Amy's Kitchen & Science of the Soul

Draft Environmental Impact Statement

April 29, 2016

Prepared by:

AKRF

AMY'S KITCHEN, INC.
Manufacturing Facility

&

SCIENCE OF THE SOUL
Conference Center

DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

April 29, 2016

Lead Agency:	Town of Goshen Planning Board
SEQRA Classification:	Type I Action
Project Sponsor:	Amy's Kitchen, Inc. 1650 Corporate Circle, Suite 200 Petaluma, CA 94955 Contact: Mark Rudolph, CFO Phone: (707) 781-7618
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DEIS Acceptance Date:	April 21, 2016
DEIS Public Hearing Date:	May 31, 2016

AMY'S KITCHEN, INC. MANUFACTURING FACILITY & SCIENCE OF THE SOUL CONFERENCE CENTER
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Project Name:	Amy's Kitchen, Inc. Manufacturing Facility & Science of the Soul Conference Center
Project Location:	Route 17M and Echo Lake Road, Town of Goshen, Orange County, New York
Lead Agency:	Town of Goshen Planning Board Goshen Town Hall 41 Webster Ave Goshen, NY 10924 Phone: (845) 294-6430 Fax: (845) 294-6542 Contact: Lee Bergus, Chairman
SEQRA Classification:	Type I Action
Project Sponsor:	Amy's Kitchen, Inc. 1650 Corporate Circle, Suite 200 Petaluma, CA 94955 Contact: Mark Rudolph, CFO Phone: (707) 781-7618
DEIS Acceptance Date:	April 21, 2016
DEIS Public Hearing Date:	May 31, 2016
DEIS Written Comment Date:	Written comments on the Draft EIS will be accepted until June 10, 2016, or until 10 days following the close of the Public Hearing, whichever is later. The comment period may be extended at the discretion of the Town of Goshen Planning Board.

This document is the Draft Environmental Impact Statement for the above-referenced project which is sometimes referred to herein as Amy's Kitchen/Science of the Soul. Copies are available for review at the office of the Lead Agency. A copy of this document has also been made available on the Internet at the following address: http:townofgoshen.org.

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✷

A. INTRODUCTION

Amy's Kitchen, Inc. ("Amy's Kitchen") proposes to construct an approximately 369,000 square-foot food manufacturing facility on an approximately 60.1-acre property located on Hartley Road in the Town of Goshen, New York (See **Figures I-1** and **I-2**). Amy's Kitchen has submitted an application to the Town of Goshen Planning Board for site plan review of its proposed manufacturing facility and is considered "the Applicant" (or "Project Sponsor") for purposes of this environmental review.

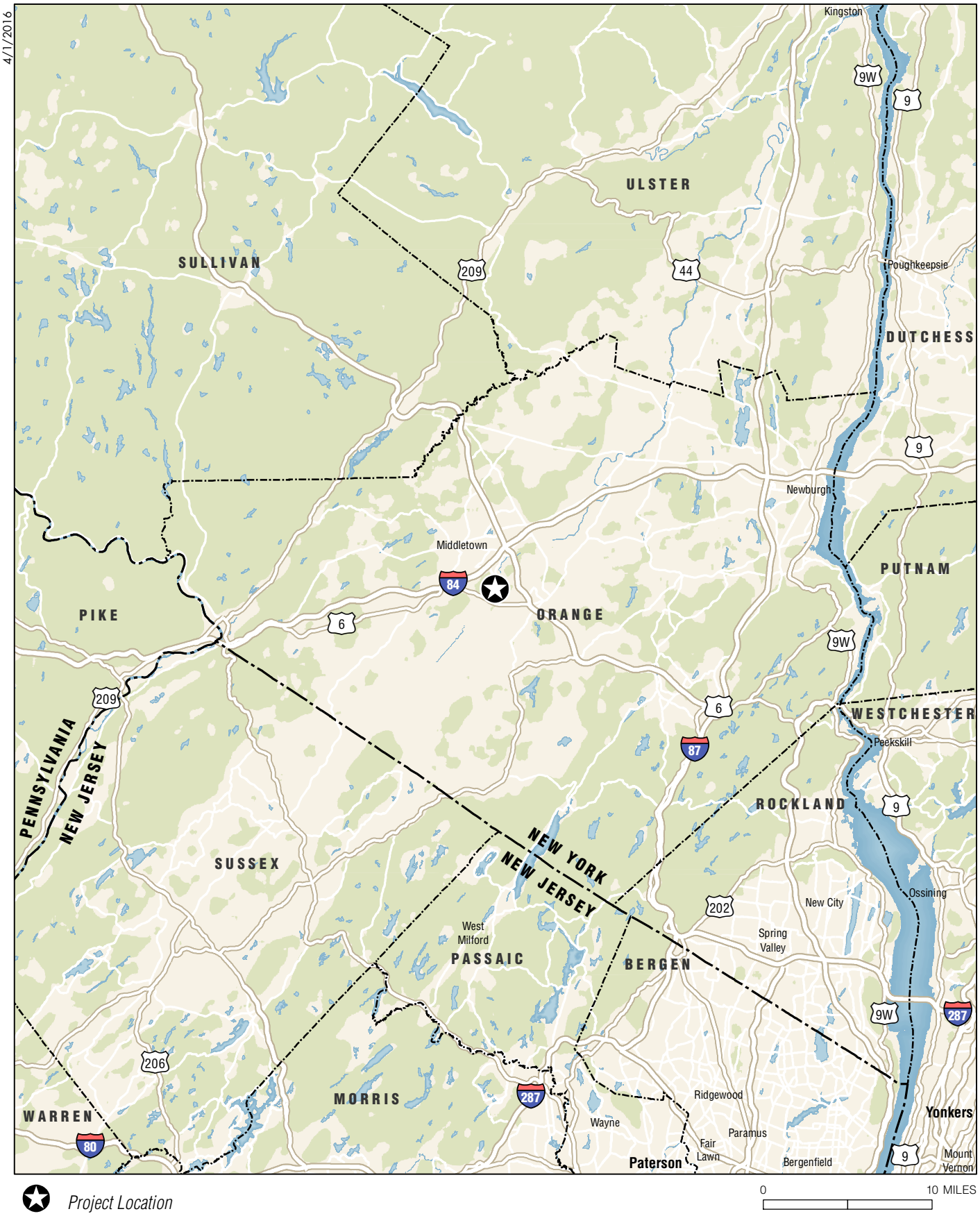
Science of the Soul ("SoS") proposes to construct a conference center (herein referred to as the "Conference Center") comprising an approximately 200,000 square-foot open-air pavilion with four (4) associated restroom buildings (approximately 5,000 square feet each); one (1) two-story approximately 80,000 square-foot Multi-Purpose/Family Area Building; one (1) two-story approximately 38,000 square-foot Central Building; one (1) one-story approximately 8,000 square-foot Maintenance Barn; two (2) Caretaker Residences, approximately 2,400 square feet each; one (1) approximately 4,500 square-foot Guest House; and associated pervious and impervious parking areas to accommodate approximately 2,043 cars and 130 buses on an approximately 195-acre property located on NYS Route 17M and Echo Lake Road in the Town of Goshen, New York.

A potential Warehouse Use on an approximately 11.6-acre subdivided parcel on Hartley Road is also contemplated.

The two entities, Amy's Kitchen and SoS, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents and to share certain access, water supply, and wastewater treatment infrastructure. The Amy's Kitchen manufacturing facility, the SoS Conference Center, together with private water and wastewater conveyance utilities connected to the City of Middletown, as well as the Warehouse Use comprise the "Proposed Project" analyzed in this Draft Environmental Impact Statement (DEIS). In total, four (4) properties comprising six (6) tax parcels and totaling approximately 374.14 acres, all in the Town of Goshen, New York, are identified and analyzed in this DEIS.

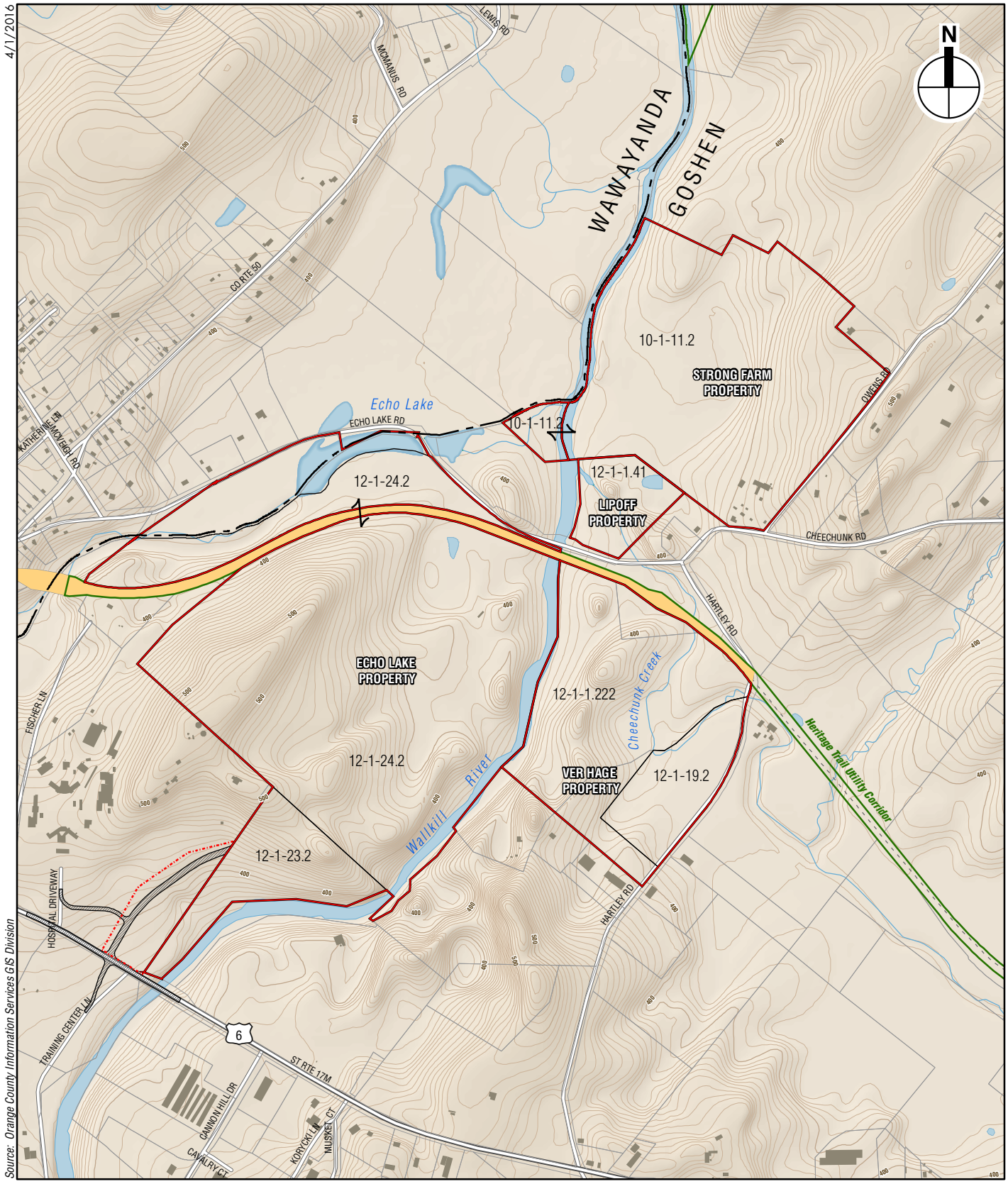
The purpose of this DEIS is to assess the potential environmental impacts of the Proposed Project, as required under SEQRA and its implementing regulations (6 NYCRR Part 617). The Town of Goshen Planning Board ("Planning Board") is the designated Lead Agency for the SEQRA process. The Planning Board declared itself Lead Agency and adopted a Positive Declaration requiring the preparing of an Environmental Impact Statement on May 22, 2014. This DEIS has been prepared in accordance with the Scoping Document approved by the Lead Agency on July 16, 2015 ("Adopted Scope")[1]. The DEIS does, however, vary from the adopted

[1] The original Scoping Document relating to the combined Amy's Kitchen and Science of the Soul project was adopted by the Planning Board on March 27, 2014. A modified Scoping Document was



Amy's Kitchen
Science of the Soul

Regional Location
Figure I-1



Project Site

NYS Land Transfer Parcel

Project Parcel Boundaries (with parcel #)

Additional Areas for Roadway Modifications

Utility Corridor

0 1,000 FEET

Amy's Kitchen
Science of the Soul

Properties Comprising the Project Site
Figure I-2

Scope in the respect of groundwater supply and wastewater treatment as the Proposed Project now includes access to the City of Middletown for the provision of those services as the preferred option. A copy of the latest Adopted Scope and all relevant SEQRA documents can be found in **Appendix II**.

B. DESCRIPTION OF THE PROPOSED PROJECT

The Proposed Project comprises four (4) primary components:

- Amy's Kitchen manufacturing facility on the "Ver Hage property";
- Subdivision of approximately 11.6 acres from the "Ver Hage property" for a future "Warehouse Use;" [2]
- Science of the Soul Conference Center on the "Echo Lake property";
- Use of the "Strong Farm property" for agricultural use and volunteer parking for Science of the Soul.

Figure I-3 presents the proposed overall layout for the Amy's Kitchen manufacturing facility on the Ver Hage property, the Science of the Soul Conference Center on the Echo Lake property, and an approximately 70,000 square-foot Warehouse Use on the 11.6 acre subdivided parcel.

AMY'S KITCHEN

Amy's Kitchen is a family-owned food manufacturing company founded in 1988 in Sonoma, California. Amy's Kitchen is a world leader in production of natural and organic convenience food products and is one of the few remaining American companies to craft its own recipes, source its own ingredients, and make its products in-house. The company currently has three manufacturing facilities: Santa Rosa, California; Medford, Oregon; and Pocatello, Idaho. The company currently purchases approximately 90 million pounds of organic materials each year for use in their products. Amy's Kitchen currently sources 95 percent of its organic material from the United States, the vast majority from the west coast. Amy's Kitchen is actively working with and pursuing increasing east coast suppliers. All of Amy's Kitchen's products are non-GMO and do not contain hydrogenated fats or oils. The majority of Amy's packaging is made from recycled material.

In an effort to better serve its east coast customers, Amy's Kitchen proposes to construct an approximately 369,000 square-foot manufacturing facility where food is prepared, packaged and frozen (see **Figure I-4**, **Figure I-5**, and **Figure I-6)**. The main products to be prepared in the facility would be pizza, canned soup, frozen entrees, and burritos. The manufacturing facility is proposed to be constructed on the Ver Hage property, which fronts on Hartley Road. A new roadway and vehicular bridge over the Wallkill River would provide direct access for Amy's Kitchen to NYS Route 17M across the Echo Lake property.

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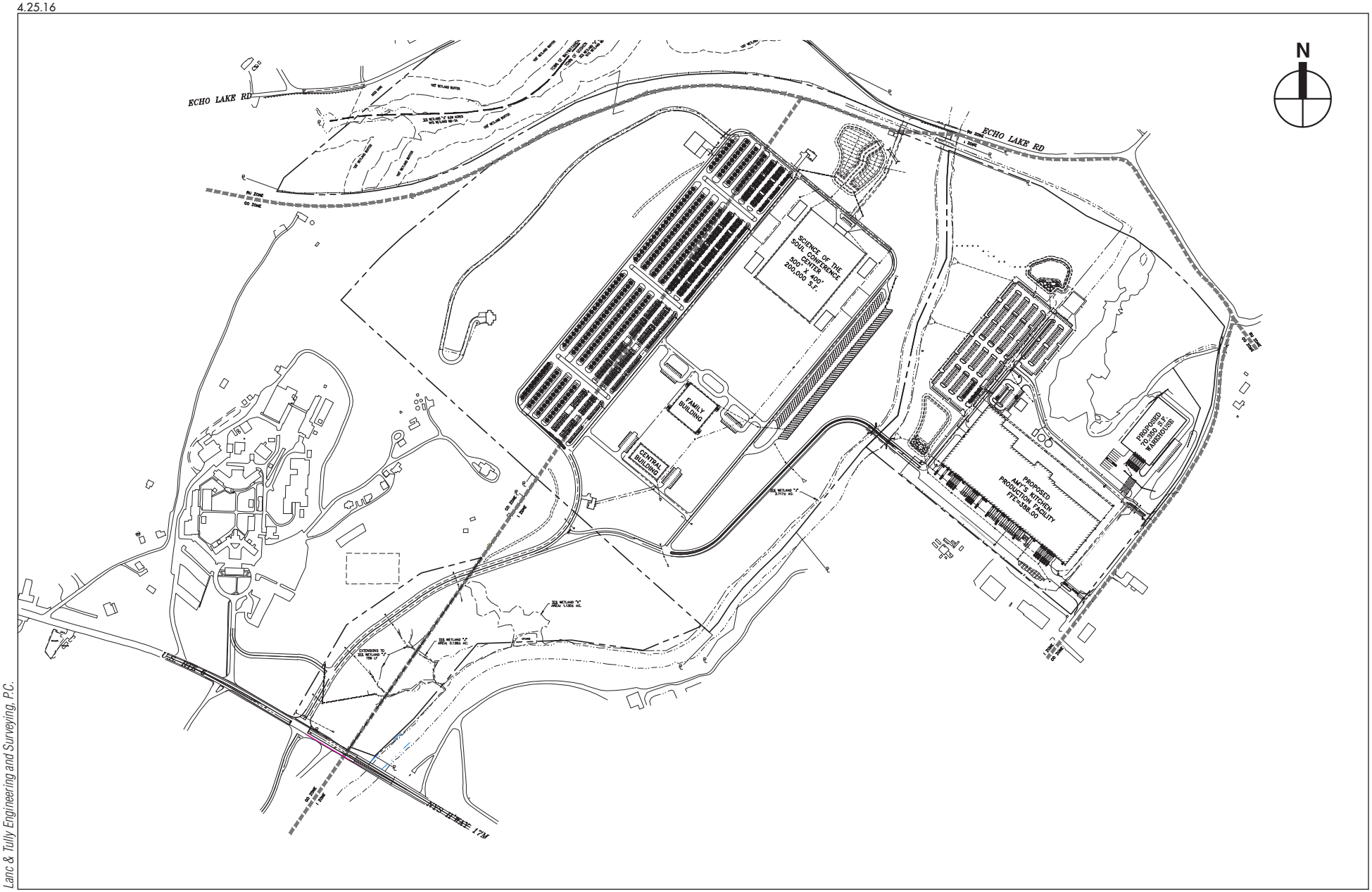
subsequently adopted by the Planning Board on September 22, 2014 when Amy's Kitchen requested to remove the Science of the Soul Conference Center from consideration. A final Scoping Document was adopted by the Planning Board on July 16, 2015, that once again includes a combined project representing the Amy's Kitchen manufacturing facility and the Science of the Soul Conference Center.

[2] The actual size of the subdivision would be determined at the time of application. The Subdivision and Site Plan/Special Permit applications for the Warehouse Use would be pursued by Mr. Ver Hage. For analysis purposes, this DEIS assumes a warehouse of approximately 70,000 square feet.

4.25.16

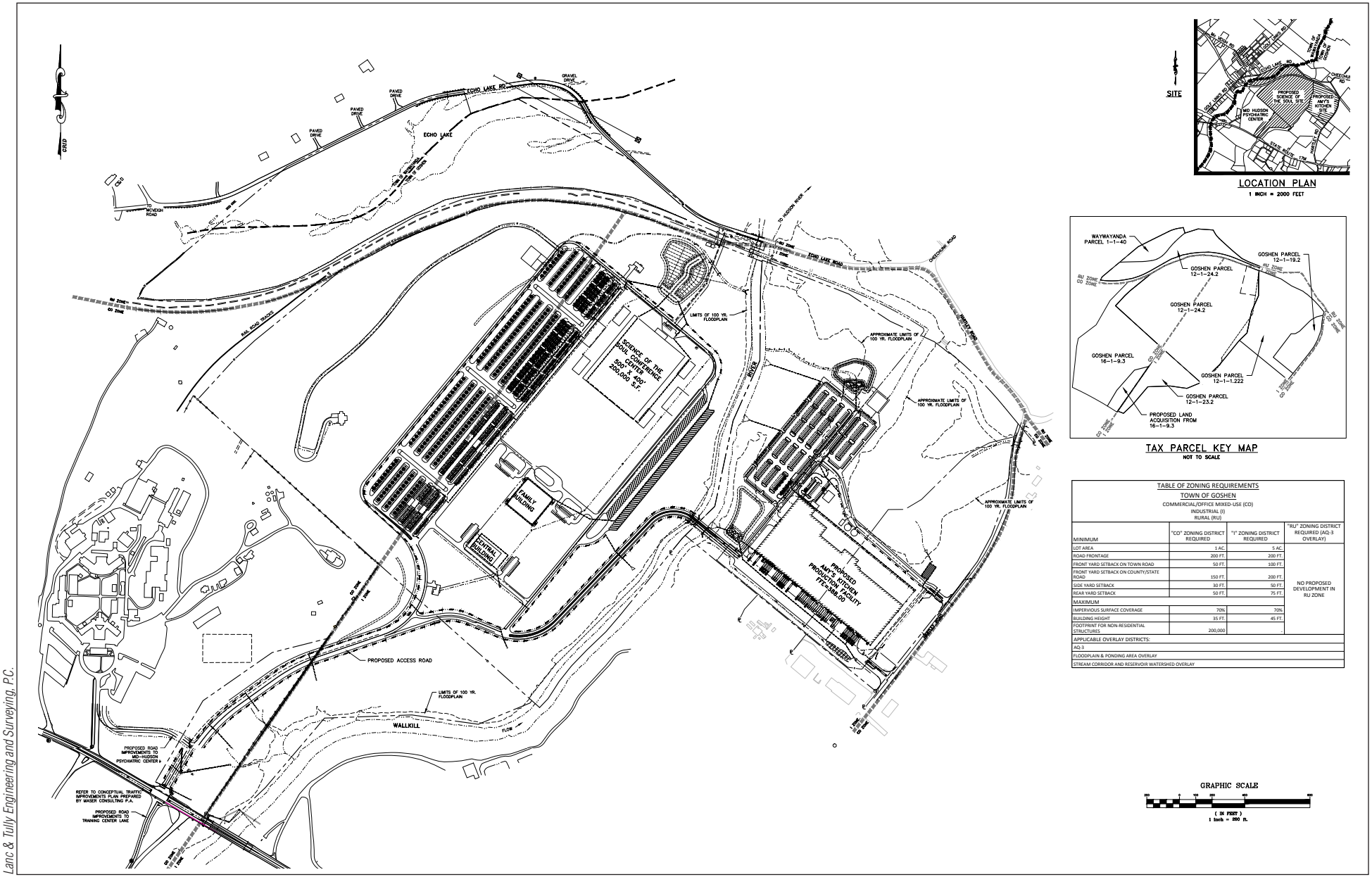


Lanc & Tully Engineering and Surveying, P.C.

Overall Site Layout

Figure I-3

Amy's Kitchen
Science of the Soul



LOCATION PLAN

1 INCH = 2000 FEET

TAX PARCEL KEY MAP

NOT TO SCALE

TABLE OF ZONING REQUIREMENTS

TOWN OF GOSHEN

COMMERCIAL/OFFICE MIXED-USE (CO)
INDUSTRIAL (I)
RURAL (RU)

MINIMUM	"CO" ZONING DISTRICT REQUIRED	"I" ZONING DISTRICT REQUIRED	"RU" ZONING DISTRICT REQUIRED (AQ-3 OVERLAY)
LOT AREA	1 AC.	5 AC.	NO PROPOSED DEVELOPMENT IN RU ZONE
ROAD FRONTAGE	200 FT.	200 FT.	
FRONT YARD SETBACK ON TOWN ROAD	50 FT.	100 FT.	
FRONT YARD SETBACK ON COUNTY/STATE ROAD	150 FT.	200 FT.	
SIDE YARD SETBACK	30 FT.	50 FT.	
REAR YARD SETBACK	50 FT.	75 FT.	
MAXIMUM			
IMPERVIOUS SURFACE COVERAGE	70%	70%	
BUILDING HEIGHT	35 FT.	45 FT.	
FOOTPRINT FOR NON-RESIDENTIAL STRUCTURES	200,000		
APPLICABLE OVERLAY DISTRICTS:			
AQ-3			
FLOODPLAIN & PONDING AREA OVERLAY			
STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY			

GRAPHIC SCALE

(IN FEET)
1 inch = 200 ft.

Lanc & Tully Engineering and Surveying, P.C.

Amy's Kitchen Site Plan

Figure I-4

Amy's Kitchen Aerial View
Figure I-5

View of Amy's Kitchen Office and Clinic from
Employee Parking Area
Figure I-6

The plant would be constructed in two (2) phases: an initial approximately 226,000 square-foot plant, including an 11,000 square-foot office area, to be opened in 2018 with an approximately 140,000 square-foot expansion (134,000 square feet of production space plus 6,000 square feet of office area) to be opened in approximately 2023. An ancillary building of approximately 3,000 square feet would be constructed for on-site medical treatment of Amy's Kitchen staff and families as part of Phase 1.

The Proposed Project includes approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces. Approximately 20 to 30 loading bays would be provided. The Amy's Kitchen manufacturing facility would employ approximately 459 full-time people on the Project Site upon completion of Phase 1, and approximately 681 full-time people upon completion of Phase 2 of the Project.

The plant would run three shifts, five days per week, with operations occasionally occurring on weekends as noted below. The shift times would generally start/end during the 5:00 AM to 7:00 AM time period, during the 2:00 PM to 5:00 PM time period, and overnight during the 10:00 PM to 1:00 AM time period. During these periods, the start and end times of the shifts are staggered, with each shift lasting 8.5 hours[3]. Based upon staffing levels at the Medford, Oregon facility, which has a similar production line to what is being considered for the Goshen facility, at full operation there would be approximately 321 Day Shift, 304 Swing Shift, and 56 Graveyard Shift employees. Thus, the maximum number of individuals to be in the manufacturing facility at any one time is projected to be approximately 325 people (assuming a small number of visitors). The on-site clinic building would be staffed by one (1) doctor and one (1) nurse as well as one (1) office assistant. Including patients and staff, and based on the Applicant's experience in its Medford, Oregon plant, the maximum number of individuals to be in the on-site clinic building at any one time is projected to be approximately eight (8) to ten (10) people. Regular plant operations would not take place on weekends except for cleaning or maintenance but occasionally, based on demand, the plant may run production shifts on weekends. General operations at the factory include processing, cooking, assembling, packaging and freezing meals for distribution.

ZONING

The proposed manufacturing facility is considered a "light industry" use in the Town of Goshen Zoning Code Use Table (§97-10) and is permitted in the Industrial (I) Zoning District subject to site plan approval by the Planning Board. The maximum height permitted in the I Zoning District is 45 feet. While the proposed manufacturing facility has not been completely designed at this point in time, Amy's Kitchen would comply with the Zoning height restriction and all other dimensional parameters (such as yards and setback requirements) within the Town's Zoning Code. Area variances from the Zoning Board of Appeals will likely be required to deviate from the strict design standards in §97-14.D. Chapter III.K, "Land Use and Zoning," provides a more complete discussion of the compliance of the Proposed Project with the Town of Goshen Zoning Code dimensional parameters. One (1) or more waivers from the Site Plan submission requirements may be required due to unique characteristics of the Project Site or the Proposed Project.

[3] Staggering shifts allows for employees to leave and enter the site at a slower pace and over an extended period of time to minimize traffic impacts. This is successfully accomplished at the other facilities run by Amy's Kitchen.

Amy's Kitchen is also consistent with both the Town and County Comprehensive Plans, in that it would further the goal of economic development, would locate development along a major commercial corridor, and would preserve to the fullest extent practicable environmental resources on the applicable sites including wetlands and mature forest habitat.

OPEN SPACE

Lot 1 of the Ver Hage property, would be approximately 60.1 acres, of which, Amy's Kitchen would disturb approximately 20.75 acres for buildings and other permanent impervious surfaces. Thus, approximately 39.4 acres (approximately 66 percent) would remain undisturbed as open space.

INFRASTRUCTURE AND UTILITIES

Gas and Electricity

Orange and Rockland Utilities, Inc. (O&R) and NYSEG provide electricity and gas service to the area. O&R and NYSEG have advised Amy's Kitchen that they have sufficient capacity to serve the Proposed Project.

Existing O&R electrical transmission lines run along Echo Lake Road, Hartley Road, and NYS Route 17M. O&R recently completed construction of a new electrical substation at the intersection of Hartley Road and Cheechunk Road. The O&R project also includes associated improvements to the distribution network along roads in the vicinity of the Project Site. New overhead electric lines would be installed from either Echo Lake Road, Hartley Road, or NYS Route 17M based upon further consultation with O&R.

An existing NYSEG gas main runs along NYS Route 17M, south of the Project Site. Gas supply lines to the Project Site would be installed within the Project Site access road.

Solid Waste

Solid waste management in the area is provided by private haulers. Solid waste would be carted to the Orange County Transfer Station south of NYS Route 17M in the Town of Goshen or to a regional recycling facility, such as Taylor Recycling in Montgomery. Amy's Kitchen would utilize private haulers to cart solid waste and recycling. As further discussed in Chapter III.J, "Utilities and Solid Waste Disposal," where feasible, Amy's Kitchen would work with local agricultural and other operations to compost food waste from the production process. Based on its Medford, Oregon plant operations, Amy's Kitchen estimates that at full-build out, regular weekly operation would generate approximately 444 tons of waste per month. Approximately 39 percent of the monthly waste would either be compostable or recyclable. Recyclable and compostable materials would be kept separate from other wastes inside the Amy's Kitchen facility and would be collected and disposed of by a private waste management company. No composting would occur on-site.

Potable Water

Based on the Applicant's experience at its plant in Medford, Oregon, Amy's Kitchen estimates a demand of approximately 375,000 gallons per day (gpd) at full buildout. Potable water supply to the Amy's Kitchen manufacturing facility would be provided by a new private utility connection to the City of Middletown water supply. An approximately eight (8)-inch diameter line would be constructed within the Heritage Trail corridor and would connect with existing City of

Middletown water supply lines in the vicinity of the City of Middletown wastewater treatment plant (WWTP). The new private water line would be constructed in a new trench within the Heritage Trail Utility Corridor at a depth of approximately 4.5 feet below existing ground surface. The water line would be horizontally separated from the existing 36- to 42-inch City of Middletown wastewater effluent line by ten (10) feet and from the proposed private wastewater conveyance line serving the Proposed Project by three (3) feet horizontally and 18 inches vertically. The new water line and wastewater conveyance line would be constructed in a single trench. It is anticipated that no pumping stations would be required along the Heritage Trail corridor to ensure satisfactory water pressure at the end of the conveyance line. (See Chapter III.E, "Groundwater/Water Supply," for additional details on the water supply system).

A private Transportation Corporation would be created to allow potable water to be supplied to Amy's Kitchen, SoS, and the future warehouse use on Hartley Road.

Wastewater

It is anticipated that Amy's Kitchen would generate approximately 300,000 gallons per day (gpd) of wastewater (including sanitary wastewater and process wastewater) at full buildout. Amy's Kitchen intends to convey wastewater to the City of Middletown wastewater treatment plant through a new private conveyance within the Heritage Trail. An approximately eight (8)-inch diameter wastewater conveyance line would be constructed within the Heritage Trail corridor and would connect to the City of Middletown wastewater treatment plant.

Two (2) below-ground pumping stations would be required to ensure pre-treated wastewater effluent conveyance to the Middletown WWTP. One (1) pumping station would be located within the Echo Lake property and one (1) pumping station would be located within the Ver Hage property. The Echo Lake pumping station would be approximately ten (10) feet in diameter and 14 feet in depth. The Ver Hage pumping station would be approximately 20 feet by 46 feet and 12 feet in depth. Clean-outs and vents would be placed along the length of the wastewater conveyance to allow maintenance access and to allow for equalization of air pressure.

A wastewater pre-treatment plant would be constructed on the Project Site to reduce the high biological oxygen demand (BOD) that is characteristic of Amy's process wastewater. The wastewater pre-treatment plant would be located at the north end of the employee parking lot and would have a footprint of approximately 15,000 square feet.

Stormwater

Stormwater management facilities are proposed for the purpose of water quality treatment and stormwater quantity control. Stormwater treatment would be provided through a combination of filtration and infiltration. Several of the proposed practices provide runoff reduction volume credits (RRV), including porous pavement, bio-retention areas, and dry swales. In order to minimize site disturbance and mimic existing drainage patterns, existing topography would be held to the greatest extent possible when determining the proposed site grading. The stormwater management system would be designed to comply with the latest design standards of New York State Department of Environmental Conservation (NYSDEC) and the NYSDEC General Permit for Stormwater from Construction Activity (GP-0-15-002) or its successor.

SITE ACCESS

A new roadway with a sidewalk and a new vehicular bridge across the Wallkill River would provide direct access for Amy's Kitchen to NYS Route 17M across the Echo Lake property. In addition to employee vehicle trips, Amy's Kitchen anticipates approximately 56 truck trips (entering or exiting) per day. Emergency access would be provided from Hartley Road.

NYS Route 17M and Site Entrance

Site access would be from a new access road intersecting with NYS Route 17M near the existing Training Center Lane. Based on initial consultations with NYSDOT, the Proposed Project would need to upgrade the intersection of NYS Route 17M at the location of the proposed site entrance. To facilitate these improvements, the Proposed Project involves a land transfer of an approximately 7 to 10 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen. The purpose of the land transfer would be to improve access to NYS Route 17M and safety along NYS Route 17M, not only for the Project, but also for the Mid-Hudson Psychiatric Center and the Orange County Transfer Station.

The new access road would serve the Mid-Hudson Psychiatric Center, SoS, and Amy's Kitchen. The new roadway would be located approximately 300 feet west of the existing Training Center Lane, which would be relocated to align opposite the SoS and Amy's Kitchen access to form a full movement signalized intersection. The intersection would be reconstructed to have multi-lane approaches. Two entrance and exit lanes would be provided on the new access road, one entrance and one exit lane would be provided on Training Center Lane, separate left-turn lanes in each direction would be provided along NYS Route 17M, and a separate right-turn lane in the westbound direction would be provided along NYS Route 17M.

Traffic light signalization of this intersection would be required to accommodate anticipated future traffic volumes and improve safety. The proposed improvements will require a Highway Work Permit from the New York State Department of Transportation. Coordination with the Orange County Department of Public Works regarding the relocation of Training Center Lane will also be required.

Based on the queuing analysis results contained in the Traffic Impact Study prepared for the Proposed Project, a 200 foot left-turn lane is proposed to be provided in each direction along NYS Route 17M as well as an approximately 150 foot westbound right-turn lane for vehicles entering the Amy's Kitchen access driveway. In addition, an approximately 150 foot separate right-turn lane will be provided on the realigned Training Center Lane approach.

While it is understood that the Town would continue to own the portion of the new access road to and on the Project Site and located on Town-owned property, Amy's Kitchen and SoS would be responsible for snow-removal and maintenance of the full length of this roadway, as well as the nearby landscaped areas to ensure access and adequate site distances are maintained.

Wallkill River Bridge

A new Warren-truss bridge would be constructed across the Wallkill River to connect the Ver Hage property to the Echo Lake property and the access road to NYS Route 17M. The bridge would be approximately 50 feet wide and accommodate three (3) vehicular lanes and a sidewalk. The third vehicular lane would allow for a left-turn lane at the end of the bridge into the employee parking lot and is considered a necessary safety element. Bridge abutments would be located outside of the boundaries of the Wallkill River and any associated wetlands but within

the 100-year floodplain. The bridge would be constructed in accordance with New York State Department of Transportation standards.

INTERNAL SITE CIRCULATION

From the new Wallkill River bridge, trucks would traverse in an easterly direction across the site to access the loading docks. Automobile traffic exiting the bridge would turn left onto a site driveway to access the employee parking area and medical clinic. The driveways on Hartley Road would be limited to emergency access to Amy's Kitchen and the Warehouse Use.

HAZARDOUS MATERIALS AND FIRE SAFETY

Fire alarms, suppression systems, and sprinklers would be provided in the manufacturing facility and on-site clinic. System design would strictly adhere to requirements of the State Fire and Building Codes and any insurance requirements. The Amy's Kitchen facility would have a pressurized water system with approximately 12 hydrants dispersed throughout the site. All Amy's Kitchen buildings would be fully sprinklered. The Wallkill River would not be used for water for firefighting. Two (2) water storage tanks containing approximately 200,000 gallons each and measuring approximately 25 feet in height and approximately 40 feet in diameter are shown to the north of the Amy's facility as part of the Proposed Project. However, depending on the ultimate pressure of the water supply, these storage tanks may not be required.

Hazardous chemicals would be utilized in cooling towers and boilers and in the wastewater pre-treatment plant on the Amy's Kitchen site. Chemicals would also be used for sanitation of food production facilities. A full list of specific chemicals to be used at the Amy's Kitchen facility has been provided to the Fire District and is included in **Appendix III.L**.

Construction of the Amy's Kitchen facility would require relocation or discontinuance of three (3) groundwater monitoring wells associated with the Old Al Turi Landfill. NYSDEC Division of Environmental Remediation has approved a request to discontinue these monitoring wells (see **Appendix III.O**).

CONSTRUCTION PHASING

Full build-out of Amy's Kitchen would occur in two (2) phases. Phase 1 would total 226,000 square feet: 215,000 square feet of production space and 11,000 square feet of office space. An accessory 3,000 square-foot medical clinic would be constructed in a free-standing building on the Project Site. Phase 1 would also include construction of the new access road from NYS Route 17M, the bridge across the Wallkill River, internal driveways and employee parking, water supply lines, wastewater conveyance lines, and the on-site wastewater pre-treatment system. Site landscaping, stormwater management, and lighting would also be completed. It is anticipated that Phase 1 would take approximately 18 months to complete. Amy's Kitchen has scheduled the Goshen facility to be in production in 2018. Grading would not commence until Site Plan approval has been finalized by the Town of Goshen Planning Board. Clearing of trees would not commence until November 1 to comply with NYSDEC restrictions relating to protected species of bats.

Overall, the sequence of construction activities would begin with site work (clearing and grading) of the Access Road Improvement Area, access road alignment on the Echo Lake property, and the bridge landing area on the Ver Hage property. The access road would be constructed to allow construction access to the Wallkill River bridge location. The gas line from

NYS Route 17M to the Echo Lake property and Ver Hage property would also be completed at this time within the access road alignment. Installation of the Wallkill River bridge would follow to allow for construction access to the Ver Hage property from NYS Route 17M. Once the access road and bridge have been substantially completed and would allow for construction truck traffic, Project Site earthwork would commence on both the Echo Lake property and Ver Hage property. Since the grading plan for the Proposed Project contemplates a roughly balanced cut-and-fill across the Project Site, excavated material from the Echo Lake property would be used to fill the Ver Hage property. With the access road and bridge completed in the earliest construction phase, very limited construction traffic would use either Hartley Road or Echo Lake Road.

Simultaneous to commencement of site work on the Project Site, construction would begin on the water supply and wastewater conveyance lines within the Heritage Trail Utility Corridor.

Following rough grading on the Ver Hage property, construction of building foundations and site utilities would commence, followed by construction of site buildings for the Amy's Kitchen manufacturing facility. Electrical connections for both Amy's Kitchen and SoS Conference Center would be pulled from existing transmission lines along Hartley Road and/or Echo Lake Road.

Phase 2 of Amy's Kitchen would total 140,000 square feet: a 134,000 square feet expansion of production space and an additional 6,000 square feet of office space. Phase 2 construction is anticipated to be completed by approximately 2023.

WAREHOUSE USE

An approximately 11.6-acre portion of the Ver Hage property would be subdivided for a future approximately 70,000 square-foot Warehouse Use that would have access from the Amy's Kitchen internal site driveway (emergency access would be provided from Hartley Road). The Warehouse Use would likely generate potable water demand of approximately 7,000 gpd (and an equivalent amount of sanitary wastewater). Water and sewer service would be provided through interconnections with the systems serving Amy's Kitchen. Water and wastewater pump stations would likely be required to serve the Warehouse Use and would be located on the warehouse property. Of the approximately 11.6-acre lot, the warehouse, site driveway, and parking area would disturb approximately 5.6 acres leaving approximately 6 acres as open space. Upon an application by others for subdivision and site plan/special permit approval of the Warehouse Use, additional environmental review may be required. . It is anticipated that stormwater management facilities for the purpose of water quality treatment and stormwater quantity control would be required as part of Site Plan approval for the Warehouse Use. The stormwater management system would be designed to comply with the latest design standards of NYSDEC and the NYSDEC General Permit for Stormwater from Construction Activity (GP-0-15-002) or its successor.

SCIENCE OF THE SOUL

SoS is an international, non-denominational philosophy based on the teachings universal to all religions. SoS, also known as Radha Soami Satsang Beas, has been in the United States since 1911 and is a registered 501(c)(3) religious non-profit organization.

SoS proposes to construct a Conference Center on the Echo Lake property. The Conference Center would comprise an approximately 200,000 square-foot open-air pavilion with four (4)

associated restroom buildings (approximately 5,000 square feet each); one (1) two-story approximately 80,000 square-foot Multi-Purpose/Family Area Building; one (1) two-story approximately 38,000 square-foot Central Building; one (1) one-story approximately 8,000 square-foot Maintenance Barn; two (2) Caretaker Residences, approximately 2,400 square feet each; one (1) approximately 4,500 square-foot Guest House; and associated pervious and impervious parking areas to accommodate approximately 2,043 cars and 130 buses (see **Figure I-7**). **Figure I-8** shows an aerial view of the SoS Conference Center in Petaluma, CA, the main pavilion, four (4) restroom buildings, and two (2) multi-purpose buildings are shown as paved and unpaved parking areas. A temporary tent is also visible adjacent to the main pavilion (no temporary tent is proposed at the SoS Conference Center in Goshen). **Figure I-9** shows the same buildings from ground level. **Figure I-10** and **Figure I-11** show computer-rendered images of seating within an open-air pavilion as well as the exterior of the open-air pavilion showing pedestrian circulation.

The Conference Center would be used to host one (1) annual three (3)-day national conference ("National Conference"), with attendance of up to 12,000 people. The National Conference would typically be held over a three (3) day period: either Friday through Sunday or Saturday through Monday. Each day's program for a National Conference would run from 9:00 AM until 1:00 PM.

In addition, SoS would hold one (1) regional two (2)-day conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees over a weekend. The Regional Conference would be held in the two-story Multi-Purpose/Family Area Building. The lecture would occur on one floor, and the other floor would be used for the family area. The Regional Conference would start mid-day on a Saturday and conclude on a Sunday afternoon.

Regular weekly meetings on Sunday mornings for local congregants ("Weekly Meeting"), estimated between 200 and 400 people, would be held in the Multi-Purpose Building. The Central Building would be used for administrative purposes, temporary accommodation for volunteers staying for short periods, and small volunteer meetings. During the week, a small number of volunteers (10 to 15 people) would attend to normal administrative and property management tasks.

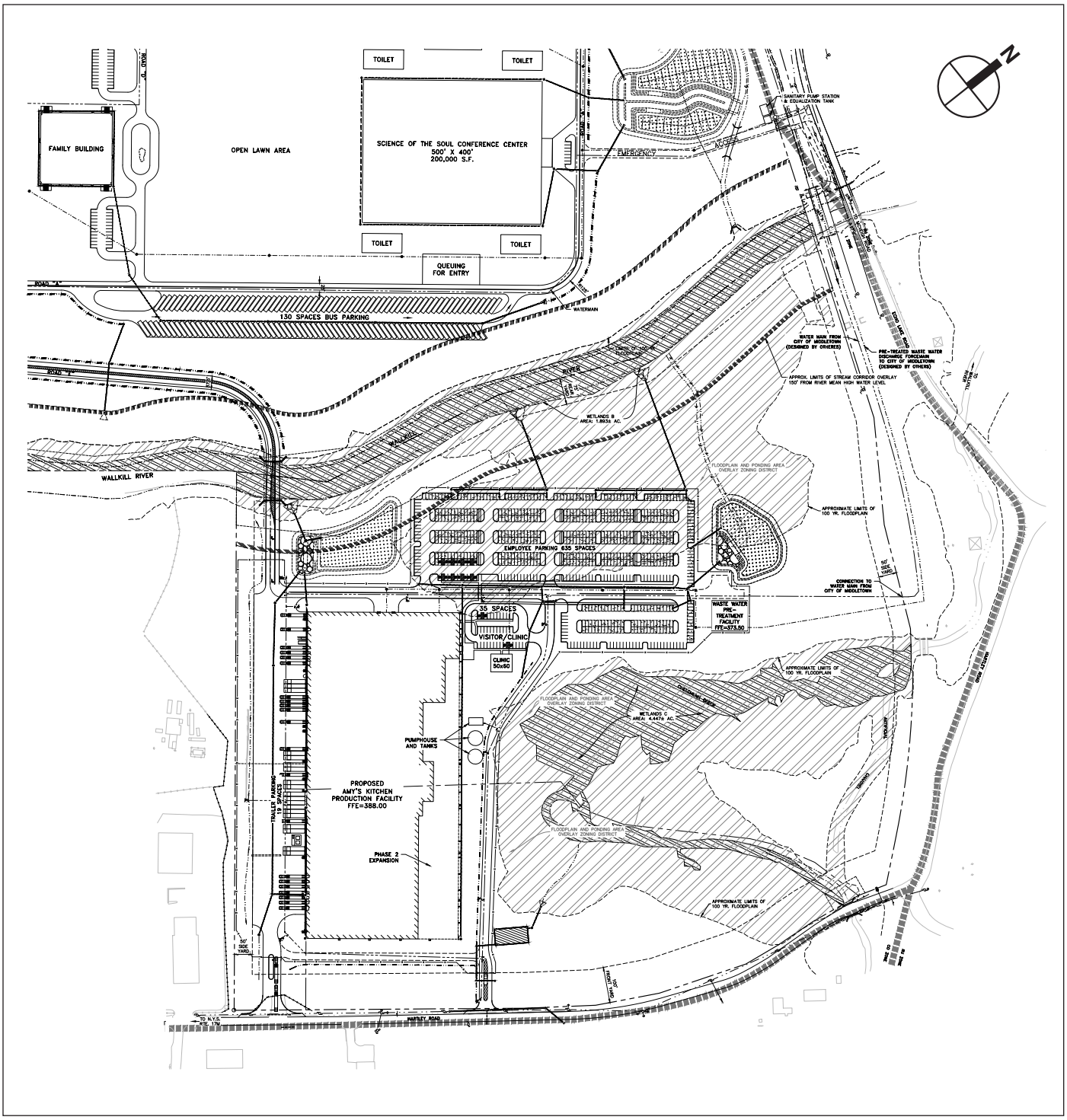
The Central Building would also contain a commercial kitchen, which would be used to provide meals for volunteers. Guests attending the National and Regional Conferences would not be served from this kitchen. As further described below, they will be offered a bag lunch with wrapped food provided by Amy's Kitchen.

During both the National and Regional Conferences, attendees would engage in off-site activities (tourism, shopping, and entertainment) or on-site volunteer activities (property maintenance and agriculture) after the day's session.

The Conference Center would not be used for weddings or other cultural events, nor would it be rented to the general public for any use.

Access to SoS would be from the new entrance roadway off NYS Route 17M, which would also serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface.

SoS would seek to avoid using temporary structures. Temporary structures would be limited to small canopy/tent structures for serving water, lunch, and tea or as information tables. These



Amy's Kitchen
Science of the Soul

SoS Site Layout
Figure I-7

Aerial View of the Science of the Soul Campus in Petaluma, CA

Figure I-8

4.29.16

Amy's Kitchen
Science of the Soul

Science of the Soul Buildings in Petaluma, CA
Figure I-9

Computer Rendered View of Open-Air Pavilion

Figure I-10

Computer Rendered View of Open-Air Pavilion

Figure I-11

would be located in strategic areas so that event staff and guests would have access to water, tea, and information at several locations. Temporary canopy structures may also be used for book sales during the National Conference.

The two (2) caretaker residences would serve as permanent residences for two (2) on-site caretaker households (individuals or couples). The five-bedroom guest-house would be used by SoS traveling speakers attending the National Conference and for National Board members and distinguished guests. The guest house would be vacant at all other times.

TRANSPORTATION

At SoS centers in Fayetteville, NC and Petaluma, CA, a goal has been set of achieving 20 percent of arrivals by bus (shuttle or long-range) and three (3) or more persons per car. SoS has achieved this goal in Fayetteville, and expects to meet or exceed this goal at the Project Site.

SoS anticipates that at National Conference events in Goshen, a large portion of attendees would travel by plane, and would use charter or shuttle buses coordinated by SoS volunteer transportation committees. SoS's goal for these events is to have 40 percent arrive by charter or shuttle buses. SoS would also encourage the use of area mass transit, including trains.

SoS has a national transportation team that organizes long-haul charter buses and local shuttles. SoS would work with local members to determine the location of hotel clusters and transportation hubs to develop a transportation plan. The plan would include the following components:

1. Car Pool—SoS has been very successful in encouraging car-pooling at its other centers. SoS has experienced a very high vehicle occupancy history of 3.78 persons per vehicle in Fayetteville, and 3.33 persons per vehicle in Petaluma.
2. Shuttle Buses—in both Fayetteville and Petaluma, SoS uses shuttle buses to deliver guests from hotel clusters. For the Proposed Project, SoS also expects to arrange shuttles from the closest train stations for attendees arriving from New York City and New Jersey.
3. Charter Buses—SoS anticipates using two types of charters: day charters from regional locations and event long charters from places such as Chicago, Washington DC, and Boston. SoS also anticipates that individual groups arriving by plane would utilize charter buses to transport themselves from the airport to the hotel, and then from the hotel to the Project Site on a daily basis during the event.

Parking

The primary parking for the SoS Conference Center would be on the Echo Lake property. A total of approximately 2,043 car parking spaces are proposed. The main parking area would comprise a combination of approximately 660 paved and 1,280 gravel and/or grass parking spaces (total of approximately 1,940 parking spaces). The paved spaces would include approximately 270 ADA-accessible parking spaces located closest to the entry venues and open-air pavilion. Four (4) additional parking areas containing approximately 24 parking spaces each (total of 96 parking spaces) would be located adjacent to the Central Building and Family Area building. Another small parking area with approximately 7 spaces would be located in the rear of the open-air pavilion. In addition, 130 bus parking spaces would be provided.

The gravel/grass spaces within the main parking area represent available parking within a grid of planted trees or "orchard," similar to how many county fairs use such spaces for informal or temporary parking. **Figure I-12** presents a photograph of the SoS facility in Petaluma showing the orchard parking as well as an agricultural orchard also at Petaluma.

During the larger National Conference, volunteers would be directed to park off-site at the Strong Farm property and would walk to the Echo Lake property. Shuttle vans would be available to transport volunteers between Strong Farm and the Conference Center as well.

Internal Site Circulation

During large events, SoS would utilize experienced and trained volunteers to manage parking and pedestrian flow. SoS would also seek to retain the services of local law enforcement to facilitate traffic flow off-site. The SoS volunteers that manage its parking teams have on average over 15 years of experience with large events (6,000 to 12,000 attendees). SoS's internal traffic plans include the following elements:

1. Pedestrian and vehicle separation—SoS designs its parking plan such that it fills spaces closest to the venue first and then farther out, row by row. This separates pedestrians from newly parking cars. Buses are parked in a separate area so that those unloading from buses do not have to cross traffic.
2. ADA and elderly accessibility—upon entry, vehicles with elderly and handicapped stickers would be directed to reserved parking areas nearest the venue. Handicapped parking spaces would be ADA compliant.
3. Shuttle—for those parking in the farthest on-site lots, shuttle vans would be used within the property.

STAFFING AND SECURITY

SoS relies on trained member volunteers to staff all events. SoS guidelines require event staffing in an amount equal to five (5) to six (6) percent of attendees. The number of volunteers is included in the total anticipated number of attendees. SoS-trained volunteers have had years of experience in staffing meetings of up to 12,000 attendees. For a typical 10,000-person event in Petaluma, SoS relies upon approximately 550 volunteers. Of those, a certain number are assigned to specific on-site tasks for traffic flow, first-aid, and security. Typical staffing of these specialty tasks for a 10,000-person event would be approximately 45 volunteers for parking; 145 volunteers for crowd flow; 50 volunteers for security and crowd care; 22 volunteers for first-aid and special needs; and 9 volunteers who coordinate overall safety of site operations and other volunteers. The other volunteers are engaged in managing overnight lodging, transportation, stage and sound management, book sales, water and food distribution, and clean-up.

SoS specifically places volunteers based on their experience. For example, the first-aid room is staffed by doctors and nurses who are members of the organization. First-aid team members are also located throughout the meeting area and grounds. Similarly, the security team is staffed with members experienced with policing or security. Members without such background undergo training. SoS first-aid teams may be staffed at levels of five (5) to twenty-two (22) depending on the size of the event. Security may be staffed at levels of 20 to 50 depending on the size of the event. As SoS meetings are spiritual in nature and there is no alcohol allowed on the property, SoS has had a very small number of situations that have required security over the past 25 years.

SoS Petaluma Conference Center orchard parking with cars **1**

Agricultural Orchard at SoS Petaluma Conference Center **2**

Coordination with local law enforcement and EMT is an important component of SoS planning. While the events are staffed by volunteers, if allowed under local regulations, procedures, or practices, SoS seeks to have an estimated four (4) to five (5) local law enforcement officers on-site. SoS would pay for off-duty officers or reimburse the Town, Sheriff, or State Police for any overtime compensation. Details of such staffing will be addressed in meetings among the relevant parties as the Security, Emergency Management, and Traffic Control Plans are further developed under any required State or County Department of Health Public Function Permit or otherwise. SoS will comply with the requirements of any such permit.

SoS also coordinates on traffic issues, and meets with town, state, and county law enforcement agencies to go over plans and concerns. As such, SoS has enjoyed a very good working relationship with local law enforcement with regard to its National and Regional conferences.

OVERNIGHT LODGING

Off-Site

During the National Conference, SoS anticipates that approximately 60 percent of attendees would stay in area hotels, and that the remainder would commute. Based on SoS's experience in North Carolina and California, less than 100 attendees would use camping or RV facilities at local campgrounds. No camping would be allowed on-site. A small number of volunteers would stay on-site in the Central Building to attend to preparations and security (see below).

Members of SoS are highly experienced in working with hotels to establish room blocks and, when needed, contracts. During SoS events in Fayetteville, NC and Petaluma, CA, SoS preferred hotels experience 100 percent occupancy. SoS staff seeks to organize clusters of hotels so that SoS can provide shuttle buses to the Project Site. Some hotels in these clusters offer banquet facilities to provide fixed dinners to SoS guests. In addition, SoS's transportation team coordinates flights, airport transportation, and hotel stays for large groups.

SoS would also coordinate with local colleges and universities to use student housing, if available. SoS currently has such an arrangement at its Petaluma Center with Sonoma State University, and approximately 500 persons avail themselves of it. Based on SoS's experience, it anticipates that the largest meetings would have a substantial effect on area hotel occupancy, with 3,000 to 5,000 rooms being required for two (2) to five (5) nights.

During the Regional Conference, SoS anticipates that 30 to 50 percent of attendees would use hotels. On an on-going basis, SoS would have event planning meetings, construction meetings, and other activities that would provide demand for local hotel rooms.

Temporary On-Site Accommodation for Volunteers

The Central Building would include temporary accommodation for a maximum of sixty (60) volunteers. These temporary accommodations would be provided in one (1) open sleeping room with a common toilet/shower room for each gender. Approximately 2,500 square feet of the building would be allocated for these temporary accommodation facilities. All temporary volunteer accommodation would be provided in these open common rooms. No individual sleeping rooms or dormitories for volunteers are proposed.

Volunteer service is a core part of the SoS religious practice. Members of diverse ethnic backgrounds, economic status, cultures, religions, and ages work together towards a common purpose. This volunteer service builds a sense of community, humility, and humanity. Working together to build and operate the Conference Center creates an atmosphere of fellowship and

good-will that builds the congregation and strengthens faith. It also provides support for the daily meditation that members practice once they return home.

SoS advocates a solitary practice that is done in the quiet of one's own home. Members commit themselves to a way of life that supports spiritual growth while carrying out their responsibilities to family, friends, and society.

Many members find coming to the Conference Center repeatedly over the years to do volunteer work as a way of deepening their spiritual life and balancing the stresses of day-to-day living. As they contribute to the building and maintenance of the Conference Center, the Conference Center becomes a touch-point of their spiritual life, as it is the place of peak experience and shared purpose with a community of fellowship. This strengthens their faith and resolve to pursue a religious life upon their return home.

These temporary accommodations make this aspect of the religious practice available to volunteers living far away. Many of the volunteers are skilled in trades or other areas of expertise. They give up their income and provide their own transportation to the Center. By having temporary accommodations they are not burdened with the additional expense of long-term hotel lodging. Furthermore, by staying on-site, these volunteers can work more efficiently and in an atmosphere conducive to the religious practice. Without this temporary accommodation, it would become burdensome for many members to volunteer their skill and time.

During the construction period, as many as 20 or 30 volunteers may be accommodated on-site. The temporary accommodation would reach its maximum use during a National Event, when a maximum of 60 total volunteers involved in event preparation would stay. They would generally arrive three (3) or four (4) days before the National Conference, and leave one (1) to two (2) days after.

During normal operations, the temporary volunteer accommodations would largely be empty. There may be a few people staying for special projects, such as landscaping, renovations, or repairs. This volunteer accommodation would strictly be temporary—no individual would stay permanently. The typical length of stay would be one (1) to two (2) weeks, with a one (1) month maximum. Volunteers would take meals served in the Central Building food service area. Except during preparation for the National Conference, lights out is strictly observed at 9:00 PM.

NOISE

During the National and Regional Conferences, all sound amplification would take place within the 200,000 square-foot steel-frame open-air pavilion. The amplified sound would consist of an approximately two-hour lecture preceded by approximately 30 minutes of spiritual singing. At Weekly Meetings, the amplified sound would be contained in the multi-purpose building. Amplified speakers would not be used throughout the property to make announcements.

SITE LIGHTING

SoS does not contemplate large nighttime events. The only night-time use would be by volunteers in preparation for the National and Regional events, night watch, and periodic evening "Study Sessions" where religious texts are studied in a small group. These Study Sessions are held once or twice during the week, starting at approximately 7:00 PM and ending at approximately 8:00 PM, with attendance of 20 to 25 people who live locally and would leave

the property promptly after the session ends. Other than preparation for the National and Regional events, all activities would cease and the Conference Center would close at 9:00 PM.

As such, site lighting would be minimal, and would generally be used to light roads, small parking areas, and pathways. All lighting would be dark-sky compliant. In addition, the proposed lighting would be zoned, so that only those fixtures needed to support site activities would be turned on. In particular, the lighting for the orchard parking area at the SoS Conference Center would only be used during the National and Regional Events.

FOOD SERVICE

For all events, meals would be provided for volunteer staff on-site. Volunteer meals consist of a simple breakfast, lunch and dinner with morning and afternoon tea. Food is prepared in a kitchen in the Central Building using locally purchased ingredients or food grown on-site or at the Strong Farm. The kitchen and on-site food preparation would comply with all applicable state and local health code requirements.

At the National and Regional Conferences, a bag lunch is offered to attendees at cost. The bag lunch typically consists of an Amy's Kitchen wrap, an apple, water, and cereal bar. The wraps would be prepared at the Amy's Kitchen manufacturing facility and delivered in a sealed plastic wrapper. Other ingredients would be purchased locally.

It is anticipated that a large percentage of guests would purchase lunch off-site, and that all attendees, other than volunteers, would obtain breakfast and dinner off-site.

In the months prior to a major event, SoS works with local restaurants to determine which facilities can provide vegetarian meals. SoS has found that both national chains and locally owned restaurants will place vegetarian items on the menu during SoS events. Where a large number of guests are staying at one hotel or hotel cluster, SoS has entered into agreements with the hotels to provide dinner in their banquet rooms.

Prior to the event, SoS provides a list of restaurants serving vegetarian meals to its attendees. During the National Conference, SoS anticipates that 6,000 dinners and breakfasts and approximately 3,000 lunches would be purchased at local hotels and restaurants.

During the Regional Conference and Weekly Meetings, SoS anticipates that 35 to 50 percent of the attendees' meals would be purchased at local hotels and restaurants.

ZONING

The proposed SoS Conference Center would be considered a "religious institution" under the Town of Goshen Zoning Code and would require a Special Permit from the Planning Board. A religious institution is defined under §97-84 of the Code as, "a church, synagogue, or other place of religious worship, as well as a monastery or other place of religious retreat." Additionally, and as noted above, SoS has a 501(c)(3) designation from the Internal Revenue Service as a religious not-for-profit entity. A determination by the Town's Building Inspector, dated October 20, 2015, confirms that "this religious use is permissible on the proposed site with all of its affiliated and accessory uses" (see **Appendix III.K**).

The proposed Conference Center would comply with all applicable setback, dimensional, and overlay district regulations. Area variances from the Zoning Board of Appeals will likely be required to allow the larger buildings to deviate from the strict design standards in §97-14.D.

One (1) or more waivers from the Site Plan submission requirements may be required due to unique characteristics of the Project Site or the Proposed Project.

SoS is consistent with both the Town and County Comprehensive Plans. As further discussed in Chapter III.K, "Land Use and Zoning," and in accordance with the Town and County Comprehensive Plans, the SoS Conference Center would result in substantial off-site spending at local restaurants, hotels, and other tourist destinations which would further support the local economy in a manner consistent with the goal of supporting the existing Village center.

OPEN SPACE

The Echo Lake property comprises 194.6 acres of land within the Town of Goshen (see Table II-1 above), of which, SoS would disturb approximately 33.8 acres for buildings and other permanent impervious surfaces. Approximately 160.8 acres (83 percent) of the Echo Lake property within the Town of Goshen would remain undisturbed as open space.

INFRASTRUCTURE AND UTILITIES

As discussed above, O&R provides electric service and NYSEG provides gas service to the area. O&R and NYSEG have indicated that they have sufficient capacity to serve the SoS Conference Center.

SoS would utilize private haulers to cart solid waste from the Project Site to the Orange County Transfer Station.

The annual three (3)-day SoS National Conference of up to 12,000 participants would generate potable water demand and sanitary wastewater of approximately 36,000 gallons per day (gpd). The annual two (2)-day Regional Conference of up to 2,000 participants would generate demand of approximately 6,000 gpd.

In addition to the two (2) caretaker residences, typical weekly activities include the following:

- Weekday – five (5) to ten (10) volunteers working in the office or property maintenance;
- Weekend – 200 to 400 individuals attending the Sunday meeting or doing volunteer work in the office or property maintenance on Saturday or Sunday.

On a normal daily basis, the two (2) caretaker residences and five (5) to ten (10) on-site volunteers would generate potable water demand and sanitary wastewater of approximately 500 gpd. The typical weekend day would generate approximately 1,000 gpd.

Potable water supply would be obtained from the City of Middletown through a new private utility connection to be located in the Heritage Trail. Wastewater treatment for SoS would be provided at the City of Middletown wastewater treatment plant through a new private utility connection to be located in the Heritage Trail. A Transportation Corporation would be established to allow for separate users of a common water and wastewater conveyance.

Stormwater management facilities are proposed for the purpose of water quality treatment and stormwater quantity control. Stormwater treatment would be provided through a combination of filtration and infiltration. Several of the proposed practices provide runoff reduction volume credits (RRV), including porous pavement, bio-retention areas, and dry swales. In order to minimize site disturbance and mimic existing drainage patterns, existing topography would be held to the greatest extent possible when determining the proposed site grading. The stormwater management system would be designed to comply with the latest design standards of NYSDEC

and the NYSDEC General Permit for Stormwater from Construction Activity (GP-0-15-002) or its successor.

FIRE SAFETY

All buildings within the SoS Conference Center would utilize fire alarms, suppression systems, and sprinklers, as required by State Fire Code. (It is not certain whether the open-air pavilion would require sprinklers). The need for water storage for fire-fighting purposes will be determined based on the pressure supplied by the new private water supply line. Approximately 16 fire hydrants will be provided as needed to provide adequate fire safety throughout the site. System design would strictly adhere to requirements of the State Fire and Building Codes and any insurance requirements. The Wallkill River would not be used for water for firefighting. Maximum capacity of any building within the Conference Center would not exceed State Fire and Building Code occupancy limits. During the National Conference, the main 200,000 square-foot open-air shed would typically accommodate approximately 10,000 people. The 38,000 square-foot Central Building would typically accommodate several hundred volunteers. The 80,000 square-foot Family Area building would typically accommodate 2,000 to 3,000 people.

CONSTRUCTION PHASING

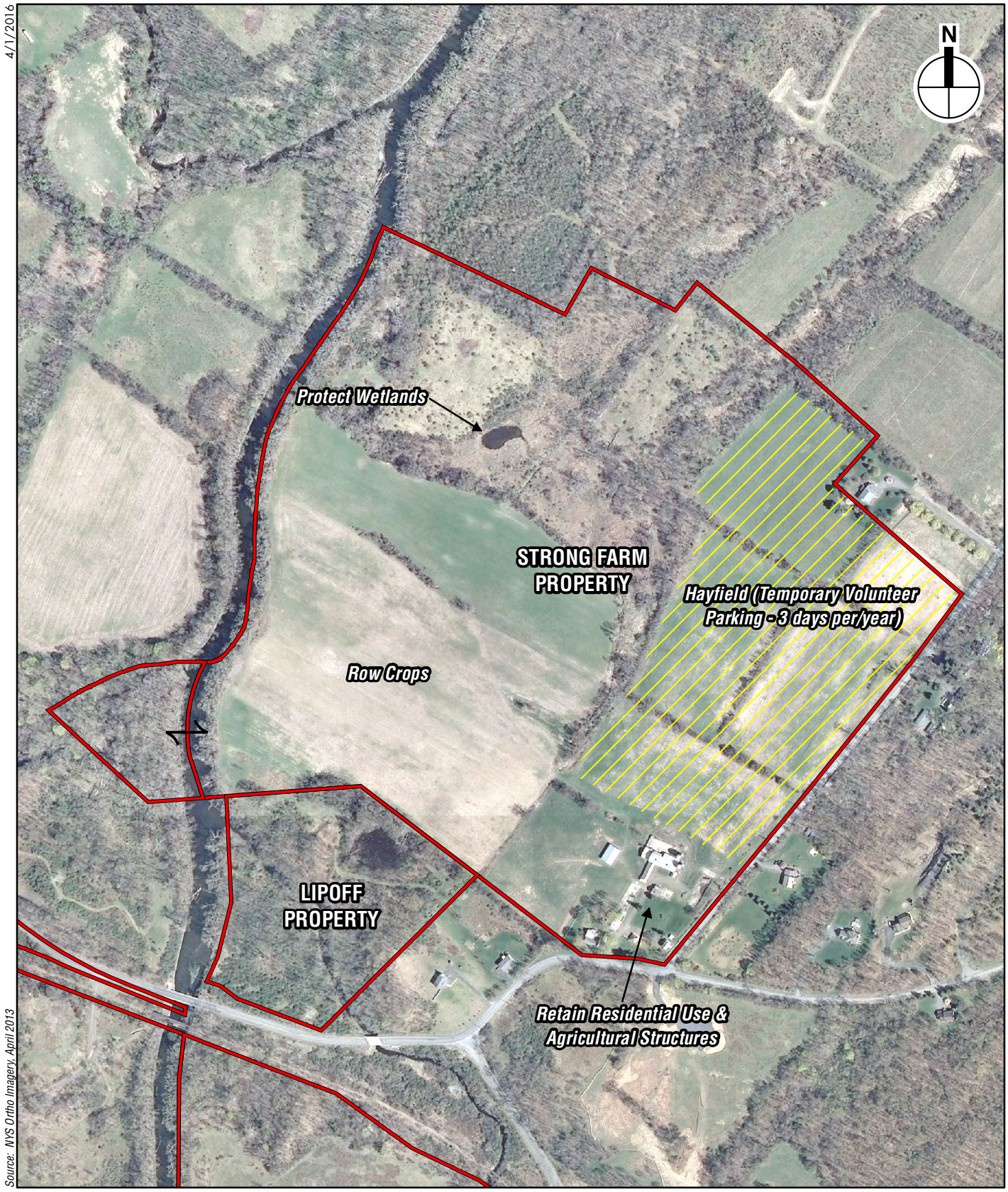
The SoS Conference Center is contemplated to be constructed in a single 18- to 24-month phase, which is currently anticipated to commence after construction of the access road, Wallkill River bridge, and Phase 1 construction of Amy's Kitchen is initiated. Construction activities on the SoS Conference Center buildings will begin after the initial clearing and grading of the Echo Lake property is substantially completed.

STRONG FARM

SoS has purchased the Strong Farm on Cheechunk Road and Owens Road. SoS intends to continue to enhance the agricultural use of the Strong Farm property and would restore the main residence and some of the agricultural structures on the property. The two (2) other residential structures would be rented to tenants or used for volunteer housing during the National and Regional Conferences. Continuation of the former dairy farm use is not proposed. The Strong Farm property would also be used for volunteer parking for the SoS Conference Center during the National Conference. Volunteer parking would be provided in hayfields or orchards, and not in areas used for crop farming (see **Figure I-13**).

C. PROJECT PURPOSE AND NEED AND BENEFITS

The purpose and objective of the Proposed Project is to construct a manufacturing plant to serve Amy's Kitchen, and to construct a Conference Center for Science of the Soul, a not-for-profit religious institution. Overall, the Proposed Project would benefit the State, Town and Village of Goshen, the City of Middletown, the Goshen Central School District, the Goshen Fire District, Orange County, and the Hudson Valley region through direct, indirect, and induced economic activities and through tax and similar revenues.



Amy's Kitchen
Science of the Soul

Strong Farm
Figure I-13

AMY'S KITCHEN

The Proposed Project would more efficiently serve Amy's Kitchen's growing customer base in the northeast and other regions of the country. Currently all manufacturing occurs in the western United States and food products must be shipped to this and other areas.

In addition to construction jobs, Amy's Kitchen would employ approximately 681 people on the Project Site once complete. Amy's Kitchen would provide long term benefits to the local and regional agricultural economy as it seeks to source local ingredients. It would also generate tax and other revenue, benefiting the State, Town, County, and other local taxing and assessment jurisdictions. As further discussed in Chapter III.M, "Fiscal Impacts," it is anticipated that Amy's Kitchen would generate substantial economic benefits from construction and annual operations. Annual (post-construction) direct, indirect, and induced economic activity would be approximately $195.27 million within New York State, the majority of which (approximately $190.67 million) would occur within Orange County.

SCIENCE OF THE SOUL

SoS is proposing the Conference Center to better serve its members in the northeast and other parts of the country. SoS National and Regional Conferences are anticipated to result in significant off-site visitor spending at local area hotels and restaurants. Since the SoS events are typically held from 9:00 AM to 1:00 PM, it is anticipated that guests will spend their afternoons and evenings patronizing local shops, restaurants, and other tourist activities, generating substantial additional economic benefit to the region. As further discussed in Chapter III.M, "Fiscal Impacts," it is anticipated that annual operations of the Conference Center would generate approximately $4.7 million in direct, indirect, and induced economic activity within New York State, the majority of which (approximately $4.2 million) would occur within Orange County.

D. PERMITS AND APPROVALS

The following permits and authorizations have been identified as potentially required. Additional permits and/or agencies may be identified at a later date.

INVOLVED AGENCIES

- NYS Department of Environmental Conservation
  - State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater from Construction Activities (GP-0-15-002)
  - Freshwater Wetlands permit (6 NYCRR Part 662) for wetland buffer disturbance
  - Extension of private wastewater conveyance line
  - Incidental taking (ECL Article 11) of an endangered species
- NYS Department of Transportation
  - Highway Work Permit for roadway improvements on NYS Route 17M
  - Land transfer from NYS OMH/OGS for roadway improvements
- NYS Office of General Services
  - Land transfer to Town of Goshen
  - Land transfer to NYSDOT

- NYS Office of Mental Health
  - Land transfer to Town of Goshen
  - Land transfer to NYSDOT
- New York State Department of Health
  - Public Function permit (Title 10, Chapter I, NYS Sanitary Code, Part 18)
- Empire State Development
  - Approval of financial incentives
- Orange County Legislature
  - Approval of wastewater conveyance and water supply within the Heritage Trail right-of-way
  - Approval of potential modified access (for SoS National Conference) across the Heritage Trail for the Echo Lake site
- Orange County Department of Public Works
  - Re-alignment of County road
  - Highway work permit for re-alignment of Training Center Lane
  - Modifications to Heritage Trail for water and wastewater lines
- Orange County Department of Health
  - Approval of extension of private water line to connect to City of Middletown
- Orange County Industrial Development Agency
  - Resolution to approve payment in lieu of tax (PILOT) program
  - Contribution of $500,000 towards Route 17M improvements
- Town of Goshen Town Board
  - Land transfer from NYS OMH/OGS
  - Granting of access easement and acceptance of roadway dedication on land transferred to the Town from the State and maintenance agreement with Amy's Kitchen for road
  - Consent to the formation of water and wastewater Transportation Corporations
- Town of Goshen Planning Board
  - Site Plan approval for Amy's Kitchen and Science of the Soul
  - Subdivision for future Warehouse Use
  - Special Permit approval for a religious use in the CO District
  - Special Permit approval for a warehouse use in the Industrial District
- Town of Goshen Zoning Board of Appeals
  - Area Variance(s)
- Town of Goshen Highway Department
  - Highway Work Permit for driveway improvements on Echo Lake Road and/or Hartley Road
- Town of Goshen Building Department
  - Floodplain Development Permit
- City of Middletown

  - Board of Estimate and/or City Council agreement for water and wastewater service to an out-of-district user
  - City Council Adoption of Local Law to amend out-of-district water and wastewater requirements
- Town of Wawayanda
  - Street-opening permit for utility crossing(s)

INTERESTED AGENCIES

The following agencies have no permitting authority but will be considered Interested under SEQR and will receive copies of all SEQR documents.

- United States Army Corps of Engineers
- United State Fish and Wildlife Service
- NYS Department of Parks, Recreation and Historic Preservation
- NYS Department of Agriculture & Markets
- NYS Police (for large SoS events)
- NYS Dormitory Authority
- Orange County Department of Planning — G.M.L. § 239-l, m, and n
- Orange County Department of Parks, Recreation and Conservation (Heritage Trail)
- Orange County Sheriff Department (for large SoS events)
- Town of Goshen Environmental Review Board
- Town of Goshen Fire District
- Town of Goshen Police Department
- Goshen Volunteer Ambulance Corp
- Town of Wallkill
- Village of Goshen

E. SUMMARY OF EXISTING CONDITIONS

PROJECT SITE

The Project Site comprises four (4) properties totaling approximately 374.14 acres in the Town of Goshen, Orange County, New York (see **Figure I-1**, **Figure I-2**, and **Table I-1**). The Project Site is located north of New York State Route 17M ("NYS Route 17M"), east of the Town of Wawayanda, west of the Village of Goshen, and south of the West Hills Country Club. The Project Site is bisected in a north-south direction by the Wallkill River and generally lies south of Echo Lake Road and the future Orange County Heritage Trail ("Heritage Trail") extension west of Hartley Road,[4] although portions of the Project Site lie north of Echo Lake Road and the Heritage Trail.

[4] While the Heritage Trail west of Hartley Road is not currently improved as a recreational trail, Orange County intends to initiate clearing in 2016 and complete construction of a multi-use trail west to the City of Middletown by 2018. Thus, in this DEIS, the Trail is considered as if it were completed.

Table I-1
Properties Comprising the Project Site

Property	Address	SBL[1]	Zoning[2]	Acres
Amy's Kitchen Properties				
Ver Hage property[5]	111 Hartley Road	12-1-1.222	I	54.6
	103 Hartley Road	12-1-19.2	I	17.1
Lipoff property	12 Echo Lake Road	12-1-1.41	RU	11.8
Science of the Soul Properties				
Echo Lake property	41 Echo Lake Road[3]	12-1-24.2	CO, I, and RU	172.9
	2832 NYS Route 17M	12-1-23.2	I	21.7
Strong Farm property[4]	212 Cheechunk Road	10-1-11.2	RU	96
			TOTAL	374.1

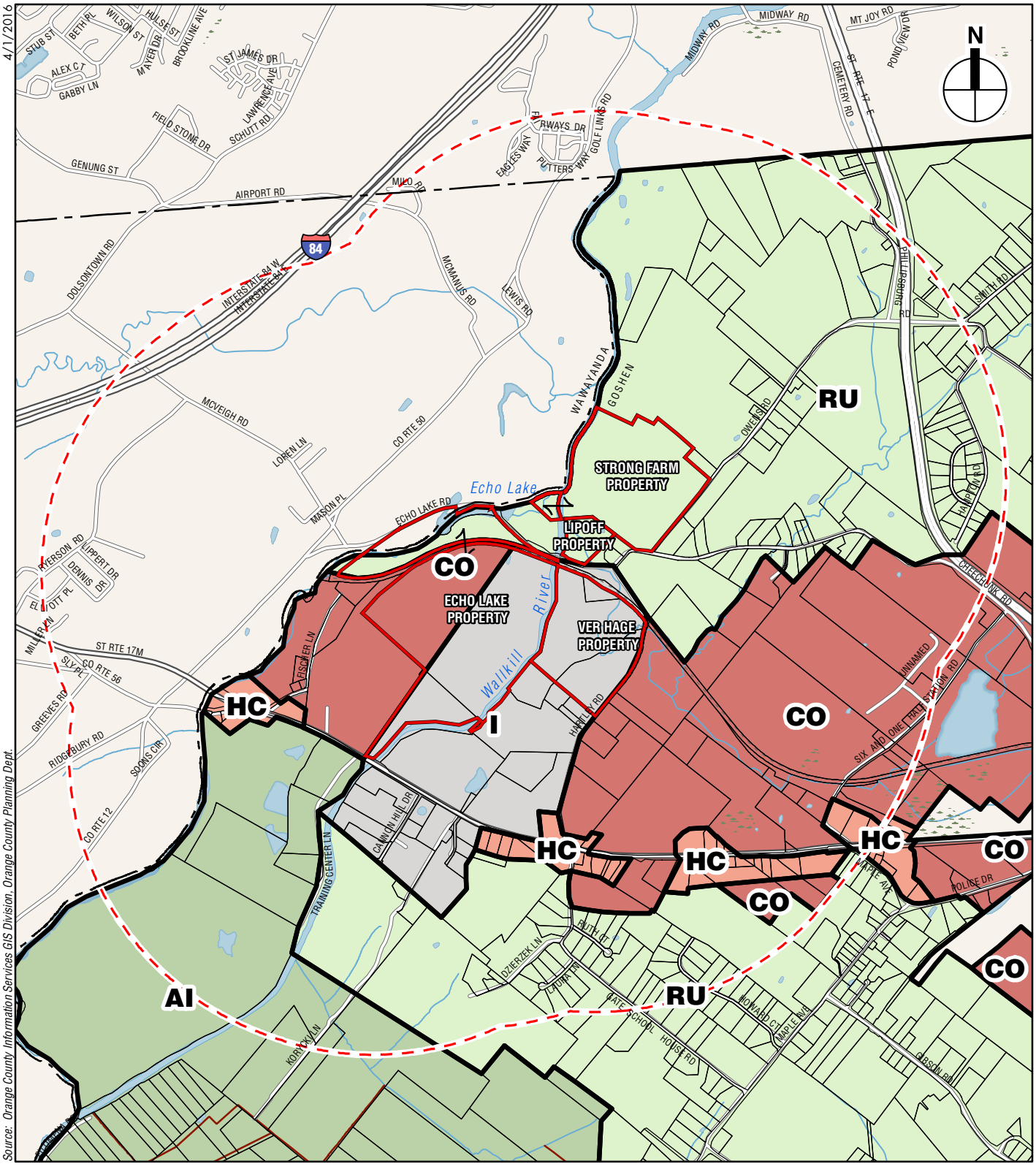
Notes:
[1] SBL 12-1-101 is currently owned by the State of New York (NYS). NYS has stated its intent to transfer 7.58 acres of this land to the Town of Goshen for the purpose of improving road access to Route 17M for the project and surrounding uses.
[2] Town of Goshen Zoning Designations: Commercial/Office Mixed-Use (CO); Industrial (I); and Rural (RU).
[3] The portion of this property in the Town of Wawayanda (SBL 1-1-40) is also owned by Echo Lake NY, LLC, an entity affiliated with Amy's Kitchen, but is not included in the calculation of acreage. There are no proposed modifications to the portion of the parcel in Wawayanda.
[4] SoS also owns a 2.9 acre parcel at 51 Owens Road (SBL 10-1-11.1) and a 14.2 acre parcel at 117 Owens Road (SBL 10-1-9). There are no proposed modifications to these properties. The existing residence at 51 Owens Road would continue to be used as a residential use.
[5] It is anticipated that approximately 11.6 acres of this property would be subdivided off for use by Mr. Ver Hage. This would leave approximately 60.1acres for use by Amy's Kitchen.

As further discussed in Chapter III.K, "Land Use and Zoning," the Project Site is located in the Commercial/Office Mixed-Use (CO), Industrial (I), and Rural (RU) Zoning Districts (see **Figure I-14**). The portion of the Echo Lake property south of the Heritage Trail is split zoned, with the western half zoned CO and the eastern half zoned I. The portion of the Echo Lake property north of the Heritage Trail is zoned RU. The Ver Hage property is zoned I. The Lipoff and Strong Farm properties are both zoned RU. The Echo Lake property is located in the AQ-3 Aquifer Overlay District. The Ver Hage property is located in both the AQ-3 and AQ-6 Aquifer Overlay Districts. The Lipoff property and Strong Farm property are located in the AQ-6 Aquifer Overlay District. In addition, portions of the Project Site are located within the Stream Corridor and Reservoir Watershed Overlay District, Floodplain and Ponding Area Overlay District, and Scenic Road Corridor Overlay District (see **Figure I-15**).

Land uses in the immediate vicinity of the Project Site are characterized by rural residential, farmland, institutional, rural commercial and rural industrial uses. The Town of Wawayanda is located to the west of the Project Site, and includes rural residential and commercial uses. Areas to the north, south, and east of the Project Site are primarily vacant forested land, rural residential, and farmland.

VER HAGE PROPERTY

Sassafras Mountain, LLC, an entity affiliated with Amy's Kitchen, is under contract to purchase the Ver Hage property, which is currently vacant. Portions of the property are open fields, which historically may have been used for farming, but more recently were stripped of top-soil for the capping of the Al Turi landfill to the south. The Cheechunk Creek traverses the northeast portion of the property. The creek enters the property where Hartley Road meets the Heritage Trail and



Project Site

Study Area (One Mile Radius)

Goshen Parcel Boundaries

Town of Goshen Zoning

- AI, Agricultrural Industrial
- CO, Commerical/Office Mixed-Use
- HC, Highway Commercial
- I, Industrial
- RU, Rural

0 1,000 2,000 FEET

Amy's Kitchen
Science of the Soul

Zoning Map

Figure I-14

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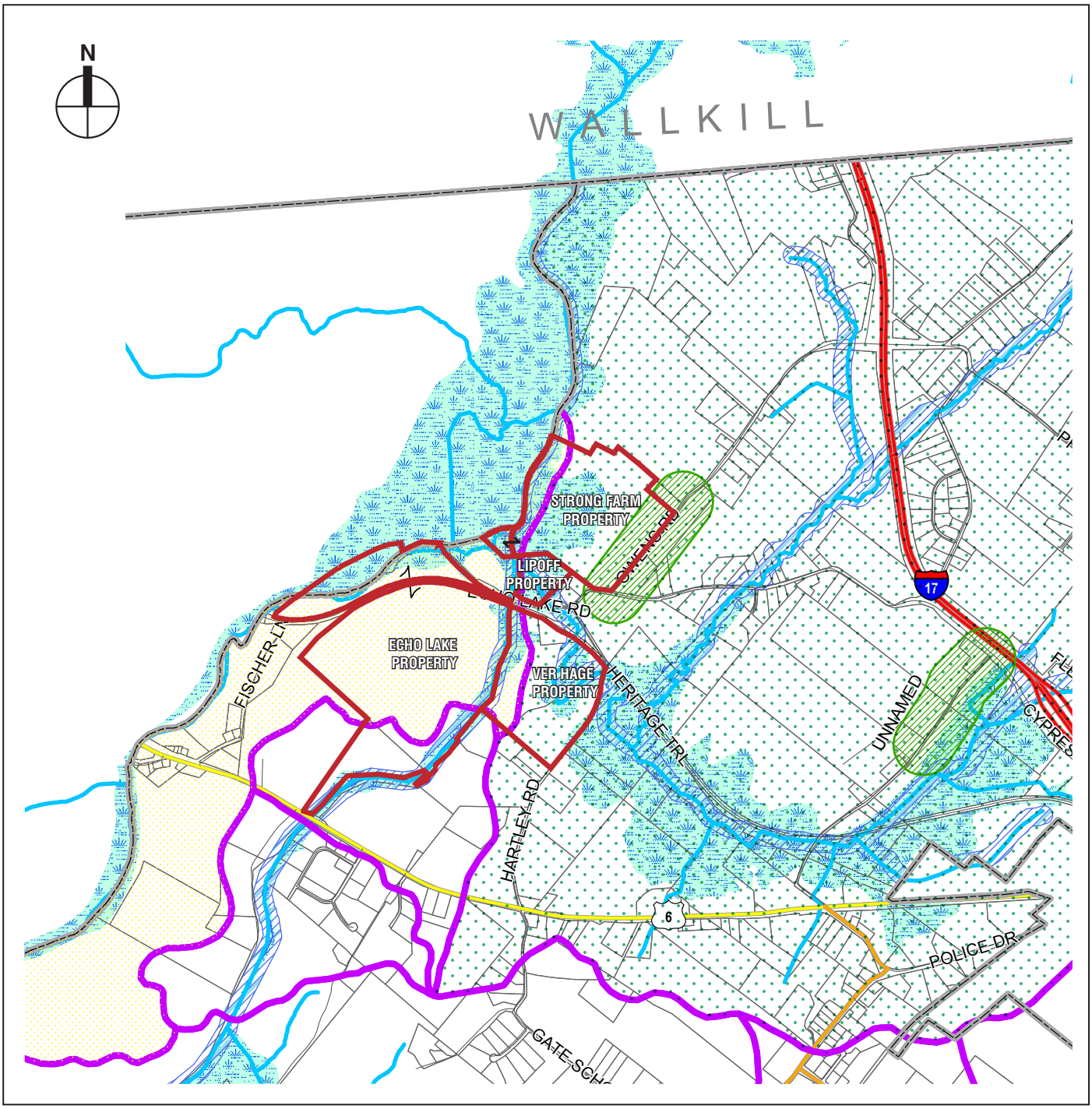


Project Site Area

Municipal Boundaries

Watershed Boundaries

Streams

Zoning Overlay Districts

Soil Mining Overlay

Scenic Road Corridor Overlay

Floodplain and Ponding Area Overlay

Stream Corridor and Reservoir Watershed Overlay

Aquifer Overlay Districts

AQ-6

AQ-3

Amy's Kitchen
Science of the Soul

Zoning Overlay Districts
Figure I-15

flows first south then north in a stream meander that separates approximately 16 acres from the majority of the property. The Cheechunk Creek exits the Ver Hage property by flowing under the Heritage Trail.[5]

Adjacent land uses include the Wallkill River and Echo Lake property to the west, Interstate Waste Service private transfer station and Old Al Turi Landfill[6] to the south, and light-industrial businesses along Hartley Road to the east. An unimproved section of the Heritage Trail forms the northern border of the Ver Hage property. East of Hartley Road, the Heritage Trail has been improved with a gravel trail for public recreational use. An Orange & Rockland Utilities (O&R) electrical sub-station was recently constructed to the north of the Ver Hage property between Hartley Road and Cheechunk Road.

The Town of Goshen has an existing easement on the Ver Hage property for the purpose of restoring and cleaning the portion of the Cheechunk Creek within the easement area, and repairing, reconstructing, replacing, and maintaining the headwall at the culvert also within the easement area.

Al Turi Landfill, Inc. has several existing access easements on the property to allow access to the monitoring wells associated with the Old Al Turi Landfill. The NYSDEC Record of Decision for the Old Al Turi Landfill restricts the installation of any drinking water wells on the Ver Hage property unless those wells are approved by the NYSDEC. In addition, the Orange County Water Authority has an approximately 3,000 square-foot permanent easement on the northwest corner of the property.

LIPOFF PROPERTY

Hudson Valley AREA, LLC, an entity affiliated with Amy's Kitchen, purchased the Lipoff property on June 24, 2015. The Lipoff property is currently vacant forested land. The Cheechunk Creek bisects the property in a southeast to northwest direction where it meets the Wallkill River near the northwest corner of the Lipoff property. Land uses adjacent to the property include the Strong Farm to the north, Echo Lake Road to the south, single-family residential to the east, and the Wallkill River and vacant forested land to the west. There is an existing easement held by Rockland Light and Power Company for transmission lines that cross the Lipoff property.

ECHO LAKE PROPERTY

Echo Lake NY, LLC, an entity affiliated with Amy's Kitchen, owns the Echo Lake property. The property was historically used as a dairy farm and later for mining. The property was purchased in the 1980s by the Town of Wallkill, which mined the land for gravel for municipal use. Gravel mining continued on the property when the Town of Wallkill sold it to a private landowner. The site is currently vacant and is listed in the Orange County Agricultural District

[5] In the Fall of 2014 the current owner of the Ver Hage property made modifications to the Cheechunk Creek that caused the creek to flow in a new channel in a northwesterly direction along the southern edge of the Heritage Trail. This modification was a violation of Town of Goshen Code and also resulted in a Cease and Desist Order from the United States Army Corps of Engineers. In June 2015 the current owner made repairs to the creek that returned water flow to the natural channel that meanders through the property.

[6] The "Old Al Turi Landfill" is identified by the NYSDEC as an Inactive Hazardous Waste Site (Site No. 3-36-016) for which a NYSDEC Record of Decision for remedial action is dated March 1996.

#2. Adjacent land uses include the New York State Mid-Hudson Psychiatric Center to the southwest; the Wallkill River to the east; Ameresco Renewable Energy Project, and Interstate Waste Service private transfer station across the Wallkill River to the southeast; the Ver Hage property across the Wallkill River to the northeast; and rural single-family residential uses in the Town of Wawayanda to the northwest.

An unimproved section of the Heritage Trail, a County property that follows an abandoned railroad bed, traverses the northern portion of the property bisecting SBL 12-1-24.2 and eliminating frontage of the main portion of SBL 12-1-24.2 on Echo Lake Road. An existing driveway from Echo Lake Road across the Heritage Trail may only be used by construction vehicles and emergency vehicles under a deed restriction controlled by the County. Any modifications to this driveway, the deed restriction against regular vehicular access, or the Heritage Trail, will require approval by the County legislature.

Several wetland areas are located within the Echo Lake property that have been determined to be Waters of the United States under the jurisdiction of the United States Army Corps of Engineers. A significant area of the portion of SBL 12-1-24.2 north of the unimproved section of the Heritage Trail and the Town of Wawayanda SBL 1-1-40 lies within New York State Wetland MD-24, which includes the body of water known as Echo Lake.

The City of Middletown holds an easement within the Echo Lake property for a sanitary sewer trunk line that runs from the Middletown wastewater treatment plant along the Heritage Trail west of C.R. 50 and then along Echo Lake Road before traversing a small section of the Echo Lake property north of the Heritage Trail to its discharge point in the Wallkill River.

The Town of Wallkill holds an easement on an approximately five (5) acre portion in the northeast section of SBL 12-1-24.2 relating to two (2) existing water supply wells. The easement stipulates, in part, that a) water obtained from the two (2) existing water supply wells in the easement area may only be used on the Echo Lake property itself and not exported to another property, and b) that the Town of Wallkill retains joint usage rights for water from the two (2) existing wells within the easement area.

STRONG FARM PROPERTY

SoS purchased the Strong Farm property as Radha Soami Satsang Beas (RSSB) America. Strong Farm is currently used for agriculture. The property contains several agricultural structures and three (3) residences. Land uses to the north include land that has been approved by the Town of Goshen for a 39-lot residential subdivision, a single-family residence, and farmland; to the south are the Lipoff property, single-family residences, and the O&R substation; to the east are single-family residences along Owens Road; and to the west is the Wallkill River and farmland. There are no easements, restrictions, or rights-of-way on the Strong Farm Property.

ADDITIONAL AREAS

Two (2) additional areas are required for improvements related to the Proposed Project, but would not be owned or controlled by either Amy's Kitchen or SoS (and so are not considered part of the "Project Site"). These additional areas are described here and are included elsewhere in this DEIS for purposes of environmental impact assessment.

HERITAGE TRAIL UTILITY CORRIDOR

A portion of the Heritage Trail from the Project Site west to the City of Middletown wastewater treatment plant will be occupied by a water supply line and wastewater conveyance line to serve the Proposed Project (see **Figure I-16**). This "utility corridor" is considered a secondary study area for purposes of analysis in this DEIS. The Heritage Trail will remain in the ownership of Orange County (from Hartley Road west to the original Wallkill River channel) and the City of Middletown (from the original Wallkill River channel west to the City of Middletown) and utility easements will be required as part of the Proposed Project.

ACCESS ROAD IMPROVEMENT AREA

The Proposed Project also involves a land transfer of an approximately 7 to 10 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen[7] to construct an access road from NYS Route 17M into the main portion of the Echo Lake property. A small area of land on the south side of NYS Route 17M owned by New York State would also be affected to allow for re-alignment of Training Center Lane. This property would remain in its current ownership.

The portion of the Echo Lake property that currently has road frontage on NYS Route 17M (SBL 12-1-23.2) is too narrow and too close to the existing bridge that carries NYS Route 17M over the Wallkill River to permit the site access road. The new access road would also serve the Mid-Hudson Psychiatric Center (one of the two existing driveways to which would be closed on NYS Route 17M) and Science of the Soul. The new roadway would be located approximately 300 feet west of the existing Training Center Lane, which would be relocated to align opposite the new site access road to form a full movement signalized intersection. These improvements would provide a public benefit to the Town of Goshen, County of Orange, and State of New York by enhancing safety of this portion of NYS Route 17M where access is provided to County and State facilities.

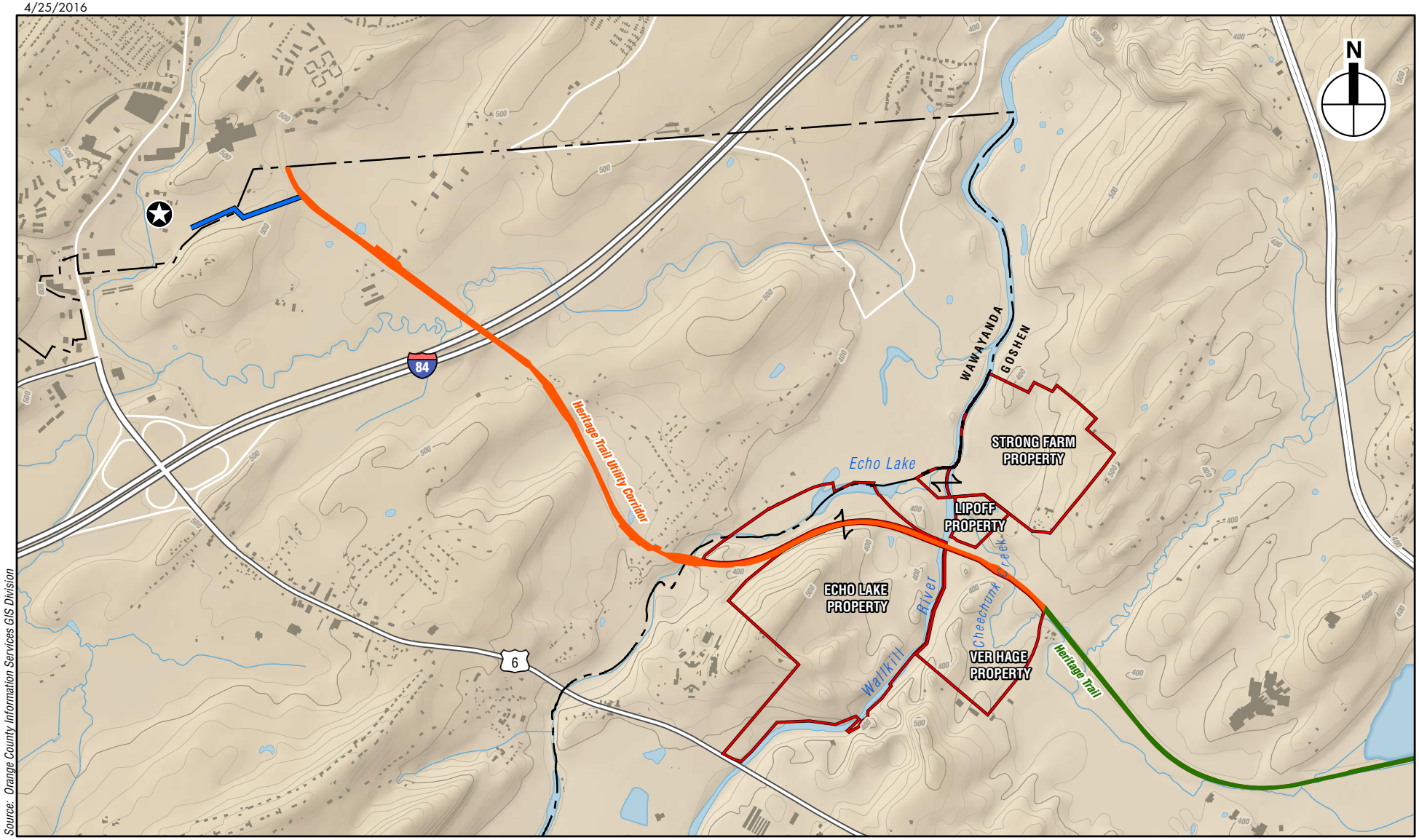
To effect the land transfer, the New York State Office of Mental Health and/or New York State Office of General Services would transfer the 7 to 10 acre portion to the Town of Goshen (transfers of State property are not allowed to a private party). Under an agreement contemplated between the Town of Goshen and Amy's Kitchen, Amy's Kitchen would obtain an access agreement across the new Town land and would pay for the site access road and related improvements at its intersection with NYS Route 17M (including relocation of County and State access roads). The agreement would also stipulate that Amy's Kitchen and SoS would be responsible for maintenance and snow-removal of the portion of the site access road (and associated landscaped areas) within the land transferred from the State to the Town. (Chapter III.H, "Traffic and Transportation," for additional detail on proposed roadway improvements).

F. ENVIRONMENTAL ANALYSIS FRAMEWORK

Amy's Kitchen intends to initiate construction of Phase 1 in 2016 so that it can be in production in 2018. The SoS Conference Center is contemplated to be constructed in a single 18- to 24-month phase, which is currently anticipated to commence after Phase 1 construction of Amy's Kitchen is initiated. Amy's Kitchen intends to complete Phase 2 by approximately 2023.

[7] See letter from James Sproat and Emil Slanc regarding land transfer in **Appendix II**. Additional acreage may be required to achieve the appropriate roadway alignment, and to minimize disturbance to wetlands and archaeologically sensitive areas.

4/25/2016



Project Site
Heritage Trail Utility Corridor
Heritage Trail
City of Middletown Wastewater Treatment Plant
Connection to WWTP

Amy's Kitchen
Science of the Soul

Heritage Trail Utility Corridor
Figure I-16

To conform with New York State Department of Transportation (NYSDOT) standard practice for evaluating potential impacts to State roadways, traffic impacts are evaluated for the Estimated Time of Completion (ETC) plus 10 years (ETC+10).Ten (10) years following full build-out of the Proposed Project (2033) is analyzed for potential traffic impacts. However, all roadway improvements necessary to avoid or mitigate traffic impacts would be constructed as part of Phase 1 of the Proposed Project.

As part of the assessment of cumulative impacts, this DEIS evaluates annual growth in traffic at 0.5 percent per year as well as the following projects (known as "No Build projects") that would occur by 2033:

- Conversion of the unimproved portion of the Heritage Trail west of Hartley Road to the City of Middletown with a multi-use bicycle/pedestrian pathway (Town of Goshen, Town of Wawayanda, City of Middletown);
- Medical Office Building expansion of the ORMC (Town of Wallkill);
- Maple Fields Development expansion (Town of Wallkill);
- Kikkerfrosch Brewery (Town of Goshen); and
- Cannon Hill Road Flex Building (Town of Goshen).

G. SUMMARY OF ENVIRONMENTAL ANALYSIS

GEOLOGY AND SOILS

Chapter III.A, "Geology and Soils," of the DEIS assesses the potential for the Proposed Project to affect geology and soils on and within the vicinity of the Project Site. Using data obtained from the Orange County Soil Survey as well as geotechnical studies of the Project Site, the existing geology and soil resources within the Project Site were characterized. The geologic analysis considers both bedrock and unconsolidated surficial deposits. The soils analysis considers the uppermost layer of the ground, which has been exposed to climatic and erosive forces. The analysis determined that the existing geology and soils are capable of supporting the Proposed Project.

On the Ver Hage property, groundwater was encountered ranging between 14.5 feet below existing ground level to 19.5 feet below existing ground level. Bedrock was not encountered at maximum depths explored on the Ver Hage property. Therefore, blasting is not anticipated to be required during construction.

On the Echo Lake property, groundwater was encountered ranging from one (1) feet below existing ground level to 43 feet below existing ground level. Some shallow groundwater was assumed to be perched on top of less pervious soil or rock layers. Bedrock was not encountered at maximum depths explored anywhere on the Echo Lake property, therefore blasting is not anticipated to be required during construction. Relatively large boulders were encountered that will likely require hydraulic jackhammers for excavation. The removal of these boulders would not result in significant adverse impacts to geologic sources.

Should bedrock removal be required, standard construction equipment is typically sufficient to excavate or "rip" the bedrock. If the rock is less weathered and stronger, additional mechanical devices, such as a hydraulic hammer mounted on an excavator, may be required to break the rock down into removable size pieces for excavation. As a last resort, to break apart massive, strong, and fresh (non-weathered) bedrock, drill and blast operations would be used if required

to fragment the rock so that it can be excavated. By using a combination of these techniques, rock excavation can be performed in a responsible manner.

If it is determined that blasting is necessary for bedrock removal on-site, it would be carried out in conformance with all applicable laws and regulations. To ensure compliance with the applicable laws and regulations, a site-specific blasting plan would be developed and provided to the Town. This plan would include schedules for blasting (day, hour, and duration), safety protocols associated with both blasting activities and the handling and transport of blasting materials, and measures to reduce noise-related impacts. Compliance with the blasting plan will minimize potential impacts associated with blasting.

The Proposed Project will require disturbance (removal of trees and other vegetation, movement of soil, excavation for building foundations and utility lines) to approximately 151 total acres of the Project Site during construction. Specifically, the Amy's Kitchen food manufacturing facility, parking lots, and driveways would have a footprint of approximately 37 acres. The Project Site entry road that would be constructed through the Echo Lake property to connect to NYS Route 17M would require disturbance of approximately 14 acres. The SoS Conference Center would have disturbance of approximately 97 acres on the Echo Lake property, and the associated guest house and driveway would have disturbance of approximately 3 acres.

Soil impacts related to these activities include those related to limitations posed by the soil conditions on-site (e.g. shallow groundwater effects to building foundations and dewatering), increased potential for erosion and sedimentation which may impact water quality, and permanent loss of potentially valuable agricultural soils.

Through the implementation of a New York State approved Stormwater Pollution Prevention Plan (SWPP) and Erosion and Sediment Control Plan (ESCP), the Proposed Project would avoid any adverse impacts to soils. Principally through use of sedimentation and erosion control measures, further discussed in Chapter III.G, "Stormwater Management," the movement of soil downslope or downstream would be avoided. This would prevent detrimental impacts to receiving waters and wetlands. These measures would be installed prior to construction, and would be monitored and maintained constantly during construction. With the implementation of these measures, the Proposed Project would not result in any significant adverse impacts to geology or soils on or in the vicinity of the Project Site.

TOPOGRAPHY

Chapter III.B, "Topography," of the DEIS describes the existing topography and steep slopes within the Project Site based on topographic surveys. Potential impacts to steep slopes are based on the potential for a project to cause soil erosion. Construction of the Proposed Project will require modifications to the natural topography of the Ver Hage property, the Echo Lake property, and the Access Road Improvement Area. The construction phasing plan for the Proposed Project would begin with clearing and grading of the access road from NYS Route 17M into the Echo Lake property, followed by the construction of the bridge over the Wallkill River. This would allow for excess material generated by clearing and grading on the Echo Lake property to be used on the Ver Hage property and for the entire Project Site to be roughly balanced between cut and fill.

The Proposed Project would utilize erosion and sedimentation protection measures to be designed to meet the requirements of Chapter §97-46, "Steep Slope Regulations" and §53,

"Clearing and Grading Control" of the Town Code. All erosion control plans will be reviewed by the Town of Goshen.

The Amy's Kitchen manufacturing facility would result in changes to the natural topography of the Ver Hage property. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 307,057 cubic yards. Based on the proposed grading plan for the Proposed Project, which is based on two (2)-foot contours, 59,092 cubic yards of cut and 247,965 cubic yards of fill is projected. As such, 188,873 cubic yards of fill would be required to balance the site, the majority of which would be obtained from the Echo Lake property (approximately 34,179 cubic yards of materials for building slab construction would have to be imported to the Ver Hage property). An approximately 200-foot-long and 14.5-foot-tall retaining wall would be required along the southern border of the proposed truck loading docks.

In addition, the Amy's Kitchen facility would disturb approximately three (3) acres of slopes between 10 to 25 percent, and less than 1 acre of slopes greater than 25 percent. The Town of Goshen Zoning Code §97-46 requires specific conditions to be met for disturbance of slopes greater than 25 percent. These conditions include adequate erosion control and drainage measures; minimization of tree cutting and vegetation disturbance; minimization of road or driveway grades; and proper engineering review of plans and construction activities. In compliance with the Town's steep slopes ordinance, the Proposed Project will incorporate proper site grading techniques and erosion and sediment control measures. All plans for grading and retaining walls will be submitted for engineering review by the Town in conjunction with site plan approval.

Construction of the proposed Warehouse Use would require grading within the northeastern portion of the Ver Hage property. A site-specific grading plan has not been performed, so no cut and fill estimates are available for the warehouse use. That information would be submitted along with the site plan application. The topographic knob on the eastern side of the property near Hartley Road would be leveled, with material being used to build up a level base for the warehouse and its driveway and parking areas. Much of this material could be used to raise the base of the property's elevation above the 100-year floodplain; however, some export of fill material may result.

The Proposed Project would result in changes to the natural topography of the Echo Lake property for the construction of the SoS Conference Center. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 1,988,179 cubic yards of total earthwork. Based on the proposed grading plan for the Proposed Project, 996,921 cubic yards of cut and 991,258 cubic yards of fill is projected. As such, 5,663 cubic yards of cut would be required to balance the site. Approximately 66,582 cubic yards of materials for building slab construction would have to be imported to the Echo Lake property. The SoS Conference Center would disturb approximately 32 acres of slopes between 10 to 25 percent, and 8 acres of slopes greater than 25 percent. No retaining walls are proposed on the Echo Lake property.

The Proposed Project would result in unavoidable adverse impacts to topography through clearing and grading activities. However, the following measures have been identified to minimize or mitigate those impacts such that they would not be significant adverse impacts. As discussed above, the Proposed Project would utilize erosion and sedimentation protection measures to be designed to meet the requirements of Chapter §97-46, "Steep Slope Regulations" and Chapter §53, "Clearing and Grading Control" of the Town Code. All erosion control plans

will be reviewed by the Town of Goshen. In addition, through the implementation of a New York State approved SWPPP, the Proposed Project would avoid any adverse impacts to topographic resources. Principally through use of sedimentation and erosion control measures, discussed in Chapter III.G, "Stormwater Management," the movement of soil downslope or downstream would be avoided. This would prevent detrimental impacts to receiving waters and wetlands. These measures would be installed prior to construction, and would be monitored and maintained constantly during construction. With these measures in place, the Proposed Project would not result in any significant adverse impacts to topography.

SURFACE WATER RESOURCES

Chapter III.C, "Surface Water Resources and Wetlands," of the DEIS documents the existing surface waters, wetlands and floodplains on the Project Site and assesses potential impacts to these resources from the Proposed Project. Disturbance to regulated wetlands and waters would require permitting from Federal, State and local agencies. The purpose of wetland and surface water regulation is to protect their unique functions and values. Wetlands, streams, and their associated buffers absorb stormwater runoff and improve water quality. Many species of plants and animals are endemic to wetlands, and many additional animals rely on wetlands as a source of food, shelter, or breeding habitat. Similarly, development within or adjacent to streams and floodplains may cause impacts to water quality and ecological/human health. These potential impacts can be avoided with proper site design and impact avoidance measures in most cases.

The Project Site is located adjacent to the Wallkill River, with the Echo Lake property on its western bank and the Ver Hage, Lipoff, and Strong Farm properties on the river's eastern bank. Cheechunk Creek is a second, smaller stream that crosses the Ver Hage and Lipoff properties, flowing from east-to-west and entering the Wallkill River at the Lipoff property.

The Wallkill River adjacent to the Strong Farm property and the northernmost shoreline of the Lipoff property is classified "B" and is regulated by the NYSDEC Protection of Waters Program, which requires permitting in accordance with this program for crossings (bridges) and disturbance to the stream's bed or banks out to a maximum distance of 50 feet. However, no development is proposed on either the Strong Farm or Lipoff properties. Therefore, the Proposed Project would not require a Protection of Waters permit.

A new stream crossing (bridge) is proposed between the Echo Lake and Ver Hage properties. The Wallkill River is classified "C" between these two properties, therefore a Protection of Waters Permit is not required for this crossing. In addition, no disturbance/fill, such as bridge abutments, would be located in the FEMA-designated "floodway" mapped between these two properties. Therefore, the Proposed Project would conform to the requirements of the NFIP and Town Code Chapter 61A.

The Proposed Project will conform to the floodplain development requirements of the Town of Goshen Chapter 61A, "Flood Damage Prevention," which implements the provisions of the National Flood Insurance Program (NFIP) at the Town level. No development is proposed in the designated "floodway" within the Wallkill River, and all development within the 100-year floodplain (Special Flood Hazard Area) will conform to the Town Code construction requirements in floodplains, including such measures as constructing the first-floor elevation of all buildings at or above the base flood elevation (BFE) or flood-proofing portions of structures that are below the BFE.

The proposed Warehouse Use would require approximately 4,634 cubic yards of fill to elevate the building above the base flood elevation of 373 feet above mean sea level. The volume of the area that was previously excavated to divert the Cheechunk Creek is approximately 5,936 cubic yards. Thus, there is more than sufficient volume to compensate for the proposed fill within the 100-year floodplain. Pursuant to Chapter 61A-14.B(3), "[w]henever any portion of a floodplain is authorized for development, the volume of space occupied by the authorized fill or structure below the base flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood elevation at or adjacent to the development site. All such excavations shall be constructed to drain freely to the watercourse. No area below the waterline of a pond or other body of water can be credited as a compensating excavation." Thus, compliance with Chapter 61A can be achieved with the suggested floodplain offset. In the event that this offset is not permissible a smaller Warehouse Use may be considered (see Chapter V, "Alternatives").

The Proposed Project would result in unavoidable adverse impacts to approximately 4.2 acres of wetlands (0.091 acres of federally-regulated wetlands) through the construction of the Proposed Project. However, impacts to these wetlands are not considered significant and adverse as the majority of disturbance is to non-regulated isolated wetlands of limited ecological value. No impacts to surface waters have been identified.

As further discussed in Chapter III.G, "Stormwater Management," a SWPPP has been developed for the Amy's Kitchen manufacturing and SoS Conference Center. The implementation of the SWPPP would avoid any potential significant adverse stormwater impacts to surface water quality. These measures include the use of bio-retention areas, porous pavement, dry swales, and underground infiltration.

In addition, a de-icing management plan will be incorporated in the SWPPP to avoid impacts to water quality from de-icing agents. This may include use of less-damaging de-icing materials (calcium chloride, etc.) and proper storage and use of de-icing materials. The SWPPP would ensure that runoff from Project Site impervious surfaces would not adversely affect the quality or quantity of waters in the Wallkill River or Cheechunk Creek.

VEGETATION AND WILDLIFE

Chapter III.D, "Vegetation and Wildlife," of the DEIS describes the plant and animal communities that occupy the Project Site and the potential impacts to those resources from the development of the Proposed Project. In addition to field reconnaissance surveys of the Project Site, publicly available and previously published information and aerial photography were used in developing the contents of Chapter III.D, "Vegetation and Wildlife."

Existing conditions for vegetation, aquatic resources, wildlife, and threatened, endangered, and special concern species within the Project Site were summarized from the following:

- Published information identified in literature and obtained from governmental and nongovernmental sources, including the NYSDEC Environmental Resource Mapper; New York State Department of Environmental Conservation (USFWS) Information for Planning and Conservation (IPaC) System list of federally-listed threatened, endangered, proposed, and candidate species for Orange County; NYSDEC 2000-2005 New York State Breeding Bird Atlas; NYSDEC Herp Atlas Project.
- Project Site inventories of plants species and habitats of the Ver Hage, Lipoff and Strong Farm properties conducted by ecologists in May/June of 2015, and of the Echo Lake property in

2011 and 2014, with reference to plant communities as defined by the New York Natural Heritage Program (NYNHP) (Edinger et al. 2014).

- Records of fish surveys of the Wallkill River provided by NYSDEC Region 3, Division of Fish, Wildlife and Marine Resources.
- Responses from the NYNHP to requests for information on rare, threatened, or endangered species recorded in the vicinity of the Project Site (see **Appendix III.D**).
- Daytime visual encounter survey of birds, mammals, reptiles and amphibians conducted within and immediately surrounding the Project Site on June 12, 2015. Incidental observations of wildlife made during May 27, 2015 and June 10, 2015 visits to the Project Site for other purposes were also recorded.
- Acoustic bat survey conducted within the Project Site from August 6 to15, 2015 (see **Appendix III.D**).
- Consideration of additional species with the potential to occur within the Project Site on the basis of their range within New York, habitat associations, area requirements, and commonness in the region.

Impacts from construction and operation of the Proposed Project to vegetation, aquatic resources, wildlife, and threatened and endangered species were assessed by considering land clearing, visual and noise disturbances, and habitat restoration. Potential impacts were considered at the individual and population levels, and in the context of habitat loss. Site-specific surveys confirm the presence of Indiana bat and Northern long-eared bat on the Project Site. Site-specific surveys have confirmed that there is not suitable habitat for the bog turtle on the Project Site.

As detailed in **Appendix III.D**, construction and operation of the Proposed Project on the Project Site (the Amy's Kitchen manufacturing facility, the SoS Conference Center, the Warehouse Use, and the access road) would disturb approximately 151 total acres of land that represents potential foraging and/or roosting habitat for the Indiana bat and/or northern long-eared bat. An additional 41 acres of potential foraging habitat for the Indiana bat, and 42 acres of potential foraging and roosting habitat for the northern long-eared bat may also be degraded by the indirect impacts of fragmentation, motor vehicle traffic and noise, and nighttime lighting to bat habitat quality.

All tree clearing for the Proposed Project would be conducted during the October 31 to March 31 hibernation period of Indiana and northern long-eared bats to avoid removal of a potentially active roost tree, and avoid the potential for any direct impacts. To offset any incidental take of the Indiana and northern long-eared bat due to indirect effects, and comply with the Endangered Species Act and the Net Conservation Benefit requirements of Article 11 of the New York State Environmental Conservation Law, the Proposed Project would include the preservation of approximately 125 total acres of woodland among the four (4) properties that would provide Indiana and northern long-eared bats with potential foraging and roosting habitat. This would exceed the 3:1 ratio of developed woodland area to preserved woodland area that is a recommended Indiana bat conservation guideline of the USFWS. In addition to the woodland preservation areas, approximately 25 acres of old field, 11 acres of shrubland, 5 acres of sedge meadow, 2 acres of shallow emergent marsh, and 62 acres of cropland would also be preserved on the Project Site and represent additional potential foraging habitat for Indiana bats. By preserving these undeveloped portions of the Project Site, both species of bats would be expected to continue to occupy the Project Site in the future. Preservation of the Strong Farm

and Lipoff properties, along with the large portions of the Echo Lake and Ver Hage properties that would be outside of the Proposed Project's limits of disturbance, would contribute to the USFWS goal of maintaining a minimum of 35 percent forest cover in the landscapes surrounding Indiana bat maternity colonies. A Geographic Information Systems analysis using the U.S. Geological Survey's National Land Cover Database showed that forest (i.e., combined categories of "Deciduous Forest", "Evergreen Forest", and "Mixed Forest") currently covers approximately 42.5 percent of the land within 2.5 miles of the center point of the Project Site; following the removal of approximately 39 acres of forest to construct the Proposed Project, that percentage would only decrease to 42.0. The approximately 125 total acres of woodland that would be preserved on the four (4) properties would represent a sizable amount of forest cover in Goshen that would be protected from development and ensure the availability of potential foraging and roosting habitat for both Indiana and northern long-eared bats.

As detailed in **Appendix III.D**, other features of the Proposed Project and measures that would be implemented to minimize potential impacts to Indiana and northern long-eared bats would include best management practices for outdoor nighttime lighting, little to no nighttime operation of the SoS Conference Center, tree plantings throughout the SoS parking area, and project footprints centered on old field and shrubland to minimize tree removal and encroachment into wooded areas. With these measures in place, the Proposed Project would be expected to offset any incidental take and result in a Net Conservation Benefit, as required under Article 11 of the ECL as implemented in 6 NYCRR Part 182, while also exceeding the 3:1 ratio of developed to preserved woodland that is recommended by the USFWS for the conservation of the Indiana bat.

GROUNDWATER/ WATER SUPPLY

Chapter III.E, "Groundwater/Water Supply," of the DEIS describes how the Proposed Project would obtain its potable water supply. In the course of design development and environmental impact assessment, Amy's has determined that connection to the City of Middletown water supply system is the best long-term option for potable water supply. None of the wells on the Project Site are being considered for potable water supply.

Based on the Applicant's experience at its plant in Medford, Oregon, Amy's Kitchen estimates a demand of approximately 375,000 gallons per day (gpd) for the food manufacturing facility at full buildout. The Warehouse Use would require approximately 7,000 gpd.

The annual three (3)-day SoS National Conference of up to 12,000 participants would generate demand of approximately 36,000 gallons per day (gpd). The annual two (2)-day Regional Conference of up to 2,000 participants would generate demand of approximately 6,000 gpd.

In addition to the two (2) caretaker residences, typical weekly activities include the following:

- Weekday – five (5) to ten (10) volunteers working in the office or property maintenance;
- Weekend – 200 to 400 individuals attending the Sunday meeting or doing volunteer work in the office or property maintenance on Saturday or Sunday.

On a normal daily basis, the two (2) caretaker residences and five (5) to ten (10) on-site volunteers would generate potable water demand and sanitary wastewater of approximately 500 gpd. The typical weekend day would generate approximately 1,000 gpd.

A new private water utility connection to the City of Middletown water supply is proposed as part of the Proposed Project. That new private utility line would serve Amy's Kitchen, Science

of the Soul, and the potential Warehouse Use and would be managed through a Transportation Corporation established to serve the multiple water users. Amy's Kitchen has received a "will serve" letter from the City of Middletown indicating its willingness and capability to serve the Proposed Project (see Appendix III.E).

No significant adverse impacts are anticipated as a result of the Proposed Project. Using a municipal source for water supply would avoid potential impacts to groundwater supply wells in the vicinity of the Project Site.

WASTEWATER MANAGEMENT

Chapter III.F, "Wastewater Management," of the DEIS addresses wastewater generation and treatment for the Proposed Project. Wastewater generated by the Proposed Project would be conveyed to the City of Middletown WWTP approximately 2.5 miles northwest of the Project Site by a new private utility forcemain connection to be constructed within the Heritage Trail Utility Corridor.

The Amy's Kitchen facility would generate both process and sanitary wastewater and the Science of the Soul Conference Center and Warehouse Use would generate sanitary wastewater. The Amy's Kitchen facility would generate approximately 300,000 gallons per day (gpd) of process and sanitary wastewater. The Warehouse Use would generate approximately 7,000 gpd of sanitary wastewater. During its largest event, the SoS Conference Center would generate approximately 36,000 gpd. The Project Site is without existing public sewer service.

A wastewater pre-treatment plant would be constructed on the Ver Hage property to reduce the high biological oxygen demand (BOD) that is characteristic of Amy's process wastewater. The pre-treatment plant would be located at the north end of the employee parking lot and would have a footprint of approximately 15,000 square feet.

The Middletown Sewer Treatment Plant has a SPDES-permitted capacity of 8.5 million gallons per day (MGD) and currently accepts an average of 5.1 MGD. Sufficient capacity exists within the City of Middletown WWTP to service the Proposed Project. Having the Proposed Project's wastewater treated at an existing regional WWTP is an environmental benefit as it avoids creating a new outfall in the Wallkill River. So long as the City of Middletown WWTP remains compliant with its State Pollutant Discharge Elimination System (SPDES) permit, the Proposed Project's wastewater would not result in any significant adverse impacts; therefore, mitigation measures are not required. All land disturbances associated with construction of underground wastewater conveyance lines would be temporary and limited to the construction period. Soil erosion and sediment control measures would be in place throughout the construction period and the disturbed land would be restored upon completion of construction. Therefore, the Proposed Project would not result in any significant adverse impacts related to wastewater.

STORMWATER MANAGEMENT

Chapter III.G, "Stormwater Management," of the DEIS describes how new stormwater would be managed on the Project Site to avoid impacts to the Wallkill River. The Proposed Project would create over one (1) acre of new impervious surfaces on the Echo Lake and Ver Hage properties, which requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan (ESCP). The SWPPP and ESCP for the Proposed Project will conform to the requirements of NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, Permit No. GP-0-15-002, and the 2015 Stormwater Management

Design Manual. The SWPPP contains both temporary erosion control measures during construction and post-construction stormwater management practices to avoid increased discharge and water quality impacts in the long term. Additionally, the SWPPP has been designed to meet the requirements and applicable regulations of the Code of the Town of Goshen, particularly Section 83-14, "Stormwater Management." With the ESCP and SWPPP in place, the Proposed Project would not result in any significant adverse stormwater management impacts.

TRAFFIC

Chapter III.H, "Traffic," of the DEIS summarizes a detailed Traffic Impact Study (TIS) contained in Appendix III.H that analyzes potential traffic impacts associated with the Proposed Project on the surrounding roadway network. Traffic counts were utilized to establish the Existing Traffic Volumes for the study area intersections. The Existing Traffic Volumes were then projected to a 2033 Design Year to take into account expected increases in traffic due to normal background traffic growth and to account for other potential development traffic in the area. The 2033 design year represents an Estimated Time of Completion of 2023 plus 10 years (ETC+10) as per NYSDOT requirements for analysis of future traffic operating conditions.

Detailed turning movement traffic counts were collected at 13 intersections during the AM, PM, and Saturday peak hours during the months of November 2013; April, May and June 2014; and May and June 2015. In addition, New York State Department of Transportation (NYSDOT) machine traffic counts were obtained and used to compare the hourly volumes along NYS Route 17M and at the I-84 interchange to identify any daily and seasonal variations. Automatic Traffic Recorder (ATR) were also collected along NYS Route 17M in the vicinity of the site to collect volume data on a 15 minute basis, as well as speed and classification data.

The intersections analyzed in the TIS are:

1. NYS Route 17M and I-84
2. NYS Route 17M and Lower Road (C.R. 12)/Golf Links Road (C.R. 50);
3. NYS Route 17M and Mid-Hudson Psychiatric Center (MHPC) Access;
4. NYS Route 17M and Training Center Lane; and
5. NYS Route 17M and Hartley Road/Gate Schoolhouse Road
6. NYS Route 17M and 6 ½ Station Road
7. NYS Route 17M and Route 17
8. Hartley Road and Echo Lake Road
9. Golf Links Road and McVeigh Road
10. Echo Lake Road and McVeigh Road
11. Fletcher Street and NYS Route 17 (Exit 122A) Eastbound On/Off Ramps
12. Fletcher Street and NYS Route 17 (Exit 122A) Westbound On/Off Ramps
13. NYS Route 17M and Cannon Hill Drive

The manual field traffic counts were performed during the Weekday AM (6:00 AM to 9:00 AM) and PM (3:00 PM to 6:15 PM) hours as well as on Saturday from 11:00 AM to 2:00 PM at the

above listed study area intersections. Based on this traffic volume data the existing peak hours for the study area were identified for each time period as follows:

- Weekday AM Peak Highway Hour—7:30 AM to 8:30 AM
- Weekday PM Peak Highway Hour—4:30 PM to 5:30 PM
- Saturday Peak Hour—12:30 PM to 1:30 PM

While the Weekday AM Peak Highway Hour was found to occur between 7:30 AM and 8:30 AM, the peak hour of Amy's Kitchen traffic generation is expected to occur prior to the AM Peak between approximately 6:00 AM to 7:00 AM when the employee shift changes are expected to occur at the plant. As indicated by the ATR machine count data collected along NYS Route 17M the traffic volumes during the 6:00 AM to 7:00 AM hour in the vicinity of the site are approximately 75 to 80 percent of the Weekday AM Peak Highway Hour traffic volumes. However, both the Amy's AM Peak Hour of Generation (6:00 AM to 7:00 AM) and the peak hour of the adjacent roadway system (AM Peak Highway Hour 7:30 AM to 8:30 AM) were analyzed.

In addition, the Scoping Document required an analysis of the 3:00 PM to 4:00 PM time period when there could be a shift change at the plant, when traffic volumes are 97 percent of peak hour volumes, and schools may be letting out. However, based on the traffic count data collected at the study area intersections, it was determined that the 4:30 PM to 5:30 PM time period was the peak time period along NYS Route 17M. This time period was determined to be the peak hour of traffic volumes along the roadway and the heavy vehicle percentages were found to be similar during this time period as was observed during the 3:00 to 4:00 PM time period. Therefore, the peak hour of traffic generation for Amy's Kitchen, which is expected to occur during the 3:00 PM to 4:00 PM time period, as well as the 4:30 PM to 5:30 PM peak hour traffic volumes, were analyzed for the study area intersections.

The Town of Goshen "Environmental Performance Standards" in Section 97-50.N(1)(d) of the Town Code establishes the following impact criteria:

> *Significant adverse traffic impacts requiring project mitigation shall be defined as any of the following occurring within the first year of operation of full build-out of the proposed project or, in the case of phased construction, during the first year of operation of each phase for which approval is sought:*
>
> *[1] Any reduction in level of service (LOS) to less than LOS D at a street intersection that operates at LOS D or better without the proposed project.*
>
> *[2] Any increase in delay times for intersections operating at LOS E or below.*
>
> *[3] Introduction of new traffic volumes that will cause the overall volume of the roadway to exceed the design capacity of the mainline (non-intersection) highway sections within the TIS study area.*

All available accident data for the latest three (3)-year period from December 1, 2010 through November 30, 2013 was obtained from the New York State Department of Transportation (NYSDOT). In addition, as required by the Scoping Document, accident data were also obtained from the Town of Goshen police department for the period from January 1, 2012 through July 6, 2015. The NYSDOT and Town accident data were summarized according to the type, weather conditions, other contributing factors and related statistics. The accident data was also compared to statewide average accident rates indicating that several intersections currently experience

accident rates over the statewide. Recommendations for potential improvements have been made in order to alleviate some of these high accident conditions.

The scoping document also required the collection of travel time data for NYS Route 17M during both the AM Peak Hour, midday school hours, and PM Peak Hour in order to identify the operation across the network especially as it relates to other factors such as school bus traffic, which influences the travel time along the corridor. The travel time runs were recorded in both the eastbound and westbound directions along NYS Route 17M. In the eastbound direction the trips began at the I-84 westbound on/off ramps and ended immediately east of the 6 ½ Station Road. Similarly in the westbound direction, the trips began immediately east of 6 ½ Station Road and ended at the I-84 westbound on/off ramps. The average travel time in both the eastbound and westbound directions was found to be approximately seven (7) minutes.

Operating conditions were assessed with traffic generated by the Amy's Kitchen full build-out, the Warehouse Use, and typical SoS traffic volumes. A separate assessment was prepared for the SoS National Conference assuming both weekend and weekday time periods.

As part of the Proposed Project, improvements at the intersection of NYS Route 17M & Training Center Lane/Project Site Access have been recommended and are included as part of the development plan. These improvements, which will be funded and implemented by the Applicant under a NYSDOT Highway Work Permit, will also address existing capacity and safety conditions in the vicinity of the intersection and provide improved access to Training Center Lane. The improvements include the relocation of Training Center Lane approximately 300 feet to the west of its current location in order to align opposite the Project Site. Separate left- and right-turn lanes along NYS Route 17M are proposed to be constructed as part of these improvements as well as a separate right-turn lane on Training Center Lane and Project Site access would also have two exiting lanes. These improvements would include the installation of a traffic signal at this intersection. As part of the construction of the Project Site access roadway the existing access to the Mid-Hudson Psychiatric Center would be eliminated and that facility would be accessed via a connection to the site access roadway and be better served by this improved, signal controlled access. This also provides better access management for the corridor by aligning the main intersection on NYS Route 17M opposite the relocated Training Center Lane.

In addition, based on the results of the analyses, in comparison to the Town of Goshen "Environmental Performance Standards," the following is a summary of the potential adverse impacts that could result from the additional traffic generated by the Proposed Project as well as the potential measures identified to mitigate these impacts. Note that each of these intersections listed below is projected to experience LOS E or F on one (1) or more approaches of the intersections regardless of the Proposed Project and therefore certain improvements will be required to improve existing and/or future traffic conditions in the area without the Proposed Project.

1. The Interstate 84 Westbound Off-Ramp at NYS Route 17M was identified to experience increased delays during the PM Peak Hour of Amy's Kitchen Generation and the PM Peak Highway Hour. The Proposed Project will not add any additional traffic to the off-ramp approach, however the existing "Stop" sign could be replaced with a "Yield" sign in order to improve traffic flow from the Off-Ramp approach. This would require the approval of the NYSDOT, and would be funded and implemented by the Applicant as part of the NYSDOT Highway Work Permit it acceptable to the department.

2. The intersection of NYS Route 17M & CR 12/CR 50 currently experiences long delays in the eastbound direction during the AM Peak Hours. Under No-Build and Build conditions the volumes are anticipated to exceed the eastbound through/right movement capacity based on the currently allocated green time. Signal timing improvements have been recommended for this intersection to mitigate delays in the eastbound direction. These improvements are recommended regardless of the Proposed Project, and will be coordinated by the Applicant with NYSDOT as part of the Highway Work Permit process

3. The intersection of NYS Route 17M & Hartley Road has a history of numerous rear-end type accidents. Traffic signal back plates (shields that increase visibility of the traffic signal) could be installed at this intersection on eastbound and westbound NYS Route 17M approaches in order to increase the visibility of the traffic signals, especially during periods of significant sun glare, which could help to reduce these accident types. This modification should be considered regardless of the Proposed Project. In addition, minor traffic signal timing improvements have been identified for this intersection to maximize the intersection's efficiency under future conditions. The traffic signal timing modifications will be coordinated by the Applicant with NYSDOT as part of the Highway Work Permit process. The installation of traffic signal back plates on the signal heads will be funded and completed by the Applicant as part of the Highway Work Permit for the project.

4. The intersection of Golf Links Road and McVeigh Road is projected to experience increased vehicle delays during the PM Peak Hour of Amy's Kitchen Generation and the PM Peak Highway Hour. The installation of All-Way Stop control has been proposed to mitigate these delay increases. This mitigation should be considered regardless of the Proposed Project, but would be funded and completed by the Applicant if approved.

5. The NYS Route 17 Interchange 122A On/Off Ramps at Fletcher Street are projected to experience increased vehicle delays during the AM Peak Highway Hour for the Eastbound On/Off Ramp and during the PM Peak Hour of Amy's Kitchen Generation for the Westbound On/Off Ramp. These delay increases are projected to occur both with and without the Proposed Project. These intersections should be monitored for signalization and a traffic signal installed if warranted in the future.

6. The intersection of NYS Route 17M and Cannon Hill Drive is currently operating at LOS F during all weekday time periods and some delay increases are projected to be experienced both with and without the Proposed Project. The reconstruction of the Training Center Lane and NYS Route 17M intersection and installation of a traffic signal, which are part of the Proposed Project will provide increased gaps in the traffic stream along NYS Route 17M including at the intersection with Cannon Hill Drive. The increased gaps created by the signal will improve the ability for traffic to exit from Cannon Hill Drive, which will improve the operation and reduce delays at this intersection.

7. All truck traffic generated by both the Amy's Kitchen and the Warehouse Use will be directed to utilize NYS Route 17M only to access NYS Route 17 and Interstate 84 avoiding the use of local roadways, many of which have weight restrictions.

8. Temporary impacts during construction of roadway improvements at NYS Route 17M and Training Center Lane/Site Access may occur. The project will be subject to the New York State "Drivers First" Initiative which prioritizes the convenience of motorists and ensures that disruptions are as minimal as possible to drivers at all highway projects throughout the state. As a result detailed Maintenance and Protection of Traffic Plans will be prepared as

part of the NYSDOT Highway Work Permit and will be funded and implemented by the Applicant to control traffic during the construction of the intersection improvements at NYS Route 17M and Training Center Lane/Site Access Roadway.

Based on the results of the capacity analysis contained herein, with the completion of the recommended improvements summarized above, the traffic generated by Amy's Kitchen, Warehouse Use, and SoS typical daily operations can be accommodated on the roadway system. A NYSDOT Highway Work Permit will be required for the proposed access improvements as well as coordination with the Orange County Department of Public Works for the realignment of Training Center Lane.

SCIENCE OF THE SOUL SPECIAL EVENT CONDITIONS

To accommodate the Science of the Soul annual three (3)-day National Conference and two (2)-day Regional Conference conditions, certain traffic management strategies will have to be implemented to ensure that traffic to and from the site and on the surrounding roadways will operate efficiently. The following is a description of these recommended measures and will require coordination with the Town of Goshen.

Staggering of Start Times

The scheduling of Science of the Soul special events should be coordinated with existing traffic volumes along NYS Route 17M in order to reduce overall traffic impacts to the corridor. The proposed start time for Weekday Morning Event of 10:00 AM ensures that Peak Entry Period occurs after the AM Peak Highway Hour along NYS Route 17M and the Peak Exit Period occurs during the 12:00 PM to 1:00 PM hour when volumes along Route 17M are as much 80 percent of the PM Peak Hour volumes along the roadway. Weekday Afternoon Events, currently proposed to begin at 4:00 PM should be avoided as much as possible since this results in the Peak Entry Period occurring during the 2:30 to 3:30 PM hour when volumes are nearing the peak volumes along Route 17M. However, these Weekday afternoon events can be accommodated with the use of manned police traffic control and other mitigation measures discussed further below.

Weekend Morning events should be scheduled such that the Peak Exit Hour occurs prior to or after the 12:30 PM to 1:30 PM Peak Hour of traffic along NYS Route 17M when traffic volumes are as much as 10 percent lower than the highest Saturday peak period. Similarly, Weekend Afternoon Events could also be scheduled such that the Peak Entry Hour also does not occur during the Peak Hour of Traffic along NYS Route 17M.

Furthermore, if Amy's Kitchen is to be in operation during the SoS National Conferences, it would be beneficial to set the start times of the events such that the peak entry and/or exit periods do not coincide with the peak hours of Amy's Generation (i.e. 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM).

Traffic Management

As indicated by the analysis results for the special event conditions, several of the study area intersections are expected to operate at capacity due to the large volume of traffic that is expected to be generated by the SoS site. During special events other arrangements with the Orange County Sheriff's office and/or State Police will also be necessary in order to manage the traffic flow along NYS Route 17M. This would be similar to what occurs at other regional venues that have special events such as the Bethel Woods Performing Arts Center in Sullivan County as well as the Orange County Fairgrounds. During these time periods, police control is

provided at numerous off-site intersections to accommodate the peak flows along the corridor. Similar practices are also employed by SoS at their Petaluma and Fayetteville facilities.

SoS has indicated that coordination with both local law enforcement and Emergency Medical Technicians (EMTs) is an important component of their planning for special events. While events are typically staffed by volunteer security personnel, SoS will also seek to have four (4) to five (5) local law enforcement officers on site, typically off-duty officers. SoS also coordinates on traffic issues prior to events including meeting with town, county and state law enforcement agencies and go over plans and concerns.

Based on the results of the capacity analysis it is likely that coordination with local law enforcement for the management of traffic will be required for several area intersections including NYS Route 17M & C.R. 12/C.R. 50, NYS Route 17M & Training Center Lane/Site Access, NYS Route 17M & Hartley Road and NYS Route 17M & Maple Avenue/6½ Station Road.

Variable Message Signs (VMS) could also be utilized prior to events to inform local drivers of the upcoming events and potential delays along the NYS Route 17M corridor and the surrounding area. This would allow local drivers to avoid this area during the event weekends, utilizing other roadways in the area. The VMS signs could also be utilized during the event to direct attendees to appropriate locations as well as inform other drivers of delays on NYS Route 17M and the surrounding area. The placement of these VMS signs would have to be coordinated with the Town, County and State.

Another option to help distribute traffic volumes during the exit period after the event would be to request permission to use the emergency access connection to Echo Lake Road. This would lessen the potential impact on NYS Route 17M. Manned police traffic control would be required at the emergency access location as well in the event of its use.

Parking Flow and Management (Internal Circulation):

As mentioned previously, SoS will rely on volunteers to manage parking and pedestrian flow both in and around the site. The SoS internal traffic plans for the Annual Events use the following elements:

- Pedestrian/Vehicle Separation – The parking plan for the SoS National Conference is such that the spaces closest to the venue are filled first and then farther spaces are filled, row by row. This is done to separate pedestrians from newly parking cars. Bus parking is provided in a separate area so that those unloading from buses do not have to cross incoming traffic. As shown on the site plan the bus parking is on the opposite side of the event area from the passenger car parking.
- Special Needs Separation - Upon entry vehicles with elderly and handicapped stickers would separate from general traffic. Special needs vehicles would be directed to a dedicated parking area closer to the event area, again trying to avoid pedestrian-vehicle conflict.
- Shuttle – Shuttles are typically provided for those parking in faraway locations. Shuttle vans are utilized within the property for this purpose. Similar shuttle vans would also be used for shuttling of people to the Strong Farm Overflow Parking location as previously indicated.

The proposed site plans for the SoS site take into account SoS staff's long experience with traffic and pedestrian flow during these special events.

Since this National Conference is an event limited to a once per year occurrence, it will not result in any significant adverse impacts that require additional mitigation. However, as part of the Proposed Project, various Traffic Management Strategies (TMS) and related measures are being incorporated to accommodate this event condition. These measures, including the use of shuttle busses, manned police traffic control, on-site circulation, etc. will be coordinated with the Town of Goshen.

NOISE

Chapter III.I, "Noise," evaluates potential noise impacts from the Proposed Project. The noise analysis considers noise levels that would be produced by both mobile sources (vehicles) and stationary sources (equipment) in operation of the Proposed Project, and whether that noise could result in significant adverse noise impacts on the surrounding area. The noise impact assessment examines noise generated by traffic traveling to and from the Project Site, vehicles moving within and parking at the Project Site, the operation of the Project's loading dock, and the operation of mechanical equipment associated with the Proposed Project.

Noise from operation of the Proposed Project was analyzed at eight (8) locations near the Project Site:

- Site 1 is located at the property line between Mid-Hudson Forensic Psychiatric Center and the Echo Lake Property. Vehicular traffic on Route 17M is the dominant noise source at this location. This location is representative of noise levels at the Mid-Hudson Forensic Psychiatric Center.
- Site 2 is located at the corner of Musket Court and Route 17M. Vehicular traffic on nearby roadways is the dominant noise source at this location. This location is representative of noise levels at residential uses in this area along Route 17M.
- Site 3 is located on County Road 50 between Route 17M and Echo Lake Road. Vehicular traffic on County Road 50 is the dominant noise source at this location. This location is representative of noise levels at residential uses on County Road 50 between Route 17M and Echo Lake Road.
- Site 4 is located on Echo Lake Road between McVeigh Road and the Wallkill River adjacent to the Echo Lake Property. Vehicular traffic on Echo Lake Road is the dominant noise source at this location. This location is representative of noise levels at residential uses on Echo Lake Road.
- Site 5 is located at Cheechunk Road between Hartley Road and Owens Road adjacent to the Ver Hage Property. Vehicular traffic on Cheechunk Road is the dominant noise source at this location. This location is representative of noise levels at residential uses on Cheechunk Road.
- Site 6 is located at the Heritage Trial adjacent to Hartley Road. Vehicular traffic on Hartley Road is the dominant noise source at this location. This location is representative of noise levels on the Heritage Trial near Hartley Road.
- Site 7 is located at 112 Hartley Road. Vehicular traffic on Hartley Road is the dominant noise source at this location. This location is representative of noise levels at this residential property.
- Site 8 is located at the Heritage Trial south of Echo Lake Road. Vehicular traffic on Echo Lake Road is the dominant noise source at this location. This location is representative of noise levels on the Heritage Trial west of Hartley Road.

These locations represent the noise-sensitive land uses that would be most likely to experience noise level increases due to the Proposed Project because of their proximity to the Project Site. Other sensitive land uses in the area would be expected to experience less noise resulting from the Proposed Project than these sites.

At all eight (8) sites, 20-minute measurements were made during the weekday AM peak time period (7:30 AM to 9:30 AM), weekday PM peak time period (4:00 PM to 6:30 PM), and the Saturday mid-day (SMD) time period (12:00 PM to 1:30 PM). The selected time periods are when the Proposed Project would have maximum traffic generation and/or the maximum potential for significant adverse noise impacts based on the traffic studies presented in the "Traffic Impact Study." Pursuant to NYSDEC noise assessment methodology, the one (1)-hour time-weighted average noise level ($L_{eq(1)}$) was selected as the most appropriate measurement for assessing potential impact of the Proposed Project.

At all receptor sites, vehicular traffic noise on adjacent roadways was the dominant noise source. Measured noise levels were relatively low to moderately high and reflect the level of vehicular activity on the adjacent roadways.

AMY'S KITCHEN

Total future noise levels associated with the proposed Amy's Kitchen manufacturing facility were calculated for each of the noise receptor sites. The predicted noise levels associated with the proposed manufacturing facility included traffic traveling to and from the Project Site as well as on-site operation of HVAC equipment and loading dock operations.

Comparing future noise levels with existing noise levels, the maximum increase in $L_{eq(1)}$ noise levels would be up to 2.1 dBA. Increases of this magnitude would be barely perceptible and would be well below the NYSDEC's threshold for a significant noise level increase of 6.0 dBA. Future noise levels at sites 2, 3, and 5 would exceed NYSDEC's recommended level for residential uses of 65 dBA. While the future noise levels exceed the recommended level of 65 dBA, the increases in noise levels would be small and existing noise levels at these locations already exceed the recommended level of 65 dBA. Consequently, noise resulting from operation of the proposed Amy's Kitchen facility would not constitute a significant noise impact.

In addition, predicted noise levels for the Amy's Kitchen Phases I and II were also calculated on two locations along the Project Site property line to determine compliance with the Town of Goshen Noise Ordinance. Site A is located on the adjoining property line immediately adjacent to the Amy's Kitchen loading dock area and site 1 is located on the adjoining property line adjacent to the proposed SoS parking lot. The maximum predicted future noise levels would be 66.6 dBA at site A and 51.9 dBA at site 1, well below the 75 dBA threshold established by the Town of Goshen Noise Ordinance.

The noise analysis includes the predicted noise levels to be produced by proposed pump stations, wastewater pre-treatment plant, and testing of backup generators, based on the measured HVAC equipment noise from the Medford, OR facility. These pieces of mechanical equipment may produce noise on the Project Site, but produce less noise than loading dock operations, and are generally separated from the surrounding noise receptors by long distances, so they consequently are not the dominant sources of project-generated noise.

SCIENCE OF THE SOUL

Total future noise levels associated with the proposed SoS Conference Center were calculated for each of the noise receptor sites. The predicted noise levels associated with the proposed Conference Center included traffic traveling to and from the Project Site as well as on-site operation of HVAC equipment and parking lot operations.

Comparing future noise levels with existing noise levels, the maximum predicted increase in $L_{eq(1)}$ noise levels for all receptor sites, with the exception of sites 6 and 7, would be up to 2 dBA during the SoS National Conference. Increases of this magnitude would be barely perceptible and would be well below the NYSDEC threshold for a significant noise level increase of 6.0 dBA. At site 7, the maximum predicted noise level increment would be 4.7 dBA during the SoS annual conference. An increase of this magnitude would be readily noticeable, but would be less than the NYSDEC threshold for a significant noise level increase of 6.0 dBA. At site 6, the maximum predicted increase in $L_{eq(1)}$ noise levels would be up to 7.6 dBA during the SoS National Conference. This predicted noise level increase would exceed the 6 dBA NYSDEC threshold for a significant noise impact. An increase of this magnitude would be readily noticeable, and may be intrusive. These noise level increases would occur primarily because of extremely low existing noise levels due to limited traffic volumes along Hartley Road near site 6. However, the SoS National Conference would occur only once per year for three (3) days and entering and exiting vehicle traffic would represent a limited duration. Thus, it would not represent a continuous and regular increase in noise levels. Furthermore, the absolute noise levels during the National Conference would be well below the 65 dBA level recommended by NYSDEC for non-industrial uses. Lastly, users of the Heritage Trail regularly experience elevated noise levels as the Heritage Trail parallels several major road corridors, including NYS Route 17M, and abuts several commercial or industrial land uses. Thus, the introduction of elevated noise levels at an additional location along the Heritage Trail would not constitute a new or significantly different experience.

Predicted total noise levels in the future with the SoS Conference Center at sites 2, 3, and 5 would exceed NYSDEC's recommended level for residential uses of 65 dBA. While the future noise levels exceed the recommended level of 65 dBA, the increases in noise levels would be small and existing noise levels at these locations already exceed the recommended level of 65 dBA. Consequently, the noise due to the SoS National Conference would not constitute a significant noise impact.

The Saturday midday time period was selected as the worst-case period for the noise analysis of operations at the SoS Conference Center due to the level of traffic associated with this time period, representing traffic generated by the SoS National Conference. If the SoS National Conference were to occur on a weekday instead of the Saturday midday time period, the amount of traffic generated would not be greater than the level analyzed for the Saturday midday time period. However, the existing baseline traffic volumes on weekday peak periods would be higher than those on a Saturday, leading to a smaller incremental change in traffic produced by the SoS National Conference were it to be held on a weekday. The smaller incremental change in traffic would consequently result in smaller noise level increments than those shown in the noise analysis above for the Saturday midday time period. Consequently, the SoS National Conference being held on a weekday would not result in any significant adverse noise impacts.

In addition, predicted noise levels for the SoS National Conference (i.e., the worst-case scenario of Project operations) were also calculated on two locations along the Project Site property line to determine compliance with the Town of Goshen Noise Ordinance. Site A is located on the

adjoining property line immediately adjacent to the Amy's Kitchen loading dock area and site 1 is located on the adjoining property line adjacent to the SoS Conference Center parking lot. The maximum predicted future noise levels would be 66.2 dBA at site A and 52.3 dBA at site B, well below the 75 dBA threshold established by the Town of Goshen Noise Ordinance.

WAREHOUSE USE

The Traffic Impact Study prepared for the Proposed Project includes trip generation for a potential 70,000 square-foot warehouse use on Hartley Road. For purposes of conducting the noise analysis, trip distribution estimates assumed that trips associated with the Warehouse Use would use Hartley Road as the primary access point. However, as described in Chapter II, "Project Description," access to the Warehouse Use would be limited to an internal driveway from the Amy's Kitchen manufacturing facility with only an emergency access driveway onto Hartley Road. Noise generated by Warehouse Use trips, including truck traffic, was modeled as part of the overall Proposed Project. Because of the proximity of the Warehouse Use to the Amy's Kitchen facility, it is difficult to calculate the incremental noise level of the Warehouse Use as distinct and separate from the Amy's Kitchen facility. Thus, future noise levels predicted for Amy's Kitchen reflect the cumulative impact of both Amy's Kitchen and the Warehouse Use including at receptors 6 and 7 on Hartley Road which are closest to the Warehouse Use.

The noise analysis for the potential Warehouse Use on Hartley Road was conducted according to the same methodology for the noise analysis of the Proposed Project. The various noise level contributions of each noise source were combined to determine a total future noise level and increment at each of the receptor sites. This analysis is conservative and represents a worst-case scenario for potential Project-generated noise level increases.

At receptor sites other than sites 6 and 7 along Hartley Road, the addition of the potential Warehouse Use had relatively little effect on the predicted noise level increases resulting from the Proposed Project. As with the Proposed Project only, the Proposed Project with the potential Warehouse Use would result in noise level increments compared to the existing levels that are less than 3 dBA, would be imperceptible or barely perceptible, and would not exceed NYCDEC's impact criteria.

At receptor site 6, which represents the Heritage Trail at Hartley Road, the predicted increase in $L_{eq(1)}$ noise level with the Proposed Project and potential Warehouse Use would be up to 10.1 dBA during the SoS National Conference. This predicted noise level increase would exceed the 6 dBA NYSDEC threshold for a significant noise impact, and exceeds the predicted 7.6 dBA noise level increase for the Proposed Project only. An increase of this magnitude would be readily noticeable, and may be intrusive. These noise level increases would occur primarily because of extremely low existing noise levels due to limited traffic volumes along Hartley Road near site 6. However, the SoS National Conference would occur only once per year for three (3) days and entering and exiting vehicle traffic would represent a limited duration. Thus, it would not represent a continuous and regular increase in noise levels. Furthermore, the absolute noise levels during the SoS National Conference would be below the 65 dBA level recommended by NYSDEC for non-industrial uses. Lastly, users of the Heritage Trail regularly experience elevated noise levels as the Heritage Trail parallels several major road corridors, including NYS Route 17M, and abuts other commercial or industrial land uses. Thus, the introduction of elevated noise levels at an additional location along the Heritage Trail would not constitute a new or significantly different experience.

At receptor site 7, which represents the residence at 112 Hartley Road, the predicted increase in $L_{eq(1)}$ noise level with the Proposed Project and potential Warehouse Use would be 10.3 dBA for Phases I and II of the Amy's Kitchen facility, and 10.7 dBA during the SoS National Conference. This predicted noise level increase would exceed the 6 dBA NYSDEC threshold for a significant noise impact, and exceeds the predicted 4.7 dBA noise level increase for the Proposed Project only. An increase of this magnitude would be readily noticeable, and may be intrusive. These noise level increases would occur primarily because of loading dock activities at the potential Warehouse Use and because of extremely low existing noise levels due to limited traffic volumes along Hartley Road near site 7. The absolute noise levels during loading dock operations would be below the 65 dBA level recommended by NYSDEC for non-industrial uses, and while 112 Hartley Road is a residence, it is a residence in a generally industrial area. Furthermore, orienting the loading dock on the potential Warehouse Use to face away from Hartley Road toward the interior of the site would result in the potential warehouse building shielding the 112 Hartley Road residence from loading dock noise and would result in noise level increases at this site that would be below the NYSDEC threshold for significant impact. Thus, the introduction of elevated noise levels at this residence would not constitute a significant adverse impact.

In addition, predicted noise levels for the potential Warehouse Use were also calculated on two locations along the Project Site property line to determine compliance with the Town of Goshen Noise Ordinance. Site A is located on the adjoining property line immediately adjacent to the potential warehouse loading dock area and site 1 is located on the adjoining property line adjacent to the proposed SoS parking lot. The maximum predicted future noise levels would be 66.7 dBA at site A and 52.5 dBA at site 1, well below the 75 dBA threshold established by the Town of Goshen Noise Ordinance.

The predicted noise levels associated with the Proposed Project would not exceed NYSDEC's threshold for a significant noise level increase of 6.0 dBA at most receptor sites, and the maximum future noise level associated with the Proposed Project would not exceed the threshold established by the Town of Goshen Noise Ordinance. At site 6, the maximum predicted increase in $L_{eq(1)}$ noise levels would be up to 7.6 dBA during the SoS National Conference with the Proposed Project only, and up to 10.1 dBA during the SoS National Conference with the Proposed Project and the potential Warehouse Use. These predicted noise level increase would exceed the 6 dBA NYSDEC threshold. However, the absolute noise levels would be well below the 65 dBA level recommended by NYSDEC for non-industrial uses. At site 7, the maximum predicted increase in $L_{eq(1)}$ noise levels would be 10.3 dBA with the potential warehouse and 10.7 dBA during the SoS National Conference with the potential Warehouse Use. These predicted noise level increase would exceed the 6 dBA NYSDEC threshold. However, the absolute noise levels would be well below the 65 dBA level recommended by NYSDEC for non-industrial uses. In addition, total noise levels in the future with the Proposed Project at sites 2, 3, and 5 would exceed NYSDEC's recommended level for residential uses of 65 dBA. While the future noise levels exceed the recommended level of 65 dBA, the increases in noise levels would be small and existing noise levels at these locations already exceed the recommended level of 65 dBA. Consequently, the noise due to the Proposed Project would not constitute a significant noise impact.

Since the Proposed Project would not result in any significant adverse noise impacts, no mitigation is required.

UTILITIES AND SOLID WASTE DISPOSAL

Chapter III.J, "Utilities and Solid Waste Disposal," assesses demand for electrical and natural gas from the Proposed Project and generation of solid waste.

UTILITIES

Orange and Rockland Utilities, Inc. (O&R) and NYSEG provide gas and electric service in the area of the Project Site. An existing NYSEG gas main runs along NYS Route 17M south of the Project Site. There are existing O&R electrical transmission lines along Echo Lake Road, Hartley Road, and NYS Route 17M. O&R recently completed construction of a new electrical sub-station between Hartley Road and Cheechunk Road just north of the Project Site. The new substation will alleviate over-loading of existing substations in the vicinity and would provide electrical power to the proposed Project Site. The new substation includes two (2) 50 Megavolt-ampere (MVA) 138/79 to 13.2 kilovolt (kV) dual transformer banks, as well as the associated switchgear and distribution circuits. In tandem with the new substation, O&R has been making improvements to the electrical distribution network throughout the local area, including along Echo Lake Road, Hartley Road, and Cheechunk Road.

Electric service would be provided to Amy's Kitchen by running a service line from the existing electric transmission line on Echo Lake Road to a bank of on-site transformers. Several 2,500 kvA transfers would be used instead of one (1) larger transformer to reduce risk of entire loss of power to the plant should the single transformer fail. Electric service lines would also be run to any lighting and heating, ventilation, and air conditioning (HVAC) energy requirements for the warehouse use on the Ver Hage parcel. Gas service would be provided to Amy's Kitchen by a service line (approximately 12-inch diameter) run from the existing gas line beneath NYS Route 17M along the new access road and under the proposed bridge over the Wallkill River.

Based on initial discussions with O&R and NYSEG, it is anticipated that these energy demands would be fully met by existing off-site infrastructure and would not require any off-site upgrades to gas or electric service or existing infrastructure beyond standard connections. A "will serve" letter from O&R has been received, and a "will serve" letter from NYSEG is pending.

It is anticipated that the energy requirements for the SoS Conference Center would be fully met by O&R and NYSEG and would not require any off-site upgrades to gas or electric service or existing infrastructure. The energy demands by SoS are not considered significant and are typical of other land uses within the study area.

SOLID WASTE

Solid waste management in the area is provided by private haulers. Solid waste is carted to the Orange County Transfer Station south of NYS Route 17M. Amy's Kitchen would utilize private haulers to cart waste to this facility. Where feasible, Amy's Kitchen would work with local agricultural and other operations to compost food waste from the production process.

Based on its Medford, Oregon plant operations, Amy's Kitchen estimates that at full-build out, a five (5)-day per week operation would generate approximately 444 tons of waste per month.

In order to reduce the total amount of landfilled solid waste, Amy's Kitchen would compost approximately 74 tons of organic matter per month and recycle approximately 100 tons of cardboard and plastics per month. Recyclable and compostable materials would be kept separate from other wastes inside the Amy's Kitchen facility and would be collected and disposed of by a private waste management company.

The proposed Warehouse Use would generate minimal amounts of solid waste from the few employees that would staff the building.

Operation of the Science of the Soul facilities would result in minimal solid waste generation. Normal SoS weekday and weekend activities at the two (2) caretaker residences and volunteer activities and weekly meetings would generate small quantities of solid waste, which could total approximately 100 pounds per month. SoS National Conference and Regional Conference events would generate solid waste from food wrappers and other personal waste items generated during events. Recyclable and compostable materials would be collected and stored separately from the waste stream and would be collected for beneficial reuse by a private waste hauling company.

As all solid waste services would be provided by a private company, no impacts to municipal services or budgets are anticipated.

LAND USE AND ZONING

Chapter III.K, "Land Use, Zoning, and Public Policy," describes compatibility of the Proposed Project with existing and future land uses within a one-mile Study Area, and consistency with applicable zoning ordinances and other public policy documents such as the Town of Goshen Comprehensive Plan and Open Space and Farmland Protection Plan; the Southern Wallkill Biodiversity Plan; and the Orange County Comprehensive Plan and Open Space Plan.

The Project Site is located in the Commercial/Office Mixed-Use (CO), Industrial (I), and Rural (RU) Zoning Districts. The portion of the Echo Lake property south of the Heritage Trail is split zoned, with the western half zoned CO and the eastern half zoned I. The portion of the Echo Lake property north of the Heritage Trail is zoned RU. The Ver Hage property is zoned I, and the Lipoff and Strong Farm properties are both zoned RU. The entire Echo Lake property and the western portion of the Ver Hage, Strong Farm, and Lipoff properties are in the AQ-3 Aquifer Overlay District (AQ-3 District). The eastern portions of the Ver Hage, Strong Farm, and Lipoff properties are located in the AQ-6 Aquifer Overlay District (AQ-6 District). In addition, portions of the Project Site are located within the Stream Corridor and Reservoir Watershed Overlay District (SC District), Floodplain and Ponding Area Overlay District (FP District), and Scenic Road Corridor Overlay District (SR District).

The proposed Amy's Kitchen manufacturing facility would be located on the Ver Hage property, located in the I Zoning District. The proposed manufacturing facility use would be considered "light industry" under the Town of Goshen Zoning Code. Light industry is defined by the Code as the "manufacture, assembly, treatment, processing, or packaging of products that does not emit objectionable levels of smoke, noise, dust, odor, glare, or vibration beyond the property boundaries" (see §97-84), and it is a use permitted by right subject to Planning Board site plan approval in the I District.

The SoS Conference Center would be partially located in the CO and I Zoning Districts, no facilities are proposed within the RU district. The SoS Conference Center is considered a "religious institution" under the Town of Goshen Zoning Code. A religious institution is defined under §97-84 of the Code as, "a church, synagogue, or other place of religious worship, as well as a monastery or other place of religious retreat." SoS has a 501(c)(3) designation from the Internal Revenue Service as a religious not-for-profit entity. A determination by the Town's Building Inspector, dated October 20, 2015, confirms that "this religious use is permissible on the proposed site with all of its affiliated and accessory uses."

An approximately 11.6-acre portion of the Ver Hage property would be subdivided for a future Warehouse Use. This DEIS identifies a conceptual layout of an approximately 70,000 square-

foot warehouse with shared access from the Amy's Kitchen internal driveway. The Warehouse Use would be located in the I Zoning District. A "warehouse" is permitted in the I District by special permit issued by the Planning Board.

Land uses in the immediate vicinity of the Project Site are characterized by rural residential, farmland, institutional, and rural industrial uses. The Town of Wawayanda is located to the west of the Project Site, and includes rural residential and commercial uses. North, south, and east of the Project Site are primarily vacant forested land, rural residential, and farmland.

The Proposed Project is consistent with all surrounding land uses. The Project Site is located in a rural industrial and agricultural area. There is currently substantial truck traffic through the Project Area associated with the existing industrial, infrastructure, agricultural, and commercial uses. The Amy's Kitchen manufacturing facility would constitute an industrial use in a corridor of other industrial uses located along NYS Route 17M. The intervening topography and distance between the SoS Conference Center and any residential uses would avoid any potential significant adverse impacts to those land uses.

The Proposed Project would result in unavoidable adverse impacts to zoning through the construction of the Proposed Project which, as discussed above, cannot be designed to meet all of the Town's design standards. However, these impacts to zoning are not considered significant, and would not adversely affect the character of land uses within the proximity of the Project Site.

With the exception of one or more area variances from design standards, or interpretation of the Town Code Enforcement Officer to permit building of more than 10,000 square feet with design or color changes, the Proposed Project is consistent with the industrial Zoning for the Project Site, policies for economic development in the Town's Comprehensive Plan, and is consistent with other land uses in adjacent areas. Granting of area variances with respect to design standards would not significantly alter the land use pattern or character of the study area. Thus, no significant adverse impacts will result, and no mitigation is required or proposed.

COMMUNITY SERVICES

Chapter III.L, "Community Services," addresses potential impacts to the following community services: police protection services; fire protection services; emergency medical services (EMS); and Town Hall services in terms of manpower, equipment, and facilities.

EMERGENCY SERVICES

The Proposed Project would be located entirely within the Town of Goshen. Therefore, calls for assistance from emergency service providers would generally be routed to providers within the Town of Goshen.

The proposed Amy's Kitchen facility would be equipped with video surveillance and an alarm system, and all visitors would be required to enter through the controlled entrance. Approximately 30 video cameras would be installed in and around the building, and the alarm system would include exit door alarms. The system would be monitored by a 24-hour manned guard house. Weekday security would be provided by an in-house security team, and weekend security would be contracted out to a local security firm. Based on its experience with a similarly sized facility in Medford, OR, Amy's Kitchen would generate only one (1) or two (2) calls for emergency service per year. None of those calls in the last five (5) years were for police service.

SoS will provide on-site security to manage traffic and other safety concerns during events. SoS will coordinate with local law enforcement and EMS in planning each event. While the events are staffed by volunteers, if allowed under local regulations, SoS would seek to have four (4) to five (5) local law enforcement officers on-site, and would pay for off-duty officers or reimburse the Town for the overtime compensation.

RECREATIONAL RESOURCES

The Echo Lake, Ver Hage, and Lipoff properties are currently vacant land. The Strong Farm property is currently used for residential and agricultural purposes. Although the right-of-way of the unimproved section of the Heritage Trail abuts the Project Site, there are no public recreational resources on the Project Site itself.

Any disturbance to the Heritage Trail will require approval from the County Legislature, and would be coordinated with the Orange County Department of Parks, Recreation and Conservation and the County Department of Public Works. Temporary disturbance of this unimproved section of the Heritage Trail can be expected during the construction period for installation of water and wastewater conveyance lines. However, since this section is not actively used by the public at this point in time, no significant adverse impacts to recreational resources during the construction are anticipated.

The Town Comprehensive Plan does not make specific recommendations for the Project Site with respect to its potential for recreational use. *Wallkill River Trailway: Conceptual Plans* prepared by the Town in 2002 identified lands in and around the Project Site for possible acquisition by the Town for use as active and passive recreation. The conceptual plan specifically referenced the portion of the Project Site running along the western bank of the Wallkill River for use as part of a trailway system. However, this plan was never implemented.

The Proposed Project is consistent with the Town's 2009 Comprehensive Plan as it advances the goal of economic development in the industrial zone and preserves sensitive features such as wetlands on the Project Site.

In addition, the Proposed Project would generate substantial property tax revenues for the Town, Goshen Fire District, and Goshen Central School District that would offset any increased costs to these community service providers. Overall, emergency and town services would benefit from the additional tax revenue generated by the Proposed Project. As further discussed in Chapter III.M, "Fiscal Impacts," at full build-out the Proposed Project would generate approximately $2,259,470 in annual property tax revenue. This includes $105,881 to the Goshen Fire District, and $1,542,397 to the Goshen Central School District. Therefore, the Proposed Project is not anticipated to result in any significant adverse impacts to police, fire, ambulance, or town hall services, or recreational resources.

FISCAL IMPACTS

Chapter III.M, "Fiscal Impacts," presents the direct and indirect economic activity and tax revenues generated by the Proposed Project and assesses the potential impacts of the Proposed Project on local taxing jurisdictions. Chapter III.M estimates the likely municipal costs associated with construction and operations of the Proposed Project, and compares that to the

estimated amounts of economic activity and tax revenues that would be generated by construction and operations of the Proposed Project.[8]

Economic Benefits of the Proposed Project

Economic benefits are estimated using IMPLAN (IMpact Analysis for PLANning), an economic input-output modeling system. That analysis focuses on changes in the local economy that would likely occur as a result of the completion of the Proposed Project, including jobs not only for Amy's Kitchen and SoS employees, but also for construction, maintenance, service, vendors and other trades. The study areas for analysis are the Town of Goshen, the various taxing jurisdictions affected by the Proposed Project, Orange County, and New York State.

Construction of the Proposed Project would result in 532 direct person-years of employment. Including indirect and induced employment, the Proposed Project would result in 829 person-years of employment in New York State, of which 766 person-years of employment are estimated in Orange County. Total direct, indirect and induced employee compensation is estimated at $49.98 million in New York State, including $44.48 million in Orange County. Total direct, indirect, and induced output from construction of the Proposed Project is estimated at $151.92 million in New York State, including $135.39 million in Orange County.

Annual operations of the Proposed Project would result in 709 direct full-time equivalent (FTE) employees associated with Amy's Kitchen (681), SoS (1), and employees that would be supported by increased expenditures from SoS visitors (27). Including indirect and induced employment, the Proposed Project would result in 870 direct, indirect, and induced FTEs in New York State, of which 844 FTEs are estimated in Orange County (see **Table III.M-20**). Total direct, indirect, and induced employee compensation from annual operations of the Proposed Project is estimated at $30.28 million in New York State, including $28.54 million in Orange County. Total direct, indirect, and induced output from annual operations of the Proposed Project is estimated at $200.29 million in New York State, including $195.20 million in Orange County.

Visitors to the SoS Conference Center would have an economic effect on local businesses. Visitors would stay overnight in area hotels, eat meals in neighborhood restaurants, and shop in neighborhood stores, thereby supporting the local and regional economies and generating sales tax revenues. For the three (3)-day National Conference, it is expected that there would be 12,000 attendees. It is assumed that 70 percent of attendees would stay in hotels (or 8,400 attendees). On average, it is assumed that hotel rooms would be occupied by two people (or 4,200 rooms) and that guests would stay for 3.5 nights for a total of 14,700 hotel nights. In addition, it is assumed that 600 volunteers would be needed to work at the National Conference. Each hotel room would be occupied by two people for four nights for a total of 1,200 hotel nights. Assuming a $125 room rate, guests and volunteers would spend $1,987,500 at area hotels. It is also assumed that each of the 12,000 attendees would spend $75 (or a total of $900,000) on items such as meals, fuel, and taxis.

For the Regional Conference, it is expected that there would be up to 2,000 attendees. It is assumed that 50 percent of guests would stay in hotels (or 1,000 attendees). On average, it is assumed that hotel rooms would be occupied by two people (or 500 rooms) and that guests

[8] Analysis of potential economic benefits and fiscal costs does not include specific information relating to the proposed Warehouse Use. The Warehouse Use would generally provide additional economic benefits through new employment and new property taxes while not generating significant additional demand for municipal services.

would stay for one night. In addition, it is assumed that 100 volunteers would be needed to work at the Regional Conference. Each hotel room would be occupied by two volunteers for two nights for a total of 100 hotel nights. Assuming a $125 room rate, guests and volunteers would spend $75,000 at area hotels. It was also assumed that each of the 2,000 attendees would spend $75 (or a total of $150,000) on items such as meals, fuel, and taxis.

Based on the estimated visitor spending, assuming that the specified expenditures take place at stores in Orange County, the direct employment supported by expenditures of SoS visitors is estimated at 27 permanent FTEs in Orange County.

Employee compensation for employees working in local businesses frequented by SoS visitors is estimated to be $724,400 annually. Total direct, indirect, and induced employee compensation in Orange County is estimated at $1.05 million annually. Total direct, indirect, and induced employee compensation in New York State is estimated at $1.21 million annually.

The direct effect on the local economy from the local expenditures of visitors, measured as economic output or demand, is estimated at approximately $2.84 million annually. Based on the IMPLAN model, the total economic activity, supported by expenditures from SoS visitor spending is estimated at $4.21 million annually in Orange County and $4.67 million in New York State.

Potential Fiscal Impacts of the Proposed Project

The four (4) properties that comprise the Project Site currently generate approximately $88,000 per year in property taxes.

By comparing real property tax revenues with real property tax costs, the net impact on taxing jurisdictions can be identified. In Year 3 the Proposed Project would generate approximately $1.36 million more in net new property tax revenue than in costs to all taxing jurisdictions. The greatest percent of positive impact would be to the Town Outside Village and Highway Outside Village funds, while the Goshen Central School District would see the greatest total amount of net revenue at an estimated $953,032.

In Year 5 and thereafter the Proposed Project would generate approximately $2.13 million more in net new property tax revenue than in costs to all taxing jurisdictions. As in Year 3, in Year 5 the greatest percent of positive impact would be to the Town Outside Village and Highway Outside Village funds, while the Goshen Central School District would see the greatest total amount of net revenue at approximately $1.48 million annually.

Amy's Kitchen is seeking a "super-enhanced" payment in lieu of taxes (PILOT) from the Orange County Industrial Development Agency (Orange County IDA). This incentive would provide a tax exemption on the value of improvements that decreases from 100 percent exemption in the first year to full taxation after 15 years. The amount of the exemption decreases by 5 percent per year over the first 10 years and by 10 percent over the last five. This exemption only applies to the value of improvements, and does not apply to the Fire District because it is a special assessment district.

Assuming that tax rates and costs will be static over time, Orange County is projected to receive an initial shortfall during the first three years under the proposed PILOT, and the Town of Goshen would receive an initial shortfall only during the first year of the PILOT. These shortfalls would be short-term, and would quickly become positive impacts as the PILOT progresses. Furthermore, Orange County would receive substantial non-property tax revenues from the Proposed Project's construction and operations that exceed the shortfall identified during the first years of the PILOT.

VISUAL RESOURCES

Chapter III.N, "Visual Resources," assesses potential visual impacts of the Proposed Project from vantage points along public roadways or along the existing and proposed Heritage Trail where views of the Project Site were possible.

The potential visual impacts of the Proposed Project were assessed based on NYSDEC Program Policy DEP-00-2, "Assessing and Mitigating Visual Impacts." While the Proposed Project is not subject to DEC review for visual impact, and DEP-00-2 does not replace local discretion for determination of significance under SEQRA, the policy does provide useful guidelines for assessing potential visual impact of the Proposed Project. While some visibility of the Proposed Project is anticipated from the selected vantage points, this visibility would not result in a significant adverse visual impact.

To analyze the potential visual impacts of the Proposed Project, a computer-rendered three-dimensional model was prepared. Potential views of the Proposed Project have been simulated for key Vantage Points where the potential for visual impacts has been identified. To provide a conservative analysis, the model includes existing topography within the study area, but does not include vegetation.

The proposed Amy's Kitchen manufacturing facility and Warehouse Use would be visible from Hartley Road and the Orange County Heritage Trail as it traverses the northern portion of the Ver Hage property. The SoS Conference Center buildings would be visible from the Orange County Heritage Trail as it traverses the Echo Lake property, from portions of Echo Lake Road, and from the existing driveway to the Echo Lake property from Echo Lake Road. Limited views of the SoS Conference Center roof-tops during winter months might be possible from higher elevations within the Owens Road Scenic Road Corridor Overlay District (Vantage Point 12). It is unlikely that any views of the Proposed Project would be possible from the main farmhouse at Strong Farm. With the exception of the new access road, elements of the Proposed Project would not be visible from NYS Route 17M and the majority of Echo Lake Road. While clearly visible from some locations, this visibility is not considered a visual impact according to the definitions contained in NYSDEC Program Policy DEP-00-2.

ENVIRONMENTAL CONTAMINATION

Chapter III.O, "Environmental Contamination," of the DEIS assesses the potential for increased exposure to environmental contamination during construction and operation of the Proposed Project, and the specific measures that would be employed to protect public health, worker safety, and the environment. The DEIS also addresses the potential concerns related to contamination associated with the former Al Turi Landfill, which is located south of the Ver Hage property on the east side of the Wallkill River. Although the potential for subsurface contamination has been identified, with the implementation of a variety of measures discussed in the analysis, construction of the Proposed Project would not result in any significant adverse impacts related to hazardous materials. Although some hazardous materials would likely still remain in the subsurface following construction, buildings would incorporate elements (such as sub-slab venting systems and/or waterproofing/vapor barriers) to prevent contaminated groundwater or vapors from entering the new facilities, resulting in no further potential for significant adverse impacts.

In addition, although operation of the Proposed Project would use a variety of materials and petroleum products (e.g., for maintenance) and would generate a variety of wastes as part of the

manufacturing process, the storage, transportation, use, and disposal of these are subject to strict regulation and, as such, would not be expected to present the potential for significant adverse impacts during operation of the Proposed Project.

Construction of the proposed Amy's Kitchen facility would require abandonment of the three (3) monitoring wells (W-20S, W-25, and W-26) associated with the Old Al Turi Landfill that are located on the Ver Hage property. These wells are not critical to the Class II Landfill monitoring program and their abandonment is not expected to pose a significant adverse impact with respect to groundwater contamination. NYSDEC Division of Environmental Remediation has approved a request to close and decomission these monitoring wells. All other on-site monitoring wells associated with the Old Al Turi landfill would be maintained at the Ver Hage property as appropriate to ensure the efficacy of the remedy that was implemented for the landfill.

Development on the Project Site in general would involve excavation of on-site soil and potential dewatering for construction purposes. Absent appropriate controls, as described below, the Proposed Project could potentially result in an increase in exposure for the community and construction workers to contaminants in soil and groundwater. As part of the Proposed Project, soil disturbance would occur on the Ver Hage property for construction of the Amy's Kitchen food processing facility, on the Echo Lake property for construction of the Science of the Soul Conference Center, along the Heritage Trail Utility Corridor for installation of water and wastewater utility connections; and for construction of an access road connecting Route 17M to the southern portion of the Echo Lake property. The Strong Farm and Lipoff properties would remain undeveloped. In general, contaminants were not identified in soil or groundwater at levels exceeding regulatory criteria for the intended site use during the Phase II Subsurface Investigations of the Ver Hage and Echo Lake properties; however, several areas of waste disposal were noted at the Echo Lake property. The Applicant anticipates that potential impacts from potential unforeseen conditions would be avoided by performing construction activities in accordance with the following protocols:

- The waste disposal areas at the Echo Lake property would be addressed by excavating, segregating and disposing of the waste materials off-site in accordance with applicable regulations. Endpoint samples would be collected from the excavations to confirm that associated contaminants do not remain in the underlying soil. Soil removal would be conducted if contaminant concentrations exceeding the applicable regulatory criteria are identified.
- Results from the soil vapor sampling at the Ver Hage Property did not identify VOCs above the NYSDOH Air Guideline Values, and data from on-going groundwater monitoring associated with the Old Al Turi Landfill shows minimal groundwater impacts on the Property. Therefore, there is low potential for future contaminant migration onto the Property and a low potential for vapor encroachment. Nevertheless, as a precautionary measure, a vapor barrier will be incorporated in the design of the Amy's Kitchen food processing facility building on the Ver Hage property to prevent potential radon and/or vapor intrusion.
- After design of the utility line connection is completed, targeted soil and groundwater sampling would be conducted along the Heritage Trail Utility Corridor to characterize subsurface materials that would be encountered during construction. The sampling parameters would be selected based on the anticipated contaminants of concern associated with the conditions identified based on the regulatory database review (e.g., metals, pesticides, PCBs, petroleum compounds associated with former railroad use; chlorinated

solvents associated with the nearby dry cleaner; VOCs and SVOCs associated with nearby petroleum spills).

- A Construction-Phase Environmental Health and Safety Plan (CHASP) would be prepared and implemented to manage disturbance of soil and handling of dewatering fluids, and would include a contingency plan to address sources or areas of contamination, if any, identified during targeted sampling along the utility corridor and/or encountered during future construction activities. Elements of the CHASP will include the following:
  - All soil and fill excavated as part of Project Site construction activities would be managed in accordance with all applicable regulations. All soil intended for off-site disposal would be tested in accordance with the requirements of the intended receiving facility. Transportation of all material leaving the Project Site for off-site disposal would be in accordance with Federal, State and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc. Among the pertinent regulatory requirements are those found in 6 NYCRR Parts 360 through 376, which set forth waste management requirements. Any waste disposal that would occur outside of New York State would be conducted in accordance with similar federal and individual state requirements.
  - If tanks, drums, or other sources of subsurface contamination are discovered at the Project Site during excavation activities, they would be removed in accordance with all applicable regulations. Any associated soil and groundwater contamination would be mitigated in accordance with the state, county, and local requirements. The removal of petroleum tanks is regulated by NYSDEC (6 NYCRR Section 613.9), which requires that tanks no longer in use be closed in place or removed according to specific requirements. Contaminated soils surrounding the tanks, separate phase product on the water table, or contaminants dissolved in the groundwater, if encountered, would be addressed in accordance with applicable NYSDEC regulations (6 NYCRR Section 611.6) and Article 12 of the New York Navigation Law (notification and management requirements for spills to the waters of the state).
  - Access to the Project Site for groundwater monitoring associated with the NYSDEC closure of the Al Turi Landfill would be permitted, as necessary.
- If dewatering is required (e.g., for installation of utilities), treatment and discharge of dewatering fluids would be conducted in accordance with all applicable regulations and guidance, including obtaining appropriate permits. The discharge of wastewater to surface or groundwater in New York State will be conducted in accordance with 6 NYCRR Part 750.
- Appropriate erosion and sediment controls will be implemented in accordance with a Stormwater Pollution Prevention Plan (SWPPP). This will minimize the potential of dust generation and sediment in stormwater during the soil disturbance activities. Analysis of stormwater management for the project is provided in Chapter III-G, "Stormwater Management."

With the implementation of these measures, no significant adverse impacts related to hazardous materials would be expected to occur as a result of the construction activities for the Proposed Project. Following construction of the Proposed Project, there would be no further potential for adverse impacts.

CULTURAL RESOURCES

Chapter III.P, "Cultural Resources," of the DEIS assesses the potential of the Proposed Project to affect cultural resources. Cultural resources include both architectural and archaeological resources. Archaeological resources can include archaeological remains from Native American people who used or occupied a site, and also remains from activities that occurred during the historic period (beginning with European settlement of the area) that include European contact with Native Americans, as well as battle sites and foundations. Historic architectural resources include significant built resources, such as structures, buildings, and objects including National Historic Landmarks (NHLs), and properties listed on or determined eligible for listing on the State and National Registers of Historic Places (S/NR).

The historic and archaeological resources analysis has been prepared in accordance with the State Environmental Quality Review Act (SEQRA), Section 14.09 of the New York State Historic Preservation Act of 1980 (SHPA), and Section 106 of the National Historic Preservation Act (NHPA). Section 14.09 of SHPA and Section 106 of the NHPA require that state and federal agencies respectively consider the effect of their actions on properties listed on or determined eligible for listing on the S/NR. Compliance with Section 106 satisfies the requirements of SHPA, set forth in Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law.

ARCHAEOLOGICAL RESOURCES

Phase IA-level documentary research to identify areas of potential archaeological sensitivity were conducted for each of the four (4) properties comprising the Project Site as well as the Additional Areas (Heritage Trail Utility Corridor and Access Road Improvement Area). Where archaeological sensitivity was identified, Phase IB and Phase II archaeological testing was conducted to identify those areas where archaeological resources were present and to determine if those resources were significant and therefore eligible for S/NR listing.

On the Echo Lake property, these investigations resulted in the identification of three (3) precontact archaeological sites that were identified as eligible for S/NR listing and one (1) historic period archaeological site that was determined to be ineligible for S/NR-listing. One (1) of the precontact archaeological sites on the Echo Lake property extends into the Access Road Improvement Area. On the Ver Hage property one (1) archaeological site was identified as eligible for S/NR listing.

Phase IB testing did not identify any archaeological resources within the Lipoff or Strong Farm properties and it was determined that neither parcel is sensitive for archaeological resources dating to either the precontact or historic periods.

Phase IA research concludes that the Heritage Trail Utility Corridor is not sensitive for archaeological resources.

The Proposed Project would result in unavoidable impacts to four (4) S/NR eligible archaeological sites. Since avoidance of these sites is not possible through design changes to the Proposed Project, Phase III Data Recovery Plans (DRPs) will be developed to outline the testing strategies and protocols that will be implemented as part of the Data Recovery. The DRPs will be submitted to SHPO for review and concurrence. As a result thereof, no significant adverse impacts to archaeological resources would result.

HISTORIC RESOURCES

The Strong Farm is a S/NR eligible resource. SoS intends to continue the agricultural use of the Strong Farm property, and would restore the main residence and some of the agricultural structures on the property. The two (2) other residential structures would be rented to tenants or used for volunteer housing during the National and Regional SoS Conferences. The Strong Farm property would also be used for volunteer parking for the SoS Conference Center during the National Conference. Volunteer parking would be provided in hayfields or orchards, north of the Strong Farm complex. The continued agricultural use of the property and temporary parking would not result in any adverse physical effects to the farm complex. In addition, due to existing topography and vegetation, neither Amy's Kitchen nor SoS are expected to be visible from the farm complex, and the farm complex's setting would not be affected. Therefore, the Proposed Project would not result in any significant adverse indirect effects on the Strong Farm historic complex.

Within the Study Area, 34 Owens Road has been identified as a potential historic resource. However, the Proposed Project would have no significant adverse impacts on this potential historic resource. The house is located across Owens Road from the Strong Farm property fields that would be utilized for agricultural use and temporary volunteer parking for SoS three days per year. It is not expected that the continued agricultural use of the fields and temporary parking would have any adverse physical effects or adversely affect the setting of the house at 34 Owens Road. Therefore, the Proposed Project would have no adverse effects on historic resources in the study area. In a letter dated September 30, 2015, SHPO concluded that it has no concerns regarding the Proposed Project's potential impacts on historic architectural resources.

AGRICULTURE

Chapter III.Q, "Agriculture," assesses the potential impact of the Proposed Project on local and regional agricultural uses. The Amy's Kitchen and SoS Project Site would be located in an area that is largely characterized by low-density rural residential and agricultural land uses, as well as several commercial and light industrial sites, public infrastructure and utilities, and institutional uses. The Project Site is located within the Town of Goshen in the Orange County Agricultural District No. 2, as approved through Resolution No. 7 of 2013 of the Orange County Legislature, Adopted 7 February 2013.

The immediate study area, including the Strong Farm property on the Project Site, includes currently operating farms which contribute to the Town and the County's economy, provide livelihoods for local residents, and add to the area's rural character and attractiveness. The Applicant recognizes the value of these factors to the local and regional economies, as well as the added value that the Proposed Project would bring to fostering and promoting the local and regional agricultural economy and jobs relating to it.

Overall, the Proposed Project would result in long term benefits to the local and regional agricultural economy. Amy's Kitchen currently purchases approximately 90 million pounds of organic materials each year for use in their products. In the last year, Amy's Kitchen purchased more than 36 million pounds of organic tomatoes, and more than 17 million pounds of organic onions. Amy's Kitchen is actively working with and pursuing increasing east coast suppliers, which could include organic produce and dairy from the Hudson Valley region.

As further discussed in Chapter III.M, "Fiscal Impacts," the Amy's Kitchen project is not anticipated to result in significant in-migration of workers, or to compete with existing

agricultural operations for workers. The analysis contained in Chapter III.M indicates that there are approximately 11,336 unemployed persons available for work (unemployed, exceeding stable unemployment rate of 4.5 percent) living within a one (1)-hour drive of the Project Site. Of these, roughly 4,060 persons live within 30 minutes of the site, and over a quarter of those (1,090 persons) are in the "blue collar" occupational category from which Amy's Kitchen would draw a majority of its employees.

The total number of full-time equivalent (FTE) workers needed to staff the Amy's Kitchen facility upon completion of Phase 2 is 681. Of these, 630 employees would work in food production, 30 employees would provide facility maintenance, and 21 employees would work in a supervisory or plant safety and engineering capacity. Wages are anticipated to be comparable to prevailing wages for similarly skilled jobs in the Project Area, including agricultural workers. As such, there is a sufficient workforce within the area from which to draw employees, and the Proposed Project is not anticipated to compete for labor with the agricultural industry.

AIR QUALITY

Chapter III.R, "Air Quality," assesses potential air quality impacts of the Proposed Project. Air quality impacts can be either direct or indirect. Direct impacts result from emissions generated by stationary sources at a project site, such as emissions from on-site fuel combustion for heat and hot water systems, or industrial process boilers. Indirect impacts are impacts that are caused by off-site emissions associated with a project, such as impacts that are caused by emissions from on-road vehicle trips generated by a project or other changes to future traffic conditions due to a project. The Proposed Project would generate both truck and car trips; therefore the potential for indirect mobile source impacts from the Proposed Project was evaluated. The Proposed Project would include natural gas-burning heat and hot water systems and process boilers. Therefore, stationary sources were evaluated as well.

The additional vehicle trips generated by the Proposed Project and the Proposed Project's stationary sources are not expected to cause any exceedance of ambient air quality standards. None of the locations affected by the Proposed Project would exceed any of the screening criteria. Therefore, additional screening or microscale modeling is not required, and the Proposed Project would not cause any significant adverse air quality impacts from mobile sources.

The Proposed Project would introduce relatively small stationary sources at a large distance from the nearest sensitive locations, and the traffic increments associated with the Proposed Projects would not exceed screening levels. Overall the review of these sources has concluded that the Proposed Project would not cause any significant adverse air quality impacts.

Emissions from vehicles generated by the Proposed Project would be unavoidable, but are not considered impacts as none of the screening locations for mobile source emissions exceed the volume threshold criteria for either carbon monoxide or particulate matter established by NYSDOT. Emissions from stationary sources (process boilers, heat and hot water systems, and ovens) are also considered unavoidable, but are not considered impacts as none of the stationary sources individually or collectively are large enough to require any air quality permits, they would be located a large distance from any sensitive receptor, and because ambient pollutant concentrations are substantially lower than NAAQS. Since the Proposed Project would not result in any significant adverse air quality impacts, no mitigation is required.

CONSTRUCTION IMPACTS

Chapter III.S, "Construction Impacts," describes the overall construction phasing of the Proposed Project and potential impacts of typical construction activities.

Full build-out of Amy's Kitchen would occur in two (2) phases. Phase 1 would total 226,000 square feet: 215,000 square feet of production space and 11,000 square feet of office space. An accessory 3,000 square-foot medical clinic would be constructed in a free-standing building on the Project Site. Phase 1 would also include construction of the new access road from NYS Route 17M, the bridge across the Wallkill River, internal driveways and employee parking, water supply lines, wastewater conveyance lines, and the on-site wastewater pre-treatment system. Site landscaping, stormwater management, and lighting would also be completed. It is anticipated that Phase 1 would take approximately 18 months to complete. Amy's Kitchen has scheduled the Goshen facility to be in production in 2018.

Overall, the sequence of construction activities would begin with site work (clearing and grading) of the Access Road Improvement Area, access road alignment on the Echo Lake property, and the bridge landing area on the Ver Hage property. The access road would be constructed to allow construction access to the Wallkill River bridge location. The gas line from NYS Route 17M to the Echo Lake property and Ver Hage property would also be completed at this time within the access road alignment. Installation of the Wallkill River bridge would follow to allow for construction access to the Ver Hage property from NYS Route 17M. Once the access road and bridge have been substantially completed and would allow for construction truck traffic, Project Site earthwork would commence on both the Echo Lake property and Ver Hage property. Since the grading plan for the Proposed Project contemplates a roughly balanced cut-and-fill across the Project Site, excavated material from the Echo Lake property would be used to fill the Ver Hage property. With the access road and bridge completed in the earliest construction phase, very limited construction traffic would use either Hartley Road or Echo Lake Road.

Simultaneous to commencement of site work on the Project Site, construction would begin on the water supply and wastewater conveyance lines within the Heritage Trail Utility Corridor.

Following rough grading on the Ver Hage property, construction of building foundations and site utilities would commence, followed by construction of site buildings for the Amy's Kitchen manufacturing facility. Electrical connections for both Amy's Kitchen and SoS Conference Center would be pulled from existing transmission lines along Hartley Road and/or Echo Lake Road.

Building construction for Amy's Kitchen would proceed in several stages, some of which would overlap: excavation and foundation; superstructure; exteriors; and interior fit out. Construction would begin with the excavation of the soils, any required remediation, and the construction of the foundations. When the below-grade construction is completed, construction of the superstructure (the building's beams, columns, floor decks, and core) of the new building would begin. Next, the exterior of the building would be constructed and interior fit-out would commence. The interior fit-out would include the construction of non-structural building elements such as interior partitions and interior finishes (i.e., flooring, painting, etc.) as well as equipment installation at the food manufacturing plant.

Phase 2 of Amy's Kitchen would total 140,000 square feet: a 134,000 square feet expansion of production space and an additional 6,000 square feet of office space. Phase 2 construction is anticipated to be completed by approximately 2023.

The SoS Conference Center is contemplated to be constructed in a single 18- to 24-month phase, which is currently anticipated to commence after construction of the access road, Wallkill River bridge, and Phase 1 construction of Amy's Kitchen is initiated. Construction activities on the SoS Conference Center buildings will begin after the initial clearing and grading of the Echo Lake property is substantially completed.

Construction of the Proposed Project would require clearing and grading of approximately 151 acres of the Project Site. Specifically, the Amy's Kitchen food manufacturing facility, parking lots, and driveways would have a footprint of approximately 37 acres. The Project Site entry road that would be constructed through the Echo Lake property to connect to NYS Route 17M would require disturbance of approximately 14 acres. The SoS Conference Center would have disturbance of approximately 97 acres on the Echo Lake property, and the associated guest house and driveway would have disturbance of approximately 3 acres.

Construction of the Amy's Kitchen manufacturing facility would result in changes to the natural topography of the Ver Hage property. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 307,057 cubic yards. Based on the proposed grading plan for the Proposed Project, which is based on two (2)-foot contours, 59,092 cubic yards of cut and 247,965 cubic yards of fill is projected. As such, 188,873 cubic yards (approximately 211,538 tons) of fill would be required to balance the site, the majority of which would be obtained from the Echo Lake property. Approximately 34,179 cubic yards (approximately 44,433 tons) of materials for building slab construction would have to be imported to the Ver Hage property. For the SoS Conference Center, approximately 996,921 cubic yards of cut and 991,258 cubic yards of fill is projected. As such, 5,663 cubic yards (approximately 6,343 tons) of cut would be required to balance the site. Approximately 66,582 cubic yards (approximately 86,557 tons) of materials for building slab construction would have to be imported to the Echo Lake property. As further described below under Traffic, the vast majority of the truck trips required to move material between the Echo Lake and Ver Hage sites would occur on the private bridge between the two sites, and not on State or local roadways.

Grading would not commence until Site Plan approval has been finalized by the Town of Goshen Planning Board. Clearing of trees would not commence until November 1 to comply with NYSDEC restrictions relating to protected species of bats.

Soil excavation on the Project Site can be performed with conventional earth moving equipment such as backhoes, excavators, and bulldozers. All excavation would be performed in accordance with OSHA requirements including, but not limited to, temporary shoring, using trench boxes, and proper benching, wherever necessary.

Construction activities on the Project Site could result in temporary impacts associated with noise, air quality (dust), and construction truck traffic.

Construction operations, for some limited time periods, would result in increased noise levels that may be intrusive and annoying and may significantly increase ambient noise levels. Construction activities would comply with the hour limitations in the Town Code to minimize noise intrusion from construction activities. Because of the limited duration of the construction activity and the generally industrial nature of the study area, these impacts would not constitute significant adverse noise impacts.

Mobile source emissions may result from the operation of construction equipment, earth-moving equipment, and trucks delivering materials to the Project Site. Localized increases in mobile source emissions would be minimized by using ultra-low sulfur diesel fuel for all construction

equipment operating on the Project Site. Delivery trucks and/or other construction equipment engines would not be permitted to remain idling during unloading or other inactive times. No significant adverse impacts on the local community from fugitive dust or emissions are expected to occur as a result of the Proposed Project.

The proposed project would generate vehicle trips associated with workers traveling to and from the construction site, as well as the hauling and delivery of soils, materials, and equipment. An estimated average of approximately 50 to 60 workers and 25 construction-related truck trips per day would occur when construction is active at the Project Site. During the initial site clearing and grading activity, trucks would be used to haul excess fill material from the Echo Lake property to the Ver Hage property using the new Wallkill River bridge that would be constructed in the first phase. Because of the large amount of fill required at the Ver Hage property, approximately 90 truck trips per day over a six (6) month period may be required between the Echo Lake property and the Ver Hage property. However, once delivered to the Project Site, none of these truck trips would occur on State or local roads as they would use the internal road and bridge across the Wallkill River.

Each construction worker was assumed to commute to the construction site by private auto and make two vehicle trips per workday – one arrival trip and one departure trip. Given typical construction hours, the majority of worker trips would occur during off-peak travel times and therefore would not typically affect traffic during the standard peak vehicular travel hours (e.g., 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM). Truck movements, including delivery of construction materials and equipment, are typically distributed throughout the work day. It is expected that only a limited number of trucks would travel to or from the site during the standard vehicular peak traffic hours Furthermore, traffic generated during construction would also be temporary. For these reasons, it is concluded that the Proposed Project would not result in significant adverse impacts due to vehicles generated by construction activity.

UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

As discussed in each of the technical chapters throughout the DEIS, the Proposed Project would create a number of physical changes to the Project Site and Additional Areas. Several environmental impacts would result that cannot be avoided.

The Proposed Project would result in the unavoidable clearing and grading of approximately 151 acres of the Project Site, much of which comprises successional old field and shrubland that has grown on previously disturbed mined land.

Construction of the Amy's Kitchen manufacturing facility would result in changes to the natural topography of the Ver Hage property. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 307,057 cubic yards. Based on the proposed grading plan for the Proposed Project, 59,092 cubic yards of cut and 247,965 cubic yards of fill are projected. As such, 188,873 cubic yards of fill would be required to balance the site, the majority of which would be obtained from the Echo Lake property.

Construction of the SoS Conference Center would result in changes to the natural topography of the Echo Lake property. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 1,988,179 cubic yards of total earthwork. Based on the proposed grading plan for the Proposed Project, 996,921 cubic yards of cut and 991,258 cubic yards of fill are projected. As such, 5,663 cubic yards of cut would be required to balance the site.

The Proposed Project would result in unavoidable adverse impacts to approximately 4.2 acres of wetlands (0.091 acres of federally-regulated wetlands) through the construction of the Proposed Project.

Within the 151 acre limits of disturbance, approximately 49 acres of successional southern hardwoods on the Project Site would be cleared. Within this area to be cleared are a number of trees greater than 12 inches in diameter. Due to the size of this area, it was not possible to conduct an exact count of the number of trees greater than 12 inches in diameter. In addition, since the Proposed Project requires an extensive amount of cut and fill between the Echo Lake and Ver Hage properties to meet the necessary grades for each site, it is not feasible to preserve any trees within the area of disturbance. The loss of vegetation and trees within the area of disturbance is considered an unavoidable adverse impact.

Development and use of the Project Site will generate solid waste due to office refuse, food wastes, and packaging materials. To minimize solid waste generation, Amy's Kitchen will recycle and compost as much as possible; however, the production of some solid waste is unavoidable.

Change of existing land use form vacant land to occupied land creates several unavoidable adverse environmental impacts. Construction of new buildings, roadways and parking areas would require excavation and grading, as well as creating additional impervious surfaces on-site. This increase in impervious surfaces would require detention, treatment, and eventual release of stormwater runoff that would formerly have been absorbed on the Project Site. A Stormwater Pollution Prevention Plan (SWPPP) would be implemented to ensure proper management of stormwater runoff including both water quality and quantity.

The Proposed Project would result in unavoidable impacts to four (4) S/NR eligible archaeological sites. Since avoidance of these sites is not possible through design changes to the Proposed Project, Phase III DRPs will be developed to outline the testing strategies and protocols that will be implemented as part of the Data Recovery. The DRPs will be submitted to SHPO for review and concurrence. As a result thereof, no significant adverse impacts to archaeological resources would result.

The Proposed Project would generate additional vehicle trips to and from the Project Site. While these trips are considered unavoidable, mitigation measures have been proposed to avoid significant adverse impacts.

Emissions from vehicles generated by the Proposed Project would be unavoidable, but are not considered impacts as none of the screening locations for mobile source emissions exceed the volume threshold criteria for either carbon monoxide or particulate matter established by NYSDOT. Emissions from stationary sources (process boilers, heat and hot water systems, and ovens) are also considered unavoidable, but are not considered impacts as none of the stationary sources individually or collectively are large enough to require any air quality permits, they would be located a large distance from any sensitive receptor, and because ambient pollutant concentrations are substantially lower than NAAQS.

Construction activities would generate traffic to and from the site, noise from construction equipment and potential erosion concerns. To minimize these impacts, a phasing plan, a SWPPP, an erosion and sediment control plan, and traffic safety measures would be implemented. These impacts would be temporary and are not considered significant.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Natural and manmade resources would be expended in the construction and operation of both Amy's Kitchen and SoS. These natural resources include the use of land and energy. Manmade resources include the effort required to develop, construct, and operate the Proposed Project; building materials; financial funding; and motor vehicle use. Resources are considered irretrievably committed because it is highly unlikely that they would be used for some other purpose. However, none of the resources expended would constitute a significant adverse impact. Therefore, no mitigation is required.

GROWTH INDUCING IMPACTS

The Proposed Project would create a substantial number of new jobs in Goshen. However, it is anticipated that these jobs can be filled by existing workers within the greater Project Area. The fiscal impact analysis identified a gap of approximately ten (10) workers within the ten-minute commute area for blue collar workers. This gap could be filled either by workers in the 10 to 20 minute commute area, of which there is a surplus, or by approximately 10 workers relocating closer to the Project Site. This fiscal analysis also found that the existing housing market can easily accommodate the small number of worker households that could potentially relocate to the 10-minute commute radius based on the results of the labor gap analysis. Therefore, the Proposed Project is not expected to result in any new housing development or a substantial number of new worker/residents.

A number of local businesses near the Project Site would likely experience increased patronage from employees during construction, as well as from Amy's Kitchen employees after construction, and SoS volunteers and visitors during the National and Regional conferences. It is expected that this patronage would be welcomed in the business community, and would not result in significant new development in areas not already developed with commercial uses.

The Proposed Project would connect to the existing potable water system and wastewater treatment plant of the City of Middletown. To avoid potential growth inducing impacts the water and sewer lines would be sized to accommodate the Proposed Project only and would be considered private utility connections. Since the water and sewer lines would not have the capacity to accommodate any additional connections, no growth inducing impacts would result from a connection to either the potable water system or wastewater treatment plant.

H. ALTERNATIVES TO THE PROPOSED PROJECT

The State Environmental Quality Review Act (SEQRA) and its implementing regulations require the consideration of project alternatives that are reasonable and feasible that meet the goals and objectives of the Proposed Project. The adopted Scope required consideration of a specific set of alternatives for comparison to the Proposed Project. However, during the course of developing the DEIS, the Applicant determined that one of the alternatives—wastewater treatment at on off-site location—is preferred to construction of an on-site wastewater treatment plant. Thus, Chapter V, "Alternatives," of the DEIS evaluates an on-site wastewater treatment plant as on alternative to the Proposed Project.

The following Alternatives are evaluated in Chapter V:

Alternative 1: No Action Alternative;

Alternative 2: Potential use of Echo Lake Road (over Heritage Trail) as an emergency access, "employee only" entrance/exit or access for Science of the Soul events;

Alternative 3: Permanent access to Amy's Kitchen manufacturing facility from Hartley Road;

Alternative 4: Connection to the Village of Goshen wastewater treatment plant; and

Alternative 5: Smaller Warehouse Use that avoids floodplain disturbance.

Each of the Alternatives has been evaluated for potential impacts in comparison to the Proposed Project.

Alternative 1, the No Action Alternative, would not achieve the objectives of the Applicant to construct a food manufacturing facility and conference center on the Project Site and is, thus, not considered realistic or feasible.

Alternative 2 would have impacts very similar to the Proposed Project. During an SoS special event, an additional police officer would have to be posted at the secondary egress during the hour or two following a National Conference or Regional Conference to control exiting traffic and ensure safe operating conditions along Echo Lake Road. An additional 501 vehicles could exit the Project Site using the secondary egress before a potential noise impact exists under Alternative 2. Rerouting some exiting vehicles toward Echo Lake Road would create a second queue of idling vehicles exiting the Project Site and may cause localized increases in carbon monoxide emissions. However, creating a second egress point managed by a police officer at the unsignalized intersection of the driveway with Echo Lake Road would create added efficiencies in clearing the Project Site of vehicles. Thus, while there may be localized increases in emissions, overall Alternative 2 may have benefits to air quality in comparison to the Proposed Project given the decreased time for the same number of vehicles to exit the Project Site.

Alternative 3 would have similar Levels of Service to the Proposed Project at each of the intersections, and that the traffic volumes associated with the Amy's Kitchen Phase 2 development could be accommodated on the roadway network with access to Hartley Road only, but would require installation of turning lanes at the intersection of NYS Route 17M and Hartley Road.

Alternative 4 would have similar impacts to the Proposed Project associated with construction of the wastewater conveyance line, except that Alternative 4 would be a shorter distance and would be constructed under an active multi-use bicycle/pedestrian path. In addition, since potable water would still be obtained from the City of Middletown, this alternative would not avoid the trenching required to reach the City of Middletown. As such, the Proposed Project, which would obtain both potable water and wastewater treatment from the City of Middletown, would have greater operational and regulatory efficiency, and fewer potential environmental impacts related to trenching.

Alternative 5 considers a smaller Warehouse Use. A smaller Warehouse Use would have significantly reduced modifications to the floodplain, which could theoretically be offset through other on-site options and not the excavated channel next to the Cheechunk Creek. A smaller Warehouse Use would generate fewer trips than the larger Warehouse Use. However, this reduction in size would not change the mitigation measures required to mitigate traffic from the Amy's Kitchen manufacturing facility. As such, potential impacts to traffic and transportation would be similar to those analyzed in the DEIS. ✷

A. INTRODUCTION

Amy's Kitchen, Inc. ("Amy's Kitchen") proposes to construct an approximately 369,000 square-foot food manufacturing facility on an approximately 60.1-acre property located on Hartley Road in the Town of Goshen, New York. Amy's Kitchen has submitted an application to the Town of Goshen Planning Board for site plan review of its proposed manufacturing facility and is considered "the Applicant" (or "Project Sponsor") for purposes of this environmental review.

Science of the Soul ("SoS") proposes to construct a conference center (herein referred to as the "Conference Center") comprising an approximately 200,000 square-foot open-air pavilion with four (4) associated restroom buildings (approximately 5,000 square feet each); one (1) two-story approximately 80,000 square-foot Multi-Purpose/Family Area Building; one (1) two-story approximately 38,000 square-foot Central Building; one (1) one-story approximately 8,000 square-foot Maintenance Barn; two (2) Caretaker Residences, approximately 2,400 square feet each; one (1) approximately 4,500 square-foot Guest House; and associated pervious and impervious parking areas to accommodate approximately 2,043 cars and 130 buses on an approximately 195-acre property located on NYS Route 17M and Echo Lake Road in the Town of Goshen, New York.

A potential Warehouse Use on an approximately 11.6-acre subdivided parcel on Hartley Road is also contemplated.

The two entities, Amy's Kitchen and SoS, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents and to share certain access, water supply, and wastewater treatment infrastructure. The Amy's Kitchen manufacturing facility, the SoS Conference Center, together with private water and wastewater conveyance utilities connected to the City of Middletown, as well as the Warehouse Use comprise the "Proposed Project" analyzed in this Draft Environmental Impact Statement (DEIS). As further detailed below in **Table II-1**, in total, four properties comprising six tax parcels and totaling approximately 374.14 acres, all in the Town of Goshen, New York, are identified and analyzed in this DEIS.

The purpose of this DEIS is to assess the potential environmental impacts of the Proposed Project, as required under SEQRA and its implementing regulations (6 NYCRR Part 617). The Town of Goshen Planning Board ("Planning Board") is the designated Lead Agency for the SEQRA process. The Planning Board declared itself Lead Agency and adopted a Positive Declaration requiring the preparing of an Environmental Impact Statement on May 22, 2014. This DEIS has been prepared in accordance with the Scoping Document approved by the Lead Agency on July 16, 2015 ("Adopted Scope")[1]. The DEIS does, however, vary from the adopted

[1] The original Scoping Document relating to the combined Amy's Kitchen and Science of the Soul project was adopted by the Planning Board on March 27, 2014. A modified Scoping Document was subsequently adopted by the Planning Board on September 22, 2014 when Amy's Kitchen requested to

Scope in the respect of groundwater supply and wastewater treatment as the Proposed Project now includes access to the City of Middletown for the provision of those services as the preferred option. A copy of the latest Adopted Scope and all relevant SEQRA documents can be found in **Appendix II**.

B. PROJECT LOCATION AND SITE DEFINITION

PROJECT SITE

The Project Site comprises four (4) properties totaling approximately 374.14 acres in the Town of Goshen, Orange County, New York (see **Figure II-1**, **Figure II-2**, and **Table II-1**). The Project Site is located north of New York State Route 17M ("NYS Route 17M"), east of the Town of Wawayanda, west of the Village of Goshen, and south of the West Hills Country Club. The Project Site is bisected in a north-south direction by the Wallkill River and generally lies south of Echo Lake Road and the future Orange County Heritage Trail ("Heritage Trail") extension west of Hartley Road,[2] although portions of the Project Site lie north of Echo Lake Road and the Heritage Trail.

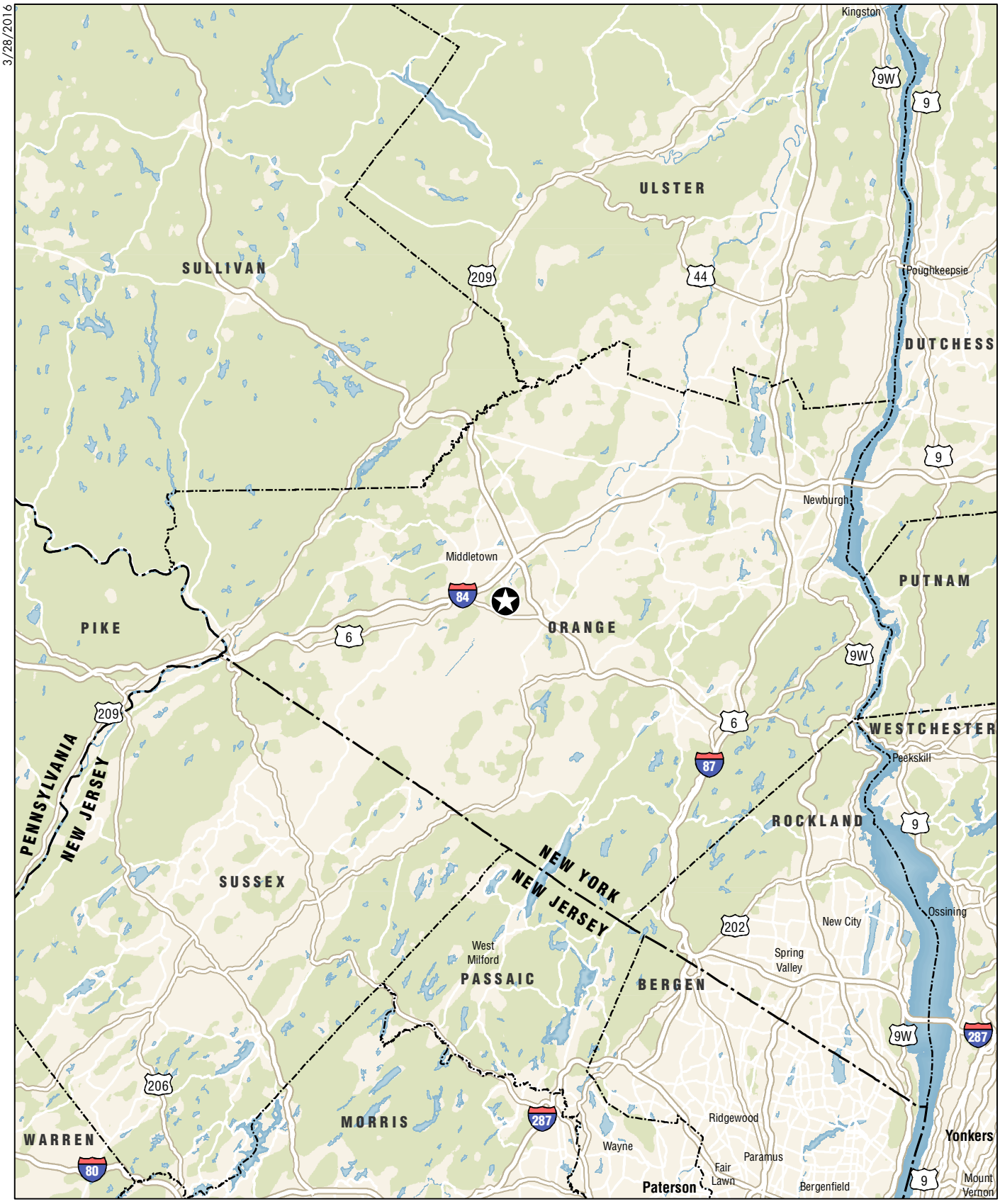
Table II-1
Properties Comprising the Project Site

Property	Address	SBL[1]	Zoning[2]	Acres
Amy's Kitchen Properties				
Ver Hage property[5]	111 Hartley Road	12-1-1.222	I	54.6
	103 Hartley Road	12-1-19.2	I	17.1
Lipoff property	12 Echo Lake Road	12-1-1.41	RU	11.8
Science of the Soul Properties				
Echo Lake property	41 Echo Lake Road[3]	12-1-24.2	CO, I, and RU	172.9
	2832 NYS Route 17M	12-1-23.2	I	21.7
Strong Farm property[4]	212 Cheechunk Road	10-1-11.2	RU	96
			TOTAL	374.1

Notes:
[1] SBL 12-1-101 is currently owned by the State of New York (NYS). NYS has stated its intent to transfer 7.58 acres of this land to the Town of Goshen for the purpose of improving road access to Route 17M for the project and surrounding uses.
[2] Town of Goshen Zoning Designations: Commercial/Office Mixed-Use (CO); Industrial (I); and Rural (RU).
[3] The portion of this property in the Town of Wawayanda (SBL 1-1-40) is also owned by Echo Lake NY, LLC, an entity affiliated with Amy's Kitchen, but is not included in the calculation of acreage. There are no proposed modifications to the portion of the parcel in Wawayanda.
[4] SoS also owns a 2.9 acre parcel at 51 Owens Road (SBL 10-1-11.1) and a 14.2 acre parcel at 117 Owens Road (SBL 10-1-9). There are no proposed modifications to these properties. The existing residence at 51 Owens Road would continue to be used as a residential use.
[5] It is anticipated that approximately 11.6 acres of this property would be subdivided off for use by Mr. Ver Hage. This would leave approximately 60.1acres for use by Amy's Kitchen.

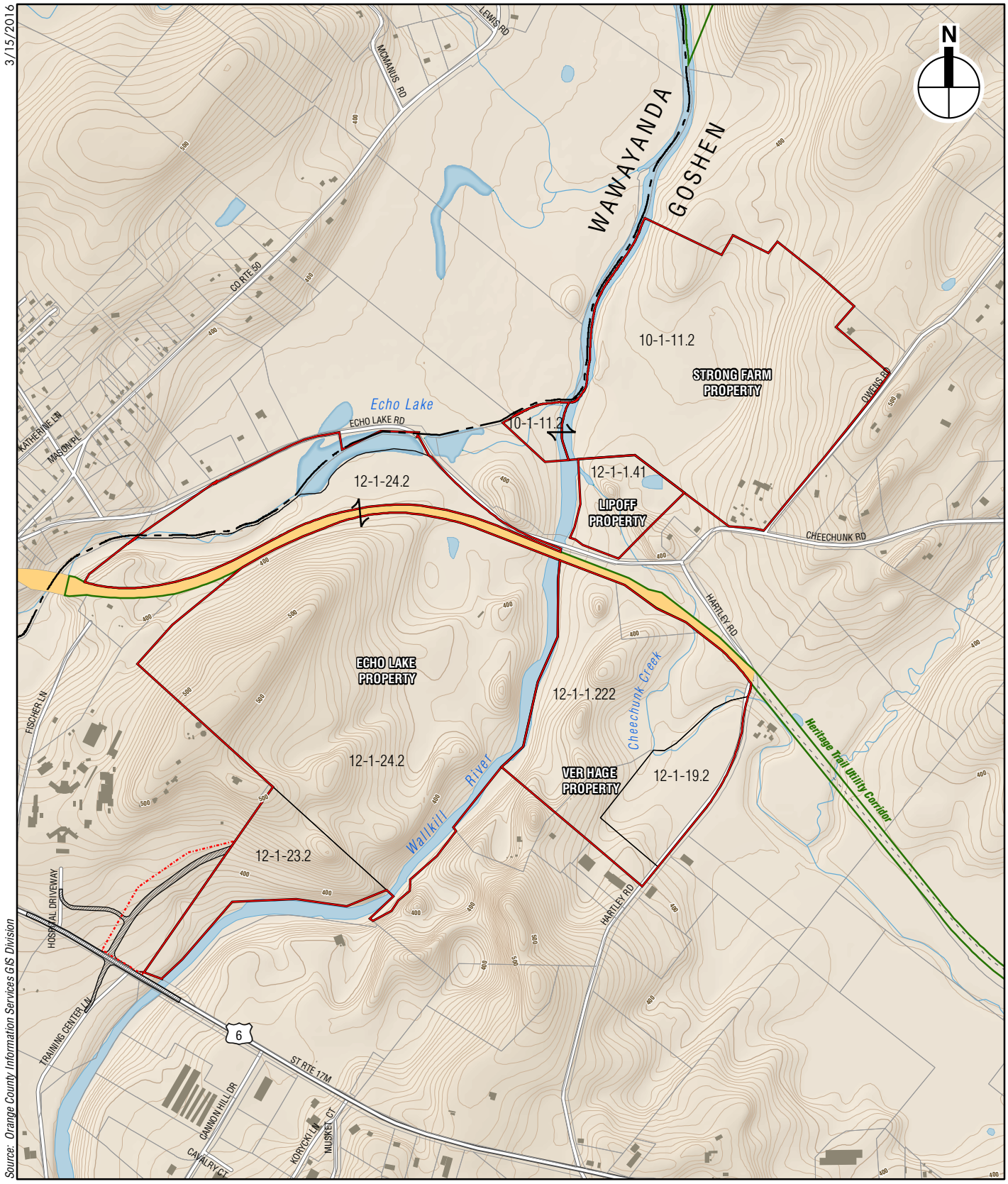
remove the Science of the Soul Conference Center from consideration. A final Scoping Document was adopted by the Planning Board on July 16, 2015, that once again includes a combined project representing the Amy's Kitchen manufacturing facility and the Science of the Soul Conference Center.

[2] While the Heritage Trail west of Hartley Road is not currently improved as a recreational trail, Orange County intends to initiate clearing in 2016 and complete construction of a multi-use trail west to the City of Middletown by 2018. Thus, in this DEIS, the Trail is considered as if it were completed.



Amy's Kitchen
Science of the Soul

Regional Location
Figure II-1



Amy's Kitchen
Science of the Soul

Properties Comprising the Project Site

Figure II-2

As further discussed in Chapter III.K, "Land Use and Zoning," the Project Site is located in the Commercial/Office Mixed-Use (CO), Industrial (I), and Rural (RU) Zoning Districts (see **Figure II-3**). The portion of the Echo Lake property south of the Heritage Trail is split zoned, with the western half zoned CO and the eastern half zoned I. The portion of the Echo Lake property north of the Heritage Trail is zoned RU. The Ver Hage property is zoned I. The Lipoff and Strong Farm properties are both zoned RU. The Echo Lake property is located in the AQ-3 Aquifer Overlay District. The Ver Hage property is located in both the AQ-3 and AQ-6 Aquifer Overlay Districts. The Lipoff property and Strong Farm property are located in the AQ-6 Aquifer Overlay District. In addition, portions of the Project Site are located within the Stream Corridor and Reservoir Watershed Overlay District, Floodplain and Ponding Area Overlay District, and Scenic Road Corridor Overlay District (see **Figure II-4**).

Land uses in the immediate vicinity of the Project Site are characterized by rural residential, farmland, institutional, rural commercial and rural industrial uses. The Town of Wawayanda is located to the west of the Project Site, and includes rural residential and commercial uses. Areas to the north, south, and east of the Project Site are primarily vacant forested land, rural residential, and farmland.

VER HAGE PROPERTY

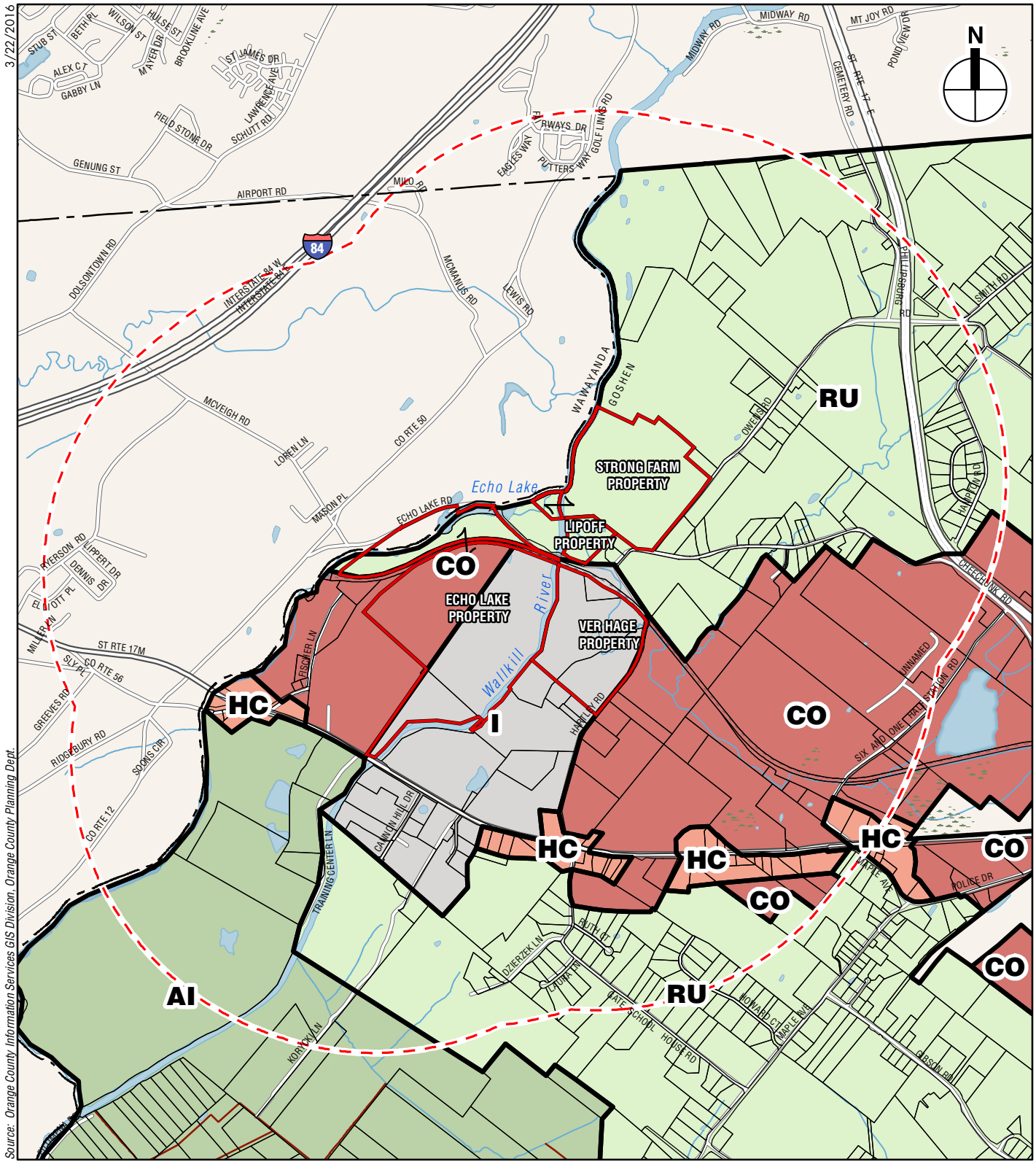
Sassafras Mountain, LLC, an entity affiliated with Amy's Kitchen, is under contract to purchase the Ver Hage property, which is currently vacant. Portions of the property are open fields, which historically may have been used for farming, but more recently were stripped of top-soil for the capping of the Al Turi landfill to the south. The Cheechunk Creek traverses the northeast portion of the property. The creek enters the property where Hartley Road meets the Heritage Trail and flows first south then north in a stream meander that separates approximately 16 acres from the majority of the property. The Cheechunk Creek exits the Ver Hage property by flowing under the Heritage Trail.[3]

Adjacent land uses include the Wallkill River and Echo Lake property to the west, Interstate Waste Service private transfer station and Old Al Turi Landfill[4] to the south, and light-industrial businesses along Hartley Road to the east. An unimproved section of the Heritage Trail forms the northern border of the Ver Hage property. East of Hartley Road, the Heritage Trail has been improved with a gravel trail for public recreational use. An Orange & Rockland Utilities (O&R) electrical sub-station was recently constructed to the north of the Ver Hage property between Hartley Road and Cheechunk Road.

The Town of Goshen has an existing easement on the Ver Hage property for the purpose of restoring and cleaning the portion of the Cheechunk Creek within the easement area, and

[3] In the Fall of 2014 the current owner of the Ver Hage property made modifications to the Cheechunk Creek that caused the creek to flow in a new channel in a northwesterly direction along the southern edge of the Heritage Trail. This modification was a violation of Town of Goshen Code and also resulted in a Cease and Desist Order from the United States Army Corps of Engineers. In June 2015 the current owner made repairs to the creek that returned water flow to the natural channel that meanders through the property.

[4] The "Old Al Turi Landfill" is identified by the New York State Department of Environmental Conservation (NYSDEC) as an Inactive Hazardous Waste Site (Site No. 3-36-016) for which a NYSDEC Record of Decision for remedial action is dated March 1996.



Source: Orange County Information Services GIS Division, Orange County Planning Dept.

Project Site

Study Area (One Mile Radius)

Goshen Parcel Boundaries

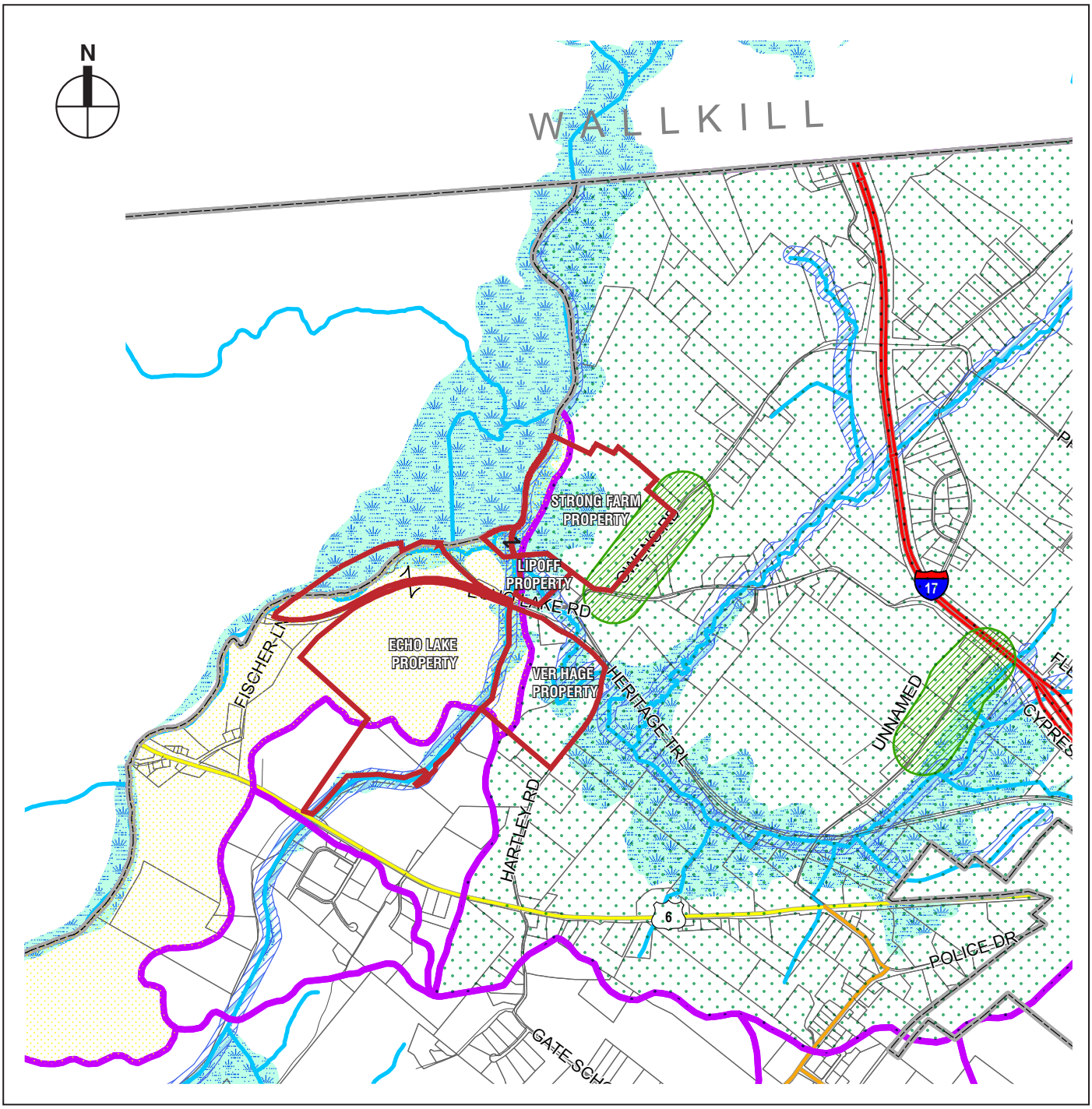
Town of Goshen Zoning

- *AI, Agricultrural Industrial*
- *CO, Commerical/Office Mixed-Use*
- *HC, Highway Commercial*
- *I, Industrial*
- *RU, Rural*

Amy's Kitchen
Science of the Soul

Zoning Map
Figure II-3

3.22.16



Project Site Area

Municipal Boundaries

Watershed Boundaries

Streams

Zoning Overlay Districts

Soil Mining Overlay

Scenic Road Corridor Overlay

Floodplain and Ponding Area Overlay

Stream Corridor and Reservoir Watershed Overlay

Aquifer Overlay Districts

AQ-6

AQ-3

Amy's Kitchen
Science of the Soul

Zoning Overlay Districts
Figure II-4

repairing, reconstructing, replacing, and maintaining the headwall at the culvert also within the easement area.

Al Turi Landfill, Inc. has several existing access easements on the property to allow access to the monitoring wells associated with the Old Al Turi Landfill. The NYSDEC Record of Decision for the Old Al Turi Landfill restricts the installation of any drinking water wells on the Ver Hage property unless those wells are approved by the NYSDEC. In addition, the Orange County Water Authority has an approximately 3,000 square-foot permanent easement on the northwest corner of the property.

LIPOFF PROPERTY

Hudson Valley AREA, LLC, an entity affiliated with Amy's Kitchen, purchased the Lipoff property on June 24, 2015. The Lipoff property is currently vacant forested land. The Cheechunk Creek bisects the property in a southeast to northwest direction where it meets the Wallkill River near the northwest corner of the Lipoff property. Land uses adjacent to the property include the Strong Farm to the north, Echo Lake Road to the south, single-family residential to the east, and the Wallkill River and vacant forested land to the west. There is an existing easement held by Rockland Light and Power Company for transmission lines that cross the Lipoff property.

ECHO LAKE PROPERTY

Echo Lake NY, LLC, an entity affiliated with Amy's Kitchen, owns the Echo Lake property. The property was historically used as a dairy farm and later for mining. The property was purchased in the 1980s by the Town of Wallkill, which mined the land for gravel for municipal use. Gravel mining continued on the property when the Town of Wallkill sold it to a private landowner. The site is currently vacant and is listed in the Orange County Agricultural District #2. Adjacent land uses include the New York State Mid-Hudson Psychiatric Center to the southwest; the Wallkill River to the east; Ameresco Renewable Energy Project, and Interstate Waste Service private transfer station across the Wallkill River to the southeast; the Ver Hage property across the Wallkill River to the northeast; and rural single-family residential uses in the Town of Wawayanda to the northwest.

An unimproved section of the Heritage Trail, a County property that follows an abandoned railroad bed, traverses the northern portion of the property bisecting SBL 12-1-24.2 and eliminating frontage of the main portion of SBL 12-1-24.2 on Echo Lake Road. An existing driveway from Echo Lake Road across the Heritage Trail may only be used by construction vehicles and emergency vehicles under a deed restriction controlled by the County. Any modifications to this driveway, the deed restriction against regular vehicular access, or the Heritage Trail, will require approval by the County legislature.

Several wetland areas are located within the Echo Lake property that have been determined to be Waters of the United States under the jurisdiction of the United States Army Corps of Engineers. A significant area of the portion of SBL 12-1-24.2 north of the unimproved section of the Heritage Trail and the Town of Wawayanda SBL 1-1-40 lies within New York State Wetland MD-24, which includes the body of water known as Echo Lake.

The City of Middletown holds an easement within the Echo Lake property for a sanitary sewer trunk line that runs from the Middletown wastewater treatment plant along the Heritage Trail west of C.R. 50 and then along Echo Lake Road before traversing a small section of the Echo Lake property north of the Heritage Trail to its discharge point in the Wallkill River.

The Town of Wallkill holds an easement on an approximately five (5) acre portion in the northeast section of SBL 12-1-24.2 relating to two (2) existing water supply wells. The easement stipulates, in part, that a) water obtained from the two (2) existing water supply wells in the easement area may only be used on the Echo Lake property itself and not exported to another property, and b) that the Town of Wallkill retains joint usage rights for water from the two (2) existing wells within the easement area.

STRONG FARM PROPERTY

SoS purchased the Strong Farm property as Radha Soami Satsang Beas (RSSB) America. Strong Farm is currently used for agriculture. The property contains several agricultural structures and three (3) residences. Land uses to the north include land that has been approved by the Town of Goshen for a 39-lot residential subdivision, a single-family residence, and farmland; to the south are the Lipoff property, single-family residences, and the O&R substation; to the east are single-family residences along Owens Road; and to the west is the Wallkill River and farmland. There are no easements, restrictions, or rights-of-way on the Strong Farm Property.

ADDITIONAL AREAS

Two (2) additional areas are required for improvements related to the Proposed Project, but would not be owned or controlled by either Amy's Kitchen or SoS (and so are not considered part of the "Project Site"). These additional areas are described here and are included elsewhere in this DEIS for purposes of environmental impact assessment.

HERITAGE TRAIL UTILITY CORRIDOR

A portion of the Heritage Trail from the Project Site west to the City of Middletown wastewater treatment plant will be occupied by a water supply line and wastewater conveyance line to serve the Proposed Project (see **Figure II-5**). This "utility corridor" is considered a secondary study area for purposes of analysis in this DEIS. The Heritage Trail will remain in the ownership of Orange County (from Hartley Road west to the original Wallkill River channel) and the City of Middletown (from the original Wallkill River channel west to the City of Middletown) and utility easements will be required as part of the Proposed Project.

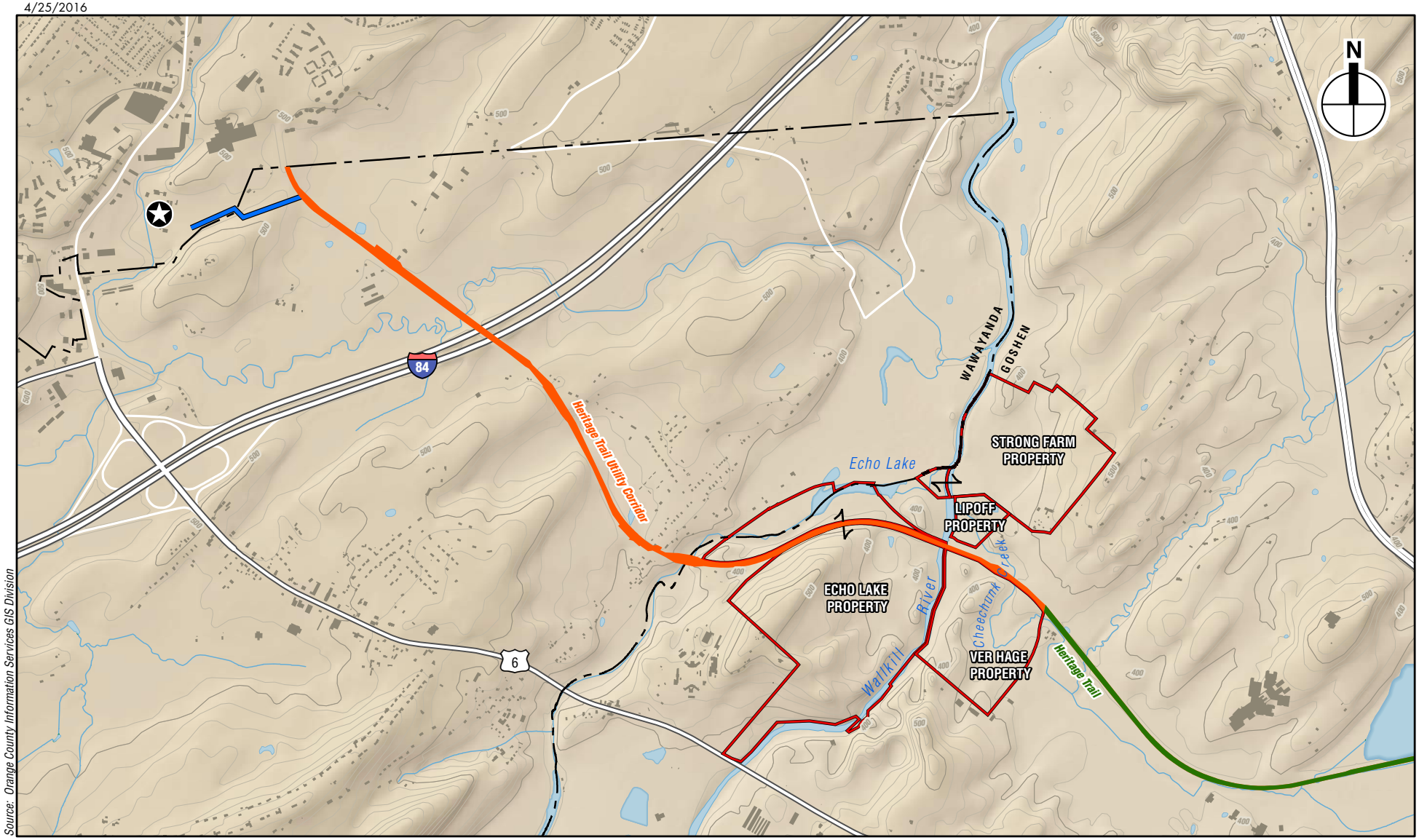
ACCESS ROAD IMPROVEMENT AREA

The Proposed Project also involves a land transfer of an approximately 7 to 10 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen[5] to construct an access road from NYS Route 17M into the main portion of the Echo Lake property. A small area of land on the south side of NYS Route 17M owned by New York State would also be affected to allow for re-alignment of Training Center Lane. This property would remain in its current ownership.

The portion of the Echo Lake property that currently has road frontage on NYS Route 17M (SBL 12-1-23.2) is too narrow and too close to the existing bridge that carries NYS Route 17M over the Wallkill River to permit the site access road. The new access road would also serve the Mid-Hudson Psychiatric Center (one of the two existing driveways to which would be closed on NYS Route 17M) and Science of the Soul. The new roadway would be located approximately 300 feet west of the existing Training Center Lane, which would be relocated to align opposite

[5] See letter from James Sproat and Emil Slanc regarding land transfer in **Appendix II**. Additional acreage may be required to achieve the appropriate roadway alignment, and to minimize disturbance to wetlands and archaeologically sensitive areas.

4/25/2016



Amy's Kitchen
Science of the Soul

Heritage Trail Utility Corridor
Figure II-5

the new site access road to form a full movement signalized intersection. These improvements would provide a public benefit to the Town of Goshen, County of Orange, and State of New York by enhancing safety of this portion of NYS Route 17M where access is provided to County and State facilities.

To effect the land transfer, the New York State Office of Mental Health and/or New York State Office of General Services would transfer the 7 to 10 acre portion to the Town of Goshen (transfers of State property are not allowed to a private party). Under an agreement contemplated between the Town of Goshen and Amy's Kitchen, Amy's Kitchen would obtain an access agreement across the new Town land and would pay for the site access road and related improvements at its intersection with NYS Route 17M (including relocation of County and State access roads). The agreement would also stipulate that Amy's Kitchen and SoS would be responsible for maintenance and snow-removal of the portion of the site access road (and associated landscaped areas) within the land transferred from the State to the Town. (See below, and Chapter III.H, "Traffic and Transportation," for additional detail on proposed roadway improvements).

C. DESCRIPTION OF THE PROPOSED PROJECT

The Proposed Project comprises four (4) primary components:

- Amy's Kitchen manufacturing facility on the "Ver Hage property";
- Subdivision of approximately 11.6 acres from the "Ver Hage property" for a future "Warehouse Use;" [6]
- Science of the Soul Conference Center on the "Echo Lake property";
- Use of the "Strong Farm property" for agricultural use and volunteer parking for Science of the Soul.

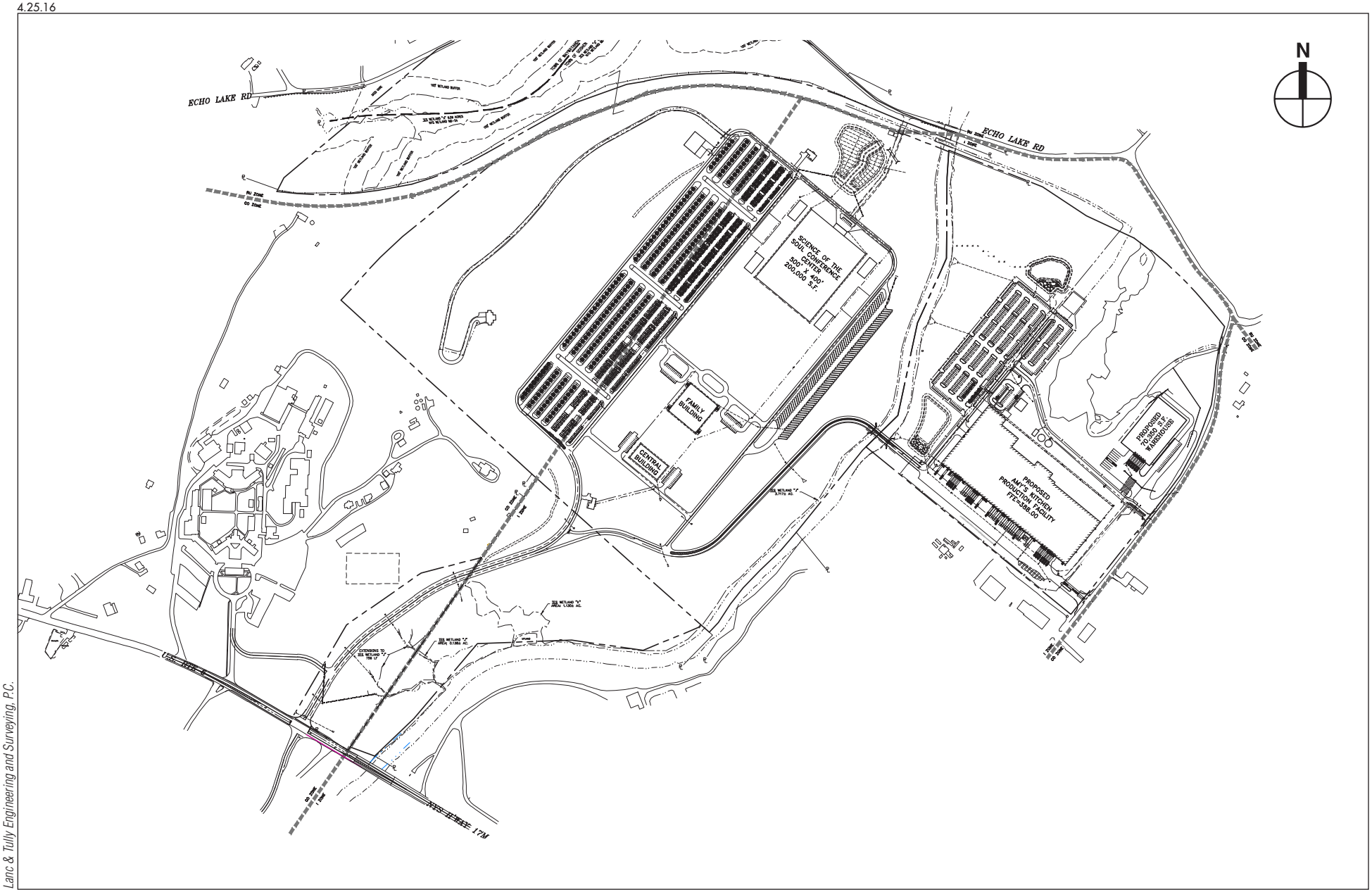
Figure II-6 presents the proposed overall layout for the Amy's Kitchen manufacturing facility on the Ver Hage property, the Science of the Soul Conference Center on the Echo Lake property, and an approximately 70,000 square-foot Warehouse Use on the 11.6 acre subdivided parcel. **Appendix II** contains the drawings submitted with the Site Plan application for Amy's Kitchen and SoS Conference Center.

AMY'S KITCHEN

Amy's Kitchen is a family-owned food manufacturing company founded in 1988 in Sonoma, California. Amy's Kitchen is a world leader in production of natural and organic convenience food products and is one of the few remaining American companies to craft its own recipes, source its own ingredients, and make its products in-house. The company currently has three manufacturing facilities: Santa Rosa, California; Medford, Oregon; and Pocatello, Idaho. The company currently purchases approximately 90 million pounds of organic materials each year for use in their products. Amy's Kitchen currently sources 95 percent of its organic material from the United States, the vast majority from the west coast. Amy's Kitchen is actively working with and pursuing increasing east coast suppliers. All of Amy's Kitchen's products are non-

[6] The actual size of the subdivision would be determined at the time of application. The Subdivision and Site Plan/Special Permit applications for the Warehouse Use would be pursued by Mr. Ver Hage. For analysis purposes, this DEIS assumes a warehouse of approximately 70,000 square feet.

4.25.16



Lanc & Tully Engineering and Surveying, P.C.

Overall Site Layout

Figure II-6

Amy's Kitchen
Science of the Soul

GMO and do not contain hydrogenated fats or oils. The majority of Amy's packaging is made from recycled material.

In an effort to better serve its east coast customers, Amy's Kitchen proposes to construct an approximately 369,000 square-foot manufacturing facility where food is prepared, packaged and frozen (see **Figure II-6, Figure II-7,** and **Figure II-8**). The main products to be prepared in the facility would be pizza, canned soup, frozen entrees, and burritos. The manufacturing facility is proposed to be constructed on the Ver Hage property, which fronts on Hartley Road. A new roadway and vehicular bridge over the Wallkill River would provide direct access for Amy's Kitchen to NYS Route 17M across the Echo Lake property.

The plant would be constructed in two (2) phases: an initial approximately 226,000 square-foot plant, including an 11,000 square-foot office area, to be opened in 2018 with an approximately 140,000 square-foot expansion (134,000 square feet of production space plus 6,000 square feet of office area) to be opened in approximately 2023. An ancillary building of approximately 3,000 square feet would be constructed for on-site medical treatment of Amy's Kitchen staff and families as part of Phase 1.

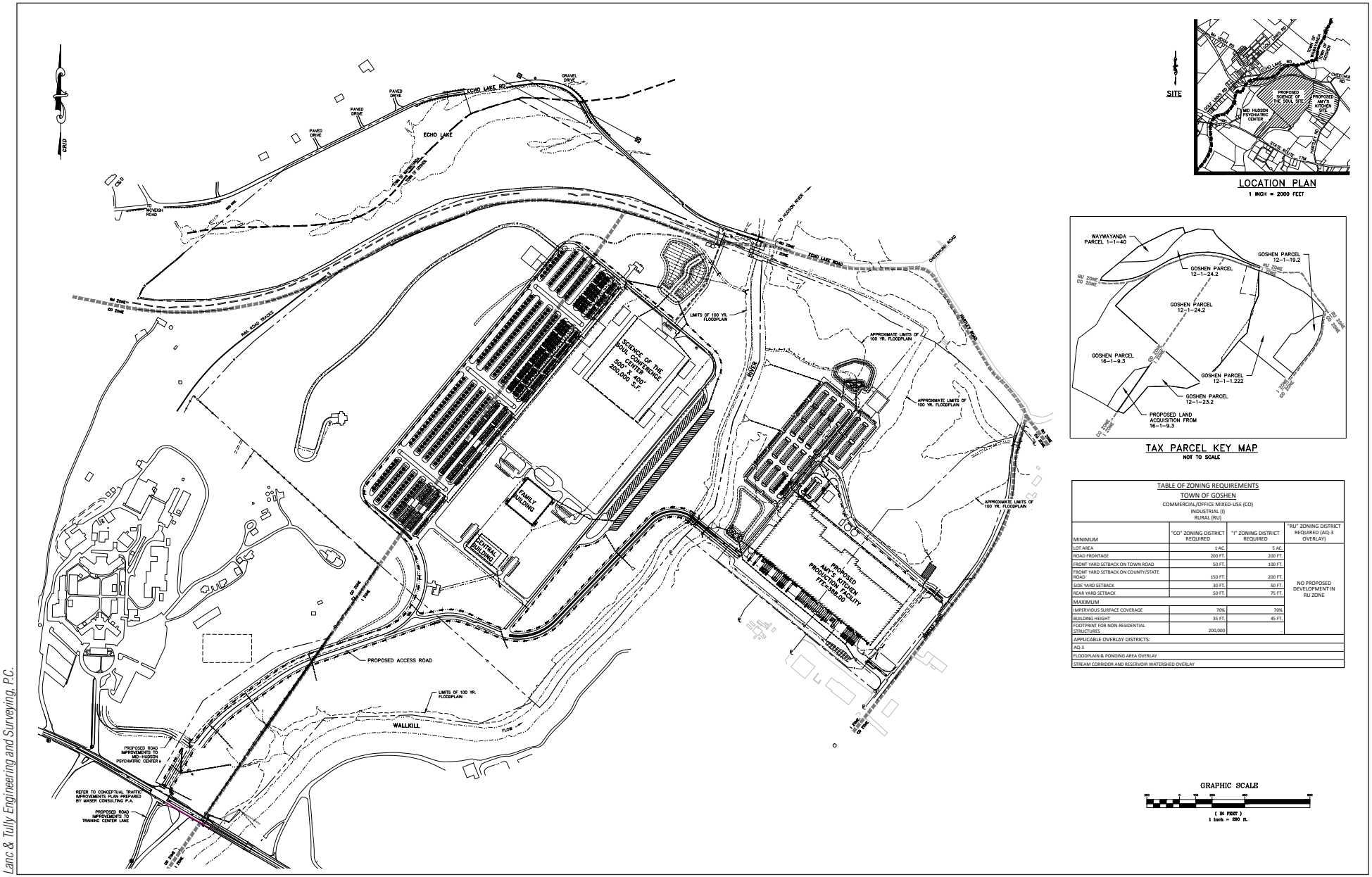
The Proposed Project includes approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces. Approximately 20 to 30 loading bays would be provided. The Amy's Kitchen manufacturing facility would employ approximately 459 full-time people on the Project Site upon completion of Phase 1, and approximately 681 full-time people upon completion of Phase 2 of the Project.

The plant would run three shifts, five days per week, with operations occasionally occurring on weekends as noted below. The shift times would generally start/end during the 5:00 AM to 7:00 AM time period, during the 2:00 PM to 5:00 PM time period, and overnight during the 10:00 PM to 1:00 AM time period. During these periods, the start and end times of the shifts are staggered, with each shift lasting 8.5 hours[7]. Based upon staffing levels at the Medford, Oregon facility, which has a similar production line to what is being considered for the Goshen facility, at full operation there would be approximately 321 Day Shift, 304 Swing Shift, and 56 Graveyard Shift employees. Thus, the maximum number of individuals to be in the manufacturing facility at any one time is projected to be approximately 325 people (assuming a small number of visitors). The on-site clinic building would be staffed by one (1) doctor and one (1) nurse as well as one (1) office assistant. Including patients and staff, and based on the Applicant's experience in its Medford, Oregon plant, the maximum number of individuals to be in the on-site clinic building at any one time is projected to be approximately eight (8) to ten (10) people. Regular plant operations would not take place on weekends except for cleaning or maintenance but occasionally, based on demand, the plant may run production shifts on weekends. General operations at the factory include processing, cooking, assembling, packaging and freezing meals for distribution.

ZONING

The proposed manufacturing facility is considered a "light industry" use in the Town of Goshen Zoning Code Use Table (§97-10) and is permitted in the Industrial (I) Zoning District subject to site plan approval by the Planning Board. The maximum height permitted in the I Zoning

[7] Staggering shifts allows for employees to leave and enter the site at a slower pace and over an extended period of time to minimize traffic impacts. This is successfully accomplished at the other facilities run by Amy's Kitchen.



LOCATION PLAN
1 INCH = 2000 FEET

TAX PARCEL KEY MAP
NOT TO SCALE

TABLE OF ZONING REQUIREMENTS
TOWN OF GOSHEN
COMMERCIAL/OFFICE MIXED-USE (CO)
INDUSTRIAL (I)
RURAL (RU)

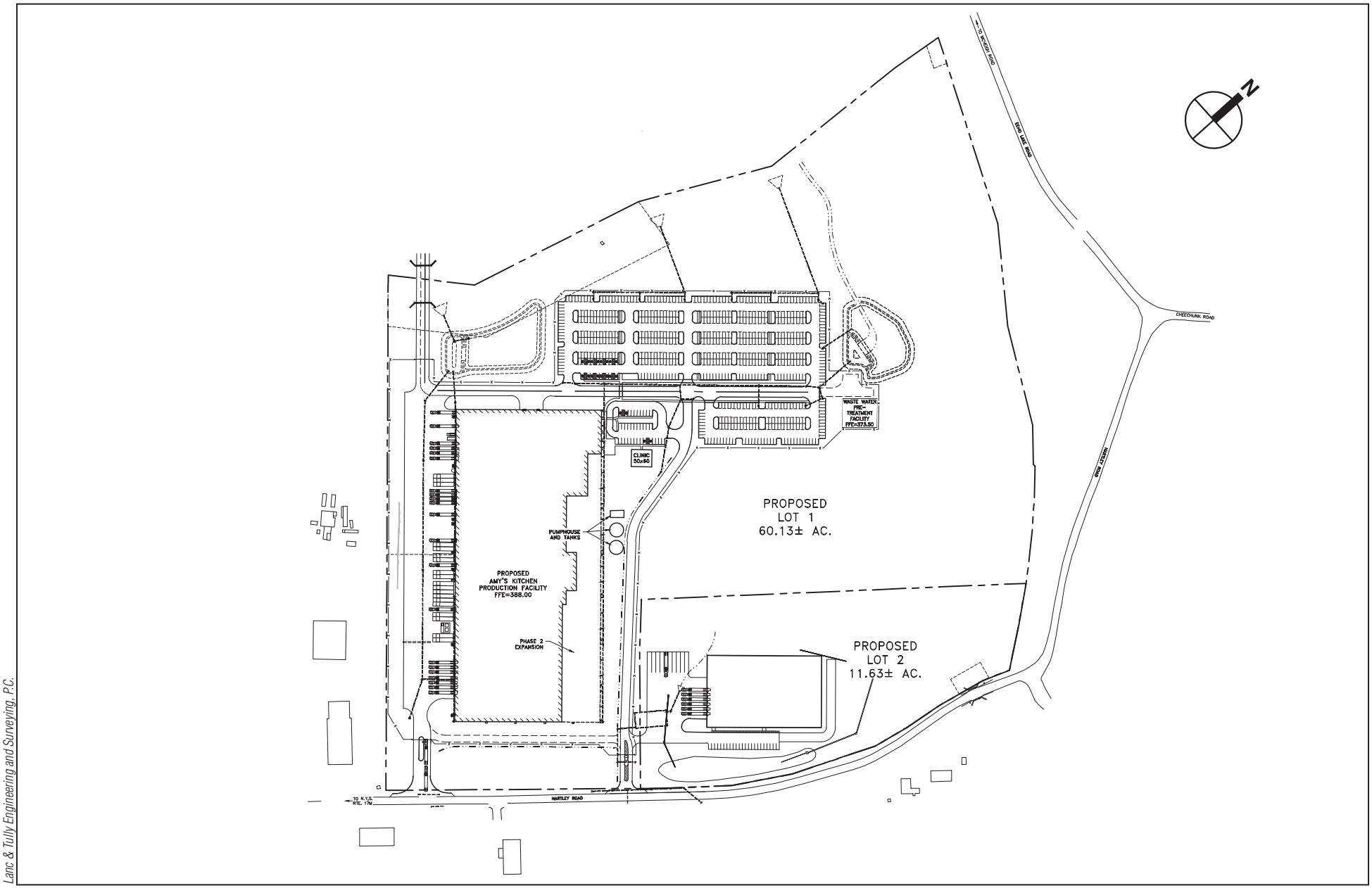
MINIMUM	"CO" ZONING DISTRICT REQUIRED	"I" ZONING DISTRICT REQUIRED	"RU" ZONING DISTRICT REQUIRED (AQ-3 OVERLAY)
LOT AREA	1 AC.	5 AC.	NO PROPOSED DEVELOPMENT IN RU ZONE
ROAD FRONTAGE	200 FT.	200 FT.	
FRONT YARD SETBACK ON TOWN ROAD	50 FT.	100 FT.	
FRONT YARD SETBACK ON COUNTY/STATE ROAD	150 FT.	200 FT.	
SIDE YARD SETBACK	30 FT.	50 FT.	
REAR YARD SETBACK	50 FT.	75 FT.	
MAXIMUM			
IMPERVIOUS SURFACE COVERAGE	70%	70%	
BUILDING HEIGHT	35 FT.	45 FT.	
FOOTPRINT FOR NON-RESIDENTIAL STRUCTURES	200,000		
APPLICABLE OVERLAY DISTRICTS:			
AQ-3			
FLOODPLAIN & PONDING AREA OVERLAY			
STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY			

GRAPHIC SCALE
(IN FEET)
1 inch = 200 ft.

Lanc & Tully Engineering and Surveying, P.C.

Amy's Kitchen Site Plan

Figure II-7



Lanc & Tully Engineering and Surveying, P.C.

Potential Location of Ver Hage Subdivision and Warehouse Use

Figure II-8

District is 45 feet. While the proposed manufacturing facility has not been completely designed at this point in time, Amy's Kitchen would comply with the Zoning height restriction and all other dimensional parameters (such as yards and setback requirements) within the Town's Zoning Code. Area variances from the Zoning Board of Appeals will likely be required to deviate from the strict design standards in §97-14.D. One (1) or more waivers from the Site Plan submission requirements may be required due to unique characteristics of the Project Site or the Proposed Project. Chapter III.K, "Land Use and Zoning," provides a more complete discussion of the compliance of the Proposed Project with the Town of Goshen Zoning Code dimensional parameters.

Amy's Kitchen is also consistent with both the Town and County Comprehensive Plans, in that it would further the goal of economic development, would locate development along a major commercial corridor, and would preserve to the fullest extent practicable environmental resources on the applicable sites including wetlands and mature forest habitat.

OPEN SPACE

Lot 1 of the Ver Hage property would be approximately 60.1 acres, of which, Amy's Kitchen would disturb approximately 20.75 acres for buildings and other permanent impervious surfaces. Thus, approximately 39.4 acres (approximately 66 percent) would remain undisturbed as open space.

INFRASTRUCTURE AND UTILITIES

Gas and Electricity

Orange and Rockland Utilities, Inc. (O&R) and NYSEG provide electricity and gas service to the area. O&R and NYSEG have advised Amy's Kitchen that they have sufficient capacity to serve the Proposed Project.

Existing O&R electrical transmission lines run along Echo Lake Road, Hartley Road, and NYS Route 17M. O&R recently completed construction of a new electrical substation at the intersection of Hartley Road and Cheechunk Road. The O&R project also includes associated improvements to the distribution network along roads in the vicinity of the Project Site. New overhead electric lines would be installed from either Echo Lake Road, Hartley Road, or NYS Route 17M based upon further consultation with O&R.

An existing NYSEG gas main runs along NYS Route 17M, south of the Project Site. Gas supply lines to the Project Site would be installed within the Project Site access road.

Solid Waste

Solid waste management in the area is provided by private haulers. Solid waste would be carted to the Orange County Transfer Station south of NYS Route 17M in the Town of Goshen or to a regional recycling facility, such as Taylor Recycling in Montgomery. Amy's Kitchen would utilize private haulers to cart solid waste and recycling. As further discussed in Chapter III.J, "Utilities and Solid Waste Disposal," where feasible, Amy's Kitchen would work with local agricultural and other operations to compost food waste from the production process. Based on its Medford, Oregon plant operations, Amy's Kitchen estimates that at full-build out, regular weekly operation would generate approximately 444 tons of waste per month. Approximately 39 percent of the monthly waste would either be compostable or recyclable. Recyclable and compostable materials would be kept separate from other wastes inside the Amy's Kitchen

facility and would be collected and disposed of by a private waste management company. No composting would occur on-site.

Potable Water

Based on the Applicant's experience at its plant in Medford, Oregon, Amy's Kitchen estimates a demand of approximately 375,000 gallons per day (gpd) at full buildout. Potable water supply to the Amy's Kitchen manufacturing facility would be provided by a new private utility connection to the City of Middletown water supply. An approximately eight (8)-inch diameter line would be constructed within the Heritage Trail corridor and would connect with existing City of Middletown water supply lines in the vicinity of the City of Middletown wastewater treatment plant (WWTP). The new private water line would be constructed in a new trench within the Heritage Trail Utility Corridor at a depth of approximately 4.5 feet below existing ground surface. The water line would be horizontally separated from the existing 36- to 42-inch City of Middletown wastewater effluent line by ten (10) feet and from the proposed private wastewater conveyance line serving the Proposed Project by three (3) feet horizontally and 18 inches vertically. The new water line and wastewater conveyance line would be constructed in a single trench. It is anticipated that no pumping stations would be required along the Heritage Trail corridor to ensure satisfactory water pressure at the end of the conveyance line. (See Chapter III.E, "Groundwater/Water Supply," for additional details on the water supply system).

A private Transportation Corporation would be created to allow potable water to be supplied to Amy's Kitchen, SoS, and the future warehouse use on Hartley Road.

Wastewater

It is anticipated that Amy's Kitchen would generate approximately 300,000 gallons per day (gpd) of wastewater (including sanitary wastewater and process wastewater) at full buildout. Amy's Kitchen intends to convey wastewater to the City of Middletown wastewater treatment plant through a new private conveyance within the Heritage Trail. An approximately eight (8)-inch diameter wastewater conveyance line would be constructed within the Heritage Trail corridor and would connect to the City of Middletown wastewater treatment plant.

Two (2) below-ground pumping stations would be required to ensure pre-treated wastewater effluent conveyance to the Middletown WWTP. One (1) pumping station would be located within the Echo Lake property and one (1) pumping station would be located within the Ver Hage property. The Echo Lake pumping station would be approximately ten (10) feet in diameter and 14 feet in depth. The Ver Hage pumping station would be approximately 20 feet by 46 feet and 12 feet in depth. Clean-outs and vents would be placed along the length of the wastewater conveyance to allow maintenance access and to allow for equalization of air pressure.

A wastewater pre-treatment plant would be constructed on the Project Site to reduce the high biological oxygen demand (BOD) that is characteristic of Amy's process wastewater. The wastewater pre-treatment plant would be located at the north end of the employee parking lot and would have a footprint of approximately 15,000 square feet.

Stormwater

Stormwater management facilities are proposed for the purpose of water quality treatment and stormwater quantity control. Stormwater treatment would be provided through a combination of filtration and infiltration. Several of the proposed practices provide runoff reduction volume credits (RRV), including porous pavement, bio-retention areas, and dry swales. In order to

minimize site disturbance and mimic existing drainage patterns, existing topography would be held to the greatest extent possible when determining the proposed site grading. The stormwater management system would be designed to comply with the latest design standards of NYSDEC and the NYSDEC General Permit for Stormwater from Construction Activity (GP-0-15-002) or its successor.

SITE ACCESS

A new roadway with a sidewalk and a new vehicular bridge across the Wallkill River would provide direct access for Amy's Kitchen to NYS Route 17M across the Echo Lake property. In addition to employee vehicle trips, Amy's Kitchen anticipates approximately 56 truck trips (entering or exiting) per day. Emergency access would be provided from Hartley Road.

NYS Route 17M and Site Entrance

Site access would be from a new access road intersecting with NYS Route 17M near the existing Training Center Lane. Based on initial consultations with NYSDOT, the Proposed Project would need to upgrade the intersection of NYS Route 17M at the location of the proposed site entrance. To facilitate these improvements, the Proposed Project involves a land transfer of an approximately 7 to 10 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen. The purpose of the land transfer would be to improve access to NYS Route 17M and safety along NYS Route 17M, not only for the Project, but also for the Mid-Hudson Psychiatric Center and the Orange County Transfer Station.

The new access road would serve the Mid-Hudson Psychiatric Center, SoS, and Amy's Kitchen. The new roadway would be located approximately 300 feet west of the existing Training Center Lane, which would be relocated to align opposite the SoS and Amy's Kitchen access to form a full movement signalized intersection. The intersection would be reconstructed to have multi-lane approaches. Two entrance and exit lanes would be provided on the new access road, one entrance and one exit lane would be provided on Training Center Lane, separate left-turn lanes in each direction would be provided along NYS Route 17M, and a separate right-turn lane in the westbound direction would be provided along NYS Route 17M.

Traffic light signalization of this intersection would be required to accommodate anticipated future traffic volumes and improve safety. The proposed improvements will require a Highway Work Permit from the New York State Department of Transportation. Coordination with the Orange County Department of Public Works regarding the relocation of Training Center Lane will also be required.

Based on the queuing analysis results contained in the Traffic Impact Study prepared for the Proposed Project, a 200 foot left-turn lane is proposed to be provided in each direction along NYS Route 17M as well as an approximately 150 foot westbound right-turn lane for vehicles entering the Amy's Kitchen access driveway. In addition, an approximately 150 foot separate right-turn lane will be provided on the realigned Training Center Lane approach.

While it is understood that the Town would continue to own the portion of the new access road to and on the Project Site and located on Town-owned property, Amy's Kitchen and SoS would be responsible for snow-removal and maintenance of the full length of this roadway, as well as the nearby landscaped areas to ensure access and adequate site distances are maintained.

Wallkill River Bridge

A new Warren-truss bridge would be constructed across the Wallkill River to connect the Ver Hage property to the Echo Lake property and the access road to NYS Route 17M. The bridge would be approximately 50 feet wide and accommodate three (3) vehicular lanes and a sidewalk. The third vehicular lane would allow for a left-turn lane at the end of the bridge into the employee parking lot and is considered a necessary safety element. Bridge abutments would be located outside of the boundaries of the Wallkill River and any associated wetlands but within the 100-year floodplain. The bridge would be constructed in accordance with New York State Department of Transportation standards.

INTERNAL SITE CIRCULATION

From the new Wallkill River bridge, trucks would traverse in an easterly direction across the site to access the loading docks. Automobile traffic exiting the bridge would turn left onto a site driveway to access the employee parking area and medical clinic. The driveways on Hartley Road would be limited to emergency access to Amy's Kitchen and the Warehouse Use.

HAZARDOUS MATERIALS AND FIRE SAFETY

Fire alarms, suppression systems, and sprinklers would be provided in the manufacturing facility and on-site clinic. System design would strictly adhere to requirements of the State Fire and Building Codes and any insurance requirements. The Amy's Kitchen facility would have a pressurized water system with approximately 12 hydrants dispersed throughout the site. All Amy's Kitchen buildings would be fully sprinklered. The Wallkill River would not be used for water for firefighting. Two (2) water storage tanks containing approximately 200,000 gallons each and measuring approximately 25 feet in height and approximately 40 feet in diameter are shown to the north of the Amy's facility as part of the Proposed Project. However, depending on the ultimate pressure of the water supply, these storage tanks may not be required.

Hazardous chemicals would be utilized in cooling towers and boilers and in the wastewater pre-treatment plant on the Amy's Kitchen site. Chemicals would also be used for sanitation of food production facilities. A full list of specific chemicals to be used at the Amy's Kitchen facility has been provided to the Fire District and is included in **Appendix III.L**.

Construction of the Amy's Kitchen facility would require relocation or discontinuance of three (3) groundwater monitoring wells associated with the Old Al Turi Landfill. NYSDEC Division of Environmental Remediation has approved a request to discontinue these monitoring wells (see **Appendix III.O**).

CONSTRUCTION PHASING

Full build-out of Amy's Kitchen would occur in two (2) phases. Phase 1 would total 226,000 square feet: 215,000 square feet of production space and 11,000 square feet of office space. An accessory 3,000 square-foot medical clinic would be constructed in a free-standing building on the Project Site. Phase 1 would also include construction of the new access road from NYS Route 17M, the bridge across the Wallkill River, internal driveways and employee parking, water supply lines, wastewater conveyance lines, and the on-site wastewater pre-treatment system. Site landscaping, stormwater management, and lighting would also be completed. It is anticipated that Phase 1 would take approximately 18 months to complete. Amy's Kitchen has scheduled the Goshen facility to be in production in 2018. Grading would not commence until Site Plan approval has been finalized by the Town of Goshen Planning Board. Clearing of trees

would not commence until November 1 to comply with NYSDEC restrictions relating to protected species of bats.

Overall, the sequence of construction activities would begin with site work (clearing and grading) of the Access Road Improvement Area, access road alignment on the Echo Lake property, and the bridge landing area on the Ver Hage property. The access road would be constructed to allow construction access to the Wallkill River bridge location. The gas line from NYS Route 17M to the Echo Lake property and Ver Hage property would also be completed at this time within the access road alignment. Installation of the Wallkill River bridge would follow to allow for construction access to the Ver Hage property from NYS Route 17M. Once the access road and bridge have been substantially completed and would allow for construction truck traffic, Project Site earthwork would commence on both the Echo Lake property and Ver Hage property. Since the grading plan for the Proposed Project contemplates a roughly balanced cut-and-fill across the Project Site, excavated material from the Echo Lake property would be used to fill the Ver Hage property. With the access road and bridge completed in the earliest construction phase, very limited construction traffic would use either Hartley Road or Echo Lake Road.

Simultaneous to commencement of site work on the Project Site, construction would begin on the water supply and wastewater conveyance lines within the Heritage Trail Utility Corridor.

Following rough grading on the Ver Hage property, construction of building foundations and site utilities would commence, followed by construction of site buildings for the Amy's Kitchen manufacturing facility. Electrical connections for both Amy's Kitchen and SoS Conference Center would be pulled from existing transmission lines along Hartley Road and/or Echo Lake Road.

Phase 2 of Amy's Kitchen would total 140,000 square feet: a 134,000 square feet expansion of production space and an additional 6,000 square feet of office space. Phase 2 construction is anticipated to be completed by approximately 2023.

WAREHOUSE USE

An approximately 11.6-acre portion of the Ver Hage property would be subdivided for a future approximately 70,000 square-foot Warehouse Use that would have access from the Amy's Kitchen internal site driveway (emergency access would be provided from Hartley Road) (see **Figure II-8**). The Warehouse Use would likely generate potable water demand of approximately 7,000 gpd (and an equivalent amount of sanitary wastewater). Water and sewer service would be provided through interconnections with the systems serving Amy's Kitchen. Water and wastewater pump stations would likely be required to serve the Warehouse Use and would be located on the warehouse property. Of the approximately 11.6-acre lot, the warehouse, site driveway, and parking area would disturb approximately 5.6 acres leaving approximately 6 acres as open space. Upon an application by others for subdivision and site plan/special permit approval of the Warehouse Use, additional environmental review may be required. It is anticipated that stormwater management facilities for the purpose of water quality treatment and stormwater quantity control would be required as part of Site Plan approval for the Warehouse Use. The stormwater management system would be designed to comply with the latest design standards of NYSDEC and the NYSDEC General Permit for Stormwater from Construction Activity (GP-0-15-002) or its successor.

SCIENCE OF THE SOUL

SoS is an international, non-denominational philosophy based on the teachings universal to all religions. SoS, also known as Radha Soami Satsang Beas, has been in the United States since 1911 and is a registered 501(c)(3) religious non-profit organization.

SoS proposes to construct a Conference Center on the Echo Lake property. The Conference Center would comprise an approximately 200,000 square-foot open-air pavilion with four (4) associated restroom buildings (approximately 5,000 square feet each); one (1) two-story approximately 80,000 square-foot Multi-Purpose/Family Area Building; one (1) two-story approximately 38,000 square-foot Central Building; one (1) one-story approximately 8,000 square-foot Maintenance Barn; two (2) Caretaker Residences, approximately 2,400 square feet each; one (1) approximately 4,500 square-foot Guest House; and associated pervious and impervious parking areas to accommodate approximately 2,043 cars and 130 buses (see **Figure II-9**). **Figure II-10** shows an aerial view of the SoS Conference Center in Petaluma, CA, the main pavilion, four (4) restroom buildings, and two (2) multi-purpose buildings are shown as paved and unpaved parking areas. A temporary tent is also visible adjacent to the main pavilion (no temporary tent is proposed at the SoS Conference Center in Goshen). **Figure II-11** shows the same buildings from ground level. **Figure II-12** and **Figure II-13** show computer-rendered images of seating within an open-air pavilion as well as the exterior of the open-air pavilion showing pedestrian circulation.

The Conference Center would be used to host one (1) annual three (3)-day national conference ("National Conference"), with attendance of up to 12,000 people. The National Conference would typically be held over a three (3) day period: either Friday through Sunday or Saturday through Monday. Each day's program for a National Conference would run from 9:00 AM until 1:00 PM.

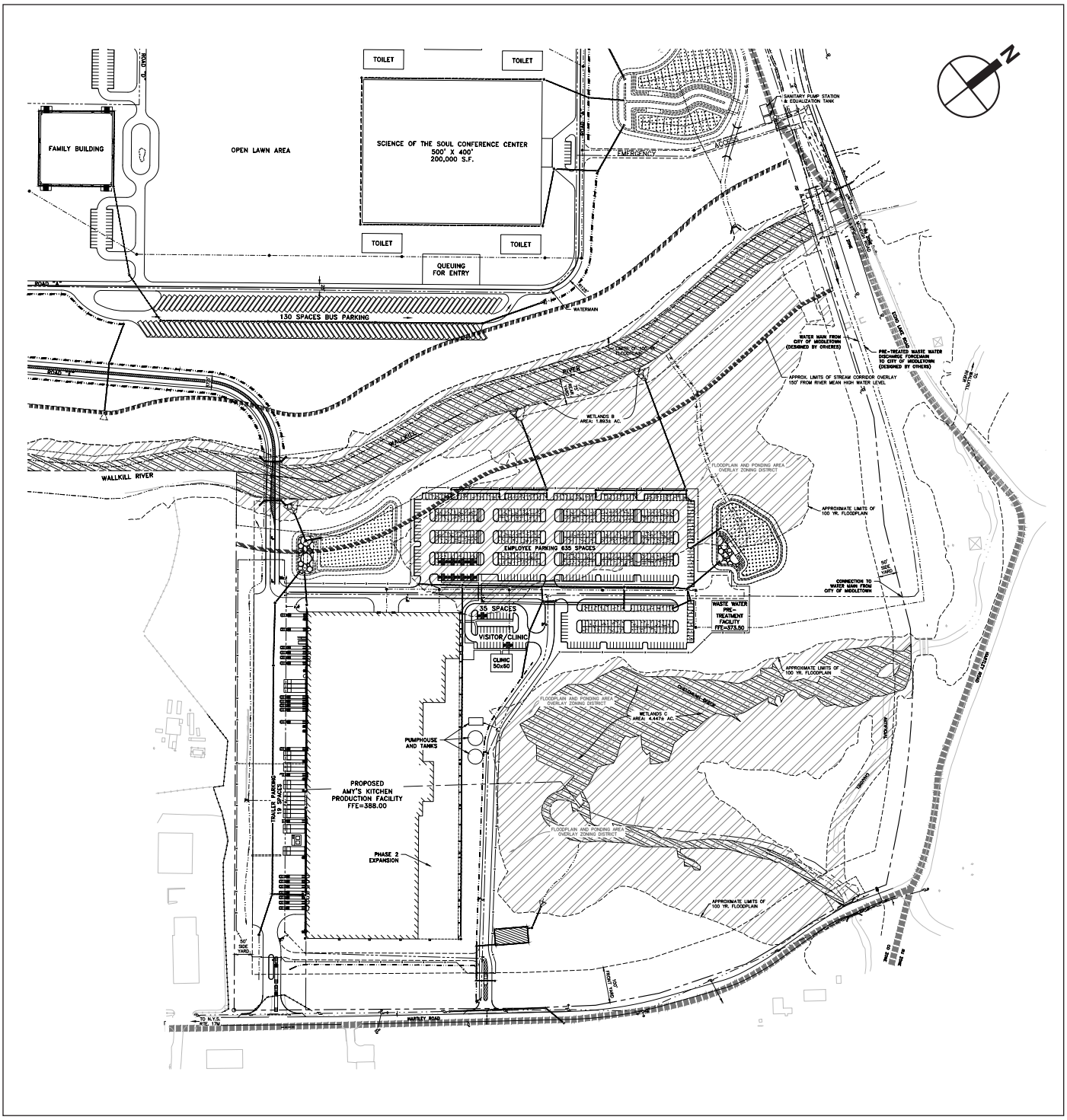
In addition, SoS would hold one (1) regional two (2)-day conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees over a weekend. The Regional Conference would be held in the two-story Multi-Purpose/Family Area Building. The lecture would occur on one floor, and the other floor would be used for the family area. The Regional Conference would start mid-day on a Saturday and conclude on a Sunday afternoon.

Regular weekly meetings on Sunday mornings for local congregants ("Weekly Meeting"), estimated between 200 and 400 people, would be held in the Multi-Purpose Building. The Central Building would be used for administrative purposes, temporary accommodation for volunteers staying for short periods, and small volunteer meetings. During the week, a small number of volunteers (10 to 15 people) would attend to normal administrative and property management tasks.

The Central Building would also contain a commercial kitchen, which would be used to provide meals for volunteers. Guests attending the National and Regional Conferences would not be served from this kitchen. As further described below, they will be offered a bag lunch with wrapped food provided by Amy's Kitchen.

During both the National and Regional Conferences, attendees would engage in off-site activities (tourism, shopping, and entertainment) or on-site volunteer activities (property maintenance and agriculture) after the day's session.

The Conference Center would not be used for weddings or other cultural events, nor would it be rented to the general public for any use.



Amy's Kitchen
Science of the Soul

SoS Site Layout
Figure II-9

Aerial View of the Science of the Soul Campus in Petaluma, CA

Figure II-10

Amy's Kitchen
Science of the Soul

Science of the Soul Buildings in Petaluma, CA
Figure II-11

Computer Rendered View of Open-Air Pavilion

Figure II-12

Computer Rendered View of Open-Air Pavilion

Figure II-13

Access to SoS would be from the new entrance roadway off NYS Route 17M, which would also serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface.

SoS would seek to avoid using temporary structures. Temporary structures would be limited to small canopy/tent structures for serving water, lunch, and tea or as information tables. These would be located in strategic areas so that event staff and guests would have access to water, tea, and information at several locations. Temporary canopy structures may also be used for book sales during the National Conference.

The two (2) caretaker residences would serve as permanent residences for two (2) on-site caretaker households (individuals or couples). The five-bedroom guest-house would be used by SoS traveling speakers attending the National Conference and for National Board members and distinguished guests. The guest house would be vacant at all other times.

TRANSPORTATION

At SoS centers in Fayetteville, NC and Petaluma, CA, a goal has been set of achieving 20 percent of arrivals by bus (shuttle or long-range) and three (3) or more persons per car. SoS has achieved this goal in Fayetteville, and expects to meet or exceed this goal at the Project Site.

SoS anticipates that at National Conference events in Goshen, a large portion of attendees would travel by plane, and would use charter or shuttle buses coordinated by SoS volunteer transportation committees. SoS's goal for these events is to have 40 percent arrive by charter or shuttle buses. SoS would also encourage the use of area mass transit, including trains.

SoS has a national transportation team that organizes long-haul charter buses and local shuttles. SoS would work with local members to determine the location of hotel clusters and transportation hubs to develop a transportation plan. The plan would include the following components:

1. Car Pool—SoS has been very successful in encouraging car-pooling at its other centers. SoS has experienced a very high vehicle occupancy history of 3.78 persons per vehicle in Fayetteville, and 3.33 persons per vehicle in Petaluma.
2. Shuttle Buses—in both Fayetteville and Petaluma, SoS uses shuttle buses to deliver guests from hotel clusters. For the Proposed Project, SoS also expects to arrange shuttles from the closest train stations for attendees arriving from New York City and New Jersey.
3. Charter Buses—SoS anticipates using two types of charters: day charters from regional locations and event long charters from places such as Chicago, Washington DC, and Boston. SoS also anticipates that individual groups arriving by plane would utilize charter buses to transport themselves from the airport to the hotel, and then from the hotel to the Project Site on a daily basis during the event.

Parking

The primary parking for the SoS Conference Center would be on the Echo Lake property. A total of approximately 2,043 car parking spaces are proposed. The main parking area would comprise a combination of approximately 660 paved and 1,280 gravel and/or grass parking spaces (total of approximately 1,940 parking spaces). The paved spaces would include approximately 270 ADA-accessible parking spaces located closest to the entry venues and open-

air pavilion. Four (4) additional parking areas containing approximately 24 parking spaces each (total of 96 parking spaces) would be located adjacent to the Central Building and Family Area building. Another small parking area with approximately 7 spaces would be located in the rear of the open-air pavilion. In addition, 130 bus parking spaces would be provided.

The gravel/grass spaces within the main parking area represent available parking within a grid of planted trees or "orchard," similar to how many county fairs use such spaces for informal or temporary parking. **Figure II-14** presents a photograph of the SoS facility in Petaluma showing the orchard parking as well as an agricultural orchard also at Petaluma.

During the larger National Conference, volunteers would be directed to park off-site at the Strong Farm property and would walk to the Echo Lake property. Shuttle vans would be available to transport volunteers between Strong Farm and the Conference Center as well.

Internal Site Circulation

During large events, SoS would utilize experienced and trained volunteers to manage parking and pedestrian flow. SoS would also seek to retain the services of local law enforcement to facilitate traffic flow off-site. The SoS volunteers that manage its parking teams have on average over 15 years of experience with large events (6,000 to 12,000 attendees). SoS's internal traffic plans include the following elements:

1. Pedestrian and vehicle separation—SoS designs its parking plan such that it fills spaces closest to the venue first and then farther out, row by row. This separates pedestrians from newly parking cars. Buses are parked in a separate area so that those unloading from buses do not have to cross traffic.
2. ADA and elderly accessibility—upon entry, vehicles with elderly and handicapped stickers would be directed to reserved parking areas nearest the venue. Handicapped parking spaces would be ADA compliant.
3. Shuttle—for those parking in the farthest on-site lots, shuttle vans would be used within the property.

STAFFING AND SECURITY

SoS relies on trained member volunteers to staff all events. SoS guidelines require event staffing in an amount equal to five (5) to six (6) percent of attendees. The number of volunteers is included in the total anticipated number of attendees. SoS-trained volunteers have had years of experience in staffing meetings of up to 12,000 attendees. For a typical 10,000-person event in Petaluma, SoS relies upon approximately 550 volunteers. Of those, a certain number are assigned to specific on-site tasks for traffic flow, first-aid, and security. Typical staffing of these specialty tasks for a 10,000-person event would be approximately 45 volunteers for parking; 145 volunteers for crowd flow; 50 volunteers for security and crowd care; 22 volunteers for first-aid and special needs; and 9 volunteers who coordinate overall safety of site operations and other volunteers. The other volunteers are engaged in managing overnight lodging, transportation, stage and sound management, book sales, water and food distribution, and clean up.

SoS specifically places volunteers based on their experience. For example, the first-aid room is staffed by doctors and nurses who are members of the organization. First-aid team members are also located throughout the meeting area and grounds. Similarly, the security team is staffed with members experienced with policing or security. Members without such background undergo training. SoS first-aid teams may be staffed at levels of five (5) to twenty-two (22)

SoS Petaluma Conference Center orchard parking with cars **1**

Agricultural Orchard at SoS Petaluma Conference Center **2**

depending on the size of the event. Security may be staffed at levels of 20 to 50 depending on the size of the event. As SoS meetings are spiritual in nature and there is no alcohol allowed on the property, SoS has had a very small number of situations that have required security over the past 25 years.

Coordination with local law enforcement and EMT is an important component of SoS planning. While the events are staffed by volunteers, if allowed under local regulations, procedures, or practices, SoS seeks to have an estimated four (4) to five (5) local law enforcement officers on-site. SoS would pay for off-duty officers or reimburse the Town, Sheriff, or State Police for any overtime compensation. Details of such staffing will be addressed in meetings among the relevant parties as the Security, Emergency Management, and Traffic Control Plans are further developed under any required State or County Department of Health Public Function permit or otherwise. SoS will comply with the requirements of any such permit.

SoS also coordinates on traffic issues, and meets with town, state, and county law enforcement agencies to go over plans and concerns. As such, SoS has enjoyed a very good working relationship with local law enforcement with regard to its National and Regional conferences.

OVERNIGHT LODGING

Off-Site

During the National Conference, SoS anticipates that approximately 60 percent of attendees would stay in area hotels, and that the remainder would commute. Based on SoS's experience in North Carolina and California, less than 100 attendees would use camping or RV facilities at local campgrounds. No camping would be allowed on-site. A small number of volunteers would stay on-site in the Central Building to attend to preparations and security (see below).

Members of SoS are highly experienced in working with hotels to establish room blocks and, when needed, contracts. During SoS events in Fayetteville, NC and Petaluma, CA, SoS preferred hotels experience 100 percent occupancy. SoS staff seeks to organize clusters of hotels so that SoS can provide shuttle buses to the Project Site. Some hotels in these clusters offer banquet facilities to provide fixed dinners to SoS guests. In addition, SoS's transportation team coordinates flights, airport transportation, and hotel stays for large groups.

SoS would also coordinate with local colleges and universities to use student housing, if available. SoS currently has such an arrangement at its Petaluma Center with Sonoma State University, and approximately 500 persons avail themselves of it. Based on SoS's experience, it anticipates that the largest meetings would have a substantial effect on area hotel occupancy, with 3,000 to 5,000 rooms being required for two (2) to five (5) nights.

During the Regional Conference, SoS anticipates that 30 to 50 percent of attendees would use hotels. On an on-going basis, SoS would have event planning meetings, construction meetings, and other activities that would provide demand for local hotel rooms.

Temporary On-Site Accommodation for Volunteers

The Central Building would include temporary accommodation for a maximum of sixty (60) volunteers. These temporary accommodations would be provided in one (1) open sleeping room with a common toilet/shower room for each gender. Approximately 2,500 square feet of the building would be allocated for these temporary accommodation facilities. All temporary volunteer accommodation would be provided in these open common rooms. No individual sleeping rooms or dormitories for volunteers are proposed.

Volunteer service is a core part of the SoS religious practice. Members of diverse ethnic backgrounds, economic status, cultures, religions, and ages work together towards a common purpose. This volunteer service builds a sense of community, humility, and humanity. Working together to build and operate the Conference Center creates an atmosphere of fellowship and good-will that builds the congregation and strengthens faith. It also provides support for the daily meditation that members practice once they return home.

SoS advocates a solitary practice that is done in the quiet of one's own home. Members commit themselves to a way of life that supports spiritual growth while carrying out their responsibilities to family, friends, and society.

Many members find coming to the Conference Center repeatedly over the years to do volunteer work as a way of deepening their spiritual life and balancing the stresses of day-to-day living. As they contribute to the building and maintenance of the Conference Center, the Conference Center becomes a touch-point of their spiritual life, as it is the place of peak experience and shared purpose with a community of fellowship. This strengthens their faith and resolve to pursue a religious life upon their return home.

These temporary accommodations make this aspect of the religious practice available to volunteers living far away. Many of the volunteers are skilled in trades or other areas of expertise. They give up their income and provide their own transportation to the Center. By having temporary accommodations they are not burdened with the additional expense of long-term hotel lodging. Furthermore, by staying on-site, these volunteers can work more efficiently and in an atmosphere conducive to the religious practice. Without this temporary accommodation, it would become burdensome for many members to volunteer their skill and time.

During the construction period, as many as 20 or 30 volunteers may be accommodated on-site. The temporary accommodation would reach its maximum use during a National Conference, when a maximum of 60 total volunteers involved in event preparation would stay. They would generally arrive three (3) or four (4) days before the National Conference, and leave one (1) to two (2) days after.

During normal operations, the temporary volunteer accommodations would largely be empty. There may be a few people staying for special projects, such as landscaping, renovations, or repairs. Unlike the two (2) caretaker residences, which are permanent homes for the caretakers and their families, this volunteer accommodation would strictly be temporary—no individual would stay permanently. The typical length of stay would be one (1) to two (2) weeks, with a one (1) month maximum. Volunteers would take meals served in the Central Building food service area. Except during preparation for the National Conference, lights out is strictly observed at 9:00 PM.

NOISE

During the National and Regional Conferences, all sound amplification would take place within the 200,000 square-foot steel-frame open-air pavilion. The amplified sound would consist of an approximately two-hour lecture preceded by approximately 30 minutes of spiritual singing. At Weekly Meetings, the amplified sound would be contained in the multi-purpose building. Amplified speakers would not be used throughout the property to make announcements.

SITE LIGHTING

SoS does not contemplate large nighttime events. The only night-time use would be by volunteers in preparation for the National and Regional events, night watch, and periodic evening "Study Sessions" where religious texts are studied in a small group. These Study Sessions are held once or twice during the week, starting at approximately 7:00 PM and ending at approximately 8:00 PM, with attendance of 20 to 25 people who live locally and would leave the property promptly after the session ends. Other than preparation for the National and Regional events, all activities would cease and the Conference Center would close at 9:00 PM.

As such, site lighting would be minimal, and would generally be used to light roads, small parking areas, and pathways. All lighting would be dark-sky compliant. In addition, the proposed lighting would be zoned, so that only those fixtures needed to support site activities would be turned on. In particular, the lighting for the orchard parking area at the SoS Conference Center would only be used during the National and Regional Events.

FOOD SERVICE

For all events, meals would be provided for volunteer staff on-site. Volunteer meals consist of a simple breakfast, lunch and dinner with morning and afternoon tea. Food is prepared in a kitchen in the Central Building using locally purchased ingredients or food grown on-site or at the Strong Farm. The kitchen and on-site food preparation would comply with all applicable state and local health code requirements.

At the National and Regional Conferences, a bag lunch is offered to attendees at cost. The bag lunch typically consists of an Amy's Kitchen wrap, an apple, water, and cereal bar. The wraps would be prepared at the Amy's Kitchen manufacturing facility and delivered in a sealed plastic wrapper. Other ingredients would be purchased locally.

It is anticipated that a large percentage of guests would purchase lunch off-site, and that all attendees, other than volunteers, would obtain breakfast and dinner off-site.

In the months prior to a major event, SoS works with local restaurants to determine which facilities can provide vegetarian meals. SoS has found that both national chains and locally owned restaurants will place vegetarian items on the menu during SoS events. Where a large number of guests are staying at one hotel or hotel cluster, SoS has entered into agreements with the hotels to provide dinner in their banquet rooms.

Prior to the event, SoS provides a list of restaurants serving vegetarian meals to its attendees. During the National Conference, SoS anticipates that 6,000 dinners and breakfasts and approximately 3,000 lunches would be purchased at local hotels and restaurants.

During the Regional Conference and Weekly Meetings, SoS anticipates that 35 to 50 percent of the attendees' meals would be purchased at local hotels and restaurants.

ZONING

The proposed SoS Conference Center would be considered a "religious institution" under the Town of Goshen Zoning Code and would require a Special Permit from the Planning Board. A religious institution is defined under §97-84 of the Code as, "a church, synagogue, or other place of religious worship, as well as a monastery or other place of religious retreat." Additionally, and as noted above, SoS has a 501(c)(3) designation from the Internal Revenue Service as a religious not-for-profit entity. A determination by the Town's Building Inspector, dated October

20, 2015, confirms that "this religious use is permissible on the proposed site with all of its affiliated and accessory uses" (see **Appendix III.K**).

The proposed Conference Center would comply with all applicable setback, dimensional, and overlay district regulations. Area variances from the Zoning Board of Appeals will likely be required to allow the larger buildings to deviate from the strict design standards in §97-14.D. One (1) or more waivers from the Site Plan submission requirements may be required due to unique characteristics of the Project Site or the Proposed Project.

SoS is consistent with both the Town and County Comprehensive Plans. As further discussed in Chapter III.K, "Land Use and Zoning," and in accordance with the Town and County Comprehensive Plans, the SoS Conference Center would result in substantial off-site spending at local restaurants, hotels, and other tourist destinations which would further support the local economy in a manner consistent with the goal of supporting the existing Village center.

OPEN SPACE

The Echo Lake property comprises 194.6 acres of land within the Town of Goshen (see Table II-1 above), of which, SoS would disturb approximately 33.8 acres for buildings and other permanent impervious surfaces. Approximately 160.8 acres (83 percent) of the Echo Lake property within the Town of Goshen would remain undisturbed as open space.

INFRASTRUCTURE AND UTILITIES

As discussed above, O&R provides electric service and NYSEG provides gas service to the area. O&R and NYSEG have indicated that they have sufficient capacity to serve the SoS Conference Center.

SoS would utilize private haulers to cart solid waste from the Project Site to the Orange County Transfer Station.

The annual three (3)-day SoS National Conference of up to 12,000 participants would generate potable water demand and sanitary wastewater of approximately 36,000 gallons per day (gpd). The annual two (2)-day Regional Conference of up to 2,000 participants would generate demand of approximately 6,000 gpd.

In addition to the two (2) caretaker residences, typical weekly activities include the following:

- Weekday – five (5) to ten (10) volunteers working in the office or property maintenance;
- Weekend – 200 to 400 individuals attending the Sunday meeting or doing volunteer work in the office or property maintenance on Saturday or Sunday.

On a normal daily basis, the two (2) caretaker residences and five (5) to ten (10) on-site volunteers would generate potable water demand and sanitary wastewater of approximately 500 gpd. The typical weekend day would generate approximately 1,000 gpd.

Potable water supply would be obtained from the City of Middletown through a new private utility connection to be located in the Heritage Trail. Wastewater treatment for SoS would be provided at the City of Middletown wastewater treatment plant through a new private utility connection to be located in the Heritage Trail. A Transportation Corporation would be established to allow for separate users of a common water and wastewater conveyance.

Stormwater management facilities are proposed for the purpose of water quality treatment and stormwater quantity control. Stormwater treatment would be provided through a combination of

filtration and infiltration. Several of the proposed practices provide runoff reduction volume credits (RRV), including porous pavement, bio-retention areas, and dry swales. In order to minimize site disturbance and mimic existing drainage patterns, existing topography would be held to the greatest extent possible when determining the proposed site grading. The stormwater management system would be designed to comply with the latest design standards of NYSDEC and the NYSDEC General Permit for Stormwater from Construction Activity (GP-0-15-002) or its successor.

FIRE SAFETY

All buildings within the SoS Conference Center would utilize fire alarms, suppression systems, and sprinklers, as required by State Fire Code. (It is not certain whether the open-air pavilion would require sprinklers). The need for water storage for fire-fighting purposes will be determined based on the pressure supplied by the new private water supply line. Approximately 16 fire hydrants will be provided as needed to provide adequate fire safety throughout the site. System design would strictly adhere to requirements of the State Fire and Building Codes and any insurance requirements. The Wallkill River would not be used for water for firefighting. Maximum capacity of any building within the Conference Center would not exceed State Fire and Building Code occupancy limits. During the National Conference, the main 200,000 square-foot open-air shed would typically accommodate approximately 10,000 people. The 38,000 square-foot Central Building would typically accommodate several hundred volunteers. The 80,000 square-foot Family Area building would typically accommodate 2,000 to 3,000 people.

CONSTRUCTION PHASING

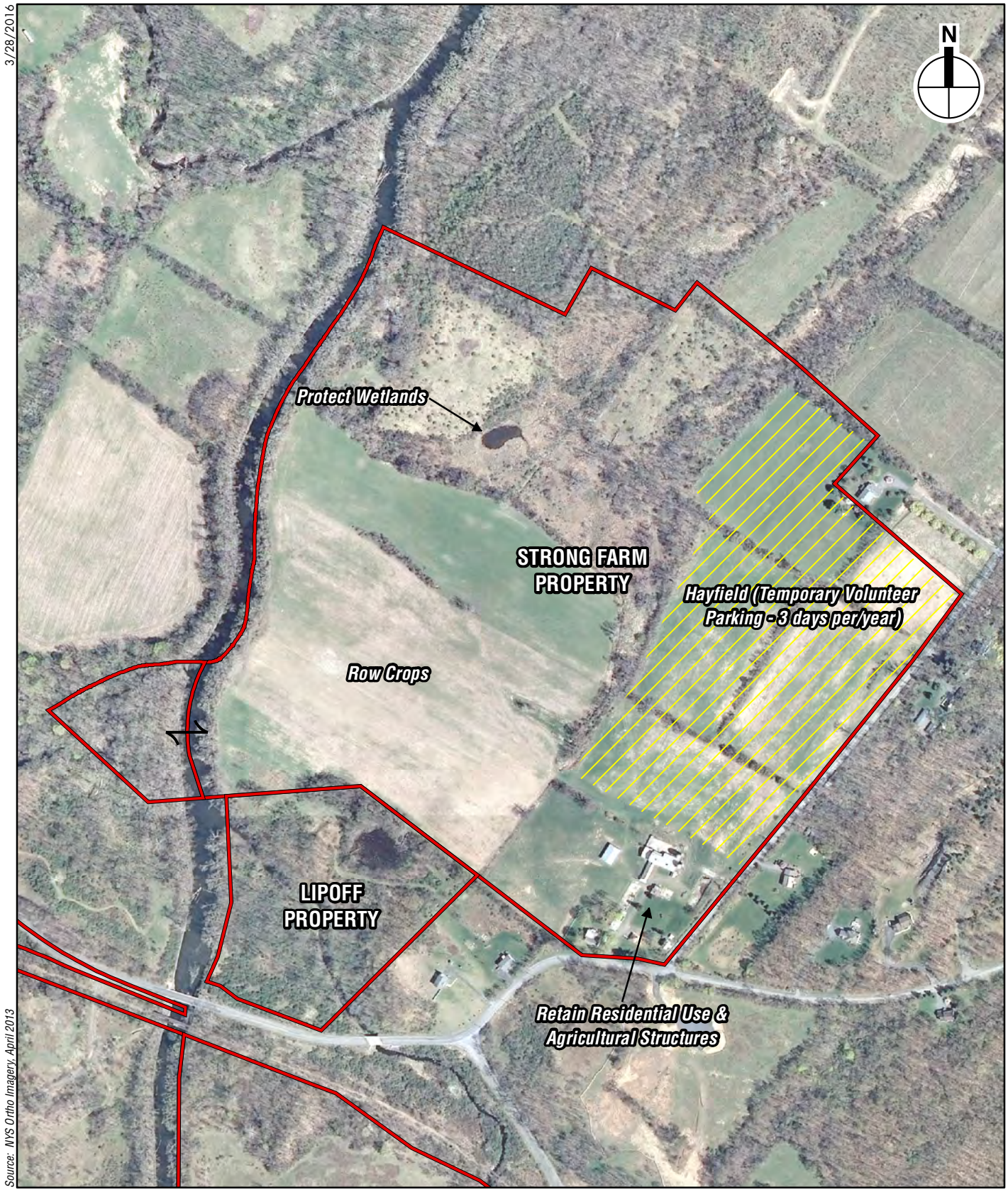
The SoS Conference Center is contemplated to be constructed in a single 18- to 24-month phase, which is currently anticipated to commence after construction of the access road, Wallkill River bridge, and Phase 1 construction of Amy's Kitchen is initiated. Construction activities on the SoS Conference Center buildings will begin after the initial clearing and grading of the Echo Lake property is substantially completed.

STRONG FARM

SoS has purchased the Strong Farm on Cheechunk Road and Owens Road. SoS intends to continue to enhance the agricultural use of the Strong Farm property and would restore the main residence and some of the agricultural structures on the property. The two (2) other residential structures would be rented to tenants or used for volunteer housing during the National and Regional Conferences. Continuation of the former dairy farm use is not proposed. The Strong Farm property would also be used for volunteer parking for the SoS Conference Center during the National Conference. Volunteer parking would be provided in hayfields or orchards, and not in areas used for crop farming (see **Figure II-15**).

D. PROJECT PURPOSE AND NEED AND BENEFITS

The purpose and objective of the Proposed Project is to construct a manufacturing plant to serve Amy's Kitchen, and to construct a Conference Center for Science of the Soul, a not-for-profit religious institution. Overall, the Proposed Project would benefit the State, Town and Village of Goshen, City of Middletown, the Goshen Central School District, the Goshen Fire District, Orange County, and the Hudson Valley region through direct, indirect, and induced economic activities and through tax and similar revenues.



Amy's Kitchen
Science of the Soul

Strong Farm
Figure II-15

AMY'S KITCHEN

The Proposed Project would more efficiently serve Amy's Kitchen's growing customer base in the northeast and other regions of the country. Currently all manufacturing occurs in the western United States and food products must be shipped to this and other areas.

In addition to construction jobs, Amy's Kitchen would employ approximately 681 people on the Project Site once complete. Amy's Kitchen would provide long term benefits to the local and regional agricultural economy as it seeks to source local ingredients. It would also generate tax and other revenue, benefiting the State, Town, County, and other local taxing and assessment jurisdictions. As further discussed in Chapter III.M, "Fiscal Impacts," it is anticipated that Amy's Kitchen would generate substantial economic benefits from construction and annual operations. Annual (post-construction) direct, indirect, and induced economic activity would be approximately $195.27 million within New York State, the majority of which (approximately $190.67 million) would occur within Orange County.

SCIENCE OF THE SOUL

SoS is proposing the Conference Center to better serve its members in the northeast and other parts of the country. SoS National and Regional Conferences are anticipated to result in significant off-site visitor spending at local area hotels and restaurants. Since the SoS events are typically held from 9:00 AM to 1:00 PM, it is anticipated that guests will spend their afternoons and evenings patronizing local shops, restaurants, and other tourist activities, generating substantial additional economic benefit to the region. As further discussed in Chapter III.M, "Fiscal Impacts," it is anticipated that annual operations of the Conference Center would generate approximately $4.7 million in direct, indirect, and induced economic activity within New York State, the majority of which (approximately $4.2 million) would occur within Orange County.

E. PERMITS AND APPROVALS

The following permits and authorizations have been identified as potentially required. Additional permits and/or agencies may be identified at a later date.

INVOLVED AGENCIES

- NYS Department of Environmental Conservation
  - State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater from Construction Activities (GP-0-15-002)
  - Freshwater Wetlands permit (6 NYCRR Part 662) for wetland buffer disturbance
  - Extension of private wastewater conveyance line
  - Incidental taking (ECL Article 11) of an endangered species
- NYS Department of Transportation
  - Highway Work Permit for roadway improvements on NYS Route 17M
  - Land transfer from NYS OMH/OGS for roadway improvements
- NYS Office of General Services
  - Land transfer to Town of Goshen
  - Land transfer to NYSDOT
- NYS Office of Mental Health
  - Land transfer to Town of Goshen

  - Land transfer to NYSDOT
- New York State Department of Health
  - Public Function permit (Title 10, Chapter I, NYS Sanitary Code, Part 18)
- Empire State Development
  - Approval of financial incentives
- Orange County Legislature
  - Approval of wastewater conveyance and water supply within the Heritage Trail right-of-way
  - Approval of potential modified access (for SoS National Conference) across the Heritage Trail for the Echo Lake site
- Orange County Department of Public Works
  - Re-alignment of County road
  - Highway work permit for re-alignment of Training Center Lane
  - Modifications to Heritage Trail for water and wastewater lines
- Orange County Department of Health
  - Approval of extension of private water main to connect to City of Middletown
- Orange County Industrial Development Agency
  - Resolution to approve payment in lieu of tax (PILOT) program
  - Contribution of $500,000 towards Route 17M improvements
- Town of Goshen Town Board
  - Land transfer from NYS OMH/OGS
  - Granting of access easement and acceptance of roadway dedication on land transferred to the Town from the State and maintenance agreement with Amy's Kitchen for road
  - Consent to the formation of water and wastewater Transportation Corporations
- Town of Goshen Planning Board
  - Site Plan approval for Amy's Kitchen and Science of the Soul
  - Subdivision for future Warehouse Use
  - Special Permit approval for a religious use in the CO District
  - Special Permit approval for a warehouse use in the Industrial District
- Town of Goshen Zoning Board of Appeals
  - Area Variance(s)
- Town of Goshen Highway Department
  - Highway Work Permit for driveway improvements on Echo Lake Road and/or Hartley Road
- Town of Goshen Building Department
  - Floodplain Development Permit
- City of Middletown
  - Board of Estimate and/or City Council agreement for water and wastewater service to an out-of-district user

  - City Council Adoption of Local Law to amend out-of-district water and wastewater requirements
- Town of Wawayanda
  - Street-opening permit for utility crossing(s)

INTERESTED AGENCIES

The following agencies have no permitting authority but will be considered Interested under SEQR and will receive copies of all SEQR documents.

- United States Army Corps of Engineers
- United State Fish and Wildlife Service
- NYS Department of Parks, Recreation and Historic Preservation
- NYS Department of Agriculture & Markets
- NYS Police (for large SoS events)
- NYS Dormitory Authority
- Orange County Department of Planning — G.M.L. § 239-l, m, and n
- Orange County Department of Parks, Recreation and Conservation (Heritage Trail)
- Orange County Sheriff Department (for large SoS events)
- Town of Goshen Environmental Review Board
- Town of Goshen Fire District
- Town of Goshen Police Department
- Goshen Volunteer Ambulance Corp
- Town of Wallkill
- Village of Goshen ✷

A. INTRODUCTION

This chapter assesses the potential for the Proposed Project to affect geology and soils on and within the vicinity of the Project Site. This chapter will:

- Characterize existing geology and soil resources within the Project Site;
- Assess geology and soil resources in the future without the Proposed Project; and
- Assess the potential for the Proposed Project to affect geology and soil resources in the future with the Proposed Project.

Geology considers both bedrock and unconsolidated surficial deposits. Soils typically consider the uppermost layer of the ground, which has been exposed to climatic and erosive forces.

B. EXISTING CONDITIONS

PROJECT SITE

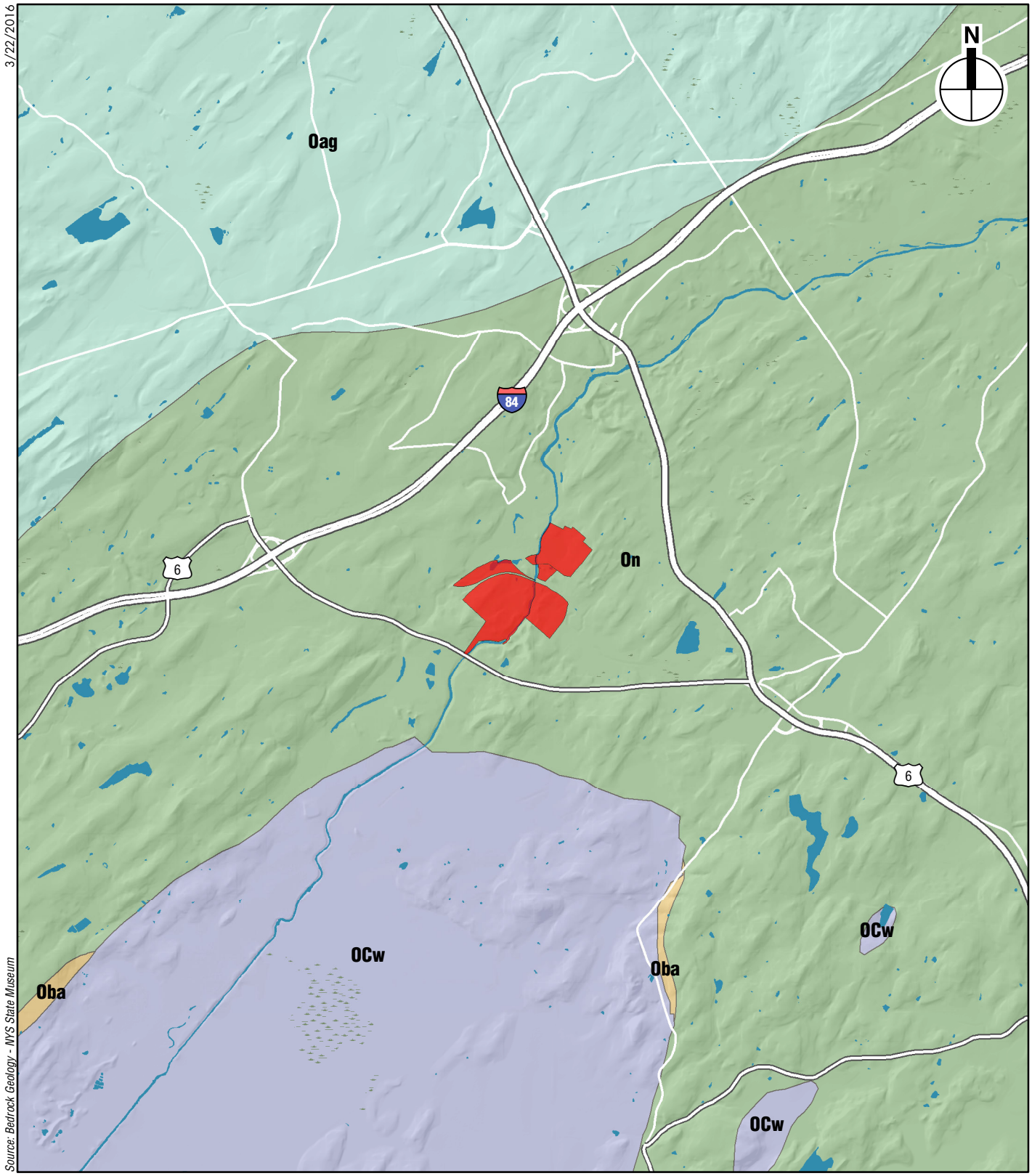
GEOLOGY

According to the Orange County Soil Survey, dated 1981 and prepared by the United States Department of Agriculture (USDA) Soil Conservation Service (now known as the Natural Resources Conservation Service [NRCS]), the central portion of Orange County, including the Project Site and Additional Areas, is located within the Hudson Mohawk Lowland Physiographic Province.

The central portion of Orange County is underlain by the Trenton Group of shales. The Project Site and Additional Areas are underlain by the "Normanskill Formation – shale, argillite, siltstone" bedrock unit of Middle Ordovician Age (see **Figure III.A-1)**. Orange County was affected by glaciation. Advance and retreat of the ice modified topography and soils. Researchers currently estimate that this ice age started some 300,000 years ago and that the last retreat of the ice occurred about 12,000 years ago. Ice advance tended to smooth out the ground surface and often deepened valleys that were oriented in the direction of the advance. Glacial deposits comprising till, kames, and fine silts and clays, are the dominant overburden material (material covering bedrock) in the county, and were deposited as glacial ice melted.[1]

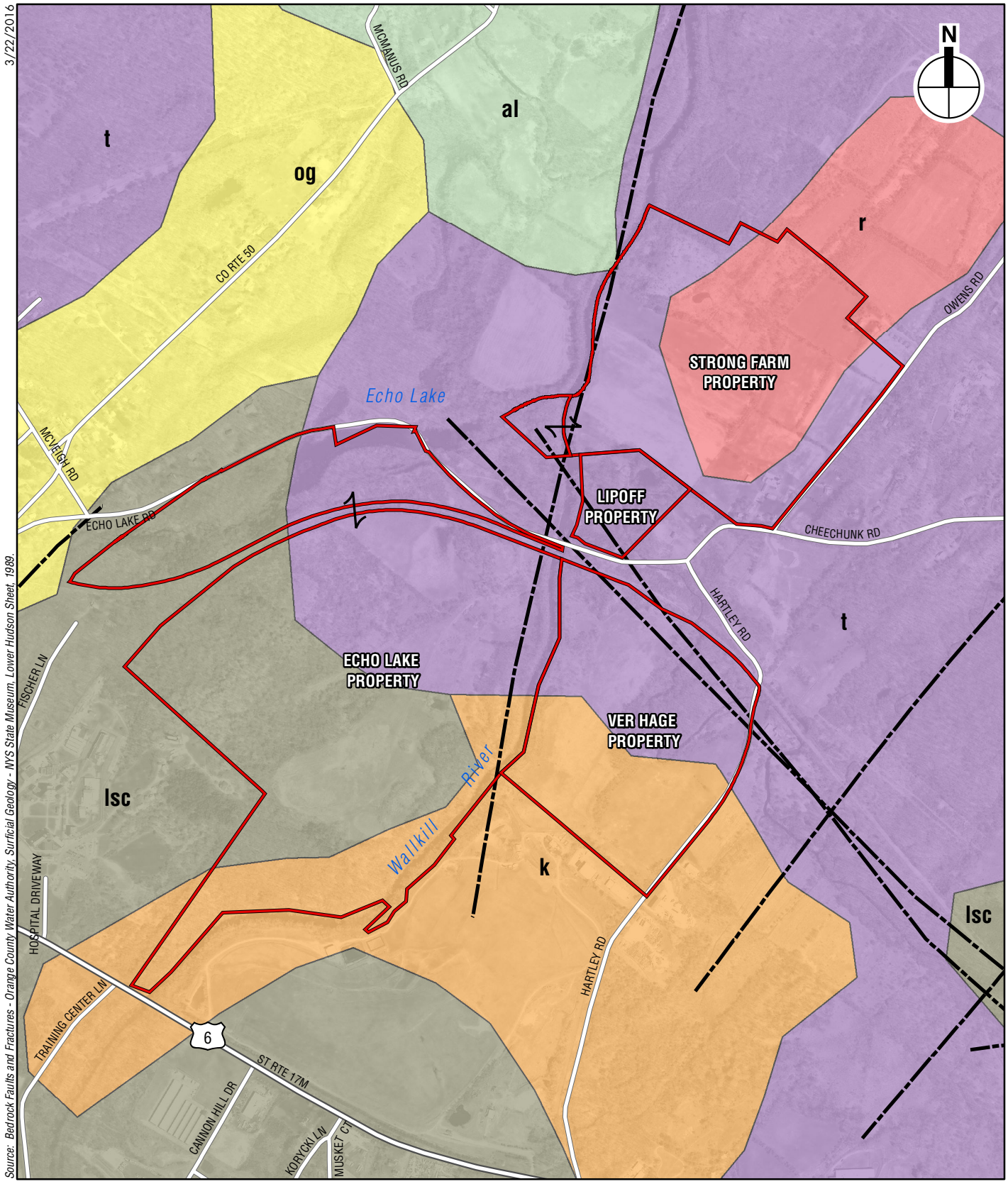
The surficial geology under the Project Site and Additional Areas consists of unconsolidated glacial deposits including kame deposits, lacustrine silt and clay, and till, and bedrock (see **Figure III.A-2**). The kame deposits occur in the southern part of the Ver Hage property as well as the eastern-most border of the Echo Lake property along the Wallkill River, down to its

[1] http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/new_york/NY071/0/orange.pdf



Amy's Kitchen
Science of the Soul

Bedrock Geology
Figure III.A-1



Amy's Kitchen
Science of the Soul

Surficial Geology and Bedrock Fracture Traces

Figure III.A-2

southern-most rectangular section along Route 6. The lacustrine silt and clay are found by the western and central parts of the Echo Lake property. Till occurs at the northern ends of both the Ver Hage and Echo Lake properties, all of the Lipoff property, and the eastern- and western-most portions of the Strong Farm property. Surficial geology of north and central sections of the Strong Farm property comprises bedrock.

Kame deposits are formed by glacial meltwater flowing between a glacier and adjacent valley, and are usually found along opposite sides of a glacial valley. It is a coarse to fine gravel or sand that occurs in thicknesses of 10 to 30 meters. Lacustrine silt and clay is generally calcareous with low permeability and deposited in proglacial lakes. It occurs in thickness up to 50 meters and has potential land instability. Characteristics of till include varying texture of clay, silt-clay, or boulder-clay, high impermeability, tendency to be sandy in areas underlain by gneiss or sandstone, varying depths, and potential instability on steep slopes.

There are three bedrock fracture traces that fall within the Project Site. One intersects the western boundary of the Strong Farm property by Wallkill River and the eastern section of the Echo Lake property, west of the Wallkill River. Another intersects the southwest portion of the Lipoff property and extends to intersect the northwest portion of the Ver Hage property. The third bedrock fracture runs just south of the previously mentioned fracture, and only intersects the Ver Hage property just south of the previous fracture. Fracture traces are linear features observed on aerial photographs often underlain by vertical zones of closely spaced fractures in the bedrock that may provide greater groundwater yields if targeted by groundwater wells.

SOILS

The USDA Natural Resources Conservation Service (NRCS) identifies major classifications of soils that have similar characteristics (such as texture and drainage) into a series. Within each series, soils differ in slope and other characteristics that affect their use. On the basis of these differences, soil series are further divided into phases (soil map units). Different soil phases exhibit variable water storage, erosion potential, and other characteristics that are important from a development perspective. The soil mapping units designated as prime farmland, and soils that are poorly drained and identified as hydric by the NRCS are identified below.

The Project Site contains 25 different soil mapping units (see **Figure III.A-3**)—five (5) of which together account for more than 70 percent of the Project Site's acreage. **Table III.A-1** contains a complete list of the soil mapping units located within the Project Site and indicates their primary characteristics. The five (5) dominant soils, in decreasing order of coverage (percent of total area) within the Project Site, include Mardin gravelly silt loams (34.19 percent), Riverhead sandy loams (14 percent), Hoosic gravelly sandy loams (9.25 percent), Erie gravelly silt loams (8.62 percent), and Middlebury silt loam (7.25 percent). These five (5) most predominant soil mapping units on the Project Site are described below.

Amy's Kitchen
Science of the Soul

Soils
Figure III.A-3

Table III.A-1
Project Site Soils Mapped by NRCS

Symbol	Soil Series Name	Percent of Project Site	Depth to Bedrock	Drainage Characteristics
Ab	Alden silt loam	0.51	> 60 in	Drainage class: very poorly drained. Designated Hydric Soil (>50% map unit). Depth to water table: at or near the surface for prolonged periods. Permeability is moderately slow in the subsoil and substratum. Runoff is very slow. Soil erodibility "K" factor: 0.37-0.43. Hydrologic group D and capability subclass is IVw. Taxonomy: Fine-loamy, mixed, nonacid, mesic Mollic Haplaquepts.
AC	Alden extremely stony soils	0.55	> 60 in	Drainage class: very poorly drained. Designated Hydric Soil (>50% map unit). Depth to water table: at or near the surface for prolonged period. Permeability is moderately slow in the subsoil and subtratum. Runoff is very slow. Soil erodibility "K" factor: 0.37-0.43. Hydrologic group D and capability subclass is VIIs. Taxonomy: fine-loamy, mixed, nonacid, mesic Mollic Haplaquepts.
AdA/AdB	Allard silt loam, 0 to 3 percent slopes, 3 to 8 percent slopes	3.82	> 60 in	Drainage class: well drained. Depth to water table: 6 feet or more throughout the year. Permeability is moderate in the surface layer, moderately low in the subsoil, and rapid to very rapid in the substratum. Erosion is a concern in areas left bare of a plant cover for long periods. Surface runoff is slow (AdA) and slow to medium (AdB). Soil erodibility "K" factor: 0.17-0.49. Hydrologic group D and capability subclass is I. Coarse-silty over sandy or sandy-skeletal, mixed mesic Typic Dystrochrepts.
BnC	Bath-Nassau channery silt loams, 8 to 15 percent slopes	0.91	48-60 in	Drainage class: well drained. Depth to water table: Bath soil - perched seasonal high water table moves laterally across the top of the fragipan for very brief periods early in spring. Nassau soil – no seasonal high water table above the bedrock. Permeability in the Bath soil is moderate in the subsoil above the fragipan and slow or very slow in the pan. Permeability in the Nassau soil is moderate. Runoff is medium in both soils. Soil erosability "K" factor: 0.24-0.28. Hydrologic group C and capability subclass is IVe. Bath - Coarse-loamy, mixed, mesic Typic Fragiochrepts. Nassau – Loamy-skeletal, mixed, mesic Lithic Dystrochrepts.
Cd	Carlisle Muck	0.06	> 60 in	Drainage class: very poorly drained. Designated Hydric Soil (>50% map unit). Depth to water table: near the surface in spring but is lowered quickly through the drainage network once upland runoff subsides. Permeability is moderately slow to moderately rapid, depending on the degree of compaction and subsidence if the organic material. Runoff is very slow. Soil erodability "K" factor: n/a. Hydrologic group A/D and capability subclass is IIIw. Euic, mesic Typic Medisaprists.
CnB	Chenango gravelly silt loam, 3 to 8 percent slopes	0.67	> 60 in	Drainage class: well drained to somewhat excessively drained. Depth to water table: Greater than 6 feet. Permeability is moderate to moderately rapid in surface layer, sublayer, and subsoil. Erosion is a slight hazard, particularly on long slopes. Surface runoff is slow to medium. Soil erodability "K" factor: 0.17-0.24. Hydrologic group A and capability subclass is IIs. Loamy-skeletal, mixed, mesic Typic Dystrochrepts.

Table III.A-1 (cont'd)
Project Site Soils Mapped by NRCS

Symbol	Soil Series Name	Percent of Project Site	Depth to Bedrock	Drainage Characteristics
ErA/ErB	Erie gravelly silt loam, 0 to 3 percent slopes, 3 to 8 percent slopes	8.62	> 60 in	Drainage class: somewhat poorly drained (ErA) and poorly drained (ErB). Depth to water table: perched above the fragipan in spring and other wet periods. Permeability is moderate in the surface layer and upper part of the subsoil and is slow or very slow in the fragipan and substratym (ErA). Permeability is moderate in the surface layer and upper part of the subsoil and is low or very slow in the pan and substratum (ErB). Runoff is slow (ErA) or medium (ErB). Soil erodability "K" factor: 0.24-0.28. Hydrologic group C and capability subclass is IIIw. Coarse-loamy, mixed, mesic Typic Dystrochrepts.
Fd	Fredon loam	0.03	> 60 in	Drainage class: somewhat poorly drained and poorly drained. Designated Hydric Soil (>50% map unit). Depth to water table: rises into the upper part of the subsoil in spring and other excessively wet periods. Permeability is moderate in the surface layer, moderately slow or slow in the subsoil, and moderately rapid or rapid in the substratum. Runoff is slow. Soil erodability "K" factor: 0.24-0.17. Hydrologic group C and capability subclass is IIIw. Coarse-loamy over sandy or sandy-skeletal, mixed, nonacid, mesic Aeric Haplaquets.
HoC/HoD	Hoosic gravelly sandy loam, 8 to 15 percent and 15 to 25 percent slopes	9.25	> 60 in	Drainage Class: somewhat excessive. Depth to water table: more than 6 feet. Permeability is moderately rapid in the surface layer, moderately rapid or rapid in the subsoil, and very rapid in the substratum. Runoff is medium in HoC and rapid in HoD. Soil erodability "K" factor: 0.17. Hydrologic group A and capability subclass is IVs (HoC) and IVe (HoD). Loamy, mixed, mesic Lithic Dystrochrepts.
Ma	Madalin silt loam	1.45	> 60 in	Drainage class: poorly drained. Designated Hydric Soil (>50% map unit). Depth to water table: perched above the fragipan early in spring and in other excessively wet periods. Permeability is moderate in the surface layer and upper part of the subsoil and is slow or very slow in the fragipan and substratum. Runoff is slow to medium. Soil erodibility "K" factor: 0.28-0.49. Hydrologic group D and capability subclass is IVw. Fine, illitic, mesic, Mollic Ochraqualfs.
MdB/MdC/MdD	Mardin gravelly silt loam, 3 to 8 percent slopes, 8 to 15 percent slopes, 15 to 25 percent slopes	34.19	> 60 in	Drainage Class: moderately well drained. Depth to water table: perched above the fragipan in spring and other wet periods. Permeability is moderate in the surface layer and upper part of the subsoil and is slow or very slow in the fragipan and substratum. Surface runoff is slow to medium (MdB), medium (MdC) or rapid (MdD). Soil erodability "K" factor: 0.24-0.28. Hydrologic group C and capability subclass is IIe, IIIe, and IVe. Coarse-loamy, mixed, mesic Typic Fragiochrepts.
My	Middlebury silt loam	7.25	> 60 in	Drainage Class: moderately well drained to somewhat poorly drained. Depth to water table: rises into the subsoil early in spring. Permeability is moderate in the surface layer and subsoil and is rapid or very rapid in the substratum. Runoff is slow. Soil erodability "K" factor: 0.17-0.49. Hydrologic group B and capability subclass is IIw. Coarse-loamy, mixed, mesic Typic Fragiochrepts.

Table III.A-1 (cont'd)
Project Site Soils Mapped by NRCS

Symbol	Soil Series Name	Percent of Project Site	Depth to Bedrock	Drainage Characteristics
OVE	Otisville and Hoosic soils, steep	0.38	> 60 in	Drainage Class: excessively drained. Depth to water table: below 5 feet. Permeability is rapid in the sibsoil and rapid or very rapid in the substratum. Runoff is rapid. Soil erodability "K" factor: 0.17. Hydrologic group A and capability subclass is VIIs. Sandy-skeletal, mixed, mesic Typic Udorthents.
Pg	Pits, gravel	1.68	n/a	n/a
Ra	Raynham silt loam	1.02	> 60 in	Drainage Class: somewhat poorly drained. Designated Hydric Soil (>50% map unit). Depth to water table: upper part of subsoil in spring. Permeability is moderate in the subsoil, and slow in the substratum. Runoff is slow. Soil erodibility "K" factor: 0.49-0.64. Hydrologic group C and capability subclass is IIIw. Coarse-silty, mixed, mesic, nonacid, mesic Aeric Haplaquepts.
RbA	Rhinbeck silt loam, 0 to 3 percent slopes	0.26	> 60 in	Drainage Class: somewhat poorly drained. Depth to water table: 6 to 18 inches in spring and other wet periods. It is perched above slowly permeable layers in the middle and lower parts of the subsoil. Runoff is slow. Soil erodability "K" factor: 0.28-0.49. Hydrologic group D and capability subclass is IIIw. Fine, illitic, mesic Aeric Ochraqualfs.
RhB/RhC/RhD	Riverhead sandy loam, 3 to 8 percent slopes, 8 to 15 percent slopes, 15 to 25 percent slopes	14.00	> 60 in	Drainage Class: well drained. Depth to water table: more than 6 feet. Permeability is moderately rapid in the surface layer and subsoil and very rapid in the substratum. Runoff is slow to medium (RhB), medium (RhC), or rapid (RhD). Soil erodability "K" factor: 0.17-0.28. Hydrologic group B and capability subclass is IIs, IIIe, IVe. Coarsed-loamy, miced, medic Typic Dystrochrepts.
RKC	Rock outcrop-Arnot complex, sloping	1.93	10-20 in	Drainage Class: excessively grained to moderately well drained. Depth to water table: where the bedrock under the Arnot soil is poorly fractures and jointed, the water table is perched above the rock for brief periods in spring. Permeability is moderate. Runoff is medium to rapid. Soil erodibility "K" factor: 0.17-0.24. Hydrologic group C and D and capability subclass is VIIs.
Su	Suncook sandy loam	4.05	> 60 in	Drainage Class: excessively drained. Depth to water table: greater than 3 feet. Permeability is rapid or very rapid. Runoff is slow. Commonly subject to flooding for brief periods in spring and other periods of extremely heavy runoff. Soil erodability "K" factor n/a. Hydrologic group A and capability subclass is IIIs. Mixed, mesic Typic Udipsamments.
Tg	Tioga silt loam	3.06	> 60 in	Drainage Class: well drained. Depth to water table: rises to the upper part of the substratum in spring. Permeability is moderate or moderately rapid in the surface layer and subsoil I and is moderate to rapid in the substratum. Runoff is slow. Soil erodibility "K" factor: 0.37-0.49. Hydrologic group B and capability subclass is I. Coarse-loamy, mixed, mesic Dystric Fluventic Eutrochrepts.
UF	Udifluvents-Fluvaquents complex, frequently flooded	0.76	n/a	Drainage Class: well drained to very poorly drained. Depth to water table, permeability, and run off are highly variable within short distances. Soil erodibility "K" factor: n/a. Hydrologic group n/a and capability subclass is Vw.

Table III.A-1 (cont'd)
Project Site Soils Mapped by NRCS

Symbol	Soil Series Name	Percent of Project Site	Depth to Bedrock	Drainage Characteristics
UnB/UnC	Unadilla silt loam, 0 to 8 percent slopes, 8 to 15 percent slopes	3.05	> 60 in	Drainage Class: well drained. Depth to water table: more than 6 feet. Permeability is moderate in the surface layer and subsoil and moderately rapid to rapid in the substratum. Runoff is slow to medium (UnB) or medium to rapid (UnC). Soil erodability "K" factor: 0.17-0.49. Hydrologic group B and capability subclass is IIe, IIIe. Coarse-silty, mixed, mesic Typic Dystrochrepts.
W	Water	2.40	n/a	n/a
	TOTAL	**100%**		

Notes: K Factor indicates the erosion potential of each soil type. This indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.05 to 0.69. The higher the value, the more susceptible the soil is to erosion.

Land capability class indicates the suitability of a soil for field crops, with Class I having few limitations, descending to Class VIII which has severe limitations that nearly preclude their use for commercial crop production.

Sources: NRCS Soil Survey of Orange County, New York.

Md: Mardin gravelly silt loam

Three phases of the Mardin gravelly silt loam series are represented within the Project Site: 3 to 8 percent slopes (MdB), 8 to 15 percent slopes (MdC), and 15 to 25 percent slopes (MdD).

This deep, moderately well drained, sloping soil formed in glacial till deposits derived from sandstone, shale, and slate. The surface layer of MdB, MdC, and MdD are dark brown gravelly silt loam 8 inches, 7 inches, and 6 inches thick, respectively. The upper 7 inches of MdB and 6 inches of MdC and MdD of the subsoil is yellowish brown gravelly silt loam. The next 5 inches of MdB and MdC, and the next 6 inches of MdD is a leached layer of mottled pale brown gravelly silt loam. Extending from 20 to 60 inches of MdB, 18 to 60 inches of MdC, and 16 to 60 inches of MdD is a firm, olive brown channery silt loam fragipan.

There are moderate limitations with MdB on small commercial buildings due to slope, frost action, and wetness. There are severe limitations with MdC and MdD on small commercial buildings due to slope. Wetness/frost action limitations can typically be overcome with building foundation design, proper site preparation, drainage and erosion control measures. Slope limitations can typically be overcome with slope stabilization measures, such as terracing, retaining walls, properly graded slopes, or avoiding areas of steep slopes if site plans allow.

This soil mapping unit is found in the western section of the Echo Lake property (81.57 acres), eastern and northern part of the Strong Farm property (48.13 acres), and southeastern tip of the Ver Hage property (0.75 acres).

Rh: Riverhead sandy loam

Three phases of the Riverhead sandy loam series are represented within the Project Site: 3 to 8 percent slopes (RhB), 8 to 15 percent slopes (RhC), and 15 to 25 percent slopes (RhD).

This deep, well drained, gently sloping soil formed in glacial outwash deposits that are dominantly sand and gravel. The surface layer of RhB, RhC, and RhD are brown sandy loam 9

inches, 8 inches, and 7 inches thick, respectively. The subsoil is 21 inches thick for RhB and 19 inches thick for RhC and RhD. The upper part is yellowish brown fine sandy loam, the middle part is olive brown find sandy loam, and the lower part is yellowish brown loamy sand. The substratum to a depth of 60 inches is loose, olive stratified sand and gravel.

There are moderate limitations with RhB on small commercial buildings due to slope and frost action. There are severe limitations with RhC and RhD on small commercial buildings due to slope. Such limitations can typically be overcome with slope stabilization measures, such as terracing, retaining walls, or properly graded slopes.

This soil mapping unit is found on the eastern border of Echo Lake property (44.61 acres), northern tip of the Lipoff property (0.1 acres), southern section of the Strong Farm property (4.33 acres), and southern section of the Ver Hage property (4.37 acres).

Ho: Hoosic gravelly sandy loam

Two phases of the Hoosic gravelly sandy loam series are represented within the Project Site: 8 to 15 percent slopes (HoC) and 15 to 25 percent slopes (HoD).

This soil is deep, somewhat excessively drained, sloping formed in glacial outwash deposits that have a high content of sand and gravel. The surface layer is dark grayish brown gravelly sandy lam, 5 inches thick. The subsoil is 20 inches thick. The upper 4 inches is yellowish brown gravelly sandy loam, the next 10 inches is yellowish brown gravelly sandy loam, and the lower 6 inches is yellowish brown very gravelly loamy sand. The substratum to a depth of 60 inches or more is loose, light olive brown very gravelly sand.

There is a severe limitation when on small commercial buildings due to slope. This limitation can be overcome with proper slope stabilization/engineering measures.

This soil mapping unit is mostly in the Ver Hage property, with a small amount occurring on the Echo Lake and Strong Farm properties. The Ver Hage property includes 25.89 of the 35.41 total acres of this unit.

Er: Erie gravelly silt loam

Two phases of the Erie gravelly sandy loam series are represented within the Project Site: 0 to 3 percent slopes (ErA) and 3 to 8 percent slopes (ErB).

This deep, somewhat poorly drained, nearly level soil has a fragipan. It formed in glacial till deposits derived from shale, slate, and sandstone. The surface layer is dark brown gravelly silt loam 10 inches thick for ErA and 9 inches thick for ErB. The subsoil is 46 inches thick for ErA and 45 inches thick for ErB. It is mottles grayish brown channery silt loam in the upper 8 inches and firm, mottles olive brown channery silt loam fragipan in the lower part. The substratum from 56 to 70 inches for ErA and 54 to 70 for ErB is mottles olive brown channery silt loam.

There is a severe limitation when on small commercial buildings due to wetness and frost action. Wetness/frost action limitations can typically be overcome with building foundation design, proper site preparation, drainage and erosion control measures.

This soil mapping unit is found in all four properties that comprise the Project Site: the Echo Lake property (20.17 acre), the Lipoff property (3.09 acres), the Strong Farm property (3.06 acres), and the Ver Hage property (4 acres).

My: Middlebury silt loam

This deep, moderately well drained to somewhat poorly drained, nearly level soil formed in recent silty alluvial deposits. The surface layer is very dark grayish brown silt loam 11 inches thick. The subsoil is 31 inches thick. The upper 6 inches is dark yellowish brown very fine sandy loam. The substratum from 42 to 60 inches is dark grayish brown, stratified sand and gravel.

There is a severe limitation when on small commercial buildings due to wetness and frost action. Wetness/frost action limitations can typically be overcome with building foundation design, proper site preparation, drainage and erosion control measures.

This soil mapping unit is found in the northeastern most portion of the Echo Lake property (9.12 acres), the western side of the Strong Farm property (8.43 acres), and the northeastern end of the Ver Hage property (10.1 acres).

AGRICULTURAL SOILS

Prime Farmland Soils

"Prime Farmland" designated soils contain the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and are also available for these uses at time of NRCS soil-mapping (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). Prime Farmland soils are of the highest quality and can economically produce sustained high yields of crops when treated and managed according to acceptable farming methods.

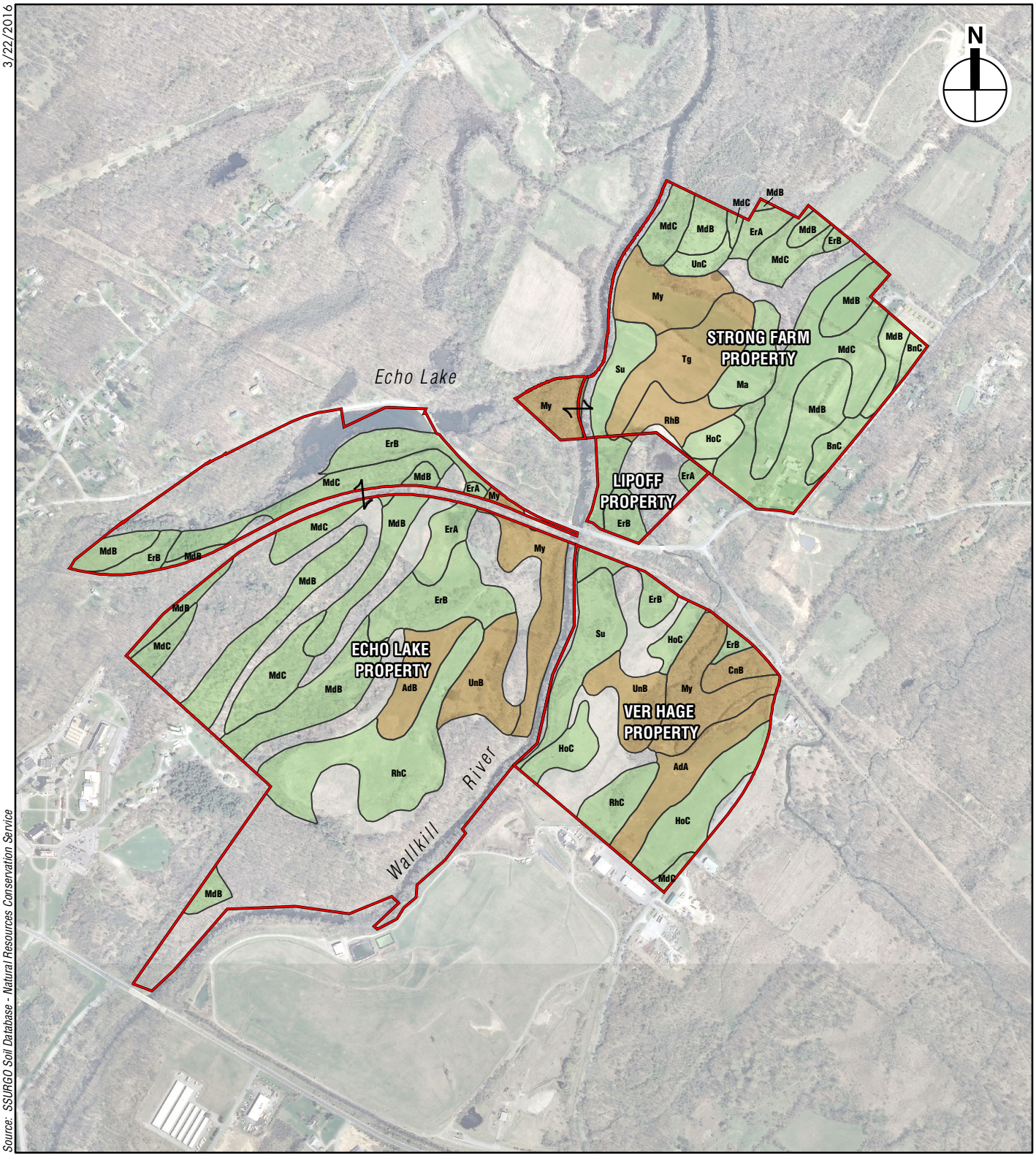
Specific technical criteria were established by Congress to identify prime farmland soils. In general, the criteria reflects adequate natural moisture content; specific soil temperature range; pH between 4.5 and 8.4 in the rooting zone; low susceptibility to flooding; low risk to wind and water erosion; minimum permeability rates; and low rock fragment content.

On the Project Site, the following soil mapping units are designated as Prime Farmland soils (see **Figure III.A-4**):

- AdA/AdB: Allard silt loam
- CnB: Chenango gravelly silt loam
- My: Middlebury silt loam
- RhB: Riverhead sandy loam
- Tg: Tioga silt loam
- UnB: Unadilla silt loam

These Prime Farmland soils make up approximately 20 percent of the overall Project Site. Within each property, Prime Farmland soils comprise approximately 11 percent of the Echo Lake property, one (1) percent of the Lipoff property, 28 percent of the Strong Farm property, and 37 percent of the Ver Hage property.

In addition, the following soil mapping units are designated as Prime Farmland *if drained*: Fd: Fredon loam, Ra: Raynham silt loam, and RbA: Rhinebeck silt loam. If undeveloped or left un-farmed these soil types generally contain wetlands subject to federal/state/local wetland protection regulations.



Project Site

Prime Farmland Soils

AdA/AdB: *Allard silt loam*
CnB: *Chenango gravelly silt loam*
My: *Middlebury silt loam*
RhB: *Riverhead sandy loam*
Tg: *Tioga silt loam*
UnB: *Unadilla silt loam*

Farmland Soils of Statewide Importance

BnC: *Bath-Nassau shaly silt loams*
ErA/ErB: *Erie gravelly silt loam*
HoC: *Hoosic gravelly sandy loam*
Ma: *Madalin silt loam*
MdB/MdC: *Mardin gravelly silt loam*
RhC: *Riverhead sandy loam*
Su: *Suncook sandy loam*
UnC: *Unadilla silt loam*

0 1,000 FEET

Amy's Kitchen
Science of the Soul

Agricultural Soils on the Project Site

Figure III.A-4

As indicated in **Table III.A-1**, the Prime Farmland soils on the Project Site have "land capability class" values of I and II, which are the highest quality classifications indicating that have few limitations for use in growing field crops.

Farmland of Statewide Importance

A second category of somewhat less productive farmland soils are soil mapping units designated as "Farmland of Statewide Importance" (see **Figure III.A-4**) by New York State. Generally, such soils are those that are nearly prime farmland soil and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable.

On the Project Site, the following soil mapping units are designated as Farmland of Statewide Importance soils:

- BnC: Bath-Nassau shaly silt loams
- ErA/ErB: Erie gravelly silt loam
- HoC: Hoosic gravelly sandy loam
- Ma: Madalin silt loam
- MdB/MdC: Mardin gravelly silt loam
- RhC: Riverhead sandy loam
- Su: Suncook sandy loam
- UnC: Unadilla silt loam

These Farmland of Statewide Importance soils make up approximately 50 percent of the overall Project Site. Within each property, Prime Farmland soils comprise approximately 44 percent of the Echo Lake property, 48 percent of the Lipoff property, 64 percent of the Strong Farm property, and 44 percent of the Ver Hage property.

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

As with most current and former railroad transportation corridors, portions of the Heritage Trail follow lowlands and drainageways in the landscape. Such features frequently have poorly drained soils, as discussed below. However, the Heritage Trail is elevated on fill or supported by bridges. Therefore, the Trail's substrate (footprint) within which the utility pipeline would be installed consists of fill material, and does not reflect the character of soils mapped beneath it by the NRCS.

The most common NRCS-mapped soil units underlying the Heritage Trail and their drainage classes are as follows:

- Ab – Alden silt loam (*very poorly drained*)
- ErB – Erie gravelly silt loam (*somewhat poorly drained*)
- ESB – Erie extremely stony soils, gently sloping (*somewhat poorly drained*)
- Ma – Madalin silt loam (*poorly drained*)
- Mdb,MdC,MdD – Mardin gravelly silt loam (*moderately well drained*)

- RbA – Rhinebeck silt loam (*somewhat poorly drained*)
- Wd – Wayland complex, non-calcereous substratum (*poorly drained*)

The parent material in which most of these soils formed is listed as "loamy till." The Madalin and Rhinebeck soils are derived from "clayey and silty glaciolacustrine deposits." The Wayland soils are derived from "alluvium derived from interbedded sedimentary rock." All of these soils formed in glacial deposits left on the landscape after the Pleistocene geologic epoch ended roughly 12,000 years ago.

Rhinebeck silt loam (RbA) is the only mapping unit listed as "Prime Farmland" soil if drained.

ACCESS ROAD IMPROVEMENT AREA

Two (2) NRCS-mapped soil units are found within the Access Road Improvement Area:

- Mdb – Mardin gravelly silt loam (moderately well drained)
- Ra – Raynham silt loam (somewhat poorly drained)

While the Mardin soils are moderately well drained (with some potential for perched groundwater), the Raynham soils do exhibit hydric qualities that may indicate presence of wetland conditions.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the Future without the Proposed Project, the Project Site is expected to remain in its current condition with no disturbance to geology and soils. Orange County intends to construct recreational trail improvements along the Heritage Trail Utility Corridor starting in 2016 with completion in approximately 2018. It is anticipated that minor disturbance to soils would occur as a result of construction of the recreational trail; however, standard construction-period erosion and sediment control measures would serve to protect surface soils from erosion. As such, there are no changes to geology and soils anticipated in the Future Without the Proposed Project.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

GEOLOGY

PROJECT SITE

Ver Hage Property

A geotechnical study (see **Appendix III.A**) was performed on the Ver Hage property to characterize the subsurface soil, rock and groundwater conditions of the site. The exploration program consisted of 10 test borings which ranged from approximately 30 feet to 52 feet in depth. Groundwater was encountered ranging between 14.5 feet below existing ground level to 19.5 feet below existing ground level. Bedrock was not encountered at maximum depths explored on the Ver Hage property. Therefore, blasting is not anticipated to be required during construction.

Given the depth to bedrock at the Ver Hage property, the Amy's Kitchen manufacturing facility would not affect geologic resources, including the mapped fracture traces.

Geologic conditions (including depth to bedrock and groundwater) on the site of the future Warehouse Use are anticipated to be similar to those revealed by the geotechnical investigation for the Amy's Kitchen facility on the Ver Hage property (Boring B-2 is located in an area proposed for construction of the Warehouse Use).

Echo Lake Property

A geotechnical study (see **Appendix III.A**) was performed on the Echo Lake property to understand the subsurface soil, rock and groundwater conditions of the site, and to estimate the geotechnical engineering properties of this material. The exploration program consisted of nine (9) test borings and 14 test pit explorations which ranged from 14 to 52 feet in depth. Groundwater was encountered ranging from one (1) feet below existing ground level to 43 feet below existing ground level. Some shallow groundwater was assumed to be perched on top of less pervious soil or rock layers. Bedrock was not encountered at maximum depths explored anywhere on the Echo Lake property, therefore blasting is not anticipated to be required during construction. Relatively large boulders were encountered that will likely require hydraulic jackhammers for excavation. The removal of these boulders would not result in significant adverse impacts to geologic sources.

Given the depth to bedrock at the Echo Lake property, the SoS Conference Center would not affect geologic resources, including the mapped fracture traces.

ADDITIONAL AREAS

Heritage Trail Utility Corridor

Bedrock is not anticipated to be encountered within the Heritage Trail Utility Corridor. As indicated previously, the railroad embankment comprises primarily fill materials. Previous construction of the City of Middletown wastewater effluent line would likely have removed most bedrock or large boulders.

Access Road Improvement Area

Due to this area's proximity to the Echo Lake property, it is anticipated that bedrock geology would be similar to conditions found on the Echo Lake property.

SOILS

The Proposed Project will require disturbance (removal of trees and other vegetation, movement of soil, excavation for building foundations and utility lines) to approximately 151 total acres of the Project Site during construction. Specifically, the Amy's Kitchen food manufacturing facility, parking lots, and driveways would have a footprint of approximately 37 acres. The Project Site entry road that would be constructed through the Echo Lake property to connect to NYS Route 17M would require disturbance of approximately 14 acres. The SoS Conference Center would have disturbance of approximately 97 acres on the Echo Lake property, and the associated guest house and driveway would have disturbance of approximately 3 acres.

Soil impacts related to these activities include those related to limitations posed by the soil conditions on-site (e.g. shallow groundwater effects to building foundations and dewatering), increased potential for erosion and sedimentation which may impact water quality, and permanent loss of potentially valuable agricultural soils. Methods for minimizing impacts to soils are described below.

PROJECT SITE

Ver Hage Property

The geotechnical report indicates that the soils on the Ver Hage property are suitable to support building foundations for the Amy's Kitchen manufacturing facility and Warehouse Use. The bottom of proposed foundations will be constructed at four feet below the proposed finished grade ground surface for frost protection. Soil excavation can be performed with conventional earth moving equipment such as backhoes, excavators, and bulldozers. All excavation would be performed in accordance with OSHA requirements including, but not limited to, temporary shoring, using trench boxes, and proper benching, wherever necessary.

Groundwater is not expected to be encountered during site excavation and foundation construction. Any water encountered during construction can likely be handled by localized sump pits and pumps. Stormwater run-off should be directed away from excavations and promptly removed from areas of foundation subgrade. Groundwater and stormwater run-off would be discharged in accordance with NYSDEC regulations.

Echo Lake Property

Soils on the Echo Lake property are suitable to support building foundations for the SoS Conference Center. According to the geotechnical investigation, the proposed structures can be supported by conventional shallow foundations which derive their support from the undisturbed natural glacial soils or properly placed controlled compacted fill installed to achieve the proposed subgrade buildings. It is believed that the foundations established on these materials could be designed to impose maximum allowable net bearing capacity of up to two tons per square foot.

Soil excavation can be performed with conventional earth moving equipment such as backhoes, excavators, and bulldozers. The geotechnical report indicates that groundwater will likely be encountered at variable elevations and intensities throughout the Echo Lake property. Consequently, controlling groundwater through drains and diversion trenches upgrade from the earthwork construction activities should be anticipated.

All excavation would be performed in accordance with OSHA requirements including, but not limited to, temporary shoring, using trench boxes, and proper benching, wherever necessary.

Agricultural Soils

As further discussed in Chapter III.Q, "Agriculture," while the Project Site does contain prime farmland soils and designated Agricultural District properties, only the Strong Farm property is currently farmed. Since the Strong Farm would continue to be farmed, the Proposed Project would not convert any active agricultural properties to a non-agricultural use.

Although 55.3 percent of the Echo Lake property and 80.8 percent of the Ver Hage property is identified as having either Prime Farmland or Farmland of Statewide Importance, these properties have been heavily disturbed by mining activities. Thus, the use of these properties for agricultural purposes is limited.

ADDITIONAL AREAS

Heritage Trail Utility Corridor

The proposed water and wastewater conveyance lines linking the Project Site to City of Middletown services would be installed primarily within the existing footprint of the Heritage Trail Utility Corridor. The former rail bed is located on a raised berm of fill soils and crosses several streams via bridge spans and culverts. As such, the soils to be temporarily disturbed for installation of the utility lines have already been disturbed and are elevated above the water table.

Where the proposed utility lines would leave the Heritage Trail in the vicinity of the Middletown wastewater treatment plant, the alignment crosses lands mapped as Mardin gravelly silt loam, a *moderately well drained* soil. These soils exhibit no engineering constraints for the construction or operation of the utility. As discussed in Chapter III.C, "Surface Waters and Wetlands," several potential wetlands areas identified preliminarily within this final stretch of the proposed utility corridor would be delineated in the growing season of 2016, once more detailed design of the water and wastewater conveyance lines is complete, so that impacts to wetlands from the utility installation can be avoided.

During construction, silt fence, soil stockpiles, construction stabilization, and other measures would be employed to prevent erosion and sedimentation (see below). After construction, the utility lines would be concealed below the surface and all areas of trenching/excavation restored to their former condition. With implementation of the Heritage Trail by Orange County in the future, it is expected that the utility line would be covered by a crushed stone or similar multi-use trail surface.

Access Road Improvement Area

Soils within the Access Road Improvement Area are anticipated to be similar to the Echo Lake property. Soil excavation can be performed with conventional earth moving equipment such as backhoes, excavators, and bulldozers. Given the possibility for shallow groundwater, dewatering of construction zones may be required.

METHODS TO MINIMIZE SOIL EROSION

Stormwater Management

To prevent the potential negative effects of site disturbance, the Proposed Project would conform to the requirements of NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges Associated with Construction Activity. This permit requires that projects disturbing more than one acre of land develop a Stormwater Pollution Prevention Plan (SWPPP), containing both temporary erosion control measures during construction and post-construction stormwater management practices to avoid flooding and water quality impacts in the long term. By conforming to the approved SWPPP, and diligent monitoring of erosion control measures now required for all new developments, the Project would avoid any significant amounts of particulate matter from being transported into the Wallkill River and other surface water features on or adjacent to the Project Site. Thus, the proposed excavation and grading activities would not cause any significant adverse impacts.

In all areas of land disturbance that would be landscaped post-construction, topsoil that has been removed from areas of development and stockpiled would be replaced as an appropriate planting

medium. Outside of the specific areas of disturbance, no changes to plant species composition or coverage would occur from erosion or soil movement due to strict adherence to the erosion control specifications and post-construction stormwater management requirements contained in the conceptual SWPPP. Details on the conceptual SWPPP are provided in Chapter III.G, "Stormwater Management."

Erosion and Sediment Control

Protection from erosion and sedimentation would be provided through the use of a variety of measures.

- Construction entrances/exits would have a stabilized aggregate pad underlain with filter fabric to prevent construction vehicles from tracking sediment off-site. Stabilized construction entrances would be located at specific transition areas between concrete/asphalt to exposed earth.
- Silt fence would be installed on the downgradient edge of disturbed areas parallel to existing or proposed contours or along the property line as perimeter control. Silt fence would be used where stakes can be properly driven into the ground as per the Silt Fence detail in the New York State Standards and Specifications for Erosion and Sediment control.
- Silt fence controls sediment runoff where the soil has been disturbed by slowing the flow of water and encouraging the deposition of sediment before the water passes through the straw bale of silt fence. Built-up sediment would be removed from silt fences when it had reached one-third the height of the bale/fence and properly disposed.
- Storm drain inlet protection would be installed at all inlets where the surrounding area has been disturbed. The inlet protection would be constructed in accordance with NYSDEC Standards and Specifications for Erosion and Sediment Control to pass stormwater through, but prevent silt and sediment from entering the drainage system.
- Stockpiled soil would be protected, stabilized, and sited in accordance with the NYSDEC Standards and Specifications for Erosion and Sediment Control, Soil Stockpile Detail. Soil stockpiles and exposed soil would be stabilized by seed, mulch, or other appropriate measures, when activities temporarily cease during construction for 7 days or more in accordance with NYSDEC requirements.
- During the clearing of vegetation and construction process, debris and any disturbed earth would be wetted down with water, if necessary to control dust. After construction activities, all disturbed areas would be covered and/or vegetated to provide for dust control on the site.
- In areas where demolition and construction activities, clearing, and grubbing have ceased, temporary seeding or permanent landscaping would be performed to control sediment laden runoff and provide stabilization to control erosion during storm events. This temporary seeding/stabilization or permanent landscaping would be in place no later than 14 days after demolition and construction activity has ceased.
- A temporary pit would be constructed to trap and filter excessive water from excavations for pumping to a suitable discharge area. Sump pits would be constructed when water collects during the excavation phase of construction.
- Due to the depth of excavation for the building foundation and proximity to on-site watercourses and wetland areas, there may be areas of construction where the groundwater table would need to be intercepted and dewatering activities will take place. Site-specific

practices and appropriate filtering devices would be employed by the contractors to avoid discharging turbid water to the surface waters of the State of New York.

- A sediment tank may be used in conjunction with other practices that would settle and filter the sediment from the stormwater runoff. The sediment tank is a compartmented tank to which sediment laden water is pumped to trap and retain the sediment. The purpose of the tank would be to trap and retain sediment and then discharge the water in accordance with NYSDEC requirements. In conjunction with the portable sediment tank, mechanical filtering devices may be necessary to filter out the finer particulates. A permit would likely be required for such activities. Therefore, the contractor would need to coordinate with the resident engineer.
- A perimeter dike/swale would be utilized to prevent off-site storm runoff from entering a disturbed area and to prevent sediment laden storm runoff from leaving the construction site or disturbed area. It would be used to convey stormwater runoff from the work area to a proposed sediment basin.
- Temporary sediment basins would be constructed to intercept sediment-laden runoff and filter the sediment laden stormwater runoff leaving disturbed areas to protect drainage ways, properties, and rights-of-way below the sediment basin. Sediment basins would be installed down gradient of construction operations which expose areas to soil erosion. The basin would be maintained until the disturbed area is protected against erosion by permanent stabilization.
- The Contractor would need to store construction and waste materials as far as practical from streams and wetlands. Where possible, materials shall be stored in a covered area to minimize any potential runoff. The Contractor would need to incorporate storage practices to minimize exposure of the materials to stormwater. Spill prevention and response practices would be put in place where practicable. Prior to commencing any construction activities the contractor would need to obtain all necessary permits or verify that all permits had been obtained.

By employing the above-mentioned measures, significant impacts related to site development would be avoided. The Final SWPPP and Erosion and Sediment Control Plans would provide for protection based on a 100-year storm event, and include engineering measures to address vegetative cover, installation and removal related to the construction schedule, and an operation and maintenance program to assure proper operation through the duration of the project.

E. PROPOSED MITIGATION

The Proposed Project would result in unavoidable adverse impacts to geology and soils through clearing and grading activities. However, the following measures have been identified to minimize or mitigate those impacts such that they would not be significant adverse impacts.

Through the implementation of a New York State approved SWPPP, the Proposed Project would avoid any significant adverse impacts to soils. Principally through use of sedimentation and erosion control measures, discussed in Chapter III.G, “Stormwater Management,” the movement of soil downslope or downstream would be avoided. This would prevent detrimental impacts to receiving waters and wetlands. These measures would be installed prior to construction, and would be monitored and maintained constantly during construction. Given the size of the Proposed Project, a request for a waiver from the five (5)-acre disturbance maximum will be

submitted. The General Permit requirements for additional site inspections and reporting will be implemented to ensure that activities that disturb soils will limit erosion.

Should bedrock removal be required, standard construction equipment is typically sufficient to excavate or "rip" the bedrock. If the rock is less weathered and stronger, additional mechanical devices, such as a hydraulic hammer mounted on an excavator, may be required to break the rock down into removable size pieces for excavation. As a last resort, to break apart massive, strong, and fresh (non-weathered) bedrock, drill and blast operations would be used if required to fragment the rock so that it can be excavated. By using a combination of these techniques, rock excavation can be performed in a responsible manner.

If it is determined that blasting is necessary for bedrock removal on-site, it would be carried out in conformance with all applicable laws and regulations. To ensure compliance with the applicable laws and regulations, a site-specific blasting plan would be developed and provided to the Town. This plan would include schedules for blasting (day, hour, and duration), safety protocols associated with both blasting activities and the handling and transport of blasting materials, and measures to reduce noise-related impacts. Compliance with the blasting plan will minimize potential impacts associated with blasting.

With the implementation of the measures noted above, the potential cumulative impacts on the geology, soils, and/or topography on or in the vicinity of the Project Site resulting from the development of the Proposed Project in conjunction with those associated with other approved projects in the area are not expected to be significant. ✷

A. INTRODUCTION

This chapter describes the existing topography within the Project Site. Steep slopes are described based on topographic surveys. Potential impacts to steep slopes are based on the potential for a project to cause soil erosion.

B. EXISTING CONDITIONS

Figure III.B-1 illustrates the existing topography and slopes on each of the four (4) properties that comprise the Project Site as well as portions of the Additional Areas using five (5)-foot contours.

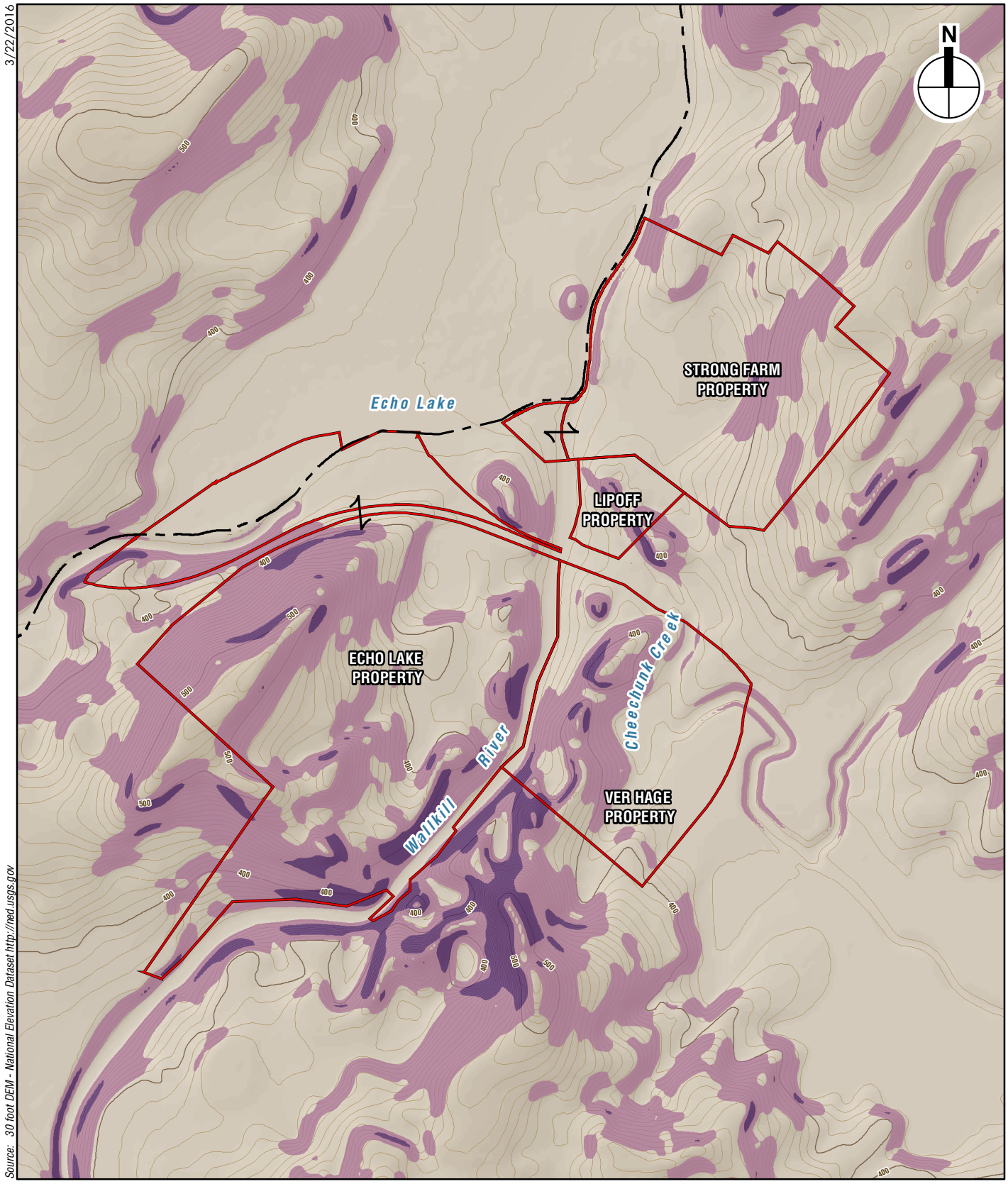
The Town of Goshen Zoning Code (§97-46) regulates activities that may disturb slopes exceeding 25 percent. For purposes of determining the location of steep slope areas, only contiguous slopes containing at least 2,000 square feet of steep slopes with at least 10 feet of continuous horizontal width perpendicular to the slope shall be considered. **Figure III.B-2** and **Figure III.B-3** illustrate existing slope categories meeting the Town's definition based on two (2)-foot surveyed contours for the Ver Hage and Echo Lake properties, respectively. Since no improvements or modifications are proposed to either the Lipoff or Strong Farm properties more detailed surveys and assessments are not provided.

The Ver Hage and Echo Lake properties have been subject to regrading in the past related to sand and gravel mining. As a result, their topography and slopes are more variable than the more topographically consistent Strong Farm and Lipoff properties. In general, each of the properties that comprise the Project Site drains into the Wallkill River although ridgelines within the Ver Hage property and Echo Lake property cause water to flow away from the Wallkill River before entering tributaries to the Wallkill River (such as the Cheechunk Creek on the Ver Hage property).

PROJECT SITE

VER HAGE PROPERTY

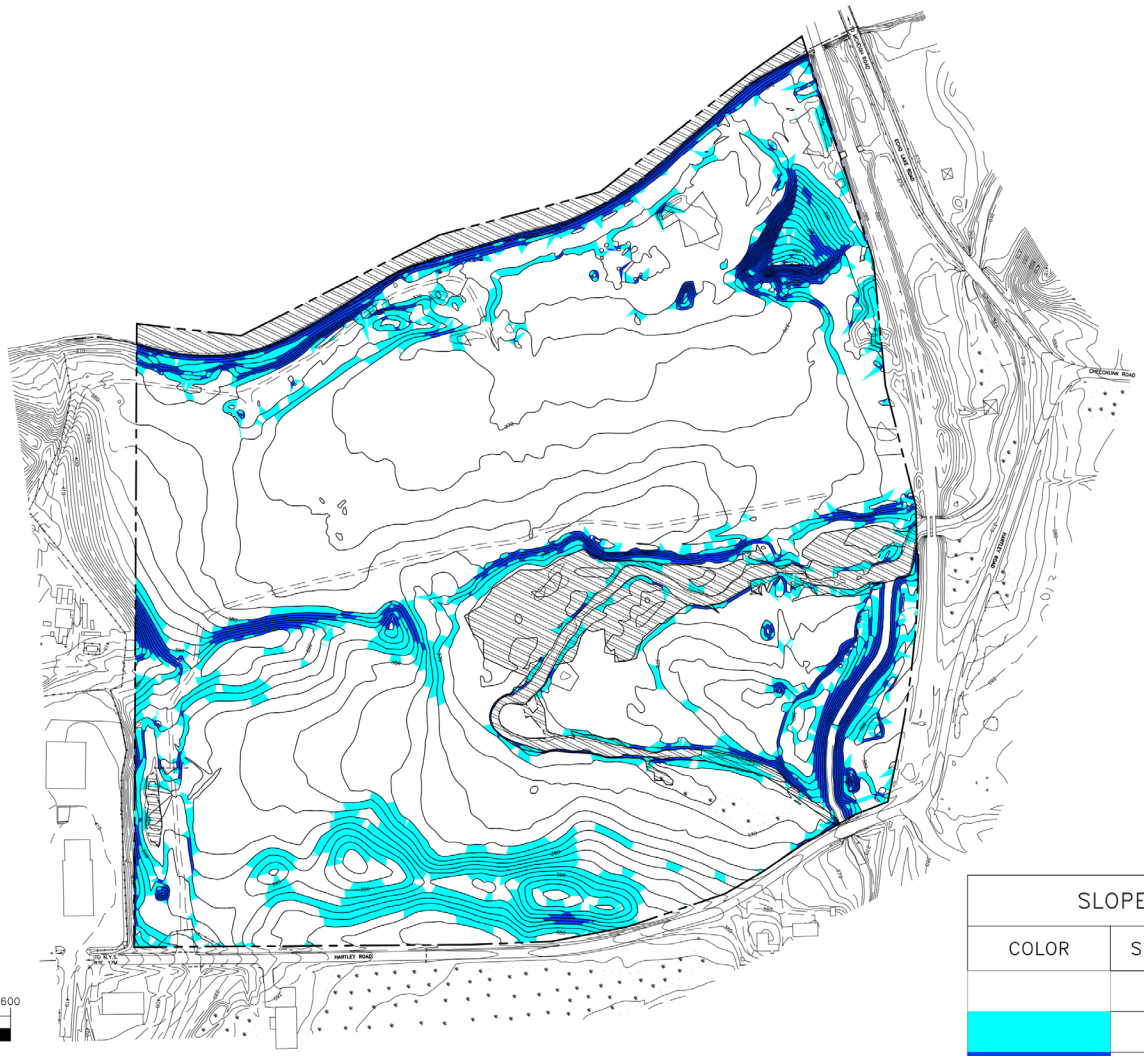
The Ver Hage property ranges in elevation from a high of 425 feet at the west/central portions of the site to a low of 360 feet adjacent to the Wallkill River. The Ver Hage property has several areas of steep slopes of 25 percent or greater, making up 6 percent of the parcel, and moderate slopes (10 to 25 percent), making up 15 percent, in the west/center (see **Figure III.B-2 and Table III.B-1**). A majority of the property, 79 percent, including its eastern half, is topographically level, with a slope range of 0 to 10 percent.



Amy's Kitchen
Science of the Soul

Topography
Figure III.B-1

9.25.15



GRAPHIC SCALE

300 0 150 300 600

(IN FEET)

1 inch = 300 ft.

SLOPE ANALYSIS TABLE		
COLOR	SLOPE RANGE	PERCENTAGE OF TOTAL SITE
	0–10%	79.1%
	10–25%	14.9%
	> 25%	6.0%

Source: Lanc & Tully, P.C.

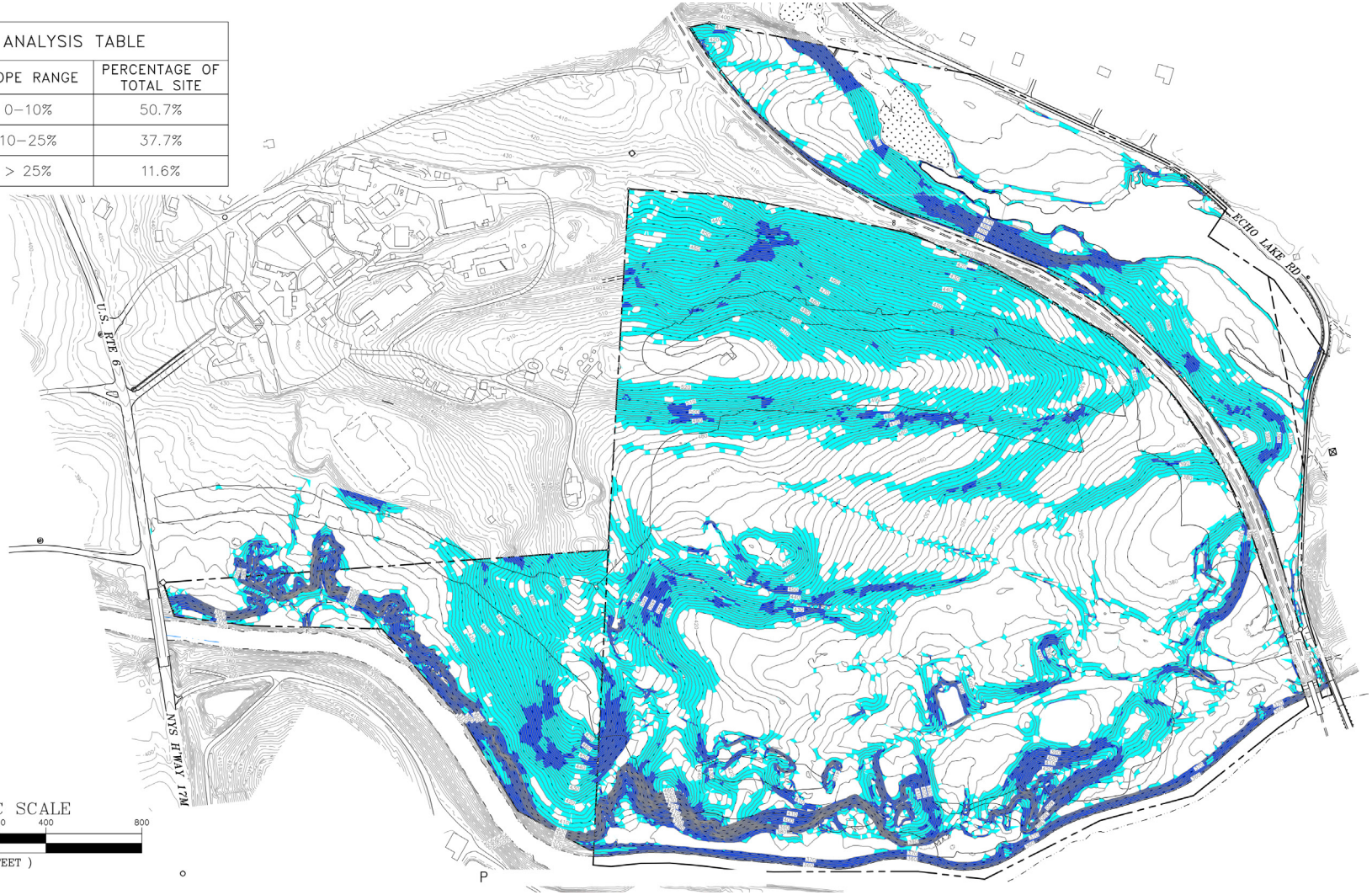
Amy's Kitchen
Science of the Soul

Ver Hage Property Existing Slopes

Figure III.B-2

9.25.15

SLOPE ANALYSIS TABLE		
COLOR	SLOPE RANGE	PERCENTAGE OF TOTAL SITE
	0–10%	50.7%
	10–25%	37.7%
	> 25%	11.6%



Source: Lanc & Tully, P.C.

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Echo Lake Property Existing Slopes
Figure III.B-3

Table III.B-1
Slope Categories on the Ver Hage Property

Slope Categories	Area (SF)	Area (AC)	Percent of Property
0-10% slopes	2,412,761	55.389	79.1%
10-25% slopes	453,195	10.404	14.9%
>25% slopes	184,356	4.232	6.0%
Total	**3,050,312**	**70.026**	**100%**

Source: Lanc & Tully P.C.

ECHO LAKE PROPERTY

The Echo Lake property's topography ranges from a high point of 530 feet above sea level near the southwest portion of the site to a low point of 360 feet above sea level on the property's southeastern boundary along the Wallkill River.

It contains steep slopes, 25 percent and greater, along the eastern border that parallels the Wallkill River. The western and southern sections have slopes between 10 and 25 percent. The middle and northern sections of the property are the topographically level portions of the parcel.

Approximately 88 percent of the Echo Lake property is sloped less than 25 percent, with 50 percent characterized as 0 to 10 percent slopes and 38 percent as 10 to 25 percent slopes. Only 12 percent is characterized as steep slopes (more than 25 percent slope) (see **Figure III.B-3 and Table III.B-2**). The steep slopes are concentrated to the north of the Echo Lake property. The steepest slopes run along the property's eastern boundary by the Wallkill River, and are not being disturbed as part of the Proposed Project.

Table III.B-2
Slope Categories on the Echo Lake Property

Slope Categories	Area (SF)	Area (AC)	Percent of Property
0-10% slopes	4,667,354	107.148	50.7%
10-25% slopes	3,465,937	79.567	37.7%
>25% slopes	1,066,227	24.477	11.6%
Total[1]	**9,199,518**	**211.192**	**100.0%**

Notes: [1] This includes the portion of this property located in the Town of Wawayanda (SBL 1-1-40). There are no proposed modifications to the portion of the parcel in Wawayanda.
Source: Lanc & Tully P.C.

LIPOFF PROPERTY

The Lipoff property adjacent to the Wallkill River ranges in elevation from 405 to 360 feet. The Lipoff property is predominantly level, with 76 percent of the site sloping at less than 10 percent. Moderate slopes of 10 to 25 percent consist of 18 percent of the site. In addition, it contains steep slopes greater than 25 percent at the center of the property, adjacent to Cheechunk Creek. This makes up 6 percent of the site (see **Table III.B-3**).

Table III.B-3
Slope Categories on the Lipoff Property

Slope Category	Percent of Site
0 – 10 percent	75.92 percent
10 – 25 percent	18.45 percent
> 25 percent	5.64 percent
Source: 30 foot DEM - National Elevation Dataset http://ned.usgs.gov	

STRONG FARM PROPERTY

The Strong Farm property ranges in elevation from 465 feet at Owens Road to 360 at the Wallkill River. The Strong Farm property is the most topographically level (gently sloping) of the Proposed Project's properties, with 78 percent of the property having less than 10 percent slope (see **Table III.B-4**). It has less than one (1) percent steep slopes. There are a few scattered slopes of 10 to 25 percent, totaling to 22 percent, on the eastern side of the property.

Table III.B-4
Slope Categories on the Strong Farm Property

Slope Category	Percent of Site
0 – 10 percent	78.09 percent
10 – 25 percent	21.62 percent
> 25 percent	0.29 percent
Source: 30 foot DEM - National Elevation Dataset http://ned.usgs.gov	

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

The Heritage Trail Utility Corridor follows a former railroad alignment from the Project Site west to the City of Middletown. A detailed survey of the corridor has not been prepared. However, previous surveys and GIS data have been used for purposes of preliminary design of proposed water and wastewater conveyance lines. While the bed of the former railroad alignment is flat, the shoulders of the alignment may contain areas of steep slope.

ACCESS ROAD IMPROVEMENT AREA

As seen in Figure III.B-1, portions of the Access Road Improvement Area contain slopes between 10 and 25 percent. There are no slopes in excess of 25 percent within the Access Road Improvement Area.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

Without the Proposed Project, the Project Site and Additional Areas are expected to remain in their current condition with no changes in topography. Within the Heritage Trail Utility Corridor, Orange County will construct an extension of the Heritage Trail multi-use bicycle/pedestrian pathway. It is expected that this construction project would be limited to the flat portions of the former railroad alignment, although some disturbance to the embankment may be required for drainage or structural improvements.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

PROJECT SITE

Construction of the Proposed Project will require modifications to the natural topography of the Ver Hage property, the Echo Lake property, and the Access Road Improvement Area. The construction phasing plan for the Proposed Project would begin with clearing and grading of the access road from NYS Route 17M into the Echo Lake property, followed by the construction of the bridge over the Wallkill River. This would allow for excess material generated by clearing and grading on the Echo Lake property to be used on the Ver Hage property and for the entire Project Site to be roughly balanced between cut and fill. See Chapter III.S, "Construction," for more details on proposed construction phasing.

VER HAGE PROPERTY

Construction of the Amy's Kitchen manufacturing facility would result in changes to the natural topography of the Ver Hage property. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 307,057 cubic yards. Based on the proposed grading plan for the Proposed Project, which is based on two (2)-foot contours, 59,092 cubic yards of cut and 247,965 cubic yards of fill are projected (see Site Plan drawing set in **Appendix II**). As such, 188,873 cubic yards of fill would be required to balance the site, the majority of which would be obtained from the Echo Lake property (approximately 34,179 cubic yards of materials for building slab construction would have to be imported to the Ver Hage property). An approximately 200-foot-long and 14.5-foot-tall retaining wall would be required along the southern border of the proposed truck loading docks. The retaining wall is required to maintain the necessary grade for the tractor trailer access drive and loading dock area as there is an area of steep slopes just off the Project Site.

As detailed in **Table III.B-5** below, the Amy's Kitchen facility would disturb approximately three (3) acres of slopes between 10 to 25 percent, and less than 1 acre of slopes greater than 25 percent. The Town of Goshen Zoning Code §97-46 requires specific conditions to be met for disturbance of slopes greater than 25 percent. These conditions include adequate erosion control and drainage measures; minimization of tree cutting and vegetation disturbance; minimization of road or driveway grades; and proper engineering review of plans and construction activities. In compliance with the Town's steep slopes ordinance, the Proposed Project will incorporate proper site grading techniques and erosion and sediment control measures. All plans for grading and retaining walls will be submitted for engineering review by the Town in conjunction with site plan approval.

Construction of the proposed Warehouse Use would require grading within the northeastern portion of the Ver Hage property. A site-specific grading plan has not been performed, so no cut

and fill estimates are available for the warehouse use. That information would be submitted along with the site plan application. The topographic knob on the eastern side of the property near Hartley Road would be leveled, with material being used to build up a level base for the warehouse and its driveway and parking areas. Much of this material could be used to raise the base of the property's elevation above the 100-year floodplain; however, some export of fill material may result.

Table III.B-5
Ver Hage Property Slopes Disturbance

Slope Categories	Disturbance Area (SF)	Disturbance Area (AC)	Percent of Disturbance Area
0-10% slopes	1,183,486	27.169	87.2%
10-25% slopes	148,347	3.406	10.9%
>25% slopes	25,663	0.589	1.9%
Total Site Disturbance Area	1,357,496	31.164	100.0%
Source: Lanc & Tully P.C.			

ECHO LAKE PROPERTY

The Proposed Project would result in changes to the natural topography of the Echo Lake property for the construction of the SoS Conference Center. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 1,988,179 cubic yards of total earthwork. Based on the proposed grading plan for the Proposed Project, 996,921 cubic yards of cut and 991,258 cubic yards of fill are projected (see Site Plan drawing set in **Appendix II**). As such, 5,663 cubic yards of cut would be required to balance the site. Approximately 66,582 cubic yards of materials for building slab construction would have to be imported to the Echo Lake property. No retaining walls are proposed on the Echo Lake property.

As detailed in **Table III.B-6** below, the SoS Conference Center would disturb approximately 32 acres of slopes between 10 to 25 percent, and 8 acres of slopes greater than 25 percent.

Table III.B-6
Echo Lake Property Slopes Disturbance

Slope Categories	Disturbance Area (SF)	Disturbance Area (AC)	Percent of Disturbance Area
0-10% slopes	2,622,920	60.214	60.0%
10-25% slopes	1,405,729	32.271	32.1%
>25% slopes	343,924	7.895	7.9%
Total Site Disturbance Area	4,372,573	100.380	100.0%
Source: Lanc & Tully P.C.			

LIPOFF PROPERTY

The Proposed Project would not result in any modifications to the natural topography on the Lipoff property.

STRONG FARM PROPERTY

The Proposed Project would not result in any changes to the natural topography on the Strong Farm property. It is anticipated that access to temporary volunteer parking areas would be provided using existing farm roads, and that no grading would be required. No grading or other topographic changes are proposed for the farming activities.

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

Construction of the proposed water supply and wastewater conveyance lines within the Heritage Trail Utility Corridor would not result in disturbance to steep slopes. As further discussed in Chapters III.C, "Surface Waters and Wetlands," and III.S, "Construction," fused HDPE pipe will be directionally bored for both the water line and wastewater conveyance line. The boring depth below streams or waterways will be sufficient to prevent the release of drilling mud into the waterway. Geotechnical investigations will be conducted as required to define the soils in the area of the borings.

ACCESS ROAD IMPROVEMENT AREA

Construction of the access road would require grading within the Access Road Improvement Area, including small areas of slopes between 10 to 25 percent. No disturbance to slopes of 25 percent or more is required.

E. PROPOSED MITIGATION

The Proposed Project would result in unavoidable adverse impacts to topography through clearing and grading activities. However, the following measures have been identified to minimize or mitigate those impacts such that they would not be significant adverse impacts.

The Proposed Project would utilize erosion and sedimentation protection measures to be designed to meet the requirements of Chapter §97-46, "Steep Slope Regulations" and Chapter §53, "Clearing and Grading Control" of the Town Code. All erosion control plans will be reviewed by the Town of Goshen.

Through the implementation of a New York State approved SWPPP, the Proposed Project would avoid any significant adverse impacts to Project Site topography. Principally through use of sedimentation and erosion control measures, discussed in Chapter III.G, "Stormwater Management," the movement of soil downslope or downstream would be avoided. This would prevent detrimental impacts to receiving waters and wetlands. These measures would be installed prior to construction, and would be monitored and maintained constantly during construction. ✷

A. INTRODUCTION AND METHODOLOGY

This chapter documents the existing surface waters, wetlands and floodplains on the Project Site and assesses potential impacts to these resources from the Proposed Project. Disturbance to regulated wetlands and waters would require permitting from Federal, State and local agencies. The purpose of wetland and surface water regulation is to protect their unique functions and values. Wetlands, streams, and their associated buffers absorb stormwater runoff and improve water quality. Many species of plants and animals are endemic to wetlands, and many additional animals rely on wetlands as a source of food, shelter, or breeding habitat. Similarly, development within or adjacent to streams and floodplains may cause impacts to water quality and ecological/human health. These potential impacts can be avoided with proper site design and impact avoidance measures in most cases.

REGULATORY CONTEXT

Surface water resources, wetlands, and floodplains are subject to Federal, State, and local laws.

FEDERAL

Wetlands, streams, and other surface water resources are regulated at the Federal level by the United States Army Corps of Engineers (USACE) if they meet the criteria of "waters of the United States," pursuant to Section 404 of the Clean Water Act and its implementing regulations. Wetlands are defined at the Federal level as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include "swamps, marshes, bogs, and similar areas" (40 CFR 230.3(t); Federal Register, 1982). As discussed below, results of a wetland delineation on the Project Site has confirmed the presence of wetlands and waters regulated at the Federal level by the USACE.

The National Flood Insurance Program (NFIP) (42 U.S.C. 4001 et seq.) is a voluntary program that communities may join to provide property owners federal flood insurance. Participation in the program requires that a community adopt and submit a local floodplain management ordinance that meets or exceeds the minimum NFIP criteria. Communities that participate in the NFIP must administer a local program that reviews/approves building plans located in 100-year floodplains (Special Flood Hazard Area) so that impacts to property and human life from flooding events are minimized. The Town of Goshen participates in the NFIP (Town of Goshen Chapter 61A, "Flood Damage Prevention").

NEW YORK STATE

The New York State Department of Environmental Conservation (NYSDEC) regulates freshwater wetlands and streams that have been mapped and classified by the State. The NYSDEC also regulates State-mapped freshwater wetlands in accordance with the State's Freshwater Wetlands Act.[1] The Act protects those wetlands larger than 12.4 acres (5 hectares) in size, and certain smaller wetlands of unusual local importance. A permit is required for activities that would alter wetlands or land within the 100-foot wetland adjacent area.

In addition to freshwater wetlands, New York State also maps and classifies certain streams, lakes and ponds. All State-classified waters are assigned a class based on existing or expected best usage. Waters that are designated as C(t) or higher (i.e., C(ts), B, or A) are collectively referred to as "protected waters," and are subject to the provisions of the Protection of Waters regulations. The Protection of Waters Permit Program[2] regulates disturbance to protected waters and navigable waters including construction, reconstruction, or repair of dams and other impoundment structures, docking and mooring facilities, and excavation or placement of fill in navigable waters.

As discussed below, the Project Site contains wetlands or waterbodies that are mapped by New York State and are therefore subject to regulation by the NYSDEC Freshwater Wetlands Program and/or Protection of Waters Program.

TOWN OF GOSHEN

The Town of Goshen regulates wetlands and watercourses at Town Code Chapter 97-45, "Wetland and Watercourse Protection" and Chapter 62, "Freshwater Wetlands." The Town definition of wetland references the same three-parameter approach followed by the USACE. Watercourses are defined as "a natural or artificial channel for the passage of water continuously or intermittently." Thus, the Town definitions of wetlands/watercourse are generally coterminous with Federal and State regulations. Wetland/watercourse areas and their 100-foot buffers are subject to the above-referenced sections and additional provisions of the Town Zoning Code that affect land disturbance and the location and density of proposed development.

The Town of Goshen participates in the National Flood Insurance Program (NFIP) and has adopted a local flood management ordinance in accordance with the federal requirements (Town of Goshen Chapter 61A, "Flood Damage Prevention"). In addition, development within the 100-year floodplain area is regulated by other provisions of the Town's Code, including the Flood Plain and Ponding [Zoning] Overlay District (§97-25), Clearing and Grading Control (§53), and Zoning (§97). These code provisions require permits for disturbance and govern the density and layout of buildings and other improvements in floodplains.

[1] Article 24, ECL, Implementing Regulations 6 NYCRR Part 662.

[2] Article 15, Title 5, New York State Environmental Conservation Law (ECL); Implementing Regulations 6 NYCRR Part 608.

B. EXISTING CONDITIONS

PROJECT SITE

FLOODPLAINS AND NYS-DESIGNATED AQUIFERS

100-Year Floodplain (Special Flood Hazard Area)

The Special Flood Hazard Area (SFH), also known as the 100-year floodplain, is defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 100-year floodplain mapped for the Project Site and Heritage Trail Utility corridor is shown in **Figures III.C-1a and III.C-1b.** As shown in these figures, most of the Echo Lake property contains no 100-year floodplain, but roughly half of the Ver Hage, Lipoff, and Strong Farm properties are mapped as 100-year floodplain. The Heritage Trail Utility Corridor and Access Road Improvement Area are located outside of the 100-year floodplain. Development within these mapped floodplain areas must conform to the building provisions of the Town of Goshen Code with regard to the construction/waterproofing of those portions of structures below the base flood elevation (height of the 100-year flood) and total coverage of buildings, roads, and other amenities. Closest to the Wallkill River, FEMA has mapped and designated a regulatory floodway in which more strict limitations on construction apply. A "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations.

Principal and Primary Aquifers

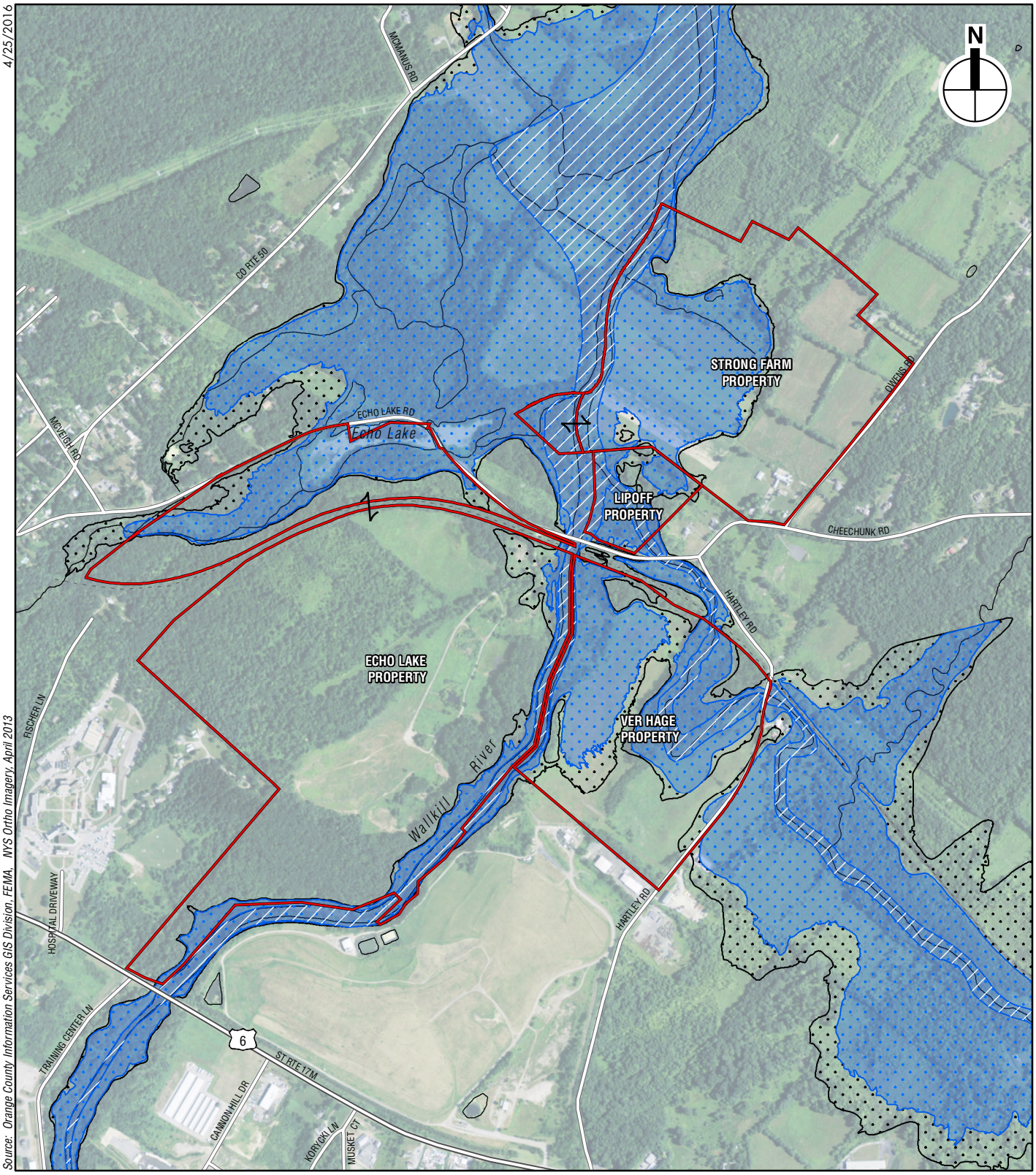
In order to enhance regulatory protection in areas where groundwater resources are most productive and most vulnerable, the New York State Department of Health, in 1980, identified eighteen Primary Water Supply Aquifers (usually referred to simply as Primary Aquifers) across the state excluding Long Island aquifers. Later, NYSDEC recognized another type of productive aquifer designated as Principal Aquifers. Both categories of aquifers are defined in the Division of Water Technical & Operational Guidance Series (TOGS) 2.1.3[1]:

> Primary Aquifers: These are as "highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems".
>
> Principal Aquifers: These are "aquifers known to be highly productive or whose geology suggests abundant potential water supply, but which are not intensively used as sources of water supply by major municipal systems at the present time".

The most productive aquifers in upstate New York consist of unconsolidated deposits of sand and gravel that occupy major river and stream valleys or lake plains and terraces. Groundwater in these aquifers occurs under water-table (unconfined) or artesian (confined) conditions.

The Project Site is not mapped as a Primary Aquifer by New York State. However, the majority of the Project Site is mapped as a "Principal Aquifer" as indicated in **Figure III.C-2**, including

[1] TOGS 2.1.3; Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York – Lower Hudson Sheet, Bugliosi, Edward F.; Trudell, Ruth A., 1988.



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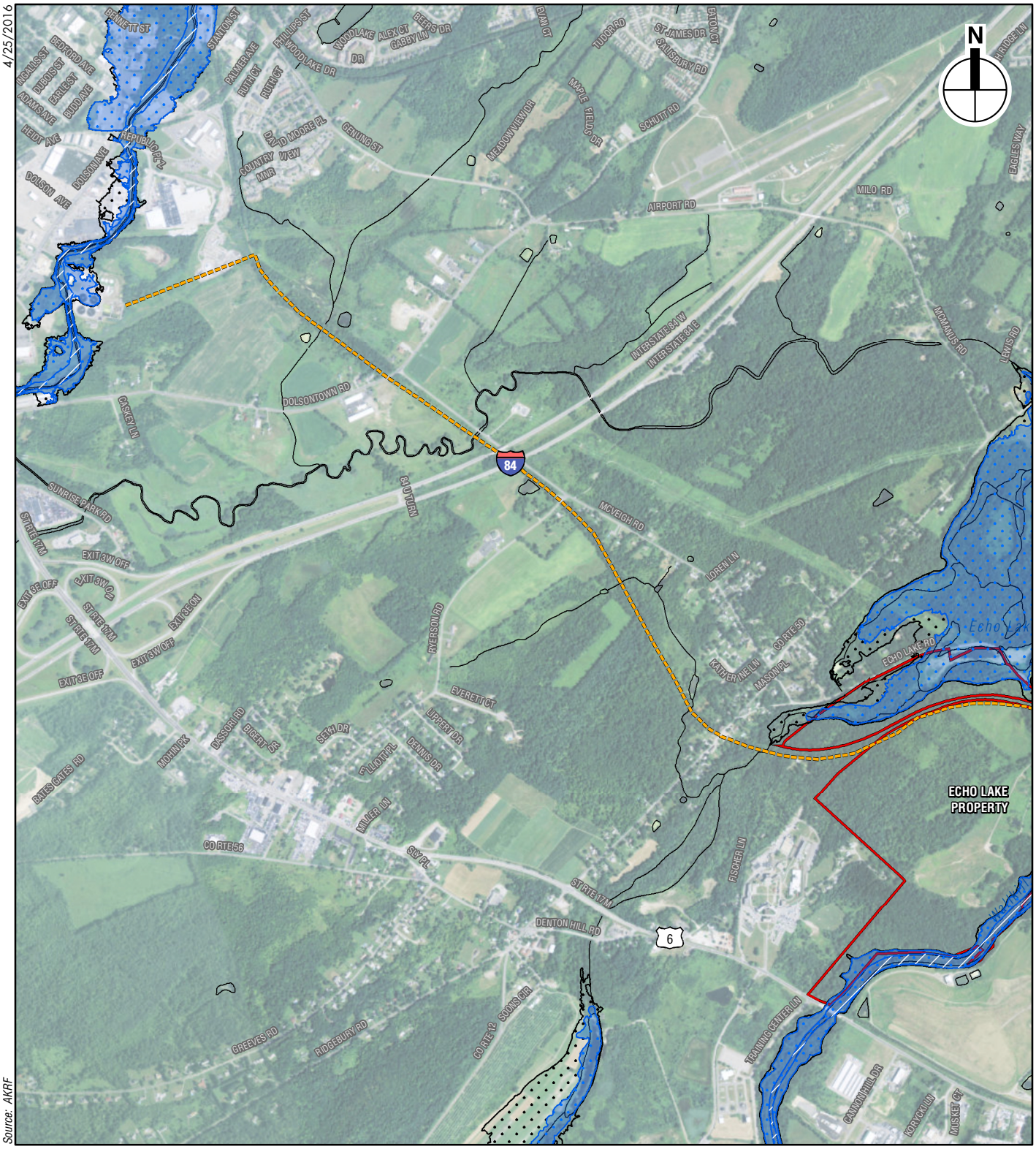
FEMA Effective Flood Hazard Areas

Figure III.C-1A



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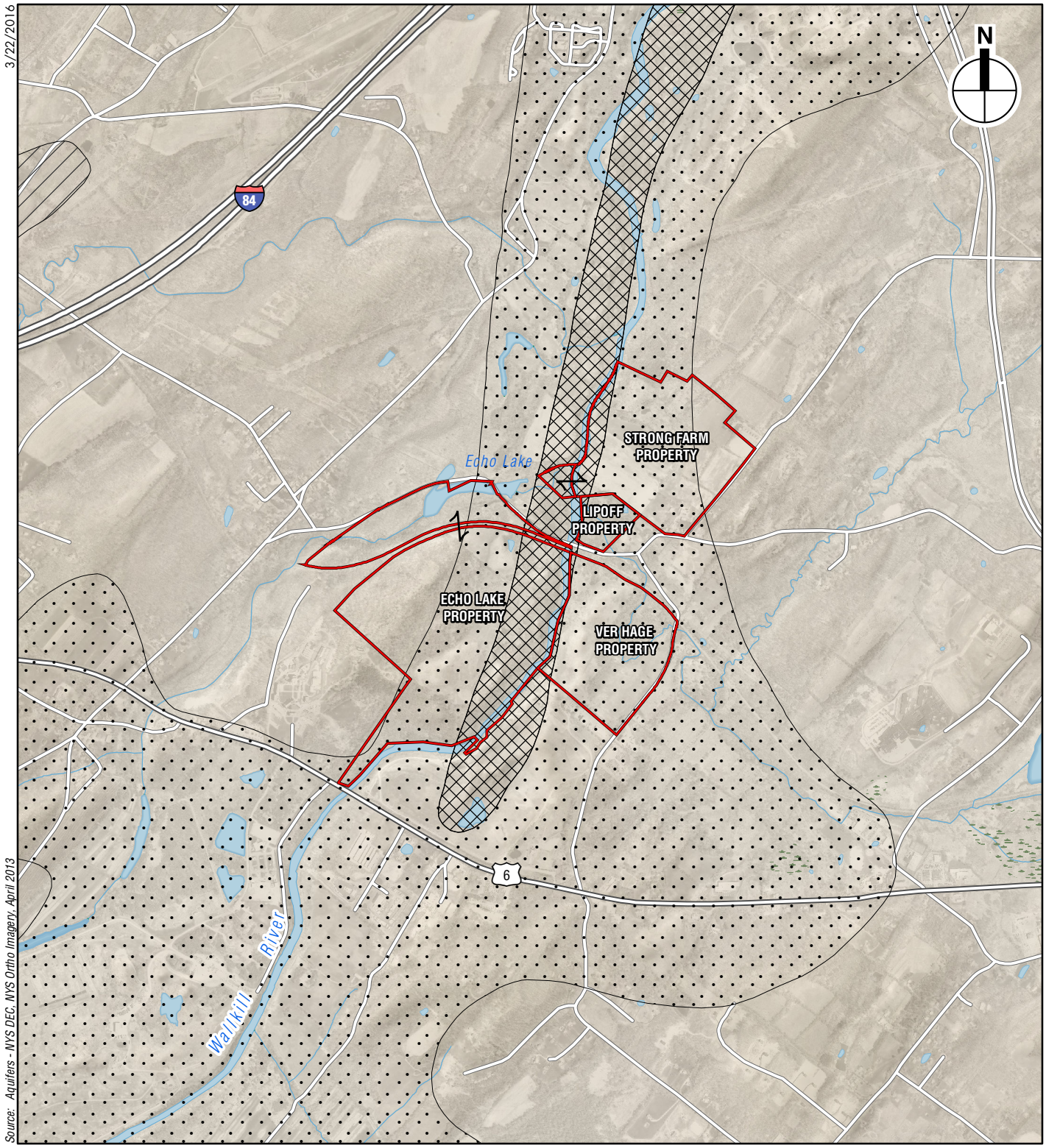
FEMA Effective Flood Hazard Areas -- Heritage Trail Utility Cooridor

Figure III.C-1B



Project Site

Principal Aquifer – High Yield: Unconfined Aquifer, more than 100 gallons per minute – Sand and gravel of high transmissivity and with saturated thickness greater than 10 feet.

Principal Aquifer – Med Yield: Unconfined Aquifer, 10 to 100 gallons per minute – Sand and gravel with saturated zone generally less than 10 feet thick, or thicker but with less permeable silty sand and gravel.

Unknown Yield: – Kame, kame terrace, kame moraine, outwash, or illuvium - Sand and gravel of unknown thickness or saturation.

0 1,000 FEET

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NYSDEC Designated Principal Aquifers

Figure III.C-2

both high yield (>100 gallon per minute [gpm]) and medium yield (10 to 100 gpm) Principal Aquifers. An area mapped as "Unconfined Aquifer, 10 to 100 gallons per minute – Sand and gravel with saturated zone generally less than 10 feet thick, or thicker but with less permeable silty sand and gravel" underlies the majority of the Project Site. In addition, the higher-yielding category of Principal Aquifer described as "Unconfined Aquifer, more than 100 gallons per minute – Sand and gravel of high transmissivity and with saturated thickness greater than 10 feet" is mapped closest to the Wallkill River.

Municipalities, industries, and farms have been built over many of these aquifers because they typically form flat areas that are suitable for development and generally provide an ample groundwater supply. This development, coupled with the high permeability of these deposits and shallow depth to the water table, makes these aquifers particularly susceptible to contamination from point sources such as landfills and petroleum storage and nonpoint sources such as urban and agricultural runoff. NYSDEC has enacted legislation indicating that no landfill may be sited over a Principal or Primary Aquifer (6 NYCRR Part 360 Regulations). At the Town level, municipalities such as Goshen have enacted Aquifer Overlay Zoning Districts to restrict potentially contaminating uses and to place limits on development density and/or impervious cover.

For additional information on the Project Site's groundwater resources, including results of pump tests and investigations conducted to assess potential groundwater supplies for use by the Proposed Project, see Chapter III.E, "Groundwater and Water Supply."

SURFACE WATERS

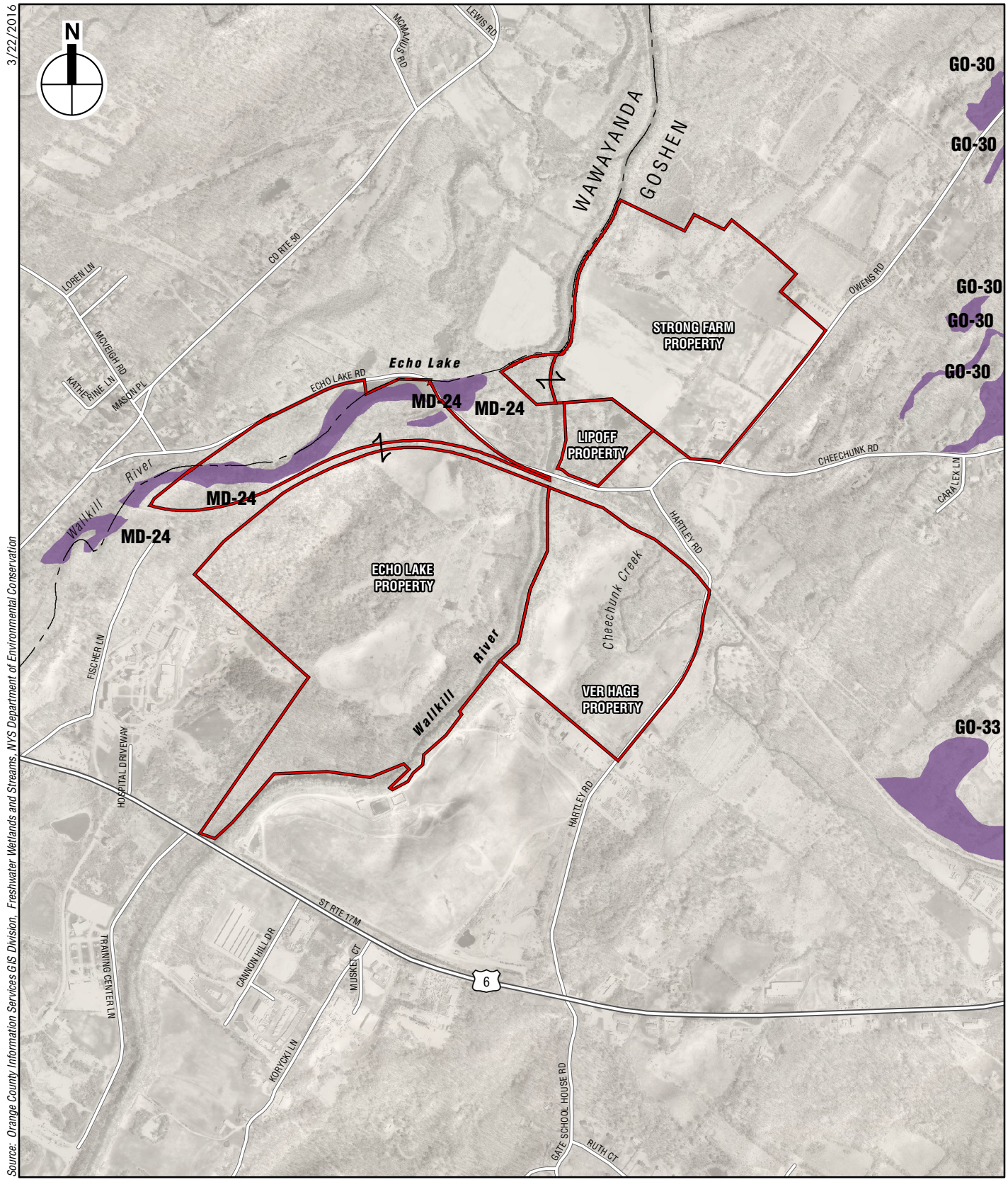
The Project Site is located adjacent to the Wallkill River, with the Echo Lake property on its western bank and the Ver Hage, Lipoff, and Strong Farm properties on the river's eastern bank. Cheechunk Creek is a second, smaller stream that crosses the Ver Hage and Lipoff properties, flowing from east-to-west and entering the Wallkill River at the Lipoff property.

The Wallkill River flows northeastwards for 94 miles from Sparta, New Jersey to the Hudson River in Kingston, New York. It is classified as "Class C" by NYSDEC upstream (south) of its confluence with Cheechunk Creek and "Class B" downstream (north) of its confluence with Cheechunk Creek. Therefore, those portions of the Wallkill River adjacent to (bordering) the Strong Farm property are regulated by the NYSDEC's Protection of Waters Program, which controls disturbance to the river's banks and the construction of bridges and other crossings. Cheechunk Creek is classified as "Class C." Streams on the Project Site as mapped and classified by the NYSDEC are shown in **Figure III.C-3.**

As described in NYSDEC regulations, "the best usages of Class B waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. The best usage of Class C waters is fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes."[1]

Additional surface waters, in the form of open water ponds generally less than ½-acre in size, are mapped on several properties, including two ponds on the Strong Farm property and two ponds

[1] 6NYCRR Part 701: Classifications-Surface Waters and Groundwaters



Project Site

NYSDEC Freshwater Wetlands (w/ Wetland ID)

NYSDEC Stream Water Quality

Class B

Class C

0 1,000 FEET

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NYSDEC Freshwater Wetlands and Stream Classification

Figure III.C-3

on the Echo Lake property. The ponds on the Project Site as mapped and classified by the USFWS National Wetlands Inventory (NWI) are shown in **Figure III.C-4**.

Chapter III.D, "Vegetation and Wildlife," provides information obtained from NYSDEC Division of Fisheries sampling data on the aquatic resources and fish species within the reach of the Wallkill River adjacent to the Project Site.

WETLANDS

Wetlands have been mapped on the Project Site by the United States Fish and Wildlife Service's National Wetlands Inventory (NWI) and by the NYSDEC[1]. The NWI is done at a broad scale for planning purposes. In all cases, prior to site development, site specific wetland field delineation is required for purposes of defining the actual extent of wetlands and is a prerequisite for permitting wetland disturbance at the Federal, State and local levels. As discussed below, wetland field delineation has been completed for the Project Site and will be confirmed through a jurisdictional determination by the USACE and NYSDEC, which is currently pending. For planning purposes, the generalized (approximate) NWI-mapped and NYSDEC-mapped wetlands on the overall Project Site are also discussed below in addition to the findings of wetland investigations that have been conducted on all properties.

NWI-mapped wetlands

USFWS National Wetlands Inventory has mapped wetlands on all properties that comprise the Project Site. These are shown in **Figure III.C-4.**

These mapped wetlands are categorized according to the Cowardin system of classifying wetlands and waters of the United States.[2] NWI-mapped wetlands on the project site are "palustrine" and "riverine". Palustrine wetlands consist of non-tidal wetlands dominated by trees, shrubs and persistent emergent vegetation. As such, they are the predominant vegetated freshwater wetland class in the nation and also on the Project Site. Riverine wetlands consist of all wetlands and deepwater habitats contained within a channel where persistent emergent vegetation does not occur. Beyond these broad categories, NWI-mapped wetlands are further categorized by flooding frequency and vegetation cover types.

The NWI-mapped wetland categories on the Project Site are as follows:

Echo Lake Property

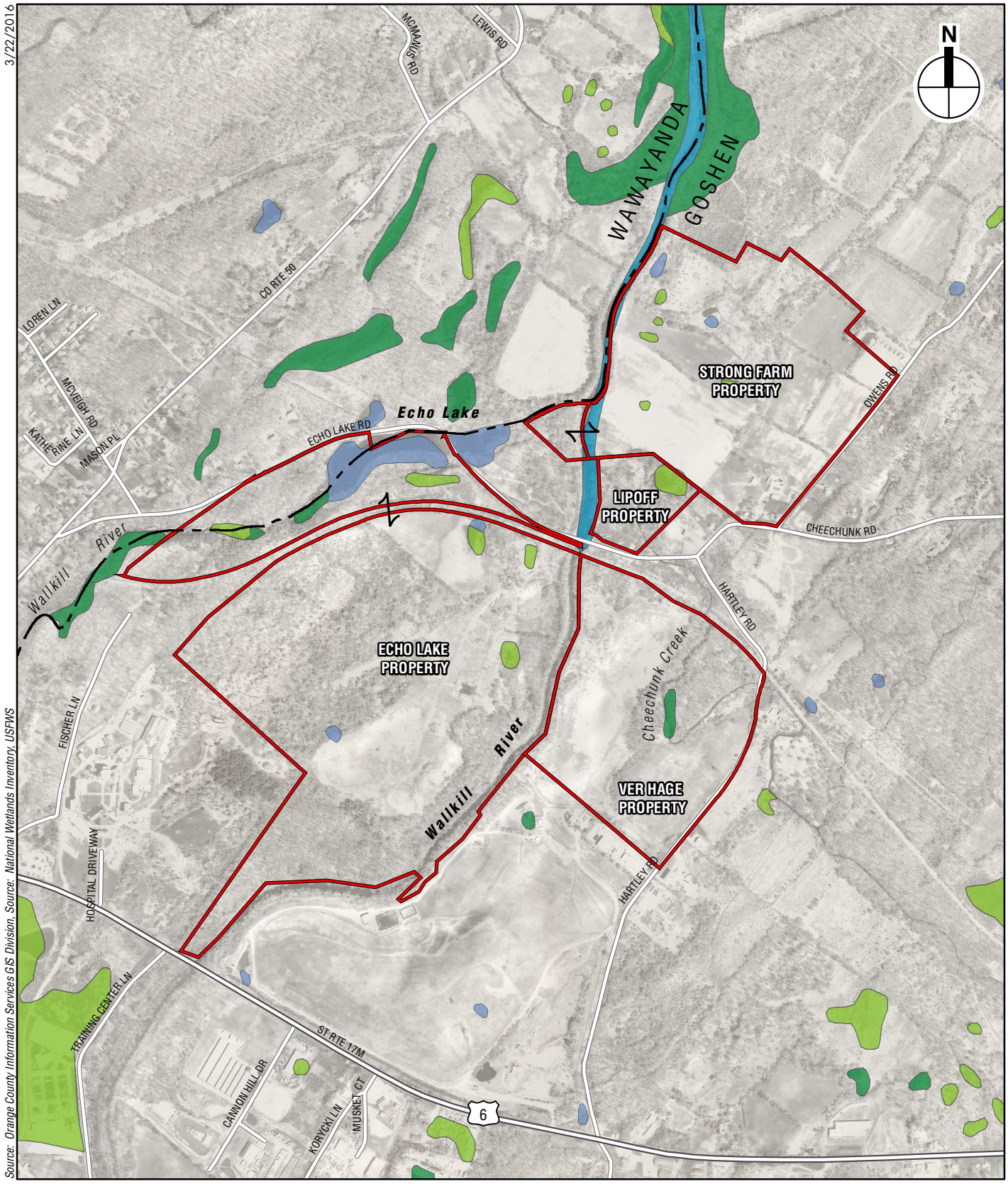
PEM1Fh—Palustrine, emergent, persistent, semi-permanently flooded, diked/impounded

PEM1F—Palustrine, emergent, persistent, semi-permanently flooded

PEM1E—Palustrine, emergent, persistent, seasonally flooded/saturated

[1] In its initial review of Proposed Project filings (see letter dated May 22, 2014, and as recently as September 25, 2015, see **Appendix III.C**), NYSDEC, did not indicate the presence of any potential un-mapped wetland areas on or near the Project Site. While NYSDEC may be conducting preliminary mapping of currently unregulated wetlands in Orange County, NYSDEC did not identify any of those areas of potential mapping on or near the Project Site.

[2] Cowardin et al. Classification of wetlands and deepwater habitats of the United States. 1979. FWS/OBS-79/31.



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NWI Wetlands
Figure III.C-4

PFO1E—Palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated

PUBHh—Palustrine, unconsolidated bottom, permanently flooded, diked/impounded

PUBFh—Palustrine, unconsolidated bottom, semi-permanently flooded, diked/impounded

Ver Hage Property

PFO1E—Palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated

Lipoff Property

PEM1Fx—Palustrine, emergent, persistent, semi-permanently flooded, excavated

R2UBH—Riverine, lower perennial, unconsolidated bottom, permanently flooded

Strong Farm Property

R2UBH—Riverine, lower perennial, unconsolidated bottom, permanently flooded

PEM1C—Palustrine emergent, persistent, seasonally flooded

PUBHh—Palustrine, unconsolidated bottom, permanently flooded, diked/impounded

PUBHx—Palustrine, unconsolidated bottom, permanently flooded, excavated

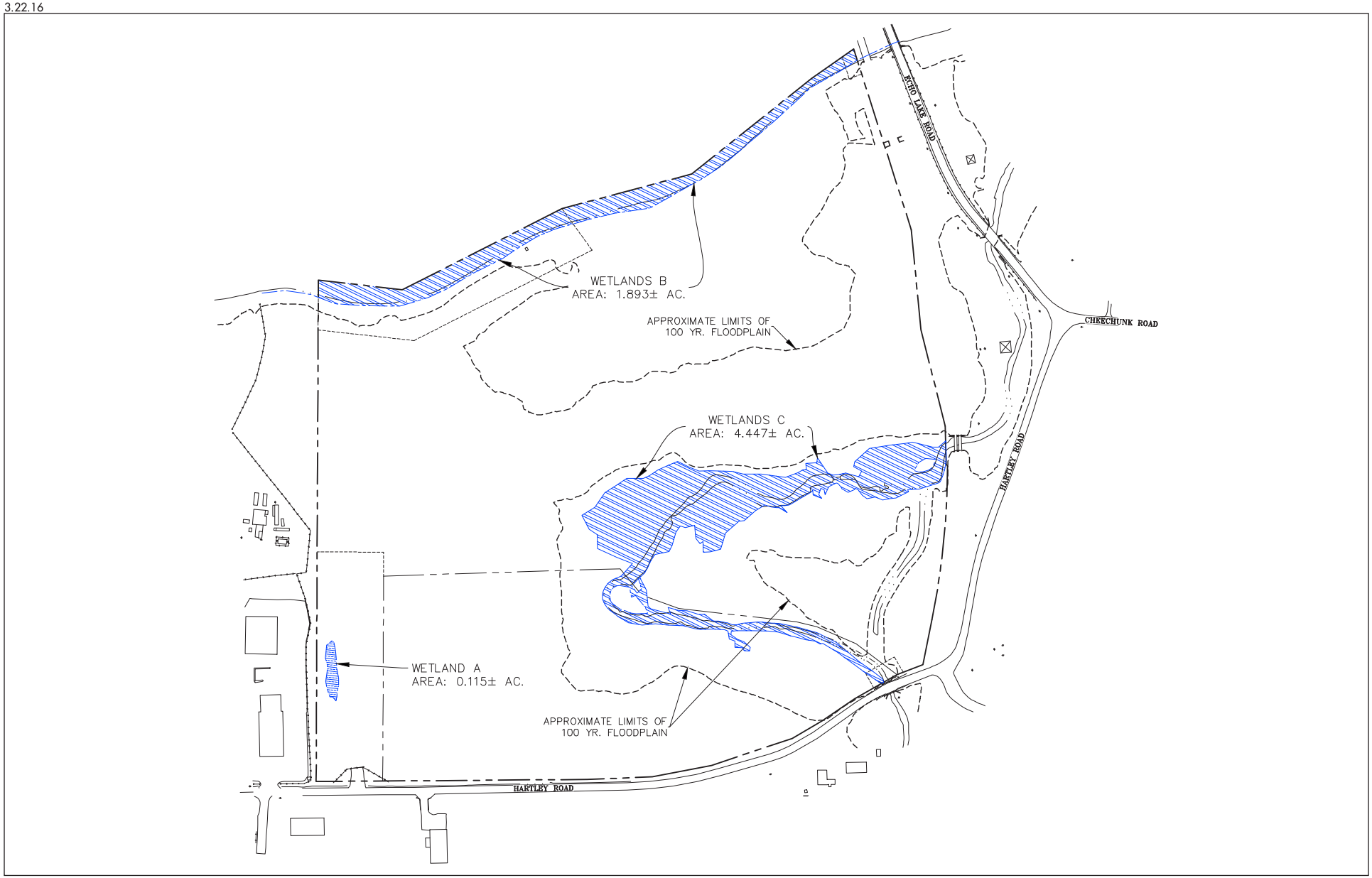
NYSDEC-Mapped Wetlands

New York State has mapped one wetland on the northern periphery of the Echo Lake property. This wetland is NYSDEC-mapped Wetland MD-24, as shown in **Figure III.C-4.** Wetlands of the Echo Lake property have been field delineated and incorporate NYSDEC Wetland MD-24, as discussed below.

Project Site Wetland Delineation

Wetlands were identified through field delineations of the Project Site using the methodology defined by the United States Army Corps of Engineers (USACE).[1] **Figures III.C-5** through **III.C-7** identify all wetlands on the Project Site. Detailed wetland delineation reports for the Project Site are included in **Appendix III.C**. The vegetation assemblages of the Project Site's wetlands have been examined in the field by project ecologists as part of baseline habitat investigations. These are described in detail in Chapter III.D, "Vegetation and Wildlife," and the approximate locations of vegetative habitats on the Project Site, including wetland habitats, are shown in **Figure III.D-1**. Field inspections for vernal pools were conducted in May and June of 2015 and in April 2016. Although several isolated wetlands occur on the Project Site, they are not expected to serve as viable vernal pools as their hydro-period (length of permanent ponding) is not optimal to support successful breeding of endemic vernal pool species (wood frog, mole salamanders, fairy shrimp).

[1] 40 CFR 230.3(t); and, U.S. Army Corps of Engineers. 2011. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.



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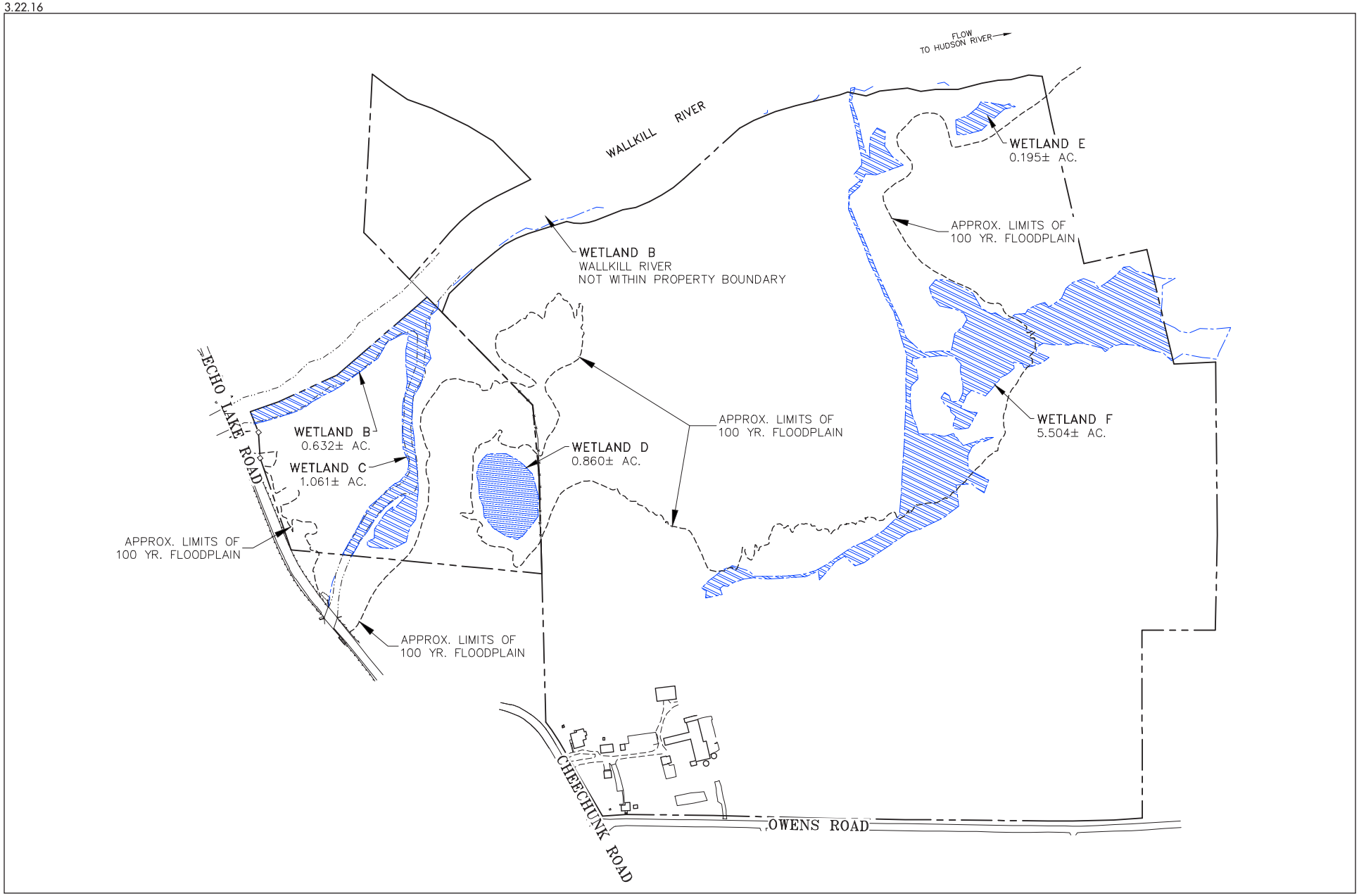
Ver Hage Property Wetlands
Figure III.C-5

3.22.16



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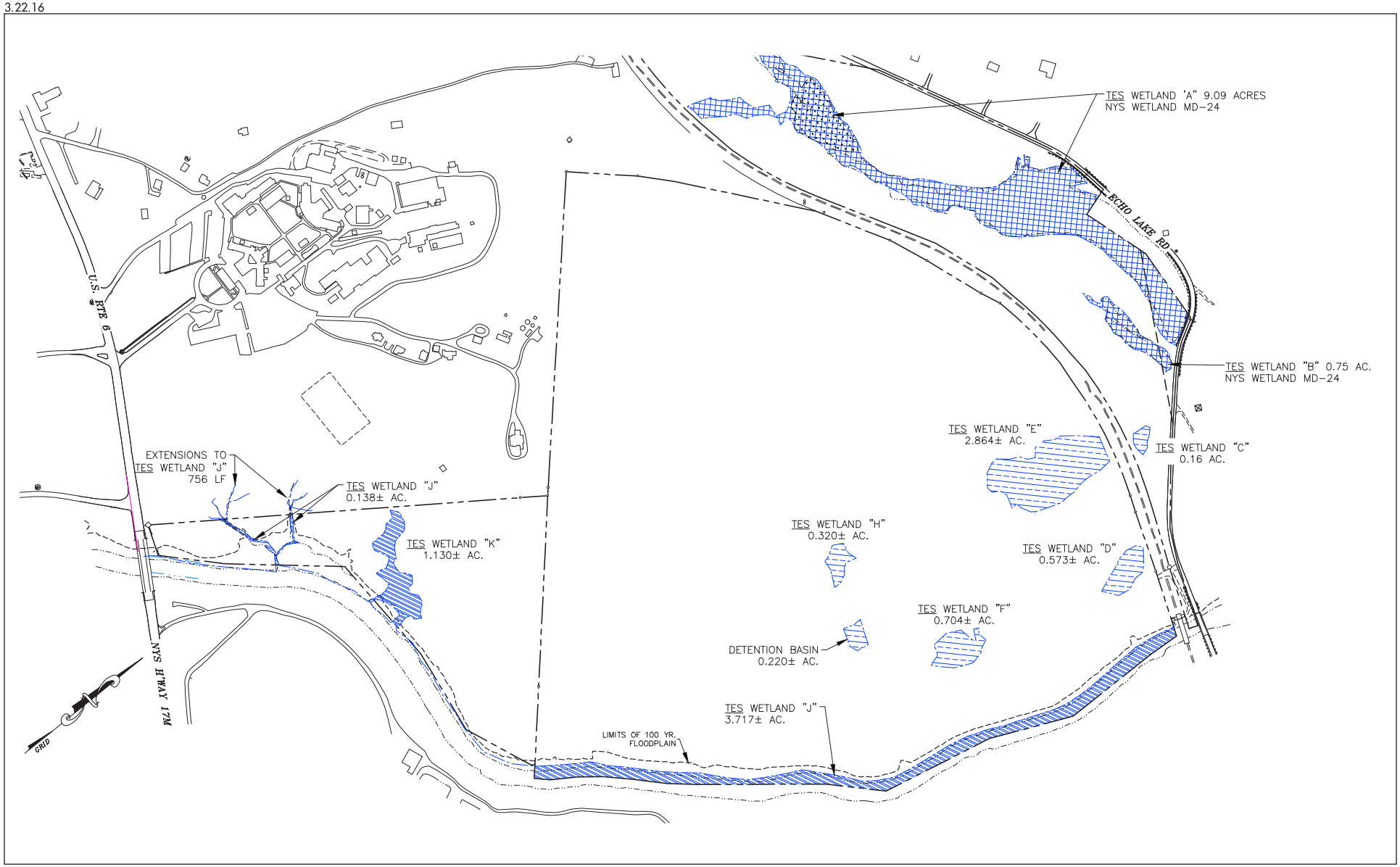
Lipoff and Strong Farm Property Wetlands
Figure III.C-6

3.22.16



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Echo Lake Property Wetlands
Figure III.C-7

Federal and State-regulated wetlands on the Echo Lake Property were previously field delineated and their boundaries were confirmed by USACE in a jurisdictional determination (JD) issued April 5, 2010 (see **Figure III.C-7**). The current jurisdictional status of Echo Lake Property was confirmed during a JD site inspection conducted with USACE on November 17, 2015 concurrent with jurisdictional determination of the additional wetlands/waters on the Ver Hage, Strong Farm, and Lipoff properties (see **Figures III.C-5** and **III.C-6**). The Town of Goshen has been provided with all correspondence between the Applicant and USACE and all wetland boundary maps have been updated to reflect the USACE jurisdictional determination for all wetlands and waters on the overall Project Site. The modifications to wetland boundaries requested by USACE and the jurisdictional determinations on the regulatory status of the Project Site's wetlands have been incorporated in revised wetland boundary drawings. These wetland boundary drawings have been submitted to USACE for its approval. Once approved, the Project Site's wetland boundary drawings are valid for a period of five (5) years.

Ver Hage Property

Wetland investigations of the ver Hage property have confirmed the presence of a narrow band of wetlands habitat along the Wallkill River, a small depressional wetland at the southern property boundary, and a larger forested wetland in the floodplain of Cheechunk Creek.[1] Dominant plant species in the wetlands bordering the Wallkill River include American sycamore, eastern cottonwood, and northern white violet. The small depressional wetland at the southern property boundary is dominated by reed canary grass and eastern cottonwood. The forested wetlands within the Cheechunk Creek floodplain contain green ash, grape vines, with moneywort and jewelweed in the understory. The federal jurisdictional determination conducted on November 17, 2015 by USACE determined that the isolated wetland (Wetland "A") on the Ver Hage property is not federally-regulated because it lacks a significant nexus to other waters of the United States (See **Figure III.C-5**).

Lipoff Property

Wetland investigations of the Lipoff property identify floodplain forest wetlands on the north side of Cheechunk Creek dominated by pin oak, green ash, honey locust, and red maple with a shrub layer of multiflora rose and hawthorn. Emergent marsh wetlands dominated by rushes and sedges also occur on the Lipoff property. The federal jurisdictional determination conducted on November 17, 2015 by USACE determined that the isolated wetland (Wetland "D") on the Lipoff property is not federally-regulated because it lacks a significant nexus to other waters of the United States (See **Figure III.C-6**).

Echo Lake Property

Delineated wetlands of the Echo Lake property and regulated 100-foot wetland buffers are shown in **Figure III.C-7**. These include wetlands coterminous with NYSDEC Wetland MD-24,

[1] The wetland delineation along the Cheechunk Creek floodplain was conducted in June 2015 following initial repair work to the Cheechunk Creek that restored water flow to the natural stream channel. Repair work was conducted by the current property owner in response to a USACE Cease and Desist Order (November 3, 2014) and Town of Goshen notice of violation (November 17, 2014) for improper disposal of fill within the wetlands and diversion of approximately 1,000 linear feet of the Cheechunk Creek.

forested wetlands adjacent to the Wallkill River, and depressional wetlands associated with previous mining activity.

Depressional wetland areas developed from past mining and other activities on the site are dominated by herbaceous species with seasonally pooled water in portions. Dominant species include rice cut grass, spike rush, sedges, fox sedge, purple loosestrife, late goldenrod, and burr reed. Forested wetlands on the Echo Lake property are dominated by red maple and green ash, with spicebush, skunk cabbage, jewelweed, poison ivy, cinnamon fern, and Virginia creeper in the understory. The federal jurisdictional determination conducted on November 17, 2015 by USACE confirmed the previous 2010 jurisdictional determination in finding that Wetlands G and I do not meet the definition of "Waters of the United States" and should be removed from the federal wetland drawing for this property.

Strong Farm Property

Wetland investigations of the Strong Farm property indicate it contains a sedge meadow wetland dominated by sedges/rushes, sensitive fern, and purple loosestrife with a limited shrub strata containing red-panicled dogwood and elderberry. (See **Figure III.C-6**)

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

On January 5, 2016, AKRF conducted a wetland investigation along the Heritage Trail (former Erie Railroad main line) between the Project Site and the Middletown WWTP to determine the potential presence/absence of wetlands and waters regulated by USACE, NYSDEC, and the Town of Goshen. Prior to the wetlands investigation, the NYSDEC and USFWS NWI maps were reviewed to determine locations of state-mapped or NWI-mapped wetlands on and in the vicinity of the Heritage Trail Utility Corridor.

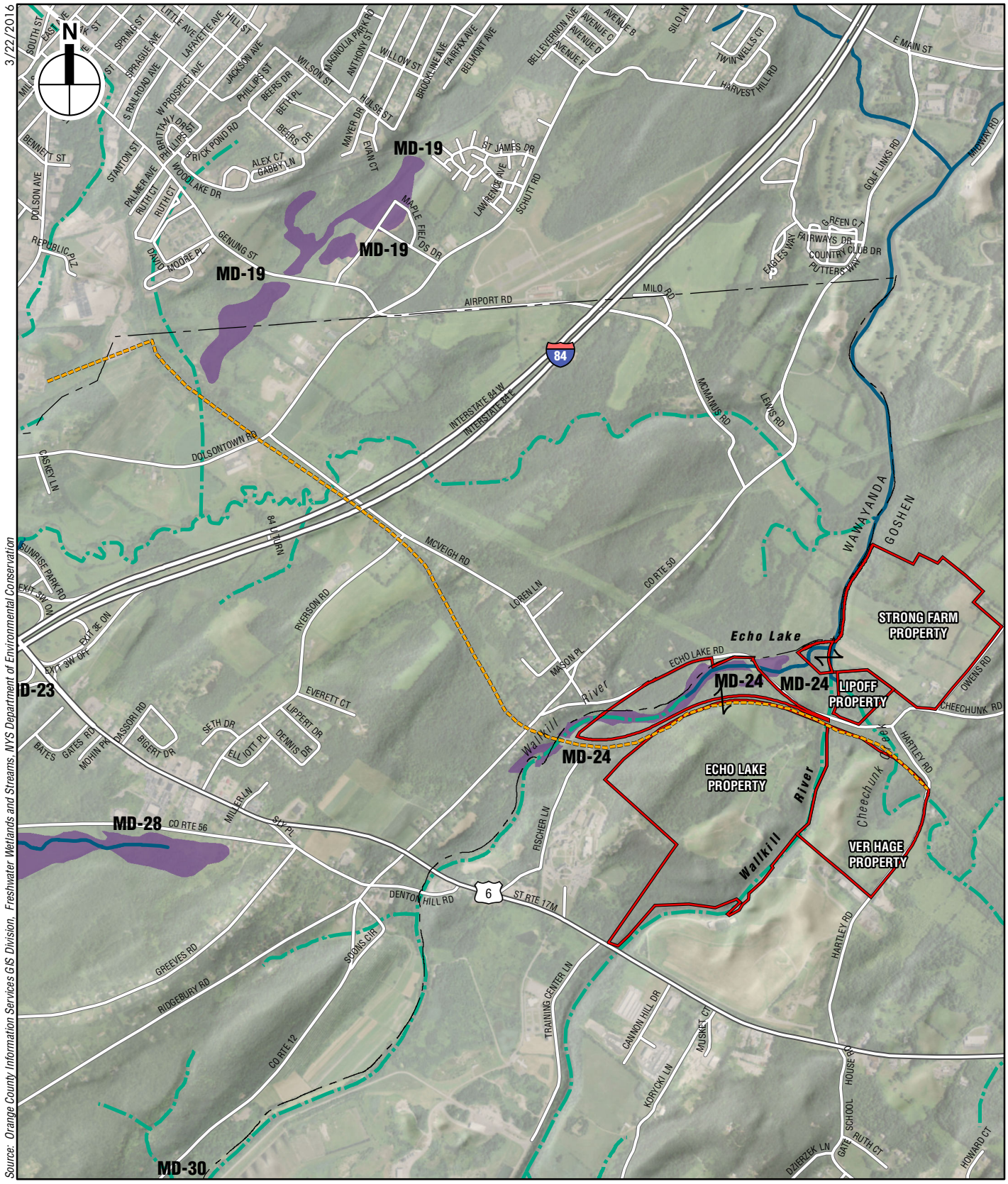
NYSDEC-Mapped Wetlands and Waters

NYSDEC has mapped two (2) freshwater wetlands that extend into and across the Heritage Trail, as shown in **Figure III.C-8**. These are NYSDEC Wetland MD-24, located south of Echo Lake Road, and east of County Route 50; and Wetland MD-19, located north and west of Dolsontown Road. The 100-foot regulated adjacent area for these two (2) wetlands extends into the Heritage Trail. As such, utility line installation within the Heritage Trail Utility Corridor would require a State Freshwater Wetland Permit (ECL Article 24) from the NYSDEC prior to construction.

The Heritage Trail crosses four (4) NYSDEC-mapped streams all classified "C", via bridges and culverts. Because these streams are class "C," the provisions of the NYS Protection of Waters Program (ECL Article 15) do not apply to disturbance within the Heritage Trail Utility Corridor provided no work is necessary to the bridge footings or culvert crossings.

NWI-Mapped Wetlands

Eleven (11) emergent freshwater wetlands, and five (5) forested freshwater wetlands are mapped by NWI adjacent to the Heritage Trail Utility Corridor (see **Figure III.C-9**). Three (3) of these wetlands cross under the Heritage Trail Utility Corridor by way of a culvert or a bridge: one wetland, east of County Route 50, is a mapped palustrine forested/emergent wetland (PFO1/EM1E), characterized by broad-leaved deciduous plants, persistent standing water, and



Project Site

Investigation Area/Heritage Trail

NYSDEC Freshwater Wetlands (w/ Wetland ID)

NYSDEC Stream Water Quality

Class B

Class C

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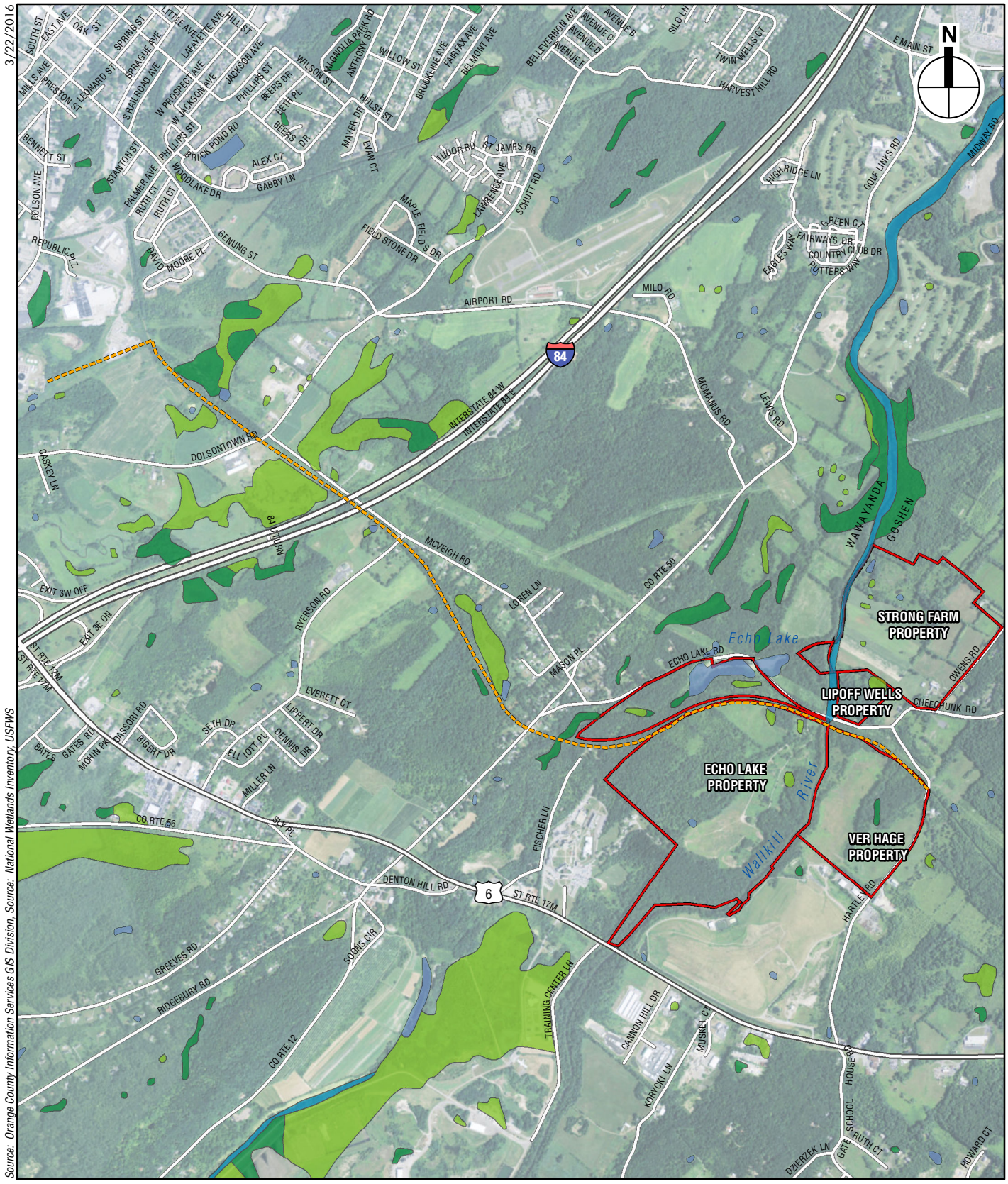
NYSDEC Freshwater Wetlands and Stream Classification

Figure III.C-8



Project Site
Investigation Area/Heritage Trail

NWI Wetlands
Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland

Freshwater Pond
Riverine

0 2,000 FEET

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NWI Wetlands
Figure III.C-9

seasonal flooding; the second, located west of I-84, is a persistent, seasonally flooded palustrine emergent wetland (PEM1E); the third, located west of Dolsontown Road, is a persistent, seasonally flooded, broad-leaf deciduous Palustrine Forested/Scrub-shrub wetland (PFO1/SS1E), connected by culvert to a palustrine emergent wetland, also persistent and seasonally flooded. Site inspection confirms these mapped wetland types and approximate locations.

Beyond the Heritage Trail Utility Corridor, the path of the proposed utility connection to the wastewater treatment plant traverses agricultural land, which contains one NWI-mapped persistent semi-permanently flooded palustrine emergent wetland (PEM1F) mapped within 100 feet of the path. As discussed below, site inspection reveals this wetland may be larger than the NWI-mapped area, and composed of three wetland areas.

Wetland Site Inspection

Site inspection confirms the absence of regulated wetlands within the footprint of that portion of the Heritage Trail Utility Corridor extending from the Project Site to the vicinity of the electrical substation in Middletown. The final approximately 0.3-mile connection of the utility lines between the Heritage Trail and the Middletown WWTP must cross undeveloped and agricultural land that was observed to contain three (3) potential wetland areas (see **Figure III.C-10**). These areas would be delineated following final design of the utility line connections within this area.

ACCESS ROAD IMPROVEMENT AREA

NWI-Mapped and NYSDEC-Mapped Wetlands

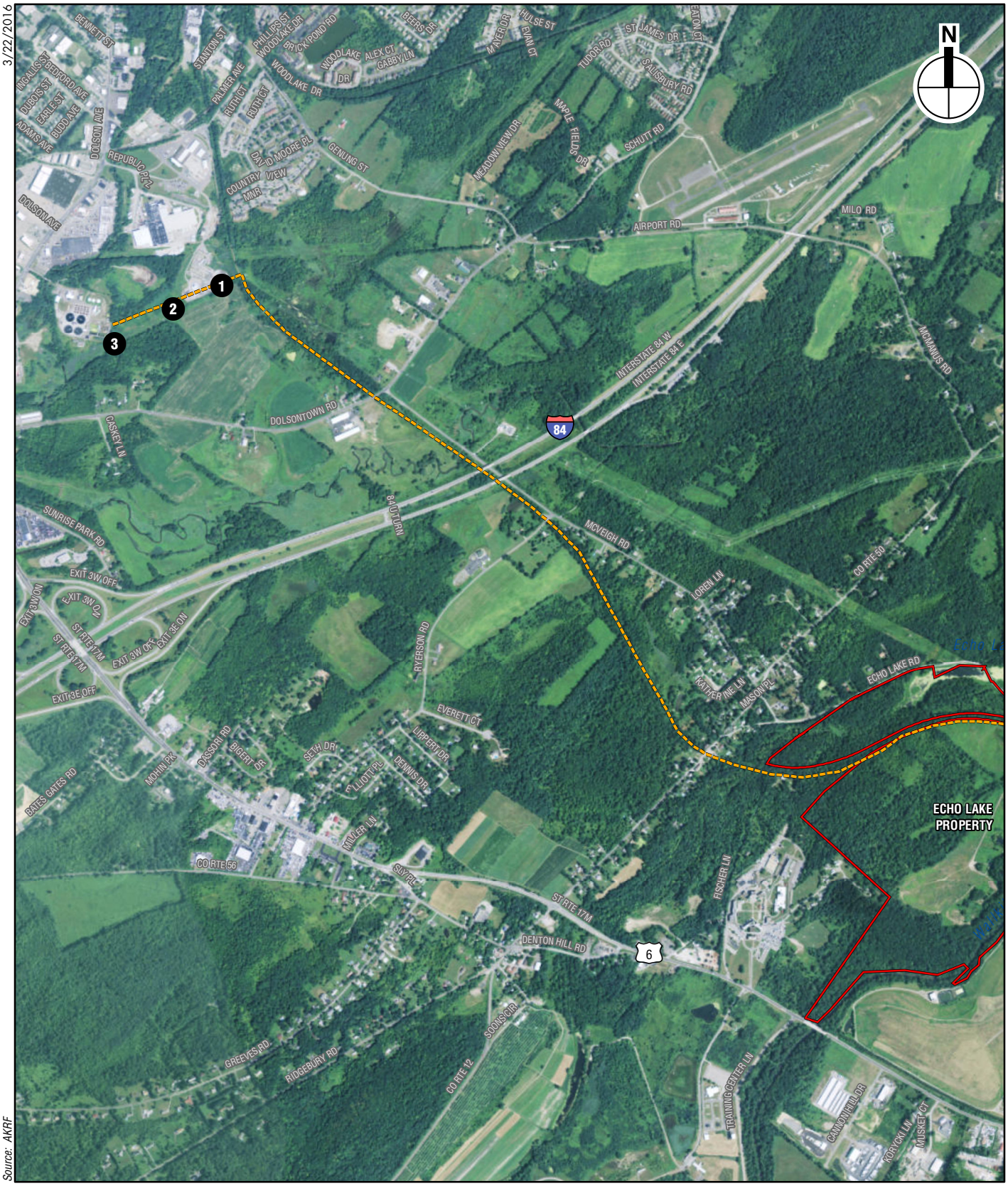
The USFWS NWI has mapped no wetlands within the footprint of the proposed access road improvements. Nor has the NYSDEC mapped any wetlands within the footprint of the proposed access road improvements. The only Federally-mapped wetland in the vicinity of this area is a palustrine emergent wetland (PEM1Cd) that is mapped on the south side of NYS Route 17M and further south than the proposed access road improvement. Most of the footprint of the access road improvement area is north of NYS Route 17M and within areas mapped as predominantly moderately well-drained soil. South of NYS Route 17M, the access road improvement area is underlain by Ra: Raynham silt loam soils, which have a drainage class of *poorly drained*.

Wetland Site Inspection

The footprint of the proposed road improvement area north of NYS Route 17M was examined by a wetland ecologist in August 2015. No wetlands were identified within the area north of NYS Route 17M. The area south of NYS Route 17M is outside of the NWI-mapped area and appears not to be wetland. These areas would be delineated following final design of the access and roadway improvements within this area.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the Proposed Project, no substantial changes to wetlands, watercourses, floodplains or Primary/Principal Aquifers are expected to occur on or near the Project Site. It is assumed that repair work on the Cheechunk Creek within the Ver Hage property will have been completed to the satisfaction of the USACE and Town of Goshen. If left unchanged, it is expected that the vegetation assemblages of the Ver Hage, Lipoff, and Echo Lake properties will continue to grow into forested conditions in the coming decades, and that the extent of wetlands would remain largely unchanged. Portions of the Strong Farm are under active cultivation and



Source: AKRF

Project Site

Investigation Area/Heritage Trail

Potential Wetlands

0 2,000 FEET

Potential Wetlands Identified Within Route of Water Sewer Pipeline Connection

Figure III.C-10

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are within a designated Agricultural District.[1] It is expected these active farming uses would continue in the future and that the same, or roughly the same, type and extent of wetlands as occurs today would continue to exist in the future without the Proposed Project.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

PROJECT SITE

AQUIFERS AND FLOODPLAINS

Principal and Primary Aquifers

The Proposed Project is located over a Principal Aquifer. Historic use of neighboring properties has resulted in some groundwater contamination under the Ver Hage property (see Chapter III.O, "Environmental Contamination"). As discussed in Chapter III.K, "Land Use and Zoning," the Proposed Project would fully conform to the impervious cover limitations of the Town's Zoning Code, including those portions of the site within the Aquifer Protection Overlay Zone. In this way, reductions in aquifer recharge from impervious surfaces associated with the Proposed Project will be kept to a minimum in order to avoid significant impacts to the Principal Aquifer.

Floodplains (Special Flood Hazard Area)

The Proposed Project will conform to the floodplain development requirements of the Town of Goshen Chapter 61A, "Flood Damage Prevention," which implements the provisions of the National Flood Insurance Program (NFIP) at the Town level. No development is proposed in the designated "floodway" within the Wallkill River, and all development within the 100-year floodplain (Special Flood Hazard Area) will conform to the Town Code construction requirements in floodplains, including such measures as constructing the first-floor elevation of all buildings at or above the base flood elevation (BFE) or flood-proofing portions of structures that are below the BFE.

The proposed Warehouse Use would require approximately 4,634 cubic yards of fill to elevate the building above the base flood elevation of 373 feet above mean sea level. The volume of the area that was previously excavated to divert the Cheechunk Creek is approximately 5,936 cubic yards. Thus, there is more than sufficient volume to compensate for the proposed fill within the 100-year floodplain. Pursuant to Chapter 61A-14.B(3), "[w]henever any portion of a floodplain is authorized for development, the volume of space occupied by the authorized fill or structure below the base flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood elevation at or adjacent to the development site. All such excavations shall be constructed to drain freely to the watercourse. No area below the waterline of a pond or other body of water can be credited as a compensating excavation." Thus, compliance with Chapter 61A can be achieved with the suggested floodplain offset. In the event that this offset is not permissible a smaller Warehouse Use may be considered (see Chapter V, "Alternatives").

[1] The Echo Lake and Strong Farm parcels are part of Orange County Agricultural District #2 (adopted by Orange County Legislature February 7, 2013). See Chapter III.A, "Geology and Soils," for additional information on Agricultural Districts and Agricultural Soils.

A new stream crossing (bridge) is proposed between the Echo Lake and Ver Hage properties. No disturbance/fill, such as bridge abutments, would be located in the FEMA-designated "floodway" mapped between these two properties. A hydraulic analysis has been completed demonstrating that the proposed bridge abutments would not increase flooding heights within the Wallkill River (see **Appendix III.C**). The hydraulic analysis used the most recent FEMA Flood Insurance Study (FIS) for Orange County completed in August 2009 and data from a HEC-2 analysis of the Wallkill River originally prepared in 1983. A HEC-RAS analysis was performed for a section of the Wallkill River 4,000 feet upstream to 9,000 feet downstream of the proposed bridge for the 10-year, 50-year, 100-year, and 500-year flood events to calculate the minimum required elevation of the bridge and stream velocities during the 50-year and 100-year storm events.

With the implementation of the floodplain offset for the Warehouse Use and design of the bridge to avoid negative freeboard for the 100-year flood event, the Proposed Project would conform to the requirements of the NFIP and Town Code Chapter 61A.

SURFACE WATERS

The Proposed Project will obtain potable water from a new private utility connection to the City of Middletown. The existing water supply wells on the Project Site will not be used. Thus, it is no longer relevant to discuss potential drawdown testing of wells and monitoring of surface water and wetlands during the drawdown tests.

As discussed in Chapter III.G, "Stormwater Management," a Stormwater Pollution Prevention Plan (SWPPP) has been developed for the Amy's Kitchen manufacturing facility and SoS Conference Center. The implementation of the SWPPP would avoid any potential significant adverse stormwater impacts to surface water quality. A de-icing management plan will be incorporated in the SWPPP to avoid impacts to water quality from de-icing agents. This may include use of less-damaging de-icing materials (calcium chloride, etc.) and proper storage and use of de-icing materials.

A new stream crossing (bridge) is proposed between the Echo Lake and Ver Hage properties. The Wallkill River is classified "C" between these two properties, therefore a Protection of Waters Permit is not required for this crossing. Final design of the Wallkill River bridge drainage has not been completed at this time. Runoff from the Wallkill River bridge could be collected in catch-basins and pipes and conveyed to the stormwater basin on the Ver Hage property just to the north of the Amy's Kitchen site driveway. That stormwater basin would provide water quality treatment, including for any road salts or other de-icing agents. If it is determined that drainage systems would not be provided on the Wallkill River bridge and that runoff would sheet flow off of the bridge directly into the Wallkill River (similar to most other bridges in Orange County), then Amy's Kitchen would implement a practice to use only sand to provide traction during winter months. Appropriate signs would be provided to warn drivers that no de-icing agents other than sand are being used (similar to other locations in Orange County where such practices are implemented).

WETLANDS

Wetland disturbance has been avoided and minimized to the maximum extent practicable. In total, approximately 0.091 acres of federally-regulated wetlands is necessary to construct the Proposed Project, primarily for the bridge crossing over the Wallkill River and minor additional impacts for the access road off NYS Route 17M. Impacts to non-federally regulated wetlands, as

confirmed by USACE jurisdictional determination conducted on November 17, 2015, would occur. Each of the wetland impact areas is discussed below.

Echo Lake property

Construction of the Project Site access road will require approximately 0.039 acres of wetland disturbance to Federally-regulated wetland K (0.039 acres). Construction of the proposed bridge crossing the Wallkill River will require approximately 0.032 acres (144 linear feet) of disturbance to wetland J. Disturbance to non-federally regulated wetlands D, E, F and H is necessary to achieve the proposed site plan, totaling 4.45 acres of disturbance. As non-jurisdictional wetlands, disturbance to these wetlands is not regulated by USACE and requires no mitigation.

With the exception of the proposed bridge, all other structures, site improvements and impervious surfaces will be a minimum of 250 feet from Wallkill River. This will allow existing vegetation to remain for the benefit of the river's water quality.

Ver Hage property

Development proposed for the Ver Hage property will avoid impacts to wetlands with the exception of approximately 0.115 acres of disturbance to a small emergent wetland identified on the southern boundary of the property, identified as wetland A. USACE has determined that this wetland is non-jurisdictional. Therefore, no federal permit is required for this disturbance. In addition, a small amount of disturbance, 0.020 acres, is necessary to construct the bridge crossing over the Wallkill River, designated wetland B.

Lipoff property

There are no proposed physical improvements or modifications to the Lipoff property. No wetland disturbance would occur on the Lipoff property.

Strong Farm property

Wetland investigation of the Strong Farm property identifies sedge meadow wetlands and open water ponds within the northern portion of the property. No site disturbance or development of any kind is proposed on the Strong Farm property. Temporary (three-day) parking of vehicles associated with the Science of the Soul Conference Center would not have any adverse effects on Strong Farm wetlands. No wetland disturbance would occur on the Strong Farm property.

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

Due to the absence of wetlands within the Heritage Trail footprint, installation of the approximately 2.5 mile length of utility lines proposed to be constructed within the Heritage Trail Utility Corridor would not cause any direct wetland disturbance. This assumes that the existing bridges and culverts that convey several streams beneath the Heritage Trail Utility Corridor would not require reconstruction and concomitant wetland disturbance to facilitate installation of the utilities. It is assumed that any stream/wetland crossings conducted as part of the Heritage Trail multi-use pathway would be completed as a No Build project and that Orange County would have obtained all necessary permits for such work. Although no direct wetland disturbance would be likely if all disturbance (cut/fill/clearing/staging) can be kept within the footprint of the Heritage Trail Utility Corridor itself, installation of the utilities would require a

NYSDEC permit for disturbance within the State-regulated 100-foot freshwater wetland buffer (ECL Article 24) due to the presence of two (2) State-mapped wetlands located adjacent to the Heritage Trail.

Construction of the proposed private water supply and wastewater conveyance lines would require stream crossings at Monhagen Brook and the original Wallkill River channels. The utility lines would be constructed underneath the channels through boring pits and pipe jacking. Temporary boring access pits will be excavated on both sides of the waterway. Shoring would be provided as necessary. Minimum setback distances would be adhered to. During the construction of these stream crossings appropriate erosion and sediment control measures (e.g., silt fencing, stockpile stabilization) will be used to avoid impacts to water quality of these surface waters. These storm water management provisions would prevent sediment from entering the waterways. In addition, provisions would be provided to properly manage groundwater removed from the excavations.

Fused HDPE pipe will be directionally bored for both the water line and wastewater conveyance line. The boring depth below the stream or waterway will be sufficient to prevent the release of drilling mud into the waterway. Geotechnical investigations will be conducted as required to define the soils in the area of the borings.

The final approximately 0.3 mile connection of the proposed utility lines between the Heritage Trail and the Middletown WWTP was observed to contain three (3) potential wetland areas identified during site inspection. These areas would be further delineated following final design of the utility lines.

ACCESS ROAD IMPROVEMENT AREA

The access road improvement area would cause no impacts to federally-regulated wetlands north of NYS Route 17M based on site inspection. South of NYS Route 17M, preliminary examination indicates that the access road would not affect federally-regulated wetland. This would be confirmed as designs for this roadway improvement are finalized.

E. PROPOSED MITIGATION

The Proposed Project would result in unavoidable adverse impacts to approximately 4.2 acres of wetlands (0.091 acres of federally-regulated wetlands) through the construction of the Proposed Project. However, impacts to these wetlands are not considered significant and adverse as the majority of disturbance is to non-regulated isolated wetlands of limited ecological value. No impacts to surface waters have been identified.

As further discussed in Chapter III.G, "Stormwater Management," a SWPPP has been developed for the Amy's Kitchen manufacturing and SoS Conference Center. The implementation of the SWPPP would avoid any potential significant adverse stormwater impacts to surface water quality. These measures include the use of bio-retention areas, porous pavement, dry swales, and underground infiltration.

In addition, a de-icing management plan will be incorporated in the SWPPP to avoid impacts to water quality from de-icing agents. This may include use of less-damaging de-icing materials (calcium chloride, etc.) and proper storage and use of de-icing materials. The SWPPP would ensure that runoff from Project Site impervious surfaces would not adversely affect the quality or quantity of waters in the Wallkill River or Cheechunk Creek. ✷

A. INTRODUCTION AND METHODOLOGY

This chapter describes the plant and animal communities that occupy the Project Site and the potential impacts to those resources from the development of the Proposed Project. In addition to field reconnaissance surveys of the Project Site, publicly available and previously published information and aerial photography were used in developing the contents of this chapter.

Existing conditions for vegetation, aquatic resources, wildlife, and threatened, endangered, and special concern species within the Project Site were summarized from the following:

- Published information identified in literature and obtained from governmental and nongovernmental sources, including the New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper; U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) System list of federally-listed threatened, endangered, proposed, and candidate species for Orange County; NYSDEC 2000-2005 New York State Breeding Bird Atlas; NYSDEC Herp Atlas Project.
- Project Site inventories of plants species and habitats of the Ver Hage, Lipoff and Strong Farm properties conducted by ecologists in May/June of 2015, and of the Echo Lake property in 2011 and 2014, with reference to plant communities as defined by the New York Natural Heritage Program (NYNHP) (Edinger et al. 2014).
- Records of fish surveys of the Wallkill River provided by NYSDEC Region 3, Division of Fish, Wildlife and Marine Resources.
- Responses from the NYNHP to requests for information on rare, threatened, or endangered species recorded in the vicinity of the Project Site (see **Appendix III.D**).
- Daytime visual encounter survey of birds, mammals, reptiles and amphibians conducted within and immediately surrounding the Project Site on June 12, 2015. Incidental observations of wildlife made during May 27, 2015 and June 10, 2015 visits to the Project Site for other purposes were also recorded.
- Acoustic bat survey conducted within the Project Site from August 6 to15, 2015 (see **Appendix III.D**).
- Consideration of additional species with the potential to occur within the Project Site on the basis of their range within New York, habitat associations, area requirements, and commonness in the region.

Impacts from construction and operation of the Proposed Project to vegetation, aquatic resources, wildlife, and threatened and endangered species were assessed by considering land clearing, visual and noise disturbances, and habitat restoration. Potential impacts were considered at the individual and population levels, and in the context of cumulative habitat loss.

B. EXISTING CONDITIONS

PROJECT SITE

ECOLOGICAL COMMUNITIES AND VEGETATION

The ecological communities and plant species identified on the Project Site are described below and are mapped in **Figure III.D-1**. These ecological communities correspond with the habitats of various wildlife species, including potential threatened, endangered, or special concern species that may occupy the Project Site, that are described below. Thus, mapping of the vegetative communities corresponds with mapping of potential habitats. Additional detail on the location of potential habitat for threatened, endangered, or special concern species is contained in the detailed biological reports contained in **Appendix III.D**. Ecological community names follow the methodology contained in the New York Natural Heritage Program's *Ecological Communities of New York State* (Edinger et al. 2014).

Ver Hage

The Ver Hage property is bordered to the south by a chain-link fence, to the west by the Wallkill River, to the north by the Heritage Trail, and to the east by Hartley Road. The Ver Hage property consists of unmaintained fields, forests, and wetlands that would be described by Edinger et al. (2014) as open uplands, forested uplands, forested mineral soil wetlands, and riverine cultural communities.

The open uplands community present within the Ver Hage property is best described as a "successional old field"[1], which occupies approximately two-thirds of the Ver Hage property. Principal species identified in the herbaceous layer are wild madder (*Rubia peregrina*), common milkweed (*Asclepias syriaca*), Canada goldenrod (*Solidago canadensis*), common mugwort (*Artemisa vulgaris*), cow vetch (*Vicia cracca*), yellow vetchling (*Lathyrus aphaca*), and tall thistle (*Cirsium altissimum*). Grasses in the herbaceous layer include foxtail grass (*Alopecurus* sp), switchgrass (*Panicum virgatum*), and dactylis (*Dactylis* sp). The shrub layer is dominated by bush honeysuckle (*Lonicera* sp), multiflora rose (*Rosa multiflora*), common red raspberry (*Rubus idaeus*), and autumn olive (*Elaeagnus umbellata*).

The forested uplands community present within the Ver Hage property is best described as a "successional southern hardwoods"[2] community, which occupies the areas on the edges of the successional old field community. The dominant canopy tree species identified include eastern cottonwood (*Populus deltoides*), American sycamore (*Platanus occidentalis*), and black walnut (*Juglans nigra*). Red panicled dogwood (*Cornus racemosa*) dominates the shrub layer. The vine layer comprises predominately grape (*Vitis* sp.), poison ivy (*Toxicodendron radicans*), and Virginia creeper (*Parthenocissus quinquefolia*). The more interior portions of the successional southern hardwoods community are dominated in the canopy by black cherry (*Prunus serotina*), honey locust (*Gleditsia triacanthos*), sugar maple (*Acer saccharum*), and red maple (*Acer rubrum*). Bush honeysuckle, barberry (*Berberis* sp.), and wineberry (*Rubus phoenicolasius*) are the dominant shrub species. Virginia creeper is the predominant vine. Predominantly, garlic mustard (*Alliaria petiolata*) and common jewelweed (*Impatiens capensis*) make up the herbaceous layer.

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[1] Edinger et al. (2014) defines this community as "a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development), and then abandoned."

[2] Edinger et al. (2014) defines this community as "a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed." Primarily these communities exist "in the southern half of New York, south of the Adirondacks."

Table III.D-1
Vegetation Identified within the Ver Hage Property

Common Name	Scientific Name	Strata
Red maple	*Acer rubrum*	Tree
Sugar maple	*Acer saccharum*	Tree
Tree of heaven	*Ailanthus altissima*	Tree
Garlic mustard	*Alliaria petiolata*	Herb
Wild chives	*Allium schoenoprasum*	Herb
Foxtail grass	*Alopecurus* sp	Herb
Common mugwort	*Artemisa vulgaris*	Herb
Common milkweed	*Asclepias syriaca*	Herb
Barberry	*Berberis* sp	Shrub
Gray birch	*Betula populifolia*	Tree
Beggar tick	*Bidens frondosa*	Herb
Spring cress	*Cardamine bulbosa*	Herb
Purple cress	*Cardamine douglassii*	Herb
Gray's sedge	*Carex grayi*	Herb
Southern catalpa	*Catalpa bignonioides*	Tree
Asiatic bittersweet	*Celastrus orbiculatus*	Vine
Oxeye daisy	*Chrysanthemum leucanthemum*	Herb
Tall thistle	*Cirsium altissimum*	Herb
Red panicled dogwood	*Cornus racemosa*	Shrub
Orchard grass	*Dactylis glomerata*	Herb
Dactylis	*Dactylis* sp	Herb
Queen Anne's lace	*Daucus carota*	Herb
Wood fern	*Dryopteris* sp	Herb
Autumn olive	*Elaeagnus umbellata*	Shrub
Horsetail	*Equisetum* sp	Herb
Common fleabane	*Erigeron philadelphicus*	Herb
Green ash	*Fraxinus pennsylvanica*	Tree
Honey locust	*Gleditsia triacanthos*	Tree
Common jewelweed	*Impatiens capensis*	Herb
Black walnut	*Juglans nigra*	Tree
Red cedar	*Juniperus virginiana*	Tree
Yellow vetchling	*Lathyrus aphaca*	Herb
Bush honeysuckle	*Lonicera* sp	Shrub
Moneywort	*Lysimachia nummularia*	Herb
Japanese stiltgrass	*Microstegium vimineum*	Herb
White mulberry	*Morus alba*	Tree
Sensitive fern	*Onoclea sensibilis*	Herb
Wood sorrel	*Oxalis stricta*	Herb
Maidencane	*Panicum hemitomon*	Herb
Switchgrass	*Panicum virgatum*	Herb
Virginia creeper	*Parthenocissus quinquefolia*	Vine
Virginia knotweed	*Persicaria virginiana*	Herb
Common reed	*Phragmites australis*	Herb
Common plantain	*Plantago major*	Herb
American sycamore	*Platanus occidentalis*	Tree
Common smartweed	*Polygonum hydropiper*	Herb
Japanese knotweed	*Polygonum cuspidatum*	Herb
Eastern cottonwood	*Populus deltoides*	Tree
Cinquefoil	*Potentilla* sp	Herb
Black cherry	*Prunus serotina*	Tree

Table III.D-1 (cont'd)
Vegetation Identified within the Ver Hage Property

Common Name	Scientific Name	Strata
Callery pear	*Pyrus calleryana*	Tree
Swamp white oak	*Quercus bicolor*	Tree
Jack oak	*Quercus ellipsoidalis*	Tree
Pin oak	*Quercus palustris*	Tree
Multiflora rose	*Rosa multiflora*	Shrub
Wild madder	*Rubia peregrina*	Herb
Common red raspberry	*Rubus idaeus*	Shrub
Wineberry	*Rubus phoenicolasius*	Shrub
Curly dock	*Rumex crispus*	Herb
Black willow	*Salix nigra*	Tree
Smooth carrion flower	*Smilax herbacea*	Herb
Common greenbrier	*Smilax rotundifolia*	Vine
Canada goldenrod	*Solidago canadensis*	Herb
Lesser stitchwort	*Stellaria graminea*	Herb
Heartleaf aster	*Symphyotrichum cordifolium*	Herb
Skunk cabbage	*Symplocarpus foetidus*	Herb
Common dandelion	*Taraxacum officinale*	Herb
Poison ivy	*Toxicodendron radicans*	Vine
Red clover	*Trifolium pratense*	Herb
White clover	*Trifolium repens*	Herb
Common cattail	*Typha latifolia*	Herb
Slippery elm	*Ulmus rubra*	Tree
Stinging nettle	*Urtica dioica*	Herb
Common mullein	*Verbascum thapsus*	Herb
Arrowwood viburnum	*Viburnum dentatum*	Shrub
Cow vetch	*Vicia cracca*	Herb
Grape	*Vitis* sp	Vine

Source: AKRF reconnaissance investigation on May 27, 2015.

The forested mineral soil wetlands community present within the Ver Hage property is best described as a "floodplain forest"[1] community, which occupies the area adjacent to the Wallkill River and Cheechunk Creek. Green ash (*Fraxinus pennsylvanica*), American sycamore, eastern cottonwood, and pin oak (*Quercus palustris*) are the dominant species in tree canopy. The herbaceous layer comprises jewelweed, stinging nettle (*Urtica dioica*), moneywort (*Lysimachia nummularia*), and beggar's tick (*Bidens frondosa*).

Due to recent disturbance initiated by the current property owner, a new channel/ditch was constructed, bypassing the natural flow of water within Cheechunk Creek. At the direction of USACE, this disturbance has been partially remedied by removing the recently deposited fill in Cheechunk Creek and returning the flow of water to the natural channel. The banks of the ditch/artificial intermittent stream are largely unvegetated, although it appears as though it was

[1] Edinger et al. (2014) defines this community as "a hardwood forest that occurs on mineral soils on low terraces of river floodplains and river deltas. These sites are characterized by their flood regime; low areas are annually flooded in spring, and high areas are flooded irregularly. Some sites may be quite dry by late summer, whereas other sites may be flooded again in late summer or early autumn (these floods are caused by heavy precipitation associated with tropical storms). This is a broadly defined community; floodplain forests are quite variable and may be very diverse."

recently seeded at the time of the May 27, 2015 reconnaissance investigation. The riverine cultural community present within the Ver Hage property is best described as a "ditch/artificial intermittent stream"[1] community, which is located along the northeastern border of the Ver Hage property where the channel of Cheechunk Creek had been diverted.

Lipoff

The Lipoff property is bordered to the south by Echo Lake Road, to the west by the Wallkill River, to the north by the Strong Farm property, and to the east by residential properties. The Lipoff property consists of unmaintained fields, forests, and wetlands that would be described by Edinger et al. (2014) as open uplands, forested uplands, forested mineral soil wetlands, and open mineral soil wetlands communities.

The open uplands community present within the Lipoff property is best described as a "successional old field" community and occupies a small portion of the northwestern corner of the property. The herbaceous layer comprises predominantly orchard grass (*Dactylis glomerata*), switchgrass, common milkweed, and common mugwort. The limited shrub layer is dominated by common red raspberry.

Forested uplands communities identified within the Lipoff property are best described as "successional southern hardwoods" and "beech-maple mesic forest"[2] communities. The "successional southern hardwoods" community occupies more than 50 percent of the Lipoff property and is located both north and south of Cheechunk Creek. Dominant trees identified within this community include green ash, European black alder (*Alnus glutinosa*), honey locust, and American sycamore. It has a well-developed shrub layer consisting primarily of wineberry, bush honeysuckle, common red raspberry, and spicebush (*Lindera benzoin*). The herbaceous layer is predominantly Virginia creeper and garlic mustard, with grape in the vine layer. The "beech-maple mesic forest" community occupies a small portion of the Lipoff property on a steep hill that runs parallel to Cheechunk Creek on its north side. The tree canopy predominantly consists of American beech (*Fagus grandifolia*), sugar maple, red oak (*Quercus rubra*), black cherry, and black birch (*Betula lenta*). The shrub layer is sparse and primarily consists of barberry. The herbaceous layer is equally sparse and dominated by common yellow wood sorrel (*Oxalis stricta*).

The "floodplain forest" wetland community identified on the Lipoff property occupies the areas adjacent to the Wallkill River and Cheechunk Creek. The floodplain forest on the north side of Cheechunk Creek is wider than on the south side. The canopy is dominated by pin oak, green ash, honey locust, and red maple. The shrub layer is primarily a mixture of multiflora rose and hawthorn (*Crataegus* sp.). The herbaceous layer is primarily stinging nettle, poison ivy, and sedge (*Carex* sp.).

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[1] Edinger et al. (2014) defines this community as "the aquatic community of an artificial waterway constructed for drainage or irrigation of adjacent lands. Water levels either fluctuate in response to variations in precipitation and groundwater levels, or water levels are artificially controlled."

[2] Edinger et al. (2014) defines this community as "a northern hardwood forest with sugar maple (*Acer saccharum*) and American beech (*Fagus grandifolia*) codominant. This is a broadly defined community type with several regional and edaphic variants. These forests occur on moist, well-drained, usually acid soils."

Table III.D-2
Vegetation Identified within the Lipoff Property

Common Name	Scientific Name	Stratum
Red maple	*Acer rubrum*	Tree
Silver maple	*Acer saccharinum*	Tree
Sugar maple	*Acer saccharum*	Tree
Tree of heaven	*Ailanthus altissima*	Tree
Garlic mustard	*Alliaria petiolata*	Herb
Wild garlic	*Allium canadense*	Herb
European black alder	*Alnus glutinosa*	Tree
Great burdock	*Arctium lappa*	Herb
Common mugwort	*Artemisia vulgaris*	Herb
Common milkweed	*Asclepias syriaca*	Herb
Barberry	*Berberis* sp	Shrub
Black birch	*Betula lenta*	Tree
Spring cress	*Cardamine bulbosa*	Herb
Purple cress	*Cardamine douglassii*	Herb
Gray's sedge	*Carex grayi*	Herb
Sedge	*Carex* sp	Herb
Asiatic bittersweet	*Celastrus orbiculatus*	Vine
Redberry moonseed	*Cocculus carolinus*	Vine
Red panicled dogwood	*Cornus racemosa*	Shrub
Hawthorn	*Crataegus* sp	Shrub
Orchard grass	*Dactylis glomerata*	Herb
Queen Anne's lace	*Daucus carota*	Herb
Autumn olive	*Elaeagnus umbellata*	Shrub
Leafy spurge	*Euphorbia esula*	Herb
American beech	*Fagus grandifolia*	Tree
Wild strawberry	*Fragaria vesca*	Herb
Green ash	*Fraxinus pennsylvanica*	Tree
Honey locust	*Gledistia triacanthos*	Tree
Common jewelweed	*Impatiens capensis*	Herb
Black walnut	*Juglans nigra*	Tree
Yellow vetchling	*Lathyrus aphaca*	Herb
Oxeye daisy	*Leucanthemum vulgare*	Herb
Northern spicebush	*Lindera benzoin*	Shrub
Bush honeysuckle	*Lonicera* sp	Shrub
Moneywort	*Lysimachia nummularia*	Herb
Japanese stiltgrass	*Microstegium vimineum*	Herb
Common yellow wood sorrel	*Oxalis stricta*	Herb
Switchgrass	*Panicum virgatum*	Herb
Virginia creeper	*Parthenocissus quinquefolia*	Vine
Virginia knotweed	*Persicaria virginiana*	Herb
Common reed	*Phragmites australis*	Herb
Pokeweed	*Phytolacca americana*	Herb
American sycamore	*Platanus occidentalis*	Tree
Common smartweed	*Polygonum hydropiper*	Herb
Eastern cottonwood	*Populus deltoides*	Tree
Black cherry	*Prunus serotina*	Tree
Pin oak	*Quercus palustris*	Tree
Red oak	*Quercus rubra*	Tree
Staghorn sumac	*Rhus typhina*	Shrub
Multiflora rose	*Rosa multiflora*	Shrub

Table III.D-2 (cont'd)
Vegetation Identified within the Lipoff Property

Common Name	Scientific Name	Stratum
Common red raspberry	*Rubus idaeus*	Shrub
Wineberry	*Rubus phoenicolasius*	Shrub
Curly dock	*Rumex crispus*	Herb
Black willow	*Salix nigra*	Tree
Canada goldenrod	*Solidago canadensis*	Herb
Great chickweed	*Stellaria pubera*	Herb
Poison ivy	*Toxicodendron radicans*	Herb
Common cattail	*Toxicodendron radicans*	Herb
Slippery elm	*Ulmus rubra*	Tree
Stinging nettle	*Urtica dioica*	Herb
Common mullein	*Verbascum thapsus*	Herb
Purple cow vetch	*Vicia cracca*	Herb
Grape	*Vitis* sp	Vine
Sources: AKRF reconnaissance investigation on June 10, 2015.		

The open mineral soil wetlands community present within the Lipoff property is best described as a "shallow emergent marsh"[1] community and is located near the northeastern corner of the property. The dominant vegetation within the shallow emergent marsh are sedges (*Carex* sp.) and rushes (*Juncus* sp.).

Strong Farm

The Strong Farm property is bordered to the south by the Lipoff property, to the west by the Wallkill River, to the north by undeveloped land, and to the east by Owens Road. The Strong Farm property consists of unmaintained fields, forests, croplands, and wetlands that would be described by Edinger et al. (2014) as open uplands, forested uplands, forested mineral soil wetlands, open peatlands, and terrestrial cultural communities.

The open uplands community present within the Strong Farm property is best described as a "successional old field" community, which occupies three distinct patches. The dominant species identified onsite within the successional old field community are herbaceous species including common mugwort, common milkweed, tall thistle, and orchard grass.

The forested uplands community present within the Strong Farm property is best described as a "successional southern hardwoods" community, and is located primarily in the northwestern portion of the property and in narrow strips separating fields. The predominant tree species identified within this community include eastern cottonwood, silver maple (*Acer saccharinum*), red maple, and American sycamore. It exhibits a moderate shrub layer dominated by multiflora rose and common red raspberry. The most common species within the herbaceous layer are Virginia creeper and garlic mustard.

[1] Edinger et al. (2014) defines this community as "a marsh meadow community that occurs on mineral soil or deep muck soils (rather than true peat), that are permanently saturated and seasonally flooded. This marsh is better drained than a deep emergent marsh; water depths may range from 15 centimeters to 1 meter (6 inches to 3.3 feet) during flood stages, but the water level usually drops by mid to late summer and the substrate is exposed during an average year."

Table III.D-3
Vegetation Identified within the Strong Farm Property

Common Name	Scientific Name	Stratum
Boxelder	*Acer negundo*	Tree
Red maple	*Acer rubrum*	Tree
Silver maple	*Acer saccharinum*	Tree
Garlic mustard	*Alliaria petiolata*	Herb
European black alder	*Alnus glutinosa*	Tree
Foxtail grass	*Alopecurus* sp	Herb
Great burdock	*Arctium lappa*	Herb
Common mugwort	*Artemisia vulgaris*	Herb
Common milkweed	*Asclepias syriaca*	Herb
Hedge bindweed	*Calystegia sepium*	Herb
Sedge	*Carex* sp	Herb
Bitternut hickory	*Carya cordiformis*	Tree
Asiatic bittersweet	*Celastrus orbiculatus*	Vine
Tall thistle	*Cirsium altissimum*	Herb
Red panicled dogwood	*Cornus racemosa*	Shrub
Orchard grass	*Dactylis glomerata*	Herb
Leafy spurge	*Euphorbia esula*	Herb
Green ash	*Fraxinus pennsylvanica*	Tree
Black walnut	*Juglans nigra*	Tree
Rush	*Juncus* sp	Herb
Oxeye daisy	*Leucanthemum vulgare*	Herb
Purple loosestrife	*Lythrum salicaria*	Herb
Japanese stiltgrass	*Microstegium vimineum*	Herb
White mulberry	*Morus alba*	Tree
Sensitive fern	*Onoclea sensibilis*	Herb
Switchgrass	*Panicum virgatum*	Herb
Virginia creeper	*Parthenocissus quinquefolia*	Vine
English plantain	*Plantago lanceolata*	Herb
Common plantain	*Plantago major*	Herb
American sycamore	*Platanus occidentalis*	Tree
Eastern cottonwood	*Populus deltoides*	Tree
White oak	*Quercus alba*	Tree
Multiflora rose	*Rosa multiflora*	Shrub
Common red raspberry	*Rubus idaeus*	Shrub
Black willow	*Salix nigra*	Tree
Elderberry	*Sambucus canadensis*	Shrub
Canada goldenrod	*Solidago canadensis*	Herb
Common dandelion	*Taraxacum officinale*	Herb
Poison ivy	*Toxicodendron radicans*	Herb
Red clover	*Trifolium pratense*	Herb
Slippery elm	*Ulmus rubra*	Tree
Common mullein	*Verbascum thapsus*	Herb
Grape	*Vitis* sp	Vine
Corn	*Zea mays*	Herb

Source: AKRF reconnaissance investigation on June 10, 2015.

The forested mineral soil wetlands community present within the Strong Farm property is best described as a "floodplain forest community" and occupies the area adjacent to the Wallkill River. The tree canopy is predominantly a mixture of eastern cottonwood, green ash, black willow (*Salix nigra*), and American sycamore. The shrub layer is dominated by European black alder, while the herbaceous layer is commonly Japanese stiltgrass (*Microstegium vimineum*).

The open peatlands community identified within the Strong Farm property is best described as a "sedge meadow"[1] community. This community is located in the northern half of the Strong Farm property and does not have a tree canopy. The limited shrub layer is predominantly red panicled dogwood and elderberry (*Sambucus canadensis*). The herbaceous layer is mixture of sedge, rush, sensitive fern (*Onoclea sensibilis*), and purple loosestrife (*Lythrum salicaria*).

Terrestrial cultural communities identified within the Strong Farm property are best described as "cropland/row crops"[2] and "cropland/field crops"[3] communities. The cropland/row crops community is located in three distinct areas of the Strong Farm property separated by narrow strips of the successional southern hardwoods community. The dominant plant species observed within this community is corn (*Zea mays*). The cropland/field crops community is located in four distinct areas of the Strong Farm property separated by narrow strips of the successional southern hardwoods community. The cropland/field crops community identified on site is a hayfield dominated by orchard grass, switchgrass, foxtail grass, and red clover (*Trifolium pratense*).

Echo Lake

The Echo Lake property is bordered to the south by the new York State Mid-Hudson Psychiatric Center and New York State Route 17M, to the north and west by Echo Lake and Echo Lake Road, and to the east by the Wallkill River. The Echo Lake property consists of unmaintained fields, forests, shrublands, and wetlands that would be described by Edinger et al. (2014) as open uplands, forested uplands, open mineral soil wetlands, and forested mineral soil wetlands communities.

Open uplands communities identified within the Echo Lake property are best described as "successional old field" and "successional shrublands"[4] communities. Successional old field communities are a common cover type within the Echo Lake property, occupying 46 acres or 26 percent of the property. This community extends south from Echo Lake Road into an area that was previously mined and was reclaimed. Waste area herbaceous species and grasses dominate this cover type, with occasional patches of woody vegetation. The area is well vegetated with herbaceous species. Dominant plant species identified in this community included: spotted

[1] Edinger et al. (2014) defines this community as "a wet meadow community that has organic soils (muck or fibrous peat). Soils are permanently saturated and seasonally flooded; there is usually little peat accumulation in the substrate, but must have deep enough peat (usually 20 centimeters) to be treated as a peatland, otherwise it may be classified as a mineral soil wetland such as shallow emergent marsh."

[2] Edinger et al. (2014) defines this community as "an agricultural field planted in row crops such as corn, potatoes, and soybeans. This community includes vegetable gardens in residential areas."

[3] Edinger et al. (2014) defines this community as "an agricultural field planted in field crops such as alfalfa, wheat, timothy, and oats. This community includes hayfields that are rotated to pasture."

[4] Edinger et al. (2014) defines this community as "a shrubland that occurs on sites that have been cleared (for farming, logging, development, etc.) or otherwise disturbed. This community has at least 50 percent cover of shrubs."

knapweed (*Centaurea maculosa*), red clover, Canada goldenrod, common mugwort, sweet vernal grass (*Anthoxanthum odoratum*), perennial rye (*Lolium perenne*), tall fescue (*Lolium arundinaceum*), and orchard grass.

Successional shrubland covers 26 acres or 15 percent of the Echo Lake property. The shrubland primarily occurs in the north-central portion of the Echo Lake property. Rock walls and hedgerows of trees are mixed within this community. Successional shrubland areas within the Echo Lake property mostly contain very dense shrub layers, some open areas, and scattered trees especially in hedgerows. Dominant plant species identified in the shrub layer of this cover type include: common buckthorn (*Rhamnus cathartica*), blackhaw (*Viburnum prunifolium*), gray-stem dogwood (*Cornus foemina*), blackberry (*Rubus allegheniensis*), multiflora rose, and young red maple. Red maple and tree-of-heaven (*Ailanthus altissima*) are common tree species. In open portions, sweet vernal grass, rough-stem goldenrod (*Solidago rugosa*), poison ivy, and Virginia creeper are common. Many of the species found in the successional old field community also occur in the successional shrubland community.

The forested uplands community within the Echo Lake property is best described as a "successional southern hardwoods" community. The successional southern hardwoods community is the most common cover type on the Echo Lake property occupying 99 acres or 56 percent of the Echo Lake property. It is common along the slopes adjacent to the Wallkill River and in the western and southern portions of the Echo Lake property. The successional southern hardwoods community vary somewhat in dominant tree species and tree sizes, but significant trees over 12 inches diameter at breast height (dbh) are prevalent within this community. Primarily there are three general mixes: oak-dominated areas in the eastern and south-central portions, somewhat disturbed forests of varying ages in the western portion, and younger disturbed forest in the very southern portion of the Echo Lake property. In the oak-dominated portions of the forest, black oak (*Quercus velutina*), white oak (*Quercus alba*), scarlet oak (*Quercus coccinea*), black cherry, and red maple are common tree species. The shrub layer is not very dense and is dominated by blackhaw. Poison ivy, garlic mustard, Virginia creeper, Christmas fern (*Polystichum acrostichoides*), and white woods aster (*Aster divaricatus*) are common herbaceous layer species.

The forest in the western portion of the site is a very mixed area with evidence of past disturbance, some stone walls, and old hedgerows. Large trees occur along the stone walls, but young forest with a dense shrub layer was present in places. Dominant trees species identified onsite include: tree-of-heaven, eastern cottonwood, black cherry, and sugar maple. Honeysuckle (*Lonicera morrowii*), common buckthorn, blackhaw, and multiflora rose are common shrub species, with scattered grape vines. Poison ivy, Virginia creeper, clearweed (*Pilea pumila*), and hound's tongue (*Cynoglossum officinale*) often occur in the herbaceous layer.

In the southern portion of the site and the areas near the Wallkill River there is evidence of past disturbance when the Wallkill River was realigned many years ago. Eastern cottonwood is the most abundant tree in this area, with American sycamore near the river and black cherry, sugar maple, and white ash (*Fraxinus americana*) on drier slopes. Blackhaw, honeysuckle, and common buckthorn are common shrub species.

The open mineral soil wetlands community within the Echo Lake property is best described as a "shallow emergent marsh" community. Shallow emergent marsh communities occur in locations in the northern portion of the Echo Lake property and total 4 acres covering 2 percent of the

Echo Lake property. These shallow emergent marsh communities develop from past mining and other activities on the site; they are not jurisdictional wetlands[1]. Herbaceous species dominate these areas and there is often seasonally pooled water in portions. Dominant species identified onsite include: rice cut grass (*Leersia oryzoides*), spike rush (*Eleocharis* sp), sedges, fox sedge (*Carex vulpinoides*), hop sedge (*C. lupulina*), purple loosestrife, late goldenrod (*Solidago gigantea*), and burreed (*Sparganium* sp).

The forested mineral soil wetlands community within the Echo Lake property is best described as a "red maple-hardwood swamp"[2] community. The red maple-hardwood swamp community is located in the southern portion and occupies 0.8 acre or 0.04 percent of the Echo Lake property. It is a federally-regulated wetland area. Pooled water was evident in portions of this area. Red maple is the dominant tree in the deciduous forest wetland and green ash is a common associate. Many of the trees in this area are significant mature trees over 12 inches dbh. Spicebush is abundant in areas and forms a dense, tall shrub layer. Common herbaceous species include: skunk cabbage (*Symplocarpus foetidus*), common jewelweed, poison ivy, cinnamon fern (*Osmunda cinnamomea*), and Virginia creeper.

A complete list of vegetation observed on the Echo Lake property is contained in Table III.D-4.

Table III.D-4
Vegetation Identified within the Echo Lake Property

Common Name	Scientific Name
Trees	
Sugar maple	*Acer saccharum*
Red maple	*Acer rubrum*
Silver maple	*Acer saccharinum*
Tree-of-heaven	*Ailanthus altissima*
Serviceberry	*Amelanchier arborea*
Sweet birch	*Betula lenta*
Paper birch	*Betula papyrifera*
Gray birch	*Betula populifolia*
Ironwood	*Ostrya virginiana*
Bitternut hickory	*Carya cordiformis*
Pignut hickory	*Carya glabra*
Shagbark hickory	*Carya ovata*
Indian cigar tree	*Catalpa speciosa*
American beech	*Fagus grandifolia*
White ash	*Fraxinus americana*
Green ash	*Fraxinus pennsylvanica*
Eastern red cedar	*Juniperus virginiana*
Tulip poplar	*Liriodendron tulipifera*
Apple	*Malus pumila*
White pine	*Pinus strobus*
Sycamore	*Platanus occidentalis*

[1] The USACE JD of 4/5/10 did not take jurisdiction of several shallow emergent marsh (depressional) wetlands within the center of the Echo Lake property. Initial site inspection by USACE in November 2015 confirms that these wetlands are not jurisdictional.

[2] Edinger et al. (2014) defines this community as "a hardwood swamp that occurs in poorly drained depressions or basins, usually on inorganic soil, but occasionally on muck or shallow peat, that is typically acidic to circumneutral. This is a broadly defined community with several regional and edaphic variants. The hydrology varies from permanently saturated to the surface to seasonally flooded/wet with hummocks and hollows."

Table III.D-4 (cont'd)
Vegetation Identified within the Echo Lake Property

Common Name	Scientific Name
Trees (cont'd)	
Eastern cottonwood	*Populus deltoides*
Trembling aspen	*Populus tremuloides*
Black cherry	*Prunus serotina*
White oak	*Quercus alba*
Scarlet oak	*Quercus coccinea*
Pin oak	*Quercus palustris*
Red oak	*Quercus rubra*
Black oak	*Quercus velutina*
Eastern hemlock	*Tsuga canadensis*
American elm	*Ulmus americana*
Slippery elm	*Ulmus rubra*
Shrubs	
Prickly-ash	*Aralia spinosa*
Japanese barberry	*Berberis thunbergii*
Musclewood	*Carpinus caroliniana*
Buttonbush	*Cephalanthus occidentalis*
Gray-stem dogwood	*Cornus foemina* ssp. *Racemosa*
Hawthorns	*Crataegus* spp.
Privet	*Ligustrum vulgare*
Spicebush	*Lindera benzoin*
Morrow's honeysuckle	*Lonicera morrowii*
Choke cherry	*Prunus virginiana*
Common buckthorn	*Rhamnus cathartica*
Staghorn sumac	*Rhus hirta*
Multiflora rose	*Rosa multiflora*
Blackberry	*Rubus allegheniensis*
Black raspberry	*Rubus occidentalis*
Elderberry	*Sambucus canadensis*
Arrowwood	*Viburnum dentatum*
Nannyberry	*Viburnum lentago*
Blackhaw	*Viburnum prunifolium*
Grape	*Vitis* sp.
Herbaceous	
Agrimony	*Agrimonia* sp.
Redtop	*Agrostis gigantea*
Garlic mustard	*Alliaria petiolata*
Wild leek	*Allium tricoccum*
Common ragweed	*Ambrosia artemisiifolia*
Sweet vernal grass	*Anthoxanthum odoratum*
Dogbane	*Apocynum* sp.
Jack-in-the-pulpit	*Arisaema triphyllum*
Common mugwort	*Artemisia vulgaris*
Swamp milkweed	*Asclepias incarnata*
Common milkweed	*Asclepias syriaca*
White wood aster	*Aster divaricatus*
Asters	*Aster* spp.
Lady fern	*Athyrium felix-femina*
Rattlesnake fern	*Botrychium virginianum*
Brome grass	*Bromus inermis*
Sedge	*Carex cristosella*
Sedge	*Carex lupulina*
Pennsylvania sedge	*Carex pensylvanica*
Sedge	*Carex scirpoides*
Sedges	*Carex* spp.
Sedge	*Carex squarrosa*

Table III.D-4 (cont'd)
Vegetation Identified within the Echo Lake Property

Common Name	Scientific Name
Herbaceous (cont'd)	
Tussock sedge	*Carex stricta*
Fox sedge	*Carex vulpinoidea*
Spotted knapweed	*Centaurea maculosa*
Chickory	*Cichorium intybus*
Enchanter's nightshade	*Circaea lutetiana*
Canada thistle	*Cirsium canadensis*
Crown-vetch	*Coronilla varia*
Hound's tongue	*Cynoglossum officinale*
Orchard grass	*Dactylis glomerata*
Jimson weed	*Datura stramonium*
Hay-scented fern	*Dennstaedtia punctilobula*
Deptford pink	*Dianthus armeria*
Crested wood fern	*Dryopteris cristata*
Wood fern	*Dryopteris intermedia*
Spikerush	*Eleocharis* sp.
Quackgrass	*Elytrigia repens*
Partridgeberry	*Epigaea repens*
Common horsetail	*Equisetum arvense*
Daisy fleabane	*Erigeron annuus*
Spurge	*Euphorbia* sp.
Narrow-leaved goldenrod	*Euthamia graminifolia*
Strawberry	*Fragaria virginiana*
White bedstraw	*Galium mollugo*
Marsh bedstraw	*Galium palustre*
White avens	*Geum canadense*
Manna grass	*Glyceria melicaria*
Mannagrass	*Glyceria* sp.
Hawkweed	*Hieracium* sp.
Spotted St. John's wort	*Hypericum punctatum*
Spotted touch-me-not	*Impatiens capensis*
Soft rush	*Juncus effusus*
Peppergrass	*Lepidium* sp.
Tall fescue	*Lolium arundinaceum*
Perennial rye	*Lolium perenne*
Japanese honeysuckle	*Lonicera japonica*
Bird's-foot trefoil	*Lotus corniculata*
Ragged-robin	*Lychnis flos-cuculi*
Moneywort	*Lysimachia nummularia*
Purple loosestrife	*Lythrum salicaria*
White sweet clover	*Melilotus alba*
Yellow sweet-clover	*Melilotus officinalis*
Sensitive fern	*Onoclea sensibilis*
Cinnamon fern	*Osmunda cinnamomea*
Interrupted fern	*Osmunda claytoniana*
Sorrel	*Oxalis* sp.
Panic grass	*Panicum* sp.
Virginia creeper	*Parthenocissus quinquefolia*
Reed canary grass	*Phalaris arundinacea*
Timothy	*Phleum pratense*
Common reed grass	*Phragmites australis*
Pokeweed	*Phytolacca americana*
Clearweed	*Pilea pumila*
Narrow-leaf plantain	*Plantago lanceolata*
Broad-leaf plantain	*Plantago major*
Canada bluegrass	*Poa compressa*

Table III.D-4 (cont'd)
Vegetation Identified within the Echo Lake Property

Common Name	Scientific Name
Herbaceous (cont'd)	
Fowl mannagrass	*Poa palustris*
Kentucky bluegrass	*Poa pratensis*
May-apple	*Podophyllum peltatum*
Tearthumb	*Polygonum persicaria*
Smartweeds	*Polygonum* spp.
Rock polypody	*Polypodium virginianium*
Christmas fern	*Polystichum acrostichoides*
Sulfur cinquefoil	*Potentilla recta*
Common cinquefoil	*Potentilla simplex*
Heal-all	*Prunella vulgaris*
Tall buttercup	*Ranunculus acris*
Large-flowered raspberry	*Rubus odoratus*
Sorrel	*Rumex* sp.
Bladder campion	*Silene vulgaris*
False Solomon's Seal	*Smilacina racemosa*
Canada goldenrod	*Solidago canadensis*
Tall goldenrod	*Solidago canadensis var. scabra*
Late goldenrod	*Solidago gigantea*
Rough-stem goldenrod	*Solidago rugosa*
Burreed	*Sparganium* sp.
Celandine poppy	*Stylophorum diphyllum*
Skunk cabbage	*Symplocarpus foetidus*
New York fern	*Thelypteris noveboracensis*
Marsh fern	*Thelypteris palustris*
Poison ivy	*Toxicodendron radicans*
Hop-clover	*Trifolium aureum*
Alsike clover	*Trifolium hybridum*
Red clover	*Trifolium pratense*
Broad-leaf cattail	*Typha latifolia*
Tall nettles	*Urtica procera*
Ironweed	*Vernonia noveboracensis*
Common speedwell	*Veronica officinalis*
Vetch	*Vicia* sp.

Note: Terrestrial Environmental Associates, vegetation inventory of the Echo Lake property, June/August 2011.

AQUATIC RESOURCES

The NYSDEC has periodically sampled finfish in the Wallkill River using standardized electrofishing techniques. In 1999, the agency sampled the river from April 13 through May 6 at three locations in Goshen, NY (NYSDEC Bureau of Fisheries Card File Report H-139-13, survey number 399011). This effort yielded 46 individual fish of four (4) species: 41 common carp (*Cyprinus carpio*), two (2) pumpkinseeds (*Lepomis gibbosus*), two (2) smallmouth bass (*Micropterus dolomieu*), and one (1) brown bullhead (*Ameiurus nebulosus*). In 2009, sampling efforts were repeated between June 8 and August 28 at eight (8) locations in the river, including a single location in Goshen, NY (NYSDEC Bureau of Fisheries Card File Report H-139-13, survey number 309955). This effort yielded 513 individuals of 26 species. The most abundant species was spottail shiner (*Notropis hudsonius*) (n =142). Other relatively abundant species in 2009 included spotfin shiner (*Cyprinella spiloptera*, n= 83), tessellated darter (*Etheostoma olmstedi*, n=60), bluegill (*Lepomis macrochirus*, n= 43), green sunfish (*Lepomis cyanellus*, n=27), and logperch (*Percina caprodes*, n=27). The remainder of the catch consisted of species

that are typical of a lower Hudson Valley stream, and as in 1999, pumpkinseeds, smallmouth bass, and brown bullheads were represented (carp were not collected in 2009). In 2010, the NYSDEC again sampled Wallkill River between August 5 and August 6, including one sample location in Goshen (NYSDEC Bureau of Fisheries Card File Report H-139-13, survey number 310908). This effort yielded 856 individuals of 23 species. As in 2009, spottail shiner was most abundant (n=380), followed by smallmouth bass (n=83), yellow bullhead (*Ameiurus natalis*, n= 78), white sucker (*Catostomus commersonii*, n=57), and longnose dace (*Rhinichthys cataractae*, n=54). Of the species collected in 2010, 18 were also collected in 2009. The 2010 collection also included a single Japanese weather loach (*Misgurnus anguillicaudatus*) – a non-native species that may have originated from an aquarium release. Of four of the species collected in 1999, only brown bullheads were not represented in 2010.

The variability in catch composition between sampling efforts may be reflective of the timing of sampling efforts relative to season, or variations in specific sampling locations or methods. Nevertheless, the catch composition is indicative of a relatively healthy mix of taxa that includes a mix of trophic groups such as forage species (e.g., shiners and minnows), apex predators (e.g., smallmouth bass and bullheads), and bottom feeders (e.g., suckers). The ubiquitous core of fish present in the Goshen region of Wallkill River includes spottail and spotfin shiners, pumpkinseeds, smallmouth bass, bullhead catfish, darters, and suckers. This species composition is typical of lower Hudson Valley streams, and indicates a well-balanced indigenous and/or naturalized (e.g., pumpkinseeds and bluegills were likely introduced from the Mississippi Basin in the 1800s, but have been naturalized along the Atlantic seaboard) community along with relatively few non-native species (e.g., carp and Japanese weather loach). The diversity of taxa and trophic groups suggest that the water quality of Wallkill River is adequate to support finfish, and that instream habitat diversity is sufficient to promote the reproduction and migration of a wide variety of fish.

WILDLIFE

The Project Site is a mosaic of habitat types including forested uplands, forested wetlands, shrublands, open wetlands, meadows, and agricultural fields. The heterogeneity of the landscape provides resources for wildlife species with various habitat associations and resource needs. Aside from the 99 acre forest on the Echo Lake property, fragmentation of much of the Project Site's forested areas limits woodland wildlife communities primarily to species that do not require deep interior forest and can thrive in forests that are fragmented by buildings, roads, and other forms of development or agriculture. Nevertheless, the degree of fragmentation is minimal, and the sizes and types of habitats present within the Project Site can potentially support a high diversity of native wildlife, including species that are threatened, endangered, or of other significance.

Birds

Over 160 species of birds occur in Orange County, owing to the region's large tracts of forest and diversity of habitat types. Some species are present year-round, whereas others only nest in, overwinter in, or migrate through the area.

The 2000-2005 New York State Breeding Bird Atlas documented 101 species in the census blocks in which the project Site is located (5458B and 5458D). On the basis of their habitat associations, 96 of these species are considered to have the potential to nest within the Project Site (**Table III.D-5**). Represented among them are a variety of woodland birds, waterbirds, and grassland and shrubland birds.

Table III.D-5
Birds Documented by the 2000-2005 New York State Breeding Bird Atlas in Blocks 5458B and 5458D

Common Name	Scientific Name
Alder Flycatcher	*Empidonax alnorum*
American Crow	*Corvus brachyrhynchos*
American Goldfinch	*Spinus tristis*
American Kestrel	*Falco sparverius*
American Redstart	*Setophaga ruticilla*
American Robin	*Turdus migratorius*
American Woodcock	*Scolopax minor*
Baltimore Oriole	*Icterus galbula*
Bank Swallow	*Riparia riparia*
Barn Swallow	*Hirundo rustica*
Barred Owl	*Strix varia*
Belted Kingfisher	*Megaceryle alcyon*
Black Vulture	*Coragyps atratus*
Black-and-white Warbler	*Mniotilta varia*
Black-capped Chickadee	*Poecile atricapillus*
Blue Jay	*Cyanocitta cristata*
Blue-gray Gnatcatcher	*Polioptila caerulea*
Blue-winged Warbler	*Vermivora pinus*
Bobolink	*Dolichonyx oryzivorus*
Brown Thrasher	*Toxostoma rufum*
Brown-headed Cowbird	*Molothrus ater*
Canada Goose	*Branta canadensis*
Carolina Wren	*Thryothorus ludovicianus*
Cedar Waxwing	*Bombycilla cedrorum*
Chestnut-sided Warbler	*Setophaga pensylvanica*
Chimney Swift	*Chaetura pelagica*
Chipping Sparrow	*Spizella passerina*
Common Grackle	*Quiscalus quiscula*
Common Moorhen	*Gallinula chloropus*
Common Nighthawk (SC)	*Chordeiles minor*
Common Yellowthroat	*Geothlypis trichas*
Cooper's Hawk (SC)	*Accipiter cooperii*
Downy Woodpecker	*Picoides pubescens*
Eastern Bluebird	*Sialia sialis*
Eastern Kingbird	*Tyrannus tyrannus*
Eastern Meadowlark	*Sturnella magna*
Eastern Phoebe	*Sayornis phoebe*
Eastern Towhee	*Pipilo erythrophthalmus*
Eastern Wood-Pewee	*Contopus virens*
European Starling	*Sturnus vulgaris*
Field Sparrow	*Spizella pusilla*
Golden-winged Warbler (SC)	*Vermivora chrysoptera*
Grasshopper Sparrow (SC)	*Ammodramus savannarum*
Gray Catbird	*Dumetella carolinensis*
Great Blue Heron	*Ardea herodias*
Great Crested Flycatcher	*Myiarchus crinitus*
Green Heron	*Butorides virescens*
Hairy Woodpecker	*Picoides villosus*
House Finch	*Carpodacus mexicanus*

Table III.D-5 (cont'd)
Birds Documented by the 2000-2005 New York State Breeding Bird Atlas in Blocks 5458B and 5458D

Common Name	Scientific Name
House Sparrow	*Passer domesticus*
House Wren	*Troglodytes aedon*
Indigo Bunting	*Passerina cyanea*
Killdeer	*Charadrius vociferus*
Least Flycatcher	*Empidonax minimus*
Mallard	*Anas platyrhynchos*
Mallard x American Black Duck Hybrid	*Anas platyrhynchos x A. rubripes*
Marsh Wren	*Cistothorus palustris*
Mourning Dove	*Zenaida macroura*
Mute Swan	*Cygnus olor*
Northern Cardinal	*Cardinalis cardinalis*
Northern Flicker	*Colaptes auratus*
Northern Mockingbird	*Mimus polyglottos*
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Orchard Oriole	*Icterus spurius*
Osprey (SC)	*Pandion haliaetus*
Ovenbird	*Seiurus aurocapilla*
Pileated Woodpecker	*Dryocopus pileatus*
Red-bellied Woodpecker	*Melanerpes carolinus*
Red-eyed Vireo	*Vireo olivaceus*
Red-tailed Hawk	*Buteo jamaicensis*
Red-winged Blackbird	*Agelaius phoeniceus*
Rock Pigeon	*Columba livia*
Rose-breasted Grosbeak	*Pheucticus ludovicianus*
Ruby-throated Hummingbird	*Archilochus colubris*
Ruddy Duck	*Oxyura jamaicensis*
Savannah Sparrow	*Passerculus sandwichensis*
Scarlet Tanager	*Piranga olivacea*
Song Sparrow	*Melospiza melodia*
Sora	*Porzana carolina*
Spotted Sandpiper	*Actitis macularius*
Swamp Sparrow	*Melospiza georgiana*
Tree Swallow	*Tachycineta bicolor*
Tufted Titmouse	*Baeolophus bicolor*
Turkey Vulture	*Cathartes aura*
Veery	*Catharus fuscescens*
Virginia Rail	*Rallus limicola*
Warbling Vireo	*Vireo gilvus*
White-breasted Nuthatch	*Sitta carolinensis*
White-eyed Vireo	*Vireo griseus*
Wild Turkey	*Meleagris gallopavo*
Willow Flycatcher	*Empidonax traillii*
Wood Duck	*Aix sponsa*
Wood Thrush	*Hylocichla mustelina*
Yellow Warbler	*Dendroica petechia*
Yellow-throated Vireo	*Vireo flavifrons*

Notes: SC = New York State species of special concern. **Boldface** indicates species that are not considered to have the potential to nest within the Project Site on the basis of their habitat associations and area requirements.

Sources: NYSDEC Breeding Bird Atlas. Available from: http://www.dec.ny.gov/cfmx/extapps/bba/

Birds observed and assumed to be breeding within the Ver Hage property during the June 12, 2015 wildlife survey include: gray catbird (*Dumetella carolinensis*), yellow warbler (*Setophaga petechia*), common yellowthroat (*Geothlypis trichas*), mourning dove (*Zenaida macroura*), red-winged blackbird (*Agelaius phoeniceus*), northern cardinal (*Cardinalis cardinalis*), blue-winged warbler (*Vermivora cyanoptera*), American robin (*Turdus migratorius*), eastern wood pewee (*Contopus virens*), magnolia warbler (*Setophaga magnolia*), song sparrow (*Melospiza melodia*), brown thrasher (*Toxostoma rufum*), black-capped chickadee (*Poecile atricapillus*), tufted titmouse (*Baeolophus bicolor*), American goldfinch (*Carduelis tristis*), European starling (*Sturnus vulgaris*), red-bellied woodpecker (*Melanerpes carolinus*), indigo bunting (*Passerina cyanea*), field sparrow (*Spizella pusilla*), great-crested flycatcher (*Myiarchus crinitus*), blue jay (*Cyanocitta cristata*), scarlet tanager (*Piranga olivacea*), and house wren (*Troglodytes aedon*).

Birds observed and assumed to be breeding within the Lipoff property during the June 12, 2015 wildlife survey include: American robin, eastern wood pewee, yellow warbler, gray catbird, brown thrasher, song sparrow, black-capped chickadee, tufted titmouse, magnolia warbler, American goldfinch, red-winged blackbird, indigo bunting, red-bellied woodpecker, mallard (*Anas platyrhynchos*), blue jay, and red-eyed vireo (*Vireo olivaceus*).

Birds observed and assumed to be nesting within the Strong Farm property during the June 12, 2015 wildlife survey include: blue jay, gray catbird, indigo bunting, American goldfinch, song sparrow, field sparrow, red-winged blackbird, great blue heron (*Ardea herodias*), red-tailed hawk (*Buteo jamaicensis*), red-bellied woodpecker, eastern kingbird (*Tyrannus tyrannus*), European starling, mourning dove, common yellowthroat, house wren, barn swallow (*Hirundo rustica*), red-winged blackbird, blue-winged warbler, and willow flycatcher (*Empidonax traillii*).

Many of the bird species that are known or expected to breed within the Project Site are migratory and overwinter at more southern latitudes. During winter, the bird community is expected to include waterbirds such as mallard (*Anas platyrhynchos*) and Canada goose (*Branta Canadensis*), landbirds such as black-capped chickadee, tufted titmouse, northern cardinal, white-breasted nuthatch (*Sitta carolinensis*), dark-eyed junco (*Junco hyemalis*), white-throated sparrow (*Zonotrichia albicollis*), tree sparrow (*Spizella arborea*), downy woodpecker (*Picoides pubescens*), red-bellied woodpecker, and wild turkey (*Meleagris gallopavo*), and raptors such as red-tailed hawk (*Buteo jamaicensis*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), barred owl (*Strix varia*), and great-horned owl (*Bubo virginianus*).

Reptiles and Amphibians

The Project Site contains a variety of habitats to support reptiles and amphibians, including streams (i.e., Wallkill River and Cheechunk Creek) and wetlands that are likely inhabited by several species of amphibians and aquatic and semiaquatic reptiles. Of these, species that breed in aquatic habitats and then migrate to upland areas for the remainder of the year are also likely to occur in the Project Site's terrestrial habitats outside of the breeding season. The NYSDEC Herp Atlas Project documented 36 species of reptiles and amphibians in the census blocks in which the Project Site is located (Middletown and Goshen USGS Quadrangles) (**Table III.D-6**). Most of these species are considered to have the potential to occur within the Project Site on the basis of their habitat associations (Klemens 1993, Mitchell et al. 2006, Gibbs et al. 2007).Green frog (*Rana clamitans*), wood frog (*Rana sylvatica*), bullfrog (*Rana catesbeiana*), and common snapping turtle (*Chelydra serpentina*) were observed within the Project Site during the June 12, 2015 wildlife survey. Painted turtle (*Chrysemys picta*), common garter snake (*Thamnophis sirtalis*), and Fowler's toad (*Bufo fowleri*) were observed within the Project Site during the May 27, 2015 reconnaissance investigation.

Table III.D-6
Reptiles and Amphibians with the Potential to Occur Within the Project Site

Common Name	Scientific Name
Northern cricket frog[1]	*Acris crepitans*
Northern copperhead	*Agkistrodon contortrix*
Jefferson salamander[1]	*Ambystoma jeffersonianum*
Blue-spotted salamander[1]	*Ambystoma laterale*
Spotted salamander	*Ambystoma maculatum*
Eastern American toad	*Bufo americanus*
Fowler's toad	*Bufo fowleri*
Common snapping turtle	*Chelydra serpentina*
Painted turtle	*Chrysemys picta*
Spotted turtle[1]	*Clemmys guttata*
Wood turtle[1]	*Clemmys insculpta*
Bog turtle[1,2]	*Clemmys muhlenbergii*
Northern black racer	*Coluber constrictor*
Timber rattlesnake[1]	*Crotalus horridus*
Northern dusky salamander	*Desmognathus fuscus*
Northern ringneck snake	*Diadophis punctatus*
Black rat snake	*Elaphe obsoleta*
Five-lined skink	*Eumeces fasciatus*
Gray treefrog	*Hyla versicolor*
Eastern milk snake	*Lampropeltis triangulum*
Northern water snake	*Nerodia sipedon*
Red-spotted newt	*Notophthalmus viridescens*
Northern red-backed salamander	*Plethodon cinereus*
Northern slimy salamander	*Plethodon glutinosus*
Northern spring peeper	*Pseudacris crucifer*
Northern red salamander	*Pseudotriton ruber*
Bullfrog	*Rana catesbeiana*
Green frog	*Rana clamitans*
Pickerel frog	*Rana palustris*
Northern leopard frog	*Rana pipiens*
Wood frog	*Rana sylvatica*
Common musk turtle	*Sternotherus odoratus*
Northern brown snake	*Storeria dekayi*
Eastern box turtle[1]	*Terrapene carolina*
Eastern ribbon snake	*Thamnophis sauritus*
Common garter snake	*Thamnophis sirtalis*

Notes: [1]NYS-listed species, [2]Federally-listed species. **Boldface** indicates species that are not considered to have the potential to occur within the Project Site on the basis of their habitat associations.

Sources: NYSDEC Herp Atlas. Available from: http://www.dec.ny.gov/animals/7140.html

Mammals

The farm houses and developed areas adjacent to the Project Site likely support several species of synanthropic, generalist species of mammals that are tolerant of disturbance, such as gray squirrel (*Sciurus carolinensis*), Norway rat (*Rattus norvegicus*), house mouse (*Mus musculus*), eastern mole (*Scalopus aquaticus*), star-nosed mole (*Condylura cristata*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*), woodchuck (*Marmota monax*), eastern cottontail (*Sylvilagus floridanus*), and white-tailed deer (*Odocoileus virginianus*). On the basis of their habitat associations and geographic range (Whitaker 1996, Kays and Wilson 2002), the mammals expected to occur in the Project Site's woodlands, shrublands, wetlands, and/or other native habitats include the species above as well as smoky shrew (*Sorex fumens*), least shrew (*Cryptotis parva*), short-tailed shrew (*Blarina brevicauda*), muskrat (*Ondatra zibethicus*), American beaver (*Castor canadensis*), northern flying squirrel (*Glaucomys sabrinus*), eastern chipmunk (*Tamias striatus*), North American deermouse (*Peromyscus maniculates*), southern red-backed vole (*Clethrionomys gapperi*), rock vole (*Microtus chrotorrhinnus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), northern long-eared bat (*Myotis septentrionalis*), little brown bat (*M. lucifugus*), Indiana bat (*M. sodalis*), big brown bat (*Eptesicus fuscus*), bobcat (*Lynx rufus*), eastern coyote (*Canis latrans*), red fox (*Vulpes vulpes*), black bear (*Ursus americanus*), fisher (*Martes pennati*), and long-tail weasel (*Mustella frenata*).

The following mammals (or their tracks or other signs) were observed within the Project Site during the June 12, 2015 wildlife survey: Virginia opossum, eastern gray squirrel, eastern chipmunk, and white-tailed deer. In addition, eastern cottontail was observed within the Project Site during the May 27, 2015 reconnaissance investigation. Bats that were identified at the Project Site by the acoustic bat survey included big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), tri-colored bat (*Perimyotis subflavus*), little brown bat (*Myotis lucifugus*), Indiana bat (*M. sodalis*), and northern long-eared bat (*M. septentrionalis*) (see **Appendix III.D**).

THREATENED, ENDANGERED, AND SPECIAL CONCERN SPECIES

The USFWS list of Federally threatened, endangered, candidate, or proposed species for the Project Site includes dwarf wedgemussel (*Alasmidonta heterodon*; U.S. endangered, NYS endangered), Indiana bat (U.S. endangered, NYS endangered), northern long-eared bat (U.S. threatened, NYS threatened), bog turtle (*Clemmys muhlenbergii*; U.S. threatened, NYS endangered), and small whorled pogonia (*Isotria medeloides*; U.S. threatened, NYS endangered). In response to a request for records of federally- and state-listed species in the vicinity of the Project Site, the NYNHP noted that a summer maternity colony of the Indiana bat has been documented within 2.5 miles (NYNHP 2015) (see **Appendix III.D**). Indiana bats and northern long-eared bats were detected within the Project Site during the August 2015 acoustic bat survey (see **Appendix III.D**).

Five (5) species listed as species of special concern were documented by the 2000-2005 Breeding Bird Atlas in the census blocks in which the Project Site is located: common nighthawk (*Chordeiles minor*), Cooper's hawk (*Accipiter cooperii*), golden-winged warbler (*Vermivora chrysoptera*), grasshopper sparrow (*Ammodramus savannarum*), and osprey (*Pandion haliaetus*). The golden-winged warbler is also currently under review by the USFWS for potential listing as Threatened or Endangered under the federal Endangered Species Act.

Federally or State-listed reptiles or amphibians documented by the Herp Atlas Project in the Middletown and Goshen USGS quadrangles include: northern cricket frog (*Acris crepitans*;

NYS endangered), Jefferson salamander (*Ambystoma jeffersonianum*; NYS special concern), blue-spotted salamander (*Ambystoma laterale*; NYS special concern), spotted turtle (*Clemmys guttata*; NYS special concern), wood turtle (*Clemmys insculpta*; NYS special concern), bog turtle (U.S. threatened, NYS endangered), timber rattlesnake (*Crotalus horridus*; NYS threatened), and eastern box turtle (*Terrapene Carolina*; NYS special concern). No Federally or State-listed endangered, threatened, or special concern wildlife or plant species were observed at the Project Site during the May 27, 2015 and June 10, 2015 reconnaissance investigations.

Included at the State level as "listed" plants, New York State also regulates plants under the categories "rare" and "exploitably vulnerable", in accordance with 6 NYCRR 193.3 and ECL § 11-0535 (the State Endangered Species Act). No "rare" plants were identified onsite. However, several "exploitably vulnerable" plants were identified onsite during the June/August 2011 and May/June 2015 vegetation inventories. "Exploitably vulnerable" plants are those likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked. The "exploitably vulnerable" category contains plants that are likely to be picked for commercial and personal purposes, including most native ferns. "Exploitably vulnerable" plants identified onsite include: lady fern (*Athyrium felix-femina*), rattlesnake fern (*Botrychium virginianum*), crested wood fern (*Dryopteris cristata*), intermediate wood fern (*Dryopteris intermedia*), cinnamon fern (*Osmunda cinnamomea*), interrupted fern (*Osmunda claytoniana*), rock polypody (*Polypodium virginianium*), Christmas fern (*Polystichum acrostichoides*), New York fern (*Thelypteris noveboracensis*), marsh fern (*Thelypteris palustris*), sensitive fern (*Onoclea sensibilis*), and trailing arbutus (*Epigaea repens L.*). NYS law prohibits removing such plants without the consent of the property owner.

Dwarf Wedgemussel

The dwarf wedgemussel's distribution within New York is limited to the Neversink River (NYNHP 2011). The Neversink River flows through Orange County, west of the Project Site, ultimately draining to the Delaware River near the Pennsylvania and New Jersey border. The Project Site is not hydrologically connected to the Neversink River, and therefore, dwarf wedgemussels do not have the potential to occur within the Project Site.

Indiana Bat

The Indiana bat is a temperate, insectivorous bat whose life cycle can be coarsely divided into two primary phases: hibernation and reproduction. Indiana bats emerge from the caves in which they hibernate (i.e., hibernacula) in early spring; males disperse and remain solitary until mating season at the end of the summer while pregnant females form maternity colonies in which to rear the young. Maternity roosts, roosting sites of post-lactating females, and roosting sites of solitary males are usually under loose bark or in the crevices of trees. Indiana bat roosting sites have been documented in numerous species of deciduous trees. Tree availability, diameter, altitude, bark characteristics, and sun exposure appear to be the most important factors in roost site selection (Kurta 2004, USFWS 2007). Roosts in New York (Britzke et al. 2006) and elsewhere (USFWS 2007) are typically in large trees with a diameter greater than 16 inches and a height taller than 52 feet, but roosts in smaller trees can occur (USFWS 2007). The trees are usually dead or nearly dead and decayed (Menzel et al. 2001, Kitchell 2008).

The Indiana bat often roosts near forest gaps or edges where trees receive direct sunlight for much of the day (Callahan et al. 1997, Menzel et al. 2001). Habitats used by the Indiana bat during summer are varied and include riparian, bottomland/floodplain, and upland forests (Humphrey et al. 1977, Britzke et al. 2006, Watrous et al. 2006) often within agricultural

landscapes (Murray and Kurta 2004, Watrous et al. 2006, USFWS 2007). Maternity colonies are typically located in areas with abundant natural or artificial freshwater sources (Carter et al. 2002, Kurta et al. 2002, Watrous et al. 2006, USFWS 2007). Spring and autumn habitats of the Indiana bat have not been well described, but appear to be largely similar to their summer habitat (Britzke et al. 2006, USFWS 2007).

During autumn, Indiana bats mate and deposit fat stores before entering their hibernaculum for the winter. Hibernacula are typically in caves or abandoned mines where ambient temperatures remain above freezing (USFWS 2007). The closest known Indiana bat hibernaculum is approximately 9.5 miles to the southeast (USFWS 2014), and as such, Indiana bats are not considered to have the potential to occur within the Project Site during winter. The Project Site contains several habitat types with which Indiana bats are associated during the summer breeding season, including mature forest, stream corridors, and old fields with shelter belts and forest edges. Indiana bats were detected within the Project Site during the August 2015 acoustic bat survey (see **Appendix III.D**).

Northern Long-eared Bat

Like Indiana bats, northern long-eared bats hibernate in caves or mines during winter and then emerge in early spring, with males dispersing and remaining solitary until mating season at the end of the summer, and pregnant females forming maternity colonies in which to rear young. Summer habitat of the northern long-eared bat generally includes upland and riparian forest within predominantly forested landscapes (Ford et al. 2005, Henderson et al. 2008). Outside of the winter hibernation period, northern long-eared bats generally inhabit mature, closed-canopy, deciduous or mixed forest within heavily forested landscapes (Owen et al. 2003, Carter and Feldhammer 2005, Ford et al. 2005), usually within 60 miles of their hibernaculum (Caceras and Barclay 2000, USFWS 2014). The long-eared bat is considered a forest-dependent species that is sensitive to fragmentation and requires interior forest for both foraging and breeding (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008). Unlike many other bats of the Northeast, northern long-eared bats will glean prey from leaves and other surfaces rather than strictly hawking flying insects in the air, and are thereby well-adapted to foraging in cluttered, structurally complex, forest interior habitat (Owen et al. 2003, Lacki et al. 2007). Most foraging occurs above the understory and below the canopy of forested hillsides and ridges (Brack and Whitaker 2001, Harvey et al. 2011, USFWS 2014). Foraging activity is greatest in interior areas with a tall and closed canopy (Owen et al. 2003, Patriquin and Barclay 2003, Adams 2013). In contrast to strictly aerial-foraging bat species, northern long-eared bats do not frequently concentrate along riparian corridors or other linear landscape features (Owen et al. 2003, Ford et al. 2005, Harvey et al. 2011, USFWS 2014), and most radio-telemetry and acoustic studies have found that they typically avoid roads and other sharp forest edges (Owen et al. 2003, Patriquin and Barclay 2003, Carter and Feldhammer 2005, Morris et al. 2010). Mature forest is considered to be the most important foraging habitat for the northern long-eared bat (USFWS 2013, 2014). The Project Site, particularly the interior forest on the Echo Lake property, contains suitable summer habitat for the northern long-eared bat, and northern long-eared bats were identified within the Project Site during the August 2015 acoustic bat survey (see **Appendix III.D**).

Bog Turtle

The bog turtle is a federally threatened and New York State endangered species listed by USFWS as occurring in Orange County. The bog turtle was documented by the NYSDEC Herp Atlas Project in the census block in which the Project Site is located. The bog turtle typically

inhabits open areas with cool, shallow, slow-moving water, deep and soft mucky soils, and tussock-forming herbaceous vegetation (Gibbs et al. 2007). Phase I Bog Turtle Habitat Surveys conducted on the Echo Lake property in 2014 and the remainder of the Project Site in 2015 (see **Appendix III.D**) determined that the Project Site does not contain suitable habitat for bog turtles; therefore, no bog turtles are considered to have the potential to occur on the Project Site.

Small Whorled Pogonia

The small whorled pogonia is a federally threatened and New York State endangered plant of the orchid family. It is widely distributed, but rare, throughout North America. The species had been declared extirpated from New York State until it was rediscovered in an undisclosed location in Orange County in 2010 (Adamovic 2014). Small whorled pogonia prefers acidic soils and a thick layer of decaying leaf matter, and often occurs on slopes that border small streams (USFWS 2008). Sites favored by the small whorled pogonia are usually predominantly second-growth deciduous or mixed forest with an open herb layer, low shrub density, and breaks in the tree canopy (Mehrhoff 1989). The features of the Project Site and its adjacent areas loosely meet these conditions, but no small-whorled pogonia was found during the vegetation surveys conducted on the Echo Lake property in 2011 and 2014, or on the remainder of the Project Site in 2015.

Northern Cricket Frog

Northern cricket frogs are more generalistic in their habitat selection further south in their range than they are in New York. In New York, northern cricket frogs are habitat specialists and are limited to just a few distinct wetlands in southwestern Orange County, eastern Ulster County, and northwestern Dutchess County, where they occur in shallow, sunny ponds that have water lilies and floating mats of moss and other vegetation (Gibbs et al. 2007). They overwinter in surrounding upland, terrestrial habitats, sometimes more than 100 meters away from their breeding pond (Gibbs et al. 2007, Kenney et al. 2012). The only ponds within the Project Site occur on the Echo Lake, Strong Farm and Lipoff properties, and these ponds do not meet the characteristics of northern cricket frog breeding habitat in New York. It is considered unlikely that northern cricket frogs occur within these ponds or elsewhere within the Project Site.

Jefferson Salamander

The Jefferson salamander is most strongly associated with vernal pool breeding habitats, but Jefferson salamanders can sometimes breed in other semi-permanent wetlands and ponds as well (Gibbs et al. 2007). Outside of the breeding season, Jefferson salamanders primarily inhabit upland deciduous and mixed deciduous-coniferous forests that surround their breeding habitat (Klemens 1993, Gibbs et al. 2007). Suitable breeding and non-breeding habitat for Jefferson salamanders is present within the Project Site. In particular, the shallow emergent marsh on the Lipoff property and the adjacent uplands could potentially be used by Jefferson salamanders as breeding and non-breeding habitat, respectively. Jefferson salamanders are considered to have the potential to occur within the Project Site.

Blue-spotted Salamander

Blue-spotted salamanders are most commonly found in mixed deciduous-coniferous forests that contain vernal pools that are used for breeding. They can also occur in forested wetlands and riparian zones of lakes and ponds (Klemens 1993, Gibbs et al. 2007). Overwintering occurs in upland forests surrounding their breeding habitats. They appear to be less sensitive to habitat fragmentation than Jefferson salamanders, and more commonly occur in suburban landscapes

and other areas with light to moderate development (Klemens 1993). Potential breeding and non-breeding habitat for blue-spotted salamanders is present within the Project Site. In particular, the shallow emergent marsh and pond on the Lipoff and Strong Farm properties and their adjacent uplands could potentially be used by blue-spotted salamanders as breeding and non-breeding habitat, respectively.

Spotted Turtle

The spotted turtle is found in relatively small, unmoving waterbodies, including ditches, ponds, bogs, swamps, and other similar wetlands. Adult spotted turtles breed between March and May in breeding pools. Females dig their nests in fields, meadows, near the edge of roads, or in other similarly open areas (NYSDEC 2015). Each of the properties contain wetlands and old fields and other open areas that might be used for nesting by spotted turtles. Spotted turtles are therefore considered to have the potential to occur within the Project Site.

Wood Turtle

The wood turtle is a species of special concern in New York that inhabits freshwater streams bordered by woodlands, meadows, grasslands, or sometimes agricultural fields (Mitchell et al. 2006, Gibbs et al. 2007). Most wood turtle activity is centered within a stream and its riparian margins, except during summer, when females will usually move farther into surrounding terrestrial habitat to forage and lay their eggs (Gibbs and Shriver 2002, Gibbs et al. 2007). Females may also nest on gravely sandbars within their home stream (Flanagan et al. 2013). Wood turtles prefer open, streamside areas with sun exposure and low canopy cover for basking (Gibbs et al. 2007) and will also commonly bask on woody debris protruding from the water (Harding and Bloomer 1979). Winter hibernation occurs within the stream (Gibbs et al. 2007). Cheechunk Creek and the Wallkill River, and their riparian zones represent suitable breeding and non-breeding habitat for wood turtles, and as such, wood turtles are considered to have the potential to occur within the Project Site.

Timber Rattlesnake

The timber rattlesnake is a New York State threatened species with a distribution within the state that is primarily limited to the Hudson Valley, Southern Tier, and eastern edge of the Adirondacks. Timber rattlesnakes are typically found in deciduous forests containing thick understory vegetation, large woody debris, rocky terrain, and rock outcrops or talus slopes, often near surface waters. They may also occur in edge habitats, including roadsides, railroad embankments, fence rows, and field-forest edges (Gibbs et al. 2007, Ulev 2008). Winter dens are usually located in south-facing rocky areas within closed-canopy forest (Ulev 2008). The project site does not contain rocky or talus slopes or other preferred habitat types of the timber rattlesnake, and it is therefore considered possible but not likely that timber rattlesnakes occur within the Project Site.

Eastern Box Turtle

The eastern box turtle can be found in a variety of open woodland and successional habitats with sandy, well-drained soils (Klemens 1993, Gibbs et al. 2007). Suitable breeding and non-breeding habitat for eastern box turtles is present on each property, and eastern box turtles are considered likely to occur within the Project Site.

Common Nighthawk

The common nighthawk is a nocturnal, aerial insectivore that can be found in a variety of open habitats in rural and urban areas. They will nest on coastal beaches and in recently logged or burned forests, woodland gaps, prairies, plains, sagebrush, and grasslands. In urban areas, they commonly nest on building rooftops (Brigham et al. 2011). Suitable nesting habitat is available throughout the Project Site and common nighthawks are considered to have the potential to occur during summer and spring and fall migration.

Cooper's Hawk

Cooper's hawk is one of North America's most widespread and common raptors. Cooper's hawk populations in the eastern U.S. appear to have fully recovered from population declines experienced in the mid-1900s (Curtis et al. 2006). In New York State specifically, the density and range of both breeding and overwintering Cooper's hawks have increased markedly in recent decades (Curtis et al. 2006, Hames and Lowe 2008), but the species remains listed as a species of special concern. Cooper's hawk was documented during the 2000-2005 Breeding Bird Atlas in the atlas block in which the Project Site is located, and the Project Site contains interior forest habitat that is preferred by Cooper's hawks for breeding. The wooded portions of the Project Site also represent suitable stopover and wintering habitat for Cooper's hawks.

Golden-winged Warbler

The golden-winged warbler is a species of special concern in New York and is under review by the USFWS for listing as threatened or endangered under the Endangered Species Act. Golden-winged warbler populations have declined due to the loss of early successional, shrubland habitat in many parts of their range. They require early successional habitats for breeding, such as regenerating clearcuts, shrubby wetlands, bogs, and aspen or willow stands (Confer et al. 2011). They are typically found in areas that contain a patchwork of early successional habitats and mature forests. Mature forests are used during the post-fledging period and prior to fall migration (Confer et al. 2011). Suitable nesting habitat for golden-winged warblers is present in the northern section of the Strong Farm property and post-fledging habitat is present in the adjacent and nearby areas of mature forest.

Osprey

Osprey populations in the New York have recovered significantly in recent decades following steep range-wide declines that occurred throughout the mid 1900's (Nye 2008). Ospreys will nest on a variety of artificial structures such as utility poles and platforms erected specifically for use by ospreys, and have become increasingly tolerant of human disturbance. In inland areas, ospreys typically nest in dead trees or on artificial structures within a few miles of large ponds, lakes, and rivers where they can find fish (Poole et al. 2002). Ospreys have the potential to occur in the Project Site.

Grasshopper Sparrow

Grasshopper sparrows nest in open grasslands, abandoned farm fields, and occasionally shrublands exceeding 20 acres in size (Balent and Norment 2003). Potential nesting habitat for grassland sparrows is therefore present on each of the properties of the Project Site, although no grasshopper sparrows were observed during the June 12, 2015 wildlife survey.

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

The Heritage Trail Utility Corridor itself contains habitat of little value. The level area formerly occupied by railroad tracks consists of compacted fill soils roughly 10 feet in width with little vegetation. The margins of the embankment (or cut in certain sections) are predominantly characterized by pole-sized deciduous saplings and vines. The Heritage Trail Utility Corridor runs through a mix of forested upland and wetland habitats, including primarily successional southern hardwood and red maple/green ash swamp. West of I-84, the Heritage Trail Utility Corridor forms a narrow corridor of trees through cleared farm lands and wetland meadows. Corridors such as the Heritage Trail may provide a conduit for the movement of plants/animals over time and provides foraging opportunities for edge-dependent species, such as white-tailed deer, goldfinch and other common perching birds.

The final approximately 0.3 mile segment of the proposed utility corridor route runs adjacent to an agricultural field and beneath a powerline easement prior to reaching the Middletown wastewater treatment plant. Portions of this area consist of bare soil adjacent to cultivated portions of the farm fields and within the powerline easement. Other areas consist of shrubby upland hedgerow habitat and areas dominated by early successional weedy species, including *Phragmites australis*, within potential wetland areas.

ACCESS ROAD IMPROVEMENT AREA

Ecological communities within the access road improvement area were examined during wetlands inspection on this property in August 2015. It was observed to contain a "successional shrubland" community similar to the shrubland within portions of the Echo Lake property. The habitat contains such plant species as red cedar (*Juniperis virginiana*), common buckthorn (*Rhamnus cathartica*), blackhaw (*Viburnum prunifolium*), gray-stem dogwood (*Cornus foemina*), blackberry (*Rubus allegheniensis*), multiflora rose (Rosa multiflora), and young red maple (*Acer rubrum*). South of NYS Route 17M, the access road improvement area would cross more open field, maintained more recently and therefore dominated by grasses and herbaceous species.

Wildlife that can be expected to occur within the access road improvement area is not substantially different from animals expected to occur elsewhere on the Project Site with the exception of breeding habitat for amphibians that require prolonged inundation, such as mole salamanders or spotted turtle. Ponds/pools do not occur within the Access Road Improvement Area. The Area's succesional shrubland and old field habitats provide nesting habitat for small mammals, hunting habitat for raptors (hawks) and other predators, and grazing habitat for deer.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

No substantial changes to vegetation and wildlife species/use of the Project Site are expected in the future without the Proposed Project. If left undeveloped, it is expected that the vegetation assemblages of the Ver Hage, Lipoff, and Echo Lake properties will continue to grow into more forested conditions in the coming decades, reducing populations of plants and animals typical of meadow or old field conditions (eastern kingbird, indigo bunting, tree sparrow) in favor of those adapted to more fully forested conditions (forest-interior nesting birds, bobcat, fisher, etc.). Portions of the Strong Farm are under active cultivation. It is expected that these active farming

uses would continue in the future on the Strong Farm property and that the same, or roughly the same, type and extent of habitats that occur today would continue to exist in the future without the Proposed Project.

Within the Heritage Trail Utility Corridor existing vegetation in the area to be occupied by the multi-use bicycle/pedestrian pathway will be removed as Orange County constructs the pathway. Vegetation lining the sides of the previous railroad right-of-way would likely be retained.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

PROJECT SITE

ECOLOGICAL COMMUNITIES AND VEGETATION

The Proposed Project's improvements are primarily located on the Ver Hage and Echo Lake properties. In total, approximately 151 acres of site disturbance are required to implement the Proposed Project (see **Figure III.D-2** and **Table III.D-7**), of which approximately 58 acres would consist of permanent impervious surface. The remainder would be regraded/landscaped and kept in a maintained lawn condition or gravel surfaces.

Table III.D-7
Acreages of Disturbance to Different Ecological Community Types on the Project Site

Habitat Type	Total Acres on Project Site	Acres of Disturbance
Beech-maple mesic forest	0.9	0.0
Field crops	33.9	0.0
Row crops	27.9	0.0
Ditch/artificial intermittent stream	0.9	0.0
Floodplain forest	11.6	0.0
Red maple-hardwood swamp	1.3	0.1
Sedge meadow	5.5	0.0
Shallow emergent marsh	5.57	3.63
Successional old field	96.3	79.2
Successional shrubland	31.1	19.4
Successional southern hardwoods	194.8	48.9
Total	**409.9**	**151.2**

The three (3) most abundant vegetation community types on the Ver Hage and Echo Lake properties are successional old field, successional southern hardwoods, and successional shrublands (see **Table III.D-7**). The vast majority of conversion of the Project Site to developed conditions (impervious surfaces and regraded/landscaped area) would disturb these three (3) vegetation community types. None of these community types is rare locally or at the State level (S4/S5). Nor are these communities, or any other communities on the Project Site, designated as Significant Habitats by the NYNHP. Disturbance to less common habitats on the Project Site include minor (< 3.0 acres) disturbance to shallow emergent marsh habitats in the depressional wetlands of the Echo Lake property created by past mining activities and a separate shallow emergent marsh habitat on the Ver Hage property. Disturbance to floodplain forest, red maple-hardwood swamp, and beach-maple mesic forest communities would be avoided with the Proposed Project.

Development of the Proposed Project would require clearing of approximately 49 acres of the approximately 195 acres of successional southern hardwoods on the Project Site. Within this area to be cleared are a number of trees greater than 12 inches in diameter. Due to the size of this area, it was not possible to conduct an exact count of the number of trees greater than 12 inches in diameter. In addition, since the Proposed Project requires an extensive amount of cut and fill between the Echo Lake and Ver Hage properties to meet the necessary grades for each site, it is not feasible to preserve any trees within the area of disturbance. Therefore, a tree survey is unwarranted, and the loss of vegetation and trees within the area of disturbance is considered an unavoidable adverse impact.

As detailed in the "Impact Assessment for the Indiana and Northern Long-Eared Bat" report contained in **Appendix III.D**, 23 0.1-acre circular plots were studied both within and outside of the Proposed Project's limits of disturbance to characterize the woodland habitat on the Project Site and to identify larger trees that may serve as roosting habitat for Indiana and northern long-eared bats. That analysis contains detailed assessments of forest stand size and composition and includes relevant metrics of mean dbh, basal area (square feet per acre), and tree density (trees/acre).

While the Proposed Project would result in the loss of trees greater than 12 inches in diameter, loss of such trees does not constitute a significant adverse impact in itself. Nor is the removal of larger trees regulated by Town of Goshen Code. The Town's Zoning Code §97-20 relating to standards for open space development indicates that identification of "stone walls and trees 12 inches dbh or larger" is required as part of a "Conservation Analysis" for proposed residential subdivisions considering an open space development pattern. The Proposed Project is not required to complete a Conservation Analysis.

Past mining activity and other disturbances have left the central portions of the Echo Lake and Ver Hage properties in successional old field and successional shrubland. Construction of the Amy's Kitchen manufacturing facility and SoS Conference Center and improvements have purposely avoided impacts to the more mature forested lands closest to the Wallkill River and Cheechunk Creek and focused development on the more disturbed ecological communities on the Project Site. By doing so, the clearing of forested areas containing larger trees has been kept to a minimum.

AQUATIC RESOURCES

Significant adverse impacts to aquatic resources would be avoided with the implementation of soil and erosion control measures during construction and stormwater management measures post-construction. As discussed in Chapter III.G, "Stormwater Management," runoff from areas of proposed site disturbance will be captured and treated in NYSDEC-approved stormwater practices. These will remove sediment and soluble pollutants prior to discharge to the Wallkill River and other waters/wetlands on the Project Site. In this way, potential significant adverse impacts to water quality and to aquatic fauna, including fish, would be avoided.

WILDLIFE

The abundance of wildlife within the Project Site will be reduced with implementation of the Proposed Project because of the sizable areas of habitat to be developed on the Ver Hage and Echo Lake properties (see **Table III.D-7**). However, as discussed below, under " Proposed Mitigation," the Proposed Project would include preservation of the remaining 160 total acres of woodland, 17 acres of old field, 12 acres of shrubland, 5 acres of sedge meadow, 2 acres of shallow emergent marsh, and 62

acres of cropland among the four (4) properties of the Project Site, which would indefinitely provide protected habitat for wildlife in these areas. As discussed below, the Proposed Project has the potential to result in incidental take of the Indiana bat and northern long-eared bat, but the effects would be offset by the proposed mitigation measures.

THREATENED AND ENDANGERED SPECIES

Of those federally listed threatened/endangered species that have the potential to occur on the Project Site, the following mitigation measures and additional investigations will be conducted to prevent any "taking" of plants/animals in accordance with the provisions of the federal Endangered Species Act.[1]

Indiana Bat and Northern Long-eared Bat

As detailed in **Appendix III.D**, construction and operation of the Proposed Project on the Project Site (the Amy's Kitchen manufacturing facility, the SoS Conference Center, the Warehouse Use, and the access road) would disturb approximately 151 total acres of land that represents potential foraging and/or roosting habitat for the Indiana bat and/or northern long-eared bat. An additional 41 acres of potential foraging habitat for the Indiana bat, and 42 acres of potential foraging and roosting habitat for the northern long-eared bat also may be affected by the indirect impacts of fragmentation, motor vehicle traffic and noise, and nighttime lighting.

All tree clearing for the Proposed Project would be conducted during the October 31 to March 31 hibernation period of Indiana and northern long-eared bats to avoid removal of a potentially active roost tree, and avoid the potential for any direct impacts to the bats. To offset any incidental take of the Indiana and northern long-eared bat due to indirect effects, and comply with the Net Conservation Benefit requirements of Article 11 of the ECL, the Proposed Project would include the preservation of approximately 160 total acres of woodland among the four properties that would provide Indiana and northern long-eared bats with potential foraging and roosting habitat. This would exceed the 3:1 ratio of preserved woodland area (160 acres) to developed woodland area (approximately 49 acres) that is a recommended Indiana bat conservation guideline of the USFWS (2012). In addition to the woodland preservation areas, approximately 17 acres of old field, 12 acres of shrubland, 5 acres of sedge meadow, 2 acres of shallow emergent marsh, and 62 acres of cropland would also be preserved on the Project Site and represent additional potential foraging habitat for Indiana bats. By preserving these undeveloped portions of the Project Site, indirect impacts would be reduced and both species of bats would be expected to continue to occupy the Project Site in the future. The Project would not jeopardize the continued existence of either bat species.

Preservation of the Strong Farm and Lipoff properties, along with the large portions of the Echo Lake and Ver Hage properties that would be outside of the Proposed Project's limits of disturbance, would contribute to the USFWS goal of maintaining a minimum of 35 percent forest cover in the landscapes surrounding Indiana bat maternity colonies (USFWS 2012). A Geographic Information Systems analysis using the U.S. Geological Survey's National Land Cover Database showed that forest (i.e., combined categories of "Deciduous Forest", "Evergreen Forest", and "Mixed Forest") currently covers approximately 42.5 percent of the land within 2.5 miles of the center point of the Project Site; following the removal of approximately 49 acres of forest to construct the Proposed Project, that percentage would only decrease to 41.9. The

[1] Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.)

approximately 160 total acres of woodland that would be preserved on the four properties would represent a sizable amount of forest cover in Goshen that would be protected from development and ensure the availability of potential foraging and roosting habitat for both Indiana and northern long-eared bats.

As detailed in **Appendix III.D**, other features of the Proposed Project and measures that would be implemented to minimize potential impacts to Indiana and northern long-eared bats would include best management practices for outdoor nighttime lighting, little to no nighttime operation of the SoS Conference Center, tree plantings throughout the SoS parking area, and project footprints centered on old field and shrubland to minimize tree removal and encroachment into wooded areas. With these measures in place, the Proposed Project would be expected to offset any incidental take and result in a Net Conservation Benefit, as required under Article 11 of the ECL, and also exceed the 3:1 ratio of preserved to developed woodland that is recommended by the USFWS for the conservation of the Indiana bat. Collectively, these Project features and measures constitute the Project's mitigation plan.

Bog Turtle

As discussed under "Existing Conditions," Phase I Bog Turtle Habitat Surveys conducted on the Echo Lake property in 2014 and the remainder of the Project Site in 2015 determined that suitable habitat for bog turtles is not present. Bog turtles are not considered to have the potential to occur on the Project Site. As such, no significant adverse impacts to this species would result from the Proposed Project.

Small Whorled Pogonia

No small-whorled pogonia was found during the vegetation surveys conducted on the Echo Lake property in 2011 and 2014, or on the remainder of the Project Site in 2015. Small-whorled pogonia is not known to occur on the Project Site. As such, no significant adverse impacts to this species would be expected to result from the Proposed Project.

SPECIAL CONCERN SPECIES

NYS-listed "special concern" reptiles/amphibians known for the region by listing in the NYS Herp Atlas Project and having the potential to occur on the Project Site based on existing habitat, include Jefferson salamander (*Ambystoma jeffersonianum*; NYS special concern), blue-spotted salamander (*Ambystoma laterale*; NYS special concern), spotted turtle (*Clemmys guttata*; NYS special concern), wood turtle (*Clemmys insculpta*; NYS special concern), and eastern box turtle (*Terrapene Carolina*; NYS special concern). Prior to site disturbance, ecologists will inspect wetland and upland areas proposed to be disturbed to capture and relocate any reptiles/amphibians encountered to appropriate habitat elsewhere on the Project Site. In wetland areas, this may require the use of nets for turtle species or minnow traps for amphibians. Because the special concern reptiles/amphibians that may occur on the Project Site are not listed as threatened or endangered by New York State, mortality to individuals or populations of these species does not require "incidental take" permits from the NYSDEC (ECL § 11-0535).

NYS-listed "special concern" birds that may occur on the Project Site include common nighthawk (*Chordeiles minor*), Cooper's hawk (*Accipiter cooperii*), golden-winged warbler (*Vermivora chrysoptera*), grasshopper sparrow (*Ammodramus savannarum*), and osprey (*Pandion haliaetus*). While the Proposed Project would eliminate some habitat for these species, all are highly mobile and there is abundant habitat in the region into which they may relocate as

nesting/foraging space allows. Because the special concern birds that may occur on the Project Site are not listed as threatened or endangered by New York State, mortality to individuals or populations of these species does not require "incidental take" permits from the NYSDEC (ECL § 11-0535).

The NYS-listed "exploitably vulnerable" plants identified onsite may be affected by the Proposed Project. However, these species are mostly ferns and are common to the area. By preserving the site's wetlands and much of the more mature forested areas, it is expected that most of the concentrations of ferns will be preserved onsite.

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

Impacts to the utility corridor would involve the excavation of one (1) approximately four (4)-foot-wide trench for installation of the water supply and wastewater conveyance lines. The Heritage Trail Utility Corridor itself contains habitat of little value. The level area formerly occupied by railroad tracks consists of compacted fill soils roughly 10 feet in width with little vegetation. The margins of the embankment (or cut in certain sections) are predominantly characterized by pole-sized deciduous saplings and vines.

It is anticipated that construction of the Heritage Trail extension by Orange County would remove existing vegetation within the area to be occupied by the multi-use pathway. Thus construction of the water supply and wastewater conveyance lines within the level area formerly occupied by railroad tracks is not expected to result in significant additional vegetation removal. Erosion control measures, such as silt fence and temporary soil stockpiles areas, can be readily accommodated with the corridor, thereby avoiding direct or indirect disturbance to the upland and wetland habitats bordering the corridor.

At the western end of the Heritage Trail Utility Corridor, the proposed route of the utility lines must leave the corridor for the final approximately 0.3 miles to the Middletown WWTP. This area is occupied by agricultural fields and disturbed/cleared land beneath a powerline easement occupied by bare soil and herbaceous plants typical of disturbed land. Several potential wetland areas were noted during site inspection, containing common reed (*Phragmites australis*) and silky dogwood (*Cornus amomum*). However, most of the proposed route of the utility connections consists of uplands. It is expected that wetlands and trees can be avoided for the temporary disturbance required to install the utilities by locating the route along the edge of the agricultural fields and within upland portions of the utility easement.

Overall impacts to ecological habitats, plants, and animal species would be minimal and temporary. After installation, the trenching for the utility connections would be back-filled and the surface restored to allow for completion of the multi-use pathway.

ACCESS ROAD IMPROVEMENT AREA

The proposed access road will disturb approximately three (3) acres of successional shrubland and approximately 14 acres of southern successional hardwood forest, which will cause some permanent loss of habitat. However, impacts from the access road have been minimized by avoiding wetlands and more valuable mature forested lands. The access road also preserves a wide buffer of undisturbed land separating it from the adjacent Wallkill River. Furthermore, loss of a small acreage of successional shrubland and southern successional hardwood forest is not

significant owing to the presence of other areas of successional shrubland and hardwood forest in the immediate vicinity.

E. PROPOSED MITIGATION

The Proposed Project would result in unavoidable adverse impacts to vegetation and wildlife through clearing and grading activities. However, the following measures have been identified to minimize or mitigate those impacts such that they would not be significant adverse impacts.

As noted above and as detailed in **Appendix III.D**, the Proposed Project would result in disturbance to approximately 151 acres of vegetation, including approximately 49 acres of the approximately 195 acres of successional southern hardwoods on the Project Site. To avoid direct impacts to the Indiana bat and northern long-eared bat that would be considered a take under the Endangered Species Act and Article 11 of the ECL, clearing of forested areas would be limited to the period between October 31 and March 31, consistent with NYSDEC regulations. To offset indirect impacts to the Indiana bat and northern long-eared bat and an indirect take under Article 11 of the ECL, the Proposed Project would include the preservation of approximately 125 total acres of woodland, 25 acres of old field, 11 acres of shrubland, 5 acres of sedge meadow, 2 acres of shallow emergent marsh, and 62 acres of cropland among the four (4) properties of the Project Site. This would benefit Indiana and northern long-eared bats, as well as the numerous other species of animals and plants that occupy these areas and are associated with these habitat types. Other features of the Proposed Project and measures that would be implemented to avoid or minimize potential impacts to Indiana and northern long-eared bats would include best management practices for outdoor nighttime lighting, orchard-style design of the SoS parking area, and construction of Proposed Project elements on old field and shrubland to minimize tree removal and encroachment into wooded areas. Surveys of NYS-special concern reptiles/amphibians that may occur on the Project Site would be conducted prior to construction so any individuals found could be relocated outside of the areas of disturbance.

Development of the Proposed Project will provide extensive areas suitable for landscape planting and site restoration, especially within the lands on the Ver Hage property that were stripped of topsoil during closure of the landfill and within the central portion of the Echo Lake property. Native plant species would be specified in a Landscape Plan to be developed for review/approval by the Town during the Site Plan review stage. Such native bunch-forming grasses as switchgrass, little bluestem, and Indian grass used in combination with low shrubs such as shadbush, chokeberry, inkberry, and dogwoods can create an attractive landscape for employees and visitors while simultaneously providing foraging habitat for native wildlife, securing the soil, and minimizing stormwater runoff. Implementation of the Landscape Plan will provide a unique opportunity to shape the site's post-construction plant community for the benefit of site and regional ecology.

With these measures in place, significant adverse impacts to the Project Site's vegetation and wildlife would not result from the Proposed Project.

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✷

A. INTRODUCTION

This chapter describes the preferred potable water supply for the Proposed Project. When Amy's Kitchen first contemplated construction of its food manufacturing facility in the Town of Goshen it intended to use existing wells on the Echo Lake property. When Amy's Kitchen expanded the Project Site by obtaining an option to purchase the Ver Hage property it also purchased the Lipoff property for its existing water supply well. The Science of the Soul Conference Center would remain on the Echo Lake property and would use the existing water supply wells on that property. However, in the course of design development and environmental impact assessment, Amy's has determined that connection to the City of Middletown water supply system is the best long-term option for potable water supply. A new private water utility connection to the City of Middletown water supply is proposed as part of the Proposed Project. That new private utility line would serve Amy's Kitchen, Science of the Soul, and the potential Warehouse Use and would be managed through a Transportation Corporation established to serve the multiple water users. Amy's Kitchen has received a "will serve" letter from the City of Middletown indicating its willingness and capability to serve the Proposed Project (see **Appendix III.E**). Thus, many of the required elements of analysis (water quantity and quality testing of on-site wells; impacts to adjacent off-site wells and surface waters; water budgets for bedrock and unconsolidated aquifers) contained in the Adopted Scoping Document (July 16, 2015) are no longer relevant.

B. EXISTING CONDITIONS

Numerous well tests have been conducted on water supply wells within the Project Site over the years. While each of the existing wells is considered a viable source of water supply, specific information on pumping rates, impacts to adjoining wells, and water budgets is no longer considered relevant since the Proposed Project proposes to obtain potable water supply from the City of Middletown. This section summarizes the existing wells on each Project Site property.

VER HAGE PROPERTY

There are no water supply wells on the Ver Hage property. The NYSDEC Record of Decision for the Old Al Turi Landfill restricts the installation of any drinking water wells on the Ver Hage property unless those wells are approved by the NYSDEC. Amy's Kitchen has no intention of installing drinking water wells on the Ver Hage property.

The Ver Hage property contains a number of groundwater monitoring wells that were installed by Al Turi Landfill, Inc., the previous property owner, to implement a long-term groundwater monitoring program. The July 2005 Environmental Monitoring Plan was required by NYSDEC through a Record of Decision to assess post-closure groundwater quality associated with the closure of the Class II Al Turi landfill located to the south. The monitoring plan requires:

- Semi-annual sampling of eight "Type 1" monitoring wells located adjacent (within 150 feet) to the north-flowing Wallkill River (W-1, W-11S, W-24S, W-38S, W-39S, W-40S, W-1D, and W-37D);
- Semi-annual sampling of nine "Type 2" monitoring wells located greater than 150 feet from the Wallkill River (W-3A, W-12SA, W-13S, W-18S, W-19S, W-20S, W-29, W-3D, and W-12DA);
- Laboratory analysis of the samples for certain contaminants of concern, including select volatile organic compounds (VOCs) and metals; and,
- Semi-annual water level gauging in all Type 1 and Type 2 monitoring wells, plus two additional wells (W-21S and TW-22S).

Al Turi Landfill, Inc. has several existing access easements on the property to allow access to the groundwater monitoring wells associated with the Old Al Turi Landfill. Construction of the Amy's Kitchen facility would require relocation or discontinuance of three (3) groundwater monitoring wells associated with the Old Al Turi Landfill. NYSDEC Division of Environmental Remediation has approved a request to discontinue these monitoring wells (see **Appendix III.O** and Chapter III.O, "Environmental Contamination," for more information relating to the groundwater monitoring program).

ECHO LAKE PROPERTY

Two (2) water supply wells were constructed on the Echo Lake property by the Town of Wallkill in approximately 1988. The Town of Wallkill holds an easement on an approximately five (5) acre portion in the northeast section of the Echo Lake property relating to the two (2) existing water supply wells. The easement stipulates, in part, that a) water obtained from the two (2) existing water supply wells in the easement area may only be used on the Echo Lake property itself and not exported to another property, and b) that the Town of Wallkill retains joint usage rights for water from the two (2) existing wells within the easement area.

LIPOFF PROPERTY

Three (3) water supply wells were constructed on the Lipoff property in approximately 1973. One (1) of those wells was a test well and the other two (2) were intended for production wells.

STRONG FARM PROPERTY

One (1) or more water supply wells serve the existing Strong Farm property.

C. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

WATER DEMAND

Based on the Applicant's experience at its plant in Medford, Oregon, Amy's Kitchen estimates a demand of approximately 375,000 gallons per day (gpd) for the food manufacturing facility at full buildout. The Warehouse Use would require approximately 7,000 gpd. The annual three (3)-day SoS National Conference of up to 12,000 participants would generate demand of approximately 36,000 gallons per day (gpd). The annual two (2)-day Regional Conference of up to 2,000 participants would generate demand of approximately 6,000 gpd.

In addition to the two (2) caretaker residences, typical weekly activities include the following:

- Weekday – five (5) to ten (10) volunteers working in the office or property maintenance;
- Weekend – 200 to 400 individuals attending the Sunday meeting or doing volunteer work in the office or property maintenance on Saturday or Sunday.

On a normal daily basis, the two (2) caretaker residences and five (5) to ten (10) on-site volunteers would generate demand of approximately 500 gallons per day. The typical weekend day would generate demand of approximately 1,000 gpd.

Thus, typical daily demand at full operation of the Proposed Project would be approximately 382,500 gpd. During the annual three (3)-day SoS National Conference, and after Amy's Kitchen reaches full build-out, total maximum daily demand for water would be approximately 418,000 gpd.

Irrigation of Project Site landscaping may be provided through on-site irrigation systems tied into the potable water supply or through rain barrels capturing roof runoff from some of the smaller buildings on the Project Site. Annual rainfall in Goshen is approximately 40 inches per year. While limited irrigation may be necessary to establish landscaping following construction, it is not anticipated that the landscaping for the Proposed Project will require large quantities of water on an annual basis.

WATER SUPPLY

Potable water supply to the Amy's Kitchen manufacturing facility would be provided by a new private utility connection to the City of Middletown water supply.

The City of Middletown obtains its raw water from three (3) reservoirs and two (2) impoundments. The City currently has an annual safe yield of 4.1 million gallons per day (MGD). Raw water is currently treated at two (2) water treatment facilities: a package plant that went on-line in November 2003 that has a capacity of 1.5 MGD and a new 5.1 MGD treatment facility that opened in June 2010. Each plant has capacity for filtration and disinfection. Current (2014) annual water demand is estimated at approximately 2.38 MGD.[1] The Proposed Project's typical daily demand of 382,500 gpd represents an increase of approximately 15 percent over current demand. However, given the City's safe yield, the additional demand is well within the capabilities of the City to provide the service. The City of Middletown has provided Amy's Kitchen with a "will serve" letter (dated January 21, 2016) indicating that it has the capability and willingness to serve the Proposed Project (see **Appendix III.E**). The City has also provided Amy's Kitchen with a letter (dated January 21, 2016) confirming its safe yield (see **Appendix III.E**).

An approximately eight (8)-inch diameter line would be constructed within the Heritage Trail Utility Corridor and would connect with existing City of Middletown water supply lines in the vicinity of the City of Middletown wastewater treatment plant (WWTP). The location of the interconnection with City of Middletown water supply lines within the City's WWTP property has not been finalized, but the general location of the water line serving the Proposed Project on the property boundary of the WWTP has been provided as directed by the City of Middletown.

The Heritage Trail Utility Corridor is an approximately 50-foot-wide corridor owned by the City of Middletown from the City's wastewater treatment plant east to the crossing of the original

[1] City of Middletown Annual Drinking Water Quality Report for 2014 (http://www.middletown-ny.com/doc-center/public-works/1299-annual-awqr-drinking-water-report.html).

Wallkill River (just east of C.R. 50) (with the exception of that portion that crosses below the New York State Thruway Authority's Interstate 84). East of that point, the Heritage Trail Utility Corridor is owned by Orange County. East of Hartley Road, the Heritage Trail is improved as a multi-use bicycle/pedestrian pathway. Orange County Department of Parks and Recreation is currently developing design plans to construct an extension of the multi-use pathway from Hartley Road west to the City of Middletown. It is anticipated that construction of the proposed private water line could happen concurrently with construction of the multi-use pathway to avoid disturbance to the pathway.

The new private water line would be constructed in a new trench within the Heritage Trail Utility Corridor at a depth of approximately 4.5 feet below existing ground surface. The water line would be horizontally separated from the existing 36- to 42-inch City of Middletown wastewater effluent line by ten (10) feet and from the proposed private wastewater conveyance line serving the Proposed Project by three (3) feet horizontally and 18 inches vertically. The new water line and wastewater conveyance line would be constructed in a single trench. Hydrants for clean-out and flushing purposes would be constructed approximately every 600 linear feet.

Where the water line crosses Monhagen Brook and the original Wallkill River channels, the water line would be constructed underneath the channels through boring pits and pipe jacking. Temporary boring access pits will be excavated on both sides of the waterway. Shoring would be provided as necessary. Minimum setback distances would be adhered to. Storm water management provisions would be provided to prevent sediment from entering the waterways. In addition, provisions would be provided to properly manage groundwater removed from the excavations.

Fused HDPE pipe will be directionally bored for both the water line and wastewater conveyance line (see Chapter III.F). The boring depth below the stream or waterway will be sufficient to prevent the release of drilling mud into the waterway. Geotechnical investigations will be conducted as required to define the soils in the area of the borings. **Appendix III.E** includes 30% Design drawings for the proposed private water line in the Heritage Trail Utility Corridor.

The City of Middletown has reported a pressure of 75 pounds per square inch (PSI) at the WWTP where the private water line and wastewater conveyance line would connect to municipal services. It is anticipated that no pumping stations would be required along the Heritage Trail Utility Corridor to ensure satisfactory water pressure at the end of the conveyance line. Final design will require an actual flow test at the final connection point at the City of Middletown WWTP system.

TRANSPORTATION CORPORATION

A Transportation Corporation, formed pursuant to New York State Transportation Corporations Law, would be created to allow potable water to be supplied to Amy's Kitchen, SoS, and the future Warehouse Use. The sole or principal shareholder of the Transportation Corporation will be Amy's Kitchen, Inc., or a wholly owned subsidiary of Amy's Kitchen, Inc. The Transportation Corporation would own, install, operate, and maintain the water line servicing the Proposed Project. The service area for the Transportation Corporation would include the Echo Lake property and Ver Hage property (including the future subdivided parcel).

ON-SITE DISTRIBUTION SYSTEMS

Separate utility connections from the new private water line in the Heritage Trail Utility Corridor would be provided to SoS on the Echo Lake property and to Amy's Kitchen on the Ver Hage property. A stub-end service line would be provided to the Warehouse Use lot from within the Amy's Kitchen lot. There are no interconnections proposed between the SoS distribution system and Amy's Kitchen distribution system. Site Plan drawings included in **Appendix II** show the locations of on-site water distribution lines. All on-site water distribution components would be designed in accordance with State, Town, and Orange County Department of Health standards and regulations.

There would be approximately 6,570 linear feet of eight (8)-inch ductile iron pipe within the SoS Conference Center servicing each of the proposed buildings. Approximately 16 hydrants (located a minimum of every 400 feet and at high points) would be provided. There would be approximately 4,500 linear feet of eight (8)-inch ductile iron pipe within the Amy's Kitchen manufacturing facility site. Approximately 12 hydrants would be provided.

With current (30%) design, computed available flow meets the flow rate required at the Project Site and therefore no individual pumping stations would be required to serve the Amy's Kitchen manufacturing facility, the SoS Conference Center (including the guest house), and the Warehouse Use. If the actual flow testing at the City of Middletown WWTP does not match the reported 75 PSI, then any pumping stations required would be located on the Project Site.

Depending upon the final design of the water supply line, and the pressure that can be achieved, Amy's Kitchen may require one (1) or two (2) fire storage tanks of approximately 200,000 gallons each. These potential storage tanks have been included on the site plan for the Proposed Project. Any storage or pre-treatment for Amy's Kitchen process water would be located within the interior of the building. The SoS Conference Center may also require on-site water storage for fire-fighting purposes. That storage tank would be designed once the water line design has been completed.

Each of the existing groundwater supply wells on the Project Site would remain in place and would be protected during the construction period by construction fencing. At this time, neither Amy's Kitchen nor Science of the Soul has any intention of reliance on either the Echo Lake or Lipoff property wells; however, the wells would not be abandoned.

D. PROPOSED MITIGATION

No significant adverse impacts and no unavoidable impacts are anticipated as a result of the Proposed Project. Using a municipal source for water supply would avoid potential impacts to groundwater supply wells in the vicinity of the Project Site. ✴

A. INTRODUCTION

This chapter describes how the Proposed Project will handle wastewater treatment and disposal and any impacts to local water resources as a result.

As described in Chapter II, "Project Description," the Proposed Project includes an Amy's Kitchen food production facility, the Science of the Soul Conference Center, and a Warehouse Use on adjacent sites in an area of the Town of Goshen without existing public sewer service. The Amy's Kitchen facility would generate both process and sanitary wastewater and the Science of the Soul Conference Center and Warehouse Use would generate sanitary wastewater.

A wastewater pre-treatment plant would be constructed on the Ver Hage property to reduce the high biological oxygen demand (BOD) that is characteristic of Amy's process wastewater. The pre-treatment plant would be located at the north end of the employee parking lot and would have a footprint of approximately 15,000 square feet.

Wastewater generated by the Proposed Project would be conveyed to the City of Middletown wastewater treatment plant (WWTP) approximately 2.5 miles northwest of the Project Site by a new private utility forcemain connection to be constructed within the Heritage Trail Utility Corridor.

A Transportation Corporation would be established to govern use of the wastewater forcemain by multiple users.

B. EXISTING CONDITIONS

The Project Site is not located within a public wastewater or sewer district. There are no wastewater treatment systems on the Project Site with the exception of two septic systems on the Strong Farm property serving the existing residences.

The nearest public wastewater treatment facility is located in the Village of Goshen and is operated by the Village of Goshen Department of Public Works. The Village of Goshen WWTP is located on Cypress Road in Goshen, approximately 1.7 miles southeast of the Project Site. Based on its current State Pollutant Discharge Elimination System (SPDES) permit, the plant has a treatment capacity of two (2) million gallons per day (MGD) and it currently accepts an average of 1.4 MGD. The Village WWTP discharges to the Rio Grande, a tributary of the Wallkill River, that is known as Cheechunk Creek in the vicinity of the Project Site.

The City of Middletown WWTP is located approximately 2.5 miles northwest of the Project Site and is operated by the City of Middletown Department of Public Works. The Middletown WWTP has a SPDES-permitted capacity of 8.5 MGD and currently accepts an average of 5.1 MGD. The City of Middletown effluent line is located within the Heritage Trail Utility Corridor from the WWTP to Echo Lake Road. The effluent line then runs beneath Echo Lake Road and a portion of the Echo Lake property before discharging into the Wallkill River.

The New York State Mid-Hudson Psychiatric Center (MHPC) WWTP is located approximately 500 feet south of NYS Route 17M opposite the Echo Lake property. The MHPC WWTP serves the MHPC only and has a SPDES-permitted capacity of 80,000 gallons per day (gpd) and currently accepts an average of approximately 35,000 gpd. The MHPC WWTP discharges to the Wallkill River south of NYS Route 17M.

Table III.F-1 summarizes the maximum permitted flow and average daily flow for the wastewater treatment plants in proximity of the Project Site.

Table III.F-1
Existing Wastewater Treatment Facilities

Municipality	Maximum Permitted Flow[1] (MGD)	Average Daily Flow (MGD)	Distance from Project Site (miles)
Village of Goshen	2.0	1.4	1.7
City of Middletown	8.5	5.1	2.5
Mid-Hudson Psychiatric Center	0.08	0.035	<0.5

Note: [1] SPDES permit maximum plant treatment capacity

C. FUTURE WITHOUT THE PROPOSED PROJECT

The Town of Goshen does not have any immediate plans to create a sewer district in the area of the Project Site. Neither the Village of Goshen nor the City of Middletown has current plans to increase capacity or extend sewer service boundaries to the Project Site. Orange County has recently initiated a planning study to evaluate sewage capacity and options for increasing overall capacity in southeastern Orange County, including, potentially, the Project Site; however, no formal proposals or recommendations have been identified at this time.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

WASTEWATER GENERATION

Based on Amy's experience at its Medford, OR production plant, it is anticipated that the food manufacturing facility would generate approximately 300,000 gallons per day (gpd) of wastewater (including sanitary wastewater and process wastewater) at full buildout. The balance of the potable water is consumed by the manufacturing process and within finished product.

The annual three (3)-day SoS National Conference of up to 12,000 participants would generate approximately 36,000 gallons per day (gpd) of sanitary wastewater. The annual two (2)-day Regional Conference of up to 2,000 participants would generate approximately 6,000 gpd.

In addition to the two (2) caretaker residences, typical weekly activities include the following:

- Weekday – five (5) to ten (10) volunteers working in the office or property maintenance;
- Weekend – 200 to 400 individuals attending the Sunday meeting or doing volunteer work in the office or property maintenance on Saturday or Sunday.

On a normal daily basis, the two (2) caretaker residences and five (5) to ten (10) on-site volunteers would generate approximately 500 gallons of sanitary wastewater per day. The typical weekend day would generate approximately 1,000 gpd.

Most wastewater generated by SoS would be sanitary wastewater from bathrooms. There would be nominal wastewater generation from kitchen sinks within the Central Building and Family Area building. Temporary sanitation facilities would not be used during either the Regional or National Conferences as sufficient capacity exists within the Conference Center restrooms and the City of Middletown WWTP. Volunteers parking on the Strong Farm would not be allowed to use the bathrooms within Strong Farm residences; thus, no impacts to the septic systems on the Strong Farm would result.

The proposed Warehouse Use would generate approximately 7,000 gpd of sanitary wastewater flow.

WASTEWATER PRE-TREATMENT

Process wastewater from the Amy's Kitchen manufacturing facility contains a high biological oxygen demand (BOD), so pre-treatment is required before the process water can be treated at the Middletown WWTP to ensure compliance with Middletown's SPDES permit. The wastewater pre-treatment plant would be located at the north end of the employee parking lot and would have a footprint of approximately 15,000 square feet.

The wastewater pre-treatment system is expected to include the following unit process components:

- Channel screen with one (1) millimeter spacing;
- Process wastewater lift station;
- 300,000-gallon equalization tank;
- Dissolved Air Floatation (DAF) Solid/Liquid Separation Technology;
- An approximately 20,000-gallon Aerated Sludge Storage;
- Optional sludge press; and
- Sanitary waste to be discharged through a solids separation tank, with liquid portion being chlorinated prior to discharge into the trunk line.

The first step in the wastewater pre-treatment process would be screening, in which all process wastewater would flow through screens to remove any large solid waste or debris larger than one (1) millimeter. After screening, the process wastewater would be transferred to a 300,000-gallon equalization tank, which would minimize the effects of shock loadings on treatment facilities and provide dampening of variations in flow, pH, and organic loading that may occur in food production facility effluent. Equalization would also improve the performance of the treatment process by providing stability.

Equalized flow would then be introduced to secondary solids-liquid separation (SLS) treatment, which would employ chemical conditioning and further solids and organic removal via dissolved air floatation (DAF) treatment of the wastewater. The secondary treatment process would also include polymer addition along with either ferric or alum chemical additions to achieve improved effluent quality, particularly removal of BOD. All wastewater treatment components other than process tanks would be located indoors and would be outfitted with odor and noise control equipment to minimize the environmental effects of on-site wastewater treatment. The process design and process tankage is designed to prevent malodorous conditions.

The solids removed through the pre-treatment process, including influent screening and sludge wasting produced by the DAF, would be pumped or otherwise transported to an on-site 20,000-

gallon sludge holding tank. Sludge from the holding tank would either be stored as-is or would be pumped to an on-site rotary press for dewatering prior to removal and off-site disposal. Hauling and disposal of wastewater solids would be performed by a private waste management company. The influent channel screen is expected to generate 1,000 pounds per day of compacted dewatered sludge. Approximately 3,000 pounds per day of waste liquid sludge is expected to be generated by the DAF process.

Amy's Kitchen would either include a backup power supply to the wastewater pre-treatment or a facility for expansion of wastewater storage capacity in case of pump failure or power outage, in compliance with state regulations and the Ten State Standards. A power outage would cease both plant operations and water supply; therefore no wastewater would be generated. Sufficient storage (approximately one (1) day of retention) would be provided, however, to adequately accommodate this scenario.

ON-SITE COLLECTION SYSTEMS

Site Plan drawings included in Appendix II show the locations of on-site wastewater collection lines. All on-site wastewater collection components would be designed in accordance with State, Town, and Orange County Department of Health standards and regulations.

There would be approximately 6,683 linear feet of four (4) to eight (8) inch wastewater collection piping within the SoS Conference Center servicing each of the proposed buildings. Manholes would be placed every 400 feet and at any change in direction. There would be approximately 1,325 linear feet of eight (8) inch wastewater collection piping within the Amy's Kitchen manufacturing facility site. Approximately six (6) manholes would be required. Two (2) below-ground pumping stations would be required to ensure wastewater effluent conveyance to the Middletown WWTP. One (1) pumping station serving the SoS Conference Center (the "SoS Pumping Station") would be located on the Echo Lake property and one (1) pumping station serving the entire Proposed Project (the "Amy's Kitchen Pumping Station") would be located on the Ver Hage property.

Sanitary wastewater generated on the Amy's Kitchen site, including in the production facility, medical center, and office areas would flow into the Amy's Kitchen Pumping Station. Process wastewater effluent from the Amy's Kitchen wastewater pre-treatment plant would join with sanitary effluent from the Amy's Kitchen manufacturing facility to flow into the Amy's Kitchen Pumping Station. This pumping station would be approximately 20 feet by 46 feet and 12 feet in depth. Wastewater generated by SoS would flow into the SoS Pumping Station where it would then be pumped to the Amy's Kitchen Pumping Station. The SoS Pumping Station would be approximately ten (10) feet in diameter and 14 feet in depth. All wastewater from the Amy's Kitchen Pumping Station would be pumped to the conveyance line in the Heritage Trail Utility Corridor.

A separate pumping station would be required to convey wastewater from the Warehouse Use into the conveyance lines in the Amy's Kitchen property.

WASTEWATER CONVEYANCE LINE

Wastewater effluent from the Proposed Project would flow from the Amy's Kitchen Pumping Station into an eight (8)-inch diameter wastewater conveyance line that would be constructed within the Heritage Trail Utility Corridor. The new wastewater conveyance line would be located approximately ten (10) feet horizontally from the existing 36-inch to 42-inch City of

Middletown effluent line and three (3) feet horizontally and 18 inches vertically from the proposed eight (8)-inch water supply line. The wastewater conveyance line would be constructed approximately six (6) feet below existing ground level. Where the wastewater conveyance line crosses Monhagen Brook and the original Wallkill River channels, the wastewater conveyance line would be constructed under the channels through boring pits and pipe jacking. Temporary boring access pits will be excavated on both sides of the waterway. Shoring would be provided as necessary. Minimum setback distances would be adhered to. Storm water management provisions would be provided to prevent sediment from entering the waterways. In addition, provisions would be provided to properly manage groundwater removed from the excavations.

Fused HDPE pipe will be directionally bored for both the water line (see Chapter III.E) and wastewater conveyance line. The boring depth below the stream or waterway will be sufficient to prevent the release of drilling mud into the waterway. Geotechnical investigations will be conducted as required to define the soils in the area of the borings. **Appendix III.E** includes 30% Design drawings for the proposed private wastewater conveyance line in the Heritage Trail utility Corridor.

Three (3) air release vents and manholes would be placed along the length of the wastewater conveyance to allow for equalization of air pressure. One (1) air release vent would be located east of the Monhagen Brook crossing and two (2) air release vents would be on the western and eastern sides of the crossing of the original Wallkill River channel.

WASTEWATER TREATMENT

The Middletown WWTP has a SPDES-permitted capacity of 8.5 MGD and currently accepts an average of 5.1 MGD. The City of Middletown has provided a "will serve" letter indicating its capability and willingness to accept wastewater from the Proposed Project (see **Appendix III.E**). The City of Middletown WWTP discharges to the Wallkill River just south of Echo Lake Road. Discharge of treated effluent from the Proposed Project to the City of Middletown WWTP would not have impacts to surface water quality of the Wallkill River as long as the City of Middletown WWTP effluent meets all applicable SPDES discharge criteria.

TRANSPORTATION CORPORATION

A Transportation Corporation, formed pursuant to New York State Transportation Corporations Law, would be created to allow wastewater from the Proposed Project to be conveyed to and treated by the City of Middletown WWTP. The sole or principal shareholder of the Transportation Corporation will be Amy's Kitchen, Inc., or a wholly owned subsidiary of Amy's Kitchen, Inc. The Transportation Corporation would own, install, operate, and maintain the on-site pumping stations and wastewater conveyance line servicing the Proposed Project. The service area for the Transportation Corporation would include the Echo Lake property and Ver Hage property (including the future subdivided parcel). Amy's Kitchen would own, operate, and maintain the wastewater pre-treatment plant.

E. PROPOSED MITIGATION

No significant adverse impacts and no unavoidable impacts are anticipated as a result of the Proposed Project. Thus, no mitigation measures are required. Having the Proposed Project's wastewater treated at an existing regional WWTP is an environmental benefit as it avoids creating a new outfall in the Wallkill River.

Sufficient capacity exists within the City of Middletown WWTP to service the Proposed Project. All land disturbances associated with construction of underground wastewater conveyance lines would be temporary and limited to the construction period. Soil erosion and sediment control measures would be in place throughout the construction period and the disturbed land would be restored upon completion of construction. ✷

A. INTRODUCTION

The Proposed Project would create over one (1) acre of new impervious surfaces on the Echo Lake and Ver Hage properties, which requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan (ESCP). The SWPPP and ESCP for the Proposed Project will conform to the requirements of New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, Permit No. GP-0-15-002, and the 2015 Stormwater Management Design Manual. A preliminary SWPPP is contained in **Appendix III.G**. The SWPPP contains both temporary erosion control measures during construction and post-construction stormwater management practices to avoid increased discharge and water quality impacts in the long term. Additionally, the stormwater management system has been designed to meet the requirements and applicable regulations of the Code of the Town of Goshen, particularly Section 83-14, "Stormwater Management."

This chapter describes existing site conditions relative to drainage and how the Proposed Project would handle stormwater and erosion and sediment control in compliance with the NYSDEC General Permit.

B. EXISTING CONDITIONS

All of the properties that comprise the Project Site are located in the Wallkill River watershed. The Wallkill River originates in two (2) branches south of the Project Site in northern New Jersey. The western branch is known as the Wallkill River while the eastern branch is known as Pochuck Creek. These branches converge approximately 7.5 miles south of the Project Site. The main branch of the Wallkill River flows north through the Project Site – the Echo Lake property is on the western banks and the Ver Hage property, Lipoff property, and Strong Farm property are on the eastern banks. The original channel of the Wallkill River flows north along the north-western border of the Echo Lake property before it joins the main branch in the vicinity of the Strong Farm property. The Wallkill River meets Rondout Creek near Kingston, New York, and then flows into the Hudson River approximately 35 miles north of the Project Site. The total drainage area for the Wallkill River in Orange County is approximately 382 square miles.[1]

It has been determined using the Strahler-Horton method that the Wallkill River is a fifth-order stream.[2] Stream order classifications were based on mapping provided by NYSDEC (see Sheet 5 in the SWPPP included in **Appendix III.G**). According to the Stormwater Management Design Manual, water quantity controls for sites that discharge directly to a fifth-order (or higher)

[1] http://waterauthority.orangecountygov.com/wallkill.html

[2] NYSDEC Stormwater Management Design Manual, Section 4.9, "Stream Order Identification." http://www.dec.ny.gov/chemical/29072.html

stream, are not required for channel protection (1-year), overbank flood (10-year), and extreme flood (100-year) events. Water quality practices will be required.

The criterion relating to water quantity controls is based on the fact that large streams have large tributary areas that create delayed peak flows and that by holding flows back on a site through use of detention, the peak of the runoff will occur later and closer to the overall watershed peak, thus potentially exacerbating downstream flood conditions. Allowing stormwater flows from a site to enter a fifth-order stream quickly will prevent any increases in peak flow within the receiving stream and minimize any flooding or damage downstream. The NYSDEC does not require any further analysis of runoff quantities when discharging to a fifth-order or larger stream, other than determining the stream order classification. Town of Goshen Site Plan review standards at §97-75.D(5)(c) requires that "the peak rate of surface water flowing off site shall not increase above predevelopment conditions." However, this requirement is not consistent with the NYSDEC Stormwater Management Design Manual, which recognizes the benefit of releasing stormwater flows quickly to a fifth-order stream, or with the Town of Goshen Subdivision Regulations, which require stormwater management facilities to be designed in accordance with the NYSDEC Stormwater Management Design Manual.

VER HAGE PROPERTY

The proposed Amy's Kitchen facility would be constructed on the Ver Hage property, which is currently vacant land, primarily open fields surrounded by wooded areas. The open field areas may have historically been used for agricultural purposes and generally have gently sloping or near level grades. Wooded areas on the Ver Hage property are characterized by steeper slopes. The site is bordered by the Wallkill River to the west, an unimproved portion of the Orange County Heritage Trail to the north, Hartley Road to the east, and private properties to the south.

The existing grade varies significantly across the property, with lower elevations on the eastern side of the property, an elevated ridge in the interior of the property, and elevations sloping down toward the Wallkill River on the western side of the property. The western portion of the site generally drains to the north and west, with stormwater flow discharging directly into the Wallkill River, while eastern portion generally drains to the Cheechunk Creek.

Table III.G-1 below and **Figure III.G-1** describe the pre-development watershed conditions of the Ver Hage property.

Table III.G-1
Ver Hage Property Pre-Development Conditions

Watershed Area	Area (Ac.)	CN	Tc (hrs.)	1 Year Peak Runoff (cfs)	10 Year Peak Runoff (cfs)	100 Year Peak Runoff (cfs)
Area A	4.30	38	.213	0.00	0.07	3.06
Area B1	23.28	61	.543	1.81	15.60	53.10
Area B2	13.34	47	.324	0.02	2.32	19.27
Study Point A	**4.30**	**--**	**--**	**0.00**	**0.07**	**3.06**
Study Point B	**36.62**	**--**	**--**	**1.81**	**15.71**	**65.21**

Source: Science of the Soul/Amy's Kitchen - Stormwater Pollution Prevention Plan, Lanc & Tully Engineering and Surveying, P.C., September 21, 2015

Source: Lanc & Tully, P.C.

Amy's Kitchen
Science of the Soul

Ver Hage Property Pre-Development Watersheds
Figure III.G-1

LIPOFF & STRONG FARM PROPERTIES

Figure III.G-2 describes the pre-development watershed conditions of the Lipoff and Strong Farm properties. The Lipoff property is currently vacant forested lands with limited topographic change. The Strong Farm is currently used for agricultural purposes and contains a mix of forested areas and agricultural fields. Topography generally slopes downward from Owens Road to the east to the Wallkill River to the west. No physical improvements or development are proposed for either the Lipoff or Strong Farm properties.

ECHO LAKE PROPERTY

The proposed SoS conference center would be constructed on the Echo Lake property, which was historically used for farming and later for mining and is currently vacant. The center of the site is a vegetated open field area in which grades have changed substantially due to the mining activity. The open field area is surrounded by woodland of varying grades. The site is bordered by the Wallkill River to the east, Echo Lake Road to the north, and the Mid-Hudson Psychiatric Center property to the southwest.

There is a slightly elevated ridge running approximately along the northeast-southwest axis of the Echo Lake property, which divides stormwater drainage. Stormwater from the site flows either west or east, depending on point of origin, but ultimately both directions of flow discharge directly into the two branches of the Wallkill River (see **Figure III.G-3**).

C. FUTURE WITHOUT THE PROPOSED PROJECT

There are no planned projects that would significantly affect the quantity or quality of stormwater flow in the vicinity of the Project Site. No known stormwater management improvements are planned for the vicinity of the Project Site.

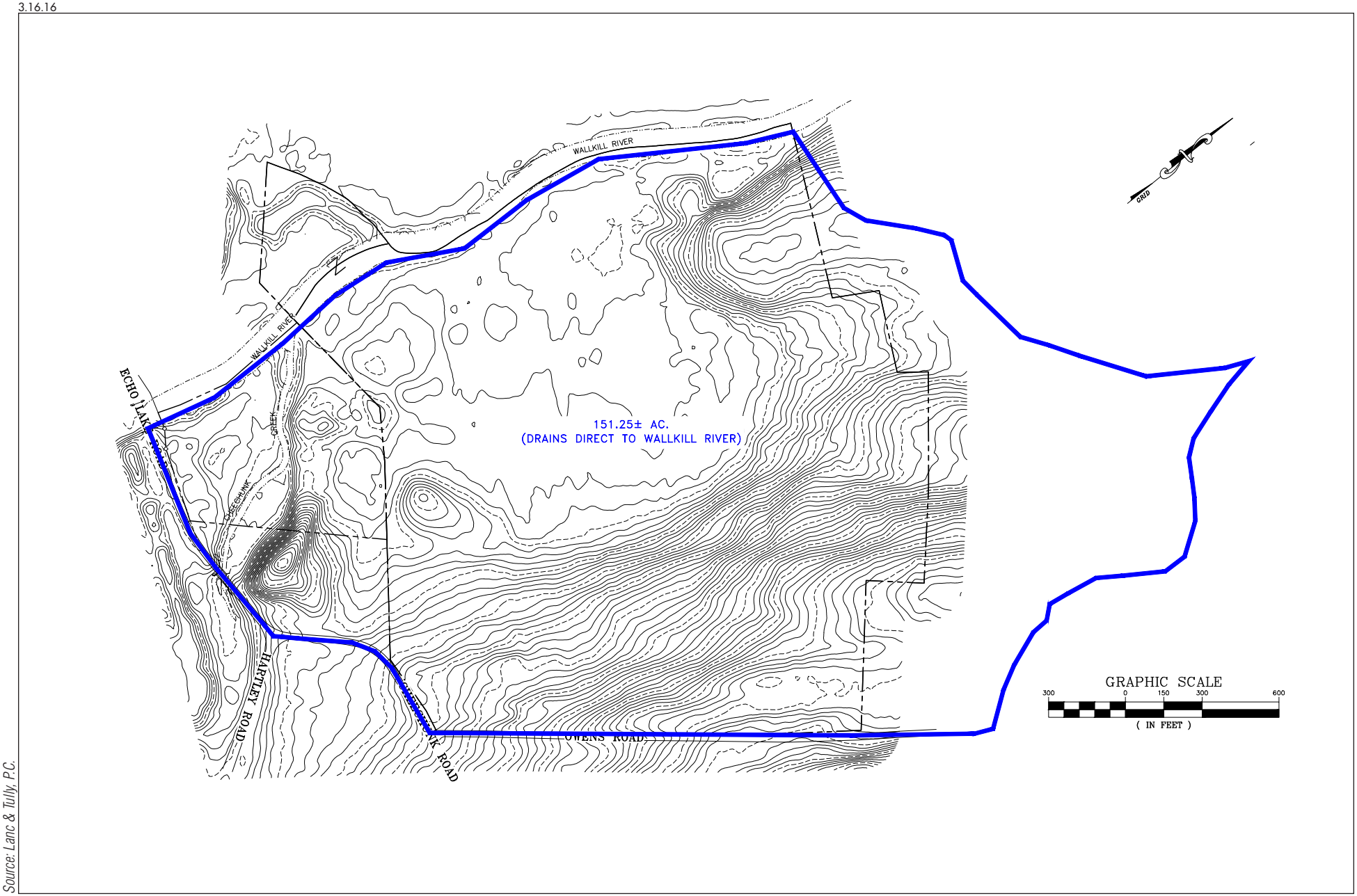
D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

Pre-development drainage patterns are described above under "Existing Conditions." The Proposed Project would result in changes to the grading of both the Ver Hage property and the Echo Lake property to establish the proposed building footprints and parking areas for the Amy's Kitchen manufacturing facility and the SoS conference center. Such changes would alter existing site drainage and runoff patterns, and necessitate the preparation of a combined SWPPP for the Ver Hage and Echo Lake properties, and construction of various stormwater management practices to manage water quality.[3] There are no proposed permanent improvements to either the Lipoff property or the Strong Farm property that would require permanent stormwater management practices, or that would change the post-development watershed characteristics. (See **Figures III.G-4** through **III.G-6**)

VER HAGE PROPERTY

As shown in **Figure III.G-4**, under post-development conditions the Ver Hage property would drain to five areas. **Table III.G-2** below identifies the post-development watershed conditions of the Ver Hage property.

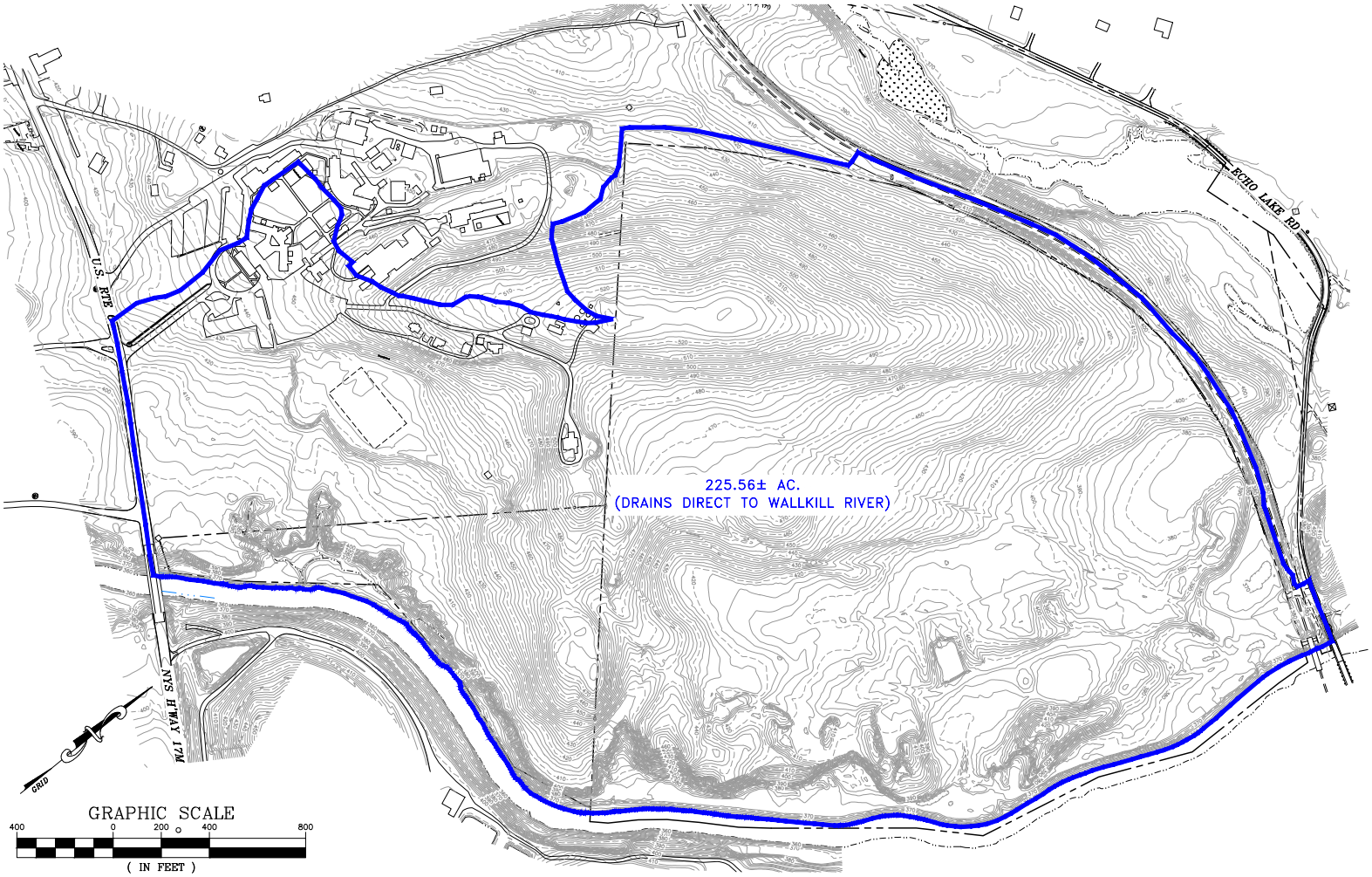
[3] Per Section 4.9, "Stream Order Identification," of the NYSDEC Stormwater Management Design Manual stormwater practices to control water quantity are not required for fifth-order streams.



Source: Lanc & Tully, P.C.

Amy's Kitchen
Science of the Soul

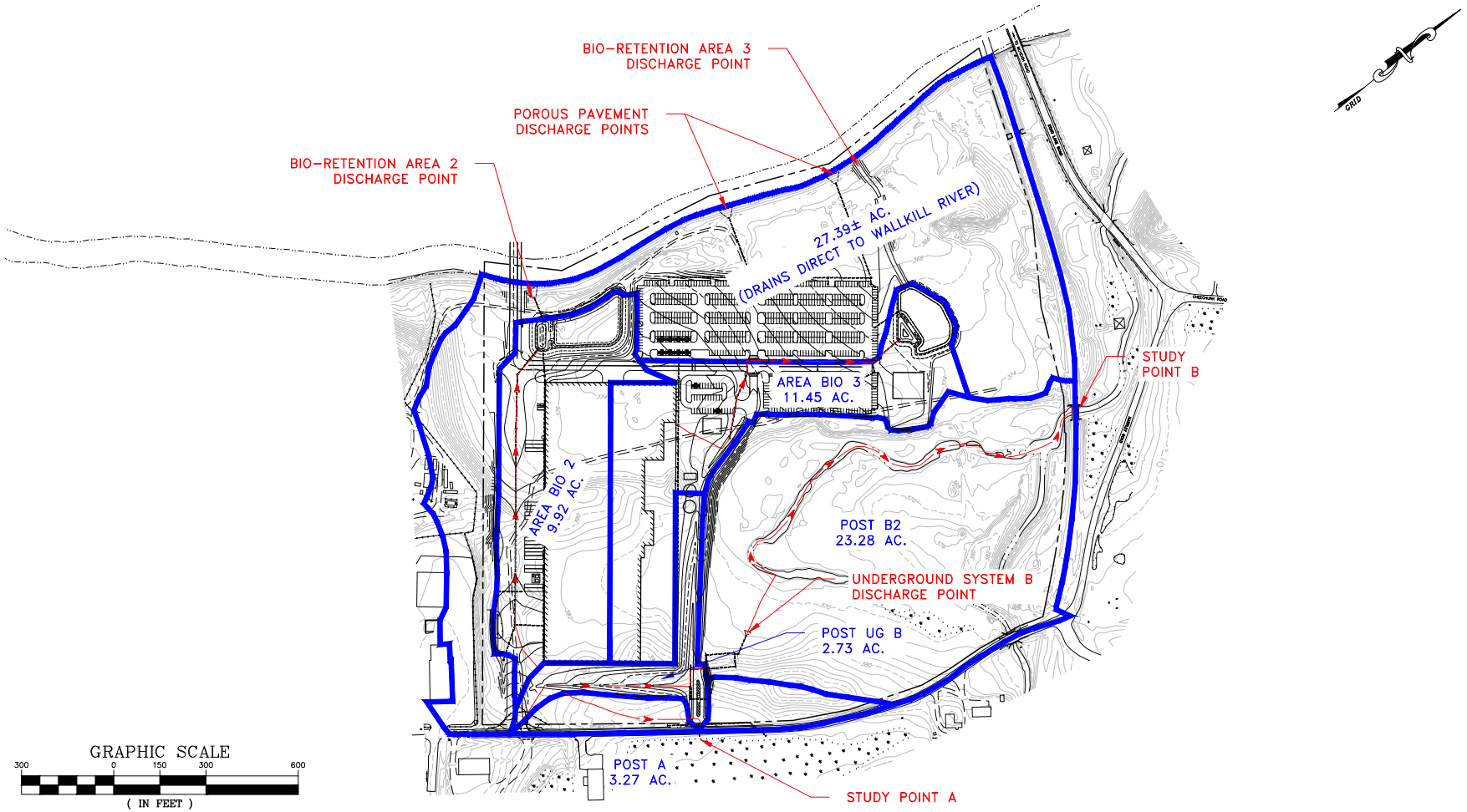
Lipoff and Strong Farm Properties Pre-Development Watersheds
Figure III.G-2



Source: Lanc & Tully, P.C.

Amy's Kitchen
Science of the Soul

Echo Lake Property Pre-Development Watersheds
Figure III.G-3



Source: Lanc & Tully, P.C.

Amy's Kitchen
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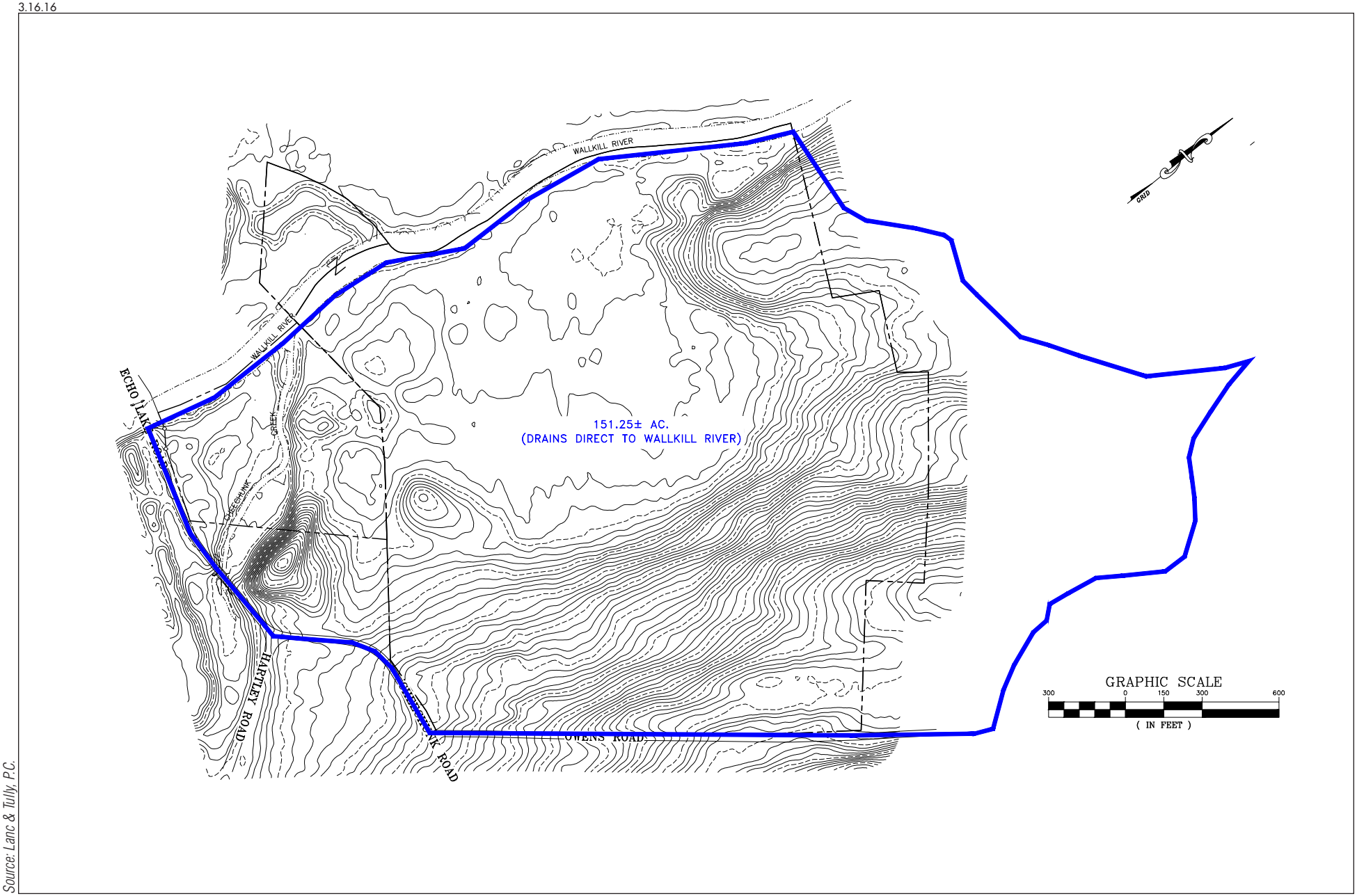
Ver Hage Property Post-Development Watersheds

Figure III.G-4



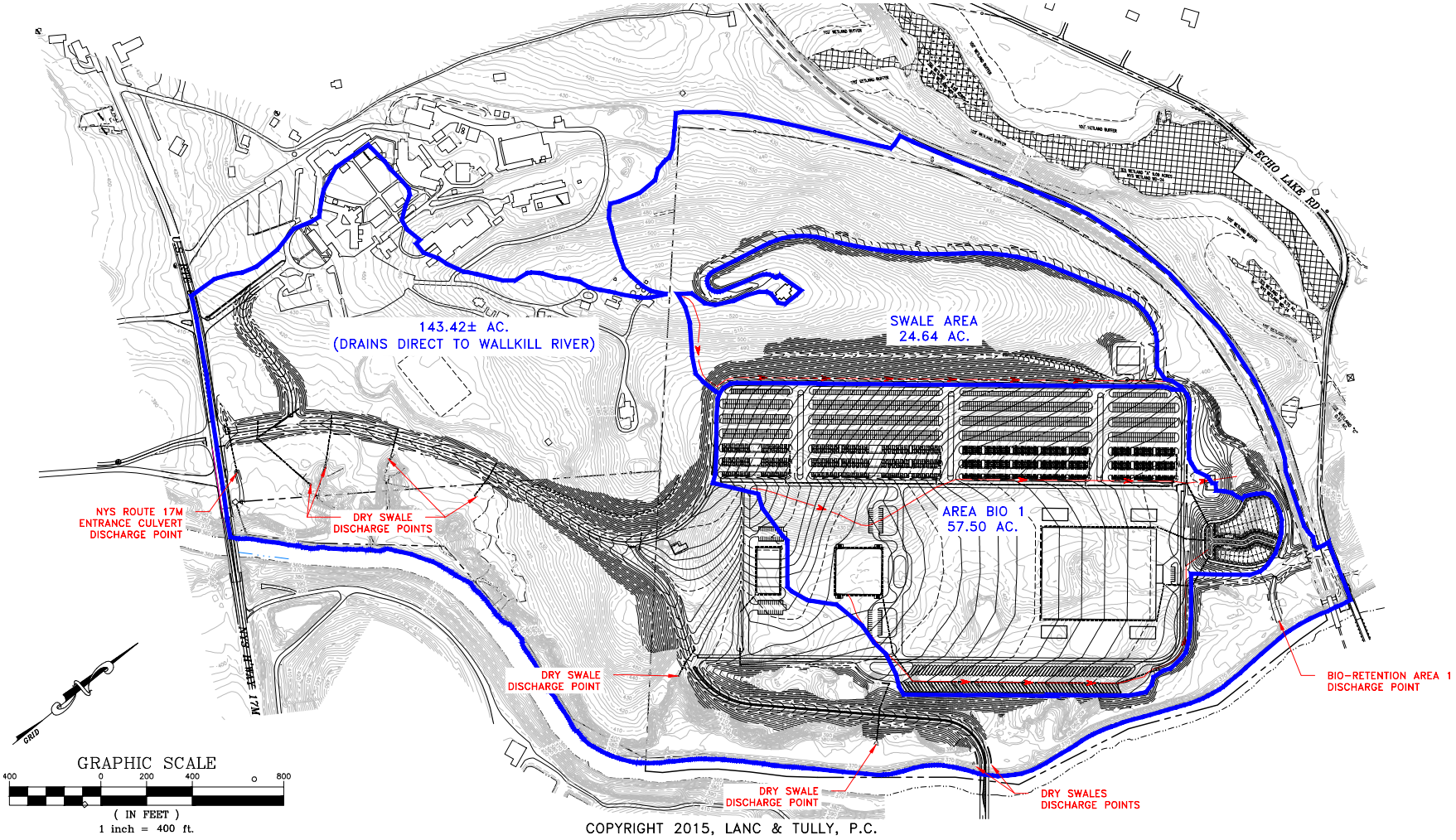
Source: Lanc & Tully, P.C.

Amy's Kitchen
Science of the Soul

Lipoff and Strong Farm Properties Post-Development Watersheds

Figure III.G-5

3.16.16



Source: Lanc & Tully, P.C.

Amy's Kitchen
Science of the Soul

Echo Lake Property Post-Development Watersheds

Figure III.G-6

Approximately 27.39 acres of land would drain directly to the Wallkill River. This area includes all developed areas that do not drain to the proposed bio-retention areas or the Cheechunk Creek. 4.49 acres of impervious cover is proposed in this area, including paved areas and porous pavement areas. Stormwater runoff from the proposed parking area would be collected by several porous pavement areas with catch basins to handle any larger storms. The porous pavement underdrains and catch basins would convey flows to the Wallkill River. The porous pavement would provide water quality treatment and runoff reduction volume for this area. However, this area would not require water quantity controls.

Final design of the Wallkill River bridge drainage has not been completed at this time. Runoff from the Wallkill River bridge could be collected in catch-basins and pipes and conveyed to the stormwater basin on the Ver Hage property just to the north of the Amy's Kitchen site driveway. That stormwater basin would provide water quality treatment, including for any road salts or other de-icing agents. If it is determined that drainage systems would not be provided on the Wallkill River bridge and that runoff would sheet flow off of the bridge directly into the Wallkill River (similar to most other bridges in Orange County), then Amy's Kitchen would implement a practice to use only sand to provide traction during winter months. Appropriate signs would be provided to warn drivers that no de-icing agents other than sand are being used (similar to other locations in Orange County where such practices are implemented).

"Post A" would consist of approximately 3.27 acres of land encompassing the area that drain to the east, under Hartley Road, eventually to the Cheechunk Creek. Approximately 0.04 acres of impervious cover is proposed in this area, including a small portion of the entrance roads. 3.11 acres of existing impervious area is also in this area. Due to the small amount of development in this area no water quality treatment is proposed. The post-development peak discharge for this watershed is summarized in **Table III.G-2**.

Table III.G-2
Ver Hage Property Post-Development Conditions

Watershed Area	Area (Ac.)	CN	Tc (hrs.)	1 Year Peak Runoff (cfs)	10 Year Peak Runoff (cfs)	100 Year Peak Runoff (cfs)
Post A	3.27	38	.213	0.00	0.05	2.09
Post UG B	2.73	57	.166	0.12	2.05	8.16
Post B2	23.28	61	.543	1.81	15.60	53.10
Study Point A	**3.27**	**--**	**--**	**0.00**	**0.05**	**2.09**
Study Point B	**29.28**	**--**	**--**	**1.81**	**15.63**	**53.89**

Source: Science of the Soul/Amy's Kitchen - Stormwater Pollution Prevention Plan, Lanc & Tully Engineering and Surveying, P.C., September 21, 2015

"Post UG B" would consist of approximately 2.73 acres of land encompassing the area that drains to the proposed underground stormwater system B and to the Cheechunk Creek. Approximately 0.60 acres of impervious cover is proposed in this area, including a portion of the paved entrance road and the gravel emergency access road. Stormwater runoff from this area will be collected by dry swales and catch basins and conveyed to underground stormwater system B. The underground stormwater system discharges through a pipe to the Cheechunk Creek. The underground stormwater system and dry swales would provide water quality treatment and runoff reduction volume for this area. The underground stormwater system would also provide quantity control for the area. The post-development peak discharge for this watershed is summarized in **Table III.G-2** above.

"Area B2" would consist of approximately 23.28 acres of land encompassing the northern end of the area that drains to the Cheechunk Creek. No development is proposed in this area. The post-development peak discharge for this watershed is summarized in **Table III.G-2** above.

"Area Bio 2" would consist of approximately 9.92 acres of land that drains to proposed bio-retention area 2. Approximately 8.08 acres of impervious cover is proposed in this area, including the portions of internal road and a portion of the proposed building. Stormwater runoff from this area would be collected by swales and catch basins and conveyed to bio-retention area 2. The bio-retention area would include a diversion forebay to allow larger storms to bypass the filter bed. The bio-retention area would discharge to the Wallkill River. Bio-retention area 2 would provide water quality treatment and runoff reduction volume for this area. This area would not require water quantity controls.

"Area Bio 3" would consist of approximately 11.45 acres of land that drains to proposed bio-retention area 3. Approximately 7.21 acres of impervious cover is proposed in this area, including the portions of internal road, a portion of the proposed building, and portions of the parking area. Stormwater runoff from this area would be collected by swales and catch basins and conveyed to bio-retention area 3. The bio-retention area would include a diversion forebay to allow larger storms to bypass the filter bed. As proposed, the outlet of the bio-retention area has a swale to the Wallkill River that is an extension of the bio-retention area filter bed. Bio-retention area 3, the outlet swale, and porous pavement areas would provide water quality treatment and runoff reduction volume for this area. This area would not require water quantity controls.

ECHO LAKE PROPERTY

As shown in **Figure III.G-6**, under post-development conditions the Echo Lake property would drain to three areas. Approximately 143.42 acres of land would drain directly to the Wallkill River. This area includes all developed areas that do not drain to the proposed bio-retention area 1, including the entrance road, road to Amy's Kitchen, guest house, and all perimeter areas. 8.51 acres of impervious cover is proposed in this area. This area would not require water quantity controls. Water quality treatment and runoff reduction volume would be provided by dry swales in this area.

The "Swale Area" would consist of approximately 24.64 acres of land that drain through a proposed swale directly to the Wallkill River. Approximately 0.93 acres of impervious cover is proposed in this area, including a portion of the internal loop road. Stormwater runoff from this area would be collected by swales and catch basins and conveyed to the outlet swale. A dry swale along the internal road would provide water quality treatment and runoff reduction volume for this area. This area also does not require water quantity controls.

"Area Bio 1" consists of approximately 57.50 acres of land that drains to proposed bio-retention area 1. Approximately 25.22 acres of impervious cover is proposed in this area, including the portions of internal roads, pavilions, and buildings. Stormwater runoff from this area would be collected by swales, dry swales, and catch basins and conveyed to bio-retention area 1. As proposed, the bio-retention area includes a diversion forebay which allows larger storms to bypass the filter bed. The bio-retention area would discharge through a swale to the Wallkill River. Bio-retention area 1 and several dry swales would provide water quality treatment and runoff reduction volume for this area. This area also would not require water quantity controls.

E. PROPOSED MITIGATION

With the implementation of an Erosion and Sediment Control Plan (ESCP) during the construction period and a Stormwater Pollution Prevention Plan (SWPPP) impacts relating to stormwater would be avoided or minimized such that significant adverse impacts or unavoidable impacts would not result. A SWPPP containing an ESCP has been developed for the Amy's Kitchen manufacturing and SoS Conference Center (see **Appendix III.G**).

CONSTRUCTION-PERIOD CONTROL MEASURES

During construction of the Proposed Project, vegetation would be removed and bare soil would be exposed as part of excavation and site preparation. As a result, there would be an increased likelihood of soil erosion and sedimentation. The preliminary SWPPP for Amy's Kitchen and SoS contains several temporary stormwater management techniques for erosion and sediment control. All proposed construction stormwater management measures are consistent with the requirements of the NYSDEC Stormwater Management Design Manual and the SPDES General Permit for Stormwater Discharges from Construction Activity. Given the size of the Proposed Project, a request for a waiver from the five (5)-acre disturbance maximum will be submitted.

An Erosion and Sediment Control Plan (ESCP) has been prepared for both Amy's Kitchen and SoS and is included in the Site Plan Drawing set in **Appendix II**. The ESCP complies with all applicable regulations, including construction sequence, both short-and long-term maintenance of facilities, storage of materials, and temporary and permanent structures. As shown on the ESCP, the following temporary and permanent erosion control practices are proposed for use during construction and for long-term protection.

STABILIZED CONSTRUCTION ENTRANCE

A stabilized construction entrance consists of a stabilized pad of aggregate underlain with geotextile and is typically located at any point where traffic would be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets. Stabilized construction entrances would be placed at the proposed construction entrances to the Project Site on NYS Route 17M, Echo Lake Road, and Hartley Road.

SILTATION FENCE

A siltation fence is a temporary barrier of geotextile fabric that would be installed on contours across a slope to intercept sediment-laden runoff from small drainage areas of disturbed soil. The purpose of a silt fence is to reduce runoff velocity and cause deposition of transported sediment loads. Limits imposed by ultraviolet stability of the fabric would dictate the maximum period the silt fence may be used (approximately one year).

SEDIMENT TRAP

Sediment traps are temporary sediment control devices formed by excavation and/or embankment to intercept sediment-laden runoff and retain the sediment. The purpose of the structure is to intercept sediment-laden runoff and trap the sediment in order to protect drainage

ways, properties, and rights-of-way below the sediment trap from sedimentation. Stone outlet sediment traps will be used at the locations throughout the Project Site.

SEDIMENT BASIN

A sediment basin is a temporary barrier or dam constructed across a drainage path to intercept sediment-laden runoff to trap and retain the sediment, reducing the amount of sediment leaving the disturbed area. Retention of sediment protects drainage areas, properties, and rights-of-way below the sediment basin. Sediment basins are proposed in drainage pathways upstream of proposed bio-retention areas.

DIVERSION SWALE

Diversion swales are temporary, excavated drainage pathways. Diversion swales are used for diverting clean runoff around a project area and for intercepting sediment-laden runoff for diversion to sediment traps and basins. Diversion swales would be used as necessary throughout the Project Site.

WATER BAR

Water bars are ridges constructed diagonally across sloping roads or utility rights-of-way that are subject to erosion. The purpose of water bars is to limit the accumulation of erosive velocity of water by diverting surface runoff at pre-designed intervals. Water bars would be placed as necessary during construction.

STORM DRAIN INLET PROTECTION

Storm drain inlet protection is typically provided by a temporary semi-permeable barrier installed around the inlet and is intended to prevent heavily sediment-laden water from entering a storm drain system. Such barriers could include a fence, berm, or excavated area which would trap water and enable settling of suspended sediment. Curb drop, filter fabric drop, and excavated drop inlet protection would be used throughout the Project Site. Inlet protection would only be used in roadway areas prior to paving.

LEVEL SPREADER

Level spreaders serve as temporary, non-erosive outlets for concentrated runoff and are constructed to disperse flow uniformly across a slope. The intent is to convert concentrated flow to sheet flow and release such flow uniformly over a stabilized area. Level spreaders would be constructed at the ends of diversion swales for diverting clean runoff around the project area.

SLOPE STABILIZATION MATTING

Mats made of synthetic or natural fibers can be placed on steep slopes to allow newly planted vegetation to take root and to protect the slope from erosion before vegetation is fully established. Slope stabilization matting would be used as necessary throughout the Project Site.

ROCK OUTLET PROTECTION

A section of rock protection would be placed at the outlet of culverts, conduits, and channels to reduce the depth, velocity, and energy of water such that the flow would not erode the receiving

downstream reach. Rock outlet protection is proposed at all pipe discharge points on the Project Site.

PIPE SLOPE DRAIN

A pipe slope drain is a temporary structure installed from the top to bottom of a slope in order to convey surface runoff across sloped areas without causing erosion. Pipe slope drains are proposed along the benched slopes along the western side of the project.

GREEN INFRASTRUCTURE MEASURES

Several green infrastructure and runoff reduction measures would be implemented throughout the Project Site to control any water quality and quantity effects of post-construction increases in stormwater runoff volume. NYSDEC requires that the water quality volume (WQv) be treated through use of specific green infrastructure practices. The design of these practices is based on promoting infiltration of the WQv. The treatment provided by the green infrastructure practices is called the runoff reduction volume (RRv). NYSDEC requires the RRv to be equal to the WQv unless site-specific conditions would not allow the full treatment using green infrastructure practices.

The larger buildings proposed for both the Amy's Kitchen manufacturing facility and SoS Conference Center would not support the additional weight and structural loading requirements of vegetated green roofs; thus, that type of practice is not being considered for the larger buildings of the Proposed Project. A green roof would increase the structural loading of the roof due to the weight of plants, soil/media, and waterproofing, as well as impounded water during rain events. In addition, because of the insulating properties of the vegetation, snow may take longer to melt and may increase the snow loading. In addition, a green roof system requires waterproofing the building roof to detain the rain water. As such, there may be water leakage if waterproofing is not installed correctly, especially around roof penetrations such as vents or conduits. Furthermore, a green roof requires more maintenance than a conventional roof. The required maintenance would depend on the type of vegetation used on the roof, and may include periodic watering (during establishment of vegetation or long term), weeding, and replanting. Lastly, safe access to the roof would need to be provided for inspection and maintenance activities.

Collection of rain water from the roofs of smaller buildings of the Proposed Project in rain barrels may be considered. This water could be used for irrigation of landscaping around these smaller buildings.

The types of buildings and structures proposed by Amy's Kitchen and SoS are consistent with the past practices of these entities, and have had a proven successful track record as to practical use, safety, economy, and longevity.

SHEETFLOW TO RIPARIAN BUFFERS

Areas that drain to the wetland buffers can be deducted from the water quality volume. In order to claim this practice, all flow must enter the buffer in sheetflow form. Areas along the north side of the perimeter of Amy's Kitchen have been removed from the water quality volume using this practice.

TREE PLANTING

Trees planted adjacent to areas of impervious cover allow the drainage area to be reduced when calculating the water quality volume. The method of reduction chosen for these sites would be 100 square feet of drainage area reduction per tree planted. The site design would call for trees to be planted throughout parking areas for SoS.

BIO-RETENTION AREAS

A bio-retention area is proposed at SoS for treating runoff from the majority of the project area. It has been designed to treat runoff from the lawn area, proposed paved areas, and the building roofs. Soil types in the vicinity of this bio-retention area are hydrologic soil group D, and the system would be installed with underdrains. Forty percent of the treatment volume of the bio-retention area can be claimed as runoff reduction volume and the remaining volume would be claimed as water quality volume. The bio-retention area filter bed would be located off-line from larger storms through use of a large forebay with an overflow to a swale leading to the Wallkill River.

Bio-retention areas at Amy's Kitchen are proposed for treating runoff from the majority of the project area. They have been designed to treat runoff from the proposed paved areas and the building roofs. Soil types in the vicinity of the bio-retention areas at Amy's Kitchen are hydrologic soil group A, and the systems would be installed without underdrains. One hundred percent of the treatment volume of the bio-retention areas can be claimed as runoff reduction volume. The bio-retention area filter beds would be located off-line from larger storms through use of a large forebay with an overflow to a swale leading to the Wallkill River. One of the bio-retention areas would have a discharge swale with a filter bed that would act as an extension to the bio-retention area.

POROUS PAVEMENT

Porous pavement is proposed for the majority of the parking stalls within the Amy's Kitchen employee parking area and a portion of the parking areas at the SoS Conference Center. The porous pavement would be installed in a strip at the downslope end of parking aisles, with standard asphalt pavement used for the remainder of the parking area. Porous pavement consists of high permeability asphalt pavement with layers of stone beneath the pavement, designed to temporarily hold the water quality volume and allow for infiltration. Swales and catch basins would be installed at the low points of the parking areas with underdrain pipes raised above the subgrade to allow stormwater from storm events larger than the water quality storm to exit the stone reservoir, if necessary, through the underdrain.

DRY SWALES

Dry swales are proposed for treating runoff from road areas at both Amy's Kitchen and SoS. The swales would be installed along a majority of the pavement edges, but only the areas with four percent slope or less would be claimed as dry swales. Soil types at the Amy's Kitchen site area are hydrologic soil group A, meaning that up to 40 percent of the treatment volume of the dry swale can be claimed as runoff reduction volume, and the remaining volume would be claimed as water quality volume. Soil types at the SoS site are hydrologic soil group D, meaning that up to 20 percent of the treatment volume of the dry swale can be claimed as runoff reduction volume and remaining volume would be claimed as water quality volume.

UNDERGROUND INFILTRATION SYSTEM

An underground infiltration system is proposed for treating runoff from the area along Hartley Road at the Amy's Kitchen site. The system would provide treatment through infiltration. Soil types in this area are hydrologic soil group A, an infiltration rate of 2 inches per hour was assumed for the model based on NRCS soil mapping. The infiltration rate would be verified though infiltration testing prior to system construction. One hundred percent of the treatment volume of the infiltration system can be claimed as runoff reduction volume. ✷

A. INTRODUCTION

This chapter discusses the findings of the Traffic Impact Study (TIS) for the Proposed Project. The complete TIS, prepared by Maser Consulting, P.A., dated April 5, 2016, is contained in **Appendix III.H.**

The potential traffic impacts associated with the Proposed Project on the surrounding roadway network were evaluated based on the requirements of the adopted Scoping Document. Traffic counts were utilized to establish the Existing Traffic Volumes for the study area intersections. The Existing Traffic Volumes were then projected to a 2033 Design Year to take into account expected increases in traffic due to normal background traffic growth and to account for other potential development traffic in the area. The 2033 design year represents an Estimated Time of Completion of 2023 plus 10 years (ETC+10) as per NYSDOT requirements for analysis of future traffic operating conditions.

B. METHODOLOGY

INTERSECTIONS

A capacity analyses was performed to determine existing and future traffic operating conditions at the study area intersections using the SYNCHRO 8 analysis software.[1]

SIGNALIZED INTERSECTION CAPACITY ANALYSIS

The capacity analysis for a signalized intersection was performed in accordance with the procedures described in the 2010 *Highway Capacity Manual*, published by the Transportation Research Board. The terminology used in identifying traffic flow conditions is Levels of Service ("LOS"). LOS A represents the best condition and a LOS F represents the worst condition. LOS C is generally used as a design standard while LOS D is acceptable during peak periods. LOS E represents an operation near capacity. In order to identify an intersection's LOS, the average amount of vehicle delay is computed for each approach to the intersection as well as for the overall intersection.

UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS

The unsignalized intersection capacity analysis method utilized in this report was also performed in accordance with the procedures described in the 2010 Highway Capacity Manual. The procedure is based on total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. The average total delay for any particular critical movement is a function of the service rate or capacity of the approach and the degree of saturation. In order to identify the LOS, the average amount of vehicle delay is computed for each critical movement to the intersection.

[1] Additional information concerning signalized and unsignalized LOS can be found in the TIS Appendix "C."

ANALYSIS YEARS

As further discussed in Chapter II, "Project Description," Phase I of the Amy's Kitchen facility and the SoS Conference Center are expected to be completed by 2018, while the Amy's Kitchen Phase II development is expected to be completed by 2023. It is anticipated that all recommended improvements associated with the proposed development discussed herein will be required and will be completed at the time of opening of the Phase I and SoS development. Therefore, only an analysis of the future Phase II development with SoS Conference Center has been presented herein to ensure that those proposed improvements will accommodate both the Phase I and Phase II developments. Since the Phase II development is expected to be completed by 2023, as per the Scoping Document and NYSDOT requirements, a Design Year of 2033 (Estimated Time of Completion plus 10 years: ETC+10) has been utilized for analyzing future traffic conditions associated with the Full Build-Out of the proposed development.

NO BUILD PROJECTS/GROWTH

The Existing Traffic Volumes (2015) were increased by a growth factor of 0.5 percent per year (compounded yearly) to the 2033 design year for a total background growth of 9.4 percent to account for normal traffic growth in the area. This background growth factor is based on historical traffic volume data available from NYSDOT in its 2012 Traffic Data Report, a copy of which is provided in the TIS Appendix "G" for reference, which indicates that actual growth along NYS Route 17M for the period between 2000 and 2012 was at a rate of approximately 0.5 percent per year.

In addition, the following traffic generators were identified and factored into the analysis: the proposed Medical Office Building expansion of the ORMC; the expansion of the Maple Fields Development in the Town of Wallkill; the Kikkerfrosch Brewery; and Cannon Hill Road Flex Building in the Town of Goshen. The trips for these developments were developed separately, however, the traffic associated with the Cannon Hill Road Flex building is considered to be included in the general background traffic growth. These volumes were added to the 2033 Projected Traffic Volumes to obtain the 2033 No-Build Traffic Volumes, which are shown on **Figures III.H-1 through III.H-5** for each of the peak hours, respectively.

CRITERIA FOR IMPACT

The Town of Goshen "Environmental Performance Standards" in Section 97-50.N(1)(d) of the Town Code establishes the following impact criteria:

> *Significant adverse traffic impacts requiring project mitigation shall be defined as any of the following occurring within the first year of operation of full build-out of the proposed project or, in the case of phased construction, during the first year of operation of each phase for which approval is sought:*
>
> *[1] Any reduction in level of service (LOS) to less than LOS D at a street intersection that operates at LOS D or better without the proposed project.*
>
> *[2] Any increase in delay times for intersections operating at LOS E or below.*
>
> *[3] Introduction of new traffic volumes that will cause the overall volume of the roadway to exceed the design capacity of the mainline (non-intersection) highway sections within the TIS study area.*

C. EXISTING CONDITIONS

STUDY AREA

To assess the traffic impacts associated with the Proposed Project, an overall study area was determined that considered key intersections likely to be affected by Project generated trips. **Figure III.H-6** shows the location of the Project Site in the context of the study area.

Detailed turning movement traffic counts were collected at 13 intersections during the AM, PM, and Saturday peak hours during the months of November 2013; April, May and June 2014; and May and June 2015. In addition, New York State Department of Transportation (NYSDOT) machine traffic counts were obtained and used to compare the hourly volumes along NYS Route 17M and at the I-84 interchange to identify any daily and seasonal variations. Automatic Traffic Recorder (ATR) were also collected along NYS Route 17M in the vicinity of the site to collect volume data on a 15 minute basis, as well as speed and classification data.

The intersections analyzed in the TIS are:

1. NYS Route 17M and I-84
2. NYS Route 17M and Lower Road (C.R. 12)/Golf Links Road (C.R. 50);
3. NYS Route 17M and Mid-Hudson Psychiatric Center (MHPC) Access;
4. NYS Route 17M and Training Center Lane; and
5. NYS Route 17M and Hartley Road/Gate Schoolhouse Road
6. NYS Route 17M and 6 ½ Station Road
7. NYS Route 17M and Route 17
8. Hartley Road and Echo Lake Road
9. Golf Links Road and McVeigh Road
10. Echo Lake Road and McVeigh Road
11. Fletcher Street and NYS Route 17 (Exit 122A) Eastbound On/Off Ramps
12. Fletcher Street and NYS Route 17 (Exit 122A) Westbound On/Off Ramps
13. NYS Route 17M and Cannon Hill Drive

The manual field traffic counts were performed during the Weekday AM (6:00 AM to 9:00 AM) and PM (3:00 PM to 6:15 PM) hours as well as on Saturday from 11:00 AM to 2:00 PM at the above listed study area intersections. Based on this traffic volume data the existing peak hours for the study area were identified for each time period as follows:

- Weekday AM Peak Highway Hour—7:30 AM to 8:30 AM
- Weekday PM Peak Highway Hour—4:30 PM to 5:30 PM
- Saturday Peak Hour—12:30 PM to 1:30 PM

While the Weekday AM Peak Highway Hour was found to occur between 7:30 AM and 8:30 AM, the peak hour of Amy's Kitchen traffic generation is expected to occur prior to the AM Peak between approximately 6:00 AM to 7:00 AM when the employee shift changes are expected to occur at the plant. As indicated by the ATR machine count data collected along NYS Route 17M the traffic volumes during the 6:00 AM to 7:00 AM hour in the vicinity of the site

are approximately 75 to 80 percent of the Weekday AM Peak Highway Hour traffic volumes. However, both the Amy's AM Peak Hour of Generation (6:00 AM to 7:00 AM) and the peak hour of the adjacent roadway system (AM Peak Highway Hour 7:30 AM to 8:30 AM) were analyzed.

In addition, the Scoping Document required an analysis of the 3:00 PM to 4:00 PM time period when there could be a shift change at the plant, when traffic volumes are 97 percent[2] of peak hour volumes, and schools may be letting out. However, based on the traffic count data collected at the study area intersections, it was determined that the 4:30 PM to 5:30 PM time period was the peak time period along NYS Route 17M. This time period was determined to be the peak hour of traffic volumes along the roadway and the heavy vehicle percentages were found to be similar during this time period as was observed during the 3:00 to 4:00 PM time period. Therefore, the peak hour of traffic generation for Amy's Kitchen, which is expected to occur during the 3:00 PM to 4:00 PM time period, as well as the 4:30 PM to 5:30 PM peak hour traffic volumes, were analyzed for the study area intersections.

The 2015 Existing Traffic Volumes for the AM Peak Hour of Amy's Trip Generation, AM Peak Hour of Adjacent Roadway, PM Peak Hour of Amy's Trip Generation, PM Peak Hour of Adjacent Roadway and for the Saturday Peak Hour are summarized on **Figures III.H-7** through **III.H-11**, respectively.

ROADWAY CHARACTERISTICS

As shown on **Figure III.H-6**, the Amy's Kitchen and SoS sites are located with frontage along NYS Route 17M and Hartley Road. The following is a description of the major roadways within the study area.

NYS ROUTE 17M/ U.S. ROUTE 6

NYS Route 17M / Route 6 (hereafter, simply "NYS Route 17M"), which is classified as an urban minor arterial, travels parallel to NYS Route 17 in Orange County. NYS Route 17M traverses through the Town of Goshen and provides access to many existing commercial land uses. It traverses in a generally northwest/southeast direction and generally has one lane in each direction plus separate turn lanes at key intersections and paved shoulders varying in width between 3 and 10 feet. In the vicinity of the Lower Road (C.R. 12) intersection, NYS Route 17M has two lanes in the westbound direction for a distance of approximately 2,500 feet. Also, in the vicinity of the I-84 interchange the roadway widens to two lanes in each direction and this roadway section continues to the west. The total width of the traveled way along the roadway varies between 24 and 52 feet with 11- to 12 foot-wide travel lanes and, as indicated by the latest pavement data report available from NYSDOT, the pavement is generally considered to be in fair to good condition. Parking is prohibited along NYS Route 17M throughout the study area. The terrain along NYS Route 17M is classified as rolling terrain and the roadway has varying grades of three (3) to eight (8) percent as well as several horizontal curves throughout its length. NYS Route 17M has a posted speed limit of 55 MPH east of Hartley Road and a posted speed limit of 45 MPH west of Hartley Road. It connects with I-84 at a full clover leaf interchange approximately 2.0 miles to the west of the Project Site. Within the study area, NYS Route 17M

[2] Based on the ATR machine count traffic volume information collected along NYS Route 17M in the vicinity of the site, traffic volumes along the roadway during the 3:00 to 4:00 PM time period are approximately 94% of the peak hour traffic volumes (4:30 PM to 5:30 PM).

has signalized intersections with I-84, Golf Links Road (CR 50)/Lower Road (CR 12), Hartley Road/Gate Schoolhouse Road, and 6 ½ Station Road. NYS Route 17M has unsignalized intersections with MHPC and Training Center Lane in the vicinity of the Project Site. There are no fixed bus stop locations along NYS Route 17M within the study area.

NYS ROUTE 17 (FUTURE I-86)

NYS Route 17, which runs throughout Orange County, is classified as an urban principal arterial expressway. The roadway originates at the New Jersey State Line and runs parallel to I-87 through the Village of Sloatsburg and the Town of Tuxedo. In the Woodbury/Harriman area, the roadway intersects with NYS Route 32 and separates at Exit 131, running in a westerly direction as a four-lane divided highway. The roadway continues and widens to six lanes in the Town of Goshen in the vicinity of Exit 124. It also has an interchange with NYS Route 17M at Exit 123. The roadway then transitions to a four-lane divided roadway with a diamond type interchange with Exit 122A (also in Goshen). The roadway continues into the Town of Wallkill and has interchanges with East Main Street/Crystal Run Road (Exit 122), I-84 (Exit 121) and NYS 211 (Exit 120). The roadway then continues north and into Sullivan County. Based on the latest pavement data report available from NYSDOT, the pavement is generally considered to be in excellent condition since the roadway was last repaved (mill and fill) in 2012. The terrain along the roadway is classified as rolling. The roadway generally has a 65 MPH posted speed limit, which is reduced in various sections to 55MPH. NYS Route 17 is planned to be transitioned to become Interstate 86, and associated improvements to the Exits 124 and 125 interchanges are proposed, however the current timing of this transition is unknown.

INTERSTATE 84

Interstate 84, which is classified as an urban principal arterial interstate, runs in an east/west direction throughout Putnam, Dutchess, and Orange Counties, connecting from Connecticut through to Pennsylvania. In the vicinity of the Project Site, the roadway is a four-lane divided highway with a posted speed limit of 65 MPH. It has a full cloverleaf interchange with NYS Route 17 and also has a full cloverleaf interchange with Route 17M (Exit 3), approximately 2.0 miles west of the Project Site. Based on the latest pavement data report available from NYSDOT, the pavement is generally considered to be in good condition and was last repaved (mill and fill) in 2008. The terrain along the roadway is classified as rolling. All movements to and from NYS Route 17M are free flow movements with the exception of the I-84 westbound off-ramp to NYS Route 17M westbound, which is controlled by a “Stop” sign.

GOLF LINKS ROAD (C.R. 50)

Golf Links Road (C.R. 50) is generally a two-lane roadway classified as an urban major collector, which travels in a north/south direction, originating at a signalized intersection with East Main Street opposite Midway Park Drive, and continues in a southerly direction past the Orange County Golf Club in the Town of Wallkill. It continues south intersecting with McVeigh Road and Echo Lake Road where the speed limit changes to 35 MPH. South of this section, the roadway continues as a two lane roadway with a 45 MPH speed limit and terminates at a signalized full movement intersection with NYS Route 17M, opposite Lower Road (C.R. 12). Lower Road continues south from the intersection as a two lane road and into the Town of Wawayanda. Golf Links Road has a varying pavement width of up to approximately 28 to 30 feet, including 2- to 4-foot shoulders on both sides of the roadway and the pavement is generally in fair to good condition The roadway has back-to-back horizontal curves in the vicinity of the McVeigh Road intersection as well as several other horizontal curves north of the this location in

the Town of Wallkill. Golf Links Road has varying vertical grades of between 2 and 5 percent. There are no bus stop locations along the roadway and parking lanes are not provided.

6 ½ STATION ROAD

6 ½ Station Road, which is classified as an urban major collector and is under the jurisdiction of the Town of Goshen, originates at a signalized intersection with NYS Route 17M, opposite Maple Avenue. 6 ½ Station Road continues in a northerly direction providing access to the Orange County Jail and intersects with Cheechunk Road at a "Stop" sign controlled intersection. The roadway has a varying pavement width of approximately 22 to 26 feet with one lane in each direction divided by a double yellow centerline. No striped shoulders or parking lanes are provided and the roadway has a 5-ton weight restriction. The pavement is generally in good condition. No bus stops are available along the roadway. 6 ½ Station Road has a varying horizontal alignment including an approximately 150-foot radius horizontal curve in the vicinity of the Hudson River Tractor Co. and Orange Hollow Racquet & Fitness Club. Immediately north of this area the roadway has a sag vertical curve in the vicinity of the Orange County Heritage Trail. Vertical grades vary between 2 and 6 percent.

HARTLEY ROAD

Hartley Road is a two-lane local roadway, under the Town of Goshen jurisdiction, which intersects with NYS Route 17M at a signalized intersection opposite Gate Schoolhouse Road. Hartley Road continues in a northerly direction intersecting with Echo Lake Road and Cheechunk Road at a "T" type intersection also providing access to Owens Road. Hartley Road has a posted speed limit of 35 MPH and a 5-ton weight limit restriction. The pavement is currently in poor condition with no centerline striping. The pavement width varies between 20 and 25 feet. The roadway has no striped shoulders or available parking lanes. There are no existing bus stop locations along the roadway. Hartley Road has a varying horizontal alignment including an approximately 125-foot radius horizontal curve in the vicinity of the existing terminus of the Orange County Heritage Trail. Vertical grades vary between 2 and 6 percent.

CHEECHUNK ROAD

Cheechunk Road is a two-lane local roadway that serves primarily residential development. It has a 35 MPH posted speed limit and a 5 ton weight limit restriction. It intersects with Owens Road at an "all way stop" controlled intersection. Cheechunk Road also provides access to Route 17 at Exit 122A. The pavement width varies between 20 and 24 feet with one lane in each direction divided by a double yellow centerline and no striped shoulders or parking lanes. The pavement along the roadway is generally in good condition and there are no existing bus stops along its length. Cheechuck road has several horizontal curves along its length. Vertical grades vary between 3 and 6 percent.

ECHO LAKE ROAD

Echo Lake Road is a two-lane local roadway, which extends from Golf Links Road and McVeigh Road to Cheechunk Road. Its intersection with Golf Links Road (C.R. 50) has two legs including one that aligns opposite McVeigh Road. The roadway has one lane in each direction and a white fog line on either side in the Town of Wallkill. It transitions into the Town of Goshen where the centerline is faded and has no white edge line. The pavement width along the roadway varies between 22 and 24 feet and it has a posted speed limit of 35 MPH and a posted 5 ton weight restriction, except for local deliveries. The pavement is generally in good condition. Some sections of the roadway west of the Wallkill River bridge crossing have striped

one-foot-wide shoulders. No parking lanes are provided along the roadway and there are not existing bus stops. Echo Lake Road has several horizontal curves along its length and mostly level terrain with steeper grades of up to 3 percent closer to McVeigh Road.

GATE SCHOOLHOUSE ROAD

Gate Schoolhouse Road is a two-lane local roadway that intersects with NYS Route 17M at a signalized intersection opposite Hartley Road. It travels from that intersection in a southeasterly direction and terminates at an unsignalized intersection with Maple Avenue (C.R 31). The roadway has a varying pavement width of between 22 and 24 feet with one lane in each direction divided by a double yellow centerline and no striped shoulders. Parking is not provided along Gate School House Road, there are no existing bus stops and the roadway and has a 5-ton weight restriction and a posted speed limit of 35 MPH. The pavement is generally in good condition. Gate Schoolhouse Road has a varying horizontal alignment including an approximately 150-foot radius horizontal curve south of Ruth Court. Vertical grades vary between 1 and 3 percent.

MAPLE AVENUE (C.R. 31)

Maple Avenue (C.R. 31) is classified as an urban major collector and is a two lane roadway that runs in a generally east/west direction. The section in the Town of Goshen intersects with Cross Road, Houston Road, Gate Schoolhouse Road, Gibson Road and terminates at a signalized intersection with NYS Route 17M opposite 6 ½ Station Road. The roadway has a varying pavement width of approximately 26 to 28 feet including approximately two-foot-wide paved shoulders on either side of the roadway. In the immediate vicinity of the Project Site the roadway has a posted speed limit of 35 MPH. The pavement is generally in good condition. Within the study area Maple Avenue has a large radius horizontal curve approaching NYS Route 17M as well as a somewhat tighter (approximately 425-foot radius) horizontal curve at the intersection with Police Highway. Between Police Highway and NYS Route 17M, Maple Avenue has a crest vertical curve as the roadway climbs approximately 25 feet with vertical grades of approximately 3 to 4 percent. There is no parking or bus stops provided along the roadway.

INTERSECTION CHARACTERISTICS

NYS ROUTE 17M AND INTERSTATE 84

NYS Route 17M intersects with Interstate 84 at a grade-separated full clover leaf interchange. Through this interchange area NYS Route 17M consists of two through lanes in each direction. Separate acceleration and deceleration lanes are also provided for each of the ramp intersections with the exception of the I-84 westbound off-ramp to NYS Route 17M westbound, which is controlled by a “Stop” sign. The NYS Route 17M overpass has a third lane in each direction which allows for weaving movements for vehicles entering and exiting I-84 eastbound and westbound.

NYS ROUTE 17M AND LOWER ROAD (C.R. 12)/C.R. 50

C.R. 50 and Lower Road (C.R. 12) intersect with NYS Route 17M at a signalized full movement intersection. The eastbound NYS Route 17M approach consists of an approximately 675-foot separate left-turn lane and a shared through/right-turn lane while the westbound approach consists of an approximately 485-foot separate left-turn lane, a through lane and an approximately 255-foot shared through/right-turn lane. The northbound and southbound approaches to the intersection each consist of a single lane for all movements.

NYS ROUTE 17M AND MID-HUDSON PSYCHIATRIC CENTER ACCESS

The Mid-Hudson Psychiatric Center (MHPC) currently has two access connections to NYS Route 17M. These are unsignalized intersections and NYS Route 17M in this vicinity consists of one lane in each direction. During peak hours, traffic exiting MHPC experiences delays especially making left-turns due to the "stop" sign control at this intersection.

NYS ROUTE 17M AND TRAINING CENTER LANE AND PROPOSED SITE ACCESS

Training Center Lane, which provides access to the Orange County Transfer Station and the Orange County Fire Training Center, currently intersects with NYS Route 17M at an unsignalized intersection. In this vicinity, NYS Route 17M consists of one lane per direction plus a paved shoulder and the Training Center Lane approach consists of one wide lane.

NYS ROUTE 17M AND HARTLEY ROAD/GATE SCHOOLHOUSE ROAD

Hartley Road and Gate Schoolhouse Road intersect with NYS Route 17M at a signalized intersection. Each of the approaches to this intersection consists of one lane.

NYS ROUTE 17M AND 6 ½ STATION ROAD/MAPLE AVENUE (C.R. 31)

Maple Avenue (C.R. 31) and 6 ½ Station Road intersect with NYS Route 17M at a signalized intersection. The NYS Route 17M approaches each consist of a shared through/right-turn lane and a 200-foot separate left-turn lane. The 6 ½ Station Road and Maple Avenue approaches consist of one lane that widens approaching the intersection.

NYS ROUTE 17M AND NYS ROUTE 17 (FUTURE I-86)

NYS Route 17M intersects with Route 17 at a directional interchange which serves traffic to and from the south. The movements generally operate as free flow a ramp movement, which is expected to continue under future conditions. The nearest intersection to these free-flow ramp locations, the intersection NYS Route 17M and Police Highway was analyzed as part of the traffic analysis. The intersection is an unsignalized, "stop"-sign-controlled intersection that consists of one lane in each direction along NYS Route 17M and one lane in each direction along Police Highway. Left-turns from Police Highway to NYS Route 17M westbound are prohibited.

HARTLEY ROAD AND ECHO LAKE ROAD/CHEECHUNK ROAD

Hartley Road intersects with Echo Lake Road and Cheechunk Road at an unsignalized "T" shaped intersection. Each of the intersecting roadways consists of one lane in each direction and the northbound Hartley Road intersection is controlled by a "stop" sign.

GOLF LINKS ROAD (C.R. 50) AND MCVEIGH ROAD

Golf Links Road (C.R. 50) and McVeigh Road intersect at an unsignalized full movement intersection. Each of the intersection approaches consists of one (1) lane and the McVeigh Road approaches are "Stop" sign controlled. Prior to the intersection in the northbound and southbound directions Golf Links Road has minor roadway intersections that function as channelized right-turn movements and accommodate the majority of northbound and southbound right-turn movements. In the northbound direction the channelized right-turn roadway becomes Echo Lake Road. In the southbound direction the channelized right-turn roadway accommodates two-way traffic and therefore also accommodates the majority of the eastbound left-turn movements from McVeigh Road to Golf Links Road.

ECHO LAKE ROAD AND MCVEIGH ROAD

Echo Lake Road and McVeigh Road intersect at an unsignalized "T" shaped intersection. Each of the intersection approaches consists of one lane and the McVeigh Road approach is controlled by a "Stop" sign. The eastbound Echo Lake Road a one-way road toward the intersection and therefore the westbound approach only permits right turns, while the southbound McVeigh Road approach only permit left-turns.

FLETCHER STREET AND NYS ROUTE 17 (EXIT 122A) EASTBOUND ON/OFF-RAMP

The NYS Route 17 Eastbound On/Off Ramps intersect Fletcher Street at an unsignalized four-leg intersection. Each of the intersection approaches consist of one lane and the southbound NYS Route 17 Eastbound Off-Ramp approach is controlled by a "Stop" sign.

FLETCHER STREET AND NYS ROUTE 17 (EXIT 122A) WESTBOUND ON/OFF-RAMP

The NYS Route 17 Westbound On/Off Ramps intersect Fletcher Street at an unsignalized four-leg intersection. Each of the intersection approaches consist of one lane and the northbound NYS Route 17 Westbound Off-Ramp approach is controlled by a "Stop" sign.

NYS ROUTE 17M AND CANNON HILL DRIVE

NYS Route 17M and Cannon Hill Drive currently intersect at an unsignalized "T" shaped intersection that is controlled by a "Stop" sign on the Cannon Hill Drive approach. The northbound Cannon Hill Drive approach consists of one 16-foot-wide lane for left- and right-turn movements. The NYS Route 17M approaches each consist of one lane.

PUBLIC TRANSPORTATION AND PEDESTRIAN ACCESS

Coach USA operates the ShortLine bus in Orange County providing public transportation options throughout Orange County as well as to other areas including New York City, Poughkeepsie, Monticello, Binghamton and Pennsylvania. The nearest bus stops to the Project Site are located at the Mid-Hudson Psychiatric Center adjacent to the Echo Lake property. The bus that stops at this location is the Orange and Rockland County to New York commuter bus that travels between Port Jervis and New York City. Limited stops are made at the Mid-Hudson Psychiatric Center throughout the day. However, buses on this route pass this location and there may be the ability to coordinate additional scheduled stops with Coach USA for use by Amy's Kitchen employees since it is within a reasonable walking distance of the Project Site. More regular scheduled stops are currently made by this bus at the Matthews Street Park and Ride in the Town of Goshen and at 14 Railroad Avenue in the Town of Middletown. Each of these locations is in excess of two (2) miles from the Project Site.

New Jersey Transit (NJ TRANSIT) operates the Port Jervis train line, which runs through Orange County, Rockland County, and New Jersey between Port Jervis and Secaucus Junction. Regular weekday and weekend service is provided on this line with weekday morning express trains to Seacaucus Junction and weekday afternoon express trains to Port Jervis. At Seacaucus Junction, transfer is available to other NJ Transit trains including trains to New York City and Penn Station, which provides access to Amtrak trains. The nearest Port Jervis Line train stations to the Project Site are located in the City of Middletown along North Galleria Drive approximately 6 miles from the Project Site and in the Town of Campbell Hall along Egbertson Road/Watkins Road approximately 9 miles from the Project Site.

The Orange County Heritage Trail currently runs for a distance of approximately 11 miles between the Village of Monroe in the vicinity of Airplane Park and the Town of Goshen

terminating in the vicinity of Hartley Road and the Ver Hage property. The trail is proposed to be extended to the west to the City of Middletown in the future. This extension will bring the trail past the Amy's Kitchen property directly along the northern property line of the Ver Hage and Echo Lake properties.

ACCIDENT EVALUATION

All available accident data for the latest three (3)-year period from December 1, 2010 through November 30, 2013 was obtained from the New York State Department of Transportation (NYSDOT). In addition, as required by the Scoping Document, accident data were also obtained from the Town of Goshen police department for the period from January 1, 2012 through July 6, 2015. The NYSDOT and Town accident data were summarized according to the type, weather conditions, other contributing factors and related statistics.

These data were then used to compute the average accident rates for each of the study area intersections where accidents were found to occur (see **Table III.H-0**). These accident rates were then compared to the statewide averages for similar intersection types. Based on a review of this information, the average accident rate at the intersection of NYS Route 17M and Hartley Road was found to be below the statewide average; however, a history of numerous rear-end type accidents does exist at this intersection likely resulting from the lack of left-turn lanes along NYS Route 17M at the intersection.

The average accident rate at the intersections of NYS Route 17M & Lower Road (C.R. 12)/C.R. 50 and NYS Route 17M & 6 ½ Station Road/Maple Avenue were found to be slightly above the statewide average. At each of these intersections, the most common accident type was rear end accidents resulting from driver inattention and vehicles following too closely.

The intersection of NYS Route 17M and the I-84 westbound off-ramp to Route 17M westbound as well as the intersection of NYS Route 17M and the Mid-Hudson Psychiatric Center Drive (including Training Center Lane) were both found to have a high rate of accidents (defined as twice the statewide average) during the time period analyzed. The I-84 westbound off-ramp experienced a total of 25 accidents during the time period analyzed, of which 24 were classified as rear end type accidents. These accidents are likely a result of the "Stop" sign control on the off-ramp approach and that there is no acceleration lane for vehicles to merge into the NYS Route 17M westbound traffic flow.

The intersection of NYS Route 17M and the Mid-Hudson Psychiatric Center Drive experienced a total of 17 accidents during the time period analyzed, with the most common accident type being rear end type accidents likely resulting from the lack of left-turn lanes along NYS Route 17M at the intersection. As part of the proposed Amy's Kitchen development, the existing access to the Psychiatric Center is proposed to be realigned to connect to the Amy's Kitchen access roadway, which is proposed to connect to NYS Route 17M opposite a relocated Training Center Lane. A traffic signal along with separate left- and right-turn lanes in both the eastbound and westbound directions and two lane approaches northbound and southbound at the intersection are proposed to be constructed. All traffic to and from the Mid-Hudson Psychiatric Center will use this intersection and the realigned driveway for access. This will provide improved traffic control through this area of NYS Route 17M and is expected to help alleviate existing accident conditions.

Table III.H-0
Summary of Accident Rates and Comparison to State Wide Average

Accident Type	Number of Accidents		Rate		Statewide Average	
U.S. ROUTE 6/NYS ROUTE 17M AND I-84 WESTBOUND OFF RAMP						
YEARS	3					
AADT	34,979	VPD				
Wet Road	3		0.08	ACC/MEV	0.02	ACC/MEV
Left Turn	0		0.00	ACC/MEV	0.01	ACC/MEV
Rear End	24		0.63	ACC/MEV	0.03	ACC/MEV
Overtaking	0		0.00	ACC/MEV	0.01	ACC/MEV
Right Angle	0		0.00	ACC/MEV	0.00	ACC/MEV
Right Turn	1		0.03	ACC/MEV	0.00	ACC/MEV
Head-On	0		0.00	ACC/MEV	0.00	ACC/MEV
Sideswipe	0		0.00	ACC/MEV	0.00	ACC/MEV
All Types	25		0.65	ACC/MEV	0.10	ACC/MEV
U.S. ROUTE 6/NYS ROUTE 17M AND C.R. 50/C.R. 12						
YEARS	3					
AADT	24,630	VPD				
Wet Road	4		0.15	ACC/MEV	0.09	ACC/MEV
Left Turn	4		0.15	ACC/MEV	0.05	ACC/MEV
Rear End	6		0.22	ACC/MEV	0.17	ACC/MEV
Overtaking	2		0.07	ACC/MEV	0.04	ACC/MEV
Right Angle	2		0.07	ACC/MEV	0.06	ACC/MEV
Right Turn	0		0.00	ACC/MEV	0.01	ACC/MEV
Head-On	0		0.00	ACC/MEV	0.01	ACC/MEV
Sideswipe	0		0.00	ACC/MEV	0.00	ACC/MEV
All Types	16		0.59	ACC/MEV	0.45	ACC/MEV
U.S. ROUTE 6/NYS ROUTE 17M AND PHSYCHIATRIC CENTER DRIVE						
YEARS	3					
AADT	19,790	VPD				
Wet Road	2		0.09	ACC/MEV	0.03	ACC/MEV
Left Turn	1		0.05	ACC/MEV	0.01	ACC/MEV
Rear End	6		0.28	ACC/MEV	0.05	ACC/MEV
Overtaking	2		0.09	ACC/MEV	0.01	ACC/MEV
Right Angle	1		0.05	ACC/MEV	0.02	ACC/MEV
Right Turn	0		0.00	ACC/MEV	0.00	ACC/MEV
Head-On	0		0.00	ACC/MEV	0.00	ACC/MEV
Sideswipe	0		0.00	ACC/MEV	0.00	ACC/MEV
All Types	17		0.78	ACC/MEV	0.15	ACC/MEV
U.S. ROUTE 6/NYS ROUTE 17M AND HARTLEY ROAD						
YEARS	3					
AADT	22,505	VPD				
Wet Road	2		0.08	ACC/MEV	0.09	ACC/MEV
Left Turn	0		0.00	ACC/MEV	0.05	ACC/MEV
Rear End	5		0.20	ACC/MEV	0.17	ACC/MEV
Overtaking	2		0.08	ACC/MEV	0.04	ACC/MEV
Right Angle	0		0.00	ACC/MEV	0.06	ACC/MEV
Right Turn	0		0.00	ACC/MEV	0.01	ACC/MEV
Head-On	0		0.00	ACC/MEV	0.01	ACC/MEV
Sideswipe	0		0.00	ACC/MEV	0.00	ACC/MEV
All Types	9		0.37	ACC/MEV	0.45	ACC/MEV
U.S. ROUTE 6/NYS ROUTE 17M AND 6 1/2 STATION ROAD						
YEARS	3					
AADT	21,685	VPD				
Wet Road	0		0.00	ACC/MEV	0.09	ACC/MEV
Left Turn	1		0.04	ACC/MEV	0.05	ACC/MEV
Rear End	10		0.42	ACC/MEV	0.17	ACC/MEV
Overtaking	0		0.00	ACC/MEV	0.04	ACC/MEV
Right Angle	0		0.00	ACC/MEV	0.06	ACC/MEV
Right Turn	0		0.00	ACC/MEV	0.01	ACC/MEV
Head-On	0		0.00	ACC/MEV	0.01	ACC/MEV
Sideswipe	0		0.00	ACC/MEV	0.00	ACC/MEV
All Types	14		0.59	ACC/MEV	0.45	ACC/MEV

Notes: 1. State wide average accident rates based on average accident rates for state highways by facility type published by NYSDOT for the period between 8/1/2011 and 7/31/ 2013. Accident rates are expressed in units of accidents per millions of entering vehicles (ACC/MEV).

2. Average annual daily traffic (AADT) volumes for each intersection are based on a combination of data available from NYSDOT as well as traffic volume data collected by Maser Consulting, P.A. at the study area intersections.

TRAVEL TIME EVALUATION

In addition to the traffic volume counts (both manual and machine) collected along the NYS Route 17M corridor, travel time runs were collected for each direction of NYS Route 17M during both the AM Peak Hour, midday school hours, and PM Peak Hour. The purpose of these runs was to identify the operation across the network especially as it relates to other factors such as school bus traffic, which influences the travel time along the corridor. **Table III.H-1** summarizes the results of these runs, which were collected in June 2014 when schools were still in session.[3]

The travel time runs were recorded in both the eastbound and westbound directions along NYS Route 17M. In the eastbound direction the trips began at the I-84 westbound on/off ramps and ended immediately east of the 6 ½ Station Road. Similarly in the westbound direction, the trips began immediately east of 6 ½ Station Road and ended at the I-84 westbound on/off ramps. The Weekday Peak AM Hour trip runs were collected between the hours of 6:30 AM and 9:00 AM, while the Weekday Peak PM Hour trip runs were collected between the hours of 2:45 PM and 5:30 PM.

Table III.H-1
Summary of Weekday Travel Time Runs Along NYS Route 17M

Hour	Direction	Average Trip Duration (minutes)	Average Number of Stops[1]	Average Number of School Buses[2]
6:30 to 9:00 AM	Eastbound	07:13	2	4
	Westbound	06:53	2	6
2:35 to 5:30 PM	Eastbound	06:46	2	3
	Westbound	07:15	2	2

Notes:
[1] Number of stops includes stops at red lights, stops for turning vehicles and school bus stops along NYS Route 17M.
[2] Number of school buses includes the total number of buses encountered traveling in either direction along NYS Route 17M during each trip

As summarized in **Table III.H-1**, the average duration of the AM Peak Hour trips in the eastbound direction was approximately 7 minutes 13 seconds, and the average duration in the westbound direction was 6 minutes 53 seconds. In each direction, the average number of observed school buses stopping was two. An average of six school buses were observed travelling in the westbound direction and an average of four school buses were observed travelling in the eastbound direction.

The average duration of the PM Peak Hour trips in the eastbound direction was approximately 6 minutes 46 seconds and the average duration in the westbound direction was 7 minutes 15 seconds. In each direction, the average number of observed school buses stopping was two. An average of three school buses were observed travelling in the eastbound direction and an average of two school buses were observed travelling in the westbound direction.

[3] See TIS Appendix B, Tables TT-1 and TT-2. These tables provide the start and end time of each run, the total trip duration, the number of stops during each trip and the number of school buses observed along the corridor during each trip.

SUMMARY OF EXISTING TRAFFIC OPERATING CONDITIONS

Capacity analyses were conducted for each of the study area intersections under existing conditions. The following provides a brief summary of the existing traffic conditions along the corridor.

- During the existing AM Peak Hour of Amy's Trip Generation (6:00 AM to 7:00 AM) and the AM Peak Hour of Highway Traffic (7:30 AM to 8:30 AM) the predominant traffic flow along NYS Route 17M is in the eastbound direction between Interstate 84 and NYS Route 17. This eastbound traffic is primarily commuter traffic, with a directional split of between 60 percent and 75 percent in the eastbound direction. The capacity analyses summarized in **Tables III.H-2 and III.H-3** indicate that the eastbound movements at several of the study area intersections are currently operating near capacity based on the volume-to-capacity (v/c) ratios. At the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 the eastbound movement currently operates with a volume-to-capacity ratio of 0.97 during the AM Peak Highway Hour. Traffic signal timing changes could be implemented at this intersection under existing conditions to improve the current operation of the eastbound approach. In addition, several of the unsignalized intersections along the corridor operate with delays on the minor road left-turn movements due to the high volume of traffic along NYS Route 17M, including at the Mid-Hudson Psychiatric Center driveway and Training Center Lane intersections.
- During the existing PM Peak Hour of Amy's Trip Generation (3:00 PM to 4:00 PM) and the PM Peak Hour of Highway Traffic (4:30 PM to 5:30 PM) the predominant traffic flow along NYS Route 17M is in the westbound direction between NYS Route 17 and Interstate 84. Similar to the morning peak hour this traffic is primarily commuter traffic, with a directional split of approximately 60 percent in the westbound direction. The capacity analyses summarized in **Tables III.H-4 and III.H-5** indicate that the westbound movements at several of the study area intersections are currently operating near capacity. In addition, similar to AM conditions, several of the unsignalized intersections along the corridor operate with delays on the minor road left-turn movements due to the high volume of traffic along NYS Route 17M, including at the Mid-Hudson Psychiatric Center driveway and Training Center Lane intersections.
- During the Saturday Peak Hour the traffic volumes along NYS Route 17M are significantly less than during the Weekday AM and PM Peak Highway Hours (75 to 80 percent of the AM and PM Peaks), with traffic volumes nearly evenly split in each direction. As a result the traffic operating conditions along the corridor are better than during AM and PM Peak time periods. The existing capacity analysis results for the Saturday Peak Hour are summarized in **Table III.H-6**.

NYS ROUTE 17M AND INTERSTATE 84

The LOS for each of the I-84 ramp intersections with NYS Route 17M, with the exception of the I-84 westbound off-ramp to NYS Route 17M, were computed utilizing the Highway Capacity Software (HCS) since Synchro does not provide analysis results for merge and diverge ramp intersections or weaving segment type intersections. The LOS for merge and diverge ramps and for weaving segments are measured by density which is expressed in units of passenger cars per mile per lane.[4] Based on the results of the analyses for these intersections, each of the ramps and weaving segments currently operate at LOS B or better during each of the peak hours. Similar LOS are expected to be maintained in the future both with and without the Proposed Project.

[4] See Appendix B, Traffic Impact Study: Amy's Kitchen & Science of the Soul, "Appendix C," prepared by Maser Consulting, P.A., April 5, 2016.

The I-84 westbound off-ramp to NYS Route 17M westbound is a "stop" sign controlled intersection and therefore the results for that intersection were computed utilizing the Synchro software. This intersection currently operates at LOS B during the AM Peak Hour of Amy's Kitchen Generation, at LOS C during the AM Peak Highway Hour and the Saturday Peak Hours and at LOS D during each of the PM Peak Hours analyzed.

NYS ROUTE 17M AND LOWER ROAD (C.R. 12)/C.R. 50

Capacity analyses were conducted at this intersection utilizing the 2015 Existing Traffic Volumes. The results indicate that the intersection currently operates at an overall LOS C during the each of the AM and PM Peak Hours, while an overall LOS B is experienced during the Saturday Peak Hour. During the AM Peak Highway Hour the eastbound approach is currently operating near capacity.

NYS ROUTE 17M AND MID-HUDSON PSYCHIATRIC CENTER ACCESS

Capacity analysis was conducted at this intersection utilizing the 2015 Existing Traffic Volumes. The results indicated that the intersection currently operates at a LOS C during the AM Peak Hour of Amy's Generation, at LOS F during the AM Peak Highway Hour and each of the PM Peak Hours and at LOS E during the Saturday Peak Hour.

NYS ROUTE 17M AND TRAINING CENTER LANE AND PROPOSED SITE ACCESS

Based on a review of the existing traffic volumes along the corridor and the results of the existing conditions analysis, the intersection of NYS Route 17M and Training Center Lane currently experiences long delays during peak hours. This is primarily due to the lack of separate turning lanes, which inhibits through traffic movements along the corridor, especially in the westbound direction. Similar conditions occur at other intervening unsignalized intersections along this section of NYS Route 17M.

NYS ROUTE 17M AND HARTLEY ROAD/GATE SCHOOLHOUSE ROAD

The capacity analysis conducted at this intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at an overall LOS A during each of the peak hours. It should also be noted that left-turns from NYS Route 17M to Hartley Road and Gate Schoolhouse Road currently prohibit the flow of through vehicles along NYS Route 17M at this intersection due to the lack of separate left-turn lanes. Also, there is a history of severe rear-end type accidents at this intersection.

NYS ROUTE 17M AND 6 ½ STATION ROAD/MAPLE AVENUE (C.R. 31)

The capacity analysis conducted at this intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at an overall LOS B during each of the peak hours with the exception of the PM Peak Hour of Amy's Generation during which the intersection currently operates at an overall LOS C.

NYS ROUTE 17M AND NYS ROUTE 17 (FUTURE I-86)

The analysis results for the intersection indicate that it is currently operating at LOS B during each of the peak hours.

HARTLEY ROAD AND ECHO LAKE ROAD/CHEECHUNK ROAD

Capacity analysis was conducted for this intersection under the 2015 Existing Traffic Volume conditions for each of the peak hours. The analysis indicates that the intersection is currently operating at LOS B or better during each of the peak hours.

GOLF LINKS ROAD (C.R. 50) AND MCVEIGH ROAD

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at LOS B or better during the AM Peak Hour of Amy's Generation as well as the AM Peak Highway Hour. During the PM Peak Hour of Amy's Generation the intersection currently experiences LOS E on the westbound McVeigh Road approach, while LOS D is experienced on the same approach during the PM Peak Highway Hour. During the Saturday Peak Hour the intersection operates at LOS C or better.

ECHO LAKE ROAD AND MCVEIGH ROAD

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at LOS A during the AM Peak Hour of Amy's Generation, while LOS B is currently experienced during the AM Peak Highway Hour. During the PM Peak Hour of Amy's Generation the intersection currently experiences LOS B, while LOS A is experienced the PM Peak Highway Hour. During the Saturday Peak Hour the intersection operates at LOS A.

FLETCHER STREET AND NYS ROUTE 17 (EXIT 122A) EASTBOUND ON/OFF-RAMP

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at LOS A during the AM Peak Hour of Amy's Generation, while LOS F is currently experienced during the AM Peak Highway Hour on the NYS Route 17 Eastbound Off-Ramp approach primarily as a result of existing commuter and school related traffic. During the PM Peak Hour of Amy's Generation and the PM Peak Highway Hour the intersection currently experiences LOS C, while LOS A is experienced the PM Peak Highway Hour. During the Saturday Peak Hour the intersection operates at LOS B.

FLETCHER STREET AND NYS ROUTE 17 (EXIT 122A) WESTBOUND ON/OFF-RAMP

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at LOS B during the AM Peak Hour of Amy's Generation, while LOS C is currently experienced during the AM Peak Highway Hour on the NYS Route 17 Eastbound Off-Ramp approach. During the PM Peak Hour of Amy's Generation and the PM Peak Highway Hour the intersection currently experiences LOS D, while LOS C or better is experienced the PM Peak Highway Hour. During the Saturday Peak Hour the intersection operates at LOS B. The capacity analysis was recomputed utilizing the 2033 No-Build and Build Traffic Volumes.

NYS ROUTE 17M AND CANNON HILL DRIVE

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at LOS E during the AM Peak Hour of Amy's Generation, while LOS F is currently experienced during the AM Peak Highway Hour, the PM Peak Hour of Amy's Generation and the PM Peak Highway Hour for traffic exiting Cannon Hill Drive onto NYS Route 17M. During the Saturday Peak Hour LOS C is currently experienced.

D. FUTURE WITHOUT THE PROPOSED PROJECT ("NO-BUILD")

SUMMARY OF 2033 NO-BUILD TRAFFIC OPERATING CONDITIONS

Capacity analyses were conducted for each of the study area intersections under the 2033 No-Build Conditions. The following summarizes traffic conditions along the corridor. More detailed summaries of No-Build conditions are provided in the discussion of 2033 Build conditions for ease of comparison.

- During the AM Peak Hour of Amy's Trip Generation (6:00 AM to 7:00 AM) and the AM Peak Hour of Highway Traffic (7:30 AM to 8:30 AM) the capacity analyses summarized in **Tables III.H-2 and III.H-3** indicate that the eastbound movements at several of the study area intersections will operate near capacity.
  - At the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 the eastbound movement is expected to operate at LOS F with a delay of 77.4 seconds and a volume-to-capacity ratio of 1.09. Signal timing changes have been identified for the future build conditions that would also improve the operation of the eastbound approach at this intersection under future No-Build conditions.
  - At the intersection of NYS Route 17M and Hartley Road it is expected that traffic will be impeded by the lack of left-turn lanes at this intersection.
  - At the Mid-Hudson Psychiatric Center and Training Center Lane intersection conditions will operate with delays on the minor road left-turn movements approaches due to the high volume of traffic along NYS Route 17M.
- During the PM Peak Hour of Amy's Trip Generation (3:00 PM to 4:00 PM) and the PM Peak Hour of Highway Traffic (4:30 PM to 5:30 PM) the capacity analyses summarized in **Tables III.H-4 and III.H-5** indicate that the westbound movements at several of the study area intersections are expected to continue to operate near capacity. In addition, similar to AM conditions, several of the unsignalized intersections along the corridor will continue to operate with delays on the minor road left-turn movements due to the high volume of traffic along NYS Route 17M, including at the Mid-Hudson Psychiatric Center driveway and Training Center Lane intersections.
- During the Saturday Peak Hour, when traffic volumes along NYS Route 17M are significantly less than during the Weekday AM and PM peaks, it is expected that there will be some minor increases in delay as a result of background traffic growth and other area projects. However, in general, similar LOS to existing conditions will be experienced at the study area intersections. The capacity analysis results for the Saturday Peak Hour are summarized in **Table III.H-6**.

POTENTIAL FUTURE AREA TRAFFIC IMPROVEMENTS

Previous studies have identified potential future area traffic improvements along NYS Route 17M and NYS Route 17 within the study area. These potential future improvements are discussed below for informational purposes. There is currently no plan to complete these improvements or timetable for when they would be implemented and therefore they have not been included in the analysis contained herein.

NYS ROUTE 17M AT MAPLE AVENUE (C.R. 31)/6½ STATION ROAD

The Goshen Town Wide Traffic Study prepared by Stantec Consulting Service, Inc. dated December 2006 had recommended potential widening of NYS Route 17M at its intersection with Maple Avenue (C.R. 31) and 6½ Station Road to provide additional through lanes through

this intersection as well as a potential widening of Maple Avenue (C.R. 31) to provide a second approach lane to the intersection in order to reduce delays on this approach. No plans have progressed for these improvements and most of the potential developments accounted for in the Town Wide Traffic Study never occurred. Based on the analysis of this intersection, the delays present at the intersection are a result of existing traffic volumes and future background traffic volumes. The Proposed Project is not expected to significantly impact the operation of this intersection. As previously indicated there is currently no proposal to implement these improvements and therefore they have not been considered in the traffic analysis.

NYS ROUTE 17M AT NYS ROUTE 17 (FUTURE I-86)

Potential future improvements are proposed to be completed to the NYS Route 17 interchange (Exit 123) with NYS Route 17M in conjunction with the conversion of NYS Route 17 to Interstate 86 and the upgrade of Exits 124 and 125 also in the Town of Goshen. As part of these potential improvements, Exit 123 would be reconfigured to a half diamond interchange configuration. To accommodate this option, NYS Route 17M would be realigned to connect with Mathews Street and West Main Street on the northeast side of NYS Route 17, rather than directly connecting to NYS Route 17 as it does currently. New ramps to and from the east would be built to connect NYS Route 17 to the newly realigned NYS Route 17M/Mathews Street. The short segment of Police Highway between Hatfield Lane and NYS Route 17M would be eliminated and replaced by an extension of Hatfield Lane. This would require the relocation of this street access to a point further from the new NYS Route 17 eastbound on-ramp.

The Exit 124 (NYS Route 17A/NYS Route 207) westbound on and off-ramps would be shifted to the east, closer to South Street. As part of this modification, the Exit 125 (NYS Route 17M/South Street) westbound on and off-ramps would be eliminated.

The eastbound on- and off-ramps at Exit 124 (NYS Route 17A/NYS Route 207) would remain unchanged, but their terminus would be redesigned to connect with a potential extension of Hatfield Lane that would run from NYS Route 207 to South Street. The Exit 125 (NYS Route 17M/South Street) eastbound ramps would be reconstructed to terminate in a roundabout. This would also require the redesign of the intersecting access roadways.

Together, these improvements would result in improved access to and from NYS Route 17 and NYS Route 17M. The modifications to the Exit 123 interchange would not significantly change the travel patterns for employees and visitors to the Proposed Project. There is currently no timetable for the implementation of these improvements and therefore they have not been considered in the traffic analysis.

E. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

SITE-GENERATED TRAFFIC VOLUMES

Estimates of the amount of traffic to be generated by the proposed Amy's Kitchen facility during each of the peak hours were developed based on data provided for other existing Amy's Kitchen facilities including the existing comparably sized Medford, Oregon facility (339,947 sf). Trip generation data for both employee and truck trips was provided. This information included estimates of the number of employees on each shift and the trip generation estimates were developed assuming a one-to-one ratio of employees to trips. In addition, data published by the Institute of Transportation Engineers (ITE) as contained in their publication entitled, *Trip Generation*, 9th Edition, 2012 was also referenced for the Warehouse Use of up to 70,000 square feet of warehouse space (Land Use Category 150).

The trip generation estimates for the full build out of the Proposed Project are summarized in **Table III.H-7**. The table summarizes the Hourly Trip Generation Rates (HTGR) and Anticipated Site-Generated Traffic Volumes including a breakdown of passenger cars and trucks for each of the peak hours. The equivalent number of passenger cars (i.e. 2 passenger cars per truck) has been shown in the table as required by the Scoping Document; however, for the purposes of the capacity analysis, trucks have been accounted for based on the methods presented in the 2010 Highway Capacity Manual, which utilizes heavy vehicle percentages to account for the number of trucks along the roadway and on each individual intersection movement.

Table III.H-7
Hourly Trip Generation Rates (HTGR) and Anticipated Site-Generated Traffic Volumes

	Entry					Exit				
Amy's Kitchen Goshen, New York	**HTGR[1]**	**Passenger Cars**	**Trucks[2]**	**Truck Passenger Car Equivalent[3]**	**Total**	**HTGR[1]**	**Passenger Cars**	**Trucks[2]**	**Truck Passenger Car Equivalent[3]**	**Total**
Amy's Kitchen Phase II - Full Build (369,000 sf)										
Peak AM Hour (6:00 AM - 7:00 AM)	0.50	176	4	8	184	0.14	34	8	16	50
Peak AM Hour (7:30 AM - 8:30 AM)	0.12	39	3	6	45	0.14	41	5	10	51
Peak PM Hour (3:00 PM - 4:00 PM)	0.52	173	10	20	193	0.42	142	6	12	154
Peak PM Hour (4:30 PM - 5:30 PM)	0.19	49	10	20	69	0.06	11	6	12	23
Saturday Peak Hour	0.10	26	6	12	38	0.19	59	6	12	71
Ver Hage Out Parcel Warehouse (70,000 sf)										
Peak AM Hour (6:00 AM - 7:00 AM)	0.77	43	11	22	54	0.17	10	2	5	12
Peak AM Hour (7:30 AM - 8:30 AM)	0.77	43	11	22	54	0.17	10	2	5	12
Peak PM Hour (3:00 PM - 4:00 PM)	0.17	10	2	5	12	0.51	29	7	14	36
Peak PM Hour (4:30 PM - 5:30 PM)	0.17	10	2	5	12	0.51	29	7	14	36
Saturday Peak Hour	0.09	5	1	2	6	0.04	2	1	1	3
Science of the Soul Typical Conditions										
Peak AM Hour (6:00 AM - 7:00 AM)	-	5	0	0	5	-	5	0	0	5
Peak AM Hour (7:30 AM - 8:30 AM)	-	5	0	0	5	-	5	0	0	5
Peak PM Hour (3:00 PM - 4:00 PM)	-	5	0	0	5	-	5	0	0	5
Peak PM Hour (4:30 PM - 5:30 PM)	-	5	0	0	5	-	5	0	0	5
Saturday Peak Hour	-	5	0	0	5	-	5	0	0	5
Total										
Peak AM Hour (6:00 AM - 7:00 AM)	-	224	15	30	243	-	49	10	21	67
Peak AM Hour (7:30 AM - 8:30 AM)	-	87	14	28	104	-	56	7	15	68
Peak PM Hour (3:00 PM - 4:00 PM)	-	188	12	25	210	-	176	13	26	195
Peak PM Hour (4:30 PM - 5:30 PM)	-	64	12	25	86	-	45	13	26	64
Saturday Peak Hour	-	36	7	14	49	-	66	7	13	79

Notes:
1. The Hourly Trip Generation Rates (HTGR) for Amy's Kitchen facility are based on data provided by Amy's Kitchen for their existing Medford, Oregon facility. The Hourly Trip Generation Rates for the Ver Hage Out Parcel warehouse are based on data provided by the institute of transportation engineers (ITE) in their publication entitled trip generation 9th edition dated 2012 for land use code - 150 - warehousing.
2. The number of trucks for the Amy's Kitchen facility is based on data provided by Amy's Kitchen for its existing Medford, Oregon facility. The number of trucks for the Warehouse Use is based on ITE data for land use code - 150 - warehousing, which indicates that typical truck generation for a warehouse is approximately 20 percent of the total site generation.
3. "Truck passenger car equivalent" accounts for each truck trip as two passenger cars. The total traffic volumes however are based on the actual number of trucks and the percent heavy vehicle factors in the traffic analysis has been adjusted to reflect this.
4. Typical operation of Science of the Soul consists of 5-10 people on site each day for typical daily maintenance activities. Some of these may live at the site full time.

Source:
Table 1, *Traffic Impact Study: Amy's Kitchen & Science of the Soul*, prepared by Maser Consulting, P.A., April 5, 2016.

The table also provides trip generation estimates for the proposed SoS Conference Center under typical conditions, which is expected to include between 5 and 10 volunteers daily that attend to administrative and property management responsibilities. Some of these people would reside at the site in the two proposed caretaker residences. The site is not expected to generate a significant number of trips under typical conditions.

The AM peak hour of Amy's trip generation is expected to occur between 6:00 AM and 7:00AM, which is prior to the peak of the adjacent roadway system. During this time, traffic volumes along NYS Route 17M are 75 to 80 percent of the peak hour (7:30 AM to 8:30 AM) traffic volumes along the corridor. The Amy's trip generation during the 7:30 AM to 8:30 AM time period is expected to

be as much as 35 percent of the 6:00 AM to 7:00 AM time period. However, to provide a complete analysis of future traffic conditions, both time periods were analyzed. Similarly, the PM peak hour of Amy's Trip Generation is expected to occur during the 3:00 PM to 4:00 PM time period when traffic volumes along NYS Route 17M are 94 percent of the peak hour (4:30 PM to 5:30 PM) traffic volumes along the corridor. The Amy's Kitchen trip generation during the 4:30 PM to 5:30 PM time period is expected to be as much as 80 percent less than the trip generation during the 3:00 PM to 4:00 PM time period. Both time periods were analyzed.

A separate analysis of the SoS National Conference Conditions is provided below. This includes a discussion of the estimated trips generated by the National Conference during the annual three (3)-day event.

ARRIVAL/DEPARTURE DISTRIBUTIONS

Arrival and departure distributions for the Proposed Project were established based on a review of the existing traffic volumes and consideration of the area roadways and location of the proposed Project Site access. These distributions were used to assign the site-generated traffic volumes to the intersections and surrounding roadway network.

The Proposed Project would be accessed via a new roadway connection to NYS Route 17M traversing through the Echo Lake property and over the Wallkill River via a proposed bridge. The proposed Warehouse Use would also be accessed via the new roadway connection to NYS Route 17M using the Wallkill River bridge.

Separate arrival and departure distributions have been developed for passenger cars and trucks for both the Amy's Kitchen and Warehouse Use. The arrival and departure distributions for each use are shown in **Figures III.H-12 through III.H-19**. The arrival and departure distributions for the SoS typical conditions are shown on **Figures III.H-20 and III.H-21**.

TRAFFIC DEMAND MANAGEMENT AND PARKING

Amy's Kitchen currently employs several initiatives at its existing locations, including the Medford, Oregon facility, to manage traffic and trips generated by these facilities. These include off-peak start of shifts, staggering of shift times, and carpooling. These initiatives may be proposed to be employed at this facility as well.

Amy's Kitchen schedules its shift times to start and end during off-peak hours of traffic along the surrounding roadway system. The shift times generally start/end during the 5:00 AM to 7:00 AM time period, during the 2:00 PM to 5:00 PM time period, and overnight during the 10:00 PM to 1:00 AM time period. During these periods, the start and end times of the shifts are also staggered to spread the trips generated by the facility over the two (2) to three (3) hour period in order to lessen the impacts of traffic on the surrounding roadway network. The actual peak hours of generation for the facility resulting from the shift changes are expected to occur during the 6:00 AM to 7:00 AM hour and during the 3:00 PM to 4:00 PM hour.

Table III.H-8 provides a comparison of the existing traffic volumes along NYS Route 17M in the vicinity of the site (including the number of buses spotted along the roadway) to the expected Amy's Kitchen Trip Generation. This information is provided on a half-hour basis for the AM and PM peak periods. As shown in the table, the AM peak hour of trip generation occurs during the 6:00 AM to 7:00 AM time period, while the peak hour of traffic along NYS Route 17M occurs during the 7:30 AM to 8:30 AM time period and the peak hour of school bus traffic occurs during the 8:00 AM to 9:00 AM time period. During the PM Peak Period the table indicates that the PM Peak Hour of traffic along NYS Route 17M occurs during the 4:30 PM to

5:30 PM time period, while the peak hour of Amy's trip generation occurs during the 3:00 PM to 4:00 PM time period. School bus traffic also occurs during the 2:00 PM to 4:00 PM time period based on the data collected. However, based on the counts and the Goshen Central School District school dismissal times, which occur between 2:10 PM and 3:20 PM, the actual peak of school bus traffic occurs during the 2:30 PM to 3:30 PM time period.

Table III.H-8
Comparison of Existing Traffic Volumes to Amy's Kitchen Trip Generation

Time Period		NYS Route 17M 2014 Existing Traffic Volumes		Number of School Buses Observed along NYS Route 17M		Amy's Kitchen Anticipated Trip Generation	
		EB	WB	EB	WB	Entry	Exit
AM Peak Period							
6:00 AM	6:30 AM	503	89	-	-	110	4
6:30 AM	7:00 AM	522	148	6	9	68	34
7:00 AM	7:30 AM	505	218	7	9	48	2
7:30 AM	8:00 AM	541	263	6	8	33	36
8:00 AM	8:30 AM	520	285	5	19	7	7
8:30 AM	9:00 AM	437	345	11	12	0	1
PM Peak Period							
2:30 PM	3:00 PM	373	494	-	-	15	85
3:00 PM	3:30 PM	393	503	12	6	105	93
3:30 PM	4:00 PM	340	495	7	7	73	52
4:00 PM	4:30 PM	306	546	4	7	24	34
4:30 PM	5:00 PM	343	546	2	0	50	6
5:00 PM	5:30 PM	333	616	1	0	3	7
5:30 PM	6:00 PM	253	566	-	-	1	1

Source: Table T-1, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Carpooling is also employed at other existing Amy's Kitchen facilities. Carpooling is encouraged by providing premium parking spaces near the entrance of the Amy's facilities only to be used by employees carpooling to the facility. The proposed Amy's Kitchen Facility will include approximately five (5) to six (6) parking spaces proximate to the entrance that will be reserved for employees that carpool. In addition, the proposed facility will also provide two reserved electric vehicle charging spaces proximate to the building to encourage electric vehicle use by employees.

In addition to these initiatives, the proposed Amy's Kitchen facility is also expected to provide bike lockers on the site to encourage use of the Heritage Trail by local employees for access to the Project Site.

Together these traffic demand management initiatives will result in lower overall trip generation for the Amy's Kitchen facility, however no credit has been taken for these initiatives in the analysis as the trip generation estimates are based on the number of employees on each shift assuming a one-to-one ratio of employees to trips; therefore, the analysis is conservative.

PARKING

The Amy's Kitchen manufacturing facility would have approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces. Approximately 20 to 30 loading bays would be provided. The Amy's Kitchen manufacturing facility would

employ approximately 459 full-time people on the Project Site upon completion of Phase 1, and approximately 681 full-time people upon completion of Phase 2 of the Project.

Based upon staffing levels at the Medford, Oregon facility, which has a similar production line to what is being considered for the Goshen facility, at full operation there would be approximately 321 Day Shift, 304 Swing Shift, and 56 Graveyard Shift employees. Thus, the maximum number of individuals to be in the manufacturing facility at any one time is projected to be approximately 325 people (assuming a small number of visitors). The on-site clinic building would be staffed by one (1) doctor and one (1) nurse as well as one (1) office assistant. Including patients and staff, and based on the Applicant's experience in its Medford, Oregon plant, the maximum number of individuals to be in the on-site clinic building at any one time is projected to be approximately eight (8) to ten (10) people. Regular plant operations would not take place on weekends except for cleaning or maintenance but occasionally, based on demand, the plant may run production shifts on weekends. As such, the proposed parking spaces would accommodate the proposed manufacturing facility, including during shift changes. SoS parking demand does not require use of the Amy's Kitchen parking areas. (See more detailed discussion of SoS parking below).

2033 BUILD CONDITION TRAFFIC VOLUMES

The site-generated traffic volumes for the Proposed Project were assigned to the roadway network utilizing the above referenced arrival and departure distributions. The site-generated traffic volumes for the full buildout of the Proposed Project, as summarized in **Table III.H-7**, were applied to the roadway network based on the arrival and departure distributions discussed above.

The site-generated traffic volumes were added to the 2033 No-Build Traffic Volumes to obtain the 2033 Full Build Traffic Volumes, which are shown on **Figures III.H-22 through III.H-26**. It is important to note that the 2033 Build Traffic Volumes also include a redistribution of traffic to and from the Mid-Hudson Psychiatric Center, which will be accessed via the proposed new Project Site access roadway connection to NYS Route 17M under future conditions.

The Scoping Document required that the arrival and departure distributions reflect the current use of Gate Schoolhouse Road by local motorists. Based on existing patterns, it has been assumed in the distributions for passenger cars that as much as 10 percent of the traffic destined to and from the site will use Gate Schoolhouse Road. It is not anticipated that truck traffic will utilize this route.

AMY'S KITCHEN FULL BUILD-OUT ANALYSIS RESULTS

A complete analysis of each of the study area intersections identified in the Scoping Document has been conducted to analyze the potential traffic impacts associated with the full buildout of the Proposed Project. The following provides a detailed description of that analysis, the results and any recommended mitigation measures. Note that the analysis also assumes typical operating conditions at the SoS site during each of the peak hours. A separate analysis of the SoS National Conference Conditions is provided in the Traffic Impact Study and a summary discussion is presented in Section III.H-F below.

Capacity analyses were performed at each of the study area intersections utilizing the procedures described above and the Synchro Version 8 analysis software (HCM 2010 results) to evaluate current and future operating conditions. Summarized below is a description of the existing

geometrics, traffic control and a summary of the existing and future LOS and any recommended improvements for each location.

The volume-to-capacity ratio, LOS and delay results for the AM Peak Hour of Amy's Generation, AM Peak Highway Hour, PM Peak Hour of Amy's Generation, PM Peak Highway Hour and Saturday Peak Hours are summarized on **Tables III.H-1, III.H-2, III.H-3, III.H-4, and III.H-5**, respectively. These tables also identify conditions with mitigation as noted for those locations that indicate a potential significant adverse impact based on the Town Code requirements previously referenced. Also note that the Traffic Impact Study provides a detailed queuing analysis for the signalized intersections.[5]

NYS ROUTE 17M AND INTERSTATE 84

Under future No-Build and Build conditions this intersection is expected to continue to experience LOS B during the AM Peak Hour of Amy's Kitchen Generation and LOS C during the Saturday Peak Hour. During the AM Peak Highway Hour the intersection is expected to operate at LOS D under both No-Build and Build conditions. During the PM Peak Hour of Amy's Kitchen Generation the intersection is expected to operate at LOS E under both No-Build and Build conditions, with an increase in delay of approximately 3.6 seconds. During the PM Peak Highway Hour the intersection is expected to operate at LOS E under No-Build conditions and at LOS F under Build conditions with an increase in delay of 1.5 seconds. The Amy's Kitchen project would not add any traffic to the westbound off-ramp approach and therefore is not expected to significantly impact the operation of this intersection. However the existing "Stop" sign could be replaced with a "Yield" sign in order to improve traffic flow from the Off-Ramp approach. This would require the approval of the NYSDOT.

NYS ROUTE 17M AND LOWER ROAD (C.R. 12)/C.R. 50

The intersection was analyzed utilizing the 2033 No-Build and 2033 Build Traffic Volumes. A review of these analyses indicates that the intersection is expected to continue to operate at an overall LOS C during the each of the PM Peak Hours, while the overall LOS during the Saturday Peak Hour is expected to drop from LOS B under Existing conditions to LOS C under No-Build and Build conditions as a result of the background traffic growth. The Proposed Project is not expected to impact the operation of this intersection during the Saturday Peak Hour.

During the AM Peak Hour of Amy's Generation the intersection is expected to operate at an overall LOS C under No-Build conditions and an overall LOS D under Build conditions. During the AM Peak Highway Hour the intersection is expected to operate at an overall LOS D under No-Build conditions and at an overall LOS E under Build conditions. It is anticipated that the eastbound approach will continue to operate with high volume-to-capacity ratios and long delays during each of the AM Peak Hours. Signal timing changes have been identified for this intersection during both of the AM Peak Hours to address Existing and No-Build traffic conditions as well as to reduce potential project-related impacts at the intersection, especially in the eastbound direction. The analysis indicates that with these timing improvements the intersection would operate similar to future 2033 No-Build conditions with the Proposed Project.

[5] See Appendix B, Traffic Impact Study: Amy's Kitchen & Science of the Soul, "Appendix B," prepared by Maser Consulting, P.A., April 5, 2016, Tables 7 through 11 for a summary of the detailed queuing analysis results.

All queues would be accommodated by the storage lengths at this intersection. In fact, based on the analysis, the eastbound and westbound left-turn queues are significantly less than the storage lengths provided for those movements. This is likely due to the longer queues in each direction on the through movements especially on the eastbound through movements during the AM Peak Hour and the longer left-turn lanes allow the left-turning vehicles to enter the turning lanes sooner resulting in less overall delay along the corridor. As indicated in the tables, the signal timing improvements recommended for Build conditions analysis during the AM Peak Hours would result in queues similar to No-Build conditions.

NYS ROUTE 17M AND MID-HUDSON PSYCHIATRIC CENTER ACCESS

Analyses were conducted at this intersection for 2033 No-Build conditions which indicate that similar LOS to existing conditions would continue to be experienced in the future without the project.

This location was also identified as a high accident location based on the accident analysis discussed above. The Proposed Project includes a new access roadway that will connect to the Amy's Kitchen/SoS access to provide MHPC access to the traffic signal and separate turning lanes that are proposed to be installed on NYS Route 17M. This access management, which combines the access connections to NYS Route 17M and the related intersection improvements will significantly improve access conditions for MHPC as well as improve safety in the vicinity of these intersections.

NYS ROUTE 17M AND TRAINING CENTER LANE AND PROPOSED SITE ACCESS

The Proposed Project includes a new access roadway to serve the Proposed Project as well as MHPC. The new roadway will intersect NYS Route 17M approximately 200 feet west of the existing Training Center Lane, which will be relocated to align opposite the Project Site access roadway to form a full movement signalized intersection. The intersection will be reconstructed to have multi-lane approaches; two lanes on each of the side roads and separate left- and right-turn lanes in each direction along NYS Route 17M. **Figure III.H-27** shows the conceptual configuration of the access improvements and the relocation of Training Center Lane to the west away from the existing bridge crossing the Wallkill River. Based upon a review of the future traffic volumes, signalization of this intersection will also be required to accommodate the expected volumes. A new fully actuated traffic signal will be installed to control traffic movements and to enhance safety along this corridor. A Highway Work Permit will be required from the New York State Department of Transportation for these improvements, which will also be coordinated with the Orange County Department of Public Works regarding the relocation and improvements to Training Center Lane. These improvements are proposed to not only accommodate traffic associated with the Proposed Project, but to also improve existing capacity and safety conditions along NYS Route 17M as well as access to and from Training Center Lane by providing separate left- and right-turning lanes and the installation of a traffic signal to control traffic movements at the new intersection. These improvements will be completed at the time of opening of the Proposed Project.

Based on the capacity analysis for this intersection under Build conditions, the intersection is projected to operate at an overall LOS B during the AM Peak Hour of Amy's Generation, while an overall LOS C is expected to be experienced during the AM Peak Highway Hour, PM Peak Hour of Amy's Generation, PM Peak Highway Hour and the Saturday Peak Hours.

Based on the queuing analysis results a 185-foot left turn lane is proposed to be provided in the eastbound direction along NYS Route 17M while a 125-foot left turn lane is proposed to be

provided in the westbound direction. In addition an approximately 135-foot westbound right turn lane for vehicles entering the Amy's Kitchen access driveway and a 100-foot eastbound right turn lane for vehicles entering Training Center Lane will also be provided. The realigned Training Center Lane approach will consist of a left/through lane and an approximately 150-foot separate right turn lane. As noted above, these improvements will not only serve the proposed development, but will significantly enhance the safety and efficiency of traffic movements to and from Training Center Lane and the Mid-Hudson Psychiatric Center.

NYS ROUTE 17M AND HARTLEY ROAD/GATE SCHOOLHOUSE ROAD

The intersection was analyzed with the 2033 No-Build Traffic Volumes. A review of these analyses indicates that the intersection is generally expected to experience an overall LOS B during each of the Peak Hours. Similar LOS would be expected to be experienced under 2033 Full Build Conditions during each of the peak hours, with some minor increases in delay and other more significant increase in volume-to-capacity ratios in the eastbound and westbound directions as a result of the project.

Long queues are currently experienced along NYS Route 17M during the AM and PM Peak Hours, some in excess of 600 feet, and these queues likely impact the ability of vehicles to turn into and out of other driveways along NYS Route 17M in the vicinity of this intersection. These conditions are expected to continue in the future under both No-Build and Build conditions. Some minor signal timing improvements have also been identified for this intersection to maximize the intersections efficiency under future conditions.

Although it is not expected that Gate Schoolhouse Road will be a major access route for employees and/or trucks to and from the site, it has been assumed that as much as 10 percent of the Amy's Kitchen employee traffic will utilize this roadway for access to the site.

NYS ROUTE 17M AND 6 ½ STATION ROAD/MAPLE AVENUE (C.R. 31)

The intersection was analyzed with the 2033 No-Build and 2033 Full Build Traffic Volumes. A review of these analyses indicates that the intersection is expected to maintain an overall LOS B during the AM Peak Hour of Amy's Generation and the Saturday Peak Hour as well as maintain an overall LOS C during the PM Peak Hour of Amy's Generation. During the AM and PM Peak Highway Hours the intersection is expected to go from an overall LOS B under Existing conditions to an overall LOS C under No-Build and Build conditions generally as a result of the background traffic growth along the corridor.

Long queues are currently experienced along NYS Route 17M during the AM and PM Peak Hours, some in excess of 600 feet. These queues likely impact the ability of vehicles to turn into and out of other driveways along NYS Route 17M in the vicinity of this intersection. However there is sufficient storage for left-turn queues and on each of the side road approaches. These conditions are expected to be maintained in the future both with and without the Proposed Project.

As previously discussed, improvements along NYS Route 17M at this intersection had been identified in the Goshen Town Wide Traffic Study, however there is currently no proposal for the implementation of these improvements and therefore they have not been considered in the analysis. The analysis discussed above indicates that the intersection will continue to operate similar to existing conditions in the future both with and without the Proposed Project and therefore no improvements are proposed to be completed at this intersection in association with the Amy's Kitchen development.

NYS ROUTE 17M AND NYS ROUTE 17 (FUTURE I-86)

NYS Route 17M and NYS Route 17 were analyzed with the 2033 No-Build and 2033 Full Build traffic volumes. The intersection will continue to operate at LOS B during each of the peak hours.

HARTLEY ROAD AND ECHO LAKE ROAD/CHEECHUNK ROAD

The capacity analysis was analyzed with the 2033 No-Build and Build Traffic Volumes. The intersection is expected to continue to operate at LOS B during each of the peak hours.

GOLF LINKS ROAD (C.R. 50) AND MCVEIGH ROAD

The intersection was analyzed utilizing the 2033 No-Build and Build Traffic Volumes. The results indicated that during the AM Peak Hour of Amy's Generation the intersection will continue to operate at LOS B or better, while LOS C or better will be experienced during the AM Peak Highway Hour both with and without the project. During the PM Peak Hour of Amy's Kitchen Generation the intersection is expected to experience LOS F on the westbound McVeigh Road approach under both No-Build and Build conditions, while during the PM Peak Highway Hour LOS E is expected to be experienced on the same approach both with and without the project. During the Saturday Peak Hour LOS C or better is expected to be maintained under future conditions with and without the project. Under typical conditions, the Proposed Project will result in an increase in traffic volumes at this intersection by approximately four percent or less during any of the peak hours.

A review of the traffic volumes and the existing and future traffic operating conditions at this intersection, especially during the PM Peak Hours, indicates that this intersection would benefit from the installation of All-Way stop control at the intersection to improve the overall traffic operating conditions. The sight distances at the intersection approaching from the north and south along Golf Links Road provides good visibility of the potential stop location. This modification should be considered regardless of the Proposed Project. Analyses of the intersection with All-Way stop control was conducted for each of the peak periods indicating that the intersection would operate at LOS C or better on all approaches during each of the peak hours.

ECHO LAKE ROAD AND MCVEIGH ROAD

The capacity analysis was computed utilizing the 2033 No-Build and Build Traffic Volumes. The results of these analyses indicate that LOS A and B will be maintained during each of the peak hours with and without the Proposed Project. It is not expected that the Proposed Project will add any significant traffic to this intersection.

FLETCHER STREET AND NYS ROUTE 17 (EXIT 122A) EASTBOUND ON/OFF-RAMP

The intersection was analyzed utilizing the 2033 No-Build and Build Traffic Volumes. The results indicate that during the AM Peak Hour of Amy's Generation the intersection will continue to operate at LOS A, while LOS F will continue to be experienced during the AM Peak Highway Hour both with and without the project. During the PM Peak Hour of Amy's Kitchen Generation the intersection is expected to operate at LOS D on the off-ramp approach, while during the PM Peak Highway Hour LOS C is expected to be maintained both with and without the project. During the Saturday Peak Hour LOS B or better is expected to be maintained under future conditions with and without the project. Under typical conditions, the Amy's Kitchen development traffic is projected to result in an increase in traffic volumes at this intersection by

approximately 2 percent or less over No-Build conditions during any of the peak hours. This intersection should be monitored in the future for potential signalization regardless of the project.

FLETCHER STREET AND NYS ROUTE 17 (EXIT 122A) WESTBOUND ON/OFF-RAMP

The intersection was analyzed utilizing the 2033 No-Build and Build Traffic Volumes. The results indicate that during the AM Peak Hour of Amy's Generation the intersection will continue to operate at LOS B, while LOS C will continue to be experienced during the AM Peak Highway Hour both with and without the project. During the PM Peak Hour of Amy's Kitchen Generation the intersection is expected to operate at LOS E on the off-ramp approach with average vehicle delay increase of less than 5 seconds form the No-Build to Build conditions, while during the PM Peak Highway Hour LOS C is expected to be maintained both with and without the project. During the Saturday Peak Hour LOS B or better is expected to be maintained under future conditions with and without the project. Under typical conditions, the Proposed Project would result in an increase in traffic volumes at this intersection by approximately 2 percent or less over No-Build conditions during any of the peak hours. This intersection should be monitored in the future for potential signalization regardless of the project.

NYS ROUTE 17M AND CANNON HILL DRIVE

The intersection was analyzed utilizing the 2033 No-Build and Build Traffic Volumes. The results indicate that the intersection will operate at LOS F during the AM Peak Hour of Amy's Generation, the AM Peak Highway Hour, the PM Peak Hour of Amy's Kitchen Generation and the PM Peak Highway Hour. LOS D is expected to be experienced during the Saturday Peak Hour. The Proposed Project would not add any additional turning movement traffic to this intersection. In addition, the presence of the proposed traffic signal to be installed at the intersection of NYS Route 17M & Training Center Lane/Project Site driveway roadway will provide additional gaps in the traffic flow along NYS Route 17M at this intersection which will improve the operation of this intersection under future conditions and reduce any delay increases.

There has been discussion regarding the potential signalization of the Cannon Hill Drive intersection in association with the Cannon Hill Drive Flex Building project to be developed along the roadway. The need for a traffic signal at this location should be addressed by that development in conjunction with the NYSDOT, however any potential signal at this location may also require the addition of a left-turn lane along NYS Route 17M as well as potential coordination with the proposed traffic signal at Training Center Lane to ensure efficient traffic flow along NYS Route 17M is maintained.

FUTURE SAFETY CONDITIONS

As previously indicated several intersections currently experience accident rates above statewide averages. The intersection of NYS Route 17M and the Mid-Hudson Psychiatric Center Drive (including Training Center Lane) were both found to have a high rate of accidents (defined as twice the statewide average) during the time period analyzed. The proposed improvements at the Training Center Lane/Site Access intersection will help to reduce accidents in this area by controlling traffic movements entering and exiting the state highway and providing separate turning lanes for these movements to occur without impeding through traffic along NYS Route 17M. The elimination of the existing Mid-Hudson Psychiatric Center driveway, which will be accessed via the proposed Site Access roadway under future conditions with the project, will

reduce conflicts and delays through this area of NYS Route 17M and therefore should help reduce current accident rates.

The average accident rate at the intersection of NYS Route 17M and Hartley Road was found to be below the statewide average, however a history of severe rear-end type accidents does exist at this intersection. As previously indicated the installation of traffic signal back plates on the eastbound and westbound approach traffic signal heads would help to make the signal more visible, especially during periods of significant sun glare and could help to reduce the number of rear-end type accidents at this location. This should be considered regardless of the proposed project.

The average accident rate at the intersections of NYS Route 17M & Lower Road (C.R. 12)/C.R. 50 and NYS Route 17M & 6 ½ Station Road/Maple Avenue were found to be slightly above the statewide average. At each of these intersections, the most common accident type was rear end accidents resulting from driver inattention and vehicles following too closely. As previously indicated, the Amy's Kitchen Traffic Generation generally occurs outside the peak hours along NYS Route 17M and the greatest increase in traffic volumes at these intersections will occur as a result of background traffic growth. In addition minor traffic signal timing improvements at the Lower Road intersection during the AM Peak Hour of Amy's Kitchen Generation and the AM Peak Highway Hour, which were previously identified, may help to somewhat reduce the existing congestion in the eastbound direction along NYS Route 17M, which contributes to the existing accident conditions at this intersection.

The intersection of NYS Route 17M and the I-84 westbound off-ramp to Route 17M westbound was also found to have a high rate of accidents (defined as twice the statewide average) during the time period analyzed. The Amy's Kitchen development would not add any additional traffic to the I-84 off-ramp approach and therefore is not expected to significantly change the future accident conditions at this intersection.

SUMMARY OF POTENTIAL SIGNIFICANT ADVERSE IMPACTS AND PROPOSED MITIGATION MEASURES

As part of the Proposed Project, improvements at the intersection of NYS Route 17M & Training Center Lane/Project Site Access have been recommended and are included as part of the development plan. These improvements, which will be funded and implemented by the Applicant under a NYSDOT Highway Work Permit, will also address existing capacity and safety conditions in the vicinity of the intersection and provide improved access to Training Center Lane. The improvements include the relocation of Training Center Lane approximately 300 feet to the west of its current location in order to align opposite the Project Site. Separate left- and right-turn lanes along NYS Route 17M are proposed to be constructed as part of these improvements as well as a separate right-turn lane on Training Center Lane and Project Site access would also have two exiting lanes. These improvements would include the installation of a traffic signal at this intersection (see **Figure III.H-27**). As part of the construction of the Project Site access roadway the existing access to the Mid-Hudson Psychiatric Center would be eliminated and that facility would be accessed via a connection to the site access roadway and be better served by this improved, signal controlled access. This also provides better access management for the corridor by aligning the main intersection on NYS Route 17M opposite the relocated Training Center Lane.

In addition, based on the results of the analyses, in comparison to the Town of Goshen "Environmental Performance Standards" as previously described, the following is a summary of

the potential adverse impacts that could result from the additional traffic generated by the project as well as the potential measures identified to mitigate these impacts. Note that each of these intersections listed below is projected to experience LOS E or F on one or more approaches of the intersections regardless of the Proposed Project and therefore certain improvements will be required to improve existing and/or future traffic conditions in the area without the Proposed Project.

1. The Interstate 84 Westbound Off-Ramp at NYS Route 17M was identified to experience increased delays during the PM Peak Hour of Amy's Kitchen Generation and the PM Peak Highway Hour. The Proposed Project will not add any additional traffic to the off-ramp approach, however the existing "Stop" sign could be replaced with a "Yield" sign in order to improve traffic flow from the Off-Ramp approach. This would require the approval of the NYSDOT, however would be funded and implemented by the Applicant as part of the NYSDOT Highway Work Permit if acceptable to the department.
2. The intersection of NYS Route 17M & CR 12/CR 50 currently experiences long delays in the eastbound direction during the AM Peak Hours. Under No-Build and Build conditions the volumes are anticipated to exceed the eastbound through/right movement capacity based on the currently allocated green time. Signal timing improvements have been recommended for this intersection to mitigate delays in the eastbound direction. These improvements are recommended regardless of the Proposed Project, however they will be coordinated by the Applicant with NYSDOT as part of the Highway Work Permit process.
3. The intersection of NYS Route 17M & Hartley Road has a history of numerous rear-end type accidents. Traffic signal back plates could be installed at this intersection on eastbound and westbound NYS Route 17M approaches in order to increase the visibility of the traffic signals, especially during periods of significant sun glare, which could help to reduce these accident types. This modification should be considered regardless of the Proposed Project. In addition, minor traffic signal timing improvements have been identified for this intersection to maximize the intersection's efficiency under future conditions. The traffic signal timing modifications will be coordinated by the Applicant with NYSDOT as part of the Highway Work Permit process. The installation of traffic signal back plates on the signal heads will be funded and completed by the Applicant as part of the Highway Work Permit for the project.
4. The intersection of Golf Links Road and McVeigh Road is projected to experience increased vehicle delays during the PM Peak Hour of Amy's Kitchen Generation and the PM Peak Highway Hour. The installation of All-Way Stop control has been proposed to mitigate these delay increases. This improvement should be considered regardless of the project, but would be funded and completed by the Applicant if approved.
5. The NYS Route 17 Interchange 122A On/Off Ramps at Fletcher Street are projected to experience increased vehicle delays at the intersections of during the AM Peak Highway Hour for the Eastbound On/Off Ramp and during the PM Peak Hour of Amy's Kitchen Generation for the Westbound On/Off Ramp. These delay increase are projected to occur both with and without the Proposed Project. These intersections should be monitored for signalization and a traffic signal installed if warranted in the future.
6. The intersection of NYS Route 17M and Cannon Hill Drive is currently operating at LOS F during all weekday time periods and some delay increases are projected to be experienced both with and without the Proposed Project. The reconstruction of the Training Center Lane

and NYS Route 17M intersection and installation of a traffic signal, which are part of the Proposed Project will provide increased gaps in the traffic stream along NYS Route 17M including at the intersection with Cannon Hill Drive. The increased gaps created by the signal will improve the ability for traffic to exit from Cannon Hill Drive, which will improve the operation and reduce delays at this intersection.

7. All truck traffic generated by both the Amy's Kitchen and the Warehouse Use will be directed to utilize NYS Route 17M only to access NYS Route 17 and Interstate 84 avoiding the use of local roadways, many of which have weight restrictions.
8. Temporary impacts during construction of roadway improvements at NYS Route 17M and Training Center Lane/Site Access may occur. The project will be subject to the New York State "Drivers First" Initiative which prioritizes the convenience of motorists and ensures that disruptions are as minimal as possible to drivers at all highway projects throughout the state. As a result detailed Maintenance and Protection of Traffic Plans will be prepared as part of the NYSDOT Highway Work Permit and will be funded and implemented by the Applicant to control traffic during the construction of the intersection improvements at NYS Route 17M and Training Center Lane/Site Access Roadway.

Based on the results of the capacity analysis contained herein, with the completion of the recommended improvements summarized above, the traffic generated by Amy's Kitchen, Warehouse Use, and SoS typical daily operations can be accommodated on the roadway system. A NYSDOT Highway Work Permit will be required for the proposed access improvements as well as coordination with the Orange County Department of Public Works for the realignment of Training Center Lane.

F. POTENTIAL IMPACTS OF SCIENCE OF THE SOUL SPECIAL EVENTS

WEEKLY MEETINGS AND REGIONAL EVENTS

As discussed in Chapter II, "Project Description," the SoS Conference Center would be used to host one (1) regional two-day conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees over a weekend. The Regional Conference would be held in the two-story Multi-Purpose/Family Area Building. The lecture would occur on one floor, and the other floor would be used for the family area. The Regional Conference would start mid-day on a Saturday and conclude on a Sunday afternoon.

A qualitative analysis of traffic conditions during a Regional Conference was completed. Since this event is of a limited duration occurring once per year, it will not result in a significant adverse impact that requires additional mitigation. However, as part of the plan for this event, based on the analysis of the event conditions, it is anticipated that to ensure efficient traffic flow along NYS Route 17M in the vicinity of the site, manned police traffic control of the Project Site driveway at NYS Route 17M intersection may be required during this limited time period. It is recommended that manned police traffic control of this intersection be provided at this intersection for the first year or two with the need for this to be further evaluated with the Town based on actual operating conditions during the Regional Conference. Furthermore, it is anticipated that the other area intersections could accommodate additional traffic that would be generated by the Regional Conference, however, in order to ensure that there would be no significant impacts to the area roadways the peak entry and exit periods of these events should be arranged such that they do not coincide with the peak hours of traffic along NYS Route 17M.

In addition, the SoS Conference Center would host regular weekly meetings on Sunday mornings for local congregants ("Weekly Meeting"), estimated between 200 and 400 people, in the Multi-Purpose Building. A separate analysis of the traffic conditions during these Sunday morning conditions has not been conducted. However, based on ITE trip generation rates it is estimated that up to approximately 244 vehicle trips could be generated by a meeting of approximately 400 attendees. ATR count data collected along NYS Route 17M indicate that the traffic volumes on a Sunday morning between 9:00 AM and 12:00 PM are between 15% and 40% lower than the Saturday Peak Hour traffic volumes along the roadway. The additional traffic volumes generated by the weekly meetings would equate to an approximately 20% increase in traffic volumes in the immediate vicinity of the site access. However, since the background volumes along NYS Route 17M are significantly lower than the Saturday Peak Hour or Weekday background volumes, it is not anticipated that this additional volume would have a significant impact on traffic conditions along NYS Route 17M. Also, the access improvements identified above for the SoS Access/Training Center Lane intersection would be able to accommodate these additional site-generated volumes.

SCIENCE OF THE SOUL NATIONAL CONFERENCE

As discussed in Chapter II, "Project Description," the SoS Conference Center would be used to host one (1) annual three-day national conference ("National Conference"), with attendance of up to 12,000 people. The National Conference would typically be held over a three (3) day period: either Friday through Sunday or Saturday through Monday. Attendees at each day's event for a National Conference would arrive and depart over an approximately four (4) hour period from 9:00 AM until 1:00 PM. The actual duration of the programming is approximately two (2) hours and could either be morning or evening events, however morning events are more typical. It is also typical for some attendees to arrive prior to the start of the programming and depart several hours after the programming.

For the purpose of the traffic impact assessment, it was assumed that the National Conference could be held during the week, over a weekend, or a combination of both. Approximately 60 percent of the attendees would arrive via passenger car and all required parking for the event would be accommodated on-site. The balance of attendees would arrive by bus from nearby hotels and/or urban centers.

As previously indicated, access to SoS would be from a new entrance roadway connection to NYS Route 17M, which would also serve the Amy's Kitchen manufacturing plant and the Mid-Hudson Psychiatric Center.

Since this National Conference is an event limited to a once per year occurrence, it will not result in any significant adverse impacts that require additional mitigation. However, as part of the Proposed Project, various Traffic Management Strategies (TMS) and related measures are being incorporated to accommodate this event condition. These measures, including the use of shuttle busses, manned police traffic control, on-site circulation, etc. will be coordinated with the Town of Goshen.

In any event, to satisfy the requirements of the Scoping Document and to help refine the planned Traffic Management Strategies, an analysis of the National Conference conditions has been conducted to assess the traffic conditions associated with this event on the surrounding roadway networks. The following describes the procedures utilized in performing this analysis. It has been assumed that the Amy's Kitchen facility will be operational during the event in order to provide a conservative analysis of future conditions during the special event.

The SoS National Conference occurs once per year and is typically held over a three (3) day period. As such, the event conditions have been analyzed during both typical weekday and weekend conditions, utilizing traffic volumes representing school traffic, in order to provide a complete analysis of the potential traffic conditions.

Based on information provided by SoS, the annual events typically have a duration of approximate two-hours. A Morning Event typically begins at 10:00 AM and ends at 12:00 PM. An afternoon event typically begins at 4:00 PM and ends at 6:00 PM. Information provided by SoS for its Petaluma, California conference center indicates the typical arrival and departure pattern of attendees prior to and after the events, which is summarized in **Table III.H-9**.

Table III.H-9
Anticipated Special Event Arrival and Departure Schedule[1]

Time Interval (Prior-to or After Event)	Arrivals	Departures
0:30	5%	20%
1:00	15%	20%
1:30	25%	15%
2:00	30%	20%
2:30	20%	15%
3:00	5%	10%
Notes: [1] The Anticipated Arrival and Departure Schedule is based on information provided by Science of the Soul for their Petaluma, California facility.		
Source:		

This information was utilized to determine the peak hours of entry and exit traffic prior to and after each event. **Table III.H-10** summarizes the anticipated peak hours of entering and exiting traffic for both morning and afternoon events.

Table III.H-10
Anticipated Event Entry and Exit Peak Hours

	Morning Event	Afternoon Event
Event Start	10:00 AM	4:00 PM
Event End	12:00 PM	6:00 PM
Entry Peak	8:30 AM – 9:30 AM	2:30 PM – 3:30 PM
Exit Peak	12:00 PM – 1:00 PM	6:00 PM – 7:00 PM
Notes:		
Sources:		

Based on the above information contained in **Tables III.H-9 and 10**, the following is a discussion of the peak entry and exit time periods for an event occurring on a weekday or weekend and the analysis that is conducted herein for each of these time periods.

WEEKDAY EVENT

- Weekday Morning Event Entry Period (8:30 AM to 9:30 AM): The Peak Entry Period for a Morning Event occurring on a weekday would occur between 8:30 AM and 9:30 AM. This peak period falls just outside the AM Peak Highway Hour (7:30 AM to 8:30 AM) for NYS Route 17M. However, based on the ATR traffic counts, the existing background traffic

volumes between 8:30 AM to 9:30 AM are approximately 97 percent of the AM Peak Highway Hour. Therefore, it was determined that a full quantitative analysis of the Weekday Morning Event Entry Period is require and for the purposes of the analysis the 2015 AM Peak Highway Hour (7:30 AM to 8:30 AM) traffic volumes have been utilized as the base traffic volumes for this analysis. These volumes are summarized in **Figure III.H-28**.

- Weekday Morning Event Exit Period (12:00 PM to 1:00 PM): The Peak Exit Period for a Morning Event occurring on a Weekday would occur between 12:00 PM and 1:00 PM. Based on the ATR traffic counts, the existing background traffic volumes between 12:00 PM to 1:00 PM are approximately 84 percent of the PM Peak Hour of Amy's Kitchen Generation (3:00 PM to 4:00 PM) volumes and therefore it was determined that a full quantitative analysis of the Weekday Morning Event Exit Period conditions is required. Since during the 12:00 PM to 1:00 PM time period complete turning movement counts were not collected and was not required to be analyzed as part of the original scoping document, based on the ATR data an 84 percent factor was applied to the 3:00 PM to 4:00 PM traffic volumes to obtain the 12:00 PM to 1:00 PM Morning Event Exit Period 2015 Existing Traffic Volumes utilized for this analysis. These volumes are summarized in **Figure III.H-29.**
- Weekday Afternoon Event Entry Period (2:30 PM to 3:30 PM): The Peak Entry Period for an Afternoon Event occurring on a Weekday would occur between 2:30 PM and 3:30 PM. Based on the ATR traffic counts, the existing background traffic volumes from 2:30 PM to 3:30 PM are 98 percent of the PM Peak Hour of Amy's Generation (3:00 PM to 4:00 PM) existing traffic volumes. Therefore, it was determined that a full quantitative analysis of the Weekday Afternoon Event Entry Period conditions is required and the 3:00 PM to 4:00 PM time period traffic volumes have been utilized as the base traffic volumes for this analysis. These volumes are summarized in **Figure III.H-30.**
- Weekday Afternoon Event Exit Period (6:00 PM to 7:00 PM): The Peak Exit Period for an Afternoon Event occurring on a Weekday would occur between 6:00 PM and 7:00 PM, which is after the PM Peak Highway Hour (4:30 PM to 5:30 PM) along NYS Route 17M. Based on the ATR traffic counts, the existing background traffic volumes from 6:00 PM to 7:00 PM along NYS Route 17M are 75 percent of the 4:30 PM to 5:30 PM volumes along the roadway and are 90 percent of the 12:00 PM to 1:00 PM volumes. Therefore it was determined that a full quantitative analysis of the Weekday Afternoon Event Exit Period conditions is not required and that the Weekday Morning Event Exit Period conditions would be representative of the afternoon conditions. A further qualitative discussion of this time period is provided below.

WEEKEND EVENT

Based on the collected traffic volume data the Saturday traffic volumes are the critical traffic volumes for a typical weekend and therefore have been utilized as the base traffic volumes for the weekend analysis. The daily traffic volumes on a Sunday are approximately 85 percent of the Saturday daily traffic volumes. A qualitative analysis of Sunday Event conditions is provided below.

- Weekend Morning Event Entry Period (8:30 AM to 9:30 AM): The Peak Entry Period for a Morning Event occurring on a weekend would occur between 8:30 AM and 9:30 AM. Based on the ATR traffic counts, the existing background traffic volumes between 8:30 AM to 9:30 AM are approximately 85 percent of the Saturday Peak Hour (12:00 PM to 1:00 PM) traffic volumes. Therefore it was determined that a full quantitative analysis of the Weekend Morning Event Entry Period was not required and that the analysis of the Weekend Afternoon Entry Period (see below) would be representative of morning entry period conditions. A further qualitative discussion of this time period is provided below.

- Weekend Morning Event Exit Period (12:00 PM to 1:00 PM): The Peak Exit Period for a Morning Event occurring on a Weekend would occur between 12:00 PM and 1:00 PM, which is coincident with the peak hour of traffic volumes along NYS Route 17M. Therefore it was determined that a full quantitative analysis of the Weekday Morning Event Exit Period conditions is required. These volumes are summarized in **Figure III.H-31**.
- Weekend Afternoon Event Entry Period (2:30 PM to 3:30 PM): The Peak Entry Period for an Afternoon Event occurring on a Weekday would occur between 2:30 PM and 3:30 PM. Based on the ATR traffic counts, the existing background traffic volumes on a Saturday from 2:30 PM to 3:30 PM are 91 percent of the Saturday Peak Hour (12:00 PM to 1:00 PM) existing traffic volumes. Therefore, it was determined that a full quantitative analysis of the Weekend Afternoon Event Entry Period conditions is required and it was conservatively assumed that the Weekend Afternoon Event Entry Period coincides with the Saturday Peak Hour Traffic Volumes. These volumes are shown on **Figure III.H-32**.
- Weekend Afternoon Event Exit Period (6:00 PM to 7:00 PM): The Peak Exit Period for an Afternoon Event occurring on a Weekend would occur between 6:00 PM and 7:00 PM. Based on the ATR traffic counts, the existing background traffic volumes from 6:00 PM to 7:00 PM along NYS Route 17M are 65 percent of the Saturday Peak Hour 12:00 PM to 1:00 PM volumes along the roadway. Therefore it was determined that a full quantitative analysis of the Weekend Afternoon Event Exit Period conditions is not required and that the Weekend Morning Event Exit Period conditions would be representative of the afternoon conditions. A further qualitative discussion of this time period is provided below.

Based the above, the following are the five time periods for which a full quantitative analysis of the SoS National Conference conditions has been conducted herein.

- Weekday Morning Event Entry Period (8:30 AM to 9:30 AM)
- Weekday Morning Event Exit Period (12:00 PM to 1:00 PM)
- Weekday Afternoon Event Entry Period (2:30 PM to 3:30 PM)
- Weekend Morning Event Exit Period (12:00 PM to 1:00 PM)
- Weekend Afternoon Event Entry Period (2:30 PM to 3:30 PM)

Similar growth and other development traffic volumes were also added to the existing traffic volumes for each of the time periods analyzed in order to project the traffic volumes to the future 2033 Design Year. The 2033 No-Build Traffic Volumes are summarized on **Figures III.H-33 through 37**.

ANNUAL EVENT TRAFFIC GENERATION AND PARKING

It is assumed that the Amy's Kitchen facility and the Warehouse Use will remain operational during the SoS National Conference for the purpose of the analysis contained herein. Thus, the Annual Event conditions analysis includes the traffic volumes associated with that portion of the development during the Weekday and Weekend Event Periods analyzed.

SoS relies on member volunteers to staff all events. SoS has indicated that the number of volunteers typically amounts to between 5 and 6 percent of the number of attendees. Based on this information it is estimated that approximately 600 to 720 volunteers may be required for the Annual Event. Volunteers typically arrive prior to the three-hour window prior to the start of an event when attendees begin to arrive. They also depart after the same three-hour window after the end of an event. Volunteer parking would be accommodated on the Strong Farm property and volunteers would either walk to the Echo Lake site event location or be provided shuttle transport via one (1) or

two (2) shuttle vans. It is anticipated that parking for approximately 300 to 360 vehicles will have to be accommodated on the Strong Farm property for volunteer parking. Since these volunteer trips will arrive well before the attendee peak and depart well after the attendee peak, volunteer trips have not been included in the quantitative analysis of the event peak time periods.

SoS has provided information on trip generation based on experience at the existing Petaluma, California and Fayetteville, North Carolina conference centers. Based on the information provided by SoS, greater than 20 percent of attendees arrive by bus at the Petaluma and Fayetteville conference centers. SoS anticipates a higher usage of busses for the proposed Goshen site. It is anticipated that this number will be closer to 40 percent arrivals by bus since a large portion of attendees for events at this location will arrive to the region from out-of-town locations by plane or long distance group buses. In addition, a combination of long distance group buses and shuttle buses from clusters of area hotels will be utilized. Based on SoS experience, the typical bus occupancy is approximately 40 persons per bus. For the purposes of the analysis it has been assumed that approximately 125 buses will arrive at the site to accommodate both attendees and staff volunteers, which would equate to approximately 5,000 attendees and staff. There is also a possibility of attendees utilizing area mass transit (including trains) however this has not been accounted for in the analysis. It should also be noted that for the purpose of the analysis, it has been assumed that not all 130 bus parking spaces will be utilized in order to provide a somewhat conservative analysis.

SoS encourages carpooling to their events and based on experience at their Petaluma and Fayetteville locations, a car occupancy of between 3.30 and 3.80 persons per vehicle can be expected. For the purposes of the Event Conditions analysis a somewhat conservative car occupancy ratio of 3.50 persons per vehicle has been utilized. Utilizing a somewhat conservative assumption of approximately 2,000 occupied parking spaces on the site, this would accommodate approximately 7,000 attendees.

The primary parking for the SoS Conference Center would be on the Echo Lake property. A total of 2,043 car parking spaces are proposed. The main parking area would comprise a combination of approximately 660 paved and 1,280 gravel and/or grass parking spaces (total of approximately 1,940 parking spaces). The paved spaces would include approximately 270 ADA-accessible parking spaces located closest to the entry venues and open-air pavilion. Four (4) additional parking areas containing approximately 24 parking spaces each (total of 96 parking spaces) would be located adjacent to the Central Building and Family Area building. Another small parking area with approximately seven (7) spaces would be located in the rear of the open-air pavilion. In addition, 130 bus parking spaces would be provided accommodating approximately 5,000 people.

Together, the busing and passenger cars are expected to accommodate approximately 12,000 attendees with volunteer parking accommodated on the Strong Farm property. Therefore, all required attendee parking (automobile and bus) would be accommodated on the Echo Lake property. The information associated with these and other assumptions utilized to determine the site generation characteristics of the Annual Event conditions are summarized in **Table III.H-16 below**.

Science of the Soul has also provided information on the typical arrival and departure schedule for these special events based on their experience at past events at the existing location in Petaluma, California (see **Table III.H-9 above**). Utilizing this information hourly trip generation estimates were developed for the typical National Conference. This information is summarized in **Table III.H-12** below.

Table III.H-11
Science of the Soul Special Event Summary

Attendees	
Total Attendees	12,000 Persons
Total Volunteer Staff	600 Persons
Proposed On-Site Parking to be Provided	
Passenger Cars:	2,043
Buses:	130
Assumed Vehicle Occupancies[1]	
Attendees per Passenger Car	3.50 Persons/Vehicle
Attendees per Bus	40 Persons/Bus
Volunteers per Passenger Car	2 Persons/Vehicle
Parking Assumptions[2]	
Passenger Cars:	2,000 Vehicles
Long Distance/Hotel Shuttle Buses:	125 Buses
Calculations	
Attendees Accommodated by On-Site Parking	7,000
Attendees Accommodated by Long Distance/Hotel Shuttle Buses	5,000
Attendees Accommodated by On-Site Parking & Long Distance/Hotel Shuttle Buses	12,000
Volunteers to be Accommodated by Strong Farm Property Parking[3]	600
Parking Spaces Required on Strong Farm Property	300

Notes:
[1] Assumed Vehicle Occupancies for Attendee Passenger Cars, Attendee Buses & Staff Passenger Cars are based on Science of the Soul experience for Annual Events held at their Petaluma, California and Fayetteville, North Carolina facilities.
[2] Parking Assumptions assumes that there will not be 100 percent usage of passenger car parking spaces and bus parking spaces on the site.
[3] Volunteer Staff will arrive at and depart the site outside of the 3-hour Arrival & Departure window for attendees and therefore are not included in the peak hour trip generation identified in Table III.H-17.

Annual Event Conditions Arrival and Departure Distributions

Similar to the base condition analysis the site-generated traffic volumes for the Annual Event condition analysis were applied to the roadway network based on arrival and departure distributions. The distributions vary slightly from the distributions utilized in the base analysis since it is expected that patrons of the SoS National Conference will be traveling from locations further from the site and therefore the majority of the traffic destined to the site (e.g. regional hotels, metropolitan areas within driving distance, etc.) is expected to utilize NYS Route 17 and Interstate 84 to access the site. Separate arrival and departure distributions were computed for passenger cars and Long Distance/Hotel Shuttle Buses destined to the Echo Lake site. In general it is anticipated that the split of traffic along NYS Route 17M will be approximately 50/50 to and from the eastbound and westbound directions.

2033 Build Traffic Volumes – Annual Event Conditions

These site-generated traffic volumes were added to the 2033 No-Build Traffic Volumes, along with the Site-Generated Traffic Volumes for the associated with the full buildout of the Amy's Kitchen and Warehouse Use. Together these volumes result in the Annual Event Conditions Build Traffic Volumes, which are shown on **Figures III.H-38 through III.H-42** for the each of the Peak Periods analyzed.

Table III.H-12
Site-Generated Traffic Volumes
Science of the Soul Event Conditions

Morning Event	Evening Event	Passenger Car Trips to Echo Lake Site		Long Distance/ Hotel Shuttle Buses		Total Trips	
		Entry	Exit	Entry	Exit	Entry	Exit
Entry Period							
7:00 AM	1:00 PM	100	0	7	0	107	0
7:30 AM	1:30 PM	300	0	19	0	319	0
8:00 AM	2:00 PM	500	0	32	0	532	0
8:30 AM	2:30 PM	600	0	38	0	638	0
9:00 AM	3:00 PM	400	0	25	0	425	0
9:30 AM	3:30 PM	100	0	7	0	107	0
Exit Period							
2:00 PM	8:00 PM	0	400	0	25	0	425
2:30 PM	8:30 PM	0	400	0	25	0	425
3:00 PM	9:00 PM	0	300	0	19	0	319
3:30 PM	9:30 PM	0	400	0	25	0	425
4:00 PM	10:00 PM	0	300	0	19	0	319
4:30 PM	10:30 PM	0	200	0	13	0	213

Notes:
[1] Trip generation estimates are based on information provided by Science of the Soul and other assumptions as indicated on Table No. 1C. Science of the soul special events typically occur on a weekend of holiday weekend and can be either morning or evening events and are held over three days. The trip generation estimates provided are based on anticipated attendance for the annual conference, the largest potential event.
[2] Peak hour traffic volumes for morning and evening event entry and exit periods are showing in highlighted rows.
[3] Trip generation for Science of the Soul event conditions is assumed to be same from weekday and weekend events.
Sources: Table 1E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Capacity Analysis Results

Capacity analyses were performed at each of the study area intersections utilizing the procedures described above and the Synchro Version 8 analysis software (HCM 2010 results) to evaluate the future operating conditions during the SoS National Conference Weekday and Weekend Peak Periods. **Tables III.H-13 though III.H-17** summarize the results of the capacity analysis for the Annual Event Conditions. A detailed queuing analysis for the signalized intersections was also conducted and is provided in the Traffic Impact Study[6]. The following provides a description of the analysis results for each of the peak periods analyzed as well as a qualitative discussion of those periods for which it was determined that a full analysis was not required. The annual event conditions analysis assumes that the previously identified improvements at the Project Site entrance on NYS Route 17M/Training Center Lane/Site Access Roadway intersection would be in place, since those improvements are required in order to accommodate the additional traffic generated by the Amy's Kitchen facility under typical conditions. Several other potential measures that could be used to further accommodate these future annual event conditions are described below.

[6] See Appendix B, Traffic Impact Study: Amy's Kitchen & Science of the Soul, "Appendix E," prepared by Maser Consulting, P.A., April 5, 2016, Tables 7-E through 11-E for a summary of the detailed queuing analysis results.

Weekday Event

Weekday Morning Event Peak Entry Period (8:30 AM to 9:30 AM)

The capacity analysis conducted for the Weekday Morning Event Peak Entry Period, for which the results are summarized on **Table III.H-13**, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will experience operating difficulties on the eastbound approach as a result of the event entry traffic and would likely require manned police traffic control during the event entry period to accommodate the traffic volumes at the intersection.

The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the eastbound left-turn and westbound right-turn movements. The analysis indicates that the intersection can generally accommodate these volumes, but the eastbound left-turn movement is expected require other measures to function adequately. Manned police traffic control is likely to be required to accommodate traffic movements at this intersection during the event entry period.

The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road indicates that the intersection will generally accommodate the traffic volumes associated with the event entry period. The westbound through movement may experience operating difficulties. This intersection should be considered for manned police traffic control during this period.

The intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is expected to operate at LOS D on all movements during the event entry period with potential signal timing improvements. All other intersections are expected to operate a similar LOS to No-Build conditions.

Weekday Morning Event Exit Period (12:00 PM to 1:00 PM)

The capacity analysis conducted for the Weekday Morning Event Peak Exit Period, for which the results are summarized on **Table III.H-14**, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will operate at an overall LOS C and that the traffic volumes associated with the event exit period can be accommodate at the intersection without the need for manned police traffic control. The largest increase in traffic volumes at this intersection will be on the westbound through movement, which currently consists of two through lanes.

The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the southbound site access approach. The capacity analysis indicates that the intersection would operate at an overall LOS E under signal control with long delays on the southbound left-turn exiting movement. Manned police traffic control will likely be required to accommodate traffic movements at this intersection during the event exit period and to ensure efficient flow of traffic along NYS Route 17M.

The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road intersection indicates that the intersection will operate at an overall LOS B and that the traffic volumes associated with the event exit period can be accommodated without manned police traffic control. Similarly, the intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is also expected to operate at an overall LOS B during the event exit period. All other intersections are expected to operate a similar LOS to No-Build conditions.

Weekday Afternoon Event Peak Entry Period (2:30 PM to 3:30 PM)

The capacity analysis conducted for the Weekday Afternoon Event Peak Exit Period, for which the results are summarized on **Table III.H-15**, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will experience operating difficulties on the eastbound

approach as a result of the event entry traffic and would likely require manned police traffic control during the event entry period to accommodate the traffic volumes at the intersection.

The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the eastbound left-turn and westbound right-turn movements. The analysis indicates that an overall LOS F would be experienced with long delays on the eastbound left-turn and westbound through movements. Manned police traffic control will be required to accommodate traffic movements at this intersection during the event entry period and ensure efficient traffic flow along NYS Route 17M.

The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road indicates that the intersection will experience operating difficulty on the westbound approach as a result of the traffic volumes associated with the event entry period. Manned police traffic control will be required to accommodate traffic movements at this intersection during the event entry period and ensure efficient traffic flow along NYS Route 17M. Similarly, the intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is expected to operate above capacity on the westbound approach during the event entry period and manned police traffic control will be required to accommodate traffic movements and ensure efficient traffic flow along NYS Route 17M. All other intersections are expected to operate a similar LOS to No-Build conditions.

Weekday Afternoon Event Peak Exit Period (6:00 PM to 7:00 PM)

As previously indicated the background traffic volumes during the Weekday Afternoon Event Peak Exit Period are 75 percent of the 4:30 PM to 5:30 PM volumes along the roadway and are 90 percent of the 12:00 PM to 1:00 PM volumes. Therefore it was determined that a full analysis of the Weekday Afternoon Event Exit Period conditions is not required and that the Weekday Morning Event Exit Period conditions would be representative of the afternoon conditions. Similar to the Weekday Morning Event Exit Period (12:00 PM to 1:00 PM), it is anticipated that the traffic volumes associated with the event exit period will generally be accommodated at the area intersections at acceptable LOS. The need for manned police traffic control is anticipated to only be required at the NYS Route 17M and Training Center Lane/Site Access intersection during this period to ensure efficient and safe traffic flow along NYS Route 17M.

Weekend Event

Weekend Morning Event Peak Entry Period (8:30 AM to 9:30 AM)

As previously indicated the existing background traffic volumes during the Weekend (Saturday) Morning Event Peak Entry Period are 85 percent of the Saturday Peak Hour (12:00 PM to 1:00 PM) traffic volumes. Therefore it was determined that a full analysis of the Weekend Morning Event Peak Entry Period conditions is not required and that the Weekend Afternoon Event Peak Entry Period (2:30 PM to 3:30 PM) conditions, which are discussed below. Based on this, it is anticipated that manned police traffic control will be required are the NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 intersection as well as at the NYS Route 17M and Training Center Lane/Site Access intersection during this period to ensure efficient and safe traffic flow along NYS Route 17M.

Weekend Morning Event Peak Exit Period (12:00 PM to 1:00 PM)

The capacity analysis conducted for the Weekend Morning Event Peak Exit Period, for which the results are summarized on **Table III.H-16,** indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will operate at an overall LOS C and that the traffic volumes associated with the event exit period can be accommodated at the intersection without the need for manned police traffic control. The largest increase in traffic volumes at this intersection will

be on the westbound through movement, which currently consists of two through lanes through this location.

The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the southbound site access approach. The capacity analysis indicates that the intersection would operate at an overall LOS E under signal control with long delays on the southbound site access exiting movements. Manned police traffic control will likely be required to accommodate traffic movements at this intersection during the event exit period and to ensure efficient flow of traffic along NYS Route 17M.

The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road indicates that the intersection will operate at an overall LOS C and that the traffic volumes associated with the event exit period can be accommodated without manned police traffic control. Similarly, the intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is also expected to operate at an overall LOS C during the event exit period. All other intersections are expected to operate a similar LOS to No-Build conditions.

Weekend Afternoon Event Peak Entry Period (2:30 PM to 3:30 PM)

The capacity analysis conducted for the Weekend Afternoon Event Peak Entry Period, for which the results are summarized on **Table III.H-17**, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will experience operating difficulty on the eastbound approach as a result of the event entry traffic and would likely require manned police traffic control during the event entry period to accommodate the traffic volumes at the intersection.

The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the eastbound left-turn and westbound right-turn movements. The analysis indicates that LOS F would be experienced with the eastbound left-turn movement. Manned police traffic control will be required to accommodate traffic movements at this intersection during the event entry period and ensure efficient traffic flow along NYS Route 17M.

The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road indicates that the intersection will operate at an overall LOS B and that the traffic volumes associated with the event entry period can be accommodated without manned police traffic control. Similarly, the intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is expected to operate at an overall LOS D and the traffic volumes associated with the event entry period can be accommodate without manned police traffic control. All other intersections are expected to operate a similar LOS to No-Build conditions.

The Saturday 12:00 PM to 1:00 PM traffic volumes were utilized as the base traffic volumes for the analysis of the Weekend Event Peak Entry Period (2:30 PM and 3:30 PM). However, since the traffic volumes from 2:30 PM to 3:30 PM on a Saturday are approximately 91 percent of the Saturday Peak Hour (12:00 PM to 1:00 PM) existing traffic volumes, this analysis can be considered somewhat conservative. Therefore, somewhat better operating conditions than those summarized in **Table III.H-17** can be expected.

Weekend Afternoon Event Peak Exit Period (6:00 PM to 7:00 PM)

As previously indicated the background traffic volumes during the Weekend Afternoon Event Peak Exit Period are 65 percent of the 12:00 PM to 1:00 PM volumes along the roadway. Therefore it was determined that a full quantitative analysis of the Weekend Afternoon Event Exit Period conditions is not required and that the Weekend Morning Event Exit Period conditions would be representative of the afternoon conditions. Similar to the Weekday Morning

Event Exit Period (12:00 PM to 1:00 PM), it is anticipated that the traffic volumes associated with the event exit period will generally be accommodated at the area intersections at acceptable LOS. The need for manned police traffic control is anticipated to only be required at the NYS Route 17M and Training Center Lane/Site Access intersection during this period to ensure efficient and safe traffic flow along NYS Route 17M.

Weekend Event Sunday

As previously indicated the Sunday daily traffic volumes along NYS Route 17M are approximately 85 percent of the Saturday daily traffic volumes along the roadway and therefore it was determined that the Saturday traffic volumes would provide the most conservative analysis of Weekend Event conditions. More specifically, the traffic volumes between 8:30 AM and 9:30 AM on a Sunday are approximately 65 percent of the Saturday volumes for the same time period, while the traffic volumes between 12:00 PM and 1:00 PM on a Sunday are approximately 86 percent of the Saturday volumes for the same time period. The traffic volumes between 2:30 PM and 3:30 PM on a Sunday are approximately 89 percent of the Saturday volumes for the same time period, while the traffic volumes between 6:00 PM and 7:00 PM on a Sunday similar to Saturday. Therefore the conclusions regarding operating conditions and the need for manned police traffic control at area intersections described for each of the event entry and exit periods above also apply for a Sunday Event. In fact, in some case, specifically a Sunday Morning Event during the Peak Entry Period, the operating conditions may be better than on a Saturday and there may be less of a need for manned police traffic control.

RECOMMENDED MEASURES FOR NATIONAL AND REGIONAL EVENT CONDITIONS

As discussed above, to accommodate the Science of the Soul annual three (3)-day National Conference and two (2)-day Regional Conference conditions, certain traffic management strategies will have to be implemented to ensure that traffic to and from the site and on the surrounding roadways will operate efficiently. The following is a description of these recommended measures and will require coordination with the Town of Goshen.

Staggering of Start Times

The scheduling of Science of the Soul special events should be coordinated with existing traffic volumes along NYS Route 17M in order to reduce overall traffic impacts to the corridor. The proposed start time for Weekday Morning Event of 10:00 AM ensures that Peak Entry Period occurs after the AM Peak Highway Hour along NYS Route 17M and the Peak Exit Period occurs during the 12:00 PM to 1:00 PM hour when volumes along Route 17M are as much 80 percent of the PM Peak Hour volumes along the roadway. Weekday Afternoon Events, currently proposed to begin at 4:00 PM should be avoided as much as possible since this results in the Peak Entry Period occurring during the 2:30 to 3:30 PM hour when volumes are nearing the peak volumes along Route 17M. However, these Weekday afternoon events can be accommodated with the use of manned police traffic control and other mitigation measures discussed further below.

Weekend Morning events should be scheduled such that the Peak Exit Hour occurs prior to or after the 12:30 PM to 1:30 PM Peak Hour of traffic along NYS Route 17M when traffic volumes are as much as 10 percent lower than the highest Saturday peak period. Similarly, Weekend Afternoon Events could also be scheduled such that the Peak Entry Hour also does not occur during the Peak Hour of Traffic along NYS Route 17M.

Furthermore, if Amy's Kitchen is to be in operation during the SoS National Conferences, it would be beneficial to set the start times of the events such that the peak entry and/or exit

periods do not coincide with the peak hours of Amy's Generation (i.e. 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM).

Traffic Management

As indicated by the analysis results for the special event conditions, several of the study area intersections are expected to operate at capacity due to the large volume of traffic that is expected to be generated by the SoS site. During special events other arrangements with the Orange County Sheriff's office and/or State Police will also be necessary in order to manage the traffic flow along NYS Route 17M. This would be similar to what occurs at other regional venues that have special events such as the Bethel Woods Performing Arts Center in Sullivan County as well as the Orange County Fairgrounds. During these time periods, police control is provided at numerous off-site intersections to accommodate the peak flows along the corridor. Similar practices are also employed by SoS at their Petaluma and Fayetteville facilities.

SoS has indicated that coordination with both local law enforcement and Emergency Medical Technicians (EMTs) is an important component of their planning for special events. While events are typically staffed by volunteer security personnel, SoS will also seek to have four (4) to five (5) local law enforcement officers on site, typically off-duty officers. SoS also coordinates on traffic issues prior to events including meeting with town, county and state law enforcement agencies and go over plans and concerns.

Based on the results of the capacity analysis it is likely that coordination with local law enforcement for the management of traffic will be required for several area intersections including NYS Route 17M & C.R. 12/C.R. 50, NYS Route 17M & Training Center Lane/Site Access, NYS Route 17M & Hartley Road and NYS Route 17M & Maple Avenue/6½ Station Road.

Variable Message Signs (VMS) could also be utilized prior to events to inform local drivers of the upcoming events and potential delays along the NYS Route 17M corridor and the surrounding area. This would allow local drivers to avoid this area during the event weekends, utilizing other roadways in the area. The VMS signs could also be utilized during the event to direct attendees to appropriate locations as well as inform other drivers of delays on NYS Route 17M and the surrounding area. The placement of these VMS signs would have to be coordinated with the Town, County and State.

Another option to help distribute traffic volumes during the exit period after the event would be to request permission to use the emergency access connection to Echo Lake Road. This would lessen the potential impact on NYS Route 17M. Manned police traffic control would be required at the emergency access location as well in the event of its use.

Parking Flow and Management (Internal Circulation):

As mentioned previously, SoS will rely on volunteers to manage parking and pedestrian flow both in and around the site. The SoS internal traffic plans for the Annual Events use the following elements:

- Pedestrian/Vehicle Separation – The parking plan for the SoS National Conference is such that the spaces closest to the venue are filled first and then farther spaces are filled, row by row. This is done to separate pedestrians from newly parking cars. Bus parking is provided in a separate area so that those unloading from buses do not have to cross incoming traffic. As shown on the site plan the bus parking is on the opposite side of the event area from the passenger car parking.

- Special Needs Separation - Upon entry vehicles with elderly and handicapped stickers would separate from general traffic. Special needs vehicles would be directed to a dedicated parking area closer to the event area, again trying to avoid pedestrian-vehicle conflict.
- Shuttle – Shuttles are typically provided for those parking in faraway locations. Shuttle vans are utilized within the property for this purpose. Similar shuttle vans would also be used for shuttling of people to the Strong Farm Overflow Parking location as previously indicated.

The proposed site plans for the SoS site take into account SoS staff's long experience with traffic and pedestrian flow during these special events.

Table III.H-2
Level of Service Summary Table
2033 Build Conditions - Weekday AM Peak Hour Of Amy's Generation (6:00 AM - 7:00 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	UNSIGNALIZED												
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.22	B	10.3	0.24	B	10.6	0.25	B	10.7	0.1
	RAMPS												
2,3,4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	B	10.4	-	B	11.4	-	B	11.9	0.5
	NYS ROUTE 17M EB WEAVE			0.25	A	9.2	0.28	A	10.3	0.30	A	11.1	0.8
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	B	13.1	-	B	14.1	-	B	15.1	1.0
	NYS ROUTE 17M WB WEAVE			0.08	A	2.6	0.08	A	2.9	0.09	A	3.0	0.1
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	5.3	-	A	5.6	-	A	5.8	0.2
	SIGNALIZED												
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.04	A	5.7	0.05	A	6.4	0.06	A	6.8	0.4
			TR	0.86	C	20.9	0.98	D	37.3	1.11	F	78.9	41.6
	ROUTE 6/17M	WB	L	0.11	B	12.9	0.19	B	19.0	0.24	B	20.0	1.0
			T	0.15	A	7.0	0.17	A	8.1	0.19	A	8.5	0.4
			TR	0.15	A	7.0	0.17	A	8.1	0.19	A	8.6	0.5
	LOWER ROAD (C.R. 12)	NB	LTR	0.56	C	31.0	0.61	C	31.3	0.62	C	31.3	0.0
	C.R. 50	SB	LTR	0.38	C	29.5	0.45	C	29.7	0.48	C	30.0	0.3
		OVERALL		**-**	**C**	**20.0**	**-**	**C**	**30.0**	**-**	**D**	**54.8**	24.8
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.05	A	5.6	-0.8
			TR	-	-	-	-	-	-	0.98	D	38.3	1.0
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.25	C	25.4	6.4
			T	-	-	-	-	-	-	0.17	A	7.1	-1.0
			TR	-	-	-	-	-	-	0.17	A	7.1	-1.0
	LOWER ROAD (C.R. 12)	NB	LTR	-	-	-	-	-	-	0.78	D	51.7	20.4
	C.R. 50	SB	LTR	-	-	-	-	-	-	0.67	D	46.2	16.5
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**34.4**	4.4
	UNSIGNALIZED												
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.01	A	7.9	0.01	A	8.0	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.02	C	21.8	0.02	D	26.6	-	-	-	-
	UNSIGNALIZED												
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.01	B	12.8	0.02	B	13.9	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.00	A	0.0	0.00	A	0.0	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.23	A	3.7	-
			T	-	-	-	-	-	-	0.90	B	18.7	-
			R	-	-	-	-	-	-	0.02	A	3.2	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.05	B	13.1	-
			T	-	-	-	-	-	-	0.32	A	6.1	-
			R	-	-	-	-	-	-	0.11	A	4.8	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.00	A	0.0	-
			R	-	-	-	-	-	-	0.00	A	0.0	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.17	D	37.3	-
			R	-	-	-	-	-	-	0.42	D	37.9	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**14.7**	-

Table III.H-2 (cont'd)
Level of Service Summary Table
2033 Build Conditions - Weekday AM Peak Hour Of Amy's Generation (6:00 AM - 7:00 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	SIGNALIZED												
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.80	A	6.7	0.85	A	9.6	0.87	B	11.4	1.8
	ROUTE 6/17M	WB	LTR	0.26	A	3.3	0.27	A	3.0	0.33	A	3.3	0.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.19	B	17.7	0.25	C	21.7	0.33	C	23.4	1.7
	HARTLEY ROAD	SB	LTR	0.05	B	17.5	0.06	C	21.1	0.10	C	22.8	1.7
		OVERALL		**-**	**A**	**6.6**	**-**	**A**	**8.9**	**-**	**B**	**10.3**	1.4
	SIGNALIZED												
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.09	A	9.8	0.10	A	9.9	0.10	B	11.2	1.3
			TR	0.90	B	12.6	0.92	B	14.9	0.92	B	15.8	0.9
	ROUTE 6/17M	WB	L	0.09	C	23.0	0.11	C	26.4	0.12	C	27.1	0.7
			TR	0.74	C	20.7	0.80	C	23.7	0.83	C	23.1	-0.6
	6 1/2 STATION ROAD	NB	LTR	0.22	C	22.5	0.22	C	25.7	0.23	C	26.3	0.6
	MAPLE AVENUE	SB	LTR	0.18	C	22.5	0.26	C	25.7	0.26	C	26.3	0.6
		OVERALL		**-**	**B**	**15.0**	**-**	**B**	**17.4**	**-**	**B**	**18.3**	0.9
	UNSIGNALIZED												
10	U.S. ROUTE 6/NYS ROUTE 17M &												
	POLICE HIGHWAY	NB	R	0.13	C	16.5	0.16	C	18.3	0.16	B	18.7	0.4
	UNSIGNALIZED												
11	HARTLEY ROAD &												
	ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.01	A	7.5	0.01	A	7.5	0.02	A	7.5	0.0
		NB	LR	0.01	A	9.3	0.01	A	9.4	0.01	A	9.4	0.0
	UNSIGNALIZED												
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.15	B	10.9	0.19	B	11.6	0.20	B	11.7	0.1
	McVEIGH ROAD	WB	LTR	0.05	B	11.7	0.06	B	12.8	0.07	B	13.0	0.2
	GOLF LINKS ROAD	NB	LTR	0.03	A	7.5	0.04	A	7.6	0.04	A	7.6	0.0
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.5	0.01	A	7.6	0.01	A	7.6	0.0
	WITH ALL-WAY STOP CONTROL[3]												
	McVEIGH ROAD	EB	LTR	-	-	-	0.04	A	8.0	0.04	A	8.1	0.1
	McVEIGH ROAD	WB	LTR	-	-	-	0.16	A	8.4	0.17	A	8.4	0.0
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.27	A	9.2	0.27	A	9.3	0.1
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.14	A	8.4	0.16	A	8.5	0.1
	UNSIGNALIZED												
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.00	A	7.3	0.01	A	7.3	0.01	A	7.3	0.0
	McVEIGH ROAD	SB	L	0.09	A	9.1	0.10	A	9.2	0.10	A	9.2	0.0
	UNSIGNALIZED												
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.06	A	7.6	0.07	A	7.6	0.07	A	7.6	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.27	B	10.9	0.30	B	11.4	0.31	B	11.4	0.0
	WITH SIGNALIZATION												
14	FLETCHER STREET	EB	TR	-	-	-	0.18	B	11.5	0.18	B	11.6	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.25	B	13.0	0.27	B	13.0	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.36	B	13.5	0.38	B	13.7	0.2
		OVERALL		-	-	-	-	B	12.9	-	B	13.0	0.1

Table III.H-2 (cont'd)
Level of Service Summary Table
2033 Build Conditions - Weekday AM Peak Hour Of Amy's Generation (6:00 AM - 7:00 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.02	A	7.9	0.02	A	7.9	0.03	A	7.9	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.07	B	10.0	0.08	B	10.2	0.08	B	10.3	0.1
WITH SIGNALIZATION													
15	FLETCHER STREET	EB	LT	-	-	-	0.22	A	3.7	0.23	A	3.7	0.0
	FLETCHER STREET	WB	TR	-	-	-	0.37	B	13.5	0.37	B	13.5	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.08	B	10.8	0.08	B	10.8	0.0
		OVERALL		-	-	-	-	B	9.7	-	B	9.7	0.0
UNSIGNALIZED													
16	NYS ROUTE 17M & CANNON HILL DRIVE[3]												
	NYS ROUTE 17M	WB	LT	0.06	B	10.8	0.07	B	11.6	0.07	B	11.7	0.1
	CANNON HILL DRIVE	NB	LR	0.35	F	37.3	0.69	F	74.4	0.78	F	96.8	(See Note 4)

Notes:

1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. Analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS For Ramp And Weaving Segment Type Intersection Is Determined By The Density Measured In Units Of Passenger Cars Per Mile Per Lane, Which Are The Values Summarized Above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The intersection of Golf Links Road and McVeigh Road will operate at improved LOS as an "all way" stop control regardless of the proposed project.
4. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would improve the operation of this intersection and reduce this delay increase.

Source: Table 2, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-3
Level of Service Summary Table
2033 Build Conditions - Weekday AM Peak Highway Hour (7:30 AM - 8:30 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	UNSIGNALIZED												
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.71	C	22.6	0.81	D	30.4	0.82	D	31.3	0.9
	RAMPS												
2,3,4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	B	11.6	-	B	12.7	-	B	12.9	0.2
	NYS ROUTE 17M EB WEAVE			0.30	A	10.5	0.33	A	11.7	0.34	B	12.1	0.4
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	B	13.2	-	B	14.2	-	B	14.7	0.5
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.17	A	6.1	0.17	A	6.2	0.1
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	8.1	-	A	8.7	-	A	8.9	0.2
	SIGNALIZED												
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.09	A	8.4	0.12	A	9.9	0.13	B	10.2	0.3
			TR	0.97	D	40.8	1.13	F	92.9	1.20	F	119.8	26.9
	ROUTE 6/17M	WB	L	0.47	B	19.9	0.55	C	21.2	0.57	C	21.3	0.1
			T	0.36	B	11.2	0.42	B	13.6	0.44	B	14.1	0.5
			TR	0.36	B	11.2	0.42	B	13.5	0.44	B	14.0	0.5
	LOWER ROAD (C.R. 12)	NB	LTR	0.66	C	31.3	0.71	C	33.2	0.71	C	33.4	0.2
	C.R. 50	SB	LTR	0.37	C	28.3	0.42	C	28.1	0.43	C	28.1	0.0
		OVERALL		**-**	**C**	**28.6**	**-**	**D**	**52.8**	**-**	**E**	**65.4**	12.6
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.12	A	9.3	-0.6
			TR	-	-	-	-	-	-	1.09	F	75.2	-17.7
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.64	C	26.2	5.0
			T	-	-	-	-	-	-	0.40	B	12.8	-0.8
			TR	-	-	-	-	-	-	0.41	B	12.7	-0.8
	LOWER ROAD (C.R. 12)	NB	LTR	-	-	-	-	-	-	0.82	D	49.7	16.5
	C.R. 50	SB	LTR	-	-	-	-	-	-	0.50	C	34.3	6.2
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**47.6**	-5.2
	UNSIGNALIZED												
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.03	A	9.2	0.04	A	9.6	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.10	F	58.2	0.14	F	87.2	-	-	-	-
	UNSIGNALIZED												
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.06	B	13.4	0.07	B	14.6	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.44	F	64.7	0.66	F	115.1	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.27	B	10.1	-
			T	-	-	-	-	-	-	0.95	C	29.4	-
			R	-	-	-	-	-	-	0.08	A	5.1	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.23	C	20.7	-
			T	-	-	-	-	-	-	0.74	B	14.8	-
			R	-	-	-	-	-	-	0.06	A	5.6	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.18	D	44.0	-
			R	-	-	-	-	-	-	0.25	C	33.7	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.39	D	44.7	-
			R	-	-	-	-	-	-	0.24	D	35.0	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**22.7**	-

Table III.H-3 (cont'd)
Level of Service Summary Table
2033 Build Conditions - Weekday AM Peak Highway Hour (7:30 AM - 8:30 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	SIGNALIZED												
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.83	B	10.1	0.90	B	17.4	0.92	C	20.6	3.2
	ROUTE 6/17M	WB	LTR	0.51	A	5.3	0.55	A	5.7	0.58	A	6.2	0.5
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.40	C	21.1	0.47	C	25.6	0.49	C	26.4	0.8
	HARTLEY ROAD	SB	LTR	0.14	C	20.1	0.16	C	24.1	0.16	C	24.6	0.5
		OVERALL		**-**	**A**	**9.5**	**-**	**B**	**14.2**	**-**	**B**	**16.1**	1.9
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	LTR	-	-	-	-	-	-	0.92	B	19.6	2.2
	ROUTE 6/17M	WB	LTR	-	-	-	-	-	-	0.57	A	6.0	0.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	-	-	-	-	-	-	0.5	C	27.2	1.6
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.16	C	25.3	1.2
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**15.6**	1.4
	SIGNALIZED												
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.10	B	18.8	0.11	C	21.5	0.10	C	23.6	2.1
			TR	0.92	B	15.6	0.94	C	22.3	0.98	D	36.6	14.3
	ROUTE 6/17M	WB	L	0.22	C	27.1	0.28	C	32.4	0.33	D	39.6	7.2
			TR	0.88	B	18.9	0.91	C	21.4	0.93	C	29.5	8.1
	6 1/2 STATION ROAD	NB	LTR	0.27	C	23.9	0.31	C	28.0	0.34	C	34.1	6.1
	MAPLE AVENUE	SB	LTR	0.45	C	25.1	0.51	C	29.5	0.56	D	36.0	6.5
		OVERALL		**-**	**B**	**18.3**	**-**	**C**	**23.1**	**-**	**C**	**33.7**	10.6
	UNSIGNALIZED												
10	U.S. ROUTE 6/NYS ROUTE 17M &												
	POLICE HIGHWAY	NB	R	0.17	C	17.0	0.21	C	19.1	0.22	C	19.6	0.5
	UNSIGNALIZED												
11	HARTLEY ROAD &												
	ECHO LAKE ROAD & CHEECHUNK ROAD	WB	LT	0.00	A	7.7	0.00	A	7.7	0.01	A	7.7	0.0
		NB	LR	0.02	B	10.1	0.02	B	10.1	0.02	A	10.1	0.0
	UNSIGNALIZED												
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.22	B	11.6	0.27	B	12.5	0.27	B	12.6	0.1
	McVEIGH ROAD	WB	LTR	0.23	B	13.4	0.29	C	15.4	0.29	C	15.6	0.2
	GOLF LINKS ROAD	NB	LTR	0.03	A	7.5	0.04	A	7.5	0.04	A	7.5	0.0
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.5	0.01	A	7.5	0.01	A	7.6	0.1
	WITH ALL-WAY STOP CONTROL[3]												
	McVEIGH ROAD	EB	LTR	-	-	-	0.19	A	9.1	0.19	A	9.1	0.0
	McVEIGH ROAD	WB	LTR	-	-	-	0.23	A	9.1	0.23	A	9.2	0.1
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.27	A	9.8	0.27	A	9.8	0.0
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.15	A	9.0	0.15	A	9.0	0.0
	UNSIGNALIZED												
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.00	A	7.5	0.01	A	7.5	0.01	A	7.5	0.0
	McVEIGH ROAD	SB	L	0.15	B	10.0	0.17	B	10.2	0.17	B	10.2	0.0

Table III.H-3 (cont'd)
Level of Service Summary Table
2033 Build Conditions - Weekday AM Peak Highway Hour (7:30 AM - 8:30 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.15	A	8.4	0.16	A	8.5	0.16	A	8.5	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	1.27	F	172.8	1.56	F	295.7	1.57	F	298.9	3.2
WITH SIGNALIZATION													
14	FLETCHER STREET	EB	TR	-	-	-	0.44	B	14.4	0.44	B	14.5	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.83	C	21.4	0.84	C	21.9	0.5
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.78	C	23.7	0.78	C	24.1	0.4
		OVERALL		-	-	-	-	C	20.7	-	C	21.0	0.3
UNSIGNALIZED													
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.05	A	8.9	0.06	A	9.1	0.07	A	9.1	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.45	C	19.7	0.53	C	23.9	0.54	C	24.2	0.3
WITH SIGNALIZATION													
15	FLETCHER STREET	EB	LT	-	-	-	0.90	C	24.9	0.92	C	28.2	3.3
	FLETCHER STREET	WB	TR	-	-	-	0.73	C	21.1	0.73	C	21.1	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.33	B	13.2	0.33	B	13.2	0.0
		OVERALL		-	-	-	-	C	21.4	-	C	22.8	1.4
UNSIGNALIZED													
16	NYS ROUTE 17M & CANNON HILL DRIVE[3]												
	NYS ROUTE 17M	WB	LT	0.04	B	12.5	0.02	B	13.3	0.02	B	13.6	0.3
	CANNON HILL DRIVE	NB	LR	0.34	F	54.7	0.46	F	77.9	0.50	F	88.8	(See Note 4)

Notes:
1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. Analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS For Ramp And Weaving Segment Type Intersection Is Determined By The Density Measured In Units Of Passenger Cars Per Mile Per Lane, Which Are The Values Summarized Above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The intersection of Golf Links Road and McVeigh Road will operate at improved LOS as an "all way" stop control regardless of the proposed project.
4. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would improve the operation of this intersection and reduce this delay increase.

Source: Table 3, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-4
Level of Service Summary Table
2033 Build Conditions - Weekday PM peak Hour Of Amy's Generation (3:00 PM - 4:00 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	UNSIGNALIZED												
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.73	D	25.9	0.84	E	37.4	0.87	E	41.0	(See Note 3)
	RAMPS												
2,3,4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	8.7	-	A	9.6	-	A	9.9	0.3
	NYS ROUTE 17M EB WEAVE			0.23	A	7.6	0.25	A	8.4	0.26	A	9.0	0.6
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.9	-	B	10.5	-	B	11.4	0.9
	NYS ROUTE 17M WB WEAVE			0.20	A	7.3	0.21	A	8.1	0.23	A	8.6	0.5
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	B	11.4	-	B	12.2	-	B	12.8	0.6
	SIGNALIZED												
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.10	B	13.1	0.14	B	15.2	0.16	B	15.9	0.7
			TR	0.68	C	23.3	0.79	C	30.0	0.92	D	41.5	11.5
	ROUTE 6/17M	WB	L	0.56	B	14.4	0.71	B	19.4	0.88	C	32.6	13.2
			T	0.55	B	16.2	0.63	B	19.4	0.69	C	21.2	1.8
			TR	0.55	B	16.2	0.63	B	19.4	0.69	C	21.1	1.7
	LOWER ROAD (C.R. 12)	NB	LTR	0.70	D	35.5	0.81	D	46.2	0.85	D	51.3	5.1
	C.R. 50	SB	LTR	0.54	C	29.9	0.64	C	32.8	0.68	C	34.6	1.8
		OVERALL		**-**	**C**	**21.6**	**-**	**C**	**26.8**	**-**	**C**	**32.4**	**5.6**
	UNSIGNALIZED												
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.8	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.00	0.00	A	0.00	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.00	0.00	A	0.00	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.45	F	50.9	0.67	F	93.3	-	-	-	-
	UNSIGNALIZED												
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.00	A	9.2	0.01	A	9.5	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.25	F	51.7	0.37	F	77.3	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.77	C	34.4	-
			TR	-	-	-	-	-	-	0.56	A	4.9	-
				-	-	-	-	-	-	0.01	A	1.8	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.00	A	6	-
			T	-	-	-	-	-	-	0.97	C	32.3	-
			R	-	-	-	-	-	-	0.09	A	4.7	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.24	D	45.6	-
			R	-	-	-	-	-	-	0.09	D	39.6	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	1.10	F	175.7	-
			R	-	-	-	-	-	-	0.14	A	3.0	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**25.7**	-
	SIGNALIZED												
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.59	A	6.2	0.64	A	7.1	0.71	A	9.0	1.9
	ROUTE 6/17M	WB	LTR	0.78	A	8.4	0.86	B	13.7	0.91	B	19.0	5.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.41	B	19.3	0.48	C	24.2	0.53	C	26.2	2.0
	HARTLEY ROAD	SB	LTR	0.09	B	18.1	0.10	C	22.2	0.13	C	23.8	1.6
		OVERALL		**-**	**A**	**8.6**	**-**	**B**	**12.2**	**-**	**B**	**15.8**	3.6
	SIGNALIZED												
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.32	C	30	0.43	D	38.1	0.48	D	42.1	4.0
			TR	0.89	C	21.8	0.92	C	26.7	0.93	C	32.3	5.6
	ROUTE 6/17M	WB	L	0.07	B	19.2	0.08	C	23.7	0.09	C	26.8	3.1
			TR	0.92	B	18.7	0.95	C	29.2	0.97	D	36.3	7.1
	6 1/2 STATION ROAD	NB	LTR	0.47	C	26.1	0.59	C	32.2	0.62	D	35.9	3.7
	MAPLE AVENUE	SB	LTR	0.51	C	26.2	0.51	C	31.2	0.52	C	34.0	2.8
		OVERALL		**-**	**C**	**21.4**	**-**	**C**	**29.1**	**-**	**C**	**34.9**	5.8

Table III.H-4 (cont'd)
Level of Service Summary Table
2033 Build Conditions - Weekday PM peak Hour Of Amy's Generation (3:00 PM - 4:00 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	UNSIGNALIZED												
10	U.S. ROUTE 6/NYS ROUTE 17M &												
	POLICE HIGHWAY	NB	R	0.05	B	12.4	0.06	B	13.2	0.06	B	13.9	0.7
	UNSIGNALIZED												
11	HARTLEY ROAD &												
	ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.01	A	7.5	0.01	A	7.5	0.02	A	7.5	0.0
		NB	LR	0.05	B	10.8	0.06	B	11.1	0.06	B	11.0	-0.1
	UNSIGNALIZED												
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.27	B	14.3	0.36	C	16.7	0.38	C	17.2	0.5
	McVEIGH ROAD	WB	LTR	0.90	F	56.4	1.16	F	135.3	1.21	F	153.9	18.6
	GOLF LINKS ROAD	NB	LTR	0.05	A	7.8	0.07	A	8.0	0.07	A	8.0	0.0
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.7	0.01	A	7.7	0.02	A	7.8	0.1
	WITH ALL-WAY STOP CONTROL[4]												
	McVEIGH ROAD	EB	LTR	-	-	-	0.66	C	20.3	0.67	C	20.9	0.6
	McVEIGH ROAD	WB	LTR	-	-	-	0.31	C	12.3	0.32	B	12.6	0.3
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.55	B	17.0	0.57	C	17.9	0.9
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.47	C	15.2	0.49	C	15.8	0.6
	UNSIGNALIZED												
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	McVEIGH ROAD	SB	L	0.12	B	10.1	0.14	B	10.3	0.14	B	10.3	0.0
	UNSIGNALIZED												
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.06	A	8.0	0.07	A	8.1	0.07	A	8.1	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.41	C	24.3	0.59	D	30.4	0.61	D	31.0	0.6
	WITH SIGNALIZATION												
14	FLETCHER STREET	EB	TR	-	-	-	0.44	B	14.5	0.45	B	14.6	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.70	A	9.2	0.70	A	9.4	0.2
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.29	B	12.7	0.30	B	12.8	0.1
		OVERALL		-	-	-	-	B	11.5	-	B	11.7	0.2
	UNSIGNALIZED												
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.06	A	0.06	0.07	A	8.5	0.07	A	8.6	0.1
	FLETCHER STREET	WB	TR	0.00	A	0.00	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.71	D	0.71	0.85	E	44.8	0.86	E	46.9	2.1
	WITH SIGNALIZATION												
15	FLETCHER STREET	EB	LT	-	-	-	0.57	A	7.1	0.59	A	7.6	0.5
	FLETCHER STREET	WB	TR	-	-	-	0.56	B	16.5	0.56	B	16.5	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.56	B	16.6	0.56	B	16.6	0.0
		OVERALL		-	-	-	-	B	13.5	-	B	13.6	0.1
	UNSIGNALIZED												
16	NYS ROUTE 17M & CANNON HILL DRIVE[4]												
	NYS ROUTE 17M	WB	LT	0.06	A	9.8	0.07	B	10.3	0.07	B	10.4	0.1
	CANNON HILL DRIVE	NB	LR	0.80	F	115.2	1.21	F	270.1	1.63	F	[-]	(See Note 5)

Notes:

1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. Analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS For Ramp And Weaving Segment Type Intersection Is Determined By The Density Measured In Units Of Passenger Cars Per Mile Per Lane, Which Are The Values Summarized Above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The I-84 Westbound Off Ramp Connection to NYS Route 17M is presently "stop" controlled. Replacing this with "yield" control would reduce delays on the westbound off-ramp approach.
4. The intersection of Golf Links Road and McVeigh Road will operate at improved LOS as an "all way" stop control regardless of the proposed project.
5. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would improve the operation of this intersection and reduce this delay increase.

Source: Table 4, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-5
Level of Service Summary Table
2033 Build Conditions - Weekday PM Peak Highway Hour (4:30 PM - 5:30 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	UNSIGNALIZED												
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.80	D	31.2	0.93	E	49.8	0.93	F	51.3	(See Note 3)
	RAMPS												
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	8.9	-	A	9.7	-	A	9.9	0.2
	NYS ROUTE 17M EB WEAVE			0.25	A	8.1	0.28	A	8.9	0.28	A	9.2	0.3
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.9	-	B	10.6	-	B	10.9	0.3
	NYS ROUTE 17M WB WEAVE			0.21	A	7.9	0.23	A	8.8	0.24	A	9.0	0.2
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	B	11.7	-	B	12.6	-	B	12.7	0.1
	SIGNALIZED												
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.04	B	12.1	0.07	B	15.0	0.07	B	15.3	0.3
			TR	0.70	C	22.1	0.82	C	31.6	0.88	D	36.0	4.4
	ROUTE 6/17M	WB	L	0.55	B	13.7	0.73	C	20.2	0.80	C	23.8	3.6
			T	0.55	B	14.6	0.64	B	18.9	0.66	B	19.6	0.7
			TR	0.55	B	14.5	0.64	B	18.9	0.66	B	19.6	0.7
	LOWER ROAD (C.R. 12)	NB	LTR	0.66	C	33.0	0.73	D	38.3	0.73	D	38.8	0.5
	C.R. 50	SB	LTR	0.54	C	30.2	0.62	C	32.0	0.62	C	32.3	0.3
		OVERALL		**-**	**C**	**20.1**	**-**	**C**	**25.9**	**-**	**C**	**27.8**	**1.9**
	UNSIGNALIZED												
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.61	F	84.1	0.91	F	174.0	-	-	-	-
	UNSIGNALIZED												
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.01	A	9.2	0.01	A	9.5	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.09	E	37.0	0.11	E	48.6	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.37	C	26.0	-
			T	-	-	-	-	-	-	0.56	A	5.2	-
			R	-	-	-	-	-	-	0.00	A	2.0	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.01	A	6.6	-
			T	-	-	-	-	-	-	0.98	C	32.4	-
			R	-	-	-	-	-	-	0.04	A	4.3	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.06	D	45.1	-
			R	-	-	-	-	-	-	0.04	D	38.4	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.49	D	46.7	-
			R	-	-	-	-	-	-	0.08	A	2.4	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**21.4**	-
	SIGNALIZED												
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.60	A	5.9	0.65	A	6.9	0.67	A	7.4	0.5
	ROUTE 6/17M	WB	LTR	0.79	A	8.2	0.87	B	13.9	0.89	B	15.7	1.8
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.39	B	19.6	0.46	C	24.6	0.48	C	25.4	0.8
	HARTLEY ROAD	SB	LTR	0.10	B	18.5	0.12	C	22.8	0.13	C	23.6	0.8
		OVERALL		**-**	**A**	**8.4**	**-**	**B**	**12.1**	**-**	**B**	**13.4**	1.3
	SIGNALIZED												
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.35	C	27.9	0.46	D	35.0	0.49	D	36.8	1.8
			TR	0.89	B	19.3	0.91	C	23.3	0.92	C	25.6	2.3
	ROUTE 6/17M	WB	L	0.09	C	20.0	0.10	C	24.6	0.11	C	25.8	1.2
			TR	0.91	B	15.9	0.94	C	24.7	0.94	C	26.9	2.2
	6 1/2 STATION ROAD	NB	LTR	0.47	C	24.3	0.56	C	29.5	0.57	C	30.8	1.3
	MAPLE AVENUE	SB	LTR	0.46	C	24.4	0.49	C	28.8	0.49	C	30.0	1.2
		OVERALL		**-**	**B**	**19.1**	**-**	**C**	**25.4**	**-**	**C**	**27.4**	2.0

Table III.H-5 (cont'd)
Level of Service Summary Table
2033 Build Conditions - Weekday PM Peak Highway Hour (4:30 PM - 5:30 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	UNSIGNALIZED												
10	U.S. ROUTE 6/NYS ROUTE 17M &												
	POLICE HIGHWAY	NB	R	0.05	B	12.5	0.06	B	13.4	0.06	B	13.6	0.2
	UNSIGNALIZED												
11	HARTLEY ROAD &												
	ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.01	A	7.4	0.01	A	7.4	0.01	A	7.4	0.0
		NB	LR	0.04	A	9.8	0.05	A	10.0	0.05	A	10.1	0.1
	UNSIGNALIZED												
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.20	B	13.5	0.26	B	14.9	0.26	B	14.9	0.0
	McVEIGH ROAD	WB	LTR	0.58	D	26.2	0.75	E	41.8	0.76	E	43.2	1.4
	GOLF LINKS ROAD	NB	LTR	0.06	A	7.8	0.07	A	8.0	0.08	A	8.0	0.0
	GOLF LINKS ROAD	NB	LTR	0.01	A	7.6	0.01	A	7.7	0.01	A	7.7	0.0
	WITH ALL-WAY STOP CONTROL[5]												
	McVEIGH ROAD	EB	LTR	-	-	-	0.39	B	12.2	0.39	B	12.3	0.1
	McVEIGH ROAD	WB	LTR	-	-	-	0.20	B	10.1	0.20	B	10.2	0.1
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.45	B	13.1	0.45	B	13.2	0.1
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.38	B	12.0	0.39	B	12.1	0.1
	UNSIGNALIZED												
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.00	A	7.7	0.01	A	7.7	0.01	A	7.7	0.0
	McVEIGH ROAD	SB	L	0.08	A	9.4	0.08	A	9.5	0.08	A	9.5	0.0
	UNSIGNALIZED												
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.04	A	7.9	0.05	A	8.0	0.05	A	8.0	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.37	C	16.8	0.43	C	19.2	0.44	C	19.2	0.0
	WITH SIGNALIZATION												
14	FLETCHER STREET	EB	TR	-	-	-	0.38	B	13.5	0.38	B	13.6	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.39	A	4.6	0.40	A	4.6	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.28	B	12.5	0.28	B	12.6	0.1
		OVERALL		-	-	-	-	A	9.8	-	A	9.9	0.1
	UNSIGNALIZED												
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.09	A	8.2	0.11	A	8.3	0.11	A	8.3	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.41	C	18.4	0.49	C	22.1	0.49	C	22.3	0.2
	WITH SIGNALIZATION												
15	FLETCHER STREET	EB	LT	-	-	-	0.66	A	9.6	0.67	A	9.9	0.3
	FLETCHER STREET	WB	TR	-	-	-	0.49	B	15.1	0.49	B	15.1	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.29	B	12.6	0.29	B	12.6	0.0
		OVERALL		-	-	-	-	B	12.3	-	B	12.4	0.1
	UNSIGNALIZED												
16	NYS ROUTE 17M & CANNON HILL DRIVE[5]												
	NYS ROUTE 17M	WB	LT	0.04	B	10.7	0.05	B	11.2	0.05	B	11.4	0.2
	CANNON HILL DRIVE	NB	LR	0.99	F	165.7	1.52	F	391.8	1.68	F	[-]	(See Note 6)

Notes:

1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. Analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS For Ramp And Weaving Segment Type Intersection Is Determined By The Density Measured In Units Of Passenger Cars Per Mile Per Lane, Which Are The Values Summarized Above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The I-84 Westbound Off Ramp Connection to NYS Route 17M is presently "stop" controlled. Replacing this with "yield" control would reduce delays on the westbound off-ramp approach.
4. Note that there is limited exiting traffic from training center lane during the PM peak hour (i.e., less than 10 vehicles) due to the hours of operation.
5. The intersection of Golf Links Road and McVeigh Road will operate at improved LOS as an "all way" stop control regardless of the proposed project.
6. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would improve the operation of this intersection and reduce this delay increase.

Source: Table 5, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-6
Level of Service Summary Table
2033 Build Conditions - Saturday Peak Hour

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	UNSIGNALIZED												
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.48	C	15.0	0.54	C	16.9	0.55	C	17.2	0.3
	RAMPS												
2,3,4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	7.3	-	A	8.0	-	A	8.1	0.1
	NYS ROUTE 17M EB WEAVE			0.17	A	6.2	0.19	A	6.8	0.19	A	6.9	0.1
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.8	-	B	10.4	-	B	10.6	0.2
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.17	A	6.0	0.17	A	6.2	0.2
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	9.4	-	B	10.1	-	B	10.3	0.2
	SIGNALIZED												
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.07	B	10.6	0.10	B	12.8	0.10	B	13.1	0.3
			TR	0.59	B	17.9	0.69	C	23.2	0.72	C	24.4	1.2
	ROUTE 6/17M	WB	L	0.31	B	11.4	0.40	B	14.4	0.43	B	15.1	0.7
			T	0.42	B	13.1	0.49	B	16.2	0.52	B	16.8	0.6
			TR	0.42	B	13.1	0.49	B	16.2	0.52	B	16.8	0.6
	LOWER ROAD (C.R. 12)	NB	LTR	0.68	C	32.3	0.74	D	36.4	0.74	D	36.7	0.3
	C.R. 50	SB	LTR	0.48	C	28.4	0.54	C	28.4	0.54	C	28.6	0.2
		OVERALL		**-**	**B**	**18.8**	**-**	**C**	**22.4**	**-**	**C**	**22.9**	**0.5**
	UNSIGNALIZED												
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.01	A	9.6	0.01	A	9.9	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.01	E	36.6	0.01	E	46.4	0.01	D	33.1	-13.3
	PSYCH. CENTER S.	SB	LTR	0.16	D	29.9	0.22	E	38.3	-	-	-	-
	UNSIGNALIZED												
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.05	A	9.8	0.06	B	10.2	-	-	-	-
	TRAINING CENTER LANE	NB	LR	1.04	F	143.7	1.48	F	321.8	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.20	B	15.2	-
			T	-	-	-	-	-	-	0.87	C	24.6	-
			R	-	-	-	-	-	-	0.16	B	10.6	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.22	B	14.3	-
			T	-	-	-	-	-	-	0.92	C	29.6	-
			R	-	-	-	-	-	-	0.03	A	6.8	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.68	C	32.2	-
			R	-	-	-	-	-	-	0.40	C	28.9	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.39	C	31.4	-
			R	-	-	-	-	-	-	0.54	C	31.0	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**26.0**	-
	SIGNALIZED												
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.61	A	6.3	0.66	A	6.5	0.68	A	6.6	0.1
	ROUTE 6/17M	WB	LTR	0.59	A	6.1	0.63	A	6.2	0.63	A	6.2	0.0
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.26	B	12.7	0.3	B	14.3	0.32	B	15.0	0.7
	HARTLEY ROAD	SB	LTR	0.07	B	12.3	0.08	B	13.7	0.09	B	14.4	0.7
		OVERALL		**-**	**A**	**6.8**	**-**	**A**	**7.1**	**-**	**A**	**7.2**	0.1
	SIGNALIZED												
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.24	B	17.8	0.29	B	19.7	0.28	B	19.3	-0.4
			TR	0.84	B	13.3	0.86	B	13.8	0.87	B	13.2	-0.6
	ROUTE 6/17M	WB	L	0.12	B	15.1	0.14	B	16.8	0.17	B	18.2	1.4
			TR	0.85	B	12.6	0.87	B	13	0.87	B	13.1	0.1
	6 1/2 STATION ROAD	NB	LTR	0.29	B	17.6	0.33	B	19.1	0.33	B	19.5	0.4
	MAPLE AVENUE	SB	LTR	0.27	B	18	0.30	B	19.4	0.31	B	19.7	0.3
		OVERALL		**-**	**B**	**18.8**	**-**	**B**	**14.6**	**-**	**B**	**14.4**	-0.2

Table III.H-6 (cont'd)
Level of Service Summary Table
2033 Build Conditions - Saturday Peak Hour

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
	UNSIGNALIZED												
10	U.S. ROUTE 6/NYS ROUTE 17M &												
	POLICE HIGHWAY	NB	R	0.06	B	12.4	0.08	B	13.2	0.08	B	13.5	0.3
	UNSIGNALIZED												
11	HARTLEY ROAD &												
	ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.01	A	7.3	0.01	A	7.3	0.01	A	7.3	0.0
		NB	LR	0.02	A	9.0	0.02	A	9.0	0.02	A	9.0	0.0
	UNSIGNALIZED												
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.11	B	10.8	0.15	B	11.2	0.15	B	11.3	0.1
	McVEIGH ROAD	WB	LTR	0.24	C	15.1	0.31	C	17.8	0.31	C	18.0	0.2
	GOLF LINKS ROAD	NB	LTR	0.04	A	7.6	0.06	A	7.7	0.06	A	7.7	0.0
	GOLF LINKS ROAD	NB	LTR	0.01	A	7.6	0.01	A	7.6	0.01	A	7.6	0.0
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.18	A	9.2	0.18	A	9.2	0.0
	McVEIGH ROAD	WB	LTR	-	-	-	0.13	A	8.6	0.13	A	8.6	0.0
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.39	B	10.5	0.36	B	10.5	0.0
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.23	A	9.4	0.24	A	9.4	0.0
	UNSIGNALIZED												
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.01	A	7.4	0.01	A	7.4	0.01	A	7.4	0.0
	McVEIGH ROAD	SB	L	0.04	A	8.9	0.04	A	9.0	0.04	A	9.0	0.0
	UNSIGNALIZED												
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.04	A	7.6	0.05	A	7.6	0.05	A	7.6	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.23	B	11.6	0.26	B	12.1	0.26	B	12.2	0.1
	WITH SIGNALIZATION												
14	FLETCHER STREET	EB	TR	-	-	-	0.18	B	11.5	0.18	B	11.5	0.0
	FLETCHER STREET	WB	LT	-	-	-	0.25	A	3.8	0.25	A	3.8	0.0
	NYS ROUTE 17 WB OFF-RAMP	SB	LR	-	-	-	0.25	B	12.2	0.25	B	12.2	0.0
		OVERALL		-	-	-	-	A	8.8	-	A	8.9	0.1
	UNSIGNALIZED												
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.03	A	7.7	0.03	A	7.7	0.03	A	7.8	0.1
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.14	B	10.6	0.15	B	10.9	0.15	B	11.0	0.1
	WITH SIGNALIZATION												
15	FLETCHER STREET	EB	LT	-	-	-	0.26	A	3.8	0.27	A	3.8	0.0
	FLETCHER STREET	WB	TR	-	-	-	0.31	B	12.8	0.31	B	12.8	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.16	B	11.4	0.16	B	11.4	0.0
		OVERALL		-	-	-	-	A	9.1	-	A	9.1	0.0
	UNSIGNALIZED												
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]												
	NYS ROUTE 17M	WB	LT	0.01	A	9.1	0.01	A	9.4	0.01	A	9.5	0.1
	CANNON HILL DRIVE	NB	LR	0.05	C	23.7	0.06	D	28.7	0.07	D	30.4	1.7

Notes:

1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. Analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS For Ramp And Weaving Segment Type Intersection Is Determined By The Density Measured In Units Of Passenger Cars Per Mile Per Lane, Which Are The Values Summarized Above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. Note that there is limited exiting traffic from training center lane during the PM peak hour (i.e., less than 10 vehicles) due to the hours of operation.
4. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would improve the operation of this intersection and reduce this delay increase.

Source: Table 6, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-13
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Morning Event Peak Entry Period (8:30 AM - 9:30 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.71	C	22.6	0.78	D	27.7	0.79	D	28.5	0.8
RAMPS													
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	B	11.6	-	B	12.4	-	B	13.7	1.3
	NYS ROUTE 17M EB WEAVE			0.30	A	10.5	0.32	A	11.4	0.42	B	12.8	1.4
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	B	13.2	-	B	14.0	-	B	18.6	4.6
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.16	A	5.9	0.17	A	5.8	-0.1
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	8.1	-	A	8.5	-	A	8.7	0.2
SIGNALIZED													
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.09	A	8.4	0.11	A	9.6	0.12	B	10.7	1.1
			TR	0.97	D	40.8	1.09	F	77.4	1.74	F	357.6	280.2
	ROUTE 6/17M	WB	L	0.47	B	19.9	0.54	C	21.0	0.56	C	21.6	0.6
			T	0.36	B	11.2	0.40	B	13.1	0.44	B	14.7	1.6
			TR	0.36	B	11.2	0.41	B	13.0	0.44	B	14.6	1.6
	LOWER ROAD (C.R. 12)	NB	LTR	0.66	C	31.3	0.70	C	32.6	0.73	C	34.4	1.8
	C.R. 50	SB	LTR	0.37	C	28.3	0.41	C	28.1	0.53	C	29.2	1.1
		OVERALL		**-**	**C**	**28.6**	**-**	**D**	**45.7**	**-**	**F**	**201.5**	155.8
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.11	A	9.7	0.1
			TR	-	-	-	-	-	-	1.58	F	286.9	209.5
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.63	C	25.5	4.5
			T	-	-	-	-	-	-	0.40	B	13.2	0.1
			TR	-	-	-	-	-	-	0.40	B	13.2	0.2
	LOWER ROAD (C.R. 12)	NB	LTR	-	-	-	-	-	-	0.82	D	49.5	16.9
	C.R. 50	SB	LTR	-	-	-	-	-	-	0.62	D	37.3	9.2
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**F**	**165.7**	120.0
UNSIGNALIZED													
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.03	A	9.2	0.04	A	9.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.10	F	58.2	0.13	F	77.3	-	-	-	-

Table III.H-13 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Morning Event Peak Entry Period (8:30 AM - 9:30 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.06	B	13.4	0.07	B	14.3	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.44	F	64.7	0.60	F	98.5	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	1.21	F	139.8	-
			T	-	-	-	-	-	-	0.75	A	7.3	-
			R	-	-	-	-	-	-	0.06	A	1.7	-
7	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.13	B	14.7	-
			T	-	-	-	-	-	-	0.93	D	40.7	-
			R	-	-	-	-	-	-	0.97	D	50.5	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.21	D	50.5	-
			R	-	-	-	-	-	-	0.67	E	71.8	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.40	D	51.3	-
			R	-	-	-	-	-	-	0.05	A	10	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**50.3**	-
SIGNALIZED													
	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.83	B	10.1	0.88	B	15.1	0.97	C	24.7	9.6
	ROUTE 6/17M	WB	LTR	0.51	A	5.3	0.54	A	5.5	1.04	F	48.1	42.6
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.40	C	21.1	0.45	C	24.7	0.52	C	26.8	2.1
	HARTLEY ROAD	SB	LTR	0.14	C	20.1	0.16	C	23.3	0.45	C	26.3	3.0
		OVERALL		**-**	**A**	**9.5**	**-**	**B**	**12.7**	**-**	**D**	**35.9**	23.2
8	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	LTR	-	-	-	-	-	-	0.89	B	17.6	2.5
	ROUTE 6/17M	WB	LTR	-	-	-	-	-	-	0.98	C	32.6	27.1
	GATE SCHOOLHOUSE ROAD	NB	LTR	-	-	-	-	-	-	0.62	C	32.8	8.1
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.51	C	29.5	6.2
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**26.2**	13.5
SIGNALIZED													
	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.10	B	18.8	0.11	C	20.8	0.37	D	40.7	19.9
			TR	0.92	B	15.6	0.93	C	20.5	0.98	D	38.0	17.5
	ROUTE 6/17M	WB	L	0.22	C	27.1	0.26	C	31.0	0.25	D	38.5	7.5
			TR	0.88	B	18.9	0.90	C	20.7	1.06	F	60.7	40.0
	6 1/2 STATION ROAD	NB	LTR	0.27	C	23.9	0.30	C	26.9	0.33	C	34.6	7.7
	MAPLE AVENUE	SB	LTR	0.45	C	25.1	0.50	C	28.3	0.58	D	36.8	8.5
		OVERALL		**-**	**B**	**18.3**	**-**	**C**	**21.8**	**-**	**D**	**48.9**	27.1
9	WITH SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.41	D	45.9	25.1
			TR	-	-	-	-	-	-	0.97	D	35.1	14.6
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.20	D	39.3	8.3
			TR	-	-	-	-	-	-	0.98	D	35.7	15.0
	6 1/2 STATION ROAD	NB	LTR	-	-	-	-	-	-	0.41	D	41.1	14.2
	MAPLE AVENUE	SB	LTR	-	-	-	-	-	-	0.69	D	49.0	20.7
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**36.8**	15.0

Table III.H-13 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Morning Event Peak Entry Period (8:30 AM - 9:30 AM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	NB	R	0.17	C	17.0	0.20	C	18.5	0.21	C	18.9	0.4
UNSIGNALIZED													
11	HARTLEY ROAD & ECHO LAKE ROAD & CHEECHUNK ROAD	WB	LT	0.00	A	7.7	0.00	A	7.7	0.09	A	8.0	0.3
		NB	LR	0.02	B	10.1	0.02	B	10.1	0.03	A	11.1	1.0
UNSIGNALIZED													
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.22	B	11.6	0.26	B	12.3	0.28	B	13.2	0.9
	McVEIGH ROAD	WB	LTR	0.23	B	13.4	0.28	C	15.1	0.32	C	17.0	1.9
	GOLF LINKS ROAD	NB	LTR	0.03	A	7.5	0.04	A	7.5	0.04	A	7.6	0.1
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.5	0.01	A	7.5	0.02	A	7.6	0.1
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.19	A	9.1	0.19	A	9.3	0.2
	McVEIGH ROAD	WB	LTR	-	-	-	0.23	A	9.1	0.23	A	9.3	0.2
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.27	A	9.8	0.27	A	9.9	0.1
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.15	A	9.0	0.22	A	9.5	0.5
UNSIGNALIZED													
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.00	A	7.5	0.00	A	7.5	0.00	A	7.5	0.0
	McVEIGH ROAD	SB	L	0.15	B	10.0	0.16	B	10.1	0.18	B	10.2	0.1
UNSIGNALIZED													
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.15	A	8.4	0.16	A	8.5	0.16	A	8.5	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	1.27	F	172.8	1.48	F	258.4	1.60	F	308.1	49.7
UNSIGNALIZED													
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.05	A	8.9	0.06	A	9.0	0.06	A	9.0	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.45	C	19.7	0.51	C	22.5	0.51	C	22.6	0.1
UNSIGNALIZED													
16	NYS ROUTE 17M & CANNON HILL DRIVE[3]												
	NYS ROUTE 17M	WB	LT	0.04	B	12.5	0.02	B	13.1	0.02	B	13.4	0.3
	CANNON HILL DRIVE	NB	LR	0.34	F	54.7	0.42	F	69.3	1.26	F	[-]	-

Notes:
1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS for ramp and weaving segment type intersection is determined by the density measured in units of passenger cars per mile per lane, which are the values summarized above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would help the operation of this intersection.

Source: Table 2-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-14
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Morning Event Peak Exit Period (12:00 PM - 1:00 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.55	C	17.3	0.61	C	19.4	0.70	D	25.7	6.3
RAMPS													
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	7.3	-	A	7.8	-	A	7.8	0.0
	NYS ROUTE 17M EB WEAVE			0.19	A	6.3	0.20	A	6.7	0.20	A	6.8	0.1
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	8.8	-	A	9.2	-	A	9.4	0.2
	NYS ROUTE 17M WB WEAVE			0.16	A	6.1	0.18	A	6.2	0.24	A	8.5	2.3
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	10.0	-	B	10.5	-	B	13.5	3.0
SIGNALIZED													
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.07	B	10.0	0.08	B	11.0	0.18	B	15.7	4.7
			TR	0.52	B	16.0	0.58	B	18.2	0.62	C	20.2	2.0
	ROUTE 6/17M	WB	L	0.39	A	9.8	0.44	B	11.1	0.48	B	12.4	1.3
			T	0.44	B	11.9	0.47	B	13.3	0.81	C	24.2	10.9
			TR	0.44	B	11.9	0.48	B	13.3	0.82	C	24.2	10.9
	LOWER ROAD (C.R. 12)	NB	LTR	0.63	C	31.7	0.65	C	32.2	0.67	C	33.2	1.0
	C.R. 50	SB	LTR	0.51	C	30.0	0.52	C	29.9	0.58	C	30.3	0.4
		OVERALL		**-**	**B**	**17.1**	**-**	**B**	**18.4**	**-**	**C**	**23.9**	**5.5**
UNSIGNALIZED													
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.01	B	10.1	0.01	B	10.4	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.26	D	29.1	0.31	D	33.7	-	-	-	-
UNSIGNALIZED													
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.00	A	8.8	0.00	A	8.9	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.14	D	31.7	0.17	E	37.2	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.21	C	22.5	-
			TR	-	-	-	-	-	-	0.56	B	10.9	-
				-	-	-	-	-	-	0.00	A	5.7	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.00	B	14.4	-
			T	-	-	-	-	-	-	0.95	D	36.3	-
			R	-	-	-	-	-	-	0.02	A	8.7	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.61	E	56.9	-
			R	-	-	-	-	-	-	0.32	D	51.1	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	1.72	F	382.2	-
			R	-	-	-	-	-	-	0.59	A	6.2	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**E**	**71.9**	-

Table III.H-14 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Morning Event Peak Exit Period (12:00 PM - 1:00 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
SIGNALIZED													
	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.50	A	5.6	0.55	A	5.8	0.83	B	10.3	4.5
	ROUTE 6/17M	WB	LTR	0.39	A	6.8	0.73	A	7.2	0.72	A	7.4	0.2
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.31	B	14.8	0.35	B	16.2	0.42	C	22.3	6.1
	HARTLEY ROAD	SB	LTR	0.08	B	14.2	0.09	B	15.4	0.1	C	20.9	5.5
8		**OVERALL**		**-**	**A**	**7.1**	**-**	**A**	**7.6**	**-**	**B**	**10.0**	2.4
SIGNALIZED													
	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.22	C	22.9	0.25	C	24.8	0.18	C	24.3	-0.5
			TR	0.84	B	18.0	0.86	B	19.0	0.92	B	17.4	-1.6
9	ROUTE 6/17M	WB	L	0.06	B	15.5	0.06	B	16.5	0.16	C	24.6	8.1
			TR	0.89	B	14.4	0.9	B	14.4	0.91	B	17.2	2.8
	6 1/2 STATION ROAD	NB	LTR	0.41	C	20.8	0.44	C	22.3	0.47	C	25.7	3.4
	MAPLE AVENUE	SB	LTR	0.40	C	21.1	0.43	C	22.6	0.45	C	25.8	3.2
		OVERALL		**-**	**B**	**16.8**	**-**	**B**	**17.6**	**-**	**B**	**18.9**	1.3
UNSIGNALIZED													
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	NB	R	0.03	B	11.5	0.04	B	11.8	0.06	C	17	5.2
UNSIGNALIZED													
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.01	A	7.5	0.01	A	7.5	0.01	A	7.5	0.0
		NB	LR	0.04	B	10.3	0.04	B	10.5	0.04	B	10.4	-0.1
UNSIGNALIZED													
	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.20	B	12.6	0.22	B	13.1	0.25	B	13.5	0.4
	McVEIGH ROAD	WB	LTR	0.64	D	25.7	0.72	D	31.7	0.78	E	38.7	7.0
	GOLF LINKS ROAD	NB	LTR	0.04	A	7.7	0.05	A	7.8	0.05	A	7.8	0.0
12	GOLF LINKS ROAD	SB	LTR	0.01	A	7.6	0.01	A	7.6	0.01	A	7.6	0.0
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.47	B	12.9	0.48	B	13.5	0.6
	McVEIGH ROAD	WB	LTR	-	-	-	0.19	A	9.8	0.22	B	10.3	0.5
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.37	B	11.9	0.41	B	12.6	0.7
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.31	B	11.2	0.35	B	11.9	0.7
UNSIGNALIZED													
	ECHO LAKE ROAD & McVEIGH ROAD												
13	ECHO LAKE ROAD	EB	LT	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	McVEIGH ROAD	SB	L	0.10	A	9.8	0.11	A	9.9	0.11	A	9.9	0.0
UNSIGNALIZED													
	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
14	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.05	A	7.9	0.05	A	7.9	0.05	A	7.9	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.34	C	17.0	0.38	C	18.6	0.38	C	18.6	0.0

Table III.H-14 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Morning Event Peak Exit Period (12:00 PM - 1:00 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.05	A	8.2	0.05	A	8.2	0.05	A	8.3	0.1
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.51	C	17.9	0.57	C	20.1	0.57	C	20.2	0.1
UNSIGNALIZED													
16	NYS ROUTE 17M & CANNON HILL DRIVE[3]												
	NYS ROUTE 17M	WB	LT	0.04	A	9.3	0.05	A	9.5	0.07	B	11.6	2.1
	CANNON HILL DRIVE	NB	LR	0.43	E	43.3	0.55	F	61.4	0.99	F	201.8	140.4

Notes:

1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS for ramp and weaving segment type intersection is determined by the density measured in units of passenger cars per mile per lane, which are the values summarized above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would help the operation of this intersection.

Source: Table 3-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-15
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Afternoon Event Peak Entry Period (2:30 PM - 3:30 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.73	D	25.9	0.81	D	33.3	0.83	E	36.8	3.5
RAMPS													
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	8.7	-	A	9.3	-	B	10.8	1.5
	NYS ROUTE 17M EB WEAVE			0.23	A	7.6	0.24	A	8.2	0.34	A	11.3	3.1
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.9	-	B	10.3	-	B	15.0	4.7
	NYS ROUTE 17M WB WEAVE			0.20	A	7.3	0.21	A	7.9	0.22	A	8.5	0.6
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	B	11.4	-	B	12.0	-	B	12.7	0.7
SIGNALIZED													
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.10	B	13.1	0.14	B	15.0	0.15	B	16.3	1.3
			TR	0.68	C	23.3	0.77	C	28.8	1.50	F	260.3	231.5
	ROUTE 6/17M	WB	L	0.56	B	14.4	0.68	B	18.0	0.88	D	44.9	26.9
			T	0.55	B	16.2	0.61	B	19.1	0.67	C	20.2	1.1
			TR	0.55	B	16.2	0.61	B	19.0	0.67	C	20.2	1.2
	LOWER ROAD (C.R. 12)	NB	LTR	0.70	D	35.5	0.78	D	42.5	0.92	E	64.9	22.4
	C.R. 50	SB	LTR	0.54	C	29.9	0.62	C	32.1	0.80	D	43.6	11.5
		OVERALL		**-**	**C**	**21.6**	**-**	**C**	**25.7**	**-**	**F**	**114.8**	**89.1**
UNSIGNALIZED													
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.00	0.00	A	0.00	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.00	0.00	A	0.00	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.45	F	50.9	0.58	F	73.3	-	-	-	-
UNSIGNALIZED													
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.00	A	9.2	0.00	A	9.4	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.25	F	51.7	0.33	F	66.6	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	1.64	F	333.2	-
			TR	-	-	-	-	-	-	0.52	A	3.2	-
				-	-	-	-	-	-	0.00	A	1.1	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.00	A	8.0	-
			T	-	-	-	-	-	-	1.09	F	76.4	-
			R	-	-	-	-	-	-	0.80	C	22.5	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.25	D	50.7	-
			R	-	-	-	-	-	-	0.21	D	48.1	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	1.37	F	284.7	-
			R	-	-	-	-	-	-	0.19	A	7.4	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**F**	**97.1**	-

Table III.H-15 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Afternoon Event Peak Entry Period (2:30 PM - 3:30 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
SIGNALIZED													
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.59	A	6.2	0.63	A	6.8	0.74	B	10.5	3.7
	ROUTE 6/17M	WB	LTR	0.78	A	8.4	0.85	B	12.3	1.32	F	164.6	152.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.41	B	19.3	0.46	C	23.2	0.55	C	26.8	3.6
	HARTLEY ROAD	SB	LTR	0.09	B	18.1	0.10	C	21.4	0.38	C	25.6	4.2
		OVERALL		**-**	**A**	**8.6**	**-**	**B**	**11.3**	**-**	**F**	**102.3**	91.0
SIGNALIZED													
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.32	C	30	0.40	D	35.7	0.48	D	43.4	7.7
			TR	0.89	C	21.8	0.91	C	24.8	0.93	C	33.9	9.1
	ROUTE 6/17M	WB	L	0.07	B	19.2	0.08	C	22.3	0.08	C	26.6	4.3
			TR	0.92	B	18.7	0.94	C	25.9	1.40	F	204.3	178.4
	6 1/2 STATION ROAD	NB	LTR	0.47	C	26.1	0.57	C	30.5	0.54	D	35.3	4.8
	MAPLE AVENUE	SB	LTR	0.51	C	26.2	0.50	C	29.8	0.62	D	37.2	7.4
		OVERALL		**-**	**C**	**21.4**	**-**	**C**	**26.6**	**-**	**F**	**131.1**	104.5
UNSIGNALIZED													
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	NB	R	0.05	B	12.4	0.05	B	13.0	0.06	B	13.7	0.7
UNSIGNALIZED													
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.01	A	7.5	0.01	A	7.5	0.08	A	7.7	0.2
		NB	LR	0.05	B	10.8	0.05	B	11.0	0.08	B	12.3	1.3
UNSIGNALIZED													
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.27	B	14.3	0.34	C	16.1	0.40	C	19.1	3.0
	McVEIGH ROAD	WB	LTR	0.90	F	56.4	1.11	F	115.9	1.28	F	183.7	67.8
	GOLF LINKS ROAD	NB	LTR	0.05	A	7.8	0.06	A	7.9	0.07	A	8.1	0.2
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.7	0.01	A	7.7	0.02	A	7.8	0.1
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.66	C	20.3	0.67	C	21.2	0.9
	McVEIGH ROAD	WB	LTR	-	-	-	0.31	B	12.3	0.32	B	12.9	0.6
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.55	C	17.0	0.57	C	18.1	1.1
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.47	C	15.2	0.57	C	17.9	2.7
UNSIGNALIZED													
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	McVEIGH ROAD	SB	L	0.12	B	10.1	0.13	B	10.2	0.15	B	10.3	0.1
UNSIGNALIZED													
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.06	A	8.0	0.07	A	8.1	0.07	A	8.1	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.41	C	24.3	0.48	D	28.7	0.69	D	32.6	3.9

Table III.H-15 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekday Afternoon Event Peak Entry Period (2:30 PM - 3:30 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.06	A	0.06	0.06	A	8.5	0.07	A	8.5	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.00	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.71	D	0.71	0.81	E	38.6	0.82	E	40.8	2.2
UNSIGNALIZED													
16	NYS ROUTE 17M & CANNON HILL DRIVE[3]												
	NYS ROUTE 17M	WB	LT	0.06	A	9.8	0.07	B	10.2	0.07	B	10.6	0.4
	CANNON HILL DRIVE	NB	LR	0.80	F	115.2	1.08	F	213.5	2.53	F	[-]	-

Notes:
1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. Analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS for ramp and weaving segment type intersection is determined by the density measured in units of passenger cars per mile per lane, which are the values summarized above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would help the operation of this intersection.
Source: Table 4-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-16
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekend Morning Event Peak Exit Period (12:00 PM - 1:00 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.48	C	15.0	0.52	C	16.3	0.57	C	18.4	2.1
RAMPS													
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	7.3	-	A	7.8	-	A	7.9	0.1
	NYS ROUTE 17M EB WEAVE			0.17	A	6.2	0.19	A	6.6	0.19	A	6.7	0.1
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.8	-	B	10.2	-	B	10.4	0.2
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.16	A	5.9	0.21	A	7.8	1.9
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	9.4	-	A	9.9	-	B	12.2	2.3
SIGNALIZED													
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.07	B	10.6	0.09	B	12.3	0.16	B	15.1	2.8
			TR	0.59	B	17.9	0.67	C	21.9	0.70	C	23.5	1.6
	ROUTE 6/17M	WB	L	0.31	B	11.4	0.37	B	13.7	0.44	B	14.5	0.8
			T	0.42	B	13.1	0.48	B	15.6	0.74	C	22.2	6.6
			TR	0.42	B	13.1	0.48	B	15.6	0.74	C	22.3	6.7
	LOWER ROAD (C.R. 12)	NB	LTR	0.68	C	32.3	0.73	D	35.3	0.73	D	36.1	0.8
	C.R. 50	SB	LTR	0.48	C	28.4	0.53	C	28.3	0.54	C	28.7	0.4
		OVERALL		**-**	**B**	**18.8**	**-**	**C**	**21.6**	**-**	**C**	**24.3**	**2.7**
UNSIGNALIZED													
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.01	E	36.6	0.01	E	43.7	0.01	E	48.4	4.7
	PSYCH. CENTER S.	SB	LTR	0.16	D	29.9	0.21	E	36.3	-	-	-	-
UNSIGNALIZED													
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.05	A	9.8	0.06	B	10.1	-	-	-	-
	TRAINING CENTER LANE	NB	LR	1.04	F	143.7	1.35	F	266.2	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.35	D	45.1	-
			T	-	-	-	-	-	-	0.91	D	37.4	-
			R	-	-	-	-	-	-	0.17	B	15.6	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.37	D	43.0	-
			T	-	-	-	-	-	-	0.96	D	46.4	-
			R	-	-	-	-	-	-	0.03	B	12.0	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	1.07	F	153.0	-
			R	-	-	-	-	-	-	0.79	E	77.3	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	1.13	F	114.4	-
			R	-	-	-	-	-	-	1.15	F	122.3	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**E**	**71.6**	-

Table III.H-16 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekend Morning Event Peak Exit Period (12:00 PM - 1:00 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
SIGNALIZED													
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.61	A	6.3	0.65	A	6.4	0.98	C	30.1	23.7
	ROUTE 6/17M	WB	LTR	0.59	A	6.1	0.62	A	6.1	0.54	A	5.0	-1.1
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.26	B	12.7	0.29	B	13.9	0.43	C	26.6	12.7
	HARTLEY ROAD	SB	LTR	0.07	B	12.3	0.08	B	13.3	0.11	C	25.1	11.8
		OVERALL		**-**	**A**	**6.8**	**-**	**A**	**7.0**	**-**	**C**	**21.1**	14.1
SIGNALIZED													
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.24	B	17.8	0.27	B	19.2	0.18	C	20.5	1.3
			TR	0.84	B	13.3	0.86	B	13.6	0.94	C	23.2	9.6
	ROUTE 6/17M	WB	L	0.12	B	15.1	0.14	B	16.4	0.31	C	33.3	16.9
			TR	0.85	B	12.6	0.86	B	12.9	0.91	C	21.6	8.7
	6 1/2 STATION ROAD	NB	LTR	0.29	B	18.0	0.32	B	18.7	0.42	C	30.9	12.2
	MAPLE AVENUE	SB	LTR	0.27	B	17.6	0.29	B	19.0	0.38	C	31.0	12.0
		OVERALL		**-**	**B**	**18.8**	**-**	**B**	**14.4**	**-**	**C**	**23.6**	9.2
UNSIGNALIZED													
10	U.S. ROUTE 6/NYS ROUTE 17M &												
	POLICE HIGHWAY	NB	R	0.06	B	12.4	0.07	B	13.0	0.13	C	20.1	7.1
UNSIGNALIZED													
11	HARTLEY ROAD &												
	ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.00	A	7.3	0.00	A	7.3	0.00	A	7.3	0.0
		NB	LR	0.02	A	9.0	0.02	A	9.0	0.09	A	9.1	0.1
UNSIGNALIZED													
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.11	B	10.8	0.14	B	11.2	0.15	B	11.3	0.1
	McVEIGH ROAD	WB	LTR	0.24	C	15.1	0.30	C	17.3	0.32	C	18.0	0.7
	GOLF LINKS ROAD	NB	LTR	0.04	A	7.6	0.05	A	7.7	0.06	A	7.7	0.0
	GOLF LINKS ROAD	NB	LTR	0.00	A	7.6	0.00	A	7.6	0.00	A	7.7	0.1
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.18	A	9.2	0.19	A	9.3	0.1
	McVEIGH ROAD	WB	LTR	-	-	-	0.13	A	8.6	0.13	A	8.6	0.0
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.39	B	10.5	0.39	B	10.9	0.4
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.23	A	9.4	0.23	A	9.4	0.0
UNSIGNALIZED													
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.00	A	7.4	0.00	A	7.4	0.00	A	7.5	0.1
	McVEIGH ROAD	SB	L	0.04	A	8.9	0.04	A	9.0	0.04	A	9.0	0.0
UNSIGNALIZED													
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.04	A	7.6	0.04	A	7.6	0.05	A	7.7	0.1
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.23	B	11.6	0.25	B	12.0	0.26	B	12.6	0.6

Table III.H-16 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekend Morning Event Peak Exit Period (12:00 PM - 1:00 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
WITH SIGNALIZATION													
14	FLETCHER STREET	EB	TR	-	-	-	0.18	B	11.5	0.24	B	12.1	0.6
	FLETCHER STREET	WB	LT	-	-	-	0.25	A	3.8	0.25	A	3.8	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.25	B	12.2	0.24	B	12.2	0.0
		OVERALL		-	-	-	-	A	8.8	-	A	9.3	0.5
UNSIGNALIZED													
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.03	A	7.7	0.03	A	7.7	0.07	A	7.8	0.1
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.14	B	10.6	0.15	B	10.8	0.16	B	11.6	0.8
WITH SIGNALIZATION													
15	FLETCHER STREET	EB	LT	-	-	-	0.26	A	3.8	0.37	A	4.6	0.8
	FLETCHER STREET	WB	TR	-	-	-	0.31	B	12.8	0.30	B	12.8	0.0
	NYS ROUTE 17 EB OFF-RAMP	NB	LR	-	-	-	0.16	B	11.4	0.15	B	11.4	0.0
		OVERALL		-	-	-	-	A	9.1	-	A	8.9	-0.2
UNSIGNALIZED													
16	NYS ROUTE 17M & CANNON HILL DRIVE[3]												
	NYS ROUTE 17M	WB	LT	0.01	A	9.1	0.01	A	9.3	0.01	B	12.8	3.5
	CANNON HILL DRIVE	NB	LR	0.05	C	23.7	0.05	D	26.9	0.16	F	72.9	46.0

Notes:

1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS for ramp and weaving segment type intersection is determined by the density measured in units of passenger cars per mile per lane, which are the values summarized above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would help the operation of this intersection.

Source: Table 5-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

Table III.H-17
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekend Afternoon Event Peak Entry Period (2:30 PM - 3:30 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
1	U.S. ROUTE 6/NYS ROUTE 17M &												
	I-84 WB OFF RAMP	WB	R	0.48	C	15.0	0.52	C	16.3	0.53	C	16.5	0.2
RAMPS													
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]												
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	7.3	-	A	7.8	-	A	9.1	1.3
	NYS ROUTE 17M EB WEAVE			0.17	A	6.2	0.19	A	6.6	0.27	A	9.2	2.6
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.8	-	B	10.2	-	B	14.5	4.3
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.16	A	5.9	0.17	A	6.1	0.2
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	9.4	-	A	9.9	-	B	10.1	0.2
SIGNALIZED													
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50												
	ROUTE 6/17M	EB	L	0.07	B	10.6	0.09	B	12.3	0.10	B	13.4	1.1
			TR	0.59	B	17.9	0.67	C	21.9	1.33	F	180.9	159.0
	ROUTE 6/17M	WB	L	0.31	B	11.4	0.37	B	13.7	0.74	C	22.6	8.9
			T	0.42	B	13.1	0.48	B	15.6	0.51	B	17.2	1.6
			TR	0.42	B	13.1	0.48	B	15.6	0.51	B	17.2	1.6
	LOWER ROAD (C.R. 12)	NB	LTR	0.68	C	32.3	0.73	D	35.3	0.78	D	39.4	4.1
	C.R. 50	SB	LTR	0.48	C	28.4	0.53	C	28.3	0.65	C	31.6	3.3
		OVERALL		**-**	**B**	**18.8**	**-**	**C**	**21.6**	**-**	**F**	**87.6**	**66.0**
UNSIGNALIZED													
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER												
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.01	E	36.6	0.01	E	43.7	0.02	F	57.2	13.5
	PSYCH. CENTER S.	SB	LTR	0.16	D	29.9	0.21	E	36.3	-	-	-	-
UNSIGNALIZED													
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE												
	ROUTE 6/17M	WB	L	0.05	A	9.8	0.06	B	10.1	-	-	-	-
	TRAINING CENTER LANE	NB	LR	1.04	F	143.7	1.35	F	266.2	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	1.17	F	136.4	-
			T	-	-	-	-	-	-	0.52	A	6.9	-
			R	-	-	-	-	-	-	0.10	A	4.4	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.14	C	22.5	-
			T	-	-	-	-	-	-	0.96	E	57.6	-
			R	-	-	-	-	-	-	0.93	D	47.6	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.85	F	98.2	-
			R	-	-	-	-	-	-	0.63	E	67.3	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.59	E	66.8	-
			R	-	-	-	-	-	-	0.10	B	18.8	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**E**	**56.9**	-

Table III.H-17 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekend Afternoon Event Peak Entry Period (2:30 PM - 3:30 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
SIGNALIZED													
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/HARTLEY ROAD												
	ROUTE 6/17M	EB	LTR	0.61	A	6.3	0.65	A	6.4	0.60	A	6.5	0.1
	ROUTE 6/17M	WB	LTR	0.59	A	6.1	0.62	A	6.1	0.95	C	23.4	17.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.26	B	12.7	0.29	B	13.9	0.45	C	26.5	12.6
	HARTLEY ROAD	SB	LTR	0.07	B	12.3	0.08	B	13.3	0.46	C	27.1	13.8
		OVERALL		**-**	**A**	**6.8**	**-**	**A**	**7.0**	**-**	**B**	**18.2**	11.2
SIGNALIZED													
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/MAPLE AVENUE												
	ROUTE 6/17M	EB	L	0.24	B	17.8	0.27	B	19.2	0.59	D	40.1	20.9
			TR	0.84	B	13.3	0.86	B	13.6	0.92	C	28.5	14.9
	ROUTE 6/17M	WB	L	0.12	B	15.1	0.14	B	16.4	0.08	B	19.9	3.5
			TR	0.85	B	12.6	0.86	B	12.9	1.04	F	50.9	38.0
	6 1/2 STATION ROAD	NB	LTR	0.29	B	18.0	0.32	B	18.7	0.44	D	36.4	17.7
	MAPLE AVENUE	SB	LTR	0.27	B	17.6	0.29	B	19.0	0.46	D	36.2	17.2
		OVERALL		**-**	**B**	**18.8**	**-**	**B**	**14.4**	**-**	**D**	**42.0**	27.6
	WITH SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.66	D	49.1	29.9
			TR	-	-	-	-	-	-	0.93	C	31.0	17.4
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.08	C	20.7	4.3
			TR	-	-	-	-	-	-	0.99	D	39.4	26.5
	6 1/2 STATION ROAD	NB	LTR	-	-	-	-	-	-	0.46	D	40.9	22.2
	MAPLE AVENUE	SB	LTR	-	-	-	-	-	-	0.49	D	40.9	21.9
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**37.1**	22.7
UNSIGNALIZED													
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	NB	R	0.06	B	12.4	0.07	B	13.0	0.07	B	13.2	0.2
UNSIGNALIZED													
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.00	A	7.3	0.00	A	7.3	0.06	A	7.5	0.2
		NB	LR	0.02	A	9.0	0.02	A	9.0	0.02	A	9.6	0.6
UNSIGNALIZED													
12	GOLF LINKS ROAD & McVEIGH ROAD												
	McVEIGH ROAD	EB	LTR	0.11	B	10.8	0.14	B	11.2	0.16	B	11.7	0.5
	McVEIGH ROAD	WB	LTR	0.24	C	15.1	0.30	C	17.3	0.33	C	19.3	2.0
	GOLF LINKS ROAD	NB	LTR	0.04	A	7.6	0.05	A	7.7	0.06	A	7.8	0.1
	GOLF LINKS ROAD	NB	LTR	0.00	A	7.6	0.00	A	7.6	0.01	A	7.6	0.0
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.18	A	9.2	0.18	A	9.3	0.1
	McVEIGH ROAD	WB	LTR	-	-	-	0.13	A	8.6	0.13	A	8.7	0.1
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.39	B	10.5	0.36	B	10.5	0.0
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.23	A	9.4	0.29	A	9.9	0.5
UNSIGNALIZED													
13	ECHO LAKE ROAD & McVEIGH ROAD												
	ECHO LAKE ROAD	EB	LT	0.00	A	7.4	0.00	A	7.4	0.00	A	7.4	0.0
	McVEIGH ROAD	SB	L	0.04	A	8.9	0.04	A	9.0	0.05	A	9.0	0.0

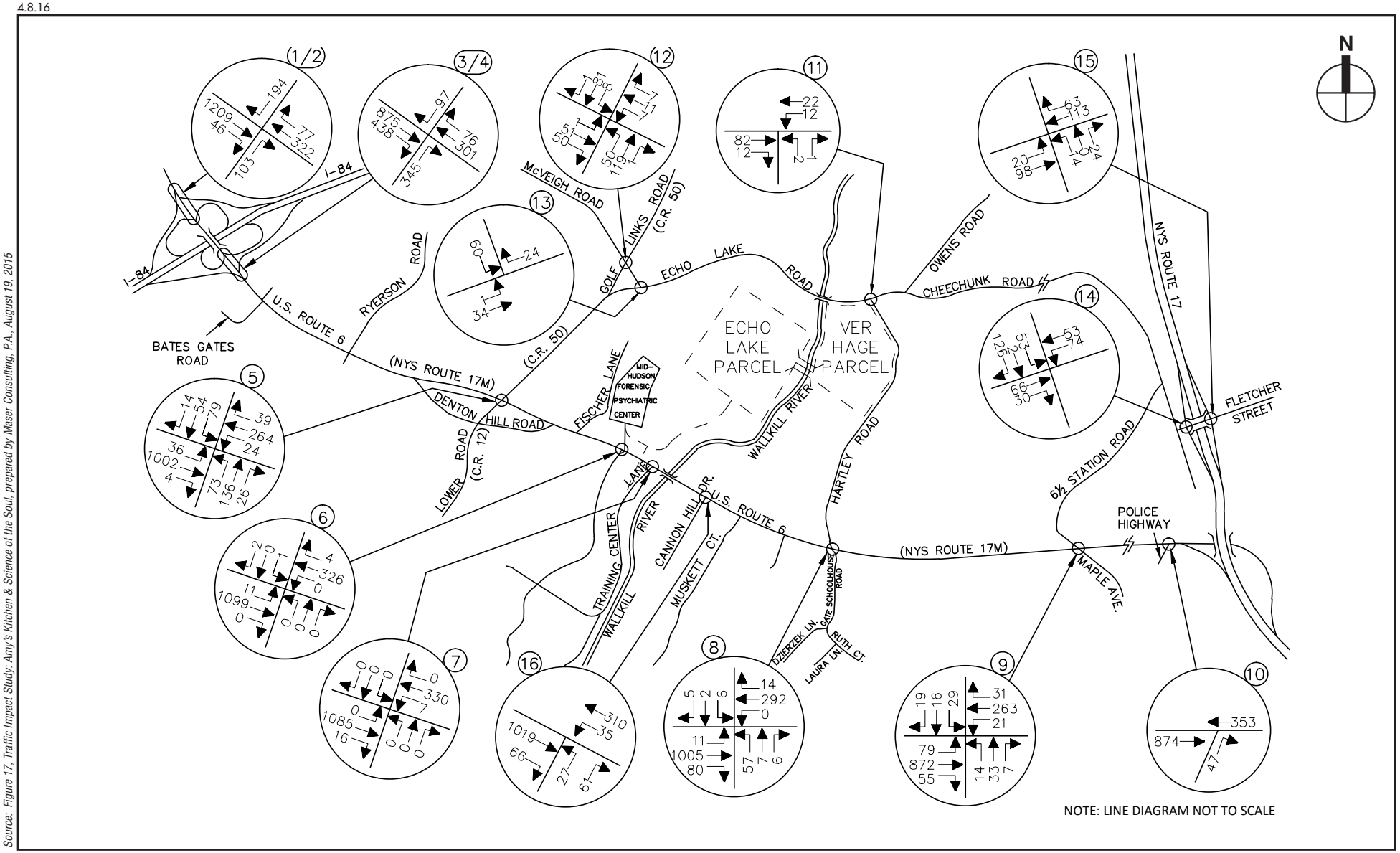
Table III.H-17 (cont'd)
Level of Service Summary Table - Science of the Soul Annual Event Conditions
Weekend Afternoon Event Peak Entry Period (2:30 PM - 3:30 PM)

				2015 Existing			2033 No-Build			2033 Build			Change in Delay No-Build to Build
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	
UNSIGNALIZED													
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.04	A	7.6	0.04	A	7.6	0.04	A	7.6	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.23	B	11.6	0.25	B	12.0	0.33	B	12.2	0.2
WITH SIGNALIZATION													
14	FLETCHER STREET	EB	TR	-	-	-	0.18	B	11.5	0.17	B	11.5	0.0
	FLETCHER STREET	WB	LT	-	-	-	0.25	A	3.8	0.24	A	3.8	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.25	B	12.2	0.36	B	13.4	1.2
		OVERALL		-	-	-	-	A	8.8	-	A	9.8	1.0
UNSIGNALIZED													
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP												
	FLETCHER STREET	EB	LT	0.03	A	7.7	0.03	A	7.7	0.03	A	7.7	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.14	B	10.6	0.15	B	10.8	0.15	B	10.9	0.1
WITH SIGNALIZATION													
15	FLETCHER STREET	EB	LT	-	-	-	0.26	A	3.8	0.26	A	3.8	0.0
	FLETCHER STREET	WB	TR	-	-	-	0.31	B	12.8	0.30	B	12.8	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.16	B	11.4	0.15	B	11.4	0.0
		OVERALL		-	-	-	-	A	9.1	-	A	9.0	-0.1
UNSIGNALIZED													
16	NYS ROUTE 17M & CANNON HILL DRIVE[3]												
	NYS ROUTE 17M	WB	LT	0.01	A	9.1	0.01	A	9.3	0.01	A	9.9	0.6
	CANNON HILL DRIVE	NB	LR	0.05	C	23.7	0.05	D	26.9	0.21	F	96.9	70.0

Notes:
1. The above represents the LOS and vehicle delay in seconds, C [16.2], for each key approach of the unsignalized intersections as well as for each approach and the overall intersection for the signalized intersections. See TIS Appendix C for a description of the LOS.
2. Intersections 2 - 4 are merge/diverge ramps and weaving segment type intersections. analysis for these intersections was conducted utilizing the Highway Capacity Manual (HCM 2010) methodology with the HCS 2010 analysis software. LOS for ramp and weaving segment type intersection is determined by the density measured in units of passenger cars per mile per lane, which are the values summarized above. TIS Appendix C contains a description of the LOS for ramp and weaving segments.
3. The proposed traffic signal at the intersection of NYS Route 17M/Training Center Lane will provide increased gaps in the traffic flow along NYS Route 17M in the vicinity of Cannon Hill Drive and therefore would help the operation of this intersection.

Source: Table 6-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., April 5, 2016.

✷

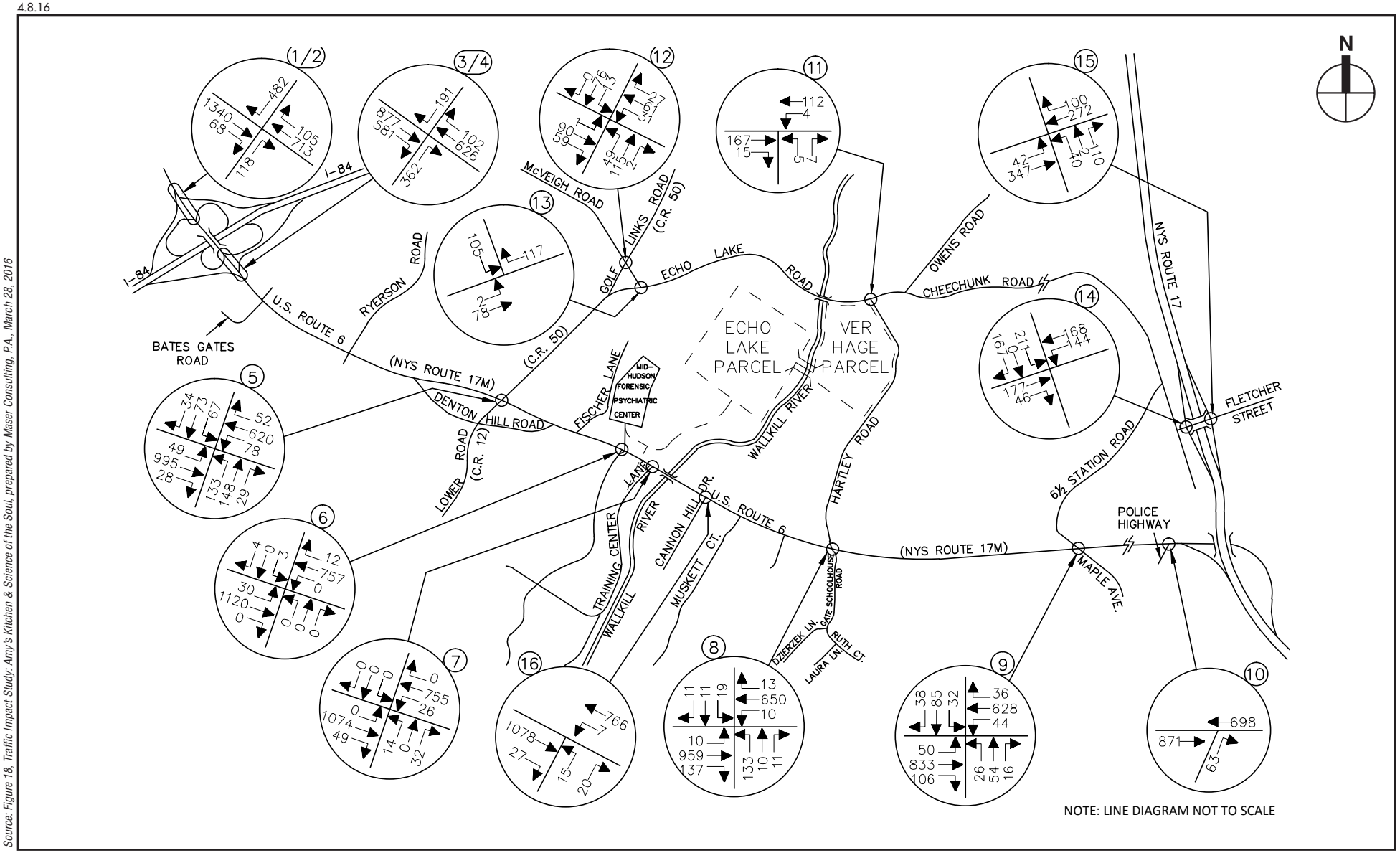


Source: Figure 17, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., August 19, 2015

2033 No-Build Traffic Volumes
Weekday AM Peak Hour of Amy's Kitchen Generation
(6:00 AM - 7:00 AM)

Figure III.H-1

Amy's Kitchen
Science of the Soul

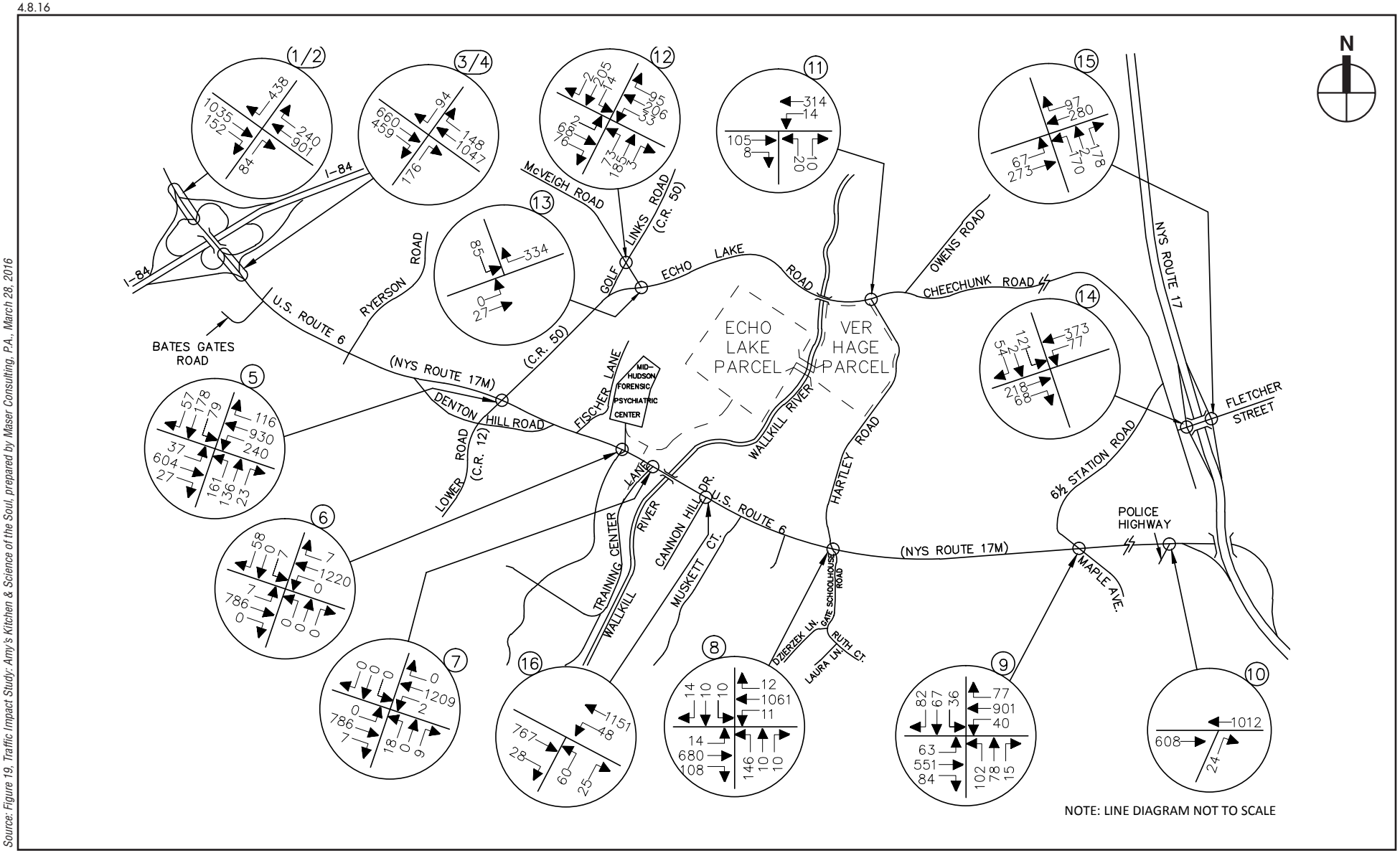


Source: Figure 18, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Weekday AM Peak Highway Hour
(7:30 AM - 8:30 AM)

Figure III.H-2

Amy's Kitchen
Science of the Soul

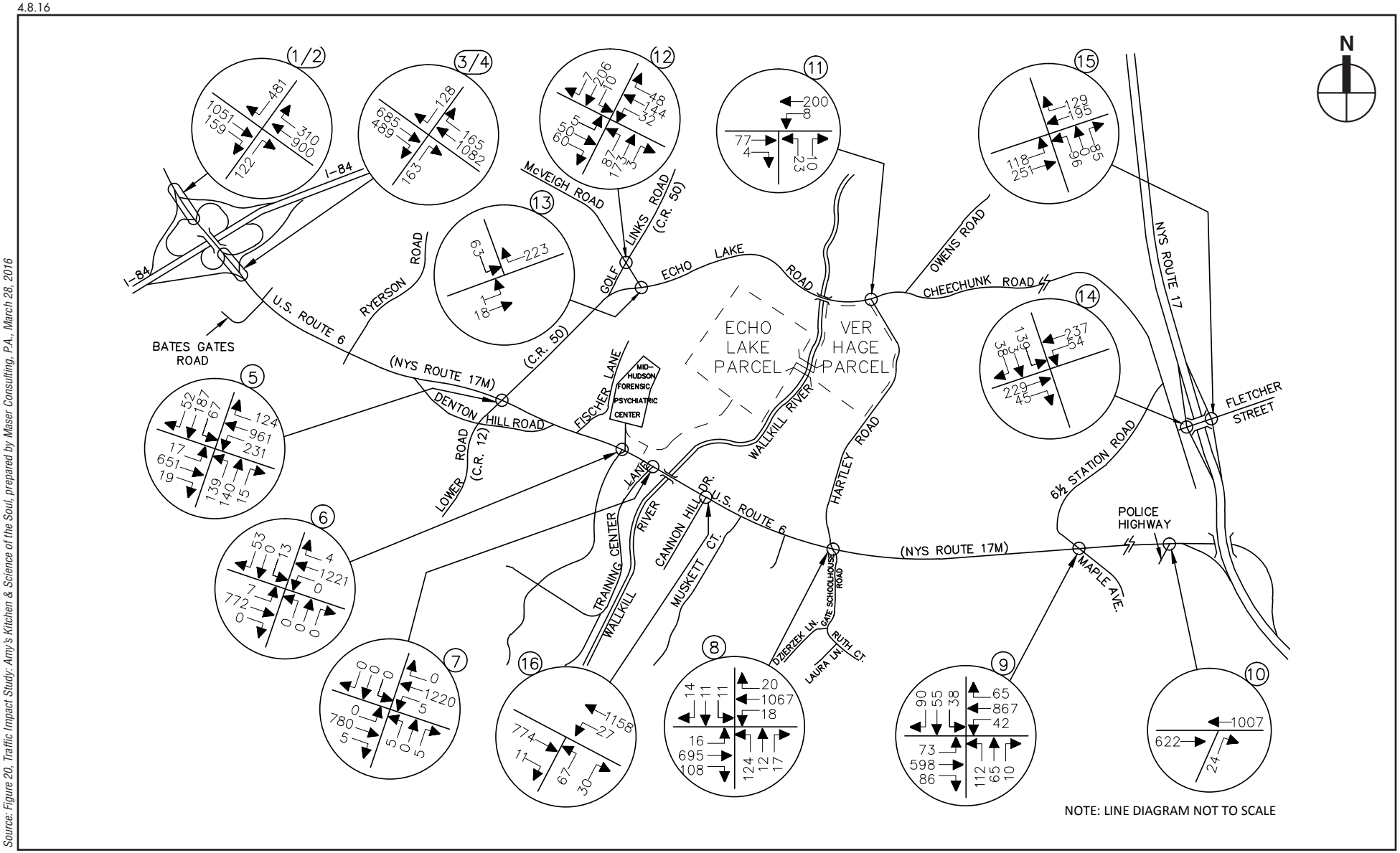


Source: Figure 19, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Weekday PM Peak Hour of Amy's Kitchen Generation
(3:00 PM - 4:00 PM)

Figure III.H-3

Amy's Kitchen
Science of the Soul

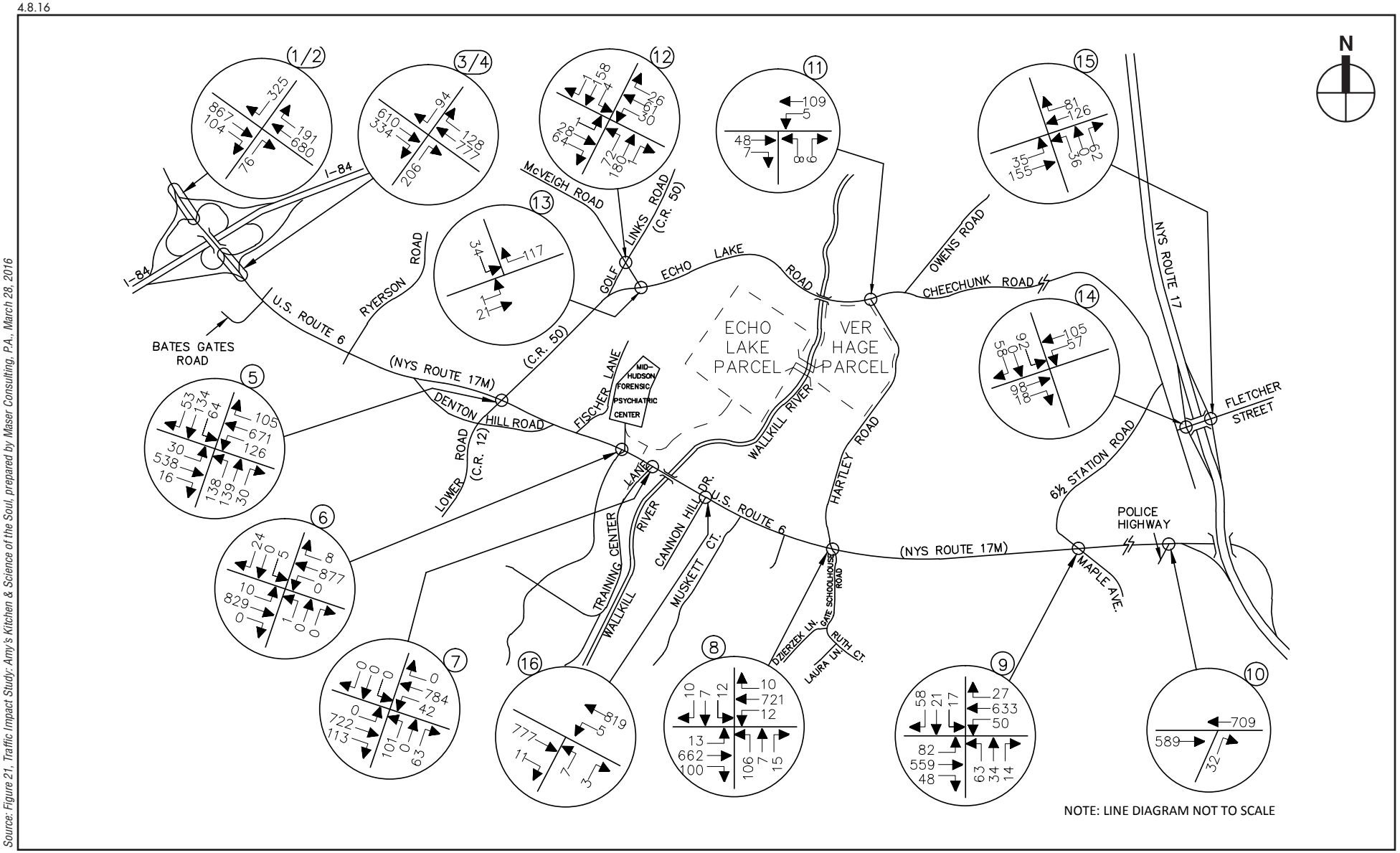


Source: Figure 20, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Weekday PM Peak Highway Hour
(4:30 PM - 5:30 PM)

Figure III.H-4

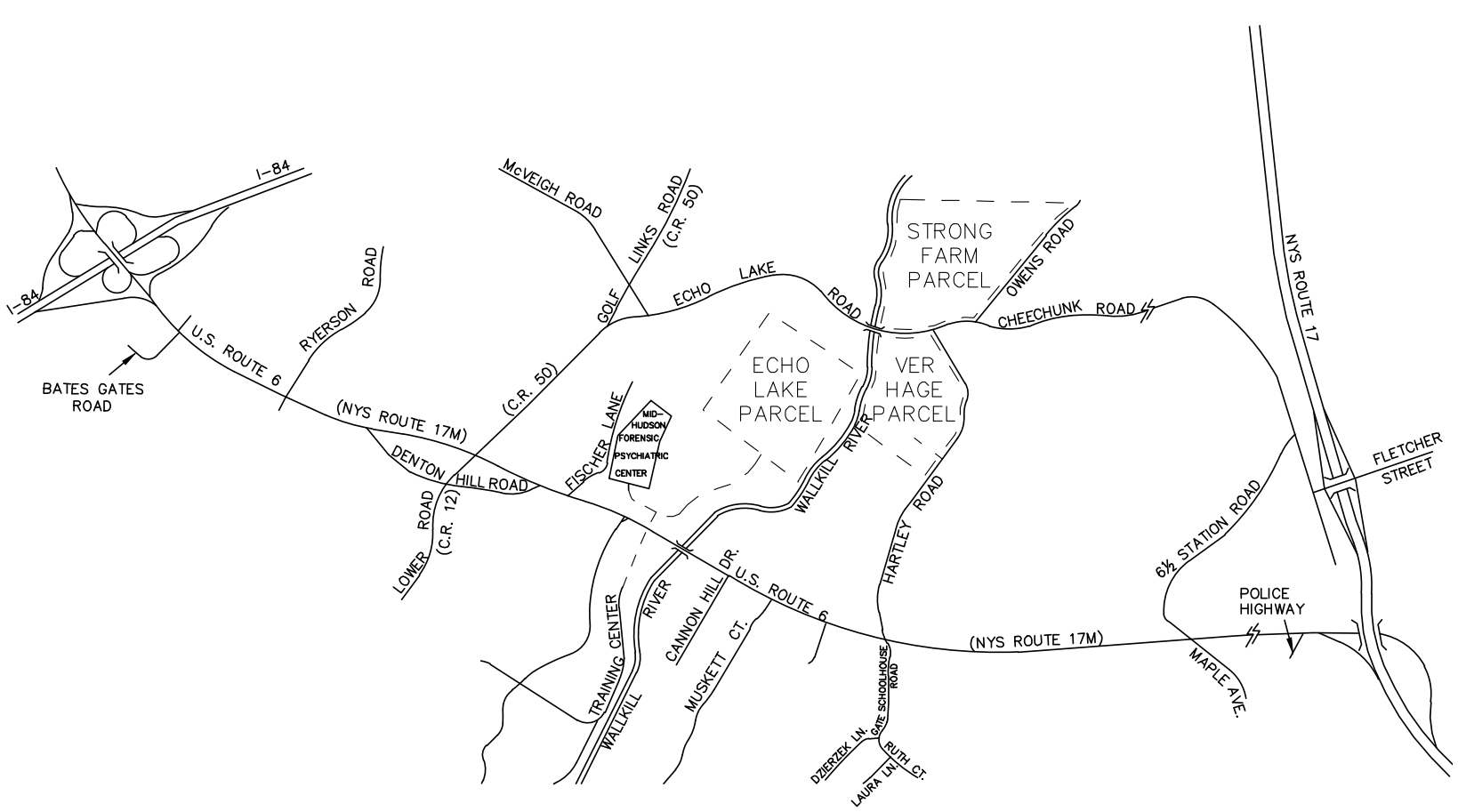
Amy's Kitchen
Science of the Soul



Source: Figure 21, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Saturday Peak Hour
Figure III.H-5

Amy's Kitchen
Science of the Soul

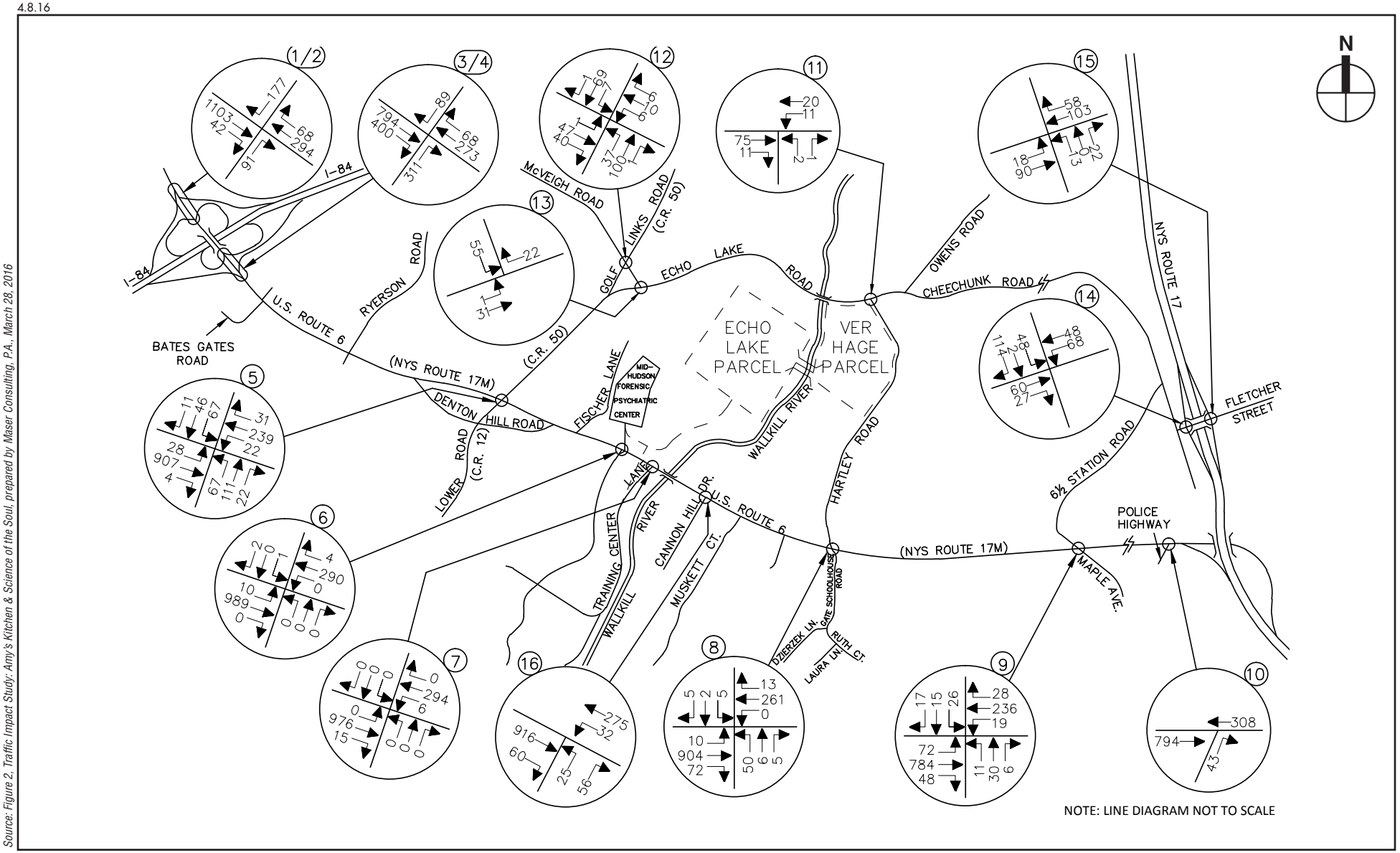


Source: Figure 1, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., August 17, 2015

Amy's Kitchen
Science of the Soul

Site Location Map
Figure III.H-6

4.8.16

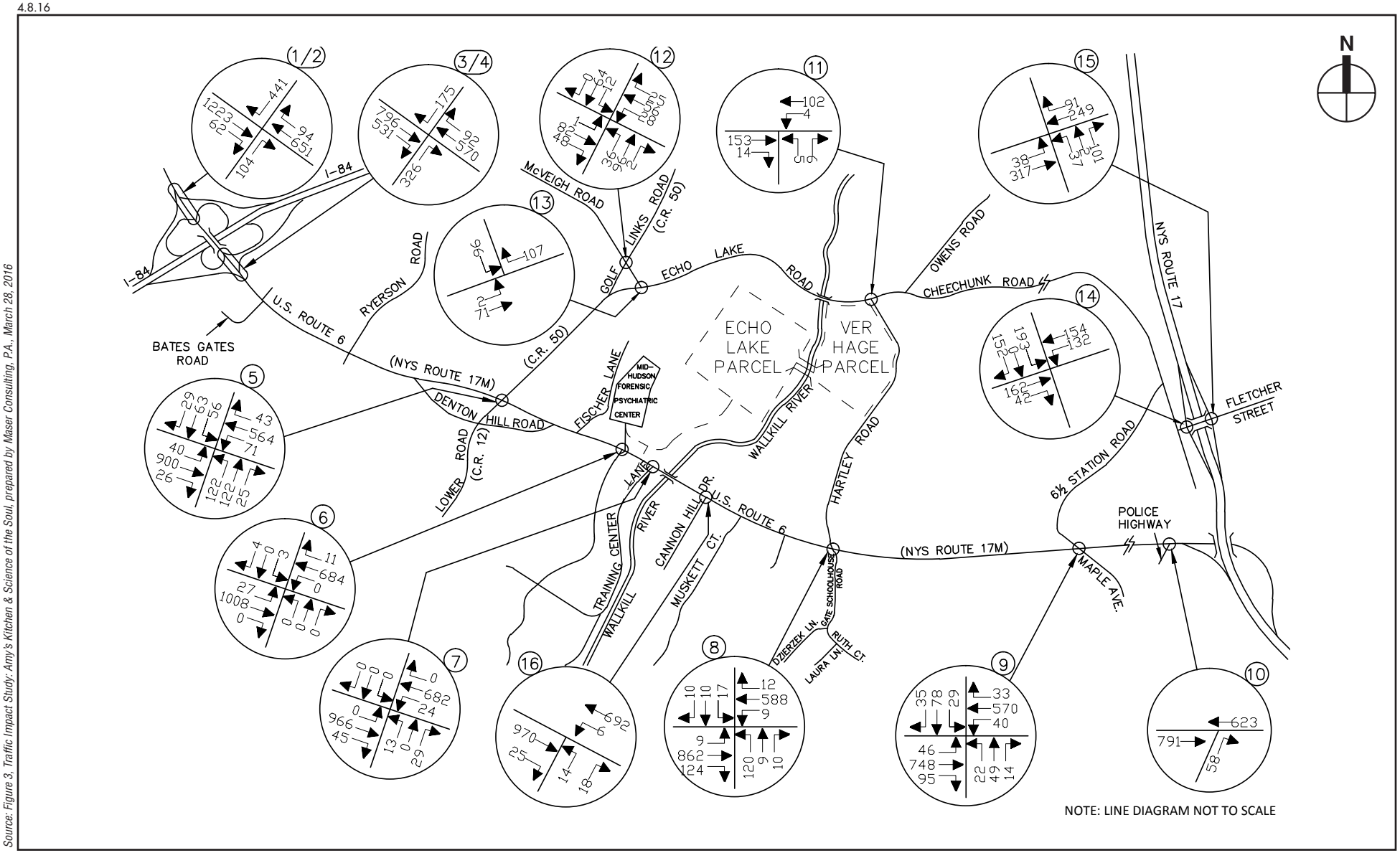


Source: Figure 2, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekday AM Peak Hour of Amy's Kitchen Generation
(6:00 AM - 7:00 AM)

Figure III.H-7

Amy's Kitchen
Science of the Soul

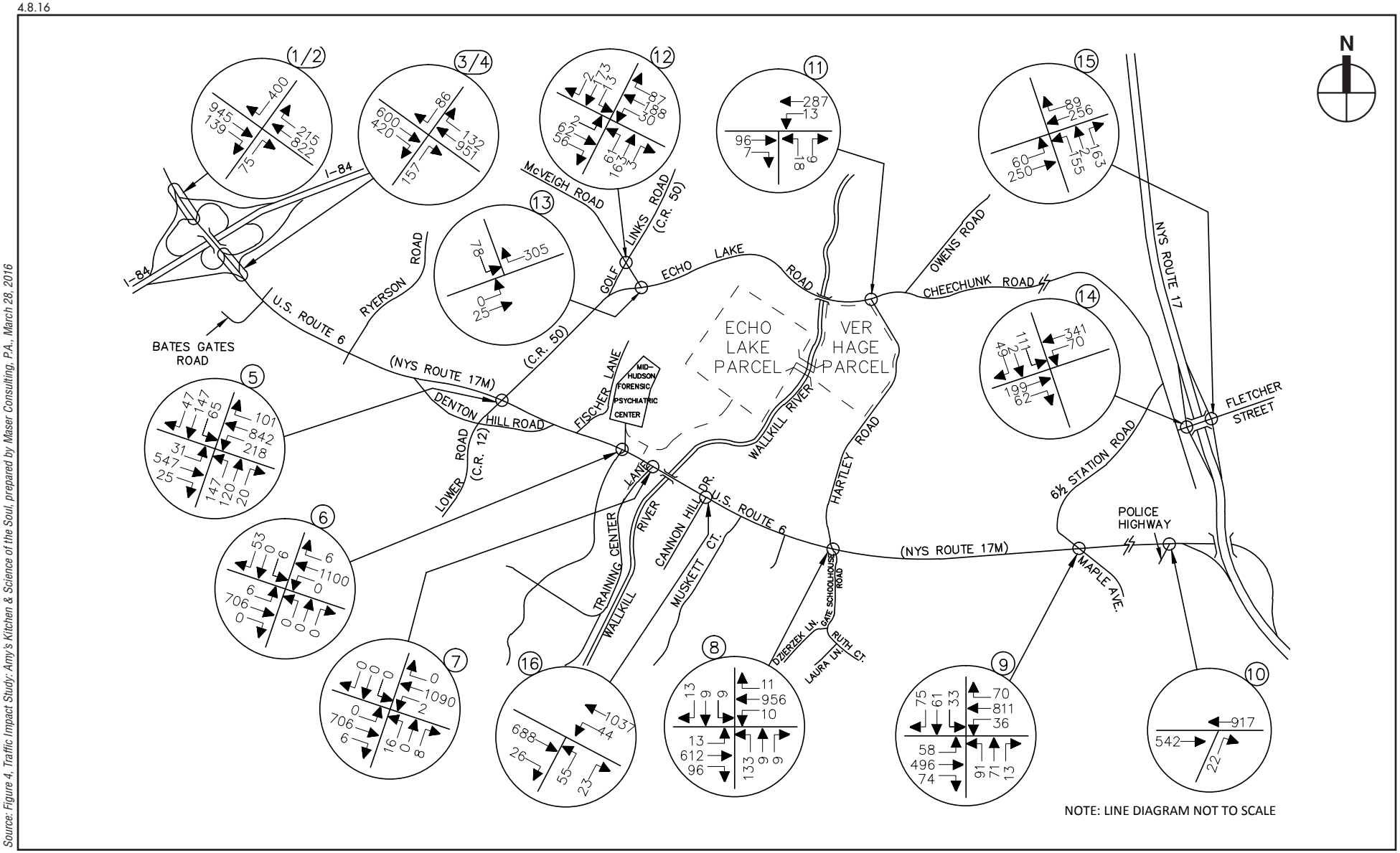


Source: Figure 3, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekday AM Peak Highway Hour
(7:30 AM - 8:30 AM)

Figure III.H-8

Amy's Kitchen
Science of the Soul

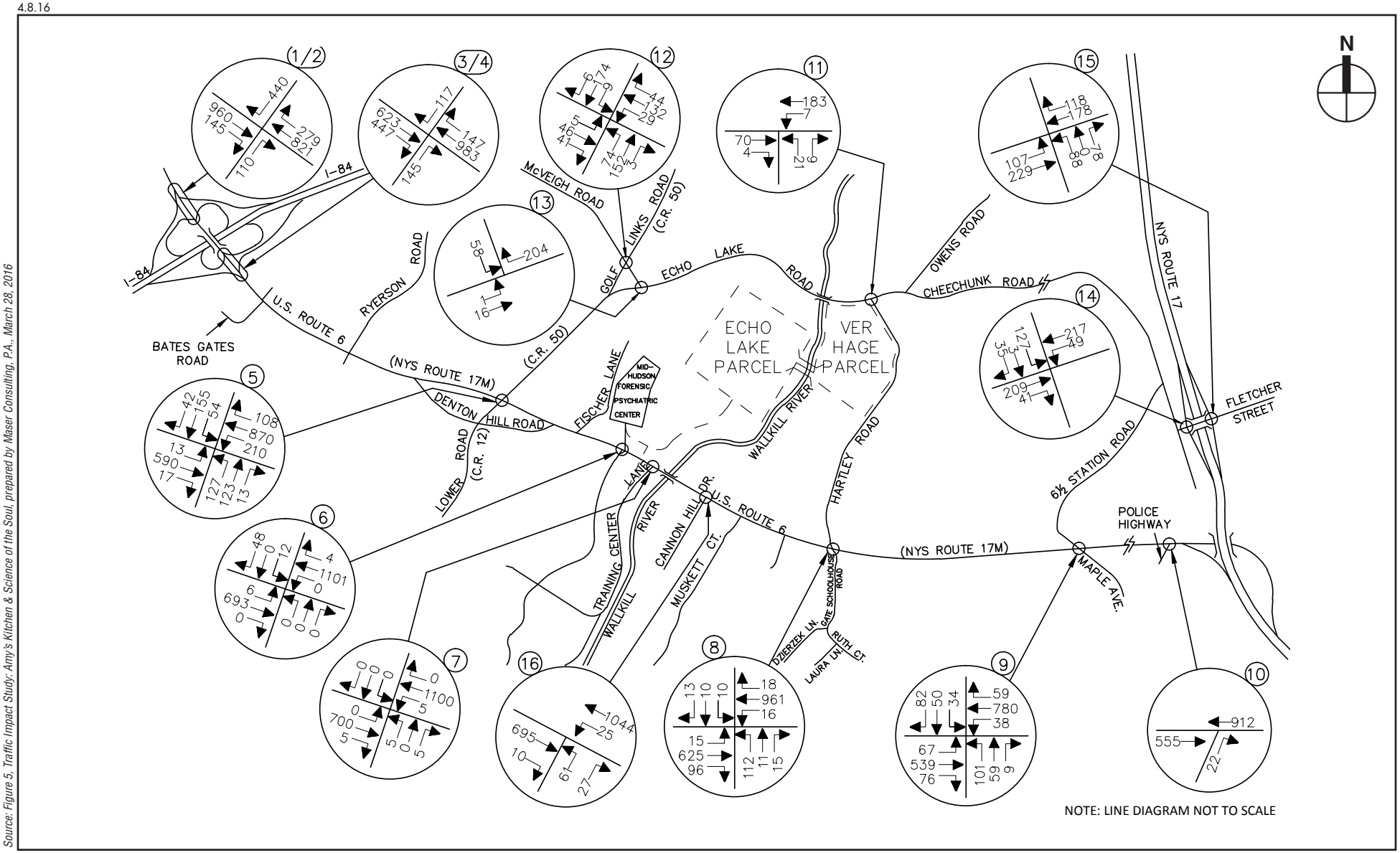


Source: Figure 4, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekday PM Peak Hour of Amy's Kitchen Generation
(3:00 PM - 4:00 PM)

Figure III.H-9

Amy's Kitchen
Science of the Soul

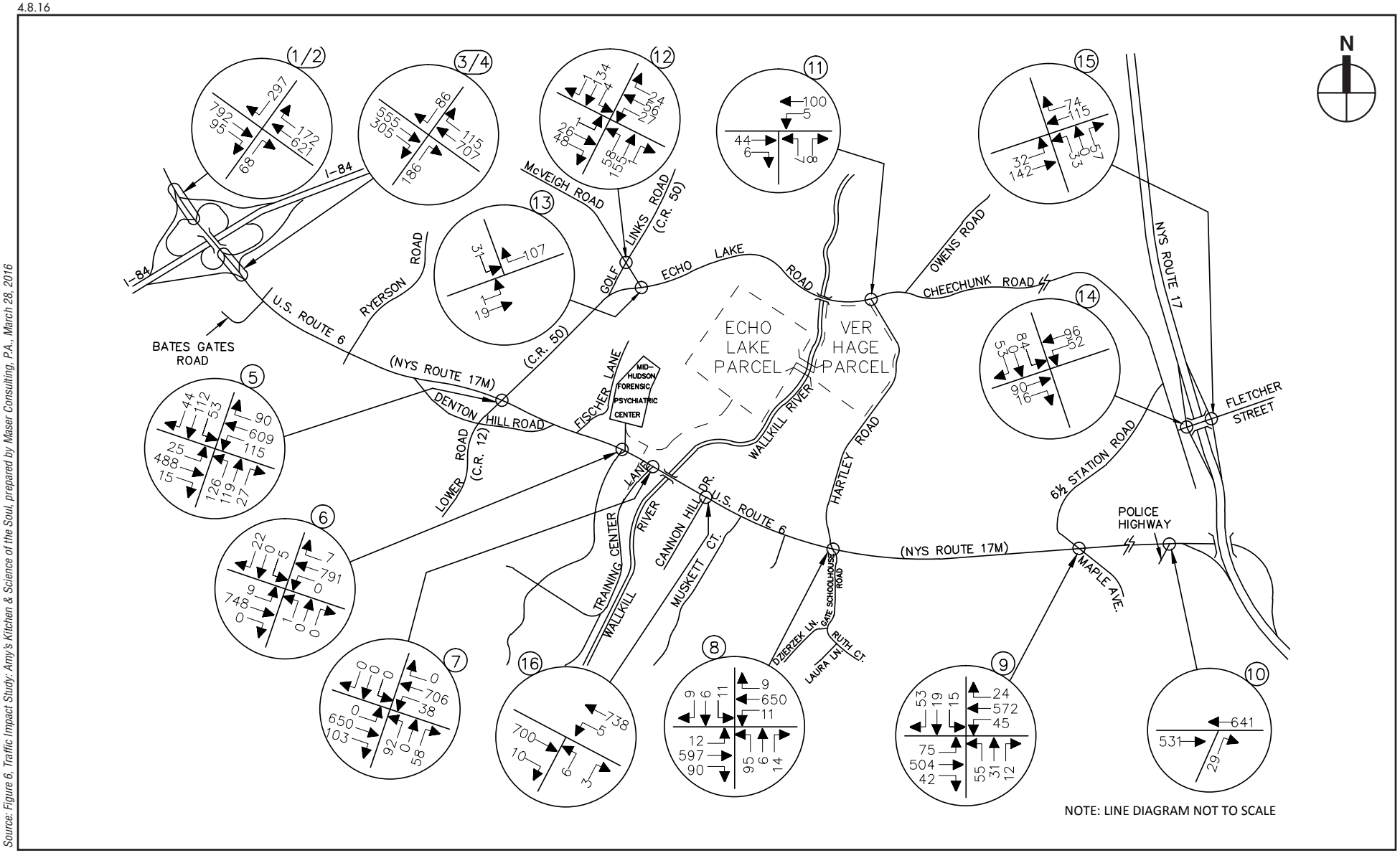


Source: Figure 5, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekday PM Peak Highway Hour
(4:30 PM - 5:30 PM)

Figure III.H-10

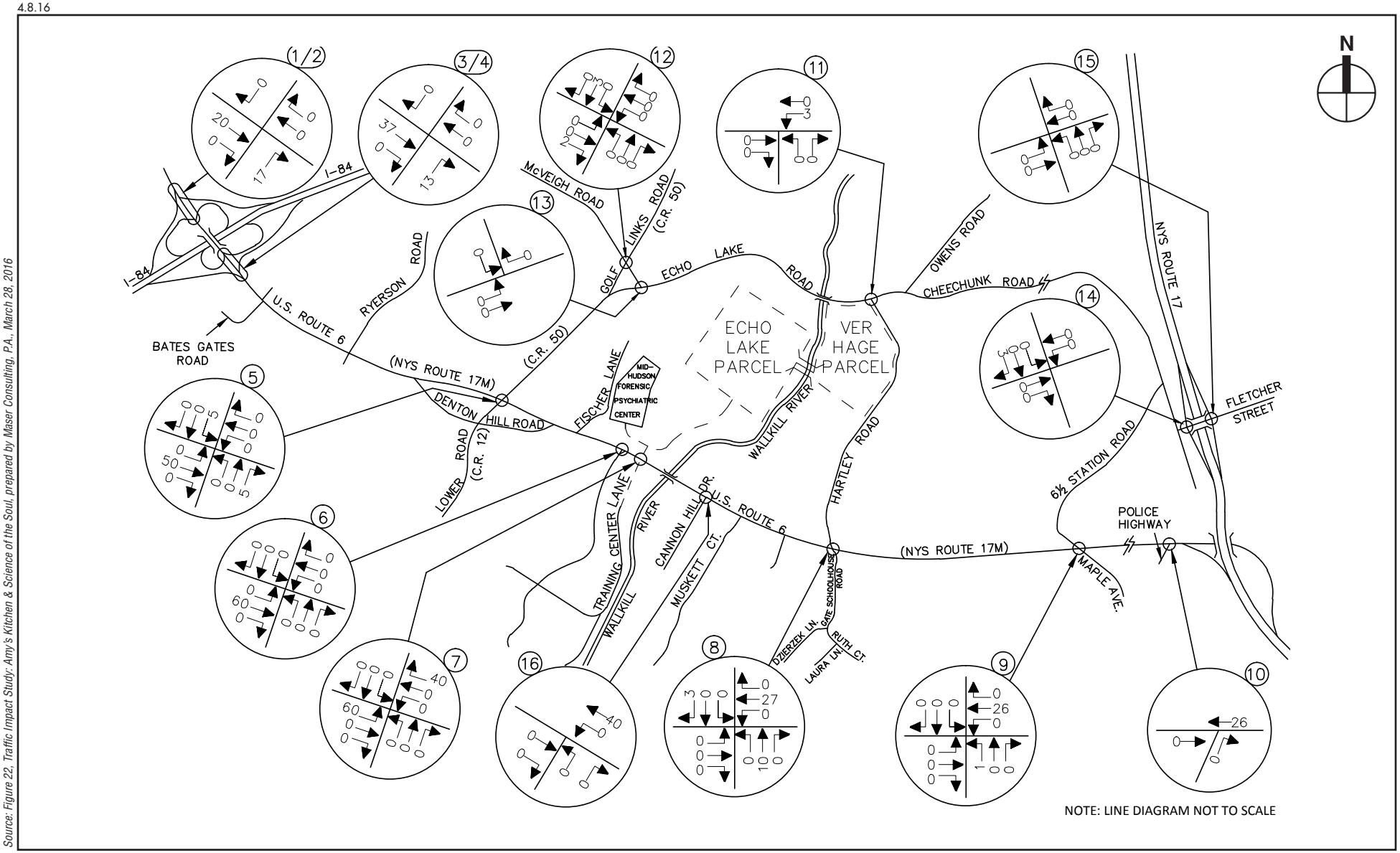
Amy's Kitchen
Science of the Soul



Source: Figure 6, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Amy's Kitchen
Science of the Soul

2015 Existing Traffic Volumes
Saturday Peak Hour
Figure III.H-11

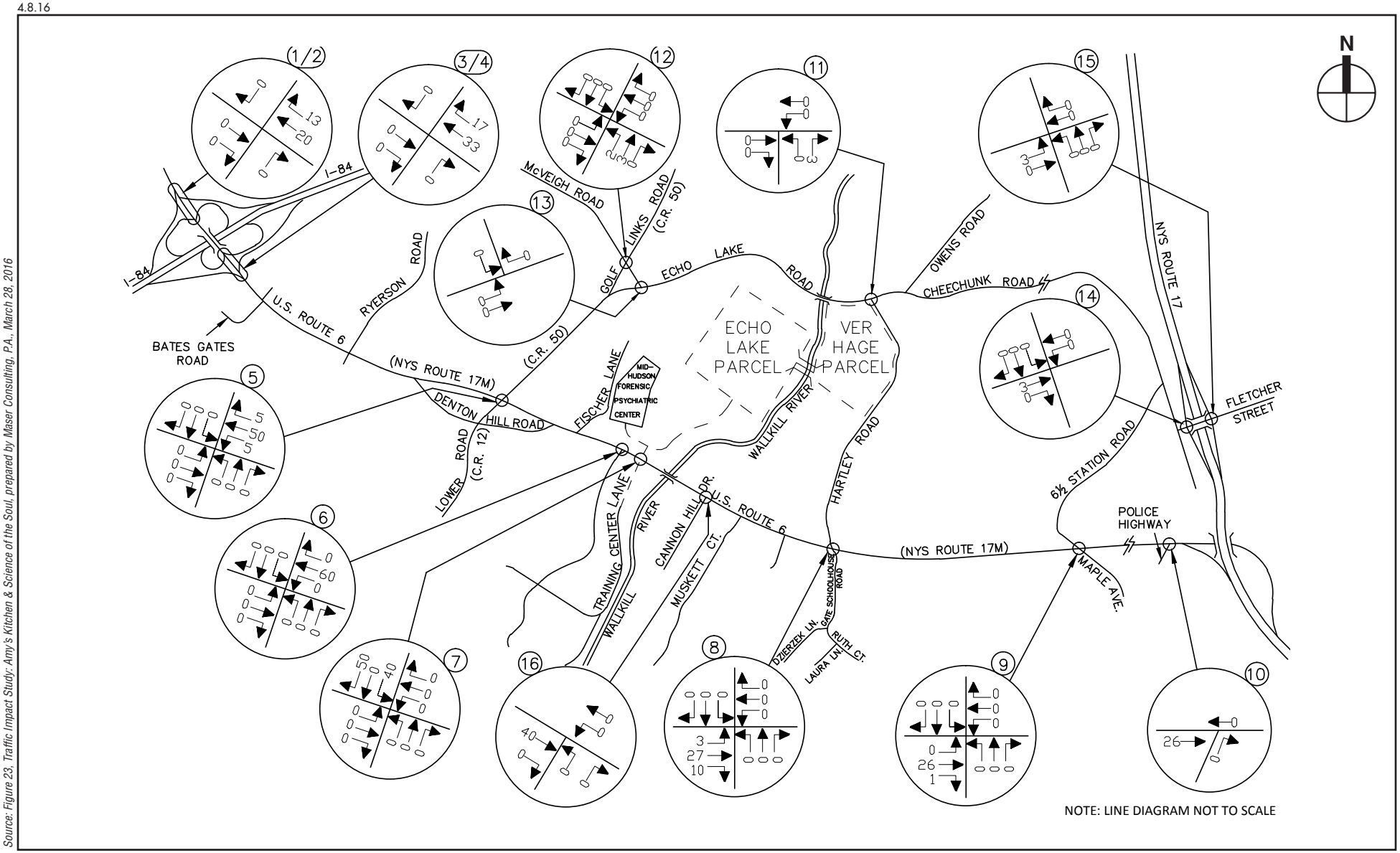


Source: Figure 22, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Ver Hage Warehouse Uses
Arrival Distribution - Cars
(All Values Expressed as a %)

Figure III.H-12

Amy's Kitchen
Science of the Soul

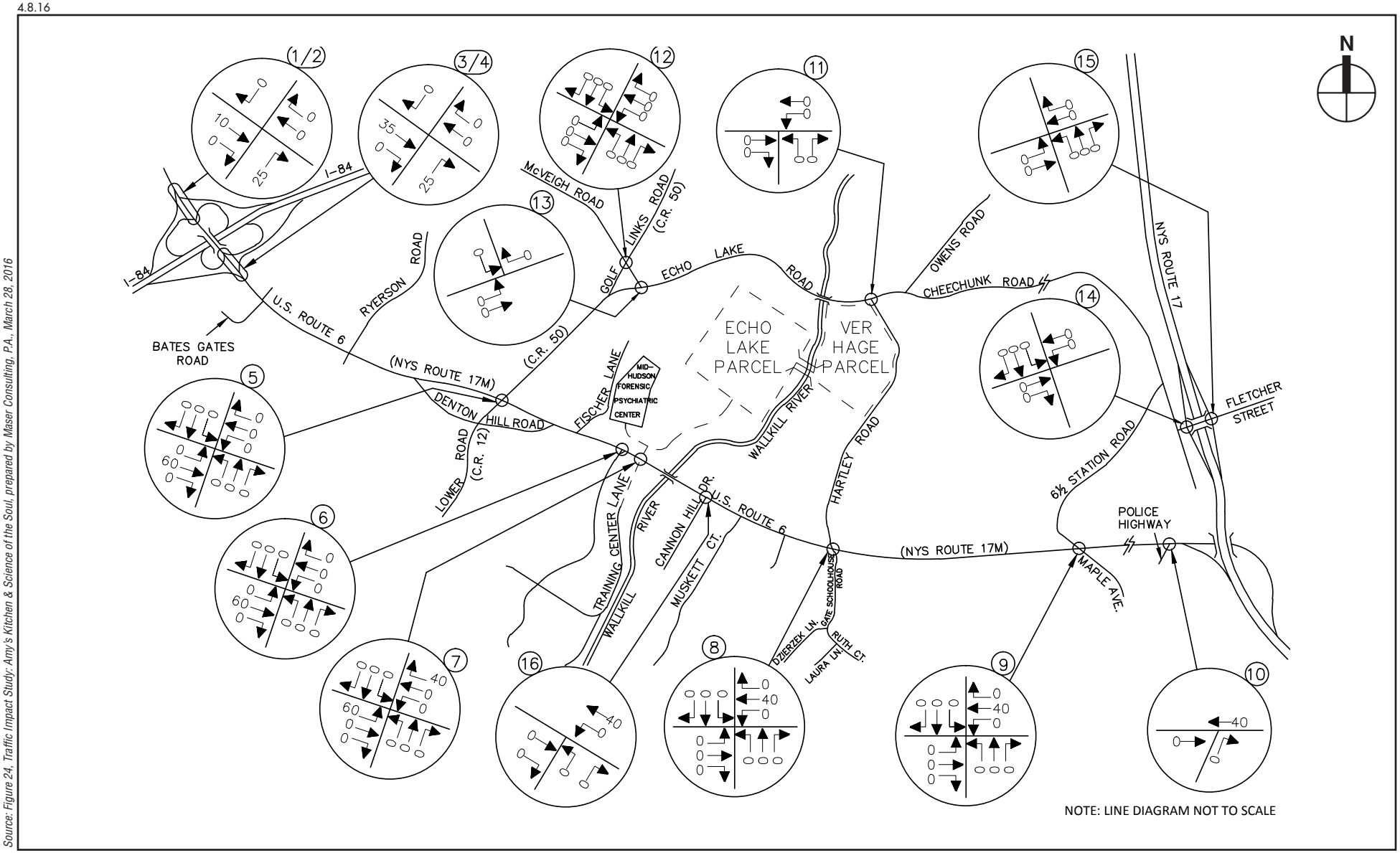


Source: Figure 23, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Ver Hage Warehouse Uses
Departure Distribution - Cars
(All Values Expressed as a %)

Figure III.H-13

Amy's Kitchen
Science of the Soul

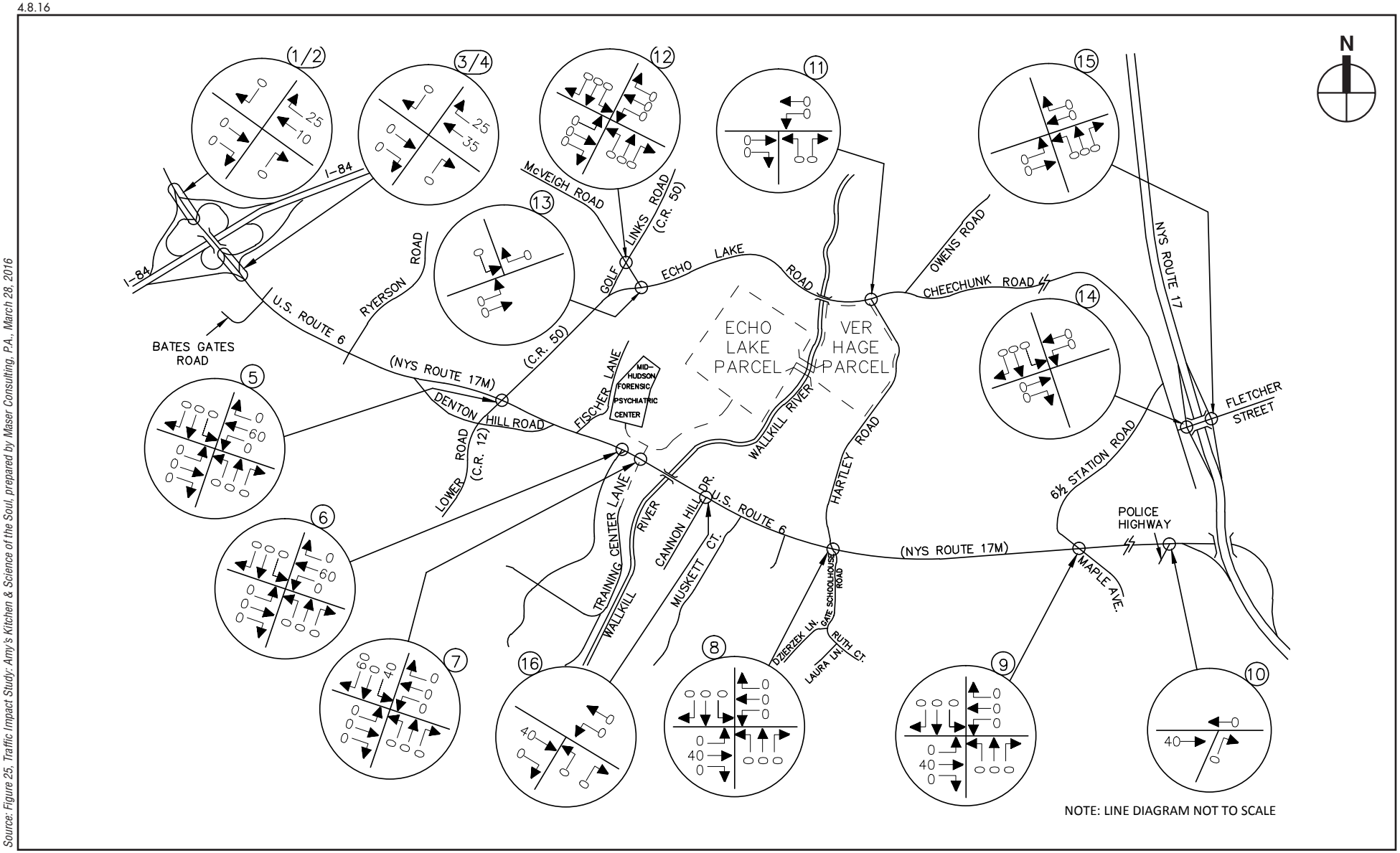


Source: Figure 24, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Amy's Kitchen
Science of the Soul

Ver Hage Warehouse Uses
Arrival Distribution - Trucks
(All Values Expressed as a %)

Figure III.H-14

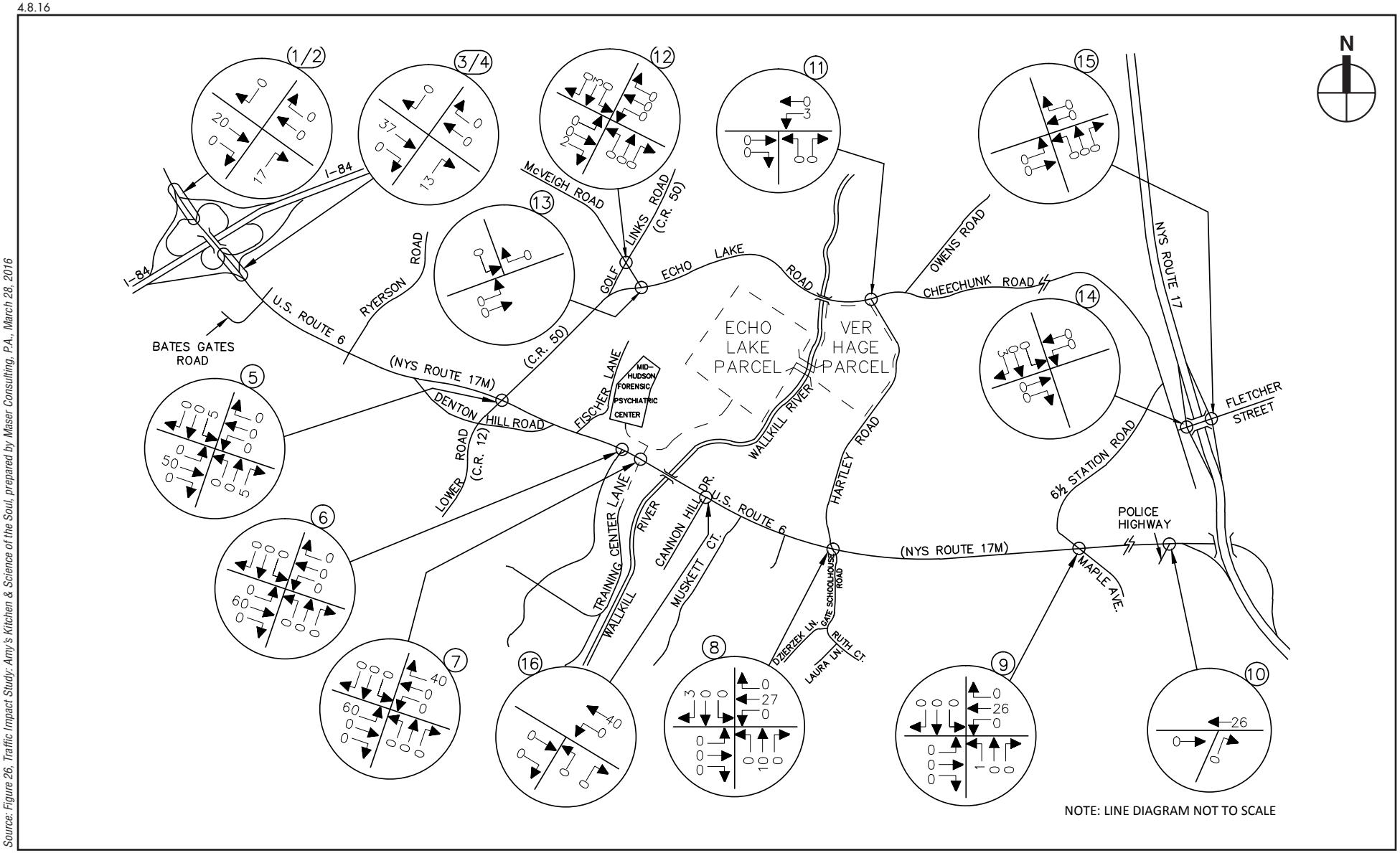


Source: Figure 25, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Ver Hage Warehouse Uses
Departure Distribution - Trucks
(All Values Expressed as a %)

Figure III.H-15

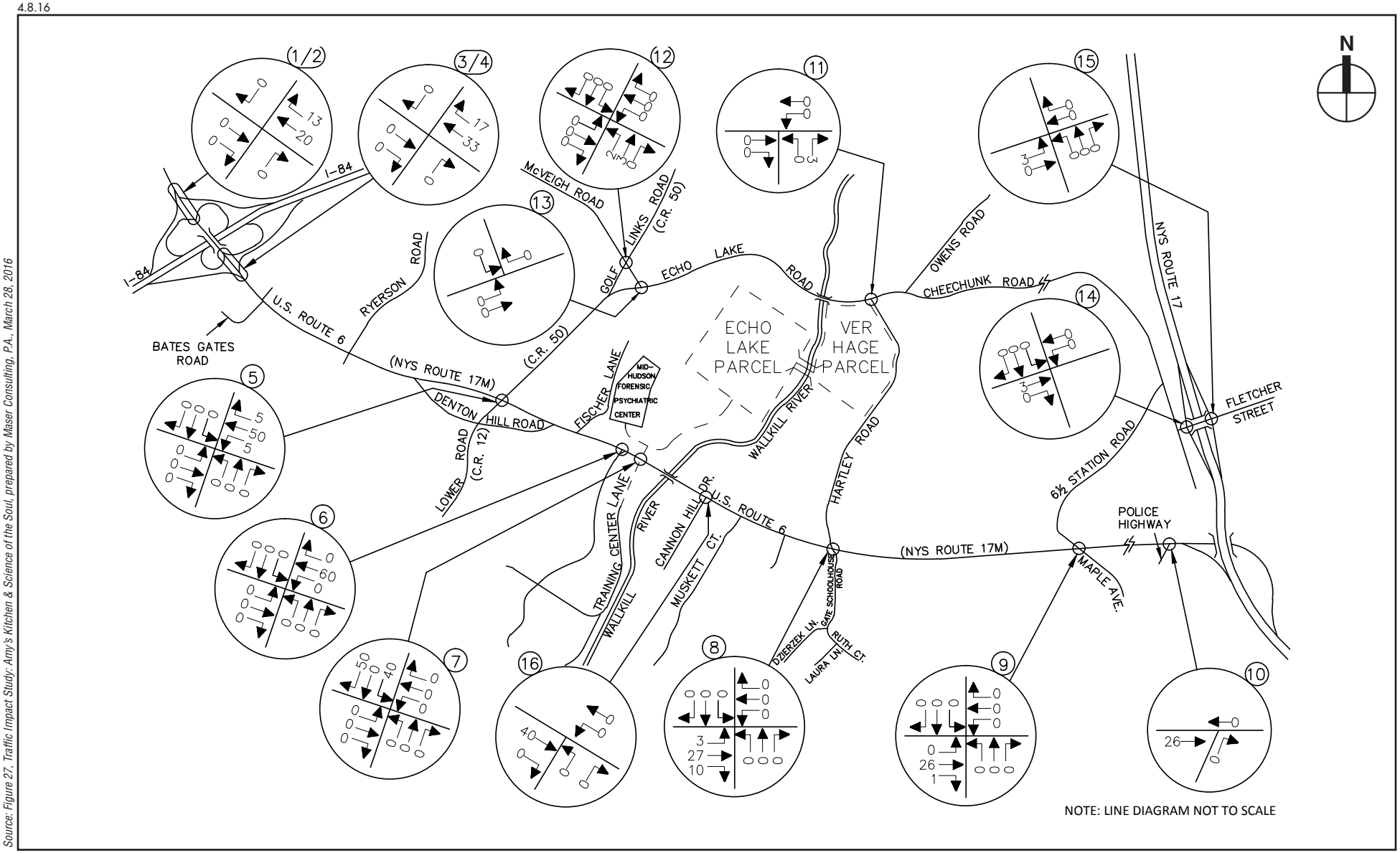
Amy's Kitchen
Science of the Soul



Source: Figure 26, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Amy's Kitchen
Science of the Soul

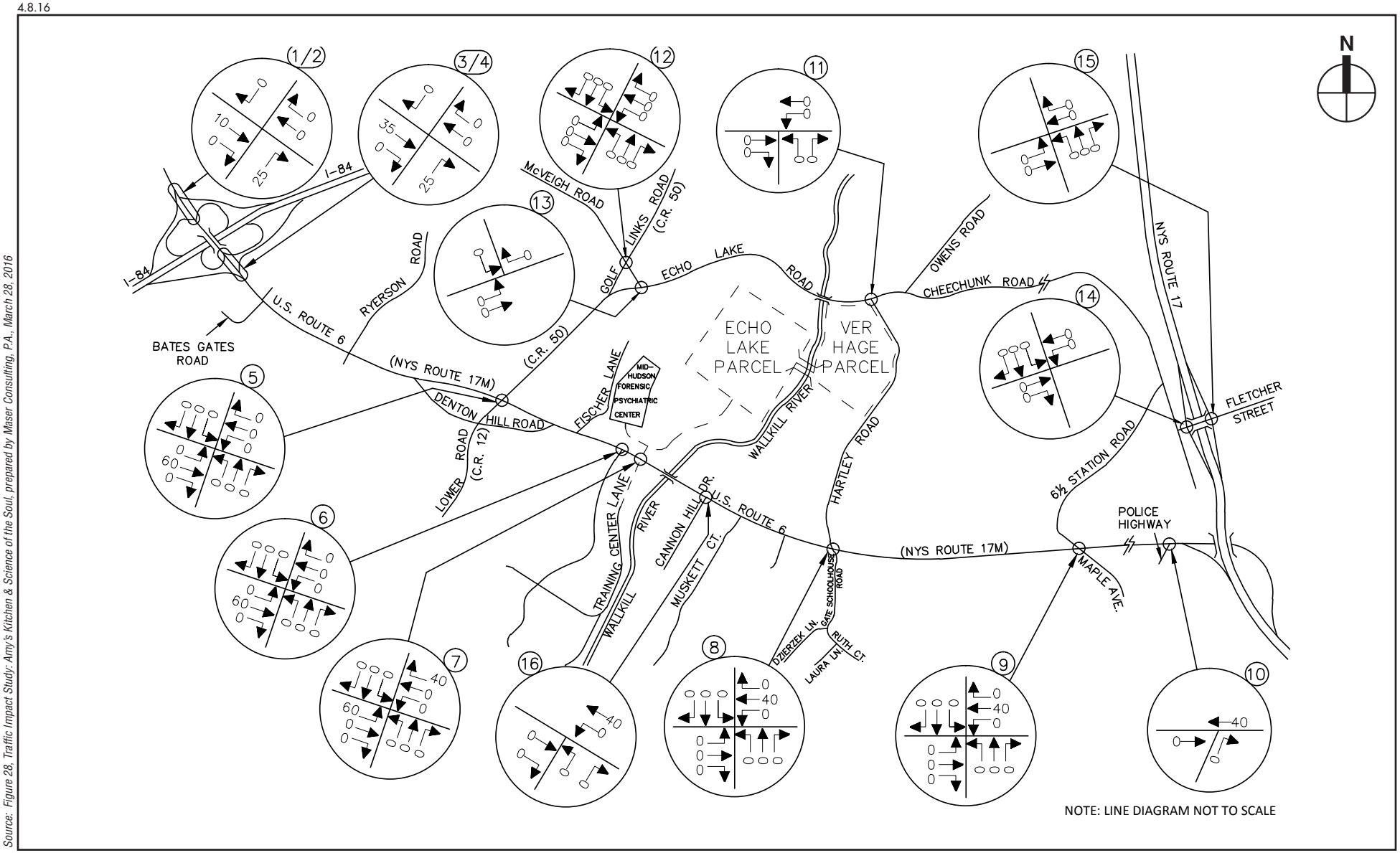
Amy's Kitchen
Arrival Distribution - Cars
(All Values Expressed as a %)
Figure III.H-16



Source: Figure 27, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

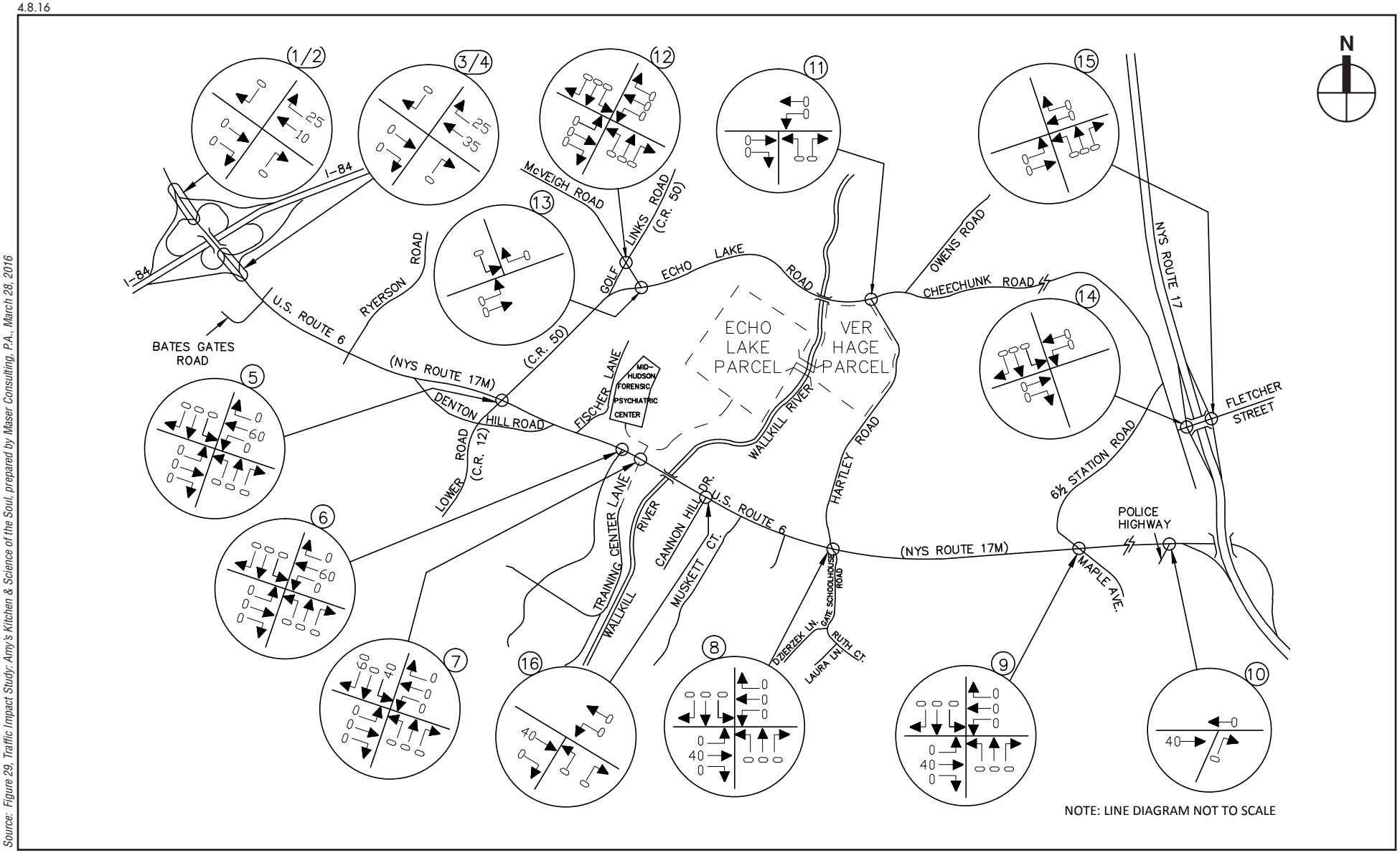
Amy's Kitchen
Science of the Soul

Amy's Kitchen
Departure Distribution - Cars
(All Values Expressed as a %)
Figure III.H-17



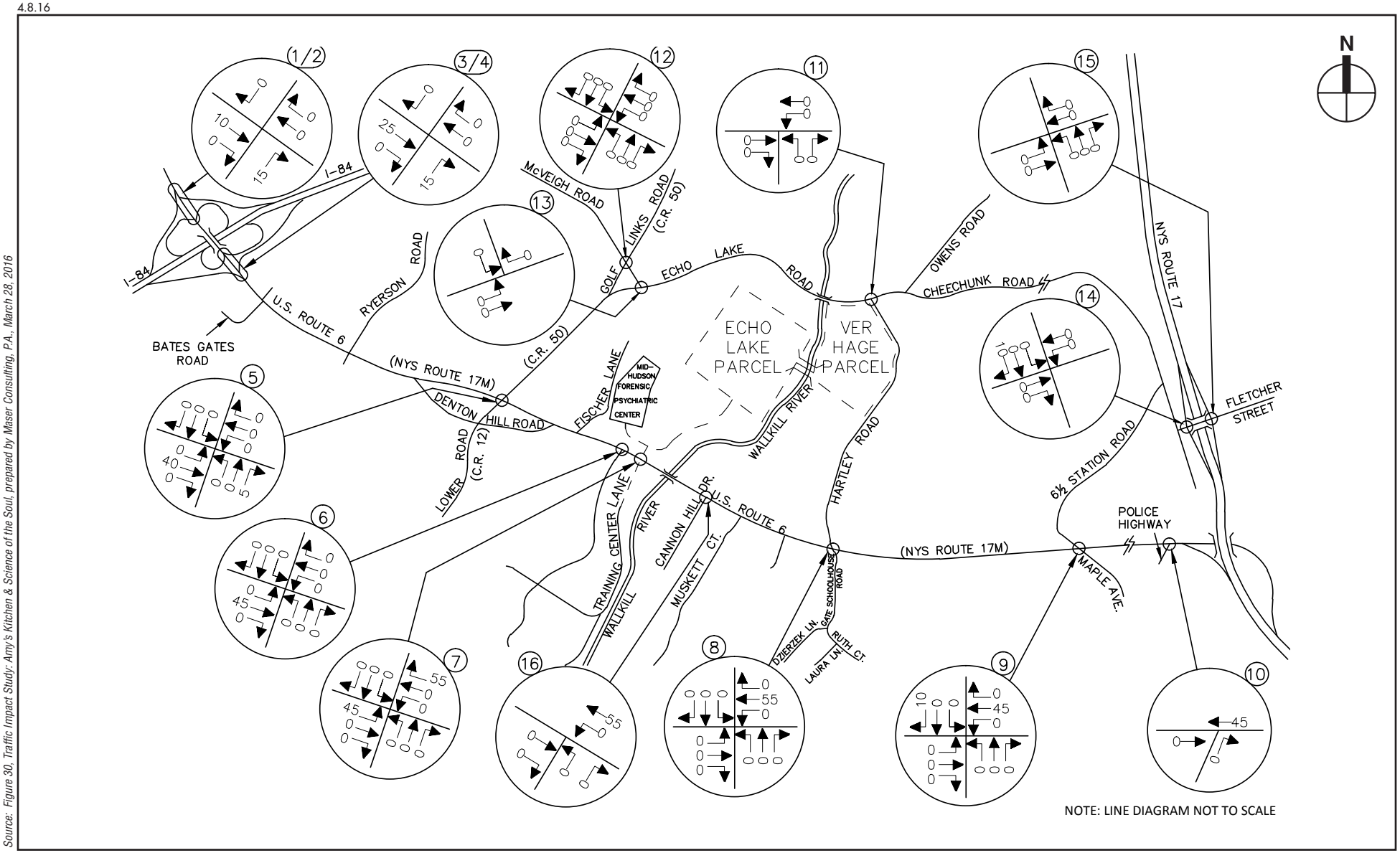
Source: Figure 28, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Amy's Kitchen
Arrival Distribution - Trucks
(All Values Expressed as a %)
Figure III.H-18



Source: Figure 29, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Amy's Kitchen
Departure Distribution - Trucks
(All Values Expressed as a %)
Figure III.H-19

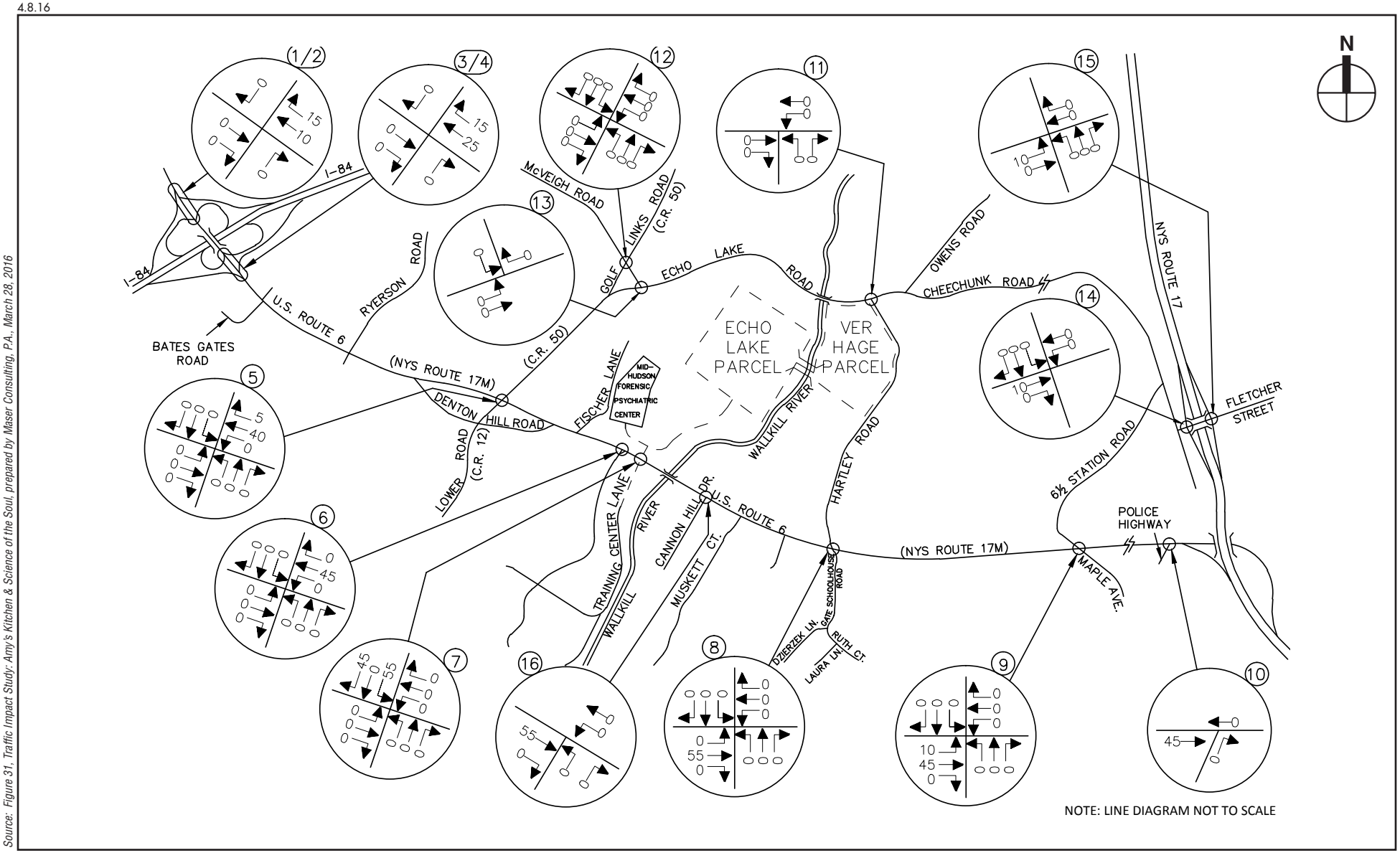


Source: Figure 30, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Science of The Soul Typical Conditions
Arrival Distribution
(All Values Expressed as a %)

Figure III.H-20

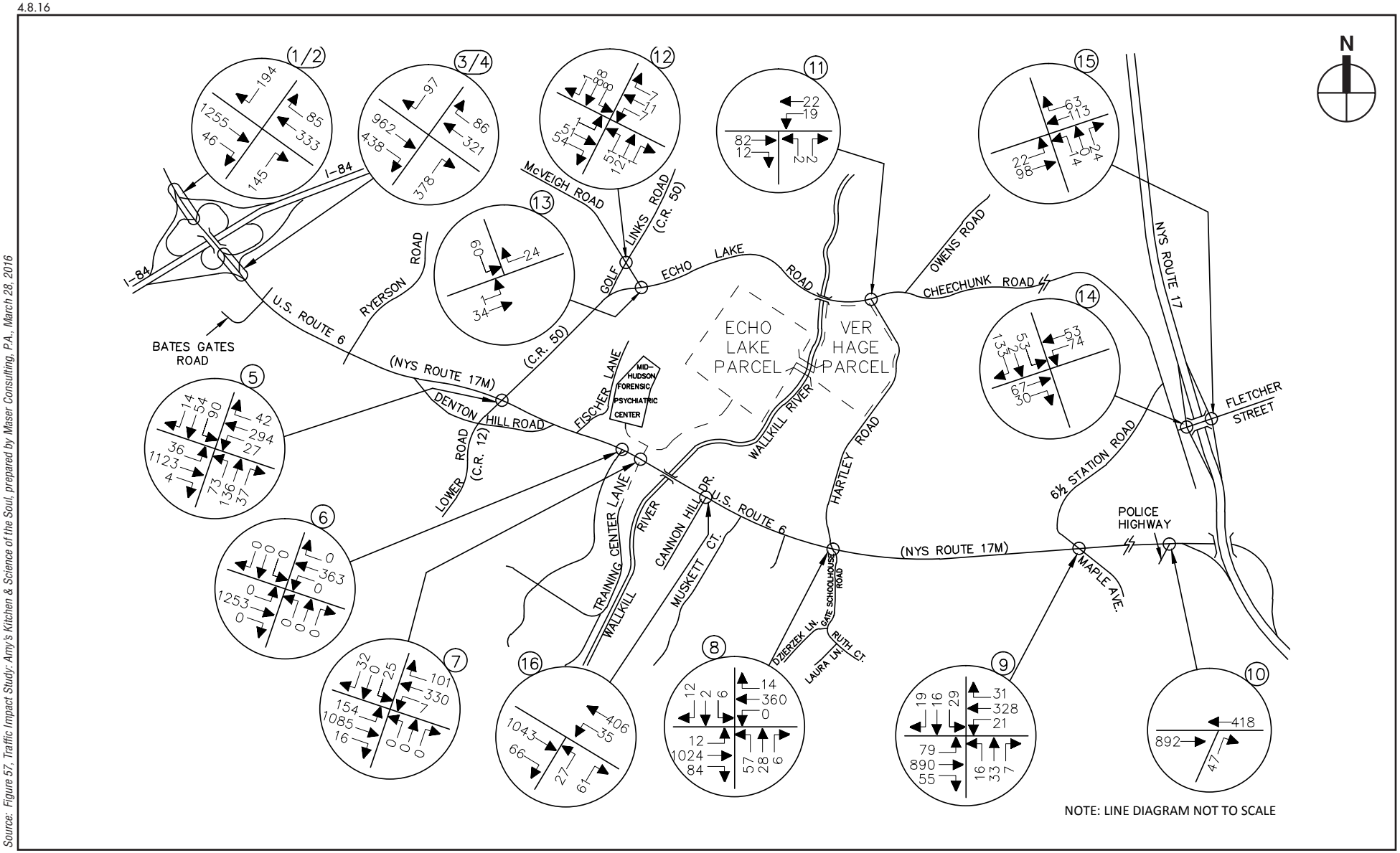
Amy's Kitchen
Science of the Soul



Source: Figure 31, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Science of The Soul Typical Conditions
Departure Distribution
(All Values Expressed as a %)
Figure III.H-21

Amy's Kitchen
Science of the Soul

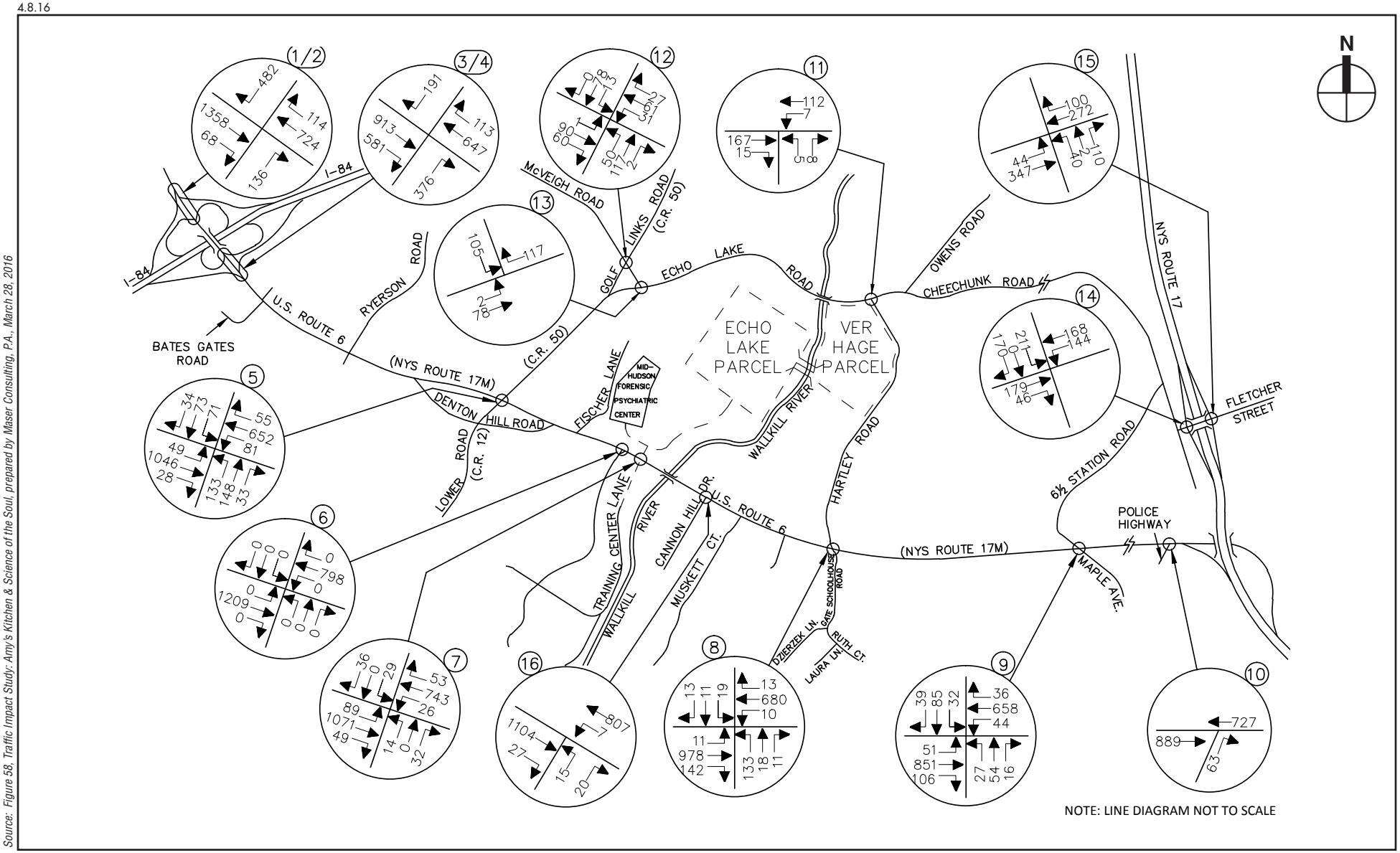


Source: Figure 57, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekday AM Peak Hour of Amy's Kitchen Generation
(6:00 AM - 7:00 AM)

Figure III.H-22

Amy's Kitchen
Science of the Soul



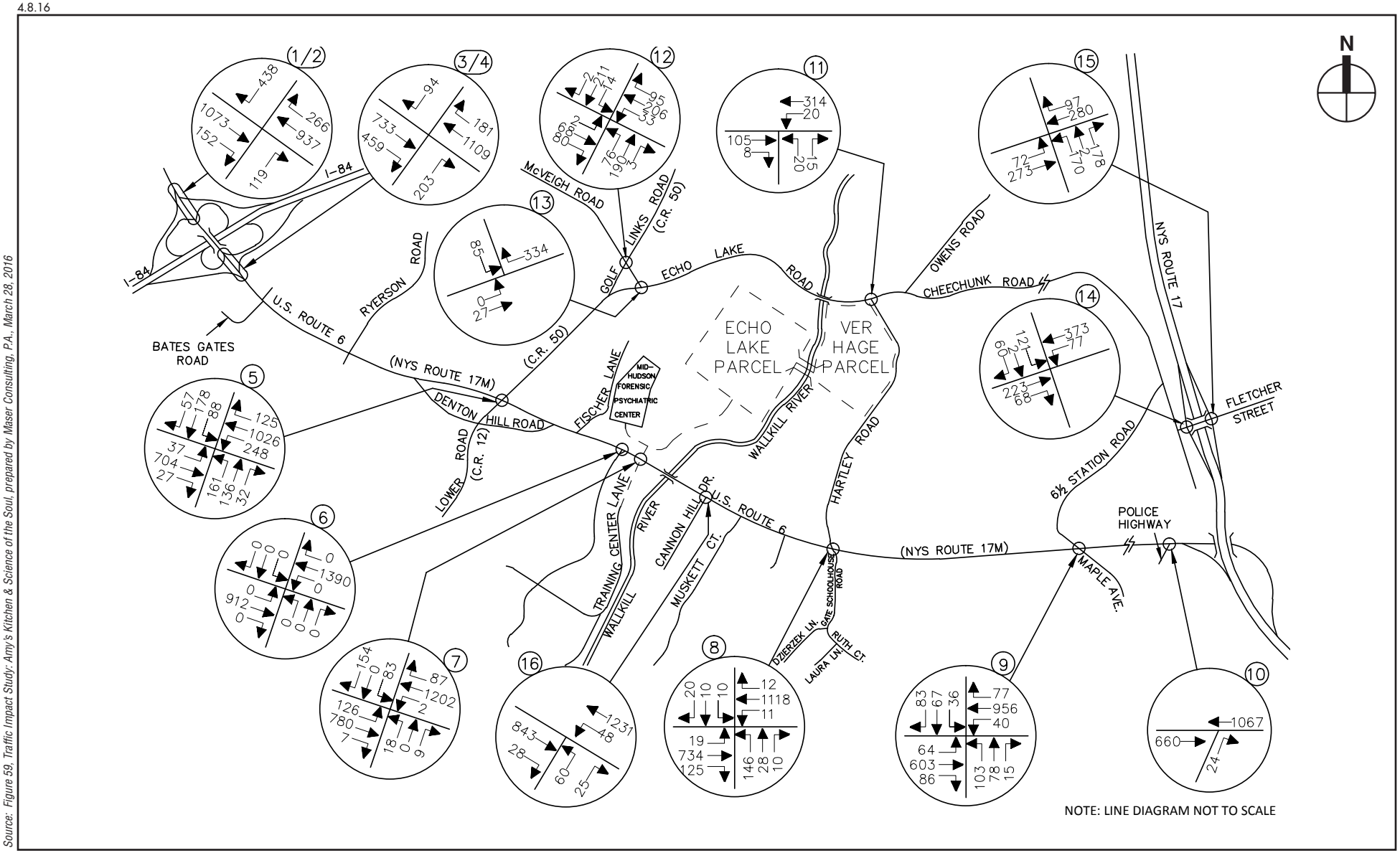
Source: Figure 58, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekday AM Peak Highway Hour
(7:30 AM - 8:30 AM)

Figure III.H-23

Amy's Kitchen
Science of the Soul

4.8.16

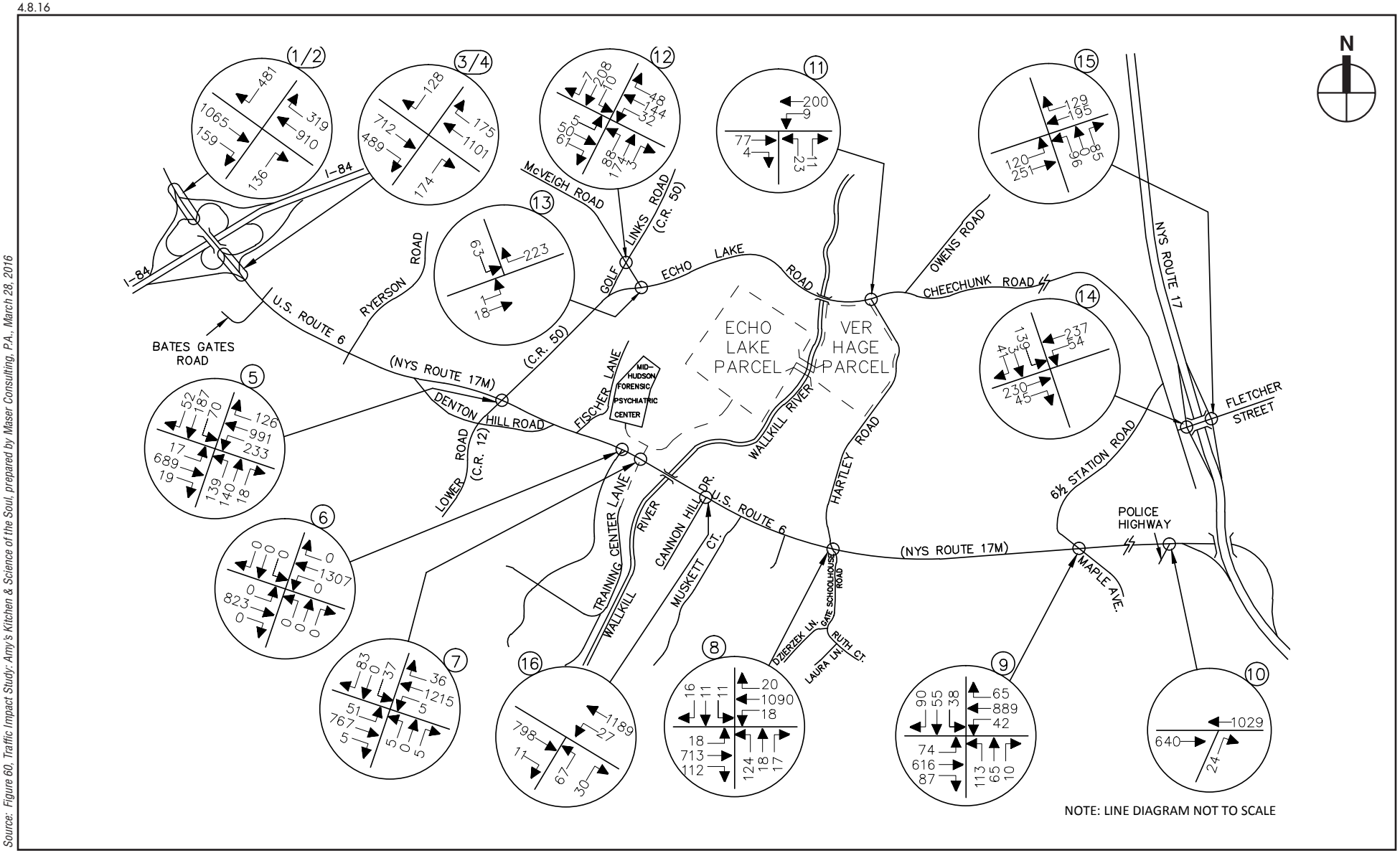


Source: Figure 59, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekday PM Peak Hour of Amy's Kitchen Generation
(3:00 PM - 4:00 PM)

Figure III.H-24

Amy's Kitchen
Science of the Soul

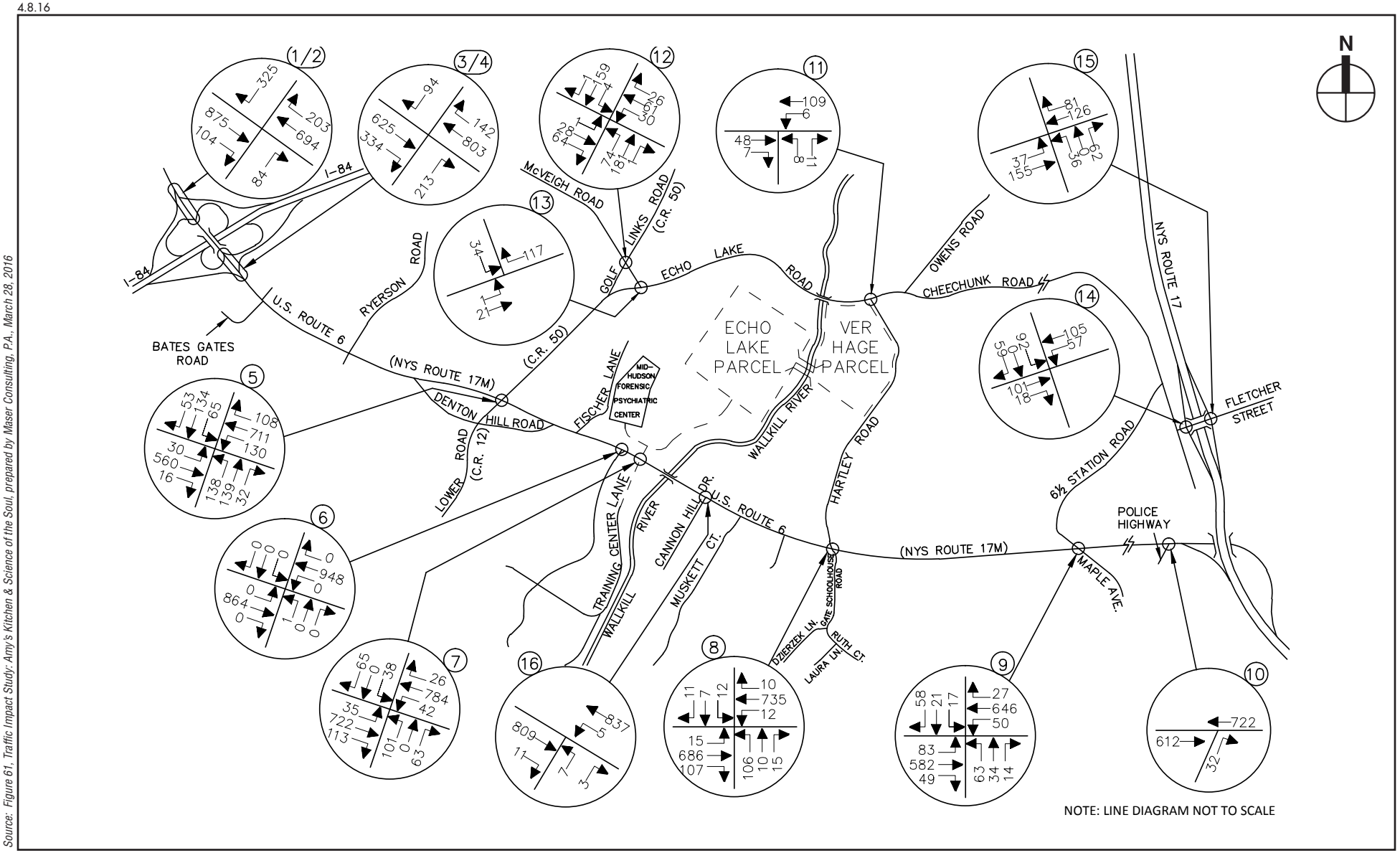


Source: Figure 60, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekday PM Peak Highway Hour
(4:30 PM - 5:30 PM)

Figure III.H-25

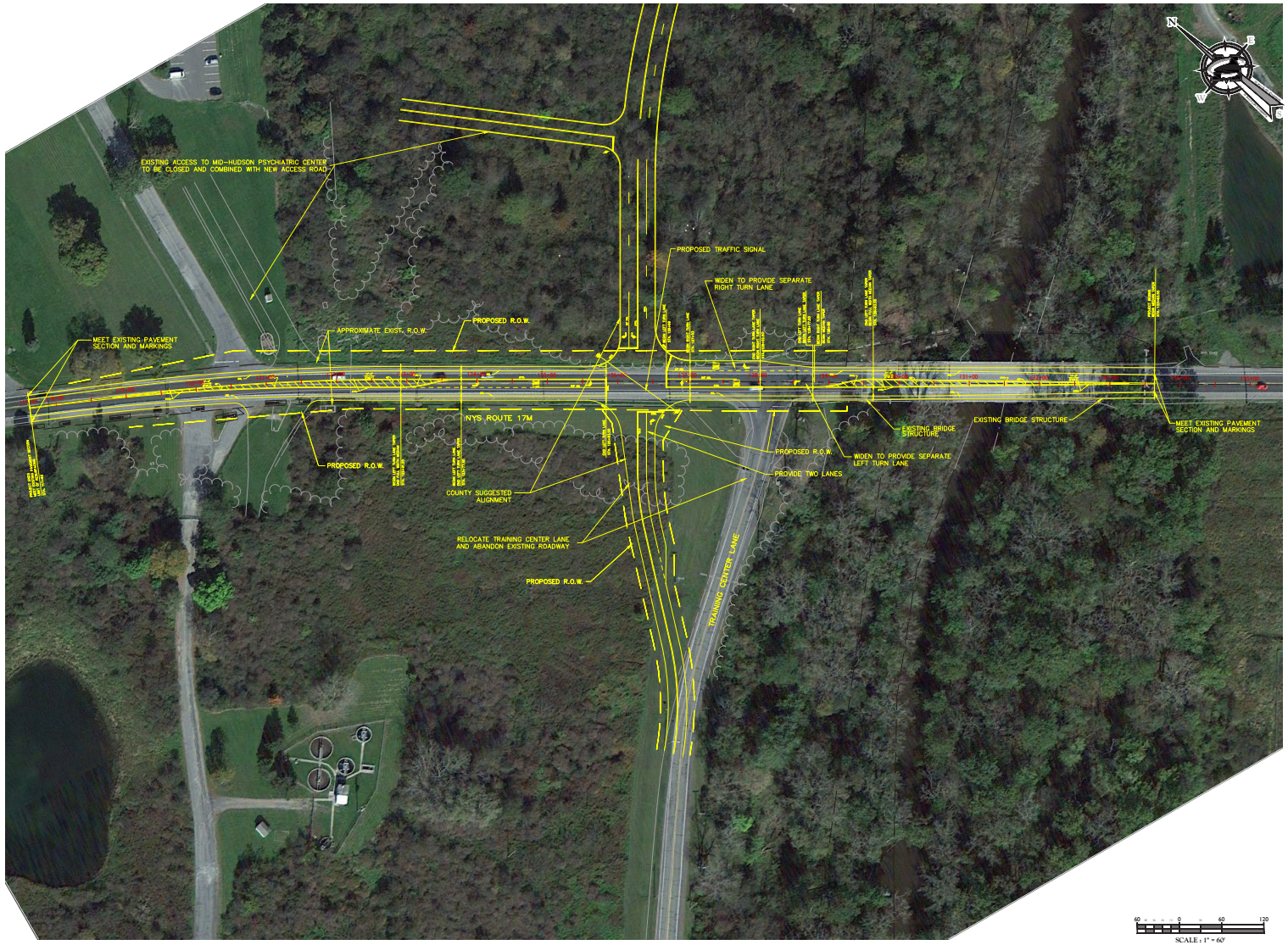
Amy's Kitchen
Science of the Soul



Source: Figure 61, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Amy's Kitchen
Science of the Soul

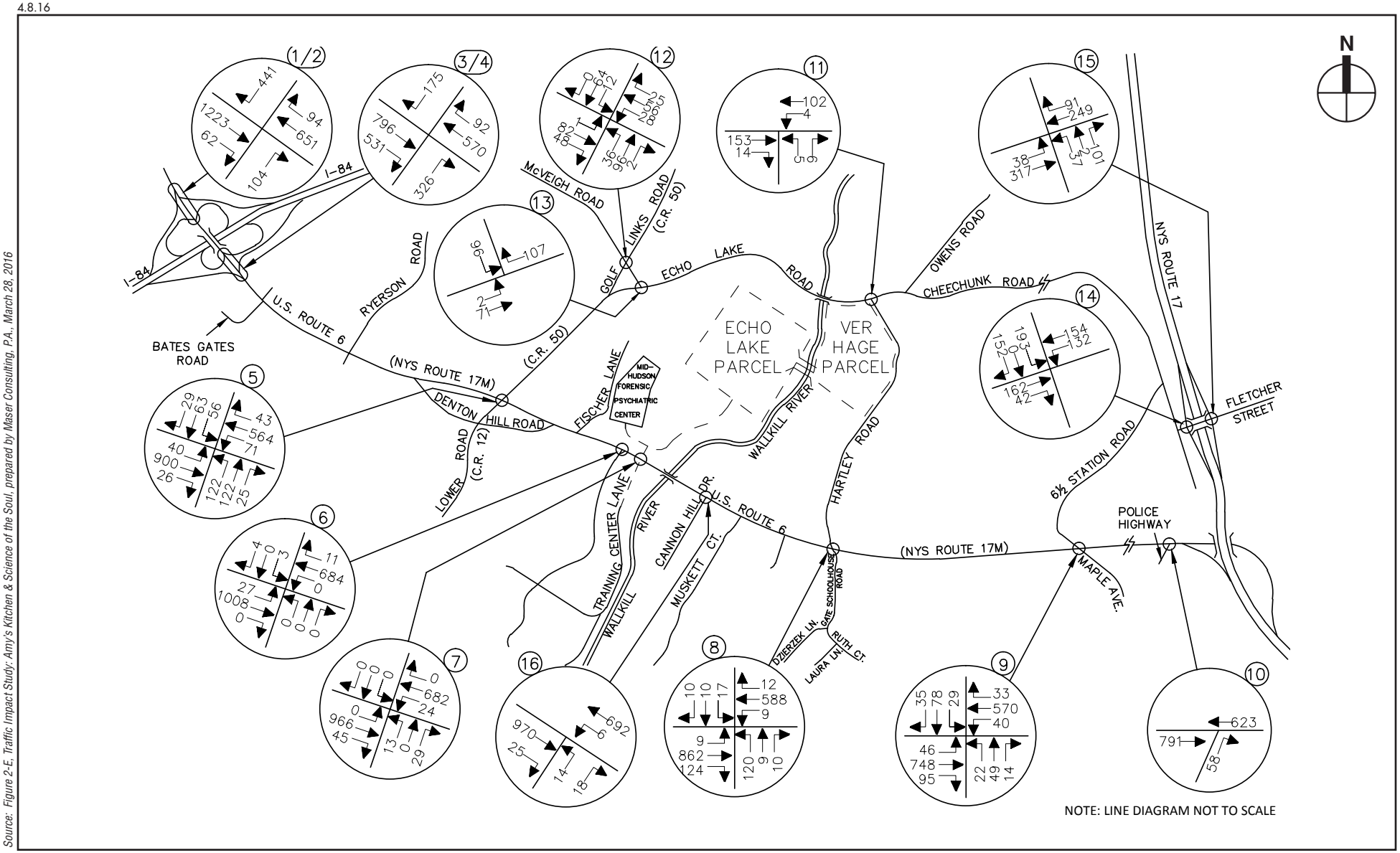
2033 Full Build Traffic Volumes
Saturday Peak Hour
Figure III.H-26



Source: Figure 31B, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

Amy's Kitchen
Science of the Soul

Concept Plan
Figure III.H-27

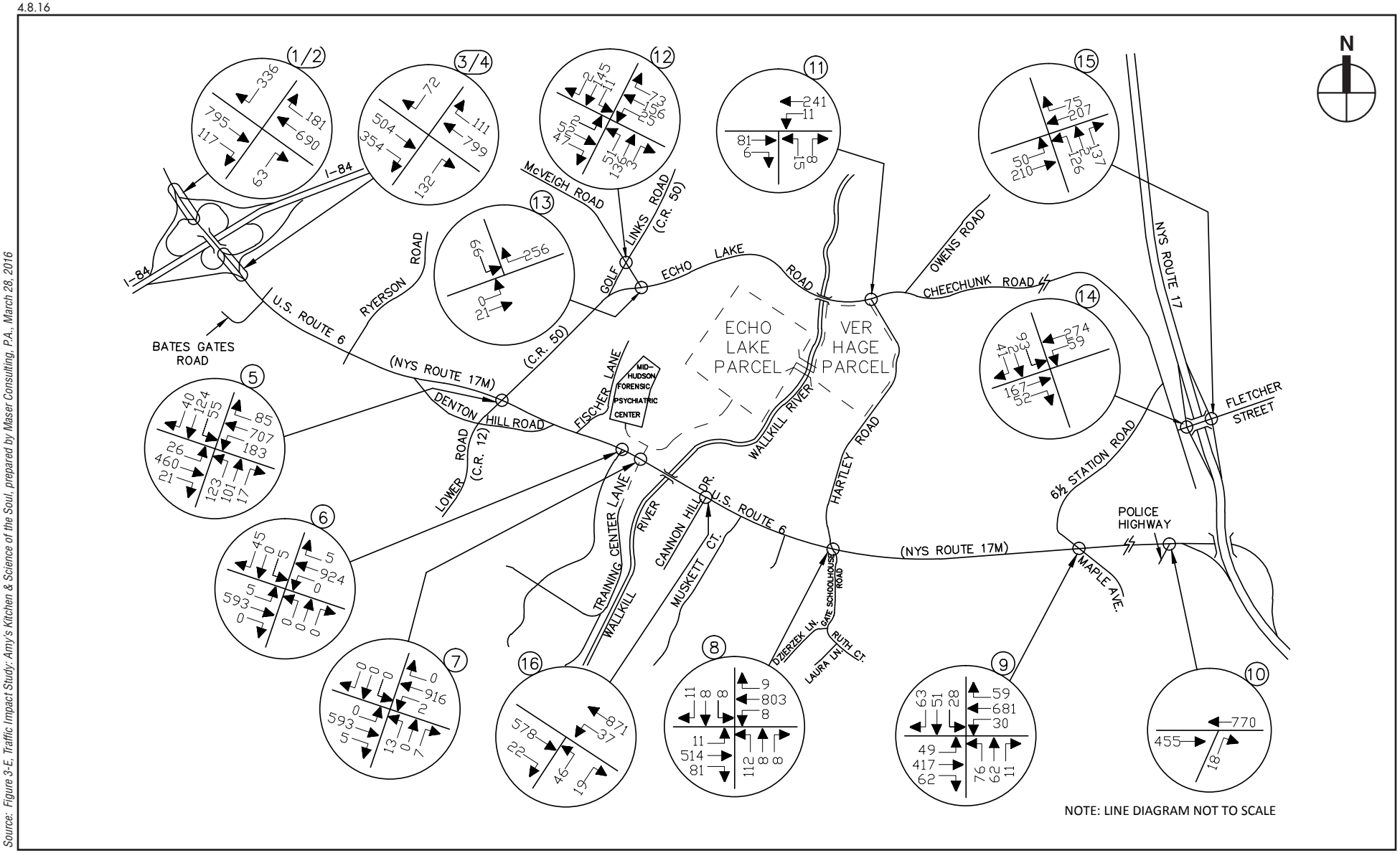


Source: Figure 2-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekday Morning Event Peak Entry Period
(8:30 AM - 9:30 AM)

Figure III.H-28

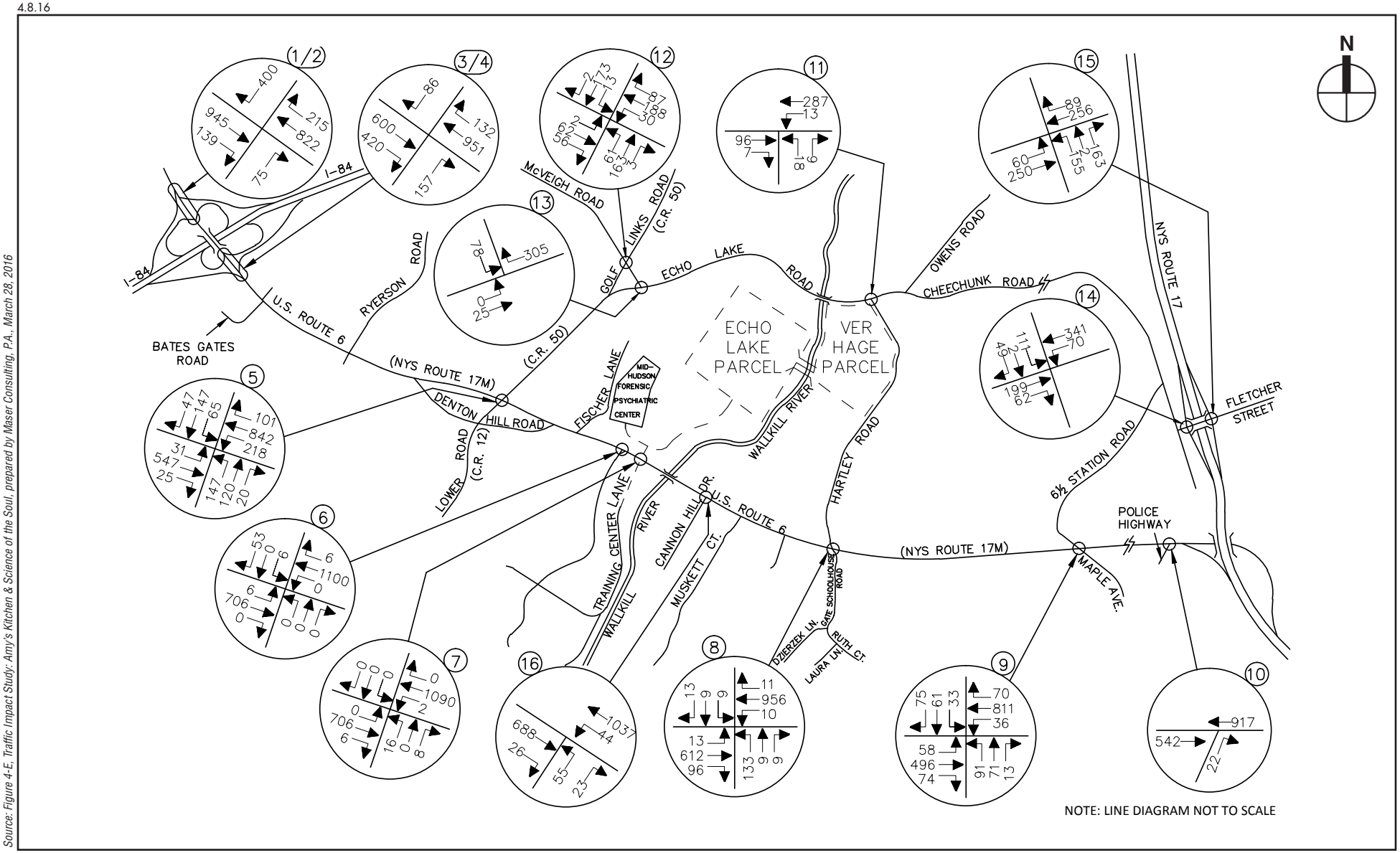
Amy's Kitchen
Science of the Soul



Source: Figure 3-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekday Morning Event Peak Exit Period
(12:00 PM - 1:00 PM)
Figure III.H-29

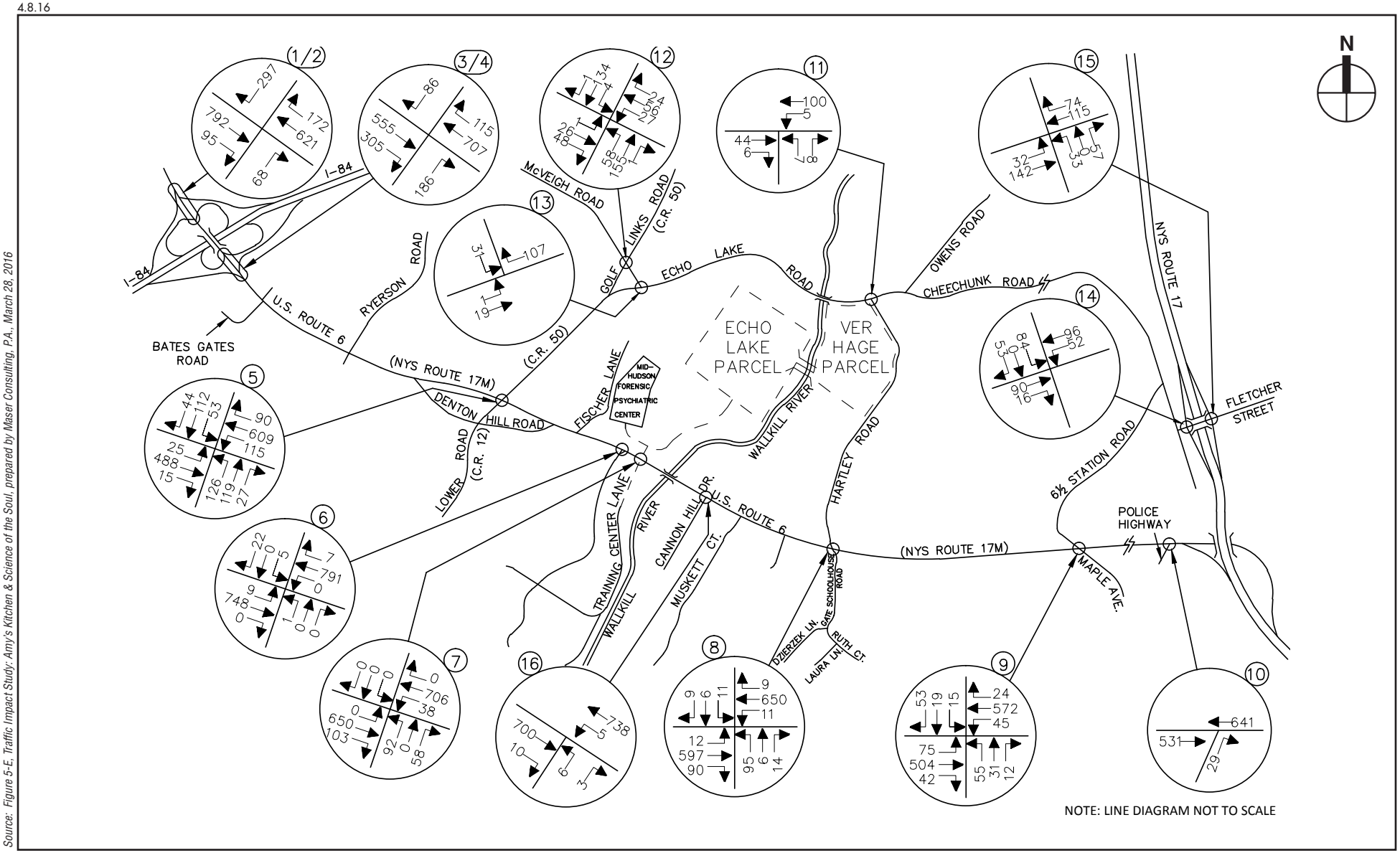
Amy's Kitchen
Science of the Soul



Source: Figure 4-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekday Afternoon Event Peak Entry Period
(2:30 PM - 3:30 PM)
Figure III.H-30

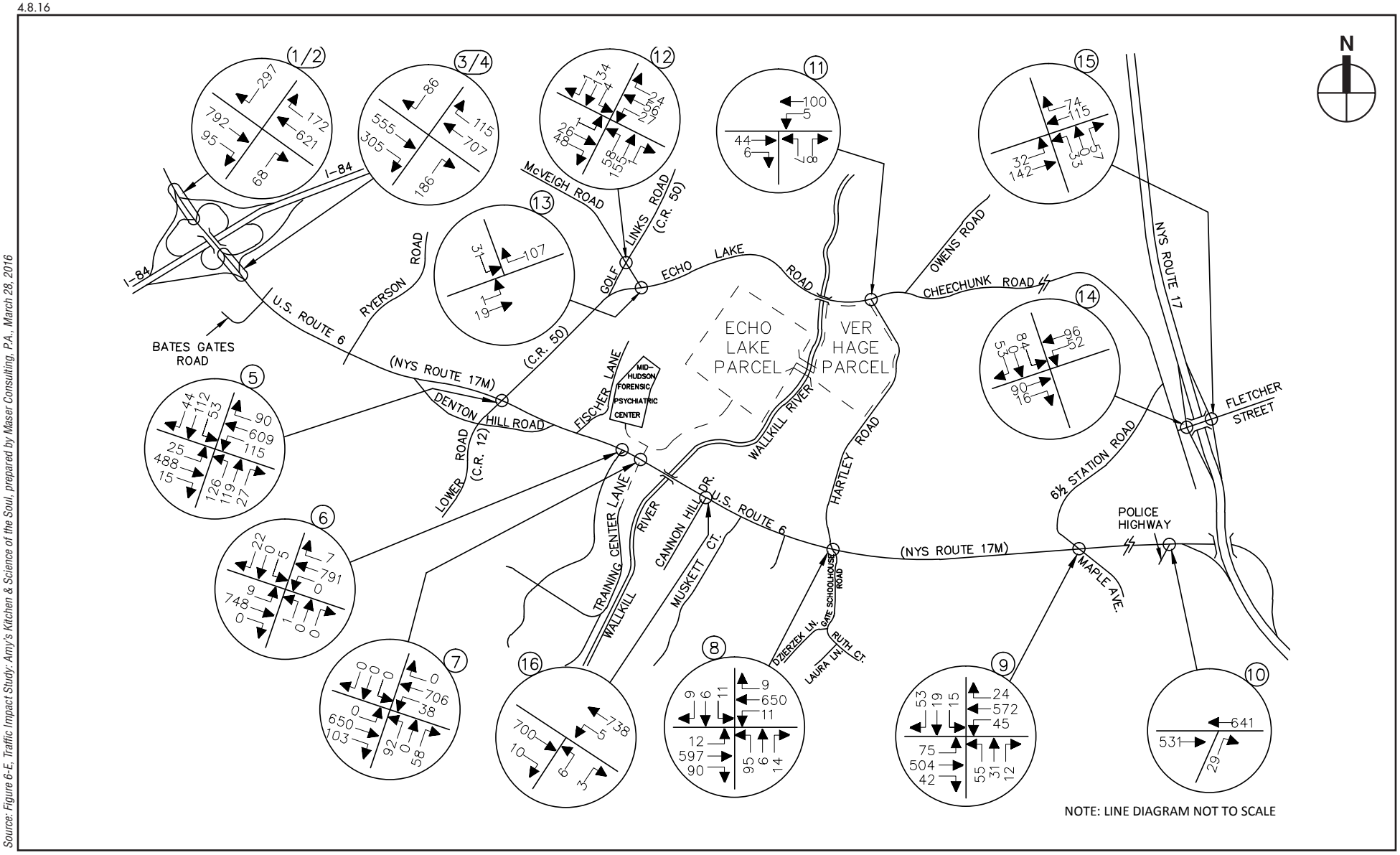
Amy's Kitchen
Science of the Soul



Source: Figure 5-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekend Morning Event Peak Exit Period
(12:00 PM - 1:00 PM)
Figure III.H-31

Amy's Kitchen
Science of the Soul

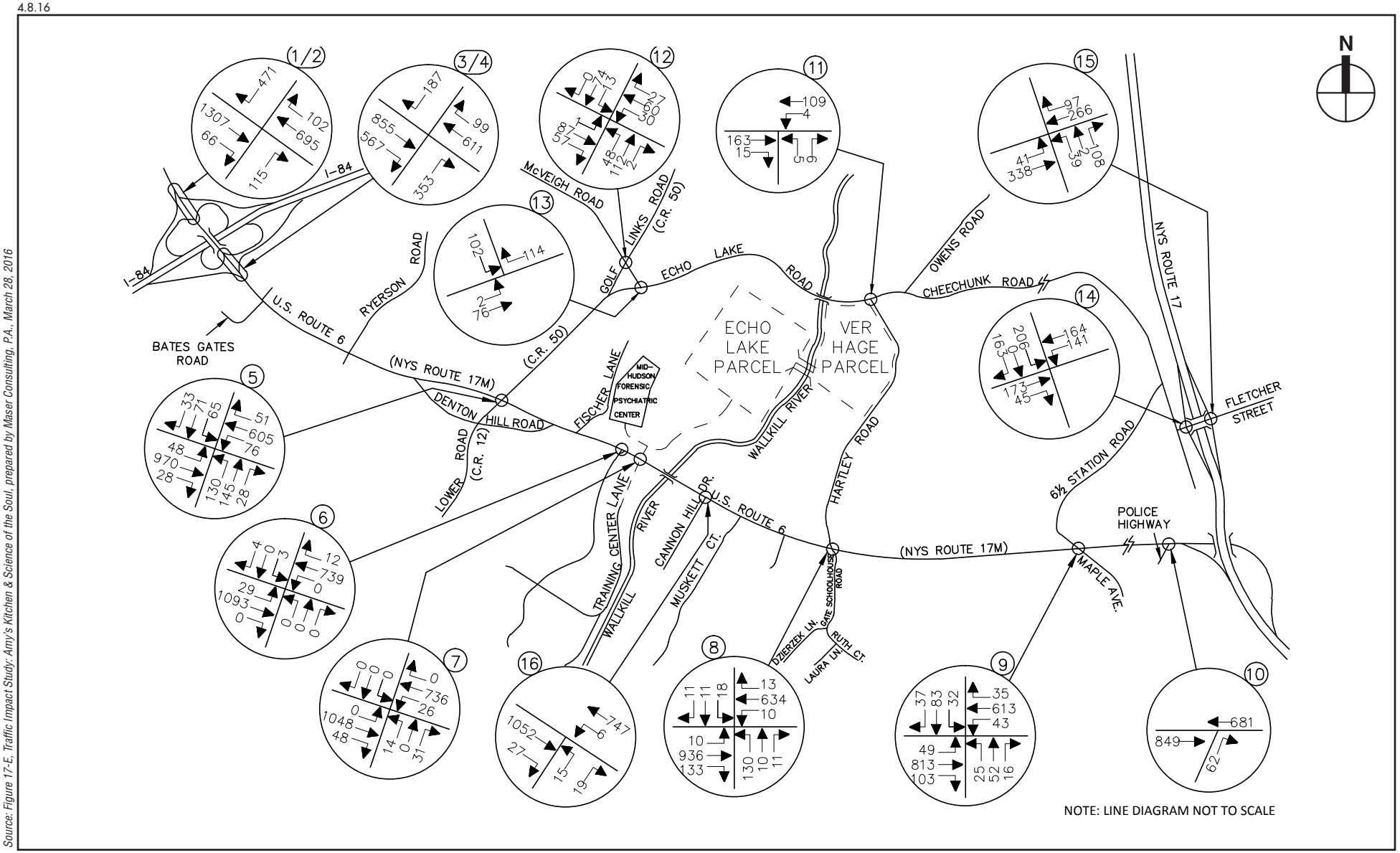


Source: Figure 6-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2015 Existing Traffic Volumes
Weekend Afternoon Event Peak Entry Period
(2:30 PM - 3:30 PM)

Figure III.H-32

Amy's Kitchen
Science of the Soul

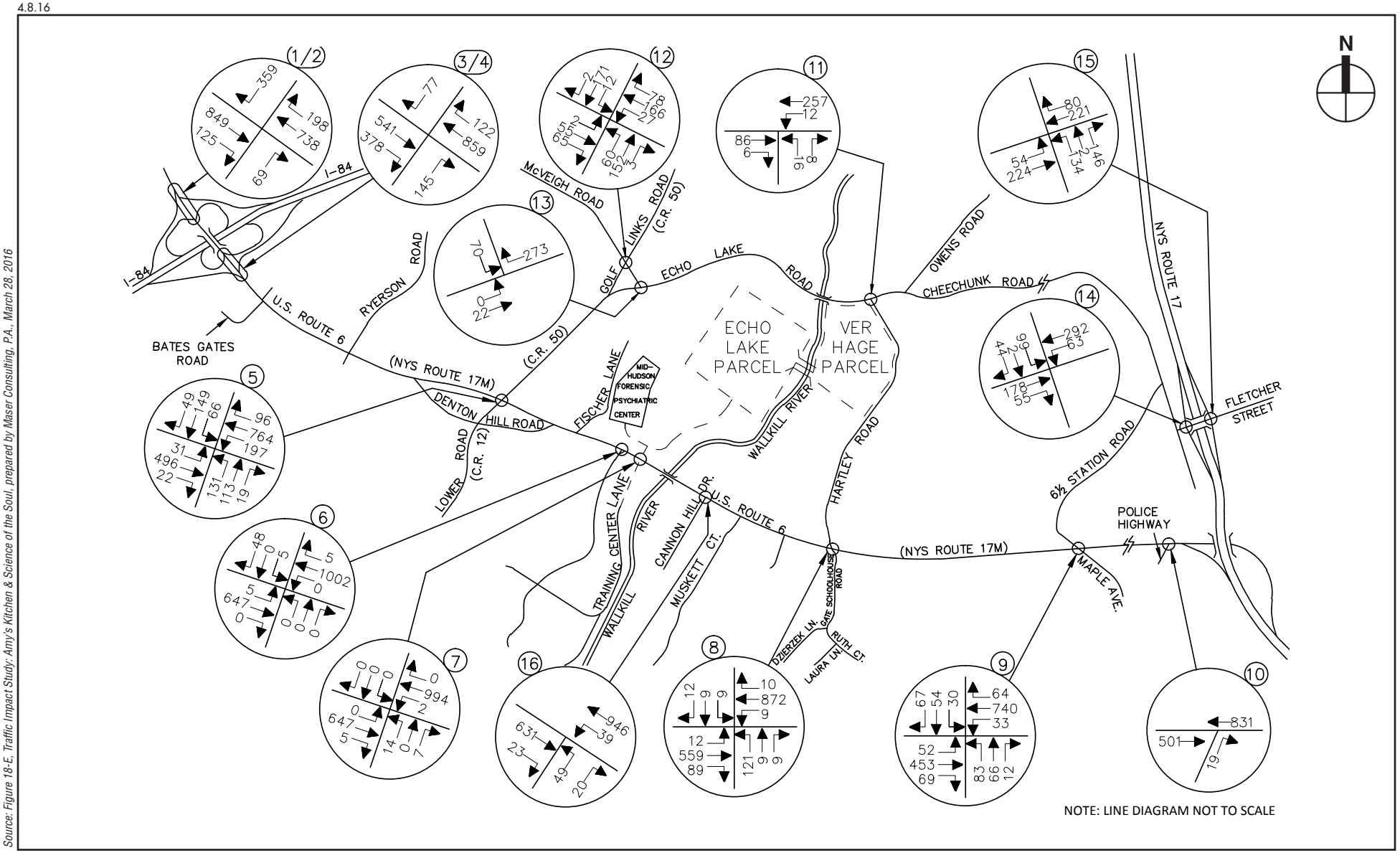


Source: Figure 17-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Weekday Morning Event Peak Entry Period
(8:30 AM - 9:30 AM)

Figure III.H-33

Amy's Kitchen
Science of the Soul

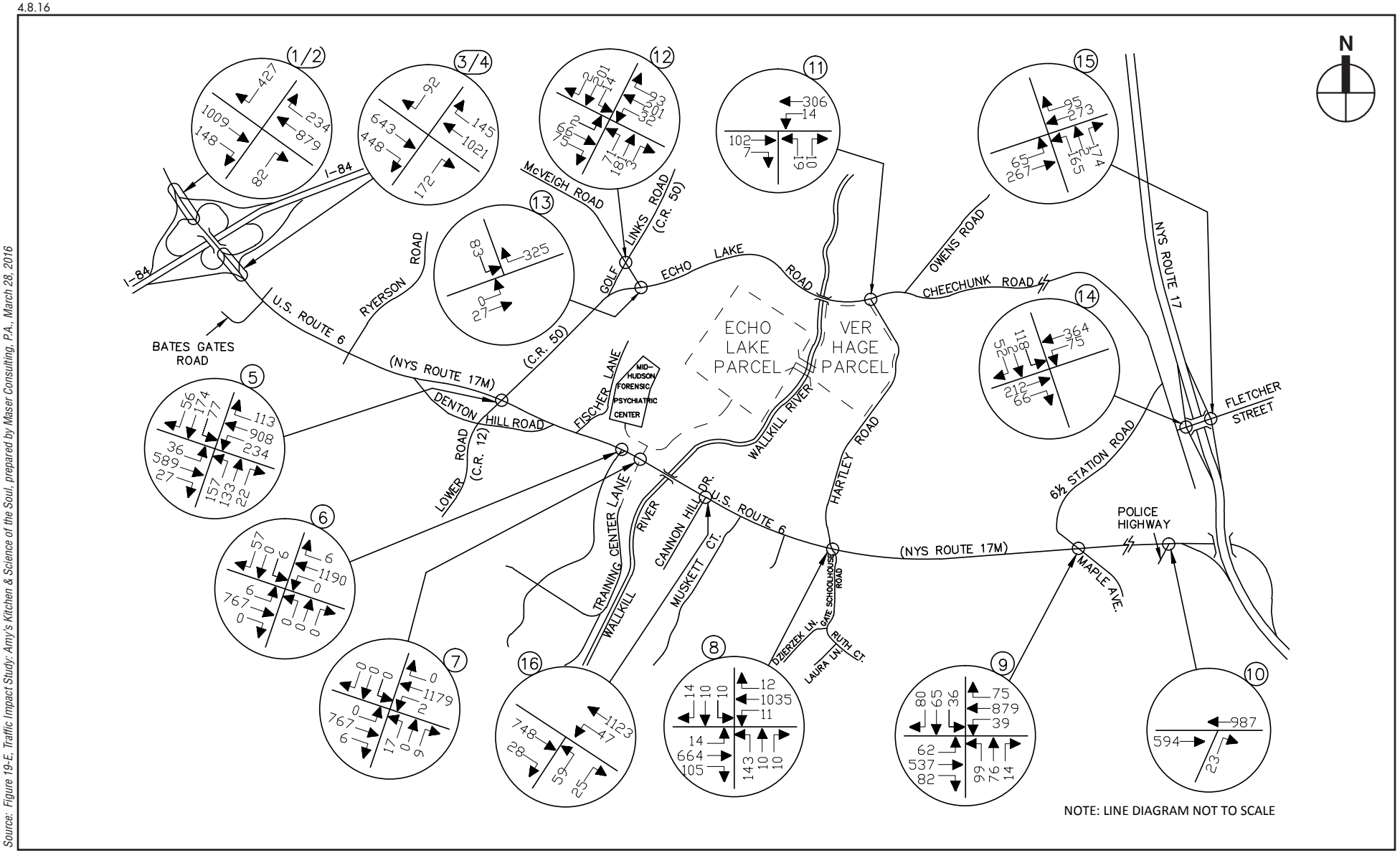


Source: Figure 18-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Weekday Morning Event Peak Exit Period
(12:00 PM - 1:00 PM)

Figure III.H-34

Amy's Kitchen
Science of the Soul

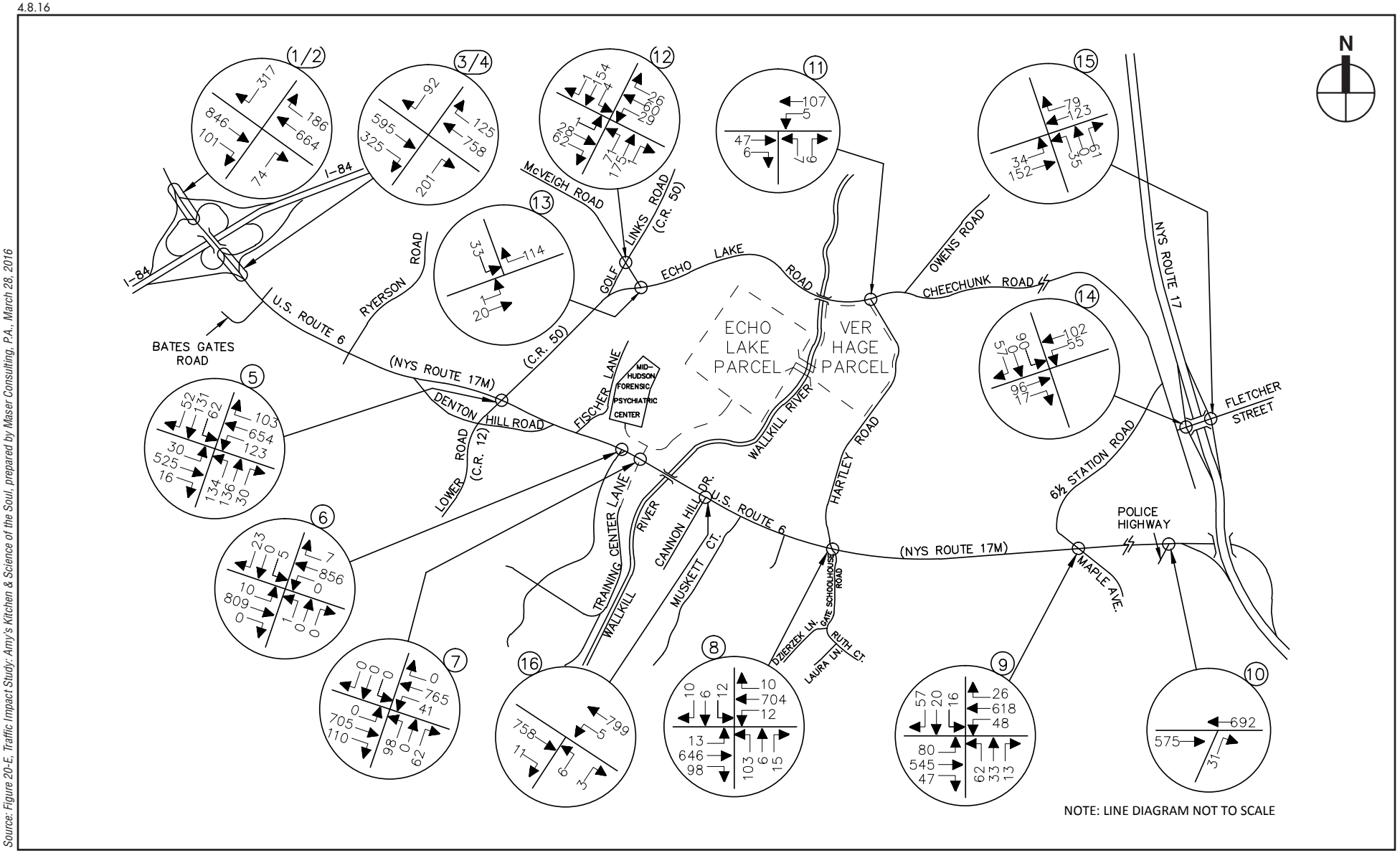


Source: Figure 19-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Weekday Afternoon Event Peak Entry Period
(2:30 PM - 3:30 PM)
Figure III.H-35

Amy's Kitchen
Science of the Soul

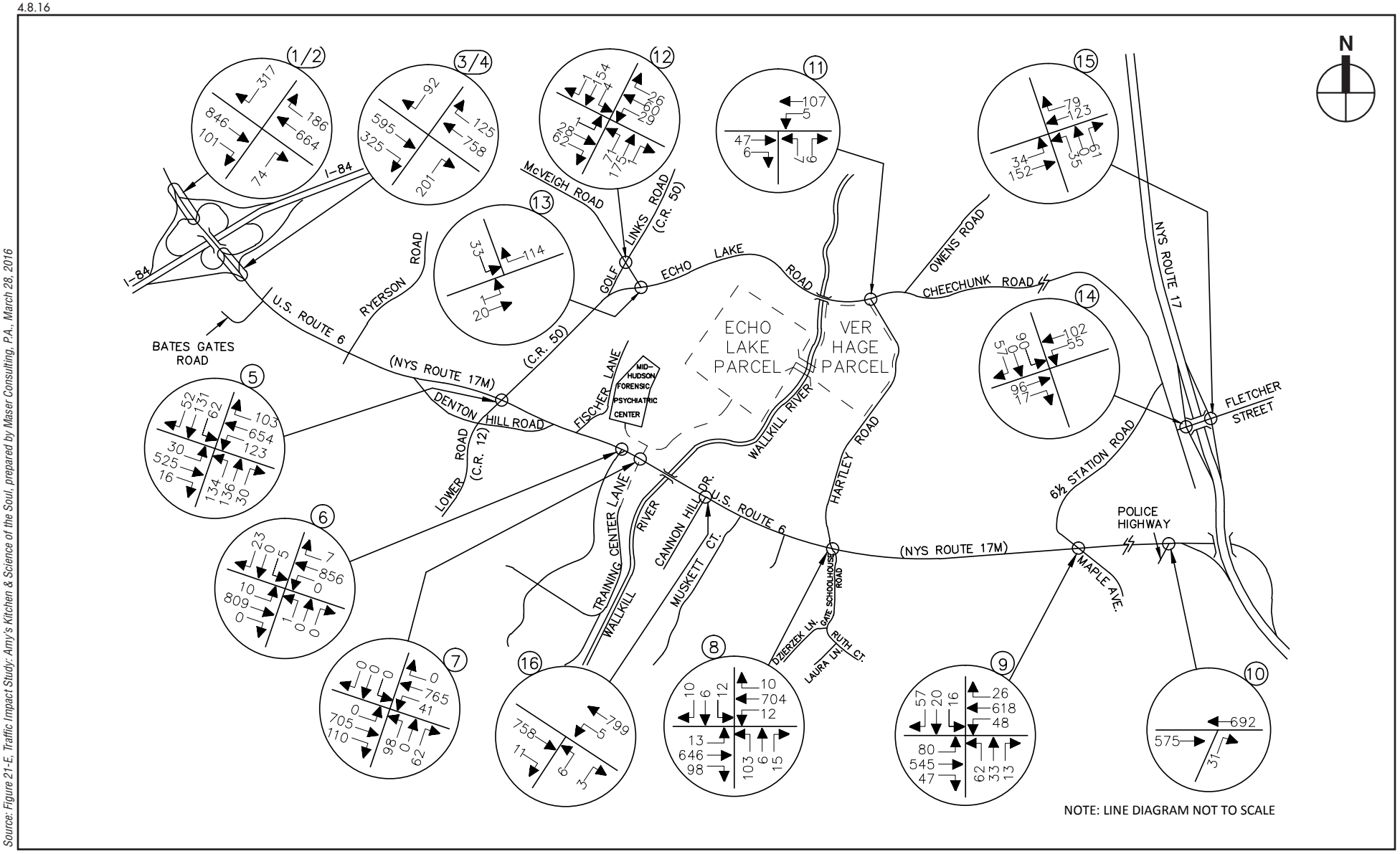
4.8.16



Source: Figure 20-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Weekend Morning Event Peak Exit Period
(12:00 PM - 1:00 PM)
Figure III.H-36

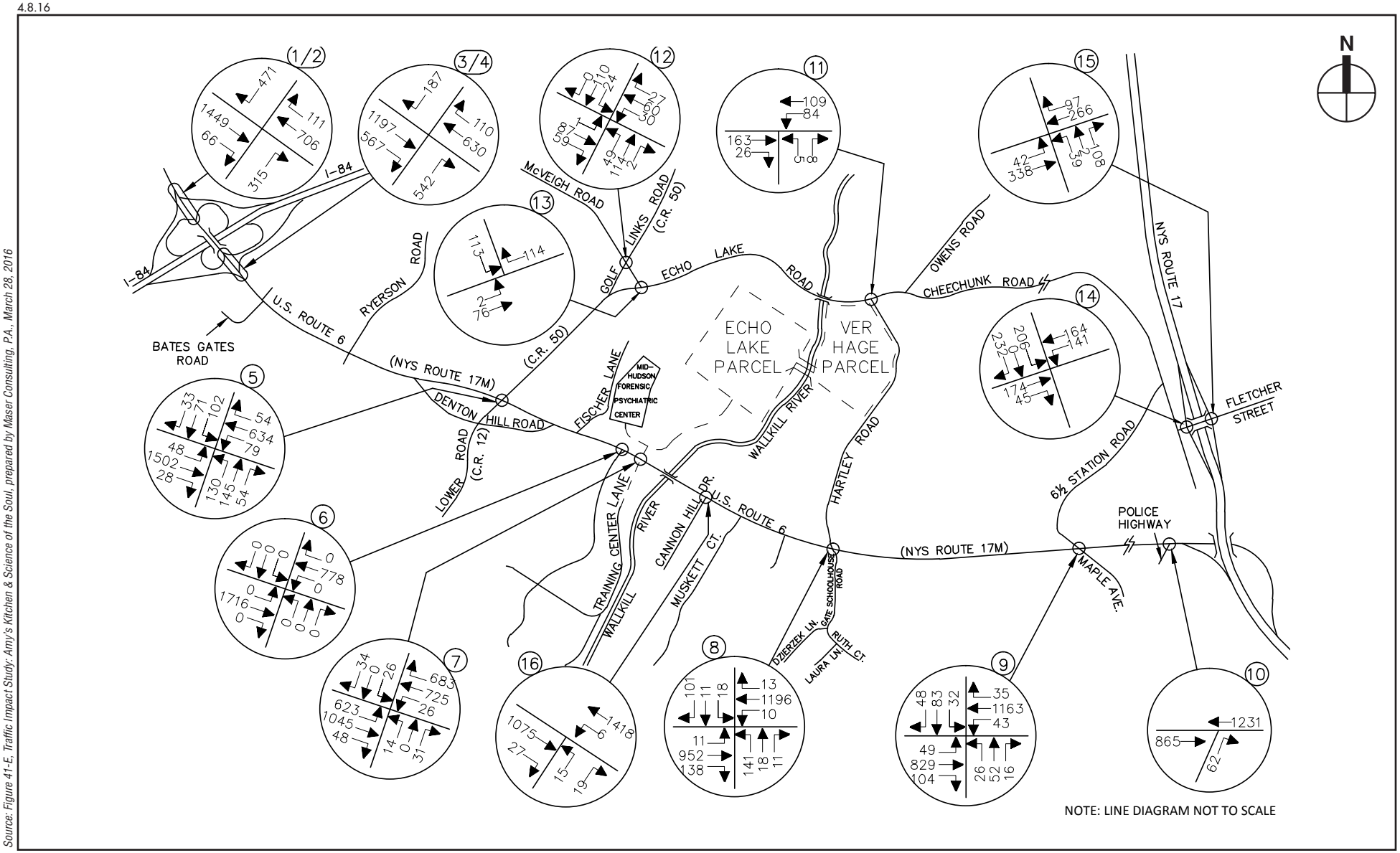
Amy's Kitchen
Science of the Soul



Source: Figure 21-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 No-Build Traffic Volumes
Weekend Afternoon Event Peak Entry Period
(2:30 PM - 3:30 PM)
Figure III.H-37

Amy's Kitchen
Science of the Soul

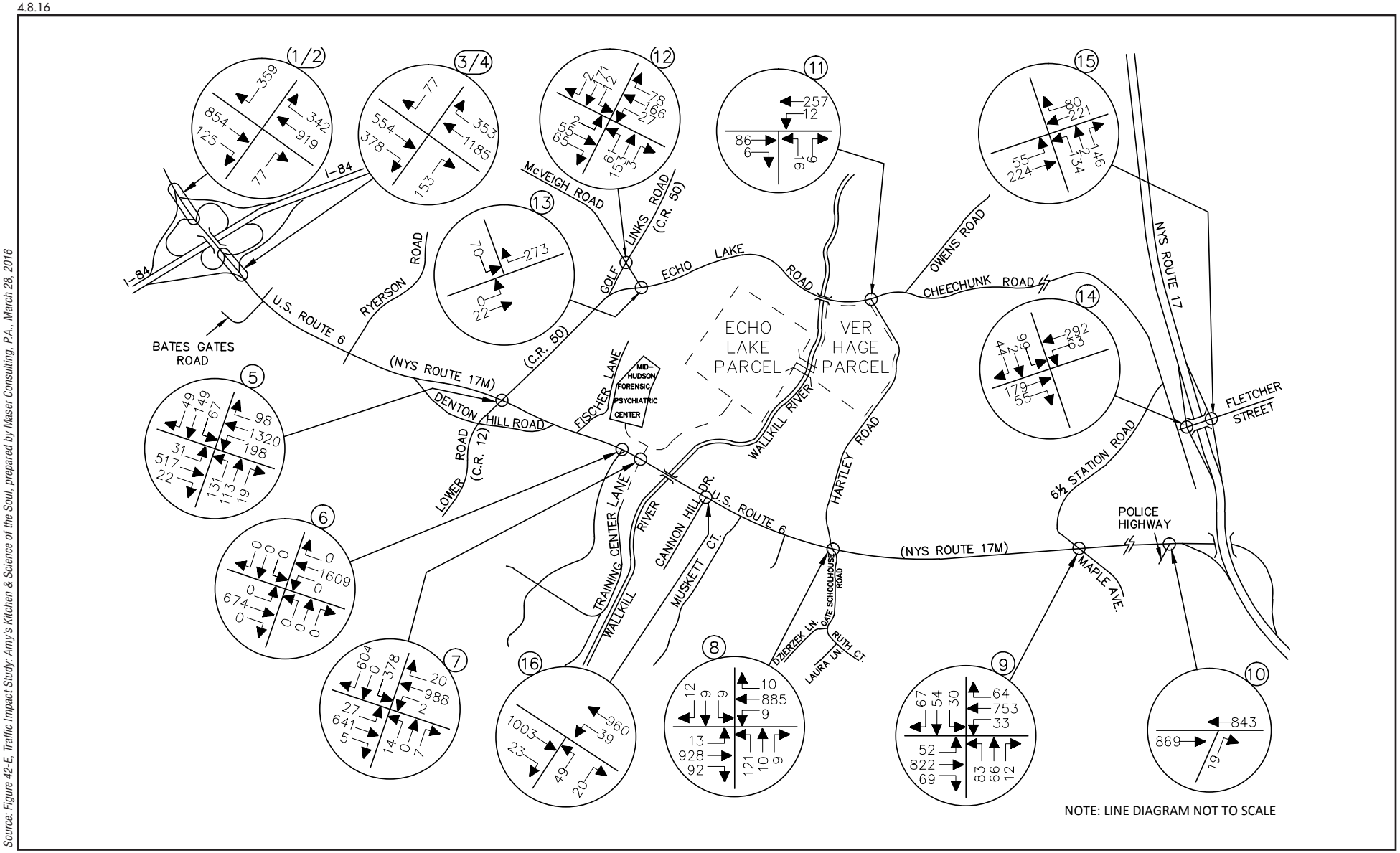


Source: Figure 41-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekday Morning Event Peak Entry Period
(8:30 AM - 9:30 AM)

Figure III.H-38

Amy's Kitchen
Science of the Soul

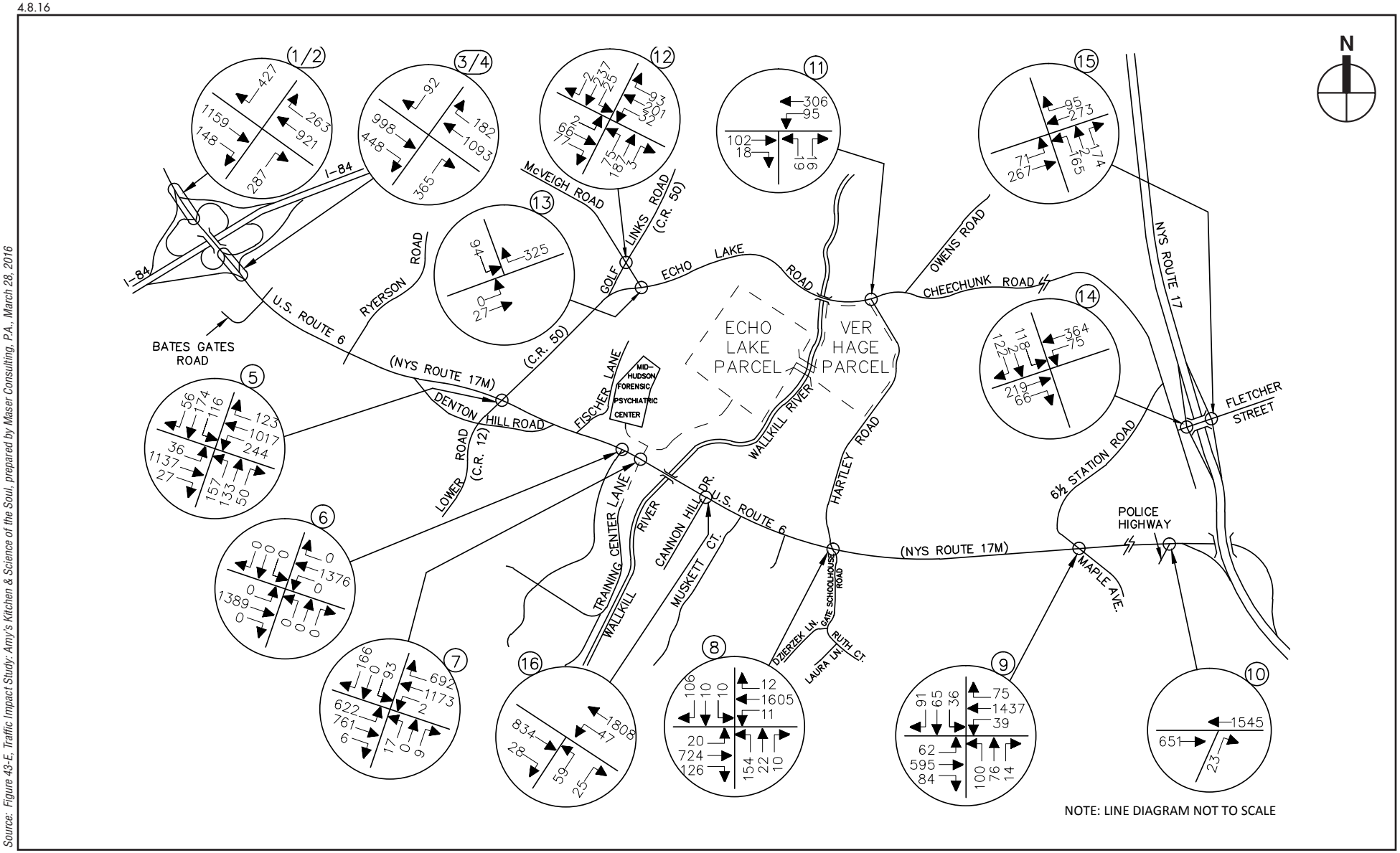


Source: Figure 42-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekday Morning Event Peak Exit Period
(12:00 PM - 1:00 PM)

Figure III.H-39

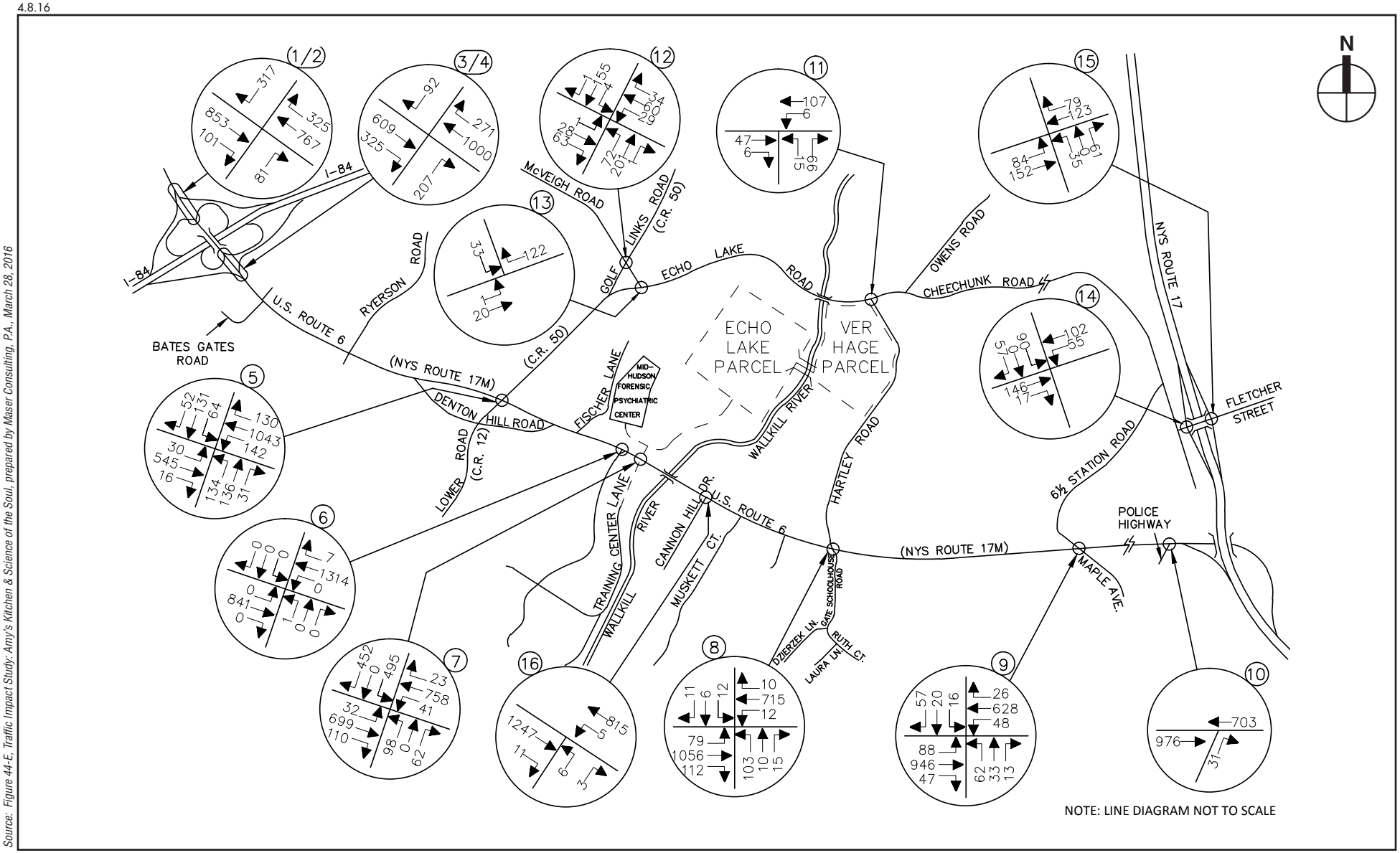
Amy's Kitchen
Science of the Soul



Source: Figure 43-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekday Afternoon Event Peak Entry Period
(2:30 PM - 3:30 PM)
Figure III.H-40

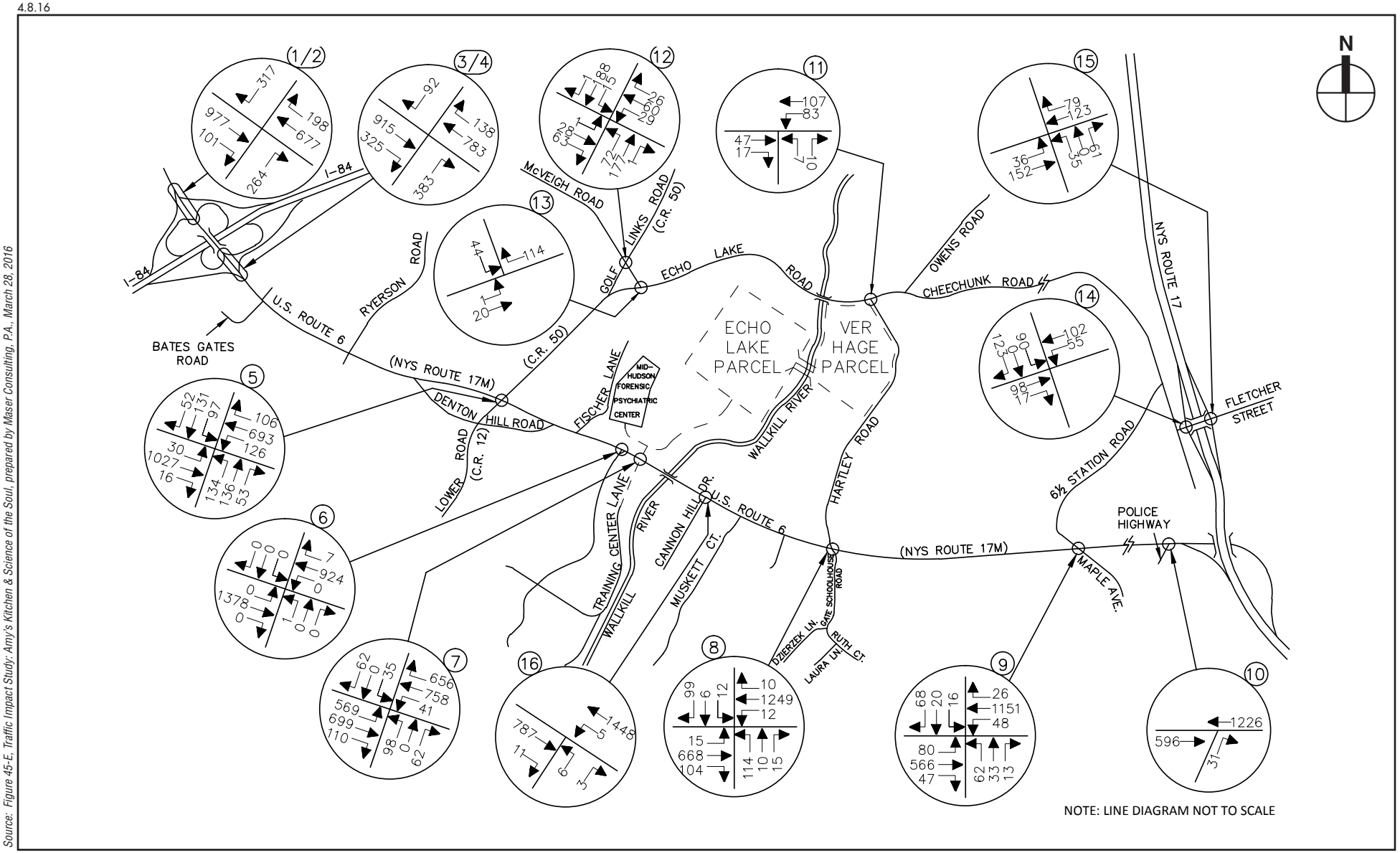
Amy's Kitchen
Science of the Soul



Source: Figure 44-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekend Morning Event Peak Exit Period
(12:00 PM - 1:00 PM)
Figure III.H-41

Amy's Kitchen
Science of the Soul



Source: Figure 45-E, Traffic Impact Study: Amy's Kitchen & Science of the Soul, prepared by Maser Consulting, P.A., March 28, 2016

2033 Full Build Traffic Volumes
Weekend Afternoon Event Peak Entry Period
(2:30 PM - 3:30 PM)
Figure III.H-42

Amy's Kitchen
Science of the Soul

A. INTRODUCTION

The noise analysis considers the noise levels that would be produced by operation of the Proposed Project, and whether that noise could result in significant adverse noise impacts on the surrounding area. The noise impact assessment examines noise generated by traffic traveling to and from the Project Site, vehicles moving within and parking at the Project Site, the operation of the Project's loading dock, and the operation of mechanical equipment associated with the Proposed Project. The following section examines the potential for impacts from these sources.

B. NOISE FUNDAMENTALS AND METHODOLOGY

NOISE FUNDAMENTALS

GENERAL EFFECTS

Quantitative information on the effects of airborne noise on humans is well documented. If sufficiently loud, noise may adversely affect humans in several ways. For example, noise may interfere with human activities, such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Although it is possible to study these effects on humans on an average or statistical basis, it must be remembered that all the stated effects of noise vary greatly with the individual. Several noise scales and rating methods are used to quantify the effects of noise on humans. These scales and methods consider such factors as loudness, duration, time of occurrence, and changes in noise level with time.

"A"-WEIGHTED SOUND LEVEL (DBA)

Noise is typically measured in units called decibels (dB), which are 10 times the logarithm of the ratio of the sound pressure squared to a standard reference pressure squared. Because loudness is important in the assessment of the effects of noise on humans, the dependence of loudness on frequency must be taken into account in the noise scale used in environmental assessments. Frequency is the rate at which sound pressures fluctuate in a cycle over a given quantity of time, and is measured in Hertz (Hz), where 1 Hz equals 1 cycle per second. Frequency defines sound in terms of pitch components. In the measurement system, one of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network—known as A-weighting—that simulates response of the human ear. For most noise assessments, the A-weighted sound pressure level in dBA units is used in view of its widespread recognition and its close correlation with perception. In this analysis, all measured noise levels are reported in dBA or A-weighted decibels. Common noise levels in dBA are shown in **Table III.I-1**.

Table III.I-1
Common Noise Levels

Sound Source	(dBA)
Military jet, air raid siren	130
Amplified rock music	110
Jet takeoff at 500 meters	100
Freight train at 30 meters	95
Train horn at 30 meters	90
Heavy truck at 15 meters	
Busy city street, loud shout	80
Busy traffic intersection	
Highway traffic at 15 meters, train	70
Predominantly industrial area	60
Light car traffic at 15 meters, city or commercial areas or residential areas close to industry	
Background noise in an office	50
Suburban areas with medium density transportation	
Public library	40
Soft whisper at 5 meters	30
Threshold of hearing	0

Note: A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness.
Source: Cowan, James P. Handbook of Environmental Acoustics. Van Nostrand Reinhold. New York. 1994.
Egan, M. David. Architectural Acoustics. McGraw-Hill Book Company. 1988.

COMMUNITY RESPONSE TO CHANGES IN NOISE LEVELS

The average ability of an individual to perceive changes in noise levels is well documented (see **Table III.I-2**). Generally, changes in noise levels less than 3 dBA are barely perceptible to most listeners, whereas 10 dBA changes are normally perceived as doublings (or halvings) of noise levels. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Table III.I-2
Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt, Beranek and Newman, Inc. *Fundamentals and Abatement of Highway Traffic Noise*, Report No. PB-222-703. Prepared for Federal Highway Administration. June 1973.

NOISE DESCRIPTORS USED IN IMPACT ASSESSMENT

Because the sound pressure level unit of dBA describes a noise level at just one moment and very few noises are constant, other ways of describing noise over extended periods have been developed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific time period as if it had been a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level," L_{eq}, can be computed. L_{eq} is the constant sound level that, in a given situation and time period (e.g., 1 hour, denoted by $L_{eq(1)}$, or 24 hours, denoted as $L_{eq(24)}$), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors such as L_1, L_{10}, L_{50}, L_{90}, and L_x, are used to indicate noise levels that are exceeded 1, 10, 50, 90 and x percent of the time, respectively. Discrete event peak levels are given as L_1 levels. L_{eq} is used in the prediction of future noise levels, by adding the contributions from new sources of noise (i.e., increases in traffic volumes) to the existing levels and in relating annoyance to increases in noise levels.

The relationship between L_{eq} and levels of exceedance is worth noting. Because L_{eq} is defined in energy rather than straight numerical terms, it is not simply related to the levels of exceedance. If the noise fluctuates very little, L_{eq} will approximate L_{50} or the median level. If the noise fluctuates broadly, the L_{eq} will be approximately equal to the L_{10} value. If extreme fluctuations are present, the L_{eq} will exceed L_{90} or the background level by 10 or more decibels. Thus the relationship between L_{eq} and the levels of exceedance will depend on the character of the noise. In community noise measurements, it has been observed that the L_{eq} is generally between L_{10} and L_{50}. The relationship between L_{eq} and exceedance levels has been used in this analysis to characterize the noise sources and to determine the nature and extent of their impact at all receptor locations.

For the purposes of this DEIS analysis, the maximum one-hour equivalent sound level ($L_{eq(1)}$) has been selected as the noise descriptor to be used in the noise impact evaluation. $L_{eq(1)}$ is the noise descriptor used by most governmental agencies, including the New York State Department of Environmental Conservation (NYSDEC) for noise impact evaluation, and is used to provide an indication of highest expected sound levels.

NOISE STANDARDS AND IMPACT CRITERIA

The following section describes federal and New York State noise criteria. These criteria provide the basis upon which commonly-used threshold values for SEQRA analyses are established. This section also provides a summary of the applicable noise regulations contained in the Codes of the Town of Goshen.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NYSDEC has published a policy and guidance document, *Assessing and Mitigating Noise Impacts* (DEP-00-1, February 2, 2001), which presents noise impact assessment methods, identifies thresholds for significant impacts, and discusses potential avoidance and mitigated measures to reduce or eliminate noise impacts.[1]

NYSDEC's guidance document sets forth thresholds that can be used in determining whether a noise increase due to a project may constitute a significant adverse impact, noting that these

[1] http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf.

thresholds should be viewed as guidelines subject to adjustment as appropriate for the specific circumstances. According to DEP-00-1:

- Increases in noise ranging from 0 to 3 dBA should have no appreciable effect on receptors;
- Increases of 3 to 6 dBA may have the potential for adverse impacts only in cases where the most sensitive of receptors (e.g., hospital or school) are present;
- Increases of more than 6 dBA may require a closer analysis of impact potential depending on existing noise levels and the character of surrounding land use and receptors; and
- Increases of 10 dBA or greater deserve consideration of avoidance and mitigation measures in most cases.

The guidance document also sets forth noise thresholds that can be used in identifying whether a noise level due to a project should be considered a significant adverse impact. According to the guidance, the addition of any noise source in a non-industrial setting should not raise the ambient noise level above a maximum of 65 dBA, and ambient noise levels in industrial or commercial areas may exceed 65 dBA with a high end of approximately 79 dBA. As set forth in the guidance, projects that exceed these levels should explore the feasibility of implementing mitigation.

TOWN OF GOSHEN NOISE ORDINANCE

The Town of Goshen Town Code describes loud, disturbing and unnecessary noises that would be considered a violation of the ordinance. Chapter 70, "Noise," at §70-2, "Prohibited noise," prohibits any noise exceeding 75 dBA at the adjoining property line.

PROJECT IMPACT CRITERIA

For purposes of impact assessment, the Proposed Project will have a significant noise impact if one of the following criteria is exceeded:

- An increase in $L_{eq(1)}$ noise levels of greater than 6.0 dBA at receptor sites and produce ambient noise levels of more than 65 dBA at residences.
- Noise levels associated with the Proposed Project exceed 75 dBA at the adjoining property line.

The impact criteria reflects the commonly-used threshold value used in SEQRA analysis, and is consistent with New York State Department of Environmental Conservation and the Town of Goshen Noise Ordinance.

METHODOLOGY

This assessment examines noise associated with the Proposed Project due to vehicular traffic, parking lot, loading dock, and HVAC equipment. The noise assessment considers each source of noise individually and cumulatively.

MOBILE SOURCE NOISE METHODLOGY

Mobile sources constitute vehicles arriving at and departing from the Project Site. The *Traffic Noise Model* Version 2.5 (TNM) was used to calculate noise levels resulting from mobile sources at nearby noise receptors. The TNM is a computerized model developed for the Federal Highway Administration (FHWA) that takes into account various factors due to traffic flow, including traffic volumes, vehicle mix (i.e., percentage of autos, light duty trucks, heavy duty trucks, buses, etc.), sources/receptor geometry, and shielding (including barriers and terrain, ground attenuation, etc.).

PARKING LOT

Noise due to vehicles accessing and traversing the Proposed Project's parking lot and the Project Site were determined using methodologies set forth in the May 2006 version of the *Transit Noise and Vibration Impact Assessment* guidance manual published by the Federal Transit Administration (FTA). Specifically, the parking lot was modeled using the techniques described for general noise assessment of a park and ride lot. The general noise assessment methodology consists of the following steps:

- Determine the Project noise exposure at 50 feet from the center of the parking facility, based on the maximum number of automobiles expected to enter and exit the Project Site in a given hour,
- Calculate Project-generated noise levels at each of the sensitive receptor locations based on the L_{eq} at 50 feet and adjusted for the distance of each receptor relative to the center of the parking area,
- Logarithmically add the calculated L_{eq} at each receptor to the measured L_{eq} at that receptor in order to determine a resultant total $L_{eq.}$

LOADING DOCK AND HVAC EQUIPMENT NOISE

In place of full design details for the Proposed Project's mechanical systems, which are not yet complete, the building HVAC equipment is expected to be placed on the roof of the proposed Amy's Kitchen production facility building. The truck loading dock would be located at the south of the facility building. In order to estimate noise levels generated by these noise sources, noise measurements at a similar-sized existing Amy's Kitchen facility in Medford, OR were performed in June of 2014 by Lanc and Tully Engineering and Surveying PC. The maximum sound pressure level resulting from operation of building HVAC equipment and loading dock, based on the noise levels measured at the comparable Amy's Kitchen facility, are shown in **Table III.I-3**.

Table III.I-3
Stationary Noise Source Emission Levels (dBA)

Source	Measurement Distance	Sound Pressure Level
Loading Dock	20[1]	85.0
HVAC Equipment	100	68.2

Note: [1]Conservative estimate.
Source: Noise levels measured and reported by Lanc and Tully Engineering and Surveying PC.

The truck loading dock is the dominant noise source associated with warehouse activities, although any other noise produced by the warehouse would also be included in this measured noise level. Predicted noise levels with the loading dock and the HVAC equipment at receptor sites were calculated using the following formula:

$$L_p = L_{p1} - 20 * LOG (D/D_1) - A_{screen}$$

where:

L_{p1} is the measured noise level;
D is the distance from the source to the receptor;
D_1 is the reference distance from the source measurements; and
A_{screen} is the attenuation due to screening from intervening obstacles/objects.

It is noted that using this formula for the mechanical equipment noise sources would be conservative because attenuation factors (i.e., ground, air absorption, foliage, etc.) were not taken into account.

C. EXISTING CONDITIONS

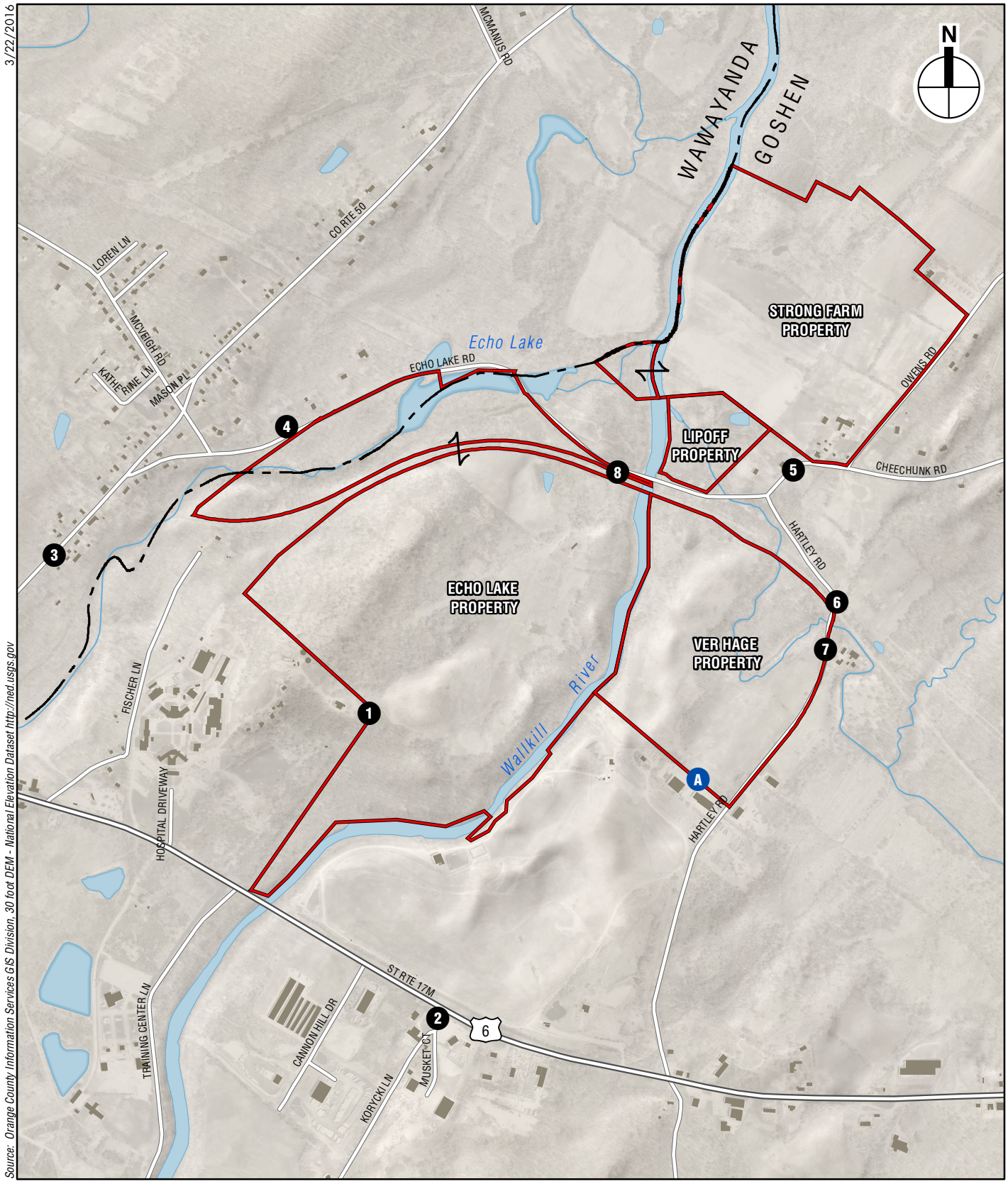
SITE DESCRIPTION

As described in **Chapter II**, "Project Description," the Project Site comprises four (4) properties in the Town of Goshen, Orange County, New York. The Project Site is located north of New York State Route 17M ("NYS Route 17M"), east of the Town of Wawayanda, west of the Village of Goshen, and south of the Orange County Golf Course. The Project Site is bisected in a north-south direction by the Wallkill River and generally lies south of Echo Lake Road and the Orange County Heritage Trail ("Heritage Trail"), although portions of the Project Site lie north of Echo Lake Road and the Heritage Trail.

SELECTION OF NOISE RECEPTOR LOCATIONS

Noise from operation of the Proposed Project was analyzed at eight (8) locations near the Project Site (shown in **Table III.I-4** and **Figure III.I-1**):

- Site 1 is located at the property line between Mid-Hudson Forensic Psychiatric Center and the Echo Lake Property. Vehicular traffic on Route 17M is the dominant noise source at this location. This location is representative of noise levels at the Mid-Hudson Forensic Psychiatric Center.
- Site 2 is located at the corner of Musket Court and Route 17M. Vehicular traffic on nearby roadways is the dominant noise source at this location. This location is representative of noise levels at residential uses in this area along Route 17M.
- Site 3 is located on County Road 50 between Route 17M and Echo Lake Road. Vehicular traffic on County Road 50 is the dominant noise source at this location. This location is representative of noise levels at residential uses on County Road 50 between Route 17M and Echo Lake Road.
- Site 4 is located on Echo Lake Road between McVeigh Road and the Wallkill River adjacent to the Echo Lake Property. Vehicular traffic on Echo Lake Road is the dominant noise source at this location. This location is representative of noise levels at residential uses on Echo Lake Road.
- Site 5 is located at Cheechunk Road between Hartley Road and Owens Road adjacent to the Ver Hage Property. Vehicular traffic on Cheechunk Road is the dominant noise source at this location. This location is representative of noise levels at residential uses on Cheechunk Road.
- Site 6 is located at the Heritage Trial adjacent to Hartley Road. Vehicular traffic on Hartley Road is the dominant noise source at this location. This location is representative of noise levels on the Heritage Trial near Hartley Road.
- Site 7 is located at 112 Hartley Road. Vehicular traffic on Hartley Road is the dominant noise source at this location. This location is representative of noise levels at this residential property.



Amy's Kitchen
Science of the Soul

Noise Monitoring Locations

Figure III.I-1

- Site 8 is located at the Heritage Trial south of Echo Lake Road. Vehicular traffic on Echo Lake Road is the dominant noise source at this location. This location is representative of noise levels on the Heritage Trial west of Hartley Road.

These locations represent the noise-sensitive land uses that would be most likely to experience noise level increases due to the Proposed Project because of their proximity to the Project Site. Other sensitive land uses in the area would be expected to experience less noise resulting from the Proposed Project than these sites.

Table III.I-4
Noise Monitoring Sites

Receptor	Location	Land Use
1	Mid-Hudson Forensic Psychiatric Center	Institutional (including residential in-patients)
2	Musket Court and Route 17M	Residential
3	County Road 50 between Route 17M and Echo Lake Road	Residential
4	Echo Lake Road between McVeigh Road and Wallkill River	Residential
5	Cheechunk Road between Hartley Road and Owens Road	Residential
6	Heritage Trail near Hartley Road	Public Open Space
7	112 Hartley Road	Residential
8	Heritage Trail near Echo Lake Road	Public Open Space

EXISTING NOISE LEVEL MEASUREMENTS

At all eight (8) sites, 20-minute measurements were made during the weekday AM peak time period (7:30 AM to 9:30 AM), weekday PM peak time period (4:00 PM to 6:30 PM), and the Saturday mid-day (SMD) time period (12:00 PM to 1:30 PM). Measurements were taken on June 6 and 10, July 25, and August 13, 2015. The selected time periods are when the Proposed Project would have maximum traffic generation and/or the maximum potential for significant adverse noise impacts based on the traffic studies presented in the "Traffic Impact Study."

EQUIPMENT USED FOR NOISE MONITORING

Measurements were performed using Brüel & Kjær Sound Level Meters (SLM) Type 2260 and Type 2270, a Brüel & Kjær ½-inch microphone Type 4189, and a Brüel & Kjær Sound Level Calibrator Type 4231. The SLMs had a laboratory calibration date within one year of the time of use, as is standard practice. The Brüel & Kjær SLMs are Type 1 instruments according to ANSI Standard S1.4-1983 (R2006). For all receptor sites the instrument/microphone was mounted on a tripod at a height of approximately 5 feet above the ground. Microphones were mounted at least approximately 5 feet away from any large reflecting surfaces. The SLMs were calibrated before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measurements at each location were made on the A-scale (dBA). The data were digitally recorded by the sound level meters and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, L_{90}, and 1/3 octave band levels. A windscreen was used during all sound measurements except for calibration. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.

RESULTS OF MEASUREMENTS

The existing noise levels are summarized in **Table III.I-5**. At all receptor sites, vehicular traffic noise on adjacent roadways was the dominant noise source. Measured noise levels were relatively low to moderately high and reflect the level of vehicular activity on the adjacent roadways.

Table III.I-5
Existing Noise Levels at Noise Receptor Sites (dBA)

Site	Location	Time	L_{eq}	L_1	L_{10}	L_{50}	L_{90}
1	Mid-Hudson Forensic Psychiatric Center	AM	50.8	56.9	53.1	49.9	47.8
		PM	44.8	53.8	47.1	42.7	40.3
		SMD	50.3	56.0	53.2	49.7	43.8
2	Musket Court and Route 17M	AM	75.9	84.6	78.8	74.2	67.8
		PM	73.9	82.1	76.4	72.0	66.0
		SMD	74.2	84.1	76.9	71.8	62.6
3	County Road 50 between Route 17M and Echo Lake Road	AM	71.6	82.2	75.5	63.3	50.3
		PM	69.2	78.3	73.7	63.4	49.4
		SMD	68.5	77.9	71.2	59.3	47.3
4	Echo Lake Road between McVeigh Road and Wallkill River	AM	64.1	75.5	68.7	50.7	42.2
		PM	66.4	77.9	69.3	60.4	56.2
		SMD	60.3	71.8	64.6	47.9	42.1
5	Cheechunk Road between Hartley Road and Owens Road	AM	65.8	76.2	71.0	52.4	43.3
		PM	65.9	76.4	70.6	52.7	45.2
		SMD	63.7	75.9	66.8	47.1	41.2
6	Heritage Trail near Hartley Road	AM	60.4	71.6	60.1	52.0	50.5
		PM	58.4	70.1	54.7	45.5	43.8
		SMD	47.7	60.4	48.3	40.1	36.1
7	112 Hartley Road	AM	52.5	64.7	50.6	48.0	46.5
		PM	54.2	68.3	47.7	44.1	42.9
		SMD	52.7	65.5	51.5	40.0	35.3
8	Heritage Trail near Echo Lake Road	AM	59.9	70.2	64.3	52.2	48.9
		PM	59.0	69.5	63.1	52.5	49.5
		SMD	56.7	67.6	58.7	45.2	38.8

Notes: Field measurements were performed by AKRF, Inc. on June 6 and10, July 15, and August 13, 2015.

D. THE FUTURE WITHOUT THE PROPOSED PROJECT

Using the methodology previously described, future noise levels for the future without the Proposed Project condition were calculated for each of the receptor sites in each of the analysis periods. Noise levels associated with vehicular traffic were calculated for the future without the Proposed Project, but noise from HVAC equipment and loading dock operations were not included because the HVAC equipment and loading dock would not be present. **Table III.I-6** shows the calculated noise levels.

Comparing future without the Proposed Project conditions with existing conditions, the maximum increase in $L_{eq(1)}$ noise levels would be less than 1.0 dBA. Increases of this magnitude would be imperceptible.

Table III.I-6
Future No Action Noise Levels (dBA)

Site	Location	Time	Existing L_{eq}	No Action L_{eq}	Change
1	Mid-Hudson Forensic Psychiatric Center	AM	50.8	50.8	0.0
		PM	44.8	44.9	0.1
		SMD	50.3	50.3	0.0
2	Musket Court and Route 17M	AM	75.9	76.1	0.2
		PM	73.9	74.1	0.2
		SMD	74.2	74.4	0.2
3	C.R. 50 between Route 17M and Echo Lake Road	AM	71.6	71.9	0.3
		PM	69.2	69.6	0.4
		SMD	68.5	69.1	0.6
4	Echo Lake Road between McVeigh Road and Wallkill River	AM	64.1	64.2	0.1
		PM	66.4	66.6	0.2
		SMD	60.3	60.5	0.2
5	Cheechunk Road between Hartley Road and Owens Road	AM	65.8	65.9	0.1
		PM	65.9	66.1	0.2
		SMD	63.7	63.8	0.1
6	Heritage Trail near Hartley Road	AM	60.4	60.5	0.1
		PM	58.4	58.6	0.2
		SMD	47.7	48.2	0.5
7	112 Hartley Road	AM	52.5	52.6	0.1
		PM	54.2	54.4	0.2
		SMD	52.7	52.8	0.1
8	Heritage Trail near Echo Lake Road	AM	59.9	60.3	0.4
		PM	59.0	59.1	0.1
		SMD	56.7	56.9	0.2

E. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

The contribution from each noise source associated with the Proposed Project was calculated according to the methodology described above, and the various contributions were combined to determine a total future noise level and increment at each of the receptor sites. Based on the "Traffic Impact Study" traffic data, the weekday AM (6:00 AM to 7:00 AM) time period was selected for analysis of the proposed Amy's Kitchen manufacturing facility and Warehouse Use and the Saturday midday (12:00 PM to 1:30 PM) time period was selected for analysis of the proposed SoS Conference Center (representing the SoS National Conference). Analysis of potential noise impacts assumed some Amy's Kitchen or Warehouse Use traffic on Hartley Road. However, since only emergency traffic is proposed to be able to access the Amy's Kitchen manufacturing facility or the Warehouse Use from Hartley Road, this analysis is conservative and represents a worst-case scenario for potential Project-generated noise level increases. A description of potential noise impacts during construction is included in Chapter III.S, "Construction."

AMY'S KITCHEN PHASES I AND II

Using the methodology described earlier, total future noise levels associated with the proposed Amy's Kitchen manufacturing facility were calculated for each of the noise receptor sites. The predicted noise levels associated with the proposed manufacturing facility included traffic traveling to and from the Project Site as well as on-site operation of HVAC equipment and loading dock operations. These future noise levels are shown in **Table III.I-7**.

Comparing future noise levels with existing noise levels, the maximum increase in $L_{eq(1)}$ noise levels would be up to 2.1 dBA. Increases of this magnitude would be barely perceptible and

would be well below the NYSDEC's threshold for a significant noise level increase of 6.0 dBA. Future noise levels at sites 2, 3, and 5 would exceed NYSDEC's recommended level for residential uses of 65 dBA. While the future noise levels exceed the recommended level of 65 dBA, the increases in noise levels would be small and existing noise levels at these locations already exceed the recommended level of 65 dBA. Consequently, noise resulting from operation of the proposed Amy's Kitchen facility would not constitute a significant noise impact.

In addition, predicted noise levels for the Amy's Kitchen Phases I and II were also calculated on two locations along the Project Site property line to determine compliance with the Town of Goshen Noise Ordinance. Site A is located on the adjoining property line immediately adjacent to the Amy's Kitchen loading dock area and site 1 is located on the adjoining property line adjacent to the proposed SoS parking lot. The maximum predicted future noise levels would be 66.6 dBA at site A and 51.9 dBA at site 1, well below the 75 dBA threshold established by the Town of Goshen Noise Ordinance (for details see **Appendix III.I)**.

The noise analysis includes the predicted noise levels to be produced by proposed pump stations, wastewater pre-treatment plant, and testing of backup generators[1], based on the measured HVAC equipment noise from the Medford, OR facility as shown in **Table III.I-3**. These pieces of mechanical equipment may produce noise on the Project Site, but produce less noise than loading dock operations, and are generally separated from the surrounding noise receptors by long distances, so they consequently are not the dominant sources of project-generated noise.

SCIENCE OF THE SOUL

Using the methodology described earlier, total future noise levels associated with the proposed SoS Conference Center were calculated for each of the noise receptor sites. The predicted noise levels associated with the proposed Conference Center included traffic traveling to and from the Project Site as well as on-site operation of HVAC equipment and parking lot operations. These future noise levels are shown in **Table III.I-7**.

Comparing future noise levels with existing noise levels, the maximum predicted increase in $L_{eq(1)}$ noise levels for all receptor sites, with the exception of sites 6 and 7, would be up to 2 dBA during the SoS National Conference. Increases of this magnitude would be barely perceptible and would be well below the NYSDEC threshold for a significant noise level increase of 6.0 dBA. At site 7, the maximum predicted noise level increment would be 4.7 dBA during the SoS annual conference. An increase of this magnitude would be readily noticeable, but would be less than the NYSDEC threshold for a significant noise level increase of 6.0 dBA. At site 6, the maximum predicted increase in $L_{eq(1)}$ noise levels would be up to 7.6 dBA during the SoS National Conference. This predicted noise level increase would exceed the 6 dBA NYSDEC threshold for a significant noise impact. An increase of this magnitude would be readily noticeable, and may be intrusive. These noise level increases would occur primarily because of extremely low existing noise levels due to limited traffic volumes along Hartley Road near site 6. However, the SoS National Conference would occur only once per year for three (3) days and entering and exiting vehicle traffic would represent a limited duration. Thus, it would not represent a continuous and regular increase in noise levels. Furthermore, the absolute noise

[1] Town of Goshen Code §70-4.G permits "Sound resulting from exigent or mitigating circumstances where necessary or required in order to protect the health, safety or welfare of an individual or the public." As such, the use of the back-up generators in an emergency situation would be exempt from the noise requirements of the Code.

levels during the National Conference would be well below the 65 dBA level recommended by NYSDEC for non-industrial uses. Lastly, users of the Heritage Trail regularly experience elevated noise levels as the Heritage Trail parallels several major road corridors, including NYS Route 17M, and abuts several commercial or industrial land uses. Thus, the introduction of elevated noise levels at an additional location along the Heritage Trail would not constitute a new or significantly different experience.

Table III.I-7
Future Action Noise Levels (dBA)

Site	Time	Existing L_{eq}	Traffic Increase L_{eq}	Loading Dock & HVAC L_{eq}	Parking Lot L_{eq}*	Action L_{eq}	Change
AMY'S KITCHEN PHASE I							
1	AM	50.8	36.3	43.4	N/A	51.7	0.9
2	AM	75.9	66.4	43.1	N/A	76.4	0.5
3	AM	71.6	60.6	34.7	N/A	71.9	0.3
4	AM	64.1	50.9	37.1	N/A	64.3	0.2
5	AM	65.8	49.2	42.8	N/A	65.9	0.1
6	AM	60.4	47.8	45.8	N/A	60.8	0.4
7	AM	52.5	46.2	47.7	N/A	54.4	1.9
8	AM	59.9	51.2	43.3	N/A	60.5	0.6
AMY'S KITCHEN PHASE II							
1	AM	50.8	40.9	43.4	N/A	51.9	1.1
2	AM	75.9	66.4	43.1	N/A	76.4	0.5
3	AM	71.6	60.6	34.7	N/A	71.9	0.3
4	AM	64.1	49.4	37.1	N/A	64.3	0.2
5	AM	65.8	51.0	42.8	N/A	66.0	0.2
6	AM	60.4	49.1	45.8	N/A	60.9	0.5
7	AM	52.5	47.1	47.7	N/A	54.6	2.1
8	AM	59.9	51.6	43.3	N/A	60.6	0.7
SCIENCE OF THE SOUL							
1	SMD	50.3	44.2	43.4	41.4	52.3	2.0
2	SMD	74.2	68.7	43.1	32.7	75.3	1.1
3	SMD	68.5	60.1	34.7	33.0	69.1	0.6
4	SMD	60.3	51.4	37.1	38.1	60.9	0.6
5	SMD	63.7	60.0	42.8	33.9	65.3	1.6
6	SMD	47.7	53.8	45.8	33.9	55.3	7.6
7	SMD	52.7	54.7	47.7	33.3	57.4	4.7
8	SMD	56.7	44.7	43.3	38.4	57.4	0.7

Note: * Specific noise levels in the Amy's Kitchen parking lot were not calculated as they are included in the overall analysis of mobile sources in the "Traffic Increase" column. For SoS, the level of activity and number of buses within the parking lot warranted a separate analysis.

Predicted total noise levels in the future with the SoS Conference Center at sites 2, 3, and 5 would exceed NYSDEC's recommended level for residential uses of 65 dBA. While the future noise levels exceed the recommended level of 65 dBA, the increases in noise levels would be small and existing noise levels at these locations already exceed the recommended level of 65 dBA. Consequently, the noise due to the SoS National Conference would not constitute a significant noise impact.

The Saturday midday time period was selected as the worst-case period for the noise analysis of operations at the SoS Conference Center due to the level of traffic associated with this time period, representing traffic generated by the SoS National Conference. If the SoS National

Conference were to occur on a weekday instead of the Saturday midday time period, the amount of traffic generated would not be greater than the level analyzed for the Saturday midday time period. However, the existing baseline traffic volumes on weekday peak periods would be higher than those on a Saturday, leading to a smaller incremental change in traffic produced by the SoS National Conference were it to be held on a weekday. The smaller incremental change in traffic would consequently result in smaller noise level increments than those shown in the noise analysis above for the Saturday midday time period. Consequently, the SoS National Conference being held on a weekday would not result in any significant adverse noise impacts.

In addition, predicted noise levels for the SoS National Conference (i.e., the worst-case scenario of Project operations) were also calculated on two locations along the Project Site property line to determine compliance with the Town of Goshen Noise Ordinance. Site A is located on the adjoining property line immediately adjacent to the Amy's Kitchen loading dock area and site 1 is located on the adjoining property line adjacent to the SoS Conference Center parking lot. The maximum predicted future noise levels would be 66.2 dBA at site A and 52.3 dBA at site B, well below the 75 dBA threshold established by the Town of Goshen Noise Ordinance (for details see **Appendix III.I)**.

WAREHOUSE USE

The Traffic Impact Study prepared for the Proposed Project includes trip generation for a potential 70,000 square-foot warehouse use on Hartley Road. For purposes of conducting the noise analysis, trip distribution estimates assumed that trips associated with the Warehouse Use would use Hartley Road as the primary access point. However, as described in Chapter II, "Project Description," access to the Warehouse Use would be limited to an internal driveway from the Amy's Kitchen manufacturing facility with only an emergency access driveway onto Hartley Road. Noise generated by Warehouse Use trips, including truck traffic, was modeled as part of the overall Proposed Project. Because of the proximity of the Warehouse Use to the Amy's Kitchen facility, it is difficult to calculate the incremental noise level of the Warehouse Use as distinct and separate from the Amy's Kitchen facility. Thus, future noise levels predicted for Amy's Kitchen in **Table III.I-6** reflect the cumulative impact of both Amy's Kitchen and the Warehouse Use including at receptors 6 and 7 on Hartley Road which are closest to the Warehouse Use.

The noise analysis for the potential Warehouse Use on Hartley Road was conducted according to the same methodology for the noise analysis of the Proposed Project as described above. The various noise level contributions of each noise source were combined to determine a total future noise level and increment at each of the receptor sites. This analysis is conservative and represents a worst-case scenario for potential Project-generated noise level increases. These predicted future noise levels for the Proposed Project and potential Warehouse Use are shown in **Table III.I-8** for both Amy's Kitchen Phases I and II and the proposed SoS Conference Center.

At receptor sites other than sites 6 and 7 along Hartley Road, the addition of the potential Warehouse Use had relatively little effect on the predicted noise level increases resulting from the Proposed Project. As with the Proposed Project only, the Proposed Project with the potential Warehouse Use would result in noise level increments compared to the existing levels that are less than 3 dBA, would be imperceptible or barely perceptible, and would not exceed NYCDEC's impact criteria.

Table III.I-8
Future Action Noise Levels with Potential Warehouse Use (dBA)

Site	Time	Existing L_{eq}	Traffic Increase L_{eq}	Loading Dock & HVAC L_{eq}	Parking Lot L_{eq}*	Action L_{eq}	Change
AMY'S KITCHEN PHASE I							
1	AM	50.8	36.3	44.8	N/A	51.9	1.1
2	AM	75.9	66.4	44.4	N/A	76.4	0.5
3	AM	71.6	60.6	38.9	N/A	71.9	0.3
4	AM	64.1	50.9	41.5	N/A	64.3	0.2
5	AM	65.8	49.2	48.7	N/A	66.0	0.2
6	AM	60.4	47.8	54.9	N/A	61.7	1.3
7	AM	52.5	46.2	62.3	N/A	62.8	10.3
8	AM	59.9	51.2	47.5	N/A	60.7	0.8
AMY'S KITCHEN PHASE II							
1	AM	50.8	40.9	44.8	N/A	52.1	1.3
2	AM	75.9	66.4	44.4	N/A	76.4	0.5
3	AM	71.6	60.6	38.9	N/A	71.9	0.3
4	AM	64.1	49.4	41.5	N/A	64.3	0.2
5	AM	65.8	51.0	48.7	N/A	66.0	0.2
6	AM	60.4	49.1	54.9	N/A	61.7	1.3
7	AM	52.5	47.1	62.3	N/A	62.8	10.3
8	AM	59.9	51.6	47.5	N/A	60.7	0.8
SCIENCE OF THE SOUL							
1	SMD	50.3	44.2	44.8	41.4	52.5	2.2
2	SMD	74.2	68.7	44.4	32.7	75.3	1.1
3	SMD	68.5	60.1	38.9	33.0	69.1	0.6
4	SMD	60.3	51.4	41.5	38.1	60.9	0.6
5	SMD	63.7	60.0	48.7	33.9	65.3	1.7
6	SMD	47.7	53.8	54.9	33.9	57.8	10.1
7	SMD	52.7	54.7	62.3	33.3	63.4	10.7
8	SMD	56.7	44.7	47.5	38.4	57.7	1.0

Note: * Specific noise levels in the Amy's Kitchen parking lot were not calculated as they are included in the overall analysis of mobile sources in the "Traffic Increase" column. For SoS, the level of activity and number of buses within the parking lot warranted a separate analysis.

At receptor site 6, which represents the Heritage Trail at Hartley Road, the predicted increase in $L_{eq(1)}$ noise level with the Proposed Project and potential Warehouse Use would be up to 10.1 dBA during the SoS National Conference. This predicted noise level increase would exceed the 6 dBA NYSDEC threshold for a significant noise impact, and exceeds the predicted 7.6 dBA noise level increase for the Proposed Project only. An increase of this magnitude would be readily noticeable, and may be intrusive. These noise level increases would occur primarily because of extremely low existing noise levels due to limited traffic volumes along Hartley Road near site 6. However, the SoS National Conference would occur only once per year for three (3) days and entering and exiting vehicle traffic would represent a limited duration. Thus, it would not represent a continuous and regular increase in noise levels. Furthermore, the absolute noise levels during the SoS National Conference would be below the 65 dBA level recommended by NYSDEC for non-industrial uses. Lastly, users of the Heritage Trail regularly experience elevated noise levels as the Heritage Trail parallels several major road corridors, including NYS Route 17M, and abuts other commercial or industrial land uses. Thus, the introduction of elevated noise levels at an additional location along the Heritage Trail would not constitute a new or significantly different experience.

At receptor site 7, which represents the residence at 112 Hartley Road, the predicted increase in $L_{eq(1)}$ noise level with the Proposed Project and potential Warehouse Use would be 10.3 dBA for Phases I and II of the Amy's Kitchen facility, and 10.7 dBA during the SoS National Conference. This predicted noise level increase would exceed the 6 dBA NYSDEC threshold for a significant noise impact, and exceeds the predicted 4.7 dBA noise level increase for the Proposed Project only. An increase of this magnitude would be readily noticeable, and may be intrusive. These noise level increases would occur primarily because of loading dock activities at the potential Warehouse Use and because of extremely low existing noise levels due to limited traffic volumes along Hartley Road near site 7. The absolute noise levels during loading dock operations would be below the 65 dBA level recommended by NYSDEC for non-industrial uses, and while 112 Hartley Road is a residence, it is a residence in a generally industrial area. Furthermore, orienting the loading dock on the potential Warehouse Use to face away from Hartley Road toward the interior of the site would result in the potential warehouse building shielding the 112 Hartley Road residence from loading dock noise and would result in noise level increases at this site that would be below the NYSDEC threshold for significant impact. Thus, the introduction of elevated noise levels at this residence would not constitute a significant adverse impact.

In addition, predicted noise levels for the potential Warehouse Use were also calculated on two locations along the Project Site property line to determine compliance with the Town of Goshen Noise Ordinance. Site A is located on the adjoining property line immediately adjacent to the potential warehouse loading dock area and site 1 is located on the adjoining property line adjacent to the proposed SoS parking lot. The maximum predicted future noise levels would be 66.7 dBA at site A and 52.5 dBA at site 1, well below the 75 dBA threshold established by the Town of Goshen Noise Ordinance (for details see **Appendix III.I)**.

CONCLUSIONS

The predicted noise levels associated with the Proposed Project would not exceed NYSDEC's threshold for a significant noise level increase of 6.0 dBA at most receptor sites, and the maximum future noise level associated with the Proposed Project would not exceed the threshold established by the Town of Goshen Noise Ordinance. At site 6, the maximum predicted increase in $L_{eq(1)}$ noise levels would be up to 7.6 dBA during the SoS National Conference with the Proposed Project only, and up to 10.1 dBA during the SoS National Conference with the Proposed Project and the potential Warehouse Use. These predicted noise level increase would exceed the 6 dBA NYSDEC threshold. However, the absolute noise levels would be well below the 65 dBA level recommended by NYSDEC for non-industrial uses. At site 7, the maximum predicted increase in $L_{eq(1)}$ noise levels would be 10.3 dBA with the potential warehouse and 10.7 dBA during the SoS National Conference with the potential Warehouse Use. These predicted noise level increase would exceed the 6 dBA NYSDEC threshold. However, the absolute noise levels would be well below the 65 dBA level recommended by NYSDEC for non-industrial uses. In addition, total noise levels in the future with the Proposed Project at sites 2, 3, and 5 would exceed NYSDEC's recommended level for residential uses of 65 dBA. While the future noise levels exceed the recommended level of 65 dBA, the increases in noise levels would be small and existing noise levels at these locations already exceed the recommended level of 65 dBA. Consequently, the noise due to the Proposed Project would not constitute a significant noise impact.

F. PROPOSED MITIGATION

While noise from the Proposed Project may be readily noticeable at certain locations and increases above ambient noise levels exceed the NYSDEC threshold for a significant impact at

two locations, these impacts are not considered significant and adverse and would not require mitigation. Nor are these impacts considered unavoidable adverse impacts.

Noise level increases at the residence on Hartley Road to the northeast of the Ver Hage property (site 7) would exceed 10 dBA during normal operations of the Proposed Project and during the SoS National Conference. While the 10 dBA increase would be readily noticeable, absolute noise levels at this location within an industrial area would be below the 65 dBA threshold for non-industrial uses. In addition, because the loading docks are located on the south side of both the Amy's Kitchen manufacturing facility and the Warehouse Use (and facing away from the residence), actual noise level increases would likely be less once the building shielding is accounted for. Thus, the introduction of elevated noise levels at this residence would not constitute a significant adverse impact and would not require mitigation.

Noise level increases at the Heritage Trail (site 6) would not be perceptible for normal operations of the Proposed Project, but would exceed 10 dBA during the SoS National Conference. However, absolute noise levels at site 6 would not exceed 65 dBA and would be of limited duration during the morning and early afternoon three (3) days per year. Users of the Heritage Trail regularly experience elevated noise levels at other locations as the Heritage Trail parallels several major road corridors and abuts other commercial or industrial land uses. Thus, the introduction of elevated noise levels at an additional location along the Heritage Trail would not constitute a new or significantly different experience.

At other locations where projected noise levels would exceed the 65 dBA threshold, ambient noise levels already exceed that threshold and the projected increase is generally less than 1 decibel, thus an imperceptible increase in noise levels.

For these reasons the Proposed Project would not result in any significant adverse or unavoidable adverse noise impacts and no mitigation is required. ✷

A. INTRODUCTION

This chapter addresses potential impacts to electric and gas utilities and solid waste disposal as a result of the Proposed Project.

B. EXISTING CONDITIONS

Orange and Rockland Utilities, Inc. (O&R) and NYSEG provide electric and gas service, respectively, in the area of the Project Site. An existing NYSEG gas main runs along NYS Route 17M south of the Project Site. There are existing O&R electrical transmission lines along Echo Lake Road, Hartley Road, and NYS Route 17M. O&R recently completed construction of a new electrical sub-station between Hartley Road and Cheechunk Road just north of the Project Site. The new substation will alleviate over-loading of existing substations in the vicinity and would provide electrical power to the proposed Project Site. The new substation includes two (2) 50 Megavolt-ampere (MVA) 138/79 to 13.2 kilovolt (kV) dual transformer banks, as well as the associated switchgear and distribution circuits. In tandem with the new substation, O&R has been making improvements to the electrical distribution network throughout the local area, including along Echo Lake Road, Hartley Road, and Cheechunk Road.

Solid waste collection for commercial uses in the study area is handled by private waste haulers who haul waste to the Orange County Transfer Station #1 located on Training Center Lane south of NYS Route 17M and to private recycling facilities. Amy's Kitchen and SoS have not selected a private waste hauler at this point.

C. FUTURE WITHOUT THE PROPOSED PROJECT

There are no known projects that would change the electric or gas supply service in the vicinity of the Project Site or result in changes to the availability of solid waste management services.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

AMY'S KITCHEN

UTILITIES

Based on operations of similar facilities owned and operated by Amy's Kitchen, it is estimated that annual electric usage at the Amy's Kitchen facility would be approximately 18,680,400 kilowatt-hours (KWH) per year. Gas usage is estimated to be 179,971 million British thermal units (MMBTU) per year.

As more fully described in Chapter III.R, "Air Quality," the Proposed Project includes industrial equipment, including process boilers, heat and hot water systems, and several process boilers.

The process boilers would combust natural gas with a total maximum expected heat input capacity of approximately 36 million British thermal units per hour (MMBtu/hr). The total energy demand from Amy's Kitchen ovens would be approximately four (4) to five (5) million BTUs per year.

Electric service would be provided to Amy's Kitchen by running an over-head service line from the existing electric transmission line on either Hartley Road or Echo Lake Road to a bank of on-site transformers. Several 2,500 kvA transfers would be used instead of one (1) larger transformer to reduce risk of entire loss of power to the plant should the single transformer fail. Gas service would be provided to Amy's Kitchen by a service line (approximately 12-inch diameter) run from the existing gas line beneath NYS Route 17M along the new access road and under the proposed bridge over the Wallkill River to the Amy's Kitchen manufacturing facility.

Based on initial discussions with O&R and NYSEG, it is anticipated that these energy demands would be fully met by existing off-site infrastructure and would not require any off-site upgrades to gas or electric service or existing infrastructure beyond standard connections. O&R and NYSEG have advised Amy's Kitchen that they have sufficient capacity to serve the Proposed Project. "Will serve" letters are provided in **Appendix III.J**.

Amy's Kitchen is considering the following energy conserving measures within its manufacturing facility, some of which have been used at Amy's Kitchen's other facilities:

- Install variable frequency drives (VFDs) on all motors.
- Occupancy sensors on lights.
- T5 fluorescent lamps instead of T8 fluorescent lamps or high pressure sodium.
- Install ammonia based refrigeration system instead of Freon based systems.
- Utilize trim motors on the ammonia refrigeration system (staged motors).
- Utilize trim motors on the air compressor system (staged motors).
- Utilize centralized glycol chilling when available.
- Install automatic doors on refrigerators and freezers to keep conditioned space at temperature.
- Install a solar panel system on the plant.
- Reuse boiler exhaust heat to preheat boiler infeed water and to preheat sanitation water.
- Insulate all water, steam, and refrigeration piping to reduce loss.
- Shut off production lines when not in use.
- Utilize impingement style tunnel which consume less gas.
- Utilize natural gas powered when applicable—more efficient that electricity.

Standby power generators are proposed for the Amy's Kitchen facility for basic lighting and communications systems within the plant. It is not anticipated that backup generators would be used to run plant operations, thus no peak load sharing is contemplated.[1] A small-volume on-site

[1] The term "peak load sharing" refers to the use of customer-operated (non-utility) generators to produce electricity at the request of the local electrical utility in order to reduce the electrical demand during peak demand periods, particularly during the summer period.

fuel storage tank would be located near the backup generators to supply fuel. Backup generators would be tested on a monthly basis during the middle of the day.

SOLID WASTE MANAGEMENT

Based on its Medford, Oregon plant operations, Amy's Kitchen estimates that at full-build out, a five (5)-day per week operation would generate approximately 444 tons of waste per month. As detailed in **Table III.J-1** below, this waste would be broken into four (4) different waste streams. Approximately 39 percent of the monthly waste would either be compostable or recyclable.

Table III.J-1
Solid Waste Generation

Waste Stream	Tons per Month
Solids from wastewater pre-treatment	47
Plant waste to landfill	223
Compost waste	74
Recycled waste	100
TOTAL	**444**

Solid waste collection for commercial uses in the study area is handled by private waste haulers who haul waste to the Orange County Transfer Station #1 located on Training Center Lane south of NYS Route 17M and to private recycling facilities. Amy's Kitchen and SoS have not selected a private waste hauler at this point.

In order to reduce the total amount of landfilled solid waste, Amy's Kitchen would compost approximately 74 tons of organic matter per month and recycle approximately 100 tons of cardboard and plastics per month. Recyclable and compostable materials would be kept separate from other wastes inside the Amy's Kitchen facility and would be collected and disposed of by a private waste management company. Other than the temporary storage of the compostable materials inside the Amy's Kitchen facility, no composting would occur on-site.

As all solid waste services would be provided by a private company, no impacts to municipal services or budgets are anticipated.

SCIENCE OF THE SOUL

UTILITIES

The proposed SoS Conference Center would have standard indoor lighting and HVAC energy demands. The largest meeting facility is proposed to be an open-air pavilion and thus would not require any associated HVAC equipment. Outdoor site lighting would include only the minimum density of lights required for vehicular and pedestrian safety along roadways, parking areas, and pathways. As described in Chapter II, "Project Description," nighttime use of the SoS Conference Center would be limited to volunteers preparing for events, night watch, and periodic evening "study sessions" where religious texts are studied in a small group.

The majority of site energy consumption would result from the small office facilities proposed to be used by daily operational staff. Electricity consumption in these facilities would be primarily

for lighting and HVAC needs. The largest HVAC equipment typically used for air-conditioned spaces at similar Science of the Soul facilities are 20-ton split air conditioning units with a seasonal energy efficiency ratio (SEER) of 15 British thermal units (BTUs) per watt-hour.

Over-head electric service lines from Echo Lake Road would be run up the emergency driveway to the SoS Conference Center. Gas service would be provided to the SoS Conference Center by a service line (approximately 12-inch diameter) run from the existing gas line beneath NYS Route 17M along the new access road.

It is anticipated that the energy requirements for the SoS Conference Center would be fully met by O&R and NYSEG and would not require any off-site upgrades to gas or electric service or existing infrastructure. The energy demands by SoS are not considered significant and are typical of other land uses within the study area.

Standby power generators are currently contemplated for the Science of the Soul Conference Center and sanitary wastewater pumping station.

Science of the Soul site proposes to employ several energy conservation measures. Lighting for the facility would use high efficiency, light emitting diode (LED) fixtures. Office area lighting would have occupancy sensors and would turn off when not in use. All lighting plans and fixtures would adhere to the New York State Energy Conservation Construction Code (19 NYCRR Part 1240). Additionally, white membrane roofing would be installed on all site buildings to reflect heat and reduce facility cooling requirements. Increased insulation in enclosed buildings would similarly reduce heating and cooling requirements throughout the site. Solar panel arrays would be installed on the roofs of Science of the Soul buildings as a means of providing renewable energy and reducing the grid electricity consumption of the site.

SOLID WASTE MANAGEMENT

Operation of the Science of the Soul Conference Center would result in minimal solid waste generation. Normal SoS weekday and weekend activities at the two (2) caretaker residences and volunteer activities and weekly meetings would generate small quantities of solid waste, which could total approximately 100 pounds per month. SoS National Conference and Regional Conference events would generate solid waste from food wrappers and other personal waste items generated during events. Recyclable and compostable materials would be collected and stored separately from the waste stream and would be collected for beneficial reuse by a private waste hauling company.

All solid waste would be transported by a private waste management company. As solid waste generation would be minimal and would be provided by a private company, no impacts to municipal services or budgets are anticipated.

WAREHOUSE USE

UTILITIES

The proposed Warehouse Use would have limited demands for electricity and natural gas. Because the Warehouse Use would be used for storage of dry goods and there would be no need for refrigeration, only limited air conditioning within a small office space and lighting would be required. Over-head electric service lines would also be run from Hartley Road to any lighting and heating, ventilation, and air conditioning (HVAC) energy requirements for the Warehouse Use.

SOLID WASTE MANAGEMENT

The proposed Warehouse Use would generate minimal amounts of solid waste from the few employees that would staff the building. All solid waste would be transported by a private waste management company. As solid waste generation would be minimal and would be provided by a private company, no impacts to municipal services or budgets are anticipated.

E. PROPOSED MITIGATION

Electric and gas requirements for the Proposed Project would be provided by Orange and Rockland Utilities and NYSEG, respectively, and would not require any additional facilities or infrastructure. Energy conservation and renewable energy generation measures would be implemented as feasible. Solid waste management services would be provided by a private company. Waste generated by the Proposed Project would be recycled and composted at off-site locations to the extent possible.

As the Proposed Project would not have any significant adverse impacts on utilities or solid waste management, no mitigation measures are required. Generation of solid waste is considered an unavoidable impact. ✷

A. INTRODUCTION

This chapter discusses the Proposed Project's potential effects on land use, zoning, and public policy. A description of existing conditions is provided, as well as an assessment of future conditions with and without the Proposed Project. This chapter describes compatibility of the Proposed Project with existing and future land uses within a one-mile Study Area, and consistency with applicable zoning ordinances and other public policy documents such as the Town of Goshen Comprehensive Plan and Open Space and Farmland Protection Plan; the Southern Wallkill Biodiversity Plan; and the Orange County Comprehensive Plan and Open Space Plan. For the reasons described below, the Proposed Project would be consistent with land use and public policy documents of the Town of Goshen, and would have no adverse effects on land use, zoning, or public policies.

B. EXISTING CONDITIONS

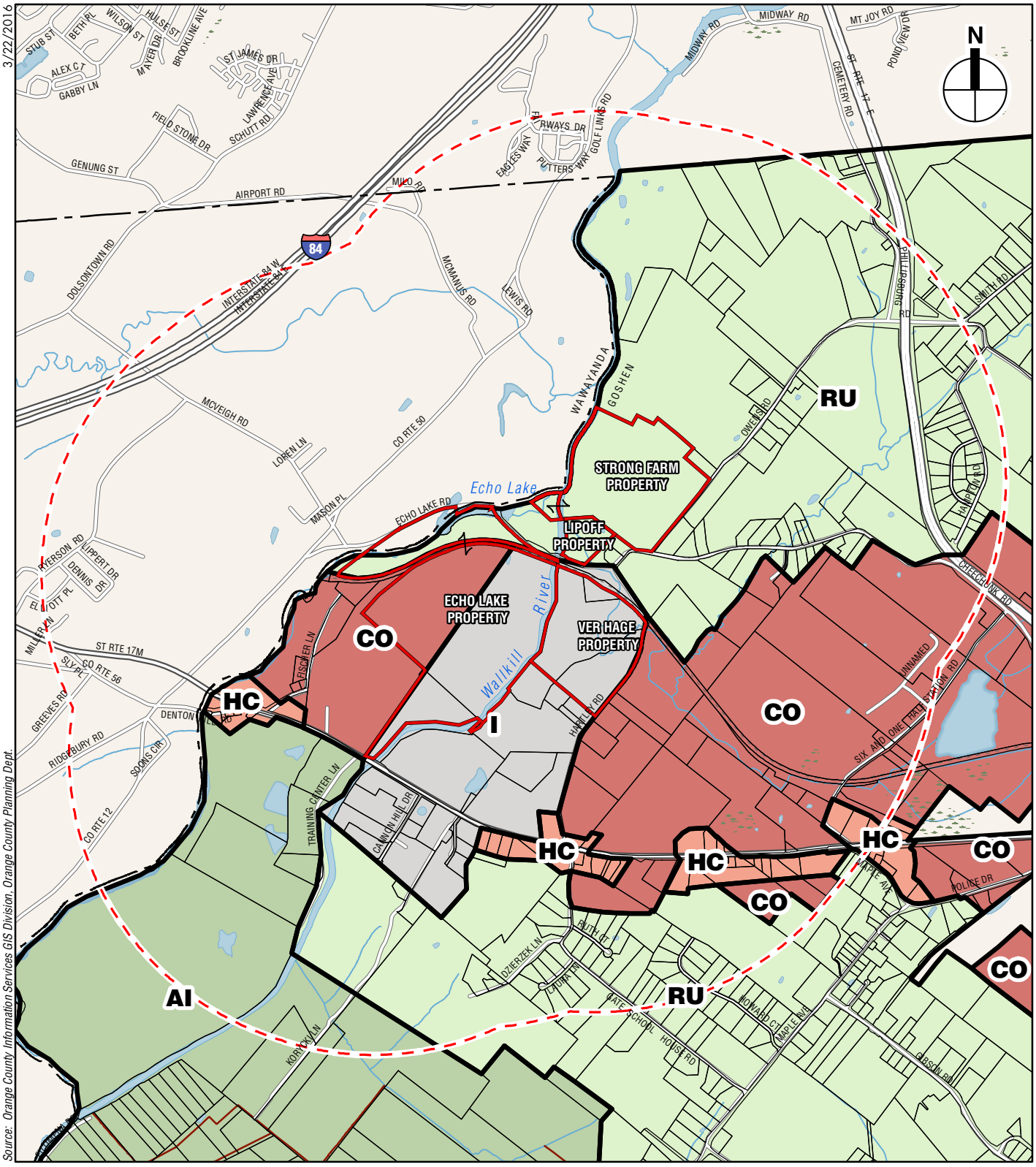
ZONING

The Project Site is located in the Commercial/Office Mixed-Use (CO), Industrial (I), and Rural (RU) Zoning Districts (see **Figure III.K-1** and **Table III.K-1**). The portion of the Echo Lake property south of the Heritage Trail is split zoned, with the western half zoned CO and the eastern half zoned I. The portion of the Echo Lake property north of the Heritage Trail is zoned RU. The Ver Hage property is zoned I, and the Lipoff and Strong Farm properties are both zoned RU. **Table III.K-2** below presents the as-of-right and special permit uses in these zoning districts.

Table III.K-1
Project Site Zoning

Property	Address	SBL[1]	Zoning[2]	Acres
Amy's Kitchen Properties				
Ver Hage property	111 Hartley Road	12-1-1.222	I	54.6
	103 Hartley Road	12-1-19.2	I	17.1
Lipoff property	12 Echo Lake Road	12-1-1.41	RU	11.8
Science of the Soul Properties				
Echo Lake property	41 Echo Lake Road[3]	12-1-24.2	CO, I, and RU	172.9
	2832 NYS Route 17M	12-1-23.2	I	21.7
Strong Farm property[4]	212 Cheechunk Road	10-1-11.2	RU	96
			TOTAL	374.1

Notes:
1 SBL 12-1-101 is currently owned by the State of New York (NYS). NYS has stated its intent to transfer 7.58 acres of this land to the Town of Goshen for the purpose of improving road access to Route 17M for the project and surrounding uses.
2 Town of Goshen Zoning Designations: Commercial/Office Mixed-Use (CO); Industrial (I); and Rural (RU).
3 The portion of this property in the Town of Wawayanda (SBL 1-1-40) is also owned, but is not included in the above Table. There are no proposed modifications to the portion of the parcel in Wawayanda.
4 SoS also owns a 2.9 acre parcel at 51 Owens Road (SBL 10-1-11.1) and a 14.2 acre parcel at 117 Owens Road (SBL 10-1-9). There are no proposed modifications to these properties. The existing residence at 51 Owens Road would continue to be used as a residential use.



Source: Orange County Information Services GIS Division, Orange County Planning Dept.

Project Site

Study Area (One Mile Radius)

Goshen Parcel Boundaries

Town of Goshen Zoning

- *AI, Agricultrural Industrial*
- *CO, Commerical/Office Mixed-Use*
- *HC, Highway Commercial*
- *I, Industrial*
- *RU, Rural*

Amy's Kitchen
Science of the Soul

Zoning Districts

Figure III.K-1

Table III.K-2
Town of Goshen Permitted Uses

Uses	Zoning Districts		
	RU	CO	I
RESIDENTIAL USES			
Single-family dwelling	P	S	--
Two-family dwelling	P	S	--
Multifamily dwelling (conversion)	P*	P*	--
Multifamily dwelling (new)	P*	P*	--
Accessory apartment	P*	P*	--
Upper-floor apartments in mixed- use building	--	P*	--
Residential care facility	S	--	--
Planned adult community	S++	--	--
BUSINESS USES**			
Adult entertainment	--	--	S
Agriculture	P	P	P
Composting facility	S	--	S++
Craft workshop	S	P*	P*
Home occupation	P+	P+	--
Bed-and-breakfast	S	S	--
Junkyard	--	--	S++
Kennel	S	S	S
Light industry	--	S	P*
Lodging facility	--	S	--
Office	SΔ	P*	P*
Public utility facility (excluding wireless communication facilities)	S++	S++	S++
Recreational business	SΔ	S	--
Restaurant	SΔ	P*	--
Retail business (not listed elsewhere)	SΔ	P*	--
Service business (not listed elsewhere)	SΔ	P*	S
Soil mining	S■++	S■++	S++
Veterinary hospital	S	S	S
Warehouse/Self-storage	--	P*	S
Wholesale business	--	P*	S
Wireless communication facility	S	S	S
COMMUNITY USES			
Cemetery	S	--	--
Educational/Charitable/Religious	S	S	--
Health-care facility	S	S	S
Membership club	S	S	--
Municipal	P	P	P

Notes:

P Designates a use permitted by right. Usually requires a zoning permit or a building permit and a certificate of occupancy from the Code Enforcement Officer, but does not require review by any municipal board.

P* Designates a use permitted by right, subject to site plan review by the Planning Board (see §97-75 et seq.).

S Designates a use permitted by special permit issued by the Planning Board (see §97-70 et seq.).

— Designates a prohibited use.

♠ Only permitted in an open space development (§97-20.D) or on farms [§97-12.B(3)].

** Subject to limitations on building footprint in the HC, CO, I and HM Districts (see §97-14A. and §97-15.G).

Δ Only in connection with agricultural use, or as provided in §97-18.C.

+ Requires a special permit if more than two nonresident employees or 30 percent of dwelling unit floor space.

S++ Designates a use permitted by special permit issued by the Town Board.

♦ Retail use shall not exceed 20 percent of floor area and shall include only sale of items produced on the premises and customary accessory items.

■ Only within the Soil Mining Overlay District.

Source: Town of Goshen Code §97-10.B[1]

ZONING OVERLAY DISTRICTS

The entire Echo Lake property and the western portion of the Ver Hage, Strong Farm, and Lipoff properties are in the AQ-3 Aquifer Overlay District (AQ-3 District). The eastern portions of the Ver Hage, Strong Farm, and Lipoff properties are located in the AQ-6 Aquifer Overlay District (AQ-6 District) (see **Figure III.K-2**). In addition, portions of the Project Site are located within the Stream Corridor and Reservoir Watershed Overlay District (SC District), Floodplain and Ponding Area Overlay District (FP District), and Scenic Road Corridor Overlay District (SR District).

Aquifer Overlay District

The purpose of the AQ-3 and AQ-6 Districts is to safeguard the Town's potable water supplies. All proposed uses within the AQ-3 and AQ-6 Districts, except for small-scale residential development in the RU District, are subject to the requirements of §97-27 of the Town Code. The regulations in this section set the maximum potential limit for density or intensity of development on a particular site and are based primarily upon the findings of the Town-Wide Potable Water Planning Study (January, 2003). Nonresidential development must comply with the well testing protocol in §97-27.C. Based on these regulations, non-residential uses not served by public water and sewer shall be evaluated on a case-by-case basis for their impact on groundwater supply and quality and such uses shall be subject to such restrictions on operations, use of materials, waste management, and stormwater control as the Planning Board deems necessary to protect groundwater resources from pollution (see §97-27.C).

Stream Corridor and Reservoir Watershed Overlay District

The SC District follows the Wallkill River and Cheechunk Creek through the Project Site, and includes all land lying within 150 feet of the mean high water line of each watercourse (see §97-26). The purpose of the SC District is to protect the water quality and scenic character of the Town's stream corridors and the reservoirs used for the village water supply, as well as to reduce the risk of damage from flooding. Pursuant to §97-26.D, no principal structure shall be located within 100 feet of a watercourse, and no accessory structure 200 square feet or greater shall be located within 50 feet of a watercourse. In addition, no hazardous materials may be stored within 100 feet of a watercourse. These setbacks apply to all uses, including agriculture, and are measured horizontally from the mean high water line of the watercourse. Per §97-26.E(3), within the SC District, the Planning Board may grant site plan approval only if it finds that, with appropriate conditions, that the proposed activity:

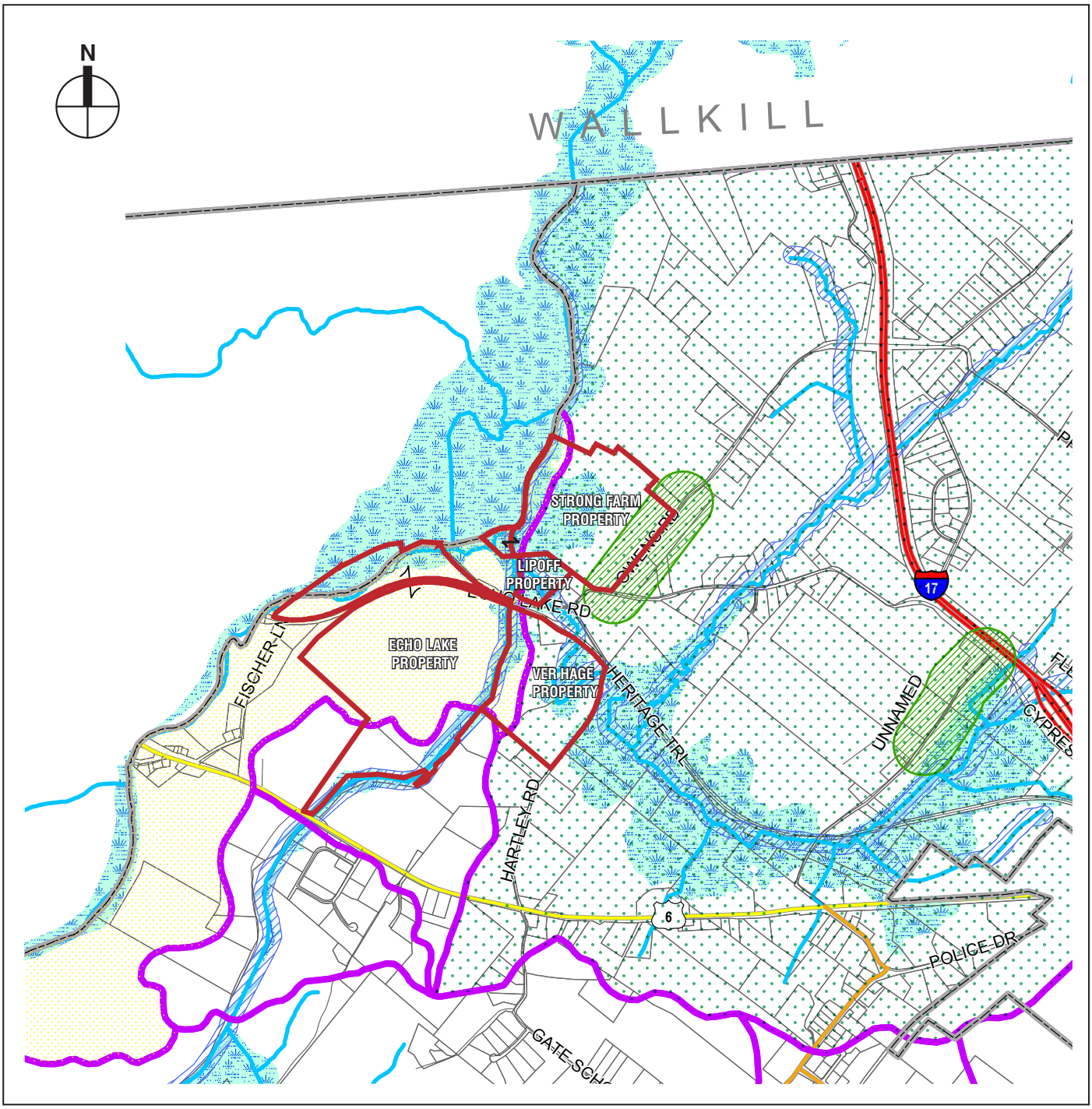
(a) Will not result in degradation of scenic character and will be aesthetically compatible with its surroundings.

(b) Will not result in erosion or surface water pollution from surface or subsurface runoff. In making such determination, the Planning Board shall consider slopes, drainage patterns, water entry points, soil erosivity, depth to bedrock and high water table, and other relevant factors. The Planning Board may require vegetated riparian buffers in which no application of chemicals, vegetation removal, and/or mowing will be permitted.

(c) Will comply with other applicable provisions of this chapter.

In addition, for any special permit, site plan, or subdivision application in which land to be disturbed lies partially within the SC District, an erosion and sediment control plan is required

3.22.16



Project Site Area

Municipal Boundaries

Watershed Boundaries

Streams

Zoning Overlay Districts

Soil Mining Overlay

Scenic Road Corridor Overlay

Floodplain and Ponding Area Overlay

Stream Corridor and Reservoir Watershed Overlay

Aquifer Overlay Districts

AQ-6

AQ-3

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Zoning Overlay Districts
Figure III.K-2

pursuant to §97-42 if the total disturbed area (including portions outside the SC District) exceeds 10,000 square feet.

Floodplain and Ponding Area Overlay District

The FP District also generally follows the Wallkill River and Cheechunk Creek through the Project Site. It also encompasses a substantial portion of the western half of the Strong Farm property, as well as the majority of the Lipoff Property. The FP District includes the areas of the Town that are subject to periodic inundation and ponding, and is the area defined on the National Flood Insurance Mapping Program Flood Insurance Rate Maps as "A" ("Special Flood Hazard Areas") Zones for the one-hundred-year floodplain. The purpose of the FP District is to protect human life, prevent material losses, and to reduce the cost to the public of rescue and relief efforts caused by the unwise occupancy of areas subject to floods and ponding.

Within the FP District, the following uses are permitted by right per §97-25.A:

(1) Recreational uses not involving buildings or structures, conservation areas and wildlife preserves.

(2) Agricultural and commercial agricultural operations and accessory uses thereto, including fences and temporary structures.

In addition, the Planning Board may permit the following uses by special permit, provided that the minimum ground floor elevations of any building meet the one-hundred-year floodplain elevation (see §97-25.B):

(1) Recreational structures and accessory uses.

(2) Utility structures.

(3) Barns, silos and related agricultural buildings.

(4) Membership clubs used for outdoor recreational purposes

Notwithstanding the above, the Planning Board, upon a finding that an area in the FP District is safe from flooding or ponding, may permit such area to be used in accordance with the regulations (including use, area, bulk and height) for the underlying land use district. For the Planning Board to make this finding, an applicant must produce sufficient evidence that the area covered by the application is safe from flooding or ponding, including means of vehicular access to the premises.

Scenic Road Corridor Overlay District

The purpose of the SR District is to protect scenic road corridors and preserve the attractive rural quality of the Town. Within the Study Area, Owens Road, which forms the southeastern boundary of the Strong Farm property, is within the SR District. The SR District includes all land within 500 feet of the right-of-way of Owens Road. The SR District requires site plan approval for the following uses, even if such activities or uses are allowed by right without site plan review by the Use Table in §97-10 (see §97-29.D):

(1) Construction of any structure or any addition to a structure greater than 500 square feet in footprint area, including residential structures.

(2) Within any one-year period, in any location that is visible from the designated scenic road in winter:

(a) Filling or excavation of an area in excess of 5,000 square feet.

(b) Clear-cutting of more than 5,000 square feet of vegetation on any parcel.

(c) Grading or other alteration of more than 5,000 square feet of the natural landscape.

Pursuant to §97-29.F, within the SR District, site plan approval may only be granted if, with appropriate conditions, the proposed activity:

(1) Will not result in degradation of scenic character and/or will be aesthetically compatible with its surroundings.

(2) Will minimize the removal of native vegetation, except where such removal may be necessary to open up scenic views and panoramas.

(3) Will locate and cluster buildings and other structures in a manner that minimizes their visibility from the road to the extent practical.

(4) Will comply with the requirements in Subsections G through J below, except where site features are screened from the road.

In addition, per §97-29.G, a continuous green buffer at least 50 feet deep along Owens Road must be maintained. The buffer must consist of native trees and shrubs, as well as fields, meadows, and lawn areas. Bike paths and/or sidewalks may be constructed within this landscaped buffer.

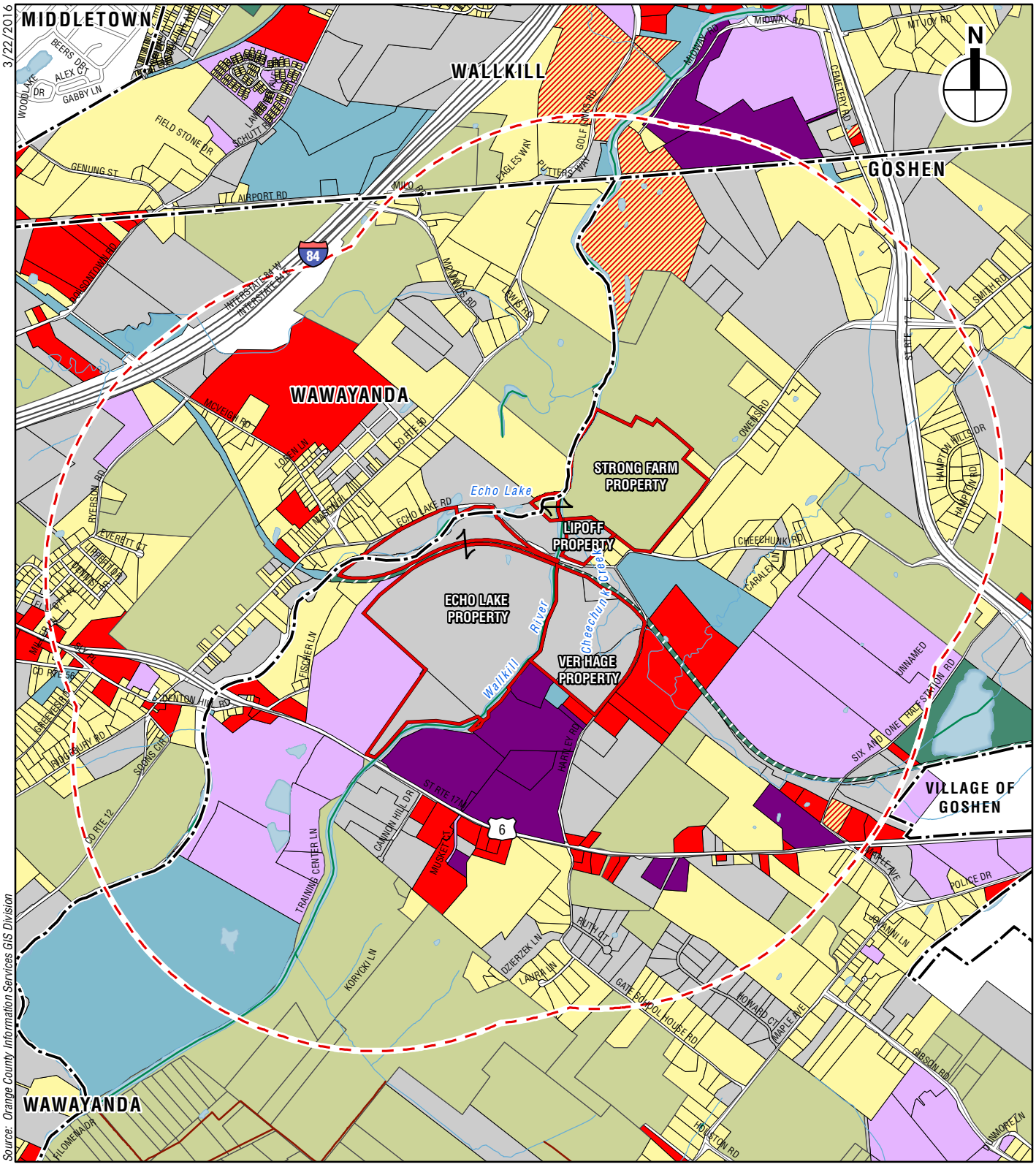
Shade trees are also required within 25 feet of the right-of-way at no more than forty-foot intervals. However, an applicant is not required to plant more than one shade tree per 1,000 square feet of floor area proposed to be developed on the parcel.

Pursuant to §97-29.H, existing structures with historic or architectural significance should be retained. Any alterations or new structures should be compatible with the architecture of the historic structures. Buildings visible from the scenic roads, including canopies for accessory facilities, are required to have peaked roofs with a slope of at least 8:12, except that hip roofs with a slope of at least 4:12 and flat roofs that are hidden by a raised cornice are also be permitted. Windows are required to be vertically proportioned and balanced on facades, with width-to-height ratios ranging from 1:2 to 3:5. Horizontal windows may be used just below roof eaves ("eyebrow" windows) and as first-floor display windows.

Chain-link, stockade, or other fence designs that block visual access to land in the corridor are prohibited per §97-29.I, unless such fences are necessary to screen a pre-existing use that does not conform to the requirements of §97-29. Any new development in the SR District is required to comply with the rural siting principles in §97-41.

LAND USE

As further described below, land uses in the immediate vicinity of the Project Site are characterized by rural residential, farmland, institutional, and rural industrial uses (see **Figure III.K-3**). The Town of Wawayanda is located to the west of the Project Site, and includes rural residential and commercial uses. North, south, and east of the Project Site are primarily vacant forested land, rural residential, and farmland.



Project Site
Study Area (One Mile Boundary)
Municipal Boundaries

Land Use Categories
Agricultural
Residential
Commercial
Community Services
Industrial
Infrastructure
Recreation & Entertainment
Vacant Land
Wild, Forested, Conservation Lands & Public Parks
Park

0 1,000 FEET

Amy's Kitchen
Science of the Soul

Land Use
Figure III.K-3

VER HAGE PROPERTY

The Ver Hage property is currently vacant. Portions of the property are open fields, which historically may have been used for farming, but more recently were stripped of top-soil for the capping of the Al Turi landfill to the south. The Cheechunk Creek traverses the northeast corner of the property. Adjacent land uses include the Wallkill River and Echo Lake property to the west, Interstate Waste Service private transfer station and Old Al Turi Landfill[1] to the south, and light-industrial businesses along Hartley Road to the east. An unimproved section of the Heritage Trail forms the northern border of the Ver Hage property. East of Hartley Road, the Heritage Trail has been improved with a gravel trail for public recreational use. An Orange & Rockland Utilities (O&R) electrical sub-station was recently constructed to the north of the Ver Hage property between Hartley Road and Cheechunk Road.

LIPOFF PROPERTY

The Lipoff property is currently vacant forested land. The Cheechunk Creek bisects the property. Land uses adjacent to the property include the Strong Farm to the north, Echo Lake Road to the south, single-family residential to the east, and the Wallkill River and vacant forested land to the west. There is an existing easement held by Rockland Light and Power Company for transmission lines that cross the property.

ECHO LAKE PROPERTY

The Echo Lake property is currently vacant. However, the property was historically used for some farming activities and is currently listed in the Orange County Agricultural District #2. Adjacent land uses include the New York State Mid-Hudson Psychiatric Center and Orange County Transfer Station to the southwest; the Wallkill River to the east; Ameresco Renewable Energy Project, and Interstate Waste Service private transfer station across the Wallkill River to the southeast; the Ver Hage property across the Wallkill River to the northeast; and rural single-family residential uses in the Town of Wawayanda to the northwest. An unimproved section of the Orange County Heritage Trail, which follows an abandoned railroad bed, traverses the northern portion of the property.

STRONG FARM PROPERTY

The Strong Farm property is currently used for agriculture. The property contains several agricultural structures and three (3) residences. Land uses to the north include vacant forested land, a single-family residence, and farmland; to the south are the Lipoff property, single-family residences, and the O&R substation; to the east are single-family residences along Owens Road; and to the west is the Wallkill River and farmland.

[1] The "Old Al Turi Landfill" is idenfitied by the New York State Department of Environmental Conservation (NYSDEC) as an Inactive Hazardous Waste Site (Site No. 3-36-016) for which a NYSDEC Record of Decision for remedial action is dated March 1996.

PUBLIC POLICY

TOWN COMPREHENSIVE PLAN

The Town of Goshen adopted the Updated Comprehensive Plan for the Town of Goshen ("Goshen Comprehensive Plan") in 2009. The key goals of the Goshen Comprehensive Plan were stated as follows:

Goal #1 Protect and enhance the agricultural activities and rural character of the Town.

Goal #2 Support existing Village center and foster Town clusters

Goal #3 Provide a range of housing alternatives that will meet the housing needs for a range of socio-economic groups.

Goal #4 Develop a strong and balanced economic base.

Goal #5 Protect and enhance open space and public space.

Goal #6 Ensure a development pattern that will provide for sustainable water use.

Goal #7 Encourage appropriately sited development & protect environmental assets

In particular to the Project Site, to attract additional tax positive commercial development, and to encourage a diverse economic base that provides tax ratables for the Town, the Goshen Comprehensive Plan also recommended increasing the maximum impervious surface coverage requirements within the CO and I Zoning Districts.

In addition, the Goshen Comprehensive Plan recommends preserving, whenever practical, a 150 foot buffer from the center line of the stream along the Wallkill River and Cheechunk Creek. The purpose of this buffer is to control non-point source pollution, erosion and sewer outfalls, prevent flooding where floodplains exist, limit or prevent filling, create wildlife corridors and create potential linear parks in those areas where it is conducive to such development as well as for their general visual preservation.

The Goshen Comprehensive Plan does not make any specific land use or zoning change recommendations for the Project Site.

TOWN OPEN SPACE AND FARMLAND PROTECTION PLAN

The Town of Goshen Open Space and Farmland Protection Plan ("Goshen OSFPP") was adopted by the Town in 2003. The Goshen OSFPP seeks to "preserve the rural character and scenic beauty of the Town of Goshen in a manner that protects and does not infringe on the property interests of land owners." The Goshen OSFPP recommends the preservation of open space resources and farmland to preserve the town's rural character, natural habitats and environmental health of the Town. The Strong Farm property is identified in the Goshen OSFPP as a scenic view of farmland.

The western portion of the Echo Lake property is identified as "forested land." The Goshen OSFPP recommends protecting remaining larger blocks of relatively un-fragmented forests in locations where they provide important wildlife habitat, protect drinking water recharge areas, or contribute to the scenic vistas of the Town.

The Lipoff and Ver Hage properties are not specifically identified in the Goshen OSFPP.

SOUTHERN WALLKILL BIODIVERSITY PLAN

The Wildlife Conservation Society completed the Southern Wallkill Biodiversity Plan ("Biodiversity Plan") for the Towns of Chester, Goshen, and Warwick in 2005. Its subtitle was "Balancing Development and the Environment in the Hudson River Estuary Watershed." The intent of the Biodiversity Plan was to identify vital biologically diverse areas for conservation purposes and to establish a regional, multi-town approach to land use planning to promote wildlife and habitat conservation. The project sought to address the impacts of sprawl on natural ecosystems. The Biodiversity Plan stresses the importance of open space linkages to serve as secondary habitats for species. Portions of the Project Site, in particular the western portion of the Echo Lake property and the Cheechunk Creek corridor on the Ver Hage property, were identified as "areas important for biodiversity."

ORANGE COUNTY COMPREHENSIVE PLAN

The Orange County Comprehensive Plan ("OCCP"), which was updated in 2010, uses the "Priority Growth Concept" to differentiate between rural and urban areas, and sets different goals for each. The Land Use Plan identifies Priority Growth Areas in and around Villages and along transportation corridors. The Echo Lake and Ver Hage properties reside within the Priority Growth Area that extends along Route 17M from the Village of Goshen into the City of Middletown. The corridor is further identified as a "mixed use corridor." The Strong Farm and Lipoff properties, located just outside that corridor, are identified as rural. An overall goal of the OCCP is to:

> *Strengthen the economy in Orange County by attracting and supporting businesses that will enhance the County's economic base and provide jobs, tax revenues, and an orderly and sustainable land use pattern that accommodates the best of the County's old economy while providing the attributes necessary to build the new economy.*

To support this goal, the OCCP economic development strategy encourages "links between the County's environmental and agricultural heritage and the promotion of sustainable agricultural and economic development."

In particular to the Project Site, the OCCP recommends that the Orange County Heritage Trail, which follows the original Erie Main Line railroad bed, be preserved and enhanced as a pedestrian and bike trail to promote transportation, economic development, and recreation in the County.

ORANGE COUNTY OPEN SPACE PLAN

The Orange County Open Space Plan ("OCOSP") was prepared in 2004. The OCOSP evaluates water resources, agriculture, recreation, landforms and landscapes, and biodiversity and sets short- and long-term goals for the continued protection of each resource. Particular to the Project Site, the OCOSP identifies the Heritage Trail as an important recreational resource.

STATE SMART GROWTH PUBLIC INFRASTRUCTURE POLICY ACT

Article 6 of the New York State Environmental Conservation Law requires any "State Infrastructure Agency" (including NYSDEC and NYSDOT) to consider the consistency of the construction, or reconstruction, of new or expanded public infrastructure with a set of Smart Growth Public Infrastructure Criteria. The law requires that the chief executive officer of a State Infrastructure Agency must provide a written "Smart Growth Impact Statement" attesting that

the project, to the extent practicable, meets the Smart Growth Public Infrastructure Criteria. Where a project cannot meet these criteria, or compliance is considered to be impracticable, the Smart Growth Impact Statement shall provide a detailed statement of justification.

The Smart Growth Public Infrastructure Criteria are as follows:

A. *To advance projects for the use, maintenance or improvement of existing infrastructure;*

B. *To advance projects located in municipal centers [defined as "areas of concentrated and mixed land uses that serve as centers for various activities"];*

C. *To advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan;*

D. *To protect, preserve and enhance the State's resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archaeological resources;*

E. *To foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income and age groups;*

F. *To provide mobility through transportation choices including improved public transportation and reduced automobile dependency;*

G. *To coordinate between State and local government and intermunicipal and regional planning;*

H. *To participate in community based planning and collaboration;*

I. *To ensure predictability in building and land use codes; and*

J. *To promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain its implementation.*

C. FUTURE WITHOUT THE PROPOSED PROJECT

No "No Build" projects were identified in the Study Area. No proposed changes to the Town's Comprehensive Plan or Zoning Code are currently proposed.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

ZONING

AMY'S KITCHEN

The proposed Amy's Kitchen manufacturing facility would be located on the Ver Hage property, located in the I Zoning District. The proposed manufacturing facility use would be considered "light industry" under the Town of Goshen Zoning Code. Light industry is defined by the Code

as the "manufacture, assembly, treatment, processing, or packaging of products that does not emit objectionable levels of smoke, noise, dust, odor, glare, or vibration beyond the property boundaries" (see §97-84), and it is a use permitted by right subject to Planning Board site plan approval in the I District.

The maximum height permitted in the I Zoning District is 45 feet. While the proposed manufacturing facility has not been completely designed at this point of time, Amy's Kitchen would comply with the Zoning height restriction and all other dimensional parameters (e.g., yards and setbacks) within the Town's Zoning Code (see **Table III.K-3**).

Pursuant to §97-14.D, all new development in the I District shall comply with design standards. **Table III.K-4** presents a compliance analysis of the proposed Amy's Kitchen manufacturing facility with the design standards. The Amy's Kitchen manufacturing facility may require one or more area variances from the Town Zoning Board of Appeals for relief from certain of the design standards. Such relief may be required from §97-14.D-2-e, which requires "large buildings (footprint larger than 10,000 square feet) [to be] generally … broken up into smaller volumes using building proportions found in the region's traditional architecture." It is not possible for the approximately 369,000 square feet of industrial space to be split into multiple, smaller spaces due to operational and internal manufacturing processes; therefore, the Amy's Kitchen manufacturing facility may require a variance from this regulation.[2]

Overlay Districts

As discussed above, the Ver Hage and Lipoff Properties are located within the Aquifer Overlay District, SC District, and the FP District.

Table III.K-3
Amy's Kitchen Dimensional Compliance

	I *(Proposed Manufacturing Site)*	
Dimensional Regulations (§97-14)	**Required**	**Proposed**
Minimum lot area	5 acres	60.1[3] acres
Minimum road frontage:		
Town Road	200 ft	847 ft
County/State Road	200 ft	847 ft
Minimum front yard setback:		
Town Road	100 ft	123 ft
County/State Road	200 ft	NA
Minimum side yard setback	50[1] ft	196 ft/200 ft
Minimum rear yard setback	75[1] ft	+/- 400 ft
Maximum impervious surface coverage	70 percent	+/- 34 percent
Maximum height[2]	45 ft	< 45 ft
Maximum footprint (in square feet) for nonresidential structures	--	--

Notes:
[1] One-hundred-foot setback with wooded buffer required if lot abuts a residential district.
[2] Above average grade. For height exceptions, see §97-40.D.
[3] Assumes a +/- 11.6 acre subdivision

[2] The Town Code Enforcement Officer may interpret this section to allow for compliance without a variance in instances where the building is designed to look like it is broken into smaller sections through the use of color changes or other façade treatments.

Table III.K-4
Amy's Kitchen §97-14.D Compliance

Zoning Reference (§97-14.D)	Requirement	Compliance
(1) Building placement	(a) Buildings shall be clustered together to the extent practical, preserving existing green areas, and conform to the natural terrain to the extent practicable.	The proposed layout of the Amy's Kitchen manufacturing facility would comply with this provision.
	(b) Buildings shall be placed in front of their parking lots to screen the parking from the road. This requirement shall not apply if the entire site is screened from the road by natural vegetation and/or natural topography.	The proposed layout of the Amy's Kitchen manufacturing facility would comply with this provision.
(2) Architecture	(a) Existing structures with historic or architectural significance shall be retained to the extent practical. Alterations to such structures shall be compatible with the architecture of the existing structure.	Not applicable. There are no structures on the Ver Hage property.
	(b) Buildings, including canopies for accessory facilities, shall have peaked roofs with a slope of at least 8:12, except that hip roofs with a slope of at least 4:12 and flat roofs that are hidden by a raised cornice shall also be permitted.	The Amy's Kitchen facility would have a flat roof with a raised cornice to screen roof-top mechanical equipment.
	(c) Windows shall be vertically proportioned and balanced on facades, with width-to-height ratios ranging from 1:2 to 3:5. Horizontal windows may be used just below roof eaves ("eyebrow" windows) and as first-floor display windows.	Typically, large manufacturing facilities such as the Proposed Project would not include windows on all facades. To the extent practicable, the Amy's Kitchen facility would comply with this requirement.
	(d) Trademarked architecture which identifies a specific company by building design features shall be prohibited, unless the applicant can demonstrate that the design is compatible with the historic architecture of the region.	Amy's Kitchen does not propose to construct a building with any architectural features that would be considered "trademarked." Amy's Kitchen would seek to install appropriate signage that would identify the property and the building as an Amy's Kitchen facility.
	(e) Large buildings (footprint larger than 10,000 square feet) shall generally be broken up into smaller volumes using building proportions found in the region's traditional architecture.	It would not be possible for the Amy's Kitchen facility to comply with this requirement. It is the Applicant's belief that this provision was not intended to apply to larger industrial buildings in the CO or I Zoning Districts.
(3) Landscaping	(a) A continuous green landscaped buffer shall be maintained along the road, consisting of trees, shrubs, fields, meadows, natural areas and lawns, provided that such buffer vegetation does not interfere with required sight distances. Bike paths and/or sidewalks shall be constructed within this landscaped buffer. To the extent practical, existing trees, lawns and shrubs shall be preserved.	A 100 foot buffer is proposed along Hartley Road to comply with this provision.
	(b) Undeveloped natural areas shall be managed to maximize recharge of groundwater, protection of surface water quality, and protection of wildlife habitat. Frequent mowing of areas not used for agriculture or pedestrian access shall be discouraged in favor of management as open meadows.	The proposed layout of the Amy's Kitchen manufacturing facility would comply with this provision.
	(c) The buffer yard requirements in §97-75.D(2) shall be used to determine specific buffer and landscaping requirements.	While the landscaping plan has not been determined, it will be designed to comply with this provision.

Table III.K-4 (cont'd)
Amy's Kitchen §97-14.D Compliance

Zoning Reference (§97-14.D)	Requirement	Compliance
(4) Fences	Fence materials and designs shall be appropriate to the historic character of Goshen and shall not block visual access to scenic views. Chain link fencing shall not be used in locations visible from public highways. Existing chain link fences may be replaced if coated with a dark, nonreflective finish or screened by an evergreen hedge.	Amy's Kitchen requires controlled access to the facility. As such, chain-link fencing is proposed. To the greatest extent practicable, Amy's Kitchen would utilize landscaping to minimize views of the proposed fence.
(5) Outdoor storage and enclosed buildings	All permitted and accessory uses shall be confined within completely enclosed buildings, with the exception of off-street parking spaces, off-street loading berths, accessory fuel storage and employee recreational facilities. Outdoor storage of materials, equipment or vehicles in an orderly manner is permitted in any area other than required front, rear or side yards, provided that such outdoor storage does not exceed 10 percent of the area of the lot and is effectively screened from public roads and from any adjacent residential district boundary. This 10 percent limitation may be waived by the Planning Board in the course of site plan review for those uses which by their nature require outdoor storage of material or products, such as nurseries, lumberyards, outdoor sculpture galleries, and automobile dealers. The screening requirement may be waived where it would prevent the necessary display of merchandise for public viewing, provided that the Planning Board finds that such display will be orderly and attractive.	Amy's Kitchen does not propose to rely upon outdoor storage of materials. Approximately 18 tractor-trailer parking spaces are proposed on the interior portion of the site, +/- 1,050 feet from Hartley Road.
(6) Curb cuts	The minimum distance between curb cuts shall be 600 feet, unless the configuration of a parcel in relation to adjoining parcels makes this requirement impossible to satisfy.	The proposed Amy's Kitchen emergency access driveway would be approximately +/- 200 feet from the adjacent parcel's driveway (on the same side of the road). Existing topography and proximity to the Cheechunk Creek make it impossible to satisfy this requirement.

Source: Town of Goshen Zoning Code §97-14.D

Aquifer Overlay District

The Amy's Kitchen manufacturing facility would be located primarily in the AQ-6 District, with the western edge of both the Ver Hage and Lipoff properties within the AQ-3 District. Since potable water supply to the Proposed Project would be provided by a new private utility connection to the City of Middletown water supply, the Proposed Project would have no effect on nearby wells or adjacent properties.

Stream Corridor and Reservoir Watershed Overlay District

The SC District follows the Wallkill River and Cheechunk Creek through the Project Site, and includes all land lying within 150 feet of the mean high water line of each watercourse (see §97-26). As such, the SC District encompasses the western edge and northeast corner of the Ver Hage property, and the western edge and middle of the Lipoff property.

Pursuant to §97-26.D, the principal structures for the Amy's Kitchen manufacturing facility would be located greater than 100 feet from the watercourse, and no accessory structures are proposed within 50 feet of the watercourse. In addition, no hazardous materials would be stored within 100 feet of either the Wallkill River or Cheechunk Creek. On the Ver Hage property, disturbance within the SC District would be limited to the proposed bridge over the Wallkill

River and associated driveway, as well as a limited number of parking spaces. No structures or disturbance is proposed on the Lipoff property.

Pursuant to §97-26.E(3), the proposed Amy's Kitchen manufacturing facility would not result in degradation of scenic character and will be aesthetically compatible with its surroundings; would not result in erosion or surface water pollution from surface or subsurface runoff; and would comply with other applicable provisions of Chapter 97. In addition, an erosion and sediment control plan will be prepared pursuant to §97-42.

Floodplain and Ponding Area Overlay District

The FP District also generally follows the Wallkill River and Cheechunk Creek through the Project Site. As such, the FP District encompasses the western edge and northeast corner of the Ver Hage property, and the western edge and middle of the Lipoff property. In addition, the northeast corner of the Lipoff property is within the FP District.

All structures associated with the Amy's Kitchen manufacturing facility are proposed to be located outside of the 100 year floodplain. For the Amy's Kitchen manufacturing facility, disturbance within the floodplain would be limited to the bridge, driveway, and parking lot.

SCIENCE OF THE SOUL

The SoS Conference Center would be partially located in the CO and I Zoning Districts, no facilities are proposed within the RU district. The SoS Conference Center is considered a "religious institution" under the Town of Goshen Zoning Code. A religious institution is defined under §97-84 of the Code as, "a church, synagogue, or other place of religious worship, as well as a monastery or other place of religious retreat." Additionally, and as noted above, SoS has a 501(c)(3) designation from the Internal Revenue Service as a religious not-for-profit entity. A determination by the Town's Building Inspector, dated October 20, 2015 (see **Appendix III.K**), confirms that "this religious use is permissible on the proposed site with all of its affiliated and accessory uses."

The proposed SoS Conference Center would comply with all applicable setback, dimensional, and overlay district regulations (see **Table III.K-5**).

Table III.K-5
Science of the Soul Dimensional Compliance

Dimensional Regulations (§97-14)	CO		I	
	Required	Proposed	Required	Proposed
Minimum lot area	1 acre	> 1 acre	5 acres	> 5 acres
Minimum road frontage:				
Town Road	200	NA	200	NA
County/State Road	200	+/- 500 ft	200	+/- 500 ft
Minimum front yard setback:				
Town Road	50	>1,000 ft	100	>1,000 ft
County/State Road	150	>1,000 ft	200	>1,000 ft
Minimum side yard setback	30[1]	>300 ft	50[1]	>300 ft
Minimum rear yard setback	50[1]	>300 ft	75[1]	>300 ft
Maximum impervious surface coverage	70 percent	+/- 16 percent	70 percent	+/- 16 percent
Maximum height[2]	35	< 35 ft	45	< 45 ft
Maximum footprint (in square feet) for nonresidential structures	200,000	NA	--	NA

Notes: [1] One-hundred-foot setback with wooded buffer required if lot abuts a residential district.
[2] Above average grade. For height exceptions, see §97-40.D.

Pursuant to §97-14.D, all new development in the I District shall comply with design standards. **Table III.K-6** presents a compliance analysis of the proposed SoS Conference Center with the design standards. The SoS Conference Center may require one or more area variances from the Town Zoning Board of Appeals for relief from certain of the design standards. Such relief may be required from §97-14.D-2-e, which requires "large buildings (footprint larger than 10,000 square feet) [to be] generally … broken up into smaller volumes using building proportions found in the region's traditional architecture." It is not possible for several of the buildings comprising the SoS Conference Center to comply with this provision. In particular, the 200,000 square-foot open-air pavilion; the two-story approximately 80,000 square-foot Multi-Purpose/Family Area Building; and the two-story approximately 38,000 square-foot Central Building. The unique nature of the SoS practice, which includes seating space for up to 12,000 individuals, could not be accommodated in a 10,000 square-foot building.

However, no variances are anticipated for the one-story approximately 8,000 square-foot Maintenance Barn; four (4) associated restroom buildings (approximately 5,000 square feet each); two (2) Caretaker Residences; and approximately 4,500 square-foot Guest House.

Special Permit Criteria

The proposed SoS Conference Center requires a Special Permit from the Planning Board. Pursuant to §97-73, in granting or denying special permits, the Planning Board shall "take into consideration the scale of the proposed project, the possible impact of the proposed project on the functioning of nearby farm operations, and, in rural areas, the tradition of freedom of land use where such use does not interfere with or diminish the value of adjoining property." **Table III.K-7** below presents the SoS Conference Center's compliance with the special permit criteria prescribed in §97-73.B.

Overlay District

As discussed above, the Echo Lake and Strong Farm properties are located within the Aquifer Overlay District, SC District, and FP District. In addition, the eastern edge of the Strong Farm property is located within the SR District.

Aquifer Overlay District

The SoS Conference Center would be located entirely within the AQ-3 District. Whereas, the western edge of the Strong Farm property is located within the AQ-3 District, and the majority of the property is located in the AQ-6 District. Since potable water supply to the Proposed Project would be provided by a new private utility connection to the City of Middletown water supply, the Proposed Project would have no effect on nearby wells or adjacent properties.

Table III.K-6
Science of the Soul §97-14.D Compliance

Zoning Reference (§97-14.D)	Requirement	Compliance
(1) Building placement	(a) Buildings shall be clustered together to the extent practical, preserving existing green areas, and conform to the natural terrain to the extent practicable.	The proposed SoS Conference Center would comply with this provision.
	(b) Buildings shall be placed in front of their parking lots to screen the parking from the road. This requirement shall not apply if the entire site is screened from the road by natural vegetation and/or natural topography.	The proposed SoS Conference Center would comply with this provision.
(2) Architecture	(a) Existing structures with historic or architectural significance shall be retained to the extent practical. Alterations to such structures shall be compatible with the architecture of the existing structure.	The proposed SoS Conference Center would comply with this provision. No structures are located on the Echo Lake property, and the existing structures on the Strong Farm property would remain.
	(b) Buildings, including canopies for accessory facilities, shall have peaked roofs with a slope of at least 8:12, except that hip roofs with a slope of at least 4:12 and flat roofs that are hidden by a raised cornice shall also be permitted.	While the final design of the SoS Conference Center has not been determined, it is anticipated that roof pitches for all buildings would be able to comply with these provisions.
	(c) Windows shall be vertically proportioned and balanced on facades, with width-to-height ratios ranging from 1:2 to 3:5. Horizontal windows may be used just below roof eaves ("eyebrow" windows) and as first-floor display windows.	While the final design of the SoS Conference Center has not been determined, it will be designed to comply with this provision.
	(d) Trademarked architecture which identifies a specific company by building design features shall be prohibited, unless the applicant can demonstrate that the design is compatible with the historic architecture of the region.	While the final design of the SoS Conference Center has not been determined, it will be designed to comply with this provision.
	(e) Large buildings (footprint larger than 10,000 square feet) shall generally be broken up into smaller volumes using building proportions found in the region's traditional architecture.	It is not possible for the SoS Conference Center to comply with this provision. The unique nature of the SoS practice, which includes seating space for up to 12,000 individuals, could not be accommodated in a 10,000 square-foot building.
(3) Landscaping	(a) A continuous green landscaped buffer shall be maintained along the road, consisting of trees, shrubs, fields, meadows, natural areas and lawns, provided that such buffer vegetation does not interfere with required sight distances. Bike paths and/or sidewalks shall be constructed within this landscaped buffer. To the extent practical, existing trees, lawns and shrubs shall be preserved.	The proposed SoS Conference Center would comply with this provision.
	(b) Undeveloped natural areas shall be managed to maximize recharge of groundwater, protection of surface water quality, and protection of wildlife habitat. Frequent mowing of areas not used for agriculture or pedestrian access shall be discouraged in favor of management as open meadows.	The proposed SoS Conference Center would comply with this provision.
	(c) The buffer yard requirements in §97-75.D(2) shall be used to determine specific buffer and landscaping requirements.	While the landscaping plan has not been determined, it will be designed to comply with this provision.
(4) Fences	Fence materials and designs shall be appropriate to the historic character of Goshen and shall not block visual access to scenic views. Chain link fencing shall not be used in locations visible from public highways. Existing chain link fences may be replaced if coated with a dark, nonreflective finish or screened by an evergreen hedge.	No fencing is currently contemplated in areas visible to the public.

Table III.K-6 (cont'd)
Science of the Soul §97-14.D Compliance

Zoning Reference (§97-14.D)	Requirement	Compliance
(5) Outdoor storage and enclosed buildings	All permitted and accessory uses shall be confined within completely enclosed buildings, with the exception of off-street parking spaces, off-street loading berths, accessory fuel storage and employee recreational facilities. Outdoor storage of materials, equipment or vehicles in an orderly manner is permitted in any area other than required front, rear or side yards, provided that such outdoor storage does not exceed 10 percent of the area of the lot and is effectively screened from public roads and from any adjacent residential district boundary. This 10 percent limitation may be waived by the Planning Board in the course of site plan review for those uses which by their nature require outdoor storage of material or products, such as nurseries, lumberyards, outdoor sculpture galleries, and automobile dealers. The screening requirement may be waived where it would prevent the necessary display of merchandise for public viewing, provided that the Planning Board finds that such display will be orderly and attractive.	The proposed SoS Conference Center would comply with this provision.
(6) Curb cuts	The minimum distance between curb cuts shall be 600 feet, unless the configuration of a parcel in relation to adjoining parcels makes this requirement impossible to satisfy.	The proposed SoS Conference Center would comply with this provision to the greatest extent practicable.

Table III.K-7
Science of the Soul Special Permit Compliance

Special Permit Findings Criteria (§97-73.B)	Compliance
(1) Will comply with all land use district, overlay district, and other specific requirements of this chapter and other local laws and regulations and will be consistent with the purposes of this chapter and of the land use district in which it is located.	The proposed the SoS Conference Center would comply with all other local laws and regulations.
(2) Will not result in excessive off-premises noise, dust, odors, solid waste, or glare or create any public or private nuisances.	The proposed SoS Conference Center would comply with this provision. The Conference Center would be centrally located on the Echo Lake property, and would comply with all applicable noise regulations.
(3) Will not cause significant traffic congestion, impair pedestrian safety, or overload existing roads, considering their current width, surfacing, and condition, and any improvements proposed to be made to them by the applicant.	The proposed SoS Conference Center would comply with this provision. The larger National Conference and Regional Conference would likely require local police officers to help manage traffic flow to and from the Project Site. The proposed roadway improvements would also help to manage flow of traffic into and from the Project Site.
(4) Will be accessible to fire, police, and other emergency vehicles.	The proposed SoS Conference Center would comply with this provision.
(5) Will not overload any public water, drainage, or sewer system, or any other municipal facility.	There are no public water or sewer systems serving the Project Site. Potable water supply and wastewater treatment to the SoS Conference Center would be provided by a new private utility connections to the City of Middletown, which has sufficient capacity to treat the additional sanitary wastewater. The stormwater management system would ensure that no impacts to Town or State drainage facilities would occur.
(6) Will not materially degrade any watercourse or other natural resource or ecosystem or degrade the water quality or quantity of an aquifer.	The proposed SoS Conference Center would comply with this provision. The stormwater management system would ensure no impacts to quality of the groundwater or aquifer.
(7) Will be suitable for the property on which it is proposed, considering the property's size, location, topography, vegetation, soils, natural habitat, and hydrology, and, if appropriate, its ability to be buffered or screened from neighboring properties and public roads.	The proposed SoS Conference Center would comply with this provision. Appropriate buffering would be provided on the perimeter of the Echo Lake property to screen views from neighboring properties and public roads.
(8) Will be subject to such conditions on operation, design and layout of structures, and provision of buffer areas as may be necessary to ensure compatibility with surrounding uses and to protect the natural, historic, and scenic resources of the Town.	The proposed SoS Conference Center would comply with this provision. Appropriate buffering would be provided on the perimeter of the Echo Lake property to screen views from neighboring properties and public roads.
(9) Will be consistent with the goal of avoiding strip commercial development and buffering nonresidential uses that are incompatible with residential use.	The proposed SoS Conference Center would comply with this provision as no strip commercial development is proposed.
(10) Will not adversely affect the availability of affordable housing in the Town.	The proposed SoS Conference Center would have no effect on the availability of affordable housing.
(11) Will comply with applicable site plan criteria in §97-75.D.	The proposed SoS Conference Center would comply with applicable site plan criteria in §97-75.D.
(12) If the property is in a residential district, will have no greater overall off-site impact than would full development of the property with uses permitted by right, considering relevant environmental, social, and economic impacts.	Not applicable. The proposed SoS Conference Center is not within a residential district.

Stream Corridor and Reservoir Watershed Overlay District

The SC District follows the Wallkill River and Cheechunk Creek through the Project Site, and includes all land lying within 150 feet of the mean high water line of each watercourse (see §97-26). As such, the SC District encompasses the eastern edge of the Echo Lake property, and the western edge of the Strong Farm property.

Pursuant to §97-26.D, the principal structures for the SoS Conference Center would be located greater than 100 feet from the watercourse, and no accessory structures are proposed within 50 feet of the watercourse. No structures or disturbance are proposed for the Strong Farm property. In addition, no hazardous materials would be stored within 100 feet of either the Wallkill River or Cheechunk Creek. On the Echo Lake property, disturbance within the SC District would be limited to the proposed bridge over the Wallkill River and associated driveway, as well as a limited number of parking spaces.

Pursuant to §97-26.E(3), the proposed SoS Conference Center would not result in degradation of scenic character and will be aesthetically compatible with its surroundings; would not result in erosion or surface water pollution from surface or subsurface runoff; and would comply with other applicable provisions of Chapter 97. In addition, an erosion and sediment control plan will be prepared pursuant to §97-42.

Floodplain and Ponding Area Overlay District

The FP District also generally follows the Wallkill River and Cheechunk Creek through the Project Site. As such, the FP District encompasses the eastern edge of the Echo Lake property, and the western edge of the Strong Farm property. All structures associated with the SoS Conference Center are proposed to be located outside of the 100 year floodplain. On the Echo Lake property, disturbance within the floodplain would be limited to the bridge, driveway, and parking lot. On the Strong Farm property, no structures or disturbance are proposed.

Scenic Road Corridor Overlay District

As discussed above, the purpose of the SR District is to protect scenic road corridors and preserve the attractive rural quality of the Town. Within the Project Site, Owens Road, which forms the southeastern boundary of the Strong Farm property, is within the SR District. The SR District includes all land within 500 feet of the right-of-way of Owens Road.

No structures are proposed for the Strong Farm property and no modifications to the property would be required to accommodate volunteer parking for limited durations three (3) days per year. The continued use of the Strong Farm property for agricultural purposes and volunteer parking would not result in degradation of scenic character and/or will be aesthetically compatible with its surroundings. There would be no removal of native vegetation except as it relates to normal agricultural use and mowing of hay before use for volunteer parking.

Per §97-29.G, a continuous green buffer at least 50 feet deep would be maintained along Owens Road, and would consist of native trees and shrubs, as well as fields, meadows, and lawn areas. Since no structures are proposed, the requirement of planting one shade tree per 1,000 square feet of floor area within 25 feet of the right-of-way is not applicable.

The Proposed Project would comply with §97-29.H, as existing agricultural structures and the farm houses on the property would be retained. As previously stated, no new structures are proposed. In compliance with §97-29.I, no chain link, stockade, or other fence designs that block visual access to land in the corridor are proposed. In addition, the proposed volunteer parking layout will comply with the rural siting principles in §97-41.

WAREHOUSE USE

An approximately 11.6-acre portion of the Ver Hage property would be subdivided for a future Warehouse Use. The application for subdivision will be submitted to the Town by others at a later point in time. The subdivision plat will be designed and filed in accordance with Chapter 83, Subdivision of Land, of the Code of the Town of Goshen. Since the proposed subdivision only involves two lots, it is anticipated that it would be considered a "Minor Subdivision" under §83-39 and would be processed under §83-22 of the Town Code.

However, for the purposes of analyses, this DEIS identifies a conceptual subdivision plat and layout of an approximately 70,000 square-foot warehouse with shared access from the Amy's Kitchen internal driveway. Water and sewer service would be provided through interconnections with the systems serving Amy's Kitchen. Water and wastewater pump stations would be required to serve the Warehouse Use and would be located on the warehouse property.

The Warehouse Use would be located in the I Zoning District. A "warehouse" is permitted by special permit issued by the Planning Board in the I District. Of the approximately 11.6-acre lot, the warehouse, site driveway, and parking area would disturb approximately 5.6 acres, leaving approximately 6 acres as open space.

The maximum height permitted in the I Zoning District is 45 feet. While the Warehouse Use has not been completely designed at this point of time, it is anticipated that the 70,000 square-foot structure can be designed to meet the dimensional parameters of the Town's Zoning Code (see **Table III.K-8**). However, as further described below, certain area variances from §97-14.D may be required.

Table III.K-8
Warehouse Use Dimensional Compliance

Dimensional Regulations (§97-14)	I *(Proposed Manufacturing Site)*	
	Required	**Proposed**
Minimum lot area	5 acres	11.6 acres
Minimum road frontage:		
Town Road	200 ft	1,154 ft
County/State Road	200 ft	NA
Minimum front yard setback:		
Town Road	100 ft	100 ft
County/State Road	200 ft	NA
Minimum side yard setback	50[1] ft	50 ft
Minimum rear yard setback	75[1] ft	75 ft
Maximum impervious surface coverage	70 percent	< 70 percent
Maximum height[2]	45 ft	< 45 ft
Maximum footprint (in square feet) for nonresidential structures	--	--

Notes: [1] One-hundred-foot setback with wooded buffer required if lot abuts a residential district.
[2] Above average grade. For height exceptions, see §97-40.D.

Pursuant to §97-14.D, all new development in the I District shall comply with design standards. **Table III.K-9** presents a compliance analysis of the proposed Warehouse Use with the design standards. The Warehouse Use may require one or more area variances from the Town Zoning Board of Appeals for relief from certain of the design standards, such as §97-14.D-2-e. This specific regulation requires "large buildings (footprint larger than 10,000 square feet) [to be] generally … broken up into smaller volumes using building proportions found in the region's traditional architecture."

Table III.K-10 presents a compliance analysis of the proposed Warehouse Use to the Special Permit standards of §97-73.

Table III.K-9
Warehouse Use §97-14.D Compliance

Zoning Reference (§97-14.D)	Requirement	Compliance
(1) Building placement	(a) Buildings shall be clustered together to the extent practical, preserving existing green areas, and conform to the natural terrain to the extent practicable.	The conceptual layout of the Warehouse Use complies with this provision.
	(b) Buildings shall be placed in front of their parking lots to screen the parking from the road. This requirement shall not apply if the entire site is screened from the road by natural vegetation and/or natural topography.	The conceptual layout of the Warehouse Use complies with this provision through the use of screening.
(2) Architecture	(a) Existing structures with historic or architectural significance shall be retained to the extent practical. Alterations to such structures shall be compatible with the architecture of the existing structure.	Not applicable. There are no structures on the Ver Hage property.
	(b) Buildings, including canopies for accessory facilities, shall have peaked roofs with a slope of at least 8:12, except that hip roofs with a slope of at least 4:12 and flat roofs that are hidden by a raised cornice shall also be permitted.	The Warehouse Use would likely have a flat roof with a raised cornice to screen roof-top mechanical equipment.
	(c) Windows shall be vertically proportioned and balanced on facades, with width-to-height ratios ranging from 1:2 to 3:5. Horizontal windows may be used just below roof eaves ("eyebrow" windows) and as first-floor display windows.	Typically, warehouses would not include windows on all facades. To the extent practicable, the Warehouse Use would comply with this requirement.
	(d) Trademarked architecture which identifies a specific company by building design features shall be prohibited, unless the applicant can demonstrate that the design is compatible with the historic architecture of the region.	It is anticipated that the Warehouse Use would comply with this provision.
	(e) Large buildings (footprint larger than 10,000 square feet) shall generally be broken up into smaller volumes using building proportions found in the region's traditional architecture.	It is anticipated that the Warehouse Use would need a variance or interpretation from this requirement.
(3) Landscaping	(a) A continuous green landscaped buffer shall be maintained along the road, consisting of trees, shrubs, fields, meadows, natural areas and lawns, provided that such buffer vegetation does not interfere with required sight distances. Bike paths and/or sidewalks shall be constructed within this landscaped buffer. To the extent practical, existing trees, lawns and shrubs shall be preserved.	It is anticipated that the Warehouse Use would need a variance from this requirement.
	(b) Undeveloped natural areas shall be managed to maximize recharge of groundwater, protection of surface water quality, and protection of wildlife habitat. Frequent mowing of areas not used for agriculture or pedestrian access shall be discouraged in favor of management as open meadows.	It is anticipated that the Warehouse Use would comply with this provision.
	(c) The buffer yard requirements in §97-75.D(2) shall be used to determine specific buffer and landscaping requirements.	It is anticipated that the Warehouse Use would comply with this provision.

Table III.K-9 (cont'd)
Warehouse Use §97-14.D Compliance

Zoning Reference (§97-14.D)	Requirement	Compliance
(4) Fences	Fence materials and designs shall be appropriate to the historic character of Goshen and shall not block visual access to scenic views. Chain link fencing shall not be used in locations visible from public highways. Existing chain link fences may be replaced if coated with a dark, nonreflective finish or screened by an evergreen hedge.	The Warehouse Use would be connected to the Amy's Kitchen facility, which requires controlled access and is proposing chain-link fencing. To the greatest extent practicable, Amy's Kitchen and the Warehouse Use would utilize landscaping to minimize views of the proposed fence.
(5) Outdoor storage and enclosed buildings	All permitted and accessory uses shall be confined within completely enclosed buildings, with the exception of off-street parking spaces, off-street loading berths, accessory fuel storage and employee recreational facilities. Outdoor storage of materials, equipment or vehicles in an orderly manner is permitted in any area other than required front, rear or side yards, provided that such outdoor storage does not exceed 10 percent of the area of the lot and is effectively screened from public roads and from any adjacent residential district boundary. This 10 percent limitation may be waived by the Planning Board in the course of site plan review for those uses which by their nature require outdoor storage of material or products, such as nurseries, lumberyards, outdoor sculpture galleries, and automobile dealers. The screening requirement may be waived where it would prevent the necessary display of merchandise for public viewing, provided that the Planning Board finds that such display will be orderly and attractive.	It is anticipated that the Warehouse Use would comply with this provision.
(6) Curb cuts	The minimum distance between curb cuts shall be 600 feet, unless the configuration of a parcel in relation to adjoining parcels makes this requirement impossible to satisfy.	The Warehouse Use would gain primary access from the Amy's Kitchen facility. Only emergency access would be provided from a shared driveway on Hartley Road. The shared emergency access driveway would be approximately +/- 200 feet from the adjacent parcel's driveway (on the same side of the road). Existing topography and proximity to the Cheechunk Creek make it impossible to satisfy this requirement.

Source: Town of Goshen Zoning Code §97-14.D

Table III.K-10
Warehouse Use Special Permit Compliance

Special Permit Findings Criteria (§97-73.B)	Compliance
(1) Will comply with all land use district, overlay district, and other specific requirements of this chapter and other local laws and regulations and will be consistent with the purposes of this chapter and of the land use district in which it is located.	With the exception of area variances from the design standards of §97-14.D, the proposed Warehouse Use complies with all other applicable standards within the Zoning Code, including the Floodplain Overlay District. The proposed Warehouse Use also complies with Chapter 61A relating to floodplain damage prevention.
(2) Will not result in excessive off-premises noise, dust, odors, solid waste, or glare or create any public or private nuisances.	The proposed Warehouse Use would not generate excessive noise, dust, odors, solid waste, or glare. The proposed Warehouse Use would be located in an area already containing similar land uses.
(3) Will not cause significant traffic congestion, impair pedestrian safety, or overload existing roads, considering their current width, surfacing, and condition, and any improvements proposed to be made to them by the applicant.	The proposed 70,000 square-foot Warehouse Use would generate limited traffic on local roads and would not impair pedestrian safety.
(4) Will be accessible to fire, police, and other emergency vehicles.	An emergency access driveway is proposed to be provided on Hartley Road.
(5) Will not overload any public water, drainage, or sewer system, or any other municipal facility.	With the Proposed Project's connection to the City of Middletown water and wastewater services, the Warehouse Use would not overload any public or sewer system. A stormwater management plan would be prepared to ensure no impacts to town drainage systems on Hartley Road.
(6) Will not materially degrade any watercourse or other natural resource or ecosystem or degrade the water quality or quantity of an aquifer.	The stormwater management plan would ensure appropriate protections to water quality. The Warehouse Use would not store hazardous chemicals that could affect the underlying aquifer.
(7) Will be suitable for the property on which it is proposed, considering the property's size, location, topography, vegetation, soils, natural habitat, and hydrology, and, if appropriate, its ability to be buffered or screened from neighboring properties and public roads.	A detailed site plan to be submitted at a later date would demonstrate how the Warehouse Use would be screened from Hartley Road.
(8) Will be subject to such conditions on operation, design and layout of structures, and provision of buffer areas as may be necessary to ensure compatibility with surrounding uses and to protect the natural, historic, and scenic resources of the Town.	The proposed Warehouse Use is located in an area with other industrial uses. Appropriate screening would be provided to buffer the Warehouse Use from the Heritage Trail.
(9) Will be consistent with the goal of avoiding strip commercial development and buffering nonresidential uses that are incompatible with residential use.	The proposed Warehouse Use is not considered "strip commercial development." There is only one (1) residence in proximity to the Warehouse Use; but this residence is located within an commercially-zoned district.
(10) Will not adversely affect the availability of affordable housing in the Town.	The proposed Warehouse Use would have no effect on the availability of affordable housing in the Town.
(11) Will comply with applicable site plan criteria in §97-75.D.	A detailed site plan to be submitted at a later date would demonstrate compliance with the criteria of §97-75.D.
(12) If the property is in a residential district, will have no greater overall off-site impact than would full development of the property with uses permitted by right, considering relevant environmental, social, and economic impacts.	Not applicable. The proposed Warehouse Use is not within a residential district.

Overlay Districts

As discussed above, the Ver Hage property is located within the Aquifer Overlay District, SC District, and the FP District.

Aquifer Overlay District

The Warehouse Use would be located in the AQ-6 District. Since potable water supply to the Proposed Project would be provided by a new private utility connection to the City of Middletown water supply, the Proposed Project would have no effect on nearby wells or adjacent properties.

Stream Corridor and Reservoir Watershed Overlay District

The SC District follows the Cheechunk Creek through the Warehouse Use site, and includes all land lying within 150 feet of the mean high water line of each watercourse (see §97-26). As such, the SC District encompasses the western and northern portions of the subdivided lot for the Warehouse Use.

The conceptual layout for the Warehouse Use would require a variance from §97-26.D, which requires principal structures to be located greater than 100 feet from the watercourse. Pursuant to §97-26.E(3), the proposed Warehouse Use would be designed to: not result in degradation of scenic character and will be aesthetically compatible with its surroundings; not result in erosion or surface water pollution from surface or subsurface runoff; and to comply with other applicable provisions of Chapter 97. In addition, an erosion and sediment control plan would be prepared pursuant to §97-42.

Floodplain and Ponding Area Overlay District

The western and northern portions of the subdivided lot for the Warehouse Use are located within the 100-year floodplain. The conceptual layout for the proposed Warehouse Use would require disturbance to the 100-year floodplain for both the structure and parking area. Construction within the FP Overlay District requires compliance with the provisions of §97-25 of the Zoning Code as well as compliance with Chapter 61A of Town Code, "Flood Damage Prevention."

Under §97-25.C, to allow the Warehouse Use within the FP Overlay District, the Planning Board would need to find that the Project Site is "safe from flooding or ponding" based on the provision of sufficient evidence that means of vehicular access from an existing street is safe from flooding and that proposed "sewage disposal, water supply, and surface drainage facilities are adequate to serve the intended use." The proposed Warehouse Use would have access from the Amy's Kitchen manufacturing facility internal driveway and from an emergency access driveway to Hartley Road. These driveways are located outside of the 100-year floodplain. The proposed Warehouse Use would obtain potable water supply and wastewater treatment using the private utility lines that would connect the Proposed Project to existing City of Middletown services. A stormwater management plan would be developed as part of site plan review of the Warehouse Use. It is anticipated that the stormwater management plan would support a conclusion by the Planning Board that it is adequate to serve the intended use. Thus, it is anticipated that the Warehouse Use would comply with the provisions of §97-25.C and could be located within the FP Overlay District.

Pursuant to Chapter 61A-14.B(3), "[w]henever any portion of a floodplain is authorized for development, the volume of space occupied by the authorized fill or structure below the base flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood elevation at or adjacent to the development site. All

such excavations shall be constructed to drain freely to the watercourse. No area below the waterline of a pond or other body of water can be credited as a compensating excavation." The proposed Warehouse Use would require approximately 4,634 cubic yards of fill to elevate the building above the base flood elevation of 373 feet above mean sea level. The volume of the area that was previously excavated to divert the Cheechunk Creek is approximately 5,936 cubic yards. Thus, there is more than sufficient volume to compensate for the proposed fill within the 100-year floodplain.

LAND USE

The Proposed Project is consistent with all surrounding land uses. The Project Site is located in a rural industrial and agricultural area. There is currently substantial truck traffic through the Project Area associated with the existing industrial, infrastructure, agricultural, and commercial uses. The Amy's Kitchen manufacturing facility would constitute an industrial use in a corridor of other industrial uses. The intervening topography and distance between the SoS Conference Center and any residential uses would avoid any potential significant adverse impacts to those land uses.

An unimproved section of the Heritage Trail runs adjacent to the Echo Lake and Ver Hage properties. While no direct connections to the Heritage Trail are considered as part of the Proposed Project, once constructed, some employees and/or SoS members may choose to use the Heritage Trail to walk or bike to local streets serving the Project Site.

The Proposed Project would not adversely impact the existing landfill properties as they are both essentially vacant land under remediation at this time. No connection is proposed between the landfill properties and the Project Site. The Proposed Project would also not adversely impact the Mid-Hudson Psychiatric Center due to the distance and intervening vegetation that would remain on the Project Site.

PUBLIC POLICY

TOWN COMPREHENSIVE PLAN

The Proposed Project has been evaluated for its consistency with the goals and objectives of the Comprehensive Plan as follows:

Goal #1 Protect and enhance the agricultural activities and rural character of the Town

The Proposed Project would preserve the agricultural use of Strong Farm, and would not significantly affect the agricultural or rural character of the Town.

Goal #2 Support existing Village center and foster Town clusters

The Proposed Project would create a new source of employment within the community, and would not compete with or detract from the existing Village center. It is anticipated that the Proposed Project would result in off-site spending at local businesses, which would support the existing Village center.

Goal #3 Provide a range of housing alternatives that will meet the housing needs for a range of socio-economic groups.

This goal is not applicable to the Proposed Project as no housing is proposed.

Goal #4 Develop a strong and balanced economic base.

The Proposed Project, by providing new jobs within the community, would contribute to a strong and balanced economic base.

Goal #5 Protect and enhance open space and public space.

The Proposed Project would not result in any significant adverse impacts to open space or public space. As part of the future without the Proposed Project, Orange County will be constructing a multi-use bicycle/pedestrian pathway along the Heritage Trail from Hartley Road west to the City of Middletown.

Goal #6 Ensure a development pattern that will provide for sustainable water use.

The Proposed Project would connect to the City of Middletown water supply. As such, it would not affect local water supply wells.

Goal #7 Encourage appropriately sited development & protect environmental assets.

The Proposed Project would utilize lands that have been disturbed by past industrial uses. The Proposed Project has been sited and designed to protect environmental assets, and to avoid significant adverse impacts to wetlands, watercourses, vegetation, and wildlife.

In addition, the Proposed Project would conform to the Goshen Comprehensive Plan in that it would further the development of a strong and balanced economic base by constructing a tax positive commercial development. In particular, the SoS Conference Center would result in substantial off-site spending at local restaurants, hotels, and other tourist destinations which would further support the local economy—including the Village of Goshen. As such, the anticipated off-site expenditures would support the existing Village center and its businesses, a stated goal of the Goshen Comprehensive Plan. Furthermore, the Proposed Project would preserve, where feasible, a 150 foot buffer from the center line of the stream along the Wallkill River and Cheechunk Creek. As such, the Proposed Project is consistent with the Goshen Comprehensive Plan.

TOWN OPEN SPACE AND FARMLAND PROTECTION PLAN

The Proposed Project will maintain important wildlife corridors along the Wallkill River, and retain approximately 125 acres of woodland, 25 acres of old field, 11 acres of shrubland, 5 acres of sedge meadow, 2 acres of shallow emergent marsh, and 62 acres of cropland on the Project Site. The Strong Farm will be retained as an active agricultural use. Therefore, the Proposed Project is consistent with the Goshen OSFPP.

SOUTHERN WALLKILL BIODIVERSITY PLAN

The Biodiversity Plan stresses the importance of open space linkages to serve as secondary habitats for species. Portions of the Project Site, in particular the western portion of the Echo Lake property and the Cheechunk Creek corridor on the Ver Hage property, were identified as "areas important for biodiversity." Consistent with the Biodiversity Plan, the Proposed Project would retain the western portion of the Echo Lake property as open space. In addition, the Proposed Project would provide a sufficient buffer from the Cheechunk Creek. As such, the Proposed Project is consistent with the Biodiversity Plan.

ORANGE COUNTY COMPREHENSIVE PLAN

The Proposed Project would promote the "links between the County's environmental and agricultural heritage and the promotion of sustainable agriculture and economic development" within a "Priority Growth Area." Amy's Kitchen specifically advances this goal in that the development will support local farms and creates a nexus between agriculture and economic development within the region. Therefore, the Proposed Project is consistent with the OCCP.

ORANGE COUNTY OPEN SPACE PLAN

The Proposed Project is consistent with the goals of the OCOSP, in that it would preserve the agricultural uses on the Strong Farm property and would support the County's efforts to enhance the recreational use of the Heritage Trail. Orange County intends to construct an extension of the multi-use Heritage Trail pathway west of Hartley Road, along the northern edge of the Project Site, to the City of Middletown. Employees and visitors to the Project Site would be able to use this pathway. The Proposed Project seeks to avoid disturbance to wetlands and watercourses, and to preserve areas of biodiversity.

STATE SMART GROWTH PUBLIC INFRASTRUCTURE POLICY ACT

The following section evaluates the Proposed Project against the Smart Growth Public Infrastructure Criteria. Italicized type below replicates the Smart Growth Public Infrastructure Criteria. Normal text following each item describes how the Proposed Project would meet these criteria.

A. To advance projects for the use, maintenance or improvement of existing infrastructure;

The Proposed Project would facilitate the improvement of existing infrastructure. In particular, the Proposed Project would facilitate improvements to the existing roadway network.

B. To advance projects located in municipal centers [defined as "areas of concentrated and mixed land uses that serve as centers for various activities"];

The Proposed Project is not located in a municipal center as defined by the Act. However, it is located in a designated Priority Growth Area in the Orange County Comprehensive Plan. The Project Site is appropriately zoned for the proposed use and has access to available infrastructure to support the Proposed Project.

C. To advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan;

As described above, the Proposed Project is consistent with both the Town of Goshen and the Orange County local comprehensive land use plans.

D. To protect, preserve and enhance the State's resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archaeological resources;

This DEIS evaluates the potential impacts of the Proposed Project on agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archaeological resources. Approximately 125 acres of woodland plus additional open space, including agricultural fields within a locally

designated scenic area, would be preserved. The historic Strong Farm property would be retained. With the implementation of a Data Recovery Plan, the Proposed Project would avoid significant adverse impacts to archaeological resources.

E. To foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income and age groups;

The Proposed Project is being constructed on property adjacent to a landfill and previously disturbed by mining activities. The introduction of new industrial land uses will provide new employment for approximately 681 employees.

F. To provide mobility through transportation choices including improved public transportation and reduced automobile dependency;

The Proposed Project is not an investment in transportation infrastructure. Therefore, it is not possible to comply with this criterion.

G. To coordinate between State and local government and intermunicipal and regional planning;

The Proposed Project involves inter-municipal cooperation between the Town of Goshen and the City of Middletown by the City's provision of sewer and water service to the Project Site.

H. To participate in community based planning and collaboration;

Through the SEQRA and site plan approval process, public hearings will be held on the Proposed Project.

I. To ensure predictability in building and land use codes; and

The Proposed Project would not affect the predictability of any building and land use codes.

J. To promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain its implementation.

The potential for air quality impacts from the Proposed Project is assessed in Chapter III.R, "Air Quality." The Proposed Project would not create a condition that would impair the sustainability of the Town of Goshen, or the underlying ability of the Town of Goshen to manage its community in a sustainable manner.

E. PROPOSED MITIGATION

The Proposed Project would result in unavoidable adverse impacts to zoning through the construction of the Proposed Project which, as discussed above, cannot be designed to meet all of the Town's design standards. However, these impacts to zoning are not considered significant, and would not adversely affect the character of land uses within the proximity of the Project Site.

With the exception of one or more area variances from design standards, or interpretation of the Town Code Enforcement Officer to permit building of more than 10,000 square feet with design or color changes, the Proposed Project is consistent with the industrial Zoning for the Project Site, policies for economic development in the Town's Comprehensive Plan, and is consistent with other land uses in adjacent areas. Granting of area variances with respect to design standards would not significantly alter the land use pattern or character of the study area. Thus, no significant adverse impacts will result. Thus, no mitigation is required or proposed. ✷

A. INTRODUCTION

This chapter addresses potential impacts to the following community services: police protection services; fire protection services; emergency medical services (EMS); and Town Hall services in terms of manpower, equipment, and facilities. Existing conditions of current service providers, future conditions expected without the Proposed Project, and potential impacts of the Proposed Project are addressed.

The Proposed Project would be located entirely within the Town of Goshen. Therefore, calls for assistance from emergency service providers would generally be routed to providers within the Town of Goshen. For the reasons described below, the Proposed Project would not result in any significant adverse impacts to community services or recreational resources. Overall, emergency and town services would benefit from the additional tax revenue generated by the Proposed Project. As further discussed in Chapter III.M, "Fiscal Impacts," at full build-out the Proposed Project would generate approximately $2,259,470 in annual property tax revenue. This includes $105,881 to the Goshen Fire District, and $1,542,397 to the Goshen Central School District.

B. EXISTING CONDITIONS

The locations of existing community service providers that serve the Project Site are shown in **Figure III.L-1** and **Table III.L-1**. Information regarding existing and proposed conditions was obtained through written correspondence, telephone calls, and the websites of emergency service providers in the Town of Goshen (see **Appendix III.L**).

POLICE PROTECTION SERVICES

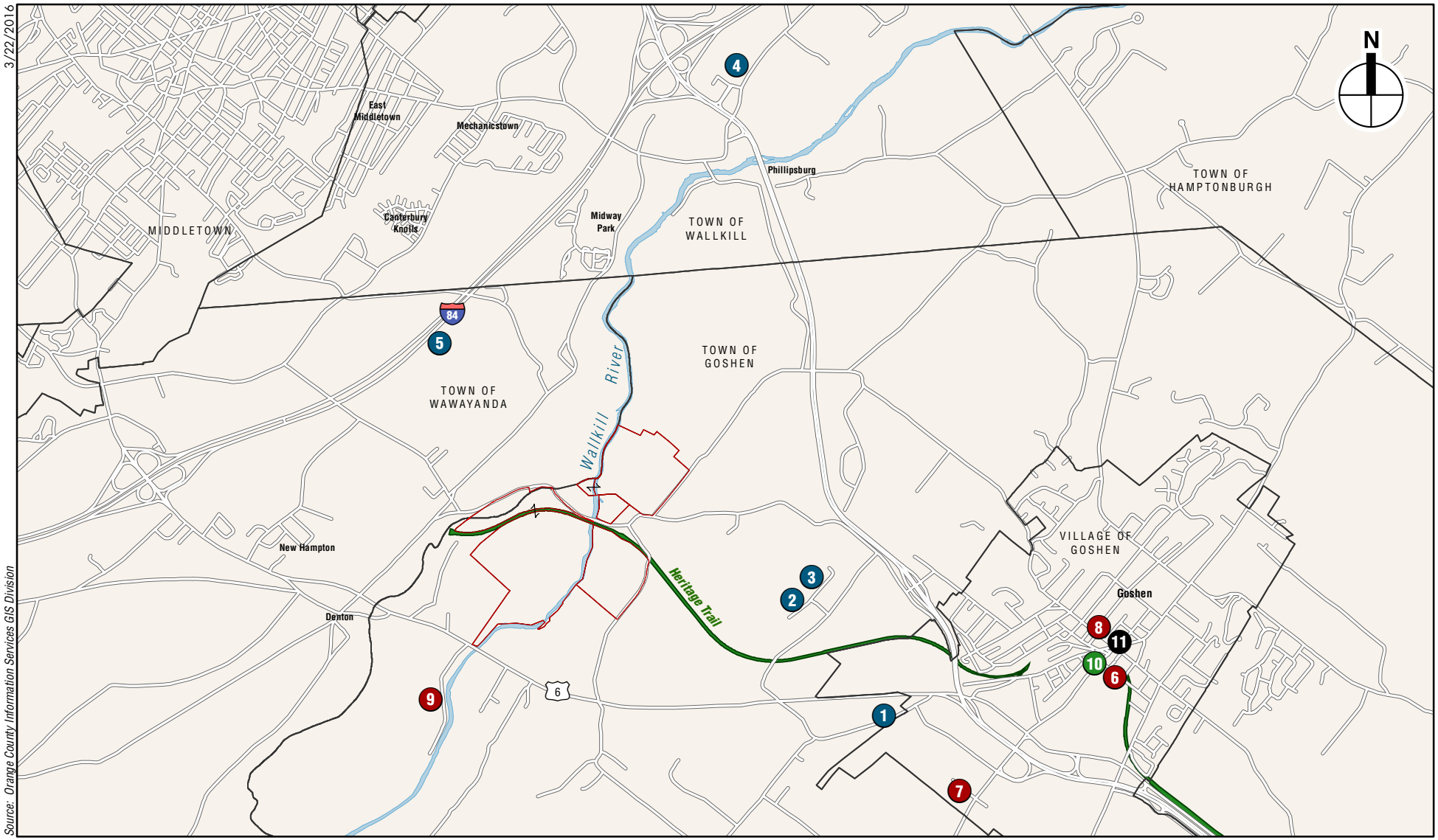
The Project Site is primarily served by the Town of Goshen Police Department. The Orange County Sheriff's office and the New York State (NYS) Police provide additional police coverage as needed.

TOWN OF GOSHEN POLICE DEPARTMENT

The Town of Goshen Police Department operates from the Town Department of Public Works facility at 44 Police Drive, Goshen, NY, and serves the Town-Outside-Village (TOV) area. It is located approximately 2.5 miles from the Project Site. The Town Police Department consists of a Police Chief, two (2) sergeants, and seven (7) full time officers. The Police Department also employs part-time officers.[1] Typical response time to the Project Site is five (5) minutes, depending on the location of patrol cars.[2] According to the US Census, the Town of Goshen

[1] Town of Goshen 2014 Adopted Budget

[2] Meeting with Police Chief McDowell, July 16, 2015



See Table III.L-1 for Community Service Providers

Amy's Kitchen
Science of the Soul

Community Services
Figure III.L-1

population is estimated at 13,669,[3] which equates to a police/citizen service ratio of approximately 1:1,367.

ORANGE COUNTY

The Orange County Sheriff's office is located at 110 Wells Farm Road, Goshen, NY, approximately 2.5 miles from the Project Site. The Orange County Sheriff's Office currently consists of 107 uniformed sworn personnel (excluding corrections officers). Typical response time to the Project Site is less than five minutes.[4]

In addition, Orange County operates an Emergency Services Center at 22 Wells Farm Road, Goshen, NY, approximately 2.3 miles from the Project Site. The Department of Emergency Services comprises five divisions: Emergency Communications (911); Emergency Management; Fire Services; Police Liaison Services; and Emergency Medical Services. The 88,000 square-foot secure facility houses the Divisions of Emergency Communications, Emergency Management, Police Liaison Services and Emergency Medical Services. The Division of Fire Services operates at the Orange County Fire Training Center located at 9 Fire Training Center Lane, New Hampton, NY, approximately 2.3 miles from the Project Site.[5]

Table III.L-1
Community Service Providers

Number	Community Service	Address
Police		
1	Town of Goshen Police Department	44 Police Drive, Goshen, NY
2	Orange County Sheriff	110 Wells Farm Road, Goshen, NY
3	Orange County Emergency Services Center	22 Wells Farm Road, Goshen, NY
4	NYS Police Troop F	55 Crystal Run Road, Middletown, NY
5	NYS Police Troop F Zone 2 Station	PO Box 31, New Hampton, NY 10958
Fire		
6	Cataract Engine & Hose Co.	40 Green Street, Goshen, NY
7	Dikeman Engine & Hose Co.	10 Dikeman Drive, Goshen, NY
8	Minisink Hook & Ladder Co.	99 North Church Street, Goshen, NY
9	Orange County Fire Training Center	9 Fire Training Center Lane, New Hampton
Ambulance		
10	Goshen Volunteer Ambulance Corps	7 New Street, Goshen, NY
Town Hall		
11	Town of Goshen Town Hall	41 Webster Street, Goshen, NY

NYS POLICE TROOP F

The NYS Police Troop F provides coverage for a Rockland, Orange, Ulster, Sullivan, and Green Counties. The NYS Police Troop F headquarters is located at 55 Crystal Run Road, Middletown,

[3] U.S. Census Bureau, 2009-2013 5-Year American Community Survey

[4] Phone conversation with Captain Scott Hamill, Orange County Sherriff's Department Public Information Officer (PIO), July 14, 2015.

[5] http://www.orangecountygov.com/content/1162/4272/default.aspx

NY, which is approximately 4.3 miles from the Project Site. In addition to its headquarters, NYS Police Troop F operates 22 stations in three zones and is capable of drawing manpower from any of these stations in the event of an emergency. The nearest substation is a Zone 2 Station in New Hampton, NY, approximately 4.4 miles from the Project Site.

NYS Police Troop F will respond to any complaint received regardless of jurisdiction, and will coordinate with local forces. NYS Police Troop F also has special detail assignments patrolling Interstate Highway 84 and NYS Route 17/Future 86, and provides 24-hour local coverage for the various towns in Orange County.

FIRE PROTECTION SERVICES

The Project Site is within the Goshen Fire District, which is part of Orange County Battalion 9. The Goshen Fire District comprises three fire companies: the Cataract Engine & Hose Co., the Dikeman Engine & Hose Co., and the Minisink Hook & Ladder Co., and operates out of three fire stations located at 40 Green Street, 10 Dikeman Drive, and 99 North Church Street, respectively. The Dikeman Engine & Hose Co. is located nearest to the Project Site, at a distance of approximately 3.5 miles. The average response time to the Project Site is approximately 5.5 to 10 minutes depending on the traffic and weather conditions. The Goshen Fire District is a 100 percent volunteer department with no full time staffing, and currently responds to an average of approximately 518 calls per year. The District owns and maintains two class A pump trucks; one aerial tower truck; one heavy rescue unit; two tank trucks (each with 3,000 gallons of water); one brush unit with trailer and ATV; one technical rescue unit and trailer; three command vehicles; one fire police vehicle; one van to transport additional personnel; and one SUV.[6]

EMERGENCY MEDICAL SERVICES

The Town of Goshen is served by the Goshen Volunteer Ambulance Corps (GOVAC). The facility is located at 7 New Street, Goshen, NY approximately 4.1 miles from the Project Site.

TOWN HALL SERVICES

The Town Hall of the Town of Goshen is located at 41 Webster Street within the Village of Goshen. Operations of the Building Department, Town Court, Tax Assessor, and a number of other administrative offices are contained within this building. According to the US Census, the Town of Goshen population is estimated at 13,669,[7] As the Village of Goshen and Village Hall provide many services to its 5,434 residents,[8] Town Hall is likely to mainly serve a population of 8,235 (Town outside Village).

[6] Letter from Elmer Budd, Chief, Goshen Fire Department, dated July 20, 2015.

[7] U.S. Census Bureau, 2009-2013 5-Year American Community Survey

[8] U.S. Census Bureau, 2009-2013 5-Year American Community Survey

Table III.L-2
Town of Goshen Calls for service

Type of Call	2013	2014	2015*
Fire	25	34	11
Traffic Complains/ Auto Accident	103	61	39
Hazardous leaks and spills	84	32	27
Electricity	1	26	13
Service Call	6	7	4
Smoke or odor removal	16	2	0
Assist police or other governmental agency	0	2	3
Cover assignment	62	41	36
Water problem	0	7	5
Dispatched and cancelled en route	41	30	8
False alarm of false call	3	67	28
System Malfunction	171	87	25
Other	20	79	37
TOTAL**	**530**	**475**	**234**

Notes: * Through 6/30/2015.
** Numbers may not add due to differences in reporting for individual categories.
Source: Goshen Fire District Incident Report

RECREATIONAL RESOURCES

According to the 2009 Updated Comprehensive Plan for the Town of Goshen, the Town has 203 acres of public parks and recreation lands, of which 136 acres contain active recreational uses and 67 acres are for passive recreation. In the vicinity of the Project Site, the improved and maintained section of the Orange County Heritage Trail, which follows the Old Erie Railroad line, presently runs from Hartley Road south to the Town of Monroe. An unimproved section of the Heritage Trail abuts the northern boundaries of the Echo Lake and Ver Hage properties on the Project Site.

In addition, the Wallkill River runs between the Echo Lake and Ver Hage properties, forming the border between the two. It also forms the western border of the Strong Farm and Lipoff properties to the north of Echo Lake Road. Town planning documents, including the 2009 Updated Comprehensive Plan, have identified the Wallkill River as a natural resource that should be preserved and enhanced. In 2002, the Town prepared the *Wallkill River Trailway: Conceptual Plans*. This document identified the Wallkill River as an underutilized and neglected natural resource that could be improved as a recreational resource, and that the Wallkill River Task Force identified an area comprising several contiguous parcels owned by different individuals and groups that could be used for active and passive recreation. The boundaries of this area were the Town of Wallkill line, the north side of the Al Turi Landfill, and the Wallkill River and border with the Town of Wawayanda. The conceptual plan included areas for natural feature restoration, the creation of parkland, active and passive recreation, as well as a trailway system that would connect to the Orange County Heritage Trail. The conceptual plan recommended that the Town seek to purchase various parcels and/or develop easement rights over properties to permit this area to be developed as a key public space.[9]

[9] 2009 Updated Comprehensive Plan for the Town of Goshen

C. FUTURE WITHOUT THE PROPOSED PROJECT

There are no known changes to service levels in any of the departments serving the Town of Goshen in the future without the Proposed Project. Orange County intends to initiate construction of an extension of the Heritage Trail multi-use pathway west of Hartley Road to the City of Middletown in 2016 with completion in 2018.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

POLICE PROTECTION SERVICES

The Proposed Project is not anticipated to result in any significant adverse impacts on police protection services at the State, County, or Town level.

AMY'S KITCHEN

The proposed Amy's Kitchen facility would be equipped with video surveillance and an alarm system, and all visitors would be required to enter through the controlled entrance. Approximately 30 video cameras would be installed in and around the building, and the alarm system would include exit door alarms. The system would be monitored by a 24-hour manned guard house. Weekday security would be provided by an in-house security team, and weekend security would be contracted out to a local security firm. A review of records for the similarly sized Amy's Kitchen facility in Medford, Oregon, indicated that no calls have been made to the local police station in the past five years. Amy's Kitchen anticipates designating the on-site Health and Safety Manager, who oversees internal operations and coordination with outside agencies, as the liaison to the Town of Goshen Police Department. The Health and Safety Manager and Amy's Kitchen security personnel will cooperate with the Town of Goshen Police Department on the most appropriate response to an incident within the facility if there were to be one.

SCIENCE OF THE SOUL

As further discussed in Chapter II, "Project Description," the SoS Conference Center would be used to host one (1) annual three (3)-day national conference ("National Conference"), with attendance of up to 12,000 attendees; one (1) annual two-day regional conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees; and weekly Sunday morning meetings for local congregants ("Weekly Meeting") with 200 to 400 attendees. Each day's program would run from 9:00 AM until 1:00 PM. During the week, a small volunteer staff (5 to 10 people) would attend to normal administrative and property management tasks. Two (2) caretaker residences and one (1) guest house would be located at the SoS Conference Center.

SoS will provide on-site security to manage traffic and other safety concerns during these events. SoS guidelines require event staffing in an amount equal to five (5) to six (6) percent of attendees. SoS volunteers have had years of experience in staffing meetings of up to 12,000 attendees (including volunteers). For a typical 10,000-person event in Petaluma, SoS relies upon approximately 550 volunteers. Of those, a certain number are assigned to specific on-site tasks for traffic flow, first-aid, and security. Typical staffing of these specialty tasks for a 10,000-person event would be approximately 45 volunteers for parking; 145 volunteers for crowd flow; 50 volunteers for security and crowd care; 22 volunteers for first-aid and special needs; and 9 volunteers for safety. "Safety" volunteers are responsible for monitoring potential safety issues

such as wet areas, walking hazards, that people are wearing safety vests in the roadways, and making sure that water stations are operating properly. "Security" volunteers are responsible for monitoring for suspicious behavior, keeping order, reporting any incidents or injuries, and monitoring what comes into the Conference Center.

SoS specifically places volunteers based on their experience. For example, the first-aid room is staffed by doctors and nurses who are members of the organization. First-aid team members are also located throughout the meeting area and grounds. Similarly, the security team is staffed with members experienced with policing or security. Members without such background undergo training. SoS first-aid teams may be staffed at levels of five (5) to twenty depending on the size of the event. Security may be staffed at levels of 20 to 40. As SoS meetings are spiritual in nature and there is no alcohol allowed on the property, SoS has had a very small number of situations that have required security over the past 25 years.

Coordination with local law enforcement and EMS is an important component of SoS planning. While the events are staffed by volunteers, if allowed under local regulations, SoS seeks to have four (4) to five (5) local law enforcement officers on-site. SoS would pay for off-duty officers or reimburse the Town for the overtime compensation.

SoS also coordinates on traffic issues, and meets with town, city and county law enforcement agencies to go over plans and concerns. As such, SoS has enjoyed a very good working relationship with local law enforcement with regard to its large events.

Therefore, with the proposed large event management plan in place, no significant adverse impacts to police protection services are anticipated.

FIRE PROTECTION SERVICES

The Proposed Project is not anticipated to result in any significant adverse impacts on fire protection services at the County or Town level.

AMY'S KITCHEN

Fire alarms, suppression systems, and sprinklers would be provided in the manufacturing facility and on-site clinic. System design would strictly adhere to requirements of the State Fire and Building Codes and any insurance requirements. All Project Site buildings would be fully sprinklered. In addition, a Knox Box equipped with fire zones and blueprints would be installed on all buildings.

Based upon staffing levels at the Medford, Oregon facility, which has a similar production line to what is being considered for the Goshen facility, there would be approximately 345 Day Shift, 276 Swing Shift, and 60 Graveyard Shift employees. (These numbers include exempt (managerial), non-exempt, and temporary employees). Thus, the maximum number of individuals to be in the manufacturing facility at any one time is projected to be approximately 350 people (assuming a small number of visitors). The on-site clinic building would be staffed by one (1) doctor and one (1) nurse as well as one (1) office assistant. Including patients and staff, the maximum number of individuals to be in the on-site clinic building at any one time is projected to be approximately eight (8) to ten (10) people.

Water for firefighting would be provided from the connection to the City of Middletown water supply system. The proposed facility would have one main fire pump house with water storage tanks with yard hydrants and stand pipes coming into the building. The hydrants and standpipes

would be accessible year-round and would be maintained by Amy's Kitchen personnel. The Wallkill River would not be used for water for firefighting.

The layout of the proposed manufacturing facility and Project Site driveways and parking areas have been designed to provide access to firefighting equipment, and can accommodate the turning radii of the Goshen Fire Department's ladder truck. As further discussed in Chapter II, "Project Description," the primary access to the Project Site is provided from the new road off Route 17M. The site will be access controlled. Gated emergency access points are provided on Hartley Road and Echo Lake Road via the SoS property (see discussion below).

Hazardous chemicals would be utilized in cooling towers, boilers, and the pre-treatment of wastewater on the Amy's Kitchen site. Chemicals would also be used for sanitation of food production facilities. A full list of specific chemicals to be used on the site has been provided to the Fire District and is included in **Appendix III.L**.

The similarly equipped Amy's Kitchen's manufacturing facility in Medford, Oregon, averaged one (1) to two (2) calls per year in 2014, 2015, or 2016.

SCIENCE OF THE SOUL

All buildings within the SoS Conference Center would utilize fire alarms, suppression systems, and sprinklers, as required by State Fire Code. (It is not certain whether the open-air pavilion would require sprinklers). The need for water storage for fire-fighting purposes will be determined based on the pressure supplied by the new private water supply line. Approximately 16 fire hydrants will be provided as needed to provide adequate fire safety throughout the site. System design would strictly adhere to requirements of the State Fire and Building Codes and any insurance requirements. The Wallkill River would not be used for water for firefighting.

Maximum capacity of any building within the Conference Center would not exceed State Fire and Building Code occupancy limits. During the National Event there would be approximately 12,000 people on the Conference Center property:

- The main 200,000 square-foot open-air pavilion would typically accommodate approximately 10,000 people;
- The 80,000 square-foot Family Area building would typically accommodate 1,500 people;
- The 500 volunteers would be distributed between the 38,000 square-foot Central Building and outdoor areas of the Conference Center (e.g., parking areas, driveways, and walkways).

The Regional Conference of up to 2,000 people would use the Multi-Purpose/Family Area building and the Central Building only.

The layout of the proposed SoS Conference Center and Project Site driveways and parking areas have been designed to provide access to firefighting equipment, and can accommodate the turning radii of the Goshen Fire Department's ladder truck. A crash gate with a Knox Box would be provided at the emergency entrance from Echo Lake Road. The Knox Box would be positioned so that the Goshen Fire Department's largest vehicle could safely pull off Echo Lake Road and access the box. In addition, a Knox Box equipped with fire zones and blueprints would be installed on all buildings. No hazardous chemicals would be stored on the SoS Conference Center site.

EMERGENCY MEDICAL SERVICES

The Proposed Project is not anticipated to result in any significant adverse impacts on emergency medical services at the County or Town level.

AMY'S KITCHEN

As part of the Proposed Project, Amy's Kitchen would construct an on-site medical clinic. The clinic would be open to Amy's Kitchen employees and their families. The medical clinic would provide general health care, and is not intended to provide emergency services.

According to company logs at Amy's Kitchen's similarly sized and staffed Medford, Oregon facility, a total of seven (7) calls were made for the ambulance services in 2014. Of these calls, one (1) was a work-related incident and the remaining were personal health related calls. A similar pattern was experienced at this facility in 2015 and in 2016 thus far. A comparable number of calls can be expected at the proposed Goshen facility.

SCIENCE OF THE SOUL

As discussed above, SoS would provide on-site first-aid services during large events. Staffing levels for the SoS first-aid teams would vary depending on the size of the event. At the National Conference, SoS would enlist approximately 22 volunteer doctors and nurses to provide first-aid and respond to special medical needs. A first-aid room staffed by doctors and nurses who are members of the organization would be provided on-site. First-aid team members would also be located throughout the meeting area and grounds. In advance of a large event, SoS would coordinate with GOVAC to address any potential emergency medical needs.

Therefore, with the proposed large event management plan in place, no significant adverse impacts to emergency medical services are anticipated.

TOWN HALL SERVICES

The Proposed Project would not result in any significant adverse impacts to Town Hall services. After the final Certificate of Occupancy is issued for the Proposed Project, very little, if any, usage of Town Hall services would be required.

RECREATIONAL RESOURCES

The Echo Lake, Ver Hage, and Lipoff properties are currently vacant land. The Strong Farm property is currently used for residential and agricultural purposes. Although the right-of-way of the unimproved section of the Heritage Trail abuts the Project Site, there are no public recreational resources on the Project Site itself.

HERITAGE TRAIL

Any disturbance to the Heritage Trail will require approval from the County Legislature, and would be coordinated with the Orange County Department of Parks, Recreation and Conservation and the County Department of Public Works. Temporary disturbance of this unimproved section of the Heritage Trail can be expected during the construction period for installation of water and wastewater conveyance lines. However, since this section is not actively used by the public at this point in time, no significant adverse impacts to recreational resources during the construction are anticipated.

WALLKILL RIVER TRAILWAY

The Town Comprehensive Plan does not make specific recommendations for the Project Site. The Proposed Project is consistent with the Town's 2009 Comprehensive Plan as it advances the goal of economic development in the industrial zone and preserves sensitive features such as wetlands on the Project Site.

As discussed above, *Wallkill River Trailway: Conceptual Plans* were prepared for the Town in 2002. This conceptual plan identified lands in and around the Project Site for possible acquisition by the Town for use as active and passive recreation. The conceptual plan specifically referenced the portion of the Project Site, running along the western bank of the Wallkill River for use as part of a trailway system. However, this plan was never implemented. At that time, the Echo Lake property was publically owned by the Town of Wallkill and therefore was a more logical and viable option for use as part of a public recreation and trail system. However, the Echo Lake property was sold to a private land owner and no easements along the Wallkill River were pursued or retained at that time. In addition, the Orange County owned property across Route 17M, which was also recommended in the report for inclusion in the trail system, has since been developed for Fire Training and other County uses. Thus a Wallkill River trail system in this location is now less viable and unlikely.

E. PROPOSED MITIGATION

For the reasons identified above, the Proposed Project would not result in any unavoidable or significant adverse impacts to police, fire, ambulance, or town hall services, or recreational resources. Numerous on-site systems would be in place to minimize potential demands on police, fire, and emergency services.

As discussed above, the proposed Amy's Kitchen facility would be equipped with video surveillance and an alarm system, and all visitors would be required to enter through the controlled entrance. Approximately 30 video cameras would be installed in and around the building, and the alarm system would include exit door alarms. The system would be monitored by a 24-hour manned guard house. Weekday security would be provided by an in-house security team, and weekend security would be contracted out to a local security firm.

In addition, as further detailed above, SoS will provide on-site security to manage traffic and other safety concerns during events. SoS will coordinate with local law enforcement and EMS in planning each event. While the events are staffed by volunteers, if allowed under local regulations, SoS would seek to have four (4) to five (5) local law enforcement officers on-site, and would pay for off-duty officers or reimburse the Town for the overtime compensation.

The Proposed Project would generate substantial property tax revenues for the Town, Goshen Fire District, and Goshen Central School District that would offset any increased costs to these community service providers. Therefore, no mitigation is required. ✷

A. INTRODUCTION

The Proposed Project would generate direct and indirect economic activity and tax revenues. The Proposed Project would also make use of municipal services such as police and fire protection. This chapter assesses the potential impacts of the Proposed Project on local taxing jurisdiction finances. It estimates the likely municipal costs associated with construction and operations of the Proposed Project, and compares that to the estimated amounts of economic activity and tax revenues that would be generated by construction and operations of the Proposed Project.[1]

The analysis utilizes a proportional valuation method to estimate the municipal costs of the Proposed Project. Economic benefits are estimated using IMPLAN (IMpact Analysis for PLANning), an economic input-output modeling system. That analysis focuses on changes in the local economy that would likely occur as a result of the completion of the Proposed Project, including jobs not only for Amy's Kitchen and Science of the Soul (SoS) employees, but also for construction, maintenance, service, vendors and other trades. The study areas for analysis are the Town of Goshen, the various taxing jurisdictions affected by the Proposed Project, Orange County, and New York State.

This assessment finds that the Proposed Project would not result in any significant adverse impacts to local taxing jurisdiction finances. The construction and regular operations of the Proposed Project would introduce only marginal costs to the Town of Goshen in the form of demands on municipal services. With respect to special events, during the annual SoS National Conference event SoS would require additional police, fire, and/or emergency service assistance, for which the various agencies would be compensated by SoS. In general, it is estimated that annual economic activity from both the Amy's Kitchen facility and SoS Conference Center would far outweigh any marginal cost to the Town of Goshen for additional municipal services.

B. EXISTING CONDITIONS

This section presents recent demographic trends for the Town of Goshen, Orange County and New York State. It then describes the existing taxing jurisdictions within the Town of Goshen, their budget allocations, and the amount of property tax revenue currently generated by the Project Site.

[1] Analysis of potential economic benefits and fiscal costs does not include specific information relating to the proposed Warehouse Use. The Warehouse Use would generally provide additional economic benefits through new employment and new property taxes while not generating significant additional demand for municipal services.

DEMOGRAPHIC OVERVIEW

The following presents existing population, housing, household income, and employment trends for the Town of Goshen, municipalities surrounding the Town of Goshen, Orange County, and New York State.

POPULATION

The Project Site is located entirely within the Town of Goshen, which is a municipality in Orange County, New York. As shown in **Table III.M-1**, the Town of Goshen has a population of approximately 13,669 residents. This represents a nearly six percent increase over the Town's population in 2000. However, the Town's growth rate was outpaced by other areas in Orange County, which overall had a 9.5 percent growth rate over the same period.

Table III.M-1
Population Trends 2000 to 2013

Area	2000	2009-2013	Percent Change
Town of Goshen	12,913	13,669	5.9%
Orange County	341,367	373,902	9.5%
New York State	18,976,457	19,487,053	2.7%
Sources: U.S. Census 2000 and 2009-2013 American Community Survey (ACS) Data.			

Approximately 40 percent of the Town of Goshen's residential population is located within the Village of Goshen, which serves as the county seat of Orange County.

HOUSEHOLDS AND HOUSING TRENDS

There are an estimated 4,539 households in the Town of Goshen, and the average household size is 2.64 persons per household. This household size is slightly smaller than that of Orange County (2.88 person per household) and slightly larger than that of New York State (2.61 persons per household).

As shown in **Table III.M-2**, there are an estimated 4,847 housing units in the Town of Goshen, representing approximately 3.51 percent of housing units in Orange County. With approximately two-thirds of its housing units owner-occupied, the Town has a lower owner-occupancy rate than the County, but a higher rate than the State.

Table III.M-2
Housing Characeristics

Area	Housing Units	Occupancy Rate	Vacancy Rate	Owner-Occupied	Renter-Occupied
Town of Goshen	4,847	93.7%	6.4%	66.8%	33.2%
Orange County	137,703	91.0%	9.0%	69.2%	30.8%
New York State	8,113,270	89.2%	10.8%	54.2%	45.8%
Source: American Community Survey (ACS) 2009-2013.					

The Town of Goshen and Orange County both feature low vacancy rates compared to the state average. Most homes in the Town are for year-round use; only 11.4 percent of vacant housing units are used for seasonal, recreational or occasional use. In comparison 16.6 percent of vacant housing units in the County and 34.3 percent of vacant housing units in the State are used for such short-term use.

INCOME TRENDS

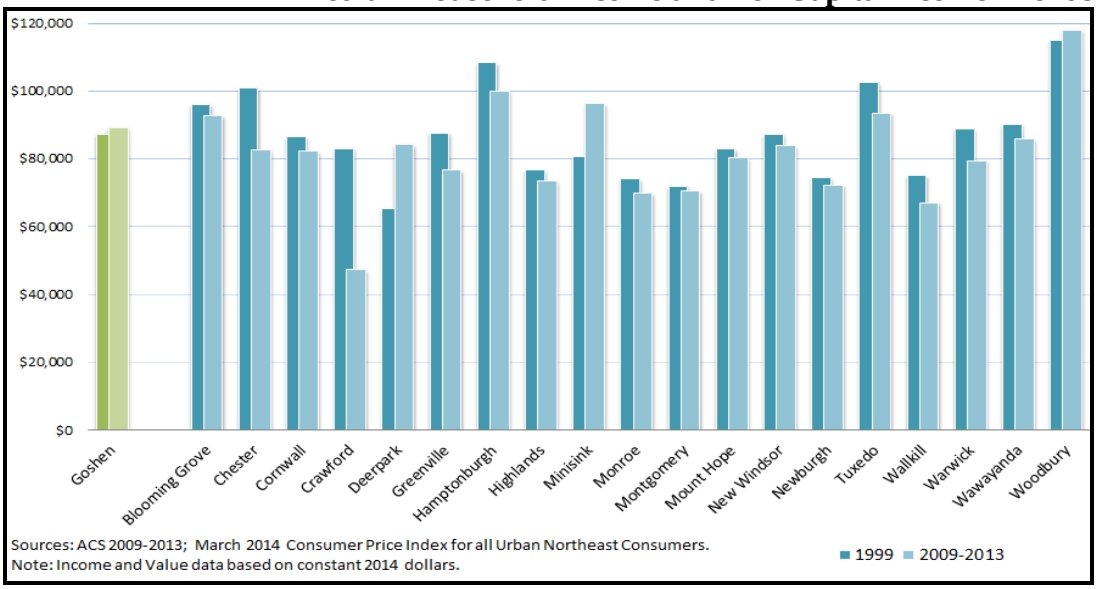
The Town of Goshen outperforms the County and the State in terms of income and poverty (see **Table III.M-3**). Median household income in Goshen is an estimated $84,217, which is higher than the median income for Orange County ($70,458) and the State ($58,003). While there was less variation in terms of per capita income, again the Town of Goshen boasted the highest value: $35,700.

Table III.M-3
Median Household Income and Per Capita Income Trends

	Median Household Income			Per Capita Income		
	1999	2009-2013	% Change	1999	2009-2013	% Change
Town of Goshen	$60,473	$84,217	39.3%	$24,275	$35,700	47.1%
Orange County	$51,895	$70,458	35.8%	$21,597	$30,583	41.6%
New York State	$43,070	$58,003	34.7%	$23,389	$32,282	38.0%
Sources: U.S. Census 2000 and 2009-2013 American Community Survey (ACS) Data.						

The Town of Goshen was one of only several towns in the County to see an increase in median household income between 1999 and 2009-2013, and is one of the more affluent towns in Orange County (see **Figure III.M-1**).

Figure III.M-1
Median Household Income and Per Capita Income Trends



As shown in **Table III.M-4**, an estimated 6.1 percent of Goshen residents live below the poverty line—a rate less than half that for Orange County (12.4 percent) and New York State (15.3 percent). However, the Town of Goshen also experienced the greatest rate of increase in percent of population living below the poverty level between 1999 and 2009-2013.

Table III.M-4
Percent of Population Living Below the Poverty Rate

	1999	2009-2013	Percent Change
Town of Goshen	4.5%	6.1%	35.6%
Orange County	10.5%	12.4%	18.1%
New York State	14.6%	15.3%	4.8%

Sources: U.S. Census 2000 and 2009-2013 American Community Survey (ACS) Data.

The percentage of households receiving public assistance in the Town of Goshen and Orange county has decreased between 2000 and 2009-2013, to the point that only 0.4 percent of Goshen households receive public assistance (2.4 percent in Orange County). Statewide, 3.4 percent of households receive public assistance.

EMPLOYMENT TRENDS

In 2014 there were an estimated 16,086 employees working in the Town of Goshen (see **Table III.M-5**). These employees represent approximately 9.3 percent of the total employment in Orange County.

Table III.M-5
Employment by Industry Sector in 2014

	Town of Goshen		Orange County		New York State	
	Number	Percent	Number	Percent	Number	Percent
Agriculture, Forestry, Fishing and Hunting	77	0.5%	549	0.3%	19,724	0.2%
Mining	18	0.1%	80	0.0%	4,380	0.0%
Utilities	115	0.7%	917	0.5%	40,208	0.4%
Construction	1,246	7.7%	9,209	5.3%	387,348	3.8%
Manufacturing	277	1.7%	7,908	4.6%	553,809	5.5%
Wholesale Trade	559	3.5%	7,997	4.6%	379,943	3.8%
Retail Trade	1,104	6.9%	29,588	17.1%	1,293,406	12.8%
Transportation and Warehousing	242	1.5%	5,636	3.3%	275,462	2.7%
Information	184	1.1%	3,433	2.0%	343,416	3.4%
Finance and Insurance	379	2.4%	3,861	2.2%	588,091	5.8%
Real Estate and Rental and Leasing	405	2.5%	4,399	2.5%	309,642	3.1%
Professional, Scientific, and Technical Services	923	5.7%	6,752	3.9%	832,599	8.2%
Management of Companies and Enterprises	0	0.0%	145	0.1%	28,683	0.3%
Administrative and Support and Waste Management and Remediation Services	299	1.9%	4,603	2.7%	301,509	3.0%
Educational Services	1,246	7.7%	19,014	11.0%	1,003,154	9.9%
Health Care and Social Assistance	3,095	19.2%	23,204	13.4%	1,494,377	14.8%
Arts, Entertainment, and Recreation	242	1.5%	2,714	1.6%	210,345	2.1%
Accommodation and Food Services	546	3.4%	13,423	7.8%	813,018	8.0%
Other Services (except Public Administration)	1,706	10.6%	12,043	7.0%	560,015	5.5%
Public Administration	3,355	20.9%	16,327	9.4%	602,092	6.0%
Unclassified Establishments	68	0.4%	1,220	0.7%	77,587	0.8%
Total	**16,086**	**100.0%**	**173,022**	**100.0%**	**10,118,808**	**100.0%**

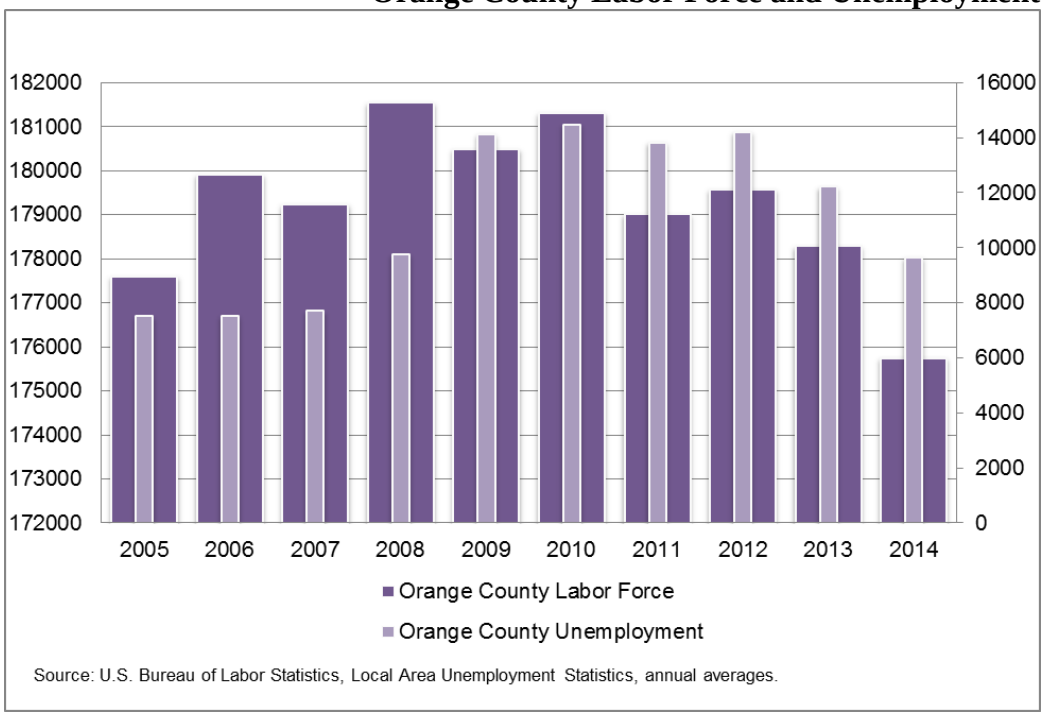
Source: ESRI Business Analyst, Inc, Business Summary Report.

Public Administration constituted the largest percentage of employment in the Town of Goshen (20.9 percent), followed by Health Care and Social Assistance (19.2 percent), Other Services (except Public Administration) (10.6 percent), and Educational Services (7.7 percent). With the

exception of Education Services, each of these sectors accounted for a larger percentage of employment in the study area than in Orange County or New York State.

In 2014, the Orange County labor force was at its lowest point in a decade (see **Figure III.M-2**). The labor force has lost more than 2,000 workers since 2000, and, while unemployment has decreased over the last three years, it has not fallen as quickly as the labor force. Among those employed, the numbers of Town and County workers employed in specific North American Industry Classification System (NAICS) sectors are similar to New York State values.

Figure III.M-2
Orange County Labor Force and Unemployment



TAX REVENUES BY JURISDICTION

This section summarizes the Orange County 2015 budget appropriations by fund, the Town of Goshen's 2015 budget appropriations and 2015 anticipated revenues by fund and by special districts, and the Goshen Central School District and Goshen Library budgets.

As shown in **Table III.M-6**, Orange County's 2015 adopted budget includes approximately $732.84 million of appropriations to 15 funds. Approximately 51.5 percent ($377.70 million) of the cost associated with these appropriations are funded by sales tax and property tax revenues, approximately 2.0 percent ($14.52 million) is funded by budget surplus, and the remaining 46.5 percent ($340.62 million) is funded by State, Federal and other sources. Over 80 percent of all revenue appropriations are allocated to two funds: Social Services and the General Fund.

As shown in **Table III.M-7**, the Town of Goshen's adopted 2015 budget includes approximately $7.50 million of appropriations to four funds: Town General (A); Highway Townwide (DA); Highway Outside Village (DB); and Town Outside Village (B). The expenditures from the

General fund include overall administrative operating expenses of the Town, including salaries for Town employees. The two highway funds pay for snow removal, road repairs, and the mechanical and contractual costs that accompany those activities. The Town Outside Village fund supports the police department and other public services including town maintenance.

The Town of Goshen budget funds are financed largely through property taxes (66.1 percent in 2015), with the remaining portion derived from non-property tax revenues and unexpended balances (29.1 percent and 4.8 percent, respectively).

Table III.M-6
Orange County 2015 Legislative Adopted Budget

Fund	Expenditure Total	Revenue Total	Taxation	Surplus	State/Federal & Other
Airport	$1,435,974	$1,435,974	$245,974	$--	$1,190,000
Community Development	$2,733,218	$2,733,218	$--	$--	$2,733,218
County Road	$15,730,398	$15,730,398	$9,983,241	$1,500,000	$4,247,157
Debt Service	$30,902,167	$30,902,167	$29,888,044	$750,000	$264,123
Social Services	$226,223,792	$226,223,792	$115,857,670	$1,158,911	$109,207,211
General Fund	$367,118,082	$367,118,082	$217,232,709	$10,000,000	$139,207,211
Landfill	$13,250,041	$13,250,041	$1,089,741	$750,000	$11,410,300
Motor Pool	$2,065,190	$2,065,190	$--	$	$2,065,190
Off Street Parking	$250,000	$250,000	$--	$	$250,000
Employment & Training	$8,536,000	$8,536,000	$30,096	$	$8,505,904
Road Machinery	$2,745,132	$2,745,132	$456,532	$	$2,288,600
Sewer	$9,333,117	$9,333,117	$--	$363,181	$8,969,936
Small Watershed Protection Fund	$511,366	$511,366	$12,000	$	$499,366
Valley View	$51,710,700	$51,710,700	$2,899,063	$	$48,811,637
Water Authority	$294,914	$294,914	$--	$	$294,914
Total	**$732,840,091**	**$732,840,091**	**$377,695,070**	**$14,522,092**	**$340,622,929**
Reserve for Uncollected Taxes			$1,000,000		
Total Taxation Required			**$378,695,070**		
Sales Tax: County Share			$193,374,183		
Sales Tax: Municipalities			$69,311,108		
Property Tax:			$116,009,779		
Total Taxation:			**$378,695,070**		

Source: Orange County New York Division of Budget website: www.co.orange.ny.us/content/124/1244/default.aspx

Table III.M-7
Summary of 2015 Adopted Town of Goshen Budget,
2015-2016 Goshen Central School District Budget and 2015 Goshen Library Budget

	2015 Appropriations	Non-Property Tax Revenues	Fund Balance	2015 Amount to be Raised by Property Taxes
Fund				
Town General (A)	$2,446,707	$598,700	$ 50,000	$1,798,007
Highway Townwide (DA)	$745,920	$11,500	$85,000	$649,420
Highway Outside Village (DB)	$1,798,177	$162,500	$125,000	$1,510,677
Town Outside Village (B)	$2,511,272	$1,408,437	$100,000	$1,002,835
SUBTOTAL	**$7,502,076**	**$2,181,137**	**$360,000**	**$4,960,939**
Special Districts				
Fire (including Villages of Goshen, Chester, Florida)	$2,104,179	$ --	$ --	$2,104,179
Middletown Thrall Library	$495	$ --	$ --	$495
Stonehedge and Scotchtown	$62,879	$62,879	$ --	$ --
Water (Hambletonian and Arcadia)	$201,592	$201,592	$ --	$ --
Sewers (Hambletonian and Arcadia)	$427,381	$427,381	$ --	$ --
TOTAL	**$10,298,602**	**$2,872,989**	**$360,000**	**$7,065,613**
Goshen Central School District	**$67,196,457**	**$21,218,540**[1]	**$980,434**	**$44,997,483**
Goshen Library	**$1,312,015**	**$33,800**	**$30,449**	**$1,247,766**

Notes: (1) Non-Property Tax Revenues for the Goshen Central School District include approximately $13.4 million in New York State aid.
Sources: 2015 Town of Goshen Adopted Budget; 2015-2016 Goshen Central School District Budget; 2015 Goshen Public Library & Historical Society Budget.

The Town of Goshen budget also includes approximately $2.80 million appropriated to five special districts: Fire; Stonehedge and Scotchtown; Water; Sewers; and Middletown Thrall Library. Stonehedge and Scotchtown are residential subdivisions that the Town of Goshen services with water. Arcadia Hills and Hambletonian Park are residential subdivisions to which the Town of Goshen provides sanitary sewers and water. With the exception of the Fire district, all of the Town's special districts are funded through user fees; the over $2 million in appropriations to Fire is funded entirely through property taxes.

The Project Site is within the boundaries of the Goshen Central School District (CSD), which has approximately 2,900 students. As shown in **Table III.M-7**, the 2015-2016 adopted budget for the Goshen CSD was approximately $67.2 million, of which approximately 67 percent ($45.00 million) was raised by property taxes. On May 19, 2015, Goshen CSD residents passed the $67.20 million proposed budget for the 2015-2016 school year.

The Project Site is also within the boundaries of the Goshen Public Library district. As shown in Table III.M-7, the 2015 budget for the library was approximately $1.31 million, of which over 95 percent (approximately $1.25 million) was raised by property taxes.

TAX REVENUES GENERATED BY PROJECT SITE PARCELS

The budget process determines the amount of local taxation required to meet appropriations. In 2015, the Town required approximately $4.96 million in property taxes as contributions to the

annual budget. Once the amount of required tax revenue is established, property tax rates are determined for each budget fund. Two factors determine these rates: (1) the portion of the budget that is to be financed by real property taxes, and (2) the total taxable assessed valuation. The property tax rate (known as the "mill rate") is the amount to be paid for every $1,000 of assessed valuation. The 2015 tax rates by taxing jurisdiction are shown in **Table III.M-8**.

Table III.M-8
2015 Property Tax Rates

Tax Jurisdiction	Tax Rate per $1,000 Assessed Value
County Tax	5.818
Part Town[1]	1.708
Town Tax[2]	2.569
Highway Tax	2.572
Goshen Fire 1 Tax	2.363
Goshen Library Tax	0.974
Goshen CSD Tax	34.425

Notes: Tax rates are rounded.
1. Part Town includes Town Outside Village Fund (B).
2. Town Tax includes Town General fund (A) and the Highway Townwide fund (DA).
Sources: Town of Goshen 2015 Budget; AKRF, Inc.

In 2015, the tax lots that comprise the Project Site were assessed at approximately $1.78 million. As shown in **Table III.M-9**, based on 2015 tax rates the Project Site generates nearly $88,000 for its various taxing jurisdictions. The approximately $61,000 allocation to the Goshen CSD comprises about 68 percent of the total tax revenues from the Project Site.

Table III.M-9
Existing Tax Revenues Generated by the Project Site (2015)

		Echo Lake		Ver Hage		Lipoff	Strong Farm	
SBL		**12-1-24.2**	**12-1-23.2**	**12-1-1.222**	**12-1-19.2**	**12-1-1.41**	**10-1-11.2**	**Total Site**
Full Market Valuation		$732,800	$473,900	$409,200	$240,400	$145,800	$721,700	$2,723,800
Total Assessed Valuation		$480,000	$310,400	$268,000	$157,493	$95,492	$472,700	$1,784,085
Taxable Assessed Valuation		$480,000	$310,400	$268,000	$157,493	$95,492	$431,471	$1,784,085
	Mill Rate[1]							
County Tax	5.818	$2,793	$1,806	$1,559	$916	$556	$2,510	$10,140
Part Town	1.708	$820	$530	$458	$269	$163	$737	$2,977
Town Tax	2.569	$1,233	$797	$689	$405	$245	$1,109	$4,478
Highway Tax	2.572	$1,235	$799	$689	$405	$246	$1,110	$4,484
Goshen Fire 1 Tax	2.363	$1,134	$734	$633	$372	$226	$1,020	$4,119
Goshen Library Tax	0.974	$467	$302	$261	$153	$93	$421	$1,698
Goshen CSD Tax	34.425	$16,524	$10,686	$9,226	$5,422	$3,287	$14,877	$60,022
Total		**$24,206**	**$15,654**	**$13,515**	**$7,942**	**$4,816**	**$21,783**	**$87,916**

Notes: Values are rounded to the nearest dollar and may not sum to total.
(1) Mill rate is provided in dollars per $1,000 of assessed value.
Sources: Town of Goshen; Orange County, Goshen Central School District; Goshen Public Library.

C. FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the Proposed Project the Town's fiscal conditions are expected to be similar to existing conditions. The Project Site would not be redeveloped, and would continue to generate property tax revenues similar to the amounts cited above.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

This section estimates the municipal costs associated with the Proposed Project, and compares those costs to the fiscal revenues and economic activity that would be generated by the Proposed Project.

MUNICIPAL COSTS

Municipal costs from the Proposed Project were estimated using the Proportional Valuation Method to project the average cost of non-residential development on a local taxing jurisdiction. The methodology for the proportional valuation is based on guidance found in *The Fiscal Impact Handbook: Estimating Local Costs and Revenues of Land Development*.[2] The method involves two steps:

- First a proportion of the local real property tax costs are apportioned to residential and non-residential development based on the proportion of total value in non-residential use and also the proportion of total land parcels used for non-residential purposes.
- Second, a portion of the total non-residential real property tax cost is apportioned to the new use based on its value compared with total non-residential value, and a refinement coefficient is then applied based on the size of the Proposed Project relative to the average existing non-residential use. The refinement coefficient is used because larger (and higher value) non-residential facilities generate lower costs than multiple smaller non-residential facilities of equivalent value.

The proportional valuation method depends on data on the value and number of parcels in residential and non-residential use. New York State maintains this data for towns, but not for villages. Because of this, the assignment of cost is based upon the town-wide ratios of residential and non-residential real property. Since the Village of Goshen contains a significant amount of non-residential real property compared with the unincorporated portion of the Town of Goshen, use of town-wide assessment data is likely to overstate the non-residential costs. This makes the analysis of potential costs from the Proposed Project conservative (costs may be overstated).

The Proportional Valuation costing calculations are included in **Appendix III.M**. The Proposed Project's estimated tax cost to each jurisdiction was calculated for the following points in time: Year 3, when Phase 1 of the Amy's Kitchen facilities would be built and operational; and Year 5, when Phase 2 of the Amy's Kitchen as well as the SoS facilities would be built and operational (Year 5 also represents a long-term stabilized operating condition). The results are summarized in **Table III.M-10**.

[2] Robert W. Burchell and David Listokin, *The Fiscal Impact Handbook: Estimating Local Costs and Revenues of Land Development* (Transaction Publishers, 2012).

Table III.M-10
Estimated Annual Municipal Costs of Proposed Project over Time

Taxing Jurisdiction	Estimated Cost Year 3	Estimated Cost Year 5 and Thereafter
County	$23,531	$22,006
Town General	$3,627	$3,910
Town Outside Village	$2,023	$2,181
Highway Townwide	$1,310	$1,412
Highway Outside Village	$3,047	$3,285
Goshen Fire 1	$4,244	$4,576
Goshen Library	$0[1]	$0[1]
Goshen Central School District (CSD)	$0[1]	$0[1]
All Jurisdictions	**$37,782**	**$37,370**

Notes: (1) As detailed under "Municipal Cost of New Employees" below, the Proposed Project is not expected to induce new residents and therefore would not have incremental costs associated with the Goshen Public Library or Goshen CSD.
Sources: Town of Goshen 2015 budget; AKRF, Inc.

ROADWAY OPERATIONS AND MAINTENANCE COSTS

The estimates shown in **Table III.M-10** are based on a proportional allocation of existing municipal costs to non-residential properties, including costs to operate and maintain highways. As shown in Table III.M-10, the Proposed Project's estimated annual cost to funds associated with the operations and maintenance of highways—the "Highway Townwide" and "Highway Outside Village" funds—totals $4,357 in Year 3 and $4,697 in Year 5 and thereafter. These projected costs represent approximately 0.2 percent (two-tenths of 1 percent) of the 2015 appropriations to the two highway funds. In addition, the Proposed Project would include road improvements and commitments from Amy's Kitchen to maintain certain roads within and approaching the Project Site. As detailed in Chapter II, "Project Description," and Chapter III.H, "Traffic and Transportation," Amy's Kitchen would construct a Project Site access road from NYS Route 17M into the main portion of the Echo Lake property that would serve the Proposed Project and the Mid-Hudson Psychiatric Center. This roadway improvement would provide a public benefit to the Town of Goshen, County of Orange, and State of New York by enhancing safety of this portion of NYS Route 17M where access is also provided to County and State facilities. Under an agreement contemplated between the Town of Goshen and Amy's Kitchen, Amy's Kitchen would pay for the site access road and related improvements at its intersection with NYS Route 17M (including relocation of County and State access roads). The agreement would also stipulate that Amy's Kitchen and SoS would be responsible for maintenance and snow-removal of the portion of the site access road (and associated landscaped areas) within the Project Site access road land transferred from the State to the Town. Overall, the Proposed Project would not result in significant adverse impacts to municipal finances due to road maintenance demands, including Town Highway Department manpower, equipment and materials.

MUNICIPAL COST OF NEW EMPLOYEES

The analysis reported above estimates the municipal costs of the proposed non-residential uses; not covered in that analysis is the potential municipal demands that could be created by new workers who migrate to Goshen and become new residents. As detailed below, the Proposed

Project would create a substantial number of new jobs in Goshen. The following analysis therefore determines whether the existing workforce can adequately meet the labor demands from the Proposed Project, or whether the Project could result in an influx of new workers who would generate a demand for new housing and municipal services.

The analysis utilizes the most current local workforce and drive-time data (i.e., information on average drive times for workers currently commuting to the Town of Goshen) to estimate likely commute times for Project employees. These drive times were mapped to develop "commute zones" radiating out from the Project Site, and new employees were divided among the commute zones. Labor force, industry, and unemployment data were examined to estimate the number of unemployed workers within each commute zone that are potentially available and qualified to work at the Proposed Project. Labor demand and supply were compared within each commute zone to identify potential labor gaps.

The estimated labor demand from each commute zone was determined by applying U.S. Census Bureau 2009-2013 ACS data on travel time to work for workers commuting to the Town of Goshen. Local workforce data for each commute zone were obtained from the U.S. Census Bureau Longitudinal Employer Household Dynamics (LEHD) data, which shows employed workforce by industry sector at the Census block group level. The local unemployment rate was assessed based on data from the U.S Census Bureau 2008-2012 ACS at the zip code level, adjusted with 2013 data from the Bureau of Labor Statistics Current Population Survey showing unemployment rates by industry sector, as well as Orange County labor force data from the New York State Department of Labor (NYSDOL). The housing analysis was based on 2008-2012 ACS housing type and vacancy data, obtained from ESRI Business Analyst for each commute zone that was estimated to have a labor gap.[3]

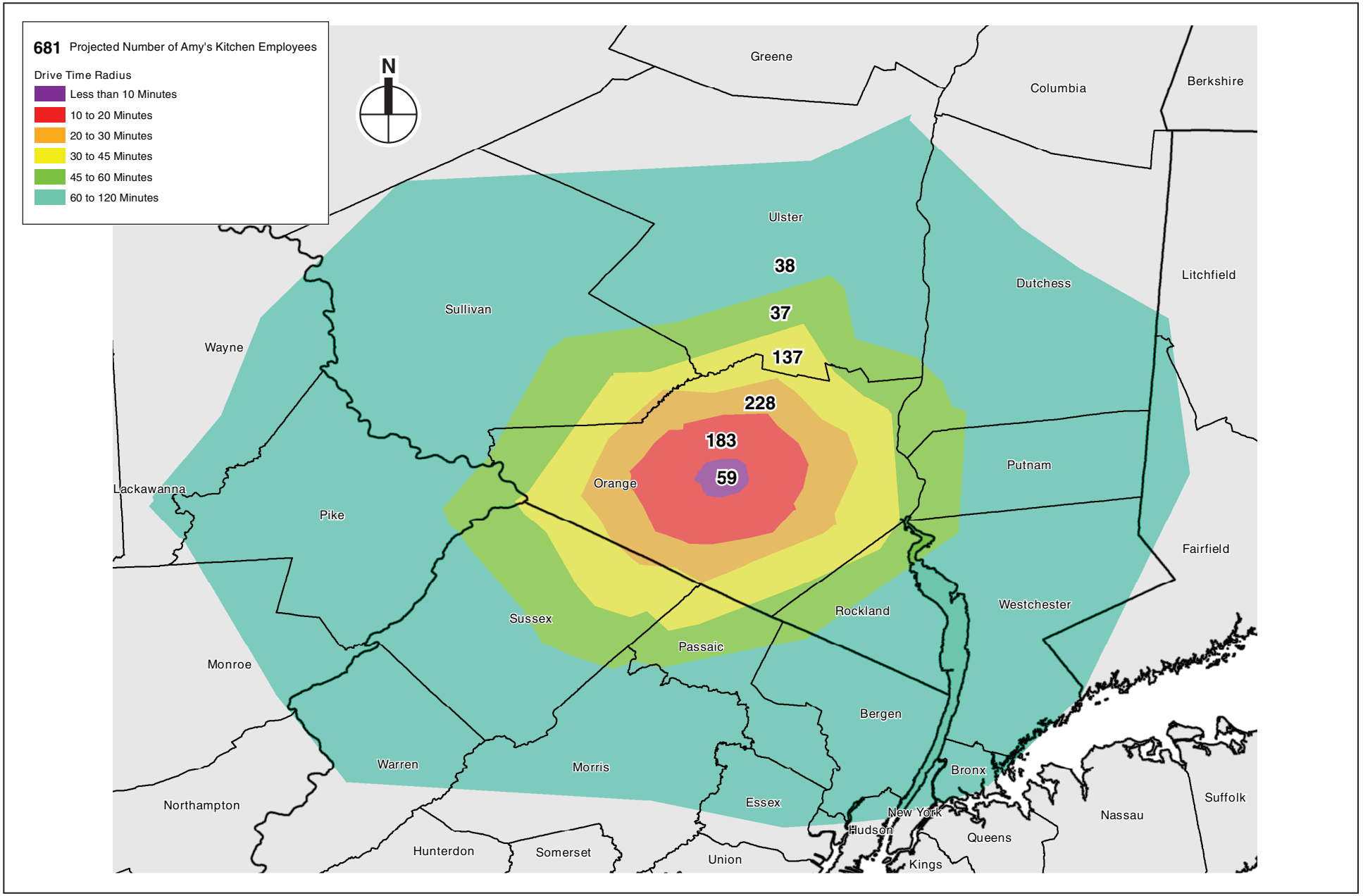
Proposed Project Labor Demand

Based on information provided by Amy's Kitchen, the total number of full-time equivalent (FTE) workers needed to staff the Proposed Project upon completion of Phase 2 is 681. As shown in **Table III.M-11**, 630 of these employees would work in food production, another 30 employees would provide facility maintenance, and 21 employees would work in a supervisory or plant safety and engineering capacity.

The vast majority of Proposed Project jobs do not require specialized education, and the skill sets required can be adapted from a number of occupations and/or obtained through basic employee training that would be provided by Amy's Kitchen. Accordingly, the labor gap analysis is conducted based on broad occupational categories, including "blue collar," management/finance, professional/administrative, and service. **Table III.M-11** shows how Amy's Kitchen employment would be classified into these broad occupational categories.

Based on average commute times recorded by the U.S. Census Bureau for people working in Goshen, over two-thirds of Amy's Kitchen employees (69.0 percent) are expected to live within a 30-minute drive of the facility (see **Table III.M-12**). The remainder is expected to be dispersed across a two-hour drive time radius that extends into northern New Jersey and eastern Pennsylvania (see **Figure III.M-3**).

[3] ESRI, Inc. is an international supplier of GIS mapping software, web GIS and geodatabase management applications. ESRI Business Analyst provides a variety of demographic, business, and consumer data.



Amy's Kitchen
Science of the Soul

Drive Time Radii with Projected Number of Employees
Figure III.M-3

Table III.M-11
Estimated On-Site Employment

Job Type	Number of FTE Jobs	Occupational Classification[2]
Production line workers	62	Blue Collar
Production/sanitation	437	Blue Collar
Lead/operators/wholesale/QA[1]	131	Blue Collar
Maintenance	30	Blue Collar
Supervisors	9	Management/Finance
HR/Safety/Engineering	11	Professional/Administrative
Plant manager	1	Management/Finance
Total	**681**	

Notes: (1) Includes more highly trained production workers such as shift leaders and shift operators.
(2) Generic occupational terms are utilized to facilitate comparison between the labor demand from Amy's Kitchen and the available local labor supply, which is estimated by grouping labor from industry sectors of relevance to Amy's Kitchen, and which uses the same terms shown in this table.
Sources: Amy's Kitchen, AKRF, Inc.

Table III.M-12
Estimated Commute Times for Proposed Project Employees based on Current Average Commute Times

Drive time to work	Percent of Employees	Number of Employees
Less than 10 minutes	8.6%	59
Between 10 and 20 minutes	26.9%	183
Between 20 and 30 minutes	33.5%	228
Between 30 and 45 minutes	20.1%	137
Between 45 and 60 minutes	5.4%	37
Between 1 and 2 hours	5.6%	38

Sources: U.S. Census Bureau, 2009-2013 American Community Survey

Labor Supply

The potential labor supply for the Proposed Project was estimated for each commute zone based on LEHD data, which show employed workforce by industry sector at the Census tract level. Industry sector data from LEHD were grouped into the occupational categories described above ("blue collar," professional, management, and service) to determine the general composition of the labor force in each commute zone.[4]

[4] Industry sectors were grouped into labor categories as follows: "Blue collar" labor category includes agriculture, forestry, fishing and hunting, mining quarrying, and oil and gas extraction, utilities, construction, manufacturing, wholesale trade, and transportation and warehousing; Professional/Administrative labor category includes information, real estate and rental and leasing, professional, scientific, and technical services, administration & support, waste management and remediation, and public administration; Management/Business labor category includes finance and insurance and management of companies and enterprises; Services labor category includes retail trade, educational services, health care and social assistance, arts, entertainment and recreation, accommodation and food services, and other services.

This analysis assumes that positions at Amy's Kitchen will be filled by existing unemployed residents before attracting in-migrants from outside the region. LEHD data provides the employed workforce in each commute zone, but does not provide information on the size or industry classification of the unemployed population. Therefore, labor force and unemployment data from the 2008-2012 ACS were utilized in combination with LEHD data to estimate the unemployed labor force in each commute zone. The estimation of unemployed workers was further refined using Bureau of Labor Statistics data showing national average unemployment rates by industry. BLS data indicate that unemployment is substantially higher in "blue collar" industries such as construction, maintenance, and production compared to industries such as professional and management and finance.

Theoretically, all unemployed residents are available to work at the planned facility; however full employment is generally considered to be achieved at an unemployment rate of approximately three percent, and some of the unemployed labor force may not have the skill set or desire to work at Amy's Kitchen. Therefore, this analysis assumes a stable unemployment rate of 4.5 percent; only the unemployed population exceeding this 4.5-percent threshold is considered available to fill jobs at Amy's Kitchen.

Overall, the analysis indicates that there are approximately 108,600 available workers (unemployed, exceeding stable unemployment rate of 4.5 percent) living within a two-hour drive of the Project Site. Of these, roughly 4,060 available workers live within 30 minutes of the site, and over a quarter of those (1,090 workers) are in the "blue collar" occupational category from which Amy's Kitchen would draw a majority of its employees.

Labor Surplus or Gap

The capacity of the existing labor supply to meet the estimated labor demand generated by the Proposed Project was measured by comparing the available pool of workers (unemployed workers minus stable unemployment) with the number of jobs generated by the Project. This comparison was performed for the various commuting ranges and occupational categories described above.

If the available pool of workers exceeds labor demand, then a surplus of workers exists for that commute zone, indicating that those positions can be sufficiently filled from the existing labor pool in that commute ring. If the available pool of workers in a given commute zone does not meet the labor demand generated by the Project for a specific occupational category, a labor supply "gap" was identified.

Table III.M-13 presents the results of the labor gap analysis. As shown, the analysis identified a labor gap in only one commute zone (10 minute drive or less) and a single occupational category ("blue collar"). This means that within the 10-minute commute zone, there may be a shortage of 10 employees available for food production and maintenance jobs at Amy's Kitchen.

Table III.M-13

Available Labor Force and Anticipated Labor Demand from Proposed Project

	Total Labor Force	Available Labor Force[(1)]	Proposed Project Labor Demand	Labor Surplus or Gap
Less than 10 minutes				
Management / Finance	197	2	1	1
Professional / Administrative	772	21	1	20
Service	2,397	118	-	118
Blue Collar	869	47	57	**(10)**
Between 10 and 20 minutes				
Management / Finance	2,383	30	3	27
Professional / Administrative	8,082	212	3	209
Service	22,043	1,080	-	1,080
Blue Collar	8,832	485	177	288
Between 20 and 30 minutes				
Management / Finance	2,848	35	3	32
Professional / Administrative	9,215	240	4	236
Service	25,098	1,227	-	1,227
Blue Collar	10,199	559	221	338
Between 30 and 45 minutes				
Management / Finance	4,044	51	2	49
Professional / Administrative	13,720	357	2	355
Service	37,315	1,822	-	1,822
Blue Collar	16,644	910	133	777
Between 45 and 60 minutes				
Management / Finance	6,242	79	1	78
Professional / Administrative	20,024	523	1	522
Service	49,699	2,430	-	2,430
Blue Collar	20,229	1,108	36	1,072
Between 60 and 120 minutes				
Management / Finance	211,407	2,604	-	2,604
Professional / Administrative	616,327	15,913	-	15,913
Service	1,323,354	64,340	-	64,340
Blue Collar	472,412	25,738	37	25,701
Total				
Management / Finance	227,121	2,801	10	2,791
Professional / Administrative	668,140	17,266	11	17,255
Service	1,459,906	71,017	-	71,017
Blue Collar	529,185	28,847	661	28,186

Notes: (1) The available labor force is the unemployed labor force above 4.5 percent unemployment. This assumes a full employment rate of 97 percent (3 percent unemployed) and an additional 1.5 percent to account for unemployed workers who may not have the skill set or desire to work at Amy's Kitchen.

Sources: Amy's Kitchen; US Census Bureau Longitudinal Employer Household Dynamics (LEHD) 2011; US Census Bureau American Community Survey (ACS) 2008-2012; Bureau of Labor Statistics Current Population Survey 2013; New York State Department of Labor Orange County labor force data 2014; AKRF, Inc.

For purposes of this analysis, it is assumed that these positions would need to be filled by workers migrating into the area. However, it should be noted that given the nature of Amy's Kitchen jobs, it is possible that these positions could be filled by local unemployed workers who are willing to learn a new skill set. For example, workers currently employed in service occupations (e.g., retail) could be retrained to fill production positions at the new Amy's Kitchen. In addition, the distribution of Amy's Kitchen employees across commute zones may not exactly match the commute patterns for existing Goshen employees, which was used as the

basis for the labor gap analysis. It is possible that Amy's Kitchen will draw the additional 10 workers from a slightly larger radius rather than attracting in-migrants. This is particularly likely given that there are currently 485 unemployed "blue collar" workers living in the 10 to 20 minute drive time radius, and this labor gap analysis assumes that Amy's Kitchen would employ only 177 of them.

The existing housing market can easily accommodate the small number of worker households that could potentially relocate to the 10-minute commute ring based on the results of the labor gap analysis. As of the 2008-2012 ACS, there were 249 vacant housing units located in the 10-minute commute ring. Approximately two-thirds of these (165 units) were single-family homes, and the remainder was in townhomes and multi-family dwellings. The existing housing supply can easily absorb any limited in-migration that may be associated with Amy's Kitchen labor demand. Therefore, the Proposed Project is not expected to result in any new housing development or a substantial number of new worker/residents who would place additional burdens on municipal finances.

PROPERTY TAX REVENUES

This section estimates the property tax revenues that would be generated by the Proposed Project.

The tax revenues generated by the Proposed Project are a factor of the assessed value, which would be determined by the Town Assessor at future dates based on the market value of the Proposed Project's built improvements. Assuming that the estimated hard construction costs associated with the Proposed Project reflect market value of the proposed improvements, at Year 3 the Project Site improvements would have a market value of approximately $42.50 million. At Year 5 and thereafter, when the Proposed Project is fully built and operational, the Project Site improvements would have a taxable market value of approximately $65.45 million.

The Town of Goshen currently is assessing at 67 percent of full market value, making the assessed value of the proposed improvements approximately $28.48 million in Year 3, and approximately $43.85 million in Year 5 and thereafter. Assuming that the (unbuilt) land would remain at its current assessed value, the total Project Site taxable assessed value would be an estimated $29.47 million in Year 3, and $44.85 million in Year 5 and thereafter.

This estimated assessed value can then be applied to the 2015 tax rates to estimate total real property tax revenues that would be generated by the Proposed Project. **Table III.M-14** presents these future property tax revenue estimates by taxing jurisdiction. The tax revenue estimates shown in **Table III.M-14** assume that SoS, as a 501(c)(3) tax-exempt organization, would not pay property taxes on the Echo Lake property.

Table III.M-14
Projected Real Property Tax Revenues by Taxing Jurisdiction

	Year 3	Year 5 and Thereafter
Full Market Valuation (Taxable Improvements)	$42,500,000	$65,450,000
Assessed Value of Improvements (Taxable)	$28,475,000	$43,851,500
Assessed Value of Land (Taxable)	$993,685	$993,685
Taxable Assessed Value	$29,468,685	$44,845,185
Property Tax Revenues		
County	$171,209	$260,669
Town General	$55,534	$84,566
Town Outside Village	$50,262	$76,525
Highway Townwide	$20,062	$30,544
Highway Outside Village	$75,705	$115,263
Goshen Fire 1	$69,543	$105,881
Library	$28,653	$43,625
Goshen CSD	$1,013,054	$1,542,397
TOTAL	**$1,484,022**	**$2,259,470**

Notes: (1) The assessed value of the Echo Lake property, including improvements, is assumed to be tax exempt as SoS is a 501(c)(3) tax-exempt organization.
Sources: Town of Goshen 2015 budget; AKRF, Inc.

NET IMPACT

By comparing real property tax revenues with real property tax costs, the net impact on taxing jurisdictions can be identified. **Table III.M-15** summarizes the net fiscal impact of the Proposed Project at Year 3, while **Table IIII.M-16** summarizes the net fiscal impact of the Proposed Project at Year 5, which represents long-term stabilized operating conditions.

In Year 3 the Proposed Project would generate approximately $1.36 million more in net new property tax revenue than in costs to all taxing jurisdictions (see **Table III.M-15**). The greatest percent of positive impact would be to the Town Outside Village and Highway Outside Village funds, while the Goshen Central School District would see the greatest total amount of net revenue at an estimated $953,032.

In Year 5 and thereafter the Proposed Project would generate approximately $2.13 million more in net new property tax revenue than in costs to all taxing jurisdictions (see **Table III.M-16**). As in Year 3, in Year 5 the greatest percent of positive impact would be to the Town Outside Village and Highway Outside Village funds, while the Goshen Central School District would see the greatest total amount of net revenue at approximately $1.48 million annually.

Table III.M-15
Net Fiscal Impact from Proposed Project at Year 3

Tax Jurisdiction	Future Estimated Cost	Existing Project Site Revenue	Estimated Project Site Revenue with Proposed Project	Net Fiscal Impact	Percent of Current Levy
County	$23,531	$10,140	$171,209	$137,538	0.1%
Town General	$3,627	$3,290	$55,543	$48,627	2.7%
Town Outside Village	$2,023	$2,977	$50,262	$45,263	4.5%
Highway Townwide	$1,310	$1,188	$20,062	$17,564	2.7%
Highway Outside Village	$3,047	$4,484	$75,705	$68,174	4.5%
Goshen Fire 1	$4,244	$4,119	$69,543	$61,180	2.9%
Library	$0	$1,698	$28,653	$26,956	2.2%
Goshen CSD	$0	$60,022	$1,013,054	$953,032	2.1%
TOTAL	**$37,782**	**$87,916**	**$1,484,031**	**$1,358,333**	

Notes: Values are rounded to nearest dollar and may not total to amount shown.
This analysis includes only revenues associated with real property taxes. Additional revenues from user fees or similar may also be generated.
Sources: AKRF, Inc.

Table III.M-16
Net Fiscal Impact from Proposed Project at Year 5 and Thereafter

Tax Jurisdiction	Future Estimated Cost	Existing Project Site Revenue	Estimated Project Site Revenue with Proposed Project	Net Fiscal Impact	Percent of Current Levy
County	$21,987	$10,140	$260,669	$228,543	0.2%
Town General	$3,910	$3,290	$84,566	$77,366	4.3%
Town Outside Village	$2,181	$2,977	$76,525	$71,366	7.1%
Highway Townwide	$1,412	$1,188	$30,544	$27,944	4.3%
Highway Outside Village	$3,285	$4,484	$115,263	$107,494	7.1%
Goshen Fire 1	$4,576	$4,119	$105,881	$97,186	4.6%
Library	$0[1]	$1,698	$43,625	$41,927	3.4%
Goshen CSD	$0[1]	$60,022	$1,542,397	$1,482,375	3.3%
TOTAL	**$37,351**	**$87,916**	**$2,259,470**	**$2,134,203**	

Notes: Values are rounded to nearest dollar and may not total to amount shown.
This analysis includes only revenues associated with real property taxes. Additional revenues from user fees or similar may also be generated.
Sources: AKRF, Inc.

PAYMENT IN LIEU OF TAXES (PILOT)

Amy's Kitchen is seeking a "super-enhanced" payment in lieu of taxes (PILOT) from the Orange County Industrial Development Agency (Orange County IDA). This incentive would provide a tax exemption on the value of improvements that decreases from 100 percent exemption in the first year to full taxation after 15 years. The amount of the exemption decreases by 5 percent per year over the first 10 years and by 10 percent over the last five. This exemption only applies to the value of improvements, and does not apply to the Fire District because it is a special assessment district.

Table III.M-17
Property Tax Revenues Generated by the Proposed Project
Assuming Payment in Lieu of Taxes (PILOT)

Year	County	Town[1]	Fire	Library	Goshen CSD	Total
1	$5,541	$6,524	$69,543	$928	$32,812	**$115,348**
2	$13,825	$16,276	$69,543	$2,321	$81,857	**$183,821**
3	$22,108	$26,027	$69,543	$3,713	$130,902	**$252,294**
4	$30,392	$35,779	$69,543	$5,106	$179,947	**$320,766**
5	$56,567	$66,594	$105,881	$9,506	$334,930	**$573,478**
6	$69,323	$81,611	$105,881	$11,651	$410,460	**$678,926**
7	$82,080	$96,628	$105,881	$13,796	$485,989	**$784,374**
8	$94,836	$111,646	$105,881	$15,940	$561,519	**$889,822**
9	$107,593	$126,663	$105,881	$18,085	$637,049	**$995,270**
10	$120,349	$141,681	$105,881	$20,229	$712,578	**$1,100,718**
11	$145,862	$171,715	$105,881	$24,519	$863,638	**$1,311,614**
12	$171,375	$201,750	$105,881	$28,808	$1,014,697	**$1,522,510**
13	$196,887	$231,785	$105,881	$33,097	$1,165,756	**$1,733,406**
14	$222,400	$261,820	$105,881	$37,386	$1,316,815	**$1,944,302**
15	$247,913	$291,854	$105,881	$41,675	$1,467,875	**$2,155,198**
16	$260,669	$306,898	$105,881	$43,625	$1,542,397	**$2,259,470**

Notes: (1) Town includes Town General fund, Town Outside Village fund, and Highway funds.
Year 16 represents annual payments after expiration of the PILOT and for all years thereafter.
Sources: AKRF, Inc.

Table III.M-18
Net Fiscal Impact of the Proposed Project
Assuming Payment in Lieu of Taxes (PILOT)

Year	County	Town[1]	Fire	Library	Goshen CSD	Total
1	$(17,990)	$(3,482)	$65,299	$928	$32,812	**$77,567**
2	$(9,706)	$6,269	$65,299	$2,321	$81,857	**$146,032**
3	$(1,423)	$16,021	$65,299	$3,713	$130,902	**$214,512**
4	$6,860	$25,772	$65,299	$5,106	$179,947	**$282,985**
5	$34,580	$55,806	$101,305	$9,506	$334,930	**$536,127**
6	$47,337	$70,823	$101,305	$11,651	$410,460	**$641,575**
7	$60,093	$85,840	$101,305	$13,796	$485,989	**$747,023**
8	$72,849	$100,858	$101,305	$15,940	$561,519	**$852,471**
9	$85,606	$115,875	$101,305	$18,085	$637,049	**$957,919**
10	$98,362	$130,893	$101,305	$20,229	$712,578	**$1,063,367**
11	$123,875	$160,927	$101,305	$24,519	$863,638	**$1,274,263**
12	$149,388	$190,962	$101,305	$28,808	$1,014,697	**$1,485,159**
13	$174,901	$220,997	$101,305	$33,097	$1,165,756	**$1,696,055**
14	$200,413	$251,032	$101,305	$37,386	$1,316,815	**$1,906,951**
15	$225,926	$281,066	$101,305	$41,675	$1,467,875	**$2,117,847**
16	$238,683	$296,110	$101,305	$43,625	$1,542,397	**$2,222,120**

Notes: (1) Town includes Town General Fund, Part-Town Fund, and Highway.
Values in (parentheses) indicate negative amounts.
Sources: AKRF, Inc.

The amount of real property revenue under the proposed PILOT that would be generated per year assuming 2015 tax rates is shown in **Table III.M-17**. The analysis conservatively assumes that there would be no property taxes generated by the Echo Lake property on which SoS operates; it is possible that Amy's Kitchen and the Town of Goshen would reach an agreement under the PILOT whereas the Echo Lake property would pay property taxes for some period of time.

Assuming that tax rates and costs will be static over time, Orange County is projected to receive an initial shortfall during the first three years under the proposed PILOT, and the Town of Goshen would receive an initial shortfall only during the first year of the PILOT (see **Table III.M-18**). These shortfalls would be short-term, and would quickly become positive impacts as the PILOT progresses. Furthermore, as discussed below, Orange County would receive substantial non-property tax revenues from the Proposed Project's construction and operations that exceed the shortfall identified during the first years of the PILOT.

ECONOMIC IMPACT TO THE LOCAL ECONOMY

The construction and operation of the Proposed Project would result in increased economic and fiscal activity in the Town of Goshen, in Orange County, and within the broader New York State economy in the form of employment, employee compensation, economic output, and tax revenues. This section presents the combined economic impacts associated with construction and operation of Amy's Kitchen food manufacturing facility and the Science of the Soul Conference Center. Additional detail of the economic activity generated from construction of each component of the Proposed Project (Amy's Kitchen Goshen food manufacturing facility, Science of the Soul Conference Center, and infrastructure improvements) is then provided. Last is a detailed discussion of the recurring economic activity generated from annual operations of each component. All dollar amounts included in this section are constant 2015 dollars. In future years, the actual dollar amounts are expected to increase with inflation.

METHODOLOGY

Overview of the IMPLAN Economic Model

This analysis was conducted using IMPLAN (IMpact Analysis for PLANning), an economic input-output modeling system. The IMPLAN model was originally developed by the United States Department of Agriculture Forest Service in 1979 and was subsequently privatized by the Minnesota IMPLAN Group (MIG). The model uses the most recent economic data from sources such as the U.S. Bureau of Economic Analysis, the U.S. Bureau of Labor Statistics, and the U.S. Census Bureau to predict effects on the local economy from direct changes in spending.

The IMPLAN model contains data on 536 economic sectors, showing for any given geography how each sector affects every other sector as a result of a change in the quantity of its product or service. This indirect economic activity that is generated through direct investment is often referred to as the "ripple," or multiplier effect.

This analysis was conducted using the most recent models for Orange County and New York State (2013).

Measures of Economic Impact

Using IMPLAN terminology, economic impacts are broken into three components: direct, indirect, and induced.

- *Direct effects* represent the initial benefits to the economy of a specific new investment; e.g., this would include direct construction cost and the resulting demand in employment and changes in employee compensation.
- *Indirect effects* represent the benefits generated by industries purchasing from other industries as a result of the direct investment. For example, indirect employment resulting from construction expenditures would include jobs in industries that provide goods and services to construction contractors. A direct investment triggers changes in other industries as businesses alter their production to meet the needs of the industry in which the direct impact has occurred. These businesses in turn purchase goods and services from other businesses, causing a ripple effect through the economy. The ripple effect continues until leakages from the region (caused, for example, by imported goods) stop the cycle within the region. The sum of these iterative inter-industry purchases is called the indirect effect.
- *Induced effects* represent the impacts caused by increased income in a region. Direct and indirect effects generate more worker income by increasing employment and/or salaries in certain industries. Households spend some of this additional income on local goods and services, such as food and drink, recreation, and medical services. Benefits generated by these household expenditures are quantified as induced effects.

SUMMARY ECONOMIC AND FISCAL BENEFITS FROM CONSTRUCTION

Table III.M-19 is a summary table that presents the jobs, employee compensation, and economic output generated from construction of the Proposed Project, including Phase 1 and Phase 2 of the Amy's Kitchen facility, the Science of the Soul Conference Center, and infrastructure improvements.[5] As shown in **Table III.M-19**, construction of the Proposed Project would result in 532 direct person-years of employment. Including indirect and induced employment, the Proposed Project would result in 829 person-years of employment in New York State, of which 766 person-years of employment are estimated in Orange County. Total direct, indirect and induced employee compensation is estimated at $49.98 million in New York State, including $44.48 million in Orange County. Total direct, indirect, and induced output from construction of the Proposed Project is estimated at $151.92 million in New York State, including $135.39 million in Orange County.

[5] A breakdown of the employment and economic benefits from construction of Phase 1 separate from Phase 2 is shown in **Table III.M-22**.

Table III.M-19
Summary Employment and Economic Benefits from Construction
Amy's Kitchen Food Manufacturing Facility, SoS Conference Center, and Infrastructure

	Portion in Orange County				Total in New York State			
Employment (person-years)[1]	Amy's Kitchen (Phase 1 and 2)	SoS	Infra-structure	Total	Amy's Kitchen (Phase 1 and 2)	SoS	Infra-structure	Total
Direct (on-site)	489	0	43	532	489	0	43	532
Indirect (jobs in support industries)	71	4	16	91	95	4	19	118
Induced (jobs from household spending)	129	1	13	143	161	1	17	179
Total	689	5	72	766	745	5	79	829
Employee Compensation (Millions of 2015 dollars)								
Direct (on-site)	$29.75	$0	$2.55	$32.30	$29.75	$0	$2.55	$32.30
Indirect (earnings in support industries)	$4.02	$0.21	$0.80	$5.03	$6.15	$0.23	$1.10	$7.48
Induced (from household spending)	$6.46	$0.04	$0.65	$7.15	$9.19	$0.06	$0.95	$10.20
Total	$40.23	$0.25	$4.00	$44.48	$45.09	$0.29	$4.60	$49.98
Total Economic Output or Demand[2] **(Millions of 2015 dollars)**								
Direct (on-site)	$74.87	$2.80	$10.00	$87.67	$74.87	$2.80	$10.00	$87.67
Indirect (output from support industries)	$15.15	$0.78	$3.04	$18.97	$21.58	$0.84	$4.05	$26.47
Induced (from household spending)	$25.98	$0.16	$2.61	$28.75	$34.07	$0.22	$3.49	$37.78
Total	$116.00	$3.74	$15.65	$135.39	$130.52	$3.86	$17.54	$151.92

Fiscal[3]

Tax Revenues, Exclusive if Real Estate (Constant 2015 dollars)

	Amy's Kitchen	SoS	Infrastructure	Total
Tax Revenues From Direct Activity	$1,663,800	$62,200	$179,000	$1,905,000
Tax Revenues From Indirect and Induced Activity	$1,873,500	$11,500	$160,100	$2,045,100
Total	$3,537,300	$73,700	$339,100	$3,950,100

Notes:

1 A person-year is the equivalent of one person working full-time for a year.

2 The total effect on the local economy, including the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.

3 Tax revenues assume that the project will be exempt from paying sales taxes on materials purchased for construction. The figures include personal income taxes, corporate and business taxes, and numerous other taxes on direct, indirect, and induced activity.

4 Numbers may not add to totals due to rounding.

Sources: The characteristics and construction cost of the development; IMPLAN economic modeling system; and AKRF, Inc.

Changes in the Local Economy from Construction Activities

Construction activities would have positive effects on the local economy in terms of increased economic activities and related direct, indirect, and induced job generation. The most direct effect would be job opportunities for local area residents who work in the construction trades; while specific contractors for the Proposed Project have not been selected, it is expected that some portion of the estimated 532 person-years of direct construction-related employment would come from the local labor force.

In addition to this direct benefit, when new direct jobs are introduced to an area, those jobs lead to the creation of additional indirect and induced jobs. Indirect employment resulting from construction expenditures would include jobs in industries that provide goods and services to the contractors, and induced employment would include jobs generated by new economic demand from households spending salaries earned through the direct and indirect jobs. Based on the IMPLAN model's economic multipliers for Orange County's industrial sectors, construction of Phase 1 and Phase 2 would support an additional 200 indirect and induced person-years of employment within Orange County. For example, during Phase 1 of construction, there would be an estimated 10 person-years of indirect employment from vendors providing transportation and warehousing services. Another 16 person-years of employment would be supported during Phase 1 construction within the retail sector from direct and indirect employee spending. While the IMPLAN model for Orange County does not provide estimates specific to the Town of Goshen, it is reasonable to assume that some portion of the indirect and induced economic activity and associated jobs would occur locally.

Construction activities associated with the Proposed Project are not expected to strain local municipal resources such as police and fire services. As described in Chapter III.S, "Construction," construction activities are not expected to result in any significant adverse environmental impacts.

Fiscal Benefits from Construction Activities

The construction activity would have associated with it tax revenues for Orange County, the Metropolitan Transportation Authority (MTA), and New York State. It is assumed that the Project would be exempt from paying sales taxes on materials purchased for construction due to a payment-in-lieu-of-taxes (PILOT) agreement with the Orange County Industrial Development Agency. However, there would be substantial tax revenues from other sources. In total, the construction is estimated to generate approximately $3.95 million in tax revenues for the County, MTA, and New York State. This includes personal income taxes, corporate and business taxes, sales tax on indirect and induced activity, and numerous related taxes on direct and secondary economic activity.

SUMMARY ECONOMIC AND FISCAL BENEFITS FROM ANNUAL OPERATIONS

Table III.M-20 presents the jobs, employee compensation and output generated from annual operations of the Proposed Project, including the operations of the Amy's Kitchen food manufacturing facility in Year 5 (and thereafter), spending from visitors to the National and Regional SoS events, as well as from the security personnel hired by SoS for its National event.[6] As shown in **Table III.M-20**, annual operations of the Proposed Project would result in 709 direct full-

[6] Employment and economic benefits from Year 3 annual operations of the Amy's Kitchen Goshen food manufacturing facility are presented in **Table III.M-26**.

time equivalent (FTE) employees associated with Amy's Kitchen, security for SoS events, and employees that would be supported by increased expenditures from SoS visitors. Including indirect and induced employment, the Proposed Project would result in 870 direct, indirect, and induced FTEs in New York State, of which 844 FTEs are estimated in Orange County. Total direct, indirect, and induced employee compensation from annual operations of the Proposed Project is estimated at $30.28 million in New York State, including $28.54 million in Orange County. Total direct, indirect, and induced output from annual operations of the Proposed Project is estimated at $200.29 million in New York State, including $195.20 million in Orange County.

Table III.M-20
Summary Employment and Economic Benefits from Annual Operations (Year 5 and Thereafter)
Amy's Kitchen Food Manufacturing Facility and SoS Conference Center

	Portion in Orange County				Total in New York State			
	Amy's Kitchen	SoS	SoS (visitor spend)	Total	Amy's Kitchen	SoS	SoS (visitor spend)	Total
Employment (permanent full-time equivalent jobs)								
Direct	681	1	27	709	681	1	27	709
Indirect	20	1	4	25	21	1	5	27
Induced	106	0	4	110	129	0	5	134
Total	807	2	35	844	831	2	37	870
Employee Compensation (Millions of 2015 dollars)								
Direct	$22.51	$0.010	$0.72	$23.24	$22.51	$0.010	$0.72	$23.24
Indirect	$0.97	$0.017	$0.16	$1.15	$1.06	$0.024	$0.24	$1.32
Induced	$3.98	$0.006	$0.17	$4.16	$5.45	$0.009	$0.25	$5.71
Total	$27.46	$0.033	$1.05	$28.54	$29.03	$0.043	$1.21	$30.28
Total Economic Output or Demand[1] (Millions of 2015 dollars)								
Direct	$170.64	$0.168	$2.84	$173.65	$170.64	$0.168	$2.84	$173.65
Indirect	$3.98	$0.130	$0.69	$4.80	$4.25	$0.144	$0.91	$5.30
Induced	$16.05	$0.023	$0.68	$16.75	$20.38	$0.033	$0.92	$21.33
Total	$190.67	$0.321	$4.21	$195.20	$195.27	$0.346	$4.67	$200.29

Fiscal[3]

Tax Revenues, Exclusive if Real Estate (Constant 2015 dollars)

	Amy's Kitchen	SoS	SoS (visitor spend)	Total
Tax Revenues From Direct Activity	$1,074,500	$8,300	$342,300	$1,425,100
Tax Revenues From Indirect and Induced Activity	$996,00	$25,500	$54,200	$1,075,700
Total	$2,070,400	$33,800	$396,500	$2,500,700

Notes:
1 The total effect on the local economy, including the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.
2 Numbers may not add to totals due to rounding.
Sources: The characteristics and construction cost of the development; IMPLAN economic modeling system; and AKRF, Inc.

Changes in the Local Economy from Annual Operations

Similar to construction activities, annual operations of the Proposed Project would have positive effects on the local economy in terms of increased economic activity and related direct, indirect, and induced job generation. The most direct effect would be new job opportunities for local area residents; it is expected that a substantial portion of the estimated 709 FTE direct employees

would come from the local labor force. As described in the labor demand analysis above, it is estimated that 49 employees would be existing residents living within a 10-minute drive-time of the Project Site, while an estimated 232 employees would be existing residents living within a 20-minute drive-time of the Project Site. These direct jobs include not only on-site jobs with Amy's Kitchen, but also include jobs in security for SoS events, and employees that would be supported by increased expenditures from SoS visitors. For example, there would be an estimated 17 jobs generated within Orange County's accommodations sector (i.e., hotels and motels) from the increased demand from SoS visitors. There would also be an estimated 7 additional jobs created at local restaurants from SoS visitor spending.

In addition to these direct employment benefits, there would be project-generated economic activity and associated local employment in business establishments providing goods and services to the Proposed Project (indirect jobs), and jobs resulting from new household spending (induced jobs). For example, the IMPLAN modeling performed for the Proposed Project finds that by Year 5 of operations, 11 jobs are projected to be generated at restaurants within Orange County from direct and indirect employee spending. Approximately 20 jobs would be supported by the Proposed Project within the retail trade sector from direct and indirect employee purchases, and approximately 10 jobs would be generated at service-oriented businesses such as automotive repair and dry-cleaning/laundry. While the IMPLAN model for Orange County does not provide estimates specific to the Town of Goshen, it is reasonable to assume that a substantial portion of the indirect and induced economic activity and associated jobs would occur locally.

In addition, as detailed below and in Chapter III.Q, "Agriculture," it is Amy's Kitchen's goal to source ingredients locally, where possible, which would lead to increased economic activity within the region's agricultural sector. The company currently purchases approximately 90 million pounds of organic materials each year for use in their products. Amy's Kitchen currently sources 95 percent of its organic material from the United States, the vast majority from the west coast. Amy's Kitchen is actively working with and pursuing increasing east coast suppliers, and is working with local producers and processors to develop a supply chain for locally grown organic products. One of the organic principles to which it subscribes is a preference for locally grown vegetables.

Fiscal Benefits from Annual Operations

The economic activity would have associated with it $2.50 million annually in tax revenue, including $2.07 million annually from Amy's Kitchen and $0.43 million from SoS and its visitors' spending.

ECONOMIC ACTIVITY GENERATED BY CONSTRUCTION

The following section presents the economic activity generated from construction of each component of the Proposed Project, including 1) Amy's Kitchen Goshen food manufacturing facility, 2) Science of the Soul Conference Center, and 3) infrastructure improvements.

Amy's Kitchen Goshen Food Manufacturing Facility Only - Construction Period Benefits

The total cost of Phase 1 construction is estimated at $95.0 million. However, the Phase 1 construction cost used for the purpose of this economic impact analysis is $51.0 million, which includes approximately $42.5 million in hard costs and $8.5 million for soft costs including design, legal, and other related costs (see **Table III.M-21**). The Phase 1 construction cost that was modeled for this economic impact analysis excludes $44.0 million of costs for property acquisition, machinery, equipment, training, fixtures, furniture, and equipment. The costs for machinery,

fixtures, furniture, and equipment were excluded as it was assumed that these would be imported to New York State and not constructed on the Project Site. However, it is likely that some portion would be purchased and/or constructed on the Project Site, and in this respect the analysis understates potential benefits.

Table III.M-21
Construction Costs: Amy's Kitchen Goshen Food Manufacturing Facility

IMPLAN Sector	Description of Industry Sector	Construction Costs (Millions of 2015 dollars)	
		Phase 1	Phase 2
53	Construction of manufacturing structures	$42.50	$22.95
447	Legal services	$2.83	$1.35
449	Architectural, engineering, and related services	$5.67	$2.70
Total Construction Cost		**$51.00**	**$27.00**

Note: The total cost for Phase 1 construction is estimated at $95.0 million. However, the Phase 1 construction cost used for the purpose of this economic impact analysis is $51.0 million. The Phase 1 construction cost that was modeled for this economic impact analysis excludes $44.0 million of costs for property acquisition, machinery, equipment, training, fixtures, furniture, and equipment.
Source: Construction costs provided by Amy's Kitchen.

The Phase 2 construction cost used for the purpose of this economic impact analysis is $27.0 million, which includes $22.95 million in hard costs and $4.05 million for soft costs including design, legal, and other related costs. In total, the cost of construction for Phase 1 and Phase 2 is $78.0 million. The $78.0 million amount reflects the estimated cost of physical improvements to the site and soft costs incurred during the construction period. Similar to the Phase 1 construction cost, the Phase 2 construction cost excludes other values such as project financing and the value of the land.

Construction Period Benefits – Employment

As a result of the direct expenditures ($51.0 million for Phase 1 and $27.0 million for Phase 2), the direct employment is estimated at 489 person-years of employment over the construction period. This includes 314 person-years for Phase 1 and 175 person-years for Phase 2 (see **Table III.M-22**). A person-year is the equivalent of one person working full-time for one year. The direct employment includes all on-site construction jobs and also a portion of the jobs associated with soft costs (legal, architecture, and engineering). For Phase 1, this equates to an average of 157 full-time equivalent (FTE) direct jobs each year during the two (2)-year construction period and 88 FTE direct jobs each year during the estimated two (2)-year construction period for Phase 2.

As discussed above, when new direct jobs are introduced to an area, those jobs lead to the creation of additional indirect and induced jobs. Indirect employment resulting from construction expenditures will include jobs in industries that provide goods and services to the contractors, and induced employment will include jobs generated by new economic demand from households spending salaries earned through the direct and indirect jobs. Based on the IMPLAN model's economic multipliers for Orange County industrial sectors, construction of Phase 1 and Phase 2 would support an additional 200 indirect and induced person-years of employment within Orange County, bringing the total number of jobs from construction activities to 689 person-years. In the larger New York State economy, the model estimates that construction of Phase 1 and Phase 2 would support an additional 56 person-years of indirect and induced employment, bringing the total direct and generated jobs from construction to 745 person-years of employment within New York State. Over the estimated 2-year construction period of Phase 1, construction would generate an average of 238

FTE direct, indirect, and induced jobs in New York State, including 221 FTEs in Orange County. Over the 2-year construction period for Phase 2, construction would generate an average of 135 direct, indirect, and induced FTEs in New York State, including 124 FTEs in Orange County.

Construction Period Benefits – Employee Compensation

The direct employee compensation during the construction period of Phase 1 and Phase 2 is estimated at $29.75 million, including $19.01 million for Phase 1 and $10.74 million for Phase 2 (see **Table III.M-22**). Total direct, indirect, and induced employee compensation resulting in Orange County from construction of Phase 1 and Phase 2 is estimated at $40.23 million. In the broader New York State economy, total direct, indirect, and induced employee compensation from construction of Phase 1 and Phase 2 is estimated at $45.09 million.

Table III.M-22
Employment and Economic Benefits from Construction
Phase 1 and Phase 2 of Amy's Kitchen Goshen Food Manufacturing Facility Only

	Portion in Orange County			Total in New York State		
Employment (person-years)[1]	Phase 1	Phase 2	Total	Phase 1	Phase 2	Total
Direct (on-site)	314	175	489	314	175	489
Indirect (jobs in support industries)	45	26	71	60	35	95
Induced (jobs from household spending)	82	47	129	102	59	161
Total	441	248	689	476	269	745
Employee Compensation (Millions of 2015 dollars)						
Direct (on-site)	$19.01	$10.74	$29.75	$19.01	$10.74	$29.75
Indirect (earnings in support industries)	$2.53	$1.49	$4.02	$3.88	$2.27	$6.15
Induced (from household spending)	$4.10	$2.36	$6.46	$5.84	$3.35	$9.19
Total	$25.64	$14.59	$40.23	$28.73	$16.36	$45.09
Total Economic Output or Demand[2] (Millions of 2015 dollars)						
Direct (on-site)	$47.87	$27.00	$74.87	$47.87	$27.00	$74.87
Indirect (output from support industries)	$9.56	$5.59	$15.15	$13.66	$7.92	$21.58
Induced (from household spending)	$16.49	$9.49	$25.98	$21.63	$12.44	$34.07
Total	$73.92	$42.08	$116.00	$83.16	$47.36	$130.52

Fiscal[3]

Tax Revenues, Exclusive if Real Estate (Constant 2015 dollars)			
	Phase 1	Phase 2	Total
Tax Revenues From Direct Activity	$1,060,200	$603,600	$1,663,800
Tax Revenues From Indirect and Induced Activity	$1,193,900	$679,600	$1,873,500
Total	$2,254,100	$1,283,200	$3,537,300

Notes:
1 A person-year is the equivalent of one person working full-time for a year.
2 The total effect on the local economy, including the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.
3 Tax revenues assume that the project will be exempt from paying sales taxes on materials purchased for construction. The figures include personal income taxes, corporate and business taxes, and numerous other taxes on direct, indirect, and induced activity.
4 Numbers may not add to totals due to rounding.
Sources: The characteristics and construction cost of the development; IMPLAN economic modeling system; and AKRF, Inc.

Construction Period Benefits – Total Effect on the Local Economy

Based on the IMPLAN models for Orange County and New York State, the total economic activity ("output") that would result from construction of Phase 1 and Phase 2 is estimated at $130.52 million in New York State, of which $116.00 million would occur in Orange County

(see **Table III.M-22**). Output reflects the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.

Construction Period Benefits – Fiscal Effects

The construction activity would have associated with it tax revenues for Orange County, MTA, and New York State. It is assumed that the Project would be exempt from paying sales taxes on materials purchased for construction due to a payment-in-lieu-of-taxes (PILOT) agreement with the Orange County Industrial Development Agency. However, there would be substantial tax revenues from other sources. In total, the construction is estimated to generate approximately $3.54 million in tax revenues for the County, MTA, and New York State (including $2.25 million for Phase 1 and $1.28 million for Phase 2). This includes personal income taxes, corporate and business taxes, sales tax on indirect and induced activity, and numerous related taxes on direct and secondary economic activity.

Science of the Soul Only - Construction-Period Benefits

The SoS Conference Center would comprise a 200,000 square-foot open-air shade structure, an 80,000 square-foot Family Area building, a 33,000 square-foot Central building, four (4) 24,000 square-foot toilet buildings, two (2) caretaker residences, and one (1) guesthouse. Construction is expected to cost $2.28 million, would be built by mostly unskilled volunteer labor assisting construction professionals. According to SoS, construction would require approximately 25 to 50 workers during peak construction periods during the week, with more on weekends.

Construction-Period Benefits – Employment and Economic Effects

As described above, the SoS Conference Center would cost approximately $2.28 million to construct. Since it is expected that the Conference Center would be built by mostly unskilled volunteer labor, the IMPLAN model was adjusted. Therefore, **Table III.M-23** shows no direct employment or employee compensation. Based on the IMPLAN model's economic multipliers for Orange County industry sectors, construction of the SoS facility would generate five person-years of indirect and induced employment. Indirect and induced employee compensation resulting in Orange County from construction of the SoS Conference Center is estimated at $290,300 in New York State, including $249,800 in Orange County. The total economic activity that would result from construction of the SoS facility is estimated at about $3.86 million in New York State, of which $3.75 million would occur in Orange County (see **Table III.M-23**).

Construction-Period Benefits – Fiscal Effects

In addition to the above economic activity, the construction of the SoS Conference Center would provide minor tax revenues.

Infrastructure Only - Construction Period Benefits

The Proposed Project would also require approximately $10.0 million of a variety of roadway and other infrastructure improvements. The following section presents the economic activity that would be generated from these infrastructure improvements. For the purposes of this analysis, it was assumed that $5.0 million would be spent on roadway improvements and $5.0 million would be spent on other infrastructure improvements, such as wastewater and water supply improvements.

Table III.M-23
Economic Benefits During Construction
Science of the Soul only (excluding Amy's Kitchen)

	Portion in Orange County	Total in New York State
Employment (Person-years)[1]		
Direct	0	0
Indirect (jobs in support industries)	4	4
Induced (jobs from household spending)	1	1
Total	5	5
Employee Compensation (2015 dollars)		
Direct	$0	$0
Indirect (earnings in support industries)	$209,100	$230,300
Induced (earnings from household spending)	$40,700	$60,000
Total	$249,800	$290,300
Total Effect on the Local Economy[2] (2015 dollars)		
Direct	$2,800,000	$2,800,000
Indirect (output from support industries)	$781,900	$841,800
Induced (output from household spending)	$163,900	$221,200
Total	$3,745,800	$3,863,000

Notes:
1 A person-year is the equivalent of one person working full-time for a year.
2 The economic output or demand for local industries derived from the direct construction spending. IMPLAN Sector 57, Construction of new commercial structures, including farm structures sectors was used to model the economic effects of project construction. This was modeled by entering the hard construction costs into the industry spending pattern analysis; no payroll or employment was modeled as mostly unskilled volunteer labor would be used to construct the facility.

Sources: The characteristics and construction cost of the development; IMPLAN economic modeling system; and AKRF, Inc.

Construction Period Benefits – Employment

As a result of $10.0 million of infrastructure costs, the direct employment is estimated at 43 person-years of employment (see **Table III.M-24**). In addition, the infrastructure improvements would support an additional 29 indirect and induced person-years of employment within Orange County, bringing the total number of jobs to 72 person-years. In the larger New York State economy, the model estimates that $10.0 million of infrastructure costs would support an additional 7 person-years of indirect and induced employment, bringing the total direct and generated jobs to 79 person-years of employment within New York State.

Construction Period Benefits – Employee Compensation

The direct employee compensation that would result from $10.0 of infrastructure costs is estimated at $2.55 million (see **Table III.M-24**). Total direct, indirect, and induced employee compensation resulting in Orange County from the infrastructure costs is estimated at $4.00 million. In the broader New York State economy, total direct, indirect, and induced employee compensation from the infrastructure costs is estimated at $4.60 million.

Construction Period Benefits – Total Effect on the Local Economy

Based on the IMPLAN models for Orange County and New York State, the total economic activity ("output") associated with $10.0 million of infrastructure costs is estimated at $17.54 million in New York State, of which $15.65 million would occur in Orange County (see **Table III.M-24**). Output reflects the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.

Table III.M-24
Economic Benefits During Construction
Infrastructure Only

	Portion in Orange County	Total in New York State
Employment (Person-years)[1]		
Direct	43	43
Indirect (jobs in support industries)	16	19
Induced (jobs from household spending)	13	17
Total	72	79
Employee Compensation (millions of 2015 dollars)		
Direct	$2.55	$2.55
Indirect (earnings in support industries)	$0.80	$1.10
Induced (earnings from household spending)	$0.65	$0.95
Total	$4.00	$4.60
Total Effect on the Local Economy[2] (millions of 2015 dollars)		
Direct	$10.00	$10.00
Indirect (output from support industries)	$3.04	$4.05
Induced (output from household spending)	$2.61	$3.49
Total	$15.65	$17.54
Fiscal[(3)]		
Tax Revenues, Exclusive if Real Estate (Constant 2015 dollars)		
Tax Revenues From Direct Activity	$179,000	
Tax Revenues From Indirect and Induced Activity	$160,100	
Total	$339,100	

Notes:
1 A person-year is the equivalent of one person working full-time for a year.
2 The economic output or demand for local industries derived from the direct construction spending. IMPLAN Sector 56, Construction of new highways and streets and IMPLAN Sector 58, Construction of other new nonresidential structures were used to model the economic effects of the infrastructure construction. This was modeled by entering the infrastructure costs into the industry spending pattern analysis.
3 Tax revenues assume that the project will be exempt from paying sales taxes on materials purchased for construction. The figures include personal income taxes, corporate and business taxes, and numerous other taxes on direct, indirect, and induced activity.
4 Numbers may not add to totals due to rounding.

Sources: The characteristics and construction cost of the development; IMPLAN economic modeling system; and AKRF, Inc.

Construction Period Benefits – Fiscal Effects

Like the expenditures for the other construction activity, the $10.0 million of infrastructure expenditures would have associated with it tax revenues for Orange County, MTA, and New York State. Although the infrastructure construction is assumed to be exempt from paying sales taxes on construction material, there would be marginal tax revenues from other sources. In total, the infrastructure construction is estimated to generate approximately $339,100 in tax revenues for the County, MTA, and New York State. This includes personal income taxes, corporate and business taxes, sales tax on indirect and induced activity, and numerous related taxes on direct and secondary economic activity.

RECURRING ECONOMIC ACTIVITY GENERATED BY ANNUAL OPERATIONS

The following section presents the recurring economic activity generated from each component of the Proposed Project, including: 1) annual operations of the Amy's Kitchen Goshen food

manufacturing facility, 2) annual operations of the Science of the Soul Conference Center, and 3) annual visitation to the Science of the Soul Conference Center.

Amy's Kitchen - Recurring Benefits from Annual Operations

Amy's Kitchen would create significant employment opportunities in Goshen by employing 459 FTE employees in Year 3 and 681 FTE employees in Year 5. By Year 5, Amy's Kitchen would provide the second-highest employment of any Goshen firm behind Elant, Inc., a provider of senior health and housing solutions that has 1,200 employees.[7] The total effect of the annual operation of the Amy's Kitchen food manufacturing facility has been estimated for Orange County and New York State using the IMPLAN model and operating data that is presented in **Table III.M-25**. As shown in **Table III.M-25,** the payroll and non-payroll operating costs are anticipated to be $26.68 million in Year 3 and $41.05 million in payroll and Year 5. Indirect and induced effects that would result from operations of Amy's Kitchen food manufacturing facility are presented in **Table III.M-26**.

Table III.M-25
Annual Direct Operating Assumptions for
Amy's Kitchen Food Manufacturing Facility (Years 3 and 5)

	Annual Operating Assumptions	
	Year 3	**Year 5 (and Thereafter)**
Direct Full-Time Equivalent Employees	459	681
Direct Employee Compensation(1)	$15.17 million	$22.51 million
Non-Payroll Operating Costs	$11.51 million	$18.54 million
Total Operating Costs	$26.68 million	$41.05 million

Notes:
1 Wages were provided by Amy's Kitchen and converted to employee compensation using IMPLAN conversion factors, which are based on Bureau of Economic Analysis data.
Sources: Amy's Kitchen, IMPLAN, and AKRF, Inc.

Recurring Benefits from Annual Operations – Employment

Direct employment of Amy's Kitchen is anticipated at approximately 459 permanent, FTE jobs on-site in Year 3 and 681 FTE in Year 5. **Table III.M-26** summarizes the projected permanent employment and recurring economic benefits from the annual operation of the development.

Total employment resulting from the operation of the Amy's Kitchen food manufacturing facility would include jobs in business establishments providing goods and services to the facility (indirect jobs), and jobs resulting from new household spending (induced jobs). It is the company's goal to source ingredients locally, where possible. Currently, 67 percent of the ingredients in Amy's Kitchen products are from Oregon and California, the states where existing Amy's Kitchen facilities are located.[8] However, relative to those states, the existing supply of organic products is limited in Orange County and New York State more broadly. In 2012, sales for organic products in Orange County totaled $1.2 million, representing 1.2 percent of total agricultural products sold in the county.[9] While there is limited organic supply in Orange County

[7] Based on the Directory of Major Employers in Orange County, New York, published by Orange County Partnership.

[8] Based on minutes from the January 15, 2014 Orange County Industrial Development Agency meeting.

[9] United States Department of Agriculture, 2012 Census of Agriculture

at present, it is expected that as demand from Amy's Kitchen grows, more organic food will be grown within the county. Further, it is expected that Amy's Kitchen would invest in local agriculture and would work with local farmers to help them grow and provide the ingredients for the facility.[10]

Table III.M-26
Employment and Economic Benefits from Annual Operations of Amy's Kitchen (without SoS)
In Year 3 and Year 5 (and Thereafter)

	Portion in Orange County		Total in New York State	
Employment (permanent full-time equivalent jobs)	**Year 3**	**Year 5 (and Thereafter)**	**Year 3**	**Year 5 (and Thereafter)**
Direct (on-site)	459	681	459	681
Indirect (jobs in support industries)	11	20	12	21
Induced (jobs from household spending)	71	106	86	129
Total	**541**	**807**	**557**	**831**
Employee Compensation (Millions of 2015 dollars)				
Direct (on-site)	$15.17	$22.51	$15.17	$22.51
Indirect (earnings in support industries)	$0.58	$0.97	$0.64	$1.06
Induced (earnings from household spending)	$2.67	$3.98	$3.65	$5.45
Total	**$18.42**	**$27.46**	**$19.46**	**$29.03**
Total Economic Output or Demand[2] (Millions of 2015 dollars)				
Direct (on-site)	$115.02	$170.64	$115.02	$170.64
Indirect (output from support industries)	$2.34	$3.98	$2.50	$4.25
Induced (output from household spending)	$10.74	$16.05	$13.64	$20.38
Total	**$128.10**	**$190.67**	**$131.16**	**$195.27**

Fiscal[3]

Tax Revenues, Exclusive if Real Estate (Constant 2015 dollars)		
	Year 3	**Year 5 (and Thereafter)**
Tax Revenues From Direct Activity	$725,300	$1,074,500
Tax Revenues From Indirect and Induced Activity	$674,100	$996,000
Total	$1,399,400	$2,070,500

Notes:
1 The total effect on the local economy, including the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.
2 Taxes include sales tax, personal income taxes, corporate and business taxes, and numerous other taxes on direct and secondary expenditures.
3 Numbers may not add to totals due to rounding.
Sources: The characteristics of the proposed development; the IMPLAN economic modeling system; tax rates by applicable jurisdiction; and AKRF, Inc.

For modelling purposes, the IMPLAN model was conservatively adjusted in Year 3 to reflect an initial condition in which none of the fruits and vegetables utilized by the new Amy's Kitchen facility are purchased in Orange County. Based on this conservative assumption, the

[10] Based on minutes from the January 15, 2014 Orange County Industrial Development Agency meeting.

development in Year 3 would generate 82 indirect and induced jobs, bringing the total number of direct, indirect, and induced jobs from Year 3 annual operations to 541 FTE jobs in Orange County (see **Table III.M-26**). In the broader New York State economy, total employment from Year 3 operations is estimated at 557 FTE jobs.

In Year 5, it was assumed that 40 percent of vegetables and 10 percent of fruit[11] that would be utilized by the new Amy's Kitchen facility would be purchased in Orange County. In Year 5, the Proposed Project would generate 126 indirect and induced jobs, bringing the total number of direct, indirect, and induced jobs from Year 5 operations to 807 FTE jobs within Orange County (see **Table III.M-26**). In the broader New York State economy, total employment from Year 5 operations is estimated at 831 FTE jobs.

Recurring Benefits from Annual Operations – Employee Compensation

Direct employee compensation from the Year 3 operations is estimated at $15.17 million (see **Table III.M-26)**. Total direct, indirect, and induced employee compensation resulting in Orange County from Year 3 operations is estimated at $18.42 million. In the broader New York State economy, total direct, indirect, and induced employee compensation from Year 3 operations is estimated at $19.46 million.

In Year 5 and thereafter, direct employee compensation from operations is estimated at $22.51 million (see **Table III.M-26)**. Total direct, indirect, and induced employee compensation resulting in Orange County from Year 5 operations is estimated at $27.46 million. In the broader New York State economy, total direct, indirect, and induced employee compensation from Year 5 operations is estimated at $29.03 million.

Recurring Benefits from Annual Operations – Total Effect on the Local Economy

The direct effect on the local economy from the annual operation of the Proposed Project, measured as economic output or demand, is estimated at approximately $115.02 million in Year 3 and $170.64 million in Year 5 (see **Table III.M-26**). Total output in Year 3 would be: $131.16 million in New York State, including $128.10 million in Orange County. The total economic activity that would result from the Year 5 operations is estimated at $195.27 million in New York State, including $190.67 million in Orange County.

Recurring Benefits from Annual Operations – Fiscal Effects

The economic activity would have associated with it non-real-estate tax revenues for Orange County, MTA, and New York State. These tax revenues are estimated at $1.40 million in Year 3 and $2.07 million in Year 5.

Science of the Soul Only - Recurring Benefits from Annual Operations

Operations of SoS would be handled mainly by volunteers. It is expected that event-related staff retained include off-duty policemen for traffic and security with total payroll of approximately $10,000. Based on Quarterly Census of Employment and Wages, the 2014 average annual pay is $12,853 for NAICS sector 9221, justice, public order, and safety in Orange County. Therefore, it is assumed that the $10,000 payroll corresponds with approximately one job. Annual operating expenses for the Conference Center are estimated at $125,000, which is based on the expenses of the Science of the Soul facility in Petaluma, California.

[11] This was the maximum value in the model. It was not adjusted.

Recurring Benefits from Annual Operations – Employment and Economic Effects

Based on the IMPLAN model's economic multipliers for Orange County industrial sectors, the SoS Conference Center would support two jobs in New York State. In addition, SoS would provide volunteer opportunities to staff the National and Regional Conferences. Direct, indirect, and induced employee compensation is estimated at $43,000 in New York State, of which $33,000 would be in Orange County. The direct effect on the local economy from the SoS Conference Center is estimated at approximately $168,000. Based on the IMPLAN models for Orange County and New York State, the total economic activity that would result from operation of the proposed Conference Center is estimated at $346,000 annually in New York State. Of that amount, $321,000 would occur in Orange County.

Recurring Benefits from Annual Operations – Fiscal Effects

The recurring economic activity is estimated to provide non-real-estate tax revenues estimated at $33,800 annually.

Recurring Benefits from Annual Visitation

In addition to construction and operational effects described above, visitors to the SoS Conference Center would have an economic effect on local businesses. Visitors would stay overnight in area hotels, eat meals in neighborhood restaurants, and shop in neighborhood stores, thereby supporting the local and regional economies and generating sales tax revenues.

For the three (3)-day National Conference, it is expected that there would be 12,000 attendees. It is assumed that 70 percent of attendees would stay in hotels (or 8,400 attendees). On average, it is assumed that hotel rooms would be occupied by two people (or 4,200 rooms) and that guests would stay for 3.5 nights for a total of 14,700 hotel nights. In addition, it is assumed that 600 volunteers would be needed to work at the National Conference. Each hotel room would be occupied by two people for four nights for a total of 1,200 hotel nights. Assuming a $125 room rate, guests and volunteers would spend $1,987,500 at area hotels. It is also assumed that each of the 12,000 attendees would spend $75 (or a total of $900,000) on items such as meals, fuel, and taxis (see **Table III.M-27**).[12]

Table III.M-27
Assumptions for Visitor Spending

	Visitor Spending Assumptions	
	National Special Event	**Regional Special Event**
Lodging[1]	$1,987,500	$75,000
Meals	$468,950	$78,160
Fuel	$125,530	$20,920
Taxis	$180,000	$30,000
Total	$2,761,980	$204,080
Notes:	Visitor expenditure estimates were provided by Science of the Soul. Assumed only 50% of spending on fuel was spent in Orange County.	

For the Regional Conference, it is expected that there would be up to 2,000 attendees. It is assumed that 50 percent of guests would stay in hotels (or 1,000 attendees). On average, it is

[12] Visitor spending estimates were provided by the Applicant. Distribution of spending across taxis, meals, and gas was based on data from Travel Industry Association of America's "Expenditure Patterns of Travelers in the US, 2002 Edition"

assumed that hotel rooms would be occupied by two people (or 500 rooms) and that guests would stay for one night. In addition, it is assumed that 100 volunteers would be needed to work at the Regional Conference. Each hotel room would be occupied by two volunteers for two nights for a total of 100 hotel nights. Assuming a $125 room rate, guests and volunteers would spend $75,000 at area hotels. It was also assumed that each of the 2,000 attendees would spend $75 (or a total of $150,000) on items such as meals, fuel, and taxis (see **Table III.M-27**).

Recurring Benefits from Annual Visitation - Employment

Based on the estimated visitor spending, assuming that the specified expenditures take place at stores in Orange County, the direct employment supported by expenditures of SoS visitors is estimated at 27 permanent FTEs in Orange County. **Table III.M-28** summarizes the projected permanent employment and annual economic benefits generated from SoS visitor expenditures.

Table III.M-28
Employment and Economic Benefits from Science of the Soul
Visitor Spending (Year 5 and Thereafter)

	Portion in Orange County			Total in New York State		
	National Program	Regional Event	Total	National Program	Regional Event	Total
Employment (permanent full-time equivalent jobs)						
Direct	25	2	27	25	2	27
Indirect (jobs in support industries)	4	0	4	5	0	5
Induced (jobs from household spending)	4	0	4	5	0	5
Total	33	2	35	35	2	37
Employee Compensation (2015 dollars)						
Direct	$668,100	$56,300	$724,400	$668,100	$56,300	$724,400
Indirect (earnings in support industries)	$146,700	$10,000	$156,700	$221,000	$15,200	$236,200
Induced (earnings from household spending)	$157,200	$12,800	$170,000	$230,300	$18,500	$248,800
Total	$972,000	$79,100	$1,051,100	$1,119,400	$90,000	$1,209,400
Total Economic Output or Demand[1] (2015 dollars)						
Direct	$2,650,000	$185,400	$2,835,400	$2,650,000	$185,400	$2,835,400
Indirect (output from support industries)	$641,500	$45,300	$686,800	$853,900	$60,100	$914,000
Induced (output from household spending)	$633,400	$51,500	$684,900	$850,500	$68,400	$918,900
Total	$3,924,900	$282,200	$4,207,100	$4,354,400	$313,900	$4,668,300
Fiscal						
Tax Revenues, Exclusive of Real Estate[2] (Constant 2015 dollars)						
Tax Revenues From Direct Activity	$342,300					
Tax Revenues From Indirect and Induced Activity	$54,200					
Total	$396,500					

Notes:
1 The total effect on the local economy, including the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.
2 Taxes include sales tax, personal income taxes, corporate and business taxes, and numerous other taxes on direct and secondary expenditures.
3 Numbers may not add to totals due to rounding.
Sources: The characteristics of the proposed development; the IMPLAN economic modeling system; tax rates by applicable jurisdiction; and AKRF, Inc.

Total employment would reflect inter-industry purchases as businesses where visitors spend money purchase goods and services from other businesses (indirect jobs), and jobs resulting from new

household spending (induced jobs). Based on the IMPLAN model's economic multipliers for Orange County industrial sectors, SoS visitor spending would support an additional eight (8) jobs in Orange County, bringing the total number of direct, indirect, and induced jobs associated with visitor spending to 35 jobs in Orange County. In the broader New York State economy, total employment supported by SoS visitor expenditures is estimated at 37 jobs.

Recurring Benefits from Annual Visitation – Employee Compensation

Employee compensation for employees working in local businesses frequented by SoS visitors is estimated to be $724,400 annually (see **Table III.M-28**). Total direct, indirect, and induced employee compensation in Orange County is estimated at $1.05 million annually. Total direct, indirect, and induced employee compensation in New York State is estimated at $1.21 million annually.

Recurring Benefits from Annual Visitation – Total Effect on the Local Economy

The direct effect on the local economy from the local expenditures of visitors, measured as economic output or demand, is estimated at approximately $2.84 million annually. Based on the IMPLAN model, the total economic activity, supported by expenditures from SoS visitor spending is estimated at $4.21 million annually in Orange County and $4.67 million in New York State (see **Table III.M-28**).

Recurring Benefits from Annual Visitation – Fiscal Effects

The visitor spending is estimated to provide non-real estate tax revenues estimated at $396,500 annually. The largest portion would come from the Orange County hotel occupancy tax, and from County, MTA, and state sales tax.

E. PROPOSED MITIGATION

The Proposed Project would not result in any unavoidable adverse fiscal impacts, or any significant adverse fiscal impacts. As such, mitigation measures are not required. The construction and operations of the Proposed Project would not introduce substantial new costs to the Town of Goshen in the form of demands on municipal services. During the annual National Conference, SoS would require additional police, fire, and/or emergency service assistance, for which the various agencies would be compensated by SoS. In general, it is estimated that annual economic activity from both the Amy's Kitchen facility and SoS Conference Center would far outweigh any marginal cost to the Town of Goshen for additional municipal services. Upon the completion of the PILOT program, full property taxes would be paid by Amy's Kitchen. ✷

A. INTRODUCTION

This chapter analyzes the potential visual impacts of the Proposed Project from vantage points identified in the adopted Scoping Document. Vantage points were selected as points along public roadways or along the existing and proposed Heritage Trail where views of the Project Site were possible.

The potential visual impacts of the Proposed Project were assessed based on New York State Department of Environmental Conservation (NYSDEC) Program Policy DEP-00-2, "Assessing and Mitigating Visual Impacts." While the Proposed Project is not subject to NYSDEC review for visual impact, and DEP-00-2 does not replace local discretion for determination of significance under SEQRA, the policy does provide useful guidelines for assessing potential visual impact of the Proposed Project.

While some visibility of the Proposed Project is anticipated from the selected vantage points, this visibility would not result in a significant adverse visual impact.

B. METHODOLOGY

NYSDEC Program Policy DEP-00-2 indicates that a project may have an impact only if it is within the viewshed of a state- or locally-designated historic or scenic resource. This differentiates between projects that are simply visible from public rights-of-way or private lands and those projects that are visible from designated resources. Once it has been determined that a project is visible within the viewshed of a designated resource, one must then make the determination of how significant the visibility is within the overall context of the viewshed. Here, DEP-00-2 provides guidance with respect to the definition of "visual impact" and "aesthetic impact."

A "visual impact" occurs when "the mitigating effects of perspective do not reduce the visibility of an object to insignificant levels. Beauty plays no role in this concept" (DEP-00-2, p. 10). The effects of perspective are important to understand in this context. While an object, such as the Proposed Project, may be visible over a long distance, atmospheric perspective, which DEP-00-2 describes as the "reduction in intensity of colors and the contrast between light and dark as the distance of the objects from the observer increases" and which is a product of the natural particles within the atmosphere that scatter light, serves to minimize the significance of the building in the overall viewshed. A second factor affecting visual impact is the overall character of the surrounding landscape: are there similar structures within the viewshed that contribute to the overall character of the landscape or is the visible landscape entirely undeveloped. In this case, views of the Project Site must consider visibility of other similarly sized structures both on and off the Project Site.

DEP-00-2 provides further guidance with respect to the definition of an "aesthetic impact":

Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Mere visibility, even startling visibility of a project proposal, should not be a threshold for decision making. Instead a project, by virtue of its visibility, must clearly interfere with or reduce the public's enjoyment and/or appreciation of the appearance of an inventoried resource. (DEP-00-2, p. 9).

Thus, while a project may be visible within a viewshed, mere visibility is not a threshold of significance. The significance of the visibility is dependent on several factors: presence of any designated historic or scenic resources within the viewshed of the project, distance, general characteristics of the surrounding landscape, and the extent to which the visibility of the project interferes with the public's enjoyment or appreciation of the designated resource. A significant adverse visual impact would only occur when the mitigating effects of design, distance, and intervening topography and vegetation do not minimize the visibility of an object and the visibility significantly detracts from the public's enjoyment of a resource.

Within the study area, the Heritage Trail, Strong Farm, and residence at 34 Owens Road are considered designated (or "sensitive") receptors for potential visual impacts according to the NYSDEC Program Policy methodology. The Heritage Trail is a County-designated open space and recreation resource that the general public uses for pleasure and from which the public may expect to have scenic views (although there are portions of the Heritage Trail that currently pass through areas that are developed with residential and commercial land uses and that lack scenic qualities). The Strong Farm (located at 212 Cheechunk Road) is a State/National Register (S/NR) of Historic Places listed resource that the public may interpret as being part of a rural landscape. The private residence at 34 Owens Road has been determined to be potentially S/NR eligible due to the remaining integrity of design characteristic of early 20th century residential architecture. Both the Strong Farm property and the 34 Owens Road residence are located within the Town of Goshen Scenic Road Corridor Overlay District.

C. EXISTING CONDITIONS

The Town of Goshen Planning Board identified 23 "Vantage Points" surrounding the Project Site from which to conduct a visual assessment (see **Figure III.N-1**). These Vantage Points were identified based on the Town's Scenic Road Corridor Overlay District, Comprehensive Plan, and DEP-00-2 criteria.

Photographs depicting the existing viewshed from each Vantage Point in a direction that characterize the viewshed or that may provide views of the Proposed Project are provided in **Figures III.N-2** through **III.N-25**. In certain locations, multiple photographs are provided to represent views in different directions that the public may experience, such as along the Heritage Trail.

This section describes the existing *viewshed* from each of the Vantage Points. For a description of existing conditions on each of the Project Site properties, please see Chapter II, "Project Description." **Figures III.N-2** through **III.N-25** also include photo-simulations showing the Proposed Project from the same Vantage Point, descriptions of the photo-simulations, and how they were created, are provided in section "E. Potential Impacts of the Proposed Project" below.

VIEWS FROM ECHO LAKE ROAD (VANTAGE POINTS 1 TO 3)

Echo Lake Road follows a roughly northeasterly direction from its intersections with County Route 50 and McVeigh Road. As it crosses Echo Lake, Echo Lake Road turns to the southeast

before crossing the Wallkill River and then intersecting with Hartley Road and Cheechunk Road.

The existing view from **Vantage Point 1** east along Echo Lake Road from its intersection with McVeigh Road is shown in **Figure III.N-2**. Between McVeigh Road and Echo Lake, the northwesterly side of Echo Lake Road contains single-family residences on wooded lots and the southeasterly side of Echo Lake Road is undeveloped and wooded. Views of the Project Site are not readily provided from the public right-of-way due to the vegetation lining the road and the northeasterly orientation of Echo Lake Road. Views of the Project Site were also evaluated from the intersection of McVeigh Road and Golf Links Road. This Vantage Point is further from the Project Site along McVeigh Road than Vantage Point 1, and only slightly higher in elevation. Therefore, views of the Project Site from this location are essentially the same as Vantage Point 1, and are dominated by the trees on the Echo Lake property.

Vantage Point 2 is located at the point of intersection of County Route 50 and the future Heritage Trail (see **Figure III.N-3**). At this location, current conditions include accessory structures and vehicles of a neighboring residential property and dense deciduous forest with some evergreen trees. There are no longer distance views toward the Project Site.

Vantage Point 3a represents views from Echo Lake Road across Echo Lake to the south and toward the northwestern portion of the Echo Lake property (see **Figure III.N-4**). Even with the open foreground created by Echo Lake and the low-lying vegetation lining Echo Lake Road, views of the Echo Lake property are limited. Even the ridgeline that divides the western-most forested portions of the Echo Lake property from the areas to be developed is not readily discernible from this location. It should also be noted that most drivers would have their vision oriented in an east-west direction along Echo Lake Road within this portion of the study area.

VIEWS FROM FUTURE HERITAGE TRAIL (VANTAGE POINTS 3B TO 6)

Several Vantage Points along the Heritage Trail corridor were selected for assessment. While Orange County Department of Parks and Recreation is currently designing improvements to the Heritage Trail west of Hartley Road to the City of Middletown, the current Heritage Trail alignment contains pole-sized deciduous trees, shrubs, and vines. Existing views from **Vantage Point 3b** includes dense deciduous vegetation and mature hardwoods (see **Figure III.N-5**).

Vantage Point 4 is located at the intersection of Echo Lake Road and the existing gated driveway to the Echo Lake property (see **Figure III.N-6**). From this location, the existing thick stands of deciduous vegetation screen views of the interior of the Echo Lake property. The higher elevation portions of the Echo Lake property are also not visible from this location.

Vantage Point 5 is located approximately 50 to 100 feet north of Vantage Point 4 where the Heritage Trail alignment crosses the existing driveway (see **Figure III.N-7**). The orientation of the driveway at this Vantage Point is similar to the orientation of the driveway at Vantage Point 4 and the existing stands of deciduous vegetation screen views of the interior of the Echo Lake property.

Vantage Points 6A and 6B show existing conditions along the Heritage Trail to the east and west, respectively, of the existing Echo Lake property driveway (see **Figure III.N-8** and **Figure III.N-9**). These photographs demonstrate the screen that is created by the deciduous trees and vines that line the Heritage Trail corridor.

VIEWS FROM ROADS NORTH OF THE PROJECT SITE (VANTAGE POINTS 7 TO 9)

Vantage Point 7 is located on Echo Lake Road just east of the Wallkill River (see **Figure III.N-10**). From the bridge over the Wallkill River looking slightly southeast, the Lipoff property is visible on the north side of Echo Lake Road. The Lipoff property is characterized by thick stands of deciduous trees and vines. The interior of the Lipoff property is not easily discerned from the roadway.

Vantage Point 8 represents views toward the Ver Hage property from Echo Lake Road (see **Figure III.N-11**). In this vicinity the vegetation is dense, but notably lower than along other portions of Echo Lake Road within the right-of-way of the existing high-tension electrical transmission lines. South of the electric transmission lines, taller deciduous vegetation returns along the Heritage Trail corridor, which is set back from Echo Lake Road. Even with the lower height of vegetation along Echo Lake Road, views of the interior of the Ver Hage property are not discernible.

Vantage Points 9A and 9B represent views along Echo Lake Road and Hartley Road on either side of the intersection with Cheechunk Road (see **Figure III.N-12** and **Figure III.N-13**). From Vantage Point 9A, which is looking slightly southeast along Hartley Road, pylons carrying the high-tension electrical transmission lines as well as shorter utility poles that connect into the O&R substation to the north characterize views within this rural landscape that include elements of an industrial nature. This view is similar from Vantage Point 9B which looks west along Echo Lake Road from its intersection with Hartley Road and Cheechunk Road. Deeper views into the Project Site are not possible and the predominant character of the viewshed is a roadway lined by deciduous vegetation and transmission lines.

VIEWS FROM OWENS ROAD (VANTAGE POINTS 10 TO 13)

Owens Road is oriented in a roughly northeast direction from its intersection with Cheechunk Road. If carried further south into the Ver Hage property, this axis of orientation would roughly bisect the Ver Hage property. Thus, drivers and passengers in vehicles traveling south on Owens Road, which is at a higher elevation than the Ver Hage property, could possibly have views into the interior portions of the Ver Hage property or the higher elevation portions of the Echo Lake property. In winter, the higher elevations of the Al Turi landfill (south of the Ver Hage property) can be seen above intervening trees from a short section of Owens Road as the road crests a hill.

Vantage Point 10 is a view of the Strong Farm buildings from Owens Road (see **Figure III.N-14**). At this elevation, views looking in a south-southwest direction towards the Project Site are primarily of the intersection of Owens Road and Cheechunk Road and the O&R substation.

Vantage Point 11a shows views from further north on Owens Road across the upper fields of the Strong Farm looking in a southwesterly direction (see **Figure III.N-15**). Similar to Vantage Points 12 and 13 described below, this view is characteristic of the rural character of the Owens Road corridor and the longer-distance views that are possible in this area.

Vantage Point 11b is representative of views from Owens Road in the vicinity of the Strong Farm property looking south-southwest toward the Project Site (see **Figure III.N-16**). From Vantage Point 11b, the upper or eastern fields of Strong Farm are clear of taller vegetation and generally slope away from Owens Road, providing for longer-distance views across the Wallkill River valley. This viewshed containing open views of farm buildings within an open valley is characteristic of the scenic qualities of this area that presumably led the Town of Goshen to

designate Owens Road as part of the Town's Scenic Road Corridor Overlay District and that may contribute to the S/NR listing of the Strong Farm. The main farmhouse on Strong Farm is located further south on Owens Road near the intersection of Cheechunk Road and at a significantly lower elevation than Vantage Points 11b and 10. Views toward the Project Site from the main farmhouse are dominated by the tall vegetation that lines Owens Road and Cheechunk Road, as well as the existing O&R substation south of Cheechunk Road.

Vantage Point 12 and **Vantage Point 13** show views from further north on Owens Road across the upper fields of the Strong Farm looking in a southwesterly direction (see **Figure III.N-17** and **Figure III.N-18**). These views are characteristic of the rural character of the Owens Road corridor and the longer-distance views that are possible in this area. Vantage Point 12 is also adjacent to 34 Owens Road, the private residence that may be considered S/NR eligible. Thus, this Vantage Point represents a potentially sensitive receptor for visual impacts. Of particular note in Photo 12 are the two (2) water storage tanks for the Mid-Hudson Psychiatric Center (MHPC) that are just visible above the ridgeline to the far left of the view. These water storage tanks are located at the northern end of the MHPC campus immediately adjacent to the property line of the Echo Lake property and along the same ridgeline that defines the Echo Lake property high-point. The portion of the Echo Lake property where the SoS Conference Center is proposed would be at a lower elevation than the water storage tanks visible in this photograph and would likely be screened by the existing vegetation at the southern end of the Strong Farm fields in the foreground.

VIEWS OF THE VER HAGE PROPERTY (VANTAGE POINTS 14 TO 17)

The Ver Hage property abuts Hartley Road and is partially visible from the Heritage Trail. **Vantage Point 14** shows views toward the interior of the Ver Hage property looking southwest from Hartley Road where Cheechunk Creek crosses under the road (see **Figure III.N-19**). The open view was made possible when larger trees (similar to those in the background) were removed from the banks of the Cheechunk Creek to divert the flow of the Cheechunk Creek into an excavated channel that ran northwest from this point. The eastern end of the excavated channel has since been refilled to return the Cheechunk Creek to its natural channel. The new embankment has been seeded with grasses, but is largely denuded of vegetation making views toward the interior of the Ver Hage property possible. Despite the lack of vegetation in the foreground, the thick stands of deciduous vegetation within the oxbow of the Cheechunk Creek restrict views of the open fields on the southern portion of the Ver Hage property.

Vantage Points 15a and 15b are representative of the Heritage Trail east and west of Hartley Road, respectively (see **Figure III.N-20 and Figure III.N-21**). East of Hartley Road, the Heritage Trail is an open gravel footpath lined with grasses in a wide alignment. West of Hartley Road, the Heritage Trail is overgrown by thick vegetation.

Vantage Point 16 looks northwest from Hartley Road into the interior of the Ver Hage property in the vicinity of the proposed Warehouse Use (see **Figure III.N-22**). Here the Ver Hage property is generally open with lower grasses and shrubs characteristic of former agricultural fields. Taller deciduous trees within the Cheechunk Creek oxbow are visible in the distance. The Ver Hage property contains rolling hills and open meadows that are generally, but not always, visible from Hartley Road. In some locations, the existing grade close to Hartley Road rises from the road limiting views into the interior of the property. Views in the other direction (to the southeast) are largely of the industrial uses lining the eastern side of Hartley Road.

Vantage Point 17 looks northwest from Hartley Road into the interior of the Ver Hage property in the vicinity of the existing gated driveway at the southern end of the Ver Hage property. From this Vantage Point the open fields and hedgerows that characterize the southern portion of the Ver Hage property are clearly visible (see **Figure III.N-23**). Views in the other direction (to the southeast) are largely of the industrial uses lining the eastern side of Hartley Road.

VIEWS FROM THE SOUTH (VANTAGE POINTS 18 TO 19)

Vantage Point 18 is located on NYS Route 17M in the vicinity of the proposed access road into the Project Site (see **Figure III.N-24**). The existing viewshed from NYS Route 17M at this location is dominated by thick stands of deciduous trees, shrubs, and taller grasses. This landscape is typical of the southern portion of the Echo Lake property as it extends north from this location.

Vantage Point 19 is located at the northern end of the entry driveway into the MHPC (see **Figure III.N-25**). Views from this Vantage Point looking toward the Project Site to the northeast are dominated by existing vegetation at the periphery of the MHPC campus. From this Vantage Point the Project Site is sufficiently distant that views of the interior of the Project Site would not be possible.

D. FUTURE WITHOUT THE PROPOSED PROJECT

There are no planned land use development projects that would introduce significant changes to the viewshed surrounding the Project Site. Orange County Department of Parks and Recreation is currently designing improvements to the Heritage Trail west of Hartley Road to the City of Middletown that would introduce an extension of the multi-use bicycle/pedestrian trail. It is presumed that the portions of the Heritage Trail that abut the Project Site would be cleared of vegetation to allow the multi-use trail to be constructed; however, the deciduous trees and vines that line the Heritage Trail corridor would likely remain. Thus, while the existing views from Vantage Points 3A, 4, 6A, 6B, 8, and 15B could change, the future Heritage Trail will still be lined with taller trees, shrubs, and vines that would generally limit views into the interior portions of the Project Site. Where the future Heritage Trail alignment contains gaps in vegetation, some views into the interior portions of the Project Site might be possible.

E. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

As further described below, the proposed Amy's Kitchen manufacturing facility and Warehouse Use would be visible from Hartley Road and the Orange County Heritage Trail as it traverses the northern portion of the Ver Hage property. The SoS Conference Center buildings would be visible from the Orange County Heritage Trail as it traverses the Echo Lake property, from portions of Echo Lake Road, and from the existing driveway to the Echo Lake property from Echo Lake Road. Limited views of the SoS Conference Center roof-tops during winter months might be possible from higher elevations within the Owens Road Scenic Road Corridor Overlay District (Vantage Point 12). It is unlikely that any views of the Proposed Project would be possible from the main farmhouse at Strong Farm. With the exception of the new access road, elements of the Proposed Project would not be visible from NYS Route 17M and the majority of Echo Lake Road. While clearly visible from some locations, this visibility is not considered a visual impact according to the definitions contained in NYSDEC Program Policy DEP-00-2.

Figure III.N-1 depicts the overall layout of the Proposed Project overlain on an aerial photograph. This figure demonstrates the long distances between most Vantage Points and the prevalence of intervening vegetation and topography that would limit the visibility of the Project Site from most off-site locations.

To analyze the potential visual impacts of the Proposed Project, a computer-rendered three-dimensional model was prepared. Potential views of the Proposed Project have been simulated for key Vantage Points where the potential for visual impacts has been identified (see **Figure III.N-26**). To provide a conservative analysis, the model includes existing topography within the study area, but does not include vegetation. Therefore, potential views of the Project Site are overstated. The computer rendered model was placed within the existing conditions photograph to create the photo-simulations presented in **Figures III.N-2** through **III.N-25**.

The existing conditions photographs and computer-rendered model are intended to present an accurate depiction of the appearance of the proposed buildings suitable for general understanding of the degree and character of project visibility. However, these images are a two-dimensional representation of a three-dimensional landscape. The human eye is capable of recognizing a greater level of detail than can be illustrated in a two-dimensional image. Planning Board members and interested parties may benefit from viewing the photo-simulations in the field from any or all of the simulated Vantage Points. In this manner, observers can directly compare the level of detail visible in the base photograph or computer model with actual field observed conditions.

AMY'S KITCHEN

The Amy's Kitchen manufacturing facility would be located on the Ver Hage property. At full build-out, the proposed manufacturing facility would include a 369,000 square-foot manufacturing facility where food is prepared, packaged and frozen; a 3,000 square-foot ancillary building for on-site medical treatment of Amy's Kitchen staff; an approximately 15,000 square-foot wastewater pre-treatment building; two (2) water storage tanks[1]; and parking for approximately 642 employees, 49 visitors, and 18 tractor-trailers. Approximately 20 to 30 loading bays would also be provided. **Figure III.N-27** shows the three-dimensional computer-rendered model overlain on a bird's eye aerial photograph. As shown in these renderings, the Amy's Kitchen manufacturing facility is designed as an unadorned industrial building. As currently proposed, the building includes gray and green tones, which are not exclusively earth toned.

The proposed manufacturing facility would be visible from Hartley Road directly adjacent to the Project Site, and south of Cheechunk Creek. The proposed manufacturing facility would be oriented with the parking area near the interior of the site, and the narrowest portion of the building facing Hartley Road. As such, motorists along Hartley Road would not have expansive views of the proposed facility as they travel south to north. Motorists traveling from north to south would likely have broader views of the proposed manufacturing facility (see **Figures III.N-22, III.N-23, III.N-28, and III.N-29**).

[1] Depending on the final design of the water supply system and the water pressure provided to the Project Site, these two (2) water storage tanks may not be required for firefighting or domestic supply purposes.

The proposed truck loading bays on the south side of the manufacturing facility are shown in **Figure III.N-29**. The loading bays would face the south-adjacent solid waste transfer facility, which is at a higher elevation.

Figure III.N-30 shows a detail of the main employee entrance and office area for the manufacturing facility, the on-site clinic, and a portion of the employee parking lot. **Figure III.N-31** and **Figure III.N-32** show a view of the manufacturing facility from the northwest corner of the employee parking lot without and with cars. The Proposed Project would retain existing vegetation between the Heritage Trail and the proposed manufacturing facility and parking area. However, limited views of the parking area, where the existing buffer is narrowest, and of the manufacturing facility beyond, can be anticipated, in particular during the winter months.

Views of the manufacturing facility from Echo Lake Road are not anticipated due to the intervening topography and vegetation. In addition, as demonstrated by the analysis of existing conditions photographs from each of the Vantage Points in the surrounding landscape, changes in topography and existing vegetation lining public rights-of-way would limit any future views of the Amy's Kitchen manufacturing facility from within the study area. Although the Amy's Kitchen manufacturing facility would be a large structure, the location and orientation of this structure would minimize its visibility from off-site locations. As such, it would have no effect on the context of residential, commercial, or industrial structures in the surrounding area.

WAREHOUSE USE

Similar to the Amy's Kitchen manufacturing facility, motorists along Hartley Road would have views of the proposed Warehouse Use (see **Figure III.N-33**). The proposed Warehouse Use will be pursued by others. A conceptual rendering is provided in **Figure III.N-33**. It is anticipated that similar to the Amy's Kitchen manufacturing facility, this building will be a utilitarian industrial building and consistent with the other industrial buildings along Hartley Road. Limited views of the upper portions of the Warehouse Use would also be possible through the trees lining Cheechunk Creek during the winter months from the Heritage Trail just as it crosses Hartley Road. In general, the remaining vegetation along the Cheechunk Creek would screen the Warehouse Use from most views from the Heritage Trail.

SCIENCE OF THE SOUL

The SoS Conference Center would be located on the Echo Lake property. As described in Chapter II, "Project Description," the Conference Center would comprise an approximately 200,000 square-foot open-air pavilion with four (4) associated restroom buildings (approximately 5,000 square feet each); one (1) two-story approximately 80,000 square-foot Multi-Purpose/Family Area Building; one (1) two-story approximately 38,000 square-foot Central Building; one (1) one-story approximately 8,000 square-foot Maintenance Barn; two (2) Caretaker Residences, approximately 2,400 square feet each; one (1) approximately 4,500 square-foot Guest House; and associated pervious and impervious parking areas to accommodate approximately 2,043 cars and 130 buses. The architectural design of the Conference Center structures would be utilitarian metal buildings with cream colored metal siding, green standing seam metal roof, white vinyl or aluminum windows, and white metal doors. The proposed color palette is not exclusively earth toned. The chosen materials are intended to be low-maintenance and long lasting.

No permanent improvements are proposed for the Strong Farm property, including landscaping or driveway modifications. As such, no changes are proposed to Owens Road.

A computer-rendered three-dimensional model was constructed for the SoS Conference Center and superimposed on a three-dimensional model of topography within the study area. This three-dimensional model does not include vegetation within the study area so it tends to over-emphasize potential views of the SoS Conference Center. In reality, existing vegetation on the Project Site and lining public rights-of-way will significantly limit views of the SoS Conference Center from locations within the study area, particularly during the spring, summer, and fall. This model was used to inform the photo-simulations shown in **Figure III.N-2** through **III.N-25**. In addition, select views of the three-dimensional model are shown in **Figures III.N-4** through **III.N-36**. These camera "views" correspond to the lettered Vantage Points shown on **Figure III.N-26**, and represent the views from which the Proposed Project would be the most visible.

Vantage Point 1: Intersection of McVeigh Road and Echo Lake Road

The majority of the SoS Conference Center would not be visible from this location. The only on-site structure that may be visible would be the proposed guest house, which would be located at a higher elevation than the remainder of the proposed structures. However, given the existing tree cover and significant distance (approximately 1,700 feet) from Vantage Point 1, any views of this building would be very minimal and likely limited to the winter months. (See **Figure III.N-2**)

Vantage Point 2: Entrance to Heritage Trail from NYS Route 50

Similar to Vantage Point 1, the majority of the SoS Conference Center would not be visible from this location. The only on-site structure that may be visible would be the proposed guest house, which would be located at a higher elevation than the remainder of the proposed structures. However, given the existing tree cover and significant distance (approximately 2,000 feet) from Vantage Point 2, any views of this building would be very minimal and likely limited to the winter months. (See **Figure III.N-3**)

Vantage Point 3a: Echo Lake Road Near Echo Lake

The majority of the SoS Conference Center would not be visible from this location. Due to existing topography and vegetation lining the Heritage Trail and on the Echo Lake property itself, views from this location, if any, would be limited to the proposed guest house and the roof of the Central Building, which would be located at higher elevations than the remainder of the proposed structures. However, given the existing tree cover, any views of these buildings would be very minimal and likely limited to the winter months. (See **Figure III.N-4**)

Vantage Point 3b:Future Heritage Trail

Views of the SoS Conference Center would be possible from this location. Heritage Trail users would have views of the restroom buildings, open-air pavilion, caretaker building, and barn. Views would be partially obscured by existing and proposed vegetation. The SoS Conference Center would be most visible from this location during the winter months. (See **Figure III.N-5**)

Vantage Point 4: Existing Entrance to Echo Lake Property

The proposed SoS Conference Center would be visible from this location. Motorists traveling on Echo Lake Road would have brief views of the restroom buildings, open-air pavilion, caretaker

building, and barn. Views would be partially obscured by existing and proposed vegetation. The SoS Conference Center would be most visible from this location during the winter months. (See **Figure III.N-6** and **III.N-34**)

Vantage Point 5: Intersection of Heritage Trail and Existing Driveway to Echo Lake Property

Figure III.N-35 indicates that the proposed SoS Conference Center would be visible from this location. However, since the three-dimensional model does not include existing vegetation, this amount of visibility would likely not exist in reality. The computer model shows how the open-air pavilion would be set in the landscape with adjacent restroom buildings. However, as shown in the photo-simulation on **Figure III.N-7**, these views would be largely screened by existing vegetation. Limited views of these buildings may be possible during the winter months.

Vantage Point 6A: View South from Heritage Trail

Vantage Point 6A in **Figure III.N-8** is looking roughly southeast toward the Wallkill River. The proposed SoS Conference Center would be partially visible from this location. Heritage Trail users traveling east would have limited views of the proposed restroom buildings and bus parking area through the existing vegetation. The SoS Conference Center would be most visible from this location during the winter months.

Vantage Point 6B: View West from Heritage Trail

Vantage Point 6B in **Figure III.N-9** is looking east along the future Heritage Trail. The proposed SoS Conference Center would be partially visible from this location. Heritage Trail users traveling west would have limited views of the proposed caretaker house, barn, and orchard parking area through the existing vegetation. The SoS Conference Center would be most visible from this location during the winter months.

Vantage Point 8: Echo Lake Road East of Existing Entrance

Vantage Point 8 in **Figure III.N-11** shows the Ver Hage property to the south. Limited views of the SoS Conference Center on the Echo Lake property to the west may be visible from this location. However, existing vegetation within the Ver Hage property and along the Heritage Trail would minimize views from this Vantage Point toward the SoS Conference Center. The primary view from this location would be the Amy's Kitchen manufacturing facility and parking lots (as shown above in **Figure III.N-31** and **Figure III.N-32**). Any visibility would likely occur only during the winter months.

Vantage Point 9B: Echo Lake Road near intersection of Hartley Road

Vantage Point 9B in **Figure III.N-13** depicts potential views of the SoS Conference Center from Echo Lake Road just west of its intersection with Hartley Road. This view demonstrates the relatively low position within the landscape of the SoS Conference Center relative to this Vantage Point. Similar to View 8, limited views of the proposed SoS Conference Center may be possible from this location. However, views would be substantially obstructed by existing off-site vegetation and topography, including the Echo Lake Road right-of-way. In particular, the Heritage Trail, which is elevated, would act as a berm minimizing views of both the Amy's Kitchen manufacturing facility as well as the SoS Conference Center. Any visibility would likely occur only during the winter months.

Vantage Point 11a and 11b: Owens Road at Lower Elevation

Vantage Points 11a and 11b in **Figures III.N-15 and N-16** document the potential view of the SoS Conference Center from the Owens Road Scenic Road Corridor Overlay District. From this more elevated position in the landscape views into the interior of the Ver Hage property and Echo Lake property are theoretically possible. The SoS Conference Center would potentially be visible west of center of this view. However, as documented in the existing conditions photographs taken from Vantage Point 11a and 11b, existing vegetation along Owens Road, within the Strong Farm property, and on the Ver Hage property significantly limit long-distance views to the south and southwest. Thus, it is not anticipated that the SoS Conference Center would be visible from this location.

Vantage Point 12: Owens Road at Higher Elevation

Similar to Vantage Points 11a and 11b, limited views of the proposed SoS Conference Center may be possible from this location within the Owens Road Scenic Road Corridor Overlay District (see **Figure III.N-17**). However, views would be substantially obstructed by existing off-site vegetation and topography and would likely be limited to roof tops during the winter months. The structure with the greatest potential for visibility from this location is the proposed guest house, which would be located at a higher elevation than the remainder of the proposed structures. However, given the existing tree cover, any views of this building would \ be very minimal and likely limited to the winter months.

Vantage Point 18: NYS Route 17M towards New Site Entrance

Vantage Point 18 in **Figure III.N-24** is from NYS Route 17M near the proposed access road. Due to existing topography and vegetation, the majority of the SoS Conference Center would not be visible from this location. Views of the Proposed Project from this location would be of the new entrance driveway and associated roadway improvements.

Vantage Point 19: Mid-Hudson Psychiatric Center Driveway

Similarly, Vantage Point 19 in **Figure III.N-25** demonstrates that the SoS Conference Center would not be visible from the visitor parking area of the MHPC due to existing topography and vegetation.

Summary of Conference Center Visibility

Although the SoS Conference Center would include large structures, the location and orientation of these structures, the substantial areas of existing vegetation on the Project Site and along public rights-of-way within the study area, and the long distances from Vantage Points to the SoS Conference Center would minimize visibility from off-site locations. As such, the SoS Conference Center would not have any significant adverse visual impacts on the context of residential, commercial, or industrial structures in the surrounding area.

STRONG FARM PROPERTY

Under the Proposed Project, the Strong Farm property would continue to be used for agricultural purposes. No permanent improvements are proposed for this site. It is anticipated that SoS volunteers would utilize fallow fields for parking during the annual conference for up to three days per year. During this time, parked cars would be visible from points along Owens Road and Cheechunk Road. However, this use would be temporary and is not anticipated to have a significant adverse visual impact.

WAREHOUSE USE

The proposed Warehouse Use would be visible from Hartley Road directly adjacent to the Project Site, and south of Cheechunk Creek. The proposed Warehouse Use would be set back a minimum of 100 feet from Hartley Road and a parking area would be located between Hartley Road and the Warehouse Use. Due to the size of the building, it would not be possible to completely screen the building from views from Hartley Road. However, Hartley Road is not considered a sensitive viewshed due to the existing industrial land uses on either side. Views of the Warehouse Use from the Heritage Trail would be unlikely given the extensive band of vegetation that would remain (see Vantage Point 14 in **Figure III.N-19** and **Figure III.N-32**). Thus, views of the Warehouse Use would not result in significant adverse impacts.

PROJECT LANDSCAPING

Landscaping is included as part of the Proposed Project. The conceptual landscaping plans include a variety of native deciduous and evergreen trees and shrubs, as well as non-invasive ornamental species (see **Figures III.N-37, III.N-38a,** and **III.N-38b**). Landscaping is proposed at the entrance to the Proposed Project, along the roadway, and within the parking areas.

PROJECT LIGHTING

Site lighting associated with the Proposed Project would be limited to the Ver Hage and Echo Lake properties. Existing residential lighting would be maintained on the Strong Farm property.

Lighting fixtures for the Ver Hage and Echo Lake properties are proposed to have full cutoff shields to limit lateral spread of light and would be dark-sky friendly, meaning that light would not be project up from the fixture. Pole-mounted fixtures are proposed for the parking areas and driveways throughout the property. The proposed lighting would be zoned, so that only those fixtures needed to support site activities would be turned on. In particular, the lighting for the orchard parking area at the SoS Conference Center would only be used during the National and Regional Conferences. The visibility of site lighting at the Amy's Kitchen manufacturing facility and Warehouse Use would be minimized by placing a maximum 0.5 foot candles at property lines. Lighting on the main access road and emergency driveways would be at a slightly higher level than other areas, but would be consistent with other lighting on NYS Route 17M and Hartley Road. (See **Figures III.N-39, III.N-40a,** and **III.N-40b**)

Building lighting is also proposed as down-cast building-mounted fixtures that would be installed around the façade and at entrances. No flood lighting is proposed.

Since the proposed lighting would conform to all applicable Town regulations, no significant adverse lighting impacts are anticipated.

PROPOSED SIGNAGE

While the exact location and design of site signage has not yet been determined, all site signage would be designed to be fully compliant with Section 97-49 of the Town Zoning Code. Any signs would be set back from the road so as to not obstruct sight distances. Directional signage within the Project Site would be minimal, and integrated with the landscaping. Since the signage would be designed to conform to all applicable Town regulations, no significant adverse impacts related to signage are anticipated.

F. PROPOSED MITIGATION

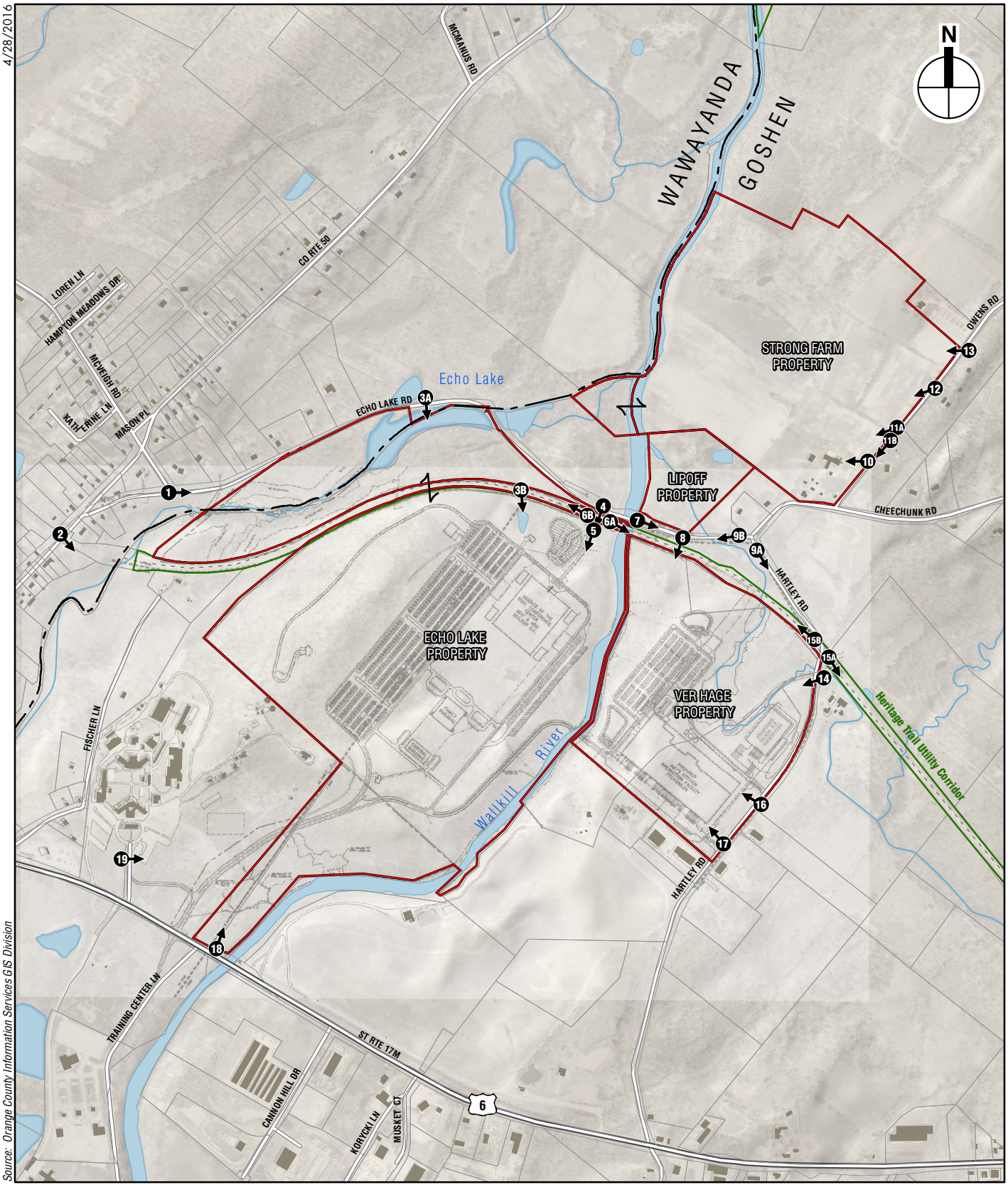
The Proposed Project has been designed to minimize its visibility from the Owens Road Scenic Road Corridor and the Orange County Heritage Trail. Buildings have been set back from local roadways and the Heritage Trail. However, the Proposed Project would be visible from several viewpoints within the study area, including from portions of the Heritage Trail. While this visibility may be considered an unavoidable impact, it would not constitute a significant adverse impact as there are other similar structures (in terms of size, style, and use) abutting the Heritage Trail, such as at 6 ½ Station Road. The Proposed Project would retain existing vegetation around the perimeter of the Project Site to minimize visibility of the interior from most points along the Heritage Trail. The existing vegetation and proposed Project Site landscaping and intervening topography would minimize most views of the Proposed Project from off-site locations. While views of the Proposed Project would be possible from sections of the Heritage Trail, this is not considered a significant adverse impact as other sections of the Heritage Trail abut heavily-traveled roads (including NYS Route 17M) and other commercial or industrial land uses.

The following measures have been identified to minimize the visibility of the Proposed Project, such that no significant adverse visual impacts would result.

Landscaping is included as part of the Proposed Project. The conceptual landscaping plans include a variety of native deciduous and evergreen trees and shrubs, as well as non-invasive ornamental species. Landscaping is proposed at the entrance to the Proposed Project, along the roadway, and within the parking areas. The proposed landscaping, as well as the retention of existing vegetation around the perimeter of the Project Site, would minimize potential visibility of the Project Site.

In addition, as discussed above, the lighting associated with the Proposed Project is proposed to have full cutoff shields to limit lateral spread of light and would be dark-sky friendly, meaning that light would not be projected up from the fixture. Pole-mounted fixtures are proposed for the parking areas and driveways throughout the property. The proposed lighting would be zoned, so that only those fixtures needed to support site activities would be turned on. In particular, the lighting for the orchard parking area at the SoS Conference Center would only be used during the National and Regional Conferences. The visibility of site lighting at the Amy's Kitchen manufacturing facility and Warehouse Use would be minimized by placing a maximum of 0.5 foot-candles at property lines, consistent with Town of Goshen Code. Lighting on the main access road and emergency driveways would be at a slightly higher level than other areas, but would be consistent with other lighting on NYS Route 17M and Hartley Road.

Therefore, with the measures described above, the Proposed Project would not result in any significant adverse visual impacts. ✷



Amy's Kitchen
Science of the Soul

Visual Assessment Location Map

Figure III.N-1

4.27.16

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 1:
View towards Echo Lake Property from
Echo Lake and McVeigh Road
Figure III.N-2

Amy's Kitchen
Science of the Soul

4.27.16

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 2:
View from Future Heritage Trail Entrance from County Route 50
Figure III.N-3

Amy's Kitchen
Science of the Soul

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 3a:
View towards Echo Lake Property from
Echo Lake Road
Figure III.N-4

Existing Winter

Proposed Conditions

View 3b:
View from the future Heritage Trail towards
Echo Lake Property
Figure III.N-5

Existing Summer

Existing Winter

Proposed Conditions

View 4:
View of entrance to Echo Lake Property from Echo Lake Road
Figure III.N-6

Amy's Kitchen
Science of the Soul

Existing Summer

Existing Winter

Proposed Conditions

View 5:
Existing view of Echo Lake Property from intersection of existing driveway and the Heritage Trail

Figure III.N-7

4.27.16

Existing Summer

Existing Winter

Proposed Conditions

View 6a:
View of Heritage Trail from
Echo Lake Property driveway
Figure III.N-8

Amy's Kitchen
Science of the Soul

4.27.16

Existing Summer

Existing Winter

Proposed Conditions

View 6b:
View from Heritage Trail towards existing Echo Lake driveway
Figure III.N-9

Amy's Kitchen
Science of the Soul

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 7:
View of Lipoff Property from Echo Lake Road
Figure III.N-10

Amy's Kitchen
Science of the Soul

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 8:
View from Echo Lake Road to Ver Hage Property

Figure III.N-11

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 9a:
View towards Ver Hage Property from intersection of Echo Lake Road, Cheechunk Road and Hartley Road

Figure III.N-12

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 9b:
View towards Lipoff Property from
Echo Lake Road, Cheechunk Road and Hartley Road

Figure III.N-13

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 10:
View of Strong Farm Property from Owens Road
Figure III.N-14

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 11a:
View of Strong Farm Property from Owens Road
Figure III.N-15

Existing Winter

Proposed Conditions

View 11b:
View of Ver Hage Site from Owens Road
Figure III.N-16

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 12:
View of Strong Farm Property from Owens Road
Figure III.N-17

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 13:
View of Strong Farm Property from Owens Road

Figure III.N-18

Existing Summer

Existing Winter

Proposed Conditions

View 14:
View of Cheechunk Creek from Hartley Road
Figure III.N-19

Amy's Kitchen
Science of the Soul

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 15a:
View of end of Heritage Trail from Hartley Road
Figure III.N-20

Amy's Kitchen
Science of the Soul

Existing Summer

Existing Winter

Proposed Conditions
(the Proposed Project not visible from this location)

View 15b:
View of Future Heritage Trail from Hartley Road

Figure III.N-21

Existing Summer

Existing Winter

Proposed Conditions

View 16:
View of Ver Hage Property from Hartley Road
Figure III.N-22

4.27.16

Existing Summer

Existing Winter

Proposed Conditions

View 17:
View of Ver Hage Property from Hartley Road
Figure III.N-23

Amy's Kitchen
Science of the Soul

Existing Summer

Existing Winter

Proposed Conditions

View 18:
View of Proposed Route 17M entrance location
Figure III.N-24

Existing Summer

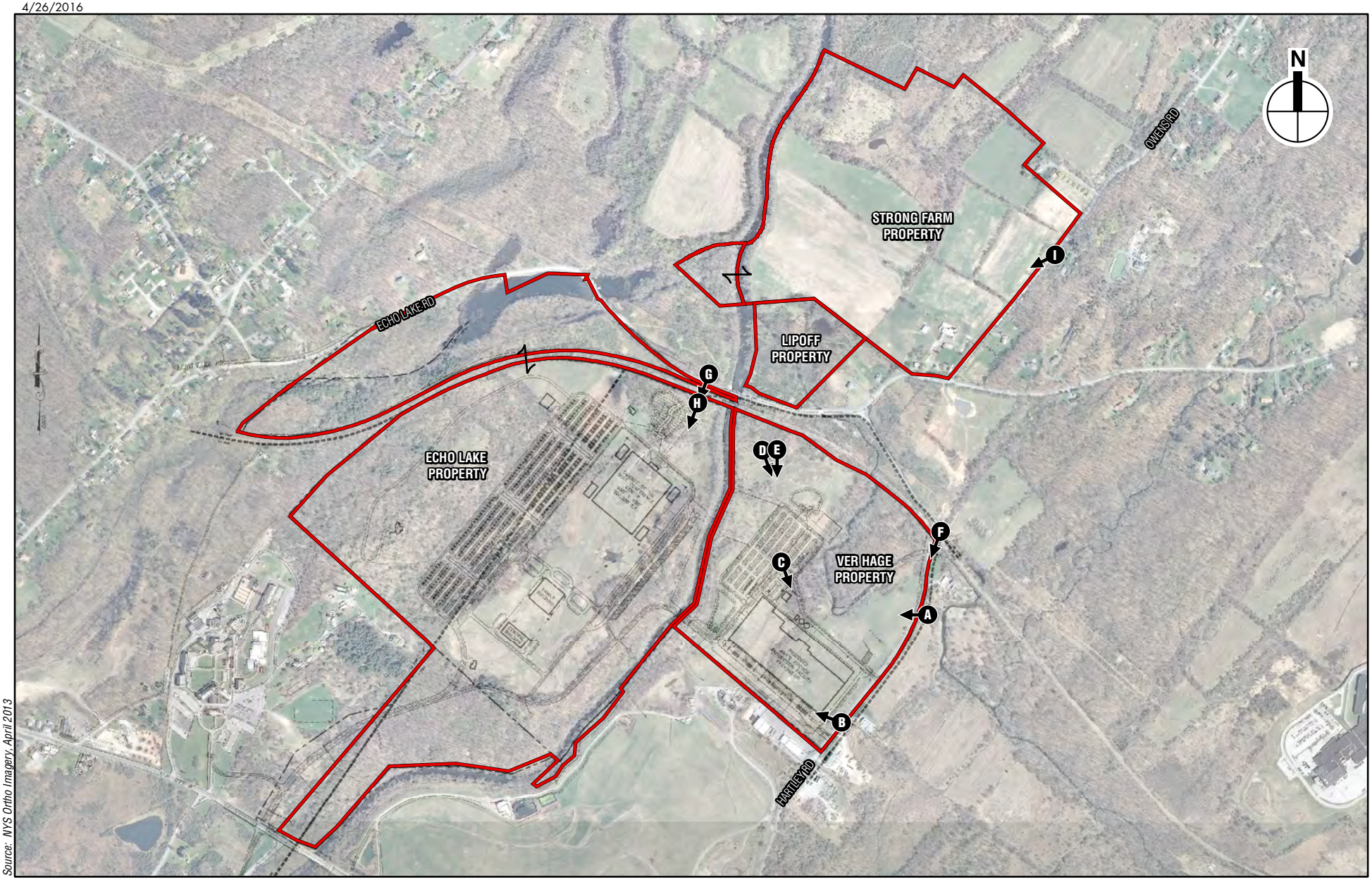
Existing Winter

Proposed Conditions

View 19:
View toward Ver Hage Property from
the Mid-Hudson Psychiatric Center
Figure III.N-25

Amy's Kitchen
Science of the Soul

4/26/2016



Source: NYS Ortho Imagery, April 2013

Project Site

Render View Direction and Reference Number

0 1,000 FEET

Amy's Kitchen
Science of the Soul

Location of 3-D Model Views
Figure III.N-26

Amy's Kitchen Aerial View
Figure III.N-27

4.27.16

View A: Amy's Kitchen Emergency Entrance from Hartley Road

Figure III.N-28

4.27.16

View B: Amy's Kitchen Loading Dock from Hartley Road

Figure III.N-29

4.27.16

View C: View of Amy's Kitchen Office and Clinic from Employee Parking Area

Figure III.N-30

4.27.16

View D: View of Amy's Kitchen Employee Parking Area from Northwest Side of Parking Lot

Figure III.N-31

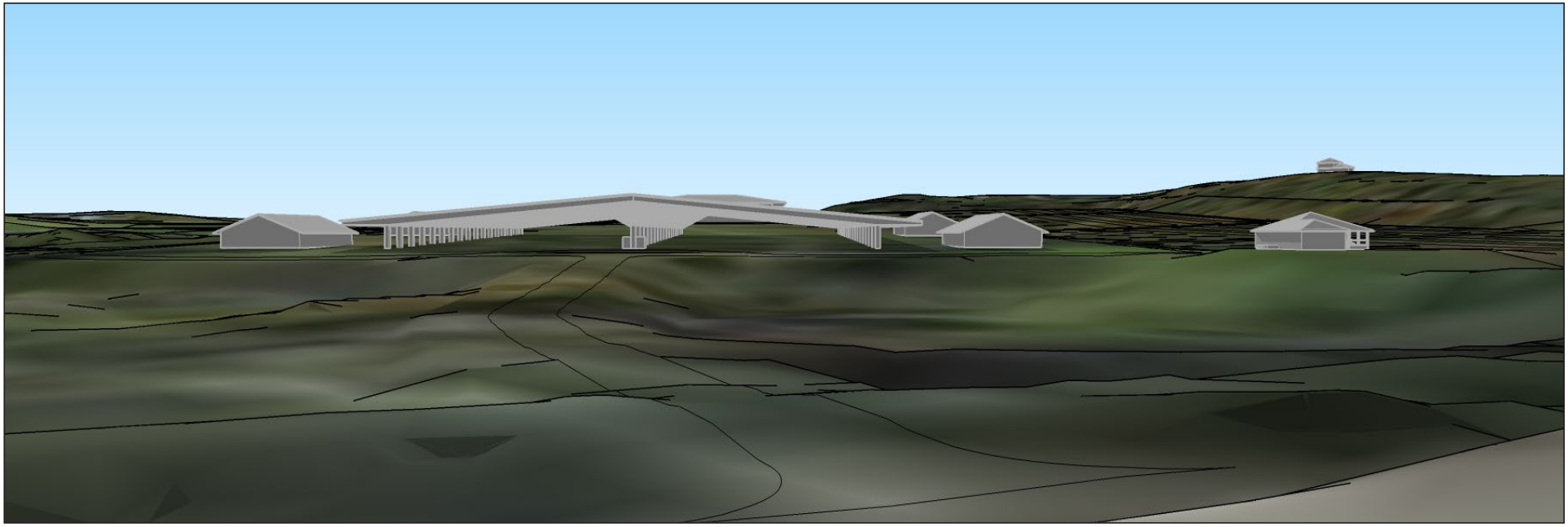
View E: View of Amy's Kitchen Employee Parking Area with Cars from Northwest Side of Parking Lot

Figure III.N-32

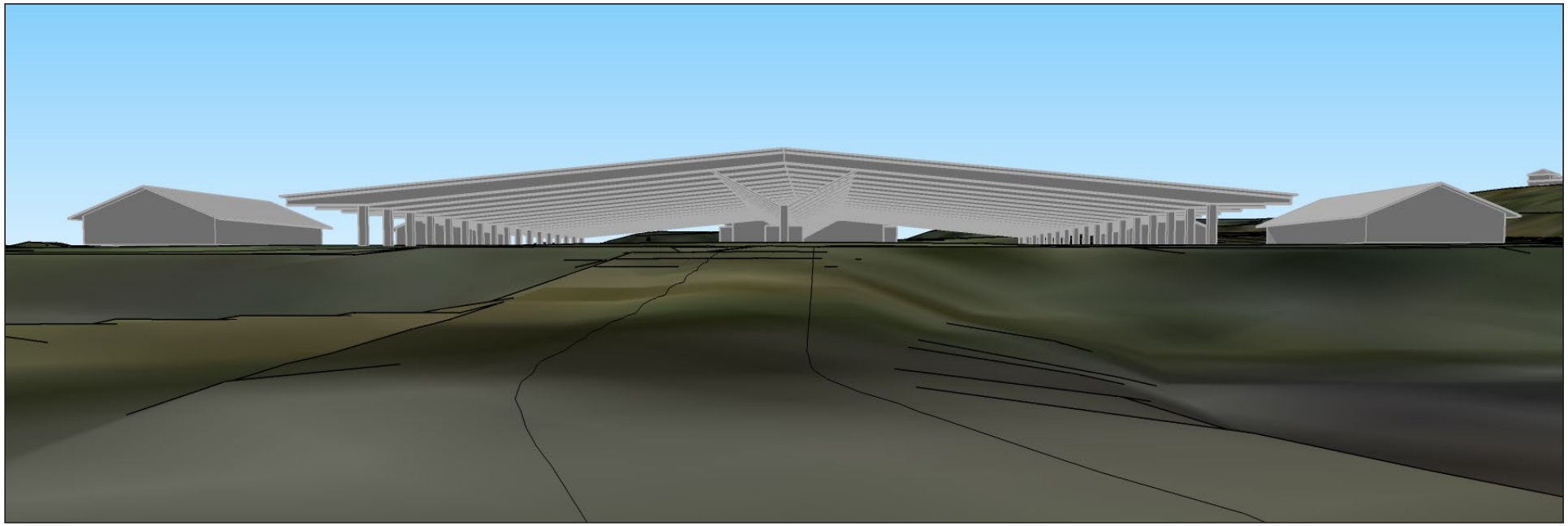
4.27.16

View F: View of Warehouse from Hartley Road

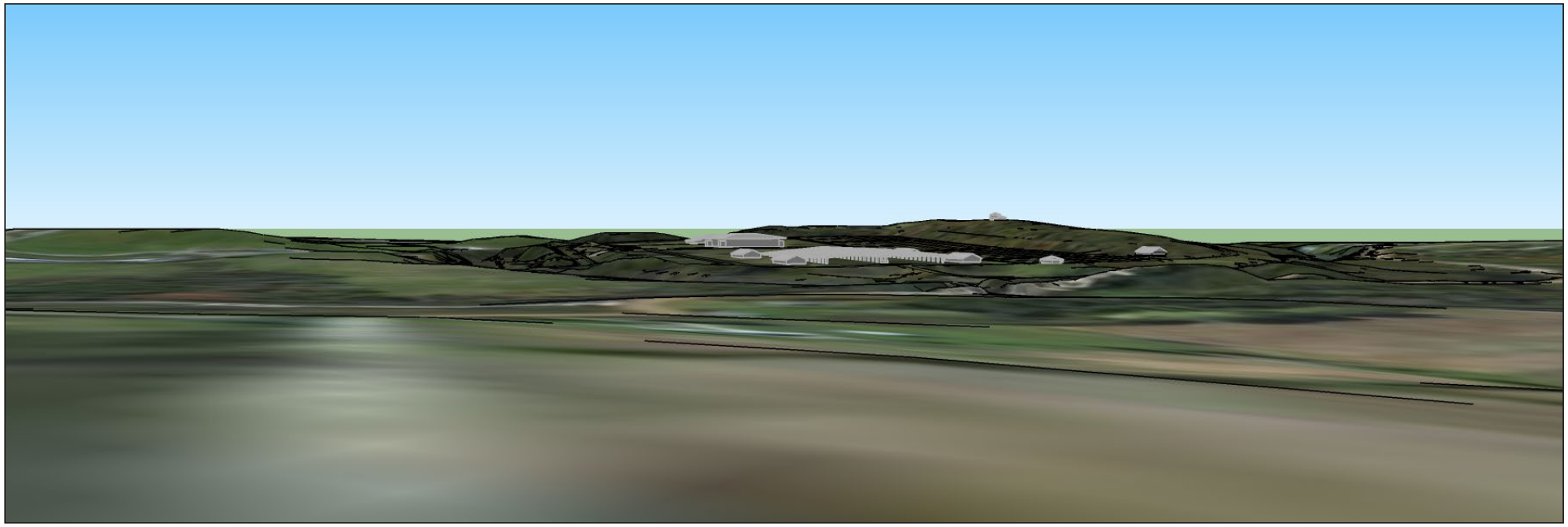
Figure III.N-33



View G:
Rendering of SoS Conference Center
Figure III.N-34

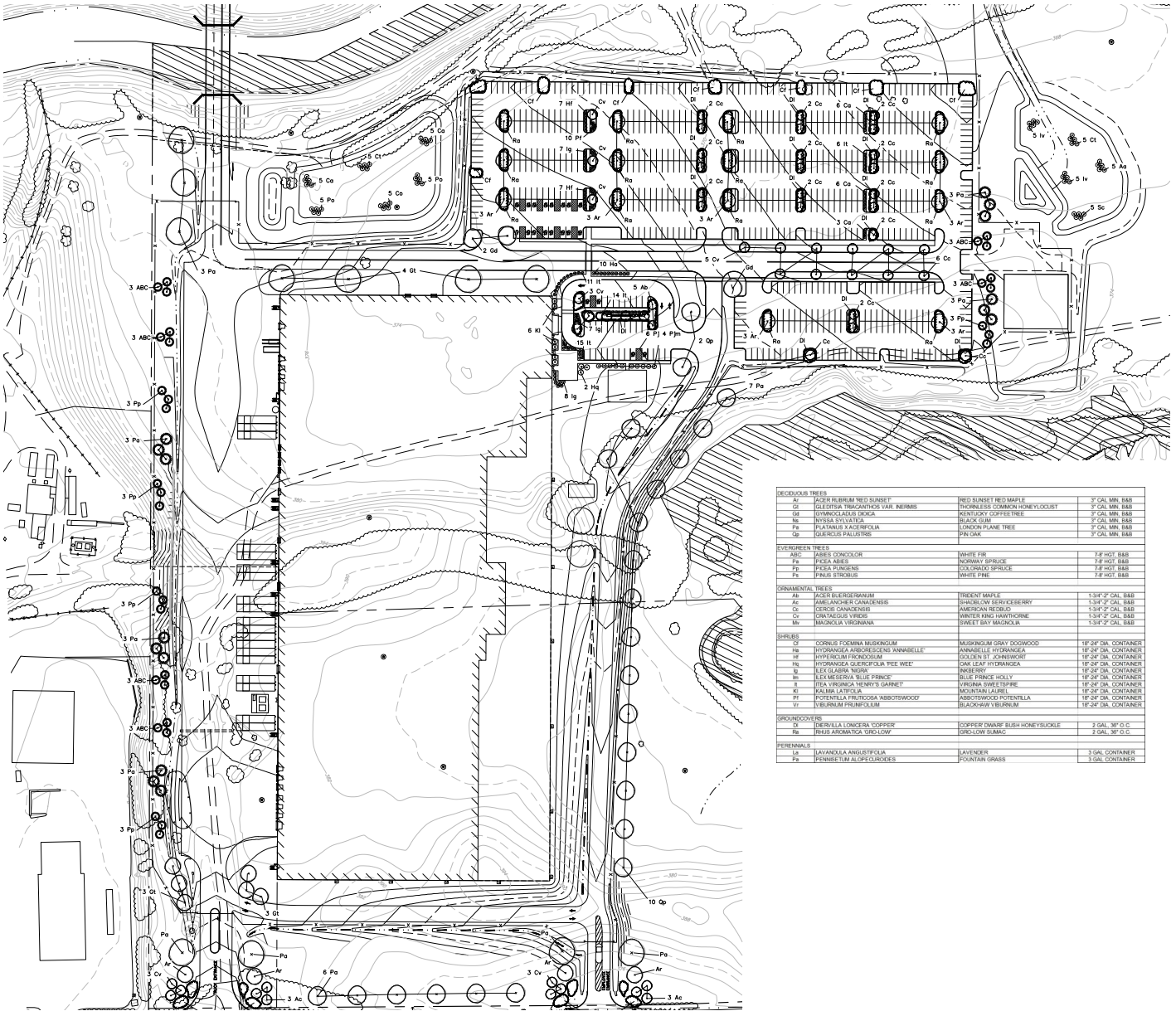


View H:
Rendering of SoS Conference Center
Figure III.N-35



View I:
Rendering of SoS Conference Center
Figure III.N-36

4.25.16



DECIDUOUS TREES			
Ar	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	3" CAL MIN. B&B
Gt	GLEDITSIA TRIACANTHOS VAR. INERMIS	THORNLESS COMMON HONEYLOCUST	3" CAL MIN. B&B
Gd	GYMNOCLADUS DIOICA	KENTUCKY COFFEETREE	3" CAL MIN. B&B
Ns	NYSSA SYLVATICA	BLACK GUM	3" CAL MIN. B&B
Pa	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	3" CAL MIN. B&B
Qp	QUERCUS PALUSTRIS	PIN OAK	3" CAL MIN. B&B
EVERGREEN TREES			
ABC	ABIES CONCOLOR	WHITE FIR	7-8' HGT. B&B
Pa	PICEA ABIES	NORWAY SPRUCE	7-8' HGT. B&B
Pp	PICEA PUNGENS	COLORADO SPRUCE	7-8' HGT. B&B
Ps	PINUS STROBUS	WHITE PINE	7-8' HGT. B&B
ORNAMENTAL TREES			
Ab	ACER BUERGERIANUM	TRIDENT MAPLE	1-3/4"-2" CAL. B&B
Ac	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	1-3/4"-2" CAL. B&B
Cc	CERCIS CANADENSIS	AMERICAN REDBUD	1-3/4"-2" CAL. B&B
Cv	CRATAEGUS VIRIDIS	WINTER KING HAWTHORNE	1-3/4"-2" CAL. B&B
Mv	MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA	1-3/4"-2" CAL. B&B
SHRUBS			
Cf	CORNUS FOEMINA MUSKINGUM	MUSKINGUM GRAY DOGWOOD	18"-24" DIA. CONTAINER
Ha	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" DIA. CONTAINER
Hf	HYPERICUM FRONDOSUM	GOLDEN ST. JOHNSWORT	18"-24" DIA. CONTAINER
Hq	HYDRANGEA QUERCIFOLIA 'PEE WEE'	OAK LEAF HYDRANGEA	18"-24" DIA. CONTAINER
Ig	ILEX GLABRA 'NIGRA'	INKBERRY	18"-24" DIA. CONTAINER
Im	ILEX MESERVA 'BLUE PRINCE'	BLUE PRINCE HOLLY	18"-24" DIA. CONTAINER
It	ITEA VIRGINICA 'HENRY'S GARNET'	VIRGINIA SWEETSPIRE	18"-24" DIA. CONTAINER
Kl	KALMIA LATIFOLIA	MOUNTAIN LAUREL	18"-24" DIA. CONTAINER
Pf	POTENTILLA FRUTICOSA 'ABBOTSWOOD'	ABBOTSWOOD POTENTILLA	18"-24" DIA. CONTAINER
Vr	VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	18"-24" DIA. CONTAINER
GROUNDCOVERS			
Dl	DIERVILLA LONICERA 'COPPER'	COPPER DWARF BUSH HONEYSUCKLE	2 GAL. 36" O.C.
Rs	RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	2 GAL. 36" O.C.
PERENNIALS			
La	LAVANDULA ANGUSTIFOLIA	LAVENDER	3 GAL CONTAINER
Pa	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	3 GAL CONTAINER

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

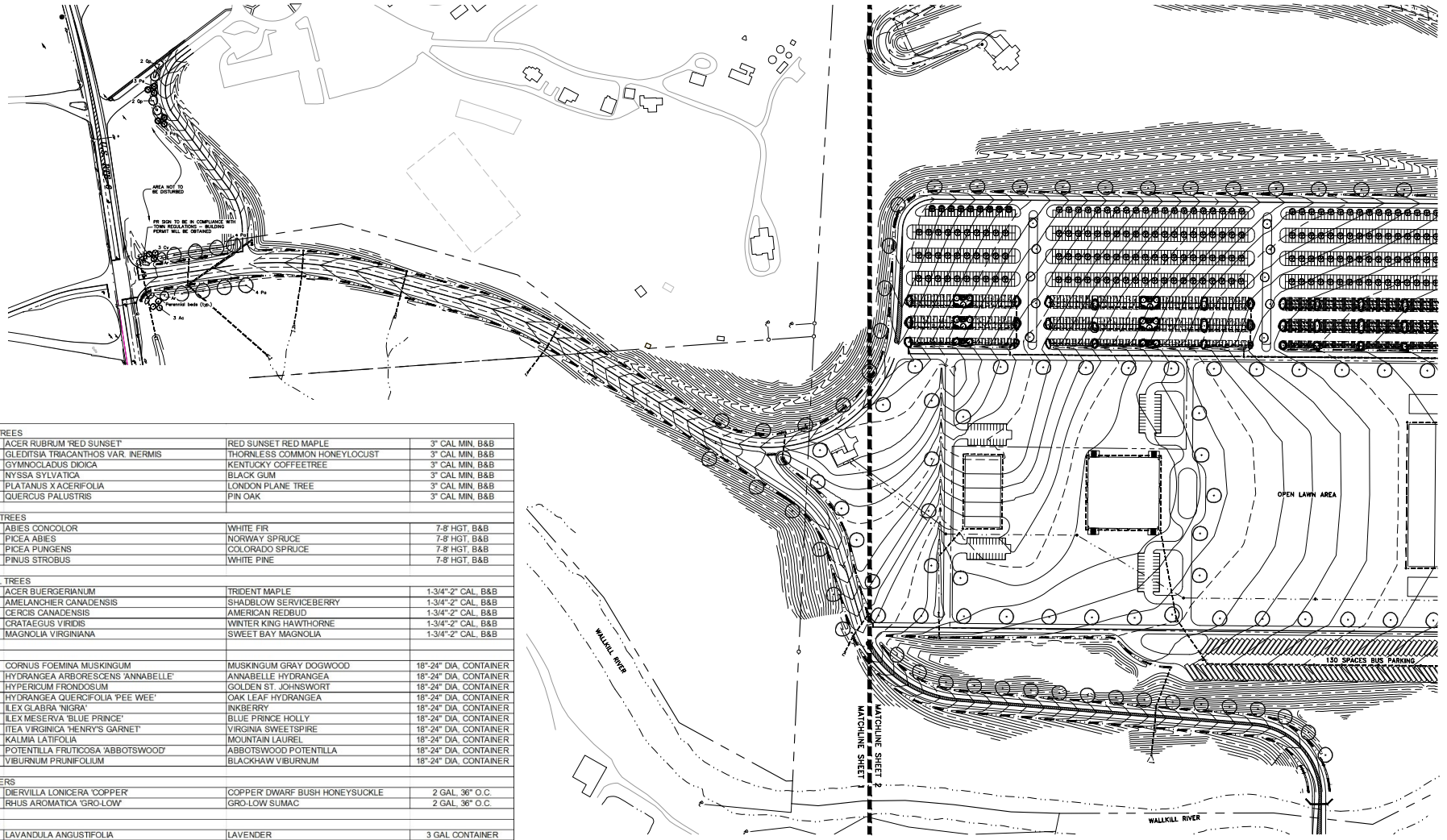
(IN FEET)
1 inch = 60 ft.

Lanc & Tully Engineering and Surveying, P.C.

Amy's Kitchen
Science of the Soul

Amy's Kitchen Landscaping Plan
Figure III.N-37

4.25.16



DECIDUOUS TREES			
Ar	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	3" CAL MIN, B&B
Gt	GLEDITSIA TRIACANTHOS VAR. INERMIS	THORNLESS COMMON HONEYLOCUST	3" CAL MIN, B&B
Gd	GYMNOCLADUS DIOICA	KENTUCKY COFFEETREE	3" CAL MIN, B&B
Ns	NYSSA SYLVATICA	BLACK GUM	3" CAL MIN, B&B
Pa	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	3" CAL MIN, B&B
Qp	QUERCUS PALUSTRIS	PIN OAK	3" CAL MIN, B&B
EVERGREEN TREES			
ABC	ABIES CONCOLOR	WHITE FIR	7-8' HGT, B&B
Pa	PICEA ABIES	NORWAY SPRUCE	7-8' HGT, B&B
Pp	PICEA PUNGENS	COLORADO SPRUCE	7-8' HGT, B&B
Ps	PINUS STROBUS	WHITE PINE	7-8' HGT, B&B
ORNAMENTAL TREES			
Ab	ACER BUERGERIANUM	TRIDENT MAPLE	1-3/4"-2" CAL, B&B
Ac	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	1-3/4"-2" CAL, B&B
Cc	CERCIS CANADENSIS	AMERICAN REDBUD	1-3/4"-2" CAL, B&B
Cv	CRATAEGUS VIRIDIS	WINTER KING HAWTHORNE	1-3/4"-2" CAL, B&B
Mv	MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA	1-3/4"-2" CAL, B&B
SHRUBS			
Cf	CORNUS FOEMINA MUSKINGUM	MUSKINGUM GRAY DOGWOOD	18"-24" DIA, CONTAINER
Ha	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" DIA, CONTAINER
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Hq	HYDRANGEA QUERCIFOLIA 'PEE WEE'	OAK LEAF HYDRANGEA	18"-24" DIA, CONTAINER
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Im	ILEX MESERVA 'BLUE PRINCE'	BLUE PRINCE HOLLY	18"-24" DIA, CONTAINER
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Kl	KALMIA LATIFOLIA	MOUNTAIN LAUREL	18"-24" DIA, CONTAINER
Pf	POTENTILLA FRUTICOSA 'ABBOTSWOOD'	ABBOTSWOOD POTENTILLA	18"-24" DIA, CONTAINER
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PERENNIALS			
La	LAVANDULA ANGUSTIFOLIA	LAVENDER	3 GAL CONTAINER
Pa	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	3 GAL CONTAINER

LEGEND

PROPERTY LINE
EXISTING MAJOR CONTOUR
EXISTING MINOR CONTOUR
EXISTING EASEMENT
ADJOINING PROPERTY LINE
EXISTING DRAINAGE
GAS — EXISTING GAS
EXISTING WETLAND BOUNDARY
EXISTING WETLAND ADJACENT AREA
EXISTING WATERCOURSE
STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LINE
FLOODPLAIN AND PONDING AREA OVERLAY
PROPOSED PROPERTY LINE
PROPOSED MAJOR CONTOUR
PROPOSED MINOR CONTOUR
PROPOSED EDGE OF PAVEMENT/CURB
PROPOSED DRAINAGE
PROPOSED SWALE / DRY SWALE
PROPOSED SANITARY SEWER

GRAPHIC SCALE
(IN FEET)
1 inch = 100 ft.

Lanc & Tully Engineering and Surveying, P.C.

Amy's Kitchen
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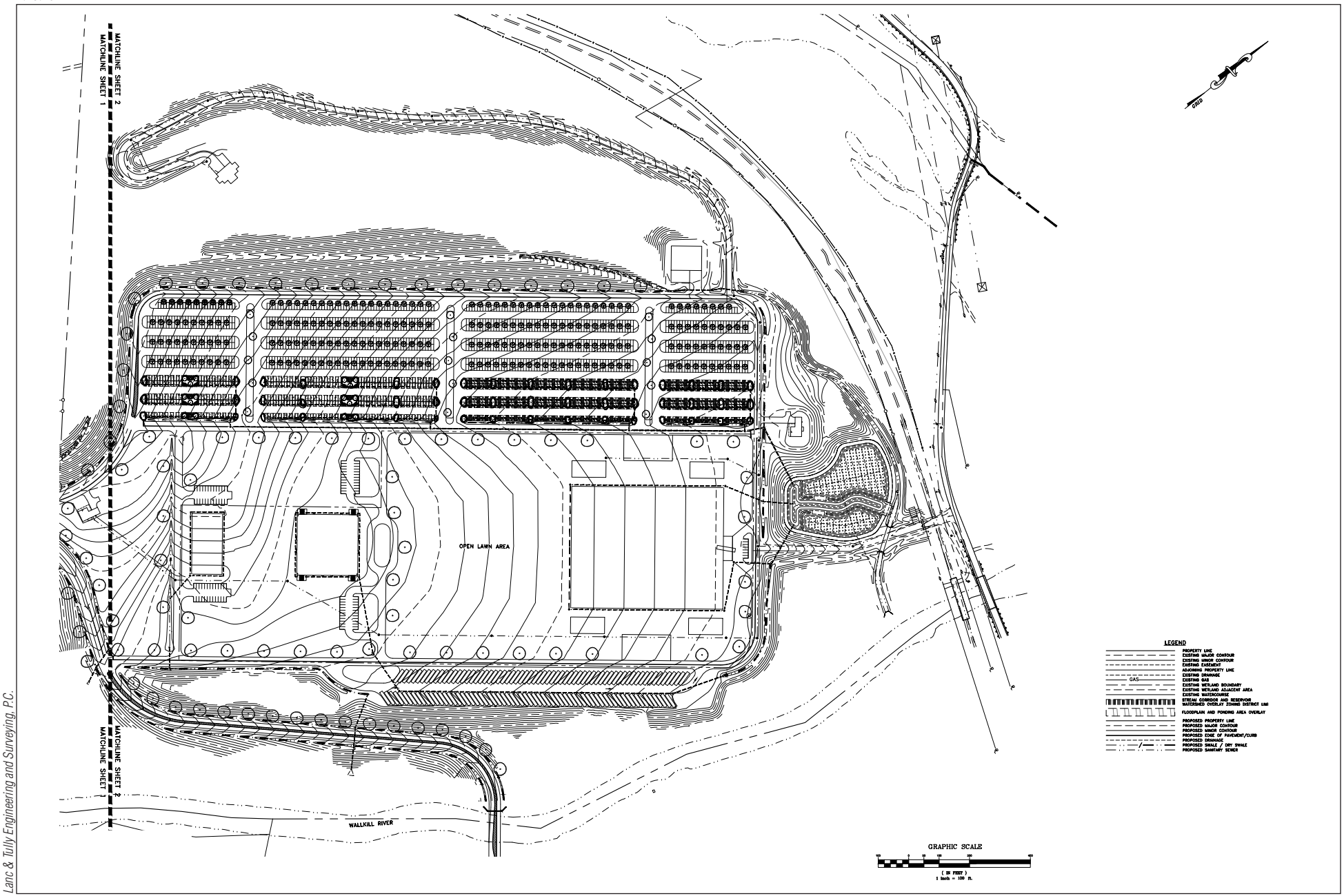
SoS Landscaping Plan
Figure III.N-38A

4.25.16



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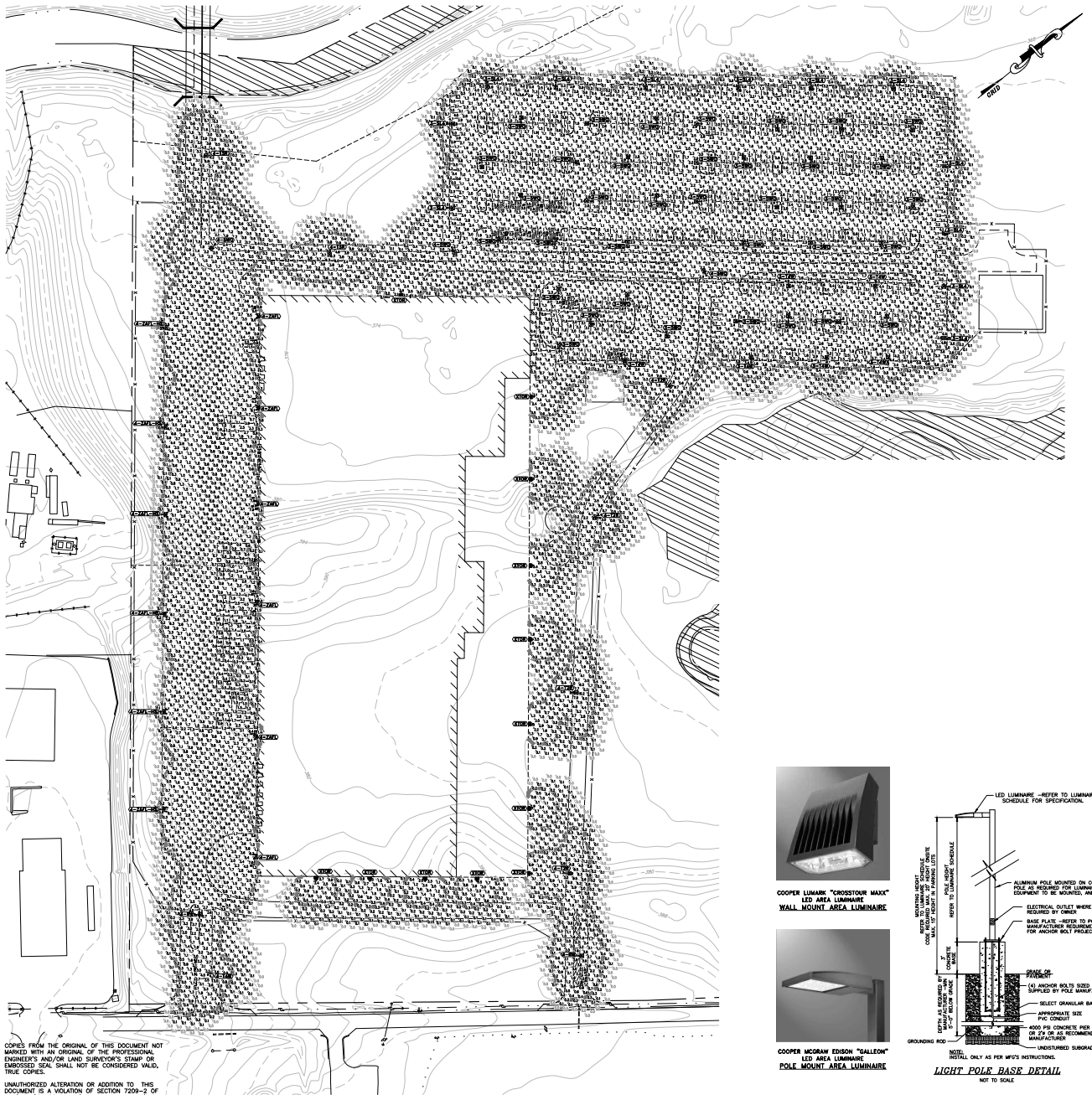
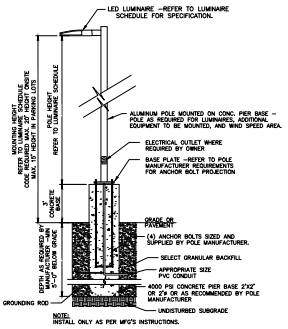
Amy's Kitchen
Science of the Soul

SoS Landscaping Plan
Figure III.N-38B



COOPER LUMARK "CROSSTOUR MAXX"
LED AREA LUMINAIRE
WALL MOUNT AREA LUMINAIRE

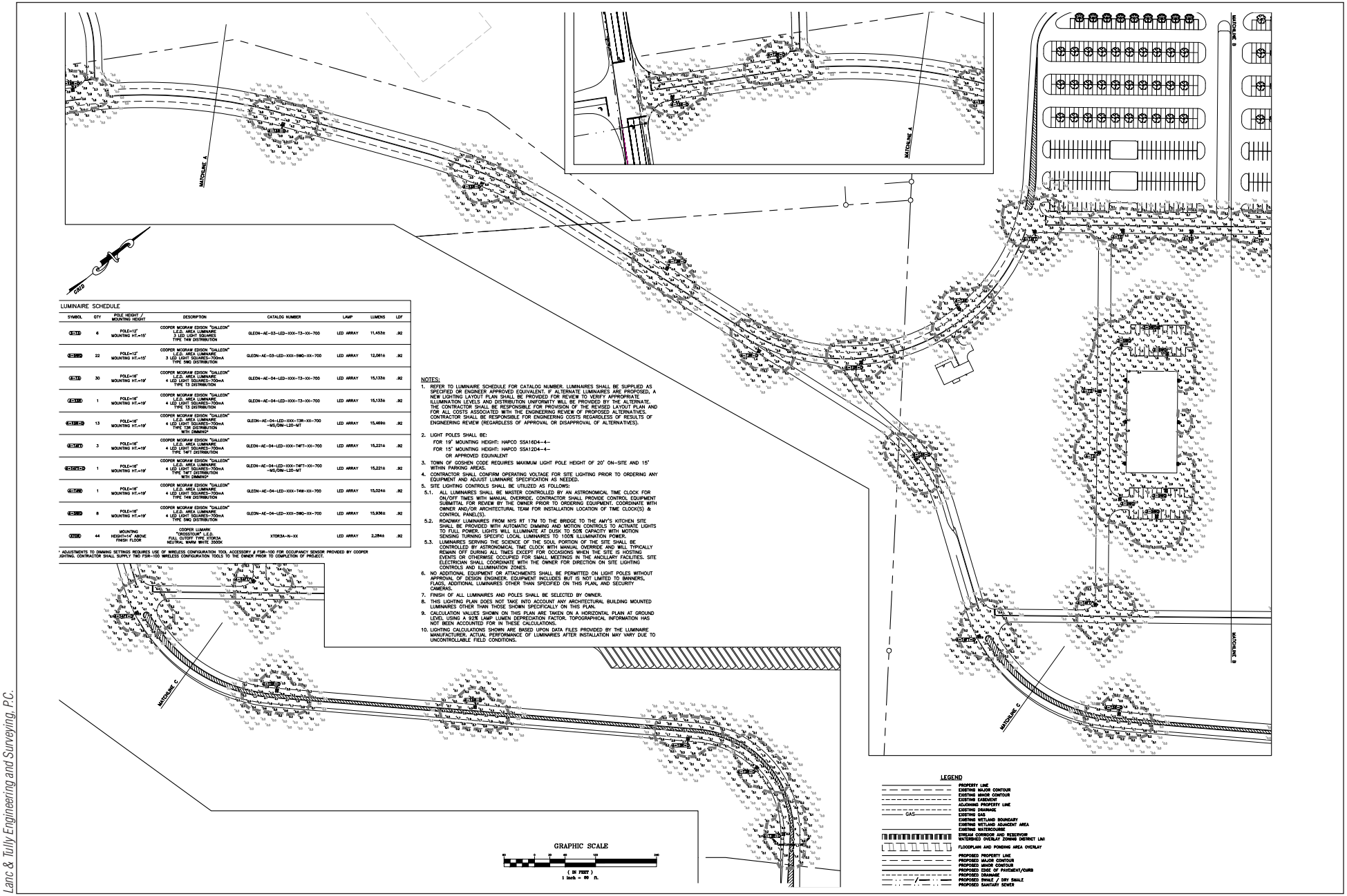
COOPER MCGRAW EDISON "GALLEON"
LED AREA LUMINAIRE
POLE MOUNT AREA LUMINAIRE



LIGHT POLE BASE DETAIL
NOT TO SCALE

Amy's Kitchen
Science of the Soul

Amy's Kitchen Lighting Plan
Figure III.N-39



LUMINAIRE SCHEDULE

SYMBOL	QTY	POLE HEIGHT / MOUNTING HEIGHT	DESCRIPTION	CATALOG NUMBER	LAMP	LUMENS	LDF
A-T4	6	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES-700mA TYPE T4W DISTRIBUTION	GLEON-AE-03-LED-XXX-T3-XX-700	LED ARRAY	11,453±	.92
A-SW2	22	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES-700mA TYPE SWQ DISTRIBUTION	GLEON-AE-03-LED-XXX-SWQ-XX-700	LED ARRAY	12,061±	.92
A-T3	30	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T3 DISTRIBUTION	GLEON-AE-04-LED-XXX-T3-XX-700	LED ARRAY	15,133±	.92
A-T3R	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T3 DISTRIBUTION	GLEON-AE-04-LED-XXX-T3-XX-700	LED ARRAY	15,133±	.92
A-T3R-D	13	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T3 DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-T3R-XX-700 -MS/DIM-L20-WT	LED ARRAY	15,469±	.92
A-T4F	3	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T4FT DISTRIBUTION	GLEON-AE-04-LED-XXX-T4FT-XX-700	LED ARRAY	15,221±	.92
A-T4FT-D	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T4FT DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-T4FT-XX-700 -MS/DIM-L20-WT	LED ARRAY	15,221±	.92
A-T4W	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T4W DISTRIBUTION	GLEON-AE-04-LED-XXX-T4W-XX-700	LED ARRAY	15,024±	.92
A-SW2	8	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE SWQ DISTRIBUTION	GLEON-AE-04-LED-XXX-SWQ-XX-700	LED ARRAY	15,936±	.92
XTOR	44	MOUNTING HEIGHT=14' ABOVE FINISH FLOOR	COOPER LUMARK "CROSSTORUM" L.E.D. FULL CUTOFF TYPE XTORA NEUTRAL WARM WHITE 3500K	XTOR3A-N-XX	LED ARRAY	2,284±	.92

* ADJUSTMENTS TO DIMMING SETTINGS REQUIRES USE OF WIRELESS CONFIGURATION TOOL ACCESSORY # FSR-100 FOR OCCUPANCY SENSOR PROVIDED BY COOPER LIGHTING. CONTRACTOR SHALL SUPPLY TWO FSR-100 WIRELESS CONFIGURATION TOOLS TO THE OWNER PRIOR TO COMPLETION OF PROJECT.

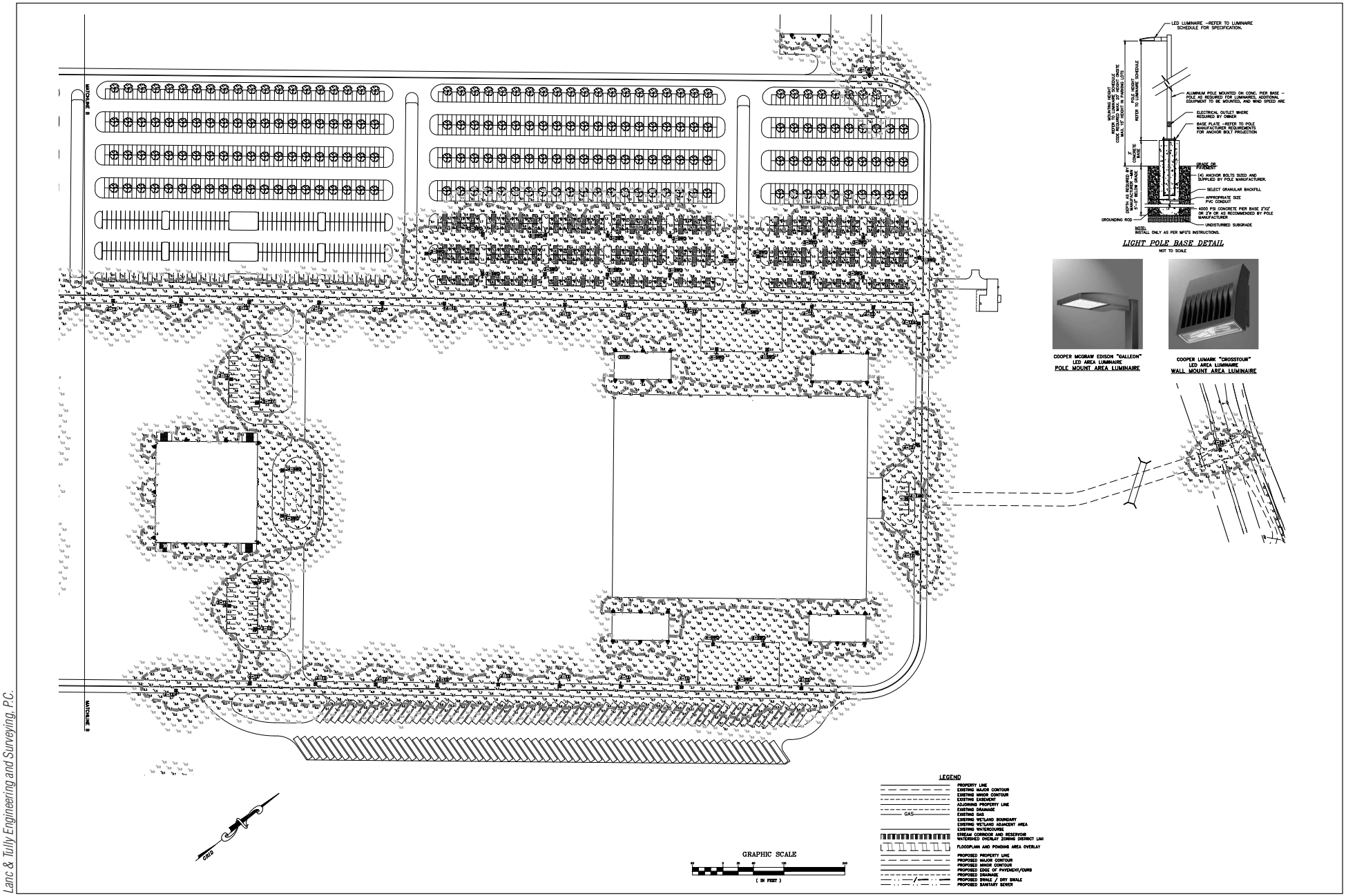
NOTES:

1. REFER TO LUMINAIRE SCHEDULE FOR CATALOG NUMBER. LUMINAIRES SHALL BE SUPPLIED AS SPECIFIED OR ENGINEER APPROVED EQUIVALENT. IF ALTERNATE LUMINAIRES ARE PROPOSED, A NEW LIGHTING LAYOUT PLAN SHALL BE PROVIDED FOR REVIEW TO VERIFY APPROPRIATE ILLUMINATION LEVELS AND DISTRIBUTION UNIFORMITY WILL BE PROVIDED BY THE ALTERNATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION OF THE REVISED LAYOUT PLAN AND FOR ALL COSTS ASSOCIATED WITH THE ENGINEERING REVIEW OF PROPOSED ALTERNATIVES. CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEERING COSTS REGARDLESS OF RESULTS OF ENGINEERING REVIEW (REGARDLESS OF APPROVAL OR DISAPPROVAL OF ALTERNATIVES).
2. LIGHT POLES SHALL BE:
   FOR 19' MOUNTING HEIGHT: HAPCO SSA16D4-4-
   FOR 15' MOUNTING HEIGHT: HAPCO SSA12D4-4-
   OR APPROVED EQUIVALENT
3. TOWN OF GOSHEN CODE REQUIRES MAXIMUM LIGHT POLE HEIGHT OF 20' ON-SITE AND 15' WITHIN PARKING AREAS.
4. CONTRACTOR SHALL CONFIRM OPERATING VOLTAGE FOR SITE LIGHTING PRIOR TO ORDERING ANY EQUIPMENT AND ADJUST LUMINAIRE SPECIFICATION AS NEEDED.
5. SITE LIGHTING CONTROLS SHALL BE UTILIZED AS FOLLOWS:
   5.1. ALL LUMINAIRES SHALL BE MASTER CONTROLLED BY AN ASTRONOMICAL TIME CLOCK FOR ON/OFF TIMES WITH MANUAL OVERRIDE. CONTRACTOR SHALL PROVIDE CONTROL EQUIPMENT SUBMITTAL FOR REVIEW BY THE OWNER PRIOR TO ORDERING EQUIPMENT. COORDINATE WITH OWNER AND/OR ARCHITECTURAL TEAM FOR INSTALLATION LOCATION OF TIME CLOCK(S) & CONTROL PANEL(S).
   5.2. ROADWAY LUMINAIRES FROM NYS RT 17M TO THE BRIDGE TO THE AMY'S KITCHEN SITE SHALL BE PROVIDED WITH AUTOMATIC DIMMING AND MOTION CONTROLS TO ACTIVATE LIGHTS TO FULL POWER. LIGHTS WILL ILLUMINATE AT DUSK TO 50% CAPACITY WITH MOTION SENSING TURNING SPECIFIC LOCAL LUMINAIRES TO 100% ILLUMINATION POWER.
   5.3. LUMINAIRES SERVING THE SCIENCE OF THE SOUL PORTION OF THE SITE SHALL BE CONTROLLED BY ASTRONOMICAL TIME CLOCK WITH MANUAL OVERRIDE AND WILL TYPICALLY REMAIN OFF DURING ALL TIMES EXCEPT FOR OCCASIONS WHEN THE SITE IS HOSTING EVENTS OR OTHERWISE OCCUPIED FOR SMALL MEETINGS IN THE ANCILLARY FACILITIES. SITE ELECTRICIAN SHALL COORDINATE WITH THE OWNER FOR DIRECTION ON SITE LIGHTING CONTROLS AND ILLUMINATION ZONES.
6. NO ADDITIONAL EQUIPMENT OR ATTACHMENTS SHALL BE PERMITTED ON LIGHT POLES WITHOUT APPROVAL OF DESIGN ENGINEER. EQUIPMENT INCLUDES BUT IS NOT LIMITED TO BANNERS, FLAGS, ADDITIONAL LUMINAIRES OTHER THAN SPECIFIED ON THIS PLAN, AND SECURITY CAMERAS.
7. FINISH OF ALL LUMINAIRES AND POLES SHALL BE SELECTED BY OWNER.
8. THIS LIGHTING PLAN DOES NOT TAKE INTO ACCOUNT ANY ARCHITECTURAL BUILDING MOUNTED LUMINAIRES OTHER THAN THOSE SHOWN SPECIFICALLY ON THIS PLAN.
9. CALCULATION VALUES SHOWN ON THIS PLAN ARE TAKEN ON A HORIZONTAL PLAIN AT GROUND LEVEL USING A 92% LAMP LUMEN DEPRECIATION FACTOR. TOPOGRAPHICAL INFORMATION HAS NOT BEEN TAKEN ACCOUNTED FOR IN THESE CALCULATIONS.
10. LIGHTING CALCULATIONS SHOWN ARE BASED UPON DATA FILES PROVIDED BY THE LUMINAIRE MANUFACTURER. ACTUAL PERFORMANCE OF LUMINARIES AFTER INSTALLATION MAY VARY DUE TO UNCONTROLLABLE FIELD CONDITIONS.

Lanc & Tully Engineering and Surveying, P.C.

Amy's Kitchen
Science of the Soul

SoS Lighting Plan
Figure III.N-40A



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Amy's Kitchen
Science of the Soul

SoS Lighting Plan
Figure III.N-40B

Chapter III.O. Environmental Contamination

A. INTRODUCTION

This chapter assesses the potential for increased exposure to environmental contamination or hazardous materials during construction and operation of the Proposed Project, and the specific measures that would be employed to protect public health, worker safety, and the environment. A "hazardous material" is generally defined as any substance that poses a threat to human health or the environment. It is often used interchangeably with "contaminated material," but should not be confused with the term "hazardous waste," which is a regulatory term that refers to specific wastes (either possessing certain characteristics or appearing on a list established pursuant to federal law).

This chapter also addresses the potential concerns related to on-going environmental monitoring associated with the former Al Turi Landfill, which is located south of the Ver Hage property on the east side of the Wallkill River, and elevated average radon levels reported for the Town of Goshen.

This chapter concludes that although the potential for subsurface contamination has been identified in some areas of the Project Site, construction of the Proposed Project would not result in any significant adverse impacts, provided that a variety of standard measures contained in a Construction Health and Safety Plan are implemented during construction. Although some hazardous materials would likely still remain in the subsurface following construction, buildings would incorporate elements (such as vapor barriers) to prevent contaminated soil vapors from entering the new facilities, resulting in no potential for significant adverse impacts.

Furthermore, although operation of the Proposed Project would use a variety of materials and petroleum products (e.g., a small fuel oil tank for backup generators, chemicals for plant cleaning and maintenance, wastewater treatment chemicals) and would generate a variety of wastes as part of the manufacturing process, the storage, transportation, use, and disposal of these materials are subject to strict regulation and, as such, would not be expected to present the potential for significant adverse impacts during operation of the Proposed Project. Analysis of wastewater management and solid waste generation is provided in Chapter III-F, "Wastewater Management," and Chapter III-J, "Utilities and Solid Waste Management."

B. EXISTING CONDITIONS

TOPOGRAPHY AND SUBSURFACE CONDITIONS

In general, each of the properties that comprise the Project Site drains into the Wallkill River although ridgelines within the Ver Hage property and Echo Lake property cause water to flow

away from the Wallkill River before entering tributaries to the Wallkill River (such as the Cheechunk Creek on the Ver Hage property).[1]

The Echo Lake and Ver Hage properties have been subject to regrading in the past due to topsoil, sand and gravel mining. As a result, their topography and slopes are more variable than the more topographically consistent Strong Farm and Lipoff properties. The Ver Hage property ranges in elevation from a high of 425 feet above sea level at the west/central portions of the property to a low of 360 feet adjacent to the Wallkill River, with several areas of steep slopes of 25 percent or greater. The Lipoff property ranges in elevation from 405 to 360 feet adjacent to the Wallkill River, and contains steep slopes at the center of the property, adjacent to Cheechunk Creek. The Echo Lake property ranges in elevation from a high point of 530 feet near the southwest portion of the site to a low point of 360 feet on the property's southeastern boundary along the Wallkill River, and contains steep slopes at its eastern border along the Wallkill River. The Strong Farm property ranges in elevation from 465 feet at Owens Road to 360 feet at the Wallkill River, and is the most topographically level of the Proposed Project's properties.

Bedrock at the Project Site is mapped as the Trenton Group of shales at depths of 20 to 100 feet below ground surface. Unconsolidated deposits including sand and gravel from glacial meltwater, lacustrine silt and clay, and glacial till, overly the bedrock. The sand and gravel deposits occur in the southern part of the Ver Hage property and along the eastern-most border of the Echo Lake property. The lacustrine silt and clay are found by the western and central parts of the Echo Lake property. Till occurs at the northern ends of both the Ver Hage and Echo Lake properties, all of the Lipoff property, and the eastern- and western-most portions of the Strong Farm property.

Based on a report entitled "Geohydrology and Water Quality of the Wallkill River Near Middletown, New York" (USGS, 1998), and groundwater monitoring data associated with the Al Turi Landfill (located south adjacent to the Ver Hage property), the water table beneath the Project Site is located at elevations ranging from approximately 355 to 400 feet above mean sea level, corresponding to depths of approximately 15 to 30 feet below ground surface near the Wallkill River, and generally at approximately 30 to 40 feet below ground surface for the remainder of the Project Site. Based on preliminary geotechnical survey data collected in 2014, the depth to groundwater varies greatly across the Echo Lake property, ranging from 1 to 45 feet below ground surface, with the more shallow groundwater suspected to be indicative of perched conditions. Based on a preliminary geotechnical study completed at the Ver Hage property in 2015, depth to water was recorded between 15 to 20 feet below ground surface on the southern portion of the property, within the footprint of the proposed food processing facility. In general, groundwater at the Project Site is expected to flow toward the Wallkill River (to the west for the Strong Farm and Lipoff properties, to the west-northwest for the Ver Hage property, and to the east-northeast for the Echo Lake property). However, local variations in water table depth and groundwater flow direction can occur based on factors such as topographic low points, subsurface openings or obstructions, current or past pumping of groundwater (for potable or non-potable uses), past filling, and other factors beyond the scope of this assessment.

[1] The Wallkill River adjacent to the Project Site does not flow along the original river course and is actually a canal that was dug in the early 1800s.

OLD AL TURI LANDFILL

An unlined landfill operated on the parcel located south-adjacent to the Ver Hage property from 1968 to 1983. This site, referred to as the "Old Al Turi Landfill" or "Class II Landfill, is listed as a New York State Inactive Hazardous Waste Disposal Site due to disposal of solvents and other materials in the landfill. The Class II landfill was capped in 2001 in accordance with a NYSDEC-approved remedy for the site. Some of the material used for the landfill cap was reportedly mined from the Ver Hage property, which was formerly owned by the operator of the Al Turi facility. The approved remedy also included a groundwater monitoring program to monitor for potential new releases from buried waste in the landfill, which, if detected, would trigger additional contingency measures. This monitoring program is currently on-going, and includes semi-annual gauging and sampling of several monitoring wells located on the Ver Hage property. A lined, Part 360-permitted landfill, which operated directly south of the Old Al Turi landfill, was closed in 2002 and subsequently capped. An on-going groundwater monitoring program is being implemented as part of the Part 360 landfill closure, and also includes sampling of monitoring wells on the Ver Hage property.

Based on information obtained from a Freedom of Information Law (FOIL) request submitted to the NYSDEC Division of Solid Waste, groundwater sampling results for the Class II Landfill monitoring wells are compared to Groundwater Protection Trigger Levels (GWTLs) that were established for certain contaminants of concern identified for the Old Al Turi Landfill (including volatile organic compounds and metals), and calculations for cumulative mass loading of contaminants to the Wallkill River are compared to surface water quality benchmarks. This information is used to determine whether implementation of the NYSDEC-approved contingency plan for groundwater remediation is warranted.

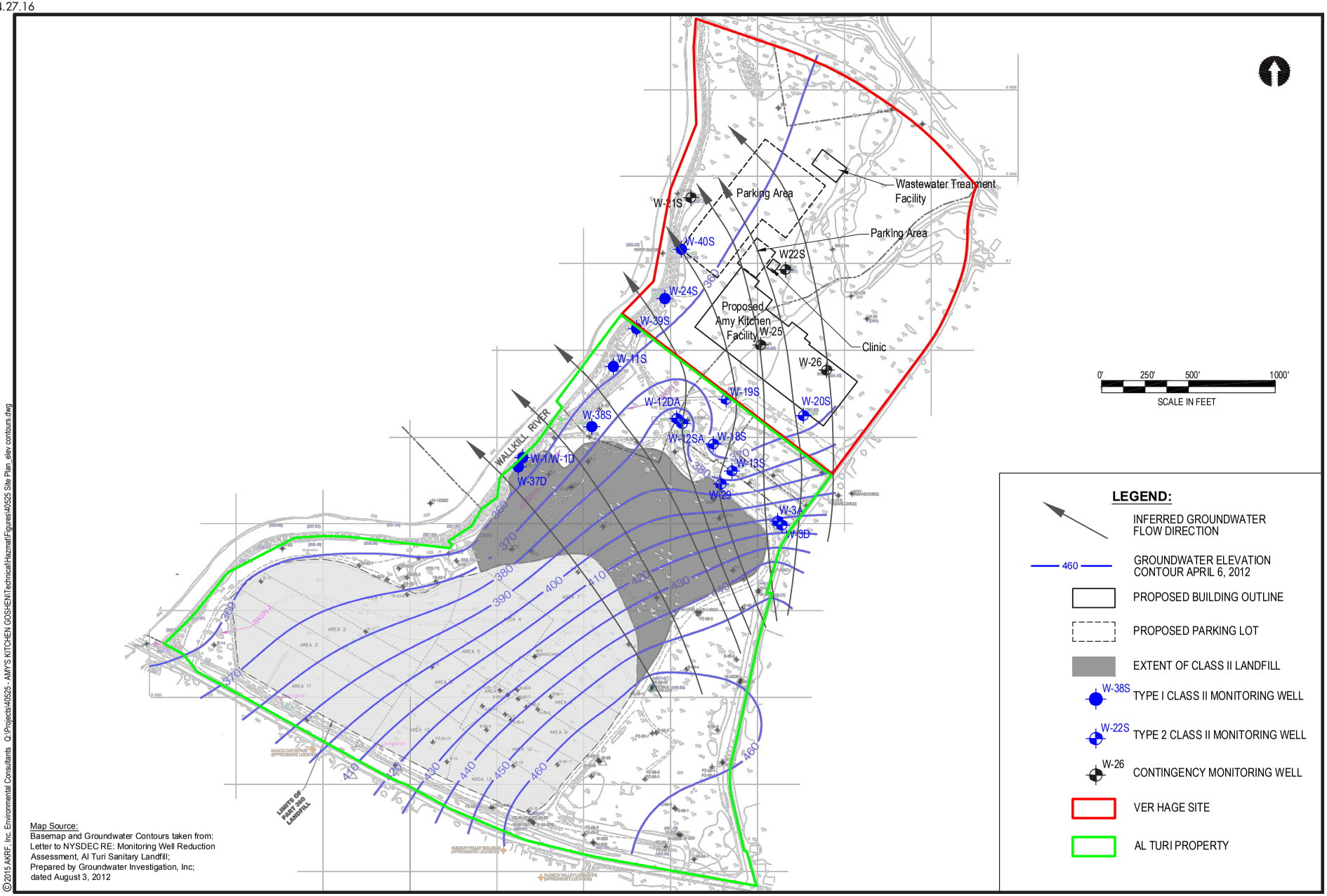
Groundwater elevation data compiled from the both the Class II and Part 360 Landfill monitoring programs indicate a predominantly west-northwesterly inferred flow direction from the western portion of the Old Al Turi Landfill towards the Wallkill River, with a more northwesterly flow component near the northeastern portion of the Landfill. A groundwater mound was noted at well MW-12SA (located north of the central portion of the landfill) during some monitoring events, which directs flow from the eastern portion of the Class II landfill toward the north-northwest. See **Figure III.O-1** for groundwater contours constructed from the January 2011 monitoring data.

Three (3) of the Class II Landfill monitoring wells on the Ver Hage property (well numbers W-20S, W-25, and W-26) are located within the footprint of the proposed Amy's Kitchen food processing facility building and loading dock area. The inferred groundwater flow lines intersecting these monitoring wells indicate that they are either outside of the flow path of the Old Al Turi Landfill or marginally downgradient of the eastern tip of the Landfill (see **Figure III.O-1**). Furthermore, of these three (3) wells, only W-20S has been sampled in the past ten (10) years. Volatile organic compounds were not detected in W-20S during any of the sampling events reviewed, and all detected metals concentrations were below their respective GWTLs. In addition, this well was reported to be "dry" and/or not sampled during ten (10) of the 16 sampling events reviewed. NYSDEC Division of Environmental Remediation has approved a request to close and decommision these monitoring wells (see **Appendix III.O**).

PHASE I ENVIRONMENTAL SITE ASSESSMENTS (ESAS)

Phase I Environmental Site Assessments (ESAs) were completed for each of the four (4) properties comprising the Project Site, and a database and historical photograph review was

4.27.16



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Map Source:
Basemap and Groundwater Contours taken from:
Letter to NYSDEC RE: Monitoring Well Reduction Assessment, Al Turi Sanitary Landfill;
Prepared by Groundwater Investigation, Inc;
dated August 3, 2012

Amy's Kitchen
Science of the Soul

Ver Hage Property Groundwater Elevation Contour Map - April 2012

Figure III.O-1

conducted for the Heritage Trail Utility Corridor (see **Appendix III.O**). These studies were conducted to identify recognized environmental conditions (RECs) and other environmental concerns associated with the properties resulting from past or current site usage and usage of neighboring properties. RECs are defined in ASTM International (ASTM) Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property. The Standard also includes definitions of Controlled REC (CREC), Historic REC (HREC), and *de minimis* Condition. A CREC is REC resulting from a past release that was addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent) with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). An HREC is a REC that has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. A *de minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action. Additionally, the potential for vapor encroachment conditions (VECs) was evaluated for the Ver Hage property, where the food processing plant will be located. VECs are defined by ASTM E 2600-10 as the presence or likely presence of contaminant vapors in the property subsurface caused by contaminated soil or groundwater on or near the property. A schematic depicting the identified environmental concerns as part of the Phase I ESAs is provided in **Figure III-O-2**. This section summarizes the conclusions of each of the ESAs.

VER HAGE PROPERTY

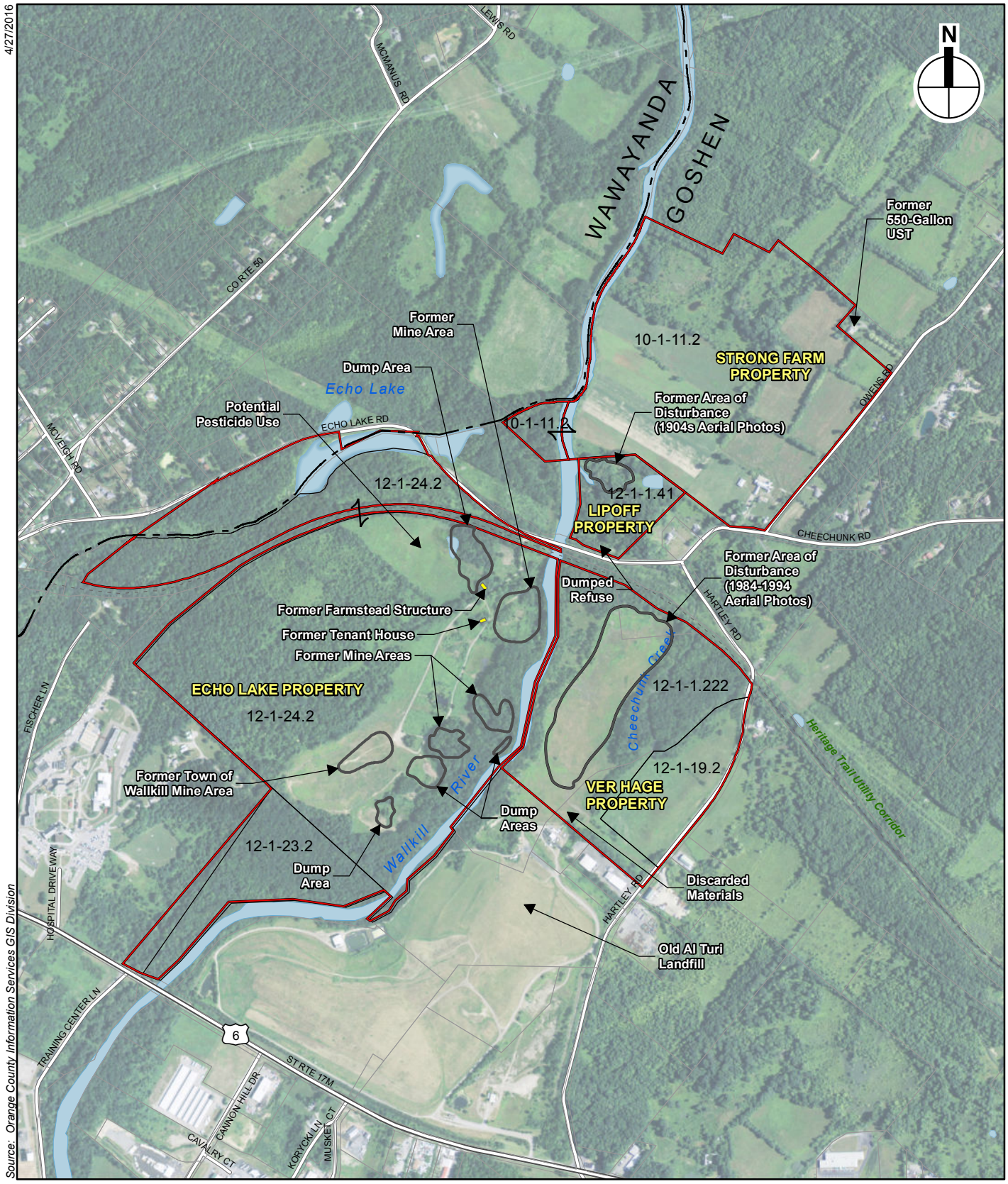
A Phase I ESA was prepared for the Ver Hage property by AKRF, Inc. in December 2015. The Phase I ESA identified the following VECs, CRECs, HRECs, and *de minimis* Conditions associated with the Ver Hage property:

On-Site VEC

- The volatile organic compound (VOC) trichloroethene (TCE) was detected in one (1) on-site groundwater monitoring well at a concentration exceeding its New York State Department of Environmental Conservation (NYSDEC) Class GA Water Quality Standard. The TCE degradation product *cis* 1,2-dichloroethene (*cis* 1,2-DCE) was detected in the same well at a concentration below its Class GA standard, as documented in the 2007 groundwater monitoring report for the south-adjacent Old Al Turi Landfill. Notwithstanding, more recent monitoring events for the Old Al Turi Landfill conducted between 2008 and 2013 indicated that groundwater concentrations were below the Class GA groundwater standards in monitoring wells on the Ver Hage property.

Off-Site CRECs

- The south-adjacent parcel operated an unlined landfill (the Old Al Turi Landfill) from 1968 to 1983 and is listed as a New York State Inactive Hazardous Waste Disposal Site due to disposal of solvents and other materials in the landfill. TCE and *cis* 1,2-DCE historically detected in groundwater on the Ver Hage property are likely associated with this facility. In 2010, the NYSDEC changed the classification of the Inactive Hazardous Waste Site from



Project Site

Project Parcel Boundaries (with parcel #)

Amy's Kitchen
Science of the Soul

Recognized Environmental Conditions/Concerns

Figure III.O-2

Class 2 to 4[2] based on the remedy completed and results of on-going groundwater monitoring.

- A Part 360 permitted solid waste landfill (the Al Turi Landfill), which also operated at the south-adjacent parcel, is located further to the south of the Old Al Turi Landfill. This landfill has been capped and closed (with post-closure monitoring under NYSDEC oversight).

The Phase I ESA also revealed the following HRECs, *de minimis* conditions, and other environmental concerns:

Off-Site HRECs

- Fourteen (14) closed-status spills (two (2) tank failures and 12 miscellaneous/other causes) were reported at the south-adjacent property. Closed-status spills at this off-site property are considered HRECs.

De Minimis Conditions

- Areas of disturbance noted in the western portion of the Ver Hage property on aerial photographs from 1964 and 1991 to 1994, and discarded items (tires, piping, etc.) noted during the property reconnaissance indicate the potential for historic disposal and/or import of fill materials of unknown origin.
- Apparent agricultural fields were noted throughout the Ver Hage property on aerial photographs dated 1940 through 1975. Residual pesticides from the former agricultural uses could be present in shallow or deeper soil on the Ver Hage property.

ECHO LAKE PROPERTY

A Phase I ESA was prepared for the Echo Lake property by Environmental Compliance Services, Inc. (ECSI) in December 2013. Phase II investigations were conducted in June and July 2015. Historical maps reviewed as part of the Phase I identified three (3) former structures at the property, including a farm house, a tenant house, and two (2) connected barn structures. The Phase I ESA identified the following RECs on the Echo Lake property:

- Potential past storage and use of fuel oil for the former farmstead structures and gasoline for operating farm equipment. An approximately 1,000-gallon above-ground storage tank (AST) (corroded and in contact with soil) was observed near the former farmstead structures and petroleum odors were noted in association with the tank.
- Several material storage areas/dump sites were observed, containing various materials buried and/or scattered across the surface of each area. Materials primarily consisted of household items and construction debris, and included farm equipment, vehicle parts, empty and rusted 55-gallon drums, waste, glass, wood, plastics, building materials, large metal objects and tree stumps. One (1) of the dump sites was located adjacent to the Wallkill River, and some of the waste materials were observed to be below the high water mark for the River.
- Two (2) former mine areas (suspected to have been mined for sandy loam material during former farming operations) were identified on the eastern portion of the property, just west of the Wallkill River. No regulation of fill materials existed when the areas were backfilled; therefore, they may contain additional waste materials.

[2] Class 4 sites are those considered properly closed, but requiring continued management.

- A former Town of Wallkill sand mine located on the southern part of the property contained stockpiles of tree stumps and limbs. Unregulated materials may have been used to backfill this mine.
- Former dairy farm operations at the property may have included the use of pesticides. Although not specified in ECSI's report, former pesticide use is considered a *de minimis* Condition.

LIPOFF PROPERTY

A Phase I ESA prepared for the Lipoff property by AKRF, Inc. in June 2015 identified the following *de minimis* Condition:

- Disturbance was noted on the northern portion of the property in 1940 and 1942 aerial photographs, and some refuse was noted to be dumped on the southern portion of the project site along Echo Lake Road during the site reconnaissance. Fill of unknown origin and potential further dumping may be associated with these activities.

STRONG FARM PROPERTY

A Phase I ESA was prepared for Strong Farm by William L. Going & Associates, Inc. in April 2015 for three (3) tax parcels identified as 10-1-9, and 10-1-11.1, and 10-1-11.2. The tax parcel 10-1-11.2 is the only parcel included as part of the Project Site; the remaining parcels are considered off-site. Tax parcel 10-1-11.2 is approximately 96 acres and includes a main house, a tenant house, barns, and farmland. The other off-site parcels contain a single-family residence and farmland comprising approximately 17 acres.

The Phase I ESA identified the following off-site HREC on the north-adjacent parcel (10-1-11.1):

- The single-family residence at 51 Owens Road utilized a 550-gallon underground storage tank (UST) that failed a tightness test. The tank test failure was reported to the NYSDEC and was assigned Spill No. 1411004. The tank was removed in April 2015. No field evidence of contamination was noted during tank removal, and no VOCs or semi-volatile compounds (SVOCs) were detected in two (2) endpoint samples collected from the tank grave (one from the bottom and one four (4)-point composite from the sidewalls). The Spill case was closed in late April 2015. Documentation related to the tank removal and spill closure was included as an attachment to the Phase I ESA report. Although not specified in the Phase I ESA report, this condition is considered a Historic REC (HREC).

During the Phase I inspection, samples were collected from two (2) wells: one at the on-site main house and one at the off-site single-family residence on tax parcel 10-1-11.1. The samples were negative for Total Coliform and E. Coli, and no VOCs or SVOCs were detected.

HERITAGE TRAIL UTILITY CORRIDOR

A regulatory database and historical photograph review prepared for the Heritage Trail Utility corridor by AKRF, Inc. in March 2016 identified the following conditions:

- The majority of the subject corridor consisted of the roadbed for railroad tracks from before 1940 until approximately 1994, indicating the potential for contamination from track ballast, railroad ties, track maintenance operations, transformers, etc. Potential contaminants in soil and/or groundwater including, but not necessarily limited to, heavy metals, petroleum-

related compounds, and polychlorinated biphenyls, could be encountered during utility installation.

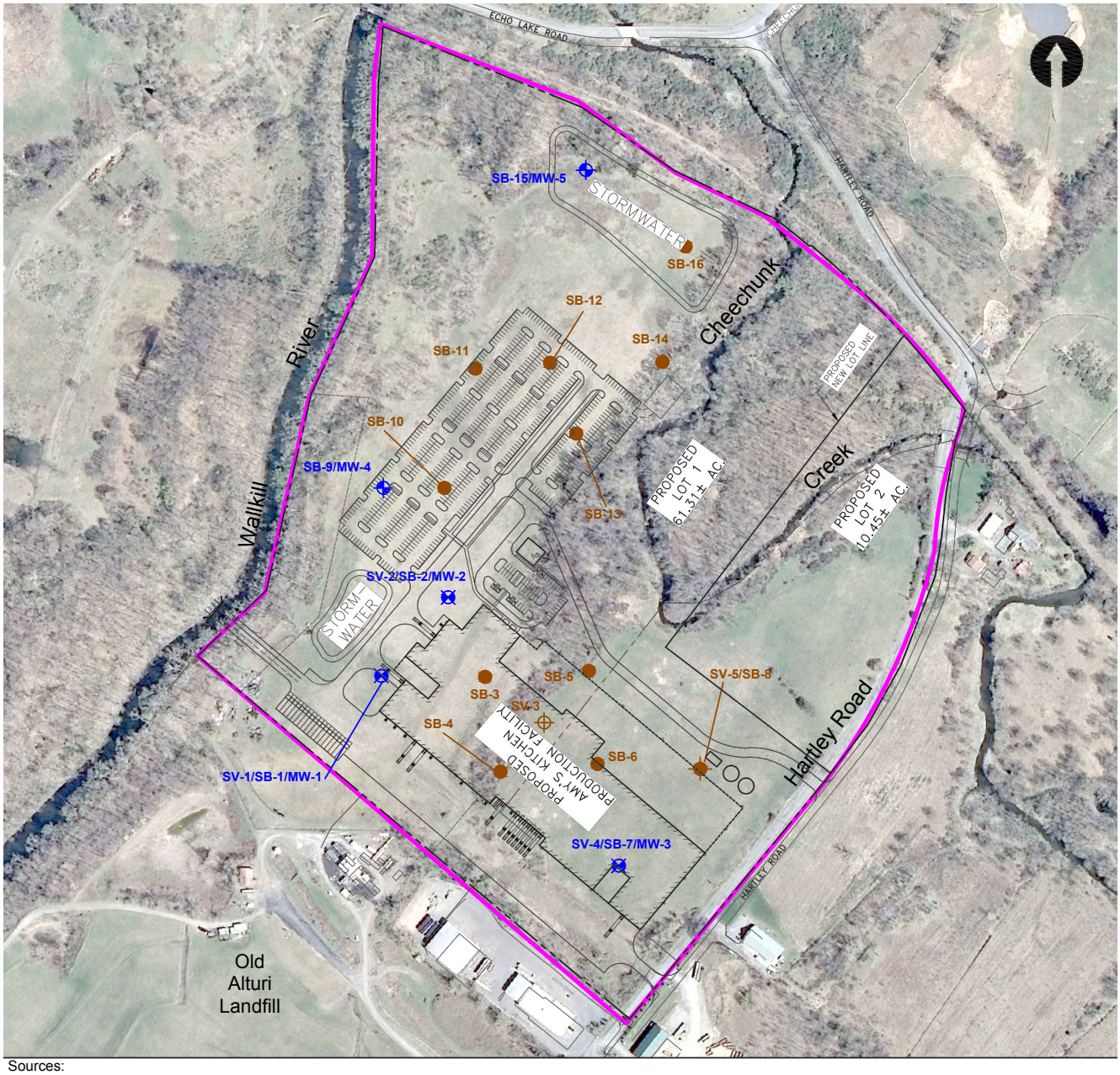
- The parcel containing the City of Middletown landfill, waste transfer station, and wastewater treatment plant, located at the western end of the corridor was listed in several regulatory databases. In particular, several closed petroleum spills and documented hazardous waste generation were reported at the wastewater treatment plant, and the former landfill was listed as a Federal Superfund site (with No Further Action Planned status) and in the NYSDEC Inactive Hazardous Waste Site and Voluntary Cleanup Program (VCP) databases. Depending on the final design of the proposed utility connections at this parcel, potential soil and/or groundwater contamination associated with these listings may be encountered during construction activities.
- An Orange and Rockland County (O&R) substation located north-adjacent to the western end of the utility corridor is listed in the Petroleum Bulk Storage (PBS) database with several underground storage tanks containing gasoline, diesel, and used oil. Several closed-status spills (mostly associated with minor releases of electrical transformer fluid) were also listed at this facility.
- Several additional facilities near the western end of the utility corridor, including a gasoline station, a dry cleaner, and GenPak Corporation (a food packaging manufacturer), were listed in the PBS, Spills, and/or hazardous waste generator databases. The information provided in the regulatory databases indicated documented subsurface contamination at the gas station and GenPak facilities, some of which has been remediated, but residual contamination could remain. Additionally, undocumented releases from these facilities may have affected groundwater along the utility corridor.
- Dumped coal tar waste from a nearby former manufactured gas plant (MGP) was discovered at a small O&R substation located approximately 550 feet north of the central portion of the corridor (near where it crosses Monhangen Brook). The waste was reportedly removed and the site restored in April 2010 and a Construction Completion Report was submitted to NYSDEC in July 2010.
- Apparent agricultural fields were noted surrounding the Heritage Trail Utility Corridor on aerial photographs dated 1940 through 1975. Potential pesticides in stormwater run-off from the former agricultural fields could be present in shallow soil along the corridor.

PHASE II SUBSURFACE INVESTIGATION REPORTS

Phase II Subsurface Investigation Reports were completed for the Echo Lake and Ver Hage Properties (see **Appendix III.O**). The purpose of the Phase II investigations was to further investigate the environmental conditions identified in the Phase I ESAs for each of these properties. This section summarizes the conclusions of both of the Phase II Reports.

VER HAGE PROPERTY

A Phase II Subsurface Investigation Report was prepared for the Ver Hage property by AKRF, Inc. in December 2015. The investigation included advancement of 16 soil borings, installation of five (5) temporary wells, installation of five (5) soil vapor monitoring points, and collection and laboratory analysis of 16 soil samples, five (5) groundwater samples and five (5) soil vapor samples. The Phase II sampling locations are depicted in **Figure III.O-3**. The soil borings and temporary wells were advanced within areas of proposed construction, including the proposed



Sources:
Aerial: 2013 New York Statewide Digital Orthoimagery. *Site Features:* Land & Tully, "Overall Schematic Site Layout", dated 9-24-15.

LEGEND:

- Property Detail VerHage
- SV-3 — Soil Vapor Location
- SB-3 — Soil Boring Location
- SB-15/MW-5 — Soil Boring/Monitor Well Location
- SV-5/SB-8 — Soil Vapor/Soil Boring Location
- SV-2/SB-2/MW-2 — Soil Vapor/Soil Boring/ Monitor Well Location

0' 200' 400' 800'
SCALE IN FEET

Amy's Kitchen
Science of the Soul

Ver Hage Property Phase II Investigation
Sampling Locations
Figure III.O-3

production facility building, surface parking area, wastewater pre-treatment facility, and stormwater retention area; the soil vapor points were installed within the footprint of the proposed production facility building. All soil borings were advanced to 10 feet below ground surface (bgs), and the temporary monitoring wells were installed by extending the corresponding boring to approximately five (5) feet below the water table (encountered at approximately 14 to 23 feet bgs) and setting a one (1)-inch diameter PVC well screen across the water table. No field evidence of contamination (stains and/or odors) was observed at depth in any of the soil borings and elevated levels of VOCs were not detected based on field screening with a photoionization detector (PID); therefore, the soil samples selected for laboratory analysis were collected at a shallow two (2)-foot interval ranging between 0.5 and 4 feet bgs (where soil disturbance during future development is more likely) for all soil borings, except at SB-15, where a deeper sample was selected due to anticipated deeper grading required for the stormwater basin. Soil samples were analyzed for VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs), and metals. Groundwater and soil vapor samples were analyzed for VOCs only.

Soil sampling results were compared to NYSDEC Part 375-6.8 Regulations Soil Clean-up Objectives (SCOs) for Commercial Use, Unrestricted Use, and the Protection of Groundwater. Only one (1) of the 16 shallow soil samples contained a VOC (acetone) above the Unrestricted Use and Protection of Groundwater SCO. Acetone is a known laboratory chemical and is suspected to be associated with laboratory contamination and not representative of site conditions. Arsenic, manganese, and nickel were detected at concentrations exceeding the SCOs for Unrestricted Use in three (3) samples, and arsenic was detected above the Groundwater Protection and Commercial use SCOs in one (1) sample. No evidence of a release (e.g., odors or staining) or obvious source of metals contamination or fill material was noted in the soil borings; therefore, these metals were attributed to naturally occurring or background conditions and not a release or spill. PCBs and pesticides were not detected in the soil samples, and all detected SVOC concentrations were below their respective SCOs.

The groundwater samples indicated low levels of chlorinated VOCs (1,1-dichlorethane and cis-1,2-dichloroethene) in one (1) well, below the Class GA water quality standards and consistent with detections reported in historic data from nearby monitoring wells associated with post-closure monitoring of the Old Al Turi Landfill. The presence of these compounds (which are degradation products of the chlorinated solvents 1,1,1-trichlorethane and tetrachloroethene and/or trichloroethene) was attributed to degradation of low levels of chlorinated solvents associated with the Old Al Turi landfill, and was not considered indicative of a new release or an on-site source of contamination. Low level detections of two (2) other VOCs (both chlorofluorocarbons, or CFCs) below Class GA Standards in two (2) monitoring wells were also attributed to known groundwater contamination associated with the landfill, and considered consistent with ongoing monitoring. No other VOCs were detected in any of the groundwater samples.

A review of the soil vapor sample analytical results indicated that 32 of the 74 VOCs analyzed were detected in one (1) or more of the samples. Acetone, trichlorofluoromethane, and Freon TF were detected at concentrations greater than 10 times the corresponding United States Environmental Protection Agency (USEPA) and New York State Department of Health (NYSDOH) background levels for indoor air. Acetone is a common laboratory contaminant, was not detected in groundwater samples collected during this investigation, and is not reported in available historical data for the Old Al Turi Landfill groundwater monitoring program; therefore, the acetone detected in the soil vapor samples is suspected to be associated with laboratory contamination. The elevated trichlorofluoromethane and Freon TF levels in two (2) of the soil

vapor samples could be attributable to historic disposal of refrigerants in the Old Al Turi Landfill. The three (3) VOCs for which NYSDOH has established Air Guideline Values (methylene chloride, tetrachloroethene [PCE], and trichloroethene [TCE]), were not detected in any of the soil vapor samples analyzed. Based on these results, the TCE detected historically in groundwater at the Ver Hage property does not appear to represent a vapor intrusion concern.

ECHO LAKE PROPERTY

A Phase II Subsurface Investigation Report was prepared for the Echo Lake property by ECSI in September 2015. The investigation included:

- A ground penetrating radar (GPR) survey in the area of the former barns and farm house to search for buried foundations and potential abandoned underground storage tanks;
- Excavation of six (6) shallow test pits in the former agricultural field and collection and laboratory analysis of one (1) shallow soil sample from each test pit;
- Collection and laboratory analysis of three (3) shallow soil samples from a fenced enclosure area where former petroleum storage was suspected;
- Collection and laboratory analysis of three (3) sediment samples and one (1) surface water sample from a wetland area and stormwater basin thought to have received stormwater run-off from former mine areas; and
- Excavation of a total of 101 test pits in the former mines, material storage/dump areas, former tenant and farm house foundations, former barn area, and remediated river dump[3].

The test pits and sampling locations were selected to investigate areas of previous disturbance noted in the Phase I report, and were used to confirm subsurface soil conditions and characterize materials. Soil samples collected from the former agricultural fields were analyzed for VOCs, SVOCs, pesticides, herbicides, total petroleum hydrocarbons (TPH), and heavy metals; soil samples collected from the fenced enclosure were analyzed for petroleum-related VOCs and SVOCs, TPH, and metals. Sediment and surface water samples were analyzed for VOCs, SVOCs, herbicides, pesticides, TPH, and heavy metals. Figures showing the sampling and test pit locations are included in ECSI's Phase II report (see **Appendix III.O**).

No evidence of waste or unusual fill material was noted in test pits excavated in the former mine areas and minimal waste (e.g., cable wire, rubber hosing) was observed in the former Town of Wallkill mine storage areas. Buried waste was identified in test pits excavated in the areas of the former tenant house and main farm house foundations, consisting of apparent construction debris and household items (appliances, rugs, furniture, etc.) apparently from demolition of the former structures. Remnants of 275-gallon aboveground storage tanks were observed in each of the foundation areas (one (1) tank in each area). The tanks contained a small amount of residual oil/sludge but no evidence of contamination was noted in the soil around the tanks. Apparent demolition debris and vehicle parts were encountered in test pits excavated in the former barn area; however, no evidence of contamination was observed in test pits advanced around the 1,000-gallon gasoline storage tanks identified in this area during the Phase I ESA. Sand and gravel backfill was noted in test pits excavated in the remediated Wallkill dump area and minimal waste was observed. These observations served to confirm that substantial waste had

[3] Sometime prior to the Phase II field activities, the previous property owner reportedly remediated the Wallkill River waste dump area by removing the buried waste and regrading of the area. The Phase II included test pits in this area to verify that it was appropriately remediated.

been removed from this area, as reported by the property owner. Analytical results for the soil and sediment samples did not identify any contaminants at concentrations above the NYSDEC Part 375 SCOs for Unrestricted Use, and no contaminants were detected in the surface water sample at concentrations above the NYSDEC Class GA groundwater standards.

Based on results of the investigation, ECSI recommended: excavation, segregation, and off-site disposal of all waste materials observed at the property; cleaning and removal of the two (2) 275-gallon and one (1) 1,000-gallon aboveground storage tanks in accordance with applicable regulations; and environmental oversight during the waste removal activities, including collection and laboratory analysis of confirmatory endpoint samples. ECSI estimated that approximately 70 cubic yards of scrap metal and 500 cubic yards of construction and demolition debris (C&D) would require removal and off-site disposal.

AVERAGE RADON LEVELS

A review of New York State Department of Health on-line data[4] indicates that the average level of radon found in basements in the Town of Goshen is 5.16 picocuries/liter, which exceeds the USEPA recommended action level is 4.0 picocuries/liter. Of the 74 homes screened in Goshen, 27 had basement radon levels exceeding the USEPA action level.

C. FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the Proposed Project, the Project Site would remain unchanged. However, hazardous material conditions in the project area associated with, for example, the Old Al Turi Landfill, may change as part of natural or engineered remediation.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

Construction of the proposed Amy's Kitchen facility would require abandonment of the three (3) monitoring wells (W-20S, W-25, and W-26) associated with the Old Al Turi Landfill that are located on the Ver Hage property. Based on the information discussed above, these wells are not critical to the Class II Landfill monitoring program and their abandonment is not expected to pose a significant adverse impact with respect to groundwater contamination. NYSDEC Division of Environmental Remediation has approved a request to discontinue these monitoring wells. All other on-site monitoring wells associated with the Old Al Turi landfill would be maintained at the Ver Hage property as appropriate to ensure the efficacy of the remedy that was implemented for the landfill.

Development on the Project Site in general would involve excavation of on-site soil and potential dewatering for construction purposes. Absent appropriate controls, as described below, the Proposed Project could potentially result in an increase in exposure for the community and construction workers to contaminants in soil and groundwater. As part of the Proposed Project, soil disturbance would occur on the Ver Hage property for construction of the Amy's Kitchen food processing facility, on the Echo Lake property for construction of the Science of the Soul Conference Center, along the Heritage Trail Utility Corridor for installation of water and wastewater utility connections; and for construction of an access road connecting Route 17M to the southern portion of the Echo Lake property. The Strong Farm and Lipoff properties would remain undeveloped. In general, contaminants were not identified in soil or groundwater at levels exceeding regulatory criteria for the intended site use during the Phase II Subsurface

[4] https://www.health.ny.gov/environmental/radiological/radon/towns.htm

Investigations of the Ver Hage and Echo Lake properties; however, several areas of waste disposal were noted at the Echo Lake property. The Applicant anticipates that potential impacts from potential unforeseen conditions would be avoided by performing construction activities in accordance with the following protocols:

- The waste disposal areas at the Echo Lake property would be addressed by excavating, segregating and disposing of the waste materials off-site in accordance with applicable regulations. Endpoint samples would be collected from the excavations to confirm that associated contaminants do not remain in the underlying soil. Soil removal would be conducted if contaminant concentrations exceeding the applicable regulatory criteria are identified.
- Results from the soil vapor sampling at the Ver Hage Property did not identify VOCs above the NYSDOH Air Guideline Values, and data from on-going groundwater monitoring associated with the Old Al Turi Landfill shows minimal groundwater impacts on the Property. Therefore, there is low potential for future contaminant migration onto the Property and a low potential for vapor encroachment. Nevertheless, as a precautionary measure, a vapor barrier will be incorporated in the design of the Amy's Kitchen food processing facility building on the Ver Hage property to prevent potential radon and/or vapor intrusion.
- After design of the utility line connection is completed, targeted soil and groundwater sampling would be conducted along the Heritage Trail Utility Corridor to characterize subsurface materials that would be encountered during construction. The sampling parameters would be selected based on the anticipated contaminants of concern associated with the conditions identified based on the regulatory database review (e.g., metals, pesticides, PCBs, petroleum compounds associated with former railroad use; chlorinated solvents associated with the nearby dry cleaner; VOCs and SVOCs associated with nearby petroleum spills).
- A Construction-Phase Environmental Health and Safety Plan (CHASP) would be prepared and implemented to manage disturbance of soil and handling of dewatering fluids, and would include a contingency plan to address sources or areas of contamination, if any, identified during targeted sampling along the utility corridor and/or encountered during future construction activities. Elements of the CHASP will include the following:
    - All soil and fill excavated as part of Project Site construction activities would be managed in accordance with all applicable regulations. All soil intended for off-site disposal would be tested in accordance with the requirements of the intended receiving facility. Transportation of all material leaving the Project Site for off-site disposal would be in accordance with Federal, State and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc. Among the pertinent regulatory requirements are those found in 6 NYCRR Parts 360 through 376, which set forth waste management requirements. Any waste disposal that would occur outside of New York State would be conducted in accordance with similar federal and individual state requirements.
    - If tanks, drums, or other sources of subsurface contamination are discovered at the Project Site during excavation activities, they would be removed in accordance with all applicable regulations. Any associated soil and groundwater contamination would be mitigated in accordance with the state, county, and local requirements. The removal of

petroleum tanks is regulated by NYSDEC (6 NYCRR Section 613.9), which requires that tanks no longer in use be closed in place or removed according to specific requirements. Contaminated soils surrounding the tanks, separate phase product on the water table, or contaminants dissolved in the groundwater, if encountered, would be addressed in accordance with applicable NYSDEC regulations (6 NYCRR Section 611.6) and Article 12 of the New York Navigation Law (notification and management requirements for spills to the waters of the state).

- Access to the Project Site for groundwater monitoring associated with the NYSDEC closure of the Al Turi Landfill would be permitted, as necessary.

- If dewatering is required (e.g., for installation of utilities), treatment and discharge of dewatering fluids would be conducted in accordance with all applicable regulations and guidance, including obtaining appropriate permits. The discharge of wastewater to surface or groundwater in New York State will be conducted in accordance with 6 NYCRR Part 750.

- Appropriate erosion and sediment controls will be implemented in accordance with a Stormwater Pollution Prevention Plan (SWPPP). This will minimize the potential of dust generation and sediment in stormwater during the soil disturbance activities. Analysis of stormwater management for the project is provided in Chapter III-G, "Stormwater Management."

With the implementation of these measures, no significant adverse impacts related to hazardous materials would be expected to occur as a result of the construction activities for the Proposed Project. Following construction of the Proposed Project, there would be no further potential for adverse impacts.

E. PROPOSED MITIGATION

The Proposed Project would not result in any unavoidable adverse impacts or any significant adverse impacts. As indicated above, potential impacts from potential unforeseen conditions would be avoided by performing construction activities in accordance with the protocols described as part of the Proposed Project. As such, no significant adverse impacts are anticipated to occur and no mitigation would be required. ✷

A. INTRODUCTION AND METHODOLOGY

This chapter assesses the potential of the Proposed Project to affect cultural resources. Cultural resources include both architectural and archaeological resources. Archaeological resources can include archaeological remains from Native American people who used or occupied a site, and also remains from activities that occurred during the historic period (beginning with European settlement of the area) that include European contact with Native Americans, as well as battle sites and foundations. Historic architectural resources ("historic resources") include significant built resources, such as structures, buildings, and objects including National Historic Landmarks (NHLs), and properties listed on or determined eligible for listing on the State and National Registers of Historic Places (S/NR).

The historic and archaeological resources analysis has been prepared in accordance with the State Environmental Quality Review Act (SEQRA), Section 14.09 of the New York State Historic Preservation Act of 1980 (SHPA), and Section 106 of the National Historic Preservation Act (NHPA). Section 14.09 of SHPA and Section 106 of the NHPA require that state and federal agencies respectively consider the effect of their actions on properties listed on or determined eligible for listing on the S/NR. Compliance with Section 106 satisfies the requirements of SHPA, set forth in Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law.

HISTORIC RESOURCES METHODOLOGY

STUDY AREA DEFINITION

In general, potential effects on historic resources can include both direct physical effects—demolition, alteration, or damage from nearby construction, such as from construction vibration; and indirect effects—the isolation of a property from its surrounding environment or the introduction of visual, audible, or atmospheric (e.g., pollutants) elements that are out of character with a property or that alter its historic setting and context (e.g., contextual effects). Significant adverse effects can occur if a project would cause a change in the quality of a property that qualifies it for inclusion in the S/NR. Physical, or direct, effects generally have the potential for impacts in a smaller geographic area than contextual or visual effects.

Therefore, to account for both potential direct and indirect effects, the historic resources study area (or Area of Potential Effect ["APE"]) for the Proposed Project was defined as the areas adjacent to the Project Site and those areas within visual range of the Project. Based on geography and vegetation including tree cover, the Project Site is visible from: 1) properties adjacent to the Ver Hage property to the south and east, 2) from the portion of the Heritage Trail that crosses north of the Echo Lake property, and 3) from the properties along Owens Road north of the Strong Farm property having visibility to the agricultural fields that could be used

for occasional parking on the Strong Farm property, and with minimal visibility (during the winter months) of the proposed SoS Conference Center on the Echo Lake Property.

IDENTIFICATION OF HISTORIC RESOURCES IN THE STUDY AREA

The New York State Office of Parks, Recreation and Historic Preservation (OPRHP)'s Cultural Resource Information System (CRIS)[1] was reviewed to identify if there are properties that are listed on or determined eligible for listing on the S/NR in the study area ("known historic resources"). In addition, the study area was surveyed to assess whether there could be any historic resources that may meet the criteria for S/NR listing but have not yet been officially reviewed for eligibility by the New York State Historic Preservation Office (SHPO) ("potential historic resources").

ARCHAEOLOGICAL RESOURCES METHODOLOGY

STUDY AREA DEFINITION

The study area for archaeological resources comprises the four (4) Project Site parcels (Echo Lake, Ver Hage, Lipoff, and Strong Farm), the Heritage Trail Utility Corridor, and the Access Road Improvement Area (see **Figure III.P-1**). Areas that may experience ground surface impacts through construction of the Proposed Project are defined as the archaeological area of potential effect (APE). Therefore, the archaeological APE only includes those areas that would be disturbed as part of the Proposed Project and may not include each parcel in its entirety.

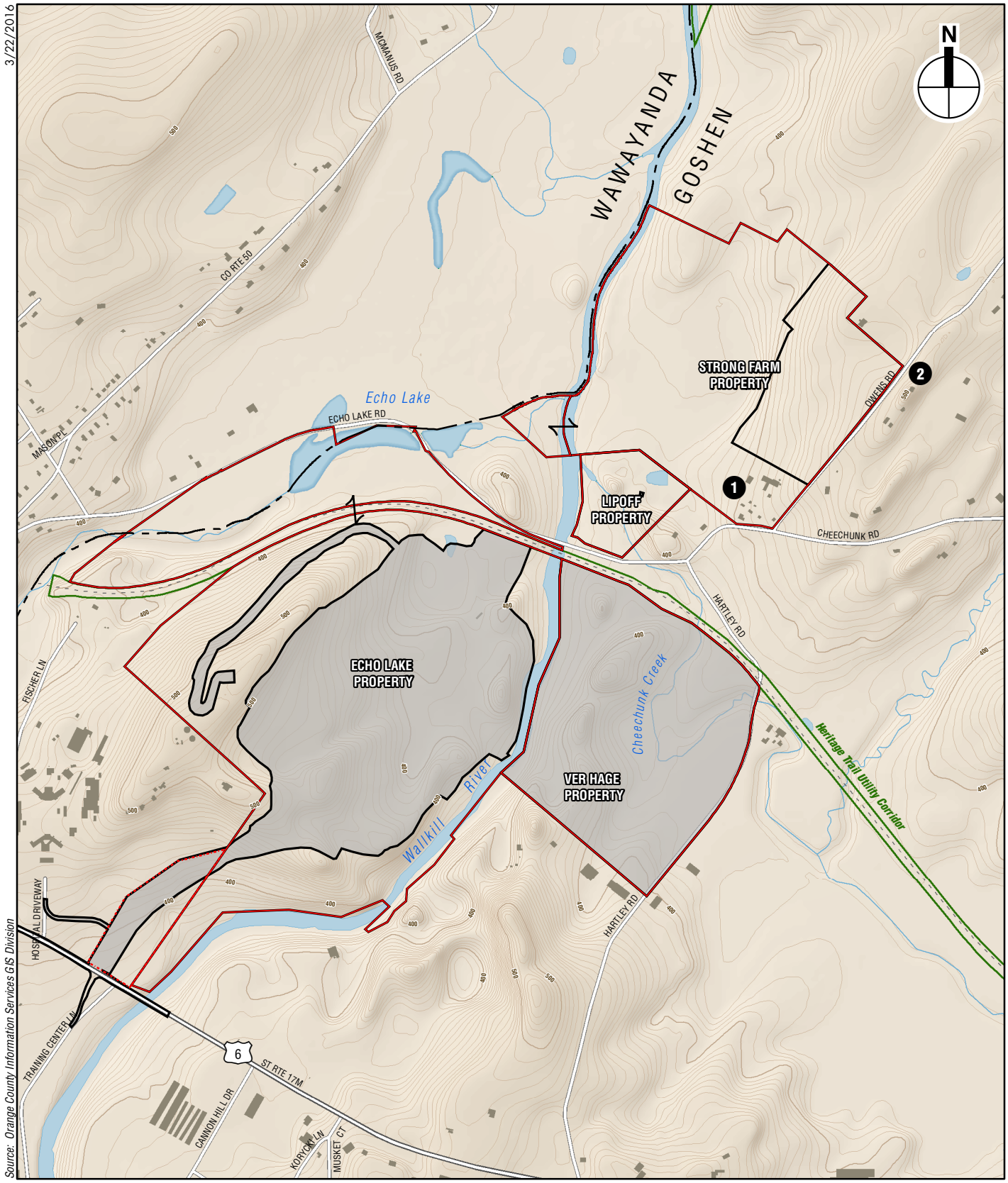
IDENTIFICATION OF ARCHAEOLOGICAL RESOURCES IN THE STUDY AREA

Precontact archaeological sites are typically identified in close proximity to level slopes, water courses, well-drained soils, and previously identified precontact archaeological sites. Historic archaeological sites are typically identified in the vicinity of structures that have been documented on historic maps or where human activity has been identified through other documentary research. The Project Site features high ground and elevated areas (such as terraces and hilltops), well-drained soils, and is situated in the immediate vicinity of numerous water courses, including rivers, streams, and ponds. Furthermore, the Project Site is included within an area of generalized archaeological sensitivity as identified by SHPO and mapped in CRIS. Numerous archaeological sites have been previously identified within and in the immediate vicinity of the Project Site. In addition, map-documented structures have been identified within the Project Site. Therefore, in compliance with SEQRA, Section 14.09 of the SHPA, and Section 106 of the NHPA, archaeological analysis is warranted on all four (4) Project Site parcels as well as the Additional Areas to determine their potential to yield archaeological resources dating to either the precontact or historic periods.

Archaeological investigations were completed by Landmark Archaeology, Inc. (LAI) within all areas of the APE where Proposed Project disturbance is anticipated. LAI completed Phase I and Phase II surveys of the Echo Lake Property;[2] Phase I and Phase II surveys of the Lipoff and Ver

[1] Accessible at: https://cris.parks.ny.gov/

[2] Landmark Archaeology, Inc. (September 2015a): "Phase I and II Archaeological Investigations of the Proposed Science of the Soul Conference Center, Echo Lake Property; Town of Goshen; Orange County, New York."



NYS Land Transfer Parcel

Archaeological APE

Sites where Phase 3 Data Recovery is Required

Historic Resources

Strong Farm, 212 Cheechunk Road (S/NR-elegible)

House at 34 Owens Road (Potential Historic Resource)

0 1,000 FEET

Amy's Kitchen
Science of the Soul

Cultural Resources
Figure III.P-1

Hage Properties;[1] Phase I survey of the Strong Farm Property;[2] Phase I survey of the Access Road Improvement Area;[3] and Phase I survey of the Heritage Trail Utility Corridor.[4] The results of these investigations are summarized below. The final reports summarizing all archaeological investigations were submitted to SHPO for review and comment (SHPO Project Review Number 15PR03538; Survey Number 15SR00600). In a comment letter dated September 30, 2015, SHPO concurred with the conclusions and recommendations of the three (3) archaeological studies covering the Project Site (see **Appendix III.P**). Concurrence is pending on the archaeological study conducted for the Heritage Trail Utility Corridor.

In accordance with Section 6.6 of the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State," published by the Archaeological Council in 1994 and adopted by the State Historic Preservation Office, sensitive site location information in each of the archaeological studies included in **Appendix III.P** has been redacted. Unredacted versions have been made available to the Planning Board to allow it to conduct a comprehensive and thorough review of potential environmental impacts in accordance with the State Environmental Quality Review Act (SEQRA).

B. EXISTING CONDITIONS

ARCHAEOLOGICAL RESOURCES

ECHO LAKE PROPERTY

That portion of the Echo Lake property that would be disturbed as part of the Proposed Project has been identified as the archaeological APE for this property (see **Figure III.P-1**). A combined Phase I and II archaeological investigation of the APE was completed by LAI in September 2015. LAI's 2015 study included a thorough review of previous archaeological investigations of the site; Phase IA-level documentary research to identify areas of potential archaeological sensitivity; and Phase IB and Phase II archaeological testing to identify those areas where archaeological resources were present and to determine if those resources were significant and therefore eligible for S/NR listing.

Previous Archaeological Investigations of the Property

LAI's 2015 report summarizes three (3) previously conducted archaeological investigations that were located within the Echo Lake Property: (1) a late-1980s Phase IB investigation of the site that was completed by Louis Berger and Associates, Inc. (LBA) as part of the proposed Orange

[1] Landmark Archaeology, Inc. (September 2015b): "Phase I and II Archaeological Investigations of the Proposed Amy's Kitchen Project: Ver Hage and Lipoff Properties; Town of Goshen; Orange County, New York."

[2] Landmark Archaeology, Inc. (September 2015c): "Phase I Archaeological Investigations of the Proposed Overflow Parking Area on the Strong Farm Property; Town of Goshen; Orange County, New York."

[3] Landmark Archaeology, Inc. (December 2015): "Phase I Archaeological Investigations of the Proposed NYS 17M Entrance to Science of the Soul Conference Center/Amy's Kitchen Production Facility; Town of Goshen; Orange County, New York."

[4] Landmark Archaeology, Inc. (April 2016): "Phase I Archaeological Investigations of the Heritage Trail Utility Corridor; Town of Goshen; Orange County, New York."

County Jail project; (2) a 1991 Phase IB investigation of the Orange County Jail project site completed by Brockington and Associates; and (3) a Phase IB/2 investigation of the Echo Lake Mine that was prepared by Heritage America, Ltd. (HTL) in 1994.[1] Those investigations combined resulted in the identification of five (5) precontact archaeological sites within the Echo Lake property, four (4) of which were located within or partially within the archaeological APE for this parcel.

Two (2) sites were identified by LBA in the late-1980s and further analyzed during a 1991 Phase IB investigation conducted by Brockington and Associates. The reports summarizing these investigations could not be located during the completion of LAI's recent Phase I/II investigation, nor is information present within the files of SHPO. Summary information provided in Heritage America's 1994 report was analyzed and included as part of LAI's analysis in 2015. Two (2) precontact archaeological sites were identified within the Echo Park property as a result of these early investigations; however, they were not determined to be S/NR-eligible and no further analysis occurred.

The 1994 survey by Heritage America resulted in the identification of three (3) additional precontact sites within the Echo Lake Property. These sites yielded Native American lithic tools and debitage dating between the Early Archaic through the Late Woodland period, ranging between 10,000 years before present (BP) and AD 1600. The sites were also not determined to be S/NR-eligible because they did not extend beneath plowed soils into the intact underlying subsoils and no additional archaeological analysis was recommended. Two (2) of these sites, as well as portions of the sites identified by LBA, were disturbed as a result of subsequent mining activities within the parcel.

Results of 2015 Archaeological Investigations

In addition to summarizing previous archaeological investigations on the property, LAI conducted background research to determine the archaeological sensitivity of the APE and to determine if potential archaeological resources could have survived previous disturbance (e.g., late-20th century mining activities). LAI determined that the Project Site was highly sensitive for precontact and historic period archaeological resources, particularly in areas of higher elevation, such as terraces and hilltops, and in the vicinity of nearby water courses, most notably the Wallkill River.

To confirm the presence or absence of archaeological resources within the APE, LAI conducted Phase IB archaeological testing. As part of the initial Phase IB survey in October 2014, a 15-meter (50-foot) grid was established across the APE and 391 shovel test pits (STPs) and one (1) testing unit were excavated at a 15-meter (50-foot) interval along each transect. The Phase IB testing resulted in the identification of three (3) precontact archaeological sites within the APE. A Phase II archaeological survey of those sites was then completed to establish the horizontal and vertical limits of the sites and to determine their significance and S/NR-eligibility. Phase II testing involved the excavation of additional STPs and 1-meter-square testing units at narrower intervals (7.5 meters [25 feet]). In all cases, the artifacts were recovered from both buried ground

[1] Heritage America, Ltd. (1994): "Stage I-B and Stage II Cultural Resources Surveys, Site Identification and Site Evaluation Phases: Proposed Echo Lake Mine Site; Town of Goshen, Orange County, New York, and Stage I Site Identification Survey: Proposed Water Line Construction Route, Towns of Wawayanda and Wallkill, Orange County, New York." Stephen J. Oberon, Principal Investigator. February 1994.

surfaces (A-horizons) and the underlying subsoil (B-horizons) and no evidence of plowing or disturbance was observed. In 2015, additional Phase IB testing was completed in an area that was added to the APE after the completion of the initial field testing. In total, 65 additional STPs were excavated, resulting in the identification of a historic period archaeological site. The four (4) sites that were identified are summarized below in **Table III.P-1**.

Table III.P-1
Summary of Archaeological Sites Identified on the Echo Lake Property

Site	Size	Site Type	Landform	Date	Artifact Types Found	Features Identified	S/NR-Eligibility
"Amy's Kitchen 1" 07106.000164	993.3 square meters (0.25 acres)	Campsite and tool manufacturing location	Terrace overlooking river	Terminal Archaic to Transitional (1,700 to 700 BC)	Lithic point and other tools/debitage; fire-cracked rock	None	Eligible
"Amy's Kitchen 2" 07106.000165	4,024 square meters (0.99 acres)	Short-term camp or resource procurement site	Hill summit overlooking the river	Late Archaic (4,000 to 1,000 BC)	Lithic point and other tools/debitage; fire-cracked rock	None	Eligible
"Amy's Kitchen 3" 07106.000166	2,245.8 square meters (0.55 acres)	Seasonal base camp	High glacial terrace adjacent to bluff overlooking the river	Late Archaic (4,000 to 1,000 BC)	Lithic points/biface fragment; other lithic tools and debitage; fire-cracked rock	Thermal feature with fire-cracked rock and oxidized soil; possibly not of precontact origin	Eligible
H. Stage Historic Site	6,186.0 square meters (1.53 acres)	Farmstead (house and barn)	Ridge along a low glacial terrace	19th to 20th Century	Residential/ architectural refuse	None	Not Eligible

Source: Landmark Archaeology, Inc. (September 2015a): "Phase I and II Archaeological Investigations of the Proposed Science of the Soul Conference Center, Echo Lake Property; Town of Goshen; Orange County, New York." Prepared for: Amy's Kitchen, Inc., Petaluma, CA.

As shown in **Table III.P-1**, the three (3) precontact archaeological sites that were identified by LAI date between the Late Archaic and Transitional periods (ranging between approximately 4,000 and 700 BC). These sites have been identified as campsites that were likely used seasonally as groups of Native Americans migrated to acquire resources from different areas. The three (3) sites were found in elevated areas adjacent to or overlooking the nearby river. Site 07106.000166 ("Amy's Kitchen 3") was found in the same location as two (2) of the previously identified archaeological sites identified by LBA and Heritage America during their investigations from the late 1980s and early 1990s.

LAI determined that all three (3) precontact archaeological sites are S/NR-eligible and recommended that the sites be preserved in place and that the Proposed Project be designed to avoid the locations of these sites. In the event that these areas cannot be avoided, LAI recommended that a Phase III data recovery of the three (3) sites be completed to mitigate any project-related impacts. The "H. Stage Historic Site" was not determined to be S/NR-eligible and no further archaeological investigations are recommended in that location. In a comment letter dated September 30, 2015, SHPO concurred with the conclusions and recommendations of the Phase I and Phase II archaeological investigations (see **Appendix III.P**).

VER HAGE AND LIPOFF PROPERTIES

The Ver Hage property (7.17 acres) and the Lipoff property (11.8 acres) were analyzed in a single Phase I/Phase II archaeological investigation completed by LAI in September 2015. For both properties, the archaeological APE included the parcels in their entirety (see **Figure III.P-1**). LAI's 2015 study of the two (2) parcels included Phase IA-level documentary research to identify areas of potential archaeological sensitivity; and Phase IB and Phase II archaeological testing to identify those areas where archaeological resources were present and to determine if those resources were significant and therefore eligible for S/NR listing. Phase IB testing was conducted across both sites, and a Phase II survey was completed within a precontact archaeological site that was identified on the Ver Hage property. In a comment letter dated September 30, 2015, SHPO concurred with the conclusions and recommendations of the Phase I and Phase II archaeological investigations (see **Appendix III.P**).

Ver Hage Property

As described in LAI's 2015 report, large portions of the Ver Hage property totaling approximately 30 acres were previously mined for sand, gravel, and topsoil and, therefore, much of the property has been extensively disturbed. Overall, the property features variable topography with gentle slopes and undulating hills. Four (4) archaeological sites were previously identified within the Project Site, including site 07106.000076—a precontact site in the now-disturbed location of the former mine—and site 07106.000023 within the southeastern corner of the parcel. Two (2) other large archaeological sites (Sites 6171 and 6200) are mapped partially within the Project Site by the New York State Museum (NYSM), although little information is known regarding these sites, including their exact locations and limits. Based on the presence of these previously identified archaeological sites as well as map-documented historic structures within the area, LAI determined that the Ver Hage property possessed high potential to contain archaeological resources dating to both the precontact and historic periods.

As part of the Phase IB investigation of the Ver Hage property, 205 STPs were excavated at a 15-meter interval. The Phase IB investigation re-located Site 07106.000023—which had been previously identified—and identified the site's limits within the APE. An additional 127 STPs and 18 1-meter-square test units were excavated as part of the Phase II investigation of the site. In total, more than 170 artifacts were recovered from both within and beneath the plowzone. Intact portions of the site beneath the plowzone appear to be limited to a 5,564.1-square-meter area near the center of the Ver Hage property. LAI concluded that the site is S/NR-eligible and recommended that a Phase III Data Recovery be completed if the site cannot be avoided as part of the construction of the Proposed Project. The Ver Hage property investigation is summarized in **Table III.P-2**.

Table III.P-2
Summary of Archaeological Site Identified on the Ver Hage Property

Site	Size	Site Type	Landform	Date	Artifact Types Found	Features Identified	S/NR-Eligibility
07106.000023	23,116.6 square meters (5.7 acres)		Terrace along the Cheechunk Creek west of the Wallkill River	Late Archaic (3,500 to 1,800 BC)	Lithic points and debitage; cobble tools; fire-cracked rick	Five concentrations of tools/fire-cracked rock; two of which were a shallow pits with soil discoloration	Eligible

Source: Landmark Archaeology, Inc. (September 2015b): "Phase I and II Archaeological Investigations of the Proposed Amy's Kitchen Project: Ver Hage and Lipoff Properties; Town of Goshen; Orange County, New York." Prepared for: Amy's Kitchen, Inc., Petaluma, CA.

Lipoff Property

As described in LAI's 2015 study, the Lipoff property is a low-lying wooded area with the remnants of two knolls. A portion of NYSM site 6171 extends into the parcel. Based on the presence of previously identified archaeological sites in the area as well as map-documented historic structures within the site, the Lipoff Property was identified in the Phase I/Phase II report as having high potential to contain archaeological resources dating to both the precontact and historic periods.

As part of the Phase IB investigation of the Lipoff Property, 42 STPs were excavated at a 15-meter interval. None of the STPs contained any cultural material and no features or archaeological sites were observed. The site was determined by LAI to have been disturbed as a result of mining and utility installation. Therefore, no further archaeological investigations were recommended for the Lipoff Property.

STRONG FARM PROPERTY

As described previously, a Phase I archaeological investigation of a 23.3-acre portion of the 96-acre Strong Farm was completed by LAI in September 2015. LAI's study of the Strong Farm property included Phase IA-level documentary research to identify areas of potential archaeological sensitivity; and Phase IB archaeological testing to identify those areas where archaeological resources were present. The Strong Farm property features steep slopes in excess of 15 percent and is situated along the Wallkill River. The archaeological APE for this property included the northeastern portion of the parcel where limited-duration volunteer parking is proposed as part of the SoS Conference Center (see **Figure III.P-1**). Background research indicated that numerous archaeological sites have been identified within one (1) mile of the Strong Farm property and structures were identified within the property on historic maps. Based on the presence of these previously identified archaeological sites as well as map-documented historic structures within the area, LAI determined that the Strong Farm property possessed high potential to contain archaeological resources dating to both the precontact and historic periods.

Phase IB archaeological testing was completed on the Property to determine the presence or absence of archaeological resources within the APE. A total of 152 STPs were excavated within level areas of the property (those with slopes less than 12 percent) at a 15 meter interval. None of the STPs contained cultural material and no evidence of archaeological features or sites was

observed. Therefore, LAI determined that the Strong Farm Property does not possess archaeological sensitivity and no further archaeological investigation was recommended. In a comment letter dated September 30, 2015, SHPO concurred with the conclusions and recommendations of the Phase I archaeological investigation (see **Appendix III.P**).

ADDITIONAL AREAS

Heritage Trail Utility Corridor

The Heritage Trail Utility Corridor was analyzed in a Phase I archaeological investigation completed by LAI in April 2016. For the purposes of this investigation, LAI considered the entire right-of-way width from Hartley Road west to the City of Middletown wastewater treatment plant as the APE, although it was understood that the proposed utility lines would be installed within a more limited approximately 20-foot easement area adjacent to the existing City of Middletown 36-inch diameter wastewater outfall line. The Phase I investigation concluded that virtually all of the corridor is either within fill used to construct the railroad right-of-way ranging in depth from two (2) to six (6) meters or within cut areas incised into Pleistocene glacial deposits that pre-date human occupation in North America. Thus, there is no sensitivity for archaeological resources within these areas. In the western-most portion of the corridor where the existing City of Middletown wastewater effluent line passes through agricultural fields there is a higher sensitivity for archaeological resources; but not within the immediate area that was disturbed to construct the City's wastewater effluent line.

Access Road Improvement Area

The Access Road Improvement Area was analyzed in a Phase IA/IB archaeological investigation completed by LAI in December 2015. LAI identified an approximately 3.1-acre APE associated with the Proposed Project access road and new connection to the existing Mid-Hudson Psychiatric Center on the north side of NYS Route 17M as well as the area on the south side of NYS Route 17M where the reconfigured Training Center Lane would be constructed.

As part of the Phase IB investigation of the Access Road Improvement Area, 71 STPs were excavated at 15-meter interval or 7.5-meter intervals. Reduced-interval STPs were conducted in areas adjacent to the previously-identified Site 07106.000164 on the east-adjacent Echo Lake property. A total of two (2) artifacts were identified in the STPs. One (1) artifact was identified approximately 31 meters from the nearest positive excavation associated with Site 07106.000164, and the other artifact was found approximately eight (8) meters from Site 07106.000164. Based on the recovery of the one closer artifact, the size of Site 07106.000164 has increased from 993.3 square meters as defined by LAI's previous investigations of the Echo Lake property to 1,578.3 square meters. LAI recommended that Phase III investigations should follow a Data Recovery Plan in consultation with SHPO. Concurrence on this recommendation by SHPO is pending.

HISTORIC RESOURCES

PROJECT SITE

One (1) S/NR-eligible historic resource has been identified on the Project Site: the Strong Farm complex at 212 Cheechunk Road. The main house appears as early as on an 1875 map, and is oriented facing Cheechunk Road (see **Figures III.P-1** and **III.P-2**). The house is a two-story frame structure with a gable roof, set on a rubble stone foundation. The facades have been

Strong Farm Property (S/NR) **1a**

Photo source: Landmark Archaeology, Inc. (September 2015c)

Strong Farm Property (S/NR) **1b**

covered in vinyl siding, but appear to retain a number of original windows. The main entrance is centrally located on the south (Cheechunk Road) façade, and has divided sidelights and transom. Also on the property is another smaller two-story house that fronts onto Owens Road at 1 Owens Road, as well as a number of accessory farm buildings including a large frame dairy barn, a silo, one-story rubble stone outbuilding, shingled well structure, and other brick and frame outbuildings (see **Figure III.P-2**).

ADDITIONAL AREAS

Heritage Trail Utility Corridor

No known historic resources have been identified within the Heritage Trail Utility Corridor.

Access Road Improvement Area

There are no structures 50 years old or older within or substantially adjacent to the Access Road Improvement Area. No standing structures would be demolished within the Access Road Improvement Area to construct the Proposed Project access road.

STUDY AREA

No known historic resources have been identified in the study area. One (1) potential historic resource was identified in the study area, the two-story frame house at 34 Owens Road (see **Figures III.P-1** and **III.P-3**). The house is located across Owens Road from the location of the Strong Farm property that would be utilized for agricultural use and temporary volunteer parking for SoS three (3) days per year. The house was likely built in the first two (2) decades of the 20th century and is oriented facing west, towards Owens Road, and has a porch supported by Doric columns extending across the first floor façade.[1] The porch has been screened. The house façades appear to be covered in vinyl and/or aluminum siding, and the house retains a number of original windows. A one-story addition is on the north façade of the house. Even though the house has been covered in new siding, it appears to retain substantial integrity of design, location, and association and, as such, could meet S/NR eligibility criteria.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the Proposed Project, it is not expected that any changes would occur to the archaeological sensitivity of the four (4) parcels that make up the Project Site or the Access Road Improvement Area. Orange County Department of Parks and Recreation proposes to improve the Heritage Trail Utility Corridor with a multi-use bicycle/pedestrian pathway from Hartley Road west to the City of Middletown. That project may involve limited ground disturbance within the former railroad right-of-way. Existing railroad bridges would be reconstructed or rehabilitated to carry the multi-use pathway across the current and original channels of the Wallkill River.

Absent the Proposed Project, the identified archaeological sites would remain preserved in place within the Echo Lake property. It is possible that future development projects unrelated to the

[1] Real estate websites give a construction date of 1914, and the house does not appear on the 1908 USGS map: http://www.trulia.com/homes/New_York/Goshen/sold/22001068-34-Owens-Rd-Goshen-NY-10924; http://www.zillow.com/homes/for_sale/31817680_zpid/41.41933,-74.360796,41.411863,-74.374744_rect/16_zm/1_fr/

Photo source: Landmark Archaeology, Inc. (September 2015c)

34 Owens Road **2**

Amy's Kitchen
Science of the Soul

Potential Historic Resource
Figure III.P-3

Proposed Project could result in impacts to the archaeological sites that were identified through the archaeological investigations referenced above.

Absent the proposed project, SoS would continue to lease the S/NR eligible Strong Farm complex and its fields to local farmers for agricultural purposes.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

ARCHAEOLOGICAL RESOURCES

PROJECT SITE

Echo Lake Property

As described above, Phase I and Phase II archaeological investigations of the Echo Lake archaeological APE were completed by LAI in 2015. These investigations resulted in the identification of three (3) precontact archaeological sites that were identified as eligible for S/NR listing—Sites 07106.000164,[1] 07106.000165, and 07106.000166—and one historic period archaeological site—the H. Stage Historic Site—that was determined to be ineligible for S/NR-listing.

Due to topographic constraints on the Echo Lake property, it would be impossible to design the access road to avoid these three (3) archaeological sites without creating extensive retaining walls or impacts to wetlands. Thus, the Proposed Project would have impacts to each of the three (3) archaeological sites.

Consistent with SHPO's letter of September 30, 2015, "if one or more of the sites cannot be avoided, then Phase III data recoveries should be conducted for each of the sites that will be impacted." LAI will develop a Phase III Data Recovery Plan (DRP) to outline the testing strategies and protocols that will be implemented as part of the Data Recovery. The plan will be submitted to SHPO for review and concurrence. As a result thereof, no significant adverse impacts to archaeological resources would result.

Ver Hage Property

As described above, Phase I and Phase II archaeological investigations of the Ver Hage property were completed by LAI in 2015. These investigations resulted in the identification of one archaeological site—Site 07106.000023—that was identified as eligible for S/NR listing. Site 07106.000023 is located in an area that is substantially contiguous to the proposed Amy's Kitchen manufacturing facility. It would not be possible to redesign the proposed 369,000 square-foot building and its associated site grading, driveways, and parking areas to entirely avoid the archaeological site. Thus, the Proposed Project would have impacts to Site 07106.000023.

LAI will develop a Phase III DRP to outline the testing strategies and protocols that will be implemented as part of the Data Recovery. The plan will be submitted to SHPO for review and concurrence. As a result thereof, no significant adverse impacts to archaeological resources would result.

[1] Site 07106.000164 also extends onto the Access Road Improvement Area to the west of the Echo Lake property near NYS Route 17M.

Lipoff Property

No disturbance is proposed on the Lipoff property. Phase IB testing did not identify any archaeological resources within the Lipoff Property and LAI determined that the parcel is not sensitive for archaeological resources dating to either the precontact or historic periods and did not recommend any additional archaeological investigations of the property. SHPO concurred with this conclusion in its letter of September 30, 2015. Therefore, the Proposed Project would not result in impacts on archaeological resources within the Lipoff Property.

Strong Farm Property

SoS proposes to continue to use Strong Farm for agricultural purposes and temporary volunteer parking during the annual three (3)-day National Conference. Phase IB testing did not identify any archaeological resources within the Strong Farm Property and LAI determined that the parcel is not sensitive for archaeological resources dating to either the precontact or historic periods and did not recommend any additional archaeological investigations of the property. SHPO concurred with this conclusion in its letter of September 30, 2015. Therefore, the Proposed Project would not result in impacts on archaeological resources within the Strong Farm Property.

ADDITIONAL AREAS

Heritage Trail Utility Corridor

The Heritage Trail Utility Corridor runs through areas of archaeological sensitivity. However, a Phase I study has determined that the portions of the corridor occupied by the former railroad alignment, within which the proposed water and wastewater conveyance lines would be constructed, lack any archaeological sensitivity. The western-most portion of the corridor runs within agricultural fields that may have higher archaeological sensitivity. However, as long as the proposed water and wastewater conveyance lines run within the area already previously disturbed by construction of the City of Middletown's wastewater effluent line, no significant impacts to archaeological resources would result.

Access Road Improvement Area

As described above, Phase IA/IB archaeological investigations of the Access Road Improvement Area APE were completed by LAI in 2015. These investigations resulted in the identification of two (2) artifacts that caused LAI to conclude that the size of Site 07106.000164 on the east-adjacent Echo Lake property should be increased from 993.3 square meters to 1,578.3 square meters.

Due to topographic constraints on the adjoining Echo Lake property that define the desired alignment of the Proposed Project access road, it would be impossible to design the access road to avoid this archaeological site without creating extensive retaining walls or impacts to wetlands. As indicated above, a Phase III DRP would be prepared to mitigate this impact.

HISTORIC RESOURCES

PROJECT SITE

In the future with the proposed project, SoS intends to continue the agricultural use of the Strong Farm property, and would restore the main residence and some of the agricultural structures on

the property. The two (2) other residential structures would be rented to tenants or used for volunteer housing during the National and Regional SoS conferences. The Strong Farm property would also be used for volunteer parking for the SoS Conference Center during the National Conference. Volunteer parking would be provided in hayfields or orchards, north of the Strong Farm complex. The continued agricultural use of the property and temporary parking would not result in any adverse physical effects to the farm complex. In addition, due to existing topography and vegetation, neither Amy's Kitchen nor SoS are expected to be visible from the farm complex, and the farm complex's setting would not be affected. Therefore, the proposed project would not result in any adverse indirect effects on the Strong Farm historic complex.

ADDITIONAL AREAS

No standing structures would be demolished in either the Heritage Trail Utility Corridor or Access Road Improvement Area as part of the Proposed Project.

STUDY AREA

The proposed project would have no adverse impacts on the potential historic resource at 34 Owens Road. As described above, the house is located across Owens Road from the Strong Farm property fields that would be utilized for agricultural use and temporary volunteer parking for SoS three (3) days per year. It is not expected that the continued agricultural use of the fields and temporary parking would have any adverse physical effects or adversely affect the setting of the house at 34 Owens Road. Therefore, the Proposed Project would have no adverse effects on historic resources in the study area.

In its letter dated September 30, 2015, SHPO concluded that it has "no concerns regarding the project's potential impacts to historic architectural resources" (see **Appendix III.P**).

E. PROPOSED MITIGATION

The Proposed Project would result in unavoidable impacts to four (4) S/NR eligible archaeological sites. Since avoidance of these sites is not possible through design changes to the Proposed Project, Phase III DRPs will be developed to outline the testing strategies and protocols that will be implemented as part of the Data Recovery. The DRPs will be submitted to SHPO for review and concurrence. As a result thereof, no significant adverse impacts to archaeological resources would result.

The Strong Farm is considered S/NR-eligible. No modifications to the Strong Farm property are proposed as part of the Proposed Project. The Strong Farm would continue to be used for agricultural purposes and volunteer parking for a limited duration (three (3) days per year). This use would not constitute a significant adverse impact to the historic resource. ✷

A. INTRODUCTION

This chapter examines the Proposed Project's potential to impact agricultural resources. The Amy's Kitchen and SoS Project Site would be located in an area that is largely characterized by low-density rural residential and agricultural land uses, as well as several commercial and light industrial sites, public infrastructure and utilities, and institutional uses. The Project Site is located within the Town of Goshen in the Orange County Agricultural District No. 2, as approved through Resolution No. 7 of 2013 of the Orange County Legislature, Adopted 7 February 2013 (see **Figure III.Q-1**).

The immediate study area, including the Strong Farm property on the Project Site, includes currently operating farms which contribute to the Town and the County's economy, provide livelihoods for local residents, and add to the area's rural character and attractiveness. The Applicant recognizes the value of these factors to the local and regional economies, as well as the added value that the Proposed Project would bring to fostering and promoting the local and regional agricultural economy and jobs relating to it.

B. EXISTING CONDITIONS

According to the 2012 Census of Agriculture, Orange County has 658 farms encompassing 88,030 acres,[1] or approximately 17 percent of the County's 519,482 acre land base.[2] From 2007 to 2012, Orange County increased its number of farms by 2.5 percent and its acreage by 9 percent. Orange County farms generated $100.7 million in cash receipts in 2012, of which $72 million was generated by crops and $29 million was generated by livestock production. Five commodities accounted for 84 percent of sales: nursery/greenhouse; vegetables; dairy; horses; and fruit/berry. Of all the commodities, only dairy had decreased value of sales in 2012 compared to 2007 (down 21 percent). According to the 2015 Orange County Agricultural and Farmland Protection Plan, a significant contributor to the overall agricultural economy is agricultural food manufacturing, which includes frozen food, canning, poultry processing and other food processing businesses.[3]

The Orange County Agricultural and Farmland Protection Plan identifies eight priority projects for enhancing the viability of agriculture in Orange County:

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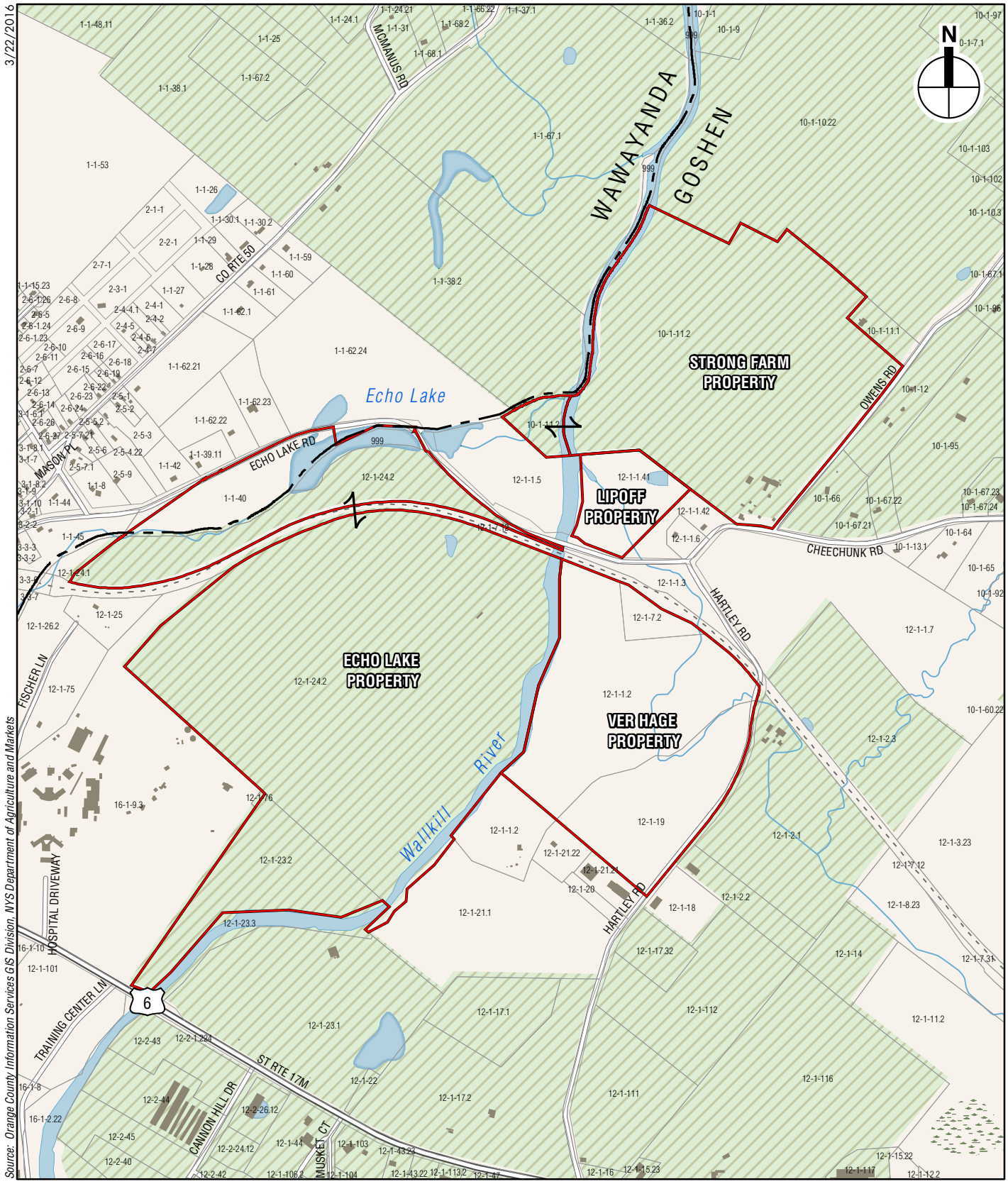
[1] http://www.agcensus.usda.gov/Publications/2012/Online_Resources/County_Profiles/New_York/cp36071.pdf (accessed June 29, 2015).

[2] U.S. Census Bureau, Census of Population and Housing. Land area is based on current information in the TIGER® data base, calculated for use with Census 2010.

[3] Orange County Agricultural and Farmland Protection Plan, February 2015, http://www.orangecountygov.com/filestorage/124/1362/4632/OC_Ag_%26_Farmland_Protection_Plan_Final.pdf



Amy's Kitchen
Science of the Soul

Agricultural Districts
Figure III.Q-1

Priority Project 1: *Develop an initiative to improve understanding of agriculture as a key economic engine in Orange County.*

Priority Project 2: *Develop additional food processing and local food system infrastructure to support farms.*

Priority Project 3: *Develop a specific agricultural economics program to increase the profitability of farms.*

Priority Project 4: *Develop a buy-local initiative to increase market opportunities for Orange County agricultural products.*

Priority Project 5: *Provide training, tools, and support to Towns to implement farm-friendly changes to local codes and plans, and assist them with removing local barriers to farming.*

Priority Project 6: *Protect farmland within core production areas.*

Priority Project 7: *Concentrate on Recruiting New Farmer/Next Generation Farmer Programs and Providing Support for Existing Farmers.*

Priority Project 8: *Implement Wallkill River Drainage Programs.*

The Orange County Agricultural and Farmland Protection Plan also identifies the importance of soil quality and conditions, in particular the highly productive muck lands or "Black Dirt" that is found in the Towns of Wawayanda, Warwick, Minisink, Goshen, and Chester. Approximately 43 percent of soils in Orange County are considered "Prime" or "Important" soils, as defined by the United States Department of Agriculture (USDA) and New York State (NYS). Within the Prime and Important soils, approximately 10,000 acres are "Black Dirt." Black Dirt soils are highly productive and very suitable for production of a wide variety of vegetable and field crops.

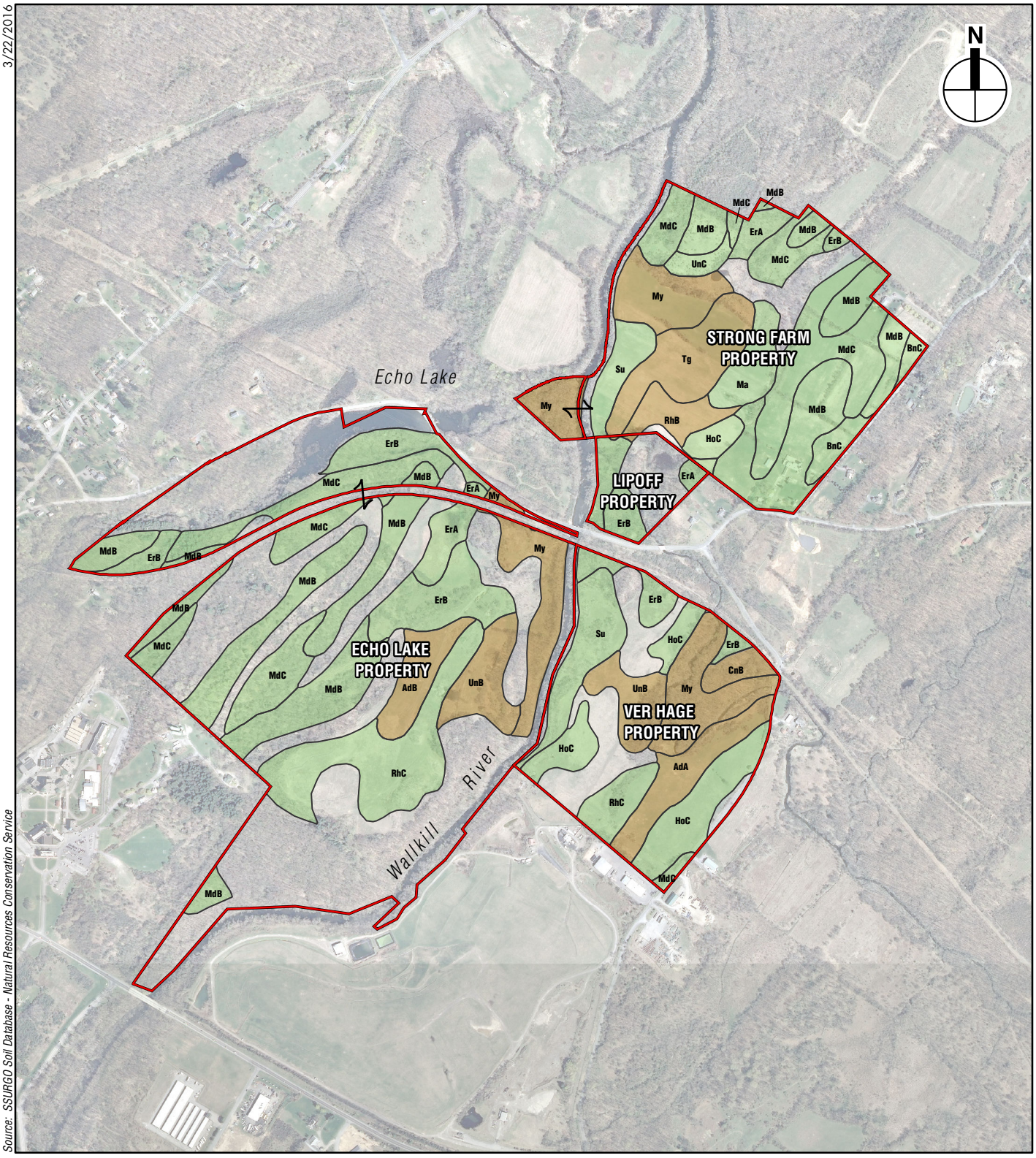
PROJECT SITE

As further discussed in Chapter II, "Project Description," the Project Site comprises four (4) properties totaling approximately 374.14 acres in the Town of Goshen, Orange County, New York. These properties include the Echo Lake property, the Ver Hage property, the Lipoff property, and the Strong Farm property. Although portions of the Project Site contain "Prime Farmland Soils" and "Farmland Soils of Statewide Importance" (see **Figure III.Q-2**), the Project Site is not within the "Black Dirt" region.

VER HAGE PROPERTY

The Ver Hage property is currently vacant land and is not located within an agricultural district. Portions of the property are open fields, which historically may have been used for farming, but more recently were stripped of top-soil for the capping of the Al Turi landfill to the south.

As shown in **Figure III.Q-2**, the USDA Soil Survey Geographic Database (SSURGO) identifies approximately 80.8 percent of the Ver Hage property as "Prime Farmland Soils" and "Farmland Soils of Statewide Importance." The Ver Hage property "Prime Farmland Soils" include Allard silt loam (AdA), Chenango gravelly silt loam (CnB), Middlebury silt loam (My), and Unadilla silt loam (UnB). The "Farmland Soils of Statewide Importance" include Erie gravelly silt loam (ErB), Hoosic gravelly sandy loam (HoC), Mardin gravelly silt loam (MdC), Riverhead sandy loam (RhC), and Suncook sandy loam (Su). However, these agricultural soils have been significantly disturbed by prior uses, including top soil mining, and may no longer be suitable for agriculture.



Project Site

Prime Farmland Soils

AdA/AdB: *Allard silt loam*
CnB: *Chenango gravelly silt loam*
My: *Middlebury silt loam*
RhB: *Riverhead sandy loam*
Tg: *Tioga silt loam*
UnB: *Unadilla silt loam*

Farmland Soils of Statewide Importance

BnC: *Bath-Nassau shaly silt loams*
ErA/ErB: *Erie gravelly silt loam*
HoC: *Hoosic gravelly sandy loam*
Ma: *Madalin silt loam*
MdB/MdC: *Mardin gravelly silt loam*
RhC: *Riverhead sandy loam*
Su: *Suncook sandy loam*
UnC: *Unadilla silt loam*

0 1,000 FEET

Amy's Kitchen
Science of the Soul

Agricultural Soils on the Project Site

Figure III.Q-2

LIPOFF PROPERTY

The Lipoff property is currently vacant land and is not located within an agricultural district. As shown in **Figure III.Q-2**, SSURGO identifies approximately 49.5 percent of the Lipoff property as "Farmland Soils of Statewide Importance." The Lipoff property "Farmland Soils of Statewide Importance" include Erie gravelly silt loam (ErA and ErB) and Suncook sandy loam (Su).

ECHO LAKE PROPERTY

The Echo Lake property is located within the Orange County Agricultural District No.2 (see **Figure III.Q-1**). The purpose of Agricultural Districts is to encourage the continued use of farmland for agricultural production. The program, which is managed by the New York State Department of Agriculture and Markets, includes a combination of landowner incentives and protections intended to forestall the conversion of farmland to non-agricultural uses. Included in these benefits are preferential real property tax treatment (agricultural assessment and special benefit assessment), and protections against overly restrictive local laws, government funded acquisition or construction projects, and private nuisance suits involving agricultural practices.[4]

The property was historically used as a dairy farm, and more recently mining. The dairy farm previously occupied the center portion of the Echo Lake property. Farming activities included the growing of hay and corn to support dairy operations from the 1920's through the mid 1960's. The property was purchased in 1989 by the Town of Wallkill, which mined the land for gravel for municipal use. Gravel mining continued on the property when the Town of Wallkill sold it to a private landowner in 2009. No farming or mining currently takes place on the Echo Lake property. Previous mining activities have significantly limited the potential for future farming activities on the Echo Lake property. Thus, its location in an Agricultural District does not carry any specific benefits.

As shown in **Figure III.Q-2**, according to the USDA Soil Survey Geographic Database (SSURGO), approximately 55.3 percent of the Echo Lake property comprises "Prime Farmland Soils" and "Farmland Soils of Statewide Importance." The Echo Lake property "Prime Farmland Soils" include Allard silt loam (AdA), Middlebury silt loam (My), and Unadilla silt loam (UnB). The "Farmland Soils of Statewide Importance" include Erie gravelly silt loam (ErA and ErB), Mardin gravelly silt loam (MdB and MdC), and Riverhead sandy loam (RhC).

The "Prime Farmland Soils" are concentrated in the northeast corner of the Echo Lake property and adjacent to the Wallkill River. This area was previously disturbed by mining and may no longer be suitable for agriculture. The "Farmland Soils of Statewide Importance" are concentrated in the northwest portion of the Echo Lake property, which is currently wooded and contains areas of steep slopes.

STRONG FARM PROPERTY

The Strong Farm property is currently used for crop farming and is located within the Orange County Agricultural District No. 2. Historically, the property was used as a dairy farm. The property contains several agricultural structures and three (3) residences. Continued use of the Strong Farm for agricultural purposes could benefit from some of the programs and protections provided within the Agricultural District.

[4] http://www.agriculture.ny.gov/ap/agservices/agdistricts.html

As shown in **Figure III.Q-2**, SSURGO identifies approximately 91 percent of the Strong Farm property as comprising "Prime Farmland Soils" and "Farmland Soils of Statewide Importance." The Strong Farm property "Prime Farmland Soils" include Middlebury silt loam (My), Riverhead sandy loam (RhB), and Tioga silt loam (Tg). The "Farmland Soils of Statewide Importance" include Bath-Nassau shaly silt loams (BnC), Erie gravelly silt loam (ErA and ErB), Hoosic gravelly sandy loam (HoC), Madalin silt loam (Ma), Mardin gravelly silt loam (MdB and MdC), Suncook sandy loam (Su), and Unadilla silt loam (UnC).

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

The Heritage Trail Utility Corridor is a former railroad transportation corridor and typically contains poorly drained soils and usage of fill material, which does not reflect the character of soils existing beneath. As previously described in Chapter III-A, "Geology & Soils," the most common NRCS-mapped soil units underlying the Heritage Trail include Alden silt loam (*very poorly drained*), ErB – Erie gravelly silt loam (*somewhat poorly drained*), ESB – Erie extremely stony soils, gently sloping (*somewhat poorly drained*), Ma – Madalin silt loam (*poorly drained*), Mdb,MdC,MdD – Mardin gravelly silt loam (*moderately well drained*), RbA – Rhinebeck silt loam (*somewhat poorly drained*), and Wd – Wayland complex, non-calcereous substratum (*poorly drained*).

The parent material in which most of these soils formed is listed as "loamy till." The Madalin and Rhinebeck soils are derived from "clayey and silty glaciolacustrine deposits." The Wayland soils are derived from "alluvium derived from interbedded sedimentary rock." All of these soils formed in glacial deposits left on the landscape after the Pleistocene geologic epoch ended roughly 12,000 years ago.

Rhinebeck silt loam (RbA) is the only mapping unit listed as "Prime Farmland" soil if drained.

ACCESS ROAD IMPROVEMENT AREA

Two (2) NRCS-mapped soil units are found within the Access Road Improvement Area and include Mardin gravelly silt loam (*moderately well drained*) and Raynham silt loam (*somewhat poorly drained*). Mardin soils are "Farmland Soils of Statewide Importance."

STUDY AREA

As further discussed in Chapter III.K, "Land Use and Zoning," land uses in the immediate vicinity of the Project Site are characterized by rural residential, farmland, institutional, and rural light industrial and commercial uses (see **Figure III.K-3**). The Town of Wawayanda is located to the west of the Project Site, and includes rural residential and commercial uses. North, south, and east of the Project Site are primarily vacant forested land, rural residential, and farmland. **Figure III.Q-1**, "Agricultural Districts," identifies properties in the immediate vicinity of the Project Site that are located within the Orange County Agricultural District No. 2.

C. FUTURE WITHOUT THE PROPOSED PROJECT

Agricultural lands throughout the study area and across Orange County are generally considered vulnerable to conversion to residential and commercial uses. Although public policies expressed in the Town's Comprehensive Plan, the Town's Zoning Code, and various County documents—

including the Orange County Agricultural and Farmland Protection Plan discussed above—encourage the protection and continued farm use of agricultural lands, the trend in agricultural land conversion is expected to continue.

As discussed in Chapter III.K, "Land Use and Zoning," the Project Site is located in the Commercial/Office Mixed-Use (CO), Industrial (I), and Rural (RU) Zoning Districts. The CO and I zoning designations permit commercial and industrial development to occur, and the RU zoning designation permits residential and agricultural development to occur. It is the belief of the Applicant that these classifications are likely to remain in place in the foreseeable future.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

The Proposed Project would not convert any active agricultural properties to a non-agricultural use. As discussed above, the Echo Lake and Ver Hage properties have been heavily disturbed by mining activities and the Al Turi landfill, thus the use of these properties for agricultural purposes is limited. Under the Proposed Project, the Strong Farm property would continue to be used for crop farming and the Lipoff property would remain in its current condition.

AMY'S KITCHEN

Under the Proposed Project, the Amy's Kitchen manufacturing facility would be constructed on the Ver Hage property. Although the property may have historically been used for agricultural purposes, the stripping of top soil from this property for use in the closure of the Al Turi landfill has made the site no longer suitable for agriculture. As such, the property is well suited for what it is zoned—an industrial use.

The proposed Amy's Kitchen manufacturing facility would support the Orange County Agricultural and Farmland Protection Plan Priority Project 2, "Develop additional food processing and local food system infrastructure to support farms." As stated in the plan, there are "systematic gaps in processing infrastructure" for fresh cut produce, meat, dairy, and grains in the Hudson Valley. The plan prioritizes the "development of new food processing and distribution infrastructure" as a way to help farms be more profitable. It identifies that "new facilities and opportunities are needed for dairy, in particular." Amy's Kitchen would provide long term benefits to the local and regional agricultural economy as it seeks to source local vegetarian ingredients. The company currently purchases approximately 90 million pounds of organic materials each year for use in their products. Amy's Kitchen currently sources 95 percent of its organic material from the United States, the vast majority from the west coast. Amy's Kitchen is actively working with and pursuing increasing east coast suppliers and is working with local producers and processors to develop a supply chain for locally grown organic products.

Amy's Kitchen works directly with growers across the world to develop specific crops for use in their food. One of the organic principles to which it subscribes is a preference for locally grown vegetables. Amy's Kitchen seeks to match its needs with what naturally grows in a specific area. In other words, it doesn't try to grow crops in regions where they won't thrive.

Through word of mouth, and referrals from county agriculture agents, Amy's Kitchen identifies local organic farmers who would like to grow for Amy's. In addition, Amy's Kitchen is active in encouraging conventional farmers to begin the three year transition to organic agriculture. Once Amy's Kitchen has made the connection with local growers, it discusses potential varieties of

vegetables that tend to do well in the area. Following that, a test plot is planted to evaluate how well the plant variety will grow in the local soil and weather conditions.

A large percentage of the vegetables that Amy's Kitchen uses are frozen in processing plants into an individually quick frozen (IQF) state. Amy's Kitchen sends samples from the test plots to various processors to evaluate how closely they can match Amy's product specifications. Once Amy's Kitchen has successfully grown a test plot of vegetables that have been processed to its specifications, the volume can be scaled up to meet production needs. Larger fields are planted and Amy's Kitchen reserves IQF processing time for each crop.

One important aspect of Amy's Kitchen's relationships with local growers is suggesting and participating in their crop rotation schemes. Amy's Kitchen has been successful in the past helping growers manage a solid rotation plan by purchasing crops from each rotation cycle.

Amy's Kitchen Sourcing Team includes a number of Agriculture Field Representatives who are experts in soil and plant science and frequently visit with grower to evaluate the health of a growing crop. Amy's Kitchen freely shares its expertise and work with growers to assure that crops are processed in a safe and clean environment. Amy's Kitchen views its relationships with local farmers as a core strength of its program. Amy's Kitchen stands behind its commitments and has a long track record of helping farmers through the tough times and well as the times of bounty.

Amy's Kitchen is several years along in its efforts to find grower partnerships in the Orange County area. It has been meeting regularly with local growers and has planted several test crops in the county. Amy's Kitchen has identified two IQF processors and is working with a separate group interested in adding more processing capability to the area. Amy's Kitchen is optimistic about developing long-lasting partnerships with local growers.

The proposed Amy's Kitchen manufacturing facility would not result in any significant adverse impacts to agricultural uses or soils, and would have long-term beneficial impacts to the regional agricultural economy through the sourcing of ingredients.

SCIENCE OF THE SOUL

SoS proposes to construct a Conference Center on the Echo Lake property. Although the Echo Lake property is located in the Orange County Agricultural District No. 2, it was most recently used for gravel mining activities which have disturbed the agricultural soils on the southeast portion of the property. The proposed Conference Center and associated driveways and parking areas would primarily be located on the portion of the site that was used for mining. As discussed in Chapter II, "Project Description," an "orchard" of trees is proposed within the parking area. However, the species of tree has not yet been determined. The northwest portion of the property, which is currently forested and contains some "Farmland Soils of Statewide Significance," would remain substantially undisturbed by the proposed SoS Conference Center. The only proposed use within this area is the five-bedroom guesthouse and access driveway.

Under the Proposed Project, the Strong Farm property would continue to be used for agricultural purposes (crop farming). Although portions of this site would be used as temporary parking for volunteers during the anticipated annual National Conference, no permanent facilities are proposed. Parking would be concentrated on the portions of the site not actively used for agricultural purposes.

Therefore, the proposed SoS Conference Center and use of the Strong Farm is not anticipated to result in any significant adverse impacts to agriculture.

WAREHOUSE USE

An approximately 70,000-square-foot Warehouse Use could be constructed on an approximately 11.6-acre subdivision of the Ver Hage property. Although the property may have historically been used for agricultural purposes, the stripping of top soil from this property for use in the closure of the Al Turi landfill has made the site no longer suitable for agriculture. As such, the property is well suited for what it is zoned—an industrial use.

OFF-SITE BENEFITS AND IMPACTS

Overall, the Proposed Project would result in long term benefits to the local and regional agricultural economy. As discussed above, Amy's Kitchen currently purchases approximately 90 million pounds of organic materials each year for use in their products. In the last year, Amy's Kitchen purchased more than 36 million pounds of organic tomatoes, and more than 17 million pounds of organic onions. Amy's Kitchen is actively working with and pursuing increasing east coast suppliers, which could include organic produce and dairy from the Hudson Valley region.

As further discussed in Chapter III.M, "Fiscal Impacts," the Amy's Kitchen project is not anticipated to result in significant in-migration of workers, or to compete with existing agricultural operations for workers. The analysis contained in Chapter III.M indicates that there are approximately 11,336 available workers (unemployed, exceeding stable unemployment rate of 4.5 percent) living within a one (1)-hour drive of the Project Site. Of these, roughly 4,060 available workers live within 30 minutes of the site, and over a quarter of those (1,090 workers) are in the "blue collar" occupational category from which Amy's Kitchen would draw a majority of its employees.

The total number of full-time equivalent (FTE) workers needed to staff the Amy's Kitchen facility upon completion of Phase 2 is 681. Of these, 630 employees would work in food production, 30 employees would provide facility maintenance, and 21 employees would work in a supervisory or plant safety and engineering capacity. Wages are anticipated to be comparable to prevailing wages for similarly skilled jobs in the Project Area, including agricultural workers. As such, there is a sufficient workforce within the area from which to draw employees, and the Proposed Project is not anticipated to compete for labor with the agricultural industry.

E. PROPOSED MITIGATION

The Proposed Project would not result in any unavoidable adverse impacts to agriculture. Although the Proposed Project would construct permanent facilities on lands identified as having "Prime Farmland Soils" or "Farmland Soils of Statewide Significance," these soils were heavily disturbed by past mining and industrial-related uses on the properties. Furthermore, the Proposed Project would retain the Strong Farm—the only active and viable agricultural use on the Project Site. Since the Proposed Project would contribute to the regional agricultural economy, and support the Orange County Agricultural and Farmland Protection Plan's Priority Project 2, no significant adverse impacts to agriculture are anticipated. Therefore, no mitigation will be required. ✷

A. INTRODUCTION

The potential for air quality impacts from operations of the Proposed Project is examined in this chapter.[1] Air quality impacts can be either direct or indirect. Direct impacts result from emissions generated by stationary sources at a project site, such as emissions from on-site fuel combustion for heat and hot water systems, or industrial process boilers. Indirect impacts are impacts that are caused by off-site emissions associated with a project, such as impacts that are caused by emissions from on-road vehicle trips generated by a project or other changes to future traffic conditions due to a project. The Proposed Project would generate both truck and car trips; therefore the potential for indirect mobile source impacts from the Proposed Project was evaluated. The Proposed Project would include natural gas-burning heat and hot water systems and process boilers. Therefore, stationary sources were evaluated as well.

As discussed below, the additional vehicle trips generated by the Proposed Project and the Proposed Project's stationary sources are not expected to cause any exceedance of ambient air quality standards. Therefore, there would be no potential significant adverse air quality impacts from the Proposed Project.

B. POLLUTANTS FOR EVALUATION

Ambient air quality is affected by air pollutants produced by both motor vehicles and stationary sources. Emissions from motor vehicles are referred to as mobile source emissions, while emissions from fixed facilities are referred to as stationary source emissions. Ambient concentrations of carbon monoxide (CO) are predominantly influenced by mobile source emissions. Particulate matter (PM), volatile organic compounds (VOCs), and nitrogen oxides (nitric oxide (NO) and nitrogen dioxide (NO_2), collectively referred to as NO_x) are emitted from both mobile and stationary sources. Fine PM is also formed when emissions of NO_x, sulfur oxides (SO_x), ammonia, organic compounds, and other gases react or condense in the atmosphere. Emissions of sulfur dioxide (SO_2) are associated mainly with stationary sources, and some sources utilizing non-road diesel such as large international marine engines. On-road diesel vehicles currently contribute very little to SO_2 emissions since the sulfur content of on-road diesel fuel, which is federally regulated, is extremely low. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and VOCs. Ambient concentrations of CO, PM, NO_2, SO_2, ozone, and lead are regulated by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act (CAA), and are referred to as 'criteria pollutants'; emissions of VOCs, NO_x, and other precursors to criteria pollutants are also regulated by EPA.

[1] A discussion of potential air quality impacts during construction is included in Chapter III.S, "Construction."

CARBON MONOXIDE

CO, a colorless and odorless gas, is produced in the urban environment primarily by the incomplete combustion of gasoline and other fossil fuels. In urban areas, approximately 80 to 90 percent of CO emissions are from motor vehicles. CO concentrations can diminish rapidly over relatively short distances; elevated concentrations are usually limited to locations near crowded intersections, heavily traveled and congested roadways, parking lots, and garages. Consequently, CO concentrations must be analyzed on a local (microscale) basis. Potential impacts on local CO concentrations from the proposed project were evaluated.

NITROGEN OXIDES, VOCS, AND OZONE

NO_x are of principal concern because of their role, together with VOCs, as precursors in the formation of ozone. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow and occur as the pollutants are advected downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of NO_x and VOC emissions from all sources are therefore generally examined on a regional basis. The contribution of any action or project to regional emissions of these pollutants would include any added stationary or mobile source emissions.

The Proposed Project would not have a significant effect on the overall volume of vehicular travel in the region; therefore, no measurable impact on regional NO_x emissions or on ozone levels is predicted. An analysis of Proposed Project-related emissions of these pollutants from mobile sources was therefore not warranted.

In addition to being a precursor to the formation of ozone, NO_2 (one component of NO_x) is also a regulated pollutant. Since NO_2 is mostly formed from the transformation of NO in the atmosphere, it has mostly been of concern further downwind from large stationary point sources, and not a local concern from mobile sources. (NO_x emissions from fuel combustion consist of approximately 90 percent NO and 10 percent NO_2 at the source.) However, with the promulgation of the 2010 1-hour average standard for NO_2, local sources such as vehicular emissions may become of greater concern for this pollutant in the future. The increases in NO_2 concentrations associated with the mobile sources have not been evaluated explicitly due to limitations in guidance and modeling tools. However, any increase in NO_2 associated with the mobile sources would be relatively small, as demonstrated below for CO and PM, due to the very small increases in the number of vehicles. This increase would not be expected to significantly affect levels of NO_2 experienced near roadways.

Potential impacts on local NO_2 concentrations from the proposed project's natural gas-burning heat and hot water systems and process boilers were evaluated.

LEAD

Airborne lead emissions are currently associated principally with industrial sources. Lead in gasoline has been banned under the CAA and would not be emitted from any other component of proposed project. Therefore, analysis of this pollutant was not warranted.

RESPIRABLE PARTICULATE MATTER—PM_{10} AND $PM_{2.5}$

PM is a broad class of air pollutants that includes discrete particles of a wide range of sizes and chemical compositions, as either liquid droplets (aerosols) or solids suspended in the atmosphere. The constituents of PM are both numerous and varied, and they are emitted from a

wide variety of sources (both natural and anthropogenic). Natural sources include the condensed and reacted forms of naturally occurring VOC; salt particles resulting from the evaporation of sea spray; wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and material from live and decaying plant and animal life; particles eroded from beaches, soil, and rock; and particles emitted from volcanic and geothermal eruptions and from forest fires. Naturally occurring PM is generally greater than 2.5 micrometers in diameter. Major anthropogenic sources include the combustion of fossil fuels (e.g., vehicular exhaust, power generation, boilers, engines, and home heating), chemical and manufacturing processes, all types of construction, agricultural activities, as well as wood-burning stoves and fireplaces. PM also acts as a substrate for the adsorption (accumulation of gases, liquids, or solutes on the surface of a solid or liquid) of other pollutants, often toxic, and some likely carcinogenic compounds.

As described below, PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$), and particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}, which includes $PM_{2.5}$). $PM_{2.5}$ has the ability to reach the lower regions of the respiratory tract, delivering with it other compounds that adsorb to the surfaces of the particles, and is also extremely persistent in the atmosphere. $PM_{2.5}$ is mainly derived from combustion material that has volatilized and then condensed to form primary PM (often soon after the release from a source) or from precursor gases reacting in the atmosphere to form secondary PM.

All gasoline-powered and diesel-powered vehicles, especially heavy duty trucks and buses operating on diesel fuel, are a significant source of respirable PM, most of which is $PM_{2.5}$; PM concentrations may, consequently, be locally elevated near roadways. Potential impacts on PM concentrations from the Proposed Project sources were evaluated.

SULFUR DIOXIDE

SO_2 emissions are primarily associated with the combustion of sulfur-containing fuels (oil and coal). SO_2 is also of concern as a precursor to $PM_{2.5}$ and is regulated as a $PM_{2.5}$ precursor under the New Source Review permitting program for large sources. Due to the federal restrictions on the sulfur content in diesel fuel for on-road and non-road vehicles, no significant quantities are emitted from vehicular sources. Vehicular sources of SO_2 are not significant; therefore, no evaluation of SO_2 from mobile sources is required.

As part of the Proposed Project, natural gas would be burned in the proposed heat and hot water and process boiler systems. The sulfur content of natural gas is negligible; therefore, no evaluation of SO_2 with the Proposed Project's stationary sources is required.

C. AIR QUALITY REGULATIONS, STANDARDS, AND BENCHMARKS

NATIONAL AND STATE AIR QUALITY STANDARDS

As required by the CAA, primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO_2, ozone, respirable PM (both $PM_{2.5}$ and PM_{10}), SO_2, and lead. The primary standards represent levels that are requisite to protect the public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The primary standards are generally either the same as the secondary standards or more restrictive. The NAAQS are presented in **Table III.R-1**. The NAAQS for CO, annual NO_2, and 3-hour SO_2 have also been adopted as the ambient air quality standards for New York State, but are defined on a running

12-month basis rather than for calendar years only. New York State also has standards for total suspended particles, settleable particles, non-methane hydrocarbons, 24-hour and annual SO_2, and ozone which correspond to federal standards that have since been revoked or replaced, and for the noncriteria pollutants beryllium, fluoride, and hydrogen sulfide.

Table III.R-1
National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary		Secondary	
	ppm	µg/m^3	ppm	µg/m^3
Carbon Monoxide (CO)				
8-Hour Average [1]	9	10,000	None	
1-Hour Average [1]	35	40,000		
Lead				
Rolling 3-Month Average [2]	NA	0.15	NA	0.15
Nitrogen Dioxide (NO2)				
1-Hour Average [3]	0.100	188	None	
Annual Average	0.053	100	0.053	100
Ozone (O3)				
8-Hour Average [4,5]	0.075	150	0.075	150
Respirable Particulate Matter (PM10)				
24-Hour Average [1]	NA	150	NA	150
Fine Respirable Particulate Matter (PM2.5)				
Annual Mean [6]	NA	12	NA	15
24-Hour Average [7]	NA	35	NA	35
Sulfur Dioxide (SO2) (8)				
1-Hour Average [9]	0.075	196	NA	NA
Maximum 3-Hour Average [1]	NA	NA	0.50	1,300

Notes:

ppm – parts per million (unit of measure for gases only)
µg/m^3 – micrograms per cubic meter (unit of measure for gases and particles, including lead)
NA – not applicable

All annual periods refer to calendar year.

Standards are defined in ppm. Approximately equivalent concentrations in µg/m^3 are presented.

(1) Not to be exceeded more than once a year.
(2) EPA has lowered the NAAQS down from 1.5 µg/m^3, effective January 12, 2009.
(3) 3-year average of the annual 98th percentile daily maximum 1-hr average concentration. Effective April 12, 2010.
(4) 3-year average of the annual fourth highest daily maximum 8-hr average concentration.
(5) EPA has proposed lowering the primary and secondary standards further to within the range 0.065-0.070 ppm. EPA will take final action on the proposed standards by Oct. 1, 2015.
(6) 3-year average of annual mean. EPA has lowered the primary standard from 15 µg/m^3, effective March 2013.
(7) Not to be exceeded by the annual 98th percentile when averaged over 3 years.
(8) EPA revoked the 24-hour and annual primary standards, replacing them with a 1-hour average standard. Effective August 23, 2010.
(9) 3-year average of the annual 99th percentile daily maximum 1-hr average concentration.

Source: 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.

EPA has revised the NAAQS for PM, effective December 18, 2006. The revision included lowering the level of the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ and retaining the level of the annual standard at 15 $\mu g/m^3$. The PM_{10} 24-hour average standard was retained and the annual average PM_{10} standard was revoked. EPA later lowered the primary annual $PM_{2.5}$ average standard from 15 $\mu g/m^3$ to 12 $\mu g/m^3$, effective March 2013.

EPA has also revised the 8-hour ozone standard, lowering it from 0.08 to 0.075 parts per million (ppm), effective as of May 2008. On November 25, 2014, EPA proposed a change in the 2008 ozone NAAQS, lowering the primary and secondary NAAQS from the current 0.075 ppm level to within the range of 0.065 to 0.070. EPA will take final action on the proposed standards by October 1, 2015. EPA expects to issue final area designations by October 1, 2017; those designations likely would be based on 2014 to 2016 air quality data.

EPA lowered the primary and secondary standards for lead to 0.15 $\mu g/m^3$, effective January 12, 2009. EPA revised the averaging time to a rolling 3-month average and the form of the standard to not-to-exceed across a 3-year span.

EPA established a 1-hour average NO_2 standard of 0.100 ppm, effective April 12, 2010, in addition to the annual standard. The statistical form is the 3-year average of the 98th percentile of daily maximum 1-hour average concentration in a year.

EPA also established a 1-hour average SO_2 standard of 0.075 ppm, replacing the 24-hour and annual primary standards, effective August 23, 2010. The statistical form is the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour concentrations (the 4th highest daily maximum corresponds approximately to 99th percentile for a year.)

NAAQS ATTAINMENT STATUS AND STATE IMPLEMENTATION PLANS

The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by EPA, the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the CAA, followed by a plan for maintaining attainment status once the area is in attainment.

The five New York City counties and Nassau, Suffolk, Rockland, Westchester, and Orange Counties, which had been designated as a $PM_{2.5}$ non-attainment area since 2004 under the CAA due to exceedance of the 1997 annual average standard, and which was also nonattainment with the 2006 24-hour $PM_{2.5}$ NAAQS since November 2009, were redesignated as in attainment for these standards on April 18, 2014, and are now under a maintenance plan. As stated above, EPA lowered the annual average primary standard to 12 $\mu g/m^3$ effective March 2013. EPA designated the area as in attainment for the new 12 $\mu g/m^3$ NAAQS effective January 15, 2015.

Effective June 15, 2004, EPA designated Dutchess, Orange and Putnam counties (Poughkeepsie NAA) as moderate non-attainment areas for the 1997 8-hour average ozone standard. Based on monitoring data (2007-2011), EPA determined that the Poughkeepsie nonattainment area has attained the 1997 8-hour ozone NAAQS (0.08 ppm). Although not yet a redesignation to attainment status, this determination removes further requirements under the 1997 8-hour standard. In March 2008 EPA strengthened the 8-hour ozone standards. Orange County was not determined to be nonattainment under the 2008 standard.

Orange County has never been designated as nonattainment for CO, lead, PM_{10}, SO_2, or NO_2, and air quality currently meets these standards in the County. EPA has designated the entire state

of New York as "unclassifiable/attainment" of the 1-hour NO_2 standard effective February 29, 2012. Since additional monitoring is required for the 1-hour standard, areas will be reclassified once three years of monitoring data are available (likely 2017). EPA has established a 1-hour SO_2 standard, replacing the former 24-hour and annual standards, effective August 23, 2010. Based on the available monitoring data, all New York State counties currently meet the 1-hour standard. Additional monitoring will be required. Draft attainment designations were published by EPA in February 2013, indicating that EPA is deferring action to designate areas in New York State and expects to proceed with designations once additional data are gathered.

DETERMINING THE SIGNIFICANCE OF AIR QUALITY IMPACTS

The State Environmental Quality Review Act (SEQRA) regulations state that the significance of a predicted consequence of a project (i.e., whether it is material, substantial, large or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected.[1] In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see **Table III.H-1**) would be deemed to have a potential significant adverse impact.

In addition, in order to maintain concentrations lower than the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas, NYSDEC has published a policy to provide interim direction for evaluating $PM_{2.5}$ impacts.[2] This policy applies only to facilities applying for permits or major permit modifications under SEQRA that emit 15 tons of PM_{10} or more annually. The policy states that such a project will be deemed to have a potentially significant adverse impact if the project's maximum impacts are predicted to increase $PM_{2.5}$ concentrations by more than 0.3 $\mu g/m^3$ averaged annually or more than 5 $\mu g/m^3$ on a 24-hour basis. Projects that exceed either the annual or 24-hour threshold will be required to prepare an Environmental Impact Statement (EIS) to assess the severity of the impacts, to evaluate alternatives, and to employ reasonable and necessary mitigation measures to minimize the $PM_{2.5}$ impacts of the source to the maximum extent practicable.

The Proposed Project's annual emissions of PM_{10} are estimated to be well below the 15-ton-per-year threshold under NYSDEC's $PM_{2.5}$ policy guidance.

D. METHODOLOGY

MOBILE SOURCE SCREENING ANALYSIS

Screening analyses were undertaken to evaluate the potential effect of the project on CO and PM concentrations. The study area included 16 intersections, employed the traffic analysis results, and includes all Proposed Project components and growth in background traffic.

CARBON MONOXIDE

An assessment of the potential air quality effects of CO emissions that would result from vehicles coming to and departing from the Proposed Project for the 2028 analysis year, which is 5 years beyond the 2023 build year, was prepared following the procedures outlined in the New

[1] New York State Environmental Quality Review Regulations, 6 NYCRR § 617.7

[2] NYSDEC. *CP33: Assessing and Mitigating Impacts of Fine Particulate Emissions.* December 29, 2003.

York State Department of Transportation (NYSDOT) *Environmental Procedures Manual (EPM)*. Since the build year is 2023 and components of the Proposed Project will be online as early as 2018, the screening procedures accounted for vehicular emission factors as of 2018 (emission factors decrease over the years due to the fleet turnover which introduces newer vehicles with lower emissions due to increasingly stricter emissions regulations.) Combining the higher emission factors from 2018 with the higher traffic volumes from 2028 results in a very conservative analysis.

Screening criteria described in the *EPM* were employed to determine whether the Proposed Project requires a detailed air quality analysis at the intersections in the study area. The screening criteria determine whether the Proposed Project would increase traffic volumes or implement any other changes (*e.g.*, changes in speed, roadway width, sidewalk locations, or traffic signals) to the extent that significant increases in air pollutant concentrations could be expected, requiring further detailed analysis.

According to the screening procedures, if the Build condition LOS is A, B, or C, no air quality analysis is required. For each intersections or corridor operating at LOS D or worse, the following Capture Criteria are applied to determine if an air quality analysis may be warranted:

- a 10 percent or more reduction in the distance between source and receptor (*e.g.*, street or highway widening); or
- a 10 percent or more increase in traffic volume on affected roadways for the Build year; or
- a 10 percent or more increase in vehicle emissions for the Build year using emission factors provided in the *EPM*; or
- any increase in the number of queued lanes for the Build year (this applies to intersections); it is not expected that intersections in the Build condition controlled by stop signs would require an air quality analysis; or
- a 20 percent reduction in speed when Build average speeds are below 30 miles per hour (mph).

If the Proposed Project does not meet any of the above criteria, a microscale analysis is not required. If a project is located within one-half (0.5) mile of any intersections evaluated in the CO SIP Attainment Demonstration (as identified in the NYSDOT *EPM*'s Chapter 1.1, Table 2 by county), more stringent screening criteria are applied. The Proposed Project would not affect SIP intersections.

Should any one of the above Capture Criteria be met, a Volume Threshold Screening is performed, using traffic volume and emission factor data to compare with specific volume thresholds established in the *EPM*. The volume thresholds (provided in the *EPM*) establish traffic volumes in which a violation of the NAAQs for CO is extremely unlikely. This approach uses region-specific emissions data to determine corresponding vehicle thresholds.

Both the Capture Criteria and Volume Threshold Screening were developed by NYSDOT to be conservative air quality estimates based on worst-case assumptions. The *EPM* states that if the project-related traffic volumes are below the volume threshold criteria, then a microscale air quality analysis is unnecessary even if the other Capture Criteria are met for a location with LOS D or worse, since a violation of the NAAQS would be extremely unlikely.

PARTICULATE MATTER

The NYSDOT guidance in *EPM* does not yet provide a screening procedure for PM, and only references general modeling guidance from EPA for hotspot analyses. In order to evaluate whether a detailed microscale analysis of PM is required, a screening procedure was undertaken. The PM screening procedure was developed for environmental analyses undertaken under New York City's *City Environmental Quality Review (CEQR)*, which is a local implementation of the environmental analyses undertaken under the New York State Environmental Quality Review Act (SEQRA), and is designed to be at least as conservative. The screening procedure was based on detailed generic modeling which correlated the results of conservative detailed microscale modeling with incremental traffic volumes, identifying traffic increments which might result in exceedances of regulatory standards. Note that the background PM concentrations in New York City are likely substantially higher than those near the Proposed Project and would continue to be so in the future; therefore applying this criterion for the Proposed Project is conservative. The screening includes emissions for both cars and trucks. The *CEQR* PM screening was refined to account for the projected future emissions based on 2018, Phase I of the Proposed Project; an interim year of 2020 in which additional trips associated with Science of the Soul, in addition to Phase I developments are expected to occur; and the build year of 2023. Based on the emissions estimated for 2018, 2020, and 2023 and project-generated traffic volumes projected for 2018, 2020, and 2028, the screening thresholds, above which microscale PM analyses would be required, are approximately 10, 13, and 32 equivalent heavy trucks, respectively (this includes emissions from trucks, buses, and cars expressed as truck-equivalent emissions.)

STATIONARY SOURCE SCREENING ANALYSIS

Stationary sources were evaluated qualitatively. See Section G for details.

E. EXISTING CONDITIONS

The area of the Proposed Project is generally rural and does not have many large sources of pollution. The existing air quality can be characterized based on pollutant concentrations measured by the New York State Department of Environmental Conservation at air quality monitoring stations in the region. Representative concentrations are presented in **Table III.R-2**.

Table III.R-2
Existing Pollutant Concentrations in the Proposed Project Area

Pollutant	Period	Statistical Form	Concentration	Monitoring Station
$PM_{2.5}$	Annual	3-year average	7.3 µg/m^3	Newburgh
	24-hour	98th percentile, 3-year average	19.7 µg/m^3	
Ozone	8-hour	Annual 4th Highest, 3-year average	60 ppb	Valley Central High School
Lead	3-month	maximum rolling average	0.03 µg/m^3	Wallkill
Notes: The statistical form is the form defined for the NAAQS.				
Sources: NYSDEC. New York State Ambient Air Quality Report for 2014. 2012-2014 data. July 2015.				

The data presented in Table III.R-2 demonstrates that pollutant concentrations are substantially lower than NAAQS shown in Table III.R-1. There is no monitoring in the area for NO_2, PM_{10}, CO, or SO_2. However, given the nature of the area and based on the above concentrations of $PM_{2.5}$, ozone, and lead, it can be assumed that air quality in the area of the Proposed Project is generally good and substantially lower than those standards as well.

F. FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the Proposed Project, air quality in the area would be unaffected, and would generally continue to improve due to federal and state efforts at reducing emissions from all sources.

G. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

MOBILE SOURCE AIR QUALITY SCREENING RESULTS

Total traffic volumes for Amy's Kitchen, SoS, and the Warehouse Use were calculated in the Traffic Impact Study. These total volumes were used as input values for the mobile source air quality analysis. The results of the screening analysis conducted using the NYSDOT EPM methodology described above show that none of the intersections affected by the Proposed Project would require a detailed microscale air quality analysis. To avoid potential impacts from CO and PM, Amy's and SoS would implement a strict anti-idling policy for trucks and buses.

CARBON MONOXIDE

Based on the review of the 16 intersections analyzed, the following four (4) intersections were projected to operate at a LOS D or worse on approaches for the AM and PM peak traffic periods:

- Location 1: US Route 6 / NYS Route 17M and Interstate 84 westbound off ramp – right
- Location 2: US Route 6 / NYS Route 17M and County Route 12 / County Route 50
- Location 3: Fletcher Street / NYS Route 17 Eastbound off ramp
- Location 4: Fletcher Street / NYS Route 17 Westbound off ramp

The screening indicated there would be a 10 percent or more increase in traffic volume at Location 2 for the Build year. Thus a volume threshold screening analysis is required at this location. The highest peak Project-related traffic volume at this location was projected to be 1,874 in 2028; this would be below the Volume Threshold criteria of 4,000 vehicles in the peak hour. Therefore, a detailed CO microscale air quality analysis was not warranted at this intersection.

Overall, no significant adverse CO impacts are expected to occur as a result of the Proposed Project's mobile sources.

PARTICULATE MATTER

The highest traffic volume increments associated with the Proposed Project would be an increase of approximately 106 cars and 13 medium to heavy trucks in the peak hour at Location 2 in the 2018 analysis year; approximately 110 cars and 13 medium to heavy trucks at that location in the interim year of 2020 when the increments associated with Science of the Soul is expected to be included; and approximately 147 cars and 15 medium to heavy trucks in the peak hour at Location 2 for the build year. The emissions from these increments would be equivalent to approximately 8 heavy trucks in 2018, 9 heavy trucks in 2020, and 11 heavy trucks in the build year—less than the respective 10-, 13-, and 32-heavy truck equivalents increment thresholds requiring microscale modeling. Therefore, the traffic increments associated with the Proposed Project would not cause any significant adverse PM impacts.

CONCLUSION

None of the locations affected by the Proposed Project would exceed any of the screening criteria. Therefore, additional screening or microscale modeling is not required, and the Proposed Project would not cause any significant adverse air quality impacts from mobile sources.

STATIONARY SOURCES

The Proposed Project would introduce four (4) types of stationary air pollutant sources: heat and hot water systems for Amy's Kitchen, including the wastewater pre-treatment plan, and for SoS; process boilers for Amy's kitchen; and several ovens for Amy's Kitchen—all operating on natural gas. In addition, the project would have two (2) emergency diesel generators. The proposed Warehouse Use would be used for storage of dry goods and there would be no need for refrigeration, only limited air conditioning within a small office space and lighting would be required.

AMY'S KITCHEN

Process Boilers

The Proposed Project would include several process boilers combusting natural gas with a total maximum expected heat input capacity of approximately 36 million British thermal units per hour (MMBtu/hr). PM, SO_2, and CO emissions from natural gas would be very low, and NO_2 would be the critical pollutant. The process boilers would emit approximately 5.6 tons of NO_x per year. Based on experience with similarly sized sources in much denser urban areas, where background concentrations are higher, sources of this size would not cause any exceedance of NO_2 standards at receptors that are located roughly 200 feet or more from the source at the height of the stack. In the case of the Proposed Project, there are no elevated receptors (e.g., residential buildings) in the area, and the nearest residential location is more than 2,000 feet away from the facility. Given the low background concentrations, even when adding the additional small sources listed below, no significant adverse air quality impacts would be expected from the process boilers.

Heat and Hot Water Systems

The heat and hot water systems would be relatively small sources. The average natural gas consumption for heating residential buildings in the Northeast is 45.2 standard cubic feet (scf) of natural gas per square foot (sf) per year—industrial spaces utilize much less space heating. Using that conservatively high rate for a total of 569,000 sf and a boiler emission rate of 100 pounds of NO_x per million scf (EPA, AP42) would result in an annual average total of 1.29 tons of NO_x per year. This would add roughly 23% to the emissions cited above for the process boilers, and would be emitted from separate sources in each of the facilities. Overall, these emissions would not change the conclusions above and no significant adverse air quality impacts would be expected from the heat and hot water systems.

Ovens

The ovens are expected to be relatively small sources of emissions. Amy's Kitchen envisions including four (4) to six (6) rack ovens, four (4) tortilla ovens, and one (1) pizza oven each rated at approximately 257,000 British thermal units per hour. Standard plant operations would have the ovens operating at roughly 80 percent load for 16 hours per day for 5 days per week. Total energy demand from the ovens would be approximately four (4) to five (5) million BTUs per

year. Overall, the ovens would add a small amount to the emissions cited above for the process boilers and heat and hot water systems, and would be emitted from separate locations. These sources do not require any permits and would not change the conclusions stated above.

Emergency Generators

Emergency generators are exempt from NYSDEC air permitting requirements and would be installed and operated in accordance with EPA requirements, as well as other applicable codes and standards. Potential air quality impacts from the emergency generators would be insignificant since they would be used only for brief testing and during power outages, and individual generators would be tested at different times. Therefore, it is not expected that the Proposed Project would result in significant adverse air quality impacts due to the emergency generators.

Overall, it is not expected that the Proposed Project would result in significant adverse air quality impacts due to stationary sources.

SCIENCE OF THE SOUL

The SoS Conference Center buildings, caretaker houses, and guest house would each have standard commercial or residential boilers and hot water heaters operating on natural gas. No industrial equipment or mechanical systems are anticipated to be included that would exceed the NYSDEC permitting threshold for an air quality permit. Since the hot water system would use natural gas fuel, the primary pollutant of concern is NO_2. However, it is not anticipated that the size or number of boilers and hot water heaters used by SoS would result in significant adverse air quality impacts.

WAREHOUSE USE

Inclusion of a Warehouse Use on the Ver Hage property will most likely include standard air conditioning units for a small office space. It is not anticipated that the warehouse would be refrigerated. Standard air conditioning units for a small office space would run on available electrical supply and would not create any air emissions.

CONCLUSIONS

The Proposed Project would introduce relatively small stationary sources at a large distance from the nearest sensitive locations, and the traffic increments associated with the Proposed Project would not exceed screening levels. Overall the review of these sources has concluded that the Proposed Project would not cause any significant adverse air quality impacts.

H. PROPOSED MITIGATION

Emissions from vehicles generated by the Proposed Project would be unavoidable, but are not considered impacts as none of the screening locations for mobile source emissions exceed the volume threshold criteria for either carbon monoxide or particulate matter established by NYSDOT. Emissions from stationary sources (process boilers, heat and hot water systems, and ovens) are also considered unavoidable, but are not considered impacts as none of the stationary sources individually or collectively are large enough to require any air quality permits, they would be located a large distance from any sensitive receptor, and because ambient pollutant concentrations are substantially lower than NAAQS. Since the Proposed Project would not result in any significant adverse air quality impacts, no mitigation is required. ✷

A. INTRODUCTION

This chapter summarizes the Proposed Project's construction phasing plan and assesses the potential for impacts due to construction. Amy's Kitchen intends to begin construction of Phase 1 in 2016 and to be in production in 2018. Phase 2 construction is anticipated to be completed by approximately 2023. The SoS Conference Center is contemplated to be constructed in a single 18- to 24-month phase, which is currently anticipated to commence after construction of the access road, Wallkill River bridge, and Phase 1 construction of Amy's Kitchen is initiated.

B. OVERVIEW OF CONSTRUCTION ACTIVITIES

This section describes the anticipated construction phasing for the Proposed Project and the types of activities likely to occur during construction. The construction logistics for the Proposed Project, including truck routes and site access points, are also described. Finally, stormwater management methods and sustainability guidelines to be employed during the construction of the Proposed Project are discussed.

CONSTRUCTION PHASING

Full build-out of Amy's Kitchen would occur in two (2) phases. Phase 1 would total 226,000 square feet: 215,000 square feet of production space and 11,000 square feet of office space. An accessory 3,000 square-foot medical clinic would be constructed in a free-standing building on the Project Site. Phase 1 would also include construction of the new access road from NYS Route 17M, the bridge across the Wallkill River, internal driveways and employee parking, water supply lines, wastewater conveyance lines, and the on-site wastewater pre-treatment system. Site landscaping, stormwater management, and lighting would also be completed. It is anticipated that Phase 1 would take approximately 18 to 24 months to complete. Amy's Kitchen has scheduled the Goshen facility to be in production in 2018.

Overall, the sequence of construction activities would begin with site work (clearing and grading) of the Access Road Improvement Area, access road alignment on the Echo Lake property, and the bridge landing area on the Ver Hage property. The access road would be constructed to allow construction access to the Wallkill River bridge location. The gas line from NYS Route 17M to the Echo Lake property and Ver Hage property would also be completed at this time within the access road alignment. Installation of the Wallkill River bridge would follow to allow for construction access to the Ver Hage property from NYS Route 17M. Once the access road and bridge have been substantially completed and would allow for construction truck traffic, Project Site earthwork would commence on both the Echo Lake property and Ver Hage property. Since the grading plan for the Proposed Project contemplates a roughly balanced cut-and-fill across the Project Site, excavated material from the Echo Lake property would be used to fill the Ver Hage property. With the access road and bridge completed in the earliest

construction phase, very limited construction traffic would use either Hartley Road or Echo Lake Road.

Simultaneous to commencement of site work on the Project Site, construction would begin on the water supply and wastewater conveyance lines within the Heritage Trail Utility Corridor.

Following rough grading on the Ver Hage property, construction of building foundations and site utilities would commence, followed by construction of site buildings for the Amy's Kitchen manufacturing facility. Electrical connections for both Amy's Kitchen and SoS Conference Center would be pulled from existing transmission lines along Hartley Road and/or Echo Lake Road.

Building construction for Amy's Kitchen would proceed in several stages, some of which would overlap: excavation and foundation; superstructure; exteriors; and interior fit out. Construction would begin with the excavation of the soils, any required remediation, and the construction of the foundations. When the below-grade construction is completed, construction of the superstructure (the building's beams, columns, floor decks, and core) of the new building would begin. Next, the exterior of the building would be constructed and interior fit-out would commence. The interior fit-out would include the construction of non-structural building elements such as interior partitions and interior finishes (i.e., flooring, painting, etc.) as well as equipment installation at the food manufacturing plant.

Phase 2 of Amy's Kitchen would total 140,000 square feet: a 134,000 square feet expansion of production space and an additional 6,000 square feet of office space. Phase 2 construction is anticipated to be completed by approximately 2023.

The SoS Conference Center is contemplated to be constructed in a single 18- to 24-month phase, which is currently anticipated to commence after construction of the access road, Wallkill River bridge, and Phase 1 construction of Amy's Kitchen is initiated. Construction activities on the SoS Conference Center buildings will begin after the initial clearing and grading of the Echo Lake property is substantially completed.

CONSTRUCTION ACTIVITIES

CLEARING AND GRADING

Construction of the Proposed Project would require clearing and grading of approximately 151 acres of the Project Site. Specifically, the Amy's Kitchen food manufacturing facility, parking lots, and driveways would have a footprint of approximately 37 acres. The Project Site entry road that would be constructed through the Echo Lake property to connect to NYS Route 17M would require disturbance of approximately 14 acres. The SoS Conference Center would have disturbance of approximately 97 acres on the Echo Lake property, and the associated guest house and driveway would have disturbance of approximately 3 acres.

Construction of the Amy's Kitchen manufacturing facility would result in changes to the natural topography of the Ver Hage property. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 307,057 cubic yards. Based on the proposed grading plan for the Proposed Project, which is based on two (2)-foot contours, 59,092 cubic yards of cut and 247,965 cubic yards of fill is projected. As such, 188,873 cubic yards (approximately 211,538 tons) of fill would be required to balance the site, the majority of which would be obtained from the Echo Lake property (approximately 34,179 cubic yards—approximately 44,433 tons) of materials for building slab construction would have

to be imported to the Ver Hage property). For the SoS Conference Center, approximately 996,921 cubic yards of cut and 991,258 cubic yards of fill is projected. As such, 5,663 cubic yards (approximately 6,343 tons) of cut would be required to balance the site. Approximately 66,582 cubic yards (approximately 86,557 tons) of materials for building slab construction would have to be imported to the Echo Lake property. As further described below under Traffic, the vast majority of the truck trips required to move material between the Echo Lake and Ver Hage sites would occur on the private bridge between the two sites, and not on State or local roadways.

Grading would not commence until Site Plan approval has been finalized by the Town of Goshen Planning Board. Clearing of trees would not commence until November 1 to comply with NYSDEC restrictions relating to protected species of bats.

Soil excavation on the Project Site can be performed with conventional earth moving equipment such as backhoes, excavators, and bulldozers. All excavation would be performed in accordance with OSHA requirements including, but not limited to, temporary shoring, using trench boxes, and proper benching, wherever necessary.

Groundwater may be encountered on portions of the Echo Lake property during site excavation and foundation construction. Any water encountered during construction can likely be handled by localized sump pits and pumps. Stormwater run-off would be directed away from excavations and promptly removed from areas of foundation subgrade. Groundwater and stormwater run-off would be discharged in accordance with NYSDEC regulations.

Should bedrock removal be required, standard construction equipment is typically sufficient to excavate or "rip" the bedrock. If the rock is less weathered and stronger, additional mechanical devices, such as a hydraulic hammer mounted on an excavator, may be required to break the rock down into removable size pieces for excavation. As a last resort, to break apart massive, strong, and fresh (non-weathered) bedrock, drill and blast operations would be used if required to fragment the rock so that it can be excavated. By using a combination of these techniques, rock excavation can be performed in a responsible manner.

Blasting is not anticipated to be required for construction at the Project Site. However, if it is determined that blasting is necessary for bedrock removal on-site, it would be carried out in conformance with all applicable laws and regulations. To ensure compliance with the applicable laws and regulations, a site-specific blasting plan would be developed and provided to the Town. This plan would include schedules for blasting (day, hour, and duration), safety protocols associated with both blasting activities and the handling and transport of blasting materials, and measures to reduce noise-related impacts. Compliance with the blasting plan will minimize potential impacts associated with blasting.

GENERAL CONSTRUCTION PRACTICES

HOURS OF WORK

Construction of the Proposed Project would be carried out in accordance with the Town of Goshen Noise Code, which allows construction activities between the hours of 8:00 AM and 8:00 PM on weekdays and between the hours of 9:00 AM and 8:00 PM on weekends and holidays. Construction activities occurring after-hours are not permitted except for emergency conditions in the interest of public safety.

STAGING AREAS AND ACCESS POINTS

Active construction on the Project Site would be focused on the Ver Hage property and the Echo Lake property. No construction activity is anticipated on either the Lipoff property or Strong Farm property. Both the Ver Hage property and the Echo Lake property are large enough to accommodate on-site construction equipment and materials staging areas, construction offices, and construction worker parking.

Truck Routes

The first phase of construction would focus on clearing and grading of the Access Road Improvement Area and construction of the access road and Wallkill River bridge. Thus, construction truck traffic access to the Project Site would be focused on NYS Route 17M. Very limited construction truck traffic may have to access the Project Site through existing driveways on either Echo Lake Road or Hartley Road. Once the access road and bridge are constructed they would provide access to the interior portions of the Echo Lake property and the Ver Hage property.

Construction trucks would use nearby State routes (e.g., I-84 and NYS Route 17M) to travel to the Project Site and minimize the use of County and Town roads to the extent practicable. I-84 and NYS Route 17M are regularly traveled by heavy trucks and the speed limit on NYS Route 17M is 55 miles per hour in the vicinity of the Project Site. Since construction traffic is anticipated to be very low on County and Town roads, it is not anticipated that any impacts to those roads would result from the Proposed Project. It is noted that Hartley Road is already in a poor condition and the construction phasing plan has been developed to avoid extensive use of Hartley Road. Only a small number of light vehicles or flat-bed tractor trailer trucks delivering construction equipment to the Ver Hage property would use Hartley Road in the initial stages of construction. It is not expected that this very limited use of Hartley Road would cause any further deterioration in conditions on Hartley Road. It is noted that the Town of Goshen is currently considering a Local Law that would eliminate weight restrictions for trucks traveling on Hartley Road.

For construction associated with Heritage Trail Utility Corridor the preferred truck route will be from I-84 to NYS Route 17M west to Dolsontown Road and then north to McVeigh Road, which parallels the Heritage Trail Utility Corridor.

Construction Site Entrances

Stabilized construction entrances would be installed at each access point to the Project Site. A stabilized construction entrance consists of a stabilized pad of aggregate underlain with geotextile. The purpose of a stabilized construction entrance is to minimize dust emissions and reduce or eliminate the tracking of sediment onto Town and County roadways. Stabilized construction entrances would be placed at the proposed entrances to the Project Site on NYS Route 17M, Echo Lake Road, and Hartley Road. Street sweeping would be implemented as needed.

STORMWATER MANAGEMENT

During construction of the Proposed Project, vegetation would be removed and bare soil would be exposed as part of excavation and site preparation. As a result, there would be an increased likelihood of soil erosion and sedimentation. Construction of the Proposed Project would conform to the requirements of the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, Permit No. GP-0-15-002. This permit

requires that commercial projects disturbing more than one (1) acre of land must develop a Stormwater Pollution Prevention Plan (SWPPP) containing both temporary erosion control measures during construction and post-construction stormwater management practices.

SUSTAINABILITY GUIDELINES RELATED TO CONSTRUCTION

All excavated rock, soil, and fill materials requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements. The contractor may make arrangements with numerous disposal sites for the final destination of the excavated material.

The Proposed Project would include a number of sustainability practices during construction. Among those sustainability construction guidelines currently under consideration are:

- Use of materials with high recycled content/renewable or sustainable harvested materials to the extent reasonably practicable;
- Use of locally and/or regionally extracted or manufactured materials where reasonably feasible; and
- Diversion of demolition and construction waste from landfills and to recycling and reuse where reasonably feasible.

Material selection throughout construction will prioritize materials from local suppliers and from the Hudson Valley region. Forest Stewardship Council (FSC) certified wood and other renewable resources will be targeted for use. Waste management of construction materials will be a priority throughout the construction phase. Initial construction waste will be carefully managed, with a goal to divert at least 75 percent of all waste materials to recycling facilities (such as Taylor-Montgomery in the Town of Montgomery) for beneficial reuse. Diverted materials will include all brick, concrete, wallboard, wood, and metal debris. Asphalt and concrete generated from roadway improvements (both on-site and off-site) would be recycled or crushed at an off-site location for reuse. Diversion of construction materials will reduce the demand for new resources as well as impacts related to processing and transportation of those materials, thus reducing the overall carbon footprint related to the Proposed Project.

TRAFFIC

The Proposed Project would reconstruct the intersection of NYS Route 17M and Training Center Lane to improve circulation into the Project Site and surrounding uses. Although traffic along NYS Route 17M would be disrupted during the construction of the Proposed Project, such effects would be temporary and limited to the periods where road improvements are made. The proposed improvements would require a Highway Work Permit from the New York State Department of Transportation (NYSDOT). Temporary Work Zone Traffic Control Plans would likely be implemented, as required, to ensure worker and public safety during construction on or adjacent to public roadways.

The proposed project would generate vehicle trips associated with workers traveling to and from the construction site, as well as the hauling and delivery of soils, materials, and equipment. An estimated average of approximately 50 to 60 workers and 25 construction-related truck trips per day would occur when construction is active at the Project Site. During the initial site clearing and grading activity, trucks would be used to haul excess fill material from the Echo Lake property to the Ver Hage property using the new Wallkill River bridge that would be constructed in the first phase. Because of the large amount of fill required at the Ver Hage property, approximately 90 truck trips per day over a six (6) month period may be required between the

Echo Lake property and the Ver Hage property. However, once delivered to the Project Site, none of these truck trips would occur on State or local roads.

Each construction worker was assumed to commute to the construction site by private auto and make two vehicle trips per workday – one arrival trip and one departure trip. Given typical construction hours, the majority of worker trips would occur during off-peak travel times and therefore would not typically affect traffic during the standard peak vehicular travel hours (e.g., 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM). Truck movements, including delivery of construction materials and equipment, are typically distributed throughout the work day. It is expected that only a limited number of trucks would travel to or from the site during the standard vehicular peak traffic hours Furthermore, traffic generated during construction would also be temporary. For these reasons, it is concluded that the Proposed Project would not result in significant adverse impacts due to vehicles generated by construction activity.

SURFACE WATERS AND WETLANDS

Surface waters on or adjacent to the Project Site would be protected during construction through the implementation of an Erosion and Sediment Control Plan (ESCP) as part of an overall Stormwater Pollution Prevention Plan (SWPPP). Silt fences, hay bales, and other best management practices would be installed before any construction activity begins to protect surface waters.

With the exception of the limited disturbance to wetlands on the Project Site to create the access road, all other regulated wetlands would be protected during the construction period by creating a defined limit of disturbance with appropriate fencing and signage to indicate "Protected Areas." No construction staging, equipment or material storage, or worker parking would be permitted within these protected areas. Wetlands would be further protected by appropriate erosion and sediment controls as required by the SWPPP developed for the Proposed Project.

NOISE

Construction of the Proposed Project would generate noise and vibration from construction equipment, construction vehicles, and delivery vehicles traveling to and from the Project Site. Noise levels caused by construction activities would vary widely, depending on the phase of construction—demolition, excavations, foundation, construction of the structures, etc.—and the specific task being undertaken. All construction activities would be conducted in full compliance with existing regulations, including local day and hour construction limitations.

Various state and federal requirements mandate that certain classifications of construction equipment and motor vehicles be used to minimize adverse impacts. Thus, construction equipment would meet specific noise emission standards. Usually, noise levels associated with construction and equipment are identified for a reference distance of 50 feet, as shown in **Table III.S-1**.

Significant noise levels typically occur nearest the construction activities, and may reach as high as 90 A-weighted decibels (dBA) under worst-case conditions. The level of noise impacts at local receptors would depend on the noise characteristics of the equipment, the activities involved, the hours of operation, and the location of sensitive noise receptors. Noise levels would decrease with distance from the construction site. Increased noise levels due to construction activity can be expected to be most significant during the early construction phases such as clearing and excavation, which would be relatively short in duration (approximately 4 months) and intermittent based on the equipment in use and the work being done.

Table III.S-1
Typical Noise Emission Levels For Construction Equipment

Equipment Item	Noise Level at 50 Feet (dBA)
Air Compressor	81
Asphalt Spreader (paver)	89
Asphalt Truck	88
Backhoe	85
Bulldozer	87
Compactor	80
Concrete Plant	83[(1)]
Concrete Spreader	89
Concrete Mixer	85
Concrete Vibrator	76
Crane (derrick)	76
Delivery Truck	88
Diamond Saw	90[(2)]
Dredge	88
Dump Truck	88
Front End Loader	84
Gas-driven Vibro-compactor	76
Hoist	76
Jack Hammer (Paving Breaker)	88
Line Drill	98
Motor Crane	93
Pile Driver/Extractor	101
Pump	76
Roller	80
Shovel	82
Truck	88
Vibratory Pile Driver/Extractor	89[(3)]

Notes: [1] Wood, E.W., and A.R. Thompson, Sound Level Survey, Concrete Batch Plant; Limerick Generating Station, Bolt Beranek and Newman Inc., Report 2825, Cambridge, MA, May 1974.
[2] New York State Department of Environmental Conservation, *Construction Noise Survey, Report No. NC-P2*, Albany, NY, April 1974.
[3] F.B. Foster Company, Foster *Vibro Driver/Extractors, Electric Series Brochure*, W-925-10-75-5M.
Sources: Patterson, W.N., R.A. Ely, And S.M. Swanson, *Regulation of Construction Activity Noise*, Bolt Beranek and Newman, Inc., Report 2887, for the Environmental Protection Agency, Washington, D.C., November 1974, except for notated items.

While the exact sequence and duration of construction activity would vary slightly, it is known that certain equipment including excavators, bulldozers, backhoes, graders, and dump trucks would be required.

Construction operations, for some limited time periods, would result in increased noise levels that may be intrusive and annoying and may significantly increase ambient noise levels. Construction activities would comply with the hour limitations in the Town Code to minimize noise intrusion from construction activities. Because of the limited duration of the construction activity and the generally industrial nature of the study area, it is the Applicant's belief that these impacts would not constitute significant adverse noise impacts.

AIR QUALITY

The principal air quality impact associated with construction activities is the possible generation of fugitive dust, which can vary widely in terms of volume and size of particulate matter generated. Fugitive dust is associated with earth moving, such as site grading, filling, and

excavation for foundations. A large proportion of the fugitive dust generated by construction activities would be of relatively large particle size, and would be expected to settle to the ground within a short distance. To minimize these problems, erosion and dust control procedures would be followed during construction and would include:

- Minimizing the area of disturbed soil by careful planning of grading operations so that only the areas needed for any particular construction activity are disturbed;
- Minimizing the time span that soil is exposed;
- Spraying water on dusty surfaces;
- Utilizing ultra-low sulfur diesel equipment; and
- Using drainage diversion methods (silt fences) to minimize soil erosion during site grading.

Water trucks would be used to spray exposed surfaces during dry weather periods. These water trucks would obtain water from off-site locations and the amount of water used during construction would depend on weather conditions during the construction period.

Mobile source emissions may result from the operation of construction equipment, earth-moving equipment, and trucks delivering materials to the Project Site. Localized increases in mobile source emissions would be minimized by using ultra-low sulfur diesel fuel for all construction equipment operating on the Project Site. Delivery trucks and/or other construction equipment engines would not be permitted to remain idling during unloading or other inactive times.

No significant adverse impacts on the local community from fugitive dust or emissions are expected to occur as a result of the Proposed Project.

HAZARDOUS MATERIALS

In general, contaminants were not identified in soil or groundwater at levels exceeding regulatory criteria for the intended site use during the Phase II Subsurface Investigations of the Ver Hage and Echo Lake properties; however, several areas of waste disposal were noted at the Echo Lake property. The Applicant anticipates that potential impacts from potential unforeseen conditions would be avoided by performing construction activities in accordance with the following protocols:

- The waste disposal areas at the Echo Lake property would be addressed by excavating, segregating and disposing of the waste materials off-site in accordance with applicable regulations. Endpoint samples would be collected from the excavations to confirm that associated contaminants do not remain in the underlying soil. Soil removal would be conducted if contaminant concentrations exceeding the applicable regulatory criteria are identified.
- Results from the soil vapor sampling at the Ver Hage Property did not identify VOCs above the NYSDOH Air Guideline Values, and data from on-going groundwater monitoring associated with the Old Al Turi Landfill shows minimal groundwater impacts on the Property. Therefore, there is low potential for future contaminant migration onto the Property and a low potential for vapor encroachment. Nevertheless, as a precautionary measure, a vapor barrier will be incorporated in the design of the Amy's Kitchen food processing facility building on the Ver Hage property to prevent potential radon and/or vapor intrusion.
- After design of the utility line connection is completed, targeted soil and groundwater sampling would be conducted along the Heritage Trail Utility Corridor to characterize subsurface materials that would be encountered during construction. The sampling parameters would be

selected based on the anticipated contaminants of concern associated with the conditions identified based on the regulatory database review (e.g., metals, pesticides, PCBs, petroleum compounds associated with former railroad use; chlorinated solvents associated with the nearby dry cleaner; VOCs and SVOCs associated with nearby petroleum spills).

- A Construction-Phase Environmental Health and Safety Plan (CHASP) would be prepared and implemented to manage disturbance of soil and handling of dewatering fluids, and would include a contingency plan to address sources or areas of contamination, if any, identified during targeted sampling along the Heritage Trail Utility Corridor and/or encountered during future construction activities. Elements of the CHASP will include the following:
  - All soil and fill excavated as part of Project Site construction activities would be managed in accordance with all applicable regulations. All soil intended for off-site disposal would be tested in accordance with the requirements of the intended receiving facility. Transportation of all material leaving the Project Site for off-site disposal would be in accordance with Federal, State and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc. Among the pertinent regulatory requirements are those found in 6 NYCRR Parts 360 through 376, which set forth waste management requirements. Any waste disposal that would occur outside of New York State would be conducted in accordance with similar federal and individual state requirements.
  - If tanks, drums, or other sources of subsurface contamination are discovered at the Project Site during excavation activities, they would be removed in accordance with all applicable regulations. Any associated soil and groundwater contamination would be mitigated in accordance with the state, county, and local requirements. The removal of petroleum tanks is regulated by NYSDEC (6 NYCRR Section 613.9), which requires that tanks no longer in use be closed in place or removed according to specific requirements. Contaminated soils surrounding the tanks, separate phase product on the water table, or contaminants dissolved in the groundwater, if encountered, would be addressed in accordance with applicable NYSDEC regulations (6 NYCRR Section 611.6) and Article 12 of the New York Navigation Law (notification and management requirements for spills to the waters of the state).
- If dewatering is required (e.g., for installation of utilities), treatment and discharge of dewatering fluids would be conducted in accordance with all applicable regulations and guidance, including obtaining appropriate permits. The discharge of wastewater to surface or groundwater in New York State will be conducted in accordance with 6 NYCRR Part 750.
- Appropriate erosion and sediment controls will be implemented in accordance with a Stormwater Pollution Prevention Plan (SWPPP). This will minimize the potential of dust generation and sediment in stormwater during the soil disturbance activities.

With the implementation of these measures, no significant adverse impacts related to hazardous materials would be expected to occur as a result of the construction activities for the Proposed Project. ✷

Chapter IV. Unavoidable Adverse Environmental Impacts

As discussed in each of the technical chapters throughout the DEIS, the Proposed Project would create a number of physical changes to the Project Site and Additional Areas. Several environmental impacts would result that cannot be avoided.

The Proposed Project would result in the unavoidable clearing and grading of approximately 151 acres of the Project Site, much of which comprises successional old field and shrubland that has grown on previously disturbed mined land.

Construction of the Amy's Kitchen manufacturing facility would result in changes to the natural topography of the Ver Hage property. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 307,057 cubic yards. Based on the proposed grading plan for the Proposed Project, 59,092 cubic yards of cut and 247,965 cubic yards of fill are projected. As such, 188,873 cubic yards of fill would be required to balance the site, the majority of which would be obtained from the Echo Lake property.

Construction of the SoS Conference Center would result in changes to the natural topography of the Echo Lake property. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 1,988,179 cubic yards of total earthwork. Based on the proposed grading plan for the Proposed Project, 996,921 cubic yards of cut and 991,258 cubic yards of fill are projected. As such, 5,663 cubic yards of cut would be required to balance the site.

The Proposed Project would result in unavoidable adverse impacts to approximately 4.2 acres of wetlands (0.091 acres of federally-regulated wetlands) through the construction of the Proposed Project.

Within the 151 acre limits of disturbance, approximately 49 acres of successional southern hardwoods on the Project Site would be cleared. Within this area to be cleared are a number of trees greater than 12 inches in diameter. Due to the size of this area, it was not possible to conduct an exact count of the number of trees greater than 12 inches in diameter. In addition, since the Proposed Project requires an extensive amount of cut and fill between the Echo Lake and Ver Hage properties to meet the necessary grades for each site, it is not feasible to preserve any trees within the area of disturbance. The loss of vegetation and trees within the area of disturbance is considered an unavoidable adverse impact.

Development and use of the Project Site will generate solid waste due to office refuse, food wastes, and packaging materials. To minimize solid waste generation, Amy's Kitchen will recycle and compost as much as possible; however, the production of some solid waste is unavoidable.

Change of existing land use form vacant land to occupied land creates several unavoidable adverse environmental impacts. Construction of new buildings, roadways and parking areas would require excavation and grading, as well as creating additional impervious surfaces on-site. This increase in impervious surfaces would require detention, treatment, and eventual release of

stormwater runoff that would formerly have been absorbed on the Project Site. A Stormwater Pollution Prevention Plan (SWPPP) would be implemented to ensure proper management of stormwater runoff including both water quality and quantity.

The Proposed Project would result in unavoidable impacts to four (4) S/NR eligible archaeological sites. Since avoidance of these sites is not possible through design changes to the Proposed Project, Phase III DRPs will be developed to outline the testing strategies and protocols that will be implemented as part of the Data Recovery. The DRPs will be submitted to SHPO for review and concurrence. As a result thereof, no significant adverse impacts to archaeological resources would result.

The Proposed Project would generate additional vehicle trips to and from the Project Site. While these trips are considered unavoidable, mitigation measures have been proposed to avoid significant adverse impacts.

Emissions from vehicles generated by the Proposed Project would be unavoidable, but are not considered impacts as none of the screening locations for mobile source emissions exceed the volume threshold criteria for either carbon monoxide or particulate matter established by NYSDOT. Emissions from stationary sources (process boilers, heat and hot water systems, and ovens) are also considered unavoidable, but are not considered impacts as none of the stationary sources individually or collectively are large enough to require any air quality permits, they would be located a large distance from any sensitive receptor, and because ambient pollutant concentrations are substantially lower than NAAQS.

Construction activities would generate traffic to and from the site, noise from construction equipment and potential erosion concerns. To minimize these impacts, a phasing plan, a SWPPP, an erosion and sediment control plan, and traffic safety measures would be implemented. These impacts would be temporary and are not considered significant. ✷

A. INTRODUCTION

The State Environmental Quality Review Act (SEQRA) and its implementing regulations require the consideration of project alternatives that are reasonable and feasible that meet the goals and objectives of the Proposed Project. The adopted Scope required consideration of a specific set of alternatives for comparison to the Proposed Project. However, during the course of developing the Draft Environmental Impact Statement, the Applicant determined that one of the alternatives—wastewater treatment at on off-site location—is preferred to construction of an on-site wastewater treatment plant. Thus, this chapter evaluates an on-site wastewater treatment plant as on alternative to the Proposed Project.

The following Alternatives are evaluated:

Alternative 1: No Action Alternative;

Alternative 2: Potential use of Echo Lake Road (over Heritage Trail) as an emergency access, "employee only" entrance/exit or access for Science of the Soul events;

Alternative 3: Permanent access to Amy's Kitchen manufacturing facility from Hartley Road;

Alternative 4: Connection to the Village of Goshen wastewater treatment plant; and

Alternative 5: Smaller Warehouse Use that avoids floodplain disturbance.

Each of the Alternatives has been evaluated for potential impacts in comparison to the Proposed Project. Only those areas of environmental concern relevant to each Alternative are discussed herein. Where impacts of the Alternative are identical to the Proposed Project, it is so stated.

B. EVALUATION OF ALTERNATIVES

ALTERNATIVE 1: NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed Amy's Kitchen Facility and SoS conference center would not be constructed. None of the impacts would occur on the site and none of the benefits would be realized. The properties that comprise the Project Site would remain in their existing condition. No additional tax revenue would be generated, no additional jobs would be created with associated spending, and no additional visitors relating to SoS events would result in increased tourism and spending at hotels, restaurants, food and other shopping establishments, and otherwise. The No Action Alternative is not consistent with the objectives of Amy's Kitchen or SoS, and is not consistent with the economic development goals and the land use plan of the Town of Goshen as discussed in its Comprehensive Plan.

GEOLOGY AND SOILS

Since no construction or development activities would occur under this Alternative, there would be no disturbance to existing soils or other important geological features.

TOPOGRAPHY

Since no construction or development activities would occur under this Alternative, there would be no disturbance to steep slopes.

SURFACE WATER RESOURCES

Since no construction or development activities would occur under this Alternative, there would be no disturbance to surface water resources.

VEGETATION AND WILDLIFE

Since no construction or development activities would occur under this Alternative, there would be no disturbance to vegetation and wildlife.

GROUNDWATER/WATER SUPPLY

Since no construction or development activities would occur under this Alternative, there would be no changes to groundwater or water supply, and no increase in water consumption.

WASTEWATER MANAGEMENT

Since no construction or development activities would occur under this Alternative, there would be no wastewater generation, and no potential impact to surface water quality.

STORMWATER MANAGEMENT

Since no construction or development activities would occur under this Alternative, there would be no potential impacts to stormwater.

TRAFFIC AND TRANSPORTATION

Since no construction or development activities would occur under this Alternative, there would be additional traffic attributed to the Proposed Project and there would not be any need for any of the Project's mitigation measures.

NOISE

Since no construction or development activities would occur under this Alternative, there would be no additional noise associated with mobile sources (e.g., trucks and automobiles) or stationary sources (e.g., building mechanical equipment).

UTILITIES AND SOLID WASTE DISPOSAL

Since no construction or development activities would occur under this Alternative, there would be no change in current utility demand or solid waste generation rate attributable to the Proposed Project.

LAND USE AND ZONING

Under the No Action Alternative, no development or change in land use would occur on the Project Site. This would not be consistent with the Town of Goshen Comprehensive Plan, which envisions economic development activity on the Project Site.

COMMUNITY SERVICES

Since no construction or development activities would occur under this Alternative, there would be no change in demand for service from municipal emergency service providers.

FISCAL IMPACTS

Since no construction or development activities would occur under this Alternative, there would be no change in tax generation rates for the Project Site. In addition, no new jobs or off-site spending at local hotels, restaurants, and shopping would be generated.

VISUAL RESOURCES

Since no construction or development activities would occur under this Alternative, there would be no potential impacts to visual resources under the No Action Alternative.

ENVIRONMENTAL CONTAMINATION

Since no construction or development activities would occur under this Alternative, there would be no potential impacts associated with exposure to existing contamination during construction.

CULTURAL RESOURCES

Since no construction or development activities would occur under this Alternative, there would be no potential impacts to historic or archaeological resources under the No Action Alternative.

AGRICULTURE

Since no construction or development activities would occur under this Alternative, there would be no potential impacts to agricultural lands on or adjacent to the Project Site.

AIR QUALITY

Since no construction or development activities would occur under this Alternative, there would be no change in air quality associated with the Proposed Project.

CONSTRUCTION

Since no construction or development activities would occur under this Alternative, there would be no potential impacts from construction activities.

ALTERNATIVE 2: POTENTIAL USE OF ECHO LAKE ROAD AS AN EMERGENCY ACCESS, "EMPLOYEE ONLY" ENTRANCE/EXIT OR ACCESS FOR SCIENCE OF THE SOUL EVENTS

The Proposed Project includes an emergency access connection from the Echo Lake site to Echo Lake Road using an existing driveway and crossing of the unimproved portion of the Heritage

Trail. The existing gravel driveway in this location would be upgraded with a hard surface driveway. A deed restriction controlled by the County on the Echo Lake property restricts use of this driveway to construction vehicles and emergency vehicles, and excludes "regular vehicular access." The County would need to approve an amendment to the existing deed restriction in order to permit this expanded use of the existing access to Echo Lake Road.

Alternative 2 considers allowing emergency access as well as employee/volunteer ingress and egress using this driveway, and secondary egress from the SoS National Conference or Regional Conference on the three (3) days per year that the National Conference would occur and two (2) days that the Regional Conference would occur. Only minor modifications would be required (potential slight widening, more durable wearing surface) to convert the emergency access driveway to a driveway that would support additional use. No significant clearing, grading, or stormwater management would be required to accommodate a wider driveway.

The realignment and upgrade of the proposed main access onto NYS Route 17M with the Proposed Project, which includes a new traffic signal and new right- and left-turning lanes, would create a safe and adequate entrance to the Echo Lake property. Even with the potential for an employee/volunteer entrance/exit and secondary egress point for the larger SoS events, the improvements at NYS Route 17M would still have to be made.

In all other respects Alternative 2 is identical to the Proposed Project. Thus, only impacts to traffic, noise, and air quality are considered.

TRAFFIC AND TRANSPORTATION

Directing some exiting vehicles from the SoS parking areas to Echo Lake Road could decrease traffic delays experienced on NYS Route 17M and would not be likely to affect overall traffic conditions on Echo Lake Road, Cheechunk Road, or Owens Road. These local roads are generally lightly traveled and would only experience increased traffic during limited time periods associated with the SoS National Conference or Regional Conference. It is likely that a police officer would have to be posted at the secondary egress during the hour or two following a National Conference or Regional Conference to control exiting traffic and ensure safe operating conditions along Echo Lake Road.

NOISE

Alternative 2 would bring more vehicles to Echo Lake Road, which could result in greater noise impacts from mobile sources. Under the Proposed Project, noise levels calculated from vehicular traffic from the SoS National Conference indicate an increase from 56.7 dBA (Leq) to 57.4 dBA (Leq), a change of only 0.7 dBA, at receptor 8, the existing driveway crossing of the Heritage Trail. At receptor 4, further west on Echo Lake Road, predicted noise levels would increase from 60.3 dBA (Leq) to 60.9 dBA (Leq), an increase of only 0.6 dBA. The existing noise levels at these locations are higher than at other receptors evaluated due to the prevalence of vehicular traffic on Echo Lake Road. Additional vehicles on Echo Lake Road under Alternative 2 would likely increase noise levels at these receptor locations. In general, a doubling of traffic levels (in passenger-car equivalents) would be required to increase noise levels by 3 dBA. No Build traffic volumes for the 2028 Build Year (as presented in the Traffic Impact Study completed for the Proposed Project) indicate approximately 167 vehicles passing by these locations during the Saturday midday peak hour (the time when traffic associated with the SoS events would likely be leaving). Those traffic volumes could double, and double again, before the NYSDEC

threshold of 65 dBA is exceeded. Thus, an additional 501 vehicles could exit the Project Site before a potential noise impact exists under Alternative 2.

AIR QUALITY

Rerouting some exiting vehicles toward Echo Lake Road would create a second queue of idling vehicles exiting the Project Site and may cause localized increases in carbon monoxide emissions. However, creating a second egress point managed by a police officer at the unsignalized intersection of the driveway with Echo Lake Road would create added efficiencies in clearing the Project Site of vehicles. Thus, while there may be localized increases in emissions, overall Alternative 2 may have benefits to air quality in comparison to the Proposed Project given the decreased time for the same number of vehicles to exit the Project Site.

ALTERNATIVE 3: PERMANENT ACCESS TO AMY'S KITCHEN MANUFACTURING FACILITY FROM HARTLEY ROAD

Under Alternative 3, access to the Amy's Kitchen manufacturing facility and Warehouse Use would be from Hartley Road. For the purposes of analyzing Alternative 3, it is presumed that the bridge over the Wallkill River would not be constructed and all Amy's Kitchen traffic would be directed toward Hartley Road. However, it is also presumed that the access road to the SoS Conference Center would be constructed. Thus, the only relevant area of analysis would be traffic, noise, and air quality.

The analysis of this scenario focused on the potentially affected intersections of NYS Route 17M & the SoS Access/Training Center Lane, NYS Route 17M & Hartley Road/Gate Schoolhouse Road and Hartley Road & the Amy's Kitchen Access driveway (see the Traffic Impact Study in **Appendix III.H**). The results indicate that this alternative would have similar Levels of Service to the Proposed Project at each of the intersections, and that the traffic volumes associated with the Amy's Kitchen Phase 2 development could be accommodated on the roadway network with access to Hartley Road only, but would require installation of turning lanes at the intersection of NYS Route 17M and Hartley Road. It should be noted that this scenario would not change the operating condition results presented in the analysis of Amy's Kitchen Phase 2 at the other intersections not analyzed as part of this alternative.

NOISE

This alternative would bring more vehicles to Hartley Road, which could result in greater noise impacts from mobile sources in this area. As analyzed for potential noise impacts, Phase 1 of Amy's Kitchen would generate 314 vehicle trips in the weekday PM (3:00 PM to 4:00 PM) peak hour of Amy's Kitchen and the Warehouse Use. The majority of those vehicle trips (295) would be employee passenger cars, but 19 would be trucks (which generate noise equivalent to 47 passenger cars). Future noise levels at receptor 7 (the residence at the north end of Hartley Road) for Amy's Kitchen Phase 1 was 54.4 dBA (Leq). If the number of trucks were to remain the same, the number of passenger cars could double from 295 to 590 and only result in an increase in 3 dBA at receptor 7. That would still be below the NYSDEC threshold of 65 dBA for residential areas. However, it should be noted that the NYSDEC threshold for an industrial area, which is more consistent with the Project Site and study area, is 79 dBA. Thus, Alternative 3 would not result in any significant adverse noise impacts.

AIR QUALITY

Alternative 3 would generate similar traffic volumes as the Proposed Project. Since none of the intersections evaluated for the Proposed Project required detailed analysis of potential mobile-source air emissions and since Alternative 3 would result in similar traffic operating conditions at each intersection as the Proposed Project, Alternative 3 would not require detailed analysis of potential mobile-source air emissions. Thus, no significant adverse impacts to air quality would result. Alternative 3 would have identical stationary source emissions as the Proposed Project and no significant adverse impacts would result.

ALTERNATIVE 4: CONNECTION TO THE VILLAGE OF GOSHEN WWTP

Under Alternative 4, wastewater generated by the Proposed Project would be pre-treated and then pumped to the Village of Goshen WWTP via a new wastewater conveyance within the existing Heritage Trail running from the Project Site east to the Village of Goshen WWTP. In all other respects, Alternative 4 would be identical to the Proposed Project.

The Village of Goshen WWTP, operated by the Village of Goshen Department of Public Works, is located on Cypress Road in Goshen, approximately 1.7 miles southeast of the Project Site. Based on its current State Pollutant Discharge Elimination System (SPDES) permit, the plant has a treatment capacity of two (2) million gallons per day (MGD) and it currently accepts an average of 1.4 MGD. The Village WWTP discharges to the Rio Grande, a tributary of the Wallkill River, known as the Cheechunk Creek adjacent to the Project Site.

Connection to the Village of Goshen WWTP could be achieved through the installation of an eight (8)-inch force-main with the Heritage Trail, which is adjacent to both the Project Site and the WWTP. It is anticipated that Amy's Kitchen would own, operate and maintain the force-main along the Heritage Trail up to the discharge manhole located within the Trail, adjacent to the WWTP.

Similar to the Proposed Project, the overall system would consist of pretreatment on-site and construction of one (1) or more pump stations. Discharge from the pump station would be via the force-main to a point along the Trail when conversion to gravity flow can be achieved, which would then discharge to the WWTP. The force-main would be designed with clean-outs with possible air/vacuum release valves. The gravity portion of the line would be designed with manholes.

Alternative 4 would have similar impacts to the Proposed Project associated with construction of the wastewater conveyance line, except that Alternative 4 would be a shorter distance and would be constructed under an active multi-use bicycle/pedestrian path. In addition, since potable water would still be obtained from the City of Middletown, this alternative would not avoid the trenching required to reach the City of Middletown. As such, the Proposed Project, which would obtain both potable water and wastewater treatment from the City of Middletown, would have greater operational and regulatory efficiency, and fewer potential environmental impacts related to trenching.

WASTEWATER MANAGEMENT

Since wastewater generated by the Proposed Project would be pretreated on-site and ultimately discharged to the Wallkill River or its tributaries, under either the Proposed Project or Alternative 4 (with on-site pre-treatment and final treatment at the Village of Goshen WWTP and discharge to a tributary of the Wallkill River) potential impacts from wastewater

management would be comparable. Discharge of treated effluent from the Proposed Project at the Village of Goshen WWTP would not have impacts to surface water quality of the Rio Grande or Wallkill River as long as the Village of Goshen WWTP effluent meets all applicable SPDES discharge criteria.

COMMUNITY SERVICES

Under this alternative, the majority of the force-main would be routed through a maintained gravel section of the Heritage Trail. As such, temporary Trail closures would be expected through the construction period. Overall, potential community services impacts would otherwise be similar to those of the Proposed Project.

ALTERNATIVE 5: SMALLER WAREHOUSE ALTERNATIVE

The Proposed Project includes the subdivision of approximately 11.6 acres from the Ver Hage property for a future 70,000 square-foot warehouse use (site plan approval for the warehouse use would be pursued by others). However, a warehouse of this size would be located partially within the 100-year floodplain. A compensatory offset equaling the volume of floodplain displaced would be required to meet Town of Goshen floodplain protection regulations. This DEIS assumes such an offset in the excavated channel adjacent to the Cheechunk Creek. If that excavated channel would not be allowed as compensatory offset, a smaller warehouse could still be constructed on the 11.6 acre portion of the Ver Hage parcel. Alternative 5 contemplates an approximately 39,200 square-foot warehouse that would have limited floodplain encroachment from a parking lot.

GEOLOGY AND SOILS

A smaller Warehouse Use would result in less ground disturbance. As such, Alternative 5 would reduce potential impacts to geology and soils from that of the Proposed Project.

TOPOGRAPHY

A smaller Warehouse Use would theoretically result in less disturbance to site topography. However, because the elevated section on that portion of the Ver Hage property is located closest to Hartley Road, the same amount of grading activity would likely occur as with the larger Warehouse Use to accommodate the building and access.

SURFACE WATER RESOURCES

A smaller Warehouse Use would result in less impervious surface than a larger Warehouse Use. However, in both conditions a SWPPP would be required to handle new runoff from impervious surfaces. As such Alternative 5 would have comparable impacts relating to stormwater. However, Alternative 5 would have significantly reduced modifications to the floodplain, which could theoretically be offset through other on-site options and not the excavated channel next to the Cheechunk Creek.

VEGETATION AND WILDLIFE

A smaller Warehouse Use would theoretically result in less ground disturbance and less vegetation removal. However, the area proposed for the Warehouse Use is predominantly meadow and there is no significant vegetation or habitat at that location.

GROUNDWATER/WATER SUPPLY

Neither Alternative 5 nor the larger Warehouse Use analyzed in the DEIS would have impacts to groundwater.

WASTEWATER MANAGEMENT

A smaller Warehouse Use would have a slight reduction in wastewater generation from the larger Warehouse Use. However, the Warehouse Use would still be connected to the wastewater conveyance system established for the Proposed Project; thus, there would be minimal differences.

STORMWATER MANAGEMENT

A smaller Warehouse Use would result in less impervious surface than a larger Warehouse Use. However, in both conditions a SWPPP would be required to handle new runoff from impervious surfaces. As such Alternative 5 would have comparable impacts relating to stormwater.

TRAFFIC AND TRANSPORTATION

A smaller Warehouse Use would generate fewer trips than the larger Warehouse Use. However, this reduction in size would not change the mitigation measures required to mitigate traffic from the Amy's Kitchen manufacturing facility. As such, potential impacts to traffic and transportation would be similar to those analyzed in the DEIS.

NOISE

A smaller Warehouse Use would have a slight reduction in traffic generation which could lessen noise from mobile sources. However, overall noise impacts would be substantially similar as those analyzed in the DEIS.

UTILITIES AND SOLID WASTE DISPOSAL

A smaller Warehouse Use would have a slight reduction in energy demand and solid waste generation than a larger Warehouse Use. However, the reduction would not significantly change how utilities are provided to the Warehouse Use or change how solid waste would be handled.

LAND USE AND ZONING

A smaller Warehouse Use would remove the proposed building from the Floodplain and Ponding Area Overlay District, which would improve its conformance with applicable land use and zoning regulations. As such, Alternative 5 would have fewer potential impacts to land use and zoning than the larger Warehouse Use. It is also possible that the smaller Warehouse Use would be more likely to conform to the design standards within the Zoning Code and would not require area variances from the Zoning Board of Appeals.

COMMUNITY SERVICES

Overall, potential impacts to community services would be similar to the Warehouse Use analyzed in the DEIS.

FISCAL IMPACTS

A smaller Warehouse Use would generate slightly less property tax revenue than the larger Warehouse Use.

VISUAL RESOURCES

A smaller Warehouse Use would be slightly less visible than the larger Warehouse Use. However, since the smaller Warehouse Use would be located outside of the floodplain, it would be located the same distance from Hartley Road as the larger Warehouse Use. Therefore, the potential visual impacts would be substantially similar to those of the larger Warehouse Use.

ENVIRONMENTAL CONTAMINATION

Alternative 5 would have comparable effects as the larger Warehouse Use.

CULTURAL RESOURCES

Neither the larger Warehouse Use nor Alternative 5 would have impacts to cultural resources.

AGRICULTURE

Neither the larger Warehouse Use nor Alternative 5 would have impacts to agricultural resources.

AIR QUALITY

A smaller Warehouse Use would have a slight reduction in traffic generation compared to the larger Warehouse Use, which could lessen potential air quality impacts from mobile sources. However, no significant air quality impacts were identified when the larger Warehouse Use was analyzed in the DEIS.

CONSTRUCTION

A smaller Warehouse Use would result in less ground disturbance. However, that decrease in ground disturbance would not necessarily decrease any impacts associated with construction activity. Thus, the smaller Warehouse Use would have comparable potential construction-period impacts as the larger Warehouse Use. ✷

A. INTRODUCTION

This Chapter discusses the impacts on energy use and solid waste management from the Proposed Project, as well as the means and methods that would be implemented to reduce overall energy consumption and generation of solid waste.

B. ENERGY USE

AMY'S KITCHEN

Based on operations of similar facilities owned and operated by the Applicant, it is estimated that annual electric usage at the Amy's Kitchen facility would be approximately 18,680,400 kilowatt-hours (KWH) per year. Gas usage is estimated to be 179,971 million British thermal units (MMBTU) per year.

Electric service would be provided to Amy's Kitchen by running an over-head service line from the existing electric transmission line on either Hartley Road or Echo Lake Road to a bank of on-site transformers. Gas service would be provided to Amy's Kitchen and the SoS Conference Center by a service line (approximately 12-inch diameter) run from the existing gas line beneath NYS Route 17M along the new access road and under the proposed bridge over the Wallkill River to the Amy's Kitchen manufacturing facility.

Amy's Kitchen is not considering pursuing United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) certification. However, Amy's Kitchen is considering the following energy conserving measures within its manufacturing facility, some of which have been used at Amy's Kitchen's other facilities:

- Install variable frequency drives (VFDs) on all motors.
- Occupancy sensors on lights.
- T5 fluorescent lamps instead of T8 fluorescent lamps or high pressure sodium.
- Install ammonia based refrigeration system instead of Freon based systems.
- Utilize trim motors on the ammonia refrigeration system (staged motors).
- Utilize trim motors on the air compressor system (staged motors).
- Utilize centralized glycol chilling when available.
- Install automatic doors on refrigerators and freezers to keep conditioned space at temperature.
- Install a solar panel system on the plant.
- Reuse boiler exhaust heat to preheat boiler infeed water and to preheat sanitation water.
- Insulate all water, steam, and refrigeration piping to reduce loss.

- Shut off production lines when not in use.
- Utilize impingement style tunnels which consume less gas.
- Utilize natural gas power when applicable—more efficient that electricity.

Standby power generators are proposed for the Amy's Kitchen facility for basic lighting and communications systems within the plant. Back-up generator capability would also be provided for the proposed on-site wastewater pre-treatment facility.

The use of geothermal energy is not currently contemplated for the Project Site. Solar energy is being considered for use within the manufacturing plant, but not for heating walkways, parking areas or road surfaces. During the winter months, salt and sand for snow and ice removal would be used judiciously to minimize potential runoff to the Wallkill River.

SCIENCE OF THE SOUL

The proposed Science of the Soul Conference Center would have standard indoor lighting and HVAC energy demands. The largest meeting facility is proposed to be an open-air pavilion and thus would not require any associated HVAC equipment. Outdoor site lighting would include only the minimum density of lights required for vehicular and pedestrian safety along roadways, parking areas, and pathways. The energy demands by SoS are not considered significant and are typical of other land uses within the study area.

Over-head electric service lines from Echo Lake Road would be run up the emergency driveway to the SoS Conference Center. Gas service would be provided to SoS Conference Center by a service line (approximately 12-inch diameter) run from the existing gas line beneath NYS Route 17M along the new access road.

The majority of site energy consumption would result from the small office facilities proposed to be used by daily operational staff. Electricity consumption in these facilities would be primarily for lighting and HVAC needs. The largest HVAC equipment typically used for air-conditioned spaces at similar Science of the Soul facilities are 20-ton split air conditioning units with a seasonal energy efficiency ratio (SEER) of 15 British thermal units (BTUs) per watt-hour. Standby power generators are currently contemplated for the Science of the Soul Conference Center and sanitary wastewater pump station.

SoS is not considering pursuing United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) certification. However, SoS proposes to employ several energy conservation measures. Lighting for the facility would use high efficiency, light emitting diode (LED) fixtures. Office area lighting would have occupancy sensors and would turn off when not in use. All lighting plans and fixtures would adhere to the New York State Energy Conservation Construction Code (19 NYCRR Part 1240). Increased insulation in enclosed buildings would similarly reduce heating and cooling requirements throughout the site. Solar panel arrays would be installed on the roofs of Science of the Soul buildings as a means of providing renewable energy and reducing the grid electricity consumption of the site.

The use of geothermal energy is not currently contemplated for the Project Site. Solar energy would be used within the SoS Conference Center, but not for heating walkways, parking areas or road surfaces. To conserve energy and reduce salt usage during the winter months, SoS would only plow those portions of the Project Site required to access the buildings and accommodate parking demand. The "orchard" parking lot would not be plowed during the winter months. In

addition, salt and sand for snow and ice removal would be used judiciously to minimize potential runoff to the Wallkill River.

WAREHOUSE USE

The proposed Warehouse Use would have limited demands for electricity and natural gas. Because the Warehouse Use would be used for storage of dry goods and there would be no need for refrigeration, only limited air conditioning within a small office space and lighting would be required. Over-head electric service lines would also be run from Hartley Road to any lighting and heating, ventilation, and air conditioning (HVAC) energy requirements for the Warehouse Use.

C. SOLID WASTE MANAGEMENT

AMY'S KITCHEN

Based on its Medford, Oregon plant operations, Amy's Kitchen estimates that at full-build out, a 5-day per week operation would generate approximately 444 tons of waste per month. As detailed in **Table VI-1** below, this waste would be broken into four different waste streams. Approximately 39 percent of the monthly waste would either be compostable or recyclable.

Table VI-1
Solid Waste Generation

Waste Stream	Tons per Month
Solids from wastewater pre-treatment	47
Plant waste to landfill	223
Compost waste	74
Recycled waste	100
TOTAL	**444**

Solid waste collection for commercial uses in the study area is handled by private waste haulers who haul waste to the Orange County Transfer Station #1 located on Training Center Lane south of NYS Route 17M and to private recycling facilities. Amy's Kitchen has not selected a private waste hauler at this point.

In order to reduce the total amount of landfilled solid waste, Amy's Kitchen would compost approximately 74 tons of organic matter per month and recycle approximately 100 tons of cardboard and plastics per month. Recyclable and compostable materials would be kept separate from other wastes inside the Amy's Kitchen facility and would be collected and disposed of by a private waste management company. Other than the temporary storage of the compostable materials inside the Amy's Kitchen facility, no composting would occur on-site.

As all solid waste services would be provided by a private company, no impacts to municipal services or budgets are anticipated.

SCIENCE OF THE SOUL

Operation of the Science of the Soul facilities would result in minimal solid waste generation. Normal SoS weekday and weekend activities at the two (2) caretaker residences and volunteer activities and weekly meetings would generate small quantities of solid waste, which could total approximately 100 pounds per month. SoS National Conference and Regional Conference

events would generate solid waste from food wrappers and other personal waste items generated during events. Recyclable and compostable materials would be collected and stored separately from the waste stream and would be collected for beneficial reuse by a private waste hauling company.

All solid waste would be transported by a private waste management company. SoS has not selected a private waste hauler at this point. As solid waste generation would be minimal and would be provided by a private company, no impacts to municipal services or budgets are anticipated.

WAREHOUSE USE

The proposed Warehouse Use would generate minimal amounts of solid waste from the few employees that would staff the building. All solid waste would be transported by a private waste management company. As solid waste generation would be minimal and would be provided by a private company, no impacts to municipal services or budgets are anticipated. ✴

Chapter VII. Irreversible and Irretrievable Commitment of Resources

Natural and manmade resources would be expended in the construction and operation of both Amy's Kitchen and SoS. These natural resources include the use of land and energy. Manmade resources include the effort required to develop, construct, and operate the Proposed Project; building materials; financial funding; and motor vehicle use. Resources are considered irretrievably committed because it is highly unlikely that they would be used for some other purpose.

The use of land is the most basic of irretrievably committed resources, as the development of the Amy's Kitchen manufacturing facility and the SoS Conference Center require the commitment of land for the Project. The Proposed Project would use vacant land for the construction of Amy's Kitchen manufacturing facility and SoS Conference Center buildings and associated parking areas and driveways.

The Proposed Project would result in the irreversible clearing and grading of approximately 151 acres of the Project Site, much of which comprises successional old field and shrubland that has grown on previously disturbed mined land. Within the 151 acre limits of disturbance, approximately 49 acres of successional southern hardwoods on the Project Site would be cleared and approximately 4.2 acres of wetlands (0.091 acres of federally-regulated wetlands) would be filled. The loss of vegetation and trees and filling of wetlands within the area of disturbance is considered an irreversible commitment of resources.

Irreversible changes to the topography would occur from site grading and filling activities. The Proposed Project would result in changes to the natural topography of the Ver Hage property for the construction of the Amy's Kitchen manufacturing facility. Grading activities are anticipated to involve both cut and fill operations with total earthwork estimated to involve approximately 307,057 cubic yards. Based on the proposed grading plan for the project, which is based on two (2)-foot contours, 59,092 cubic yards of cut and 247,965 cubic yards of fill is projected. As such, 188,873 cubic yards of fill would be required to balance the site, the majority of which would be obtained from the Echo Lake property.

The Proposed Project would also result in changes to the natural topography of the Echo Lake property for the construction of the SoS Conference Center. Grading activities are anticipated to involve both cut and fill operations with total earthwork is estimated to involve approximately 1,948,841 cubic yards of total earthwork. Based on the proposed grading plan for the project, 976,356 cubic yards of cut and 972,485 cubic yards of fill is projected. As such, 3,871 cubic yards of cut would be required to balance the site.

In addition, approximately 24 acres of the Ver Hage property would be impervious surface associated with the Amy's Kitchen manufacturing facility, and approximately 34 acres of the Echo Lake property would be impervious surface associated with the SoS Conference Center.

The actual building materials used in the construction of the Proposed Project (wood, steel, concrete, glass, etc.) and energy, in the form of gas and electricity, consumed during the construction and operation of the Proposed Project by the various mechanical systems (heating,

hot water, air conditioning, and manufacturing) would also be irretrievably committed to the Proposed Project.

In addition, the Proposed Project would require water to serve the on-site uses. It is anticipated that Amy's Kitchen would require approximately 375,000 gallons per day (gpd) of water. The annual three (3)-day SoS National Conference of up to 12,000 participants would generate potable water demand and sanitary wastewater of approximately 36,000 gallons per day (gpd). The annual two (2)-day Regional Conference of up to 2,000 participants would generate demand of approximately 6,000 gpd.

In addition to the two (2) caretaker residences, typical weekly activities include the following:

- Weekday – five (5) to ten (10) volunteers working in the office or property maintenance;
- Weekend – 200 to 400 individuals attending the Sunday meeting or doing volunteer work in the office or property maintenance on Saturday or Sunday.

On a normal daily basis, the two (2) caretaker residences and five (5) to ten (10) on-site volunteers would generate potable water demand and sanitary wastewater of approximately 500 gpd. The typical weekend day would generate approximately 1,000 gpd.

Water would be provided through connection to the City of Middletown water supply system. Therefore, the Proposed Project would not affect adjacent water supply wells.

The Proposed Project would generate solid waste. Where feasible, Amy's Kitchen would work with local agricultural and other operations to compost food waste from the production process. In order to reduce the total amount of landfilled solid waste, Amy's Kitchen would compost approximately 74 tons of organic matter per month and recycle approximately 100 tons of cardboard and plastics per month. Recyclable and compostable materials would be kept separate from other wastes inside the Amy's Kitchen facility and would be collected and disposed of by a private waste management company.

Operation of the Science of the Soul facilities would result in minimal solid waste generation. Normal SoS weekday and weekend activities at the two (2) caretaker residences and volunteer activities and weekly meetings would generate small quantities of solid waste, which could total approximately 100 pounds per month. SoS National Conference and Regional Conference events would generate solid waste from food wrappers and other personal waste items generated during events. Recyclable and compostable materials would be collected and stored separately from the waste stream and would be collected for beneficial reuse by a private waste hauling company.

As all solid waste services for Amy's Kitchen and SoS would be provided by a private company, no impacts to municipal services or budgets are anticipated.

None of these irreversible or irretrievable commitments of resources is considered significant. ✷

Chapter VIII. Growth Inducing Impacts

This Chapter assesses the potential for the Proposed Project to induce growth. As discussed in Chapter III.M, "Fiscal Impacts," the Proposed Project would create a substantial number of new jobs in Goshen. However, it is anticipated that these jobs can be filled by existing workers within the greater Project Area.[1] The fiscal impact analysis identified a gap of ten (10) workers within the ten-minute commute area for blue collar workers. This gap could be filled either by workers in the 10 to 20 minute commute area, of which there is a surplus, or by approximately 10 workers relocating closer to the Project Site. This fiscal analysis also found that the existing housing market can easily accommodate the small number of worker households that could potentially relocate to the 10-minute commute radius based on the results of the labor gap analysis. Therefore, the Proposed Project is not expected to result in any new housing development or a substantial number of new worker/residents.

A number of local businesses near the Project Site would likely experience increased patronage from employees during construction, as well as from Amy's Kitchen employees after construction, and SoS volunteers and visitors during the National and Regional conferences. It is expected that this patronage would be welcomed in the business community, and would not result in significant new development in areas not already developed with commercial uses.

The Proposed Project includes utility connections to the City of Middletown WWTP and water supply system. The proposed utility connections would be private, and would be sized to only accommodate the Proposed Project. Since the sewer and water lines would not have the capacity to accommodate any additional connections, no growth inducing impacts would result from these connections. ✷

[1] See Table III.M-12, "Available Labor Force and Anticipated Labor Demand from Proposed Project" in Chapter III.M, "Fiscal Impacts." This table identifies the potential labor force based on variable commute times up to a 2 hour drive from the Project Site. The only deficit identified was within the 10-minute commute radius for blue collar workers.

FINAL
SCOPING DOCUMENT
JULY 16, 2015

FOR

AMY'S KITCHEN, INC.
Draft Environmental Impact Statement

NYS Route 17M/ Echo Lake Road/ Hartley Road
Town of Goshen
Orange County, New York

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GENERAL GUIDELINES

- The Draft Environmental Impact Statement ("DEIS") shall address all items in this Scoping Document and conform to the format outlined in this Scoping Document. If appropriate, impact issues listed separately in this outline may be combined in the DEIS, provided all such issues described in this Scoping Document are addressed as fully in a combined format as if they were separately addressed.
- The document should be written in the third person. The terms "we" and "our" should not be used. The Applicant's conclusions and opinions should be identified as those of the "Project Sponsor," "Applicant" or "the Developer."
- Narrative discussions should be accompanied by appropriate charts, graphs, maps and diagrams whenever possible. If a particular subject matter can most effectively be described in graphic format, the narrative discussion should merely summarize and highlight the information presented graphically. All plans and maps showing the applicable sites shall include adjacent homes, other neighboring uses and structures, roads, water bodies and a legend.
- The entire document should be checked carefully to ensure consistency with respect to the information presented in the various sections.
- Environmental impacts should be described in terms that the layperson can readily understand (e.g., truck-loads of fill and cubic yards rather than just cubic yards).
- All discussions of mitigation measures should consider at least those measures mentioned in the Scoping Outline. Where reasonable and necessary, mitigation measures should be incorporated into the Proposed Action if they are not already included.

The DEIS is intended to convey general and technical information regarding the potential environmental impacts of the proposed project to the Town of Goshen Planning Board (as Lead Agency), as well as several other agencies involved in the review of the proposed project. The DEIS is also intended to convey the same information to the interested public. The Preparer of the DEIS is encouraged to keep this audience in mind as it prepares the document. Enough detail should be provided in each subject area to ensure that most readers of the document will understand, and be able to make decisions based upon, the information provided.

As the DEIS will become, upon acceptance by the Lead Agency, a document that may, if appropriate, support objective findings on approvals requested under the application, the Preparer is requested to avoid subjective statements regarding potential impacts. The EIS should contain objective statements and conclusions of facts based upon technical analyses. Subjective evaluations of impacts where evidence is inconclusive or subject to opinion should be prefaced by statements indicating that "It is the Applicant's opinion that...". The Town of Goshen Planning Board reserves the right, during review of the document, to require that subjective statements be removed from the document or otherwise modified to indicate that such subjective statements are not necessarily representative of the findings of the Lead Agency.

BRIEF DESCRIPTION OF THE PROPOSED ACTION

The proposed project comprises five (5) primary components:

- Amy's Kitchen manufacturing plant on the "ver Hage property" (12-1-1.222 & 19.2);
- Subdivision of approximately 10 to 12 acres from the "ver Hage property" for future warehouse use;
- Science of the Soul conference center on the "Echo Lake property" (12-1-23.2 & 24.2);
- Use of the "Strong Farm property" (10-1-11.2) for agricultural use and parking for volunteers during the Science of the Soul national event; and
- Use of the "Lipoff Wells property" (12-1-1.41) as a source of water for Amy's Kitchen manufacturing plant.

Amy's Kitchen

Amy's Kitchen, Inc. ("Amy's Kitchen") proposes to construct an approximately 366,000 square foot manufacturing plant where food is prepared, packaged and frozen. The manufacturing plant is proposed to be constructed on the "ver Hage property," which fronts on Hartley Road. Initial site access will be from Hartley Road. Ultimately, a new entrance drive will provide direct access for Amy's Kitchen to NYS Route 17M across the "Echo Lake property" via a new vehicular bridge across the Wallkill River.

The plant will be constructed in two (2) phases: (i) an initial approximately 226,000 square foot plant, including an 11,000 square foot office area, to be opened in the First Quarter of 2018, and (ii) an approximately 140,000 square foot expansion to be opened in approximately 2023. An ancillary building of approximately 3,000 square feet will be constructed for on-site medical treatment of Amy's Kitchen employees as part of Phase 1. The project proposes approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces for the manufacturing plant and office area. For the plant, 20 to 30 loading bays will be provided. The Amy's Kitchen manufacturing facility will employ approximately 681 people on the project site at full build-out.

ver Hage Subdivision

An approximately 10- to 12-acre portion of the ver Hage property will be subdivided for future warehouse use with access from Hartley Road.

Science of the Soul

Science of the Soul ("SoS") is an international, non-denominational philosophy and organization based on the teachings universal to all religions. SoS, also known as Radha Soami Satsang Beas, has been in the United States since in 1911 and is a registered 501(c)(3) religious non-profit organization.

SoS proposes to construct a conference center on the "Echo Lake property." The conference center will comprise an approximately 200,000 square foot covered structure with open sides and an earthen floor; ancillary buildings for administration and support; parking areas (both paved and gravel) to accommodate approximately 2,000 cars and 130 buses; two (2) 2,600 square foot caretaker residences; and one (1) five-bedroom guest-house.

The conference center will be used to host an annual three-day national conference, with attendance of up to 12,000 people. This annual conference will usually be held over a three-day period. Science of the Soul believes that sufficient parking would be accommodated on-site at the Echo Lake site. Volunteer parking would be provided on the Strong Farm property and overflow parking could be provided at the Amy's Kitchen facility.

In addition to the annual three-day conference, SoS will hold one (1) annual regional two-day conference for 1,200 to 2,000 people. Regular weekly meetings on Sunday mornings for local congregants would attract approximately 200 to 400 people. During the week, a small staff (5 to 10 people) and a small number of volunteers will attend to normal administrative and property management tasks.

Access to SoS will be from a new entrance drive off NYS Route 17M, which will also serve the Amy's Kitchen manufacturing plant upon the completion of the new vehicular bridge across the Wallkill River as noted above. This road will traverse an approximately 7 to 10 acre area of land currently owned by the State of New York. The State has agreed to transfer this land to the Town of Goshen for highway purposes, and an access arrangement (easement or other) will be sought from the Town to construct a road over this land. Emergency access and such other access as the Town may require will be provided from Echo Lake Road with a permeable hard surface.

Strong Farm

SoS has purchased the Strong Farm on Cheechunk Road and Owens Road for agricultural use and parking of the volunteers for the SoS conference center.

Infrastructure

Water supply for the Amy's Kitchen manufacturing plant will be provided by wells to be established on a property north of Echo Lake Road, known as the "Lipoff Wells property", with a new private utility connection (and Transportation Corporation or other appropriate entity) conveying the water to the ver Hage parcel. Water supply for the SoS conference center will be provided by two (2) existing wells on the Echo Lake property. Water supply for the ver Hage future warehouse use would be provided by the same wells serving the Amy's Kitchen manufacturing plant.

Wastewater for Amy's Kitchen will either be conveyed to an on-site sewage treatment facility where it will be treated and discharged to the Wallkill River or conveyed to a nearby municipally owned sewage treatment facility. Wastewater for SoS will be provided through an on-site septic system (supplemented by portable facilities during the annual 12,000 person events) or through interconnection with the Amy's Kitchen site. All options will be explored. Wastewater treatment for the ver Hage future warehouse use would be provided at the Amy's Kitchen tertiary treatment plant through a Transportation Corporation or other appropriate entity.

This application is a TYPE 1 Action under SEQRA, as it involves the construction of a non-residential facility with greater than 100,000 square feet, parking for more than 1,000 cars, and involves the physical alteration of more than 10 acres. See 6 N.Y.C.R.R. § 617.4(b)(6).

INVOLVED AGENCIES

NYS Department of Environmental Conservation
- SPDES (wastewater and stormwater)
- Water Supply Application

NYS Department of Transportation
- Highway Work Permit
- Approval of new bridge

NYS Office of General Services
- Land transfer to the Town of Goshen

NYS Office of Mental Health
Land transfer to the Town of Goshen
Orange County Legislature
Approval of potential wastewater conveyance within the Heritage Trail right-of-way
Orange County Department of Public Works
Realignment of County road
Orange County Department of Health
Approval of public water supplies
Town of Goshen Town Board
Granting of access easement and acceptance of roadway dedication of land transferred to the Town from the State.
Potential Zoning Map amendment for Echo Lake parcel
Town of Goshen Planning Board
Site Plan, Subdivision and Special Permit Approval
Town of Goshen Zoning Board of Appeals
Potential Area Variance(s)
Town of Goshen Highway Department
Highway Work Permit for improvements on Echo Lake Road, Hartley Road, Owens Road, and/or Cheechunk Road
Town of Goshen Building Department
Floodplain Development Permit
Village of Goshen
Potential agreement to treat sanitary sewage at the Village WWTP
Orange County Industrial Development Agency
NYS Department of Parks, Recreation and Historic Preservation
NYS Dormitory Authority

INTERESTED AGENCIES
U.S. Army Corps of Engineers
Orange County Department of Planning — G.M.L. § 239-l, m, and n
Orange County Department of Parks, Recreation and Conservation (Heritage Trail)
Town of Goshen Environmental Review Board
Town of Goshen Fire Department
Town of Goshen Police Department
Goshen Volunteer Ambulance Corp
Town of Wallkill
Town of Wawayanda
NYS Department of Agriculture & Markets
U.S. Fish and Wildlife Services
NYS Police (for large SoS events)
County Sheriff Department (for large SoS events)

FORMAT AND SCOPE OF DEIS

COVER SHEET

The DEIS must begin with a cover sheet that identifies the following:

- Identification as the Draft Environmental Impact Statement;
- The date the document was submitted to the Planning Board;
- The name and location of the Project;
- The Town of Goshen Planning Board as the Lead Agency for the Project, and the name, address, telephone number and facsimile number of the contact person for the Lead Agency, and the SEQRA status (Type I action);
- The name and address of the Project Sponsor, and the name, address and telephone number of the contact person representing the applicant;
- The name, address and email address of the primary preparers of the DEIS, and the name, address, email address and telephone number of the contact person representing the preparer;
- The date the DEIS was accepted by the Lead Agency as complete (to be inserted at a later date);
- The date of the public hearing and subsequent adjournments (to be inserted at a later date);
- The date which public written comments on the DEIS are due (to be inserted at a later date); and
- All revision dates of the DEIS.

TABLE OF CONTENTS

The DEIS will include a Table of Contents identifying major sections and subsections of the document. The Table of Contents must also include a list of figures, tables, appendices and any additional volumes if necessary.

I. EXECUTIVE SUMMARY

An Executive Summary shall be required and will provide a précis of the more comprehensive information included within the document. No information will be included in the Executive Summary that is not found within the body of the document. The Executive Summary will include the following elements:

- An Introduction, including the purpose of the DEIS, a relevant history of the SEQRA process that has occurred (i.e., relevant dates establishing Lead Agency, the date of adoption of the Positive Declaration, date of the acceptance of the Scoping Document).
- Project Site Existing Conditions - provide a short description of the subject property and characterize its topographical, water and natural features as well as provide a brief history of the use of the property and where existing changes to its natural state have occurred.
- Project Description - overview of the project layout, size and use of proposed structures, discussion of parking, loading, circulation, landscaping, lighting, and proposed utilities.
- Discussion of Project Plan Alternatives
- List of Involved and Interested Agencies.
- Project purpose, need and benefits.
- Summary of Existing Conditions, Potential Impacts and Proposed Mitigation Measures in the order they appear later in the document (organized by topic and presented in tabular format, if possible).
- Summary of adverse impacts and irreversible commitment of resources.
- Alternatives to the Proposed Action including the mandatory no build alternative.
- Unavoidable Adverse Impacts and Irreversible and Irretrievable Commitment of Resources.

II. PROJECT DESCRIPTION

A. Site Location — This section will include a narrative description and graphical representation of the location of the proposed project. In addition, parcel acreage, tax map designation, abutting streets, zoning designation, surrounding land uses, existing utilities (and access thereto) will be included as well as any and all easements, rights-of-way, private agreements, special district boundaries and any other legal agreements that may affect the proposed use of the site. This section should discuss the historical uses of the properties proposed to be developed by Amy's Kitchen, SoS and the ver Hage future warehouse use.

B. Description of Proposed Action — This will include written and graphical representation of the proposed action including general layout of the site, access, circulation, parking and loading. Hours of operation and general operations at the site will also be described, as well as large events to be held at the SoS conference center. Any improvements to public rights of ways or other public improvements will be discussed. Transfer of land for access purposes will be discussed (correspondence with the State will be provided). Any areas to remain as open and/or green space will be discussed. This section will discuss the possible presence of any hazardous materials utilized by, in, or created by the various processes in the facility or the wastewater treatment or potable water treatment plants. It will also discuss the height of the buildings, and number of people anticipated to be in any given structure at any one time, and the nature of the fire alarm system. The fire protection for the building shall be discussed in terms of on-site pressurized water systems, hydrants, stand pipes, sprinklers, year round connections, and whether the Wallkill River could be utilized for fire protection as a backup system.

Proposed drainage, utilities and construction phasing will be summarized. The section will discuss the project's compliance with the Zoning Code, and any required variances, zoning changes or waivers needed to construct the project, and an evaluation of why such variance is needed. This section should discuss the relationship between the Proposed Action and both the Town and County Comprehensive Plans.

C. Project Need and Benefit — This section will include a narrative description of the need for the project, it shall identify the objectives of the project sponsor and the public benefits achieved by the development of the proposed action.

D. Permits and Approvals required — This section will list the Involved Agencies for the Proposed Action and the necessary approvals and a list of the Interested Agencies.

III. EXISTING CONDITIONS, POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

A. Geology and Soils

1. Existing Conditions
    - Underlying geological conditions including depth to bedrock and depth to groundwater will be described;
    - Soil types and characteristics shall be identified as presented in the Orange County Soil Survey and supported with actual borings when necessary.
    - The Applicant shall provide a map of the fracture traces on the property, including those traces that continue onto adjacent properties.
2. Potential Impacts
    - Limitations that geology or soils may place on the development of the sites;
    - Potential for erosion or drainage complications; and
    - Potential for blasting or major rock removal.

3. Proposed Mitigation
    - Mitigation will be proposed for identified adverse environmental impacts as necessary. Unavoidable adverse impacts will be identified.

B. Topography

1. Existing Conditions
    - Site topography and slopes shall be described.
    - Topographical maps at 2' contours shall be provided.
2. Potential Impacts
    - Grading plan will be presented with a cuts and fills analysis at 2' contours;
    - The need for any retaining walls will be discussed; and
    - Any limitations or relevant regulations of the Town Code shall be discussed and the project's consistency therewith.
3. Proposed Mitigation
    - Mitigation will be proposed for identified adverse environmental impacts as necessary.

C. Surface Water Resources

1. Existing Conditions
    - All existing surface waters, including wetlands (as defined by the Goshen Town Code and Federal/NYS criteria) the Wallkill River and flood plains, will be discussed and presented graphically; and
    - All resources will be described in terms of jurisdiction, classification, size and any applicable regulated areas including buffer and floodplains. A Jurisdictional Determination will be provided as an attachment to the DEIS.
2. Potential Impacts
    - Any encroachment into surface water resources or regulated areas will be discussed. Discuss whether those encroachments will be permanent or temporary and impacts associated therewith will be provided;
    - The potential for contamination of surface waters on both a long- and short-term (construction) basis will be addressed, including use of deicing agents on site; and
    - Proposed existing supply wells that are tested may be impacted by surface water. Thus, all water supply well testing shall include appropriate testing measures (i.e., piezometers and monitoring of wetlands and surface water bodies).
3. Proposed Mitigation
    - Mitigation will be proposed for identified adverse environmental impacts as necessary.

D. Vegetation and Wildlife

1. Existing Conditions
    - Site Biological Assessment will be prepared for the sites by a qualified consultant. Mapping for habitats of threatened and endangered species and species of special concern will be provided. For purposes of this DEIS, a habitat is a place where a plant or animal lives, with all the living and nonliving conditions necessary for it to thrive. Also, an ecological community shall be considered an assemblage of plants and animals that interact in a shared environment, and a vegetative community is only the plant component of the assemblage;
    - On-site vegetative communities will be described and an inventory of species likely on the sites will be provided;

- Existing significant trees (i.e., 12" dbh), hedgerows, etc. will be discussed;
- Threatened, endangered and rare species as well as species of conservation concern (as defined by DEC), found on the site or known to be located in the area, and the potential for such species to locate on the sites given the existing site ecology will be discussed; and
- Correspondence with and documentation from the NYS DEC Natural Heritage Program and U.S. Fish and Wildlife Services will be provided.

2. Potential Impacts
   - Discuss amount of vegetation removal including any portion of habitats identified above and the amount of open and/or green space which will remain after construction. In addition, the impact on existing trees with the limits of potential site disturbance will be provided.
   - The impacts to, and maintenance of, any significant trees (i.e., 12" dbh), hedgerows, etc. shall be discussed with regard to the layout of the facilities and entry road.
3. Proposed Mitigations
   - Mitigation will be proposed for identified adverse environmental impacts as necessary, which may include, if appropriate, preservation, rehabilitation, relocation, plantings, etc. or a restriction on tree cutting during specified time periods. Additionally, the selection of any planted vegetation for mitigation should be, to the extent possible, restricted to native, companion and xeriscape compatible vegetation.

E. Groundwater/ Water Supply

1. Existing Conditions
   - Identify existing wells on the sites and their pumping capacity. Include dates of pump testing and protocol employed. Provide both current and prior testing (quantity and quality) where relevant and identify inconsistencies. Provide confirmation protocol was consistent with requirements of the Town of Goshen Zoning Code.
   - Identify an off-site existing supply well array that will be monitored during proposed on-site water supply testing to assess off-site impacts, if any.
   - Identify source of ground water and potential contamination sources.
   - Calculate water budgets for both the bedrock and unconsolidated aquifers beneath the sites. Relate the water budgets to proposed site water use. Estimate available water on the subject sites and in the surrounding drainage basin for the bedrock and unconsolidated aquifers.
2. Potential Impacts
   - Calculate the anticipated amount of water usage for the proposed Action and discuss the ability and feasibility of the existing and proposed wells to serve the project in terms of both quantity and quality, as well as any long-term impacts to the local hydrogeological character of the aquifer(s);
   - If the existing sources are inadequate discuss alternatives for providing adequate water for potable or non-potable uses including development of adjacent water supplies and/or connections to or expansion of existing systems;
   - Discuss the results of off-site and on-site and surface water monitoring before, during and after pump testing of on-site supply wells. Confirm what the impacts of on-site pumping are on these three items;
   - Describe the infrastructure required for the proposed water distribution system (storage tanks, pressure zones, distribution mains, etc.) and provide a map of the system(s). Both on and off-site improvements will be described if appropriate. Discuss anticipated water demand (domestic, fire flow and process), treatment systems based on the results of the water quality analysis;

- Discuss any possible connectivity and/or draw-down of on-site or adjoining surface waters, as well as on existing off-site water supply wells;
- Discuss fate of existing wells on all of the sites (Echo Lake, ver Hage, Lipoff and Strong) that are not intended to be developed including well abandonment procedures;
- Describe administrative issues related to the proposed water systems such as property ownership, easements, facility ownership, maintenance, and service area boundaries; and
- Discuss any possible connection between the proposed Amy's Kitchen and/or SoS and/or ver Hage warehouse water systems.

3. Proposed Mitigation
   - The Applicant shall discuss what mitigation measures will be proposed for identified adverse environmental impacts including off-site existing supply wells. Unavoidable adverse environmental impacts will also be identified.

F. Wastewater Management

1. Existing Conditions
   - Identify existing wastewater infrastructure on-site or in the immediate vicinity of the project site.
2. Potential Impacts
   - Calculate amount of anticipated wastewater production for the proposed Action;
   - Describe proposed system to collect, convey and treat wastewater and provide a map of the proposed system including potential outfall location and alternatives (if any);
   - Describe the feasibility and impacts associated with an on-site wastewater treatment systems including impacts to surface water resources and ground water as well as possible odor or noise associated with the system. Discuss the maintenance, replacement and life expectancy of an on-site sewage collection and treatment system;
   - Describe administrative issues related to the on-site sewage collection and treatment system such as property ownership, easements, facility ownership, maintenance, and service area boundaries. Discuss the requirements to form a Sewage Works Corporation if pertinent; and
   - Describe proposed plan to address wastewater collection, conveyance and treatment from anticipated annual conference.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

G. Stormwater Management

1. Existing Conditions
   - Existing drainage patterns will be described and presented graphically; and
   - Discuss of the overall watershed in which the project sites are located.
2. Potential Impacts
   - Project will require coverage under SPDES General Permit for Stormwater Discharges from Construction Activity - GP-0-15-002;
   - Temporary construction impacts will be discussed;
   - Describe pre and post-construction drainage patterns, flows and proposed infrastructure to capture and treat stormwater consistent with the NYS DEC design manual (latest edition);
   - Describe and graphically depict proposed stormwater pond discharges and study points;
   - Potential water quality impacts will be addressed; and

- Preliminary SWPPP, which shall include a sediment and erosion control plan, will be provided as an appendix.

3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.
   - The discussion shall include consideration of vegetated roof decks and stormwater infiltration as a way to mitigate run-off from impervious rooftop on the manufacturing plant, and a use of impervious and pervious materials for the on-site and off-site parking areas.

H. Traffic

1. Existing Conditions
   - Provide a detailed description of existing area roadways (most particularly, U.S. Route 6/NYS Route 17M and Hartley Road), including ownership, pavement width, pavement condition, width of travel lanes, shoulder and parking lanes, speed limits, roadway characteristics including vertical and horizontal features, location of bus stops and types of traffic control and signage with focus on the following intersections:
     - U.S. Route 6/ NYS Route 17M and Lower Road/ Golf Links Road;
     - U.S. Route 6/NYS Route 17M and Mid-Hudson Psychiatric Center Access;
     - U.S. Route 6/NYS Route 17M and Training Center Lane;
     - U.S. Route 6/NYS Route 17M and Hartley Road/Gate Schoolhouse Road;
     - U.S. Route 6/NYS Route 17M and 6 1/2 Station Road;
     - U.S. Route 6/NYS Route 17M and Route 17;
     - U.S. Route 6/NYS Route 17M and 1-84;
     - U.S. Route 6/NYS Route 17M and Cannon Hill Drive;
     - Echo Lake Road and Golf Links Road/McVeigh Road; and
     - Hartley Road and Echo Lake Road.
   - Perform manual field traffic counts during the weekday AM (6:30-9:00 AM) and PM (3:00-6:00 PM) hours as well as on Saturdays from 11:00 AM to 2:00 PM at the above listed intersections (Study Intersections). Also obtain available traffic volume data for the NYS Route 17M corridor from NYSDOT.
   - Perform at least three runs in either direction along the corridor to document (1) the number of school buses encountered traveling in either direction, and (2) the number of stops that were observed.
   - Compute the existing intersection capacity and operational level of service for the Study Intersections during the peak hours for each intersection following the procedures set forth in the 2010 Highway Capacity Manual (HCM). Analysis will be performed using an appropriate analysis tool such as Synchro, including an evaluation of the adequacy of left-turn queue storage lanes on US Route 6/NYS Route 17M. **For the PM Peak Hour, the analysis shall focus on the period from 3:00 p.m. to 4:00 p.m., when there is a shift change at the plant, when traffic volumes are at 97% of peak and schools may be letting out.**
   - Obtain the most recent three years of accident data from NYSDOT and from the Town of Goshen Police Department for the study area listed above. Compile and analyze the accident data to determine whether there are any locations which have exhibited a high rate of accidents (defined as twice the statewide average rate for similar facilities). For such locations, study the type of accidents, list of contributory causes and conduct a field inspection of the location to verify that the roadway geometry conforms to current design standards.

2. Future Traffic Conditions without the Project
For a development of this size, the New York State Department of Transportation, who will have approval jurisdiction over the U.S. Route 6/NYS Route 17M access, typically requires future traffic volumes to be evaluated for a ten-year window after the estimated time of completion ("ETC + 10").

The analysis of future conditions without the Project shall consist of the following elements:

- Apply an annual growth factor to the existing traffic volumes to project them to the expected ETC +10. Note, this may or may not require the use of separate evaluation years for each of the alternatives. The Applicant should provide their best estimate for when each of the alternatives will be completed and then conduct the analysis for 10 years after that. Add in traffic from other projects (proposed, approved, under construction or constructed but yet occupied) in the area expected to add more than ten vehicles per hour to the corridor.
- Calculate intersection capacity, queues and operational level of service at the Study Intersections for future conditions without the project.

3. Potential Impacts
Two alternatives shall be evaluated to determine the project's future impacts. The first alternative will assume full development of the Amy's Kitchen and Science of the Soul facilities with access to the Amy's Kitchen component provided through the Echo Lake site via the contemplated new bridge from the ver Hage site to the Echo Lake site, together with the development of the ver Hage warehouse use. The second alternative (see Chapter V, "Alternatives") will assume the contemplated full development of the Amy's Kitchen and Science of the Soul facilities with access to the Amy's Kitchen component provided via Hartley Road and access to the Science of the Soul component from U.S. Route 6/NYS Route 17M, together with the development of the ver Hage warehouse use.

Science of the Soul has indicated that the site will be used to host an annual three-day national conference, with attendance of up to 12,000 people. This annual conference would usually be held over a three-day period. Science of the Soul believes that sufficient parking would be accommodated on-site at the Echo Lake site. Volunteer parking would be provided on the Strong Farm property and overflow parking could be provided at the Amy's Kitchen facility. Science of the Soul indicates that in addition to the annual three-day conference, an annual two-day regional conference with attendance between 1,200 to 2,000 people, and regular weekly meetings on Sunday mornings for local congregants, estimated between 200 and 400 people would be held. During the week, a small staff (5 to 10 people) and a small number of volunteers will attend to normal administrative and property management tasks.

The event analysis must assume that the event may occur on any three-day period, including weekdays and weekends, and that access to the Amy's Kitchen facility will be through the Science of the Soul property, as this is the worst-case analysis. Analysis of the SoS National Event will be conducted for a weekend (when Amy's Kitchen would not be in operation) and for a weekday (when Amy's Kitchen would be in operation). Mitigation may consist of such measures as police officers providing temporary traffic control or other similar event-type measures. An event analysis assuming access to Amy's Kitchen component of the development is via Hartley Road need only be performed if it is determined that there are unacceptable and unmitigable adverse traffic impacts with a single point of access via U.S. Route 6/NYS Route 17M. The potential impact on the NYS Route 17 exit 122A interchange and access to the Strong Farm shall be evaluated including the Cheechunk Road and Owens Road intersection.

The analysis of future conditions for both alternatives, as well as the event analysis, shall consist of the following elements:

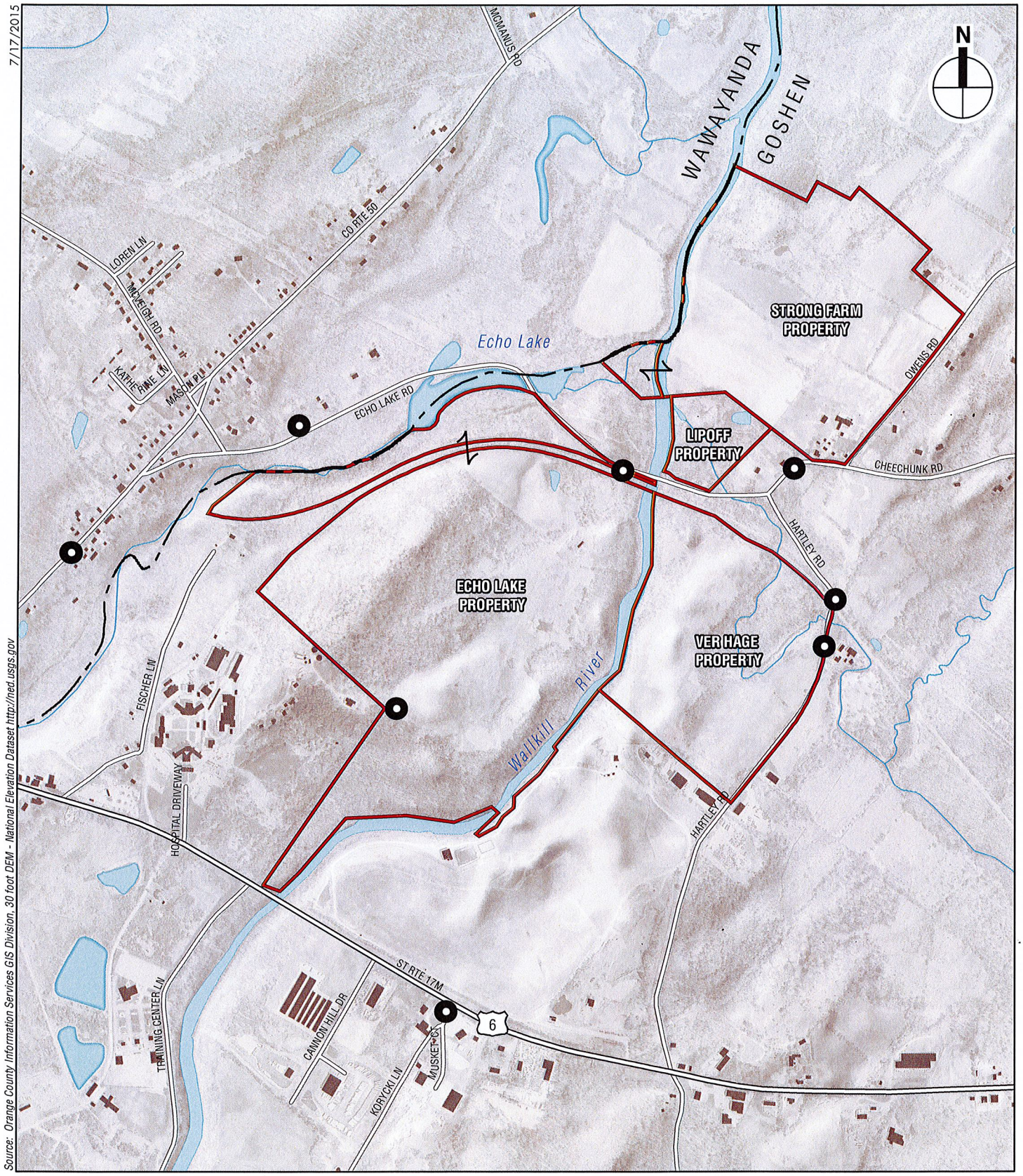
- Describe Amy's Kitchen employees' shifts and impacts on traffic; describe staggering of traffic for both the Amy's Kitchen facility and the annual event.
- For non-event days, estimate peak-hour traffic generation of passenger vehicles, busses and trucks for typical operation of Amy's Kitchen facility, including the potential future warehouse use located on Hartley Road. For ease of analysis, all truck and bus trips generated by the project shall be identified and each shall be counted as 2 car trips for the analysis of future conditions with the project (the alternative would be to have the applicant calculate the number of site-generated truck/bus trips on every movement and then adjust the heavy vehicle percentage of each movement manually, an extremely laborious effort). Rates from a similar Amy's Kitchen facility should be used to make this determination, but there should be a clear link between the size of the operations/number of employees at such similar facility and the size of operation of the proposed facility. Also estimate the number of peak-hour trips generated by the proposed adjacent private conference center on a typically busy day when no special traffic mitigation measures will be implemented.
- For event days, identify the measures that will be used to reduce the potential trip generation of the annual event and its possible impact. Such measures may include limiting the times when events start or finish to periods when traffic volumes on US Route 6/NYS Route 17 are below a critical threshold value (700 vph, for example) or using satellite parking and bussing some or all of the visitors to and from the site.
- Estimate the number of peak-hour trips which could be generated by the proposed conference center's annual event. Based on implementation of previously identified measures, estimate (showing calculations) how many passenger vehicles, busses and trucks would be added to the roadway system during the annual event (counting each single bus or truck trip as the equivalent of two passenger car trips).
- To the trips generated by the annual event, also estimate and add the number of Amy's Kitchen trips that would be added to the roadway system at the same time, indicating whether or not such events would be scheduled to start or finish at times other than Amy's Kitchen shift changes.
- Generally identify areas where sufficient parking could be provided to accommodate annual event parking and describe how adequate access to the regional roadway network would be provided to these general areas.
- Apply the estimated combined traffic volumes to the Study Intersections utilizing appropriate arrival and departure distributions for the Amy's Kitchen build condition and the annual event condition. The arrival and departure distributions should reflect the general bias to and from the west exhibited by the psychiatric center and the training center (but modified to reflect the location of satellite parking for bussed events) as well as the apparent considerable use of Gate Schoolhouse Road by local motorists. Calculate intersection capacity and operation level of service including left-turn lane queuing, at the Study Intersections for future conditions with the Amy's Kitchen manufacturing facility and conference center;
- Calculate intersection capacity and operation level of service including left-turn lane queuing at the Study Intersections for future conditions with a large event at the Science of the Soul conference center.

- Potential for use of public transportation and the existing Heritage Trail will be discussed; including how cyclists and pedestrians would travel from the site to the trail;
- Calculate the total number of parking spaces expected to be needed at the Amy's Kitchen Plant, including during shift changes and compare it to the proposed number of Amy's Kitchen parking spaces.
- Calculate the total number of parking spaces for cars and for busses expected to be needed at the proposed private conference center at the annual event and compare it to the proposed number of parking Spaces.
- Discuss how parking may or may not be shared by the facilities and how this would either permit the total impervious coverage to be reduced or to allow more parking at the private conference center for events.
- Where high accident locations were identified, discuss the projected increase in traffic volumes on the movements involved and how the increase might impact traffic safety;
- Describe on-site circulation by trucks, bus and car traffic for both sites.
- Describe proposed emergency access and discuss use as secondary access or service access during the annual event.

4. Proposed Mitigation
   - Recommend traffic and safety improvements, including roadway widening, addition of lanes, signalization additions and modifications, signage, striping, etc. as needed for the Study Intersections;
   - Identify measures for accommodating annual event conditions, including temporary traffic control (such as police officers directing traffic and functioning like a simple signal);
   - Identify who will be responsible for funding the measures and who will be responsible for ensuring that the measures are implemented or carried out;
   - Describe the traffic management plan(s) to be employed for the annual event at the Science of the Soul conference center and who will be responsible for ensuring that the measures are implemented or carried out; and
   - Additional Mitigations as necessary. All unavoidable impacts will be identified.

I. Noise

1. Existing Conditions
   - Existing noise measurements will be taken at locations identified on the Noise Monitoring Locations map, annexed hereto, to characterize ambient noise levels at sensitive receptors (e.g., residences) in close proximity to the project site. Dates and times of measurements will be provided.
2. Potential Impacts
   - Major sources of noise will be identified and their potential noise levels based on manufacture specifications or noise measurements at other similar facilities, including the SoS conference center;
   - Overall anticipated noise generation from the proposed action will be discussed and a comparison to existing conditions will be provided; and
   - A discussion of how the anticipated noise levels relate to Town or other noise regulations will be provided.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.



Amy's Kitchen
Science of the Soul

Noise Monitoring Locations
Figure III.I-1

J. Utilities and Solid Waste Disposal

1. Existing Conditions
   - Utilities not discussed above, including gas and electric service will be discussed in terms of their availability at the project site and service providers; and
   - Existing solid waste management will be discussed.
2. Potential Impacts
   - Impacts to electric and gas service will be discussed including any required upgrades to service or existing infrastructure;
   - If standby power generators are being proposed, describe the possible impacts, positive and negative, including the possibility of load-sharing during peak times of consumption;
   - Impacts of the use and conservation of energy; and
   - Impacts of the proposed action on solid waste management.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary, including recycling where possible. The Applicant will expand on what is available to the facilities in terms of recycling.

K. Land Use and Zoning

1. Existing Conditions
   - Existing land use and zoning of the project site and within one mile will be described and presented graphically; and
   - Overlay districts will be identified.
2. Potential Impacts
   - A bulk table comparing the existing zoning dimensional requirements with proposed conditions will be prepared;
   - Special Permit criteria, overlay district requirements, and requirements of § 97-14 (HC, CO and I Districts) of the zoning code will be discussed and how the project does or does not meet these criteria;
   - Subdivision regulations will be discussed;
   - Any required variances or waivers will be identified;
   - Consistency with the Town and County Comprehensive Plans will be addressed; and
   - Discuss the relationship with surrounding land uses including the Heritage Trail and landfill; and
   - A statement and evaluation of the potential impacts shall be set forth at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence, and as otherwise necessary pursuant to the items listed at 6 NYCRR § 617.9(b)(5)(iii)(a)-(h), including the relationship of the proposed project to the overall land use patterns within the study area. This section will describe the project's conformance with the Town Zoning Code, the Town Comprehensive Plan, the Town Open Space and Farmland Protection Plan, the Southern Wallkill Biodiversity Plan, the Orange County Comprehensive Plan and the Orange County Open Space Plan.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

L. Community Services

1. Existing Conditions
   - Police, Fire, Ambulance and Town Hall services will be discussed in terms of manpower, equipment and facility locations relative to the project site.
2. Potential Impacts
   - Services will be contacted to discuss their possible concerns related to the project. A discussion of fire fighting needs, including water storage, access and circulation, will be provided.
   - Services will be contacted to discuss potential needs during large events at the SoS conference center.
   - Provide a discussion on the loss of a future recreation resource, which shall include a discussion of the Town's Wallkill River Trailway Report, Comprehensive Plan and Trail Map.
3. Proposed Mitigation
   - Any on-site security will be discussed; and
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

M. Fiscal Impacts

1. Existing Conditions
   - Existing tax revenue for each taxing jurisdiction will be presented based on the most recent tax records.
2. Potential Impacts
   - Anticipated costs and revenues will be calculated for the proposed project using the proportional valuation method or other acceptable method agreed to by the Town Planning Board;
   - Provide an analysis of the changes in the local economy (including hotels, restaurants, shopping, services, etc.) that would likely occur as a result of the completion of the project, including jobs not only for Amy's Kitchen and SoS employees, but also for construction, maintenance, service, vendors, and other trades;
   - The discussion of the potential changes in the local economy will include a discussion of the anticipated economic benefits and any detriments from construction and operations over a three and five year period (and thereafter); and
   - Describe impacts to the operations and maintenance costs for road maintenance including Town Highway Department manpower, equipment and materials.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

N. Visual Resources

1. Existing Conditions
   - Narrative and graphic description of the existing site and surrounding properties will be presented; and
   - Visual resources in the area of the site will be identified. View analysis will include the sites shown on Visual Analysis Locations Map, annexed hereto, as well as from:
     - The intersection of Golf Links Road and McVeigh Road;
     - Along Owens Road, approximately 1/4 to 1/2 mile north of its intersection with Cheechunk Road; and
     - At the municipal boundary along the Heritage Trail.

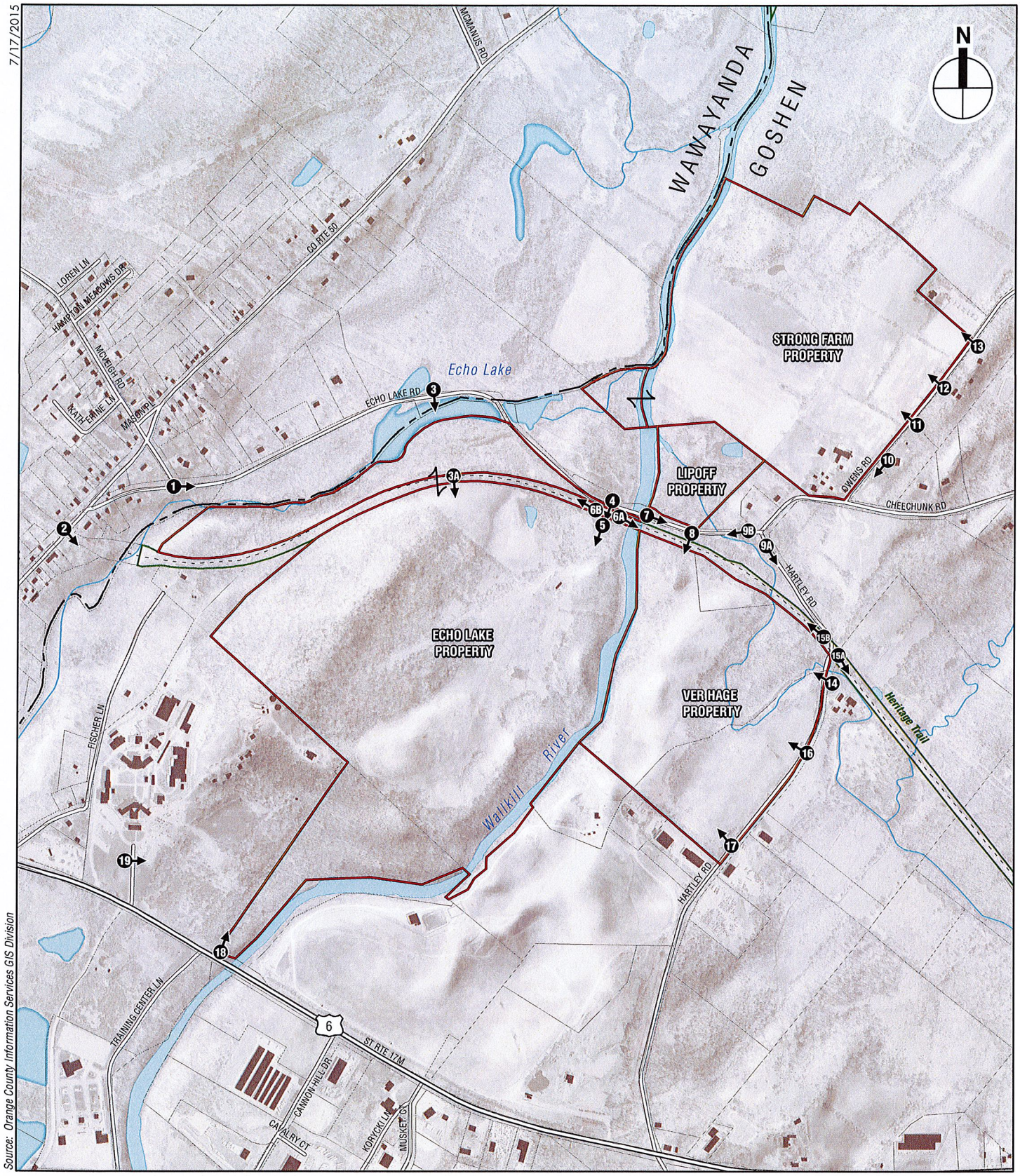
2. Potential Impacts
   - Narrative and graphic description of proposed project will be provided including physical dimensions and architectural characteristics of buildings and structures, and how they relate to visible structures in the surrounding area in terms of visibility, height, etc.;
   - Portions of proposed Action which will be visible from public roads will be discussed with photo-simulation, including from the views listed above;
   - Discussion of proposed site lighting (including, but not limited to, signage, security, driveway and parking lot lighting) and landscaping;
   - Discussion of proposed signage (and location of signage) for uses on-site; and
   - Discussion of visual impacts to the Orange County Heritage Trail.
3. Proposed Mitigation
   - Landscaping plans, including an entrance design for the main entrance on NYS Route 17M and the proposed emergency access on Echo Lake Road, the proposed temporary access on Hartley Road and any entrances to the volunteer parking from Owens Road will be described and presented graphically.
   - Mitigation will be proposed for identified adverse environmental impacts as necessary, including, but not limited to earth tone colors, night-sky friendly lighting, and limitation of foot candles at the boundary line.

O. Environmental Contamination

1. Existing Conditions
   - Surrounding contaminated sites will be discussed in terms of history, current status and likelihood of site impact.
   - Summarize the findings of any Phase I Environmental Site Assessments completed for each of the properties.
2. Potential Impacts
   - Potential for any contamination on the project site or for the proposed action to otherwise impact or disturb contaminated areas.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

P. Cultural Resources

1. Existing Conditions
   - A Phase 1A archaeological investigation will be prepared and appended to the DEIS. This will include a discussion of the history of the use of the project site and immediate area;
   - A Phase 1B will be prepared if recommended.
2. Potential Impacts
   - Describe the potential for construction of the proposed project to affect any cultural resources that may be present on the project sites.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.



Amy's Kitchen
Science of the Soul

Visual Assessment Location Map

Figure III.N-1

Q. Agriculture

1. Existing Conditions
   - The project site is located in an Agricultural District. Discuss the implications associated with this designation; and
   - Discuss any agricultural history of the project site or adjacent sites.

2. Potential Impacts
   - Discuss reduction in agricultural land or impacts to surrounding agricultural land and/or impacts to local agricultural labor supply;
   - Discuss how Amy's will source materials, including whether there is processing for those materials and how that is to be accomplished, whether Amy's will need the use of certified organic farmers, and the potential contractors or categories of contractors for these materials; and
   - Discuss benefits to agricultural community and use of local products in Amy's facilities.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

R. Air Quality

1. Existing Conditions
   - Existing ambient air quality conditions within the study area based on data obtained from the NYSDEC will be described. NYSDEC data will be analyzed and compared to the National Ambient Air Quality Standards in order to characterize the existing air quality at the site.
2. Potential Impacts
   - A statement and evaluation of the potential impacts shall be set forth at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence, and as otherwise necessary pursuant to the items listed at 6 NYCRR § 617.9(b)(5)(iii)(a)-(h). The effects of emissions from stationary sources at the project site will be qualitatively assessed, and, if necessary, a screening analysis to determine the potential impacts of site generated traffic on air quality will be performed to determine whether any location should undergo a detailed microscale CO analysis. This screening analysis should follow the procedures outlined by the New York State Department of Transportation. The Applicant shall include any potential impacts from construction equipment, trucks, busses, idling vehicles, traffic entering and exiting the site, and delivery vehicles, as well as all emissions during the operation of the proposed facilities.
3. Proposed Mitigation
   - Proposed and potential mitigation measures for identified adverse Environmental Impacts will be discussed. The discussion shall clearly indicate which mitigation measures have been incorporated into the plans. Unavoidable adverse Environmental Impacts will also be identified.

S. Construction Impacts

Potential Environmental Impacts anticipated due to the construction of the proposed project, phasing, if any, hours of construction operations, including noise, traffic, alternate construction traffic access to the site that will minimize the use of Town roadways, removal of soil, rocks and trees from the site, air quality (including all sources of emissions during construction), dust and the impact on the surrounding area will be described, including the potential (and remedial measures to be taken to correct such damage) to Town and County roadways and infrastructure from construction traffic, and the prevention of project mud and gravel from being tracked onto Town and County roadways. Estimates of the tons and truck trips necessary to accomplish the construction activities, and an itemization of the proposed construction traffic routes, and speed restrictions shall be set forth. Also, the precautions that will be

taken during construction to avoid and protect wetlands shall be described in detail. This Section will also describe methods of recycling waste and natural materials on-site during construction and the building process, and other "green" building techniques employed, so as to minimize the carbon footprint to the extent economically and technologically feasible.

IV. UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

This section will identify and summarize those adverse environmental impacts that can be expected to occur with or without mitigation measures, and the probability of such impacts.

V. ALTERNATIVES

A. No Action Alternative
B. Alternatives to an on-site wastewater treatment package plant (i.e., Village of Goshen or Middletown)
C. Potential use of Echo Lake Road (over Heritage Trail) as an emergency access, "employee only" entrance/exit or access for Science of the Soul events.
D. Permanent access to Amy's Kitchen manufacturing facility from Hartley Road

VI. PROJECT IMPACTS ON ENERGY USE AND SOLID WASTE MANAGEMENT

This chapter will summarize the proposed project and its Environmental Impacts in terms of the use of energy and the management of solid waste produced by the proposed project. It will identify the energy sources to be used, anticipated levels of consumption and ways to reduce energy consumption, including Leadership in Energy and Environmental Design Standards (LEED). This chapter will discuss whether geothermal and/or solar energy are options for use at this site, including but not limited to heating walkways, parking areas and road surfaces to reduce the amount of road salt required during the winter.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

This chapter will summarize the proposed project and its impacts in terms of the loss of environmental resources, both in the immediate future and in the long term.

VIII. GROWTH INDUCING IMPACTS

This chapter will discuss whether there is a growth inducing impact as a consequence of the approval and construction of the proposed action.

Technical Appendices (unless full report is in DEIS text)

1. SEQRA Documentation: EAF, DEIS Scope and Agency Correspondence;
2. SWPPP and supporting data;
3. Wetland Delineation Map and all other technical reports;
4. Site Plan (Full size);
5. Natural resources reports;
6. Subsurface Exploration Report(s);
7. Water System Data & Supporting Technical Reports;
8. Traffic Report;
9. Wastewater Collection & Treatment System Data & Supporting Technical Reports including WAC analysis (if required by DEC);
10. Archaeological Survey: Phases 1A and 1B (if required);
11. Noise Report;
12. Fiscal Report; and
13. Resumes of Professionals submitting reports.

TOWN OF GOSHEN PLANNING BOARD
STATE ENVIRONMENTAL QUALITY REVIEW
NOTICE OF INTENT TO BECOME LEAD AGENCY

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The Planning Board of the Town of Goshen hereby declares its intent to serve as Lead Agency for the Amy's Kitchen, Inc. application, which application seeks subdivision, site plan and special permit approval on property located in the Town of Goshen, Orange County. If, within 30 calendar days from the date of mailing this notification, no Involved Agency submits a written objection to the Town of Goshen Planning Board, said Planning Board shall serve as Lead Agency pursuant to 6 N.Y.C.R.R. Part 617.

Amy's Kitchen, Inc. intends to prepare and submit a Draft Environmental Impact Statement in order to evaluate the effects of the subdivision, site plan, and special permit as described further below.

Name of Action: Amy's Kitchen, Inc.

Date of Action: April 17, 2014

SEQR Status: Type 1

Description of Action: Amy's Kitchen, Inc. is the contract vendee of a 200+/- acre project site located between Echo Lake Road and New York State Route 17M, involving property better known on the Town's tax maps as Section 12, Block 1, Lots 23.2 and 24.2. The project site is located within the Commercial/Office Mixed-Use ("CO"), Industrial ("I") and Rural ("RU") zoning districts of the Town of Goshen. The Proposed Action includes a two-lot minor subdivision of the property. On Lot 1, Amy's Kitchen, Inc. proposes to construct a 579,680 square foot manufacturing plant to manufacture and distribute its full line of natural and organic frozen food products. The building will contain a 25,000 square foot office area.

On Lot 2, Amy's Kitchen, Inc. proposes to construct a 200,000 square foot open-air shed structure to be used for annual conferences and other private gatherings. The structure will have a cantilevered roof over grass with six permanent restrooms and other accessory buildings.

The project also involves a 7.6-acre land transfer, representing a portion of Section 12, Block 1, Lot 101 from the State of New York to the Town of Goshen. The purpose of the land transfer is to improve access to New York State Route 17M, not only for the proposed Amy's Kitchen project, but also for the surrounding properties. A portion of the project site, tax parcel 1-1-40, is located in the Town of Wawayanda. No disturbance is proposed on this portion of the property.

There are two existing wells onsite which will be utilized for water for the project. Wastewater will be conveyed to an onsite sewage treatment facility where it will be treated and discharged to the Wallkill River.

Amy's Kitchen, Inc. projects that it will employ approximately 680 people on the project site. It is anticipated that with the construction of the new manufacturing plant in Goshen, Amy's Kitchen will look to find a significant volume of their products from local and regional farms.

Location: The project site is located on the north side of New York State Route 17M and south of Echo Lake Road in the Town of Goshen.

Contact Person: Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Ave.
Goshen, NY 10924
(845) 294-6250

Involved Agency Circulation: This notice is being sent to the following involved agencies:

NYS Department of Environmental Conservation
Division of Environmental Permits – Region 3
625 Broadway
Albany, New York 12233-1010

NYS Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

New York State Department of Transportation
4 Burnett Boulevard
Poughkeepsie, New York 12601
Contact: Terry Donoghue

NYS Office of General Services
Empire State Plaza, 41st Floor, Corning Tower
Albany, New York 12242
Contact: James Sproat, Executive Director

NYS Office of Mental Health
44 Holland Avenue
Albany, New York 12229
Contact: Emil Slane, Deputy Commissioner

Orange County Department of Health, Division of Environmental Permits
1887 County Building
124 Main Street
Goshen, New York 10924
Contact: Edwin Sims, PE, Acting Director

Orange County Department of Public Works
2455-2459 Route 17M
P.O. Box 509
Goshen, New York 10924
Contact: Charles Lee, P.E., Commissioner

Town of Goshen Town Board
41 Webster Ave
Goshen, New York 10924
Contact: Douglas Bloomfield, Supervisor

New York State Office of Parks, Recreation and Historic Preservation
Post Office Box 189, Peebles Island
Waterford, New York 12188

Orange County Industrial Development Agency
4 Crotty Lane, Suite 100
New Windsor, New York 12553

Dormitory Authority of the State of New York
515 Broadway
Albany, New York 12207-2964

Interested Agency Circulation: This notice is being sent to the following interested agencies:

Village of Goshen
276 Main Street
Goshen, New York 10924

Town of Goshen Police Department
44 Police Drive
P.O. Box 217
Goshen, New York 10924

Town of Wawayanda
80 Ridgebury Hill Road
Slate Hill, New York 10973

Town of Wallkill
99 Tower Drive, Building A
Middletown, New York 10941

Orange County Department of Planning
1887 County Building
124 Main Street
Goshen, New York 10924

U.S. Army Corps of Engineers
26 Federal Plaza
Jacob Javits Building
New York, New York 10278

U.S. Fish and Wildlife Service
New York Field Office
3817 Luker Road
Cortland, New York 13045
Attn: Noelle Rayman

NYS Department of Agriculture & Markets
10B Airline Drive
Albany, New York 12235

Northeast Organic Farming Association
P.O. Box 164
Stevenson, CT 06491

Town of Goshen Environmental Review Board
41 Webster Avenue
Goshen, New York 10924

Goshen Volunteer Ambulance Corp.
P.O. Box 695
Goshen, New York 10924

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: Amy's Kitchen, Inc.		
Project Location (describe, and attach a general location map): NYS Route 17M and Echo Lake Road		
Brief Description of Proposed Action (include purpose or need): See attached narrative.		
Name of Applicant/Sponsor: Amy's Kitchen, Inc.	Telephone: (707) 781-7618 E-Mail:	
Address: 1650 Corporate Circle, Suite 200		
City/PO: Petaluma	State: CA	Zip Code: 94955
Project Contact (if not same as sponsor; give name and title/role): Mark Rudolph, CFO	Telephone: (707) 781-7618 E-Mail: markrudolph@amyskitchen.net	
Address: same as above		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Concrete Properties, LLC / Tetz Family, LLC	Telephone: E-Mail:	
Address: 130 Crotty Rd		
City/PO: Middletown	State: NY	Zip Code: 10941

B. Government Approvals

B. Government Approvals Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, or Village Board of Trustees ☑Yes ☐No	Town Board - Access easement for site access road	TBD
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town Planning Board: Site Plan, Special Permit and subdivision	3/27/14
c. City Council, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	County Health Department: Water Supply County Planning:GML, County DPW: road work	TBD
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYS DEC: SPDES NYS DOT: highway work permit	TBD
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
CO and I, Town AQ-3 Overlay District and County Ag District #2

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site?

C.4. Existing community services.

a. In what school district is the project site located? Goshen Central School District

b. What police or other public protection forces serve the project site?
Town of Goshen Police Department

c. Which fire protection and emergency medical services serve the project site?
Goshen FD and GOVAC

d. What parks serve the project site?
Orange Co Heritage Trail adjacent to project site.

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Industrial with conference center and office components

b. a. Total acreage of the site of the proposed action? +/- 195 acres
b. Total acreage to be physically disturbed? +/- 131 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? +/- 212 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☑ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
One industrial lot with separate lot for conference center
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? 2
iv. Minimum and maximum proposed lot sizes? Minimum TBD Maximum TBD

e. Will proposed action be constructed in multiple phases? ☑ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated TBD
- Anticipated commencement date of phase 1 (including demolition) 3 month 2015 year
- Anticipated completion date of final phase 11 month 2015 year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 17

ii. Dimensions (in feet) of largest proposed structure: 45 height; 1060 width; and 683 length

iii. Approximate extent of building space to be heated or cooled: 579,680 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑Yes ☐No

If Yes,

i. Purpose of the impoundment: stormwater detension

ii. If a water impoundment, the principal source of the water: ☑ Ground water ☐ Surface water streams ☑Other specify: Stormwater

iii. If other than water, identify the type of impounded/contained liquids and their source.

iv. Approximate size of the proposed impoundment. Volume: TBD . million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: TBD height; TBD length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

earth fill

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging?

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards):
- Over what duration of time?

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe.

v. What is the total area to be dredged or excavated? _____ acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan:

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description):

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No
If Yes, describe:

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No
If Yes:

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:

i. Total anticipated water usage/demand per day: 200,000 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐ Yes ☑ No
If Yes:

- Name of district or service area: On site, private system
- Does the existing public water supply have capacity to serve the proposal? ☐ Yes ☑ No
- Is the project site in the existing district? ☐ Yes ☑ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☐ Yes ☑ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☑ Yes ☐ No
If, Yes:

- Applicant/sponsor for new district: Amy's Kitchen, Inc.
- Date application submitted or anticipated: 4/1/14
- Proposed source(s) of supply for new district: on site wells.

v. If a public water supply will not be used, describe plans to provide water supply for the project:
Plans and additional details will be provided in an Environmental Impact Statement

vi. If water supply will be from wells (public or private), maximum pumping capacity: 330 gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:

i. Total anticipated liquid waste generation per day: 200,000 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
Sanitary and manufacturing wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☑ No
If Yes:

- Name of wastewater treatment plant to be used:
- Name of district:
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans):

On-site sewer treatment with potential discharge to the Wallkill River.

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or +/- 49 acres (impervious surface)

_____ Square feet or 212.3 acres (parcel size)

ii. Describe types of new point sources. buildings/ roads/ parking areas

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Combination of stormwater management structures and green treatment methods.

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

Large trucks

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

Construction equipment

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Cooking and packaging equipment

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☑Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☑ Morning ☑ Evening ☐ Weekend
☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: See attached traffic discussion

iii. Parking spaces: Existing 0 Proposed 3051 Net increase/decrease 3051

iv. Does the proposed action include any shared use parking? ☑Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:
New access road and realignment to serve adjoining properties. See attached preliminary traffic report.

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☑No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☑No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☑Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action:
TBD

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):
Local utility

iii. Will the proposed action require a new, or an upgrade to, an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 8am-8pm or as otherwise req'd
- Saturday: 9am-8pm or as otherwise req'd
- Sunday: none
- Holidays: none

ii. During Operations:

- Monday - Friday: 6am-11pm
- Saturday: TBD
- Sunday: none
- Holidays: none

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Plant machinery, HVAC units and trucks will create noise. Additional information will be provided in the DEIS.

ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? ☑ Yes ☐ No

Describe: Existing site vegetation will be removed.

n.. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Plan will be provided in the DEIS

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☑ Yes ☐ No

Describe: removal of existing vegetation

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☑ Yes ☐ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

Cooking and vehicle emissions could possibly produce odors. The nearest occupied structure is the adjacent psychiatric center which is scheduled to be closed by the State. Other nearby uses include landfills and agricultural uses which also produce odors. Additional information to be provided in the DEIS.

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally describe proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: TBD tons per _____ (unit of time)
- Operation : TBD tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: TBD
- Operation: recycling as required by Orange County recycling program

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: private dumpster
- Operation: private hauler

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☑ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☑ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): County Psychiatric Center & adjacent landfill

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	49	+ 49
• Forested	+/- 145	37	- 108
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	+/- 53	112	+ 59
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	+/- 3.3	+/- 3.3	0
• Wetlands (freshwater or tidal)	+/- 10.7	+/- 10.7	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐Yes ☑No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑Yes ☐No

If Yes,

i. Identify Facilities:

Project site is adjacent to Mid-Hudson Psychiatric Center for adults with mental disabilities.

e. Does the project site contain an existing dam? ☐Yes ☑No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☑Yes ☐No

If Yes:

i. Has the facility been formally closed? ☑Yes ☐ No

- If yes, cite sources/documentation: Based on Phase 1, see report for additional details.

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

Al Turi Landfill - 73 Hartley Rd, 500 feet south of site at a lower elevation
Orange Co Landfill, NYS Rotue 17M, Goshen, 3,096 feet South, lower elevation

iii. Describe any development constraints due to the prior solid waste activities: _____

A Phase 1 Environmental Assessment will be submitted with the DEIS.

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☑Yes ☐No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

Between 1968 and 1981 the Al Turi landfill accepted hazardous materials. Additional details to be provided in the DEIS.

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑Yes ☐No

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): 336016

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑Yes ☐No

If yes, provide DEC ID number(s): 336016

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

The Al Turi landfill has been capped. Ground water, surface water and gas emissions are currently monitored by the NYS DEC and USEPA

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >70' feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

Mardin Gravelly Silt Loam (Md)	38.7 %
Riverhead Sandy Loam (Rh)	21.2 %
	%

d. What is the average depth to the water table on the project site? Average: 20 feet

e. Drainage status of project site soils:

☑ Well Drained:	59.6 % of site
☑ Moderately Well Drained:	27.4 % of site
☑ Poorly Drained	13 % of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	51.5 % of site
☑ 10-15%:	17.1 % of site
☑ 15% or greater:	31.4 % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name Wallkill River Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Wetland / NYSDEC Approximate Size Fed: 0.84 / DEC: 9.09
- Wetland No. (if regulated by DEC) MD-24

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☑ Yes ☐ No

j. Is the project site in the 100 year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500 year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
Green Frog, Treefrog, American Toad | Chipmunk, gray squirrel, raccoon
Wood Frog, bull frog, snapping turtle | coyote and white-tailed deer

n. Does the project site contain a designated significant natural community? ☐Yes ☑No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑Yes ☐No

Indiana Bat - potential habitat along Wallkill River

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐Yes ☑No

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐Yes ☑No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☑Yes ☐No
If Yes, provide county plus district name/number: ORAN002

b. Are agricultural lands consisting of highly productive soils present? ☐Yes ☑No
i. If Yes: acreage(s) on project site? _____
ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐Yes ☑No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐Yes ☑No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Orange Co Heritage Trail

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): County Park/ Trailway

iii. Distance between project and resource: 0 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

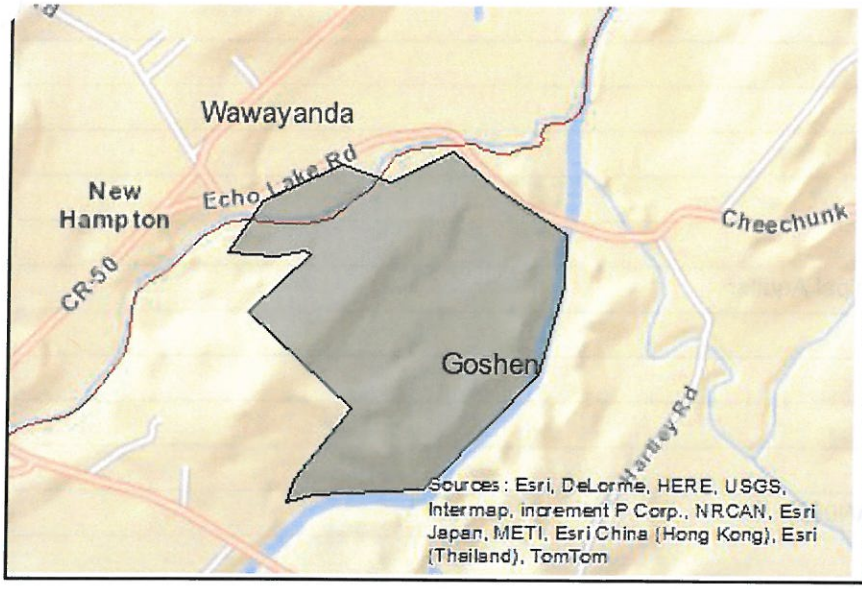
Applicant/Sponsor Name Amy's Kitchen Date 2/20/2014

Signature _____ Title _____

PRINT FORM

EAF Mapper Summary Report

Wednesday, April 16, 2014 1:33 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	336016
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	855.5-1
E.2.h.iv [Surface Water Features - Stream Classification]	B
E.2.h.iv [Surface Water Features - Wetlands Name]	NYS Wetland, Federal Wetland

E.2.h.iv [Surface Water Features - Wetlands Size in Acres]	Federal Wetland:6.25695858, Federal Wetland:0.89311641, Federal Wetland:0.69927919, Federal Wetland:0.22966854, Federal Wetland:0.74412443, Federal Wetland:0.6085139, Federal Wetland:0.22363596, Federal Wetland:0.39699229, Federal Wetland:0.72248635, Federal Wetland:0.30780888, NYS Wetland:27.4
E.2.h.iv [Surface Water Features - Wetlands No]	MD-24
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Yes
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	ORAN002
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National Register of Historic Places]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Agency Use Only [If applicable]

Project:

Date:

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "Yes" to a numbered question, please complete all the questions that follow in that section.
- If you answer "No" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land
Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)
☐ NO ☑ YES
If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☑	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☐	☑
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☑	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☑
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☑	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☐	☑
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☑	☐
h. Other impacts: _____		☑	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	☐	☐
c. Other impacts: _____		☐	☐

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☐ NO ☑ YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	☑	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☑	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☑	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☑	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☐	☑
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☑	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☐	☑
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☐	☑
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☐	☑
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☑	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☐	☑

l. Other impacts: _____		☑	☐

4. Impact on groundwater

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t) ☐ NO ☑ YES

If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☐	☑
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	☑	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☑	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☑	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☑	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☑	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☑	☐
h. Other impacts: _____		☑	☐

5. Impact on Flooding

The proposed action may result in development on lands subject to flooding. (See Part 1. E.2) ☐ NO ☑ YES

If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☑	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☑	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☑	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☑
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☑
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☑	☐

g. Other impacts: _____		☑	☐

6. Impacts on Air

The proposed action may include a state regulated air emission source. ☐NO ☑YES

(See Part 1. D.2.f., D,2,h, D.2.g)

If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☑	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☑	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☑	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☑	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☑	☐
vi. 43 tons/year or more of methane	D2h	☑	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☑	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☑	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☑	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☑	☐
f. Other impacts: _____		☑	☐

7. Impact on Plants and Animals

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☐NO ☑YES

If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☑	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☑
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☑	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☑	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☑	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	☑	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☑	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	☐	☑
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☑	☐
j. Other impacts: _____ _____		☑	☐

8. Impact on Agricultural Resources
The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☐ NO ☑ YES
If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☐	☑
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, E1b	☑	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☑	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☑	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	E1a, E1b	☑	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☑	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☑	☐
h. Other impacts: _____		☑	☐

9. Impact on Aesthetic Resources
The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.)
☐ NO ☑ YES
If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☑
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☑
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	☐ ☐	☑ ☑
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	☑ ☐	☐ ☑
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☑	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☑	☐
g. Other impacts: _____		☑	☐

10. Impact on Historic and Archeological Resources
The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.)
☐ NO ☑ YES
If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on or has been nominated by the NYS Board of Historic Preservation for inclusion on the State or National Register of Historic Places.	E3e	☑	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☑	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☑	☐

d. Other impacts: _____		☑	☐
e. If any of the above (a-d) are answered "Yes", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☑	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☑	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☑	☐

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☐ NO ☑ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☑	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☑
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☑	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☑	☐
e. Other impacts: Trail plan adopted by Town Board involving this property		☐	☑

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: _____		☐	☐

13. Impact on Transportation
The proposed action may result in a change to existing transportation systems. ☐ NO ☑ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - g. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☑
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☑
c. The proposed action will degrade existing transit access.	D2j	☑	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☑	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☑
f. Other impacts: _____		☑	☐

14. Impact on Energy
The proposed action may cause an increase in the use of any form of energy. ☐ NO ☑ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☑	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☑	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☑	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☑
e. Other Impacts: _____		☑	☐

15. Impact on Noise, Odor, and Light
The proposed action may result in an increase in noise, odors, or outdoor lighting. ☐ NO ☑ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☑	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☑	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☑	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☐	☑
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☐	☑
f. Other impacts: _____ _____		☑	☐

16. Impact on Human Health
The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☐ NO ☑ YES
If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may occur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☑
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☑	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☑	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☑	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☑	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☑	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☑
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☑	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☑
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☑
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☑	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☑	☐
m. Other impacts: _____ _____		☑	☐

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. (See Part 1. C.1, C.2. and C.3.) ☐ NO ☑ YES

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☑	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☑	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☑	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☑	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, E1b	☑	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☑	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☑	☐
h. Other: _____ _____		☑	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. (See Part 1. C.2, C.3, D.2, E.3) ☐ NO ☑ YES

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☑	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☑	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☑	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☑	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☑	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☑	☐
g. Other impacts: _____ _____		☑	☐

State Environmental Quality Review Act

POSITIVE DECLARATION

Notice of Intent to Prepare a Draft Environmental Impact Statement
and Notice of Public Scoping Meeting
Lead Agency Determination of Significance

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law. The Planning Board of the Town of Goshen has determined that the proposed action described below may have a significant impact on the environment and that a Draft Environmental Impact Statement will be prepared. The Planning Board hereby adopts a Positive Declaration in order to investigate and evaluate the potential environmental impacts of this Proposed Action. Scoping will be conducted, and a public scoping meeting will be held on June 19, 2014.

Name of Action: Amy's Kitchen, Inc.

Lead Agency: Planning Board of the Town of Goshen, Orange County

Date: May 22, 2014

SEQR Status: Type 1

Description of Action: Amy's Kitchen, Inc. is the contract vendee of a 200+/- acre project site located between Echo Lake Road and New York State Route 17M, involving property better known on the Town of Goshen tax maps as Section 12, Block 1, Lots 23.2 and 24.2. The project site is located within the Commercial/Office Mixed-Use ("CO"), Industrial ("I") and Rural ("RU") zoning districts of the Town of Goshen. The Proposed Action includes a two-lot minor subdivision of the property. On Lot 1, Amy's Kitchen, Inc. proposes to construct a 579,680 square foot manufacturing plant to manufacture and distribute its full line of natural and organic frozen food products. The building will contain a 25,000 square foot office area.

On Lot 2, Amy's Kitchen, Inc. proposes to construct a 200,000 square foot open-air shed structure to be used for annual conferences and other private gatherings. The structure will have a cantilevered roof over grass with six permanent restrooms and other accessory buildings.

The project also involves a 7.6-acre land transfer, representing a portion of Section 12, Block 1, Lot 101 from the State of New York to the Town of Goshen. The purpose of the land transfer is to improve access to New York State Route 17M, not only for the proposed Amy's Kitchen project, but also for the surrounding properties. A portion of the project site, tax parcel 1-1-40, is located in the Town of Wawayanda. No disturbance is proposed on this portion of the property.

There are two existing wells onsite which will be utilized for water for the project. Wastewater will be conveyed to an onsite sewage treatment facility where it will be treated and discharged to the Wallkill River.

Amy's Kitchen, Inc. projects that it will employ approximately 680 people on the project site. It is anticipated that with the construction of the new manufacturing plant in Goshen, Amy's Kitchen will look to find a significant volume of their products from local and regional farms.

Location: The project site is located on the north side of New York State Route 17M and south of Echo Lake Road in the Town of Goshen.

Reasons Supporting this Determination: Potential environmental impacts associated with the proposed action are identified in the Full Environmental Assessment Form. These impacts, which may be reasonably expected to result from the Project, have been compared to the criteria for determining significance identified in 6 N.Y.C.R.R. § 617.7(c)(1) and in accordance with 6 N.Y.C.R.R. § 617.7(c)(2) and (3). The Planning Board finds that the Proposed Action may result in one or more significant impact on the environment, and an Environmental Impact Statement ("EIS") will be prepared to address, at a minimum, the following elements of the Proposed Action, which may result in potential impacts:

1. The Proposed Action includes construction on slopes of 15% or greater.

2. The Proposed Action could involve the excavation of more than 1,000 tons of natural materials.

3. The Proposed Action may result in increased erosion from both physical disturbance and natural vegetation removal.

4. The Proposed Action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.

5. The Proposed Action will create one or more outfalls for discharge of wastewater into the Wallkill River from on an onsite wastewater treatment plant.

6. The Proposed Action may affect the water quality of a water body within or downstream of the project site.

7. The Proposed Action requires conversion of more than 10 acres of forest habitat.

8. The project site contains soil classified within soil group 1 through 4 of the NYS Land Classification System.

9. The Proposed Action requires new water supply wells.

10. The Proposed Action may be visible from the Orange County Heritage Trail and other publically accessible vantage points.

11. The Proposed Action includes construction of over 700 paved parking spaces.

12. Traffic from the Proposed Action may exceed capacity of the existing road network and may alter the present pattern of people or goods.

13. Project has potential to generate traffic significantly above current levels and may result in the alteration of traffic patterns for cars as well as busses.

14. The project will result in the heating and cooling of more than 100,000 square feet of building area when completed.

15. The proposed action may result in light shining onto adjoining properties.

16. The Proposed Action may result in lighting creating sky-glow brighter than existing area conditions.

17. The proposed action may result in an increase in the rate of disposal, or processing of solid waste.

18. The Proposed Action may result in excavation or disturbance within 2,000 feet of a site used for the disposal of solid or hazardous waste.

Public Scoping: The Planning Board has scheduled a Public Scoping Meeting for **June 19, 2014** starting at 7:30 PM or reasonably soon thereafter. Scoping is the process by which the Lead Agency identifies the potentially significant adverse impacts related to the proposed action that are to be addressed in the forthcoming DEIS, including the content and level of detail of the analysis, range of alternatives to be considered, and mitigation measures needed and the identification of non relevant issues.

A copy of the applicant's draft scoping document can be viewed on the Town's website: www.townofgoshen.org, or in the Town Building Department located in Town Hall (41 Webster Ave.). All persons interested are invited to be present at said meeting. Written comments can be submitted to the Building Department at any time up to the meeting date.

For Further Information:

Contact Person: Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, New York 10924
(845) 294-6250

A copy of this Notice is being sent to the following Involved and Interested Agencies:

Involved Agencies

NYS Department of Environmental Conservation
Division of Environmental Permits – Region 3
625 Broadway
Albany, New York 12233-1010

NYS Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

New York State Department of Transportation
4 Burnett Boulevard
Poughkeepsie, New York 12601
Contact: Terry Donoghue

NYS Office of General Services
Empire State Plaza, 41st Floor, Corning Tower
Albany, New York 12242
Contact: James Sproat, Executive Director

NYS Office of Mental Health
44 Holland Avenue
Albany, New York 12229
Contact: Emil Slane, Deputy Commissioner

Orange County Department of Health, Division of Environmental Permits
1887 County Building
124 Main Street
Goshen, New York 10924
Contact: Edwin Sims, PE, Acting Director

Orange County Department of Public Works
2455-2459 Route 17M
P.O. Box 509
Goshen, New York 10924
Contact: Charles Lee, P.E., Commissioner

Town of Goshen Town Board
41 Webster Ave
Goshen, New York 10924
Contact: Douglas Bloomfield, Supervisor

New York State Office of Parks, Recreation and Historic Preservation
Post Office Box 189, Peebles Island
Waterford, New York 12188

Orange County Industrial Development Agency
4 Crotty Lane, Suite 100
New Windsor, New York 12553

Dormitory Authority of the State of New York
515 Broadway
Albany, New York 12207-2964

Interested Agencies

Environmental Notice Bulletin – via email
enb@gw.dec.state.ny.us

Village of Goshen
276 Main Street
Goshen, New York 10924

Town of Goshen Police Department
44 Police Drive
P.O. Box 217
Goshen, New York 10924

Town of Wawayanda
80 Ridgebury Hill Road
Slate Hill, New York 10973

Town of Wallkill
99 Tower Drive, Building A
Middletown, New York 10941

Orange County Department of Planning
1887 County Building
124 Main Street
Goshen, New York 10924

U.S. Army Corps of Engineers
26 Federal Plaza
Jacob Javits Building
New York, New York 10278

U.S. Fish and Wildlife Service
New York Field Office
3817 Luker Road
Cortland, New York 13045
Attn: Noelle Rayman

NYS Department of Agriculture & Markets
10B Airline Drive
Albany, New York 12235

Northeast Organic Farming Association
P.O. Box 164
Stevenson, CT 06491

Town of Goshen Environmental Review Board
41 Webster Avenue
Goshen, New York 10924

Goshen Volunteer Ambulance Corp.
P.O. Box 695
Goshen, New York 10924

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1620
Phone: (845) 256-3054 **FAX:** (845) 255-4659
Website: www.dec.ny.gov

Joe Martens
Commissioner

May 22, 2014

REC
MAY 29 2014
TOWN OF GOSHEN
TOWN CLERK

Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, NY 10924

Re: Amy's Kitchen
DEC Tracking ID #: 3-3330-00231/00001, /00002
Town of Goshen, Orange County
Response to SEQR Lead Agency and DEC Jurisdiction

Dear Chairman Bergus:

The New York State Department of Environmental Conservation (DEC) has reviewed the Town of Goshen's notice of intent to assume lead agency status for the State Environmental Quality Review (SEQR) of the proposed development of Amy's Kitchen. DEC has no objection to the Town acting as lead agency; the Lead Agency request indicated that an Environmental Impact Statement (EIS) will be prepared for this Type 1 action. DEC jurisdiction is as follows with reference to the Environmental Conservation Law (ECL). By copy of this letter the applicant is made aware of these jurisdictions.

State Pollutant Discharge Elimination System (SPDES) – Industrial
Pursuant to Article 17, Titles 7, 8 of the ECL, this development will require an industrial SPDES permit for the proposed discharge of 200,000 gallons per day to the Wallkill River, NYS Waters Index # H-139-13 portion (Rio Grande to New York-New Jersey state line), Class C. The applicant will be required to provide the following information in the application:

- Sampling information for the industrial wastewater discharge.
- A breakdown of the relative portions of the discharge that will be industrial process waste and sanitary waste.
- Discussion of the alternative of connecting to a municipal sewer system.

Technical questions on preparation of the SPDES permit application can be directed to DEC Division of Water staff member Manju Cherian at (914) 428-2505 ext 357.

Water Withdrawal
This project will require a Water Withdrawal Permit pursuant to Article 15, Title 15 of the ECL for withdrawal of water in excess of 100,000 gallons per day. The applicant will have to demonstrate that a sustainable yield is possible and determine any potential impacts to nearby resources such neighboring wells, the Wallkill River, or NYS freshwater wetland MD-24.

The applicant is referred to the DEC website for information on the water withdrawal program - http://www.dec.ny.gov/permits/6036.html and the necessary elements of a complete application.

These will include pump test results; the DEC pumping test procedures are available at http://www.dec.ny.gov/lands/86950.html.

Technical questions on preparation of the Water Withdrawal application can be directed to DEC Division of Water staff member Aparna Roy at (914) 428-2505 ext 362.

Protection of Waters and Freshwater Wetlands
The site contains portions of the Wallkill River, NYS Waters Index # H-139-13 portion, Class C (upstream of Rio Grande) regulated under Article 15, Title 5 of the ECL, Protection of Waters. A permit is not required to disturb the bed or banks of a Class C stream without a trout standard.

The site contains portions of DEC freshwater wetland MD-24, regulated under Article 24 of the ECL. The wetland boundary was delineated and surveyed in 2009. According to the plans and EAF, no disturbances are proposed to this wetland or the associated adjacent area.

If any disturbance is proposed to wetlands regulated by the Army Corps of Engineers and permit is required from the Corps, then a Water Quality Certification pursuant to Section 401 of the Clean Water Act will be required from DEC. If the project qualifies for an Army Corps Nationwide Permit, then it may qualify for the DEC Blanket Water Quality Certification.

Endangered and Threatened Species
This site is within 2.5 miles of known roost trees of Indiana bat (*Myotis sodalist*), a species listed by New York State and the U.S. Fish & Wildlife Service as endangered. Removal of forested areas has the potential to impact Indiana bat roosting and foraging habitat. The general habitat report submitted with the EAF, "Vegetation and Wildlife Resources at the Echo Lake Site", lists a number of tree species occurring on the site that are suitable as roost trees.

The DEC requires sufficient information to determine whether a permit pursuant to Article 11, Title 5 of the ECL, Endangered and Threatened Species, may be required for the taking of endangered species habitat. The applicant must provide an assessment of potential impacts of the development on Indiana bat foraging and roosting habitat for DEC review.

The applicant may contact Lisa Masi, DEC Bureau of Wildlife, at (845) 256-2257 to discuss potential impacts or options for avoidance.

Mined Land Reclamation
Portions of the property are currently mined for sand and gravel under Mined Land Reclamation permit 3-3330-00072/00001, issued to E Tetz & Sons Inc, and expiring January 31, 2018. Prior to Amy's Kitchen Inc initiating construction, the mine permittee must either complete reclamation pursuant to their approved reclamation plan or modify the permit reclamation plan to allow for the construction.

If more than 1000 tons (750 cubic yards) of soil and minerals will be excavated in association with the construction, then a mined land reclamation permit or construction exemption will be required. Any EIS should include a comprehensive cut and fill analysis.

State Pollutant Discharge Elimination System (SPDES) – Stormwater
The proposed action will disturb more than 1 acre and will require coverage under the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001). The EAF indicated that impoundment(s) will be constructed for stormwater with the size given as "TBD". If the stormwater impoundment(s) exceed either of the following thresholds, a Protection of Waters Dam Safety permit will be required:

- the maximum height[1] is more than 6 feet **and** the maximum impounding capacity[2] is greater than three million gallons; or
- the maximum height is more than 15 feet **and** the maximum impounding capacity is more than one million gallons.

Other DEC Jurisdictions
The EAF states that on the site there will be no underground storage of chemicals or petroleum products and no aboveground storage of petroleum products in excess of 1,100 gallons or chemical storage in excess of 185 gallons. Please note that these regulatory thresholds for bulk storage registration apply to the summary capacity of all storage units of a type (petroleum or chemical), not just to the individual units.

The EAF states that air emissions will be limited to construction equipment, vehicles, and equipment for cooking and packaging. Construction, vehicle, and food production emissions are exempt from regulation pursuant to 6 NYCRR Part 201 Air Resource Permits and Registrations.

Please note that an air facility registration may be required if the project includes installation of a combustion boiler burning coal or wood with a maximum-rated heat-input capacity greater than one million British Thermal Units per hour or a boiler burning any other fuel with a capacity greater than ten million.

The site is adjacent to and across the Wallkill River from the former Al Turi landfill, Remediation Site Code 336016. Impacts on the development from this former landfill are not expected because the river marks the boundary of a regional groundwater discharge zone and is a hydrologic boundary.

Uniform Procedures
All SPDES, Water Withdrawal, and Protection of Waters permits, as well as Water Quality Certifications, are processed pursuant to Uniform Procedures, Article 70 of the ECL. Per

1 Maximum height is measured from the downstream (outside) toe of the impoundment at its lowest point to the highest point at the top of the structure.
2 Maximum impounding capacity is the volume of water impounded when the water level is at the top of the structure.

Re: Amy's Kitchen
DEC Tracking ID #: 3-3330-00231/00001, /00002
Town of Goshen, Orange County
Response to SEQR Lead Agency and DEC Jurisdiction

Uniform Procedures regulations 6 NYCRR Part 621, all DEC applications for a project must be submitted simultaneously and processed as a single application batch, with the exception of filing for coverage under the stormwater SPDES general permit. A determination on taking of an endangered species must also be made prior to the application being deemed complete.

Please note that this will be a major application pursuant to Uniform Procedures and a 30-day public comment period will be required. No application can be deemed complete until the Town as Lead Agency pursuant to SEQR either issues a Negative Declaration or accepts a Draft Environmental Impact Statement for review. As the site is within an area designated by the NY State Historic Preservation Office (SHPO) as sensitive for archeological sites, a determination on potential impacts by SHPO will be required for a complete application for permits.

DEC recommends the applicant request a pre-application meeting to discuss the necessary elements of the SPDES and Water Withdrawal permits, as well as the Endangered Species Taking jurisdiction determination.

If the applicant wishes to schedule a meeting, they may contact me. If you have any questions, please feel free to contact me at (845) 256-3014 or at rscrist@gw.dec.state.ny.us.

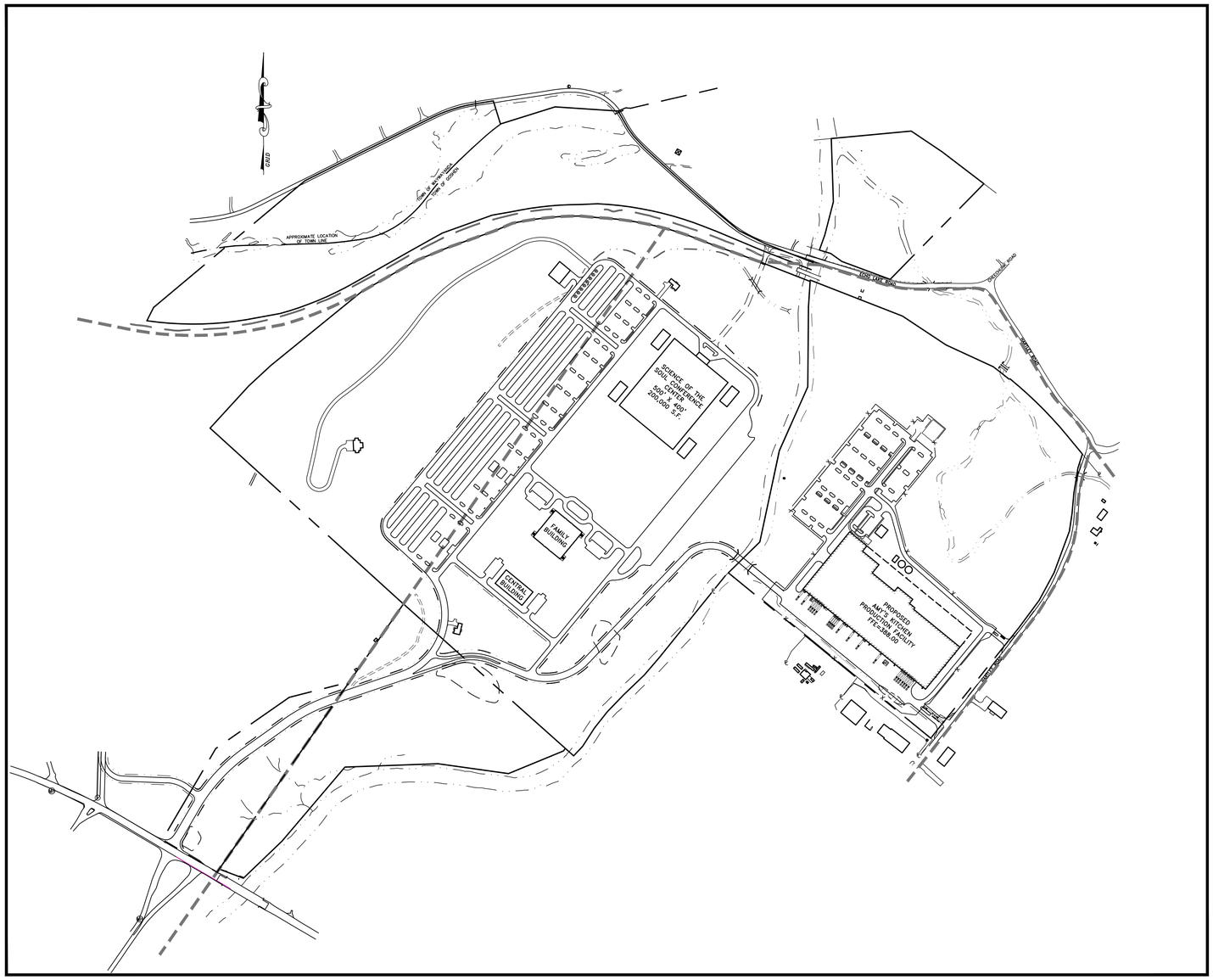
Sincerely,

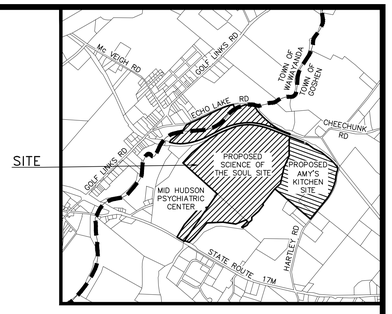
Rebecca Crist
Environmental Analyst

Ecc: Mark Rudolph, Amy's Kitchen Inc
Stuart Turner, Turner Miller Group
John O'Rourke, Lanc and Tully Engineering and Surveying P.C.
Gary Tetz, E. Tetz & Sons
Orange County Department of Health
Philip Perazio, NYSHPO
Manju Cherian, DEC Division of Water
Aparna Roy, DEC Division of Water
Lisa Masi, DEC Bureau of Wildlife

AMY'S KITCHEN, INC.
&
SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK
SEPTEMBER 25, 2015





LOCATION PLAN
1 INCH = 2,000± FEET
(Taken from OCWA Mapping)

PROJECT APPLICANT
AMY'S KITCHEN, INC.
□□□□C□□P□□□□□ C□□CL□□S□□□ □□□
P□□□L□M□□C□ □□□□□
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PROJECT ENGINEER
LANC & TULLY ENGINEERING AND SURVEYING, P.C.
P□S□ □□□C□ □□□ □□□
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PROJECT ARCHITECT
STELLAR
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PROJECT ATTORNEY
DRAKE, LOEB, HELLER, KENNEDY, GOGERTY, GABA, & RODD PLLC
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PROJECT PLANNER
AKRF, INC.
□□S□□□□ □□□□□□□Y S□□□ □□□
□ □□□□PL□NS□NY □□□□□
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DRAWING INDEX

	SHEET No.		SHEET TITLE
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	C 1-02	OF 4	OVERALL SITE CONCEPT PLAN
	C 1-03	OF 4	AMY'S KITCHEN CONCEPT PLAN
	C 1-04	OF 4	SCIENCE OF THE SOUL CONCEPT PLAN
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	C 2-06	OF 13	CONCEPTUAL LANDSCAPING PLAN
	C 2-07	OF 13	LANDSCAPING DETAILS
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	C 2-09	OF 13	EROSION & SEDIMENT CONTROL PLAN
	C 2-10	OF 13	EROSION & SEDIMENT CONTROL DETAILS
	C 2-11	OF 13	DRAINAGE DETAILS
	C 2-12	OF 13	CONSTRUCTION DETAILS 1 OF 2
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SCIENCE OF THE SOUL	C 3-01	OF 22	EXISTING CONDITIONS
	C 3-02	OF 22	OVERALL GRADING PLAN 1 OF 2
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	C 3-09	OF 22	GRADING & UTILITY 6 OF 8
	C 3-10	OF 22	GRADING & UTILITY 7 OF 8
	C 3-11	OF 22	GRADING & UTILITY 8 OF 8
	C 3-12	OF 22	CONCEPTUAL LANDSCAPING PLAN 1 OF 2
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	C 3-16	OF 22	LIGHTING PLAN SHEET 2 OF 2
	C 3-17	OF 22	EROSION & SEDIMENT CONTROL PLAN 1 OF 2
	C 3-18	OF 22	EROSION & SEDIMENT CONTROL PLAN 2 OF 2
	C 3-19	OF 22	EROSION & SEDIMENT CONTROL DETAILS
	C 3-20	OF 22	DRAINAGE DETAILS
	C 3-21	OF 22	CONSTRUCTION DETAILS 1 OF 2
	C 3-22	OF 22	CONSTRUCTION DETAILS 2 OF 2

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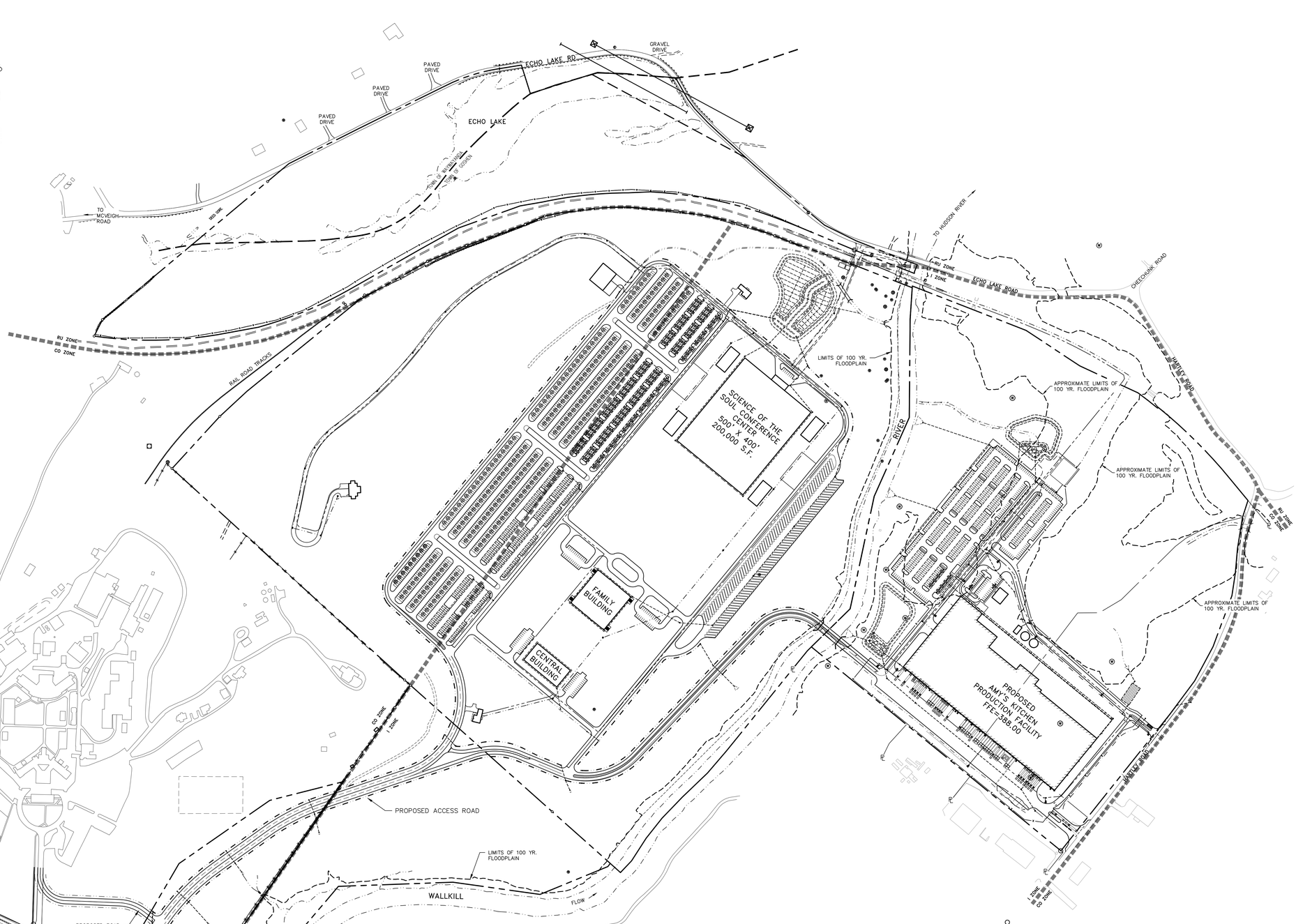
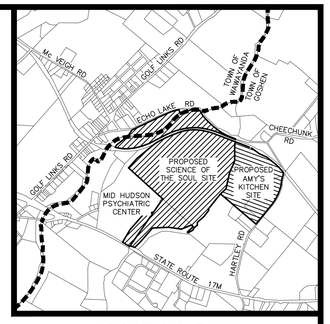
Goshen, N.Y. 10924
(845) 294-3700

AMY'S KITCHEN, INC.
&
SCIENCE OF THE SOUL
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

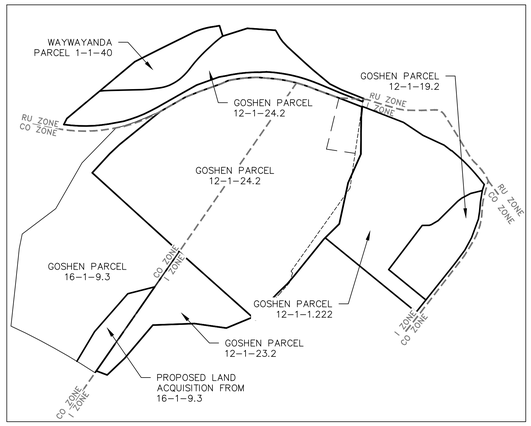
REVISIONS
MARCH 7, 2016
APRIL 22, 2016





LOCATION PLAN

1 INCH = 2000 FEET



TAX PARCEL KEY MAP

NOT TO SCALE

TABLE OF ZONING REQUIREMENTS

TOWN OF GOSHEN

COMMERCIAL/OFFICE MIXED-USE (CO)
INDUSTRIAL (I)
RURAL (RU)

MINIMUM	"CO" ZONING DISTRICT REQUIRED	"I" ZONING DISTRICT REQUIRED	"RU" ZONING DISTRICT REQUIRED (AQ-3 OVERLAY)
LOT AREA	1 AC.	5 AC.	NO PROPOSED DEVELOPMENT IN RU ZONE
ROAD FRONTAGE	200 FT.	200 FT.	
FRONT YARD SETBACK ON TOWN ROAD	50 FT.	100 FT.	
FRONT YARD SETBACK ON COUNTY/STATE ROAD	150 FT.	200 FT.	
SIDE YARD SETBACK	30 FT.	50 FT.	
REAR YARD SETBACK	50 FT.	75 FT.	
MAXIMUM			
IMPERVIOUS SURFACE COVERAGE	70%	70%	
BUILDING HEIGHT	35 FT.	45 FT.	
FOOTPRINT FOR NON-RESIDENTIAL STRUCTURES	200,000	-	
APPLICABLE OVERLAY DISTRICTS:			
AQ-3			
FLOODPLAIN & PONDING AREA OVERLAY			
STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY			

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

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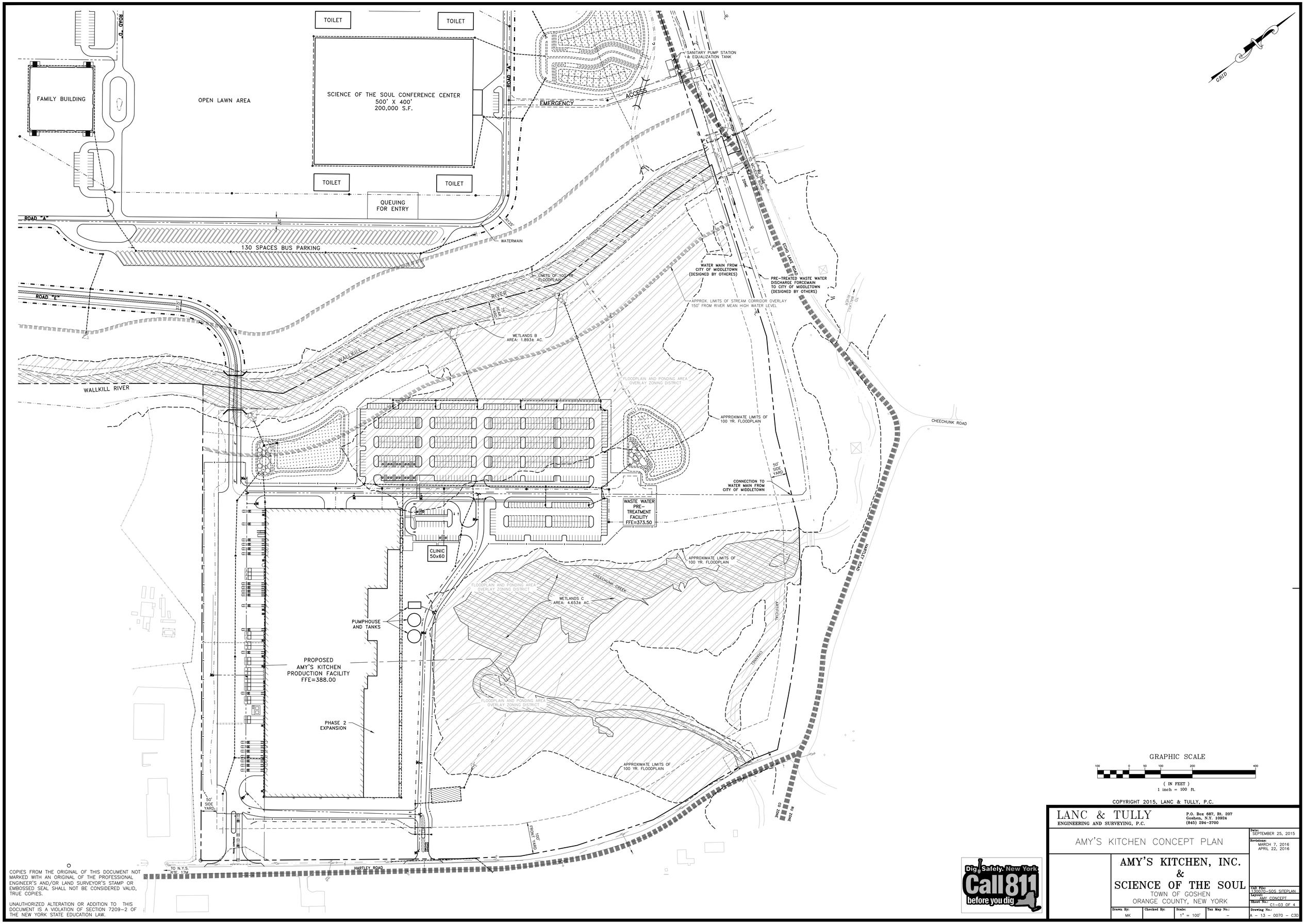
OVERALL SITE CONCEPT PLAN

AMY'S KITCHEN, INC. & SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
CAD File: 10070-SITEPLAN
Layout: SP 200SC
Sheet No.: C1-02 OF 4
Drawn By: MK
Checked By:
Scale: 1" = 200'
Tax Map No.: -
Drawing No.: A - 13 - 0070 - C30



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GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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(845) 294-3700

AMY'S KITCHEN CONCEPT PLAN

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016

AMY'S KITCHEN, INC. & SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: LTA0070-SOS SITEPLAN
Layout: AMY CONCEPT
Sheet No.: 21-03 OF 4

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
MK		1" = 100'	–	A – 13 – 0070 – C30

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5 BEDROOM
GUEST HOUSE

MAINT.
BARN

STORMWATER
TREATMENT
DRY SWALE (TYP.)

ROAD "A"

350 SPACES
220 GRAVEL PARKING
130 PAVED PARKING

687 SPACES
427 GRAVEL PARKING
260 PAVED PARKING

607 SPACES
427 GRAVEL PARKING
180 PAVED ACCESSIBLE

296 SPACES
206 GRAVEL PARKING
90 PAVED ACCESSIBLE

ROAD "B"

CO ZONE
I ZONE

CARETAKER
RESIDENCE

QUEUING
FOR ENTRY

TOILET

TOILET

ROAD "D"

ROAD "C"

CENTRAL
BUILDING

FAMILY BUILDING

OPEN LAWN AREA

SCIENCE OF THE SOUL CONFERENCE CENTER
500' X 400'
200,000 S.F.

ROAD "A"

EMERGENCY ACCESS

SANITARY PUMP STATION
& EQUALIZATION TANK

TOILET

TOILET

QUEUING
FOR ENTRY

ROAD "A"

TES WETLAND "K"
AREA: 1.130± AC.

ARCHAEOLOGICAL
SITE 2 BOUNDARY

ROAD "C"

WALLKILL RIVER

STORMWATER
TREATMENT
DRY SWALE (TYP.)

WATERMAIN

130 SPACES BUS PARKING

ROAD "E"

ARCHAEOLOGICAL
SITE 3 BOUNDARY

APPROX. LIMITS OF STREAM CORRIDOR OVERLAY
150' FROM RIVER MEAN HIGH WATER LEVEL

TES WETLAND "J"
3.11± AC.

LIMITS OF 100 YR.
FLOODPLAIN

WALLKILL RIVER

LIMITS OF 100 YR
FLOODPLAIN

WALLKILL RIVER

APPROX. LIMITS OF STREAM CORRIDOR OVERLAY
150' FROM RIVER MEAN HIGH WATER LEVEL

WATER MAIN FROM
CITY OF MIDDLETOWN
(DESIGNED BY OTHERES)

PRE-TREATED WASTE WATER
DISCHARGE FORCEMAIN
TO CITY OF MIDDLETOWN
(DESIGNED BY OTHERS)

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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SCIENCE OF THE SOUL CONCEPT PLAN

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016

AMY'S KITCHEN, INC.
&
SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: L:\2070-SOS SITEPLAN
Layout: CONCEPT
Sheet No.: C1-04 OF 4

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
MK		1" = 100'	SEE SHEET C1-02	A - 13 - 0070 - C30

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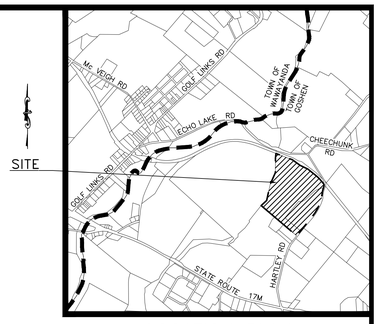
EASEMENT GRANTED TO THE TOWN OF GOSHEN		
LINE	BEARING	DISTANCE
L1	N80°45'15"W	50.00'
L2	N9°14'45"E	100.00'
L3	S80°45'15"E	52.98'
L4	S17°46'16"W	20.12'
L5	S9°14'45"W	80.10'



LOCATION PLAN

1 INCH = 2000 FEET

NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:

   MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163-13.

   MAP ENTITLED "THREE LOT MINOR SUBDIVISION PLAT, LANDS OF JOSEPH R. CARMICHAEL, ETAL, LOT 17, BLOCK 1 SECTION 12, TOWN OF GOSHEN, ORAENGE COUNTY, NEW YORK," DATED OCTOBER 3, 1975 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 1, 1975, AS FILED MAP NO. 3626.

   MAP ENTITLED "SURVEY PREPARED FOR SASSFRAS MOUNTAIN LLC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED MARCH 20, 2015, LAST REVISED APRIL 9, 2015, PREPARED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C.

   MAP ENTITLED "SITE PLAN, PROPOSED WOOD MULCH FACILITY RVH MULCH SUPPLY, LLC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED OCTOBER 24, 2012, LAST REVISED MARCH 6, 2013, PREPARED BY T.M. DEPUY, ENGINEERING AND LAND SURVEYING, P.C.

   MAP ENTITLED "RIGHT OF WAY AND TRACK MAP, ERIE RAILROAD COMPANY," OPERATED BY ERIE RAILROAD COMPANY, NEW YORK DIVISION,STATION 3221+80 TO STATION 3274+60, DATED JUNE 30, 1918, OFFICE OF VALUATION ENGINEER, NEW YORK, MAP NUMBER V-2-N.Y./49.

   TITLE REPORT NUMBER HN 53031A, HAVING AN EFFECTIVE DATE OF DECEMBER 6, 2014, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.

   TITLE REPORT NUMBER HN 53031B, HAVING AN EFFECTIVE DATE OF DECEMBER 6, 2014, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.

3. TAX LOT 12 – 1 – 19.2 SUBJECT TO A DECLARATION OF COVENANTS & RESTRICTIONS AND GRANT OF EASEMENT AS RECORDED IN LIBER 13782 OF DEEDS AT PAGE 1900.
4. TAX LOT 12 – 1 – 1.222 SUBJECT TO A RESERVATION OF EASEMENT AS RECORDED IN LIBER 13712 OF DEEDS AT PAGE 1138.
5. TAX LOT 12 – 1 – 1.222 SUBJECT TO A DECLARATION OF COVENANTS & RESTRICTIONS AND GRANT OF EASEMENT AS RECORDED IN LIBER 13712 OF DEEDS AT PAGE 1144.
6. TAX LOTS 12 – 1 – 19.2 & 12 – 1 – 1.222 SUBJECT TO RESTRICTED USES AS DESCRIBED THE MEADOW PROPERTY IN LIBER 6174 OF DEEDS AT PAGE 146.
7. TOPOGRAPHY SHOWN IS THE RESULT OF AN AERIAL MANUSCRIPT PROVIDED BY GEODETIC ASSOCIATES INTERNATIONAL, LLC. AND FIELD UPDATED BY LANC AND TULLY ENGINEERING AND SURVEYING IN THE LOCATION OF THE ARTIFICIAL CHANNEL. CONTOUR ELEVATIONS SHOWN ARE BASED ON NAVD 88 DATUM.
8. THE APPROXIMATE LOCATION OF FLOODPLAIN LIMITS SHOWN HEREON HAVE BEEN ADOPTED TO MATCH TOPOGRAPHY BASED UPON ELEVATIONS SHOWN ON FEMA FLOOD INSURANCE RATE MAPS PANELS 0267E, 0269E, & 0286E DATED EFFECTIVE AUGUST 3, 2009.
9. WETLANDS SHOWN AS FIELD DELINEATED BY AKRF, INC., ENVIRONMENTAL, PLANNING, AND ENGINEERING CONSULTANTS, AND FIELD LOCATED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C. ON JULY 6, 2015.

WETLAND AREAS:

WETLAND	AREA	JURISDICTION
WETLAND A	0.118± AC.	NON-JURISDICTIONAL
WETLAND B	1.893± AC.	USACE JURISDICTIONAL
WETLAND C	4.653± AC.	USACE JURISDICTIONAL
TOTAL:	6.664± AC.	

RECORD OWNER:

VER HAGE INDUSTRIES LLC
455 WEST MAIN STREET
WYCOFF, NJ 07481

L.13712 P. 1156
12 – 1 – 1.222
LOT A FILED MAP
NO. 163-13

L. 13782 P. 1911
12 – 1 – 19.2
LOT B FILED MAP
NO. 163-13

AREAS:

TAX LOT 12 - 1 - 19.2	17.145± AC.
TAX LOT 12 - 1 - 1.222	54.616± AC.
TOTAL:	71.761± AC.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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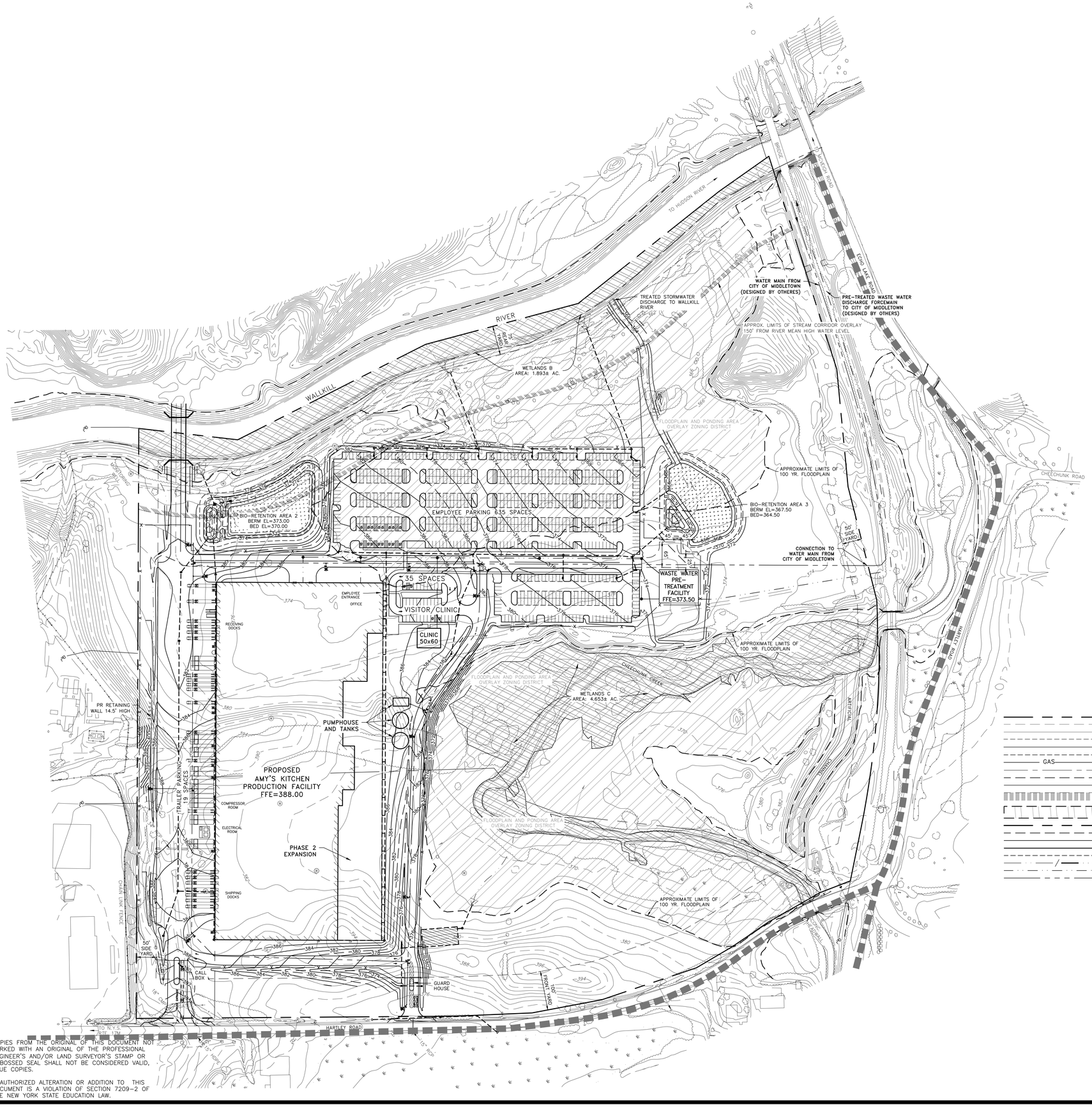
Goshen, N.Y. 10924
(845) 294-3700

EXISTING CONDITIONS MAP

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	140040-SVY.DWG
Layout:	EX CONDITION
Sheet No.:	C2-01 OF 13
Drawing No.:	C30 A – 15 – 0040 – 01
Drawn By:	JW
Checked By:	
Scale:	1" = 100'
Tax Map No.:	12 - 1 - 19.2 12 - 1 - 1.222



CRID

GENERAL NOTES:

1. FIRE DEPARTMENT KNOX BOX ENTRY SYSTEM TO BE PROVIDED AT MAIN LOBBY ENTRANCE. A MAP OF THE BUILDING SPRINKLER SYSTEM ZONE LOCATIONS SHALL BE PROVIDED IN THE KNOX BOX.
2. SPRINKLER SIAMESE CONNECTION TO BE PROVIDED WITH 5" STORZ CONNECTION FITTING.
3. ANY CLEARING OF TREES GREATER THAN 4" CALIPER SHALL OCCUR BETWEEN OCTOBER 31ST THROUGH MARCH 31ST.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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OVERALL GRADING PLAN

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 INTERIM UPDATE APRIL 11, 2016 REVISE EM. ACCESS TO FULL TRUCK ACCESS FOR FUTURE VER HAGE WAREHOUSE
CAD File:	AMY_ON_VERHAGE SP
Layout:	GRAD 100
Sheet No.:	C2-02 OF 13
Drawn By:	MK
Checked By:	
Scale:	1" = 100'
Tax Map No.:	SEE SHEET C2-01
Drawing No.:	A - 13 - 0070 - C30

MATCHLINE SHEET 2
MATCHLINE SHEET 1

PROPOSED
AMY'S KITCHEN
PRODUCTION FACILITY
FFE=388.00

PHASE 2
EXPANSION

PUMPHOUSE
AND TANKS

PR RETAINING
WALL 14.5' HIGH

PR-CB-3
GR=386.38
36" INV=375.88

PR-DMH-4
RIM=387.97
INV=383.97

PR-DMH-3
RIM=387.97
INV=383.97

PR-DMH-2
RIM=383.95
INV=380.35

PR-CB-2
GR=382.06
36" INV=377.46

PR-CB-1
GR=383.95
18" INV=380.35

PR-DMH-1
RIM=387.87
INV=383.87

PR-DMH-7
RIM=386.16
INV=382.56

PR-CB-29
GR=373.85
15" INV=368.50

PR-CB-28
GR=373.04
15" INV=369.44

PR-CB-27
GR=372.74
15" INV=369.94

PR-CB-30
GR=375.30
INV=373.67

PR-CB-31
GR=375.80
INV=373.21

PR-DMH-6
RIM=375.00
24" INV IN=367.73
6" INV OUT=367.73

PR-FES-7
6" INV OUT=367.42

PR-FES-8
INV=374.52

PR-FES-9
INV=372.90

91' - 24" HDPE @ 2.04%

117' - 36" HDPE @ 0.5%

141' - 18" HDPE @ 1.3%

52' - 15" HDPE @ 1.0%

50' - 15" HDPE @ 1.0%

92' - 6" HDPE @ 0.5%

TRAILER PARKING
19 SPACES

COMPRESSOR
ROOM

ELECTRICAL
ROOM

SHIPPING
DOCKS

DRY SWALE
BOTTOM WIDTH=24"
DEPTH=18"

DRY SWALE
BOTTOM WIDTH=54"
DEPTH=18"

OUTLET SW
INV OUT=

OUTLET SWALE
BOTTOM WIDTH=2'
DEPTH=1'
SLOPE=0.5%

FLOODPLAIN AND PONDING AREA
OVERLAY ZONING DISTRICT

FLOODPLAIN AND PONDING AREA
OVERLAY ZONING DISTRICT

UNDERGROUND STORMWATER SYSTEM
CULTEC V8HD
8 ROWS X 13 CHAMBERS
STONE INV=367.48
CHAMBER INV=367.98
TOP OF STONE=371.73

PROPOSED
ACCESS GATE

PROPOSED
ACCESS GATE

CALL
BOX

PROPOSED 8' TALL
CHAIN LINK FENCE

GUARD
HOUSE

12X6
REDUCER

TRUCK ENTRANCE

EMPLOYEE
ENTRANCE

HARTLEY ROAD

TO N.Y.S.
RTE. 17M

GRID

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
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- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 1 OF 3

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
INTERIM UPDATE
APRIL 11, 2016 -
REVISE EM. ACCESS TO FULL TRUCK ACCESS FOR FUTURE VER HAGE WAREHOUSE
CAD File: AMY_ON_VERHAGE_SP
Layout: GU40-1
Sheet No.: C2-03 OF 13
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 40'	SEE SHEET C2-01

GRID

WALLKILL RIVER

WETLANDS B
AREA: 1.893± AC.

75' REAR YARD

PR-FES-6
18" INV=364.24

150' - 15" HDPE @ 0.5%

MATCHLINE SHEET 3
MATCHLINE SHEET 2

PR-DMH-13
RIM=380.36
INV=377.56

PR-DMH-14
RIM=376.61
INV=373.51

PR-DMH-15
RIM=373.40
INV=365.25

PR-DMH-10
RIM=370.13
INV=367.33

16' - 15" HDPE @ 2.2%

131' - 15" HDPE @ 3.1%

128' - 15" HDPE @ 2.5%

16' - 15" HDPE @ 4.6%

POROUS PAVEMENT

16' - 15" HDPE @ 8.7%

16' - 15" HDPE @ 7.8%

PR-CB-24
TC=381.66
6" INV=377.91
15" INV=377.91

PR-CB-25
TC=378.65
6" INV=374.90
15" INV=374.90

PR-CB-26
TC=375.30
6" INV=371.55
15" INV=371.55

PR-CB-22
TC=371.82
6" INV=368.07
15" INV=368.07

EMPLOYEE PARKING 635 SPACES

PR-FES-3
30" INV=365.85

PR-BIO3-OUTLET
GR=372.25
30" INV=366.62

38' - 30" HDPE @ 1.0%

30" HDPE @ 0.5%

PR-BIO3-OUTLET
GR=372.25
30" INV=367.00

BIO-RETENTION AREA 2
BERM EL=373.00
BED EL=370.00

PR-FES-1
36" INV OUT=372.00

STUB & CAP

PR-FES-2
36" INV OUT=372.00

PR-CB-12
TC=386.32
INV=382.80

PR-CB-11
TC=386.43
INV=383.13

84' - 15" HDPE @ 6.2%

220' - 24" HDPE @ 0.8%

227' - 24" HDPE @ 2.3%

33' - 15" HDPE @ 1.6%

PR-SMH

PR-DMH-8
RIM=386.62
INV=377.62

38' - 18" HDPE @ 1.8%

PR-CB-13
TC=380.91
INV=375.81

PR-CB-9
TC=380.30
INV=377.00

PR-CB-10
TC=381.79
INV=376.48

88' - 18" HDPE @ 3.75%

PR-CB-5
GR=380.95
36" INV=373.44

PR-DMH-5
RIM=382.45
INV=375.40

35 SPACES

25'

89' - 15" HDPE @ 0.5%

EMPLOYEE ENTRANCE

OFFICE

PR-CB-8
TC=383.54
INV=376.92

VISITOR/CLINIC

PR-CB-7
TC=382.84
INV=377.06

29' - 15" HDPE @ 0.5%

RECEIVING DOCKS

173' - 36" HDPE @ 0.5%

CLINIC
50x60
FFE=385.75

22.5'

PR-CB-4
GR=380.95
36" INV=374.30

PR-CB-6
GR=380.35
INV=377.55

DRY SWALE
BOTTOM WIDTH=24"
DEPTH=18"

MATCHLINE SHEET 2
MATCHLINE SHEET 1

MATCHLINE SHEET 2
MATCHLINE SHEET 1

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 2 OF 3

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	CAD File:
SEPTEMBER 25, 2015	AMY_ON_VERHAGE.SP
Revisions: MARCH 7, 2016; APRIL 22, 2016	Layout: GU40-2
	Sheet No.: C2-04 OF 13
Drawn By: MK	Checked By:
Scale: 1" = 40'	Tax Map No.: SEE SHEET C2-01
	Drawing No.: A - 13 - 0070 - C30

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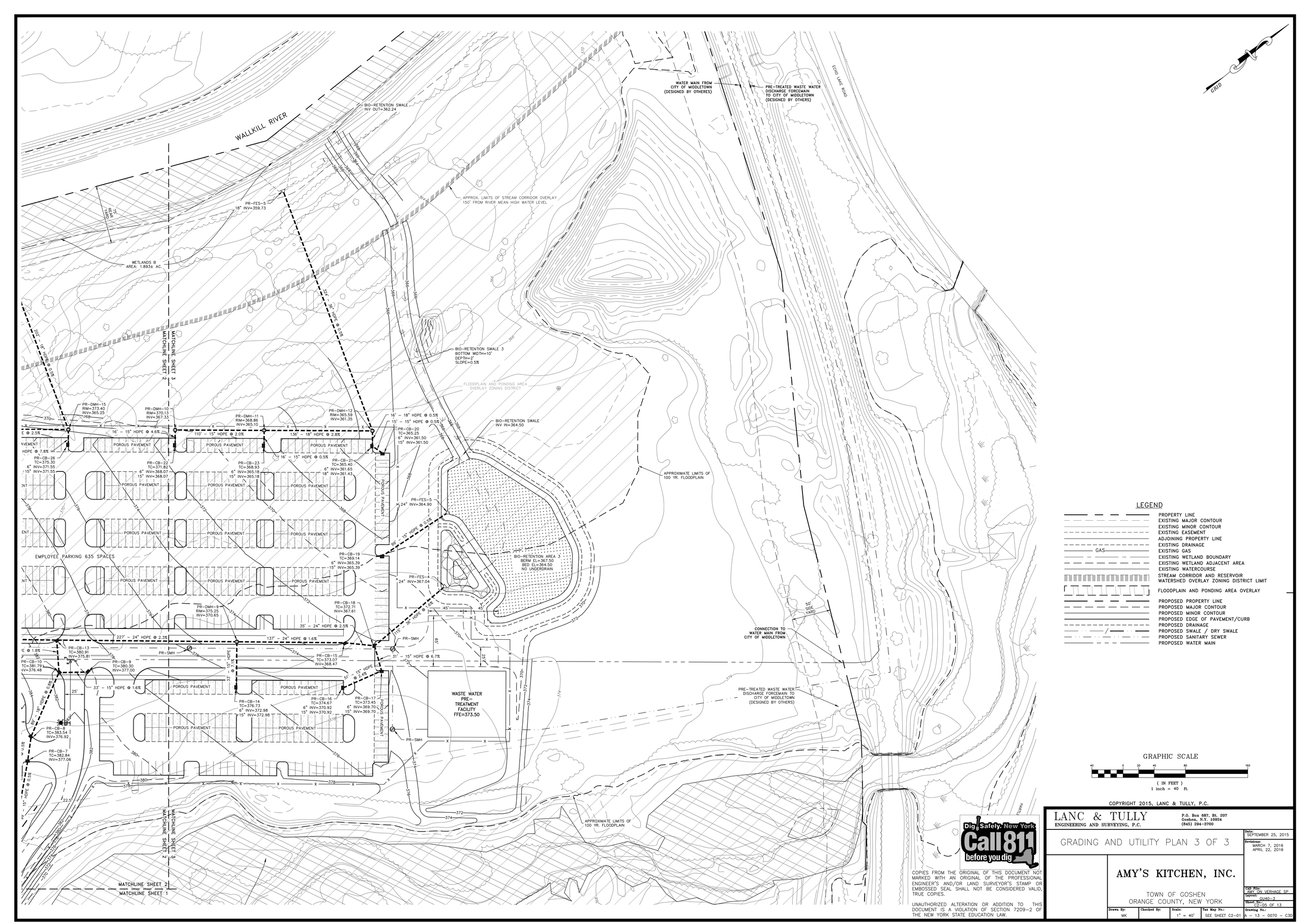

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
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- PROPOSED DRAINAGE
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- PROPOSED SANITARY SEWER
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GRAPHIC SCALE

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GRADING AND UTILITY PLAN 3 OF 3

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016, APRIL 22, 2016
CAD File: AMY ON VERHAGE SP
Layout: GU40-3
Sheet No.: C2-05 OF 13
Drawing No.: A - 13 - 0070 - C30
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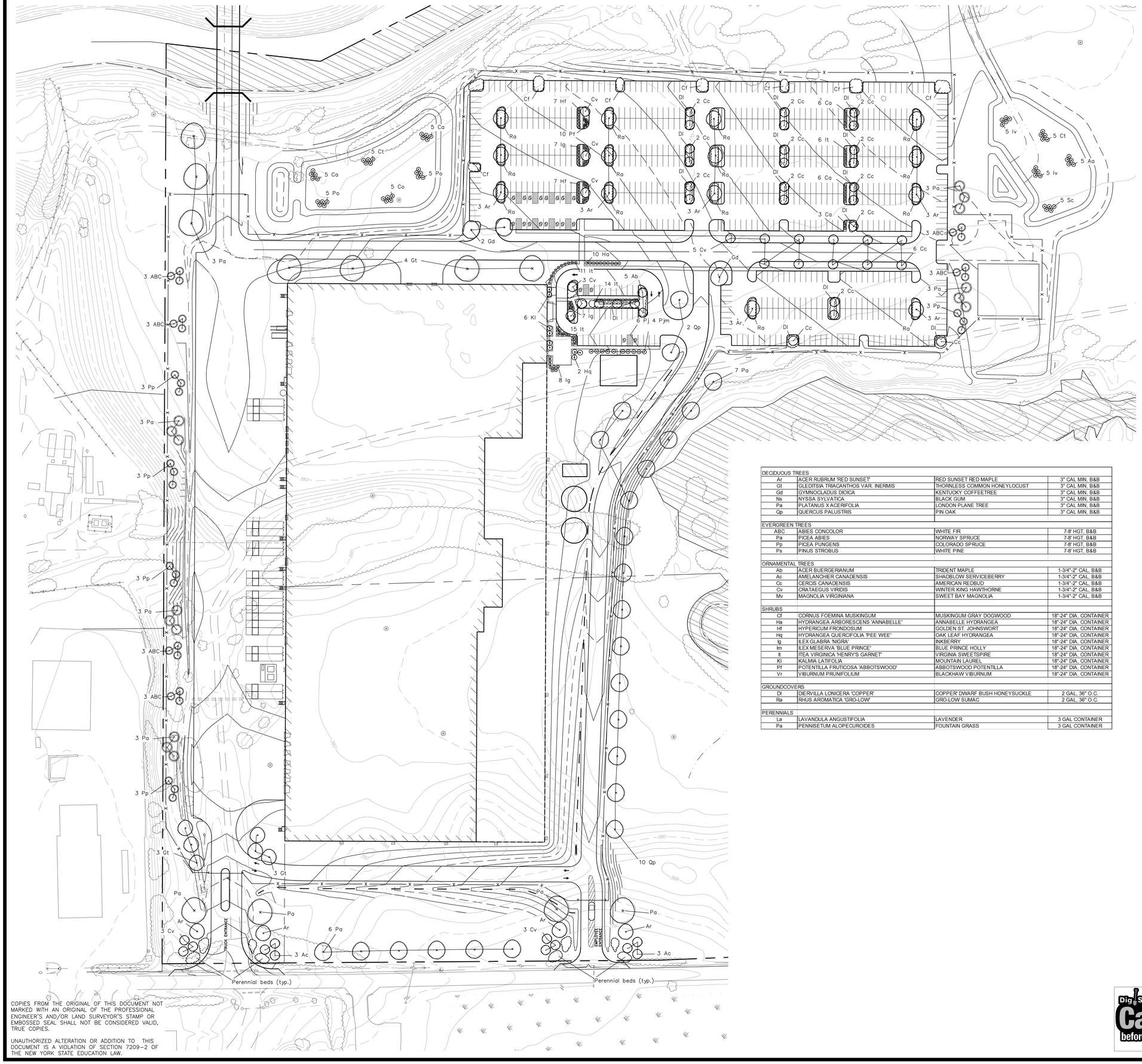

DECIDUOUS TREES			
Ar	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	3" CAL MIN, B&B
Gt	GLEDITSIA TRIACANTHOS VAR. INERMIS	THORNLESS COMMON HONEYLOCUST	3" CAL MIN, B&B
Gd	GYMNOCLADUS DIOICA	KENTUCKY COFFEETREE	3" CAL MIN, B&B
Ns	NYSSA SYLVATICA	BLACK GUM	3" CAL MIN, B&B
Pa	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	3" CAL MIN, B&B
Qp	QUERCUS PALUSTRIS	PIN OAK	3" CAL MIN, B&B
EVERGREEN TREES			
ABC	ABIES CONCOLOR	WHITE FIR	7-8' HGT, B&B
Pa	PICEA ABIES	NORWAY SPRUCE	7-8' HGT, B&B
Pp	PICEA PUNGENS	COLORADO SPRUCE	7-8' HGT, B&B
Ps	PINUS STROBUS	WHITE PINE	7-8' HGT, B&B
ORNAMENTAL TREES			
Ab	ACER BUERGERIANUM	TRIDENT MAPLE	1-3/4"-2" CAL, B&B
Ac	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	1-3/4"-2" CAL, B&B
Cc	CERCIS CANADENSIS	AMERICAN REDBUD	1-3/4"-2" CAL, B&B
Cv	CRATAEGUS VIRIDIS	WINTER KING HAWTHORNE	1-3/4"-2" CAL, B&B
Mv	MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA	1-3/4"-2" CAL, B&B
SHRUBS			
Cf	CORNUS FOEMINA MUSKINGUM	MUSKINGUM GRAY DOGWOOD	18"-24" DIA, CONTAINER
Ha	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" DIA, CONTAINER
Hf	HYPERICUM FRONDOSUM	GOLDEN ST. JOHNSWORT	18"-24" DIA, CONTAINER
Hq	HYDRANGEA QUERCIFOLIA 'PEE WEE'	OAK LEAF HYDRANGEA	18"-24" DIA, CONTAINER
Ig	ILEX GLABRA 'NIGRA'	INKBERRY	18"-24" DIA, CONTAINER
Im	ILEX MESERVA 'BLUE PRINCE'	BLUE PRINCE HOLLY	18"-24" DIA, CONTAINER
It	ITEA VIRGINICA 'HENRY'S GARNET'	VIRGINIA SWEETSPIRE	18"-24" DIA, CONTAINER
Kl	KALMIA LATIFOLIA	MOUNTAIN LAUREL	18"-24" DIA, CONTAINER
Pf	POTENTILLA FRUTICOSA 'ABBOTSWOOD'	ABBOTSWOOD POTENTILLA	18"-24" DIA, CONTAINER
Vr	VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	18"-24" DIA, CONTAINER
GROUNDCOVERS			
Dl	DIERVILLA LONICERA 'COPPER'	COPPER' DWARF BUSH HONEYSUCKLE	2 GAL, 36" O.C.
Ra	RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	2 GAL, 36" O.C.
PERENNIALS			
La	LAVANDULA ANGUSTIFOLIA	LAVENDER	3 GAL CONTAINER
Pa	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	3 GAL CONTAINER

LEGEND

- PROPERTY LINE
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- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

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CONCEPTUAL LANDSCAPING PLAN

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
CAD File: AMY LANDSCAPE
Layout: LSCAPE 60
Sheet No.: C2-06 OF 13
Drawn By: MK
Checked By:
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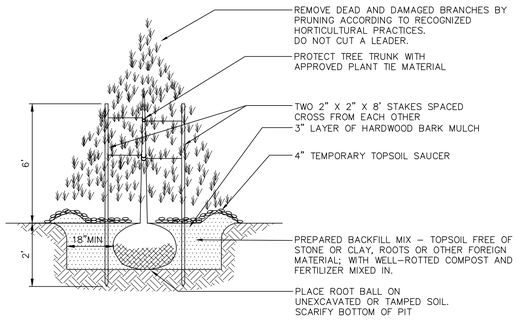
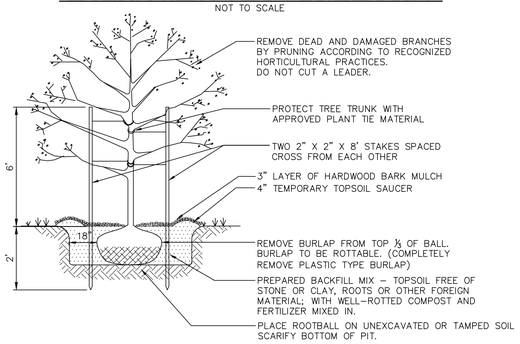
Tax Map No.: SEE SHEET C2-01
Drawing No.: A - 13 - 0070 - C30



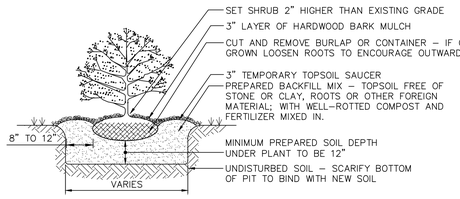
EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



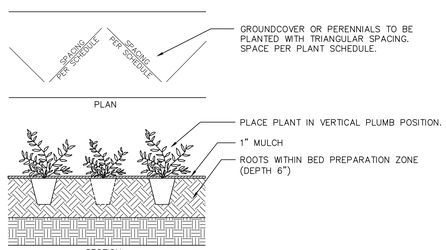
DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE



GROUNDCOVER/PERENNIAL PLANTING DETAIL

NOT TO SCALE

GENERAL LANDSCAPING NOTES:

1. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE TO LOCATE AND VERIFY LOCATION OF ALL UTILITIES ON SITE PRIOR TO CONSTRUCTION OR INSTALLATION.
2. ALL PLANT MATERIAL SHALL BE NURSERY GROWN AND SHALL CONFORM TO THE STANDARDS OF AMERICAN STANDARD FOR NURSERY STOCK, THE AMERICAN ASSOCIATION OF NURSERYMEN, LATEST EDITION.
3. ALL PLANTS AND WORKMANSHIP SHALL BE UNCONDITIONALLY GUARANTEED FOR 2 CALENDAR YEARS. CONTRACTOR SHALL REMOVE STAKING AND GUYING AT END OF GUARANTEE PERIOD.
4. ALL LANDSCAPE INSTALLATIONS SHALL BE MAINTAINED ON A REGULAR BASIS, AND SHALL NOT BE ALLOWED TO TAKE ON AN UNSIGHTLY APPEARANCE (EXCEPT FOR NATURAL AREAS WHICH SHALL BE ALLOWED TO GROW NATURALLY WITH A MINIMUM OF MAINTENANCE).
5. CONTRACTOR SHALL FIELD STAKE THE LOCATIONS OF ALL PLANT MATERIAL PRIOR TO INITIATING INSTALLATION FOR THE REVIEW AND APPROVAL OF THE OWNER'S REPRESENTATIVE.
6. ALL LANDSCAPING PLANT MATERIALS – TREES, SHRUBS, GROUNDCOVERS AND PERENNIALS SHALL BE PLANTED AS SHOWN IN DETAILS. BACKFILL MIX FOR PLANTING BEDS SHALL BE A MIX OF TOPSOIL, WELL-ROTTED COMPOST AND FERTILIZER. PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS. IF WET SOIL CONDITIONS EXIST THEN PLANTING PITS SHALL BE EXCAVATED AN ADDITIONAL 12" AND FILLED WITH CRUSHED STONE.
7. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THAT WHICH EXISTED IN THE NURSERY.
8. ALL PLANTS SHALL BE ORIENTED AT THEIR PROPOSED LOCATION TO PRESENT THEIR BEST SIDE.
9. NEWLY INSTALLED PLANT MATERIAL SHALL BE WATERED AT THE TIME OF INSTALLATION. REGULAR WATERING SHALL BE PROVIDED TO ENSURE THE ESTABLISHMENT, GROWTH AND SURVIVAL ALL PLANTS.
10. ALL LAWN/GRASSED AREAS ARE TO BE TOPSOILED TO A DEPTH OF 4" AND SEEDED AS PER THE PERMANENT SEEDING RATE. A MINIMUM OF 12" OF TOPSOIL IN ALL PLANTING AREAS. IF POOR SOILS OR ROCK ARE ENCOUNTERED IN AREAS OF CUT, PROPOSED TREES SHALL BE PLANTED IN A MINIMUM OF 18" TOPSOIL COMPOST MIX.
11. MULCH ALL PLANTING BEDS AND TREES WITH A 3 INCH MINIMUM DEPTH OF HARDWOOD BARK MULCH. NO MULCH SHALL BE PLACED AGAINST THE ROOT COLLAR OF THE PLANTINGS. ALL TREES PLANTED IN LAWN AREAS SHALL RECEIVE A 3' DIAMETER MULCH RING OR TO THE LIMIT OF THE ADJACENT LAWN AREA.
12. SHRUB AND PERENNIAL PLANTINGS ARE MASS PLANTING BEDS AND SHALL BE MULCHED CONTINUOUSLY.

LANDSCAPING SEEDING SCHEDULE

TEMPORARY SEEDING DISTURBED AREAS

SEASON	TYPE OF COVER & SPECIES OF MIXTURES	SEEDING RATES IN LBS. 1,000 SF	LBS. PER ACRE
SPRING/SUMMER/EARLY FALL	ANNUAL RYEGRASS	0.7	30
LATE FALL/EARLY WINTER	AROOSTOOK WINTER RYE	2.5	100

MULCH WITH HAY OR STRAW AT 2 TONS/ACRE OR 90 LBS. PER 1,000 SF

PERMANENT LAWN SEEDING RATES

PERMANENT LAWN SEEDING SHALL CONSIST OF 30% CREEPING RED FESCUE, 50% KENTUCKY BLUE GRASS, 10% ANNUAL RYEGRASS, AND 10% PERENNIAL RYEGRASS – ERNST 5311 CONSERVATION MIX (ERNST-114) OR APPROVED EQUAL – AT A RATE OF 200 POUNDS PER ACRE OR 5 POUNDS PER 1,000 SQ. FT.

NOTES:
1. TOPSOIL SURFACE SHALL BE FINELY GRADED AND LOOSENED BY MECHANICAL RAKES TO ENSURE SEED ACCEPTANCE AND SEED TO SOIL CONTACT.
2. SEEDING AREA TO BE PREPARED WITH THE APPLICATION OF LIMESTONE AT THE RATE OF 800 LBS. PER 1,000 SY AND FERTILIZED WITH 10-20-20 AT THE RATE OF 140 LBS. PER 1,000 SY AFTER SEEDING, HAY MULCH IS TO BE APPLIED AT A RATE OF 2½ TO 3 TONS PER ACRE.

SEEDING FOR SLOPES, SWALES AND PERIMETER

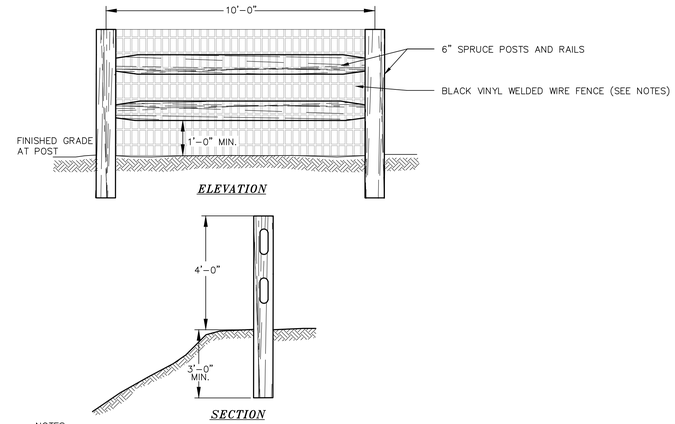
A. NATIVE STEEP SLOPE MIX WITH ANNUAL RYEGRASS (ERNMX-181 OR APPROVED EQUAL) SHALL BE BROADCAST OVER ALL STEEP SLOPES ON THE PLANS AT A RATE OF 30 LBS PER ACRE OR 1 LB PER 1,000 SQ FT.

B. NORTHEASTERN U.S. ROADSIDE NATIVE MIX (ERNMX-105 OR APPROVED EQUAL) SHALL BE BROADCAST OVER DISTURBED AREAS ALONG ROAD SIDES AT A RATE OF 20 POUNDS PER ACRE OR 1/2 POUND PER 1,000 SQ. FT.

C. RETENTION BASIN FLOOR MIX – LOW MAINTENANCE (ERNMX 126 OR APPROVED EQUAL) SHALL BE BROADCAST OVER ROAD SIDE SWALES AT A RATE OF 30 LB PER ACRE OR 1 LB PER 1,000 SQ FT.

PLANTING SCHEDULE

	SPRING PLANTING	FALL PLANTING
TREES AND SHRUBS:		
EVERGREEN	APRIL 1 – JUNE 30	SEPT. 1 – OCT. 15
DECIDUOUS	MARCH 1 – JUNE 30	OCT. 1 – DEC. 1
SEEDING:	APRIL 1 – MAY 31	SEPT. 1 – OCT. 15



NOTES:
1. TWO RAIL RUSTIC SPLIT POST AND RAIL FENCING TO BE SPRUCE.
2. 2"X4" X 14 GAUGE PVC BLACK VINYL COATED WELDED WIRE FENCE TO BE ATTACHED TO INTERIOR OF SPLIT RAIL FENCING.
3. FENCE TO BE INSTALLED AROUND STORMWATER FACILITIES AS INDICATED ON PLAN.

RUSTIC SPLIT POST AND RAIL FENCE DETAIL

NOT TO SCALE

PLANTING SCHEDULE FOR BIORETENTION AREAS

SITE PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE, NOTES
SHRUBS (BIORETENTION AREAS)			
Aa	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	3 GAL CONTAINER
Ca	CLETHRA ALNIFOLIA	SUMMERSWEET CLETHRA	3 GAL CONTAINER
Co	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	3 GAL CONTAINER
Ct	CHAMAECYPARIS THYOIDES 'TOP POINT'	ATLANTIC WHITE CEDAR	3 GAL CONTAINER
Iv	ILEX VERTICILLATA	WINTERBERRY	3 GAL CONTAINER
Po	PHYSOCARPUS OPULIFOLIUS	NINEBARK	3 GAL CONTAINER
Sc	SAMBUCUS CANADENSIS	ELDERBERRY	3 GAL CONTAINER
SEEDING			
RAIN GARDEN MIX (ERNMX-180 OR APPROVED EQUAL) SHALL BE BROADCAST OVER BIORETENTION AREAS AT A RATE OF 15 LB PER ACRE, OR 1/2 POUND PER 1,000 SQ. FT. - SEED SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.			

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LANDSCAPING DETAILS

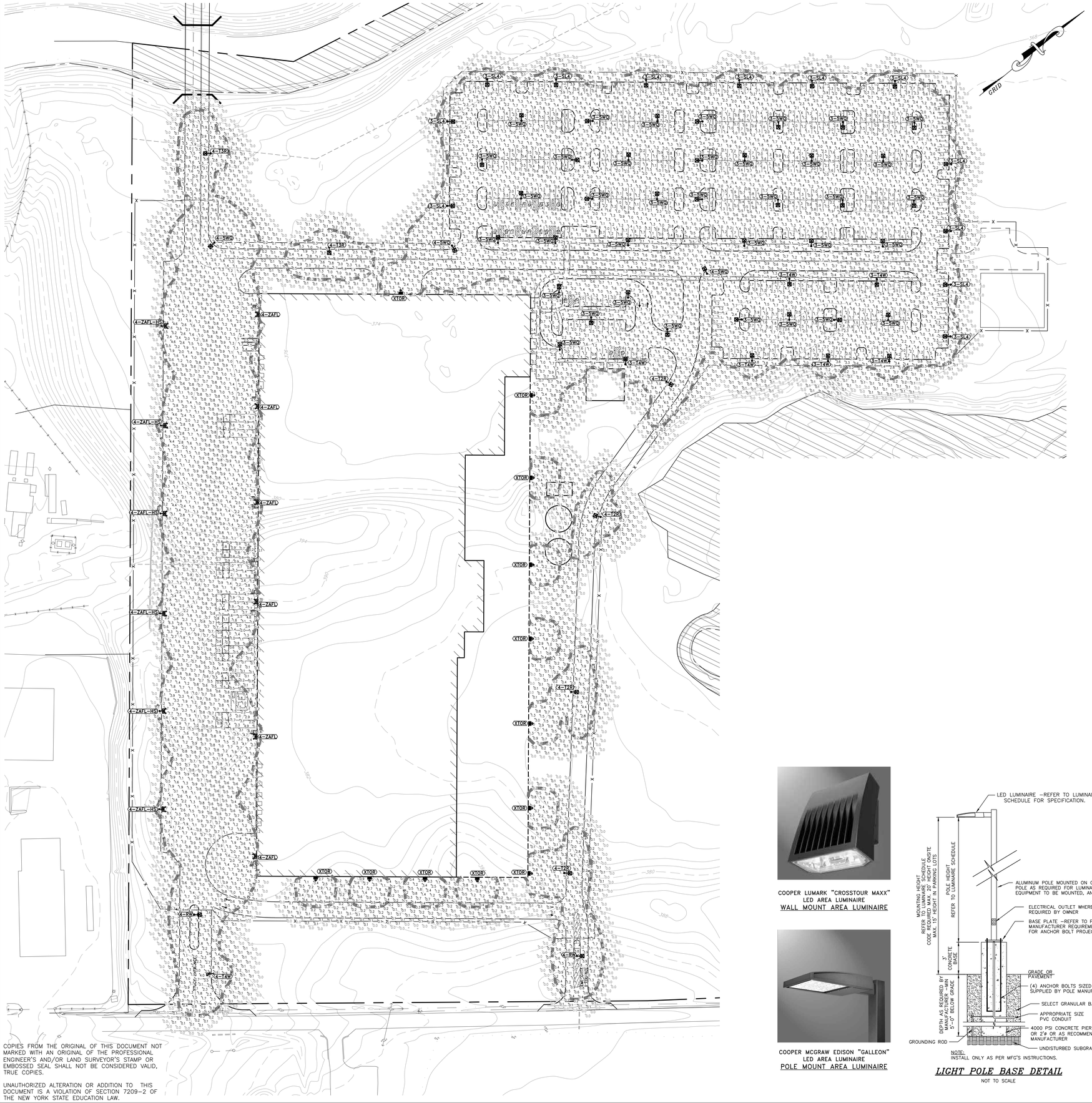
Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: L130070-LANDSCAPING
Layout: SCAPE DETAILS
Sheet No.: C2-07 OF 13

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
LMC		N/A	SEE SHEET C2-01	A – 13 – 0070 – C3D



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LUMINAIRE SCHEDULE

SYMBOL	QTY	POLE HEIGHT / MOUNTING HEIGHT	DESCRIPTION	CATALOG NUMBER	LAMP	LUMENS	LDF
3-T4W	6	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES TYPE T4W DISTRIBUTION WITH DIMMING*	GLEON-AE-03-LED-XXX-T4W-XX-700 -MS/DIM-L20-MT	LED ARRAY	11,370±	.92
3-SWQ	36	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES-700mA TYPE SWQ DISTRIBUTION WITH DIMMING*	GLEON-AE-03-LED-XXX-SWQ-XX-700 -MS/DIM-L20-MT	LED ARRAY	12,061±	.92
3-SL4	12	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES-700mA TYPE SL4 DISTRIBUTION WITH DIMMING*	GLEON-AE-03-LED-XXX-SL4-XX-700 -MS/DIM-L20-MT	LED ARRAY	10,880±	.92
4-T2R	4	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T2R DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-T2R-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,762±	.92
4-T3R	2	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T3R DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-T3R-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,469±	.92
4-T4W	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T4W DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-T4W-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,221±	.92
4-SWQ	3	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE SWQ DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-SWQ-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,936±	.92
4-RW	2	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE RW DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-RW-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,465±	.92
4-ZAFL	6	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON FLOOD" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES TYPE AFL DISTRIBUTION-1A HEAD TILTED 30° FROM HORIZONTAL WITH DIMMING*	GLEON-AE-04-LED-XXX-AFL-XX-ADJA-WM -MS/DIM-L20-MT	LED ARRAY	21,236±	.92
4-ZAFL-HS	6	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON FLOOD" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-1A TYPE AFL DISTRIBUTION W/ HOUSE SIDE SHIELD HEAD TILTED 30° FROM HORIZONTAL WITH DIMMING*	GLEON-AE-04-LED-XXX-AFL-XX-ADJA-WM -MS/DIM-L20-MT-HSS	LED ARRAY	21,236±	.92
XTOR	12	MOUNTING HEIGHT=20' ABOVE FINISH FLOOR	COOPER LUMARK "CROSSTOUR MAXX" L.E.D. FULL CUTOFF TYPE XTOR5A NEUTRAL WARM WHITE 3500K	XTOR5A-N-XX	LED ARRAY	4,136±	.92

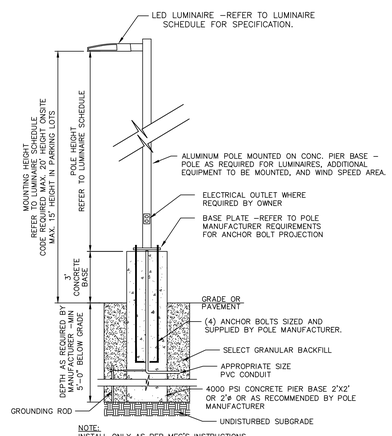
* ADJUSTMENTS TO DIMMING SETTINGS REQUIRES USE OF WIRELESS CONFIGURATION TOOL ACCESSORY # FSIR-100 FOR OCCUPANCY SENSOR PROVIDED BY COOPER LIGHTING. CONTRACTOR SHALL SUPPLY ONE FSIR-100 WIRELESS CONFIGURATION TOOL TO THE OWNER PRIOR TO COMPLETION OF PROJECT.

NOTES:

1. REFER TO LUMINAIRE SCHEDULE FOR CATALOG NUMBER.
2. LIGHT POLES SHALL BE:
   FOR 19' MOUNTING HEIGHT: HAPCO SSA16D4-4-
   FOR 15' MOUNTING HEIGHT: HAPCO SSA12D4-4-
   OR APPROVED EQUIVALENT
3. TOWN OF GOSHEN CODE REQUIRES MAXIMUM LIGHT POLE HEIGHT OF 20' ON-SITE AND 15' WITHIN PARKING AREAS.
4. CONTRACTOR SHALL CONFIRM OPERATING VOLTAGE FOR SITE LIGHTING PRIOR TO ORDERING ANY EQUIPMENT AND ADJUST LUMINAIRE SPECIFICATION AS NEEDED.
5. THIS LIGHTING PLAN PROPOSES INSTALLATION OF DIMMING CONTROLS WITH MOTION SENSORS ON EACH LIGHT POLE TO ALLOW DIMMING OF LIGHTS DURING PERIODS OF INACTIVITY. LIGHTING SHALL BE CONTROLLED AS FOLLOWS:
   5.1. ALL LUMINAIRES SHALL BE MASTER CONTROLLED BY AN ASTRONOMICAL TIME CLOCK FOR ON/OFF TIMES. CONTRACTOR SHALL PROVIDE CONTROL EQUIPMENT SUBMITTAL FOR REVIEW BY THE OWNER PRIOR TO ORDERING EQUIPMENT. COORDINATE WITH OWNER AND/OR ARCHITECTURAL TEAM FOR INSTALLATION LOCATION OF TIME CLOCK & CONTROL PANEL.
   5.2. ROADWAY AND PARKING LUMINAIRES WILL ILLUMINATE AT DUSK TO 50% CAPACITY WITH MOTION SENSING TURNING SPECIFIC LOCAL LUMINAIRES TO 100% ILLUMINATION POWER. BUILDING LUMINAIRES MOUNTED OVER EMERGENCY EXIT DOORS WILL OPERATE AT 100% POWER AT ALL TIMES.
   5.3. AT THE OWNERS DISCRETION CERTAIN PORTIONS OF THE SITE MAY BE TURNED OFF DURING OVERNIGHT HOURS IN CONSIDERATION OF SITE SECURITY NEEDS AND ENERGY SAVINGS GOALS.
6. NO ADDITIONAL EQUIPMENT OR ATTACHMENTS SHALL BE PERMITTED ON LIGHT POLES WITHOUT APPROVAL OF DESIGN ENGINEER. EQUIPMENT INCLUDES BUT IS NOT LIMITED TO BANNERS, FLAGS, ADDITIONAL LUMINAIRES OTHER THAN SPECIFIED ON THIS PLAN, AND SECURITY CAMERAS.
7. FINISH OF ALL LUMINAIRES AND POLES SHALL BE SELECTED BY OWNER.
8. THIS LIGHTING PLAN DOES NOT TAKE INTO ACCOUNT ANY ARCHITECTURAL BUILDING MOUNTED LUMINAIRES OTHER THAN THOSE SHOWN SPECIFICALLY ON THIS PLAN.
9. CALCULATION VALUES SHOWN ON THIS PLAN ARE TAKEN ON A HORIZONTAL PLAIN AT GROUND LEVEL USING A 92% LAMP LUMEN DEPRECIATION FACTOR. TOPOGRAPHICAL INFORMATION HAS NOT BEEN ACCOUNTED FOR IN THESE CALCULATIONS.
10. LIGHTING CALCULATIONS SHOWN ARE BASED UPON DATA FILES PROVIDED BY THE LUMINAIRE MANUFACTURER. ACTUAL PERFORMANCE OF LUMINARIES AFTER INSTALLATION MAY VARY DUE TO UNCONTROLLABLE FIELD CONDITIONS.

COOPER LUMARK "CROSSTOUR MAXX" LED AREA LUMINAIRE
WALL MOUNT AREA LUMINAIRE

COOPER MCGRAW EDISON "GALLEON" LED AREA LUMINAIRE
POLE MOUNT AREA LUMINAIRE



NOTE: INSTALL ONLY AS PER MFG'S INSTRUCTIONS.

LIGHT POLE BASE DETAIL
NOT TO SCALE

Dig Safely. New York Call 811 before you dig

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

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(845) 294-3700

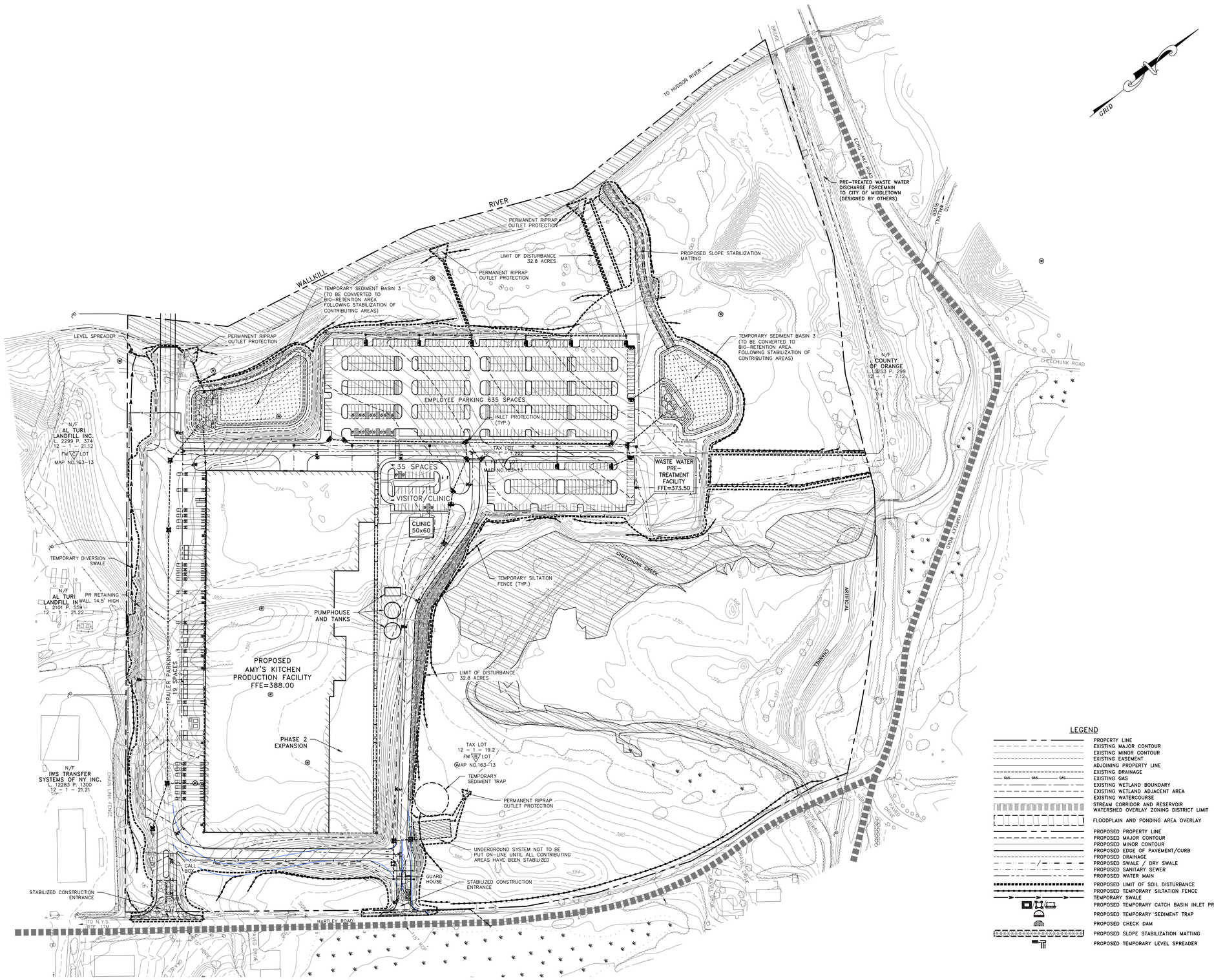
LIGHTING PLAN FOR

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	AMY LIGHTING
Layout:	LIGHTING
Sheet No.:	C2-08 OF 13
Drawing No.:	A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 60'	SEE SHEET C2-01



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
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- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED LIMIT OF SOIL DISTURBANCE
- PROPOSED TEMPORARY SILTATION FENCE
- TEMPORARY SWALE
- PROPOSED TEMPORARY CATCH BASIN INLET PROTECTION
- PROPOSED TEMPORARY SEDIMENT TRAP
- PROPOSED CHECK DAM
- PROPOSED SLOPE STABILIZATION MATTING
- PROPOSED TEMPORARY LEVEL SPREADER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

EROSION AND SEDIMENT CONTROL NOTES AND SPECIFICATIONS

1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
2. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN AND THE "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNT NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS.
4. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
5. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF TOPSOIL.
6. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
7. ALL FILL TO BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
8. EXCEPT FOR APPROVED LANDFILLS, FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
9. FROZEN MATERIALS OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED IN FILLS.
10. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
11. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
12. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
13. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
14. STOCKPILES, BORROW AREAS AND SPOIL AREAS SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECT TO THE PROVISIONS OF THIS STANDARD AND SPECIFICATION.
15. SEED ALL DISTURBED AREAS WHICH WILL REMAIN UNDISTURBED FOR A PERIOD OF 15 DAYS OR MORE AND WHICH WILL NOT BE UNDER CONSTRUCTION WITHIN 30 DAYS WITH TEMPORARY RYEGRASS COVER, AS FOLLOWS (METHOD OF SEEDING IS OPTIONAL):
    A. LOOSEN SEEDBED BY DISCING TO A 4" DEPTH.
    B. SEED WITH SUMMER – PERENNIAL OR ANNUAL RYEGRASS AT 30 LBS PER ACRE
       FALL/WINTER – AROOSTOOK WINTER RYE AT 100 LBS PER ACRE
    C. MULCH WITH 2 TONS PER ACRE OF BLOWN AND CHOPPED HAY.
    D. WHERE NOTED ON THE PLAN, AND ON SLOPES GREATER THAN OR EQUAL TO 3:1, PROVIDE SOIL STABILIZATION MATTING.
16. AFTER COMPLETION OF SITE CONSTRUCTION, FINE GRADE AND SPREAD TOPSOIL ON ALL LAWN AREAS AND SEED WITH PERMANENT LAWN MIX AS FOLLOWS (SEE LANDSCAPE PLAN FOR OTHER PLANTING INFORMATION):
    A. LIME TOPSOIL TO pH 6.0.
    B. FERTILIZE WITH 600 LBS PER ACRE OF 5-10-10.
    C. SEED REQUIREMENTS – SEE LANDSCAPING PLAN.
    D. MULCH AS DESCRIBED FOR TEMPORARY SEEDING (NOTE 15C ABOVE).
17. DURING THE PROGRESS OF CONSTRUCTION, AND ESPECIALLY AFTER RAIN EVENTS, MAINTAIN ALL SEDIMENT TRAPS, BARRIERS, AND FILTERS AS NECESSARY TO PREVENT THEIR BEING CLOGGED WITH SEDIMENT. RE-STABILIZE ANY AREAS THAT MAY HAVE ERODED.
18. MAINTAIN ALL SEEDED AND PLANTED AREAS TO INSURE A VIABLE STABILIZED VEGETATIVE COVER.
19. MAINTAIN COPIES OF THE CONSTRUCTION LOGBOOK, STORMWATER POLLUTION PREVENTATION PLAN (SWPPP) NOTICE OF INTENT (NOI), PERMITS, AND SITE PLANS ON-SITE AT ALL TIMES DURING CONSTRUCTION.
20. A RAIN GAUGE WILL BE MAINTAINED ON-SITE AT ALL TIMES. READINGS SHALL BE TAKEN ON A DAILY BASIS AND LOGGED.

CONSTRUCTION SEQUENCE

1. PRE-CONSTRUCTION MEETING: BEFORE CONSTRUCTION ACTIVITIES AN EVALUATION OF THE SITE WILL BE PERFORMED WITH THE SITE CONTRACTOR, TOWN PERSONNEL AND SITE DESIGN ENGINEER TO DISCUSS GENERAL CONSTRUCTION PROCEDURES AND SEQUENCING. DURING THIS MEETING SENSITIVE AREAS OF THE PROPERTY SHALL BE DELINEATED AND MARKED-OUT WITH ORANGE CONSTRUCTION FENCE (I.E.: TREES, WETLANDS, WELLS, ETC.).
2. DELINEATE TOTAL SITE DISTURBANCE LIMITS: PLACEMENT OF ORANGE CONSTRUCTION FENCING ALONG THE LIMIT OF DISTURBANCE THROUGHOUT THE SITE.
3. PROTECT EXISTING BUFFERS: PLACE EROSION CONTROL DEVICES (SILT FENCING, DIVERSION BERMS, ETC.) UPSTREAM OF ANY EXISTING WATERCOURSE WITHIN OR OUTSIDE OF CONSTRUCTION AREAS, PRIOR TO THE START OF ANY CONSTRUCTION.
4. CONSTRUCTION ENTRANCES/SILTATION CONTROLS: TEMPORARY CONSTRUCTION ENTRANCES WILL BE INSTALLED AT THE ENTRANCES TO THE SITE ON NYS ROUTE 17M AND ECHO LAKE ROAD AS SHOWN. DURING WET WEATHER, IT MAY NECESSARY TO WASH VEHICLE TIRES AT THIS LOCATION. THEREFORE, THIS ENTRANCE IS TO BE GRADED SO THAT RUNOFF IS DIRECTED TO THE ADJACENT SEDIMENT TRAP. IN ADDITION, ANY OTHER SILTATION CONTROL DEVICES, AS SHOWN ARE TO BE INSTALLED ADJACENT TO THE TEMPORARY ENTRANCE AND STAGING AREA. INSTALL TEMPORARY CULVERT DIVERTING THE EXISTING ROADSIDE SWALE AT THE NYS ROUTE 17M ENTRANCE.
5. CONSTRUCTION OF TEMPORARY SEDIMENT BASINS: CONSTRUCTION OF THE TEMPORARY SEDIMENT BASINS PRIOR TO THE START OF ANY MAJOR EARTHWORK MOVEMENT OR SITE CONSTRUCTION.
6. CONSTRUCTION OF TEMPORARY DIVERSION SWALES: THE INSTALLATION OF TEMPORARY DIVERSION SWALES TO CONVEY STORMWATER AROUND THE CONSTRUCTION AREA.
7. STAGING AREA: THE STAGING AREA WILL BE GRADED FOR STORAGE OF EQUIPMENT AND PLACEMENT OF CONSTRUCTION TRAILERS.
8. STRIP TOPSOIL: TOPSOIL WILL BE STRIPPED FROM THE ACTIVE WORK AREAS AND WILL BE STOCKPILED FOR LATER REUSE.
9. LAND GRADING: BULK SOIL GRADING WILL COMMENCE, SOIL TO BE MOVED FROM THE WESTERN SIDE OF THE PROJECT AREA AND PLACED IN THE FILL AREA ALONG THE EAST SIDE OF THE PROJECT AREA. AT THIS TIME, TEMPORARY STOCKPILE AREAS SHOULD BE UTILIZED. THE PRODUCTION FACILITY PAD AREA WILL BE GRADED.
10. BUILDING FOUNDATION CONSTRUCTION: UPON COMPLETION OF GRADING IN BUILDING FOOTPRINT AREA, BUILDING FOUNDATION CONSTRUCTION FOR THE PRODUCTION FACILITY BUILDING WILL COMMENCE.
11. UTILITY INSTALLATION: INSTALL WATER, SEWER, AND STORMWATER THROUGHOUT THE PROJECT. INLET PROTECTION WILL BE INSTALLED AT ALL STORMWATER CATCH BASINS.
12. PAVEMENT CONSTRUCTION: CONSTRUCT PAVED AREAS AND CONCRETE PARKING AREAS.
13. STORMWATER INSTALLATION: INSTALL POROUS PAVEMENT AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. CONVERT TEMPORARY SEDIMENT BASINS TO BIO-RETENTION AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. RIPRAP OUTLET PROTECTION AREAS WILL BE INSTALLED.
14. EROSION CONTROL PRACTICE REMOVAL: REMOVE ANY REMAINING EROSION CONTROL PRACTICES INCLUDING INLET PROTECTION, AND TEMPORARY DIVERSIONS SWALES WHEN AREAS HAVE BEEN TEMPORARILY STABILIZED.
15. LANDSCAPING AND FINAL STABILIZATION: ALL OPEN AREAS TO BE STABILIZED WITH TOPSOIL AND SEEDED AS PER THE SEEDING SCHEDULE SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLANS. REMOVAL OF ALL TEMPORARY MEASURES, FLUSHING/CLEANING OF ALL CATCH BASINS AND PIPE, AND REMOVAL AND DISPOSAL OF ALL TRAPPED SEDIMENT ON SITE SHALL BE COMPLETED.
16. FINAL SITE INSPECTION AND CERTIFICATION: AT THE END OF CONSTRUCTION A SITE EVALUATION OF THE SITE WILL BE PERFORMED WITH SITE CONTRACTOR, TOWN PERSONNEL, AND SITE ENGINEER TO ENSURE THAT ALL STORMWATER FACILITIES WERE CONSTRUCTED AS PER THE SWPPP DESIGN AND THAT THE SITE HAS BEEN STABILIZED. A NOTICE OF TERMINATION WILL BE SUBMITTED TO THE NYSDEC.

EROSION AND SEDIMENT CONTROL NOTES

1. THE OWNER OR OPERATOR SHALL HAVE A QUALIFIED INSPECTOR CONDUCT AT LEAST TWO (2) SITE INSPECTIONS IN ACCORDANCE WITH PART IV.C EVERY SEVEN (7) CALENDAR DAYS, FOR AS LONG AS GREATER THAN FIVE (5) ACRES OF SOIL REMAIN DISTURBED. THE TWO (2) INSPECTIONS SHALL BE SEPARATED BY A MINIMUM OF TWO (2) FULL CALENDAR DAYS.
2. IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES SHALL BE INSTALLED AND/OR IMPLEMENTED WITHIN SEVEN (7) DAYS FROM THE DATE OF SOIL DISTURBANCE ACTIVITY CEASED.
3. TEMPORARY STABILIZATION MEANS THAT EXPOSED SOIL HAS BEEN COVERED WITH MATERIALS AS SET FORTH IN THE TECHNICAL STANDARD, NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL TO PREVENT THE EXPOSED SOIL FROM ERODING. THE MATERIALS CAN INCLUDE, BUT ARE NOT LIMITED TO, MULCH, SEED AND MULCH, AND EROSION CONTROL MATS (E.G. JUTE TWISTED YARN, EXCELSIOR WOOD FIBER MATS).
4. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBANCE ACTIVITIES HAVE CEASED AND A UNIFORM, PERENNIAL VEGETATIVE COVER WITH A DENSITY OF EIGHTY (80) PERCENT OVER THE ENTIRE PERVIOUS SURFACE HAS BEEN ESTABLISHED; OR OTHER EQUIVALENT STABILIZATION MEASURES, SUCH AS PERMANENT LANDSCAPE MULCHES, ROCK RIP-RAP OR WASHED/CRUSHED STONE HAVE BEEN APPLIED ON ALL DISTURBED AREAS THAT ARE NOT COVERED BY PERMANENT STRUCTURES, CONCRETE OR PAVEMENT.

SOIL RESTORATION REQUIREMENTS

1. ALL DISTURBED AREAS WHERE ONLY TOPSOIL STRIPPING HAS OCCURRED REQUIRE AERATION OF THE SUBGRADE BEFORE SPREADING TOPSOIL.
2. ALL DISTURBED ARES WHERE CUT AND FILL OPERATIONS OCCURRED REQUIRE FULL SOIL RESTORATION AS SPECIFIED IN NYSDEC MANUAL PUBLICATION ENTITLED "DEEP RIPPING AND DE-COMPACTION."

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EROSION AND SEDIMENT CONTROL PLAN

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By:	Checked By:	Scale:	Tax Map No.:
ESR		1" = 100'	–

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016
CAD File: L:\0070-DRAINAGE-COMBINED
Layout: EROSION AMY
Sheet No.: 02-09 OF 13
Drawing No.: A – 13 – 0070 – C3D

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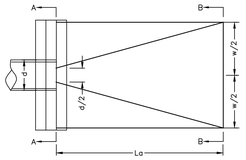
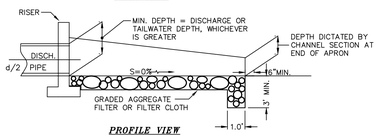
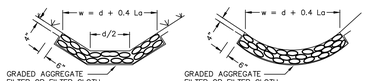


PLAN VIEW



PROFILE VIEW

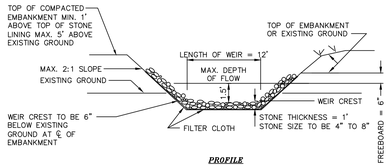


SECTION A–A
(AT END OF CULVERT)

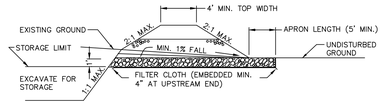
SECTION B–B
(AT END OF APRON)

NOTE:
SEE RIPRAP STANDARDS AND SPECIFICATIONS
MAXIMUM TAILWATER CONDITIONS

RIP RAP OUTLET PROTECTION
NOT TO SCALE



PROFILE



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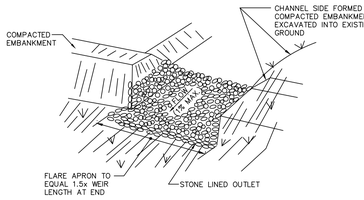
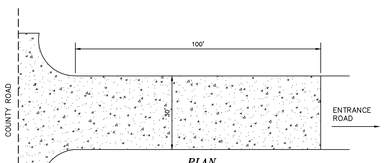
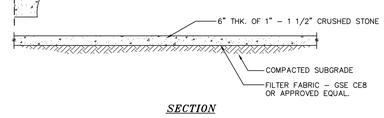


PERSPECTIVE VIEW

RIP–RAP OUTLET SEDIMENT TRAP
NOT TO SCALE



PLAN



SECTION

NOTE:
ENTRANCE SHALL BE MAINTAINED AS CONDITIONS DEMAND TO PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS.

A CRUSHED STONE, VEHICLE WHEEL–CLEANING BLANKET WILL BE INSTALLED WHENEVER A CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. SAID BLANKET WILL BE COMPOSED OF 6" DEPTH OF 1"–1 1/2" CRUSHED STONE, WILL BE AT LEAST 30' X 100' AND SHOULD BE PLACED ON COMPACTED SUB–GRADE AND SHALL BE MAINTAINED.

ALL DRIVEWAYS MUST BE STABILIZED WITH 1" – 1½" CRUSHED STONE OR SUB–BASE PRIOR TO INDIVIDUAL HOME CONSTRUCTION.

PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

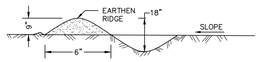
ALL CATCH BASIN INLETS WILL BE PROTECTED WITH A CRUSHED STONE OR HAYBALE FILTER (FILTER DETAILS APPEAR ON PLAN).

ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE DISCHARGE POINTS BECOME OPERATIONAL.

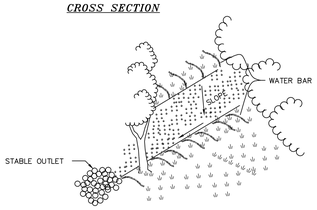
ALL SOIL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE DETAILED ON THE PLAN.

CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER–SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER.
4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE LEVEL WEIR CREST.
6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.
7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIPRAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
8. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
11. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.



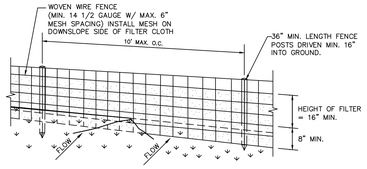
CROSS SECTION



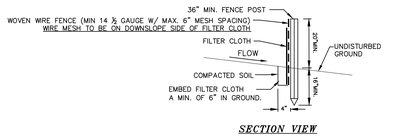
CONSTRUCTION SPECIFICATIONS

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.

WATER BARS DETAIL
NOT TO SCALE



PERSPECTIVE VIEW

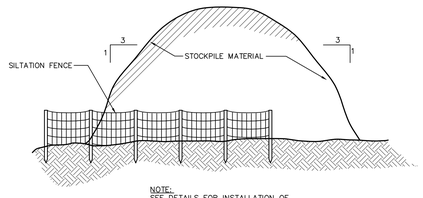


SECTION VIEW

CONSTRUCTION SPECIFICATIONS

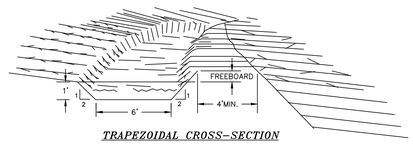
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER–LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILTATION FENCE
NOT TO SCALE



NOTE:
SEE DETAILS FOR INSTALLATION OF SILTATION FENCE

TYPICAL STOCKPILE DETAIL
NOT TO SCALE

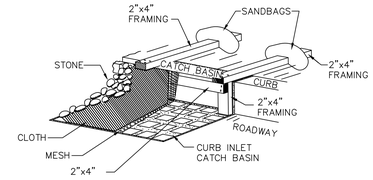


TRAPEZOIDAL CROSS–SECTION

CONSTRUCTION SPECIFICATIONS

1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
2. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE DIVERSION.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE STOCKPILED FOR RESTORATION OF THE AREA SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
   A. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE DIVERSION SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.

TEMPORARY DIVERSION SWALE
NOT TO SCALE

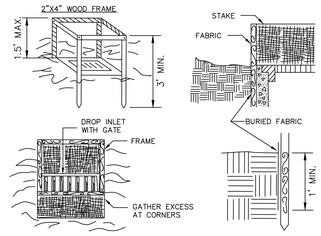


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85.
2. WOODEN FRAME SHALL BE CONSTRUCTED OF 2"x4" CONSTRUCTION GRADE LUMBER.
3. THE ASSEMBLY SHALL BE PLACED AGAINST THE INLET AND SECURED BY 2"x4" ANCHORS 2 FEET LONG EXTENDING ACROSS THE TOP OF THE CURB AND SIDEWALK AND HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHTS.

MAXIMUM DRAINAGE AREA 1 ACRE

STORM DRAIN INLET FILTER DETAIL FOR CURB INLETS
NOT TO SCALE

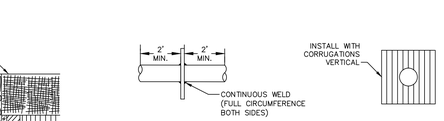


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED, IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2"x4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

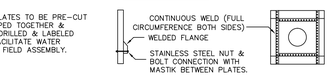
MAXIMUM DRAINAGE AREA 1 ACRE

FILTER FABRIC DROP INLET PROTECTION
NOT TO SCALE

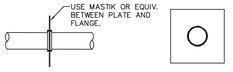


COLLAR WELDED IN PLACE BARREL SECTION

1. PLATES TO BE PRE–CUT CLAMPED TOGETHER & PRE–DRILLED & LABELED TO FACILITATE WATER TIGHT FIELD ASSEMBLY.



MULTI–PIECE COLLAR FOR LARGE PIPES

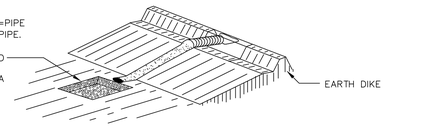


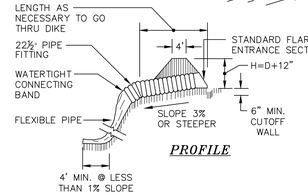
COLLAR FOR FLANGE JOINT PIPE

TYPICAL ANTI–SEEP COLLARS
NOT TO SCALE

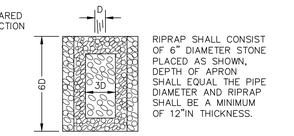
NOTE:
SIZE DESIGNATION IS:
PSD–PIPE DIA. (EX., PSD–18=PIPE SLOPE DRAIN WITH 18"DIAM. PIPE.

DISCHARGE INTO A STABILIZED WATERCOURSE, SEDIMENT TRAPPING DEVICE, OR ONTO A STABILIZED AREA.





PROFILE



RIPRAP SHALL CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN, DEPTH OF APRON SHALL EQUAL THE PIPE DIAMETER AND RIPRAP SHALL BE A MINIMUM OF 12"IN THICKNESS.

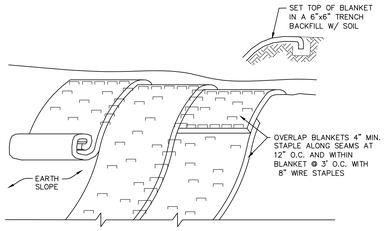
RIPRAP APRON PLANVIEW

CONSTRUCTION SPECIFICATIONS

1. THE INLET PIPE SHALL HAVE A SLOPE OF 3% OR STEEPER.
2. THE TOP OF THE EARTH DIKE OVER THE INLET PIPE AND THOSE DIKES CARRYING WATER TO THE PIPE SHALL BE AT LEAST 1' HIGHER AT ALL POINTS THAN THE TOP OF THE INLET PIPE.
3. THE INLET PIPE SHALL BE CORRUGATED METAL PIPE WITH WATERTIGHT CONNECTING BANDS.
4. THE FLEXIBLE TUBING SHALL BE THE SAME DIAMETER AS THE INLET PIPE AND SHALL BE CONSTRUCTED OF A DURABLE MATERIAL WITH HOLD–DOWN GROMMETS SPACED AT 10' ON CENTER.
5. THE FLEXIBLE TUBING SHALL BE SECURELY FASTENED TO THE CORRUGATED METAL PIPE WITH METAL STRAPPING OR WATERTIGHT CONNECTING COLLARS.
6. THE FLEXIBLE TUBING SHALL BE SECURELY ANCHORED TO THE SLOPE BY STAKING AT THE GROMMETS PROVIDED.
7. A RIPRAP APRON SHALL BE PROVIDED AT THE OUTLET. THIS SHALL CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN.
8. THE SOIL AROUND AND UNDER INLET PIPE AND ENTRANCE SECTION SHALL BE HAND TAMPED IN 4" LIFTS TO THE TOP OF EARTH DIKE.
9. FOLLOW–UP INSPECTION AND ANY NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH STORM.

* DRAINAGE AREA MUST NOT EXCEED 5 ACRES.

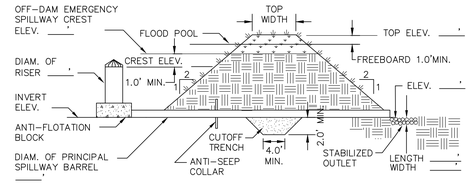
PIPE SLOPE DRAIN FLEXIBLE DETAIL
NOT TO SCALE



SLOPE STABILIZATION DETAIL
NOT TO SCALE

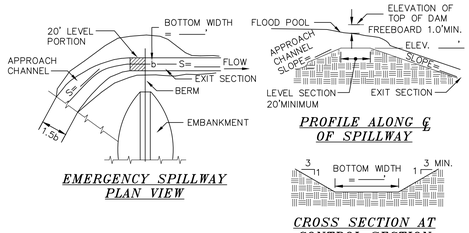
NOTES:

1. SLOPE STABILIZATION TO BE USED ON ALL CREATED OR DISTURBED SLOPES GREATER THAN 33% AND WHERE SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. STABILIZE PREPARED EARTHEN SLOPE WITH A BIODEGRADABLE NATURAL FIBER NETTING. APPROVED TYPES AS FOLLOWS:
   –S150BN – NORTH AMERICAN GREEN 1–800–772–2040
   –ECS–2B – EAST COAST EROSION BLANKET 1–800–582–4005
   –APPROVED EQUAL
3. ALL SLOPE RESTORATION MUST INCLUDE 4" TOPSOIL.
4. PREPARE THE SOIL SURFACE INCLUDING RAKING, SEEDING AND FERTILIZING PRIOR TO INSTALLING EROSION CONTROL NETTING.
5. AFTER NETTING IS INSTALLED, PLANT ANY PROPOSED LANDSCAPING/GROUND COVER THROUGH SLITS CUT IN FABRIC.



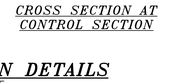
PRINCIPAL SPILLWAY PROFILE

MAXIMUM DRAINAGE AREA = 100 ACRES



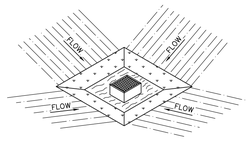
EMERGENCY SPILLWAY PLAN VIEW

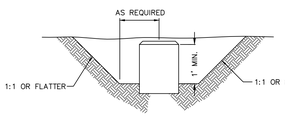
PROFILE ALONG ℄ OF SPILLWAY



CROSS SECTION AT CONTROL SECTION

SEDIMENT BASIN DETAILS
NOT TO SCALE

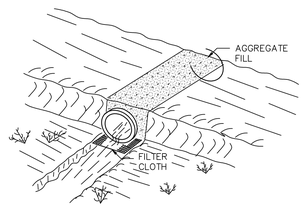


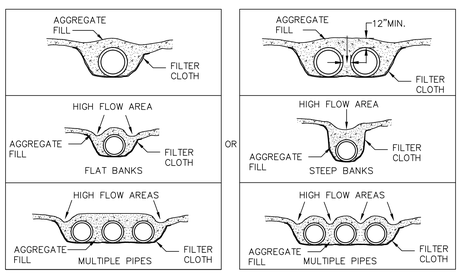


CATCH BASIN SEDIMENT TRAP
NOT TO SCALE

CONSTRUCTION SPECIFICATION FOR ST–III

1. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
2. THE VOLUME OF SEDIMENT STORAGE SHALL BE 3600 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE. THE MAXIMUM DRAINAGE ARE IS 3 ACRES.
3. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
5. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
6. ALL CUT SLOPES SHALL BE 1:1 OR FLATTER.





TEMPORARY ACCESS CULVERT DETAIL
NOT TO SCALE

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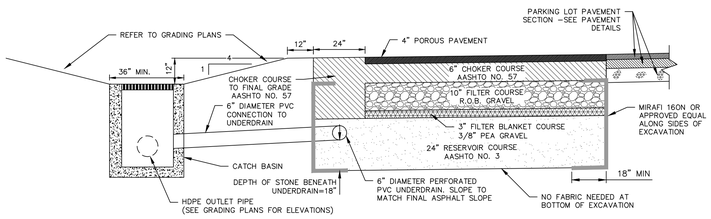
EROSION AND SEDIMENT CONTROL DETAILS

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	130070–DETAILS
Layout:	EROSION DETAILS
Sheet No.:	C2–10 OF 13
Drawn By:	ESR
Checked By:	
Scale:	N/A
Tax Map No.:	SEE SHEET C2–01
Drawing No.:	A – 13 – 0070 – C30



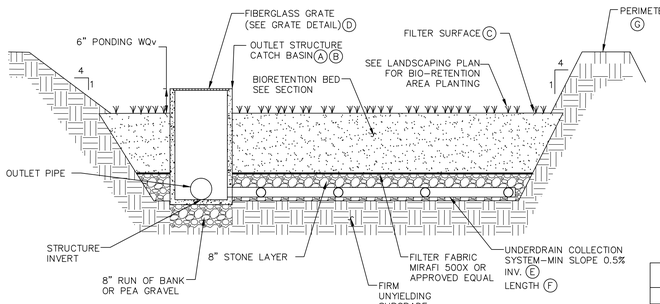
POROUS ASPHALT PAVEMENT CROSS-SECTION

NOT TO SCALE

NOTES:
1. POROUS ASPHALT MIX SHALL BE PG 64-28 OR 76-22 WITH SBS (STYRENE BUTADIENE STYRENE) OR SBR (STYRENE BUTADIENE RUBBER) AND 5 POUNDS OF FIBER PER TON.
2. REFER TO THE UNIVERSITY OF NEW HAMPSHIRE DESIGN SPECIFICATION FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS FOR RECOMMENDED INSTALLATION AND QUALITY CONTROL PROCEDURES.
3. ALTERNATE MIX DESIGNS MAY BE ACCEPTABLE PENDING SUBMISSION TO AND REVIEW BY THE DESIGN ENGINEER. FINAL MIX DESIGN MUST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.

R.O.B. GRAVEL GRADATION	
SIEVE SIZE	PERCENT PASSING BY WEIGHT
2-INCH	100%
1/4-INCH	25% TO 65%
NO. 40	5% TO 40%
NO. 200	0% TO 10%

POROUS ASPHALT MIX DESIGN	
SIEVE SIZE (INCH/MM)	***PERCENT PASSING (%)***
0.75/19	100
0.50/12.5	85-100
0.375/9.5	55-75
No. 4/4.75	10-25
No. 8/2.36	5-10
No. 200/0.075	2-4
PROPERTY	***VALUE***
BINDER CONTENT (AASHTO T164)	6 - 6.5%
FIBER CONTENT BY TOTAL MIXTURE MASS	0.3% CELLULOSE OR 0.4% MINERAL
SBR CONTENT BY WEIGHT OF BITUMENT	1.5 - 3%
IN-PLACE AIR VOID CONTENT (ASTM D6752/AASHTO T275)	16.0 - 19.0%



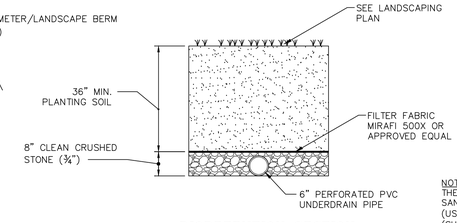
SECTION

BIO-RETENTION AREA DETAIL

NOT TO SCALE

BIORETENTION AREA MAINTENANCE REQUIREMENTS:
INSPECTION SHALL BE MADE WEEKLY BY A LICENSED PROFESSIONAL AND AFTER EVERY ½" RAINFALL EVENT BY THE OWNER OR CONTRACTOR DURING CONSTRUCTION. DURING THE FIRST GROWING SEASON INSPECTIONS SHALL BE CONDUCTED MONTHLY AND BI ANNUALLY THEREAFTER. THE FOLLOWING TASKS SHALL BE PERFORMED AS NEEDED:

1. REMOVAL OF ACCUMULATED SEDIMENT AND CLEANING AND/OR RESTORATION OF THE FILTER BED AREAS WHENEVER ACCUMULATED SEDIMENT REACHES A DEPTH OF 1 INCH.
2. RESTORATION OF ANY DISTURBED PLANT MATERIAL AND ANY ERODED EMBANKMENTS. REPLACEMENT OF PROPOSED PLANTS SHALL OCCUR IF MORE THEN 50% OF THE COVERAGE OF THE FACILITY IS NOT ACHIEVED.
3. REMOVAL OF ACCUMULATED DEBRIS WITHIN THE FILTER BED AREAS AND AT ALL INLET AND OUTFALL STRUCTURES.
4. ANNUAL MOWING (EARLY WINTER) OF THE BASINS. TRIMMING AND PRUNING OF BUSHES. REMOVAL OF ANY FALLEN TREES OR LIMBS.
5. WHEN THE FILTERING CAPACITY OF THE FILTER DIMINISHES SUBSTANTIALLY (I.E., WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 48 HOURS), THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH MATERIAL. THE REMOVED SEDIMENTS SHALL BE DISPOSED IN AN ACCEPTABLE MANNER (I.E., LANDFILL).
6. REFER TO LANDSCAPING PLANS FOR PLANTING REQUIREMENTS. IF FOR ANY REASON A CONFLICT OF PLANT MATERIAL OR PLANT MAINTENANCE SHOULD OCCUR, THE LANDSCAPE PLANS ARE TO TAKE PRECEDENCE.

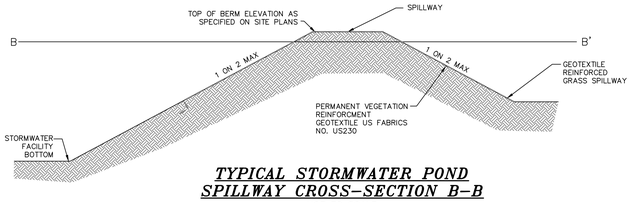


BIORETENTION SECTION

NOTES:
THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BY LESS THAN 25% BY VOLUME. SOILS SHOULD FALL WITHIN THE SM, OR ML CLASSIFICATIONS OF THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12 TO 18", LOOSELY COMPACTED (TAMPED LIGHTLY WITH A DOZER OR BACKHOE BUCKET).

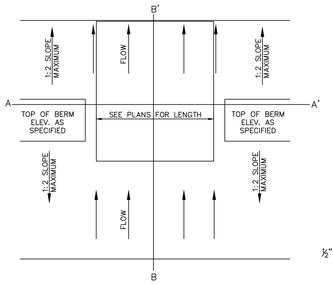
BIO-RETENTION AREA DATA

	BIO-RETENTION AREA OUTLET STRUCTURE	A	B	C
A	OUTLET STRUCTURE DIMENSIONS (OUTSIDE)	48"x48"	48"x48"	48"x48"
B	TOP OF STRUCTURE ELEVATION	409.50	400.50	396.50
C	FILTER SURFACE ELEVATION	409.00	400.00	396.00
D	FIBERGLASS GRATE DIMENSION	42"x42"	42"x42"	42"x42"
E	UNDERDRAIN INVERT ELEVATION	405.00	396.00	392.00
F	UNDERDRAIN SYSTEM LENGTH	900'	1,100'	1,500'
G	TOP OF PERIMETER BERM	413.25	404.25	400.25



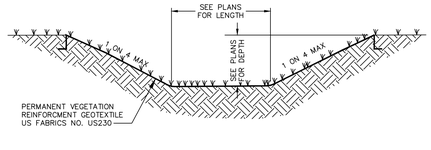
TYPICAL STORMWATER POND SPILLWAY CROSS-SECTION B-B

NOT TO SCALE



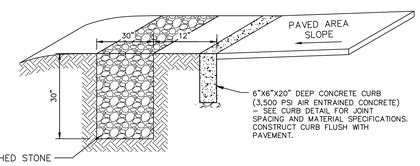
TYPICAL STORMWATER POND SPILLWAY PLAN VIEW

NOT TO SCALE



TYPICAL STORMWATER POND SPILLWAY CROSS-SECTION A-A

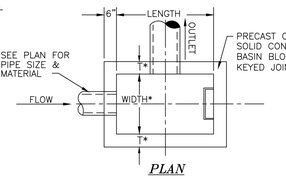
NOT TO SCALE



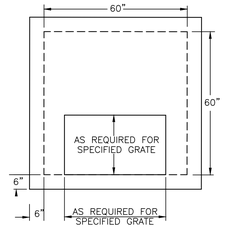
ROAD EDGE AND GRAVEL DIAPHRAGM DETAIL

NOT TO SCALE

NOTE: TO BE UTILIZED IN AREAS WHERE SHEET FLOW TO BIORETENTION OR INFILTRATION AREAS IS PROPOSED.



PLAN



ROOF SLAB FOR OVERSIZED STRUCTURE

ROOF TO BE 8" THICK, WITH STEEL REINF. DESIGNED FOR H-20 LOADING.

CURB TOP CATCH BASIN

FLAT TOP CATCH BASIN

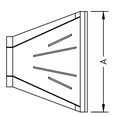
CATCH BASIN DETAIL

NOT TO SCALE

PRECAST BASIN SCHEDULE			
*PRECAST SIZE	INTERIOR LENGTH	INTERIOR WIDTH	ROOF SLAB
TYPICAL	48"	30"	NO
OVERSIZED	60"	60"	YES
*SEE NOTE 7			

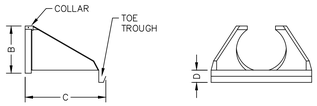
PLAN LEGEND
(OSS) = CATCH BASIN WITH OVERSIZED STRUCTURE AND STANDARD SIZE GRATE
(OSG) = CATCH BASIN WITH OVERSIZED STRUCTURE AND OVERSIZED GRATE

NOTES:
1. CONCRETE STRENGTH: 4000 P.S.I. @ 28 DAYS.
2. BACKFILL AROUND CATCH BASIN IS TO BE ACCEPTABLE DRY RUN OF BANK GRAVEL, FREE OF ANY STONES LARGER THAN 3" IN DIAMETER, COMPACTED IN 8" MAX. LIFTS WITH JUMPING JACK COMPACTOR, ACHIEVING 95% COMPACTION.
3. SPECIFIED CATCH BASINS ARE TO HAVE FLAT GRATES, SEE PLAN LABELS.
4. PIPES TO BE CUT FLUSH WITH INSIDE WALLS OF CATCH BASIN.
5. PIPES SHALL BE PARGED AROUND INTERIOR AND EXTERIOR PRIOR TO BACKFILLING OF STRUCTURE.
6. STEPS ARE TO BE CAMPBELL FOUNDRY CO. PATTERN NO. 2593 2254, OR APPROVED EQUAL.
7. SEE PLAN LABELS FOR SIZE OF STRUCTURE AND GRATE.



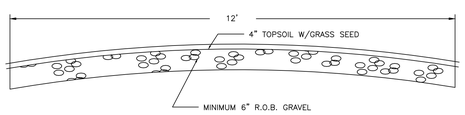
PIPE DIAMETER						
DIMENSION	10/12	15	18	24	30	36
A	42	41	49	59.5	88	88
B	14.5	19	22	28	36	43
C	33	34	43	48	63.5	66.5
D	6	6	6	6	6	6

NOTE: ALL MEASUREMENTS IN INCHES



HDPE FLARED END SECTION

NOT TO SCALE

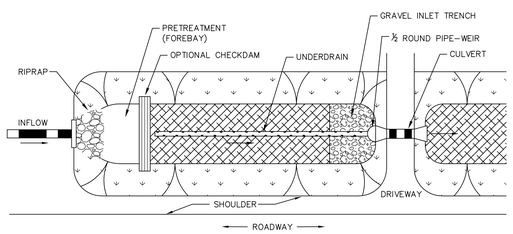


GRAVEL SHALL CONFROM TO THE FOLLOWING GRADATION REQUIREMENTS:

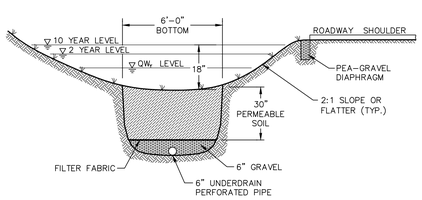
SIEVE SIZE	% PASSING BY WEIGHT
2"	100
1/4"	30-65
NO 200	10-20

POND MAINTENANCE ACCESS DETAIL

NOT TO SCALE



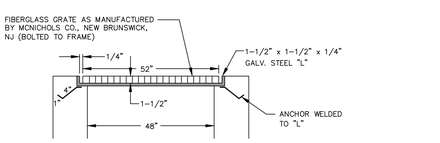
PLAN VIEW



SECTION

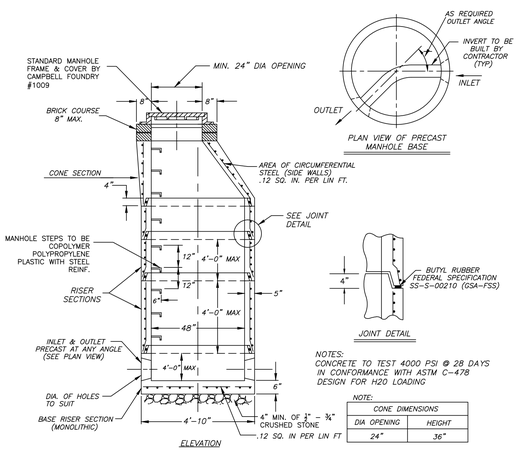
DRY SWALE DETAIL

NOT TO SCALE



GRATE DETAIL

NOT TO SCALE



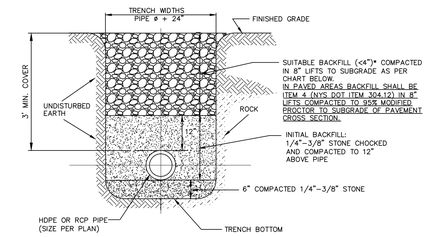
NOTES:
CONCRETE TO TEST 4000 PSI @ 28 DAYS IN CONFORMANCE WITH ASTM C-478
DESIGN FOR H20 LOADING

NOTE:

CONE DIMENSIONS	
DIA OPENING	HEIGHT
24"	36"

PRE CAST CONCRETE STORM MANHOLE DETAIL

NOT TO SCALE



EARTH OR ROCK EXCAVATION

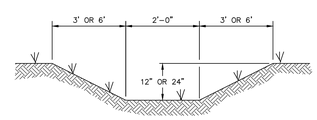
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
DESCRIPTION	SOIL CLASSIFICATION ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, CRUSHED STONE, GRAVEL	CLASS I	-	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

* BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

STORM SEWER TRENCH CROSS SECTION

NOT TO SCALE



SWALE DETAIL

NOT TO SCALE

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(845) 294-3700

DRAINAGE DETAILS

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016, APRIL 22, 2016

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: 130070-DETAILS
Layout: DRAINAGE DETAILS
Sheet No.: C2-11 OF 13
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
ESR		N/A	SEE SHEET C2-01

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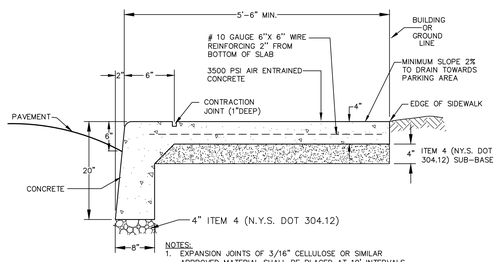
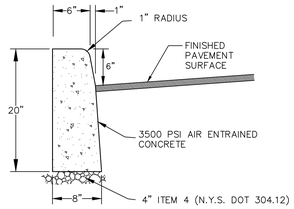


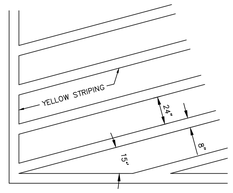
NOTES:
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS
2. CONTRACTION JOINTS 1" DEEP HAVING 1/4" RADIUS EDGES SHALL BE PLACED AT 5'-0" INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE 1/2" RADIUS.
4. USE 3500 PSI AIR ENTRAINED CONCRETE.
5. BROOM FINISH TOP SURFACE.

MONOLITHIC CURB AND SIDEWALK DETAIL
NOT TO SCALE



CONTRACTOR TO PROVIDE 1/2" PREFORMED BITUMINOUS – IMPREGNATED FIBER JOINT FILLER EVERY 10'. JOINT FILLER TO COMPLY WITH A.A.S.H.O. SPEC. M-213. FILLER TO BE RECESSED IN FROM FRONT FACE AND TOP OF CURB 1/4".

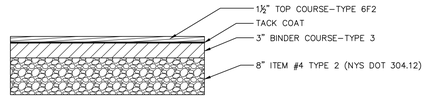
CONCRETE CURB
NOT TO SCALE



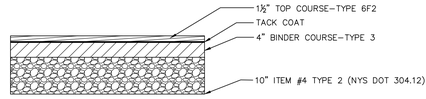
HATCH LINES
261.13(b)

NOTE: DETAIL SHALL BE USED FOR ALL ON-SITE LOCATIONS WHERE PAVEMENT HATCHING IS SPECIFIED

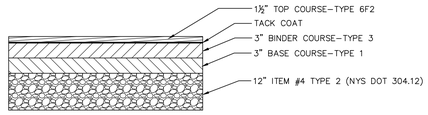
STRIPING DETAIL
NOT TO SCALE



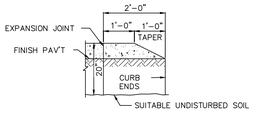
PAVEMENT SECTION 1
PASSENGER TRAFFIC AND PARKING AREAS
NOT TO SCALE



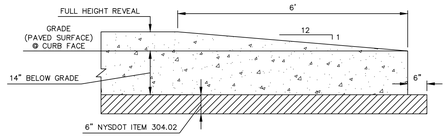
PAVEMENT SECTION 2
MEDIUM DUTY TRUCK TRAFFIC AREAS
NOT TO SCALE



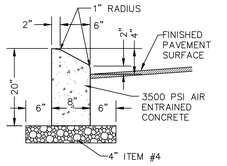
PAVEMENT SECTION 3
HEAVY DUTY TRUCK TRAFFIC AREAS
NOT TO SCALE



BULLNOSE CURB TERMINAL
NOT TO SCALE

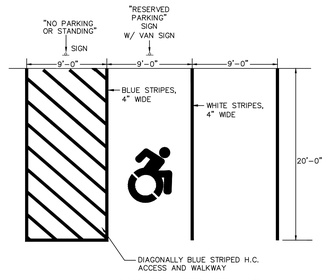


NYSDOT CURB TERMINAL
NOT TO SCALE

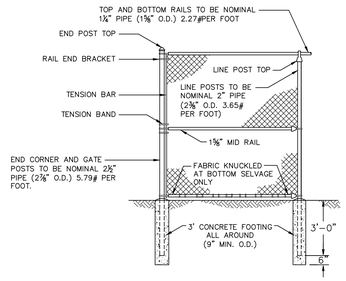


CONTRACTOR TO PROVIDE 1/2" PREFORMED BITUMINOUS – IMPREGNATED FIBER JOINT FILLER EVERY 10'. JOINT FILLER TO COMPLY WITH A.A.S.H.T.O. SPEC. M-213. FILLER TO BE RECESSED IN FROM FRONT FACE AND TOP OF CURB 1/4".

CONCRETE CURB DETAIL (MOUNTABLE)
NOT TO SCALE



HANDICAP AND TYPICAL PARKING SPACE STRIPING DETAIL
NOT TO SCALE



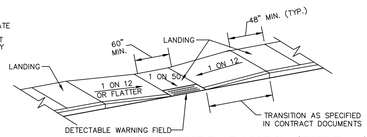
FENCE SPECIFICATIONS:

1. FENCING MATERIAL SHALL BE CYCLONE TYPE 1 FENCE AS MANUFACTURED BY USS OR EQUAL.
2. FABRIC HEIGHT IS TO BE 8'.
3. FABRIC SHALL BE 2" MESH 11 GAUGE (MIN.).
4. GATE SHALL HAVE POSITIVE TYPE LATCHING DEVISES WITH PROVISIONS FOR PADLOCKING.
5. ALL POSTS, RAILS, AND APPURTENANCES SHALL BE GALVANIZED STEEL. PIPE POSTS SHALL HAVE TOPS WHICH EXCLUDE MOISTURE.
6. END, CORNER, PULL, AND GATE POSTS ARE TO BE BRACED WITH THE SAME MATERIAL AS TOP RAIL. ALL POSTS SHALL BE SET IN A CONCRETE FOUNDATION OF 1:2:4 MIX. LINE POSTS SHALL BE EVENLY SPACED 10' OR LESS.
7. FENCE IS TO BE INSTALLED IN A PROFESSIONAL MANNER TO ENHANCE THE APPEARANCE OF THE INSTALLATION, TO PREVENT ENTRANCE OF PERSONS AND ANIMALS AND TO PROTECT EQUIPMENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN THAT THE GRADE AT THE FENCE LINE IS CORRECT, LEVEL AND FINAL BEFORE THE FENCE IS INSTALLED. ALL POSTS SHALL BE ALIGNED TOP RAIL SHALL BE HELD LEVEL.
8. EXPERIENCED PERSONNEL IN THE FENCE INDUSTRY SHALL INSTALL THE FENCE.

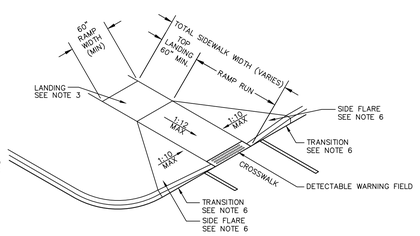
TYPICAL CHAIN LINK FENCE
NOT TO SCALE

GENERAL SIDEWALK NOTES:

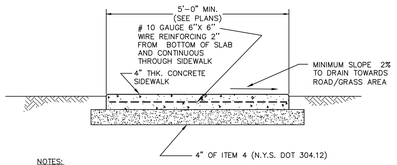
1. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE AMERICAN'S WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.
2. THERE SHALL BE A LANDING AT THE TOP OF EACH CURB RAMP. THERE SHALL BE A LANDING AT THE TOP AND AT THE BOTTOM OF EACH PARALLEL AND PARALLEL/PERPENDICULAR RAMP.
3. LANDINGS SHALL HAVE A MINIMUM CLEAR DIMENSION OF A 60" BY 60" SQUARE. THE MAXIMUM CROSS SLOPE AT LANDINGS IS 2 PERCENT IN ANY DIRECTION. LANDINGS MAY OVERLAP WITH ADJACENT LANDINGS OR A SINGLE LANDING LANDINGS MAY OVERLAP WITH THE CLEAR GROUND SPACE REQUIRED AT PEDESTRIAN SIGNAL PUSH BUTTONS.
4. CROSS SLOPES. THE MAXIMUM CROSS SLOPE OF CURB RAMPS SHALL BE 2 PERCENT. CURB RAMP SURFACES SHALL GENERALLY LIE IN CONTINUOUS PLANES WITH A MINIMUM OF SURFACE WARP.
5. THE RUNNING GRADE OF CURB RAMPS SHOULD BE AS FLAT AS PRACTICABLE. THE MAXIMUM RUNNING GRADE OF ANY PORTION OF ANY CURB RAMP SHALL BE 1:12 (8.3%). CURB RAMPS ARE NOT REQUIRED TO BE LONGER THAN 15'.
6. CURB RAMPS LOCATED WHERE PEDESTRIANS MAY WALK ACROSS THE CURB RAMP SHALL HAVE FLARED SIDES. THE LENGTH OF THE FLARES SHALL BE AT LEAST TEN (10) TIMES THE CURB HEIGHT, MEASURED ALONG THE CURB LINE. WHEN INFEASIBLE OR IMPRACTICABLE TO PROVIDE A LANDING THAT IS AT LEAST 60" WIDE (MEASURED FROM THE TOP OF THE RAMP TO THE BACK OF THE SIDEWALK), THE LENGTH OF THE FLARES SHALL BE TWELVE (12) TIMES THE CURB HEIGHT MEASURED ALONG THE CURB LINE.
7. THE SURFACE OF ALL CURB RAMPS SHALL BE STABLE, FIRM AND SLIP RESISTANT. A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE SLOPE IS RECOMMENDED ON CONCRETE RAMP SURFACES, EXCLUSIVE OF THE DETECTABLE WARNING FIELDS.
8. RAMP TRANSITIONS BETWEEN WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4" MAX.).
9. COORDINATE ALL TRAFFIC CONTROL DEVICES, UTILITY LOCATIONS, SIGNS, STREET FURNITURE AND DRAINAGE TO ENSURE A CONTINUOUS PEDESTRIAN ACCESS ROUTE AT ALL CURB RAMP LOCATIONS. GUIDANCE FOR CROSSWALK MARKINGS AND TRAFFIC CONTROL DEVICES IS PROVIDED IN THE MUTCD. DRAINAGE GRATES AND UTILITY ACCESS COVERS ARE NOT ALLOWED IN RAMP WALKING SURFACES OR LANDINGS.
10. WHERE FEASIBLE, E.G. WHERE R.O.W. WIDTH PROVIDES SUFFICIENT SPACE TO INSTALL SIDEWALKS SET BACK FROM THE CURBS, RAMP TYPES 2A AND 3A SHOULD BE INSTALLED AS THE SEPARATION PROVIDED BETWEEN SIDEWALK AND CURB OR TRAVELWAY MAKE FOR AS GREATER PEDESTRIAN SAFETY AND COMFORT.
11. AT MARKED CROSSINGS, THE FULL WIDTH OF THE RAMP SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS. THE SIDES OF THE RAMPS (THE FLARES) NEED NOT BE WITHIN THE WIDTH OF THE MARKINGS.
12. DETAILS ILLUSTRATE THAT DETECTABLE WARNINGS ARE REQUIRED. SEE THE CURRENT DETECTABLE WARNING STANDARD SHEET FOR SPECIFIC DETECTABLE WARNING REQUIREMENTS. DETAILS DO NOT SHOW DROPPED CURBS AT BOTTOMS OF CURB RAMPS. DROP CURBS MAY BE SPECIFIED.
13. SLOPES ON BLENDED TRANSITIONS SHALL NOT BE STEEPER THAN 2% (1 ON 50) IN ANY DIRECTION.



PARALLEL CURB RAMPS (TYPE A)
NOT TO SCALE



PERPENDICULAR SIDEWALK CURB RAMP (TYPE B)
NOT TO SCALE



NOTES:
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS
2. CONTRACTION JOINTS 1" DEEP HAVING 1/4" RADIUS EDGES SHALL BE PLACED AT 5'-0" INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE 1/2" RADIUS.
4. USE 3500 PSI AIR ENTRAINED CONCRETE.
5. BROOM FINISH TOP SURFACE.

STANDARD SIDEWALK DETAIL
NOT TO SCALE

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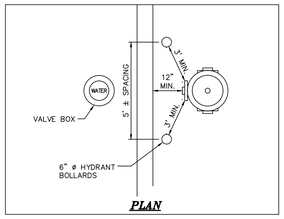
ENGINEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

CONSTRUCTION DETAILS – 1

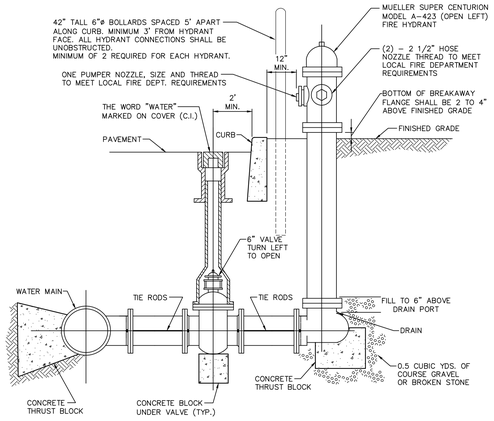
AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revision:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	13070-DETAILS
Layout:	CONS DETAILS-1
Sheet No.:	C2-12 OF 13
Drawn By:	ESR
Checked By:	
Scale:	N/A
Tax Map No.:	SEE SHEET C2-01
Drawing No.:	A – 13 – 0070 – C3D



PLAN

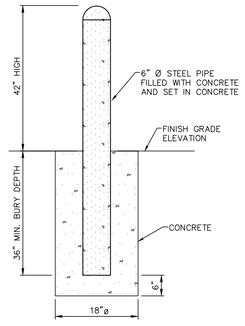


HYDRANT DETAIL

NOT TO SCALE

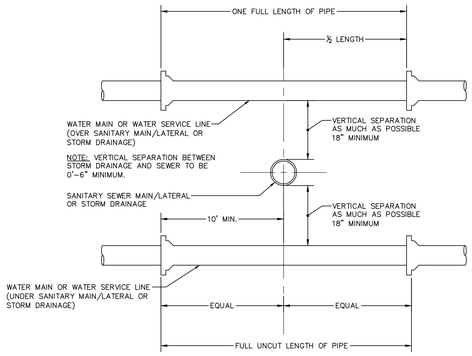
NOTES:

1. HYDRANT SHALL BE MUELLER SUPER CENTURION MODEL A–423 (OPEN LEFT).
2. HYDRANT SHALL BE PAINTED IN ACCORDANCE WITH AWWA STANDARDS (C502, SEC. 4.13)
3. WHERE GROUND WATER RISES TO WITHIN 2 FEET OF A FIRE HYDRANT BASE, THE DRAIN PORT SHALL BE PLUGGED. ANY HYDRANT THAT IS PLUGGED SHALL BE LABELED IN A MANNER SATISFACTORY TO THE LOCAL FIRE DEPARTMENT AND WATER DEPARTMENT TO ENSURE THAT THE HYDRANT IS PUMPED OUT AFTER EACH USE.



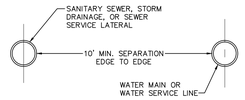
HYDRANT BOLLARD DETAIL

NOT TO SCALE



WATER & SEWER CROSSING DETAIL

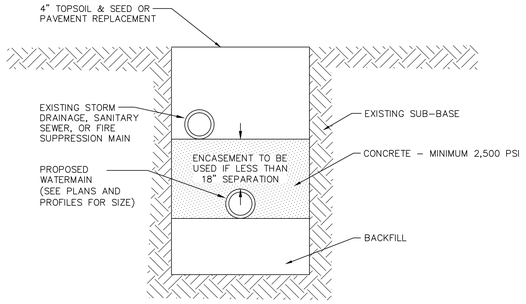
NOT TO SCALE



WATER & SEWER HORIZONTAL SEPARATION

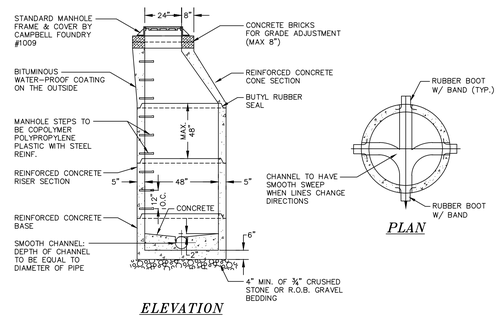
NOT TO SCALE

NOTE:
THE SEPARATION REQUIREMENT SHALL CONFORM TO CURRENT ORANGE COUNTY DEPARTMENT OF HEALTH STATUTES, CODES, RULES, REGULATIONS AND LAWS AS THEY APPLY. ANY DEVIATION FROM THE ABOVE SEPARATION REQUIREMENTS SHALL REQUIRE WRITTEN APPROVAL FROM THE ORANGE COUNTY DEPARTMENT OF HEALTH.



CONCRETE ENCASEMENT DETAIL

NOT TO SCALE



ELEVATION

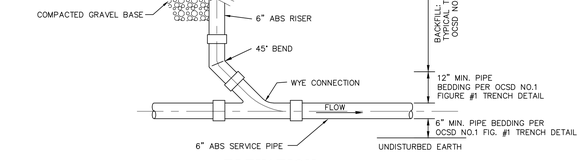
PLAN

PRE–CAST MANHOLE

NOT TO SCALE

NOTES:

1. SMOOTH CHANNEL INVERT TO BE PAVED WITH CEMENT MORTAR.
2. PIPE JOINTS SHALL BE A MINIMUM OF 2' FROM OUTSIDE WALL OF MANHOLE.
3. SANITARY SEWER TO EXTEND INTO THE MANHOLE ONLY TO A POINT WHERE OUTSIDE OF SEWER MEETS INSIDE WALL OF MANHOLE.
4. OPENING FOR PIPE SHALL BE PRE–CAST. CONNECTIONS TO EXISTING MANHOLES SHALL BE MACHINE CORED.
5. MANHOLE COVERS TO BE STAMPED "SANITARY".
6. PRECAST REINFORCED CONCRETE MANHOLE SHALL BE DESIGNED FOR H20 LIVE LOAD.



ELEVATION
SEWER CLEAN OUT DETAIL

NOT TO SCALE

NOTES:

1. CLEAN OUT INSTALLATION SHALL CONFORM TO CLEAN OUT DETAIL (C.O.) FIGURE 4 FROM ORANGE COUNTY DEPT. OF EF&S, OCSD NO.1, AND NOTE 5 BELOW.
2. CLEAN OUT LOCATION TO BE SHOWN ON AS–BUILT DRAWINGS WITH DISTANCE FROM BUILDING CORNERS.
3. MINIMUM COVER OVER 6" ABS SERVICE PIPE IS 4.0 FEET.
4. FOR BACKFILL SPECIFICATIONS, SEE TYPICAL TRENCH DETAIL (SANITARY SEWER) FIGURE 1 (FROM ORANGE COUNTY DEPT. OF EF&S, OCSD NO.).
5. EACH BUILDING SEWER SHALL HAVE A CLEANOUT INSTALLED APPROXIMATELY 2' DOWNSTREAM OF THE BUILDING PIPE TO BUILDING SEWER CONNECTION. THEREAFTER, CLEANOUTS SHALL BE INSTALLED ALONG THE BUILDING SEWER APPROXIMATELY EVERY 100' (MAXIMUM). FOR THE PURPOSE OF CLEANOUT LOCATIONS, DISTANCE SHALL BE MEASURED FROM THE FIRST CLEANOUT LOCATED DOWNSTREAM OF THE HOUSE PIPE TO BUILDING SEWER CONNECTION, THENCE DOWNSTREAM ALONG THE BUILDING SEWER TO THE CENTER OF THE SEWER MAIN LINE (GENERALLY LOCATED IN THE CENTER OF THE STREET).

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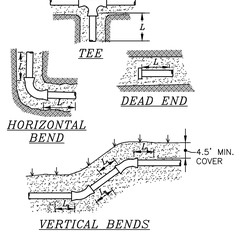
NOTE:
LENGTH OF RESTRAINED JOINTS BASED UPON:
a. 4.5' MINIMUM COVER
b. TEST PRESSURE = 150 PSI
c. TYPE 5 TRENCH
d. 1.5 TO 1 SAFETY FACTOR

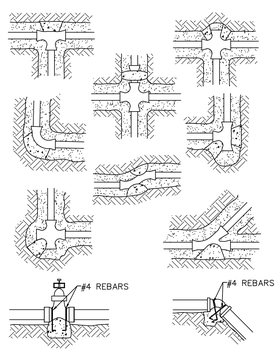


RESTRAINED JOINT TABLE	
MINIMUM LENGTH REQUIRED IN L.F.	
FITTING	*LENGTH IN L.F. (L)*
TEES & DEAD ENDS	
6"	22
8"	29
10"	34
12"	40
14"	46
16"	52
90° BEND	
6"	10
8"	12
10"	15
12"	17
14"	20
16"	22
45° BEND	
6"	4
8"	5
10"	6
12"	7
14"	8
16"	9
22½° BEND	
6"	2
8"	3
10"	3
12"	4
14"	4
16"	5
VERTICAL BENDS	L_1 / L_2
6"	9 / 4
8"	12 / 5
10"	14 / 6
12"	17 / 7
14"	19 / 8
16"	22 / 9

ALL REQUIRED JOINT RESTRAINT SHALL BE MEGALUG RETAINING GLANDS AS MANUFACTURED BY EBAA IRON, OR APPROVED EQUAL.

RESTRAINED JOINT DETAILS

NOT TO SCALE



FOR VALVES 12" AND LARGER ANCHOR VALVE AS ABOVE

AT VERT. BENDS, ANCHOR TO RESIST OUTWARD THRUSTS

NOTES:

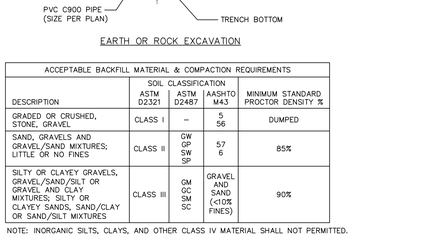
1. KEEP NUTS AND BOLTS FREE OF CONCRETE THROUGH THE USE OF PLASTIC COVERS.
2. ANCHORING OF VALVES AND VERTICAL BENDS SHALL BE DONE WITH #4 REBARS WITH A MINIMUM ENGAGEMENT DEPTH OF 3" INCHES AND 3 INCHES OF THE TERMINUS END OF THE REBAR BEING BENT AT 90° ORIENTATION AS SHOWN.

THRUST BLOCK DETAILS

NOT TO SCALE

THRUST BLOCK SIZING TABLE					
BEARING AREA OF THRUST BLOCK IN SQUARE FEET					
FITTING	*THRUST * (POUNDS)*	*HARD SHALE*	*SAND & GRAVEL*	*SAND*	*SOFT CLAY*
TEES AND DEAD ENDS					
6"	5,700	1 1	2	3	6
8"	9,870	2	3.5	5	10
10"	16,125	2.5	5.5	8.5	16.5
12"	22,965	3.5	8	11.5	23
14"	31,155	4.5	10.5	16.0	31.5
16"	40,320		13.5	20.5	40.5
90° BEND					
6"	8,055	1	3	4	8
8"	13,950	1.5	5	9	14
10"	22,800	2.5	8 11	11.5	23
12"	32,460	3.5	15.0	16.5	32.5
14"	44,040	4.5	19.5	22.5	44.5
16"	57,015	6		29	57.5
45° BEND					
6"	4,365	1	1.5	2.5	4.5
8"	7,560	1	2.5	4	8
10"	12,360	1.5	4.5	6.5	12.5
12"	17,580	2	6	9	18
14"	23,865	2.5	8.0	12.0	24
16"	30,885	3.5	10.5	15.5	31
22½° BEND					
6"	2,205	1 1	1	1.5	2.5
8"	3,825	1 1	1.5	2	4
10"	6,255	1.5	2	3.5	6.5
12"	8,910	2	3	4.5	9
14"	12,090		4.5	6.5	12.5
16"	15,645		5.5	8	16

* THRUST AT 150 PSI OF WATER PRESSURE



EARTH OR ROCK EXCAVATION

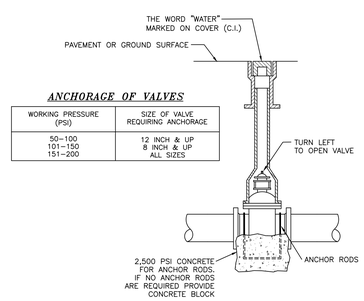
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
	SOIL CLASSIFICATION			
DESCRIPTION	ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

WATERMAIN TRENCH CROSS SECTION

NOT TO SCALE

*BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

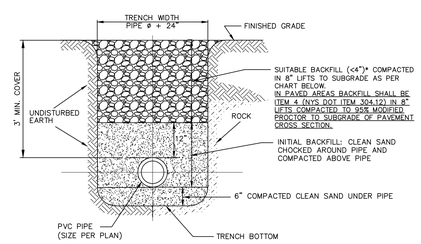


ANCHORAGE OF VALVES

WORKING PRESSURE (PSI)	SIZE OF VALVE REQUIRING ANCHORAGE
50–100 101–150 151–200	12 INCH & UP 8 INCH & UP ALL SIZES

VALVE DETAIL

NOT TO SCALE



EARTH OR ROCK EXCAVATION

ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
	SOIL CLASSIFICATION			
DESCRIPTION	ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

SANITARY SEWER TRENCH CROSS SECTION

NOT TO SCALE

*BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

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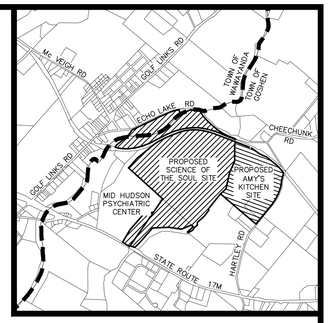
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294–3700

CONSTRUCTION DETAILS – 2

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016
CAD File: 13070–DETAILS
Layout: CONS DETAILS–2
Sheet No.: C2–13 OF 13
Drawing No.: A – 13 – 0070 – C30
Drawn By: ESR
Checked By:
Scale: N/A
Tax Map No.: SEE SHEET C2–01



LOCATION PLAN

1 INCH = 2000 FEET

TEMPORARY ACCESS EASEMENT		
LINE	BEARING	DISTANCE
L1	S68°42'15"E	50.00'
L2	S21°18'37"W	65.89'
L3	N68°42'03"W	50.01'
L4	N21°19'03"E	65.89'

BOUNDARY SURVEY NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:
   - A. MAP ENTITLED "SURVEY & TOPOGRAPHIC MAP OF LANDS OF CONCRETE PROPERTIES, LLC, SITUATED IN THE TOWNS OF GOSHEN & WAWAYANDA, ORANGE COUNTY, NEW YORK STATE, SURVEY & TOPOGRAPHIC MAP OF LANDS OF TETZ FAMILY, LLC, AND SUBDIVISION MAP OF LANDS OF THE PEOPLE OF THE STATE OF NEW YORK, SITUATE IN THE TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK STATE," DATED NOVEMBER 2007 AND LAST REVISED MAY 2009, PREPARED BY MERCURIO, NORTON, TAROLLI, LAND SURVEYING–ENGINEERING, P.C.
   - B. MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163–13.
   - C. MAP ENTITLED "SKETCH PLAN FOR ECHO LAKE SITE OWNED BY THE TOWN OF WALLKILL, TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JUNE 19, 2007, PREPARED BY EUSTANCE & HOROWITZ, P.C.
   - D. MAP ENTITLED "LANDS OF HUBERTH, TOWN OF WAWAYANDA, ORANGE COUNTY, NEW YORK," DATED APRIL 12, 2006 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON JANUARY 10, 2007, AS FILED MAP NO. 6–07.
   - E. MAP ENTITLED "THREE LOT MINOR SUBDIVISION PLAT, LANDS OF JOSEPH R. CARMICHAEL, ETAL, LOT 17, BLOCK 1 SECTION 12, TOWN OF GOSHEN, OREANGE COUNTY, NEW YORK," DATED OCTOBER 3, 1975 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 1, 1975, AS FILED MAP NO. 3626.
   - F. TITLE REPORT NUMBER HN 53050, PREPARED BY HILL–N–DALE ABSTRACTERS, INC., HAVING AN EFFECTIVE DATE OF DECEMBER 7, 2014.
3. TAX LOT 12 – 1 – 24.2 IS SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 771 OF DEEDS AT PAGE 487 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
4. TAX LOT 12 – 1 – 23.2 IS SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 1016 OF DEEDS AT PAGE 103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
5. TAX LOT 12 – 1 – 24.2 IS SUBJECT TO TERMS AND CONDITIONS IN PERMANENT LICENSE AGREEMENT WITH THE TOWN OF WALLKILL FOR THE USE OF WATER GENERATED BY THE WELL HEAD SITES THERE, AS WELL AS PERMANENT ACCESS RIGHTS TO ENTER UPON, OVER ACROSS AND THROUGH THE LOT NUMBER 1 PREMISES.
6. TAX LOT 12 – 1 – 23.2 IS SUBJECT TO A GAS RIGHT AGREEMENT BETWEEN AL TURI LANDFILL, INC AND AMERESCO LFG–I, INC., AS DESCRIBED IN LIBER 11588 OF DEEDS AT PAGE 2008, AS FILED IN THE ORANGE COUNTY CLERK'S OFFICE.

ADDITIONAL MAP NOTES:

1. WETLANDS DELINEATED BY TES, INC. IN AUGUST 2009 AND AMENDED BY TES, INC. IN NOVEMBER 2015.
2. 100 YR. FLOOD PLAIN LIMITS SHOWN ARE COORDINATED TO ALIGN WITH ACTUAL FIELD TOPOGRAPHY BASED UPON FLOOD ELEVATIONS DEPICTED ON FEMA FIRM PANELS 36071C0267E AND 36071C0269E DATED 8/3/2009.

WETLAND AREAS:

WETLAND	AREA	JURISDICTION
TES WETLAND A	9.09± AC.	NYSDEC JURISDICTIONAL
TES WETLAND B	0.75± AC.	NYSDEC JURISDICTIONAL
TES WETLAND C	0.16± AC.	NON-JURISDICTIONAL
TES WETLAND D	0.573± AC.	NON-JURISDICTIONAL
TES WETLAND E	2.864± AC.	NON-JURISDICTIONAL
TES WETLAND F	0.704± AC.	NON-JURISDICTIONAL
TES WETLAND H	0.320± AC.	NON-JURISDICTIONAL
TES WETLAND K	1.130± AC.	USACE JURISDICTIONAL
TES WETLAND J (WALLKILL RIVER)	3.717± AC.	USACE JURISDICTIONAL
TES WETLAND J (ONSITE)	0.138± AC.	USACE JURISDICTIONAL
EXTENSIONS TO TES WETLAND J (ADJOINING SITE)	756 L.F.	USACE JURISDICTIONAL
TOTAL:	19.446± AC. 756 L.F.	

NOTE: WETLANDS "A", "B", AND "C" BOUNDARIES AND AREAS SHOWN TAKEN FROM MAP REFERENCE 2.A. ABOVE

RECORD OWNERS:

CONCRETE PROPERTIES LLC
130 CROTTY ROAD
MIDDLETOWN, NY 10941

L. 12807 P. 171
TOWN OF GOSHEN
12 – 1 – 24.2
TOWN OF WAWAYANDA
1 – 1 – 40

TETZ FAMILY LLC
130 CROTTY ROAD
MIDDLETOWN, NY 10941

TOWN OF GOSHEN
12 – 1 – 23.2
L. 12584 P. 1568

AREAS:

TAX LOT 12 - 1 -24.2 & 1 - 1 - 40	189.081± AC.
TAX LOT 12 - 1 - 23.2	21.733± AC.
TOTAL:	210.814± AC.

PEOPLE OF THE STATE OF NY
515 BROADWAY
ALBANY, NY 12077
16 – 1 – 9.3
12 – 1 – 101
L. 13353 P.1385

PROPOSED LAND ACQUISITION = 7.578± AC.

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GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

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EXISTING CONDITIONS MAP

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By: MK	Checked By:	Scale: 1" = 200'	Tax Map No.: SEE ABOVE	

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016
CAD File: Echo EXISTING COND.
Layout: EX CONDITIONS
Sheet No.: C3–01 OF 22
Drawing No.: A – 13 – 0070 – C30

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GRID

GENERAL NOTES:

1. FIRE DEPARTMENT KNOX BOX ENTRY SYSTEM TO BE PROVIDED AT MAIN LOBBY ENTRANCE. A MAP OF THE BUILDING SPRINKLER SYSTEM ZONE LOCATIONS SHALL BE PROVIDED IN THE KNOX BOX.
2. SPRINKLER SIAMESE CONNECTION TO BE PROVIDED WITH 5" STORZ CONNECTION FITTING.
3. ANY CLEARING OF TREES GREATER THAN 4" CALIPER SHALL OCCUR BETWEEN OCTOBER 31ST THROUGH MARCH 31ST.

MATCHLINE SHEET 2
MATCHLINE SHEET 1

5 BEDROOM GUEST HOUSE

U.S. RTE 6

MID-HUDSON PSYCHIATRIC CENTER ENTRANCE DRIVE

PROPOSED ROAD IMPROVEMENTS TO MID-HUDSON PSYCHIATRIC CENTER

REFER TO CONCEPTUAL TRAFFIC IMPROVEMENTS PLAN PREPARED BY MASER CONSULTING P.A.

PROPOSED ROAD IMPROVEMENTS TO TRAINING CENTER LANE

ARCHAEOLOGICAL SITE 1 BOUNDARY

PROPOSED FEDERAL WETLAND DISTURBANCE 72 L.F.

PROPOSED FEDERAL WETLAND DISTURBANCE 43 L.F.

PROPOSED FEDERAL WETLAND DISTURBANCE 29 L.F.

PROPOSED ACCESS ROAD

PROPOSED FEDERAL WETLAND DISTURBANCE 0.039± AC

LIMITS OF 100 YR. FLOODPLAIN

NYS HWY 17M

WALLKILL RIVER

IES WETLAND "K" AREA: 1.130± AC.

ARCHAEOLOGICAL SITE 2 BOUNDARY

ROAD "A"

ROAD "B"

ROAD "C"

ROAD "D"

ROAD "E"

ROAD "F"

350 SPACES
220 GRAVEL PARKING
130 PAVED PARKING

427 GI
260 P

CARETAKER RESIDENCE

CENTRAL BUILDING

FAMILY BUILD

STORMWATER TREATMENT DRY SWALE (TYP.)

ARCHAEOLOGICAL SITE 3 BOUNDARY

APPROX. LIMITS OF STREAM CORRIDOR OVERLAY 150' FROM RIVER MEAN HIGH WATER LEVEL

IES WETLAND "I" 0.570± AC.

MATCHLINE SHEET 1
MATCHLINE SHEET 2

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

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GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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OVERALL GRADING PLAN 1 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	SOS ON ECHO SP
Layout:	SP 100-1
Sheet No.:	C3-02 OF 22
Drawn By:	MK
Checked By:	
Scale:	1" = 100'
Tax Map No.:	SEE SHEET C3-01
Drawing No.:	A - 13 - 0070 - C30

MATCHLINE SHEET 2

MATCHLINE SHEET 1

TOWN OF WAYWAYANDA

TOWN OF GOSHEN

ECHO LAKE RD

GRID

GENERAL NOTES:

1. FIRE DEPARTMENT KNOX BOX ENTRY SYSTEM TO BE PROVIDED AT MAIN LOBBY ENTRANCE. A MAP OF THE BUILDING SPRINKLER SYSTEM ZONE LOCATIONS SHALL BE PROVIDED IN THE KNOX BOX.
2. SPRINKLER SIAMESE CONNECTION TO BE PROVIDED WITH 5" STORZ CONNECTION FITTING.
3. ANY CLEARING OF TREES GREATER THAN 4" CALIPER SHALL OCCUR BETWEEN OCTOBER 31ST THROUGH MARCH 31ST.

35± WETLAND "A" 9.09 ACRES NYS WETLAND WD-24

100' WETLAND BUFFER

35± WETLAND "C" 0.57 ACRES NYS WETLAND WD-24

5 BEDROOM GUEST HOUSE

STORMWATER TREATMENT DRY SWALE (TYP.)

MAINT. BARN

ROAD "D"

350 SPACES
220 GRAVEL PARKING
130 PAVED PARKING

687 SPACES
427 GRAVEL PARKING
260 PAVED PARKING

607 SPACES
427 GRAVEL PARKING
180 PAVED ACCESSIBLE

296 SPACES
206 GRAVEL PARKING
90 PAVED ACCESSIBLE

ROAD "B"

CARETAKER RESIDENCE

QUEUING FOR ENTRY

TOILET

TOILET

ROAD "C"

CARETAKER RESIDENCE

CENTRAL BUILDING

FAMILY BUILDING

OPEN LAWN AREA

SCIENCE OF THE SOUL CONFERENCE CENTER
500' X 400'
200,000 S.F.

ROAD "A"

SANITARY PUMP STATION
1& EQUALIZATION TANK

EMERGENCY ACCESS

TOILET

TOILET

QUEUING FOR ENTRY

STORMWATER TREATMENT DRY SWALE (TYP.)

130 SPACES BUS PARKING

WATERMAIN

ECHO LAKE RD

ROAD "E"

ARCHAEOLOGICAL SITE 3 BOUNDARY

APPROX. LIMITS OF STREAM CORRIDOR OVERLAY 150' FROM RIVER MEAN HIGH WATER LEVEL

35± WETLAND "J" 3.97± AC.

WALLKILL RIVER

MATCHLINE SHEET 2

MATCHLINE SHEET 1

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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OVERALL GRADING PLAN 2 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
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GRID

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
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- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 1 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
CAD File: SOS ON ECHO SP
Layout: GU 40-1
Sheet No.: C3-04 OF 22

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
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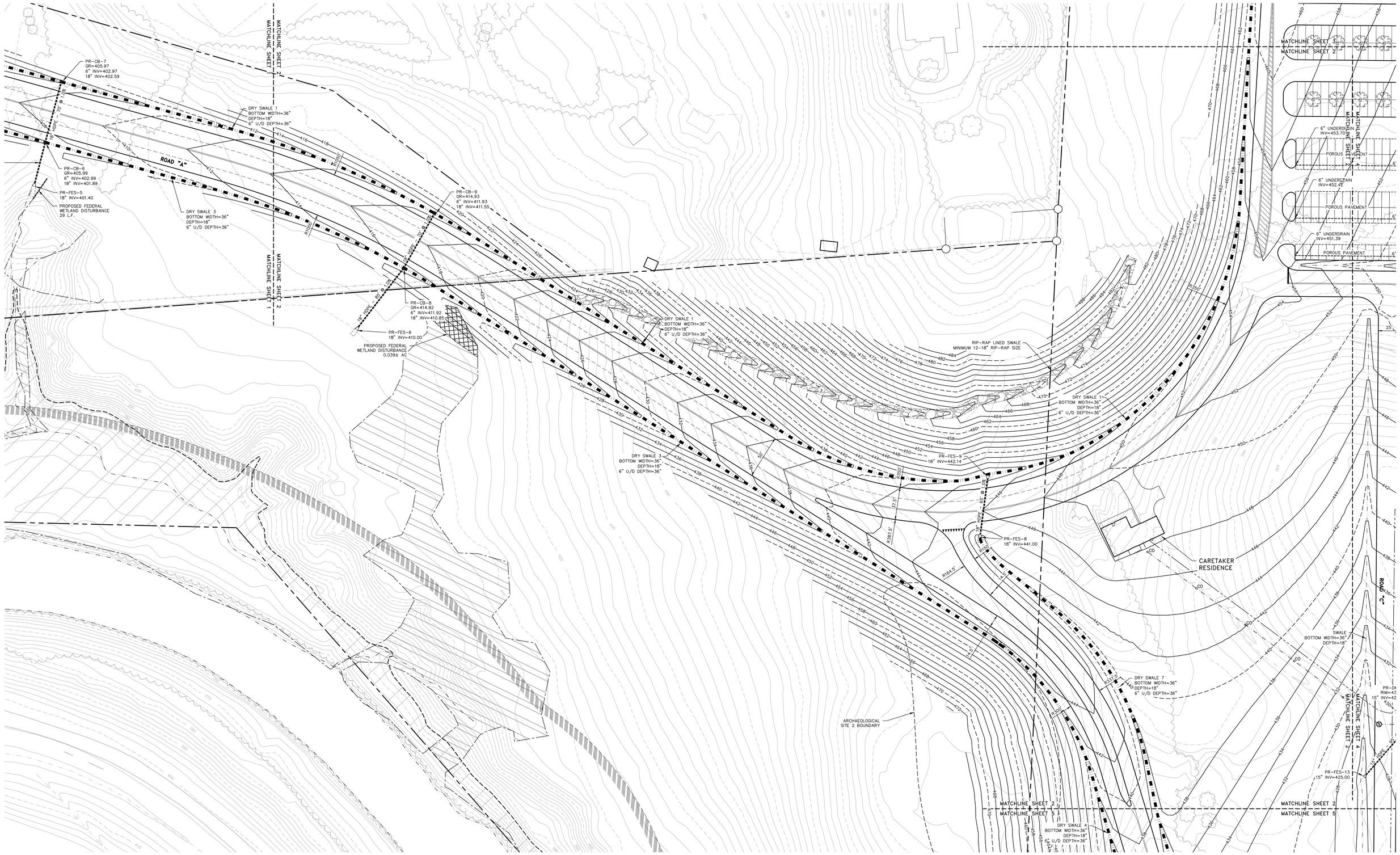

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GRID

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- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 2 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
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CAD File:	SOS ON ECHO SP
Layout:	GU 40-2
Sheet No.:	C3-05 OF 22
Drawn By:	MK
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Scale:	1" = 40'
Tax Map No.:	SEE SHEET C3-01
Drawing No.:	A - 13 - 0070 - C30

MATCHLINE SHEET 6
MATCHLINE SHEET 3

5 BEDROOM
GUEST HOUSE

DRY SWALE 13
BOTTOM WIDTH=36"
DEPTH=18"
SIDE U/D DEPTH=36"

ROAD "A"

MATCHLINE SHEET 3
MATCHLINE SHEET 2

MATCHLINE SHEET 3
MATCHLINE SHEET 4

MATCHLINE SHEET 3
MATCHLINE SHEET 5

MATCHLINE SHEET 3
MATCHLINE SHEET 4

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GRID

LEGEND

- PROPERTY LINE
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- EXISTING GAS
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- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
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- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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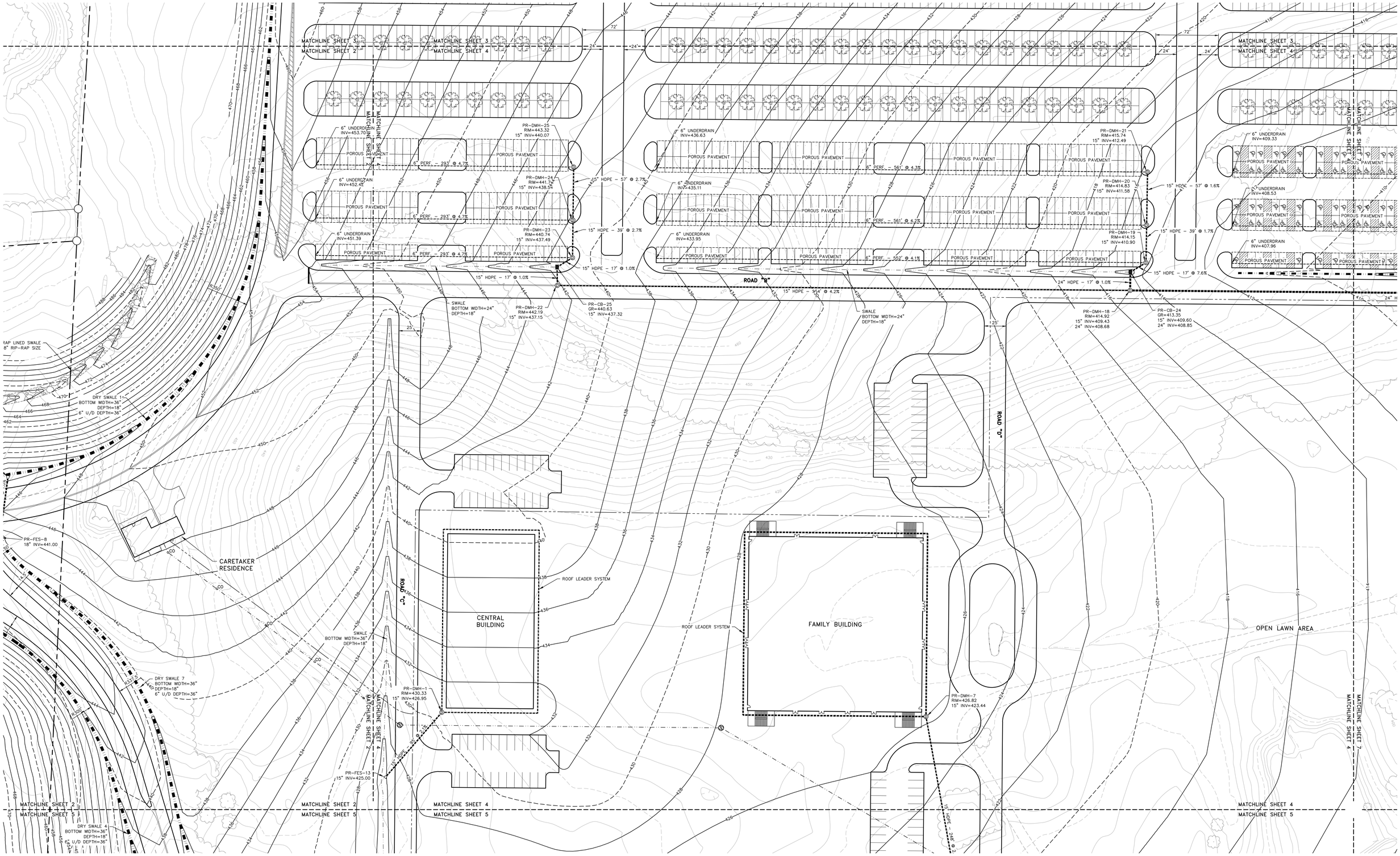
GRADING AND UTILITY PLAN 3 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	Revisions:	CAD File:	Layout:	Sheet No.:	Drawing No.:
SEPTEMBER 25, 2015	MARCH 7, 2016 APRIL 22, 2016	SOS ON ECHO SP	ZU 40-3	C3-06 OF 22	A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 40'	SEE SHEET C3-01



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
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- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

GRID

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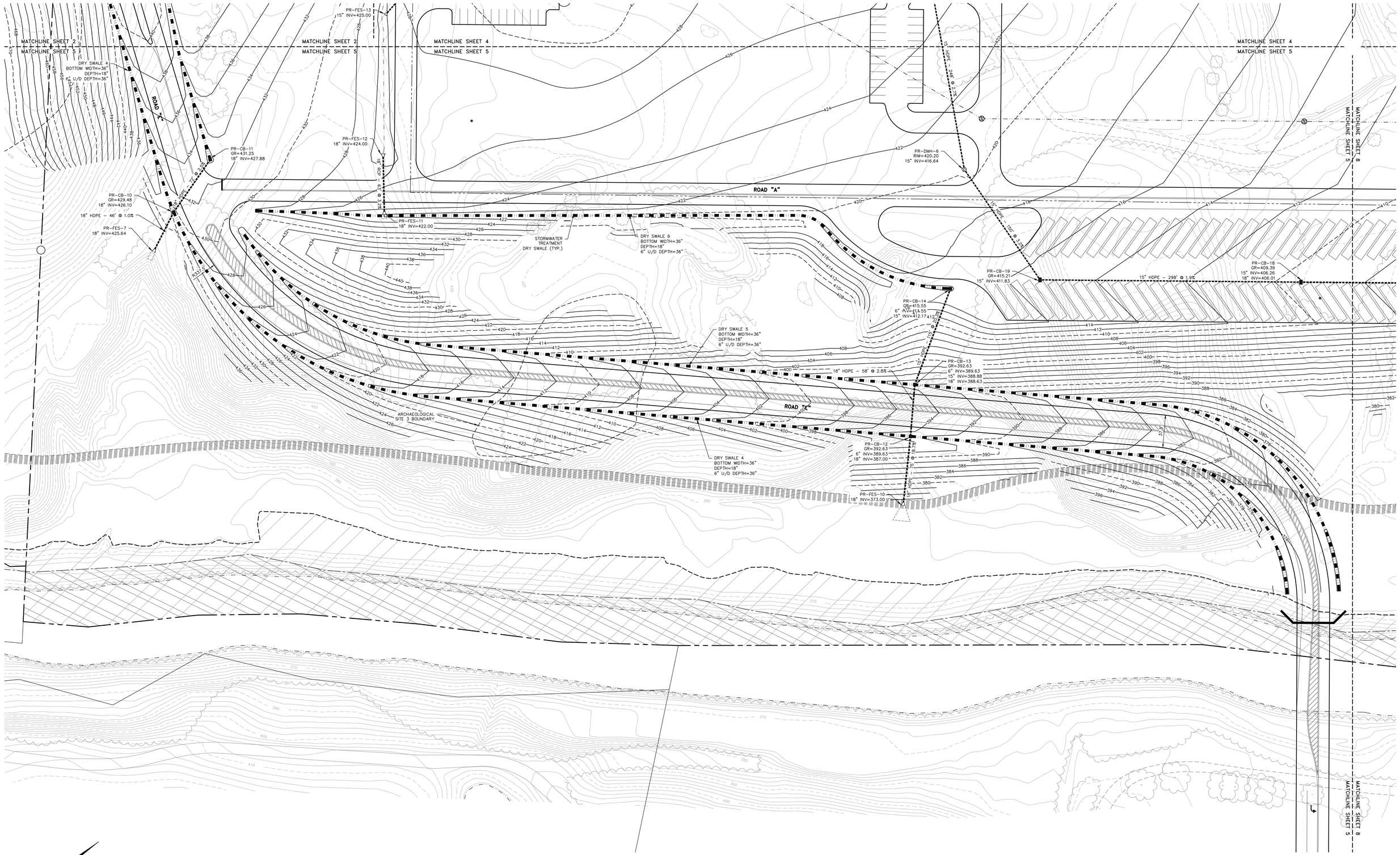
GRADING AND UTILITY PLAN 4 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	SOS ON ECHO SP
Layout:	GU 40-4
Sheet No.:	C3-07 OF 22
Drawing No.:	A - 13 - 0070 - C3D
Drawn By:	MK
Checked By:	
Scale:	1" = 40'
Tax Map No.:	SEE SHEET C3-01



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
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- PROPOSED MINOR CONTOUR
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- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

GRID

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GRADING AND UTILITY PLAN 5 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	SOS ON ECHO SP
Layout:	GU 40-5
Sheet No.:	C3-08 OF 22
Drawn By:	MK
Checked By:	
Scale:	1" = 40'
Tax Map No.:	SEE SHEET C3-01
Drawing No.:	A - 13 - 0070 - C30

MATCHLINE SHEET 6
MATCHLINE SHEET 3

RIP-RAP LINED SWALE
MINIMUM 12-18" RIP-RAP SIZE

MAINT.
BARN

15" HDPE - 80' @ 2.2%

PR-FES-22
24" INV=405.75

PR-FES-20
24" INV=402.00

24" RCP - 59' @ 1.2%

PR-FES-19
24" INV=401.30

PR-FES-21
24" INV=404.00

25'
TYP.

72'

24'

MATCHLINE SHEET 6
MATCHLINE SHEET 7

MATCHLINE SHEET 6
MATCHLINE SHEET 3

MATCHLINE SHEET 6
MATCHLINE SHEET 7

GRID

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LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 6 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By:	Checked By:	Scale:	Tax Map No.:
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APRIL 22, 2016
CAD File: SOS ON ECHO SP
Layout: GU 40-6
Sheet No.: C3-09 OF 22
Drawing No.: A - 13 - 0070 - C30

MATCHLINE SHEET 6
MATCHLINE SHEET 7

MATCHLINE SHEET 7
MATCHLINE SHEET 4

MATCHLINE SHEET 7
MATCHLINE SHEET 8

POROUS PAVEMENT
6" PERF. – 552' @ 1.4%

PR-DMH-17
RIM=405.02
15" INV=401.77

PR-DMH-16
RIM=404.18
15" INV=400.93

PR-DMH-15
RIM=403.60
15" INV=400.35

6" UNDERDRAIN
INV=399.02

6" UNDERDRAIN
INV=398.04

6" UNDERDRAIN
INV=397.35

6" PERF. – 280' @ 0.8%

6" PERF. – 280' @ 0.7%

6" PERF. – 280' @ 0.6%

PR-DMH-13
RIM=401.07
15" INV=396.82

PR-DMH-12
RIM=399.38
15" INV=396.13

PR-DMH-11
RIM=398.86
15" INV=395.61

12" HDPE – 57' @ 1.5%

15" HDPE – 39' @ 1.5%

15" HDPE – 16' @ 10.8%

24" HDPE – 17' @ 3.7%

24" HDPE – 649' @ 1.8%

30" HDPE – 377' @ 1.6%

15" HDPE – 57' @ 1.2%

15" HDPE – 39' @ 1.3%

15" HDPE – 55' @ 4.0%

15" HDPE – 17' @ 17.6%

24" HDPE – 17' @ 3.7%

30" HDPE – 62' @ 1.6%

PR-FES-18
15" INV=397.73

PR-CB-21
GR=397.13
6" INV=394.13
15" INV=391.25
30" INV=390.00

CARETAKER RESIDENCE

DRY SWALE 10
BOTTOM WIDTH=36"
DEPTH=18"
6" U/D DEPTH=36"

UPPER DISCHARGE SWALE
BOTTOM WIDTH=4'
DEPTH=3'

AMY'S KITCHEN PRE-TREATMENT WASTEWATER FORCEMAIN TO CITY OF MIDDLETOWN (DESIGNED BY OTHERS)

AMY'S KITCHEN PRE-TREATMENT WASTEWATER FORCEMAIN TO CITY OF MIDDLETOWN (DESIGNED BY OTHERS)

PR-DMH-14
RIM=403.58
24" INV=397.25
30" INV=396.75

PR-CB-23
GR=402.00
6" INV=399.00
15" INV=398.62
24" INV=397.87

QUEUING FOR ENTRY

DRY SWALE 12
BOTTOM WIDTH=24"
DEPTH=18"
6" U/D DEPTH=36"

DRY SWALE 11
BOTTOM WIDTH=24"
DEPTH=18"
6" U/D DEPTH=36"

PR-CB-22
GR=396.00
6" INV=393.00
15" INV=392.62
24" INV=391.87

PR-DMH-10
RIM=398.40
24" INV=391.25
30" INV=390.75

TOILET

TOILET

PR-DMH-9
RIM=409.43
15" INV=406.05

15" HDPE – 506' @ 1.5%

PR-DMH-8
RIM=399.37
15" INV=396.24
18" INV=395.99

18" HDPE – 132' @ 5.0%

18" HDPE – 93' @ 16.4%

PR-FES-17
30" INV=375.00

PR-FES-16
18" INV=375.50

BIO-RETENTION AREA 1
BERM EL=378.00
BED EL=375.00

DRY SWALE 9
BOTTOM WIDTH=36"
DEPTH=18"
6" U/D DEPTH=36"

SANITARY PUMP STATION & EQUALIZATION TANK

CONNECTION TO PROPOSED FORCEMAIN FROM AMY'S KITCHEN SEWER FORCEMAIN

PR-CB-20
GR=394.11
6" INV=391.11
18" INV=390.73

TRENCH DRAIN

ROAD "A"

PR-FES-14
24" INV=375.5

ACCESS

SCIENCE OF THE SOUL CONFERENCE CENTER
500' X 400'
200,000 S.F.

EMERGENCY

18" HDPE – 121' @ 8.0%

PR-DMH-2
RIM=399.32
18" INV=391.94

18" HDPE – 159' @ 2.5%

PR-CB-15
GR=386.76
6" INV=383.76
18" INV=382.76
24" INV=382.26

LOWER DISCHARGE SWALE
BOTTOM WIDTH=12'
DEPTH=3'

TRENCH DRAIN

PR-DMH-5
RIM=409.45
15" INV=406.07

15" HDPE – 506' @ 2.0%

PR-DMH-3
RIM=399.30
15" INV=396.17
18" INV=395.92

GRID

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- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 7 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	SOS ON ECHO SP
Layout:	GU 40-7
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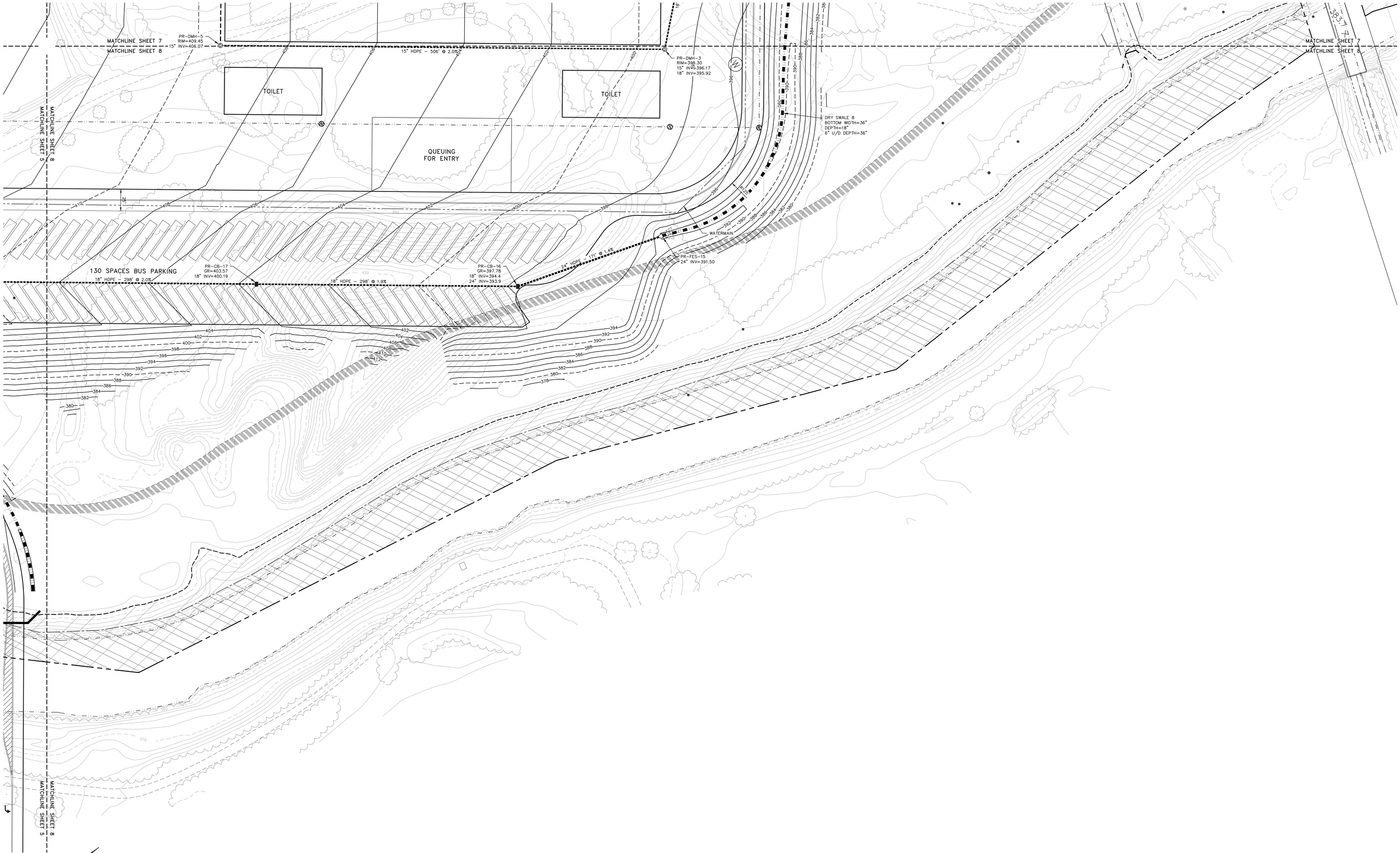
Drawing No.:	A - 13 - 0070 - C3D



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GRADING AND UTILITY PLAN 8 OF 8

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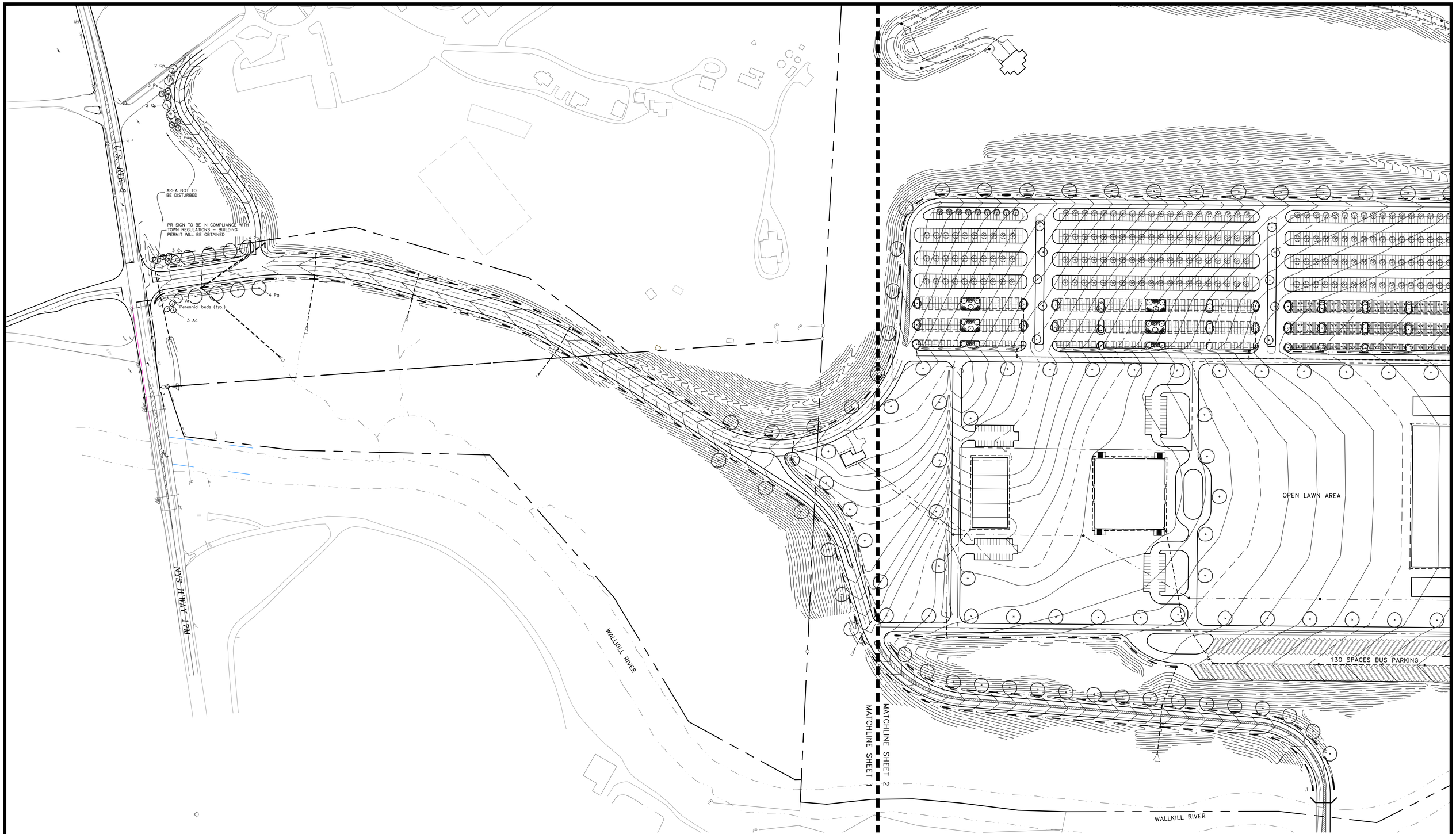

GRID

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- EXISTING DRAINAGE
- GAS — EXISTING GAS
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GRAPHIC SCALE

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CONCEPTUAL LANDSCAPING PLAN
SHEET 1 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

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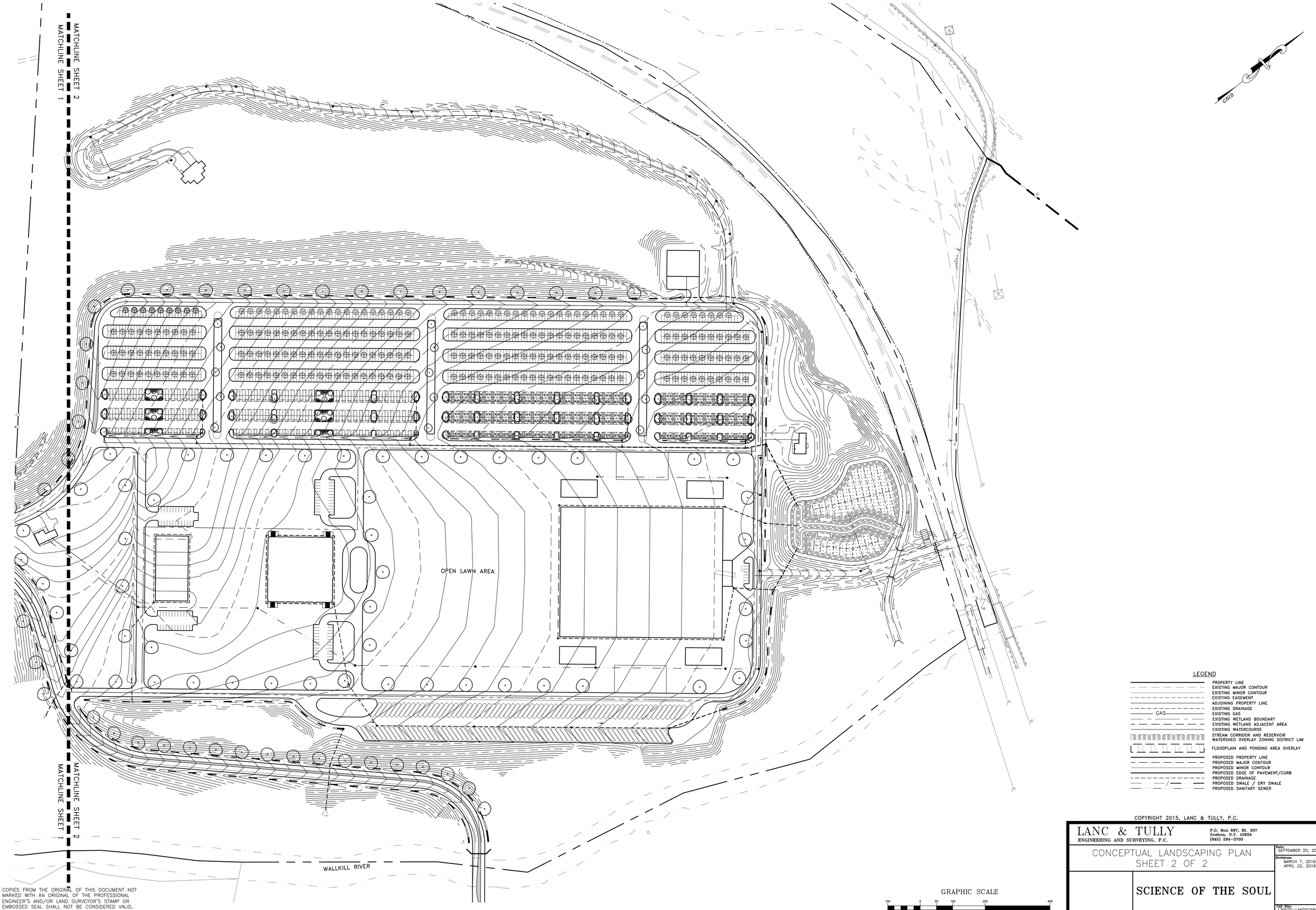

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CONCEPTUAL LANDSCAPING PLAN
SHEET 2 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

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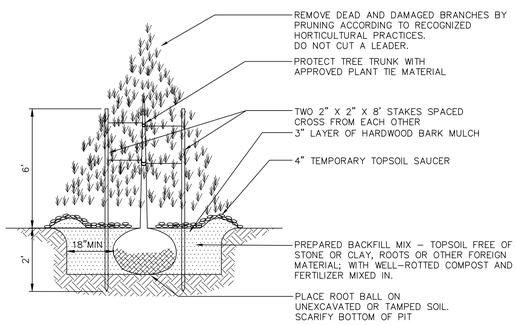
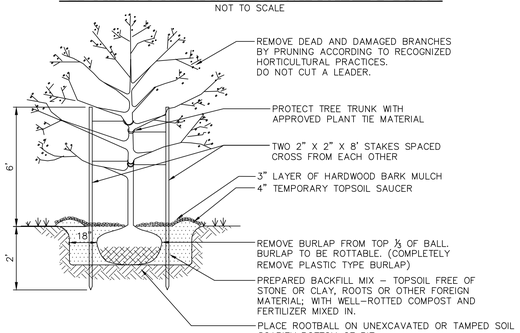


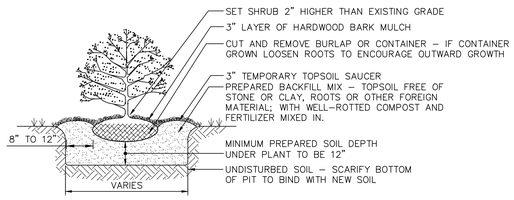
EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



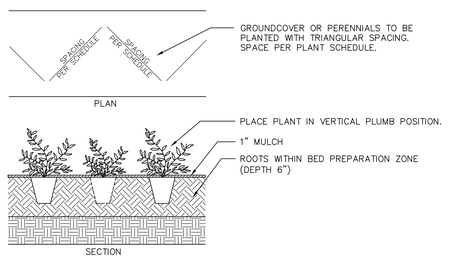
DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE



GROUNDCOVER/PERENNIAL PLANTING DETAIL

NOT TO SCALE

DECIDUOUS TREES			
Ar	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	3" CAL MIN, B&B
Gt	GLEDITSIA TRIACANTHOS VAR. INERMIS	THORNLESS COMMON HONEYLOCUST	3" CAL MIN, B&B
Gd	GYMNOCLADUS DIOICA	KENTUCKY COFFEETREE	3" CAL MIN, B&B
Ns	NYSSA SYLVATICA	BLACK GUM	3" CAL MIN, B&B
Pa	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	3" CAL MIN, B&B
Qp	QUERCUS PALUSTRIS	PIN OAK	3" CAL MIN, B&B
EVERGREEN TREES			
ABC	ABIES CONCOLOR	WHITE FIR	7-8' HGT, B&B
Pa	PICEA ABIES	NORWAY SPRUCE	7-8' HGT, B&B
Pp	PICEA PUNGENS	COLORADO SPRUCE	7-8' HGT, B&B
Ps	PINUS STROBUS	WHITE PINE	7-8' HGT, B&B
ORNAMENTAL TREES			
Ab	ACER BUERGERIANUM	TRIDENT MAPLE	1-3/4"-2" CAL, B&B
Ac	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	1-3/4"-2" CAL, B&B
Cc	CERCIS CANADENSIS	AMERICAN REDBUD	1-3/4"-2" CAL, B&B
Cv	CRATAEGUS VIRIDIS	WINTER KING HAWTHORNE	1-3/4"-2" CAL, B&B
Mv	MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA	1-3/4"-2" CAL, B&B
SHRUBS			
Cf	CORNUS FOEMINA MUSKINGUM	MUSKINGUM GRAY DOGWOOD	18"-24" DIA, CONTAINER
Ha	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" DIA, CONTAINER
Hf	HYPERICUM FRONDOSUM	GOLDEN ST. JOHNSWORT	18"-24" DIA, CONTAINER
Hq	HYDRANGEA QUERCIFOLIA 'PEE WEE'	OAK LEAF HYDRANGEA	18"-24" DIA, CONTAINER
Ig	ILEX GLABRA 'NIGRA'	INKBERRY	18"-24" DIA, CONTAINER
Im	ILEX MESERVA 'BLUE PRINCE'	BLUE PRINCE HOLLY	18"-24" DIA, CONTAINER
It	ITEA VIRGINICA 'HENRY'S GARNET'	VIRGINIA SWEETSPIRE	18"-24" DIA, CONTAINER
Kl	KALMIA LATIFOLIA	MOUNTAIN LAUREL	18"-24" DIA, CONTAINER
Pf	POTENTILLA FRUTICOSA 'ABBOTSWOOD'	ABBOTSWOOD POTENTILLA	18"-24" DIA, CONTAINER
Vr	VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	18"-24" DIA, CONTAINER
GROUNDCOVERS			
Dl	DIERVILLA LONICERA 'COPPER'	COPPER' DWARF BUSH HONEYSUCKLE	2 GAL, 36" O.C.
Ra	RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	2 GAL, 36" O.C.
PERENNIALS			
La	LAVANDULA ANGUSTIFOLIA	LAVENDER	3 GAL CONTAINER
Pa	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	3 GAL CONTAINER

GENERAL LANDSCAPING NOTES:

1. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE TO LOCATE AND VERIFY LOCATION OF ALL UTILITIES ON SITE PRIOR TO CONSTRUCTION OR INSTALLATION.
2. ALL PLANT MATERIAL SHALL BE NURSERY GROWN AND SHALL CONFORM TO THE STANDARDS OF AMERICAN STANDARD FOR NURSERY STOCK, THE AMERICAN ASSOCIATION OF NURSERYMEN, LATEST EDITION.
3. ALL PLANTS AND WORKMANSHIP SHALL BE UNCONDITIONALLY GUARANTEED FOR 2 CALENDAR YEARS. CONTRACTOR SHALL REMOVE STAKING AND GUYING AT END OF GUARANTEE PERIOD.
4. ALL LANDSCAPE INSTALLATIONS SHALL BE MAINTAINED ON A REGULAR BASIS, AND SHALL NOT BE ALLOWED TO TAKE ON AN UNSIGHTLY APPEARANCE (EXCEPT FOR NATURAL AREAS WHICH SHALL BE ALLOWED TO GROW NATURALLY WITH A MINIMUM OF MAINTENANCE).
5. CONTRACTOR SHALL FIELD STAKE THE LOCATIONS OF ALL PLANT MATERIAL PRIOR TO INITIATING INSTALLATION FOR THE REVIEW AND APPROVAL OF THE OWNER'S REPRESENTATIVE.
6. ALL LANDSCAPING PLANT MATERIALS – TREES, SHRUBS, GROUNDCOVERS AND PERENNIALS SHALL BE PLANTED AS SHOWN IN DETAILS. BACKFILL MIX FOR PLANTING BEDS SHALL BE A MIX OF TOPSOIL, WELL-ROTTED COMPOST AND FERTILIZER. PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS. IF WET SOIL CONDITIONS EXIST THEN PLANTING PITS SHALL BE EXCAVATED AN ADDITIONAL 12" AND FILLED WITH CRUSHED STONE.
7. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THAT WHICH EXISTED IN THE NURSERY.
8. ALL PLANTS SHALL BE ORIENTED AT THEIR PROPOSED LOCATION TO PRESENT THEIR BEST SIDE.
9. NEWLY INSTALLED PLANT MATERIAL SHALL BE WATERED AT THE TIME OF INSTALLATION. REGULAR WATERING SHALL BE PROVIDED TO ENSURE THE ESTABLISHMENT, GROWTH AND SURVIVAL ALL PLANTS.
10. ALL LAWN/GRASSED AREAS ARE TO BE TOPSOILED TO A DEPTH OF 4" AND SEEDED AS PER THE PERMANENT SEEDING RATE. A MINIMUM OF 12" OF TOPSOIL IN ALL PLANTING AREAS. IF POOR SOILS OR ROCK ARE ENCOUNTERED IN AREAS OF CUT, PROPOSED TREES SHALL BE PLANTED IN A MINIMUM OF 18" TOPSOIL COMPOST MIX.
11. MULCH ALL PLANTING BEDS AND TREES WITH A 3 INCH MINIMUM DEPTH OF HARDWOOD BARK MULCH. NO MULCH SHALL BE PLACED AGAINST THE ROOT COLLAR OF THE PLANTINGS. ALL TREES PLANTED IN LAWN AREAS SHALL RECEIVE A 3' DIAMETER MULCH RING OR TO THE LIMIT OF THE ADJACENT LAWN AREA.
12. SHRUB AND PERENNIAL PLANTINGS ARE MASS PLANTING BEDS AND SHALL BE MULCHED CONTINUOUSLY.

LANDSCAPING SEEDING SCHEDULE

TEMPORARY SEEDING DISTURBED AREAS

SEASON	TYPE OF COVER & SPECIES OF MIXTURES	SEEDING RATES IN LBS. 1,000 SF	LBS. PER ACRE
SPRING/SUMMER/EARLY FALL	ANNUAL RYEGRASS	0.7	30
LATE FALL/EARLY WINTER	AROOSTOOK WINTER RYE	2.5	100

MULCH WITH HAY OR STRAW AT 2 TONS/ACRE OR 90 LBS. PER 1,000 SF

PERMANENT LAWN SEEDING RATES

PERMANENT LAWN SEEDING SHALL CONSIST OF 30% CREEPING RED FESCUE, 50% KENTUCKY BLUE GRASS, 10% ANNUAL RYEGRASS, AND 10% PERENNIAL RYEGRASS – ERNST 5311 CONSERVATION MIX (ERNST-114) OR APPROVED EQUAL – AT A RATE OF 200 POUNDS PER ACRE OR 5 POUNDS PER 1,000 SQ. FT.

NOTES:
1. TOPSOIL SURFACE SHALL BE FINELY GRADED AND LOOSENED BY MECHANICAL RAKES TO ENSURE SEED ACCEPTANCE AND SEED TO SOIL CONTACT.
2. SEEDING AREA TO BE PREPARED WITH THE APPLICATION OF LIMESTONE AT THE RATE OF 800 LBS. PER 1,000 SY AND FERTILIZED WITH 10-20-20 AT THE RATE OF 140 LBS. PER 1,000 SY AFTER SEEDING, HAY MULCH IS TO BE APPLIED AT A RATE OF 2½ TO 3 TONS PER ACRE.

SEEDING FOR SLOPES, SWALES AND PERIMETER

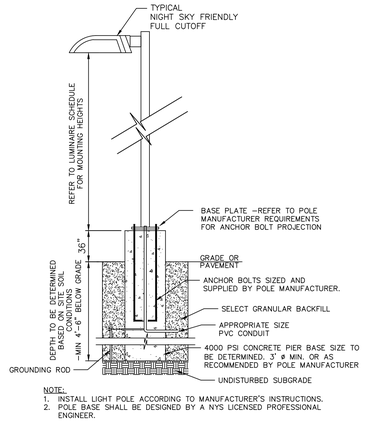
A. NATIVE STEEP SLOPE MIX WITH ANNUAL RYEGRASS (ERNMX-181 OR APPROVED EQUAL) SHALL BE BROADCAST OVER ALL STEEP SLOPES ON THE PLANS AT A RATE OF 30 LBS PER ACRE OR 1 LB PER 1,000 SQ FT.

B. NORTHEASTERN U.S. ROADSIDE NATIVE MIX (ERNMX-105 OR APPROVED EQUAL) SHALL BE BROADCAST OVER DISTURBED AREAS ALONG ROAD SIDES AT A RATE OF 20 POUNDS PER ACRE OR 1/2 POUND PER 1,000 SQ. FT.

C. RETENTION BASIN FLOOR MIX – LOW MAINTENANCE (ERNMX 126 OR APPROVED EQUAL) SHALL BE BROADCAST OVER ROAD SIDE SWALES AT A RATE OF 30 LB PER ACRE OR 1 LB PER 1,000 SQ FT.

PLANTING SCHEDULE

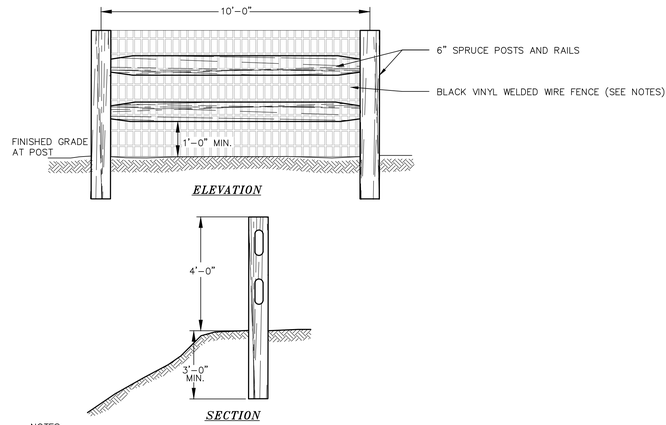
	SPRING PLANTING	FALL PLANTING
TREES AND SHRUBS:		
EVERGREEN	APRIL 1 – JUNE 30	SEPT. 1 – OCT. 15
DECIDUOUS	MARCH 1 – JUNE 30	OCT. 1 – DEC. 1
SEEDING:	APRIL 1 – MAY 31	SEPT. 1 – OCT. 15



NOTE:
1. INSTALL LIGHT POLE ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
2. POLE BASE SHALL BE DESIGNED BY A NYS LICENSED PROFESSIONAL ENGINEER.

LIGHT POLE BASE DETAIL

NOT TO SCALE



NOTES:
1. TWO RAIL RUSTIC SPLIT POST AND RAIL FENCING TO BE SPRUCE.
2. 2"X4" X 14 GAUGE PVC BLACK VINYL COATED WELDED WIRE FENCE TO BE ATTACHED TO INTERIOR OF SPLIT RAIL FENCING.
3. FENCE TO BE INSTALLED AROUND STORMWATER FACILITIES AS INDICATED ON PLAN.

RUSTIC SPLIT POST AND RAIL FENCE DETAIL

NOT TO SCALE

PLANTING SCHEDULE FOR BIORETENTION AREAS

SITE PLANT SCHEDULE			
KEY	BOTANICAL NAME	COMMON NAME	SIZE, NOTES
SHRUBS (BIORETENTION AREAS)			
Aa	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	3 GAL CONTAINER
Ca	CLETHRA ALNIFOLIA	SUMMERSWEET CLETHRA	3 GAL CONTAINER
Co	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	3 GAL CONTAINER
Ct	CHAMAECYPARIS THYOIDES 'TOP POINT'	ATLANTIC WHITE CEDAR	3 GAL CONTAINER
Iv	ILEX VERTICILLATA	WINTERBERRY	3 GAL CONTAINER
Po	PHYSOCARPUS OPULIFOLIUS	NINEBARK	3 GAL CONTAINER
Sc	SAMBUCUS CANADENSIS	ELDERBERRY	3 GAL CONTAINER
SEEDING			
RAIN GARDEN MIX (ERNMX-180 OR APPROVED EQUAL) SHALL BE BROADCAST OVER BIORETENTION AREAS AT A RATE OF 15 LB PER ACRE, OR 1/2 POUND PER 1,000 SQ. FT. - SEED SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.			

GRAPHIC SCALE

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LANDSCAPING AND LIGHTING DETAILS

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
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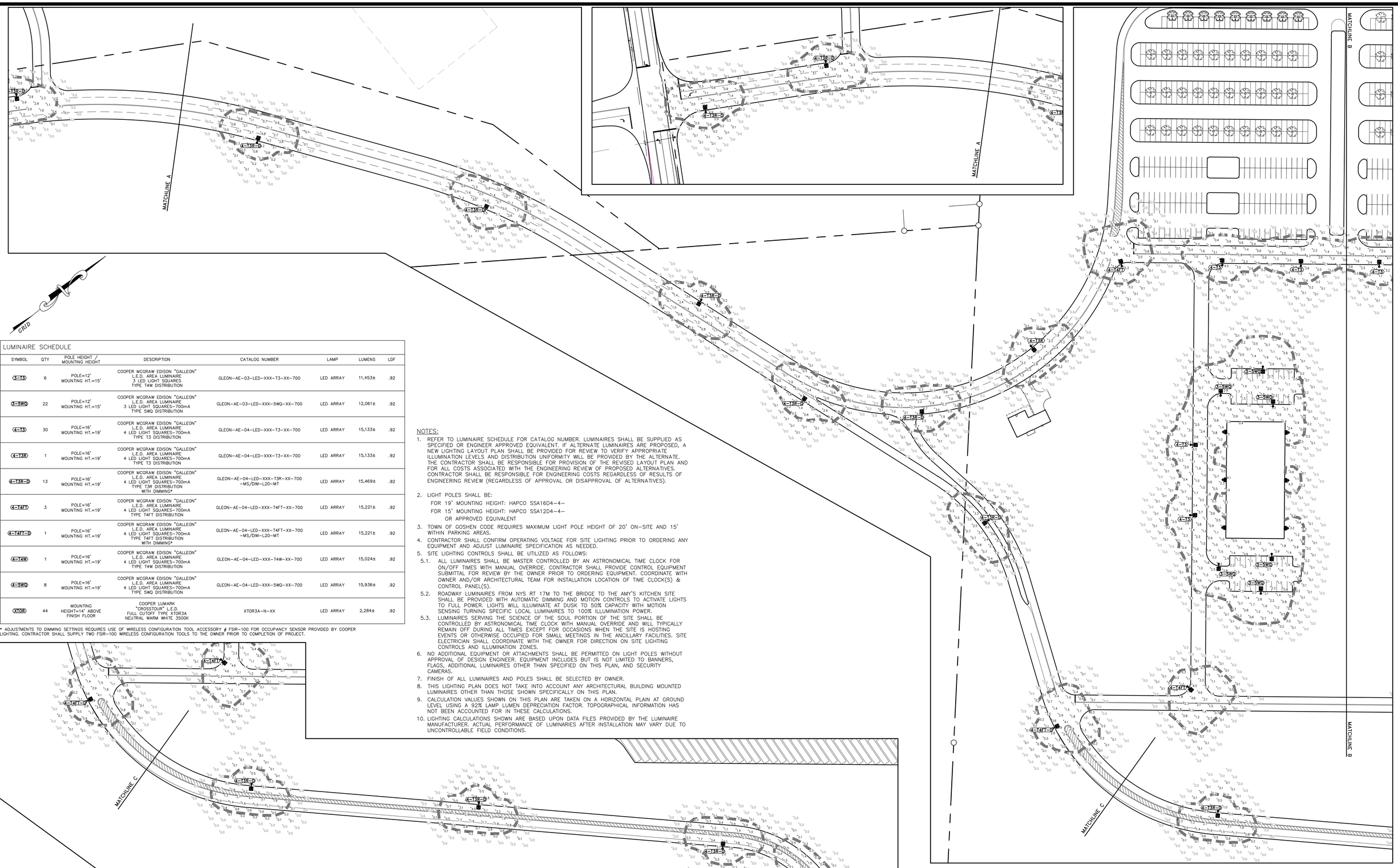

LUMINAIRE SCHEDULE

SYMBOL	QTY	POLE HEIGHT / MOUNTING HEIGHT	DESCRIPTION	CATALOG NUMBER	LAMP	LUMENS	LDF
4–T4	6	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES TYPE T4W DISTRIBUTION	GLEON–AE–03–LED–XXX–T3–XX–700	LED ARRAY	11,453±	.92
4–5WQ	22	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES–700mA TYPE 5WQ DISTRIBUTION	GLEON–AE–03–LED–XXX–5WQ–XX–700	LED ARRAY	12,061±	.92
4–T3	30	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T3 DISTRIBUTION	GLEON–AE–04–LED–XXX–T3–XX–700	LED ARRAY	15,133±	.92
4–T3R	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T3 DISTRIBUTION	GLEON–AE–04–LED–XXX–T3–XX–700	LED ARRAY	15,133±	.92
4–T3R–D	13	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T3R DISTRIBUTION WITH DIMMING*	GLEON–AE–04–LED–XXX–T3R–XX–700 –MS/DIM–L20–MT	LED ARRAY	15,469±	.92
4–T4FT	3	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T4FT DISTRIBUTION	GLEON–AE–04–LED–XXX–T4FT–XX–700	LED ARRAY	15,221±	.92
4–T4FT–D	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T4FT DISTRIBUTION WITH DIMMING*	GLEON–AE–04–LED–XXX–T4FT–XX–700 –MS/DIM–L20–MT	LED ARRAY	15,221±	.92
4–T4W	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T4W DISTRIBUTION	GLEON–AE–04–LED–XXX–T4W–XX–700	LED ARRAY	15,024±	.92
4–5WQ	8	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE 5WQ DISTRIBUTION	GLEON–AE–04–LED–XXX–5WQ–XX–700	LED ARRAY	15,936±	.92
XTOR	44	MOUNTING HEIGHT=14' ABOVE FINISH FLOOR	COOPER LUMARK "CROSSTOUR" L.E.D. FULL CUTOFF TYPE XTOR3A NEUTRAL WARM WHITE 3500K	XTOR3A–N–XX	LED ARRAY	2,284±	.92

* ADJUSTMENTS TO DIMMING SETTINGS REQUIRES USE OF WIRELESS CONFIGURATION TOOL ACCESSORY # FSIR–100 FOR OCCUPANCY SENSOR PROVIDED BY COOPER LIGHTING. CONTRACTOR SHALL SUPPLY TWO FSIR–100 WIRELESS CONFIGURATION TOOLS TO THE OWNER PRIOR TO COMPLETION OF PROJECT.

NOTES:

1. REFER TO LUMINAIRE SCHEDULE FOR CATALOG NUMBER. LUMINAIRES SHALL BE SUPPLIED AS SPECIFIED OR ENGINEER APPROVED EQUIVALENT. IF ALTERNATE LUMINAIRES ARE PROPOSED, A NEW LIGHTING LAYOUT PLAN SHALL BE PROVIDED FOR REVIEW TO VERIFY APPROPRIATE ILLUMINATION LEVELS AND DISTRIBUTION UNIFORMITY WILL BE PROVIDED BY THE ALTERNATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION OF THE REVISED LAYOUT PLAN AND FOR ALL COSTS ASSOCIATED WITH THE ENGINEERING REVIEW OF PROPOSED ALTERNATIVES. CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEERING COSTS REGARDLESS OF RESULTS OF ENGINEERING REVIEW (REGARDLESS OF APPROVAL OR DISAPPROVAL OF ALTERNATIVES).
2. LIGHT POLES SHALL BE:
   FOR 19' MOUNTING HEIGHT: HAPCO SSA16D4–4–
   FOR 15' MOUNTING HEIGHT: HAPCO SSA12D4–4–
   OR APPROVED EQUIVALENT
3. TOWN OF GOSHEN CODE REQUIRES MAXIMUM LIGHT POLE HEIGHT OF 20' ON–SITE AND 15' WITHIN PARKING AREAS.
4. CONTRACTOR SHALL CONFIRM OPERATING VOLTAGE FOR SITE LIGHTING PRIOR TO ORDERING ANY EQUIPMENT AND ADJUST LUMINAIRE SPECIFICATION AS NEEDED.
5. SITE LIGHTING CONTROLS SHALL BE UTILIZED AS FOLLOWS:
   5.1. ALL LUMINAIRES SHALL BE MASTER CONTROLLED BY AN ASTRONOMICAL TIME CLOCK FOR ON/OFF TIMES WITH MANUAL OVERRIDE. CONTRACTOR SHALL PROVIDE CONTROL EQUIPMENT SUBMITTAL FOR REVIEW BY THE OWNER PRIOR TO ORDERING EQUIPMENT. COORDINATE WITH OWNER AND/OR ARCHITECTURAL TEAM FOR INSTALLATION LOCATION OF TIME CLOCK(S) & CONTROL PANEL(S).
   5.2. ROADWAY LUMINAIRES FROM NYS RT 17M TO THE BRIDGE TO THE AMY'S KITCHEN SITE SHALL BE PROVIDED WITH AUTOMATIC DIMMING AND MOTION CONTROLS TO ACTIVATE LIGHTS TO FULL POWER. LIGHTS WILL ILLUMINATE AT DUSK TO 50% CAPACITY WITH MOTION SENSING TURNING SPECIFIC LOCAL LUMINAIRES TO 100% ILLUMINATION POWER.
   5.3. LUMINAIRES SERVING THE SCIENCE OF THE SOUL PORTION OF THE SITE SHALL BE CONTROLLED BY ASTRONOMICAL TIME CLOCK WITH MANUAL OVERRIDE AND WILL TYPICALLY REMAIN OFF DURING ALL TIMES EXCEPT FOR OCCASIONS WHEN THE SITE IS HOSTING EVENTS OR OTHERWISE OCCUPIED FOR SMALL MEETINGS IN THE ANCILLARY FACILITIES. SITE ELECTRICIAN SHALL COORDINATE WITH THE OWNER FOR DIRECTION ON SITE LIGHTING CONTROLS AND ILLUMINATION ZONES.
6. NO ADDITIONAL EQUIPMENT OR ATTACHMENTS SHALL BE PERMITTED ON LIGHT POLES WITHOUT APPROVAL OF DESIGN ENGINEER. EQUIPMENT INCLUDES BUT IS NOT LIMITED TO BANNERS, FLAGS, ADDITIONAL LUMINAIRES OTHER THAN SPECIFIED ON THIS PLAN, AND SECURITY CAMERAS.
7. FINISH OF ALL LUMINAIRES AND POLES SHALL BE SELECTED BY OWNER.
8. THIS LIGHTING PLAN DOES NOT TAKE INTO ACCOUNT ANY ARCHITECTURAL BUILDING MOUNTED LUMINAIRES OTHER THAN THOSE SHOWN SPECIFICALLY ON THIS PLAN.
9. CALCULATION VALUES SHOWN ON THIS PLAN ARE TAKEN ON A HORIZONTAL PLAIN AT GROUND LEVEL USING A 92% LAMP LUMEN DEPRECIATION FACTOR. TOPOGRAPHICAL INFORMATION HAS NOT BEEN ACCOUNTED FOR IN THESE CALCULATIONS.
10. LIGHTING CALCULATIONS SHOWN ARE BASED UPON DATA FILES PROVIDED BY THE LUMINAIRE MANUFACTURER. ACTUAL PERFORMANCE OF LUMINARIES AFTER INSTALLATION MAY VARY DUE TO UNCONTROLLABLE FIELD CONDITIONS.

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)

1 inch = 60 ft.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIM
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

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LIGHTING PLAN SHEET 1 OF 2

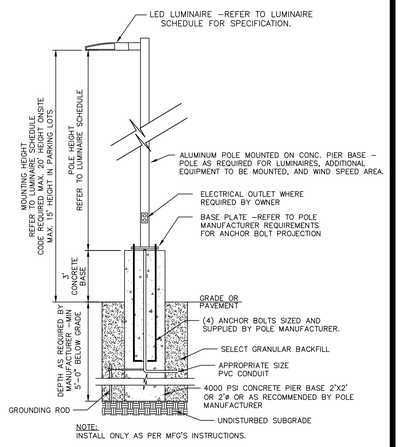
SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
CAD File: L:\00070–LANDSCAPING
Layout: LIGHT 60–1
Sheet No.: C3–15 OF 22
Drawn By: MK
Checked By:
Scale: 1" = 100'
Tax Map No.: SEE SHEET C3–01
Drawing No.: A – 13 – 0070 – C30

MATCHLINE B

MATCHLINE B



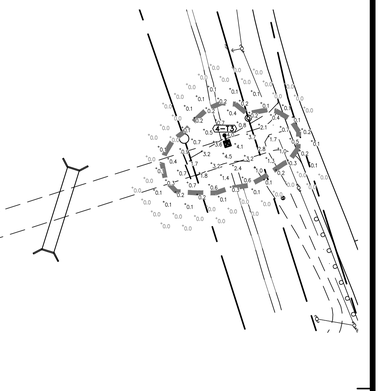
NOTE:
INSTALL ONLY AS PER MFG'S INSTRUCTIONS.

LIGHT POLE BASE DETAIL

NOT TO SCALE

COOPER MCGRAW EDISON "GALLEON"
LED AREA LUMINAIRE
POLE MOUNT AREA LUMINAIRE

COOPER LUMARK "CROSSTOUR"
LED AREA LUMINAIRE
WALL MOUNT AREA LUMINAIRE



GRID

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(IN FEET)
1 inch = 60 ft.

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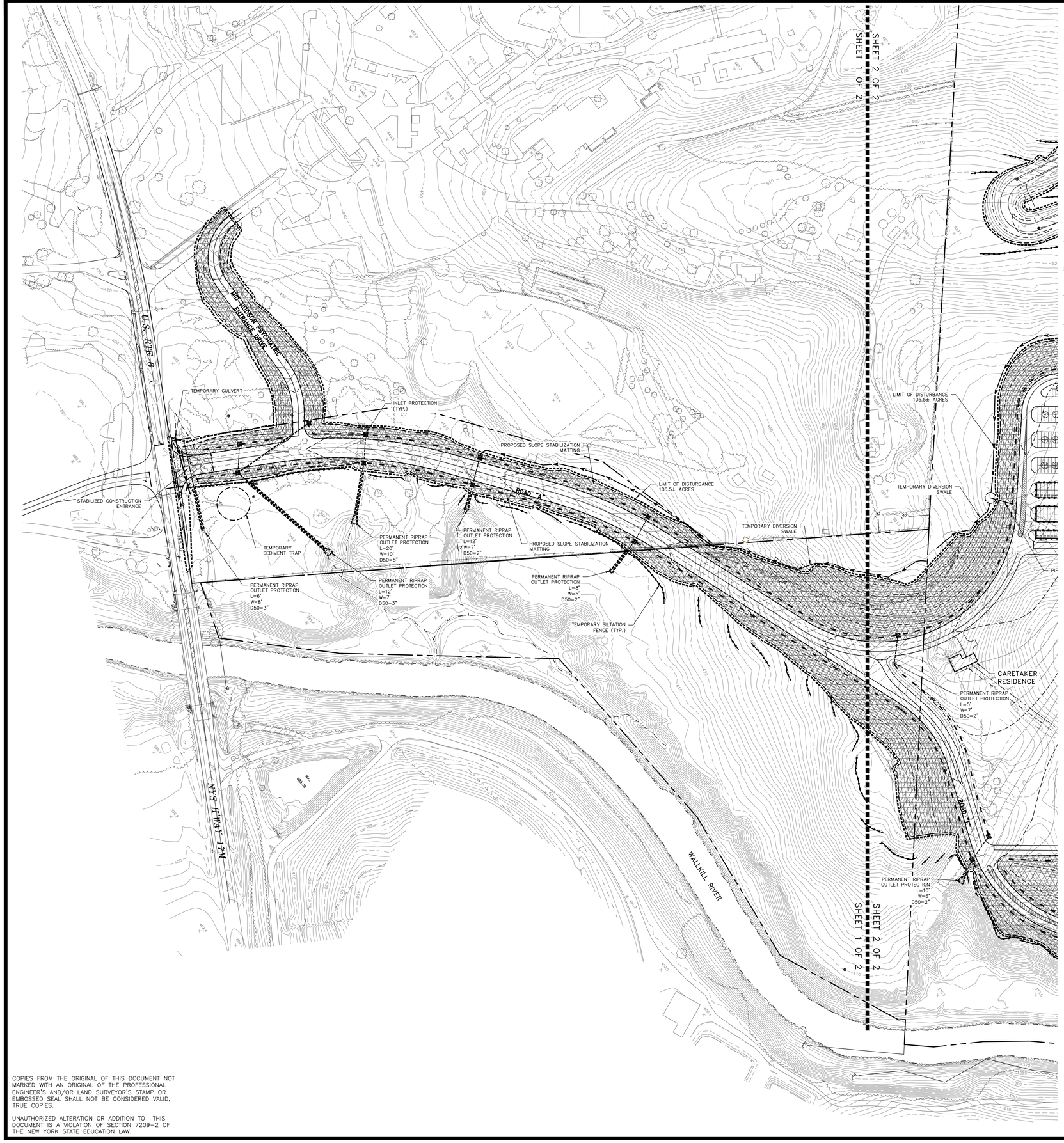
LIGHTING PLAN SHEET 2 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	130070–LANDSCAPING
Layout:	LIGHT 60–2
Sheet No.:	C3–16 OF 22
Drawn By:	MK
Checked By:	
Scale:	1" = 60'
Tax Map No.:	SEE SHEET C3–01
Drawing No.:	A – 13 – 0070 – C3D



EROSION AND SEDIMENT CONTROL NOTES

1. THE OWNER OR OPERATOR SHALL HAVE A QUALIFIED INSPECTOR CONDUCT AT LEAST TWO (2) SITE INSPECTIONS IN ACCORDANCE WITH PART IV.C EVERY SEVEN (7) CALENDAR DAYS, FOR AS LONG AS GREATER THAN FIVE (5) ACRES OF SOIL REMAIN DISTURBED. THE TWO (2) INSPECTIONS SHALL BE SEPARATED BY A MINIMUM OF TWO (2) FULL CALENDAR DAYS.
2. IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES SHALL BE INSTALLED AND/OR IMPLEMENTED WITHIN SEVEN (7) DAYS FROM THE DATE OF SOIL DISTURBANCE ACTIVITY CEASED.
3. TEMPORARY STABILIZATION MEANS THAT EXPOSED SOIL HAS BEEN COVERED WITH MATERIALS AS SET FORTH IN THE TECHNICAL STANDARD, NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, TO PREVENT THE EXPOSED SOIL FROM ERODING. THE MATERIALS CAN INCLUDE, BUT ARE NOT LIMITED TO, MULCH, SEED AND MULCH, AND EROSION CONTROL MATS (E.G. JUTE TWISTED YARN, EXCELSIOR WOOD FIBER MATS).
4. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBANCE ACTIVITIES HAVE CEASED AND A UNIFORM, PERENNIAL VEGETATIVE COVER WITH A DENSITY OF EIGHTY (80) PERCENT OVER THE ENTIRE PERVIOUS SURFACE HAS BEEN ESTABLISHED; OR OTHER EQUIVALENT STABILIZATION MEASURES, SUCH AS PERMANENT LANDSCAPE MULCHES, ROCK RIP-RAP OR WASHED/CRUSHED STONE HAVE BEEN APPLIED ON ALL DISTURBED AREAS THAT ARE NOT COVERED BY PERMANENT STRUCTURES, CONCRETE OR PAVEMENT.

SOIL RESTORATION REQUIREMENTS

1. ALL DISTURBED AREAS WHERE ONLY TOPSOIL STRIPPING HAS OCCURRED REQUIRE AERATION OF THE SUBGRADE BEFORE SPREADING TOPSOIL.
2. ALL DISTURBED ARES WHERE CUT AND FILL OPERATIONS OCCURRED REQUIRE FULL SOIL RESTORATION AS SPECIFIED IN NYSDEC MANUAL PUBLICATION ENTITLED "DEEP RIPPING AND DE-COMPACTION."

EROSION AND SEDIMENT CONTROL NOTES AND SPECIFICATIONS

1. PRE-CONSTRUCTION MEETING: BEFORE CONSTRUCTION ACTIVITIES AN EVALUATION OF THE SITE WILL BE PERFORMED WITH THE SITE CONTRACTOR, TOWN PERSONNEL AND SITE DESIGN ENGINEER TO DISCUSS GENERAL CONSTRUCTION PROCEDURES AND SEQUENCING. DURING THIS MEETING SENSITIVE AREAS OF THE PROPERTY SHALL BE DELINEATED AND MARKED-OUT WITH ORANGE CONSTRUCTION FENCE (I.E.: TREES, WETLANDS, WELLS, ETC.).
2. DELINEATE TOTAL SITE DISTURBANCE LIMITS: PLACEMENT OF ORANGE CONSTRUCTION FENCING ALONG THE LIMIT OF DISTURBANCE THROUGHOUT THE SITE.
3. PROTECT EXISTING BUFFERS: PLACE EROSION CONTROL DEVICES (SILT FENCING, DIVERSION BERMS, ETC.) UPSTREAM OF ANY EXISTING WATERCOURSE WITHIN OR OUTSIDE OF CONSTRUCTION AREAS, PRIOR TO THE START OF ANY CONSTRUCTION.
4. CONSTRUCTION ENTRANCES/SILTATION CONTROLS: TEMPORARY CONSTRUCTION ENTRANCES WILL BE INSTALLED AT THE ENTRANCES TO THE SITE ON HARTLEY ROAD AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. DURING WET WEATHER, IT MAY NECESSARY TO WASH VEHICLE TIRES AT THIS LOCATION. THEREFORE, THIS ENTRANCE IS TO BE GRADED SO THAT RUNOFF IS DIRECTED TO THE ADJACENT SEDIMENT TRAP. IN ADDITION, ANY OTHER SILTATION CONTROL DEVICES, AS SHOWN ON THE EROSION CONTROL PLAN ARE TO BE INSTALLED ADJACENT TO THE TEMPORARY ENTRANCE AND STAGING AREA.
5. CONSTRUCTION OF TEMPORARY SEDIMENT BASINS: CONSTRUCTION OF THE TEMPORARY SEDIMENT BASINS PRIOR TO THE START OF ANY MAJOR EARTHWORK MOVEMENT OR SITE CONSTRUCTION.
6. CONSTRUCTION OF TEMPORARY DIVERSION SWALES: THE INSTALLATION OF TEMPORARY DIVERSION SWALES TO CONVEY STORMWATER AROUND THE CONSTRUCTION AREA.
7. STAGING AREA: THE STAGING AREA WILL BE GRADED FOR STORAGE OF EQUIPMENT AND PLACEMENT OF CONSTRUCTION TRAILERS.
8. STRIP TOPSOIL: TOPSOIL WILL BE STRIPPED FROM THE ACTIVE WORK AREAS AND WILL BE STOCKPILED FOR LATER REUSE.
9. LAND GRADING: BULK SOIL GRADING WILL COMMENCE, SOIL TO BE MOVED FROM THE WESTERN SIDE OF THE PROJECT AREA AND PLACED IN THE FILL AREA ALONG THE EAST SIDE OF THE PROJECT AREA. AT THIS TIME, TEMPORARY STOCKPILE AREAS SHOULD BE UTILIZED. THE BUILDING PAD AREAS WILL BE GRADED.
10. BUILDING FOUNDATION CONSTRUCTION: UPON COMPLETION OF GRADING IN BUILDING FOOTPRINT AREAS, BUILDING FOUNDATION CONSTRUCTION FOR THE BUILDINGS WILL COMMENCE.
11. UTILITY INSTALLATION: INSTALL WATER, SEWER, AND STORMWATER THROUGHOUT THE PROJECT. INLET PROTECTION WILL BE INSTALLED AT ALL STORMWATER CATCH BASINS.
12. PAVEMENT CONSTRUCTION: CONSTRUCT PAVED AREAS AND CONCRETE PARKING AREAS.
13. STORMWATER INSTALLATION: INSTALL POROUS PAVEMENT AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. CONVERT TEMPORARY SEDIMENT BASINS TO BIO-RETENTION AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. RIPRAP OUTLET PROTECTION AREAS WILL BE INSTALLED.
14. EROSION CONTROL PRACTICE REMOVAL: REMOVE ANY REMAINING EROSION CONTROL PRACTICES INCLUDING INLET PROTECTION, AND TEMPORARY DIVERSIONS SWALES WHEN AREAS HAVE BEEN TEMPORARILY STABILIZED.
15. LANDSCAPING AND FINAL STABILIZATION: ALL OPEN AREAS TO BE STABILIZED WITH TOPSOIL AND SEEDED AS PER THE SEEDING SCHEDULE SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLANS. REMOVAL OF ALL TEMPORARY MEASURES, FLUSHING/CLEANING OF ALL CATCH BASINS AND PIPE, AND REMOVAL AND DISPOSAL OF ALL TRAPPED SEDIMENT ON SITE SHALL BE COMPLETED.
16. FINAL SITE INSPECTION AND CERTIFICATION: AT THE END OF CONSTRUCTION A SITE EVALUATION OF THE SITE WILL BE PERFORMED WITH SITE CONTRACTOR, TOWN PERSONNEL, AND SITE ENGINEER TO ENSURE THAT ALL STORMWATER FACILITIES WERE CONSTRUCTED AS PER THE SWPPP DESIGN AND THAT THE SITE HAS BEEN STABILIZED. A NOTICE OF TERMINATION WILL BE SUBMITTED TO THE NYSDEC.

CONSTRUCTION SEQUENCE

1. PRE-CONSTRUCTION MEETING: BEFORE CONSTRUCTION ACTIVITIES AN EVALUATION OF THE SITE WILL BE PERFORMED WITH THE SITE CONTRACTOR, TOWN PERSONNEL AND SITE DESIGN ENGINEER TO DISCUSS GENERAL CONSTRUCTION PROCEDURES AND SEQUENCING. DURING THIS MEETING SENSITIVE AREAS OF THE PROPERTY SHALL BE DELINEATED AND MARKED-OUT WITH ORANGE CONSTRUCTION FENCE (I.E.: TREES, WETLANDS, WELLS, ETC.).
2. DELINEATE TOTAL SITE DISTURBANCE LIMITS: PLACEMENT OF ORANGE CONSTRUCTION FENCING ALONG THE LIMIT OF DISTURBANCE THROUGHOUT THE SITE.
3. PROTECT EXISTING BUFFERS: PLACE EROSION CONTROL DEVICES (SILT FENCING, DIVERSION BERMS, ETC.) UPSTREAM OF ANY EXISTING WATERCOURSE WITHIN OR OUTSIDE OF CONSTRUCTION AREAS, PRIOR TO THE START OF ANY CONSTRUCTION.
4. CONSTRUCTION ENTRANCES/SILTATION CONTROLS: TEMPORARY CONSTRUCTION ENTRANCES WILL BE INSTALLED AT THE ENTRANCES TO THE SITE ON NYS ROUTE 17M AND ECHO LAKE ROAD AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. DURING WET WEATHER, IT MAY NECESSARY TO WASH VEHICLE TIRES AT THIS LOCATION. THEREFORE, THIS ENTRANCE IS TO BE GRADED SO THAT RUNOFF IS DIRECTED TO THE ADJACENT SEDIMENT TRAP. IN ADDITION, ANY OTHER SILTATION CONTROL DEVICES, AS SHOWN ON THE EROSION CONTROL PLAN ARE TO BE INSTALLED ADJACENT TO THE TEMPORARY ENTRANCE AND STAGING AREA. INSTALL TEMPORARY CULVERT DIVERTING THE EXISTING ROADSIDE SWALE AT THE NYS ROUTE 17M ENTRANCE.
5. CONSTRUCTION OF TEMPORARY SEDIMENT BASINS: CONSTRUCTION OF THE TEMPORARY SEDIMENT BASINS PRIOR TO THE START OF ANY MAJOR EARTHWORK MOVEMENT OR SITE CONSTRUCTION.
6. CONSTRUCTION OF TEMPORARY DIVERSION SWALES: THE INSTALLATION OF TEMPORARY DIVERSION SWALES TO CONVEY STORMWATER AROUND THE CONSTRUCTION AREA.
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8. STRIP TOPSOIL: TOPSOIL WILL BE STRIPPED FROM THE ACTIVE WORK AREAS AND WILL BE STOCKPILED FOR LATER REUSE.
9. LAND GRADING: BULK SOIL GRADING WILL COMMENCE, SOIL TO BE MOVED FROM THE WESTERN SIDE OF THE PROJECT AREA AND PLACED IN THE FILL AREA ALONG THE EAST SIDE OF THE PROJECT AREA. AT THIS TIME, TEMPORARY STOCKPILE AREAS SHOULD BE UTILIZED. THE BUILDING PAD AREAS WILL BE GRADED.
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12. PAVEMENT CONSTRUCTION: CONSTRUCT PAVED AREAS AND CONCRETE PARKING AREAS.
13. BRIDGE CONSTRUCTION: CONSTRUCT BRIDGE ACROSS WALLKILL RIVER TO THE AMY'S KITCHEN SITE.
14. STORMWATER INSTALLATION: INSTALL POROUS PAVEMENT AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. CONVERT TEMPORARY SEDIMENT BASINS TO BIO-RETENTION AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. RIPRAP OUTLET PROTECTION AREAS WILL BE INSTALLED.
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17. FINAL SITE INSPECTION AND CERTIFICATION: AT THE END OF CONSTRUCTION A SITE EVALUATION OF THE SITE WILL BE PERFORMED WITH SITE CONTRACTOR, TOWN PERSONNEL, AND SITE ENGINEER TO ENSURE THAT ALL STORMWATER FACILITIES WERE CONSTRUCTED AS PER THE SWPPP DESIGN AND THAT THE SITE HAS BEEN STABILIZED. A NOTICE OF TERMINATION WILL BE SUBMITTED TO THE NYSDEC.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
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- EXISTING WETLAND ADJACENT AREA
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- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED LIMIT OF SOIL DISTURBANCE
- PROPOSED TEMPORARY SILTATION FENCE
- TEMPORARY SWALE
- PROPOSED TEMPORARY CATCH BASIN INLET PROTECTION
- PROPOSED TEMPORARY SEDIMENT TRAP
- PROPOSED CHECK DAM
- PROPOSED SLOPE STABILIZATION MATTING
- PROPOSED TEMPORARY LEVEL SPREADER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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EROSION AND SEDIMENT CONTROL PLAN
1 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
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CAD File: X:\2070-DRAINAGE-COMBINED
Layout: EROSION SOS 1
Sheet No.: C3-17 OF 22
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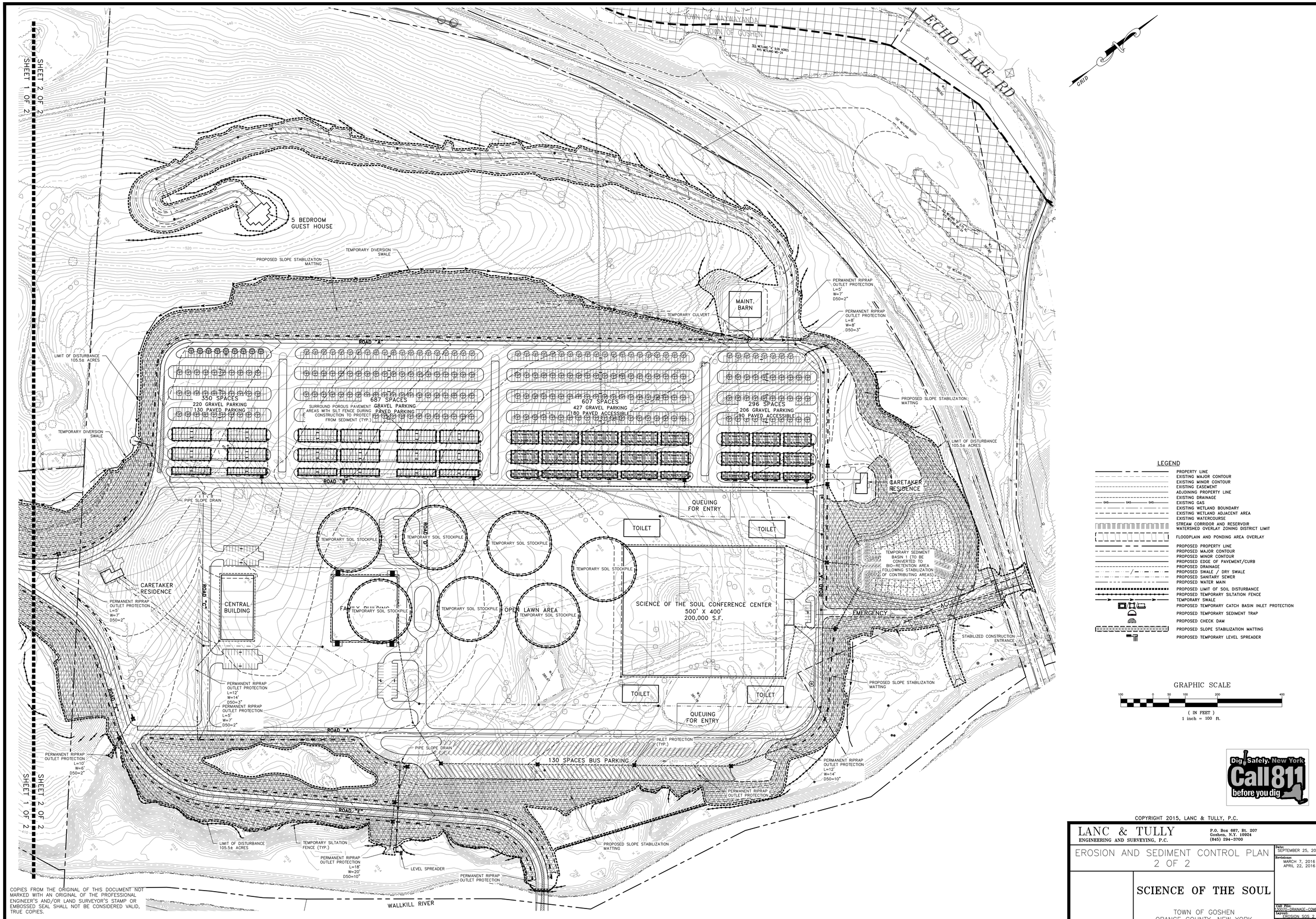
Drawn By:	Checked By:	Scale:	Tax Map No.:
ESR		1" = 100'	-



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED LIMIT OF SOIL DISTURBANCE
- PROPOSED TEMPORARY SILTATION FENCE
- TEMPORARY SWALE
- PROPOSED TEMPORARY CATCH BASIN INLET PROTECTION
- PROPOSED TEMPORARY SEDIMENT TRAP
- PROPOSED CHECK DAM
- PROPOSED SLOPE STABILIZATION MATTING
- PROPOSED TEMPORARY LEVEL SPREADER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

Dig Safely. New York. Call 811 before you dig

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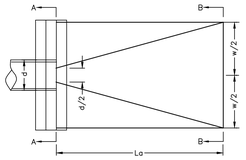
EROSION AND SEDIMENT CONTROL PLAN
2 OF 2

SCIENCE OF THE SOUL

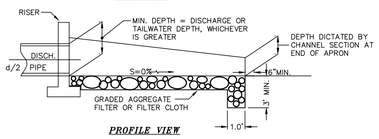
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	0070-DRAINAGE-COMBINED
Layout:	EROSION SOS 2
Sheet No.:	13-18 OF 22
Drawing No.:	A - 13 - 0070 - C3D

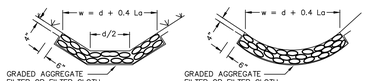
Drawn By:	Checked By:	Scale:	Tax Map No.:
ESR		1" = 100'	-



PLAN VIEW



PROFILE VIEW

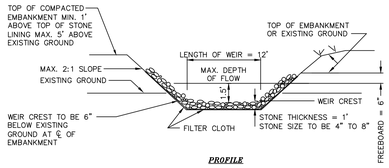


SECTION A-A
(AT END OF CULVERT)

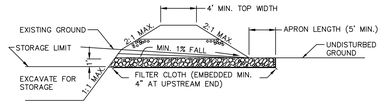
SECTION B-B
(AT END OF APRON)

NOTE:
SEE RIPRAP STANDARDS AND SPECIFICATIONS
MAXIMUM TAILWATER CONDITIONS

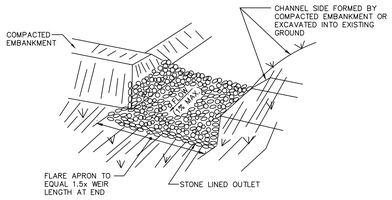
RIP RAP OUTLET PROTECTION
NOT TO SCALE



PROFILE

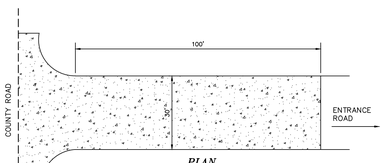


CROSS SECTION

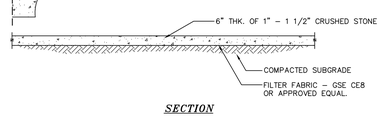


PERSPECTIVE VIEW

RIP-RAP OUTLET SEDIMENT TRAP
NOT TO SCALE



PLAN



SECTION

NOTE:
ENTRANCE SHALL BE MAINTAINED AS CONDITIONS DEMAND TO PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS.

A CRUSHED STONE, VEHICLE WHEEL-CLEANING BLANKET WILL BE INSTALLED WHENEVER A CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. SAID BLANKET WILL BE COMPOSED OF 6" DEPTH OF 1"-1 1/2" CRUSHED STONE, WILL BE AT LEAST 30' X 100' AND SHOULD BE PLACED ON COMPACTED SUB-GRADE AND SHALL BE MAINTAINED.

ALL DRIVEWAYS MUST BE STABILIZED WITH 1" - 1½" CRUSHED STONE OR SUB-BASE PRIOR TO INDIVIDUAL HOME CONSTRUCTION.

PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

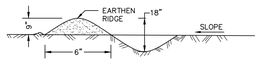
ALL CATCH BASIN INLETS WILL BE PROTECTED WITH A CRUSHED STONE OR HAYBALE FILTER (FILTER DETAILS APPEAR ON PLAN).

ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE DISCHARGE POINTS BECOME OPERATIONAL.

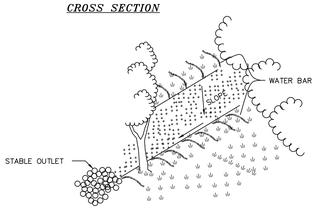
ALL SOIL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE DETAILED ON THE PLAN.

CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER.
4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE LEVEL WEIR CREST.
6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.
7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIPRAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
8. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
11. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.



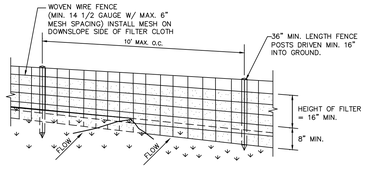
CROSS SECTION



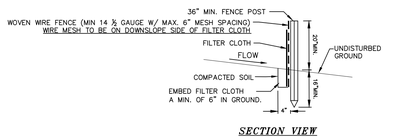
CONSTRUCTION SPECIFICATIONS

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.

WATER BARS DETAIL
NOT TO SCALE



PERSPECTIVE VIEW

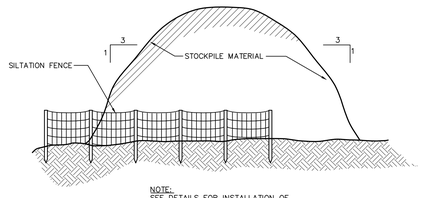


SECTION VIEW

CONSTRUCTION SPECIFICATIONS

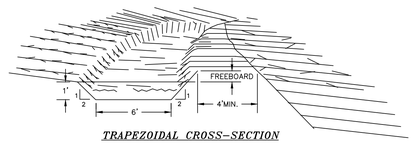
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILTATION FENCE
NOT TO SCALE



NOTE:
SEE DETAILS FOR INSTALLATION OF SILTATION FENCE

TYPICAL STOCKPILE DETAIL
NOT TO SCALE

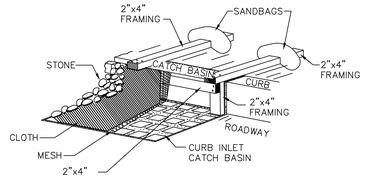


TRAPEZOIDAL CROSS-SECTION

CONSTRUCTION SPECIFICATIONS

1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
2. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE DIVERSION.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE STOCKPILED FOR RESTORATION OF THE AREA SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
   A. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE DIVERSION SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.

TEMPORARY DIVERSION SWALE
NOT TO SCALE

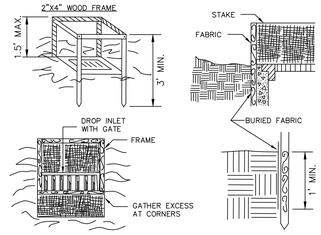


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85.
2. WOODEN FRAME SHALL BE CONSTRUCTED OF 2"x4" CONSTRUCTION GRADE LUMBER.
3. THE ASSEMBLY SHALL BE PLACED AGAINST THE INLET AND SECURED BY 2"x4" ANCHORS 2 FEET LONG EXTENDING ACROSS THE TOP OF THE CURB AND SIDEWALK AND HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHTS.

MAXIMUM DRAINAGE AREA 1 ACRE

STORM DRAIN INLET FILTER DETAIL FOR CURB INLETS
NOT TO SCALE

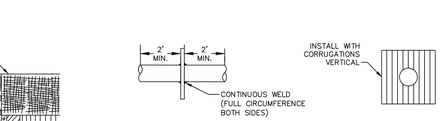


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED, IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2"x4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

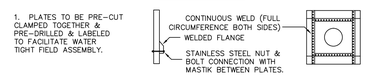
MAXIMUM DRAINAGE AREA 1 ACRE

FILTER FABRIC DROP INLET PROTECTION
NOT TO SCALE

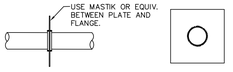


COLLAR WELDED IN PLACE BARREL SECTION

1. PLATES TO BE PRE-CUT CLAMPED TOGETHER & PRE-DRILLED & LABELED TO FACILITATE WATER TIGHT FIELD ASSEMBLY.



MULTI-PIECE COLLAR FOR LARGE PIPES

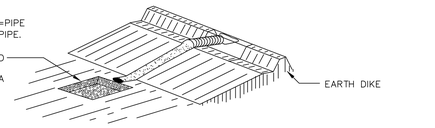


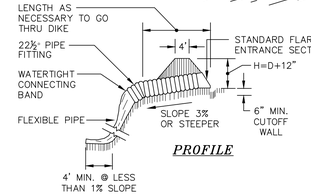
COLLAR FOR FLANGE JOINT PIPE

TYPICAL ANTI-SEEP COLLARS
NOT TO SCALE

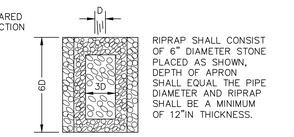
NOTE:
SIZE DESIGNATION IS:
PSD-PIPE DIA. (EX., PSD-18=PIPE SLOPE DRAIN WITH 18"DIAM. PIPE.

DISCHARGE INTO A STABILIZED WATERCOURSE, SEDIMENT TRAPPING DEVICE, OR ONTO A STABILIZED AREA.





PROFILE



RIPRAP SHALL CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN, DEPTH OF APRON SHALL EQUAL THE PIPE DIAMETER AND RIPRAP SHALL BE A MINIMUM OF 12"IN THICKNESS.

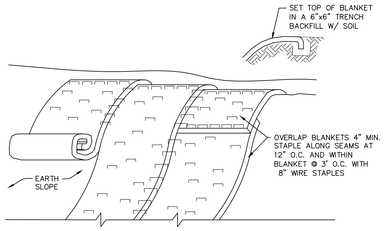
RIPRAP APRON PLANVIEW

CONSTRUCTION SPECIFICATIONS

1. THE INLET PIPE SHALL HAVE A SLOPE OF 3% OR STEEPER.
2. THE TOP OF THE EARTH DIKE OVER THE INLET PIPE AND THOSE DIKES CARRYING WATER TO THE PIPE SHALL BE AT LEAST 1' HIGHER AT ALL POINTS THAN THE TOP OF THE INLET PIPE.
3. THE INLET PIPE SHALL BE CORRUGATED METAL PIPE WITH WATERTIGHT CONNECTING BANDS.
4. THE FLEXIBLE TUBING SHALL BE THE SAME DIAMETER AS THE INLET PIPE AND SHALL BE CONSTRUCTED OF A DURABLE MATERIAL WITH HOLD-DOWN GROMMETS SPACED AT 10' ON CENTER.
5. THE FLEXIBLE TUBING SHALL BE SECURELY FASTENED TO THE CORRUGATED METAL PIPE WITH METAL STRAPPING OR WATERTIGHT CONNECTING COLLARS.
6. THE FLEXIBLE TUBING SHALL BE SECURELY ANCHORED TO THE SLOPE BY STAKING AT THE GROMMETS PROVIDED.
7. A RIPRAP APRON SHALL BE PROVIDED AT THE OUTLET. THIS SHALL CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN.
8. THE SOIL AROUND AND UNDER INLET PIPE AND ENTRANCE SECTION SHALL BE HAND TAMPED IN 4" LIFTS TO THE TOP OF EARTH DIKE.
9. FOLLOW-UP INSPECTION AND ANY NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH STORM.

* DRAINAGE AREA MUST NOT EXCEED 5 ACRES.

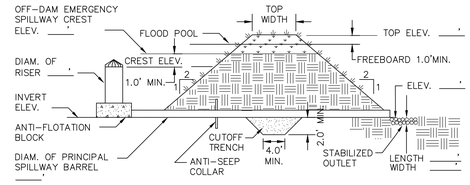
PIPE SLOPE DRAIN FLEXIBLE DETAIL
NOT TO SCALE



SLOPE STABILIZATION DETAIL
NOT TO SCALE

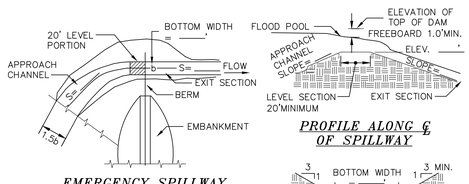
NOTES:

1. SLOPE STABILIZATION TO BE USED ON ALL CREATED OR DISTURBED SLOPES GREATER THAN 33% AND WHERE SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. STABILIZE PREPARED EARTHEN SLOPE WITH A BIODEGRADABLE NATURAL FIBER NETTING. APPROVED TYPES AS FOLLOWS:
   -S150BN - NORTH AMERICAN GREEN 1-800-772-2040
   -ECS-2B - EAST COAST EROSION BLANKET 1-800-582-4005
   -APPROVED EQUAL
3. ALL SLOPE RESTORATION MUST INCLUDE 4" TOPSOIL.
4. PREPARE THE SOIL SURFACE INCLUDING RAKING, SEEDING AND FERTILIZING PRIOR TO INSTALLING EROSION CONTROL NETTING.
5. AFTER NETTING IS INSTALLED, PLANT ANY PROPOSED LANDSCAPING/GROUND COVER THROUGH SLITS CUT IN FABRIC.



PRINCIPAL SPILLWAY PROFILE

MAXIMUM DRAINAGE AREA = 100 ACRES

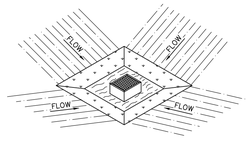


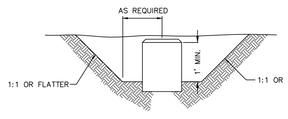
EMERGENCY SPILLWAY PLAN VIEW

PROFILE ALONG ℄ OF SPILLWAY

CROSS SECTION AT CONTROL SECTION

SEDIMENT BASIN DETAILS
NOT TO SCALE

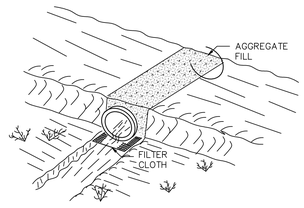


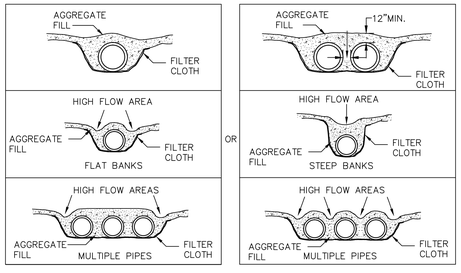


CATCH BASIN SEDIMENT TRAP
NOT TO SCALE

CONSTRUCTION SPECIFICATION FOR ST-III

1. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
2. THE VOLUME OF SEDIMENT STORAGE SHALL BE 3600 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE. THE MAXIMUM DRAINAGE ARE IS 3 ACRES.
3. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
5. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
6. ALL CUT SLOPES SHALL BE 1:1 OR FLATTER.





TEMPORARY ACCESS CULVERT DETAIL
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Dig Safely. New York Call 811 before you dig

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EROSION AND SEDIMENT CONTROL DETAILS

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	L30070-DETAILS
Layout:	EROSION DETAILS
Sheet No.:	C3-19 OF 22
Drawn By:	ESR
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Tax Map No.:	SEE SHEET C3-01
Drawing No.:	A - 13 - 0070 - C30

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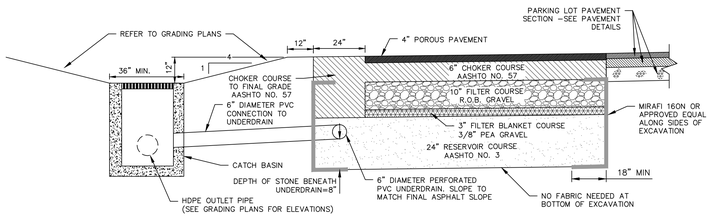


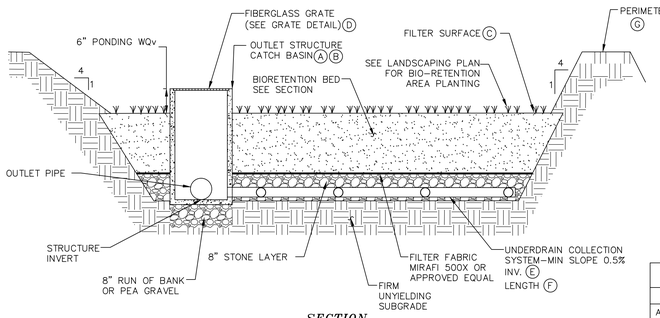
POROUS ASPHALT PAVEMENT CROSS-SECTION

NOT TO SCALE

NOTES:
1. POROUS ASPHALT MIX SHALL BE PG 64-28 OR 76-22 WITH SBS (STYRENE BUTADIENE STYRENE) OR SBR (STYRENE BUTADIENE RUBBER) AND 5 POUNDS OF FIBER PER TON.
2. REFER TO THE UNIVERSITY OF NEW HAMPSHIRE DESIGN SPECIFICATION FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS FOR RECOMMENDED INSTALLATION AND QUALITY CONTROL PROCEDURES.
3. ALTERNATE MIX DESIGNS MAY BE ACCEPTABLE PENDING SUBMISSION TO AND REVIEW BY THE DESIGN ENGINEER. FINAL MIX DESIGN MUST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.

R.O.B. GRAVEL GRADATION	
SIEVE SIZE	PERCENT PASSING BY WEIGHT
2-INCH	100%
1/4-INCH	25% TO 65%
NO. 40	5% TO 40%
NO. 200	0% TO 10%

POROUS ASPHALT MIX DESIGN	
SIEVE SIZE (INCH/MM)	***PERCENT PASSING (%)***
0.75/19	100
0.50/12.5	85-100
0.375/9.5	55-75
No. 4/4.75	10-25
No. 8/2.36	5-10
No. 200/0.075	2-4
PROPERTY	***VALUE***
BINDER CONTENT (AASHTO T164)	6 - 6.5%
FIBER CONTENT BY TOTAL MIXTURE MASS	0.3% CELLULOSE OR 0.4% MINERAL
SBR CONTENT BY WEIGHT OF BITUMENT	1.5 - 3%
IN-PLACE AIR VOID CONTENT (ASTM D6752/AASHTO T275)	16.0 - 19.0%



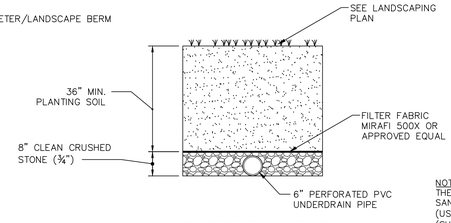
SECTION

BIO-RETENTION AREA DETAIL

NOT TO SCALE

BIORETENTION AREA MAINTENANCE REQUIREMENTS:
INSPECTION SHALL BE MADE WEEKLY BY A LICENSED PROFESSIONAL AND AFTER EVERY ½" RAINFALL EVENT BY THE OWNER OR CONTRACTOR DURING CONSTRUCTION. DURING THE FIRST GROWING SEASON INSPECTIONS SHALL BE CONDUCTED MONTHLY AND BI ANNUALLY THEREAFTER. THE FOLLOWING TASKS SHALL BE PERFORMED AS NEEDED:

1. REMOVAL OF ACCUMULATED SEDIMENT AND CLEANING AND/OR RESTORATION OF THE FILTER BED AREAS WHENEVER ACCUMULATED SEDIMENT REACHES A DEPTH OF 1 INCH.
2. RESTORATION OF ANY DISTURBED PLANT MATERIAL AND ANY ERODED EMBANKMENTS. REPLACEMENT OF PROPOSED PLANTS SHALL OCCUR IF MORE THEN 50% OF THE COVERAGE OF THE FACILITY IS NOT ACHIEVED.
3. REMOVAL OF ACCUMULATED DEBRIS WITHIN THE FILTER BED AREAS AND AT ALL INLET AND OUTFALL STRUCTURES.
4. ANNUAL MOWING (EARLY WINTER) OF THE BASINS. TRIMMING AND PRUNING OF BUSHES. REMOVAL OF ANY FALLEN TREES OR LIMBS.
5. WHEN THE FILTERING CAPACITY OF THE FILTER DIMINISHES SUBSTANTIALLY (I.E., WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 48 HOURS), THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH MATERIAL. THE REMOVED SEDIMENTS SHALL BE DISPOSED IN AN ACCEPTABLE MANNER (I.E., LANDFILL).
6. REFER TO LANDSCAPING PLANS FOR PLANTING REQUIREMENTS. IF FOR ANY REASON A CONFLICT OF PLANT MATERIAL OR PLANT MAINTENANCE SHOULD OCCUR, THE LANDSCAPE PLANS ARE TO TAKE PRECEDENCE.

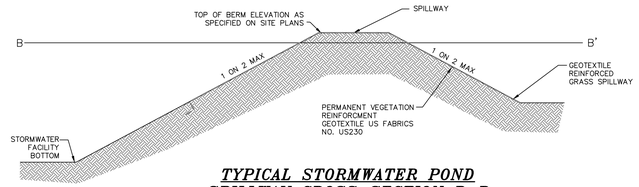


BIORETENTION SECTION

BIO-RETENTION AREA DATA

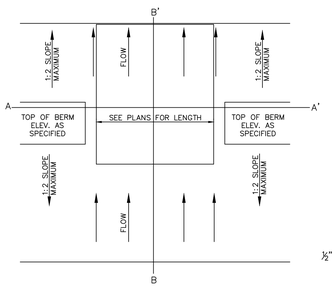
	BIO-RETENTION AREA OUTLET STRUCTURE	A	B	C
A	OUTLET STRUCTURE DIMENSIONS (OUTSIDE)	48"x48"	48"x48"	48"x48"
B	TOP OF STRUCTURE ELEVATION	409.50	400.50	396.50
C	FILTER SURFACE ELEVATION	409.00	400.00	396.00
D	FIBERGLASS GRATE DIMENSION	42"x42"	42"x42"	42"x42"
E	UNDERDRAIN INVERT ELEVATION	405.00	396.00	392.00
F	UNDERDRAIN SYSTEM LENGTH	900'	1,100'	1,500'
G	TOP OF PERIMETER BERM	413.25	404.25	400.25

NOTES:
THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BY LESS THAN 25% BY VOLUME. SOILS SHOULD FALL WITHIN THE SM, OR ML CLASSIFICATIONS OF THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12 TO 18", LOOSELY COMPACTED (TAMPED LIGHTLY WITH A DOZER OR BACKHOE BUCKET).



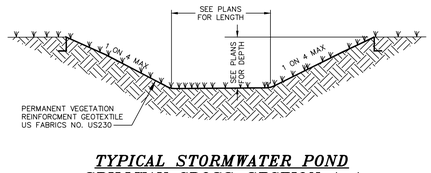
TYPICAL STORMWATER POND SPILLWAY CROSS-SECTION B-B

NOT TO SCALE



TYPICAL STORMWATER POND SPILLWAY PLAN VIEW

NOT TO SCALE



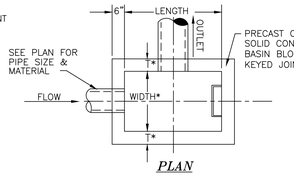
TYPICAL STORMWATER POND SPILLWAY CROSS-SECTION A-A

NOT TO SCALE

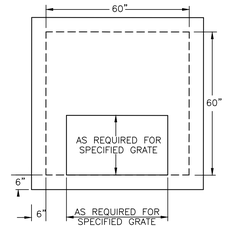
ROAD EDGE AND GRAVEL DIAPHRAGM DETAIL

NOT TO SCALE

NOTE: TO BE UTILIZED IN AREAS WHERE SHEET FLOW TO BIORETENTION OR INFILTRATION AREAS IS PROPOSED.

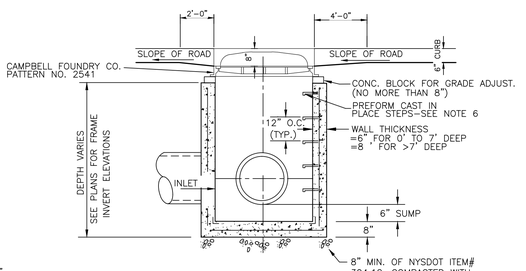


PLAN

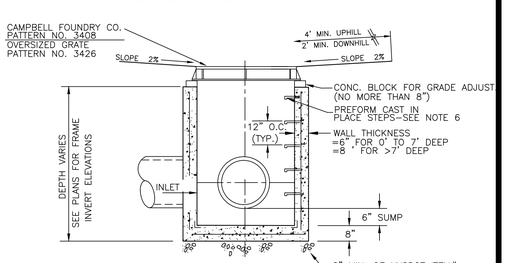


ROOF SLAB FOR OVERSIZED STRUCTURE

ROOF TO BE 8" THICK, WITH STEEL REINF. DESIGNED FOR H-20 LOADING.



CURB TOP CATCH BASIN



FLAT TOP CATCH BASIN

CATCH BASIN DETAIL

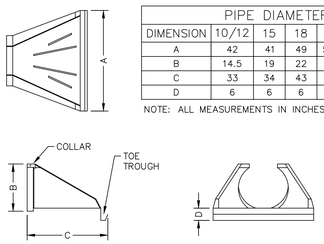
NOT TO SCALE

PRECAST BASIN SCHEDULE			
*PRECAST SIZE	INTERIOR LENGTH	INTERIOR WIDTH	ROOF SLAB
TYPICAL	48"	30"	NO
OVERSIZED	60"	60"	YES

*SEE NOTE 7

PLAN LEGEND
(OSS) = CATCH BASIN WITH OVERSIZED STRUCTURE AND STANDARD SIZE GRATE
(OSG) = CATCH BASIN WITH OVERSIZED STRUCTURE AND OVERSIZED GRATE

NOTES:
1. CONCRETE STRENGTH: 4000 P.S.I. @ 28 DAYS.
2. BACKFILL AROUND CATCH BASIN IS TO BE ACCEPTABLE DRY RUN OF BANK GRAVEL, FREE OF ANY STONES LARGER THAN 3" IN DIAMETER, COMPACTED IN 8" MAX. LIFTS WITH JUMPING JACK COMPACTOR, ACHIEVING 95% COMPACTION.
3. SPECIFIED CATCH BASINS ARE TO HAVE FLAT GRATES, SEE PLAN LABELS.
4. PIPES TO BE CUT FLUSH WITH INSIDE WALLS OF CATCH BASIN.
5. PIPES SHALL BE PARGED AROUND INTERIOR AND EXTERIOR PRIOR TO BACKFILLING OF STRUCTURE.
6. STEPS ARE TO BE CAMPBELL FOUNDRY CO. PATTERN NO. 2593 2254, OR APPROVED EQUAL.
7. SEE PLAN LABELS FOR SIZE OF STRUCTURE AND GRATE.

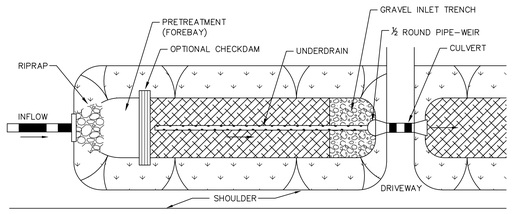


PIPE DIAMETER						
DIMENSION	10/12	15	18	24	30	36
A	42	41	49	59.5	88	88
B	14.5	19	22	28	36	43
C	33	34	43	48	63.5	66.5
D	6	6	6	6	6	6

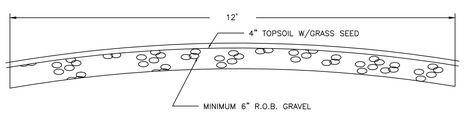
NOTE: ALL MEASUREMENTS IN INCHES

HDPE FLARED END SECTION

NOT TO SCALE



PLAN VIEW

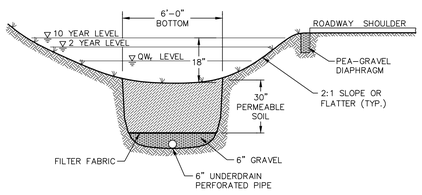


GRAVEL SHALL CONFROM TO THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE	% PASSING BY WEIGHT
2"	100
1/4"	30-65
NO 200	10-20

POND MAINTENANCE ACCESS DETAIL

NOT TO SCALE



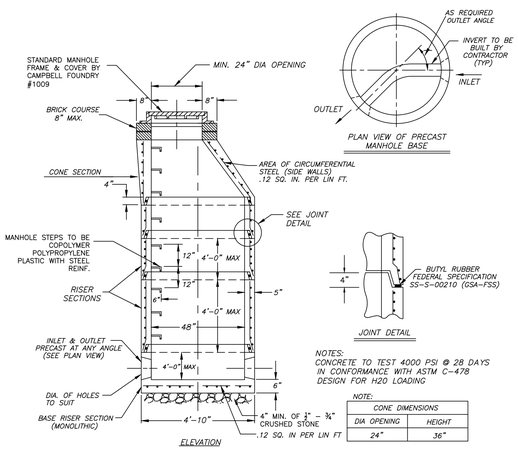
SECTION

DRY SWALE DETAIL

NOT TO SCALE

GRATE DETAIL

NOT TO SCALE



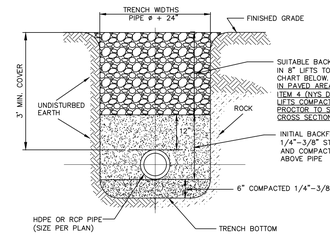
NOTES:
CONCRETE TO TEST 4000 PSI @ 28 DAYS IN CONFORMANCE WITH ASTM C-478
DESIGN FOR H20 LOADING

NOTE:

CONE DIMENSIONS	
DIA OPENING	HEIGHT
24"	36"

PRE CAST CONCRETE STORM MANHOLE DETAIL

NOT TO SCALE



EARTH OR ROCK EXCAVATION

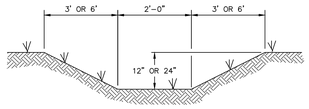
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
DESCRIPTION	SOIL CLASSIFICATION ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, CRUSHED STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

* BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

STORM SEWER TRENCH CROSS SECTION

NOT TO SCALE



SWALE DETAIL

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DRAINAGE DETAILS

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016
CAD File: 130070-DETAILS
Layout: DRAINAGE DETAILS
Sheet No.: C3-20 OF 22
Drawn By: ESR
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Scale: N/A
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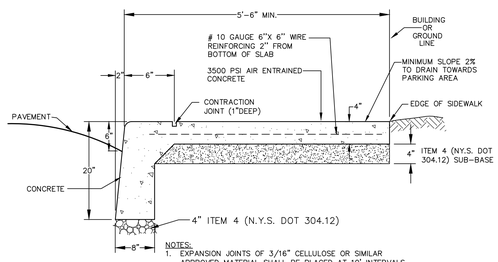
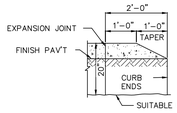
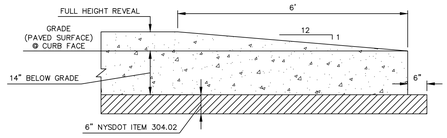


NOTES:
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS
2. CONTRACTION JOINTS 1" DEEP HAVING 1/4" RADIUS EDGES SHALL BE PLACED AT 5'-0" INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE 1/2" RADIUS.
4. USE 3500 PSI AIR ENTRAINED CONCRETE.
5. BROOM FINISH TOP SURFACE.

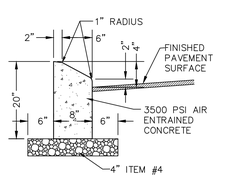
MONOLITHIC CURB AND SIDEWALK DETAIL
NOT TO SCALE



BULLNOSE CURB TERMINAL
NOT TO SCALE

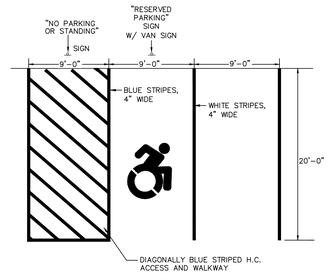


NYSDOT CURB TERMINAL
NOT TO SCALE

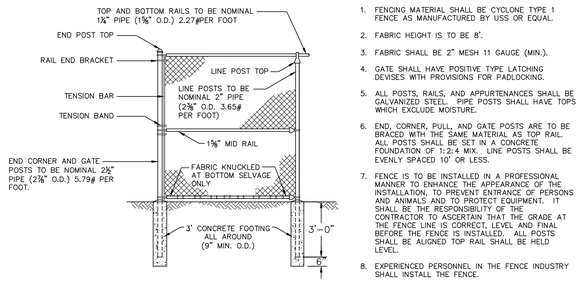


CONTRACTOR TO PROVIDE 1/2" PREFORMED BITUMINOUS – IMPREGNATED FIBER JOINT FILLER EVERY 10'. JOINT FILLER TO COMPLY WITH A.A.S.H.T.O. SPEC. M-213. FILLER TO BE RECESSED IN FROM FRONT FACE AND TOP OF CURB 1/4".

CONCRETE CURB DETAIL (MOUNTABLE)
NOT TO SCALE



HANDICAP AND TYPICAL PARKING SPACE STRIPING DETAIL
NOT TO SCALE



TYPICAL CHAIN LINK FENCE
NOT TO SCALE

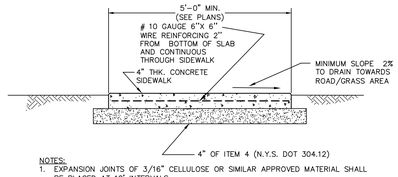
FENCE SPECIFICATIONS:

1. FENCING MATERIAL SHALL BE CYCLONE TYPE 1 FENCE AS MANUFACTURED BY USS OR EQUAL.
2. FABRIC HEIGHT IS TO BE 8'.
3. FABRIC SHALL BE 2" MESH 11 GAUGE (MIN.).
4. GATE SHALL HAVE POSITIVE TYPE LATCHING DEVISES WITH PROVISIONS FOR PADLOCKING.
5. ALL POSTS, RAILS, AND APPURTENANCES SHALL BE GALVANIZED STEEL. PIPE POSTS SHALL HAVE TOPS WHICH EXCLUDE MOISTURE.
6. END, CORNER, PULL, AND GATE POSTS ARE TO BE BRACED WITH THE SAME MATERIAL AS TOP RAIL. ALL POSTS SHALL BE SET IN A CONCRETE FOUNDATION OF 1:2:4 MIX. LINE POSTS SHALL BE EVENLY SPACED 10' OR LESS.
7. FENCE IS TO BE INSTALLED IN A PROFESSIONAL MANNER TO ENHANCE THE APPEARANCE OF THE INSTALLATION, TO PREVENT ENTRANCE OF PERSONS AND ANIMALS AND TO PROTECT EQUIPMENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN THAT THE GRADE AT THE FENCE LINE IS CORRECT, LEVEL AND FINAL BEFORE THE FENCE IS INSTALLED. ALL POSTS SHALL BE ALIGNED TOP RAIL SHALL BE HELD LEVEL.
8. EXPERIENCED PERSONNEL IN THE FENCE INDUSTRY SHALL INSTALL THE FENCE.

HATCH LINES
261.13(b)

NOTE: DETAIL SHALL BE USED FOR ALL ON-SITE LOCATIONS WHERE PAVEMENT HATCHING IS SPECIFIED

STRIPING DETAIL
NOT TO SCALE

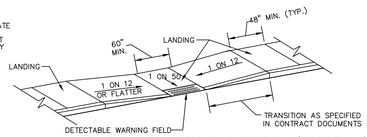


NOTES:
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS
2. CONTRACTION JOINTS 1" DEEP HAVING 1/4" RADIUS EDGES SHALL BE PLACED AT 5'-0" INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE 1/2" RADIUS.
4. USE 3500 PSI AIR ENTRAINED CONCRETE.
5. BROOM FINISH TOP SURFACE.

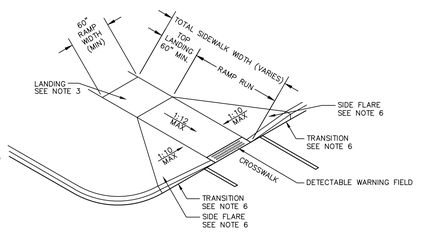
STANDARD SIDEWALK DETAIL
NOT TO SCALE

GENERAL SIDEWALK NOTES:

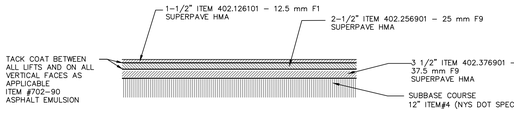
1. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE AMERICAN'S WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.
2. THERE SHALL BE A LANDING AT THE TOP OF EACH CURB RAMP. THERE SHALL BE A LANDING AT THE TOP AND AT THE BOTTOM OF EACH PARALLEL AND PARALLEL/PERPENDICULAR RAMP.
3. LANDINGS SHALL HAVE A MINIMUM CLEAR DIMENSION OF A 60" BY 60" SQUARE. THE MAXIMUM CROSS SLOPE AT LANDINGS IS 2 PERCENT IN ANY DIRECTION. LANDINGS MAY OVERLAP WITH ADJACENT LANDINGS OR A SINGLE LANDING LANDINGS MAY OVERLAP WITH THE CLEAR GROUND SPACE REQUIRED AT PEDESTRIAN SIGNAL PUSH BUTTONS.
4. CROSS SLOPES. THE MAXIMUM CROSS SLOPE OF CURB RAMPS SHALL BE 2 PERCENT. CURB RAMP SURFACES SHALL GENERALLY LIE IN CONTINUOUS PLANES WITH A MINIMUM OF SURFACE WARP.
5. THE RUNNING GRADE OF CURB RAMPS SHOULD BE AS FLAT AS PRACTICABLE. THE MAXIMUM RUNNING GRADE OF ANY PORTION OF ANY CURB RAMP SHALL BE 1:12 (8.3%). CURB RAMPS ARE NOT REQUIRED TO BE LONGER THAN 15'.
6. CURB RAMPS LOCATED WHERE PEDESTRIANS MAY WALK ACROSS THE CURB RAMP SHALL HAVE FLARED SIDES. THE LENGTH OF THE FLARES SHALL BE AT LEAST TEN (10) TIMES THE CURB HEIGHT, MEASURED ALONG THE CURB LINE. WHEN INFEASIBLE OR IMPRACTICABLE TO PROVIDE A LANDING THAT IS AT LEAST 60" WIDE (MEASURED FROM THE TOP OF THE RAMP TO THE BACK OF THE SIDEWALK), THE LENGTH OF THE FLARES SHALL BE TWELVE (12) TIMES THE CURB HEIGHT MEASURED ALONG THE CURB LINE.
7. THE SURFACE OF ALL CURB RAMPS SHALL BE STABLE, FIRM AND SLIP RESISTANT. A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE SLOPE IS RECOMMENDED ON CONCRETE RAMP SURFACES, EXCLUSIVE OF THE DETECTABLE WARNING FIELDS.
8. RAMP TRANSITIONS BETWEEN WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4" MAX.).
9. COORDINATE ALL TRAFFIC CONTROL DEVICES, UTILITY LOCATIONS, SIGNS, STREET FURNITURE AND DRAINAGE TO ENSURE A CONTINUOUS PEDESTRIAN ACCESS ROUTE AT ALL CURB RAMP LOCATIONS. GUIDANCE FOR CROSSWALK MARKINGS AND TRAFFIC CONTROL DEVICES IS PROVIDED IN THE MUTCD. DRAINAGE GRATES AND UTILITY ACCESS COVERS ARE NOT ALLOWED IN RAMP WALKING SURFACES OR LANDINGS.
10. WHERE FEASIBLE, E.G. WHERE R.O.W. WIDTH PROVIDES SUFFICIENT SPACE TO INSTALL SIDEWALKS SET BACK FROM THE CURBS, RAMP TYPES 2A AND 3A SHOULD BE INSTALLED AS THE SEPARATION PROVIDED BETWEEN SIDEWALK AND CURB OR TRAVELWAY MAKE FOR AS GREATER PEDESTRIAN SAFETY AND COMFORT.
11. AT MARKED CROSSINGS, THE FULL WIDTH OF THE RAMP SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS. THE SIDES OF THE RAMPS (THE FLARES) NEED NOT BE WITHIN THE WIDTH OF THE MARKINGS.
12. DETAILS ILLUSTRATE THAT DETECTABLE WARNINGS ARE REQUIRED. SEE THE CURRENT DETECTABLE WARNING STANDARD SHEET FOR SPECIFIC DETECTABLE WARNING REQUIREMENTS. DETAILS DO NOT SHOW DROPPED CURBS AT BOTTOMS OF CURB RAMPS. DROP CURBS MAY BE SPECIFIED.
13. SLOPES ON BLENDED TRANSITIONS SHALL NOT BE STEEPER THAN 2% (1 ON 50) IN ANY DIRECTION.



PARALLEL CURB RAMPS (TYPE A)
NOT TO SCALE

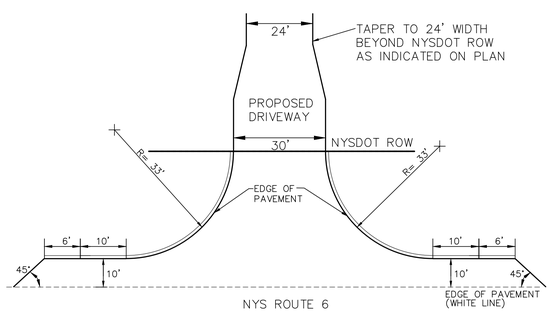


PERPENDICULAR SIDEWALK CURB RAMP (TYPE B)
NOT TO SCALE

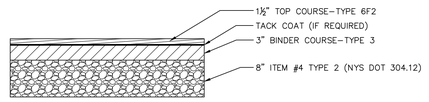


NOTES:
1. NYSDOT PAVEMENT SPECIFICATION SHALL BE UTILIZED TO RIGHT-OF-WAY LINE.

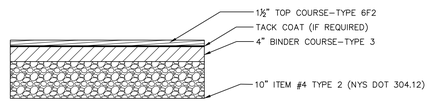
NYSDOT PAVEMENT CROSS SECTION
NOT TO SCALE



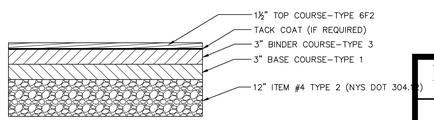
ROADWAY ENTRANCE DETAIL STATE HWY.
NOT TO SCALE



PAVEMENT SECTION 1
PASSENGER TRAFFIC AND PARKING AREAS
NOT TO SCALE



PAVEMENT SECTION 2
MEDIUM DUTY TRUCK TRAFFIC AREAS
NOT TO SCALE



PAVEMENT SECTION 3
HEAVY DUTY TRUCK TRAFFIC AREAS
NOT TO SCALE

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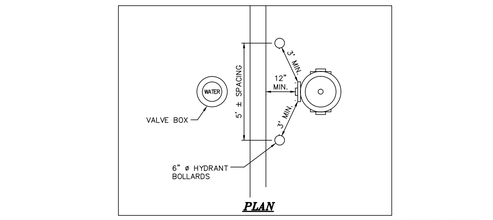
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

CONSTRUCTION DETAILS – 1

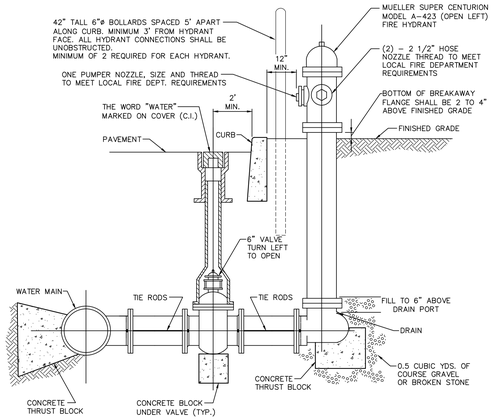
SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016
CAD File:	13070-DETAILS
Layout:	CONS DETAILS-1
Sheet No.:	C3-21 OF 22
Drawn By:	ESR
Checked By:	
Scale:	N/A
Tax Map No.:	SEE SHEET C3-01
Drawing No.:	A – 13 – 0070 – C30



PLAN

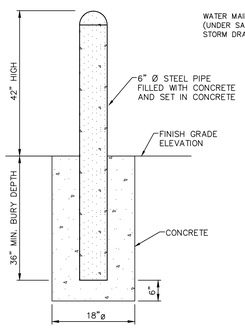


HYDRANT DETAIL

NOT TO SCALE

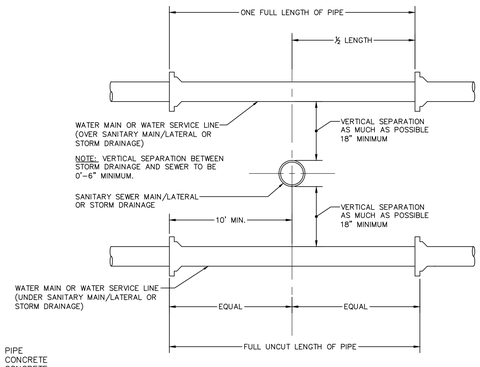
NOTES:

1. HYDRANT SHALL BE MUELLER SUPER CENTURION MODEL A-423 (OPEN LEFT).
2. HYDRANT SHALL BE PAINTED IN ACCORDANCE WITH AWWA STANDARDS (C502, SEC. 4.13)
3. WHERE GROUND WATER RISES TO WITHIN 2 FEET OF A FIRE HYDRANT BASE, THE DRAIN PORT SHALL BE PLUGGED. ANY HYDRANT THAT IS PLUGGED SHALL BE LABELED IN A MANNER SATISFACTORY TO THE LOCAL FIRE DEPARTMENT AND WATER DEPARTMENT TO ENSURE THAT THE HYDRANT IS PUMPED OUT AFTER EACH USE.



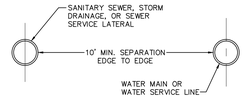
HYDRANT BOLLARD DETAIL

NOT TO SCALE



WATER & SEWER CROSSING DETAIL

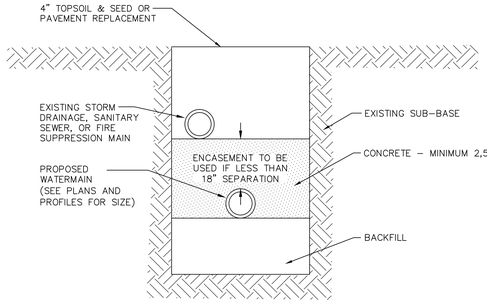
NOT TO SCALE



WATER & SEWER HORIZONTAL SEPARATION

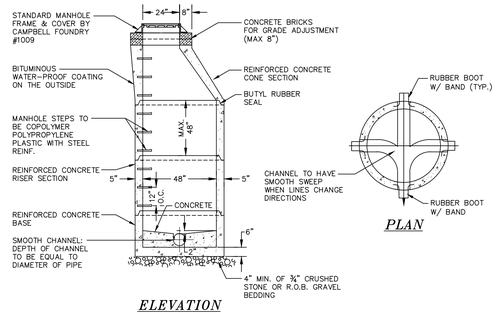
NOT TO SCALE

NOTE:
THE SEPARATION REQUIREMENT SHALL CONFORM TO CURRENT ORANGE COUNTY DEPARTMENT OF HEALTH STATUTES, CODES, RULES, REGULATIONS AND LAWS AS THEY APPLY. ANY DEVIATION FROM THE ABOVE SEPARATION REQUIREMENTS SHALL REQUIRE WRITTEN APPROVAL FROM THE ORANGE COUNTY DEPARTMENT OF HEALTH.



CONCRETE ENCASEMENT DETAIL

NOT TO SCALE



ELEVATION

PLAN

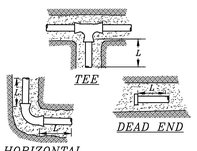
PRE-CAST MANHOLE

NOT TO SCALE

NOTES:

1. SMOOTH CHANNEL INVERT TO BE PAVED WITH CEMENT MORTAR.
2. PIPE JOINTS SHALL BE A MINIMUM OF 2' FROM OUTSIDE WALL OF MANHOLE.
3. SANITARY SEWER TO EXTEND INTO THE MANHOLE ONLY TO A POINT WHERE OUTSIDE OF SEWER MEETS INSIDE WALL OF MANHOLE.
4. OPENING FOR PIPE SHALL BE PRE-CAST. CONNECTIONS TO EXISTING MANHOLES SHALL BE MACHINE CORED.
5. MANHOLE COVERS TO BE STAMPED "SANITARY".
6. PRECAST REINFORCED CONCRETE MANHOLE SHALL BE DESIGNED FOR H20 LIVE LOAD.

NOTE:
LENGTH OF RESTRAINED JOINTS BASED UPON:
a. 4.5' MINIMUM COVER
b. TEST PRESSURE = 150 PSI
c. TYPE 5 TRENCH
d. 1.5 TO 1 SAFETY FACTOR



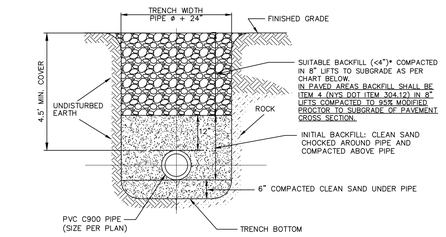
RESTRAINED JOINT TABLE	
MINIMUM LENGTH REQUIRED IN L.F.	
FITTING	LENGTH IN L.F. (L)
TEES & DEAD ENDS	
6"	22
8"	29
10"	34
12"	40
14"	46
16"	52
90° BEND	
6"	10
8"	12
10"	15
12"	17
14"	20
16"	22
45° BEND	
6"	4
8"	5
10"	6
12"	7
14"	8
16"	9
22½° BEND	
6"	2
8"	3
10"	3
12"	4
14"	4
16"	5

VERTICAL BENDS	L_1	L_2
6"	9	4
8"	12	5
10"	14	6
12"	17	7
14"	19	8
16"	22	9

ALL REQUIRED JOINT RESTRAINT SHALL BE MEGALUG RETAINING GLANDS AS MANUFACTURED BY EBAA IRON, OR APPROVED EQUAL.

RESTRAINED JOINT DETAILS

NOT TO SCALE



EARTH OR ROCK EXCAVATION

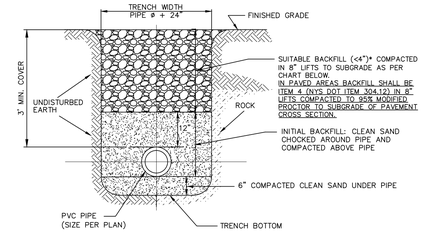
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
	SOIL CLASSIFICATION			
DESCRIPTION	ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

WATERMAIN TRENCH CROSS SECTION

NOT TO SCALE

*BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.



EARTH OR ROCK EXCAVATION

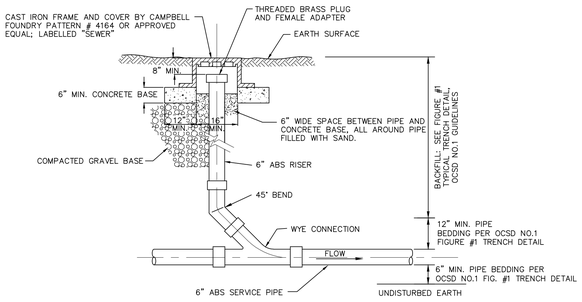
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
	SOIL CLASSIFICATION			
DESCRIPTION	ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

SANITARY SEWER TRENCH CROSS SECTION

NOT TO SCALE

*BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

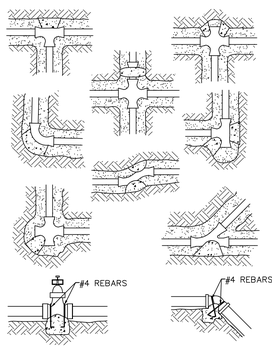


ELEVATION
SEWER CLEAN OUT DETAIL

NOT TO SCALE

NOTES:

1. CLEAN OUT INSTALLATION SHALL CONFORM TO CLEAN OUT DETAIL (C.O.) FIGURE 4 FROM ORANGE COUNTY DEPT. OF EF&S, OCSD NO.1, AND NOTE 5 BELOW.
2. CLEAN OUT LOCATION TO BE SHOWN ON AS-BUILT DRAWINGS WITH DISTANCE FROM BUILDING CORNERS.
3. MINIMUM COVER OVER 6" ABS SERVICE PIPE IS 4.0 FEET.
4. FOR BACKFILL SPECIFICATIONS, SEE TYPICAL TRENCH DETAIL (SANITARY SEWER) FIGURE 1 (FROM ORANGE COUNTY DEPT. OF EF&S, OCSD NO.)
5. EACH BUILDING SEWER SHALL HAVE A CLEANOUT INSTALLED APPROXIMATELY 2' DOWNSTREAM OF THE BUILDING PIPE TO BUILDING SEWER CONNECTION. THEREAFTER, CLEANOUTS SHALL BE INSTALLED ALONG THE BUILDING SEWER APPROXIMATELY EVERY 100' (MAXIMUM). FOR THE PURPOSE OF CLEANOUT LOCATIONS, DISTANCE SHALL BE MEASURED FROM THE FIRST CLEANOUT LOCATED DOWNSTREAM OF THE HOUSE PIPE TO BUILDING SEWER CONNECTION, THENCE DOWNSTREAM ALONG THE BUILDING SEWER TO THE CENTER OF THE SEWER MAIN LINE (GENERALLY LOCATED IN THE CENTER OF THE STREET).



FOR VALVES 12" AND LARGER ANCHOR VALVE AS ABOVE

AT VERT. BENDS, ANCHOR TO RESIST OUTWARD THRUSTS

NOTES:

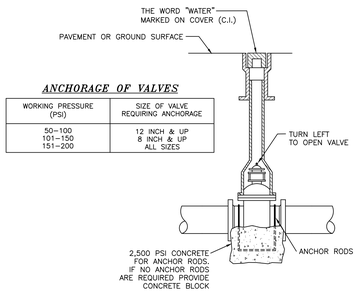
1. KEEP NUTS AND BOLTS FREE OF CONCRETE THROUGH THE USE OF PLASTIC COVERS.
2. ANCHORING OF VALVES AND VERTICAL BENDS SHALL BE DONE WITH #4 REBARS WITH A MINIMUM ENGAGEMENT DEPTH OF 3" INCHES AND 3 INCHES OF THE TERMINUS END OF THE REBAR BEING BENT AT 90° ORIENTATION AS SHOWN.

THRUST BLOCK DETAILS

NOT TO SCALE

THRUST BLOCK SIZING TABLE					
BEARING AREA OF THRUST BLOCK IN SQUARE FEET					
FITTING	THRUST * (POUNDS)	HARD SHALE	SAND & GRAVEL	SAND	SOFT CLAY
TEES AND DEAD ENDS					
6"	5,700	1 1 2 4.5	2 3.5 5.5 8 10.5 13.5	3 5 8.5 11.5 16.0 20.5	6 10 16.5 23 31.5 40.5
8"	9,870				
10"	16,125				
12"	22,965				
14"	31,155				
16"	40,320				
90° BEND					
6"	8,055	1 1.5 2.5 3.5 4.5 6	3 5 8 11 15.0 19.5	4 9 11.5 16.5 22.5 29	8 14 23 32.5 44.5 57.5
8"	13,950				
10"	22,800				
12"	32,460				
14"	44,040				
16"	57,015				
45° BEND					
6"	4,365	1 1 1.5 2.5 3.5	1.5 2.5 4.5 6 8.0 10.5	2.5 4 6.5 9 12.0 15.5	4.5 8 12.5 18 24 31
8"	7,560				
10"	12,360				
12"	17,580				
14"	23,865				
16"	30,885				
22½° BEND					
6"	2,205	1 1 1.5 2 2.5 3.5	1 1.5 2 3 4.5 5.5	1.5 2 3.5 4.5 6.5 8	2.5 4 6.5 9 12.5 16
8"	3,825				
10"	6,255				
12"	8,910				
14"	12,090				
16"	15,645				

* THRUST AT 150 PSI OF WATER PRESSURE



ANCHORAGE OF VALVES

WORKING PRESSURE (PSI)	SIZE OF VALVE REQUIRING ANCHORAGE
50–100	12 INCH & UP
101–150	8 INCH & UP
151–200	ALL SIZES

VALVE DETAIL

NOT TO SCALE

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Goshen, N.Y. 10924
(845) 294-3700

CONSTRUCTION DETAILS – 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016, APRIL 22, 2016
CAD File: 13007D-DETAILS
Layout: CONS DETAILS-2
Sheet No.: C3-22 OF 22
Drawn By: ESR
Checked By:
Scale: N/A
Tax Map No.: SEE SHEET C3-01
Drawing No.: A – 13 – 0070 – C3D

ANDREW M. CUOMO
GOVERNOR

ROANN M. DESTITO
COMMISSIONER

STATE OF NEW YORK
EXECUTIVE DEPARTMENT
OFFICE OF GENERAL SERVICES
MAYOR ERASTUS CORNING 2ND TOWER
THE GOVERNOR NELSON A. ROCKEFELLER EMPIRE STATE PLAZA
ALBANY, NEW YORK 12242

January 15, 2014

Honorable Douglas Bloomfield
Supervisor
Town of Goshen
P.O. Box 217
Goshen, New York 10924

Re: Proposed Access Improvements
Mid-Hudson Psychiatric Center
Town of Goshen, Orange County, New York

Dear Mr. Bloomfield:

Developers for the proposed Goshen Business Park are in the process of seeking approvals for the development of a parcel of land adjacent to above mentioned State-owned lands located on Route 17M. The proposed project includes reconfiguring the access to the State facility and the conveyance of a 7.6 +/- acre parcel of land to the Town of Goshen for highway purposes pursuant to Section 34 of the Public Lands Law.

Upon receiving all necessary project approvals, the developer shall construct an access road leading to the Goshen Business Park and reconfigure the facility access to enter and exit at common controlled intersection point. When the access road is accepted by the Town and the facility access improvements are completed and accepted by the State, the State shall grant the 7.6 +/- acre parcel of land to the Town, pursuant to the statute for Highway Purposes.

The developer will provide the Office of General Services with a survey for review and approval and a metes and bounds description of the lands to be conveyed. The Town of Goshen, as SEQRA lead agency on the proposed development, will include the State agencies as involved agencies. The parties understand that the NYS Department of Transportation may seek a transfer of jurisdiction of the portion of the lands to be conveyed if needed for intersection improvements, resulting in a slightly reduced acreage.

The Office of General Services received letters from Steven M. Neuhaus, County Executive, Orange County, dated January 9, 2014 and from Douglas Bloomfield, Supervisor, Town of Goshen, in support of this plan and project.

Therefore, the State of New York, acting by and through the Office of Mental Health with offices located at 44 Holland Avenue, Albany, New York, and the Office of General Services with offices located at Mayor Erastus Corning II Tower Building, Empire State Plaza, Albany, New York, agree to grant the aforesaid 7.6 acre parcel of land to the Town of Goshen for highway purposes as above described.

Sincerely,

NEW YORK STATE
OFFICE OF GENERAL SERVICES

By: _____
James Sproat
Executive Director
Real Estate Planning and Development

Date: 2/3/14

NEW YORK STATE
OFFICE OF MENTAL HEALTH

By: _____
Emil Slane
Deputy Commissioner
Office of Financial Management

Date: 1/27/14

cc: Honorable Steven M. Neuhaus
Orange County Executive
Orange County Government Center
Goshen, New York 10924

Mr. Richard J. Smith
R.J. Smith Realty
55 Main Street
Pine Bush, New York 12566

DANIEL ABATEMARCO

SENIOR TECHNICAL DIRECTOR - ACOUSTICS, NOISE, AND VIBRATION

Daniel Abatemarco is an electrical engineer specializing in environmental noise and vibration analysis and control. As a Senior Technical Director at AKRF, Mr. Abatemarco brings expertise in sound and vibration measurements and monitoring, as well as evaluation of potential noise and vibration impacts and mitigation measures, including a specialty in construction noise and vibration monitoring and control. He has extensive experience dealing with New York City Noise Control Code, New York City Department of Buildings Code, and Noise (E) designation compliance. In addition, Mr. Abatemarco is actively engaged in performing acoustical tests, conducting sound and vibration field measurements, on-site inspections, computer noise propagation modeling, computer audio simulations of physical phenomena. He has extensive experience with Computer Aided Noise Abatement (CadnaA), Traffic Noise Model (TNM), Federal Transit Administration (FTA) Noise and Vibration Impact Assessment Manual and is familiar with Roadway Construction Noise Model (RCNM), AutoCAD, and MATLAB.

Mr. Abatemarco graduated from The Cooper Union with a Bachelor's degree in electrical engineering. His academic training includes computer modeling of acoustics and audio phenomena.

BACKGROUND

Education
TNM 2.5 Plus Integrated Fundamentals Training Course, Harris Miller Miller and Hanson, 2006
B.E., Electrical Engineering, The Cooper Union for the Advancement of Science and Art, 2005

Professional Memberships
Institute of Electrical and Electronics Engineers (IEEE)

Certifications/Licenses

New York City Department of Environmental Protection Approved Noise Consultant

Years of Experience
Year started in company: 2005
Year started in industry: 2005

PUBLICATIONS:

Acoustical Analysis Methodology for Urban Rooftop Playgrounds in New York City, INTER-NOISE 2009

ALEXANDER R. AULD

SENIOR TRANSPORTATION PLANNER

Alexander R. Auld is a Senior Transportation Planner with over twelve years of experience, specializing in the coordination of traffic data collection, data reduction, capacity analysis, and the preparation of traffic impact, traffic corridor, and parking utilization studies. He is highly skilled in the use of Highway Capacity Software (HCS) and Synchro/SimTraffic traffic analysis software and performs most of the technical transportation analyses for the firm's White Plains office. He develops trip and parking generation estimates, prepares traffic assignments, and prepares technical reports of analysis results. He also performs field work collecting geometric measurements and signal timings and conducting parking surveys. Mr. Auld also assists in the firm's air quality analyses as these relate to transportation.

Mr. Auld has worked on traffic and environmental impact studies of all sizes for both public and private sector clients, including municipalities, public agencies, medical facilities, school districts, universities, and private developers. He has worked on studies throughout the metropolitan New York area, including New York City, Long Island, Connecticut, and the Hudson Valley, as well as studies in upstate New York, Maryland, and West Virginia.

BACKGROUND

Education

B.S., Civil Engineering (Transportation Concentration), University of Delaware, 1994

Professional Memberships

Institute of Transportation Engineers

Years of Experience

Year started in company: 2001
Year started in industry: 1997

AKRF

MARC S. GODICK, LEP

SENIOR VICE PRESIDENT

Marc S. Godick, a Senior Vice President of the firm, has over 25 years of experience in the environmental consulting industry. Mr. Godick will serve as Principal-in-Charge for this effort and has broad-based environmental experience includes expertise in brownfield redevelopment, site assessment, remedial investigation, design and implementation of remedial measures, compliance assessment, and litigation support.

BACKGROUND

Education

M.E., Engineering Science/Environmental Engineering, Pennsylvania State University, 1998

B.S., Chemical Engineering, Carnegie Mellon University, 1989

Licenses/Certifications

Licensed Environmental Professional (License # 396) – State of Connecticut – 2003 - Present

40 Hour HAZWOPER and Annual Refresher Training, 1990 - Present

Supervisors of Hazardous Waste Operations (8 Hour), 1990

Professional Memberships

Chairman, Village of Larchmont/Town of Mamaroneck Coastal Zone Management Commission, 1997 – Present

Member, Westchester County Stormwater Advisory Board, 2011 – Present

Chairman/Member, Westchester County Soil and Water Conservation District, 2005 - 2010

Board of Directors, Sheldrake Environmental Center, Larchmont, New York, 2006 - 2008

Member, NYSDEC Risk-Based Corrective Action (RBCA) Advisory Group for Petroleum-Impacted Sites, 1997

Community Leadership Alliance, Pace University School of Law, 2001

Years of Experience

Year started in company: 2002

Year started in industry: 1990

ASHLEY LEY, AICP

TECHNICAL DIRECTOR

Ashley Ley is a Technical Director with AKRF in the firm's White Plains Office. Her experience includes municipal land use planning and zoning, including the preparation of special area plans; comprehensive plans; zoning text, map, and code amendments; visual impact assessments; urban design standards; sign regulations; and master planning. Ms. Ley also collaborates with the firm's planning staff on Environmental Assessment Forms (EAFs), Environmental Assessment Statements (EASs), and Environmental Impact Statements (EISs) and coordinates her efforts with various in-house technical departments, involved agencies, and outside consultants. Ms. Ley's experience includes preparation of environmental impact statements under New York's State Environmental Quality Review Act (SEQRA) and the National Environmental Policy Act (NEPA) for public actions, private development projects, and large transportation and infrastructure projects.

BACKGROUND

Education

M.U.P, New York University, 2005

B.A., History, University of Michigan, 2003

B.F.A., Graphic Design, University of Michigan, 2003

Continuing Education

Certificate in Landscape Design, New York Botanical Gardens, 2011

Licenses/Certifications

Member, American Institute of Certified Planners (AICP)

Professional Memberships

Member, American Planning Association (APA)

Board Activity

City of Stamford Environmental Protection Board, Board Member, 2015-present

Years of Experience

Year started in company: 2005

Year started in industry: 2005

PRESENTATIONS

Pace University School of Law, Land Use Law Center, "Land Use & Sustainable Development" conference, December 7, 2012. Speaker: "Zoning for Energy."

JESSE I. MOORE

NATURAL RESOURCES

Jesse Moore has a background in terrestrial and aquatic ecology, with practical experience in wetland delineation, threatened and endangered species surveys, habitat assessment, vegetation surveys, ecological restoration, hydrologic monitoring, sedimentation monitoring, and acoustic tracking. Prior to entering the environmental consulting field he worked for the New York City Department of Parks and Recreation's Natural Resources Group, where Mr. Moore was involved in a variety of ecological restoration activities. He has worked on restoration projects related to the Bronx River including: an alewife reintroduction program, oyster reef habitat restorations, bank stabilization and erosion control, and reforestation within the Bronx River floodplain. Most recently, Jesse Moore has been involved in wetland delineations, environmental permitting, and preparation of National Environmental Policy Act (NEPA) documents for projects related to transportation infrastructure.

BACKGROUND

Education

B.S. Environmental and Forest Biology, Magna Cum Laude, State University of New York, Syracuse, NY

M.S. Aquatic Science, University of Michigan, Ann Arbor, MI

Years of Experience

Year started in company: 2012
Year started in industry: 2005

Certifications

Rutgers University Wetland Delineation Series Certificate, 2012

JAMES NASH

TECHNICAL DIRECTOR

James Nash is a Technical Director who specializes in natural resource issues and environmental planning. Mr. Nash conducts environmental reviews and regulatory permitting that includes analyses of natural resources, endangered wildlife, wetlands, and water quality. These typically involve communication with federal and state agencies, including the New York State Department of Environmental Conservation (NYSDEC), New York State Department of State (NYSDOS), New York City Department of Environmental Protection (NYCDEP) and the U.S. Army Corps of Engineers (USACE). In addition, he provides environmental planning services, to several municipalities in Westchester County.

BACKGROUND

Education

M.E.S., School of Forestry and Environmental Studies, Yale University, 1994 / B.A. History, Middlebury College, 1989

Licenses/Certifications

Rutgers University, Cook College – Federal Wetland Delineation Training Certification, 1996.

Years of Experience

Year started in company: 1995

Year started in industry: 1989

CHAD L. SEEWAGEN, PH.D.

SENIOR PROFESSIONAL

Dr. Seewagen brings over eight years of professional wildlife research and conservation experience to AKRF. He has extensive experience designing and managing studies of birds in particular. His work on birds has spanned the fields of ecology, physiology, toxicology, and behavior. Through his research in New York City and Westchester County parks, Dr. Seewagen provided the first quantitative evidence that urban forest fragments can represent high quality stopover sites for birds migrating through the metropolitan area on their way to northern breeding grounds or southern wintering grounds. He has authored numerous articles in peer-reviewed science journals such as the *Journal of Comparative Physiology*, *Journal of Field Ornithology*, and *Acta Oecologica*, and is considered an expert on migratory bird biology. His research has been featured in various media outlets including *The New York Times*, *The New Yorker*, and *Wildlife Conservation Magazine*.

Dr. Seewagen is a primary resource at AKRF for diverse projects relating to birds and other terrestrial wildlife. He conducts various natural resources field surveys and contributes to EIS preparation.

BACKGROUND

Education

Ph.D., Biology, University of Western Ontario, 2010

M.A., Conservation Biology, Columbia University, 2006

B.S., Wildlife & Fisheries Conservation, University of Massachusetts-Amherst, 2002

Professional Memberships

American Ornithologists' Union

Association of Field Ornithologists

Bird-safe Glass Foundation

New York Ornithological Association

Wilson Ornithological Society

Honors

University of Western Ontario Graduate Research Scholarship, 2006-2010

Years of Experience

Year started in company: 2011

Year started in industry: 2002

SELECTED PUBLICATIONS

Seewagen, C.L., E.J. Slayton, C.D. Sheppard, and C.G. Guglielmo. 2011. Plasma metabolites and mass changes of migratory landbirds indicate adequate stopover refueling in a heavily urbanized landscape. *The Condor,* in press.

Seewagen, C.L. and C.G. Guglielmo. 2011. Quantitative magnetic resonance analysis and a morphometric predictive model reveal lean body mass changes in migrating Nearctic-Neotropical passerines. *Journal of Comparative Physiology B* 181(3):413-421.

Seewagen, C.L., E.J. Slayton, and C.G. Guglielmo. 2010. Passerine migrant stopover duration and spatial

behaviour at an urban stopover site. *Acta Oecologica* 36(5):484-492.

Snyder, B.A. and C.L. Seewagen. 2010. First record of the millipede *Cleidogona nantahala* for New York State. *Entomological News* 121(1):104-105.

Seewagen, C.L. and C.G. Guglielmo. 2010. Effects of fat and lean body mass on migratory landbird stopover duration. *Wilson Journal of Ornithology* 122(1):82-87. PDF

Seewagen, C.L. 2010. Threats of environmental mercury to birds: Knowledge gaps and priorities for future research. *Bird Conservation International* 20(2):112-123.

Seewagen, C.L. and E.J. Slayton. 2008. Mass changes of migratory landbirds during stopovers in a New York City park. *Wilson Journal of Ornithology* 120(2):296-303.

Seewagen, C.L. 2008. An evaluation of condition indices and predictive models for non-invasive estimates of lipid mass of migrating Common Yellowthroats, Ovenbirds, and Swainson's Thrushes. *Journal of Field Ornithology* 79(1):80-86.

Seewagen, C.L. and E.J. Slayton. 2006. Historical accounts of Bicknell's Thrush in New York City and a new record for Bronx County. *Kingbird* 56(3):210-215.

GRAHAM L. TRELSTAD, AICP, PP

SENIOR VICE PRESIDENT

Graham L. Trelstad, AICP, is a Senior Vice President at AKRF, Inc. and serves as Director of Planning for the firm's White Plains office. Mr. Trelstad has more than 15 years of experience in regional and environmental planning, and has provided consulting services to a number of towns and villages and developers throughout New York State.

His community planning experience includes preparation of comprehensive plans, zoning studies and code amendments, special area plans, and site plan and subdivision application reviews. He has completed several major local and regional planning studies that combine land use planning, economic development, and water quality protection or integrate land use planning with transportation and traffic management.

Mr. Trelstad's practice includes preparation of environmental impact statements under SEQRA and NEPA for public actions, private development projects, and large transportation and infrastructure projects.

Prior to joining AKRF, Mr. Trelstad was a research associate with Regional Plan Association (RPA) in New York City, where he co-authored a book describing methods to combine community planning tools with water quality protection techniques. He also contributed to RPA's innovative open space planning program and the development of the organization's Third Plan for the 31-county New York metropolitan region.

Mr. Trelstad is an Adjunct Assistant Professor at Columbia University's Graduate School of Architecture, Planning and Preservation where he teaches site planning and design and environmental impact assessment.

Mr. Trelstad has lectured at Yale University, the Cooper Union, and Princeton University on environmental impact assessment and presented seminars on planning and environmental impact assessment for the New York Planning Federation, the Westchester Municipal Planning Federation, and the Lorman Educational Services continuing education program.

BACKGROUND

Education

B.A., Urban Studies, Columbia University, 1989

M.E.S., Yale University School of Forestry and Environmental Studies, 1994

Certifications

American Institute of Certified Planners (AICP)

New Jersey Professional Planner (PP)

Professional Memberships

Member, American Planning Association (APA)

Member, Urban Land Institute (ULI)

Member, Congress for New Urbanism (CNU)

Board Activity

Urban Land Institute, Westchester/Fairfield Chapter, Advisory Board Member, 2012-present

Hudson Valley Pattern for Progress, Board Member, 2013-present

LECTURES/PRESENTATIONS

Columbia University Graduate School of Architecture Planning and Preservation

Adjunct Assistant Professor, 2005-present

Fall Semester: Site Planning & Support Systems for Development

Spring Semester: Environmental Impact Assessment

Other Lectures & Presentations

Pattern for Progress, "Let's Talk Infrastructure," May 18, 2015. Speaker: "Framing the Issues for the Day Ahead."

Pattern for Progress and Regional Plan Association, "Shaping our Region's Future: Understanding the Issues that will Define Strong Communities and Economic Success in the 21st Century," January 12, 2015. Moderator.

Pace University School of Law, Land Use Law Center, "Transitioning Communities" conference, December 5, 2014. Panelist: "Legal Neighborhoods and the Public Laws that Define Them."

Yale University School of Forestry & Environmental Studies, November 17, 2014. Guest Lecturer: "Implementing the Big & Green in the Small & Gray: Adapting Bold Environmental Initiatives at the Local Level."

New York Planning Federation, Summer School, July 29, 2014. Instructor: "Navigating SEQRA."

Pattern for Progress, "Infrastructure Planning and Investment: A Widening Gap," May 19, 2014. Panelist: "Best Planning Practices for Infrastructure Investment."

New York Planning Federation, Annual Conference, March 31, 2014. Panelist: "Planning and Zoning Terms and Concepts."

New York Planning Federation, Annual Conference, April 22, 2013. Panelist: "Site Plan and Special Permit Review."

Urban Land Institute, Westchester/Fairfield Chapter, January 24, 2013. Panel Moderator: "Anchor Institutions."

Yale University School of Forestry & Environmental Studies, September 24, 2012. Guest Lecturer: "The Science, Policy, and Art of Environmental Impact Assessment in Urban and Suburban Communities."

Pace University School of Law, Land Use Law Center, "Sustainable Development in Tough Economic Times" conference, December 2, 2011. Panelist: "Redevelopment Readiness: New Techniques to Streamline the Development Process to be Open for Business."

Cooper Union, April 13, 2011. Guest Lecturer: "Environmental Impact Assessment."

Vision Long Island, 2010 Smart Growth Summit, November 19, 2010. Panelist: "SEQRA Reform: Overcoming Challenges to Approvals of Smart Growth Projects."

Pattern for Progress, "Housing the Hudson Valley: A Balanced Pattern for Growth," June 14, 2010. Panel Moderator: "Municipal Best Practices: A Smoother SEQR Process."

Law Seminars International, "Stormwater Regulation in New York" conference, April 23, 2010. Speaker on "Organizational Structures and Funding for Stormwater Retrofits."

NYSDEC Region 3 SEQR Workgroup, September 2009-February 2010.

RICHARD G. D'ANDREA, JR., PE, PTOE

Associate/Project Engineer

EDUCATION

- M.S. Transportation Planning and Engineering, Polytechnic Institute of New York University, 2012
- B.S. Civil Engineering, University of Delaware, 2007

PROFESSIONAL REGISTRATIONS

- Professional Engineer (PE) New York
- Professional Traffic Operations Engineer (PTOE)

PROFESSIONAL TRAINING

- Construction Traffic Management (2014)
- Adaptive Traffic Signal Control (2013)
- Roundabout Design and Operation (2012)
- AutoTurn (2010)
- Synchro (2008)

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers
- Institute of Transportation Engineers
- National Society of Professional Engineers

EXPERIENCE

Mr. D'Andrea has seven years of experience in various aspects of traffic and transportation engineering; including the preparation of various studies for a variety of land use types including retail centers, residential subdivisions, hotels, office complexes, mixed use developments, etc. These studies include traffic impact evaluations, capacity analyses, signal warrant studies, parking utilization studies, accident investigation studies and justification studies. He has also been responsible for coordinating SEQRA reviews for multiple New York State Municipalities. Mr. D'Andrea has also been responsible for the development of preliminary and final roadway improvement and traffic signal plans as well as conducting detailed cost estimates for such improvement projects.

Mr. D'Andrea has significant knowledge of traffic engineering and highway design software including AutoCAD Civil 3D, Synchro, HCS and AutoTurn. He also has experience with other related software programs such as TSIS-Corsim, Transyt-7F and Microstation.

He is responsible for the preparation of Priority Investigation Location (PIL) reports when such preparation is directed by the state under the New York State Highway Safety Investigation (HIS) Program. His responsibilities include the collection and summarization of accident data for the identified PIL location as well as the preparation of accident diagrams.

PROJECTS

Maple Fields, Residential Development
Town of Wallkill, Orange County, NY
Prepared a complete traffic impact study for the approximately 200 unit residential development. The traffic study included the collection of data and analysis of 15 intersections in the area of the site. Completed capacity analysis using Synchro software and made recommendations for improvements based on the analysis. Coordinated traffic study for inclusion in the environmental impact statement. Prepared preliminary design layout for proposed roundabout recommended as an improvement to accommodate project generated traffic.

U.S. Route 1, Roadway Diet Program
City of Rye, Westchester County, NY
Preparation of design documents including pavement marking alterations, raised and flush median installation and signing inventory and evaluation for upgrade of an approximately two-mile section of U.S. Route 1. Preparation of Synchro analysis for signalized intersections to determine new signal timings to accommodate the diet.

Patterson Multimodal, NYS Route 311
Town of Patterson, Putnam County, NY
Contributed to the design of roadway improvements including the widening of an approximately ¼ mile stretch of NYS Route 311 at the Interstate 84 interchange to provide left turn lanes at the two I-84 ramp intersections. Also provided detailed designs for two new traffic signals at the Interstate 84 ramp intersections. Developed detailed cost estimates for the proposed improvements which were then incorporated into contract bid documents. Coordinated response to contractor's requests for information during the bid process.

Crystal Run Healthcare, Medical Office Support Facility
Rykowski Lane, Town of Wallkill, Orange County, NY
Prepared a complete traffic study for the 150,000 SF Crystal Run Healthcare office support facility located on Rykowski Lane in the Town of Wallkill, New York. The traffic study included the collection of data for area intersections, estimates of proposed trip generation and analysis of post development conditions. Developed several improvement scenarios including conceptual design of geometry improvements and sight distance improvements. Also conducted signal warrant analysis for main access intersections to Rykowski Lane.

Arthursburg Commons/Dunkin Donuts
NYS Route 82, Town of Lagrange, Dutchess County, NY
Prepared a complete traffic study for the proposed Dunkin Donuts facility including collection of traffic data, estimates of trip generation and analysis of area intersections impacted by the project traffic. Developed several different access scenarios using the existing access driveways to the Arthursburg Commons shopping center. Performed signal warrant analysis for the main access intersection to determine need for a future traffic signal. Developed conceptual layout of improvements to NYS Route 82 to provide a left turn lane at the main site access intersection. Prepared detailed design documents for the left turn lane improvement as well as the signal to be constructed at the site access intersection. Coordinated improvements with NYSDOT to obtain a Highway Work Permit. Also used AutoTurn to analyze ability of delivery vehicles to circulate within the site.

Mohegan Lake Motors, Dealership
U.S. Route 6 (E. Main Street), Town of Yorktown, Westchester County, NY
Prepared a complete traffic study for the proposed dealership facility including collection of traffic data, estimates of trip generation and analysis of area intersections impacted by the project traffic. Developed conceptual layout of improvement alternatives to U.S. Route 6. Prepared detailed design documents for the access driveway including a small section of widening and installation of sidewalk along the site frontage. Coordinated improvements with NYSDOT to obtain a Highway Work Permit.

Rivertowns Square SEQRA Review, Mixed Use Development
Village of Dobbs Ferry, Westchester County, NY
Conducted detailed review of traffic reports and analysis as consultant to the Village Board for the mixed use development project that consists of approximately 200 residential units, approximately 200,000 SF of commercial space including, a movie theater and an approximately 100 unit hotel. Worked closely with the Applicants consultants to develop the Final Environmental Impact Statement and the Findings Statement. Developed several alternatives for improvement scenarios and conceptual improvement plans for roadways within the Village impacted by the project including in residential neighborhoods nearby the development.

Summerfield Gardens SEQRA Review, Residential/Retail Development
Town of Eastchester, Westchester County, NY
Conducted detailed review of traffic reports and analysis as consultant to the Town Board for the mixed use development project that consists of approximately 100 age restricted (55 and older) residential units and approximately 3,600 SF of retail space.

PHILIP J. GREALY, PHD, PE

Principal/Discipline Leader/Traffic

EDUCATION

- Ph.D. Transportation Planning and Engineering, Polytechnic University, 1999
- M.S. Transportation Planning and Engineering, Polytechnic Institute of New York, 1980
- B.E. Civil Engineering, Manhattan College, 1977

PROFESSIONAL REGISTRATIONS

- Professional Engineer (PE) New York, New Jersey, Connecticut, Delaware, Pennsylvania

PROFESSIONAL AFFILIATIONS

- Institute of Transportation Engineers
- American Society of Civil Engineers
- Acoustical Society of America
- National Society of Professional Engineers
- Transportation Research Board, Affiliate

EXPERIENCE

Dr. Grealy is licensed professional engineer with over 35 years of extensive experience in all aspects of transportation and traffic engineering. He has served as Project Manager on a variety of transportation study, design, and research projects. Over the course of his career, he has completed thousands of traffic impact studies for both commercial and residential projects. He also serves as a technical consultant for both private and municipal clients on transportation related issues and has extensive expertise in the use of state-of-the-art Traffic engineering software packages.

His current responsibilities include the overall project coordination, budgeting, cost control, and quality assurance for Traffic and Transportation services in Maser Consulting's office located in Westchester County, NY.

PROJECTS

Adams Fairacre Farm
Route 9/Old State Road Intersection Reconstruction
Wappinger City, Dutchess County, NY
Prepared detailed traffic impact studies including traffic volume forecast, capacity analysis and intersection evaluations to identify mitigation measures as part of SEQRA review process with Town of Wappinger. Prepared detailed intersection and signal design plans and obtained NYSDOT Highway Work Permits for the project.

Marketplace Development, Routes 300 & 52
City of Newburgh, Orange County, NY
Prepared traffic impact evaluations including all traffic projections, capacity analysis and identification of mitigation measures as part of the SEQRA review of this major commercial development. Completed all traffic study documents for DEIS, FEIS and Findings. Prepared access and offsite roadway improvement and traffic signal plans for obtaining New York State Department of Transportation Highway Work Permits. Design included a roundabout design.

Minisceongo Park Shopping Center
Town of Haverstraw, Rockland County, NY
Responsible for all traffic analysis, evaluations and designs as part of SEQRA associated with this approximately 250,000SF shopping center. Responsibilities also included offsite roadway improvements including signal design and coordination plans. Provided expert testimony for various Planning and Zoning Boards and this work also included parking studies for parking variances.

Costco Wholesale Club
Yorktown Heights, Town of Yorktown, Westchester County, NY
Preparation of traffic projections, capacity analysis and intersection evaluation for traffic impact studies as part of the SEQRA process. Responsible for compilation of simulations, conceptual design, and coordination with highway design engineer.

Orange Regional Medical Center
East Main Street Reconstruction Project
Town of Wallkill, Orange County, NY
Preparation of traffic impact studies for this new 320 bed state of the art medical center. Work included traffic projections and evaluations for SEQRA review process. Responsible for DEIS, FEIS and Findings related to traffic and transportation related issues. Responsible for preparation of site plan layout design plans including signalization improvements and coordination of these in conjunction with Orange County Department of Public Works.

Maple Fields
Town of Wallkill, Orange County, NY
Preparation of traffic impact studies including site traffic projections, evaluation of future conditions for numerous intersections as part of the SEQRA review process. Provided expert testimony and preparation of traffic portions of the DEIS and FEIS. Work also included preparation of construction plans for offsite improvements including a roundabout design.

The Galleria at Crystal Run
Town of Wallkill, Orange County, NY
Prepared DEIS and FEIS traffic studies and evaluations for all phases of development for this regional shopping center development which now exceeds 1,000,000 sq. ft. Responsible for expert testimony as part of all SEQRA approvals with the town.

Wallkill Comprehensive Traffic Impact Study
Town of Wallkill, Orange County, NY
Preparation of comprehensive traffic study for use by planning board to evaluate approximately a dozen different planned developments in proximity to the Route 211, Tower Drive and Scotchtown Road corridors within the town. Developed detailed traffic projections and analyses to identify potential mitigation measures. Prepared cost estimates and cost allocation formulas based on trip generation for each development depending on their size and mix to allow the planning board to implement a transportation improvement strategy to accommodate them.

Stop & Shop Supermarket
Town of Hyde Park, Dutchess County, NY
Preparation of Traffic Impact Studies and evaluations as part of the SEQRA review with the Town Planning Board. Prepared access redesign plans including signal design for Highway Work Permits with New York State Department of Transportation.

Oakwood Commons
City of Poughkeepsie, Dutchess County, NY
Preparation of traffic studies including projections and analysis for this mixed use office/retail development as part of the SEQRA review process. Prepared construction drawings including roadway intersection reconstruction and signalization plans for the New York State Department of Transportation Highway Work Permits.

Roundhouse at Beacon
City of Beacon, Dutchess County, NY
Preparation of traffic and parking evaluations for SEQRA review with the Planning Board and City Council for this mixed use development which includes residential dwelling units, a specialty Inn, restaurant and banquet/catering facility.

Harbors at Haverstraw
Village of Haverstraw, Rockland County, NY
Preparation of Traffic Impact Studies for DEIS and FEIS for this waterfront multi-family residential development. Identified and coordinated offsite roadway improvements.

Home Depot Distribution Center
Village of Montgomery, Orange County, NY
Preparation of traffic impact studies for SEQRA review and site plan approvals. Also completed roadway improvement plans for site access to obtain Orange County Department of Public Works Highway Work Permit.

MUNICIPAL REVIEWS

Cross County Shopping Center
City of Yonkers, Westchester County, NY
Responsible for review of traffic studies and site plans prepared by the applicant for an expansion and renovation of this 1,000,000 SF shopping center located in the City of Yonkers. Provided guidance to the Planning Board and Zoning Board during SEQRA and site plan review phases. Also provided technical assistance to the City of Yonkers' Traffic Engineering Department in reviewing offsite traffic signal and roadway improvement plans to accommodate the expansion.

Ridge Hill Design Review
City of Yonkers, Westchester County, NY
Provided consulting design review services to the City of Yonkers' Traffic Engineering Department reviewing offsite roadway and signal plans for this mixed used development consisting of approximately 1,000 dwelling units and 1,000,000 SF of commercial development.

Rivertowns Square
Village of Dobbs Ferry, Westchester County, NY
Assisted Village Board of Trustees and Planning Board in review of a proposed major redevelopment/expansion of existing site for a mixed use project consisting of residential units, a supermarket, hotel, movie complex and other commercial uses. Provided technical assistance in reviewing scoping documents, DEIS and FEIS traffic studies and analysis. Based on this review, assisted boards in formulating mitigation plans required for offsite traffic improvements to be completed by the developer. Improvements included road widenings, new signalization, signalization upgrades and traffic calming measures. Accommodations for bicycles and pedestrian access including new sidewalk systems were identified.

Woodbury Common Expansion
Town of Woodbury, Orange County, NY
Provided technical assistant to the Planning Board in their review of a major renovation and 60,000 sq. ft. expansion of Woodbury Common as part of the SEQRA process. Work involved reviewing and commenting on the Scoping Documents, DEIS and FEIS traffic studies and providing technical assistance in developing Findings Statement and Developer's Agreements.

Atlantic Development
City of Mt. Vernon, Westchester County, NY
Consultant to City Council and planning board for technical review of traffic, parking and transportation studies prepared by the applicant for the SEQRA review of a major proposed three-stage mixed used redevelopment project. Work involved presentations to council and planning board in advising them on the potential traffic/transportation impacts and required mitigation for the project.

Ridge Rise Residential Development
Town of New Windsor, Orange County, NY
Review of traffic impact study and provide technical assistance to the Planning Board in formulating appropriate mitigation measures as part of the SEQRA review process.

PROFESSIONAL TRAINING

- Adaptive Traffic Control, 2013
- New Tools for Effective Highway Safety Management, 2011
- 2009 MUTCD: Traffic Signs and Pavement Markings, 2011
- Designing Safety/Security into Walkable Urban Thoroughfares, 2011
- Highway Capacity Manual 2010 Overview, 2011
- Pedestrian Safety – An Operational Perspective, 2011
- Roundabout Design and Operation, 2010
- Access Management Best Practices, 2010
- Design, Construction Management and Ethics for Professional Engineers, 2009

JASON TESAURO

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EDUCATION:

1998-2002

Rutgers the State University of New Jersey
Graduate School
M.S. Ecology and Evolution
Advisor: Dr. David Ehrenfeld
Thesis: The Effects of Livestock Grazing on the Bog Turtle (*Clemmys muhlenbergii*)

1992-1997

Rutgers the State University of New Jersey
Rutgers College
B.A. Anthropology
Minor – Biological Sciences

PROFESSIONAL EXPERIENCE:

Owner – **Jason Tesauro Consulting, LLC**, a consulting firm specializing in the recovery, management, and protection of rare, threatened & endangered wildlife. Skills/areas of expertise include: species habitat assessments, presence/absence surveys, radio-telemetry research, wetland ecology, conservation planning, habitat management & restoration, wetland mitigation, and landowner outreach & education

Current Projects:

USDA Natural Resources Conservation Service, Syracuse, New York (2011-present)
Position: Consultant under the *Mid-Atlantic Center for Herpetology & Conservation (MACHAC)*. Oversee, coordinate, and implement all phases of wetland habitat restoration projects funded under the federal Wetlands Reserve Program (WRP) on private lands in southeastern New York and Connecticut. Provide expertise, guidance, and oversight on all wildlife-related issues for each WRP project, particularly related to the federally-listed Bog Turtle (*Glyptemys muhlenbergii*)

U.S. Fish and Wildlife Service (2005-present)
Position: Contracting Biologist. Assist with the development of national habitat management guidelines and recovery strategies for the Bog Turtle; develop habitat management plans for individual Bog Turtle sites; perform Bog Turtle habitat evaluations, population studies, habitat analyses, habitat management, and de novo surveys in Pennsylvania, New York, Maryland, and Connecticut

Hudsonia Ltd., Annandale, New York (2000-present)

Position: Contracting Biologist. Perform habitat assessments and surveys for rare wildlife in New York and Connecticut; Serve as project manager for long-term Bog Turtle radio-telemetry/habitat use study; Review/provide commentary on environmental impact statements and wetland mitigation plans; assist with lectures and training seminars on field biology techniques. *www.hudsonia.org*

Previous Employment:

Environmental Defense Fund, Washington, D.C. (2003-2010)

Contracting Ecologist. Assist Environmental Defense Fund's long-term effort to promote the conservation and recovery of the federally-listed Bog Turtle on privately owned land in New York, Pennsylvania, and Maryland; major responsibilities included habitat assessments, landowner outreach & education, conservation planning, biological monitoring, coordinating with federal and state agencies (NRCS, USFWS, NYSDEC, DEP, DNR), and the development & implementation of habitat restoration plans

New Jersey Division of Fish and Wildlife, Endangered and Nongame Species Program, Trenton, NJ (1994-2003)

Biologist (salaried). Implement the conservation, protection, and management of non-game wildlife with emphasis on state-threatened, endangered and/or rare herpetofauna and insects; serves program specialist/project manager for various species and/or species-driven projects. Other responsibilities: field research, prepare and submit grants and year-end reports; analyze and provide commentary on endangered species regulatory issues; conduct public educational seminars; coordinate volunteers; author publications; train and supervise staff

PUBLICATIONS/ARTICLES:

Tesauro, J. 2001. Restoring wetland habitats with cows and other livestock. *Conservation Biology in Practice* **2**:26-30.

Tesauro, J. and David Ehrenfeld. 2007. The effects of livestock grazing on the bog turtle [*Glyptemys* (=*Clemmys*) *mulenberghii*]. *Herpetologica* **63**:293-300.

Lathrop, R., P. Montesano, J. Tesauro, and B. Zarate. 2005. Statewide mapping and assessment of vernal pools: A New Jersey case Study. *Journal of Environmental Management* 76:230-238.

PROFESSIONAL CERTIFICATIONS:

- U.S. Fish and Wildlife Service Qualified Bog Turtle Surveyor/Trapper for PA, NJ, and NY

PROFESSIONAL AFFILATIONS:

- Advisory board member for the non-profit wetlands conservation entity, The Wetlands Conservancy based in Brooktondale, NY (March 2014-present)

VOLUNTEER EXPERIENCE

- Woodstock Land Conservancy BioBlitz, Woodstock, NY (2014) - lead herpetologist
- NEPARC Northeast Wood Turtle Survey Working Group - assisted with surveys for Wood Turtle (*Glyptemys insculpta*) in PA, NY, and ME (2014-present)
- NYSDEC Division of Fish and Wildlife, Region 3, Ulster County, NY - assistance with northern cricket frog (*Acris crepitans*) habitat use and movement study (2013)
- Project Orianne, Lumberton, GA (2008) – assistance with eastern indigo snake (*Drymarchon couperi*) conservation efforts
- Westchester Land Conservancy BioBlitz, Westchester County, NY (2007) – herpetological survey team
- Great Swamp Watershed Association BioBlitz, Morris County, NJ (2007) – herpetological survey team
- NJ Division of Fish and Wildlife's timber rattlesnake radio-telemetry project, New Jersey Highlands (2004-2006) – assisted with tracking and capturing snakes for implantation
- The Nature Conservancy, Warren County, NJ (2006-2007) – invasive plant control
- Hudsonia Ltd., Dutchess County, NY – Arlington School Blanding's turtle project (2004)

Amy's Kitchen – Ver Hage Site

TOWN OF GOSHEN, NEW YORK

Preliminary Geotechnical Engineering Report

AKRF Project Number: 40525

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1.0 INTRODUCTION

AKRF Engineering, P.C. (AKRF) has prepared this preliminary geotechnical engineering report to summarize the results of our recent geotechnical field exploration for the proposed Amy's Kitchen Food Production Facility. As discussed herein, additional subsurface exploration will be required to satisfy the 2010 Building Code of New York State (BCNYS) requirements for geotechnical exploration. The preliminary geotechnical evaluations and recommendations presented herein are in general accordance with the BCNYS. The preliminary exploration work described in this report was performed by AKRF in accordance with our May 14, 2015 proposal authorized by Amy's Kitchen.

AKRF used the following document provided by Amy's Kitchen in preparation of this report:

- Concept plan sheets (three sheets) prepared by Lanc & Tully Engineering and Surveying. P.C, dated February 26, 2015. These plans were used to determine the location of the geotechnical boring locations advanced as part of this preliminary exploration.
- Concept plan sheets (three sheets) prepared by Lanc & Tully Engineering and Surveying. P.C, dated June 16, 2015. These plans show the latest preliminary site layout at the Ver Hage site.

2.0 SITE DESCRIPTION & PROPOSED DEVELOPMENT

The proposed development is located at a site known as "the Ver Hage site", located north of State Route 17M, south of Echo Lake Road, between Hartley Road and the Wallkill River, in the Town of Goshen, New York, herein after referred to as the "site". The site is bounded to the south by the Al Turi landfill facility. The site is currently undeveloped with forested areas and open grass covered areas. The site has variable terrain and there is an escarpment that runs from the south west to the north east that roughly bisects the site into two halves.

The eastern half of the site is higher in elevation than the western half of the site. The eastern half of the site ranges in elevation from about elevation (el.) +380 to +390. The Cheechunk Creek flows through the northeast quadrant of the site. The western half of the site ranges in elevation from about el. +370 down to the Wallkill River at about el. +360. A site location map is shown in Figure 1.

The proposed development involves the construction of an Amy's Kitchen manufacturing at the site. The new building will be constructed in phases, and the total developed footprint for the new building will be about 380,000 square feet. The new building will be 45 foot high warehouse-type structure. Other areas of the site will be developed as access roads, porous paved parking areas, and stormwater detention basins.

Preliminary site grading and layout plans, and preliminary structural foundation loads, were not developed at the time of preparing this preliminary report. We expect that significant earthwork operations will be required as part of the site development.

3.0 REVIEW OF AVAILABLE INFORMATION

3.1 Geological Setting

The site is located in an area where surficial soils are predominately unconsolidated glacial deposits in the Wallkill River valley that were deposited as a result of Wisconsin-age glaciation. A recessional moraine identified as the New Hampton moraine is located to the south of the site. The United States Geologic Survey (USGS) Surficial Geologic Map of New York – Lower Hudson Sheet identifies kame deposits and till deposits within the limits of the site. A portion of the USGS map is shown in Figure 2. These soils are variable in texture and composition, including a variety of gravels, sands, and fine grained materials (silts/clays).

3.2 Historic Land Use

Our preliminary understanding of the site history is based on anecdotal reports that have not been verified. The anecdotal reports suggest the site was previously utilized as farmland. The site was then stripped of topsoil and the material transported to cap the Al Turi landfill to the south of the site. We do not know how many feet of soil were stripped from the Ver Hage site.

We reviewed historic aerial photographs from 1968, 1975, 1994, 2006, 2011 and 2013 that were obtained from http://www.HistoricAerials.com/. The following provides a summary description of each of the historic aerial photographs:

- The 1968 aerial photograph shows the eastern half of the site is cleared for farming, and the western half of the site is relatively undeveloped and forested.
- The 1975 aerial photograph shows the eastern half of the site is an open field and does not appear to be used for farming. The north western quadrant of the site appears to be in the process of being stripped and there is a haul road leading to the intersection of Hartley road and Echo Lake Road.
- The 1994 aerial photograph shows the eastern half of the site is an open field and does not appear to be used for farming. The western half of the site appears to be well into the process of being stripped. There is haul road leading directly into the Al Turi landfill site.
- The 2006 aerial photograph shows the eastern half of the site is an open field and does not appear to be used for farming. The western half of the site is no longer being stripped and the ground surface is predominantly covered with grass.
- Both the 2011 and 2013 aerial photographs shows the eastern half of the site is an open field and does not appear to be used for farming. The western half of the site is undeveloped and is predominantly covered with grass.

The historic aerial photographs appear to corroborate the anecdotal reports that the site was stripped of soil to be used to cap the Al Turi landfill. It appears stripping first occurred around 1975 however the stripping does not appear to be associated with capping of the Al Turi landfill. Significant stripping appears to be taking place in 1994 and the presence of a haul road from the site into the Al Turi landfill suggest the soil was being transported to the landfill, reportedly for the purpose of capping the landfill. We do not know if soil stripping was a continuous operation between 1975 and 1994 and we do not know to which depth and elevation the soil was excavated at the Ver Hage site.

We recommend further exploration is conducted into the past site use and obtain confirmation that the site was only used as a source of topsoil and soil material, and that the site was never used as a landfill.

4.0 PRELIMINARY SUBSURFACE EXPLORATION

4.1 Test Boring Program

A total of 10 geotechnical test borings, designated B-1 through B-10, were drilled at the site to depths ranging between about 32 feet and 52 feet between May 28, 2015 and June 4, 2015. All borings were inspected on a full-time basis by an AKRF geotechnical engineer. The boring locations were set out by AKRF using measured distances from known site features. The boring locations were not surveyed. The test boring locations are shown on Figure 3.

Drilling was performed by Craig Geotechnical Drilling Company, Inc. of Mays Landing, New Jersey using a truck-mounted CME-75 drill rig. The borings were advanced using the mud rotary technique with a 3-7/8 inch diameter tri-cone roller bit. Soil samples were obtained in all borings in accordance with the American Society for Testing and Materials (ASTM) Standard Specification D1586-Standard Penetration Test (SPT). The SPT consists of driving a 2 inch outside diameter (OD) split-spoon sampler for a depth of 24 inches with repeated blows of a 140 pound automatic hammer free-falling 30 inches. The standard penetration, or N-value, is defined as the number of blows required to drive the sampler for a 12 inch interval after an initial 6 inches of penetration. The soil samples obtained from the borings were visually classified using the Unified Soil Classification System (USCS).

The test boring logs are included in Appendix A.

4.2 Temporary Groundwater Observation Well

Two temporary groundwater observation wells were installed in completed test boring B-3(OW) and B-6(OW). Within boring B-3(OW), the well was constructed of 2-inch nominal outside diameter Schedule 40 PVC pipe with a 20 foot long slotted screen at the bottom and 32.5 feet of solid riser pipe. The top of the riser pipe was set at about 3.5 feet above the existing ground surface. Within boring B-6(OW), the well was constructed of 2-inch nominal outside diameter Schedule 40 PVC pipe with a 10 foot long slotted screen at the bottom and 21 feet of solid riser pipe. The top of the riser pipe was set at about 4 feet above the existing ground surface. The annulus between the pipe and the wall of the well pipe was backfilled with sand to a minimum of two feet above the screened section of pipe. A bentonite plug was installed in the annulus above the sand to limit surface water from entering the observation well.

Sketches of the groundwater observation wells are included in Appendix B.

4.3 Geotechnical Laboratory Testing

Geotechnical laboratory testing was performed on selected samples collected during this exploration. The purpose of the geotechnical laboratory testing was to confirm field soil classifications and to define mechanical and physical soil properties for use in the preliminary foundation design and earthwork recommendations. The geotechnical laboratory testing consisted of:

- 16 Particle Size Distribution (sieve analysis) per ASTM D422.

The geotechnical laboratory test results are included in Appendix C.

5.0 GENERALIZED SUBSURFACE CONDITIONS

Based on our review of the logs, we present our preliminary interpretation of the generalized subsurface conditions with the following strata and groundwater descriptions. Subsurface conditions may be summarized by the following brief descriptions of the major strata, listed in their order of occurrence with depth.

The site is typically underlain by glacial deposits of sand and gravel with localized discontinuous strata of silt and clay. There appears to be two glacial deposits consisting of an upper deposit characterized by brown sand and brown gravel, and a lower deposit characterized by grey sand and grey gravel.

In general, the preliminary borings indicate the eastern half of the site is underlain by brown sand of the upper glacial deposit, which is underlain by grey gravel of the lower glacial deposit. The western half of the site is underlain by brown sand then gravel of the upper glacial deposit, which is underlain by grey sand then gravel of the lower glacial deposit.

5.1 Topsoil

A layer of topsoil was encountered in all borings. The topsoil is characterized by the presence of plant roots and generally consists of brown medium to fine sand with varying amounts of gravel and silt.

The topsoil is typically about 1 foot to 2 feet thick in the majority of the borings. The topsoil is about 6 feet thick as encountered in boring B-5 and the soil encountered was predominantly silt.

5.2 Upper Glacial Deposits – Sand

Beneath the topsoil a layer of brown sand was encountered in all borings. The sand is typically coarse to fine with little to trace gravel and silt. The brown sand is thickest in the eastern half of the site up to about 30 feet thick as encountered in boring B-3(OW), and the brown sand thins to the west and is about 5 feet thick. Uncorrected SPT N-values ranged from 6 blows per foot (bpf) to 42 bpf with an average N-value of about 18 bpf. The brown sand can be characterized as medium-dense to dense in terms of relative density.

5.3 Upper Glacial Deposits – Gravel

A deposit of brown gravel was encountered below the brown sand in all borings in the western half of the site (the brown gravel was not encountered in borings B-1 through B-4). The brown gravel is thickest at about 25 feet thick as encountered in boring B-5, and the brown gravel thins to the west and is about 6 feet to 18 feet thick. Uncorrected SPT N-values ranged from 18 bpf to 97 bpf with an average N-value of about 38 bpf. The brown gravel can be characterized as medium-dense to very dense in terms of relative density.

5.4 Lower Glacial Deposits – Sand

A deposit of grey sand was encountered below the brown gravel in all borings in the western half of the site (the grey sand was not encountered in borings B-1 through B-4). Uncorrected SPT N-values ranged from 11 bpf to 43 bpf with an average N-value of about 27 bpf. The grey sand can be characterized as medium-dense to dense in terms of relative density.

5.5 Lower Glacial Deposits – Gravel

A deposit of grey gravel was encountered below the brown sand in all borings (except boring B-8 that terminated in the grey sand).The grey gravel was encountered directly below the brown sand at the eastern half of the site, and was typically encountered below the grey sand at the western half of the site. Uncorrected SPT N-values ranged from 19 bpf to 93 bpf with an average N-value of about 52 bpf. The grey gravel can be characterized as medium-dense to very dense in terms of relative density.

5.6 Discontinuous Strata

Glacial deposits are typically non-uniform and often contain discontinuous lenses and pockets of various soil types. The preliminary borings encountered discontinuous lenses of silt and clayey silt in the upper and lower glacial deposits.

5.7 Groundwater Level

Groundwater depth was measured periodically in observation wells B-3(OW) and B-6(OW) between May 28, 2015 and June 4, 2015. The most recent measurement taken June 4, 2015 indicates groundwater at about 19.7 feet and 14.5 feet below the ground surface at each well location respectively. The corresponding static groundwater elevation is about el. +362 at well B-3(OW) and about el. +359 at well B-6(OW). The groundwater levels are at about the same elevation of the Wallkill River at about el. +360.

6.0 PRELIMINARY FOUNDATION DESIGN RECOMMENDATIONS

This section presents preliminary engineering evaluations and recommendations for the design of the new building foundations. The evaluations and recommendations are based on the results of the preliminary subsurface exploration, our experience on other projects, and the information we have been provided to date on the design requirements for the proposed structure.

The concept plan sheets prepared by Lanc & Tully Engineering and Surveying. P.C, dated June 16, 2015 show two flood plains at the site for the 100 year flood event. The flood plain for the Cheechunk Creek is about el. +373, and the flood plain for the Wallkill River is about el+371.

6.1 Additional Exploration

The proposed development footprint of 380,000 square feet will require additional exploration to satisfy the design of a new building supported on shallow foundations. We recommend the additional exploration is comprised of additional geotechnical borings and shallow test pit excavations. We will discuss the required number of explorations as the schematic site design is developed and the new building location and pervious pavement locations are further developed and more accurately defined.

6.2 Seismic Evaluation

The seismic design recommendations presented in this section are in accordance with BCNYS Section 1613 Earthquake Loads. The subsurface exploration generally revealed a profile consisting of medium dense to very dense soil. Therefore, we recommend a "stiff soil profile" is assigned with a corresponding Site Class D. We assume the building will be assigned to Structural Occupancy/Risk Category (SO/RC) II. The appropriate SO/RC should be confirmed by the Architect or Structural Engineer. Based on the assumed Site Class and SO/RC, the recommended Seismic Design Category is B.

6.3 Liquefaction Potential

Liquefaction is the full or partial loss of shear strength of granular or cohesionless soils during an earthquake. The potential consequences of liquefaction could include loss of bearing capacity causing collapse or excessive settlement of ground. Potentially liquefiable soil types include clean sands, silty sands and silts below the water table and to a depth of 50 feet below the ground surface.

Groundwater depth was measured periodically in the observation wells B-3(OW) and B-6(OW) between May 28, 2015 and June 4, 2015. The most recent measurement taken indicates groundwater at about 19.7 feet and 14.5 feet below the ground surface at each well location respectively. The corresponding static groundwater elevation is about el. +362 at well B-3(OW) and about el. +359 at well B-6(OW).

The BCNYS does not include procedures for assessing the liquefaction potential of soils. In the absence of such procedures the preliminary liquefaction potential of the soils at the site was evaluated using the general liquefaction assessment procedure outlined in the 2014 New York City Building Code. The charts presented in Figures 4a through 4c show the N_{60} values (SPT-N value corrected for field procedures such as hammer efficiency and rod length etc.) for soil below the groundwater table at the site plotted with depth. The dashed, diagonal line represents the cutoff for liquefaction analysis for structural risk/occupancy category II/III. If N_{60}

values plot to the right of the line, liquefaction evaluation is not required, while N_{60} values plotting to the left of the line indicate that a liquefaction evaluation is required.

The seismic criteria used for evaluating liquefaction potential in New York City is likely more stringent for a larger earthquake than would be expected at the site location in Orange County. The preliminary liquefaction assessment suggests that liquefaction is not a concern for this site, as shown in Figures 4a through 4c. We recommend a site specific liquefaction assessment is performed as part of the final exploration and report for the site.

6.4 Preliminary Foundation Recommendations

Preliminary site grading plans were not developed at the time of preparing this preliminary report. The proposed development involves the construction of a manufacturing plant and warehouse at the site. The new buildings will be constructed in phases, and the total developed footprint for the new buildings will be about 380,000 square feet. The new buildings will be 45 foot high warehouse-type structures. Other areas of the site will be developed as access roads, porous paved parking areas, and stormwater detention basins.

We assume the finished floor elevation of the new warehouse buildings will be about el. +380. We estimate the new foundations will be constructed at about 4 feet below proposed finished grade for frost protection as discussed herein.

The preliminary grading for paved areas of the site are not known, however we estimate up to about 2 feet to 4 feet of soil will be excavated, or placed as fill, to meet proposed grades and a balanced earthwork program for the site.

Detailed evaluation of the permeability of the soils is not discussed in this preliminary report. We will conduct appropriate exploration and testing in our next phase of geotechnical exploration to identify soils at specific locations where soil permeability data are required to be evaluated. We expect the sand and gravel soils to be relatively free draining, depending on the quantities of silt and clay in the soil matrix. Areas where high silt and clay contents are present may not be suitable for infiltration basins.

6.4.1 Shallow Foundation

The building can likely be supported by a shallow foundation bearing on the upper sand material. The preliminary recommended allowable bearing pressure is 2.5 tons per square foot. Depending on foundation bearing depth and bearing material, these values may be increased upon further engineering analysis. Estimated settlements for shallow foundations bearing on medium to dense sand are between ½ inch and 1 inch. The final recommended allowable bearing pressure and estimated settlements will be determined after we have reviewed the foundation load estimate prepared by the project Structural Engineer.

6.5 Permanent Groundwater Control

6.5.1 Static Groundwater Level

Groundwater depth was measured periodically in the observation wells B-3(OW) and B-6(OW) between May 28, 2015 and June 4, 2015. The most recent measurement taken indicates groundwater at about 19.7 feet and 14.5 feet below the ground surface at each well location respectively. The corresponding static groundwater elevation is about el. +362 at well B-3(OW) and about el. +359 at well B-6(OW). We recommend that a design groundwater level of el. +373 be considered to account for fluctuations in the groundwater elevation due to the 100 year flood elevation within the Cheechunk Creek.

6.5.2 Foundation Damp-Proofing

We recommend all slabs-on-grade are fully damp-proofed to limit water vapor infiltration into occupied and moisture sensitive spaces. We recommend a membrane type damp-proofing product be used, such as products by W.R. Grace & Co. For horizontal applications, we recommend that the membrane be installed on a two-inch-thick concrete substrate (mudslab).

The installation of all foundation damp-proofing elements should be performed by a certified installer and be inspected on a full time basis to confirm that the damp-proofing is being installed as per the manufacturer's specifications and details.

6.6 Floor Slabs

The first floor slab should be designed as a slab-on-grade. We recommend that slab-on-grade floors be supported on a minimum of 6-inch thick layer of free-draining ¾-inch crushed stone placed atop suitably compacted subgrade. For the purposes of preliminary design, we recommend a subgrade modulus of 100 pounds per square inch per inch (psi/in). We recommend placement of a geotextile filter fabric, such as a Mirafi 140N (manufactured by Tencate) or equivalent, between the gravel and subgrade layers.

7.0 PRELIMINARY FOUNDATION CONSTRUCTION RECOMMENDATIONS

This section presents a discussion of our preliminary recommendations regarding foundation construction aspects of the proposed development that should be addressed in the project specifications and contract documents.

7.1 Excavation

The bottom of the proposed foundation will be constructed at about 4 feet below the proposed finished grade ground surface for frost protection. Soil excavation within the upper sand material can be performed with conventional earth moving equipment such as backhoes, excavators, dozers etc. We expect the majority of the excavation will be performed above the static groundwater elevation. All excavation should be performed in accordance with all OSHA requirements including, but not limited to, temporary shoring, using trench boxes, and proper benching, wherever necessary.

7.2 Construction Dewatering

Groundwater is not expected to be encountered during site excavation and foundation construction. Any water encountered during construction can likely be handled by localized sump pits and pumps. The contractor is responsible for the design and operation of any dewatering system. Stormwater run-off should be directed away from excavations and promptly removed from areas of foundation subgrade. Groundwater and stormwater run-off must be discharged in accordance with New York State Department of Environmental Conservation (NYSDEC) regulations.

7.3 Subgrade Preparation

The excavation will be conducted in the glacial deposits, and as such, care should be taken to prevent the disturbance (loosening) of the bearing stratum. We recommend the contractor excavate the last 12 inches of soil above the proposed foundation bearing elevation using an excavator equipped with a straight-edged bucket. We do not recommend using a standard bucket with teeth as the teeth will likely disturb and loosen the subgrade soil.

We note the topsoil and upper brown sand material contains silt and fine soils (fines) of over 10 percent by weight. Soils with fines contents greater than about 10 percent are sensitive to slight variations in moisture

content and may soften if they become too wet. The Contractor must prevent prepared subgrades from softening before placement of the foundation concrete as discussed herein.

Upon excavating to the proposed foundation subgrade elevation, the subgrade material should be inspected and approved by the Special Inspector. A proof-roll inspection should be conducted in the presence of the Special Inspector to confirm that the bearing material stable and firm. Areas of soft, rutted, or "pumping" subgrade material should be over-excavated and replaced with structural fill. We recommend areas of subgrade for slab-on-grade construction, new pavement and roads, are proof-rolled with about five to six passes of a heavy smooth-drum vibratory roller. Smaller compaction equipment such as a walk-behind roller may be used in areas of limited access such as utility trenches and localized areas of excavation.

The exposed subgrade surface should be level and free of debris and/or other unsatisfactory material. Foundation concrete should be placed as soon as possible on the prepared subgrade to prevent disturbance. The approved subgrade surface should be protected from precipitation, freezing weather, and construction traffic until concrete is placed. Methods of protection include sealing with lean concrete (mud slab). The contractor shall not place any concrete for foundations on frozen ground, or where snow or standing water is present.

7.4 Fill Material and Compaction Criteria

Site grading indicates that there will be an overall excavation within the truck marshalling area to the west of the site at the site to meet proposed grades, therefore we anticipate minimal fill placement will be required.

The existing on-site soil is generally considered acceptable for re-use as compacted structural backfill provided that any miscellaneous debris, organics, pockets of cohesive soils, and cobbles are removed. The maximum allowable particle size used in structural fill should be 4 inches. The gradation of the existing site soils deemed suitable for re-use should meet the criteria recommended for imported fill as described in this section of the report.

We note the topsoil and upper brown sand material contains silt and fine soils (fines) of over 10 percent by weight. Soils with fines contents greater than about 10 percent are sensitive to slight variations in moisture content and may soften if they become too wet. The Contractor must provide adequate measures for handling excavated soil to prevent softening during handling and fill placement.

In addition to the geotechnical requirements for soil re-use, the soil must be acceptable per environmental criteria (by others). The suitability of all excavated soil for re-use at the site should be approved during construction by the on-site geotechnical and environmental engineers.

The contractor must submit representative samples of the material excavated at the site, along with modified proctor results, for evaluation of the suitability of this material for reuse as backfill. We expect this material can be typically be re-used for backfill behind retaining walls and backfill of utility trenches.

While not anticipated, if additional fill is required at the site, the imported fill should consist of a well graded sand and/or gravel having less than 15 percent by dry weight passing the No. 200 sieve. Suitable imported fill should be free of organics and other deleterious materials and environmental contaminants and should have a maximum particle size of 4 inches.

Backfill should be placed in uniform loose lifts having a maximum thickness of 12 inches. No fill material should be placed on areas where free water is standing, on frozen subsoil areas, or on surfaces which have not been approved by the geotechnical engineer. In restricted areas where only hand-operated compactors can be used, the maximum lift thickness should be limited to 8 inches. Each lift should be compacted with a minimum 10-ton vibratory roller to at least 95 percent of the soil's maximum dry density as determined by ASTM D1557 (latest edition). The appropriate water content at the time of compaction should be plus or

minus 2 percentage points of the optimum water content determined by the laboratory compaction tests on proposed fill material.

Grain size distribution, maximum dry density, and the optimum water content determinations should be made on representative samples of all fill materials proposed by the Contractor. All fill placement and compaction is subject to Special Inspection and testing per BCNYS.

7.5 Construction Documents and Quality Assurance

Design specifications and drawings should incorporate our recommendations to ensure that subsurface conditions and other geotechnical issues at the site are adequately addressed in construction documents. AKRF should assist the design team in preparing specification sections related to geotechnical issues such as subgrade preparation, fill placement and compaction. AKRF should also review foundation design drawings and details, and all contractor submittals and construction procedures related to geotechnical work.

A geotechnical engineer familiar with the site subsurface conditions and design intent should perform the quality assurance observations and testing of geotechnical-related work during construction. Per the requirements of BCNYS, the construction of foundations (foundation subgrade preparation, earthwork, pile installation, ground improvement, etc.) requires Special Inspection by a Professional Engineer currently registered in the State of New York. We recommend that AKRF provide the required Special Inspections to verify that the foundation design is implemented during construction and to provide timely responses to field questions and changes. The foundation contractor's Professional Engineer will be responsible for the design, construction, and inspection of the SOE systems if required.

8.0 LIMITATIONS

The conclusions and preliminary recommendations provided by AKRF in this preliminary report have been prepared based on professional judgment of the subsurface conditions inferred from borings made at the site, as well as plans and/or drawings provided by the client. The recommendations provided are solely for the conditions encountered at the site, and should not be used independently at other sites where other subsurface conditions are presumed to exist.

In the event that the proposed building is changed, modified, or its location moved, AKRF should be informed to determine whether such modification would change AKRF's recommendations as presented herein. Geological and groundwater conditions presented herein represent conditions encountered at the time and specific locations where exploration work was performed. In the event that conditions during construction differ from those presented in this report, they should be brought to AKRF's immediate attention for evaluation, as recommendations in this report may be affected.

AKRF has prepared this preliminary geotechnical engineering report for the site at the proposed Amy's Kitchen Food Production Facility known as "the Ver Hage site", in the Town of Goshen, NY for use by the Owner, the project architect and structural engineer in the preliminary design process and is only applicable for this specific site and the planned design work. The information in this report should not be relied upon by engineers or contractors involved in other unrelated aspects of design or construction work at the site without first verifying from AKRF whether the information contained herein is applicable for such use.

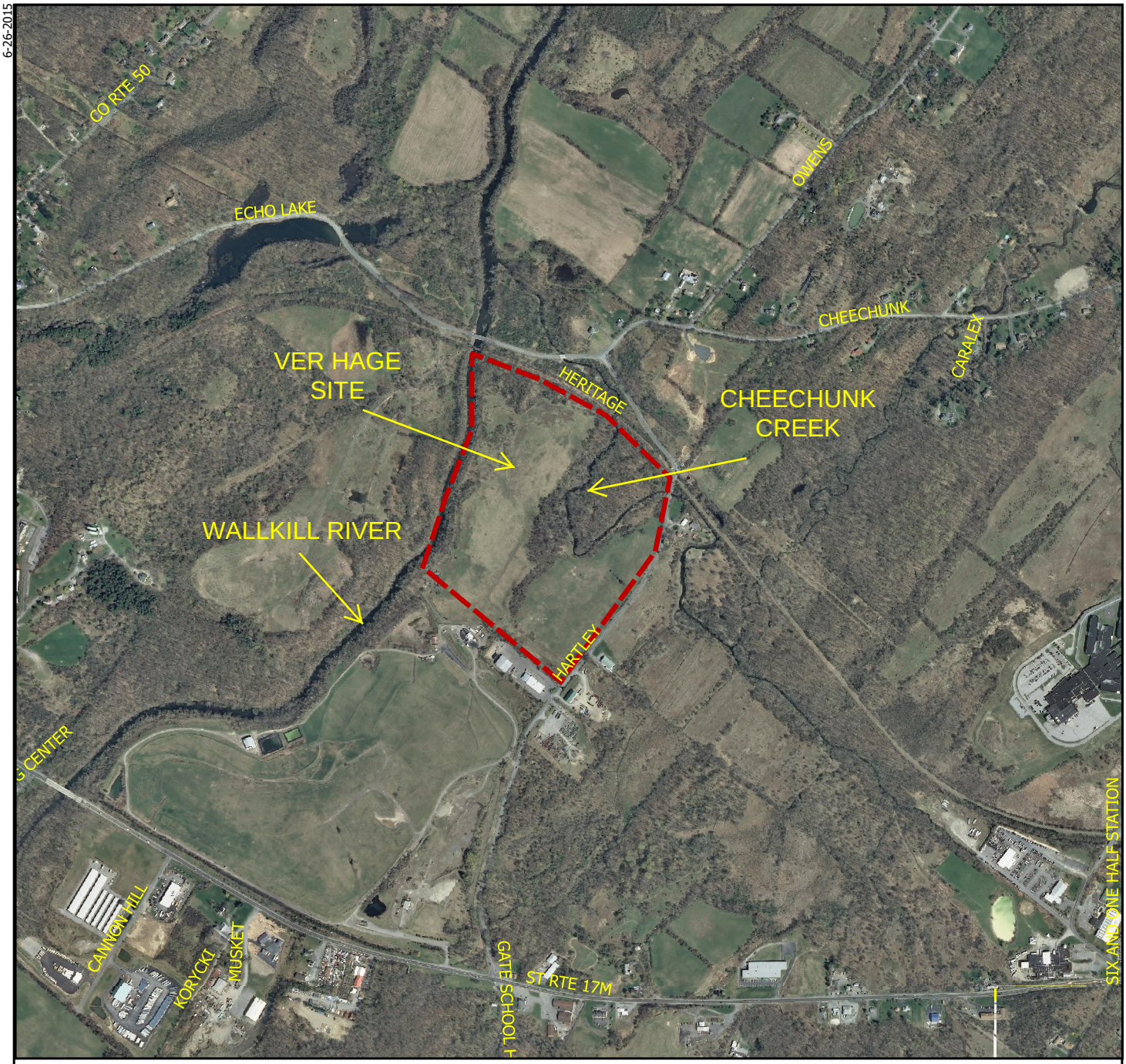
Environmental issues (such as potentially contaminated soil and groundwater) are outside the scope of this study and should be addressed in a separate study.

9.0 REFERENCES

- American Society for Testing and Materials (ASTM). ASTM Standard D1586 2011. "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils." West Conshohocken, PA: ASTM International, 2011.
- --- ASTM Standard D1557. "Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort" West Conshohocken, PA: ASTM International, 2011.
- --- ASTM Standard D422. "Standard Test Method for Particle-Size Analysis of Soils" West Conshohocken, PA: ASTM International, 2011.
- Cadwell, Donald H. "Surficial Geologic Map of New York – Lower Hudson Sheet" N.Y.S. Geological Survey, 1989.
- 2010 Building Code of New York State
- City of New York. "NYCity Map – DoITT and NYC Department of City Planning". New York City, NY, 2015.

FIGURES

6-26-2015



Source: New York State Office of Information Technology Services (ITS)

LEGEND

PROJECT SITE

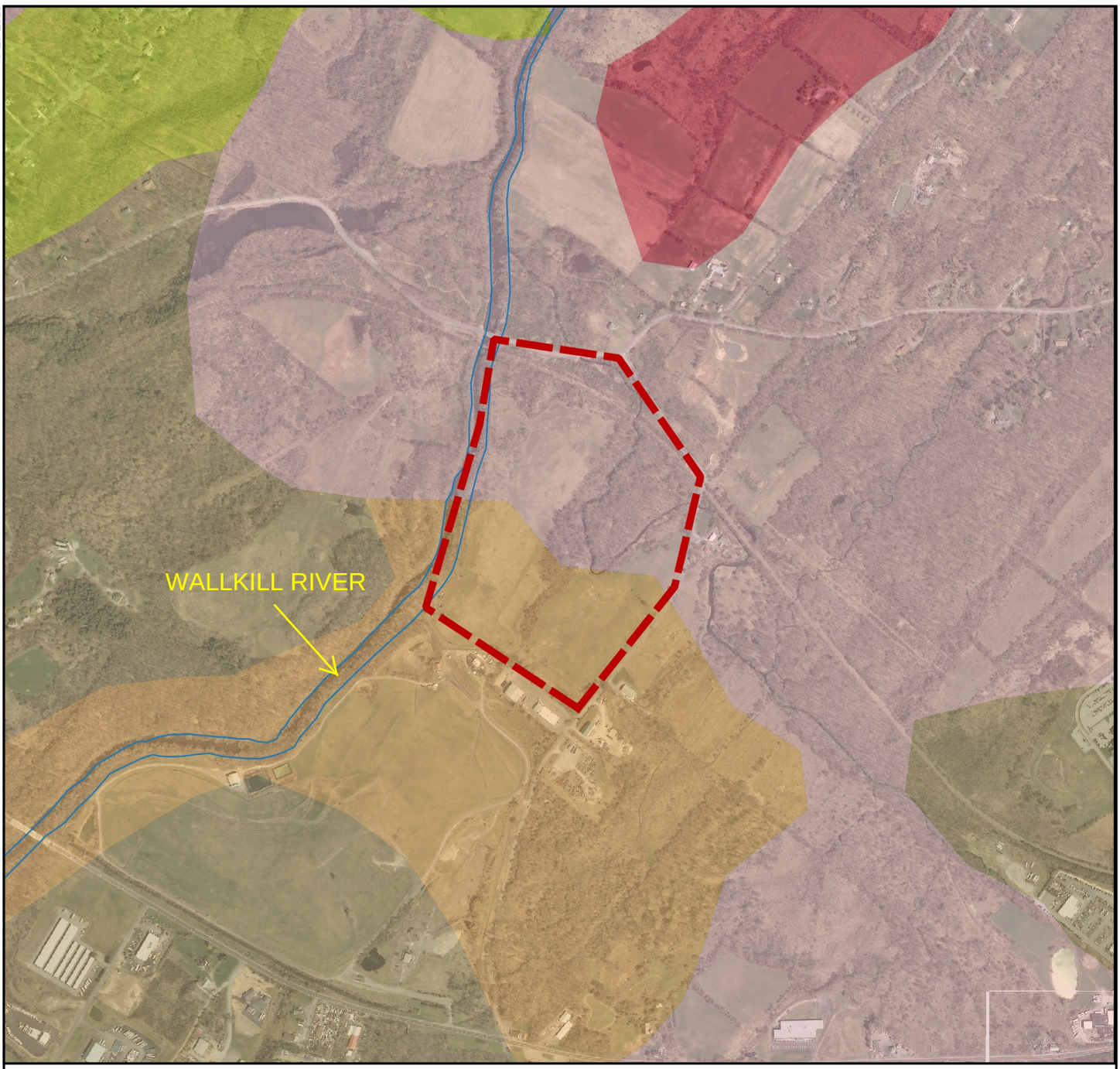
PROJECT LOCATION

96 HARTLEY ROAD
GOSHEN, NY

1000 0 1000 2000 ft

AMY'S KITCHEN - VER HAGE GOSHEN, NY	AKRF *Environmental, Planning, and Engineering Consultants* AKRF Engineering, P.C. 440 Park Avenue South. New York. N.Y. 10016	DATE **06/26/2015**
		PROJECT NO. **40525**
SITE LOCATION MAP		FIGURE **1**

6-26-2015



Source: Surficial Geologic Map of New York - Lower Hudson Sheet. © 1989 NYSGS; New York State Office of Information Technology Services (ITS)

LEGEND

APPROX. LIMITS OF VER HAGE SITE

TILL

KAME DEPOSITS

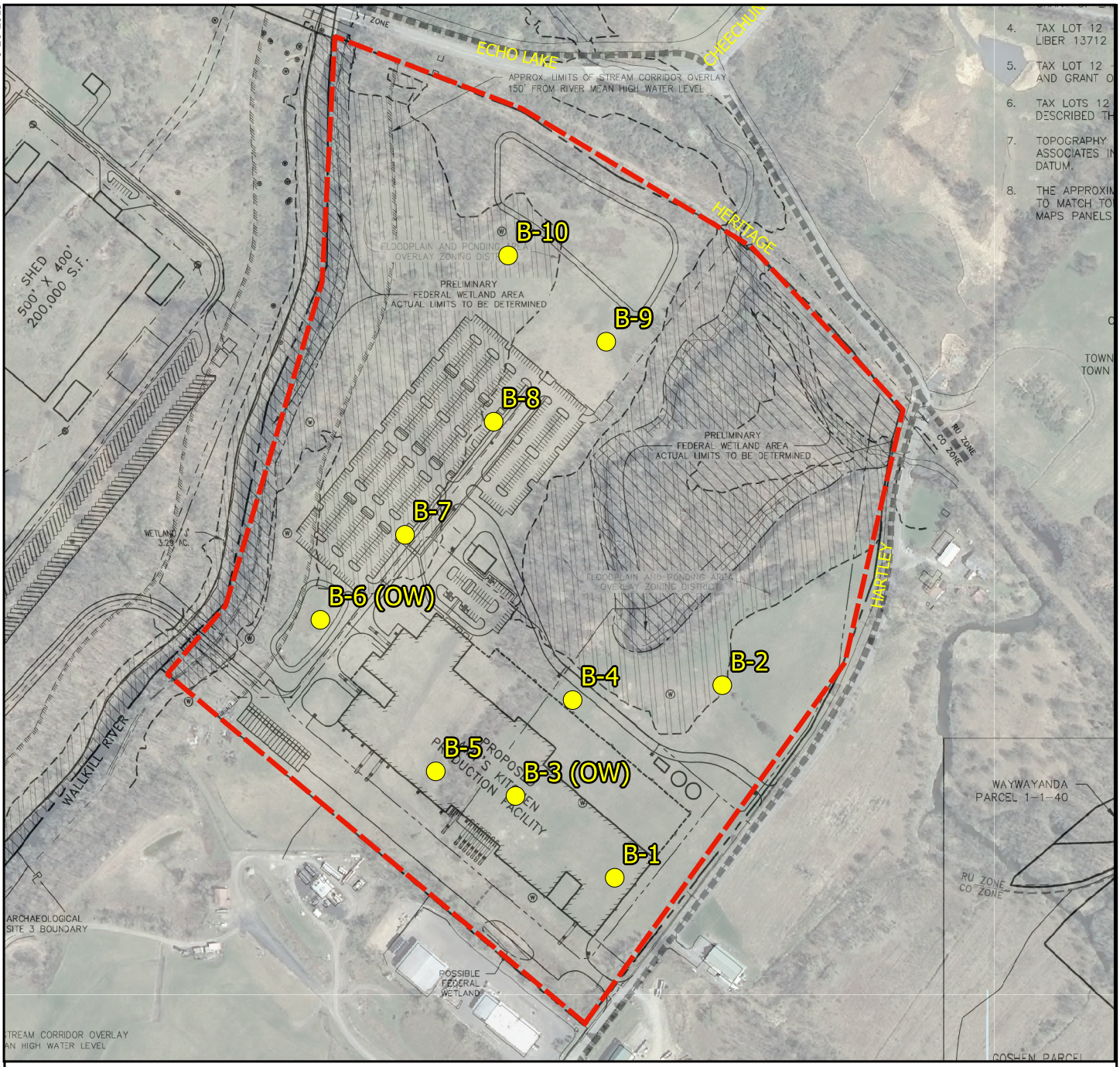
PROJECT LOCATION

96 HARTLEY ROAD
GOSHEN, NY

1500 0 1500 3000 ft

96 HARTLEY ROAD GOSHEN, NY	AKRF *Environmental, Planning, and Engineering Consultants* AKRF Engineering, P.C. 440 Park Avenue South. New York. N.Y. 10016	DATE **6/26/2015**
		PROJECT NO. **40525**
GEOLOGIC MAP		FIGURE **2**

6-26-2015



Source: New York State Office of Information Technology Services (ITS) - 2013 Aerial; Background copyright 2015, Lanc & Tully, P.C. - Concept Plan for Amy's Kitchen dated 2/23/2015. Latest revision dated 6/16/2015

LEGEND

I.D. BORING LOCATION (AKRF JUNE 2015 INVESTIGATION)

APPROX. LIMITS OF VER HAGE SITE

PROJECT LOCATION

96 HARTLEY ROAD
GOSHEN, NY

500 0 500 1000 ft

AMY'S KITCHEN - VER HAGE
GOSHEN, NY

BORING LOCATION PLAN

AKRF

Environmental, Planning, and Engineering Consultants

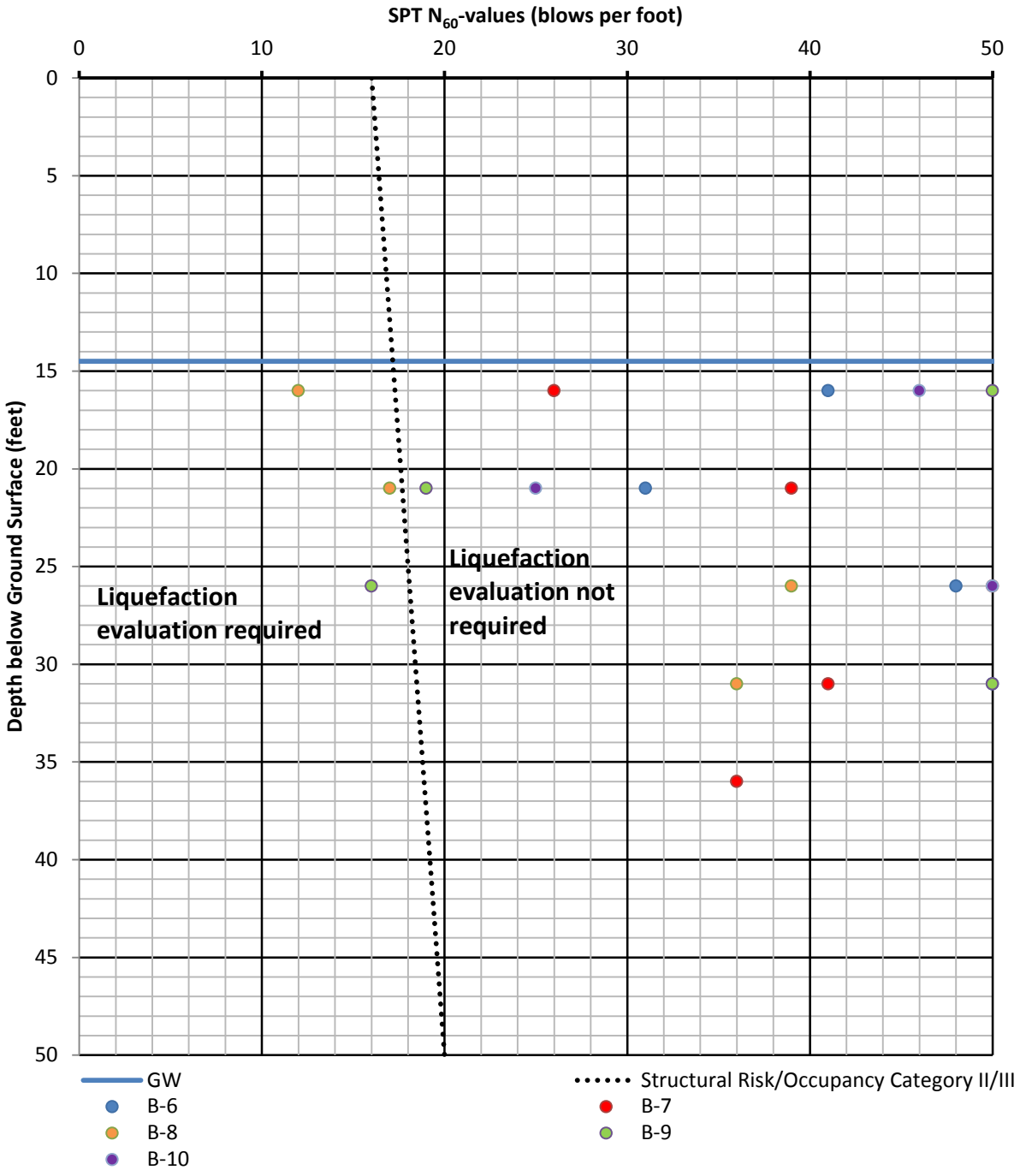
AKRF Engineering, P.C.
440 Park Avenue South. New York. N.Y. 10016

DATE
06/26/2015

PROJECT NO.
40525

FIGURE
3

SPT N-values vs. Depth



1. **Note: This figure is based on Section 1813 of the 2014 NYC Building Code for structural risk/occupancy category II/III**

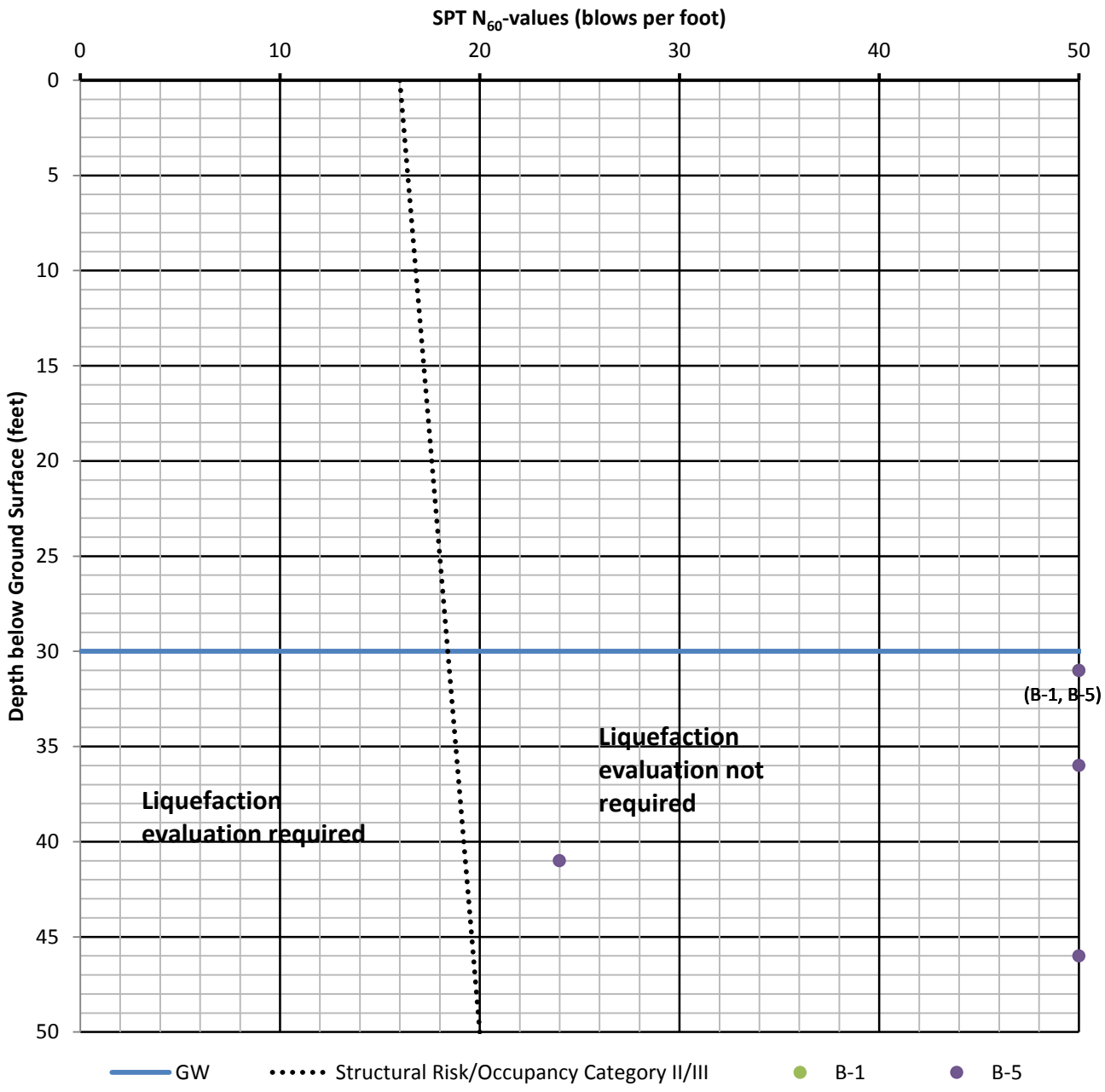
2. **Ground Surface (depth = zero feet) is about el. +373**

Project Location

Amy's Kitchen - Ver Hage
96 Hartley Road
Goshen, NY

Amy's Kitchen - Ver Hage Goshen, NY	AKRF *Environmental, Planning, and Engineering Consultants*	DATE **6/26/2015**
Preliminary Liquefaction Evaluation	AKRF Engineering, P.C. 440 Park Avenue South, New York, N.Y. 10016	PROJECT No. **40525** FIGURE **4A**

SPT N-values vs. Depth



1. **Note: This figure is based on Section 1813 of the 2014 NYC Building Code for structural risk/occupancy category II/III**

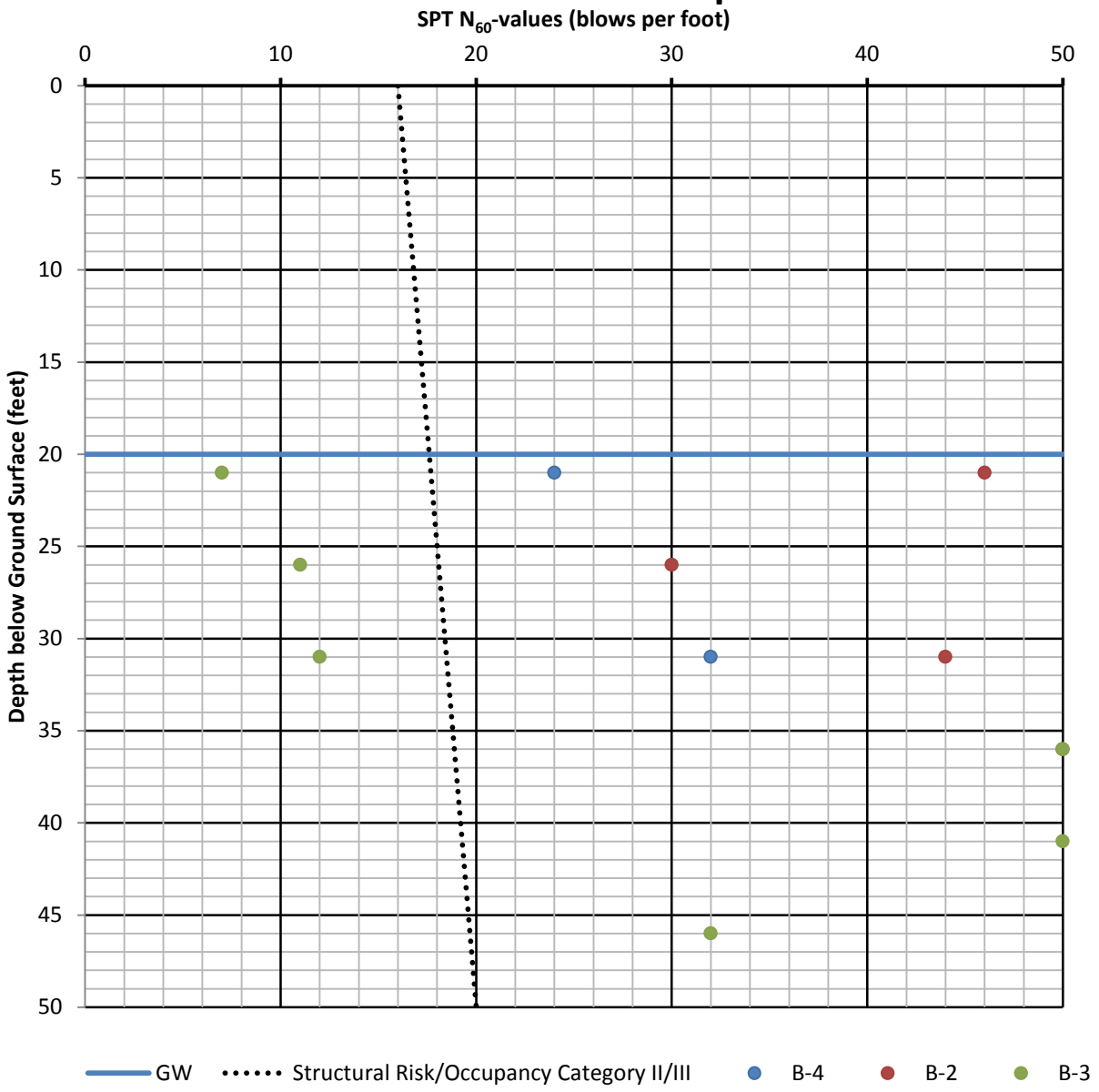
2. **Ground Surface (depth = zero feet) is about el. +392**

Project Location

Amy's Kitchen - Ver Hage
96 Hartley Road
Goshen, NY

Amy's Kitchen - Ver Hage Goshen, NY	AKRF *Environmental, Planning, and Engineering Consultants*	DATE **6/26/2015**
Preliminary Liquefaction Evaluation	AKRF Engineering, P.C. 440 Park Avenue South, New York, N.Y. 10016	PROJECT No. **40525**
		FIGURE **4B**

SPT N-values vs. Depth



1. **Note: This figure is based on Section 1813 of the 2014 NYC Building Code for structural risk/occupancy category II/III**

2. **Ground Surface (depth = zero feet) is about el. +377**

Project Location

Amy's Kitchen - Ver Hage
96 Hartley Road
Goshen, NY

Amy's Kitchen - Ver Hage Goshen, NY	AKRF *Environmental, Planning, and Engineering Consultants* AKRF Engineering, P.C. 440 Park Avenue South, New York, N.Y. 10016	DATE **6/26/2015**
		PROJECT No. **40525**
Preliminary Liquefaction Evaluation		FIGURE **4C**

APPENDIX A
SOIL BORING LOGS

Table A-1: Unified Soil Classification System

Coarse-Grained Soils *(50% > #200 Sieve)*	Gravels and Gravelly Soils *(50% > #4 Sieve)*	Clean Gravels *(No more than 5% < #200 Sieve)*	**GW**	Well-graded gravels, or gravel-sand mixtures. Little to no fines.
			GP	Poorly-graded gravels, or gravel-sand mixtures. Little to no fines.
		Dirty Gravels *(more than 12% > #200 Sieve)*	**GM**	Silty gravels, or gravel-sand-silt mixtures.
			GC	Clayey gravels, or gravel-sand-clay mixtures.
	Sands and Sandy Soils *(50% < #4 Sieve)*	Clean Sands *(No more than 5% < #200 Sieve)*	**SW**	Well-graded sands, or gravelly sands. Little to no fines.
			SP	Poorly graded sands, or gravelly sands. Little to no fines.
		Dirty Sands *(more than 12% > #200 Sieve)*	**SM**	Silty sands, or sand-silt mixtures.
			SC	Clayey sands, or sand-clay mixtures.
Fine-Grained Soils *(50% < #200 Sieve)*	Silts and Clays *(LL < 50%)*	**ML** Inorganic silt, rock flour, or clayey silts with slight plasticity.		
		CL Inorganic, lean clays of low to medium plasticity; gravelly, sandy or silty clays.		
		OL Organic silty or organic silty clays of low plasticity.		
	Silts and Clays *(LL > 50%)*	**MH** Inorganic silt, spongy, talcy, micaceous, diatomaceous, or fine sandy silt.		
		CH Inorganic, fat clays of high plasticity.		
		OH Organic, fat clay of high plasticity.		
	Peat	**PT** Peats or other highly organic soils		

Table A-2: Particle Sizes of Geologic Material

Material Size	Size Range	Passing Sieve Size	Retained Sieve Size
Boulder	Greater than 12 in.	–	–
Cobble	3 in. to 12 in.	–	–
Coarse Gravel	¾ in. to 3 in.	3 inch	¾ inch
Fine Gravel	19.1 mm (¾ in.) to 4.76 mm	¾ inch	No. 4
Coarse Sand	4.75 mm to 2.00 mm	No. 4	No. 10
Medium Sand	2.00 mm to 0.425 mm	No. 10	No. 40
Fine Sand	0.425 mm to 0.074 mm	No. 40	No. 200
Silt	0.074 mm to 0.005 mm	Requires Hydrometer Analysis	
Clay	Less than 0.005 mm		

Table A-3: Quantity Descriptors

Descriptor	Percentage of Sample (by weight)	Examples
"CAPITALIZED"	> 50%	Brown ***SAND***
and	35 to 50%	***and*** silt
some	20 to 35%	***some*** gravel
little	10 to 20%	***little*** clay
trace	< 10%	***trace*** silt

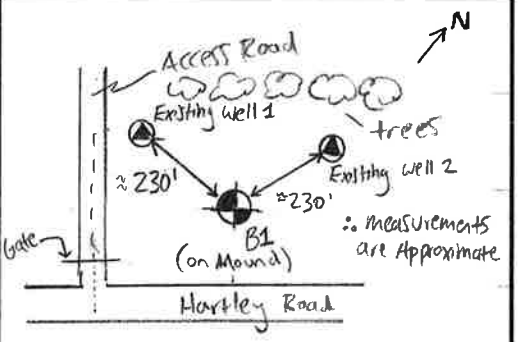
LOG OF BORING B1

PAGE 1 OF 2

PROJECT NAME:	Amy's Kitchen - Ver Haye Site	CONTRACTOR:	CRAIG Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Parent
PROJECT LOCATION:	Goshen, NY	SAMPLER TYPE(S):	2" OD Split Spoon
BOREHOLE COORD. (N/E):	41.405626° / -74.375013°	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	392 ± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Roller bit / 3 7/8"
BORING START:	9:00 AM 5/28/15	CASING TYPE/DIA.:	Steel Flush / 4" I.D.
BORING END:	11:30 AM 5/28/15	WATER LEVEL:	1ST – END – 24H –
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 10 U – C –
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.
	Topsoil	0					
		1	Brown mf SAND, little f gravel, trace silt (SP)	1	SS	12"	7 22 10 10
		2					
	G	3	Brown fc GRAVEL, some mc Sand, little silt (GM)	2	SS	12"	15 10 16 22
		4	C Gravel 1"	3	SS	1"	18 13 11 7
		5					
		6					
	S	7	Brown fc SAND, little f gravel, trace silt. (SP)	4	SS	18"	9 9 5 5
		8					
	G	9	Brown fc GRAVEL, and cm Sand, trace silt (GP-GM)	5	SS	15"	7 10 11 14
		10	f gravel, some mc Sand, trace silt (GP)	6	SS	20"	18 13 10 10
		11					
		12					
		13					
		14					

OBSERVATIONS & NOTES



Boring Location Plan

Weather: 70s, clear
Start: 9:00 AM
Sample 0-2'
Sample 2-4'
Sample 4-6'
Sample 6-8'
Sample 8-10'

Driller Adds Arro Vis "Mud" to fluid
Driller drills to seat casing
Driller drives casing to 10' bgs using Auto hammer
Rig shuts down at 9:30 AM
Broken "Relay". Drillers leave site to buy a new piece. Back on site at 10:30. Rig repaired and drilling continued.
Drill to 15'
Smooth drilling

LOG OF BORING B1

PAGE 2 OF 2

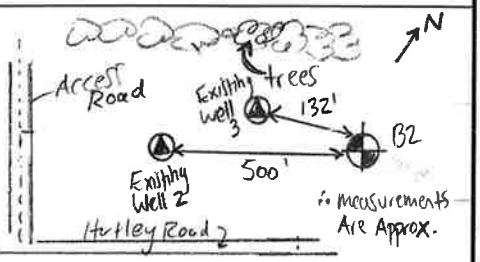
GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	G	15						Sample 15-17
	S	16	Brown mf SAND, trace f gravel, trace silt (SP)	7	SS	6"	7 7 9 15	
		17						Drill to 20'
		18						Smooth drilling
		19						
		20						Sample 20-22'
		21	Brown fm SAND, little silt trace fc gravel (SM)	8	SS	20"	9 13 10 10	
		22						Drill to 25'
		23						Smooth drilling
		24						
		25						Sample 25-27
		26	Brown mc SAND, little fc gravel, little silt (SM)	9	SS	12"	6 14 14 21	
		27						Drill to 30'
		28						Smooth drilling
		29						
		30						Sample 30-32'
	G	31	C GRAVEL, some silt, trace f sand. (GM)	10	SS	12"	13 60 28 27	Very dense - Possible cobble
		32						End boring at 32' bgs at 11:30 AM

LOG OF BORING B2

PAGE 1 OF 2

PROJECT NAME:	Amy's Kitchen - Ver Haye Site	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Parent
PROJECT LOCATION:	Goshen, NY	SAMPLER TYPE(S):	2" O.D. Split Spoon
BOREHOLE COORD. (N/E):	41.407082 / -74.373944	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	372± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Roller bit / 3 7/8"
BORING START:	2:30 PM 5/28/15	CASING TYPE/DIA.:	Steel Flush 4" ID
BORING END:	8:47 AM 5/29/15	WATER LEVEL:	1ST — END — 24H —
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 11 U — C —
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	Top Soil	1	Brown mf SAND, little f gravel, trace Silt. (SP)	1	SS	16"	3 4 4 5	
		2	Brown mf SAND, trace f gravel, trace Silt. (SP)	2	SS	12"	7 7 8 6	
	S	3 4 5	Brown mf SAND, little Silt. (SM)	3	SS	12"	6 6 4 4	
		6	Brown mf SAND, trace Silt (SP)	4	SS	16"	7 8 6 6	
		7 8 9	Brown mf SAND, little Silt (SM)	5	SS	12"	8 7 7 5	
		10 11 12 13 14	Brown and Gray fine SAND, some f gravel, little Silt (SM)	6	SS	22"	4 12 12 6	



Boring Location Plan

Weather: 70's, clear

Start 2:30 PM

Sample 0-2'
Sample 2-4'
Sample 4-6'
Sample 6-8

Sample 8-10

Sample 10-12

Driller cleans out hole and Drives 4" casing with Auto hammer to 10 ft bgs. Drills to 15' bgs

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LOG OF BORING B2

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
		15						Smooth drilling to 15'
	G	16	fc GRAVEL, little gray Cm Sand, trace Silt (GW)	7	SS	8"	8 14 37 38	Hard retrieval of rods, driller adds 5' of casing. Cleans out borhole. End drilling for the day at 3:00 PM 5/28/15 Drilling resumed at 7:45 am on 5/29/15 Sample 15-17'
		17						
		18						Driller Drives another 5' of casing with Auto hammer Casing Refusal.
		19						Roller Bit to 20' Slight Drill chatter at about 19'
		20						
		21	fc GRAVEL, little gray Cm Sand, trace Silt (GW)	8	SS	6"	20 24 13 12	Sample 20-22
		22						Drill to 25'
		23						Smooth drilling
		24						
		25						Sample 25-27
		26	f GRAVEL, little gray Cm Sand, trace Silt. (GP)	9	SS	13"	12 13 11 10	
		27						Drill to 30 ft
		28						
		29						Smooth drilling
		30						Sample 30-32
	M	31	Gray Clay & Silt (ML)	10	SS		9 10 23 16	
		32						Drill to 35'

LOG OF BORING B2

PAGE 3 OF 3

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	14	33						Smooth drilling
		34						
		35						Sample 35-37
	6	36	fc GRAVEL, little gray Cm Sand, little Silt (GM)	5	S	12"	14 43 50/3"	
		37						End boring at 37' bgs 8:47 AM
		38						
		39						
		40						
		41						
		42						

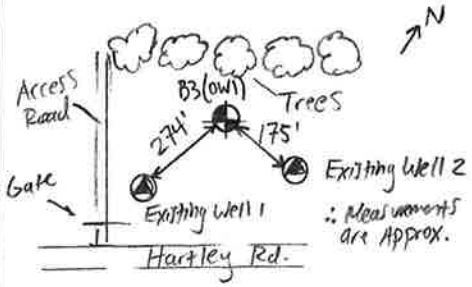
LOG OF BORING B3(OW1)

PAGE 1 OF 2

PROJECT NAME:	Amy's Kitchen - Ver Hage Site	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Parent
PROJECT LOCATION:	Goshen NY	SAMPLER TYPE(S):	2" o.d. Split spoon
BOREHOLE COORD. (N/E):	41.406240° / -74.376010°	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	382± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Roller bit / 3 7/8"
BORING START:	11:45 AM 5/28/15	CASING TYPE/DIA.:	Steel Flush / 4" I.D.
BORING END:	1:45 PM 5/28/15	WATER LEVEL:	1ST — END 19.75' 24H 19.75'
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 14 U — C —
		DRILLING METHOD:	Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.
	Top Soil	1	Brown fm SAND, trace f gravel, trace Silt. Roots (SP)	1	SS	20"	2 2 2 2
	S	2 3 4	Brown fm SAND, little Silt. Roots (SM)	2	SS	14"	3 3 4 5
	M	5 6	Brown Silt, some f Sand (ML)	3	SS	20"	5 5 5 6
	S	7 8 9 10	Brown fm SAND, trace Silt, trace f gravel (SP)	4	SS	20"	8 8 3 6
			Brown fm SAND, some Silt (SM)	5	SS	20"	7 6 5 4
	M	11 12 13 14	Gray Silt, trace f Sand (ML)	6	SS	18"	4 4 5 5

OBSERVATIONS & NOTES



Boring Location Plan

Weather: 70's, clear
Start = 11:45 AM
Sample 0-2'
Sample 2-4'
Sample 4-6'
Sample 6-8'
Sample 8-10'
Sample 10-12'
Driller drives casing using Auto hammer to 10'
Driller Drills to 15' bgs
Smooth Drilling
Continuous backwash.

AKRF

LOG OF BORING B3 (OW1)

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN	OBSERVATIONS & NOTES
		15						Sample 15-17
	S	16	Brown fm SAND, trace Silt (SP)	7	SS	16"	3 3 4 5	
		17						Drill to 20'
		18						Smooth Drilling Continuous backwash
		19						
		20						Sample 20-22
		21	Brown fm SAND, trace Silt (SP)	8	SS	16	3 3 3 6	
		22						Drill to 25'
		23						Smooth drilling Continuous backwash
		24						
		25						Sample 25-27'
		26	Brown fm SAND, trace Silt, trace f gravel (SP)	9	SS	18"	3 4 5 8	
		27						Drill to 30'
		28						Smooth drilling Continuous backwash
		29						
		30						Sample 30-32
		31	Brown fm SAND, trace Silt (SP)	10	SS	20"	4 4 5 7	
		32						

LOG OF BORING B3 (OW1)

DEPTH (FT)	MATERIAL & CLASS	MATERIAL DESCRIPTION	SAMPLE NO	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN	OBSERVATIONS & NOTES
33							Hard drilling at about 33 to 35 ft.
34							
35							Sample 35-37'
36	G	fc GRAVEL, trace gray mf sand, trace silt (GW)	1	SS	11	49 57 28 36	Very dense. Possible cobble
37							Slight drill chatter at about 38'
38							
39							Slight drill chatter at about 39 ft
40							Sample 40-42'
41		fc GRAVEL, little gray mf SAND, trace silt (GW)	2	SS	4"	20 26 30 23	
42							Drill to 45'
43							Slight drill chatter at 43 ft Continuous backwash
44							
45	S	Gray mc SAND, little f gravel, trace silt (SP)					Sample 45-47
46			3	SS	24"	12 13 11 9	
47							Drill to 50'
48							Slow drilling Continuous backwash
49	G						
50							Sample 50-52

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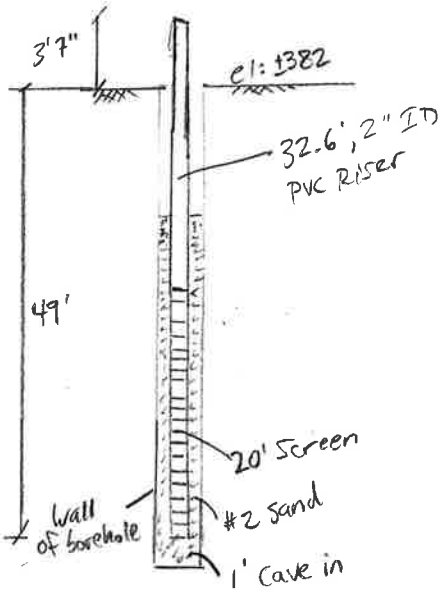
LOG OF BORING B3 (OW2)

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	GW	51	fc GRAVEL, little gray mc sand, trace Silt (GW)	±	SS		48 46 21 46	Sample 50-52 Very dense material
		52						End boring @ 52' bgs 1:45 PM Driller is to develope the well tomorrow morning



Monitoring Well Sketch

Readings:
- 5/28/15 4:30 PM 19.75'
- 5/29/15 9:14 AM 19.75'
- 6/1/15 7:52 AM 19.7'
- 6/1/15 3:03 PM 19.7'
- 6/2/15 8:50 AM 19.8
- 6/3/15 7:27 AM 19.7'
- 6/4/15 7:32 AM 19.7'
- 6/4/15 11:35 AM 19.7

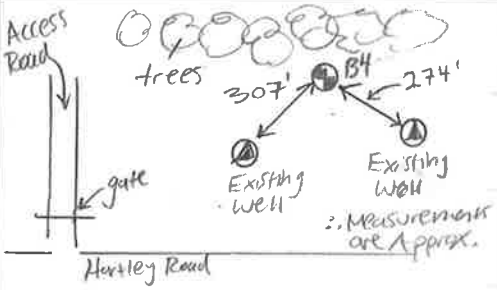
∴ All readings are the depth below ground surface

LOG OF BORING B4

PAGE 1 OF 2

PROJECT NAME:	Amy's Kitchen - Ver Heuge Site	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Parent
PROJECT LOCATION:	Goshen NY	SAMPLER TYPE(S):	2" o.d. Splitspoon
BOREHOLE COORD. (N/E):	41.406965 / -74.375442	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	377± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Roller bit - 3 7/8", 2 15/16"
BORING START:	7:52 AM 6/4/15	CASING TYPE/DIA.:	Steel Flush / 4" ID
BORING END:	9:05 AM 6/4/15	WATER LEVEL:	1ST — END — 24H —
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 10 U — C —
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	TOPSOIL	0	Brown fm SAND, little Silt (SM)	1	SS	20"	2 2 5 4	
	S	1	brown mf SAND, trace f gravel, trace Silt (SP)					
		2	fc GRAVEL, some cm brown Sand, trace Silt (moist) (GW)	2	SS	14"	5 13 18 23	
	G	3						
		4	fc GRAVEL and cm brown Sand, little Silt (GM) (moist)	3	SS	15"	25 14 11 12	
		5						
		6	Brown mf SAND, trace f gravel, trace Silt (moist) (SP)	4	SS	20"	18 6 5 6	
		7						
		8	Brown f SAND (moist) (SP)	5	SS	24"	10 6 6 9	
	S	9						
		10	Brown mc SAND, trace f gravel, trace Silt (Moist) (SP)	6	SS	18"	12 7 6 7	
		11						
		12						
		13						
		14						



Boring Location Plan

Weather: 60s, cloudy

Start: 7:52 AM

Sample 0-2

Sample 2-4

Sample 4-6

Sample 6-8

Sample 8-10

Sample 10-12

Driller adds Accu-Vis "Mud" to drilling fluid

Driller drives 10' of casing to about 10'. 269 blows/ft

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LOG OF BORING B4

PAGE 2 OF 2

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	S	15						Smooth drilling to 15' Sample 15-17'
		16	fc GRAVEL, trace c Sand, trace Silt. (GW)	1	SS	12"	12 13 15 10	
		17						Drill to 20' using 3 7/8" bit.
		18						Slight chatter at about 17.5'
		19						Slow drilling from 17.5' to 19'.
		20						Sample 20-22'
		21	fc GRAVEL, trace mc Sand, trace Silt (GW)	2	SS	15"	13 12 7 7	
	G	22						Drill to 25' using 3 7/8" Roller bit.
		23						
		24						Smooth quick drilling.
		25						Sample 25-27
		26	fc GRAVEL, trace cm Sand, trace Silt (GW)	3	SS	12"	20 22 24 14	
		27						Drill to 30'
		28						quick drilling
		29						
		30						Slight chatter at about 30'
		31	fc GRAVEL, little mc Sand, little (GM)	4	SS	12"	18 13 9 10	
		32						End boring at 32' at 9:05 AM

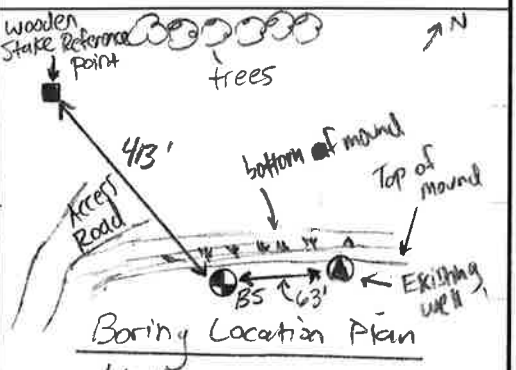
LOG OF BORING BS

PAGE 1 OF 4

PROJECT NAME:	Amy's Kitchen - Ver Hage	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Perrett
PROJECT LOCATION:	Goshen NY	SAMPLER TYPE(S):	2", 3" OD Split Spoon
BOREHOLE COORD. (N/E):	41.406423 / -74.376810	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	392± - See Survey	DRILL BIT TYPE/DIA.:	4 7/8", 3 7/8", 2 15/16"
BORING START:	12:15 PM 6/3/15	CASING TYPE/DIA.:	Steel flush / 4" ID
BORING END:	2:02 PM 6/3/15	WATER LEVEL:	1ST – END – 24H –
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 14 U C
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.
	Top Soil	0					1 1
		1	Brown Silt, trace f SAND Roots. (moist) (ML)	1	SS	20	3 5
		2	Brown Silt, trace f SAND Roots. (moist) (ML)	2	SS	12"	6 9 9 15
		3					
		4	Brown Silt, trace f Sand, trace f Gravel, Roots (ML)	3	SS	20"	21 16 17 12
		5					
		6					
	M	7	Brown Silt, trace f SAND (moist) (ML)	4	SS	24"	19 16 12 14
		8	Brown Silt, trace f Sand (moist) (ML)	5	SS	24"	18 17 17 13
		9					
		10	Brown Silt, trace f Sand (moist) (ML)	6	SS	24"	27 14 17 13
		11					
		12					
		13					
		14					

OBSERVATIONS & NOTES



Boring Location Plan

Weather: 60's, clear

Start: 12:15 PM

Sample 0-2

Sample 2-4

Sample 4-6

Sample 6-8

Sample 8-10

Sample 10-12

Driller adds Accu-Vis "Mud" to drilling fluid. Driller drills with 4 7/8" Roller bit to 10'. Driller pushes Casing to 10'.

LOG OF BORING BS

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	M	15						Sample 15-17.
		16	Brown fc GRAVEL, some mc Sand, little Silt (moist) (GM)	7	SS	12"	10 10 8 10	
		17						Drill to 20' using 2 15/16" Roller bit
		18						Slight drill chatter at about 18'
		19						
		20						Sample 20-22'
		21	fc GRAVEL, little cm brown Sand, little Silt (moist) (GM)	8	SS	6"	11 10 11 20	
		22						Drill to 25' using 2 15/16" roller bit.
		23						Slight drill chatter at about 22',
		24						
	G	25						Sample 25-27'
		26	fc GRAVEL, little Cm brown Sand, little Silt (moist) (GM)	9	SS	10"	16 17 14 20	
		27						Drill to 30' using 2 5/16" roller bit
		28						Slight drill chatter at 27.5'
		29						
		30						Sample 30-32'
		31	fc GRAVEL, little Cm brown Sand, little Silt (moist) (GM)	10	SS	8"	20 23 23 30	
		32						Drill to 35' using 3 7/8" bit

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LOG OF BORING B5

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
		33						Smooth drilling
		34						
		35						Sample 35-37
	G	36	fc GRAVEL, little brown to gray cm SAND, trace Silt (moist) (GW)	11	SS	0"	24 22 22 19	No Recovery using 2" split Spoon. Sample recovered using 3" O.D. Split Spoon. Recovery = 20" with 3" splitspoon
		37						Drill to 40' using 3 7/8" roller bit
		38						
		39						Smooth drilling hard retrieval of rods
		40						Sample 40-42
		41	Gray mf SAND, trace Silt (moist) (SP)	12	SS	12"	9 9 9 10	
	S	42						Drill to 45' using 3 7/8" bit
		43						
		44						Slight drill chatter at about 44'
		45						Sample at 45-47'
		46	fc GRAVEL, little Gray Cm. Sand, trace Silt (moist) (GP)	M	SS	16"	14 20 26 32	
	G	47						Drill to 50'.
		48						Slight drill chatter at 47' to 50'
		49						
		50						

AKRF

LOG OF BORING B5

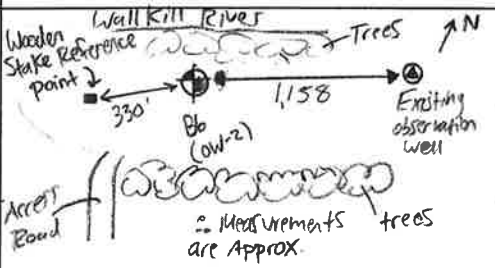
GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	G	50	fc GRAVEL, little cm gray Sand, trace Silt (moist) (GW)	4	SS		19 36 20 19	Sample 50-52
		52						End boring at 52' 2:02 PM

LOG OF BORING B6 (ow2)

PAGE 1 OF 3

PROJECT NAME:	Amy's Kitchen - Ver Haye Site	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 Keith Parent
PROJECT LOCATION:	Goshen NY	SAMPLER TYPE(S):	2" O.D. Splitspoon
BOREHOLE COORD. (N/E):	41.407562° / -74.377972°	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	373± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Roller 54 / 3 7/8", 2 15/16"
BORING START:	10:22 AM 5/29/15	CASING TYPE/DIA.:	Steel Flush 4" ID
BORING END:	1:30 PM 5/29/15	WATER LEVEL:	1ST – END 14.8 24H 15
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 10 U – C –
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
	Top Soil	1	Brown cmf SAND, little f gravel, trace Silt (SW)	1	SS	12"	13 21 20 16	
	S	2	Brown and gray cmf SAND, little f gravel, trace Silt (SW)	2	SS	10"	10 15 15 28	
		3						
		4	Brown and gray cmf SAND, little f gravel, little Silt (SM)	3	SS	20"	10 16 17 13	
		5						
		6						
	G	7	C GRAVEL, little brown cmf SAND, trace Silt, (GP)	4	SS	12"	15 22 15 28	
		8						
		9	C GRAVEL, trace brown mf Sand, trace Silt (GP)	5	SS	12"	10 16 21 17	
		10						
		11	C GRAVEL, little Silt, trace f sand (GP)	6	SS	6"	16 21 28 14	
		12						
		13						
		14						



Boring Location Plan

Weather: 70's, clear
Start at 10:22 AM
Sample 0-2'
Sample 2-4
Sample 4-6
Sample 6-8'
Sample 8-10

Driller drives casing with auto hammer to 10' bgs. Drills to 10'. Backwash consisted of c gravel pieces
Sample 10-12'

Drill to 15'. Slight Drill Chatter at 12'

LOG OF BORING B6(OW2)

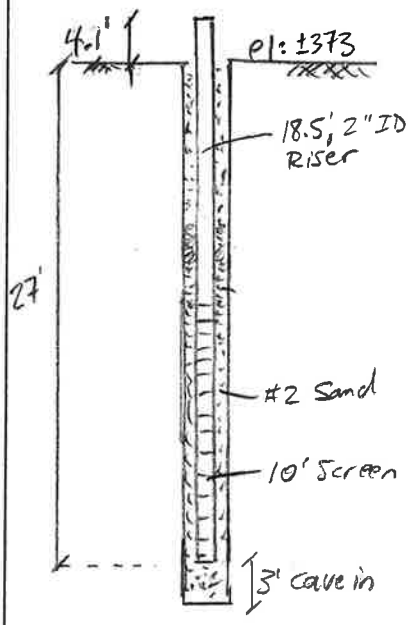
GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN	OBSERVATIONS & NOTES
		15						Sample 15-17
	G	16	f GRAVEL, little gray cm SAND, trace Silt (GP)	7	SS	5"	11 19 18 16	
		17						Drill to 20' with 2 15/16" bit
		18						Drill chatter at about 20 ft
		19						Driller hammers another 5' of 4" ID casing using Auto hammer
		20						Driller adds another 5', 4" ID casing.
	S	21	Dark gray m SAND, trace C gravel, trace Silt (SP)	8	SS	14"	10 13 12 14	Driller drills to 20' backwash consists of coarse gravel. Slow drilling
		22						Sample 20-22
		23						Drill to 25'
		24						Smooth drilling
		25						Sample 25-27
		26	Dark gray mc SAND, trace Silt (SP)	9	SS	17"	23 17 21 18	
		27						Drill to 30 with 3 7/8" bit
		28						
		29						Smooth drilling
		30						
	G	31	f gravel, little dark gray mc SAND, trace Silt (GP)	10	SS	3"	55 44 32 34	
		32						End boring at 32' bgs 5/29/15

LOG OF BORING BL (OW2)

PAGE 3 OF 3

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES

Install well down to 27' bgs.



Monitoring Well Sketch

Well Readings

5/29/15	4:30 PM	14.8'
6/1/15	7:52 AM	15.0
6/1/15	4:24 PM	15.0
6/2/15	10:35 AM	15.0'
6/2/15	11:40 AM	15.0'
6/3/15	7:34 AM	14.8'
6/3/15	2:21 PM	14.7'
6/4/15	7:20 AM	14.7
6/4/15	11:40 AM	14.5

∴ All readings are depth below ground surface.

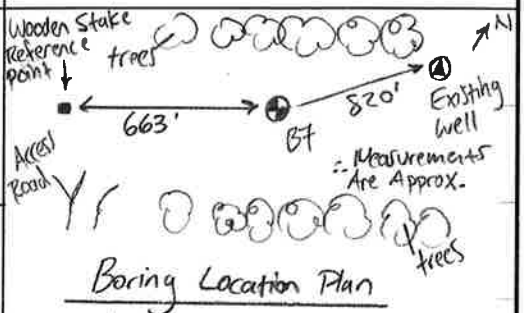
LOG OF BORING B7

PAGE 1 OF 3

PROJECT NAME:	Amy's Kitchen - Ver Hage Site	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Parent
PROJECT LOCATION:	Goshen NY	SAMPLER TYPE(S):	2" OD Split Spoon
BOREHOLE COORD. (N/E):	41.408206 / -74.377128	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	371± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Roller bit / 3 7/8, 2 15/16
BORING START:	9:30 AM 6/1/15	CASING TYPE/DIA.:	Steel Flush / 4" ID
BORING END:	10:50 AM 6/1/15	WATER LEVEL:	1ST – END – 24H –
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 11 U – C –
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.
	Top Soil	0	Brown mf SAND, little Silt, Roots. (moist) SM				5 12 12 11
	5	1	Brown mf SAND, little Silt (moist) (SM)	1	SS	24	
		2	Dark brown mc SAND, little Silt, little f gravel (SM) (moist)	2	SS	12	8 10 9 9
		4	Dark brown cm SAND, some f gravel, trace Silt (moist) (SP)	3	SS	18	8 8 9 10
	6	6	fc GRAVEL, little mc dark brown Sand, trace Silt (moist) (GW)	4	SS	20	12 13 10 10
		8	fc GRAVEL, little mc dark brown Sand, trace Silt (GW) (moist)	5	SS	20	17 13 20 12
		10	f GRAVEL, little Silt, trace cm Sand. (GP) (moist)	6	SS	18	15 9 10 7
		12					
		13					
		14					

OBSERVATIONS & NOTES



Boring Location Plan

Weather: 60's, Rain

Start 9:30 AM

Sample 0-2

Sample 2-4

Sample 4-6

Sample 6-8

Sample 8-10

Sample 10-12

Driller adds Accu Vis "Mud" to drilling fluid.

Drill to insert casing.

Driller drives 10' of casing to about 10' with auto hammer 200 blows/5 ft

AKRF

LOG OF BORING B7

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
		15	C GRAVEL (GP)					Drill to 15'
		16						fine gravel in backwash
		17		7	SS	6"	10	Driller adds 5' of casing
	G	18					10	driven with Auto hammer. 150 blows/ft
		19					13	Driller cleans out hole to 15'
		20					12	backwash consists of gravel
		21	f GRAVEL, Some brown Cm sand, little Silt (GM) (moist)	8	SS	10"	20	Sample 15-17
		22					17	Driller adds 5' of casing
		23					14	Driven with Auto hammer.
		24					14	Drill to 20'
		25	Gray Silt & clay (moist) (ML)					Smooth drilling
		26		9	SS	20"	17	Sample 20-22'
		27					25	
	M	28					20	Drill to 25'
		29					16	
		30						Slight drill chatter at about 24'
		31	Gray Silt & clay (moist) (ML)	10	SS	21"	16	Sample 25-27'
		32					16	
							15	Drill to 30'
							21	Smooth drilling
								Sample 30-32'

LOG OF BORING B7

PAGE 3 OF 3

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
		33						Drill to 35'
	M	34						Smooth drilling
		35						Sample 35-37'
			9" Gray Silt & Clay (ML)					
		36	6" Gray and black mf SAND, Some Silt, trace f gravel (SP) (moist)	11a	SS	15"	13	
	S						13	
				11b			14	
		37					16	
								End boring at 37' bgs 10:51 AM

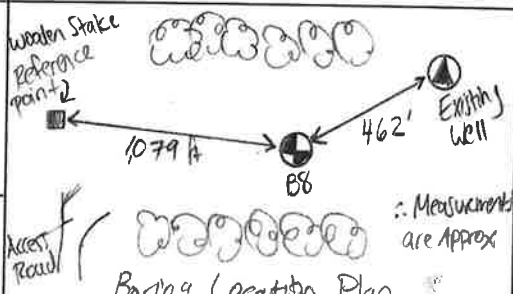
LOG OF BORING B8

PAGE 1 OF 2

PROJECT NAME:	Amy's Kitchen - Ver Huge Site	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Patent
PROJECT LOCATION:	Goshen NY	SAMPLER TYPE(S):	2" O.D. Split Spoon
BOREHOLE COORD. (N/E):	41.409062 / -74.376215	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	374± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Roller bit 3 7/8", 2 15/16"
BORING START:	11:30 AM 6/1/15	CASING TYPE/DIA.:	Steel Flush / 4" ID
BORING END:	1:55 PM 6/1/15	WATER LEVEL:	1ST - END - 24H -
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 10 U - C -
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.
		0	6" Topsoil - Brown fm SAND, little Silt.				3
	S	1	Brown fm SAND, little Silt, little fc gravel. (SM) (moist)	1	SS	12	12 15 9
	M	2	Gray Silt & Clay, trace fm sand. (ML) (moist)	2	SS	20"	10 11 8 9
	G	4	fc GRAVEL, little mc Sand little Silt, (GM) (moist)	3	SS	24"	9 7 14 11
	G	6	fc GRAVEL, little m brown Sand, little Silt (moist) (GM)	4	SS	20"	19 60 24 24
		8	fc GRAVEL, little mf Sand, trace Silt. (GP) (moist)	5	SS	12"	10 13 13 23
	S	10	Brown to black m SAND, trace Silt. (SP) (moist)	6	SS	20"	15 13 11 9
		12					
		13					
		14					

OBSERVATIONS & NOTES



Boring Location Plan

Weather 60s, Rain

Start 11:30 AM

Sample 0-2'

Sample 2-4'

Sample 4-6'

Sample 6-8'

Possible Cobble at 7'

Sample 8-10'

Sample 10-12

Driller adds Accu Vis "Mud" to drilling fluid

Driller drives 10' of casing 300 blow / 5 ft

Drillers Run low on water, Driller leave Site at 12:15 PM to get water.

AKRF

LOG OF BORING B8

PAGE 2 OF 2

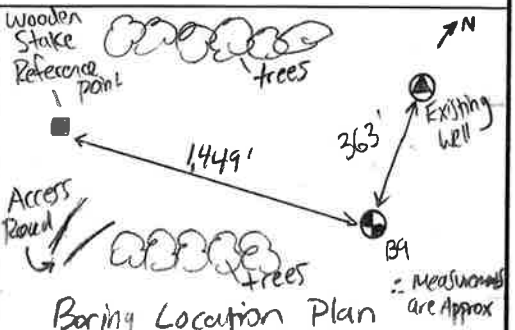
GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
		15						Drillers back on site at 1 PM. Continue Drilling B8. Drill to 15'
		16	Brown to black mf SAND, little gravel, little Silt (SM) (moist)	1	SS	12"	6 5 6 5	backwash consists of Silt & Clay (Soil) at about 13'. (large chunk in backwash)
	S	17						Driller drives 5' of casing to 15' with auto hammer. 220 blows / 5 ft
		18						Driller cleans hole with 2 15/16" Roller bit.
		19						Sample 15-17'
		20						Drill to 20' with 3 7/8" Roller bit
								Smooth drilling
								Sample 20-22
		21	Brown to black cm SAND, little fc Gravel, little Silt (SM) (moist)	2	SS	12"	10 8 6 10	
		22						Drill to 25' with 3 7/8" bit
		23						Slight drill chatter at about 24'.
		24						
		25						Sample 25-27
		26	Brown to black mc SAND, little fc gravel, little Silt (SM) (moist)	3	SS		16 13 18 13	
		27						Drill to 30' using 3 7/8" bit
		28						
		29						Smooth Drilling
		30						Sample 30-32'
		31	Gray mf SAND, little Silt, little f gravel. (SM) (moist)	4	SS		13 13 14 13	
		32						End boring at 32' bgs 1:55 PM

LOG OF BORING B9

PAGE 1 OF 2

PROJECT NAME:	Amy's Kitchen - Ver Hage Site	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Parent
PROJECT LOCATION:	Goshen NY	SAMPLER TYPE(S):	2" O.D. Split Spoon
BOREHOLE COORD. (N/E):	41.409669 / -74.375121	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	374± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Rollerbit 3 7/8", 2 15/16"
BORING START:	2:22 PM 6/1/15	CASING TYPE/DIA.:	Steel Flush / 4" I.D.
BORING END:	8:35 AM 6/3/15	WATER LEVEL:	1ST — END — 24H —
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 10 U — C —
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.
	Topsoil	0	1' Topsoil				
	S	1	Brown mc SAND, trace Silt trace f gravel (moist) (SP)	1	SS	20"	4 4 8 8
		2	Gray fm SAND, and Silt, trace f gravel (moist) (SM)	2	SS	20"	5 6 7 8
		3					
		4	Brown mc SAND, trace f gravel, trace Silt (SP) (moist)	3	SS	24"	8 12 30 19
		5					
		6	Brown mc SAND, little f gravel, trace Silt (SP) (moist)	4	SS	12"	20 11 15 12
		7					
		8	fc GRAVEL, little m Sand, trace Silt (moist) (GP)	5	SS	6"	15 12 15 14
	G	9					
		10	f GRAVEL, trace m Sand, trace Silt (GP)	6	SS	6"	18 19 26 25
		11					
		12					
		13					
		14					



Boring Location Plan

Weather: 60's Rain

Start: 2:22 PM

Sample 0-2

Sample 2-4

Sample 4-6

Sample 6-8

Sample 8-10

Sample 10-12

Driller adds 'Accu-Vis' "Mud" to drilling fluid.

Drives 10' casing using Auto hammer. Stop drilling at 2:45 PM

Driller ends day at 3:00 PM 6/1/15

LOG OF BORING B9

PAGE 2 OF 2

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
		15						Drilling Continues 7:45 AM 6/3/15.
	G	16	fc GRAVEL, little mc SAND, little Silt (GM) (moist)	7	SS	6"	20 68 29 18	Driller Clears out borehole with 2 15/16" Roller bit. Driller drives another 5' of casing to 15' with Auto hammer. 370 blows / 5 ft.
		17						Driller Cleans out hole with 2 15/16" Roller bit.
		18						Sample 15-17'
		19						Possible Cobble at 15.5'.
		20						Drill to 20' using 3 7/8" Roller bit.
		21	Gray Silt & clay, trace f gravel, trace fm Sand. (ML)					Slight Drill chatter at about 18' bgs.
	M	22		8	SS	12"	3 4 11 6	Sample 20-22'
		23						Drill to 25'.
		24						Smooth drilling
		25						Sample 25-27'
		26	Gray Silt & Clay, trace f gravel, trace fm SAND. (ML)	9	SS	15"	7 7 6 9	
		27						Drill to 30'
		28						Slight drill chatter at about 29'
		29						
		30						Sample 30-32'
	S	31	Gray mc SAND, some Silt, little f gravel (moist) (SM)	10	SS	6"	16 20 23 29	Upon Retrieval of rods, backwash coming up without drilling
		32						End of boring at 32' bgs 8:35 am

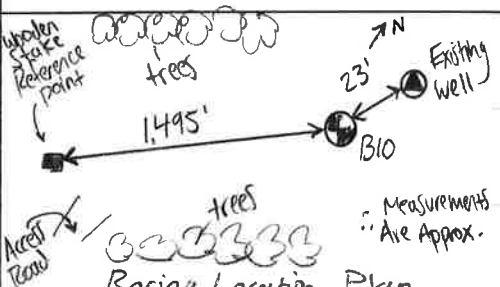
AKRF

LOG OF BORING B10

PAGE 1 OF 2

PROJECT NAME:	Amys Kitchen - Ver Haye Site	CONTRACTOR:	Craig Geotechnical Drilling Company
PROJECT NO.:	40525	RIG TYPE & FOREMAN:	CME 75 - Keith Parent
PROJECT LOCATION:	Goshen NY	SAMPLER TYPE(S):	2" O.D. Split Spoon
BOREHOLE COORD. (N/E):	41.410317 / -74.376107	HAMMER TYPE(S)	Auto
ELEVATION/DATUM:	371± - See Survey	DRILL BIT TYPE/DIA.:	Tricone Roller Bit 3 7/8", 2 15/16"
BORING START:	9:03AM 6/3/15	CASING TYPE/DIA.:	Steel Flush / 4"
BORING END:	10:12 AM 6/3/15	WATER LEVEL:	1ST — END — 24H —
LOGGED BY:	J. Holmberg	NO. OF SAMPLES:	SS 10 U — C —
		DRILLING METHOD:	Mud Rotary

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.
	Top Soil	0	1.5' topsoil				
		1	Brown mc SAND, trace f gravel, trace Silt. (moist) (SP)	1	SS	20"	4 4 4 5
		2	Brown fmc SAND, some fc gravel, little Silt. (moist) (SM)	2	SS	14"	10 7 8 8
		4	Brown mc SAND, little fc gravel, trace Silt (moist) (SP)	3	SS	14"	3 8 8 10
	S	6	Brown mc SAND, little f gravel, trace Silt (moist) (SP)	4	SS	18"	11 9 10 8
		8	Brown mc SAND, little fc gravel, trace Silt. (moist) (SP)	5	SS	13"	16 19 9 12
		10	Brown mf SAND, trace Silt (moist) (SP)	6	SS	20"	17 5 5 9
	G	13	— — — — — — —				
		14					



Boring Location Plan

Weather: 60's, clear

Start: 9:03 AM

Sample 0-2

Sample 2-4

Sample 4-6

Sample 6-8

Sample 8-10'

Sample 10-12

Driller introduces Accu Vis drilling mud. Drills to 10'.

Drillers drive 10' of casing to about 10' using Auto hammer. 256 blow/5 ft.

Driller drills to 15' using 2 15/16" roller bit.

Slight drill chatter at about 13' bgs

AKRF

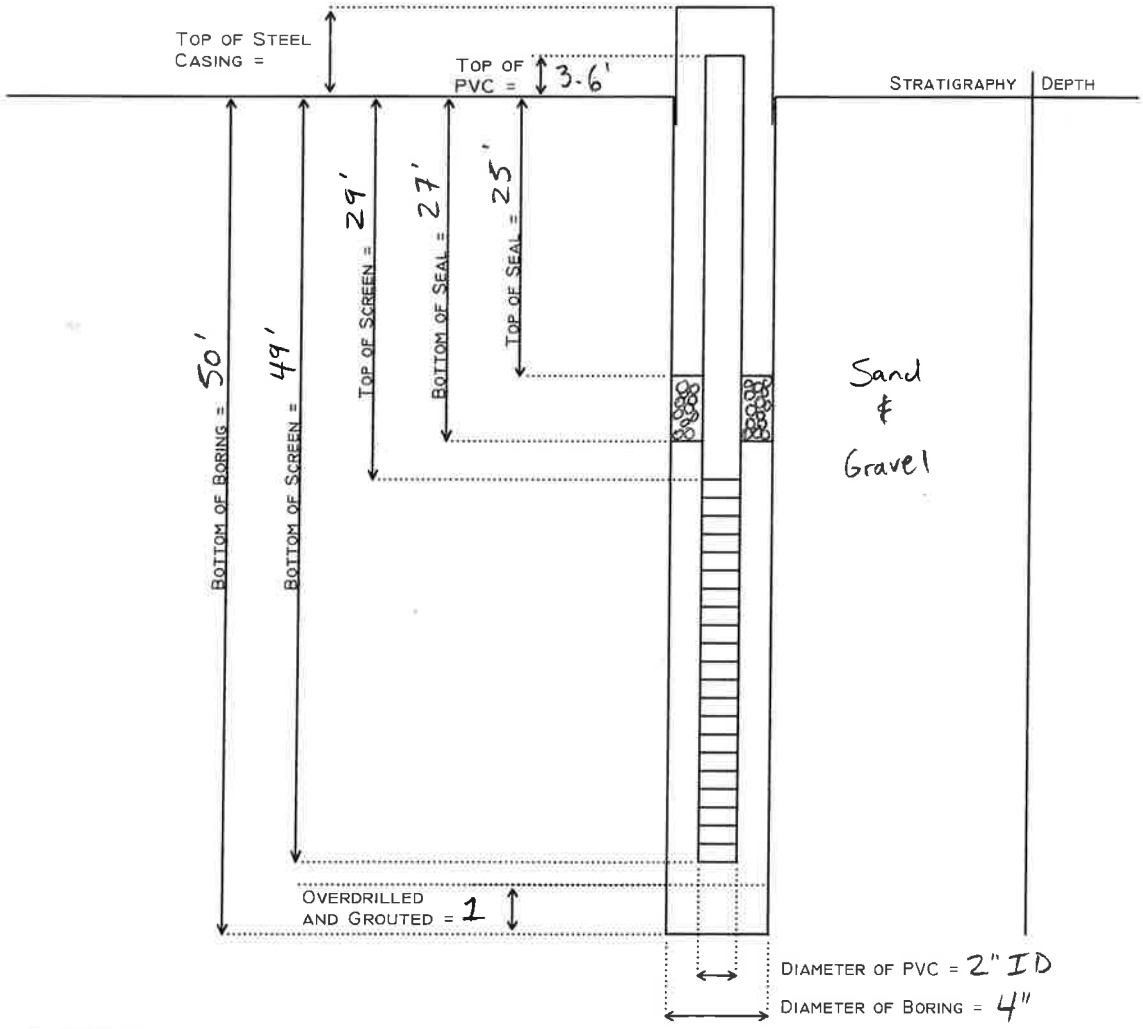
LOG OF BORING B10

GRAPHIC LOG	MATERIAL & CLASS	DEPTH (FT)	MATERIAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	SAMPLE REC. (INCH)	SAMPLE BLOWS PER 6-INCH PEN.	OBSERVATIONS & NOTES
		15						backwash consists of a small amount of f gravel.
	G	16	f GRAVEL, little cm SAND, trace Silt (moist) (GP)	7	SS	12"	13 23 18 20	Sample 15-17'
		17						Drill to 20' using 3 7/8" roller bit.
		18						Drill chatter at about 17.5'
		19						
	M	20	Gray Silt & clay, trace f gravel, trace cm SAND (moist) (ML)					Sample 20-22'
		21		8	SS	12"	20 10 10 22	
		22						Drill to 25'
		23						Smooth drilling
		24						
		25						Sample 25-27'
	G	26	f GRAVEL, some Silt, little cm gray sand. (GP) (moist)	9	SS	12"	24 34 13 13	
		27						Drill to 30'
		28						heavy drill chatter at about 28'
		29						low backwash at about 28 to 30'
		30						Sample 30-32
		31	C GRAVEL, trace mc Sand, trace Silt	10	SS	3"	50/3"	bouncing hammer
		32						End boring at about 30-3" 10:12 AM

APPENDIX B

WELL DIAGRAMS

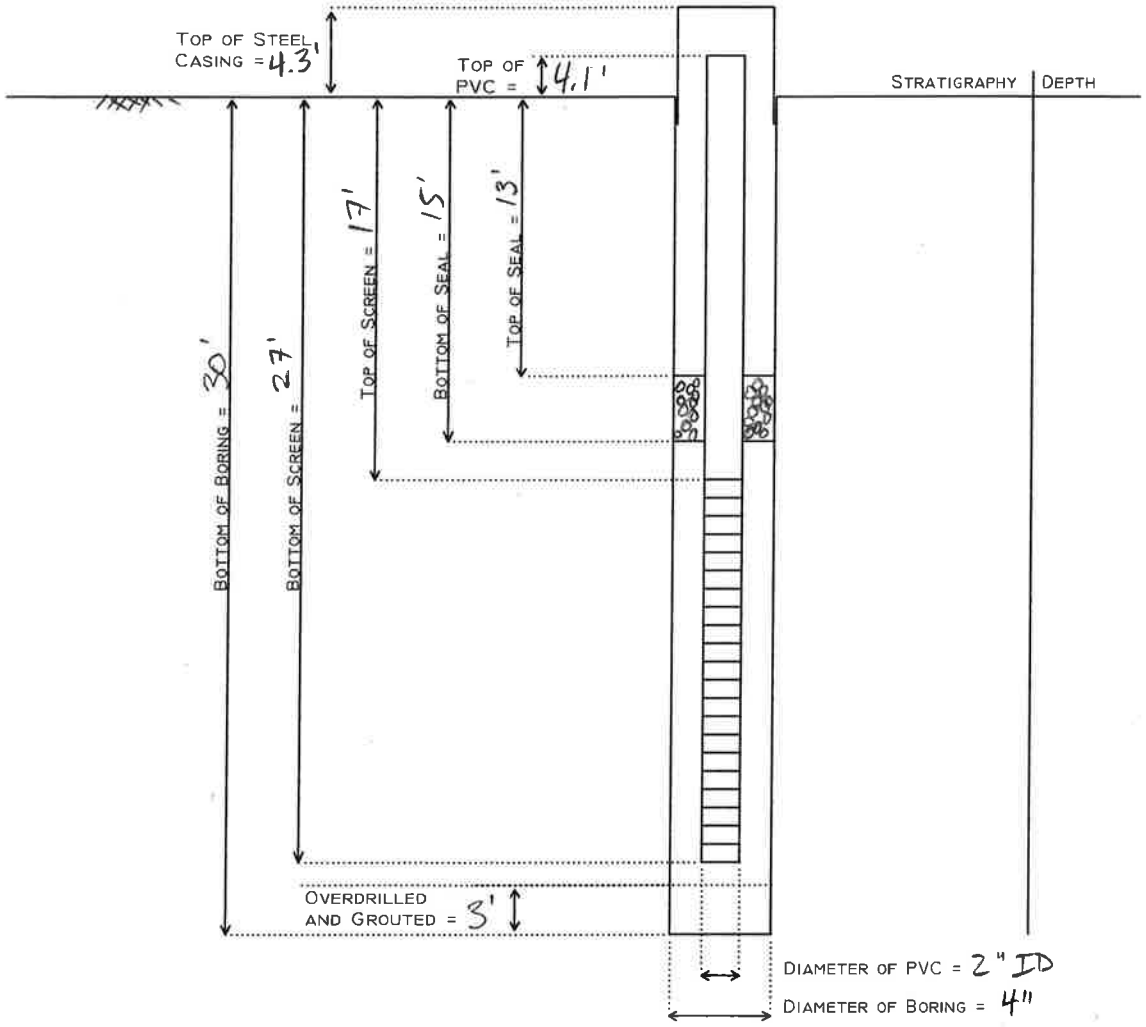
AKRF ENGINEERING, P.C. 440 PARK AVENUE SOUTH, 7TH FL. NEW YORK, NY 10016	MONITORING WELL SKETCH	BORING NUMBER: B3 WELL NUMBER: 1 PROJECT NUMBER: 40525
PROJECT NAME: Amy's Kitchen - Ver Hage Site		ELEVATION: ± 382
PROJECT LOCATION (ADDRESS, CITY, STATE): Goshen, NY		DATUM: See Survey
BORING LOCATION (DESCRIPTION, COORDINATES, LAT/LONG): 41.406240 N / -74.376010 E		DATE STARTED: 5/28/15
GEOTECHNICAL ENGINEERING INSPECTOR: J. Holmberg		DATE FINISHED: 5/28/15
DRILLING CONTRACTOR (NAME & COMPANY LOCATION): Craig Geotechnical Drilling Company		
DRILLER: Keith Parent	HELPER:	



WATER LEVEL OBSERVATIONS

DATE	TIME (24 HR)	DEPTH TO WATER	DATE	TIME (24 HR)	DEPTH TO WATER	DATE	TIME (24 HR)	DEPTH TO WATER
5/28/15	16:30	19.75'						
5/29/15	9:14	19.75'						
6/1/15	7:52	19.7'						
6/1/15	15:03	19.7'						
6/2/15	8:50	19.8'						
6/3/15	7:27	19.7'						
6/4/15	7:32	19.7'						
6/4/15	11:35	19.7'						

AKRF ENGINEERING, P.C. 440 PARK AVENUE SOUTH, 7TH FL. NEW YORK, NY 10016	MONITORING WELL SKETCH	BORING NUMBER: B6 WELL NUMBER: 2 PROJECT NUMBER: 40525
PROJECT NAME: Amy's Kitchen - Ver Haye Site		ELEVATION: ±373
PROJECT LOCATION (ADDRESS, CITY, STATE): Goshen, NY		DATUM: See Survey
BORING LOCATION (DESCRIPTION, COORDINATES, LAT/LONG): 41.407562 N / -74.377972 E		DATE STARTED: 5/29/15
GEOTECHNICAL ENGINEERING INSPECTOR: J. Holmberg		DATE FINISHED: 5/29/15
DRILLING CONTRACTOR (NAME & COMPANY LOCATION): Craig Geotechnical Drilling Company		
DRILLER: Keith Parent	HELPER:	



WATER LEVEL OBSERVATIONS

DATE	TIME (24 HR)	DEPTH TO WATER	DATE	TIME (24 HR)	DEPTH TO WATER	DATE	TIME (24 HR)	DEPTH TO WATER
5/29/15	16:30	14.8'						
6/1/15	8:10	15.0'						
6/1/15	16:24	15.0'						
6/2/15	10:35	15.0'						
6/2/15	11:40	15.0'						
6/3/15	7:34	14.8'						
6/3/15	14:21	14.7						
6/4/15	7:20	14.7						
6/4/15	11:40	14.5						

APPENDIX C

GEOTECHNICAL LABORATORY TEST RESULTS

GEOTECHNICAL LABORATORY TESTING RESULTS

CLIENT: AKRF Engineering, P.C.
440 Park Ave South 7th Floor
New York, NY 10016

ATTN: Mr. Jarrod Holmberg

PROJECT: Amy's Kitchen
Goshen, New York

CTL # 568004
CTB # 155155

DATE: June 22, 2015

CHECKED BY: Eduardo M. Freire, P.E.
Geotechnical Laboratory Manager

SAMPLES RECEIVED: June 10, 2015

SAMPLES TESTED: 6/11/15 - 6/22/15

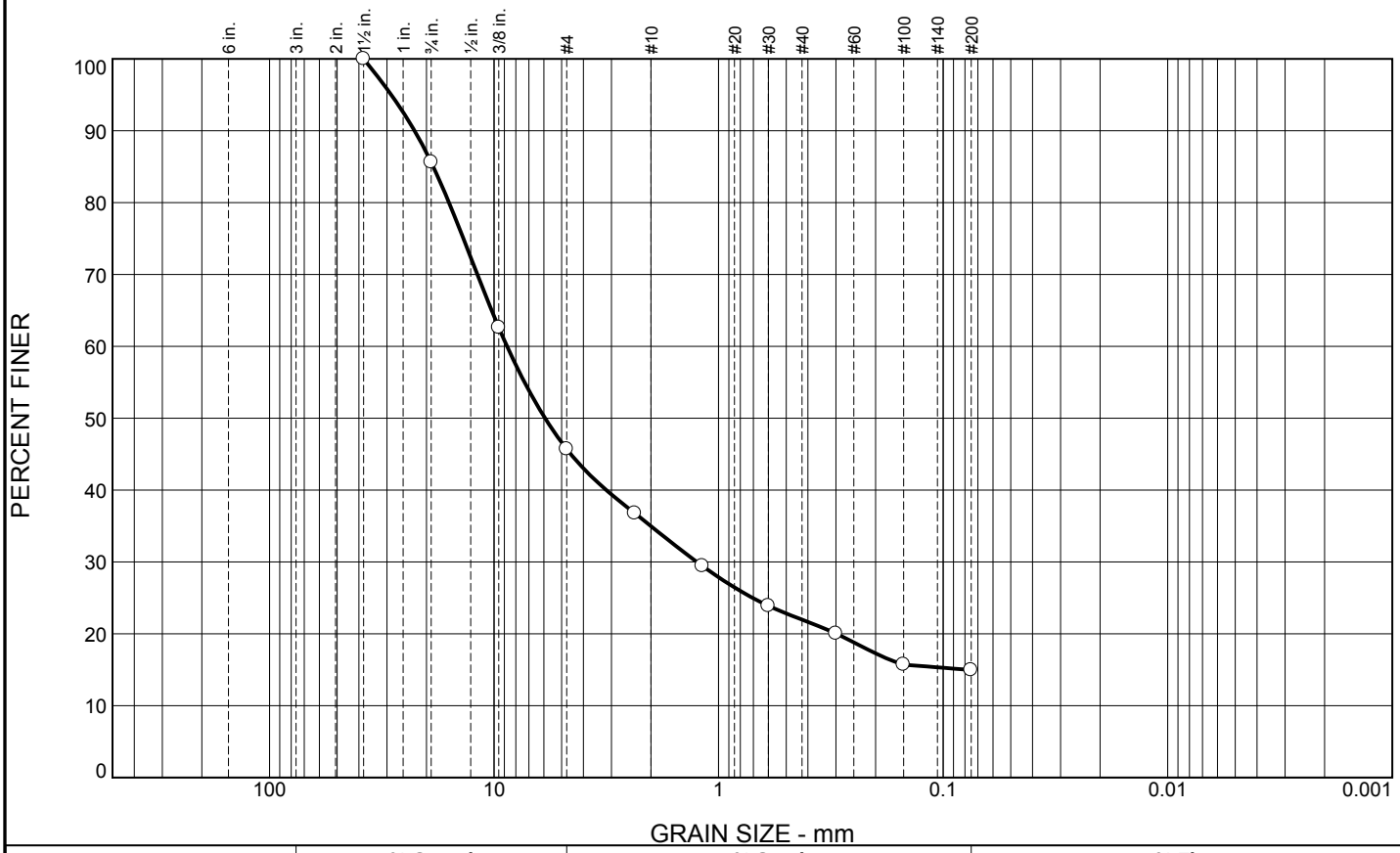
LAB TECHNICIAN(S): J. Veach, A. Platt

Test Boring No.	Sample No.	Depth (ft)	Water Content (%) (ASTM D2216)	Atterberg Limits (ASTM D4318)			Particle Size Analysis (Sieve Only)* (ASTM D422)	%Passing #200 Sieve (ASTM D1140)	Organic Content (%) (ASTM D2974)	Sulfate (mg/L) (ASTM D4327)	Chloride (mg/L) (ASTM D4327)	pH of Soil (ASTM G51)	Consolidation* (ASTM D2435)	UU Triaxial* (ASTM D2850)	CU Triaxial (ASTM D4767)	Soil Perm. Class Rating (NJAC 7:9A-6.3)					
				LL	PL	PI										A	B				
B-1	S-2	2-4					Plate 1														
	S-5	8-10					Plate 2														
B-2	S-3	4-6					Plate 3														
	S-6	10-12					Plate 4														
B-3	S-3	4-6					Plate 5														
	S-5	8-10					Plate 6														
B-4	S-3	4-6					Plate 7														
B-5	S-3	4-6					Plate 8														
	S-7	15-17					Plate 9														
B-6	S-3	4-6					Plate 10														
B-7	S-2	2-4					Plate 11														
	S-8	20-22					Plate 12														
B-8	S-4	6-8					Plate 13														
	S-7	15-17					Plate 14														
B-9	S-2	2-4					Plate 15														
B-10	S-2	2-4					Plate 16														
Billing Total:							**16**														

Comments/Remarks: *See attached Plates

CRAIG TESTING LABORATORIES, INC.
5439 Harding Highway, PO Box 427 - Mays Landing, NJ 08330
Lab: (609) 625-0386: Fax: (609) 625-9133

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.4	39.9	10.7	13.0	7.0	15.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
.75	85.6		
.375	62.6		
#4	45.7		
#8	36.8		
#16	29.4		
#30	23.9		
#50	20.0		
#100	15.7		
#200	15.0		

* (no specification provided)

Material Description

Brown silty\clayey GRAVEL with sand

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 18.6455 D_{60}= 8.7497 D_{50}= 5.9268
D_{30}= 1.2504 D_{15}= 0.0783 D_{10}=
C_u= C_c=

Classification

USCS= GM\GC

Remarks

Source of Sample: B-1 **Depth:** 2'-4'
Sample Number: S-2

Date: 6/22/15

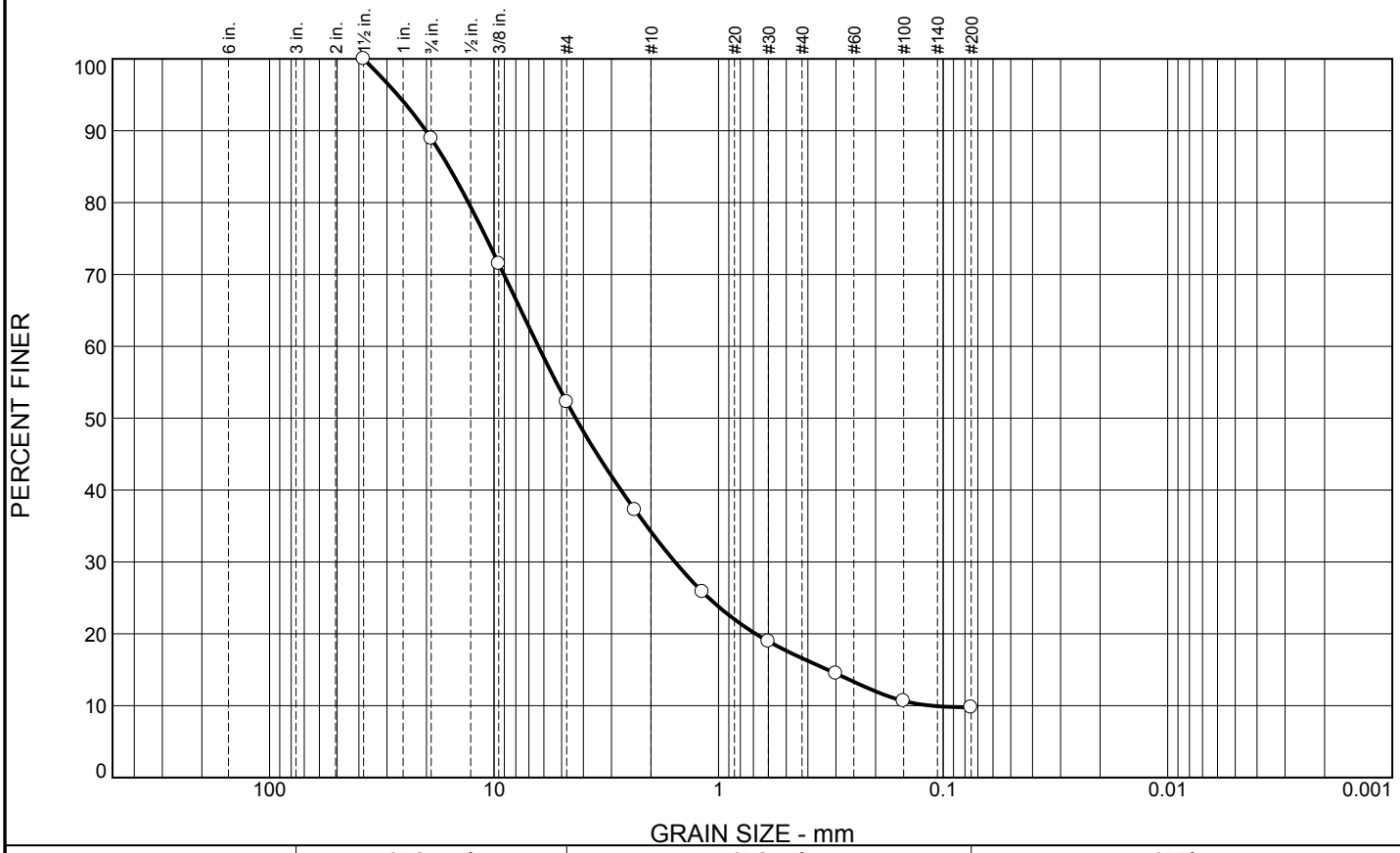
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 1

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.1	36.6	18.1	17.6	6.8	9.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
.75	88.9		
.375	71.5		
#4	52.3		
#8	37.2		
#16	25.8		
#30	19.0		
#50	14.5		
#100	10.6		
#200	9.8		

* (no specification provided)

Material Description

Brown poorly graded GRAVEL with silt\clay and sand

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 15.9200 D_{60}= 6.3522 D_{50}= 4.3307
D_{30}= 1.5644 D_{15}= 0.3272 D_{10}= 0.1139
C_u= 55.75 C_c= 3.38

Classification

USCS= GP-GM\GC

Remarks

Source of Sample: B-1 **Depth:** 8'-10'
Sample Number: S-5

Date: 6/22/15

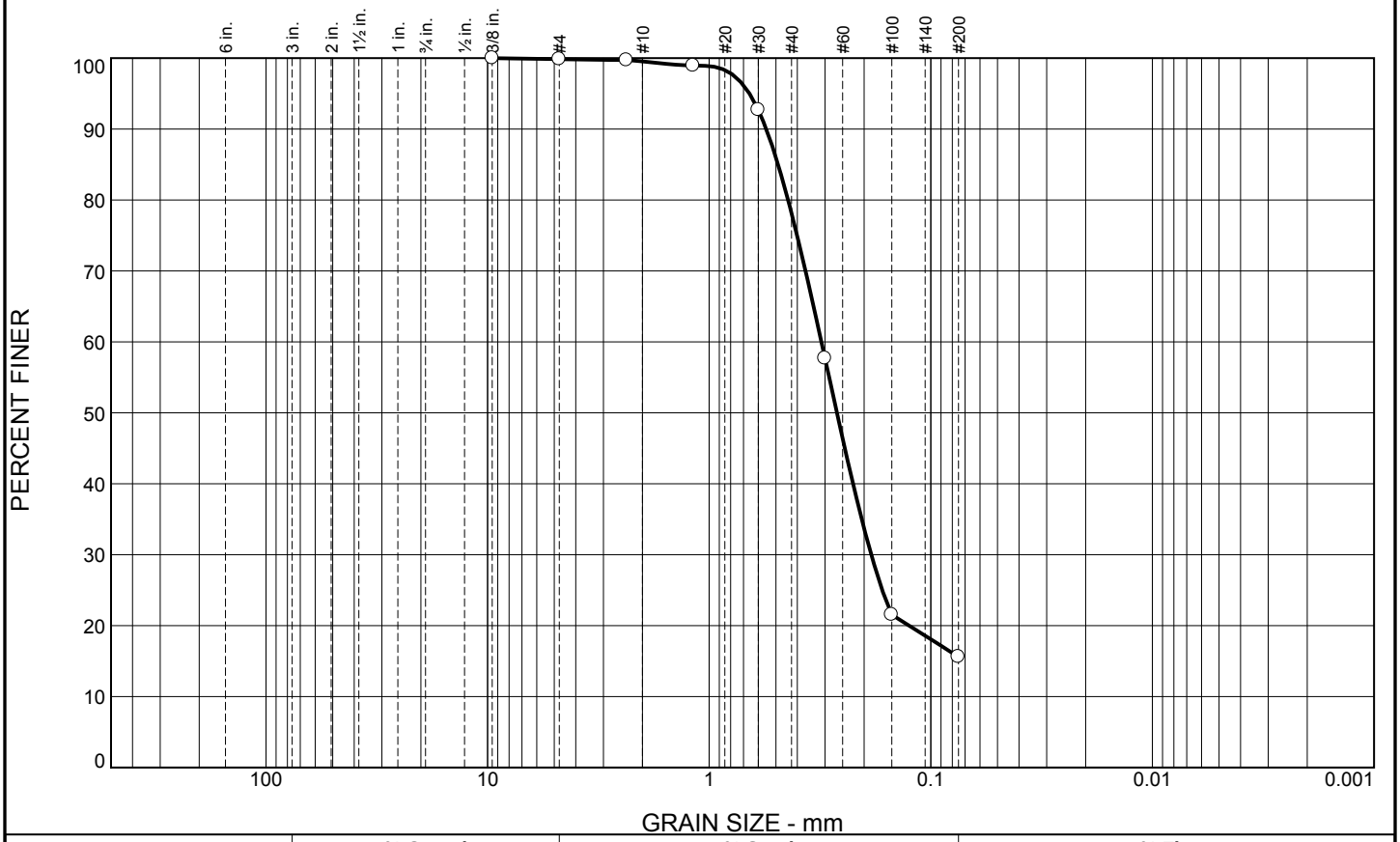
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 2

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	21.4	62.5	15.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#8	99.7		
#16	99.0		
#30	92.7		
#50	57.7		
#100	21.5		
#200	15.6		

* (no specification provided)

Material Description

Brown silty\clayey SAND

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 0.4887 D_{60}= 0.3115 D_{50}= 0.2651
D_{30}= 0.1857 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM\SC

Remarks

Source of Sample: B-2 **Depth:** 4'-6'
Sample Number: S-3

Date: 6/22/15

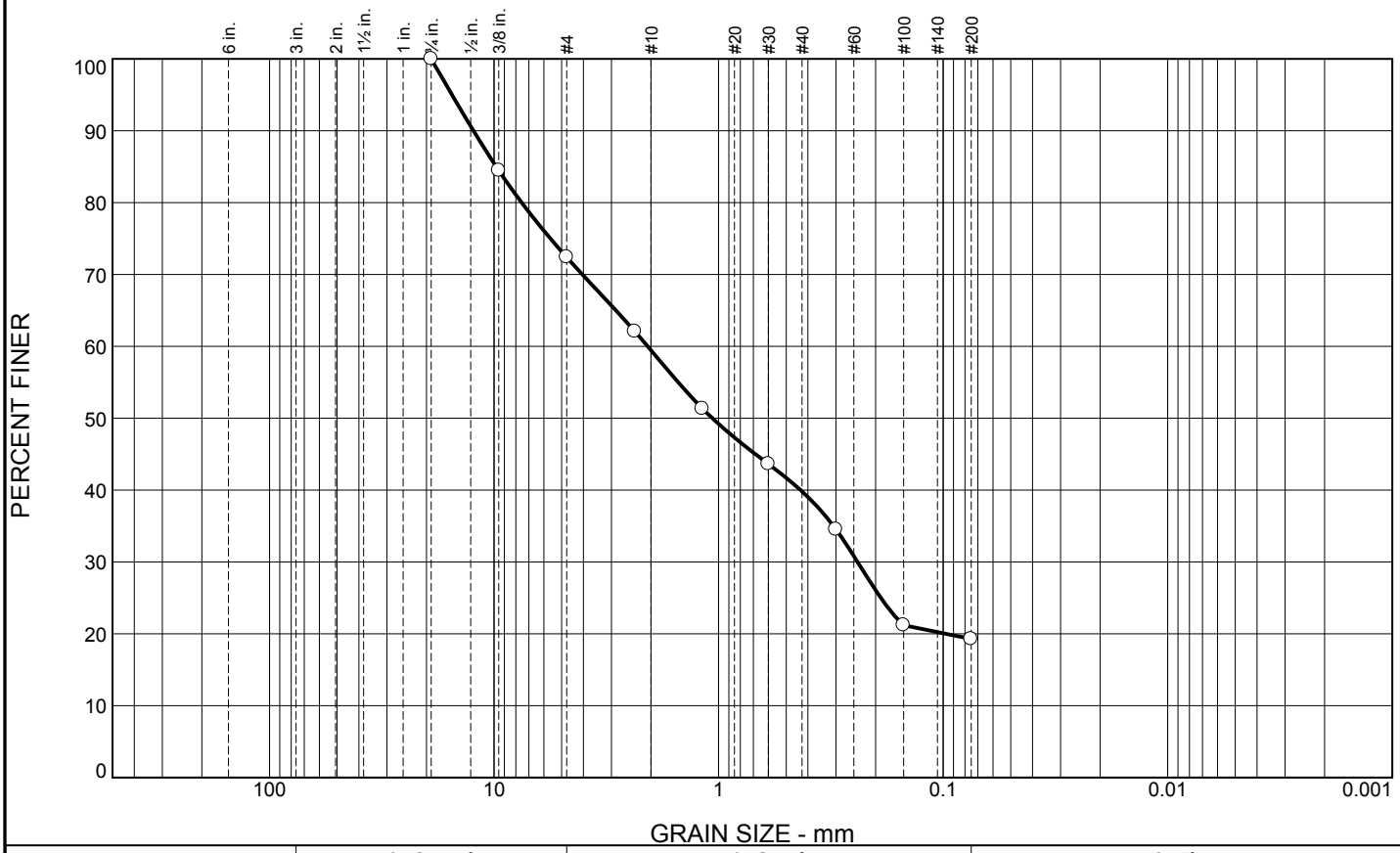
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 3

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	27.6	12.9	19.7	20.5	19.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.375	84.5		
#4	72.4		
#8	62.1		
#16	51.3		
#30	43.6		
#50	34.5		
#100	21.2		
#200	19.3		

* (no specification provided)

Material Description

Brown\gray silty\clayey SAND with gravel

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 9.7771 D_{60}= 2.0692 D_{50}= 1.0668
D_{30}= 0.2406 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM\SC

Remarks

Source of Sample: B-2 **Depth:** 10'-12'
Sample Number: S-6

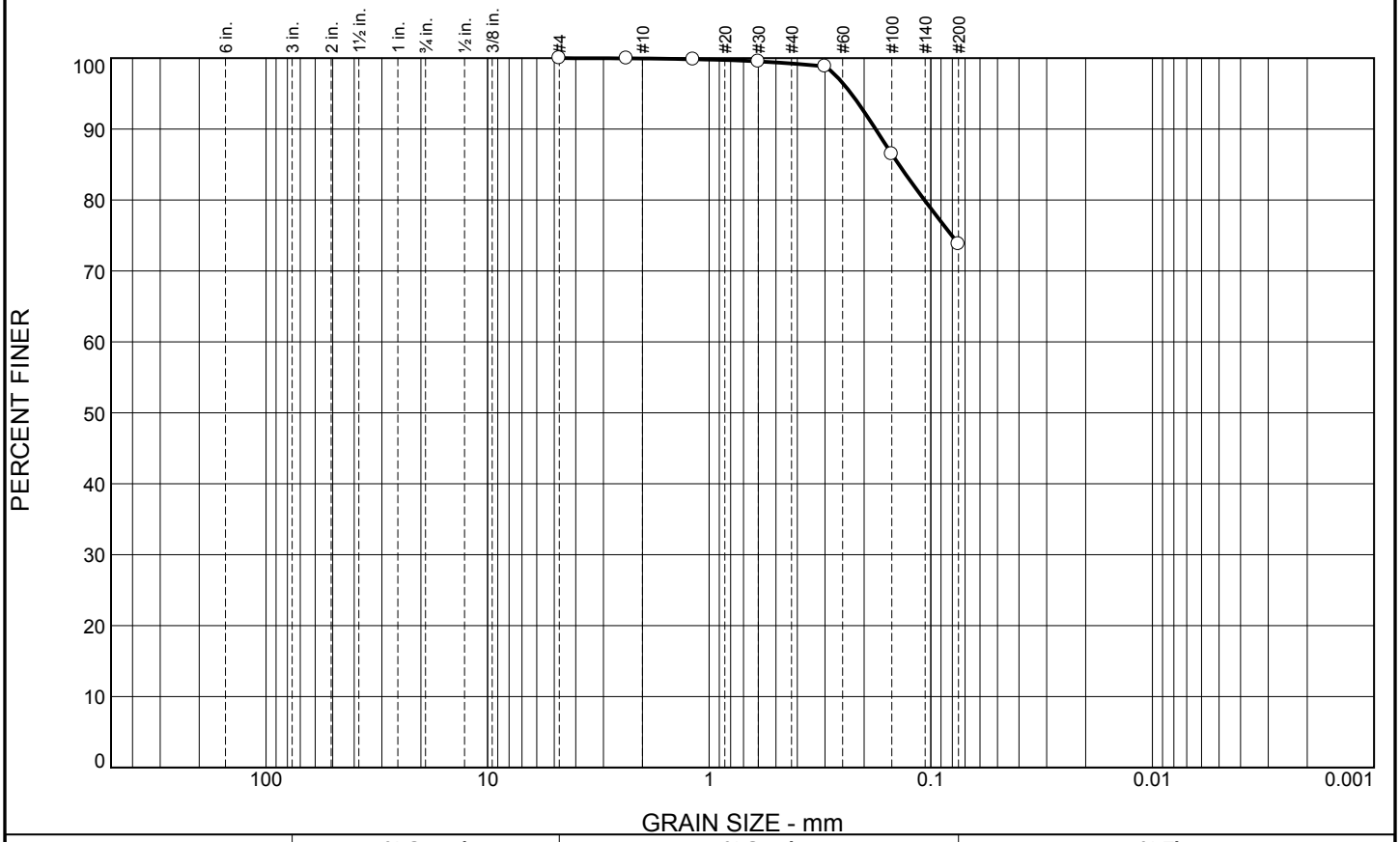
Date: 6/22/15

Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004 **Plate** 4

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	25.4	73.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	100.0		
#16	99.8		
#30	99.5		
#50	98.8		
#100	86.5		
#200	73.8		

* (no specification provided)

Material Description

Brown SILT\CLAY with sand

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 0.1393 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL:H\ML:H

Remarks

Source of Sample: B-3 **Depth:** 4'-6'
Sample Number: S-3

Date: 6/22/15

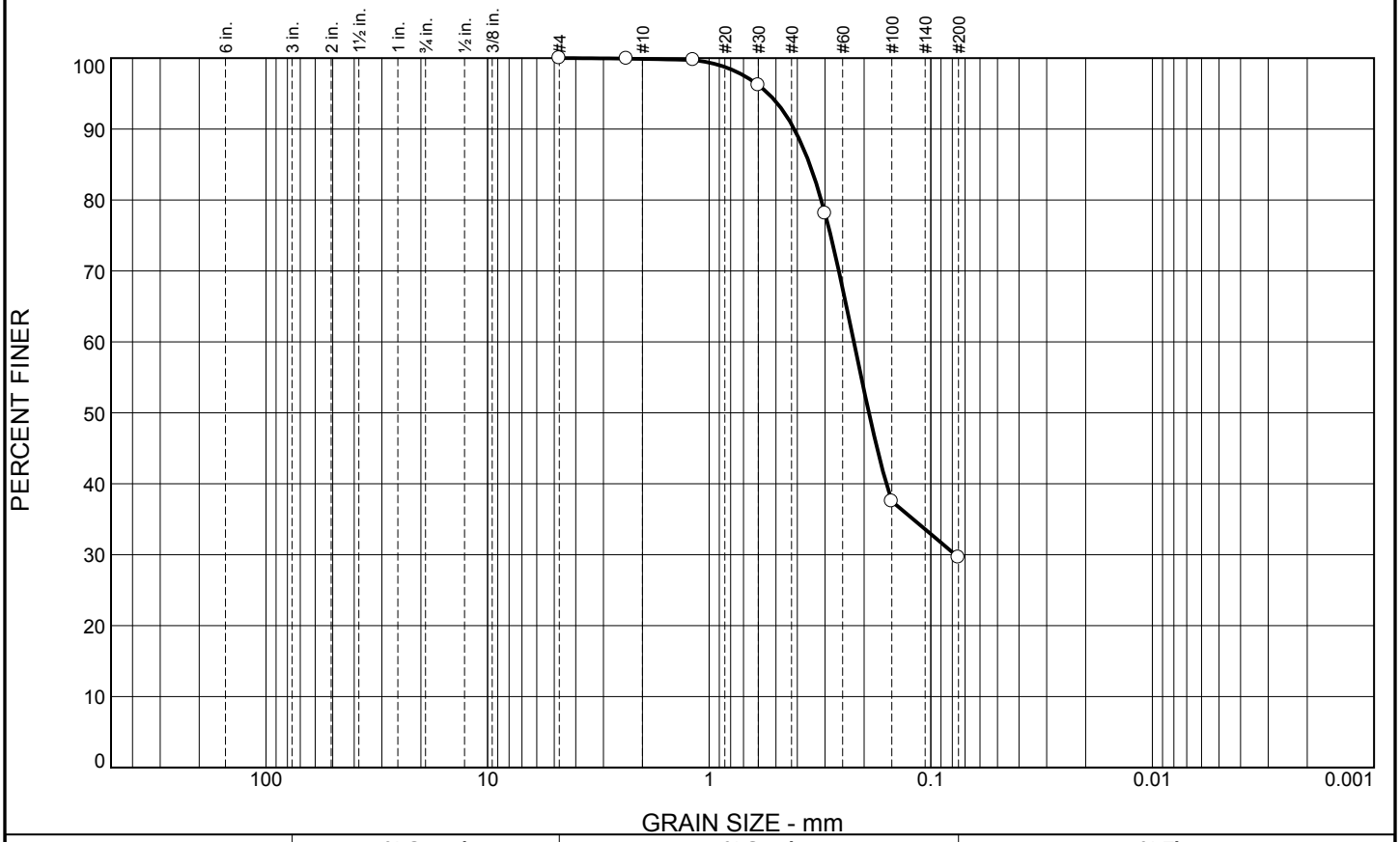
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 5

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	9.2	61.1	29.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	99.9		
#16	99.7		
#30	96.2		
#50	78.1		
#100	37.5		
#200	29.6		

* (no specification provided)

Material Description

Brown silty\clayey SAND

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 0.3515 D_{60}= 0.2223 D_{50}= 0.1902
D_{30}= 0.0775 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM\SC

Remarks

Source of Sample: B-3 **Depth:** 8'-10'
Sample Number: S-5

Date: 6/22/15

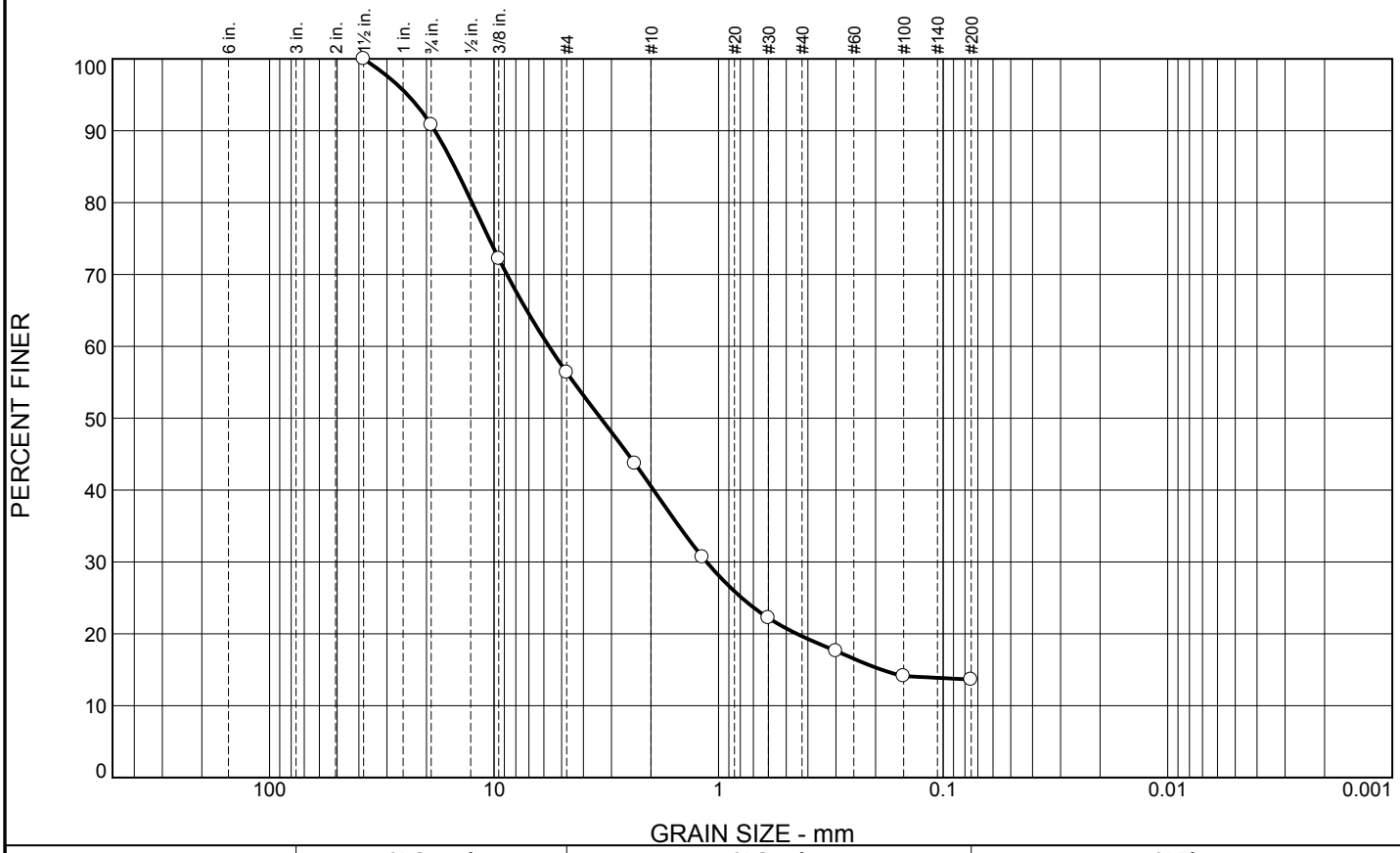
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 6

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.2	34.4	15.9	20.8	6.1	13.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
.75	90.8		
.375	72.2		
#4	56.4		
#8	43.7		
#16	30.7		
#30	22.2		
#50	17.6		
#100	14.1		
#200	13.6		

* (no specification provided)

Material Description

Brown\gray silty\clayey GRAVEL with sand

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 14.9900 D_{60}= 5.6965 D_{50}= 3.3486
D_{30}= 1.1316 D_{15}= 0.1881 D_{10}=
C_u= C_c=

Classification

USCS= GM\GC

Remarks

Source of Sample: B-4 **Depth:** 4'-6'
Sample Number: S-3

Date: 6/22/15

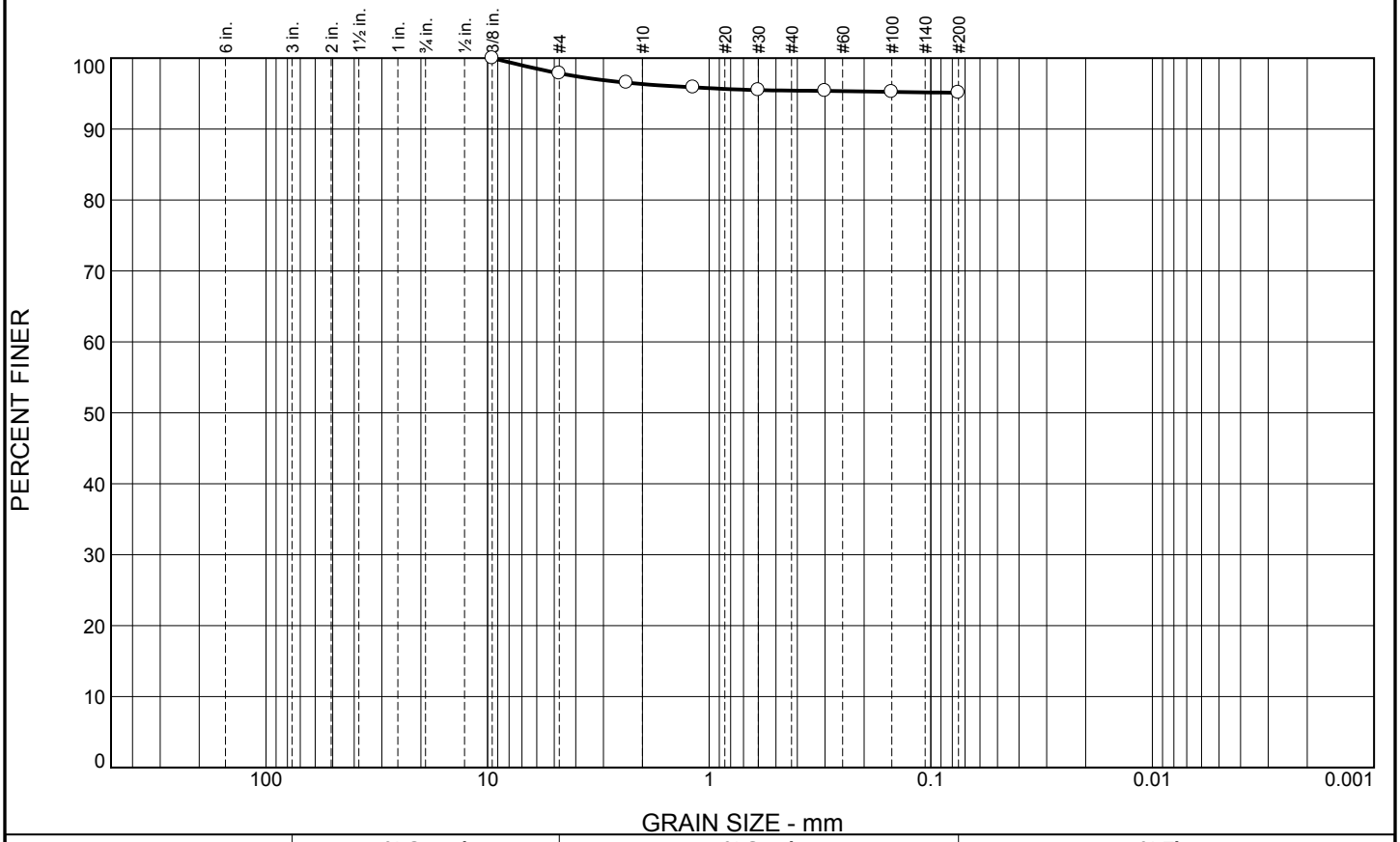
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 7

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	1.6	0.9	0.3	95.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	97.9		
#8	96.5		
#16	95.9		
#30	95.5		
#50	95.4		
#100	95.2		
#200	95.1		

* (no specification provided)

Material Description

Brown SILT\CLAY

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL:H\ML:H

Remarks

Source of Sample: B-5 **Depth:** 4'-6'
Sample Number: S-3

Date: 6/22/15

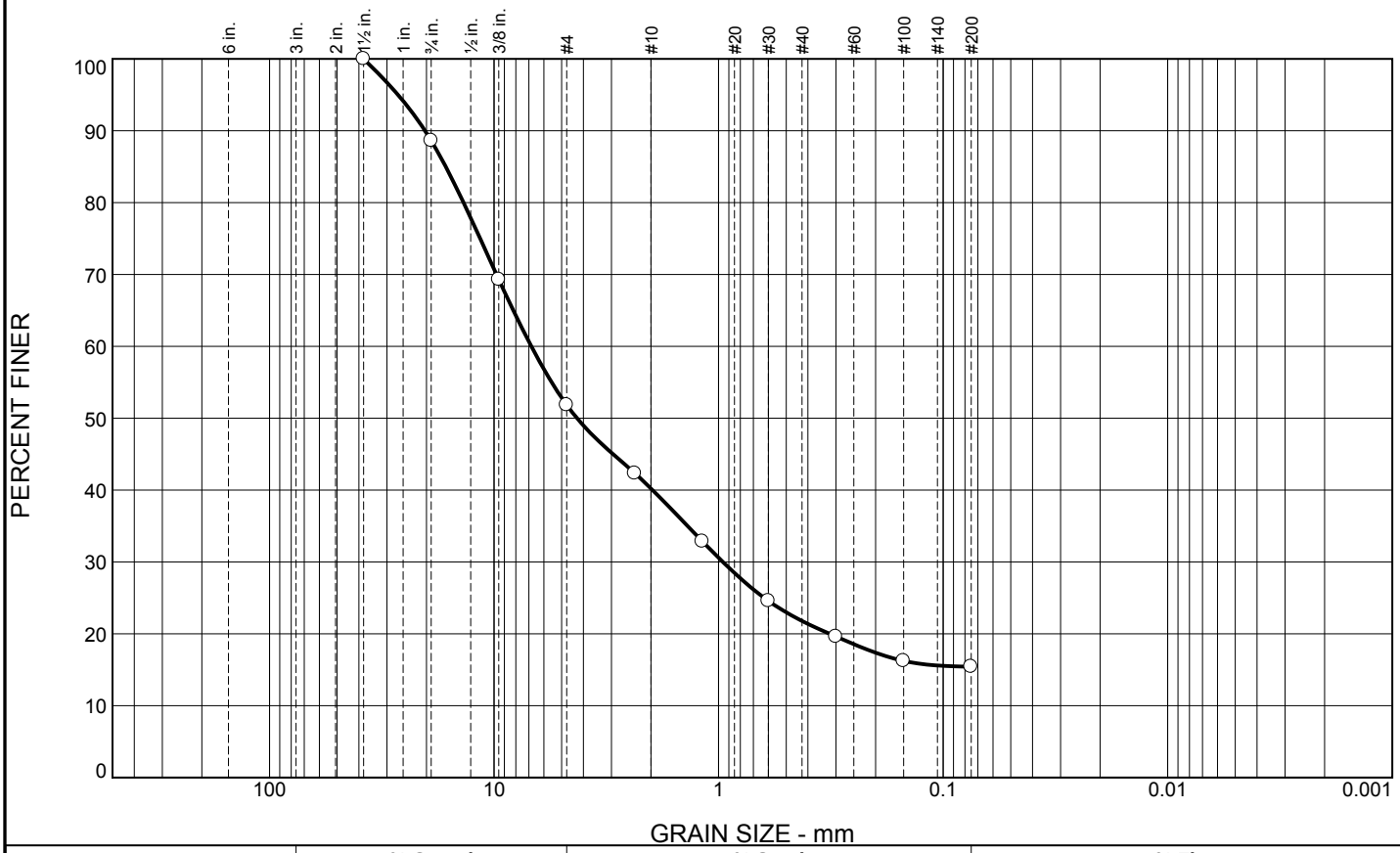
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 8

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.4	36.8	11.6	18.4	6.4	15.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
.75	88.6		
.375	69.3		
#4	51.8		
#8	42.3		
#16	32.8		
#30	24.6		
#50	19.6		
#100	16.2		
#200	15.4		

* (no specification provided)

Material Description

Brown silty\clayey GRAVEL with sand

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 16.4121 D_{60}= 6.8241 D_{50}= 4.2705
D_{30}= 0.9572 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= GM\GC

Remarks

Source of Sample: B-5 **Depth:** 15'-17'
Sample Number: S-7

Date: 6/22/15

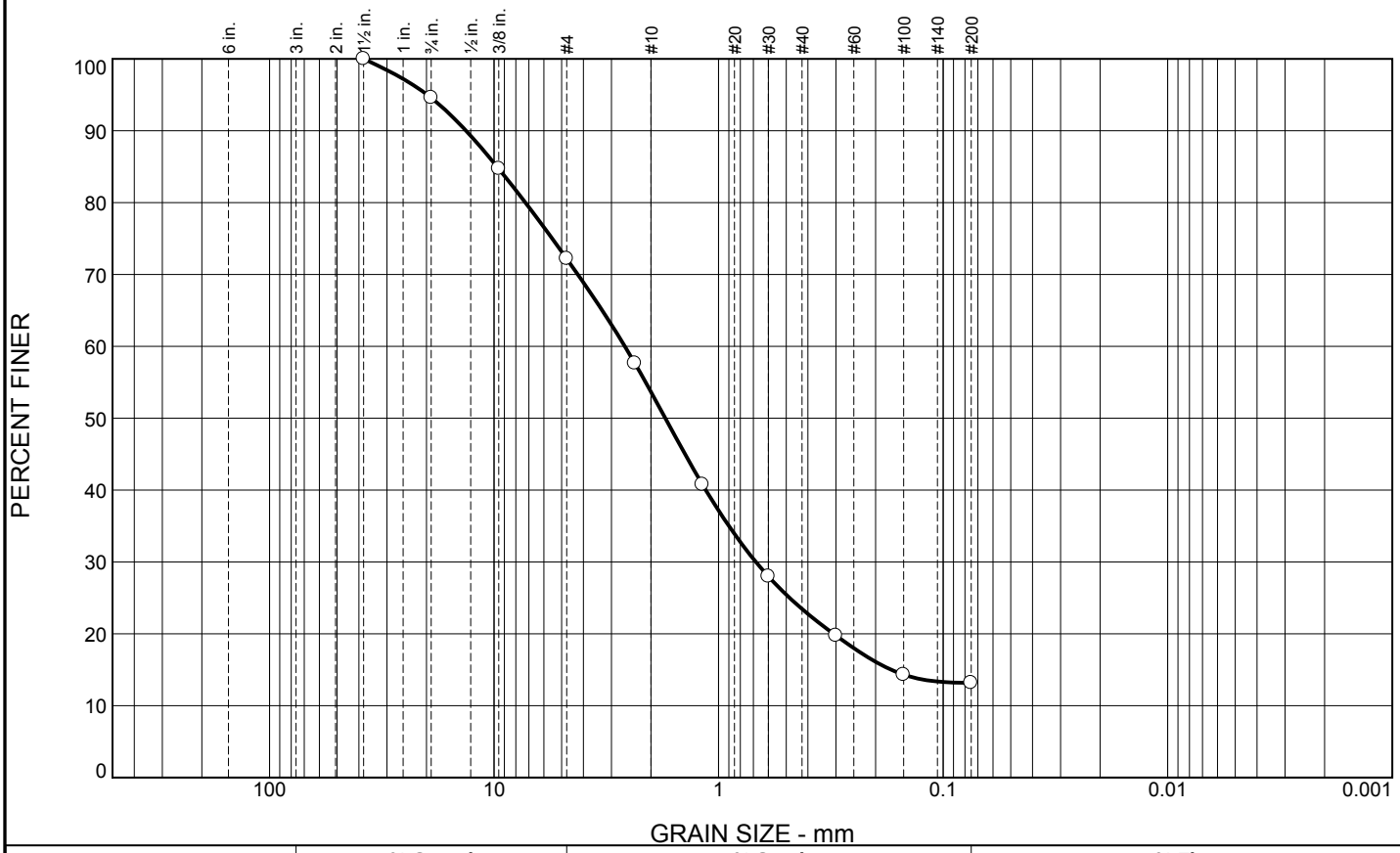
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 9

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.4	22.4	18.5	30.3	10.2	13.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
.75	94.6		
.375	84.7		
#4	72.2		
#8	57.6		
#16	40.8		
#30	28.0		
#50	19.7		
#100	14.3		
#200	13.2		

* (no specification provided)

Material Description

Brown silty\clayey SAND with gravel

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 9.6955 D_{60}= 2.6157 D_{50}= 1.7263
D_{30}= 0.6825 D_{15}= 0.1705 D_{10}=
C_u= C_c=

Classification

USCS= SM\SC

Remarks

Source of Sample: B-6 **Depth:** 4'-6'
Sample Number: S-3

Date: 6/22/15

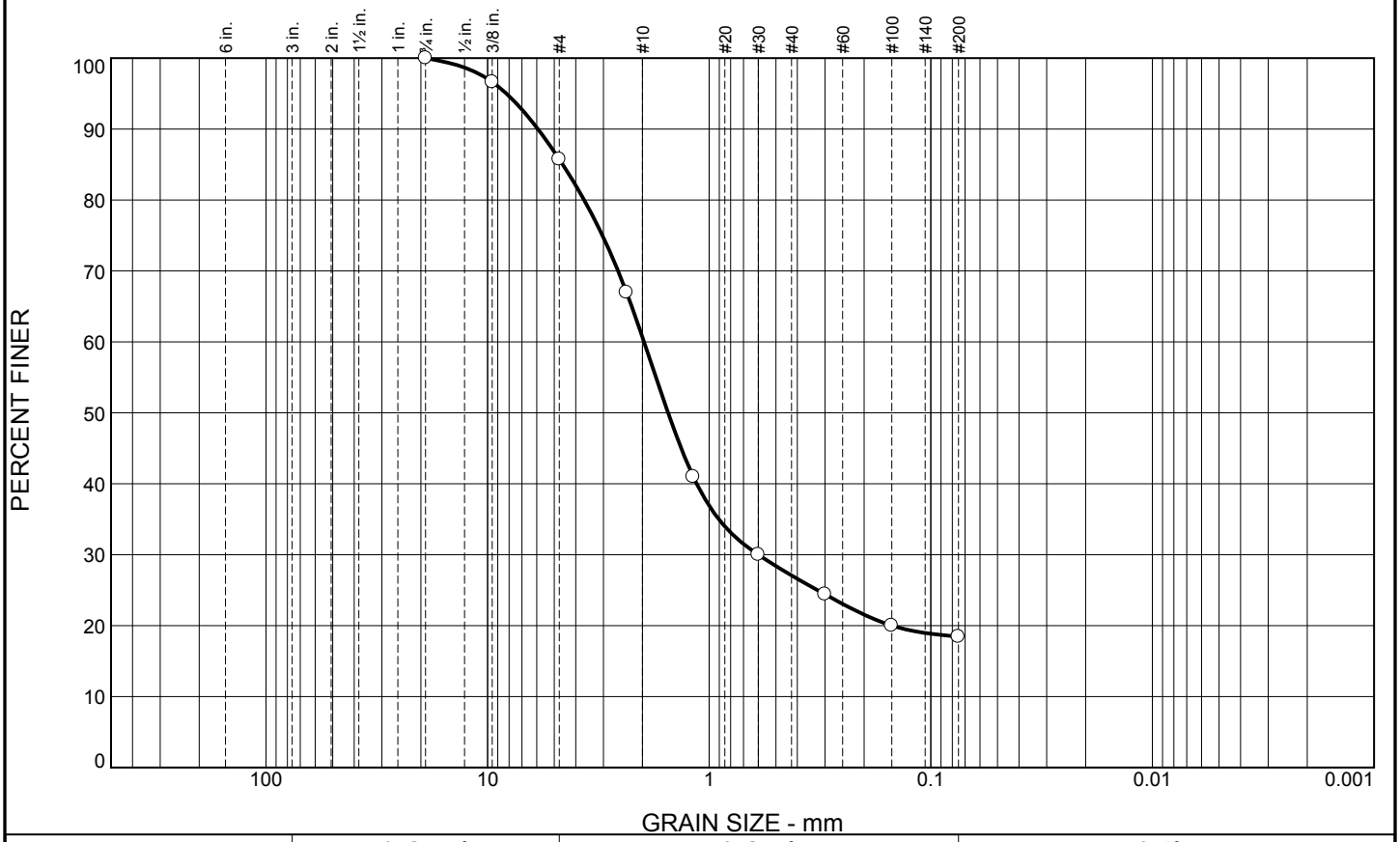
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 10

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	14.2	25.1	33.6	8.7	18.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.375	96.6		
#4	85.8		
#8	67.0		
#16	41.0		
#30	30.0		
#50	24.4		
#100	20.0		
#200	18.4		

* (no specification provided)

Material Description

Brown silty\clayey SAND

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 4.5805 D_{60}= 1.9674 D_{50}= 1.5321
D_{30}= 0.6001 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM\SC

Remarks

Source of Sample: B-7 **Depth:** 2'-4'
Sample Number: S-2

Date: 6/22/15

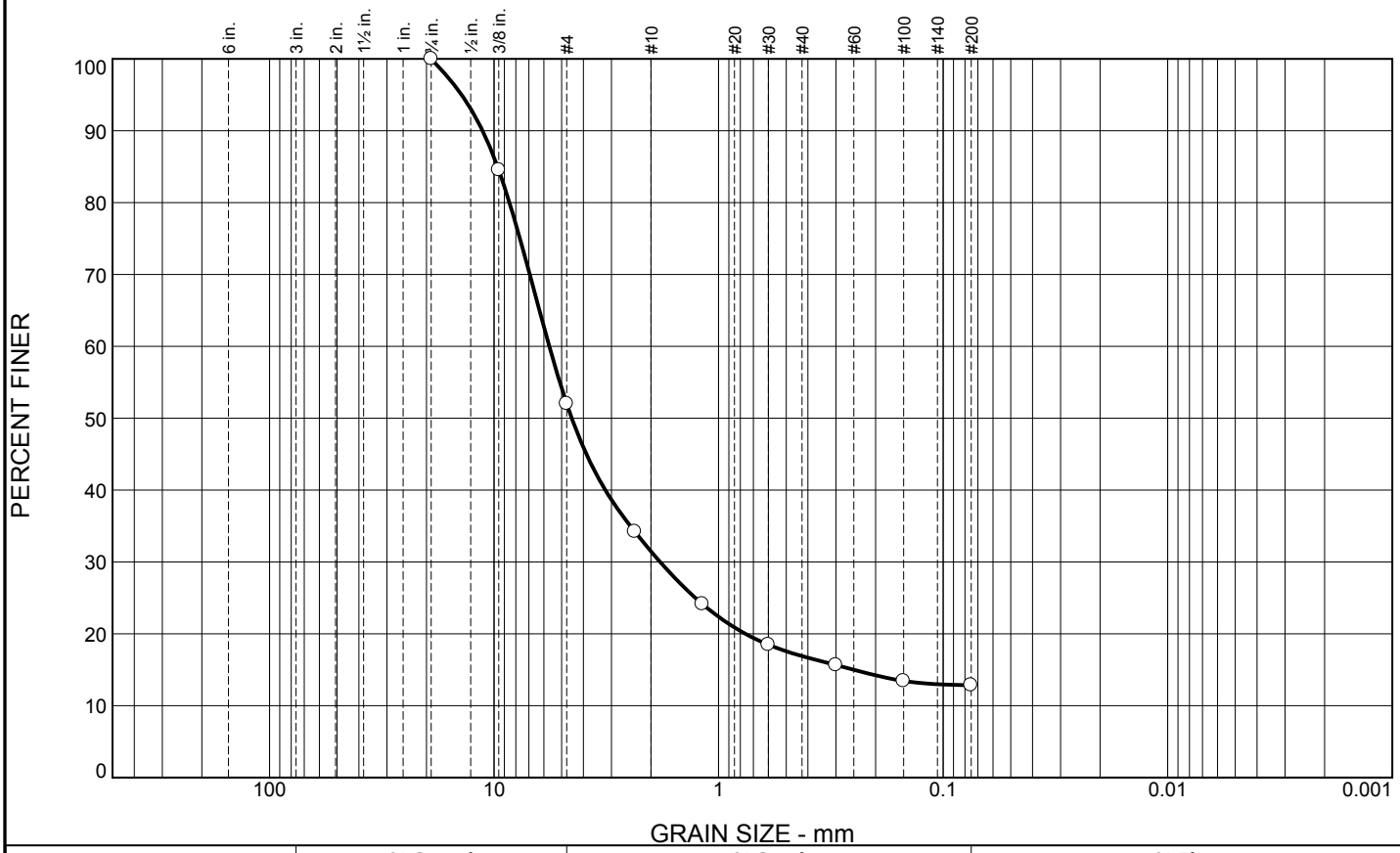
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 11

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	48.0	20.5	14.6	4.1	12.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.375	84.5		
#4	52.0		
#8	34.2		
#16	24.1		
#30	18.5		
#50	15.6		
#100	13.4		
#200	12.8		

* (no specification provided)

Material Description

Brown silty\clayey GRAVEL with sand

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 9.6437 D_{60}= 5.6741 D_{50}= 4.5090
D_{30}= 1.8210 D_{15}= 0.2504 D_{10}=
C_u= C_c=

Classification

USCS= GM\GC

Remarks

Source of Sample: B-7 **Depth:** 20'-22'
Sample Number: S-8

Date: 6/22/15

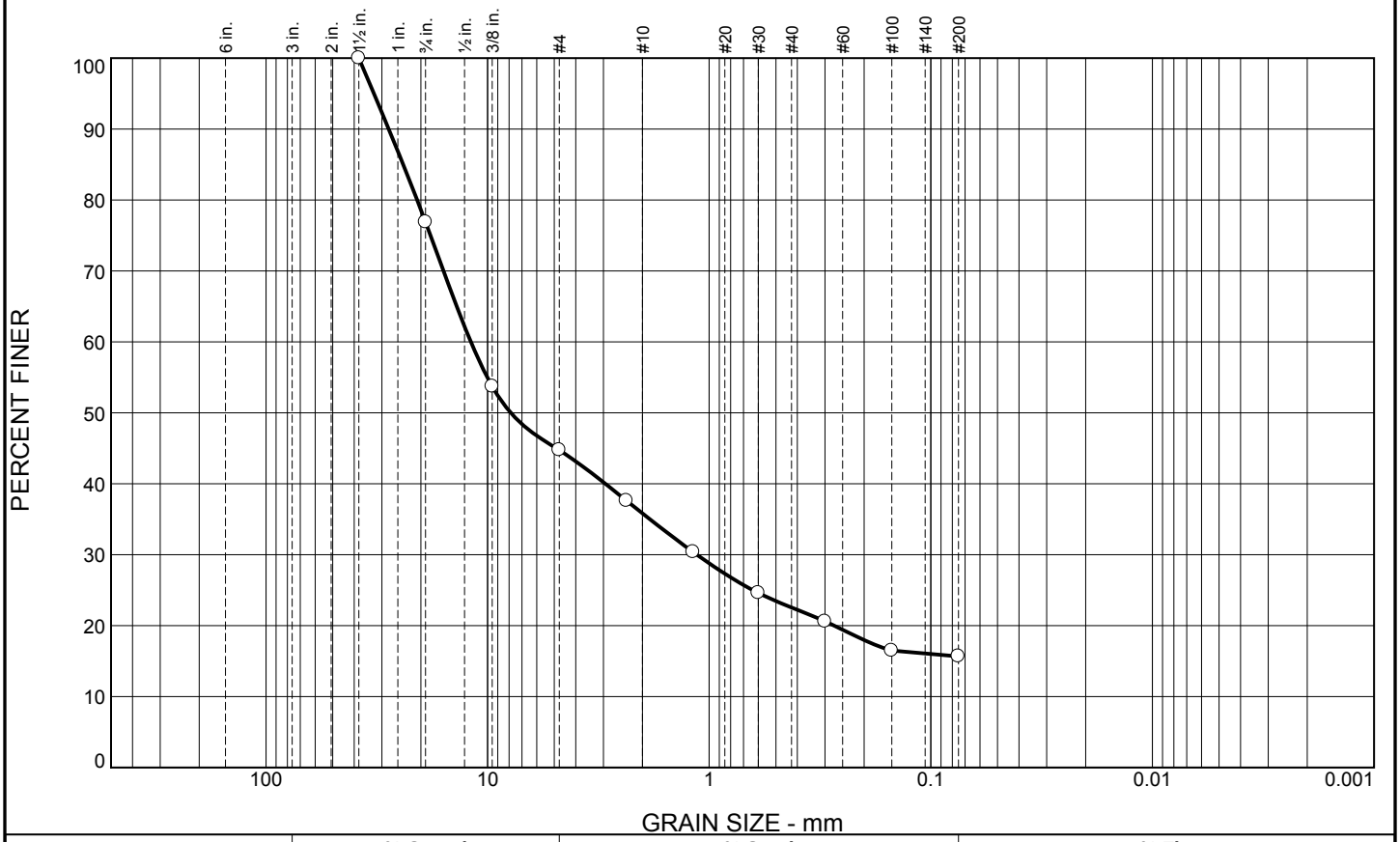
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 12

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	23.1	32.2	8.9	13.2	6.9	15.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
.75	76.9		
.375	53.7		
#4	44.7		
#8	37.6		
#16	30.4		
#30	24.6		
#50	20.6		
#100	16.5		
#200	15.7		

* (no specification provided)

Material Description

Brown silty\clayey GRAVEL with sand

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 24.0299 D_{60}= 11.9010 D_{50}= 7.8605
D_{30}= 1.1367 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= GM\GC

Remarks

Source of Sample: B-8 **Depth:** 6'-8'
Sample Number: S-4

Date: 6/22/15

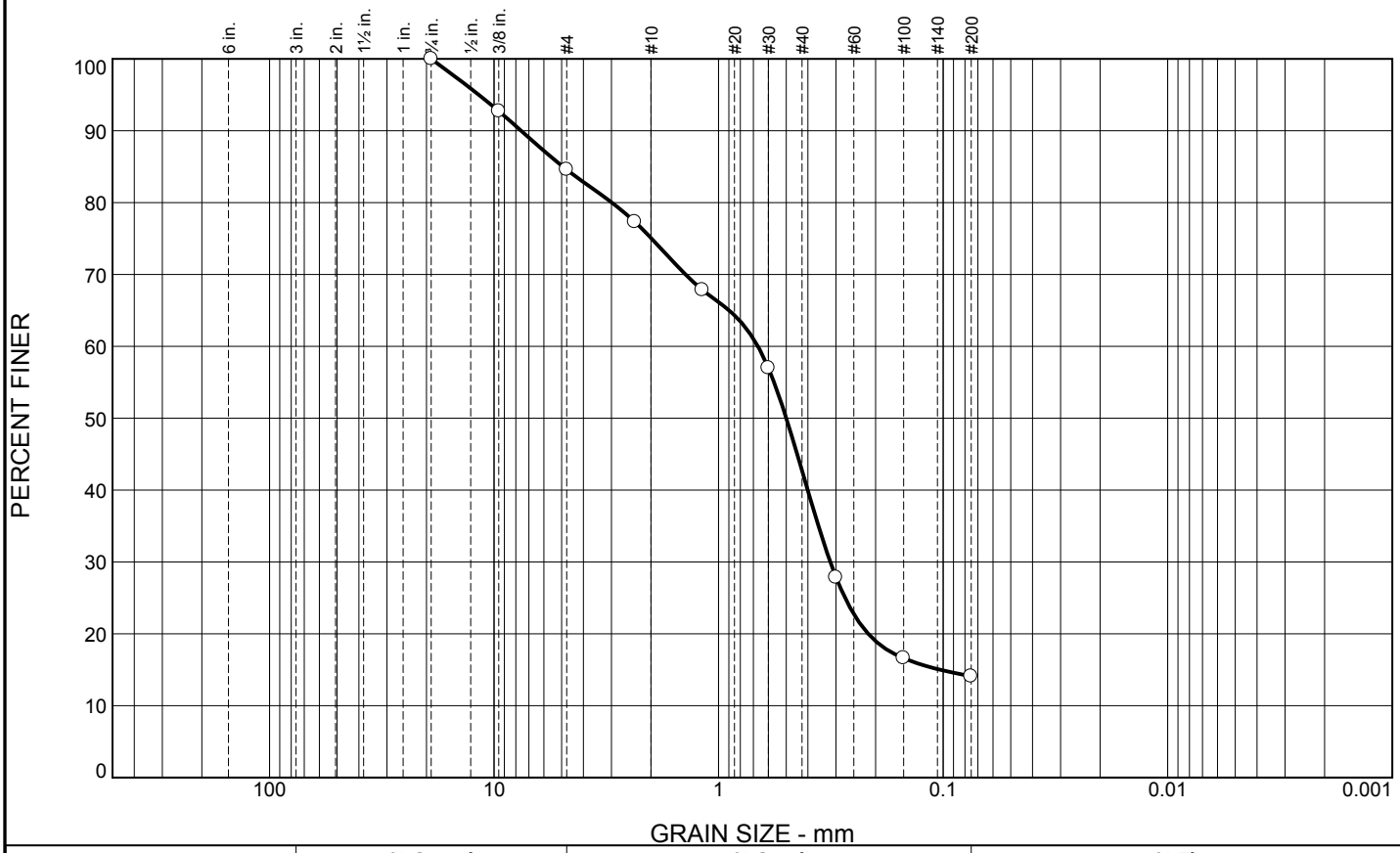
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 13

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	15.4	9.5	32.4	28.6	14.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.375	92.7		
#4	84.6		
#8	77.3		
#16	67.8		
#30	57.0		
#50	27.9		
#100	16.6		
#200	14.1		

* (no specification provided)

Material Description

Brown silty\clayey SAND with gravel

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 4.9347 D_{60}= 0.6679 D_{50}= 0.4995
D_{30}= 0.3183 D_{15}= 0.1033 D_{10}=
C_u= C_c=

Classification

USCS= SM\SC

Remarks

Source of Sample: B-8 **Depth:** 15'-17'
Sample Number: S-7

Date: 6/22/15

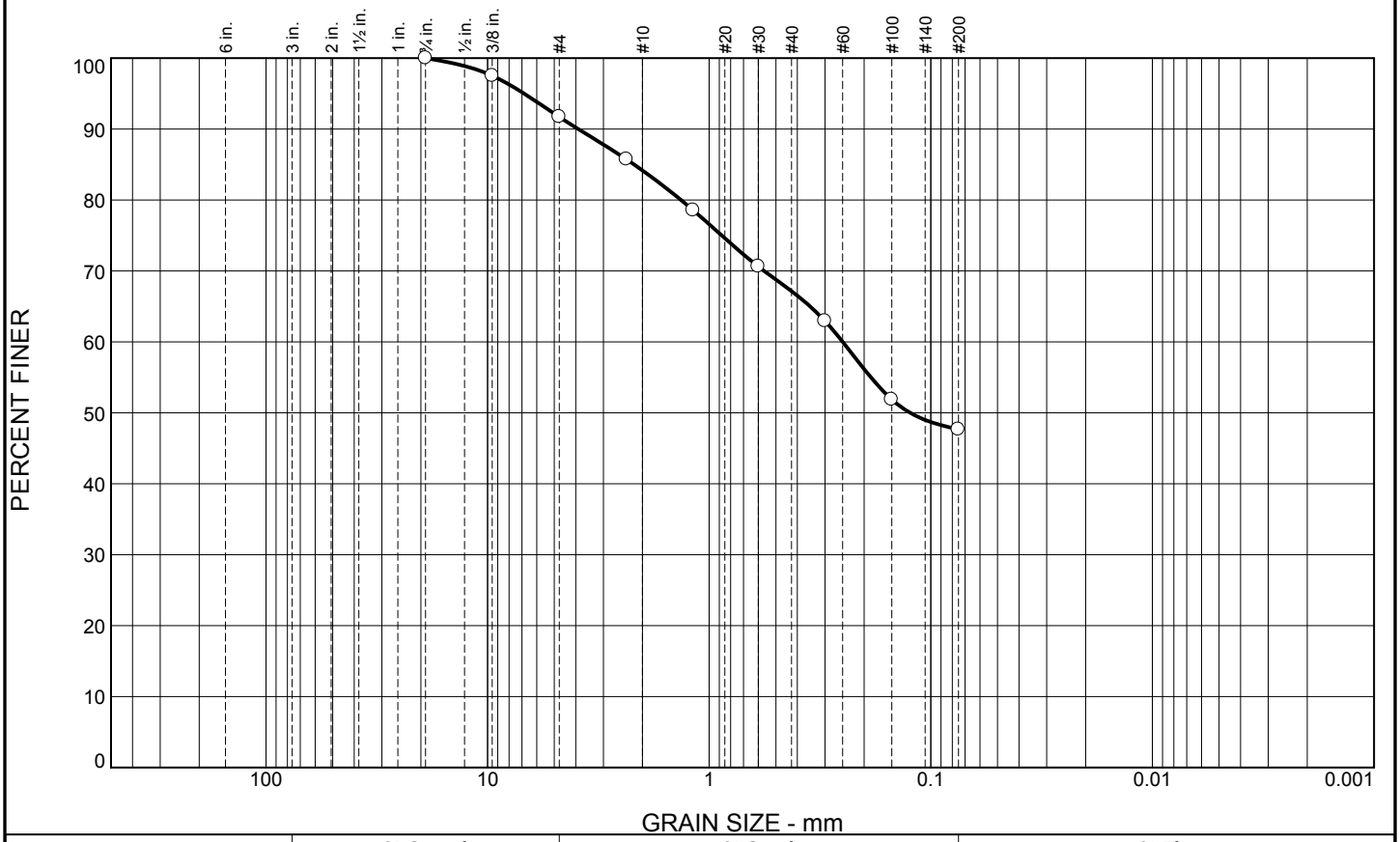
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 14

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	8.3	7.5	17.1	19.4	47.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.375	97.5		
#4	91.7		
#8	85.7		
#16	78.5		
#30	70.6		
#50	62.9		
#100	51.9		
#200	47.7		

* (no specification provided)

Material Description

Gray silty\clayey SAND

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 2.1819 D_{60}= 0.2498 D_{50}= 0.1240
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM\SC

Remarks

Source of Sample: B-9 **Depth:** 2'-4'
Sample Number: S-2

Date: 6/22/15

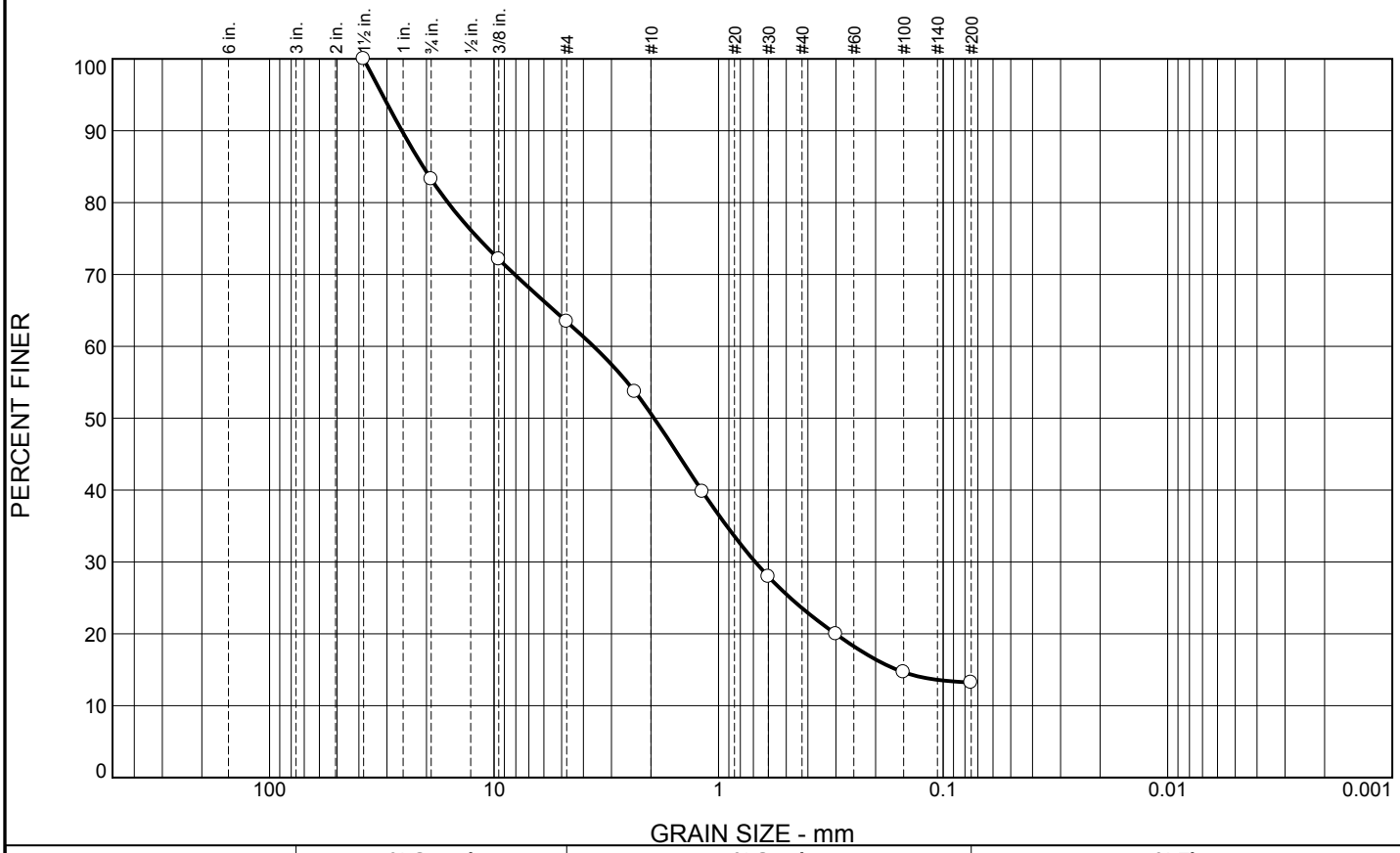
Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 15

Particle Size Distribution Report



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	16.7	19.9	12.8	27.0	10.4	13.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
.75	83.3		
.375	72.1		
#4	63.4		
#8	53.7		
#16	39.8		
#30	28.0		
#50	20.0		
#100	14.7		
#200	13.2		

* (no specification provided)

Material Description

Brown silty\clayey SAND with gravel

Atterberg Limits

LL= PL= PI=

Coefficients

D_{85}= 20.6955 D_{60}= 3.6034 D_{50}= 1.9378
D_{30}= 0.6871 D_{15}= 0.1607 D_{10}=
C_u= C_c=

Classification

USCS= SM\SC

Remarks

Source of Sample: B-10 **Depth:** 2'-4'
Sample Number: S-2

Date: 6/22/15

Craig Testing Laboratories, Inc.

Mays Landing, New Jersey

Client: AKRF
Project: Amy's Kitchen
Goshen, New York
Project No: 568004

Plate 16

Appendix C

Preliminary Geotechnical Report

REPORT
PRELIMINARY SUBSURFACE INVESTIGATION

PROPOSED AMY'S KITCHEN DEVELOPMENT
GOSHEN, ORANGE COUNTY, NEW YORK
AMY'S KITCHEN

January 24, 2014

Prepared By:
Melick-Tully and Associates, P.C.
117 Canal Road
South Bound Brook, NJ 08880
Tel: 732-356-3400 Fax: 732-356-9054

MTA Project No.: 9154-001*1D

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January 24, 2014

Amy's Kitchen
c/o Lanc & Tully, P.C.
P. O. Box 687
Goshen, New York 10924

Attention: Mr. John O'Rourke, P.E.
Vice President

Report
Preliminary Subsurface Investigation
Proposed Amy's Kitchen Development
Goshen, Orange County, New York
Amy's Kitchen

Introduction

This report presents the results of a preliminary soils and foundation investigation performed by Melick-Tully and Associates, P.C. (MTA) for the proposed Amy's Kitchen development planned to be constructed in the Town of Goshen, Orange County, New York. The site is located adjacent to and south of Echo Lake Road, to the east of its intersection with McVeigh Road, as shown on the Site Location Map, Plate 1. This report was prepared in general accordance with our proposal dated December 17, 2013.

Proposed Construction

The initial plans provided to us indicated that the western portion of the property would be developed by the construction of a "Shed" building with a number of appurtenant free standing structures surrounded by parking areas. In addition, an Amy's food preparation facility on the order of 500 feet by 1,000 feet in plan dimensions with two loading docks 160 feet by 350

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feet each would be constructed in the northeast portion of the property. The locations of the explorations performed for our preliminary study were based on this initial scheme. After the field work was completed, we received plans showing a proposed conference center in the western portion of the property with 13 free standing structures around the conference center and numerous parking areas. The Amy's food preparation facility has been shifted to the south and east and is shown on the latest undated plan as being approximately 1,050 by 500 feet in overall plan dimensions with an office building which abuts the west side of the structure, approximately 280 feet by 90 feet, and a single loading dock located on the north side of the structure. Automobile parking for the proposed food preparation building would be located south and west of the structure and tractor trailer parking along the east side of the facility.

Detailed structural information was not provided to us at this time; however, we anticipate that the conference center building could have relatively large open spans resulting in moderate to heavy foundation loads. Structural loading for the proposed Amy's food preparation facility was not provided to us, but we understand that the processing equipment planned for the facility could impose relatively heavy floor loads.

No grading information was provided, but the existing grades in the conference center vary by as much as 60 feet and by as much as 50 feet in the Amy's food building. Therefore, significant cuts and fills will be necessary to grade the building areas and parking lots.

Purpose and Scope of Work

The purpose of our services was to:

1) explore the subsurface soil, rock and groundwater conditions within the proposed building and paved areas;

2) estimate the geotechnical engineering properties of the encountered materials;

3) evaluate the site foundation requirements considering the anticipated structural loads and encountered subsurface conditions;

4) recommend an appropriate type of foundation for support of the proposed structures, and provide preliminary geotechnical-related foundation design and installation criteria, including an estimate of the site class as defined by the Building Code of the State of New York, 2010 Edition for seismic design purposes;

5) provide preliminary recommendations for the support and the need for subdrainage of the building floor slabs; and

6) discuss preliminary earthwork considerations consistent with the proposed construction and encountered subsurface conditions.

To accomplish these purposes, a subsurface exploration program consisting of 9 test borings and 14 test pit explorations was performed at the site. The borings were advanced utilizing drilling equipment mounted on an all terrain vehicle and extended to depths varying from approximately 14 to 52 feet below the existing surface grades. The test pits were advanced using a track-mounted excavator (Case Model 9020B) and extended to depths ranging from approximately 10 to 15 feet below the existing surface grades. The approximate locations of the explorations are shown on the Plot Plan, Plate 2.

All field work was performed under the direct technical observation of a geotechnical engineer and a geologist from MTA. Our representatives located the explorations in the field utilizing survey control provided by Lanc & Tully, P.C. (L&T), maintained continuous logs of the explorations as the work proceeded, and supervised the soil sampling operations during

drilling to obtain the desired subsurface information. Numerous closely spaced soil samples were obtained from the borings using the procedures of the Standard Penetration Test. Bulk samples were collected from the test pits.

Detailed descriptions of the materials encountered in the borings are shown on the individual boring logs, Plates 3A through 3I. The results of the test pit explorations are shown on Plates 4A through 4N, Log of Test Pits. The soils were visually classified in general accordance with the Unified Soil Classification System presented on Plate 5.

All soil samples obtained from the explorations were brought to our office where they were further examined in our soil mechanics laboratory. Sixteen of the soil samples were subjected to laboratory testing consisting of either grain-size analyses and/or moisture content determinations to aid in their engineering classification and evaluation. The results of the grain-size tests are presented on Plates 6A through 6C, Gradation Curves. The results of the moisture content tests are presented on the Gradation Curves and on the appropriate exploration logs.

The results of our subsurface exploration program, our visual examination of the soil samples, and our review of the laboratory test results have provided the basis for our engineering analyses and preliminary design recommendations. The following discussions of our findings are subject to the limitations attached as an Appendix to this report.

Site Conditions

Surface Features: We understand that the site was previously utilized as a sand and gravel quarry. The eastern portion of the property is a relatively open, brush covered area. Several dirt roads, isolated stands of trees, and areas identified as wetlands are present. The western portion of the site is moderately to heavily wooded, and covered with dense brush.

Topographic information shown on plans provided to us indicates that the site slopes moderately to steeply downward from the south-central portion of the property adjacent to the property line which is common to the adjacent psychiatric facility. The grades slope to the north, east and west from a high of approximately Elevation +530 feet to a low of approximately Elevation +410 feet along the western edge of the property, Elevation +380 feet in the northern corner of the property adjacent to Echo Lake Road, and Elevation +370 feet along the eastern side of the site before it drops off steeply to meet the Wallkill River.

Subsurface Conditions: The following generalized strata were encountered in the explorations and are listed in order of increasing depth:

1) Topsoil: A surficial layer of topsoil was encountered in 22 of the 23 explorations performed for this study. In general, the topsoil was found to be approximately four to six inches thick, but ranged up to approximately eight to twelve inches in thickness in Test Pits No. 1, 10 and 12.

2) Silt: Below the topsoil in three of the explorations (B-8, TP-4 and TP-10), a layer of stiff to very stiff silt containing varying amounts of sand and gravel was encountered. The silt layer extended to depths of approximately one and one-half to two feet below grade, where encountered.

3) Silty Sand: The surficial topsoil and silt were underlain by glacial deposits of sands and silty sands containing varying amounts of gravel, cobbles and boulders. The sands were generally found to be medium dense to very dense in relative density and extended to the completion depths in 18 of the 23 explorations.

4) In Test Pits No. 9, 11, 12 and 14, the sand layer was in turn underlain by stiff to hard silt and clayey silt at depths of approximately 7 to 12 feet below grade which extended to the completion depths in those five explorations of 12-1/2 to 14-1/2 feet below grade.

Groundwater was encountered at various levels in 16 of the explorations ranging from approximately 1 to 43 feet below the existing surface grades. We believe that many of the shallower groundwater levels observed could be perched groundwater levels atop less pervious zones of the in-place materials. In addition, mottling, which is indicative of seasonal groundwater conditions or seasonally saturated soils, was evident in four of the test pits at depths of approximately three to nine and one-half feet below grade. Based on the seepage observed n the explorations, it should be anticipated that groundwater will be encountered at variable elevations and intensities throughout the site.

Findings and Recommendations

General: Based on the results of our study, it is our opinion that:

1) The proposed structures may derive their support from conventional shallow foundations established on the undisturbed natural soils or controlled compacted fill placed to reach the desired levels. Pavements and floor slabs may also derive their support from these materials.

2) Bedrock was not encountered to the maximum depths explored in any of the explorations. However, only two of the borings, B-3 and B-8, extended deeper than 27 feet. Relatively large boulders were encountered in a number of the explorations and refusal atop boulders was encountered in many of these explorations. Consequently, the use of relatively large excavation equipment and/or localized jackhammering with hydraulic hammers attached to large excavation equipment could be required for site excavations.

3) The moisture levels observed in the majority of the materials subjected to laboratory testing indicate that the natural glacial soils appear to be at or above moisture levels which would allow compaction to 95 percent of their maximum dry density. Due to the relatively high silt content of the materials, the soils are highly susceptible to disturbance due to slight changes in moisture content. Consequently, some aeration and drying of materials in cut areas should be anticipated to be required.

4) Groundwater seepage was observed at various levels in the majority of the explorations. Consequently, dewatering during construction should be anticipated to be required.

Further discussion of these items and others considered relevant to the proposed development are presented in subsequent sections of this report.

Site Preparation and Earthwork: Prior to construction, areas to be developed should be cleared and grubbed of all vegetation and roots. The topsoil should be stripped from within and at least ten feet beyond the limits of the proposed building footprints and paved areas. The topsoil could be stockpiled on-site for future use in landscaped areas; however, the topsoil would not be suitable for reuse as controlled compacted fill in structural areas.

Grading plans were not developed at the time of this study; however, it appears that in order to balance the site, cuts of up to 50 feet or greater would be required in the higher elevated portions of the site. After clearing and stripping, and prior to placement of controlled compacted fill in areas to be raised, the exposed subgrade materials should be proofrolled and compacted to a dense and unyielding consistency with several passes of a heavy, self-propelled, vibrating drum compactor with a minimum static drum weight of ten tons under the observation of a qualified geotechnical engineer. Any subgrade materials which appear to be soft or unstable should be excavated to the surface of competent soils and backfilled with controlled compacted fill. We believe that the majority of the soils exposed after stripping of the topsoil would consist of glacial silty sand materials. For the most part, these materials are anticipated to be relatively dense; however, due to their high silt content and the presence of variable water levels, we anticipate that the surficial materials will be highly susceptible to softening and disturbance once subjected to construction equipment traffic. If the proofrolling operations are performed during

or following periods of wet or freezing weather, some overexcavation of disturbed soils may be required.

The majority of the on-site soils in the higher elevated areas were observed to consist of silty sands with varying amounts of cobbles and boulders. The moisture content tests performed on the samples obtained in the explorations indicated that the majority of the site materials were above moisture contents that would permit compaction to the required degree. Consequently, some aeration and drying should be anticipated. We recommend that the project be sequenced so that the majority of the earthwork operations are performed during periods of warm, dry weather in order to facilitate reuse of the on-site soils as structural fill. If the earthwork operations are performed during or following periods of wet or freezing weather, compaction of the on-site soils to the required degree may be difficult or impossible. We recommend that the earthwork contractor work in conjunction with a qualified geotechnical engineer familiar with the site conditions to selectively utilize the driest available materials from cut areas in the proposed buildings and to utilize wetter soil over as large an area as possible in parking areas where they could be allowed to dry prior to compaction.

We recommend to the extent possible that cobbles and boulders be utilized in areas requiring deeper fills where they would not interfere with future excavations for foundation and utility installation. Use of a crusher so the boulders could be crushed to a graded stone may be beneficial if sufficient quantities of boulders are encountered. Care should be taken to provide sufficient soil to infill any voids between the cobbles and boulders to minimize the potential for migration of the upper soils into the voids between the cobbles and boulders.

Any imported fill required to complete the site grading in structural areas should consist of uncontaminated, relatively well-graded granular soils containing less than 15 percent by weight of material passing a U.S. Standard No. 200 sieve and a maximum particle size of six inches. The fill supplier should provide documentation of the environmental quality of all imported fill.

All fill placed in building or paved areas should be spread in layers on the order of twelve inches or less in loose thickness and uniformly compacted to at least 95 percent of its maximum dry density as determined by the ASTM D-1557 test procedure. Backfill placed in confined areas such as foundation or utility trench excavations should be spread in thinner layers and uniformly compacted to similar densities using manually operated compaction equipment.

All construction excavations should be performed in accordance with the most recent OSHA Excavation Guidelines and any state and local governing safety codes. Based on the results of our explorations, we believe that the existing site soils will be considered a Type "C" soil as defined by the latest OSHA Excavation Regulations. Excavation side slopes should be flattened as necessary to maintain safe excavations or should be adequately braced.

Groundwater was encountered in the majority of the explorations at depths ranging from approximately 1 foot to 43 feet below grade upon their completion. The variable nature of the groundwater levels observed while the explorations were being performed indicates that groundwater seepage will be encountered in excavations at various levels due to seepage through more pervious zones of materials and from surface water which percolates through the surficial soils. Consequently, controlling groundwater through drains and diversion trenches upgrade from the earthwork construction activities should be anticipated to be required during

construction. We believe that water seepage will be variable in intensity, but the majority of the site groundwater can be controlled by pumping from sumps and/or diversion and cutoff trenches. The contract documents should require the contractor to provide the equipment, labor and whatever means necessary to maintain relatively dry excavations at all times.

Foundation Design Criteria: Following the previously described site preparation procedures, the proposed structures could be supported by conventional shallow foundations which derive their support from the undisturbed natural glacial soils or properly placed controlled compacted fill installed to achieve the proposed building subgrade levels. We believe that foundations established on these materials could be designed to impose maximum allowable net bearing pressures of up to two tons per square foot.

Exterior foundations should be established at least four feet below the lowest adjacent exterior grades, or deeper if required by local building codes, to provide protection from frost penetration. Interior foundations located in permanently heated portions of the proposed buildings could be constructed at convenient depths below the ground floor slabs.

Seismic Design Criteria: Based on the subsurface conditions encountered in the explorations performed for this study, we estimate that the site would be a Site Class "D" as defined by the Building Code of the State of New York, 2010 Edition for seismic design purposes.

Floor Slab Design Criteria: Following the previously described site preparation procedures, the proposed floor slabs could be supported directly atop the natural sandy soils or controlled compacted fill. We recommend that all slabs on-grade be underlain by a minimum

four-inch thick layer of clean, three-quarter inch crushed stone or washed gravel to provide a capillary break between the bottom of the slabs and the underlying soils.

Future Work: Once plans are more fully developed and site grading is complete, we recommend that additional explorations be performed at the actual building locations as necessary to reach below the proposed finished grade levels. We would be happy to provide these services as planning for the project continues.

Please feel free to contact us if you have any questions regarding this report.

The following Plates and Appendix are attached and complete this report:

Plate 1 – Site Location Map
Plate 2 – Plot Plan
Plates 3A through 3I – Logs of Borings
Plates 4A through 4N – Logs of Test Pits
Plate 5 – Unified Soil Classification System
Plates 6A through 6D – Gradation Curves
Appendix - Limitations

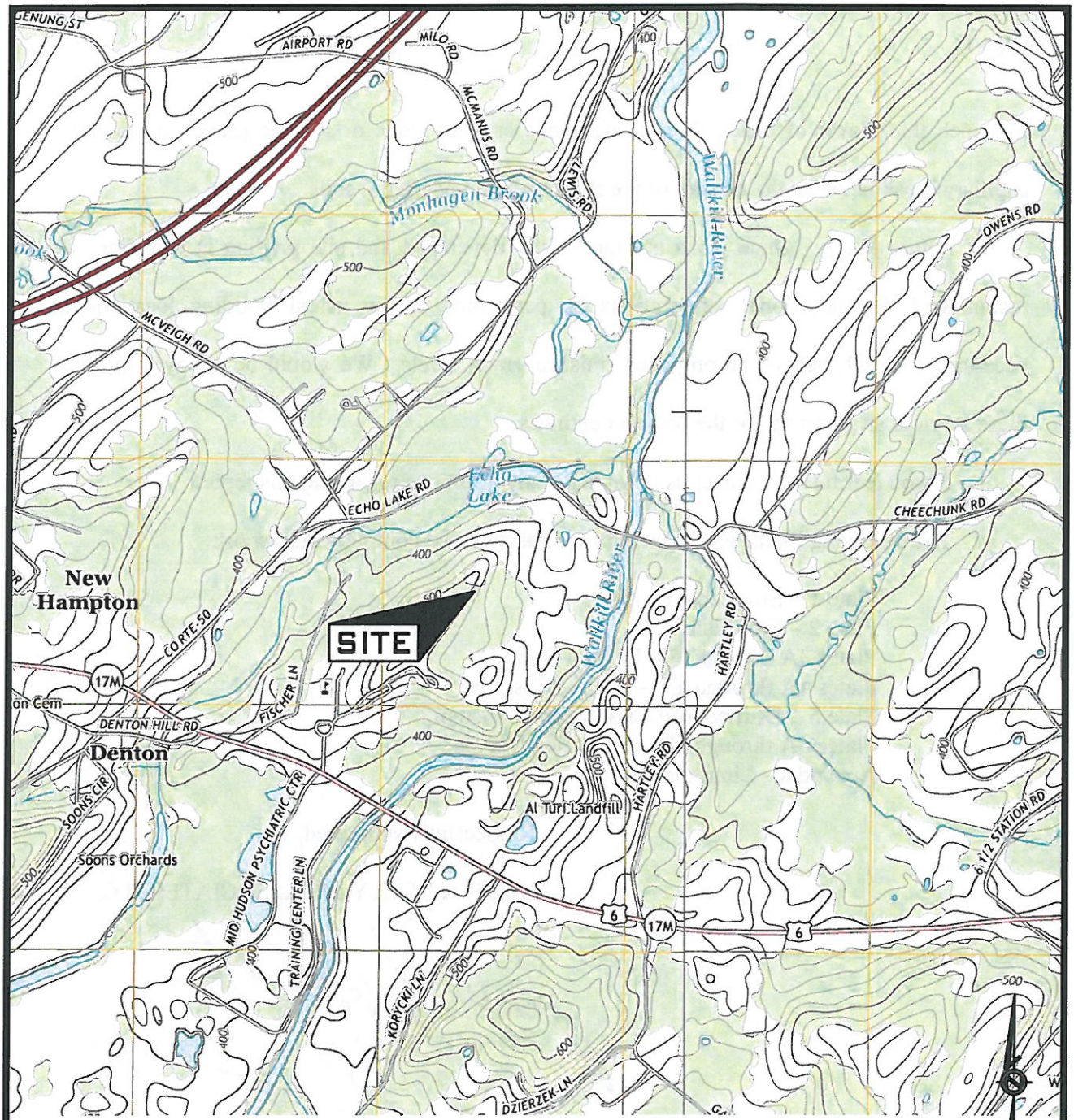
Respectfully submitted,

MELICK-TULLY and ASSOCIATES, P.C.

James H. Beattie, P.E.
Senior Associate

Todd E. Horowitz, P.E.
Vice President

JHB:TEH/mh
9154-001*1D
(3 copies submitted)



FROM: "Middletown Quadrangle, NY, 7.5 Minute Series (Topographic)," USGS, 2013.
"Goshen Quadrangle, NY, 7.5 Minute Series (Topographic)," USGS, 2013.

MELICK–TULLY AND ASSOCIATES, P.C.
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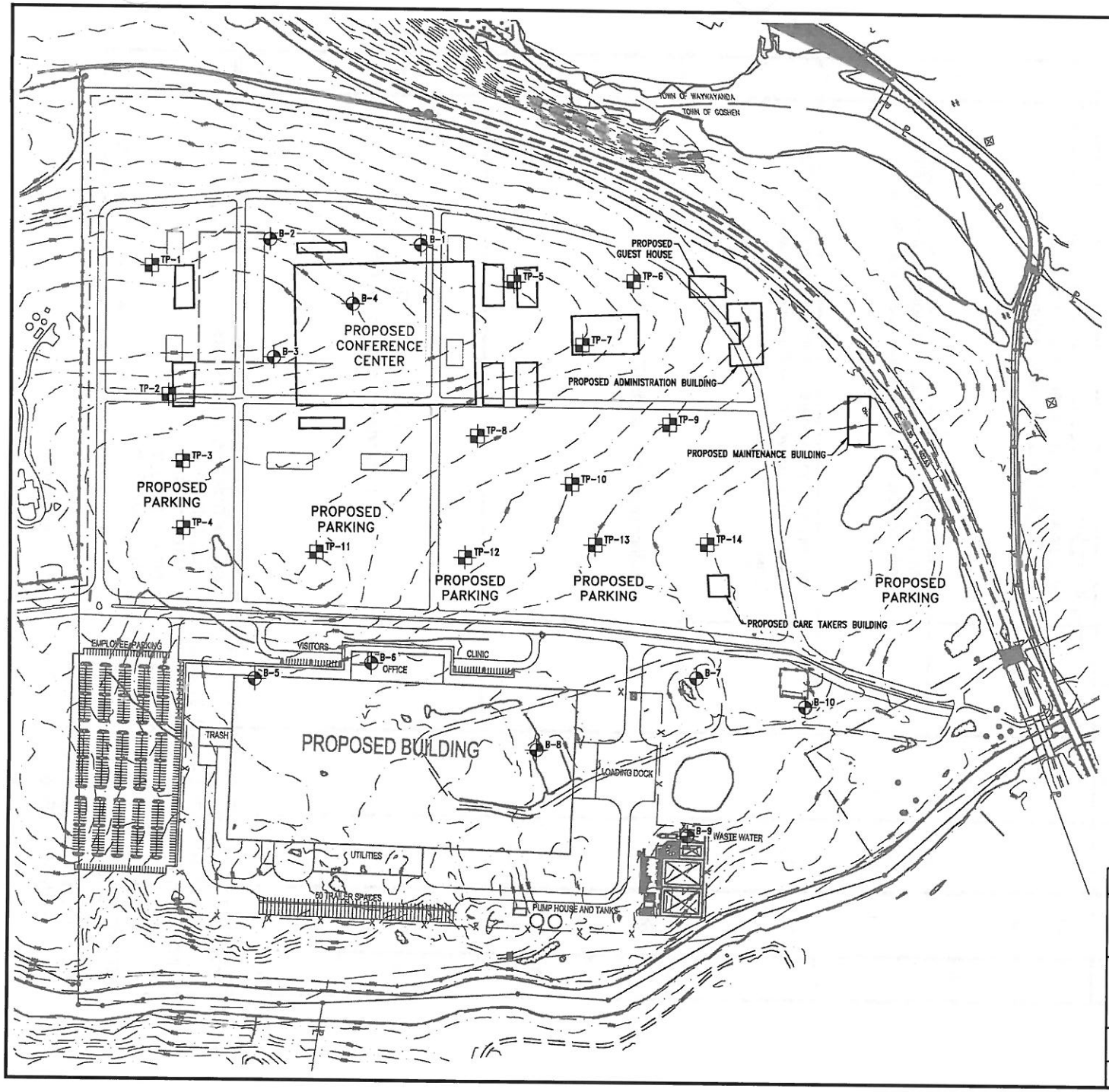
117 Canal Road
South Bound Brook, New Jersey 08880
(732) 356–3400

SITE LOCATION MAP

PROPOSED COMMERCIAL DEVELOPMENT
GOSHEN, NEW YORK
AMY'S KITCHEN

JOB NO.	FILE NO.	DR. BY	CHK. BY	DATE	SCALE	PLATE
9154–001*1D	26126	VJD	JHB	1–22–14	1"=2,000'	1



GRAPHIC SCALE

200 0 100 200 400

1 inch =200ft.

KEY:

B-1 NUMBER AND APPROXIMATE LOCATION OF BORINGS PERFORMED FOR THIS STUDY

TP-1 NUMBER AND APPROXIMATE LOCATION OF TEST PITS PERFORMED FOR THIS STUDY

NOTES:

1. This drawing is part of Melick-Tully and Associates, P.C. Report No. 9154-001*1D and should be read together with the report for complete evaluation.
2. General layout was obtained from a drawing prepared by The Stellar Group, entitled "Site Geometry Plan", not dated, scale 1"= 200'.

PLOT PLAN

PROPOSED COMMERCIAL DEVELOPMENT
GOSHEN, NEW YORK
AMY'S KITCHEN

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers
& Environmental Consultants
117 Canal Road
South Bound Brook, New Jersey 08880
(732) 356-3400

JOB NO.	FILE NO.			
9154-001*1D	26126			
DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	JHB	1-22-14	1"=200'	2

LOG OF BORING

BORING NO. 1

COMPLETION DATE: 12/27/13
JOB NUMBER: 9154-001*1D

SURFACE ELEVATION: +470 ft (±)

WATER LEVEL: 15'
READING DATE: 12/27/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
0	S1	12			2" Topsoil	0
	S2	7	11.2	SM	Gray-brown fine to coarse sand, little silt, some fine gravel (moist)(loose to medium dense)	
5	S3	42				5
	S4	87		SM	Gray-brown fine to coarse sand, some to and silt, little fine to coarse gravel (moist)(dense to very dense)	
10	S5	25				10
				SM	Dark brown fine to coarse sand, little to some silt, little fine to coarse gravel (moist)(medium dense to very dense)	
15	S6	114			- driller notes cobbles @ 17'	15
20	S7	65				20
25					Boring completed @ 22' Groundwater encountered @ 15'	25
30						30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 3A

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LOG OF BORING

BORING NO. 2

COMPLETION DATE: 12/27/13 | SURFACE ELEVATION: +500 ft (±) | WATER LEVEL: *

JOB NUMBER: 9154-001*1D | READING DATE: 12/27/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
0	S1	33	17.6		4" Topsoil	0
				SM	Brown fine sand, and silt (moist)(medium dense to dense)	
	S2	41				
5	S3	14				5
	S4	44				
10	S5	31				10
15	S6	61		SM	Brown fine to medium sand, some silt, little fine to coarse gravel (moist)(very dense)	15
20	S7	48		SP	Brown fine to medium sand, trace silt (moist)(dense)	20
25					Boring completed @ 22' *Groundwater not encountered	25
30						30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 3B

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. 3

COMPLETION DATE: 12/27/13 | SURFACE ELEVATION: +515 ft (±) | WATER LEVEL: 42'-9"

JOB NUMBER: 9154-001*1D | READING DATE: 12/26/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
	S1	15			2" Topsoil	
				SP/SM	Brown fine to coarse sand, trace silt, and fine gravel (moist)(medium dense to dense)	
	S2	23	7.6			
5	S3	32				5
	S4	29				
	S5	22			Gray-brown fine to coarse sand, trace silt, trace fine gravel (moist)(medium dense)	
10	S6	19	7.0	SP/SM		10
15	S7	63		SM	Gray-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(very dense) - driller notes cobbles @ 16'	15
20	S8	45		SP	Gray-brown fine to coarse sand, and fine to coarse gravel, trace silt, frequent cobbles and boulders (moist)(medium dense to dense)	20
25	S9	22				25
30						30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 2 PLATE: 3C

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. 3

COMPLETION DATE: 12/27/13 | SURFACE ELEVATION: +515 ft (±) | WATER LEVEL: 42'-9"

JOB NUMBER: 9154-001*1D | READING DATE: 12/26/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
35	S10	31		SP	Gray-brown fine to coarse sand, and fine to coarse gravel, trace silt, frequent cobbles and boulders (moist)(medium dense to dense)	35
40	S11	55		SM	Gray-brown fine to coarse sand, some silt, some fine to coarse gravel, frequent cobbles and boulders (moist)(very dense)	40
45	S12	33				45
50	S13	17		SP	Gray-brown fine to medium sand, trace silt (wet)(medium dense to very dense)	50
55	S14	57			Boring completed @ 52' Groundwater encountered @ 42'-9"	55
60						60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

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LOG OF BORING

BORING NO. 4

COMPLETION DATE: 12/26/13 | SURFACE ELEVATION: +510 ft (±) | WATER LEVEL: 16'-5"

JOB NUMBER: 9154-001*1D | READING DATE: 12/26/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					4" Topsoil	
	S1	8		SM	Gray-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(loose to medium dense)	
	S2	13				
5	S3	6				5
	S4	28				
				SM	Gray-brown fine to coarse sand, little silt, some fine to coarse gravel, occasional to frequent cobbles and boulders (moist)(very dense)	
10	S5	82				10
15	S6	100/5"		SM	Gray-brown fine to coarse sand, and silt, little fine gravel, occasional cobbles (moist to wet)(very dense)	15
20	S7	116	9.8			20
25					Boring completed @ 22' Groundwater encountered @ 16'-5"	25
30						30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 3D

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LOG OF BORING

BORING NO. 5

COMPLETION DATE: 12/26/13
JOB NUMBER: 9154-001*1D

SURFACE ELEVATION: +420 ft (±)

WATER LEVEL: *
READING DATE: 12/26/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
0	S1	10			6" Topsoil	0
				SM	Brown fine sand, little silt (moist)(medium dense to dense)	
	S2	24				
5	S3	37				5
	S4	41				
	S5	44				
10	S6	41				10
				SM	Gray-brown fine to coarse sand, some silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense)	
15	S7	140				15
20	S8	125				20
					Boring completed @ 22' *Groundwater not encountered	
25						25
30						30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 3E

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LOG OF BORING

BORING NO. 6

COMPLETION DATE: 12/31/13
JOB NUMBER: 9154-001*1D

SURFACE ELEVATION: +420 ft (±)

WATER LEVEL: *
READING DATE: 12/30/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
0	S1	13			6" Topsoil	0
	S2	62	11.8	SM	Gray-brown fine to coarse sand, some to and silt, little fine gravel, occasional to frequent cobbles and boulders (moist)(medium dense to very dense)	
5	S3	68	11.1			5
10	S4	127/5"				10
15	S5	100/5"				15
20	S6	195				20
25	S7	100/2"			- drill bit refusal atop boulder @ 27'	25
30					Boring completed @ 272' *Groundwater not encountered	30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 3F

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LOG OF BORING

BORING NO. 7

COMPLETION DATE: 12/30/13
JOB NUMBER: 9154-001*1D

SURFACE ELEVATION: +390 ft (±)

WATER LEVEL: *
READING DATE: 12/30/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
0	S1	10			6" Topsoil	0
				SM	Gray-brown fine to coarse sand, and silt, little fine to coarse gravel, occasional to frequent cobbles and boulders (moist)(medium dense to very dense)	
	S2	44				
5	S3	60				5
	S4	145			- auger refusal atop boulder @ 8', relocated boring 5' west	
10	S5	110				10
					- auger refusal atop boulder @ 14'	
15						15
20					Boring completed @ 14' *Groundwater not encountered	20
25						25
30						30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 3G

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LOG OF BORING

BORING NO. 8

COMPLETION DATE: 12/31/13 | SURFACE ELEVATION: +390 ft (±) | WATER LEVEL: *

JOB NUMBER: 9154-001*1D | READING DATE: 12/31/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
0	S1	6		ML	5" Topsoil Brown silt, and fine to coarse sand, trace fine gravel (moist)(medium)	0
5	S2	37	11.1	SM	Brown fine to coarse sand, and silt, some fine to coarse gravel, occasional to frequent cobbles and boulders (moist)(dense to very dense)	5
	S3	32				
	S4	74				
10	S5	124				10
15	S6	110				15
20	S7	61				20
25	S8	130		SM	Gray fine to coarse sand, little to some silt, some fine to coarse gravel, frequent cobbles and boulders (moist to wet)(very dense)	25
30						30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

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LOG OF BORING

BORING NO. 8

COMPLETION DATE: 12/31/13
JOB NUMBER: 9154-001*1D

SURFACE ELEVATION: +390 ft (±)

WATER LEVEL: *
READING DATE: 12/31/13

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
35	S9	81		SM	Gray fine to coarse sand, little to some silt, some fine to coarse gravel, frequent cobbles and boulders (moist to wet)(very dense)	35
	S10	156				
40	S11	163/11"				40
45					Boring completed @ 41'-5" *Groundwater not encountered	45
50						50
55						55
60						60

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 2 of 2 PLATE: 3H

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LOG OF BORING

BORING NO. 9

COMPLETION DATE: 1/02/14
JOB NUMBER: 9154-001*1D

SURFACE ELEVATION: +390 ft (±)

WATER LEVEL: *
READING DATE: 1/02/14

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
0					2" Topsoil	0
	S1	12		SM	Brown fine to coarse sand, some silt, little fine to coarse gravel, occasional to frequent cobbles and boulders (moist)(medium dense to very dense)	
	S2	50				
5	S3	83				5
	S4	88				
10	S5	94				10
15	S6	100/3"				15
					- auger refusal atop boulder @ 19'	
20						20
25					Boring completed @19' *Groundwater not encountered	25
30						30

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 3|

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LOG OF TEST PIT

TEST PIT NO: 1

COMPLETION DATE: 12/27/13 | SURFACE ELEVATION: +510 ft (±) | WATER LEVEL: 11.5'

JOB NUMBER: 9154-001*1D | READING DATE: 12/27/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				9" Topsoil	
			SM	Gray-brown fine to coarse sand, some silt, some fine to coarse gravel (moist)(medium dense)	
	S1	13.0		Gray-brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(dense)	
5	S2				5
	S3	11.5	SM		
10					10
	S4				
15				Test pit completed @ 13' Mottling observed @ 7'-6" Moderate groundwater seepage encountered @ 11'-6"	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4A

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LOG OF TEST PIT

TEST PIT NO: 2

COMPLETION DATE: 12/27/13
JOB NUMBER: 9154-001*1D

SURFACE ELEVATION: +495 ft (±)

WATER LEVEL: *
READING DATE: 12/27/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
			SM	Gray-brown fine to coarse sand, some to and silt, little fine to coarse gravel (moist)(dense)	
5	S1				5
	S2		SM	Gray-brown fine to coarse sand, some silt, little fine to coarse gravel, frequent cobbles and boulders (moist)(dense to very dense)	
10					10
	S3				
15				Test pit completed @ 12'-6" *Groundwater seepage not encountered	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4B

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LOG OF TEST PIT

TEST PIT NO: 3

COMPLETION DATE: 12/27/13 | SURFACE ELEVATION: +475 ft (±) | WATER LEVEL: 3'-6"

JOB NUMBER: 9154-001*1D | READING DATE: 12/27/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1	18.8		Gray-brown fine to coarse sand, and silt, little fine gravel, occasional cobbles and boulders (moist)(dense to very dense)	
				- grading (wet)	
5	S2		SM		5
	S3				
	S4				
10					10
				Test pit completed @ 10'	
15				Mottling observed @ 3'-6"	15
				Slight groundwater seepage encountered @ 3'-6"	
20					20

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4C

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 4

COMPLETION DATE: 12/30/13
JOB NUMBER: 9154-001*1D

SURFACE ELEVATION: +465 ft (±)

WATER LEVEL: 7'
READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
			ML	Gray-brown silt, and fine to coarse sand, trace fine gravel (moist)(stiff)	
5	S1		SM	Brown fine to coarse sand, and silt, little fine to coarse gravel, occasional to frequent cobbles and boulders (moist to wet)(medium dense to dense)	5
10					10
15				Test pit completed @ 12' Moderate groundwater seepage encountered @ 7'	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4D

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 5

COMPLETION DATE: 12/30/13 | SURFACE ELEVATION: +480 ft (±) | WATER LEVEL: 3'-6"

JOB NUMBER: 9154-001*1D | READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				2" Topsoil	
	S1	21.4	SM	Gray-brown fine to coarse sand, and silt, little fine gravel (moist)(medium dense)	
5	S2	22.5	SM	Brown fine to coarse sand, and silt, some fine to coarse gravel (moist to wet)(medium dense)	5
10	S3		SM	Light brown fine to coarse sand, and silt, some fine to coarse gravel, occasional cobbles and boulders (moist)(very dense)	10
15				Test pit completed @ 15' Moderate groundwater seepage encountered @ 3'-6"	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4E

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 6

COMPLETION DATE: 12/30/13 SURFACE ELEVATION: +455 ft (±) WATER LEVEL: 8'-6"

JOB NUMBER: 9154-001*1D READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1	18.3	SM	Gray-brown fine to coarse sand, some silt, some fine gravel (moist)(medium dense)	
5	S2		SM	Gray-brown fine to coarse sand, some silt, little fine to coarse gravel, occasional cobbles and boulders (moist to wet)(dense to very dense)	5
10					10
15				Test pit completed @ 14' Moderate groundwater seepage encountered @ 3' Moderate groundwater seepage encountered @ 8'-6"	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4F

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 7

COMPLETION DATE: 12/30/13 SURFACE ELEVATION: +470 ft (±) WATER LEVEL: 7'

JOB NUMBER: 9154-001*1D READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
0	S1		SM	Light brown fine to coarse sand, and silt, some fine to coarse gravel (moist)(medium dense)	0
	S2	15.7		Gray-brown fine to coarse sand, little silt, some fine to coarse gravel, frequent cobbles and boulders (moist to wet)(dense to very dense)	
5			SM		5
10					10
15				Test pit completed @ 11'-6" Mottling observed @ 3' Rapid groundwater seepage encountered @ 7'	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4G

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 8

COMPLETION DATE: 12/30/13 SURFACE ELEVATION: +450 ft (±) WATER LEVEL: 8'

JOB NUMBER: 9154-001*1D READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1		SM	Light brown fine to coarse sand, and silt, trace fine gravel (moist)(medium dense)	
	S2	21.9		Gray-brown fine to coarse sand, and silt, some fine gravel (moist to wet)(dense)	
5			SM		5
	S3				
10					10
15				Test pit completed @ 12' Moderate groundwater seepage encountered @ 8'	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4H

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 9

COMPLETION DATE: 12/30/13 | SURFACE ELEVATION: +420 ft (±) | WATER LEVEL: 4'

JOB NUMBER: 9154-001*1D | READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1		SM	Light brown fine to medium sand, and silt, trace fine gravel (moist)(medium dense)	
5	S2				5
	S3				
	S4		SM	Gray-brown fine to medium sand, and silt, trace fine gravel (moist)(medium dense)	
10			ML	Light brown clayey silt, some fine to coarse sand, trace fine gravel (wet)(stiff)	10
15				Test pit completed @ 14'-6" Mottling observed @ 9'-6" Moderate groundwater seepage encountered @ 4' Rapid groundwater seepage encountered @ 12'	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4I

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 10

COMPLETION DATE: 12/30/13 SURFACE ELEVATION: +420 ft (±) WATER LEVEL: 1'

JOB NUMBER: 9154-001*1D READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				12" Topsoil	
			ML	Light brown silt, some fine to coarse sand (moist)(stiff)	
	S1		SM	Gray-brown fine to coarse sand, some silt, little fine to coarse gravel (moist)(dense)	
5					5
	S2		SM	Light brown fine to coarse sand, and silt, trace fine to coarse gravel, frequent cobbles and boulders (moist to wet)(dense to very dense)	
10					10
				Test pit completed @ 11'-6" Moderate groundwater seepage encountered @ 1'	
15					15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4J

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 11

COMPLETION DATE: 12/30/13 SURFACE ELEVATION: +470 ft (±) WATER LEVEL: 2'

JOB NUMBER: 9154-001*1D READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1		SM	Gray-brown fine to coarse sand, and silt (moist to wet)(medium dense)	
5					5
	S2		ML	Brown clayey silt, some fine to coarse sand, trace fine gravel, occasional cobbles and boulders (moist)(very stiff)	
10					10
				Test pit completed @ 12'-6"	
15				Moderate groundwater seepage encountered @ 2'	15
20					20

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4K

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 12

COMPLETION DATE: 12/27/13 SURFACE ELEVATION: +430 ft (±) WATER LEVEL: 11'-6"

JOB NUMBER: 9154-001*1D READING DATE: 12/27/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				8" Topsoil	
	S1		SM	Gray-brown fine to coarse sand, some silt, little fine to coarse gravel (moist to wet)(medium dense)	
5	S2		SM	Gray-brown fine to coarse sand, and silt, little fine to coarse gravel (moist)(dense)	5
	S3		SM	Gray fine to medium sand, little silt (wet)(medium dense)	
10	S4		ML	Gray brown clayey silt, and fine to coarse sand, trace fine to coarse gravel (moist to wet)(stiff)	10
	S5				
	S6				
15				Test pit completed @ 13' Slight groundwater seepage encountered @ 11'-6"	15
20					20

NOTES FOR COLUMNS:

1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:

TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4L

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF TEST PIT

TEST PIT NO: 13

COMPLETION DATE: 12/30/13 SURFACE ELEVATION: +410 ft (±) WATER LEVEL: 2'

JOB NUMBER: 9154-001*1D READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				6" Topsoil	
	S1		SM	Gray-brown fine to coarse sand, and silt, trace fine to coarse gravel (moist)(medium dense)	
5	S2		SM	Gray-brown fine to medium sand, and silt, trace fine to coarse gravel, occasional cobbles and boulders (moist)(dense)	5
10	S3				10
15				Test pit completed @ 11'-6" Moderate groundwater seepage encountered @ 2'	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 3M

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF TEST PIT

TEST PIT NO: 14

COMPLETION DATE: 12/30/13 SURFACE ELEVATION: +390 ft (±) WATER LEVEL: 2'

JOB NUMBER: 9154-001*1D READING DATE: 12/30/13

DEPTH	SAMPLES (1)	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH
				4" Topsoil	
	S1		SM	Gray-brown fine to coarse sand, and silt, trace fine gravel (moist to wet)(medium dense)	
5					5
	S2		SP	Brown fine to coarse sand, trace silt, trace fine gravel (moist)(medium dense)	
10	S3		ML	Gray clayey silt, trace fine to coarse sand, trace fine gravel (moist)(very stiff)	10
15				Test pit completed @ 14' Moderate groundwater seepage encountered @ 2' Moderate groundwater seepage encountered @ 6'	15
20					20

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: jhb/mh 1/14

Sheet: 1 of 1 PLATE: 4N

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS More than 50% of material is LARGER than No. 200 Sieve	GRAVEL & GRAVELLY SOILS More than 50% of coarse fraction RETAINED on No. 4 Sieve	CLEAN GRAVELS (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS More than 50% of coarse fraction PASSING a No. 4 Sieve	CLEAN SAND (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines.
			SP	Poorly-graded sands, gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS More than 50% of material is SMALLER than No. 200 Sieve.	SILTS AND CLAYS	Liquid limit LESS than 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS	Liquid limit GREATER than 50	MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			PT	Peat, humus, swamp soils with high organic contents

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

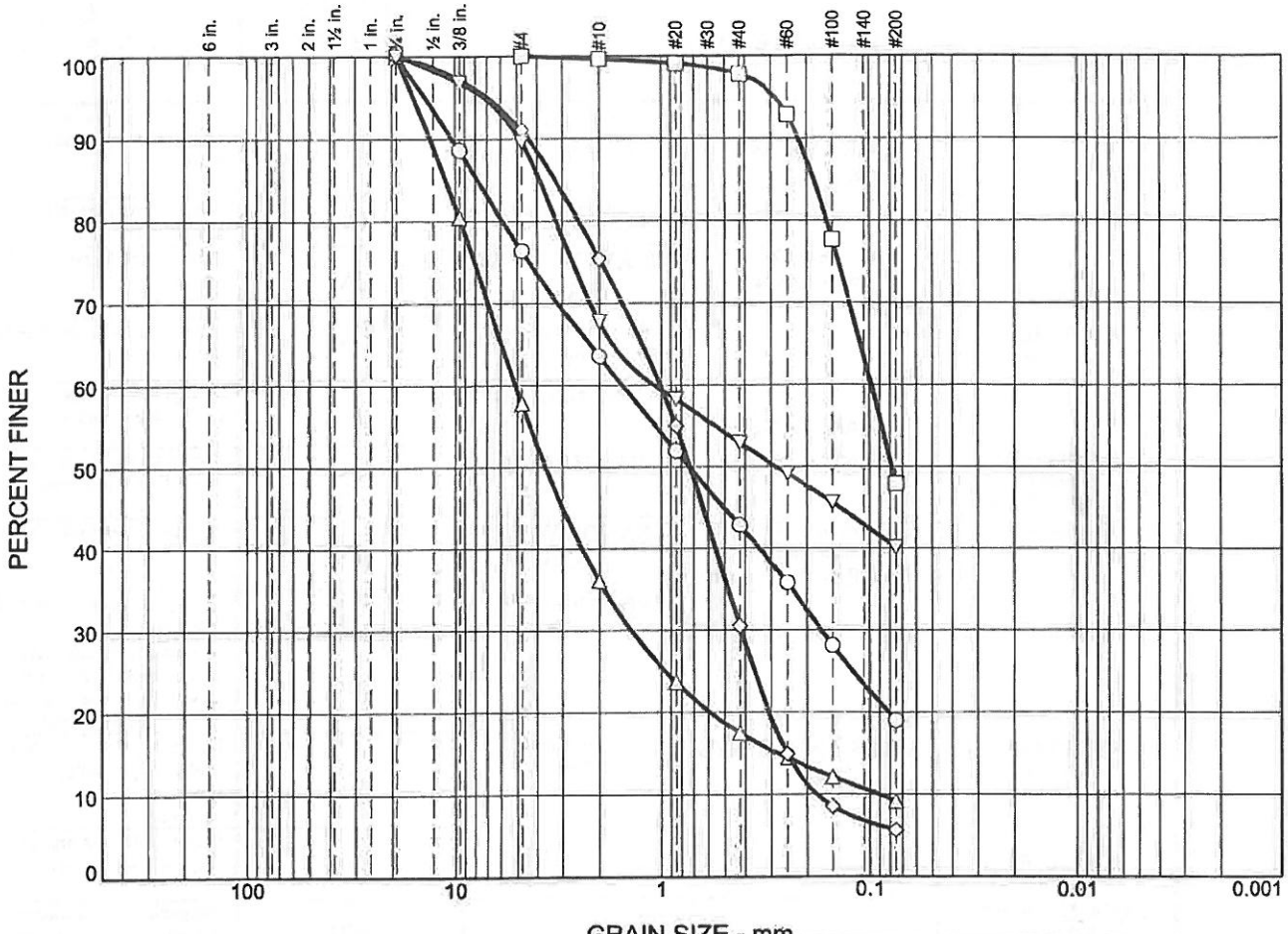
GRADATION*		COMPACTNESS* sand and/or gravel		CONSISTENCY* clay and/or silt	
% Finer by Weight		Relative Density		Range of Shearing Strength in Pounds per Square Foot	
Trace	0% to 10%	Loose	0% to 40%	Very Soft	less than 250
Little	10% to 20%	Medium Dense	40% to 70%	Soft	250 to 500
Some	20% to 35%	Dense	70% to 90%	Medium	500 to 1000
And	35% to 50%	Very Dense	90% to 100%	Stiff	1000 to 2000
				Very Stiff	2000 to 4000
				Hard	Greater than 4000

**Values are from laboratory or field test data, where applicable. When no testing was performed, values are estimated.*

UNIFIED SOIL CLASSIFICATION SYSTEM

SOIL CLASSIFICATION CHART

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	23.7	12.8	20.7	23.9	18.9
□	0.0	0.0	0.0	0.4	1.9	49.8	47.9
△	0.0	0.0	42.2	21.7	18.7	8.2	9.2
◇	0.0	0.0	9.0	15.6	44.9	24.9	5.6
▽	0.0	0.0	10.5	21.8	14.8	12.8	40.1

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-1	S-2	2-4	Fine to coarse Sand, some fine Gravel, little Silt. (MC=11.2%)	SM
□	B-2	S-1	0-2	Fine Sand, and Silt. (MC=17.6%)	SM
△	B-3	S-2	2-4	Fine to coarse Sand, and fine Gravel, trace Silt. (MC=7.6%)	SP-SM
◇	B-3	S-6	10-12	Fine to coarse Sand, trace Silt, trace fine Gravel. (MCV=7.0%)	SP-SM
▽	B-4	S-8	20-22	Fine to coarse Sand, and Silt, little fine Gravel. (MC=9.8%)	SM

Melick-Tully & Associates, P.C.

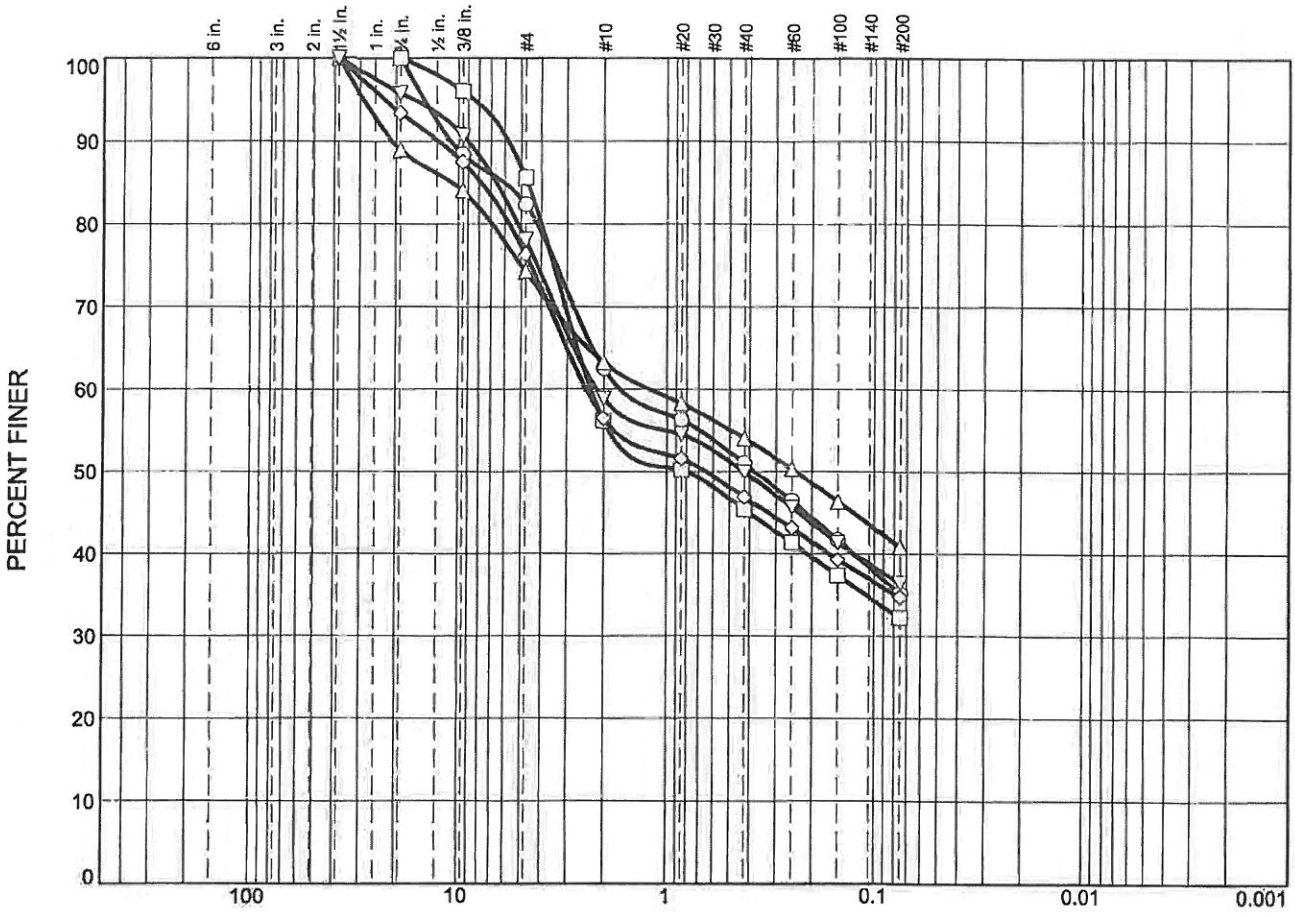
South Bound Brook, NJ

Client: Amy's Kitchen

Project: Proposed Commercial Developoment, Goshen, NY

Project No.: 9154-001 **Plate** 6A

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	17.7	19.8	11.5	15.8	35.2
□	0.0	0.0	14.5	29.4	10.7	13.2	32.2
△	0.0	11.1	14.7	11.0	9.2	13.2	40.8
◇	0.0	6.7	17.0	19.9	9.6	12.1	34.7
▽	0.0	4.3	17.6	19.2	9.0	13.5	36.4

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-6	S-2	2-4	Fine to coarse Sand, and Silt, little fine Gravel. (MC=11.8%)	SM
□	B-6	S-3	5-7	Fine to coarse Sand, some Silt, little fine Gravel. (MC=11.1%)	SM
△	B-8	S-2	2-4	Fine to coarse Sand, and Silt, some f-c Gravel. (MC=11.1%)	SM
◇	TP-1	S-1	3	Fine to coarse Sand, some Silt, some f-c Gravel. (MC=13.0%)	SM
▽	TP-1	S-3	8	Fine to coarse Sand, and Silt, some f-c Gravel. (MC=11.5%)	SM

Melick-Tully & Associates, P.C.

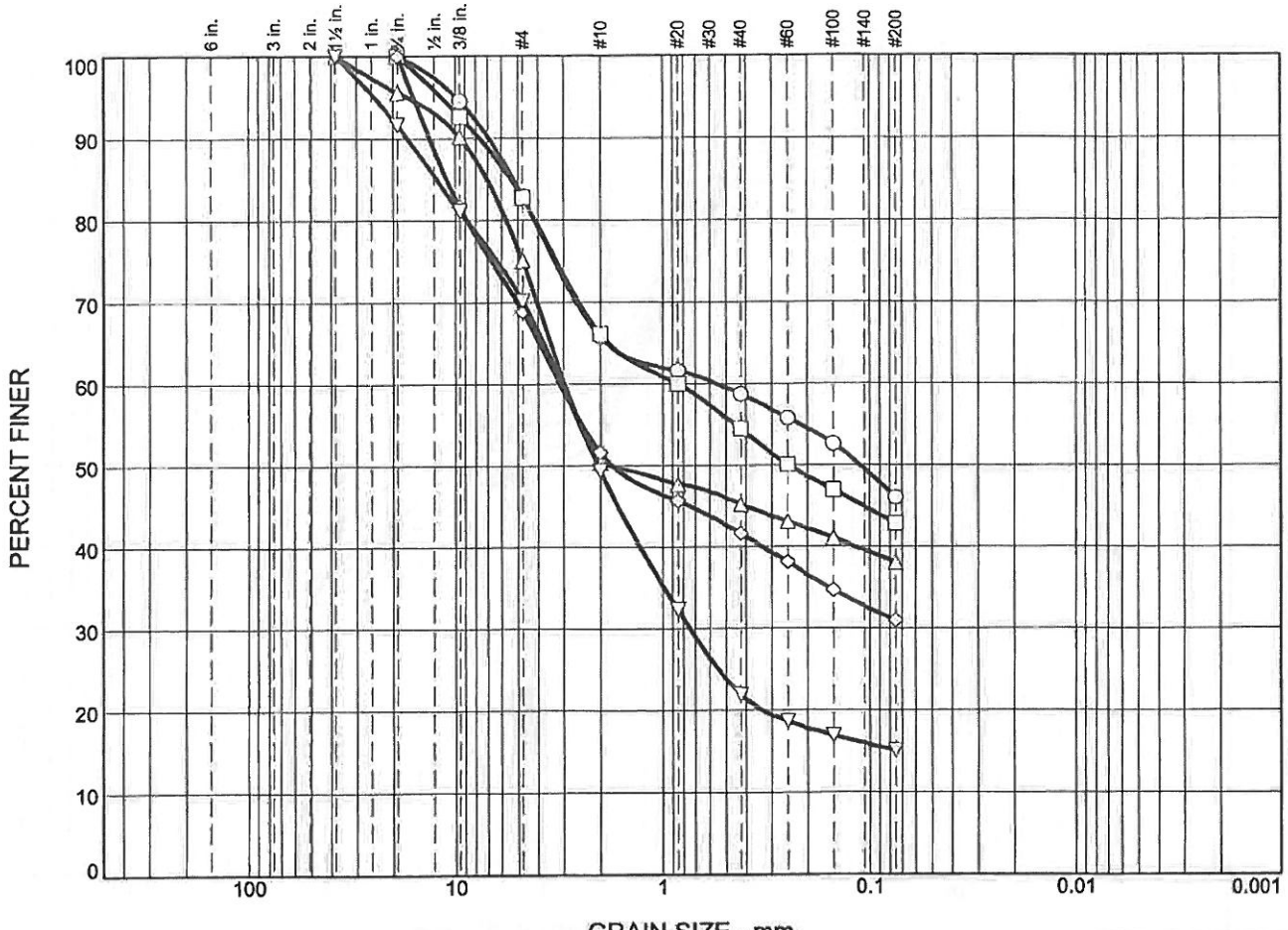
South Bound Brook, NJ

Client: Amy's Kitchen

Project: Proposed Commercial Developoment, Goshen, NY

Project No.: 9154-001 **Plate** 6B

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	17.1	17.1	7.1	12.7	46.0
□	0.0	0.0	17.3	16.6	11.7	11.5	42.9
△	0.0	4.5	20.4	24.8	5.1	7.1	38.1
◇	0.0	0.0	31.2	17.2	10.0	10.6	31.0
▽	0.0	8.4	21.4	20.8	27.5	6.8	15.1

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-3	S-1	2	Fine to coarse Sand, and Silt, little fine Gravel. (MC=18.8%)	SM
□	TP-5	S-1	1.5	Fine to coarse Sand, and Silt, little fine Gravel. (MC=21.4%)	SM
△	TP-5	S-2	5.5	Fine to coarse Sand, and Silt, some f-c Gravel. (MC=22.5%)	SM
◇	TP-6	S-1	1	Fine to coarse Sand, some Silt, some fine Gravel. (MC=18.3%)	SM
▽	TP-7	S-2	3	Fine to coarse Sand, some f-c Gravel, little Silt. (MC=15.7%)	SM

Melick-Tully & Associates, P.C.

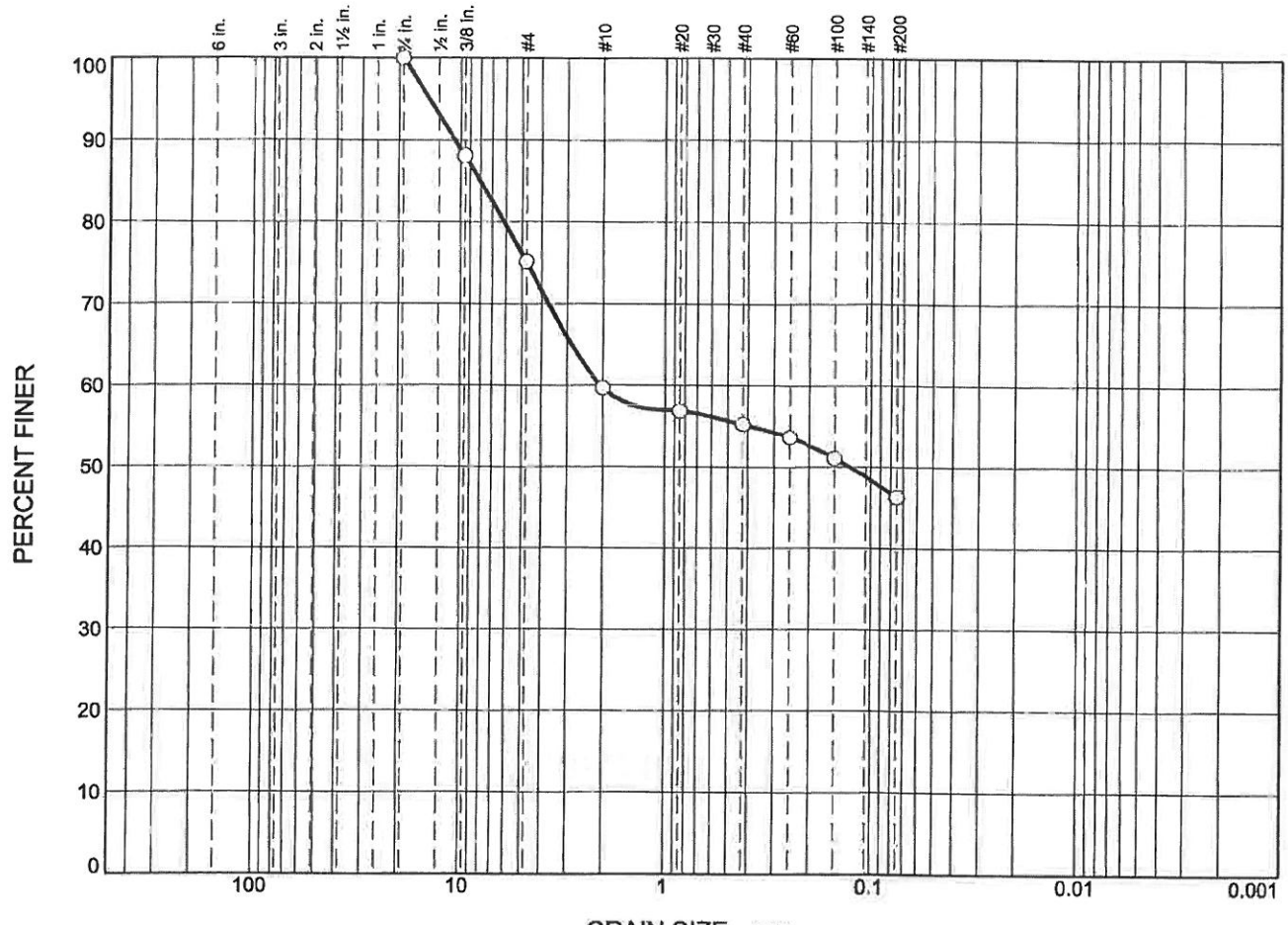
South Bound Brook, NJ

Client: Amy's Kitchen

Project: Proposed Commercial Developoment, Goshen, NY

Project No.: 9154-001 **Plate** 6C

Gradation Curve(s)



	% Cobbles	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	24.9	15.4	4.5	8.9	46.3

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	TP-8	S-2	3	Fine to coarse Sand, and Silt, some fine Gravel. (MC=21.9%)	SM

Melick-Tully & Associates, P.C.

South Bound Brook, NJ

Client: Amy's Kitchen

Project: Proposed Commercial Develoopment, Goshen, NY

Project No.: 9154-001

Plate 6D

APPENDIX

APPENDIX

Limitations

A. Subsurface Information

Locations: The locations of the explorations were approximately determined by tape measurement from an untitled plan provided to us by Lanc & Tully, P.C. Elevations of the explorations were approximately determined by interpolation between contours shown on topographic plans provided to us by the site engineer. The locations and elevations of the explorations should be considered accurate only to the degree implied by the method used.

Interface of Strata: The stratification lines shown on the individual logs of the subsurface explorations represent the approximate boundaries between soil types, and the transitions may be gradual.

Field Logs/Final Logs: A field log was prepared for each exploration by a member of our staff. The field log contains factual information and interpretation of the soil conditions between samples. Our recommendations are based on the final logs as shown in this report and the information contained therein, and not on the field logs. The final logs represent our interpretation of the contents of the field logs, and the results of the laboratory observations and/or tests of the field samples.

Water Levels: Water level readings have been made in the explorations at times and under conditions stated on the individual logs. These data have been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater will occur due to variations in rainfall, temperature, and other factors.

Pollution/Contamination: Unless specifically indicated to the contrary in this report, the scope of our services was limited only to investigation and evaluation of the geotechnical engineering aspects of the site conditions, and did not include any consideration of potential site pollution or contamination resulting from the presence of chemicals, metals, radioactive elements, etc. This report offers no facts or opinions related to potential pollution/contamination of the site.

Environmental Considerations: Unless specifically indicated to the contrary in this report, this report does not address environmental considerations which may affect the site development, e.g., wetlands determinations, flora and fauna, wildlife, etc. The conclusions and recommendations of this report are not intended to supersede any environmental conditions which should be reflected in the site planning.

B. Applicability of Report

This report has been prepared in accordance with generally accepted soils and foundation engineering practices for the exclusive use of Amy's Kitchen for specific application to the preliminary design of the proposed (project). No other warranty, expressed or implied, is made.

A more detailed subsurface investigation should be performed at the site prior to proceeding with final design. This investigation should consider the final locations and design features of the proposed facilities and should serve to confirm and/or further define the subsurface conditions and recommendations discussed in this preliminary study.

AMY'S KITCHEN – GOSHEN, NY
WETLAND DELINEATION REPORT OF THE VER HAGE, LIPOFF, AND STRONG FARM PROPERTIES

October 2015

Prepared for:

Amy's Kitchen

1650 Corporate Circle, Suite 200

Petaluma, CA 94954-6970

Prepared by:

AKRF, Inc.

34 South Broadway

White Plains, NY 10601

EXECUTIVE SUMMARY

In June and July of 2015, AKRF, Inc. conducted a federal wetland delineation of three (3) properties proposed for development as the future location of an Amy's Kitchen manufacturing plant and conference center. These properties included the ver Hage property, Lipoff property, and Strong Farm property in Goshen, New York. Six (6) wetlands were identified onsite and are documented in this report. Wetlands B, C, E and F are associated with the adjacent Wallkill River and Cheechunk Creek, both perennial streams that are "relatively permanent waters". Wetlands A and D are depressional wetlands which will require a "significant nexus determination" from the U.S. Army Corps of Engineers (USACE) in order to determine their federal regulatory status. This report includes descriptions of all wetlands delineated onsite, wetland/upland data sheets, photographs, and accompanying figures.

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A. INTRODUCTION

Amy's Kitchen is evaluating the Echo Lake property, ver Hage property, Lipoff property, and Strong Farm property in Goshen, New York, as the future location of an Amy's Kitchen manufacturing plant and conference center. See **Figure 1: Regional Location**. The following report presents the results of a federal wetland delineation completed by AKRF, Inc. on the ver Hage, Lipoff, and Strong Farm properties. Wetlands of the Echo Lake property were delineated by Terrestrial Environmental Specialists, Inc. (TES) in 2009 and are described in a separate wetland delineation report.

The properties that comprise the Project Site are largely undeveloped. The ver Hage property was recently stripped of top-soil, used to cap the nearby Al Turi landfill. The Lipoff property is currently vacant forested land. The Strong Farm property is currently used for agriculture and rural residences.

As show in **Figure 2: Site Location**, the Project Site is located adjacent to the Wallkill River, with the Echo Lake property located on the river's western bank and the Ver Hage, Lipoff, and Strong Farm properties on the river's eastern bank. Cheechunk Creek is a second, smaller stream that crosses the Ver Hage and Lipoff properties, flowing from east-to-west and entering the Wallkill River at the Lipoff property. The Wallkill River is a perennial, fifth-order stream within that portion of the river's reach bordering the Project Site. The Wallkill flows northeastwards for 94 miles from Sparta, New Jersey ultimately discharging to the Hudson River (a TNW) in Kingston, New York. The Wallkill has an overall watershed size of 785 square miles. It is classified as "Class C" by NYSDEC upstream (south) of its confluence with Cheechunk Creek and "Class B" downstream (north) of its confluence with Cheechunk Creek. Cheechunk Creek is a perennial, second-order stream classified as "Class C" by the NYSDEC. The Wallkill and Cheechunk are low gradient, slow moving streams that can be expected to contain a substrate dominated by finer material (silt).

B. WETLAND DELINEATION METHODOLOGY

AKRF delineated wetlands on the project site in June and July 2015 to identify wetland areas with the potential to be regulated by the US Army Corps of Engineers (USACE) as waters of the US, and their boundaries. This memorandum outlines the details of the wetland delineation.

Prior to the wetlands investigation, the New York State Department of Environmental Conservation (NYSDEC) and United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps were reviewed to determine locations of state-mapped or NWI-mapped wetlands on and in the vicinity of the project site. The Natural Resources Conservation Service (NRCS) soils maps were also reviewed to determine soil types within the project site, particularly with respect to soil series identified as hydric soils. An AKRF wetland scientist conducted a wetland delineation of the project in June and July 2015, using the United States Army Corps of Engineers (USACE) wetland delineation methodology.[1] Methodology pertaining

[1] Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Miss; U.S. Army Corps of Engineers. 2011. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (version 2.0), ed. J.S. Wakeley, R.W. Lichvar, C.V. Noble, and J.F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

to the three USACE wetland indicators (i.e., hydrology, soils, and hydrophytic vegetation) is described below. The USACE "Wetland Determination Data Form – Northcentral and Northeast Region" (2012) was used to document the wetlands observed on the project site, and photographs were taken of observed wetland areas.

HYDROLOGY AND SOILS

The hydrology of the site was characterized using aerial photographs, site observations, and an auger to determine soil saturation and/or a high water table. Soils were characterized with the use of an auger and a Munsell Soil Color Chart. During the wetlands assessment, both hydrology and soils observations were made during a period of dry weather.

VEGETATION

The USACE *Northcentral and Northeast 2014 Regional Wetland Plant List* was used to determine the wetland/upland status of the plant identified on the project site. Percent cover was documented in the tree, vine, shrub, and herbaceous strata. In most instances, a 30-foot (ft) radius plot was established to document percent cover of the tree and vine strata. Within this 30-ft plot, a 15-ft radius plot was established for the measurement of shrubs and saplings. For species in the herbaceous stratum, five 3.28-ft by 3.28-ft square plots were sampled within the 30-ft tree and vine plot and averaged together. The vegetated communities immediately east of the Wallkill River within the project site occur as narrow bands along the topographic gradient of the riverbank. There are other areas of the project site which are similarly constrained to narrow bands by the surrounding topography. Thus, the 15-ft and 30-ft radius plots typically used in the standard USACE methodology for the documentation of saplings/shrubs and trees/vines, respectively, would have resulted in overlap between the upland and wetland monitoring areas. As such, the standard methodology for sampling vegetation was adapted to fit the site conditions by sampling elongated rectangular plots within these riparian communities.

C. EXISTING CONDITIONS

MAPPING

NATIONAL WETLANDS INVENTORY-MAPPED WETLANDS

NWI wetland maps indicate a single freshwater wetland within the ver Hage property (see **Figure 3: NWI Wetlands)**, a palustrine forested wetland with broad-leaved deciduous vegetation that is seasonally flooded/saturated (PFO1E). Site inspection confirms this mapped wetland type and approximate location.

There are two NWI-mapped wetlands within the Lipoff property, a riverine low gradient perennial wetland with an unconsolidated bottom that is permanently flooded (R2UBH) and a palustrine semipermanently flooded wetland with emergent persistent vegetation that has been excavated (PEM1Fx). Site inspection confirms these mapped wetland types and approximate locations.

There are eight NWI-mapped wetlands within the Strong Farm property, the continuation of the R2UBH within the Lipoff property, a palustrine permanently flooded wetland with an unconsolidated bottom that has been excavated (PUBHx), a palustrine permanently flooded wetland with an unconsolidated bottom that has been diked/impounded (PUBHh), and five

palustrine seasonally flooded wetlands with emergent persistent vegetation (PEM1C). Site inspection confirms the mapped wetland type and approximate location for all but three of the PEM1C wetlands, which were not observed within the Strong Farm property.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION-MAPPED WETLANDS

There are no NYSDEC-mapped freshwater wetlands within the ver Hage property, Lipoff property, or Strong Farm property. NYSDEC Wetland MD-24 is mapped on a separate portion of the Echo Lake property as shown in **Figure 4: NYSDEC Freshwater Wetlands and Stream Classification**.

NATURAL RESOURCES CONSERVATION SERVICE -MAPPED SOILS

Figure 5: Soils shows the NRCS soil mapping units on the Project Site. Within the ver Hage property soils are mapped as "RhC – Riverhead sandy loam, 8 to 15 percent slopes," "Ada-Allard silt loam, 0 to 3 percent slopes," "Su – Suncook sandy loam," "My – Middlebury silt loam," "CnB – Chenango gravelly silt loam, 3 to 8 percent slopes," and "ErB – Erie gravelly silt loam, 3 to 8 percent slopes" by NRCS. The NRCS lists one of the series mapped for the ver Hage property as hydric: My – Middlebury silt loam, one of the three parameters that determine whether an area falls under USACE jurisdiction as a wetland.

Within the Lipoff property soils are mapped as "Su – Suncook sandy loam," "Pg – Pits, gravel," "ErA – Erie gravelly silt loam, 0 to 3 percent slopes," "ErB – Erie gravelly silt loam, 3 to 8 percent slopes," and "Tg – Tioga silt loam" by NRCS. There are no NRCS-hydric listed soils mapped for the Lipoff property.

Within the Strong Farm property soils are mapped as "Su – Suncook sandy loam," "Tg – Tioga silt loam," "RhB – Riverhead sandy loam, 3 to 8 percent slopes," "Pg – Pits, gravel," "ErA – Erie gravelly silt loam, 0 to 3 percent slopes," "HoC – Hoosic gravelly sandy loam, 8 to 15 percent slopes," "MdB – Mardin gravelly silt loam, 3 to 8 percent slopes," "MdC – Mardin gravelly silt loam, 8 to 15 percent slopes," "MdD – Mardin gravelly silt loam, 15 to 25 percent slopes," "Ma – Madalin silt loam," "My – Middlebury silt loam," "UnC – Unadilla silt loam, 8 to 15 percent slopes," "AC – Alden extremely stony soils," and "BnC – Baath-Nassau channery silt loam, 8 to 15 percent slopes." NRCS lists two of the series mapped for the Strong Farm property as hydric: My – Middlebury silt loam and AC – Alden extremely stony soils, one of the three parameters that determine whether an area falls under USACE jurisdiction as a wetland.

ONSITE DELINEATION

A total of six wetlands (A to F) were delineated in June and July 2015 on the ver Hage, Lipoff, and Strong Farm properties. These are shown in **Figures 6: Surveyed Wetlands**. Representative photos of all wetlands delineated onsite are shown in **Figure 7: Photo Location Key** and **Figures 8a-8f: Representative Site Photographs**.

WETLAND A

Wetland A is a relatively small depressional shallow emergent freshwater marsh wetland located along the southern boundary of the ver Hage property, between a gravel road and the toe of a slope. It is vegetated with a mixture of graminoid species (see **Figure 8a**). The soils, hydrology, and hydrophytic vegetation of Wetland A were documented by sampling point A-1, and are

described below. Wetland A appears to be an isolated wetland with no apparent inlets or outlets. As a depressional wetland a "significant nexus" determination conducted by the USACE is necessary to confirm the federal regulatory status of Wetland A.

Sampling Point A-1

The Data Form for Wetland A depicts the dominant species associated with this sampling point. These species include Eastern cottonwood (*Populus deltoids)* (FAC) for the tree layer, reed canary grass (*Phalaris arundinacea*) (FACW) for the herbaceous layer, and Virginia creeper (*Parthenocissus quinquefolia*) (FACW) for the woody vine layer.

Soils of this wetland meet the criteria of "F3 Depleted Matrix." The primary hydrology indicator is "B8 Sparsely Vegetated Concave Surface" and the secondary hydrology indicator is "D2 Geomorphic position," since the elevation of the wetland was in a depression compared to the surrounding area (see Data Form Wetland A-1).

UPLAND A

This upland area is located between Wetland A and the gravel road, as described above in "Wetland A." The dominant species associated with the upland area is common mugwort (*Artemisia vulgaris*) (UPL), in the herbaceous layer. The vegetation, soils, and hydrology of this area do not meet the USACE criteria for a wetland. For these reasons, this area was documented as upland (see Data Form for Upland A).

WETLAND B

Wetland B is associated with the Wallkill River, mapped as R2UBH (see **Figure 3**), located in the ver Hage, Lipoff, and Strong Farm properties. This wetland is a narrow, forested freshwater wetland located within the floodplain of the Wallkill River that is limited by the steepness of the riverbank (see **Figure 8b**). The Wallkill River is a perennial Relatively Permanent Water (RPW) water. The soils, hydrology, and hydrophytic vegetation of Wetland B were documented at sampling point B-1, and are described below.

Sampling Point B-1

The Data Form from for Wetland B describes the dominant species associated with this wetland. The dominant species for the tree, shrub, and herbaceous layers are eastern cottonwood (*Populus deltoides*) (FAC), American sycamore (FACW), and Japanese stiltgrass (*Microstegium vimineum*) (FAC) and northern white violet (*Viola pallens*) (OBL), respectively.

The soils of this wetland meet the criteria of "F6 Redox Dark Surface." The primary hydrology indicators are "B2 Sediment Deposits" and "C3 Oxidized Rhizospheres on Living Roots" (see Data Form for Wetland B-1).

UPLAND B

Data for the upland area adjacent to Wetland B was taken from the forested area adjacent to the riverbank of the Wallkill River. The dominant species in this upland area are slippery elm (*Ulmus rubra*) (FAC) and American sycamore (FACW) for the tree layer, slippery elm (FAC) and black cherry (*Prunus serotina*) (FACU) for the shrub layer, garlic mustard (*Alliaria petiolata*) (FACU) and Virginia knotweed (*Persicaria virginiana*) (FAC) for the herbaceous layer, and Virginia creeper (FACW) for the woody vine layer. The vegetation, soils, and

hydrology of this area do not meet the USACE criteria for a wetland. For these reasons, this area was documented as upland (see Data Form for Upland B).

WETLAND C

Wetland C is a forested wetland located within the floodplain of Cheechunk Creek, which does not have a steep riverbank and is thus less confined than Wetland B (see **Figure 8c**). The freshwater forested riparian wetland associated with Cheechunk Creek is also associated with the NWI-mapped PFO1E wetland shown in **Figure 3**. Cheechunk Creek is a perennial Relatively Permanent Water (RPW). This wetland is located on the northeastern portion of the ver Hage property and diagonally cuts the Lipoff property from the northwest to southeast. On the ver Hage property, stream flow within the channel of Cheechunk Creek had been diverted to a manmade channel located within the northern portion of the ver Hage property. This diversion had been restored at the time of the wetland delineation. The diversion may have affected the hydrology and vegetation of Wetland C. The soils, hydrology, and hydrophytic vegetation of Wetland C were documented by sampling points C-1, C-2, and C-3, and are described below.

Sampling Point C-1

The dominant species documented at sampling point C-1 are green ash (*Fraxinus pennsylvanica*) (FACW) in the tree stratum, moneywort (*Lysimachia nummularia*) (FACW) and orange jewelweed (*Impatiens capensis*) (FACW) in the herbaceous stratum, and grape (*Vitis* sp) (FAC-OBL) in the woody vine stratum.

The soils of this wetland meet the criteria of "F6 Redox Dark Surface." The primary hydrology indicator is "B1 Water Marks" and the secondary hydrology indicators are "B16 Moss Trim Lines" and "D2 Geomorphic Position" (see Data Form for Wetland C-1).

Sampling Point C-2

The dominant tree species documented at sampling point C-2 are pin oak (*Quercus palustris*) (FACW) and green ash (FACW), the dominant shrub species is silky dogwood (*Cornus amomum*) (FACW), the dominant herbaceous species are Japanese stiltgrass (FAC) and moneywort (FACW), and the dominant woody vine species are poison ivy (*Toxicodendron radicans*) (FAC) and Virginia creeper (FACU).

Soils of this wetland meet the criteria of "F3 Depleted Matrix." The primary hydrology indicators are "A2 High Water Table" which was observed to begin six inches from the soil surface, "A3 Saturation" which was observed to begin within six inches from the soil surface, and "B9 Water-Stained Leaves." The secondary hydrology indicator is "D3 Shallow Aquitard" (see Data Form for Wetland C-2).

Sampling Point C-3

The Data Form for Wetland C-3 depicts the dominant species associated with this sampling point. These species include red maple (*Acer rubrum*) (FAC), slippery elm (FAC), and green ash (FACW) in the tree layer, and clearweed (*Pilea pumila*) (FACW) in the herbaceous layer.

The soils of this wetland meet the criteria of "F6 Redox Dark Surface." The primary hydrology indicator is "B1 Water Marks" and the secondary hydrology indicator is "D2 Geomorphic Position" (see Data Form for Wetland C-3).

UPLAND C

Data for the upland portion of this wetland was taken from the forested area adjacent to the riverbank of Cheechunk Creek. The dominant species in the tree stratum of this upland area are pin oak (FACW) and slippery elm (FAC). Buckthorn (*Rhamnus cathartica*) (FAC) is dominant in the shrub stratum and poison ivy (FAC) is dominant in the woody vine layer. The vegetation, soils, and hydrology of this area do not meet the USACE criteria for a wetland. The only hydrology indicator present is the secondary "B16 Moss Trim Lines." For these reasons, this area was documented as upland (see Data Form for Upland C).

WETLAND D

Wetland D is a depressional shallow emergent freshwater marsh associated with NWI-mapped wetland PEM1Fx (see **Figure 3**), and is located along the northeastern boundary of the Lipoff property. It is vegetated with a mixture of graminoid species (see **Figure 8d**). The soils, hydrology, and hydrophytic vegetation of Wetland D are documented by sampling point D-1, and are described below. Wetland D appears to be an isolated wetland, although there may be an infrequent over-land connection to Cheechunk Creek based on the topography of the area. As a depressional wetland a "significant nexus" determination conducted by the USACE is necessary to confirm the federal regulatory status of Wetland D.

Sampling Point D-1

The dominant species documented at sampling point D-1 are buttonbush (*Cephalanthus occidentalis*) (OBL) in the shrub layer, and peat moss (*Sphagnum* sp) (OBL), rice cutgrass (*Leersia oryzoides*) (OBL), and common beggar ticks (*Bidens frondosa*) (FACW) in the herbaceous layer.

The soils of this wetland meet the criteria of "F1 Loamy Mucky Mineral." The primary hydrology indicators are "A1 Surface Water," "A2 High Water Table" which was observed to begin two inches from the soil surface, "A3 Saturation" which was observed at the soil surface, and "B9 Water-Stained Leaves." The secondary hydrology indicator is "D2 Geomorphic Position."

UPLAND D

This upland is located between Wetland D and the agricultural field located to the north. The dominant species in the tree stratum of this upland area are pin oak (FACW), black cherry (FACU), red maple (FAC). Buckthorn (FAC) is dominant in the shrub stratum, Virginia creeper (FACU) and poison ivy (FAC) are the dominant herbaceous layer species, and grape (FAC to OBL) and poison ivy (FAC) are dominant in the woody vine layer. The vegetation, soils, and hydrology of this area do not meet the USACE criteria for a wetland. For these reasons, this area was documented as upland (see Data Form for Upland D).

WETLAND E

Wetland E, associated with the NWI-mapped PUBHx (see **Figure 3**), is a depressional vernal pool located east of the Wallkill River, on the northwest portion of the Strong Farms property (see **Figure 8e**). The soils, hydrology, and hydrophytic vegetation on Wetland E were documented at sampling point E-1, and are described below. Wetland E is adjacent to the

Wallkill River and there is likely a seasonal connection between the Wallkill River and Wetland E.

Sampling Point E-1

The Data Form from Wetland E depicts the dominant species associated with this sampling point. These species include green ash (FACW) for the shrub stratum, and clearweed (FACW) and mild water-pepper (*Persicaria hydropiper*) (OBL) for the herbaceous stratum.

Soils of this wetland meet the criteria of "F3 Depleted Matrix." The primary hydrology indicators are "A3 Saturation," which was observed to begin within two inches from the soil surface, "B7 Inundation Visible on Aerial Imagery," and "B9 Water-Stained Leaves." The secondary hydrology indicator is "D2 Geomorphic Position."

UPLAND E

This upland area is located between wetland E and the Wallkill River. The dominant species associated with the upland area are sugar maple (*Acer saccharum*) (FACU) and white mulberry (*Morus alba*) (FACU) for the tree layer, buckthorn (FAC) and slippery elm (FAC) for the shrub layer, poison ivy (FAC) and multifloral rose (*Rosa multiflora*) (FACU) for the herbaceous layer, and grape (FAC to OBL) for the woody vine layer. The vegetation, soils, and hydrology of this area does not meet the USACE criteria for a wetland. For this reason, this area was documented as upland (see Data Form for Upland D).

WETLAND F

Wetland F, located in the northern portion of the Strong Farms property, is the largest of the all the wetlands delineated. This sedge meadow wetland is seasonally connected to the Wallkill River via agricultural ditches, which also account for its convoluted path (see **Figure 8f**). The NWI-mapped wetlands associated with this wetland are PEM1C and PUBHh (see **Figure 3**). The soils, hydrology, and hydrophytic vegetation on Wetland F were documented at sampling points F-1 and F-2, and are described below.

Sampling Point F-1

The dominant species documented at sampling point F-1 are red-panicle dogwood (*Cornus racemosa*) (FAC) in the tree layer, and tussock sedge (*Carex stricta*) (OBL) and purple loosestrife (*Lythrum salicaria*) (OBL) in the herbaceous layer.

The soils of this wetland meet the criteria of "F6 Redox Dark Surface." The primary hydrology indicators are "A1 Surface Water" which was observed one inch from the soil surface, "A2 High Water Table" which was observed to begin 1.25 inches from the soil surface, "A3 Saturation" which was observed at the soil surface. The secondary hydrology indicators are "B10 Drainage Patterns" and "D4 Microtopographic Relief" (see Data Form for Wetland F-1).

Sampling Point F-2

The dominant species in the herbaceous stratum documented at sampling point F-2 is orange jewelweed (*Impatiens capensis*).

The soils of this wetland meet the criteria of "F6 Redox Dark Surface." The primary hydrology indicator is "A3 Saturation," which was observed to begin one inch from the soil surface (see Data Form for Wetland F-2).

UPLAND F-1

This upland is located between Wetland F and the cropland located adjacent to the open pond in the central portion of this wetland. The dominant species associated with the upland area is the wrinkle-leaf goldenrod (*Solidago rugosa*) (FAC) in the herbaceous layer. The soils of this area meet the criteria of "F3 Depleted Matrix." The hydrology of this area does not meet the USACE criteria for a wetland. For this reason, this area was documented as upland (see Data Form for Upland F-1).

UPLAND F-2

This upland is located within croplands located adjacent to the southeastern portion of Wetland F. The dominant species associated with the upland area are tall thistle (*Cirsium altissimum*) (UPL) and orchard grass (*Dactylis glomerata*) (FACU) in the herbaceous layer. The vegetation, soils, and hydrology of this area do not meet the USACE criteria for a wetland. For these reasons, this area was documented as upland (see Data Form for Upland F-2).

D. SUMMARY

As described above, six vegetated freshwater wetlands (two depressional shallow freshwater emergent marsh [Wetlands A and D], and two forested riparian wetlands [Wetlands B and C], one depressional vernal pool [Wetland E], and one sedge meadow [Wetland F]) were identified, as per the USACE wetland delineation methodology, within the ver Hage, Lipoff, and Strong Farm properties. Wetlands B through F would be expected to be under the jurisdiction of the USACE. Any disturbance to these wetlands or any construction in Waters of the United States (e.g., Wallkill River or Cheechunk Creek) would be expected to require Section 401 and 404 permits. Wetland A may or may not be regulated by USACE due to its landscape position and functional relationship to other waters/wetlands, and would require a Jurisdictional Determination site inspection from the USACE to make the determination. Upon completion of the wetland delineation for these three properties, AKRF would coordinate with USACE to facilitate the necessary site inspection. Once the wetland/waters boundaries are confirmed by the USACE, they are valid for a period of five (5) years. As federal wetlands only, the USACE and NYSDEC do not regulate a 100' adjacent area (buffer) around them.

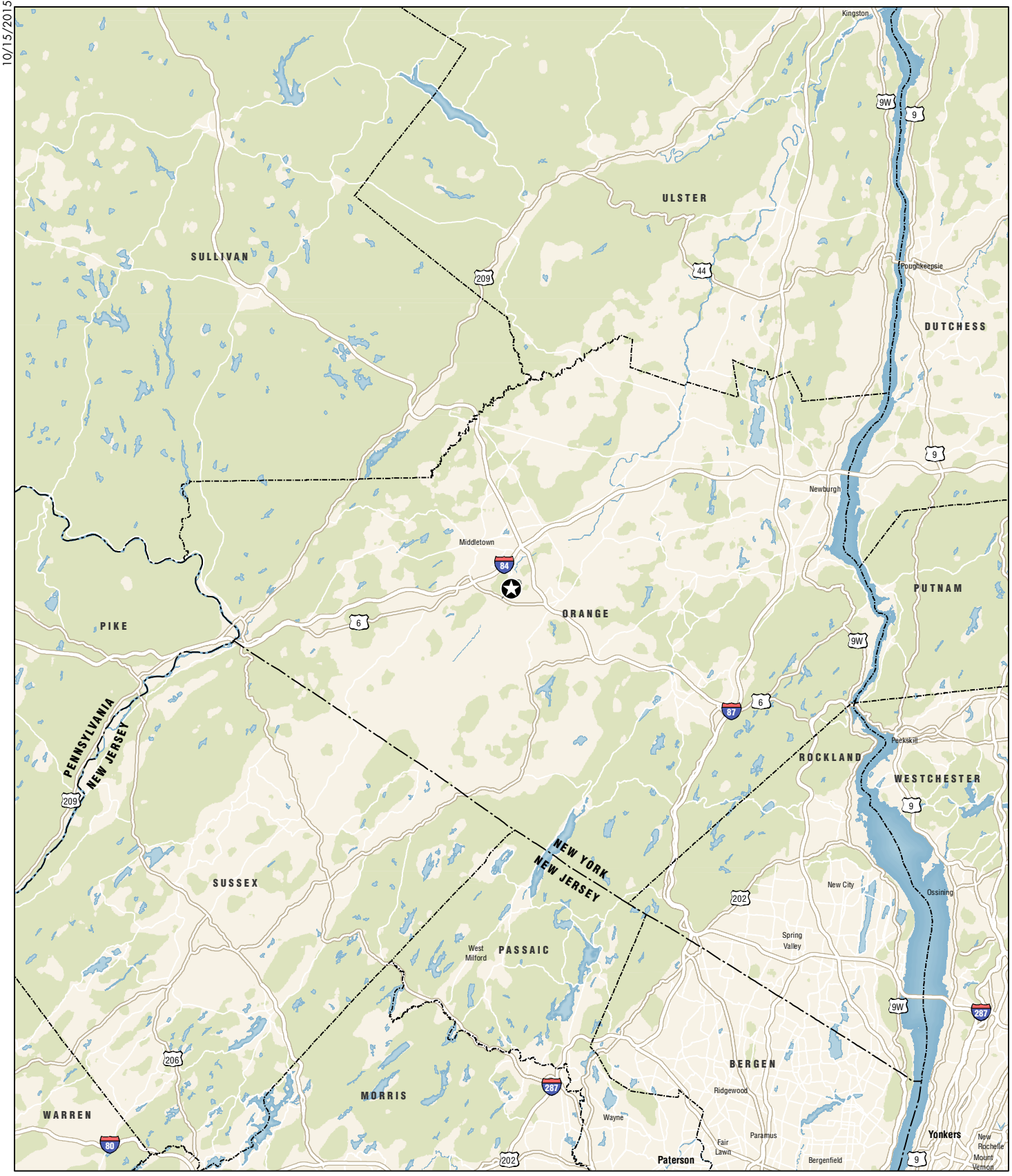
E. REGULATORY DISCUSSION

FEDERAL WETLANDS

The onsite wetlands delineated by AKRF meet the definition of "wetlands", "relatively permanent waters" or contain flood waters (inundation) and are connected to wetlands – all of which confer regulatory jurisdiction over them in accordance with Sections 401/404 of the Clean Water Act. These delineated boundaries of the site's waters/wetlands must be confirmed by USACE during an onsite field inspection – a "jurisdictional determination" (JD) site visit. As discussed above, one wetland – Wetland A – despite meeting the physical requirements may not be regulated by USACE due to their apparent isolated condition. This area is not clearly connected to other "waters of the U.S." The final determination of which delineated wetlands and waters onsite are federally-regulated will be made by USACE.

Figures

10/15/2015



Project Location

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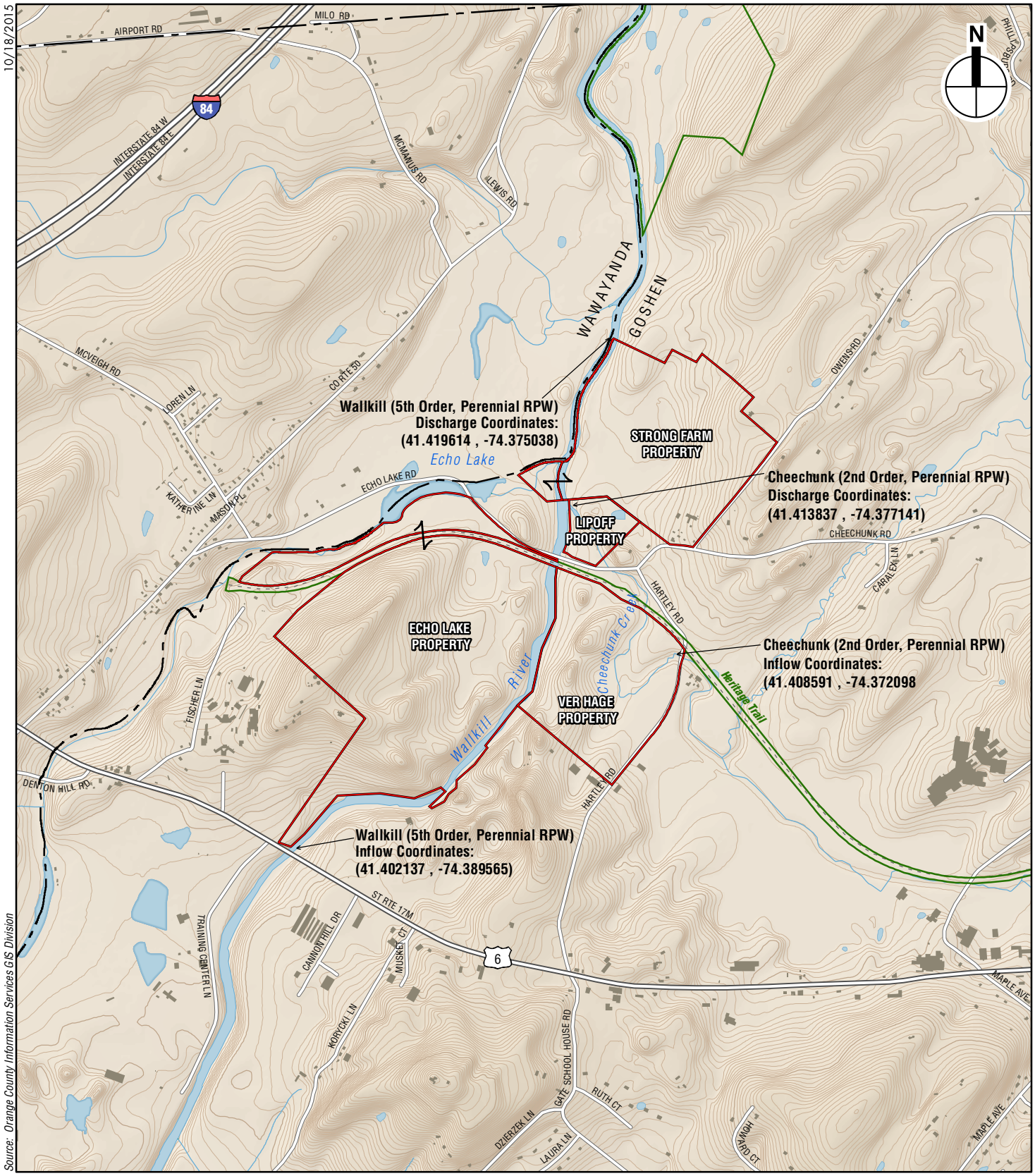
Regional Location
Figure 1



Project Site

0 2,000 FEET

Coordinates of Project Site:
Lat: 41.408834; Long: -74.376841
UTM (18T): 552083.58 E; 4584330.47 N

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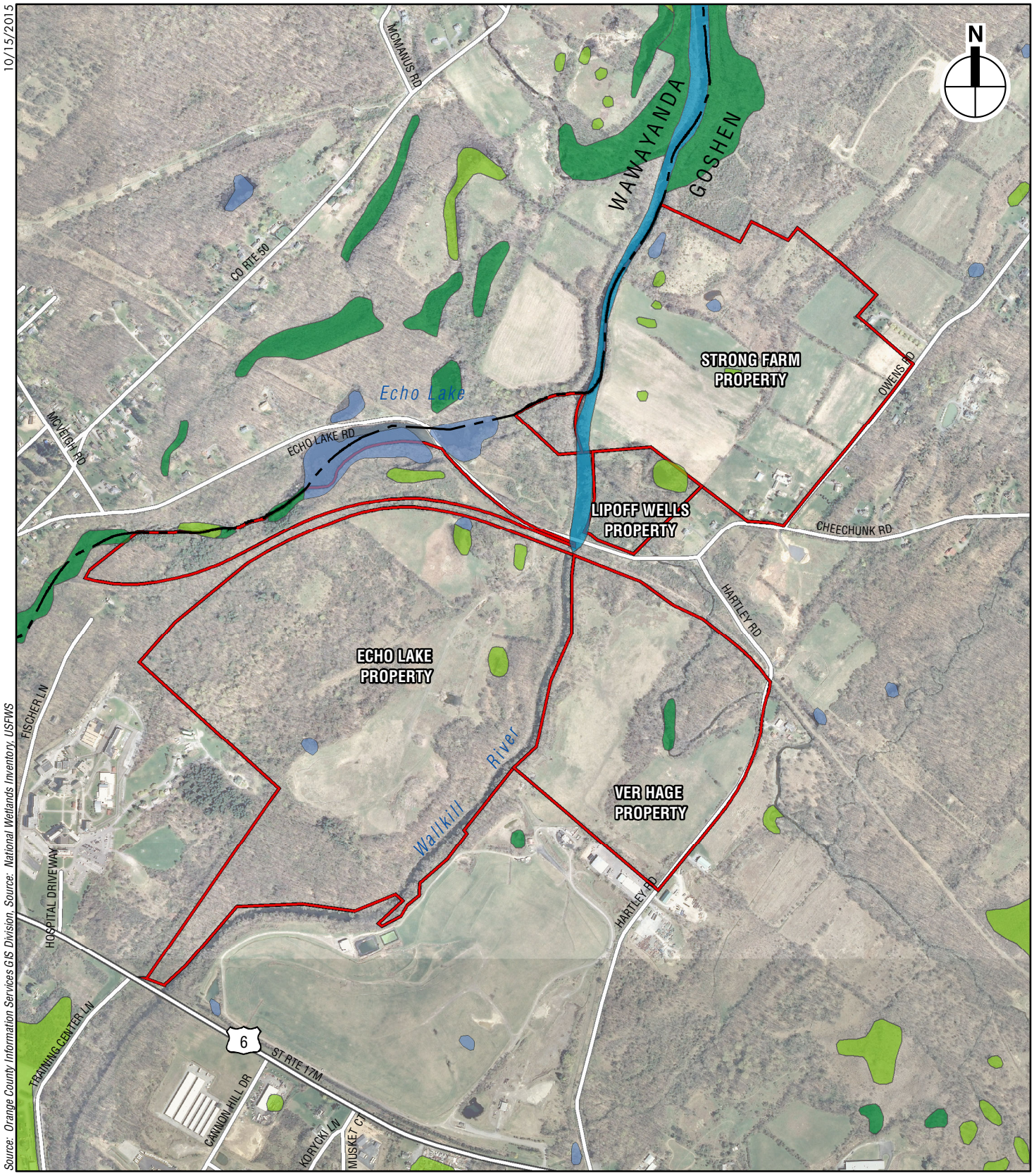
Project Location
Figure 2



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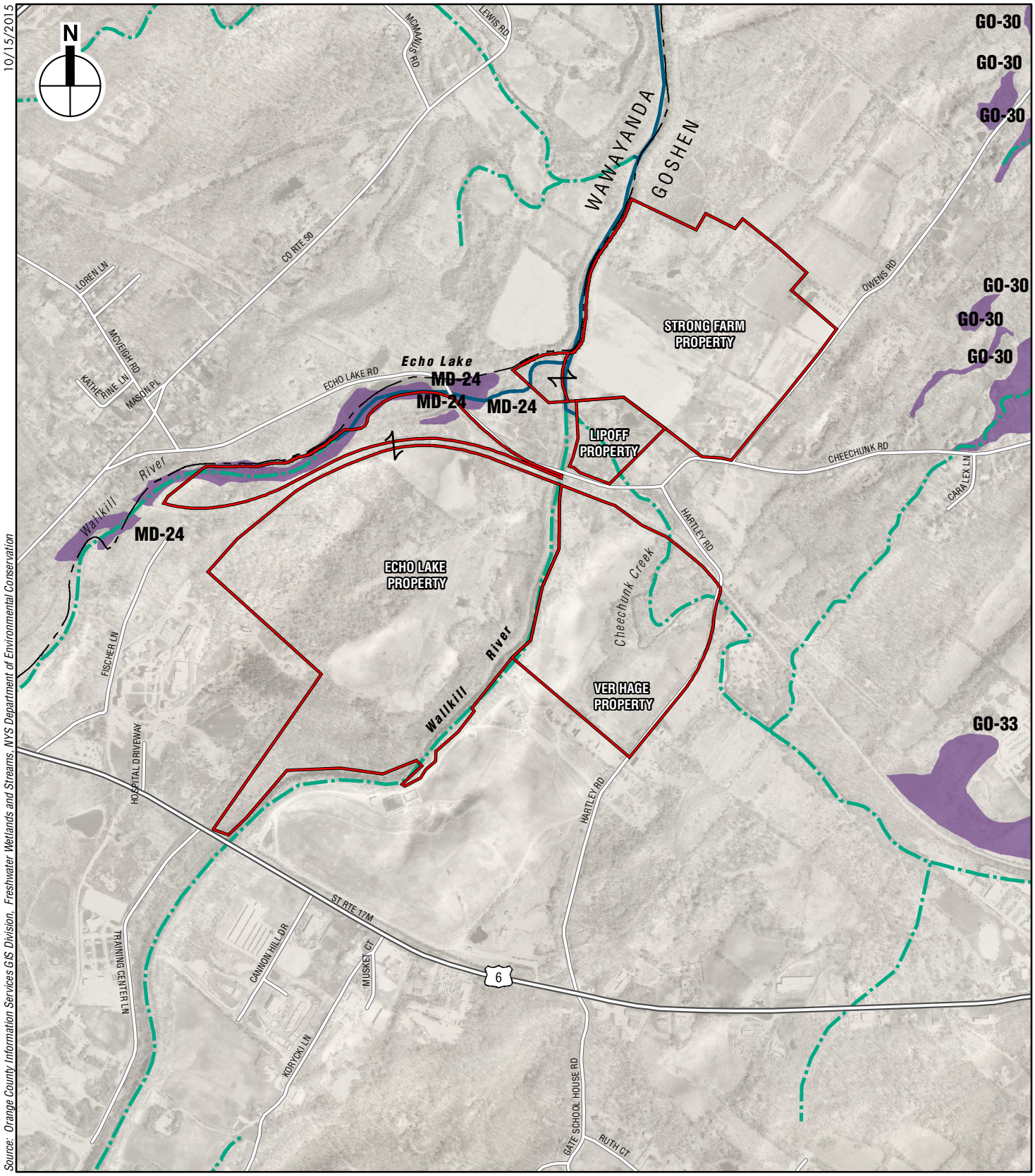
NWI Wetlands
Figure 3



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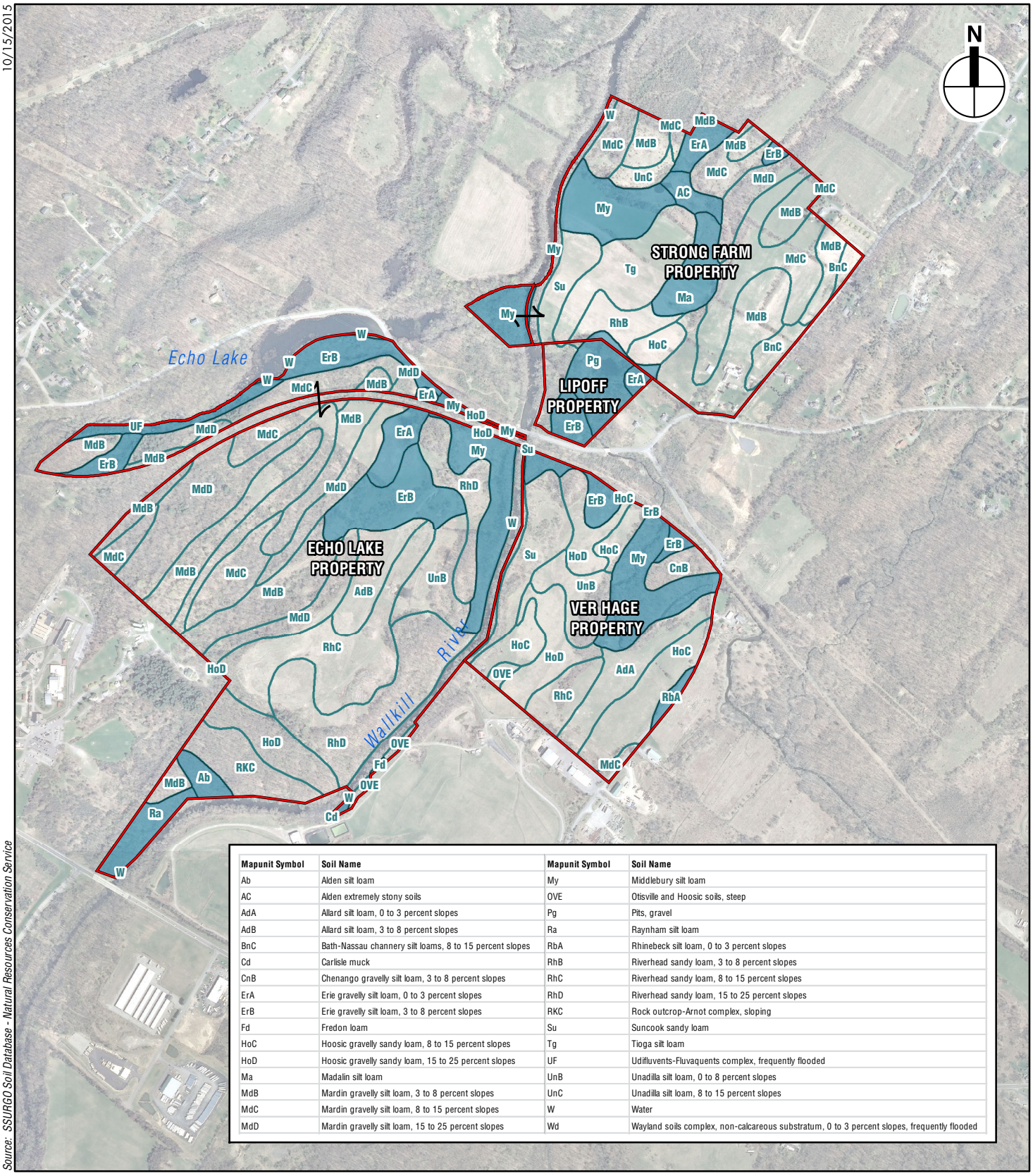
NYSDEC Freshwater Wetlands and Stream Classification

Figure 4



Mapunit Symbol	Soil Name	Mapunit Symbol	Soil Name
Ab	Alden silt loam	My	Middlebury silt loam
AC	Alden extremely stony soils	OVE	Otisville and Hoosic soils, steep
AdA	Allard silt loam, 0 to 3 percent slopes	Pg	Pits, gravel
AdB	Allard silt loam, 3 to 8 percent slopes	Ra	Raynham silt loam
BnC	Bath-Nassau channery silt loams, 8 to 15 percent slopes	RbA	Rhinebeck silt loam, 0 to 3 percent slopes
Cd	Carlisle muck	RhB	Riverhead sandy loam, 3 to 8 percent slopes
CnB	Chenango gravelly silt loam, 3 to 8 percent slopes	RhC	Riverhead sandy loam, 8 to 15 percent slopes
ErA	Erie gravelly silt loam, 0 to 3 percent slopes	RhD	Riverhead sandy loam, 15 to 25 percent slopes
ErB	Erie gravelly silt loam, 3 to 8 percent slopes	RKC	Rock outcrop-Arnot complex, sloping
Fd	Fredon loam	Su	Suncook sandy loam
HoC	Hoosic gravelly sandy loam, 8 to 15 percent slopes	Tg	Tioga silt loam
HoD	Hoosic gravelly sandy loam, 15 to 25 percent slopes	UF	Udifluvents-Fluvaquents complex, frequently flooded
Ma	Madalin silt loam	UnB	Unadilla silt loam, 0 to 8 percent slopes
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	UnC	Unadilla silt loam, 8 to 15 percent slopes
MdC	Mardin gravelly silt loam, 8 to 15 percent slopes	W	Water
MdD	Mardin gravelly silt loam, 15 to 25 percent slopes	Wd	Wayland soils complex, non-calcareous substratum, 0 to 3 percent slopes, frequently flooded

Project Site

SSURGO Soil Map Unit Boundaries

Soils with Hydric Components

0 1,000 FEET

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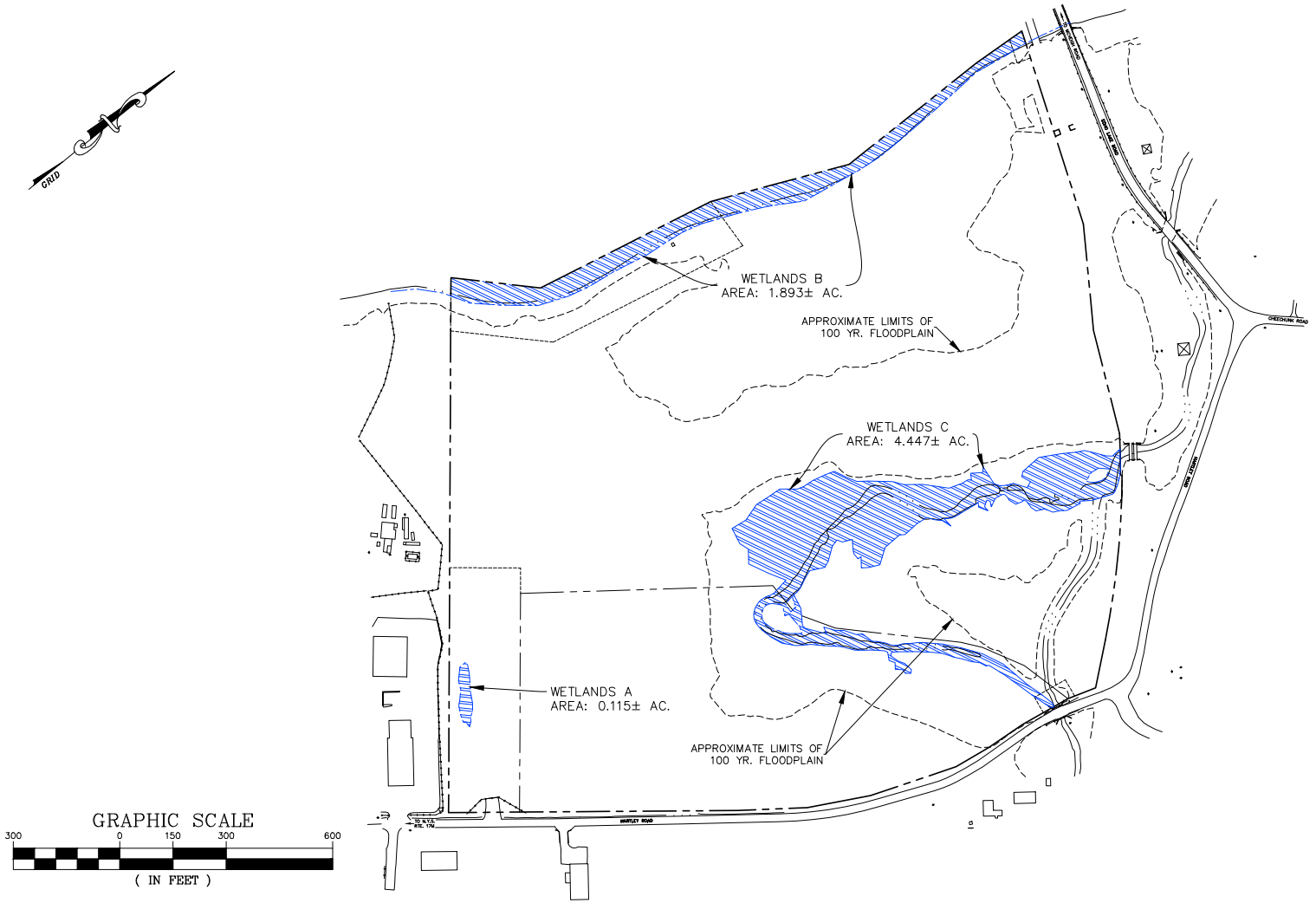
Soils
Figure 5



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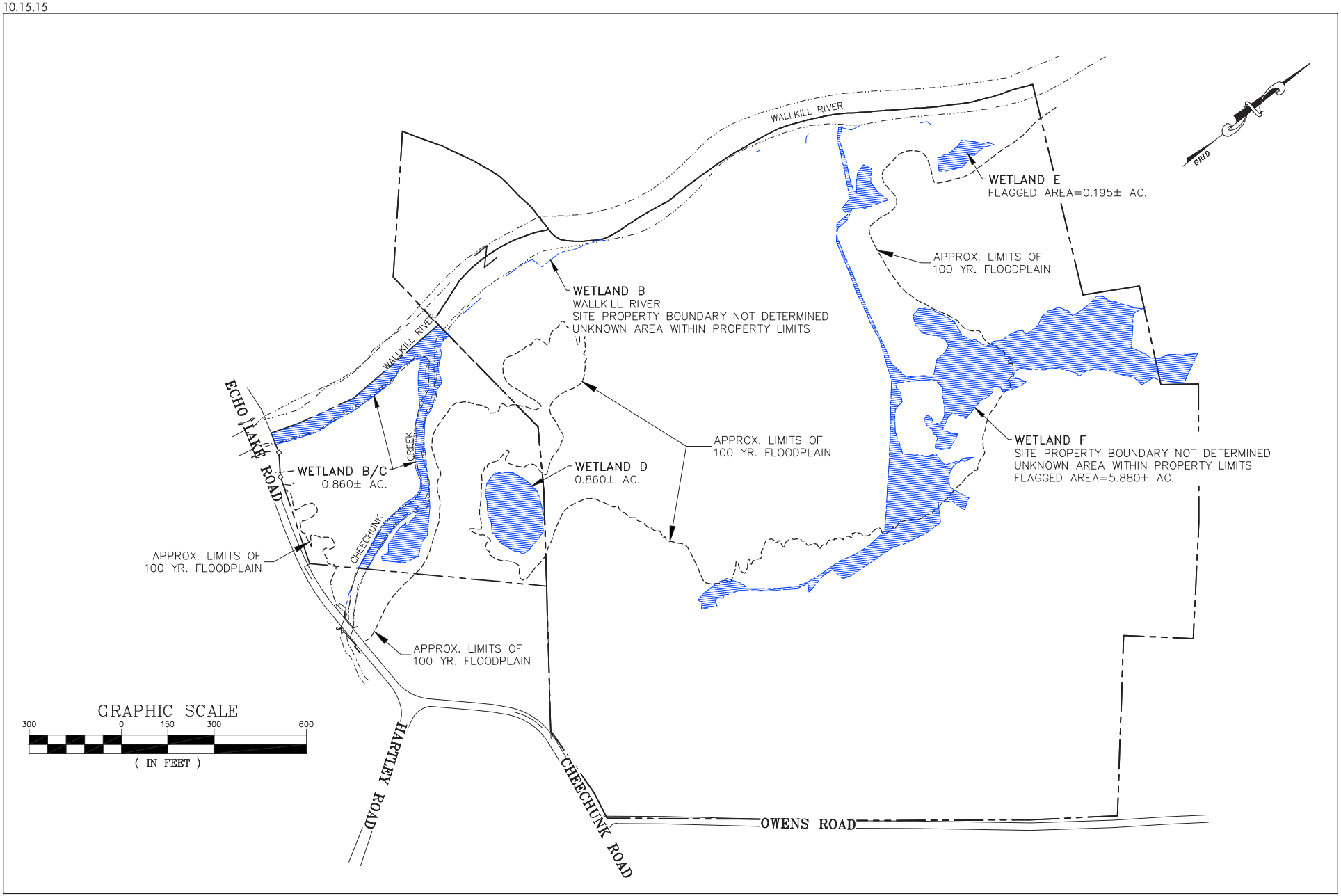
Ver Hage Property Wetlands
Figure 6a

10.15.15



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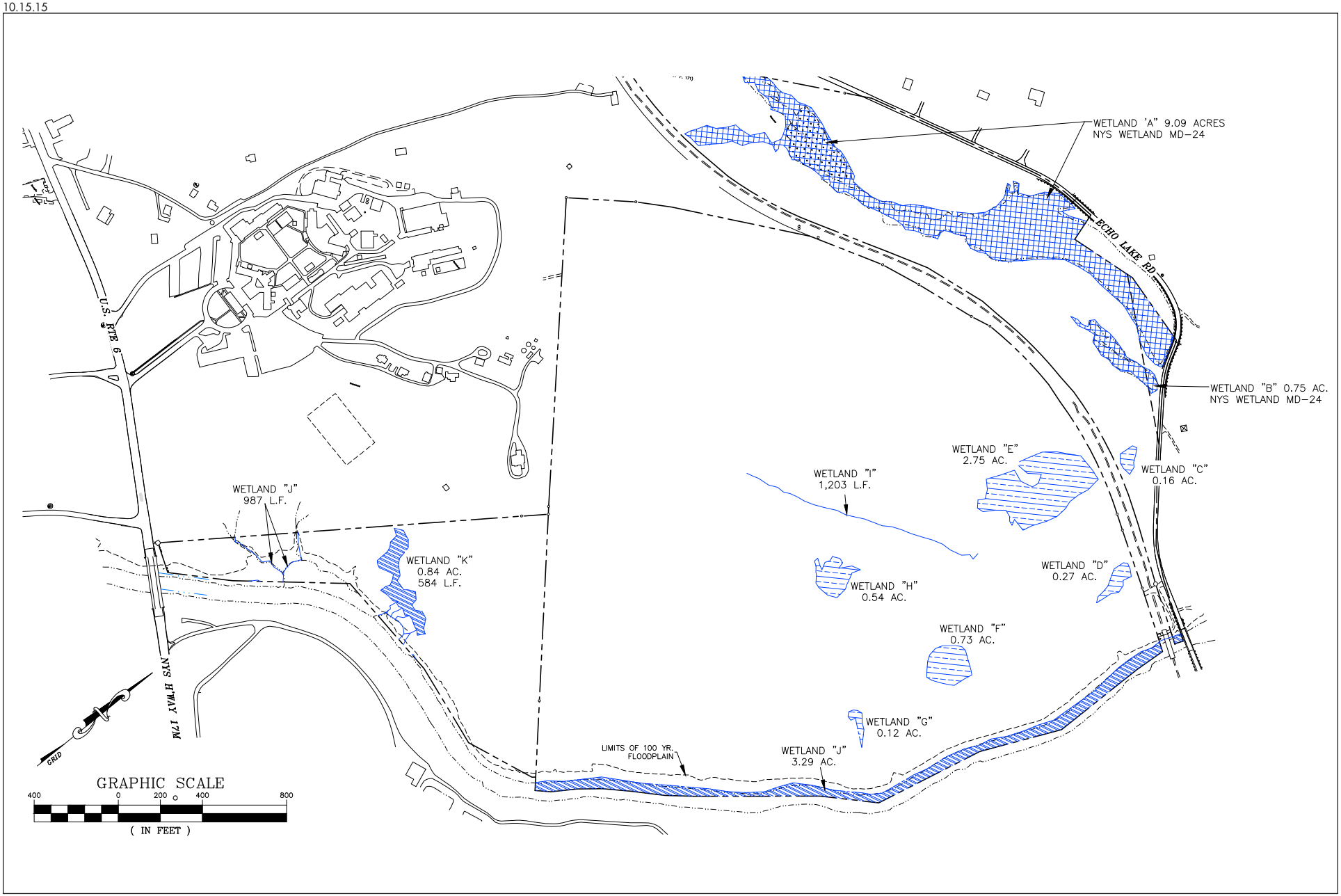
Lipoff and Strong Farm Property Wetlands
Figure 6b

10.15.15



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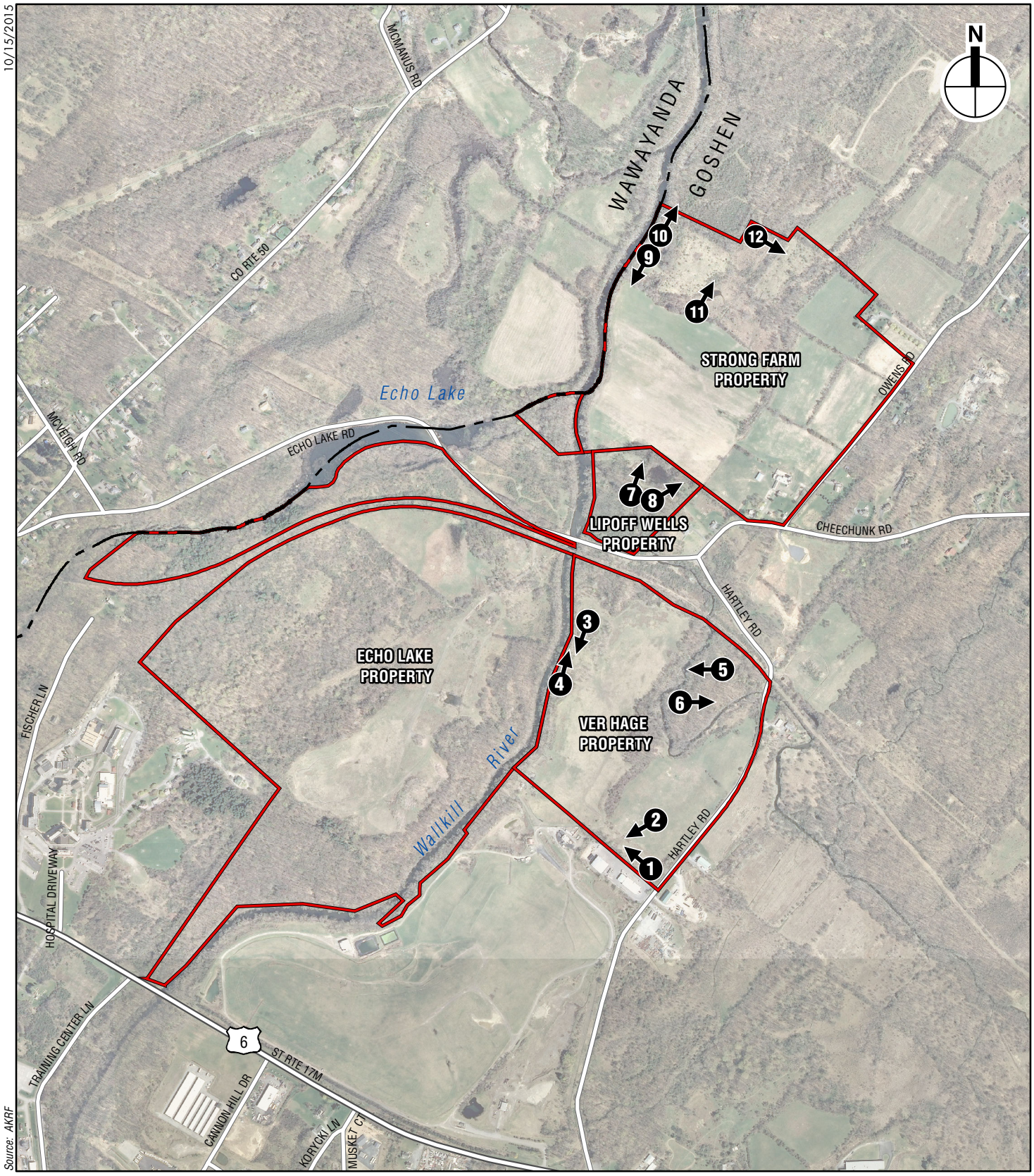
Echo Lake Property Wetlands
Figure 6c



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Photograph Key

Figure 7

View of Wetland A (foreground) and the successional old field community (background), facing northeast. **1**

View of Wetland A and the wooded hillside from the gravel road, facing southwest. **2**

View of Wetland B along the riverbank of the Wallkill River, facing south. **3**

View of Wetland B along the riverbank of the Wallkill River, facing north. **4**

View of Wetland C (left) and Cheechunk Creek, facing west. **5**

View of Wetland C, facing east. **6**

View of Wetland D, facing north. **7**

View of Wetland D, facing northeast. **8**

View of Wetland E, facing south. **9**

View of Wetland E, facing north. **10**

Representative Site Photographs
Figure 8e

View of Wetland F, facing north. **11**

View of Wetland F, facing east. **12**

Representative Site Photographs
Figure 8f

USACE Wetland Determination Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: ver Hage City/County: Orange County Sampling Date: 5/27/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland A-1

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): Concave Slope (%): 0-3

Subregion (LRR or MLRA): LRR R Lat: 41°24'20.4"N Long: 74°22'34.7"W Datum:

Soil Map Unit Name: AdA, RhC NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	
Hydric Soil Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: A

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):		
Saturation Present?	Yes	No X	Depth (inches):	**Wetland Hydrology Present?**	**Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wetland A-1

Tree Stratum (Plot size: 15' x 40' plot)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	25	Y	FAC
2. *Morus alba*	5	N	FACU
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot Size: 3, 3' x 3' plots averaged)			
1. *Typha latifolia*	1	N	OBL
2. *Phalaris arundinacea*	43	Y	FACW
3. *Phragmites australis*	2	N	FACW
4. *Equisetum* sp.	0.5	N	FAC-OBL
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	46.5	=Total Cover	
Woody Vine Stratum (Plot size: 15' x 40' plot)			
1. Parthenocissus quinquefolia	1	Y	FACW
2.			
3.			
4.			
	1	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland A-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-4	10 YR 5/2	95					Clayey loam	
4-7	10 YR 4/2	80	10 YR 5/6	10	C	M	Clayey loam	
7-8	10 YR 4/1	90					Clayey loam	
8-12	10 YR 5/3	80	10 YR 4/4	15	C	M	Clayey loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: ver Hage City/County: Orange County Sampling Date: 6/25/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Upland A

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): ridge Local relief (concave, convex, none): convex Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'20.4"N Long: 74°22'34.7"W Datum:

Soil Map Unit Name: AlA, RdC NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes**	**No** X
Hydric Soil Present?	Yes	No X	If yes, optional Wetland Site ID:		
Wetland Hydrology Present?	Yes	No X			

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):		
Saturation Present?	Yes	No X	Depth (inches):	**Wetland Hydrology Present?**	**Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Upland A

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Artemisia vulgaris*	75	Y	UPL
2. *Solidago canadensis*	7	N	FACU
3. *Rosa multiflora*	5	N	FACU
4. *Lathyrus pratensis*	2	N	FACU
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	89	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is >50%

___ 3 – Prevalence Index is #3.0[1]

___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Upland A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10 YR 4/4	65	10 YR 5/6	5	C	M	Sandy clay	Iron Redox
0-6	10 YR 6/2	30						
6-9.5	10 YR 5/2	60	7.5 YR 5/8	3	C	M	Clay	Iron Redox
6-9.5	10 YR 5/4	35						
9.5-17	10 YR 4/3	60	10 YR 5/6	15	C	M	Sandy clay	Iron Redox
9.5-17	2.5 YR 7/2	25						
17-25	10 YR 7/3	50	10 YR 4/6	20	C	M	Sandy clay	Iron Redox
17-25	10 YR 5/3	20	10 YR 5/6	10	C	M		Iron Redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: ver Hage City/County: Orange County Sampling Date: 5/27/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland B-1

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'33.4"N Long: 74°22'41.8"W Datum:

Soil Map Unit Name: Su NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID: B
Wetland Hydrology Present?	Yes X	No	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):		
Saturation Present?	Yes X	No	Depth (inches):	>5"	**Wetland Hydrology Present?** **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wetland B-1

Tree Stratum (Plot size: 15' x 40')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	25	Y	FAC
2. *Salix nigra*	7	N	OBL
3. *Platanus occidentalis*	12	Y	FACW
4. *Ulmus rubra*	6	N	FAC
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' x 20')			
1. *Platanus occidentalis*	2	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	2	=Total Cover	
Herb Stratum (Plot Size: 5' radius)			
1. *Toxicodendron radicans*	1	N	FAC
2. *Oxalis stricta*	1	N	FACU
3. *Microstegium vimineum*	8	Y	FAC
4. *Viola pallens*	20	Y	OBL
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	30	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and creater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland B-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-4	10 YR 3/2	85	7.5 YR 5/8	7	C	PL	Loam	
4-5	7.5 YR 2.5/1	95					Loamy sand	
5-10	7.5 YR 2.5/1	95					Sandy loam	
10-18	7.5 YR 2.5/1	95					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ver Hage City/County: Orange County Sampling Date: 6/25/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Upland B

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'33.4"N Long: 74°22'41.8"W Datum:

Soil Map Unit Name: HoC, OVE, Su NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?**	**Yes**	**No** X
Hydric Soil Present?	Yes	No X	If yes, optional Wetland Site ID:		
Wetland Hydrology Present?	Yes	No X			

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):
Water Table Present?	Yes	No	Depth (inches):
Saturation Present?	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Upland B

Tree Stratum (Plot size: 15' x 40')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	20	Y	FAC
2. *Fraxinus americana*	2	N	FACU
3. *Platanus occidentalis*	30	Y	FACW
4. *Prunus serotina*	5	N	FACU
5.			
6.			
7.			
	57	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' x 20')			
1. *Rhamnus cathartica*	5	N	FAC
2. *Fraxinus americana*	1	N	FACU
3. *Ulmus rubra*	17	Y	FAC
4. *Prunus serotina*	12	Y	FACU
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot Size: 5' radius)			
1. *Alliaria petiolata*	25	Y	FACU
2. *Persicaria virginiana*	15	Y	FAC
3. *Berberis sp.*	5	N	FACU
4. *Chelidonium majorus*	7	N	UPL
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	52	=Total Cover	
Woody Vine Stratum (Plot size: 15' x 40')			
1. *Parthenocissus quinquefolia*	5	Y	FACU
2.			
3.			
4.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.14 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is >50%

___ 3 – Prevalence Index is #3.0[1]

___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Upland B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	5YR 2.5/1	100					Loam	
2-4	5YR 2.5/1	100					Clayey Loam	
4-15	7.5 YR 3/1	80					Sandy Loam	Coarse Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: ver Hage City/County: Orange County Sampling Date: 5/27/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland C-1

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-3

Subregion (LRR or MLRA): LRR R Lat: 41°24'31.3"N Long: 74°22'30.1"W Datum:

Soil Map Unit Name: My, CnB, ErB NWI classification: PFO1E

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID: C
Wetland Hydrology Present?	Yes X	No	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present?	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wetland C-1

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	7	N	FACW
2. *Fraxinus pennsylvanica*	40	Y	FACW
3.			
4.			
5.			
6.			
7.			
	47	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot Size: 5' radius)			
1. *Solidago* sp.	3	N	?
2. *Bidens frondosa*	15	N	FACW
3. *Lysimachia nummularia*	40	Y	FACW
4. *Impatiens capensis*	60	Y	FACW
5. *Persicaria hydropiper*	7	N	OBL
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	125	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Vitis* sp.	4	Y	FAC-OBL
2.			
3.			
4.			
	4	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland C-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
1-8	7.5 YR 2.5/1	95					Clayey loam	
8-18	2.5 YR 3/2	80	10 YR 2.5/2	1	C	M	Clay	Manganese and iron
			7.5 YR 5/8	10	C	M		Redox features

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ver Hage City/County: Orange County Sampling Date: 6/29/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland C-2

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'35.9"N Long: 74°22'26.8"W Datum:

Soil Map Unit Name: My, HoC NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	**Yes** X **No**
Hydric Soil Present?	Yes X No	If yes, optional Wetland Site ID:	
Wetland Hydrology Present?	Yes X No		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes	X	No	Depth (inches):	6
Saturation Present?	Yes	X	No	Depth (inches):	6

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wetland C-2

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	20	Y	FACW
2. *Fraxinus pennsylvanica*	15	Y	FACW
3. *Ulmus rubra*	5	N	FAC
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Cornus amomum*	7	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	7	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Microstegium vimineum*	60	Y	FAC
2. *Lysimachia nummularia*	40	Y	FACW
3. *Impatiens capensis*	25	N	FACW
4. Sedge (*Carex* sp.)	5	N	---
5. *Geum canadense*	2	N	FAC
6. *Parthenocissus quinquefolia*	1	N	FACU
7. *Solidago uliginosa*	1	N	OBL
8. *Persicaria hydropiper*	0.5	N	OBL
9.. *Cornus amomum*	0.5	N	FACW
10.			
11.			
12.			
	135	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Toxicodendron radicans*	7	Y	FAC
2. *Parthenocissus quinquefolia*	2	Y	FACU
3.			
4.			
	9	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.71 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland C-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10 YR 4/1	70	10 YR 5/6	30	C	M	Clay	Saturation 6 inches
12-19	10 YR 4/1	100					Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks: Saturated soil starting at 6 inches depth.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lipoff Wells City/County: Orange County Sampling Date: 7/6/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland C-3

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'46.8"N Long: 74°22'35.1"W Datum:

Soil Map Unit Name: ErB, Pg, Su NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	**Yes** X **No**
Hydric Soil Present?	Yes X No	If yes, optional Wetland Site ID:	
Wetland Hydrology Present?	Yes X No		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present?	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wetland C-3

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Y	FAC
2. *Ulmus rubra*	10	Y	FAC
3. *Fraxinus pennsylvanica*	10	Y	FACW
4.			
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot Size: 1m x. 1m)			
1. *Pilea pumila*	95	Y	FACW
2. *Geum canadense*	2	N	FAC
3. *Persicaria hydropiper*	2	N	OBL
4.			
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	99	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and creater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland C-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-13	2.5 YR 3/1	85	10 YR 4/4	15	C	M	Clay	
13-19	10 YR 5/8	60	10 YR 6/2	40	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ver Hage City/County: Orange County Sampling Date: 6/25/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Upland C

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'35.9"N Long: 74°22'26.8"W Datum:

Soil Map Unit Name: My, HoC NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes		No	X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No		Depth (inches):
Water Table Present?	Yes		No		Depth (inches):
Saturation Present?	Yes		No		Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Upland C

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	25	Y	FACW
2. *Ulmus rubra*	20	Y	FAC
3. *Acer saccharum*	12	N	FACU
4. *Carya cordiformis*	7	N	FAC
5. *Prunus serotina*	3	N	FACU
6. *Fraxinus americana*	3	N	FACU
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhamnus cathartica*	7	Y	FAC
2. *Carya cordiformis*	2	N	FAC
3. *Ulmus rubra*	2	N	FAC
4. *Quercus palustris*	1	N	FACW
5.			
6.			
7.			
	12	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Toxicodendron radicans*	7	Y	FAC
2. *Rhamnus cathartica*	1	N	FAC
3. *Carya cordiformis*	1	N	FAC
4. *Solidago canadensis*	1	N	FACU
5. *Celastrus orbiculatus*	0.5	N	UPL
6. *Alliaria petiolata*	0.5	N	FACU
7. *Acer saccharum*	0.5	N	FACU
8. *Parthenocissus quinquefolia*	0.5	N	FACU
9..			
10.			
11.			
12.			
	14	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Upland C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-9	10 YR 3/1	100					Loam	
9-15	10 YR 4/5	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lipoff Wells City/County: Orange County Sampling Date: 7/6/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland D-1

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'47.2"N Long: 74°22'31.9"W Datum:

Soil Map Unit Name: Pg, Su NWI classification: PEM1Fx

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	**Yes** X **No**
Hydric Soil Present?	Yes X No	If yes, optional Wetland Site ID:	
Wetland Hydrology Present?	Yes X No		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):	
Water Table Present?	Yes	No	Depth (inches):	2
Saturation Present?	Yes X	No	Depth (inches):	Surface

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Surface water was observed in the lower elevation points adjacent to the sampling point.

VEGETATION – Use scientific names of plants. Sampling Point: Wetland D-1

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Cephalanthus occidentalis*	4	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot Size: 1 m x. 1m)			
1. *Sphagnum* spp.	40	Y	OBL
2. *Leersia oryzoides*	30	Y	OBL
3. *Bidens frondosa*	25	Y	FACW
4. *Persicaria hydropiper*	2	N	OBL
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	97	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is >50%

___ 3 – Prevalence Index is #3.0[1]

___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland D-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1.5	5 YR 2.5/1	100					Organic matter	Poorly decomposed
1.5-6	10 YR 3/1	100					Mucky silt	Saturated
6-19	10 YR 4/1	100					Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- X Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:
Water table is 4 inches in depth.
Loamy mucky mineral

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lipoff Wells City/County: Orange County Sampling Date: 7/6/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Upland D

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): level Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'47.2"N Long: 74°22'31.9"W Datum:

Soil Map Unit Name: Pg, Su NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	
Wetland Hydrology Present?	Yes		No	X	

Is the Sampled Area within a Wetland? **Yes** **No** X

If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	
Saturation Present?	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Upland D

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	20	Y	FACW
2. *Prunus serotina*	17	Y	FACU
3. *Acer rubrum*	15	Y	FAC
4. *Fraxinus americana*	12	N	FACU
5. *Morus alba*	8	N	FACU
6. *Rhamnus cathartica*	3	N	FAC
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhamnus cathartica*	20	Y	FAC
2. *Prunus serotina*	5	N	FACU
3. *Rosa multiflora*	1	N	FACU
4.			
5.			
6.			
7.			
	26	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Parthenocissus quinquefolia*	30	Y	FACU
2. *Toxicodendron radicans*	20	Y	FAC
3. *Rubus allegheniensis*	7	N	FACU
4. *Alliaria petoilata*	2	N	FACU
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	59	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Vitis* sp.	12	Y	FAC-OBL
2. *Toxicodendron radicans*	10	Y	FAC
3.			
4.			
	22	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and creater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Upland D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	7.5 YR 2.5/2						Loam	
1-15	10 YR 3/2						Clayey loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strong Farm City/County: Orange County Sampling Date: 7/9/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland E-1

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°25'07.8"N Long: 74°22'29.7"W Datum:

Soil Map Unit Name: MdC NWI classification: PUBHx

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	**Yes** X **No**
Hydric Soil Present?	Yes X No	If yes, optional Wetland Site ID:	
Wetland Hydrology Present?	Yes X No		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present?	Yes X	No	Depth (inches):	2

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wetland E-1

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Fraxinus pennsylvanica*	1	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	1	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Pilea pumila*	70	Y	FACW
2. *Persicaria hydropiper*	30	Y	OBL
3. *Carex grayi*	15	N	FACW
4. *Leersia oryzoides*	5	N	OBL
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	120	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and creater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland E-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 3/1						Mucky – Clayey loam	
2-20	10 YR 4/1	70	10 YR 4/4	30	C	M	Loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strong Farm City/County: Orange County Sampling Date: 7/9/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Upland E

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°25'07.8"N Long: 74°22'29.7"W Datum:

Soil Map Unit Name: MdB, MdC, My, UnC NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	
Wetland Hydrology Present?	Yes		No	X	

Is the Sampled Area within a Wetland? **Yes** **No** X

If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No		Depth (inches):
Water Table Present?	Yes		No		Depth (inches):
Saturation Present?	Yes		No		Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Upland E

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	30	Y	FACU
2. *Morus alba*	10	Y	FACU
3. *Ulmus rubra*	5	N	FAC
4. *Rhamnus cathartica*	5	N	FAC
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhamnus cathartica*	40	Y	FAC
2. *Ulmus rubra*	15	Y	FAC
3. *Rosa multiflora*	5	N	FACU
4. *Ligustrum vulgare*	2	N	FACU
5.			
6.			
7.			
	62	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Toxicodendron radicans*	20	Y	FAC
2. *Rosa multiflora*	10	Y	FACU
3. *Parthenocissus quinquefolia*	1	N	FACU
4. *Alliaria petiolata*	1	N	FACU
5. *Celastrus orbiculatus*	1	N	UPL
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	33	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Vitis* sp.	15	Y	FAC-OBL
2.			
3.			
4.			
	15	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.14 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and creater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Upland E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	10 YR 2/2	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strong Farm City/County: Orange County Sampling Date: 7/10/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland F-1

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Hummocks and hollows Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°25'03.0"N Long: 74°22'24.9"W Datum:

Soil Map Unit Name: AC, My, Tg, UnC NWI classification: PuBHh

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	**Yes** X **No**
Hydric Soil Present?	Yes X No	If yes, optional Wetland Site ID:	
Wetland Hydrology Present?	Yes X No		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	1in
Water Table Present?	Yes X	No ___	Depth (inches):	1.25 in
Saturation Present?	Yes X	No ___	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wetland F-1

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Cornus racemosa*	2	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	2	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Carex stricta*	50	Y	OBL
2. *Lythrum salicaria*	25	Y	OBL
3. *Impatiens capensis*	15	N	FACW
4. *Persicaria hydropiper*	10	N	OBL
5. *Solidago patula*	2	N	OBL
6. *Persicaria sagittata*	1	N	OBL
7.			
8.			
9..			
10.			
11.			
12.			
	103	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland F-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10 YR 3/1	100					Mucky loam	
2-10	10 YR 3/1	90	5 YR 4/6	10	C	M	Clayey loam	
10-20	10 YR 3/1	75	10 YR 5/8	7	C	M	Clayey loam	
			10 YR 4/4	12	C	M		
			5 YR 4/6	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strong Farm City/County: Orange County Sampling Date: 7/14/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Wetland F-2

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'54.4"N Long: 74°22'19.6"W Datum:

Soil Map Unit Name: HoC, Ma, MdB, MdC NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	**Yes** X **No**
Hydric Soil Present?	Yes X No	If yes, optional Wetland Site ID:	
Wetland Hydrology Present?	Yes X No		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):		
Saturation Present?	Yes X	No	Depth (inches):	1	**Wetland Hydrology Present?** **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wetland F-2

Tree Stratum (Plot size: 40' x 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: 25' x 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Impatiens capensis*	60	Y	FACW
2. *Phalaris arundinacea*	7	N	FACW
3. *Persicaria sagittata*	5	N	OBL
4. *Typha latifolia*	2	N	OBL
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	74	=Total Cover	
Woody Vine Stratum (Plot size: 40' x 15')			
1.			
2.			
3.			
4.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and creater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland F-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	10 YR 3/2	100					Loam	Saturated
8-20	10 YR 3/1	70	10 YR 4/1	30	C	M	Loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strong Farm City/County: Orange County Sampling Date: 7/9/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Upland F-1

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): level Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°25'02.1"N Long: 74°22'25.7"W Datum:

Soil Map Unit Name: My, Tg NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	
Hydric Soil Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):
Water Table Present?	Yes	No	Depth (inches):
Saturation Present?	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Upland F-1

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Solidago rugosa*	90	Y	FAC
2. *Solidago altissima*	7	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	97	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and creater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Upland F-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 4/2	95	10 YR 5/8	<1	C	M	Clayey loam	
3-18	10 YR 4/2	80	10 YR 5/8	15	C	M	Clayey loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Strong Farm City/County: Orange County Sampling Date: 7/14/2015

Applicant/Owner: Amy's Kitchen State: NY Sampling Point: Upland F-2

Investigator(s): Jesse Moore Section, Township, Range: Town of Goshen

Landform (hillslope, terrace, etc.): level Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR R Lat: 41°24'54.8"N Long: 74°22'20.4"W Datum:

Soil Map Unit Name: Ma, MdB, MdC, HoC NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes**	**No** X
Hydric Soil Present?	Yes	No X	If yes, optional Wetland Site ID:		
Wetland Hydrology Present?	Yes	No X			

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present?	Yes	No	Depth (inches):	

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Upland F-2

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
Herb Stratum (Plot Size: 1m x 1m)			
1. *Cirsium altissimum*	40	Y	UPL
2. *Dactylis glomerata*	25	Y	FACU
3. *Asclepias syriaca*	2	N	UPL
4. *Daucus carota*	1	N	UPL
5. *Solidago canadensis*	1	N	FACU
6. *Trifolium pratense*	1	N	FACU
7.			
8.			
9..			
10.			
11.			
12.			
	70	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is >50%

___ 3 – Prevalence Index is #3.0[1]

___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Upland F-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10 YR 4/3	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** **No** X

Remarks:

WETLAND DELINEATION REPORT
FOR THE
ECHO LAKE PROPERTY

TOWNS OF GOSHEN AND WAWAYANDA,
ORANGE COUNTY,
NEW YORK

Prepared for:

CONCRETE PROPERTIES, LLC
130 Crotty Road
Middletown, NY 10941-4000

Prepared by:

TERRESTRIAL ENVIRONMENTAL SPECIALISTS, INC.
23 County Route 6, Suite A
Phoenix, New York 13135

August 2009

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(Large-scale Wetland Survey in back pocket)

1.0 INTRODUCTION

Terrestrial Environmental Specialists, Inc. (TES) was contracted by Concrete Properties, LLC to prepare a wetland report on a property located in the Towns of Goshen and Wawayanda, Orange County, New York. The study area is approximately 209 acres in size and is located north of U.S. Route 6 and State Route 17M, east of County Road 50, south of Echo Lake Road, and west of the Wallkill River (Figure 1). The site is referred to as the Echo Lake Property.

The TES wetland/water resources investigation consisted of a review of available background information and a field review of wetlands and other regulated waters. This report addresses the results of the background information review and the wetland delineation. A number of figures are included at the end this report, along with photographs and field data sheets.

2.0 BACKGROUND INFORMATION REVIEW

Prior to the field investigation at the site, TES assembled and reviewed available background information. This information included:

- the New York State Department of Transportation (NYSDOT) Topographic map (Middletown and Goshen quadrangles) (Figure 1);
- the New York State Department of Environmental Conservation (NYSDEC) New York State Freshwater Wetlands map (Figure 2);
- the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory map (Figure 3);
- the Orange County Soil Survey map prepared by the U.S. Soil Conservation Service (currently Natural Resources Conservation Service) (Figure 4);
- the New York State Stream Classification Map (Figure 5);
- the Federal Emergency Management Agency (FEMA) Flood Insurance Rate map (Figure 6); and
- 2007 aerial photograph obtained from the New York State GIS Clearinghouse (Figure 7).

All figures are provided after the text of the report.

3.0 METHODS

The agency resource information maps, soils descriptions, and the aerial photograph discussed above were used during the field review of the site. These maps and information assisted in the initial identification of potential wetland areas.

Flagging of the wetlands/waters on the site and data collection along the boundaries were performed by TES on November 10-12, 2008. The boundaries were delineated using the state and federal criteria for delineating wetlands (NYSDEC 1995, Environmental Laboratory 1987, Reed 1988, and USSCS 1989).

Surveyor's ribbons were placed along the wetland boundaries based on observations of vegetation, soils, and hydrology conditions. These observations were made along transects located perpendicular to the wetland boundaries. Additional observations of vegetation, soils, and hydrology were made at intermediate locations between the transects for the placement of additional flagging. Each wetland flag was labeled with a letter identifier of the wetland and was numbered consecutively (for example, A-1, A-2, A-3, etc.). Mercurio-Norton-Tarolli Land Surveying-Engineering, P.C. surveyed the flagged wetland boundaries.

To further support the wetland boundaries, data on vegetation, soils, and hydrology were collected during the field effort in plots along transects located perpendicular to the wetland boundaries on the site. TES sampled 32 plots in and around the wetlands and in other representative areas of the site. Plots were generally located on the wetland and upland sides of the flagged wetland boundaries. The plot data were recorded on data sheets similar to those used in the federal manual (Environmental Laboratory 1987).

Vegetation data were collected in all the plots. Ocular estimates of the percent areal cover by plant species for each vegetation layer (tree, shrub, and herbaceous layers) were recorded. The plots varied in size by vegetation layer being sampled. The sizes were: 30-foot diameter for the trees, 10-foot diameter for the shrubs, and 5-foot diameter for the herbaceous layer.

The presence of wetland vegetation was determined when more than 50 percent of the dominant species in a sample plot had an indicator status of obligate (OBL), facultative-wet (FACW), or facultative (FAC+, FAC), excluding FAC-. The dominant species for each layer in a plot were determined by ranking the species in decreasing order of percent cover and recording those species which, when cumulatively totaled, immediately exceeded 50 percent of the total cover of that layer. Additionally, any plant species that comprised 20 percent or more of the total cover for each layer was considered to be a dominant species.

Scientific nomenclature for plant species follows *A Checklist of New York State Plants* (Mitchell and Tucker 1997). The indicator status for each dominant plant species was determined using the *National List of Plants that Occur in Wetlands: Northeast (Region 1)* (Reed 1988) and the *1995 Supplement To the List Of Plant Species That Occur In Wetlands: Northeast (Region 1)* (Tiner *et al.* 1995). For any species not included in the list, the indicator status was designated using the *Manual of Vascular Plants of Northeastern United States and Adjacent Canada* (Gleason and Cronquist 1991), *New Britton and Brown Illustrated Flora* (Gleason 1952), and *Gray's Manual of Botany* (Fernald 1950).

Soil and hydrology data were collected in soil pits or soil borer holes to a minimum depth of 20 inches within each sample plot. Soil characteristics were noted along the soil profile at the depth specified by the Corps criteria (Environmental Laboratory 1987). Procedures for identifying hydric soils as outlined in the *Field Indicators of Hydric Soils in the United States* (USDA NRCS 1995) were also followed. Soil colors were determined by using the Munsell color chart. Primary and secondary indicators of hydrology were also noted at each sample plot.

The wetland boundaries were refined on the basis of intermediate soil borer holes along each transect.

4.0 RESULTS

The following section of the report provides a site description and a description of the wetlands/water resources at the Echo Lake Property.

4.1 Site Description

The NYSDOT topographic map (Figure 1) shows the site is located north of U.S. Route 6 and State Route 17M, east of County Road 50, south of Echo Lake Road, and west of the Wallkill River in the Towns of Goshen and Wawayanda, Orange County, New York. Elevations on the site are sloping and range from approximately 526 feet above mean sea level (amsl) in the western portion of the site to approximately 380 feet amsl in the eastern part of the site. A section of Echo Lake is located in the northern portion of the site, and the Wallkill River defines the eastern boundary.

The New York State (NYS) Freshwater Wetlands map (Figure 2) indicates a portion of one state-regulated wetland (MD-24) is located in the northern section of the site. The NYSDEC has rated this wetland as a Class II wetland (in the NYSDEC class rating system, Class I wetlands are the highest value, while Class IV are the lowest value). The portion of Wetland MD-24 that occurs on the site is associated with Echo Lake.

According to the USFWS NWI map (Figure 3), there are several mapped wetlands located within the site. The designation and description of the wetlands are as follows.

PFO1E - Palustrine, forested, broad leaved deciduous, seasonal saturated wetlands
PEM1F - Palustrine, emergent, persistent, semi-permanent wetlands
PEM1E- Palustrine, emergent, persistent, seasonal saturated wetlands
PEM1Fh - Palustrine, emergent, persistent, semi-permanent, diked/impounded wetland
PUBH - Palustrine, unconsolidated bottom, permanent wetland
PUBHh - Palustrine, unconsolidated bottom, permanent, diked/impounded wetland
PUBFh - Palustrine, unconsolidated bottom, semi-permanent, diked/impounded wetland

The Orange County Soil Survey (Figure 4) produced by the U.S. Soil Conservation Service (currently Natural Resources Conservation Service) shows 16 soils on the property, which include:

- Alden silt loam;
- Allard gravelly silt loam, 3 to 8% slopes;
- Erie gravelly silt loam, 0 to 3% slopes;
- Erie gravelly silt loam, 3 to 8% slopes;
- Erie extremely stony soils, gently sloping 1/;
- Hoosic gravelly sandy loam, 15 to 25% slopes;
- Mardin gravelly silt loam, 3 to 8% slopes;
- Mardin gravelly silt loam, 8 to 15% slopes;
- Mardin gravelly silt loam, 15 to 25% slopes;
- Middlebury silt loam;
- Raynham silt loam;
- Riverhead sandy loam, 8 to 15% slopes;
- Riverhead sandy loam, 15 to 25% slopes;
- Rock outcrop-Arnot complex, sloping 1/;
- Udifluvents-Fluvaquents complex, frequently flooded 1/; and
- Unadilla silt loam, 0 to 8 percent slopes.

Alden silt loam, Raynham silt loam, and Udifluvents-Fluvaquents complex are recognized as hydric soils. Alden silt loam can be found in the northwestern and southern portions of the site. Raynham silt loam is located in the southern most section of the site. Udifluvents-Fluvaquents complex is found in the northwestern portion of the site near Alden silt loam (Figure 4). Erie gravelly silt loam and Erie extremely stony soils are soils with potential for hydric inclusions. These soils can be found in the central and western areas of the property.

The New York State Stream Classification map (Figure 5) shows the northeastern portion of the site contains a branch of the Wallkill River, which includes Echo Lake, that is designated with a water quality Classification of Class B with B Standards by the NYSDEC. It is a state-protected waterbody since it has a water quality Classification of C and Standards of C (T) (trout) or higher. The section of the Wallkill River that creates the eastern boundary of the site is designated with a water quality Classification of Class C with C Standards.

According to the FEMA Flood Insurance Rate Map (Figure 6), much of the site is within areas of minimal flooding. The Wallkill River and Echo Lake areas are mapped as areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. In the northwestern portion of the site where Echo Lake is located it is designated as an area of 100-year flood; base flood elevations and flood hazard factors determined.

The 2007 aerial photograph (Figure 7) shows that much of the site is undeveloped and dominated by deciduous forest upland. The southeastern portion of the site contained a reclaimed mine.

4.2 Site Ecology

The site consisted of open field, scrub-shrub upland, deciduous forest upland, mixed forest upland, and wetlands.

Open field can be found in the northeastern portion of the site. There is no tree layer in this community. The shrub layer was very sparse but contained multiflora rose (*Rosa multiflora*). The herbaceous layer is dominated by bluegrass (*Poa* sp.), white bedstraw (*Galium mullago*), common milkweed (*Asclepias syriaca*), horse nettle (*Solanum carolinense*), quackgrass (*Elytrigia repens*), Canada goldenrod (*Solidago canadensis*), goldenrod (*Solidago* sp.), and aster (*Aster* sp.).

A small area of scrub-shrub upland is found in the north central section of the site. There is no tree layer in this area. The shrub layer is dominated by blackberry (*Rubus allegheniensis*) and gray dogwood (*Cornus foemina* ssp. *racemosa*). Canada goldenrod, bluegrass, and aster dominated the herbaceous layer.

Deciduous forest upland is the dominant cover type on the site. Sweet birch (*Betula lenta*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), eastern hemlock (*Tsuga canadensis*), sugar maple (*Acer saccharum*), white ash (*Fraxinus americana*), sycamore (*Platanus occidentalis*), white oak (*Quercus alba*), shagbark hickory (*Carya ovata*), pin oak (*Quercus palustris*), black cherry (*Prunus serotina*), and American elm (*Ulmus americana*) dominated the overstory. The shrub layer is dominated by spicebush (*Lindera benzoin*), eastern red cedar (*Juniperus virginiana*), sugar maple, privet (*Ligustrum vulgare*), common buckthorn (*Rhamnus cathartica*), multiflora rose, red maple, barberry (*Berberis vulgaris*), pin oak, silky dogwood (*Cornus amomum*), and honeysuckle (*Lonicera* sp.). Garlic mustard (*Alliaria petiolata*), Japanese honeysuckle (*Lonicera japonica*), bluegrass, marginal wood fern (*Dryopteris marginalis*), goldenrod, and honeysuckle dominated the herbaceous layer.

Mixed forest upland can be found in northwestern portion of the site. The dominant tree species were eastern hemlock, American elm, and tree of heaven (*Ailanthus altissima*). The shrub layer is dominated by common buckthorn and multiflora rose, while the herbaceous layer consists primarily of common wood fern (*Dryopteris intermedia*).

4.3 Wetlands Descriptions

Eleven wetlands/water resources were delineated on the site. They are referred to as Wetlands A through K. Together Wetlands A through H, Wetland J, and Wetland K total 18.54 acres. Wetland I is a linear wetland and is approximately 1,203 linear feet in length. Portions of Wetlands J and K are linear, together these areas total 1,571 linear feet.

The delineated wetland boundaries are shown on Figure 8 and were surveyed by Mercurio-Norton-Tarolli Land Surveying-Engineering, P.C. (a large-scale copy of their survey is provided in the back pocket of this report). Wetland sample plot and photograph locations are shown on Figure 9. Photographs and field data sheets are provided in Appendix A and Appendix B, respectively.

Wetland A

Wetland A is the largest wetland on the site and is approximately 9.09 acres in size (Figure 8). This wetland included the open water portion of Echo Lake, emergent, scrub-shrub, and deciduous forest wetland cover types.

The Echo Lake portion of Wetland A roughly corresponds to NYSDEC mapped Wetland MD-24 and can be found near the northern border of the site. The herbaceous layer around the border of the water contained water willow (*Decodon verticillatus*), purple loosestrife (*Lythrum salicaria*), and dodder (*Cuscuta* sp.).

Wetland A contains two areas of emergent wetland. These areas are located along the northwestern portion of Wetland A. The tree layer was dominated by river birch (*Betula nigra*), pin oak, and red maple. The shrub layer was sparse but contained river birch and red maple. Reed canary grass (*Phalaris arundinacea*), tearthumb (*Polygonum sagittatum*), and purple-leaf willow herb (*Epilobium coloratum*) were the dominant species found in the herbaceous layer.

The primary soil in these portions of Wetland A was Udifluvents- Fluvaquents complex, which is a hydric soil (Figure 4). Soil samples for the emergent wetland areas of Wetland A showed gleyed soils and redoximorphic features.

In the southwestern portion of Wetland A, an area of scrub-shrub wetland can be found. There was no tree layer in this cover type. The shrub layer consisted of speckled alder (*Alnus incana*) and multiflora rose. The herbaceous layer was dominated by sensitive fern (*Onoclea sensibilis*) and goldenrod.

The primary soil in this portion of Wetland A was Erie gravelly silt loam, which is a soil with potential hydric inclusions (Figure 4). Soil samples from this portion of Wetland A showed low matrix chromas in the B-horizon and redoximorphic features.

Hydrology indicators throughout these areas of Wetland A included inundation and saturation to ground surface.

Deciduous forest wetland can be found along the western and southern portions of Wetland A. Red maple and green ash dominated the overstory. The shrub layer is sparse but contained spicebush. Sensitive fern, moneywort (*Lysimachia nummularia*), woodreed (*Cinna* sp.), and marsh fern (*Thelypteris palustris*) dominated the herbaceous layer.

The primary soil in this portion of Wetland A was Udifluvents-Fluvaquents complex, which is a hydric soil (Figure 4). Soil samples for the deciduous forest portion of Wetland A showed low matrix chromas in the B-horizon and redoximorphic features.

Hydrology indicators throughout this portion of Wetland A included drainage patterns, water marks, and oxidized root channels.

Wetland B

Wetland B is a scrub-shrub wetland approximately 0.75 acre in size. This wetland was located south of Wetland A, in the northern portion of the site (Figure 8). It is mapped as a portion of NYSDEC Wetland MD-24 (Figure 2).

The overstory in Wetland B was sparse but contained sweet birch, pin oak, and American elm. The shrub layer is dominated by buttonbush (*Cephalanthus occidentalis*). There was no herbaceous layer in this wetland.

The primary soil mapped in Wetland B is Erie gravelly silt loam, a soil with potential hydric inclusions (Figure 4). Soil samples from Wetland B showed low matrix chromas and redoximorphic features in the B-horizon.

Hydrology indicators throughout Wetland B included inundation and saturation in the upper 12 inches. This wetland is considered isolated.

Wetland C

Wetland C is a wet meadow, approximately 0.16 acre in size. This wetland is located southeast of Wetland B, near the northeastern portion of the site boundary (Figure 8).

The shrub layer in Wetland C was very sparse but consisted of American elm. Purple loosestrife, sedge, and rough stem goldenrod (*Solidago rugosa*) dominated the herbaceous layer.

Wetland C is not located in a mapped area of hydric soils or soils with potential hydric inclusions; however soils within Wetland C showed low matrix chromas and redoximorphic features in the B-horizon.

Hydrology indicators throughout Wetland C included drainage patterns. This wetland is not connected to any other wetland/waterbody and is considered isolated.

Wetland D

Wetland D is a wet meadow, approximately 0.27 acre in size. This wetland is located southeast of Wetland C, near the northeastern portion of the site boundary (Figure 8). It may have been created by past mining activities in the area.

Wetland D contained no tree or shrub layer. The herbaceous layer contained reed canary grass and purple-leaf willow herb.

While not located in a mapped area of hydric soils or soils with potential hydric inclusions, soils within Wetland C showed low matrix chromas with mottles in the B-horizon and redoximorphic features.

Hydrology indicators throughout Wetland D included drainage patterns. This wetland is not connected to any wetland/waterbody and is considered isolated.

Wetland E

Wetland E is approximately 2.75 acres in size and can be found south of Wetland C and west of Wetland D (Figure 8). This wetland consisted of emergent wetland and wet meadow cover types, and was likely created from past mining activities.

Emergent wetlands occurred in the northern portion of Wetland E. There were no tree or shrub layers in this cover type. The herbaceous layer was dominated by purple-leaf willow herb, soft rush (*Juncus effusus*), and burreed (*Sparganium* sp.).

Hydrology indicators throughout this portion of Wetland E included inundated and saturated ground surface.

The southern portion of Wetland E contains the wet meadow area. There were no tree or shrub layers in this cover type. Tearthumb, soft rush, goldenrod, and purple-leaf willow herb comprised the herbaceous layer.

The primary soil in Wetland E is Erie gravelly silt loam, a soil with potential hydric inclusions (Figure 4). Soil samples from Wetland E showed low matrix chromas with mottles and redoximorphic features in the B-horizon.

Hydrology indicators throughout the wet meadow portion of Wetland E included drainage patterns. Wetland E is not connected to any other wetland/waterbody and is considered an isolated wetland.

Wetland F

Wetland F is an emergent wetland, approximately 0.73 acre in size. This wetland is located south of Wetland D, in the eastern portion of the site (Figure 8). It is primarily an emergent wetland with a forested portion on the eastern edge.

The canopy in Wetland F is sparse but contained red maple. There was no shrub layer; the herbaceous layer, however, included ironweed (*Veronia noveboracensis*), soft rush, and water willow.

Wetland F roughly corresponds to an area mapped as water on the soil survey (Figure 4). Soil samples from Wetland F showed low matrix chromas and redoximorphic features in the B-horizon.

Hydrology indicators throughout this wetland included inundated and saturated ground surface. This wetland is not connected to any other wetland/waterbody and is considered isolated.

Wetland G

Wetland G is a wet meadow and a narrow drain, approximately 0.12 acre in size. This wetland is located south of Wetland F, in the eastern portion of the site (Figure 8).

There were no tree or shrub layers in Wetland G. The herbaceous layer was dominated by smartweed (*Polygonum* sp.) but also contained ironweed and sensitive fern.

While not located in a mapped area of hydric soils or soils with potential hydric inclusions, soils within Wetland G showed low matrix chromas with mottles in the B-horizon and redoximorphic features.

Hydrology indicators throughout Wetland G included drainage patterns. This wetland is not connected to any wetland/waterbody and is considered isolated.

Wetland H

Wetland H is a wet meadow, approximately 0.54 acre in size. This wetland is located northwest of Wetland G, in the central portion of the site (Figure 8).

There were no tree or shrub layers in Wetland H. The herbaceous layer contained purple loosestrife, goldenrod, soft rush, and aster.

While not located in a mapped area of hydric soils or soils with potential hydric inclusions, soils within Wetland H showed low matrix chromas, with mottles in the B-horizon and redoximorphic features.

Hydrology indicators throughout Wetland H included drainage patterns. This wetland drains towards a detention basin and is considered isolated.

Wetland I

Wetland I is a linear feature between two stone walls. It may have been an old farm lane or a pasture lane. It is approximately 1,203 linear feet in length. This wetland is located north of Wetland H, in the central portion of the site (Figure 8).

The canopy in Wetland I included green ash (*Fraxinus pennsylvanica*) and red maple. The shrub layer contained honeysuckle, buckthorn, and multiflora rose.

The primary soil in Wetland I is Erie gravelly silt loam, a soil with potential for hydric inclusions. Soil samples from Wetland I showed low matrix chromas.

Hydrology indicators throughout Wetland I include drainage patterns. This wetland drains to the northeast, but there does not appear to be a connection to wetland E, and it is considered isolated.

Wetland J

Wetland J is primarily the bank of the Wallkill River. Within the eastern edge of the site, Wetland J is approximately 3.29 acres and 987 linear feet of the river edge (Figure 8).

The canopy in Wetland I included green ash and red maple. The shrub layer contained honeysuckle, buckthorn, and multiflora rose.

The Wallkill River is not located in an area of hydric soils, or soils with potential hydric inclusions. No B-horizon could be reached through the rocky riverbed.

Hydrology indicators throughout Wetland J include inundated and saturated ground surface, and drainage patterns.

Wetland K

Wetland K is a deciduous forest wetland, located in the southern portion of the site, with drains running into Wetland J and into the Wallkill River. Approximately 0.84 acre and 584 linear feet of drains comprise this wetland (Figure 8).

The canopy in Wetland K was dominated by red maple and green ash (*Fraxinus pennsylvanica*). The shrub layer contained spicebush, honeysuckle, and American elm. Canada goldenrod, Japanese honeysuckle, mannagrass (*Glyceria* sp.), and cinnamon fern (*Osmunda cinnamomea*) dominated the herbaceous layer.

The primary soil in Wetland K is Alden silt loam, a hydric soil (Figure 4). Soil samples from Wetland K showed low matrix chromas, with mottles and redoximorphic features in the B-horizon.

Hydrology indicators throughout Wetland K included saturation, inundation, and drainage patterns.

5.0 SUMMARY

Terrestrial Environmental Specialists, Inc. (TES) was contracted by Concrete Properties, LLC to prepare a wetland report on a property located in the Towns of Goshen and Wawayanda, Orange County, New York. The study area is approximately 209 acres in size and is located north of the U.S. Route 6 and State Route 17M, east of County Road 50, south of Echo Lake

Road, and west of the Wallkill River (Figure 1). The site is referred to as the Echo Lake Property.

TES collected and reviewed available background information and maps, including a topographic map, wetland maps, a soil map and descriptions, a stream classification map, a flood insurance rate map, and an aerial photograph. These maps were used to locate potential wetlands on the site. There was one state-regulated wetland (MD-24) located in the northern portion of the site; this wetland is associated with Echo Lake. The NYSDEC has ranked this wetland as a Class II wetland.

The northern portion of the site contains a section of the Wallkill River, which includes Echo Lake and is designated with a water quality Classification of Class B with B Standards by the NYSDEC. It is a state-protected waterbody since it has a water quality Classification or Standard of CT (trout) or higher. The section of the Wallkill River that creates the eastern boundary of the site is designated with a water quality Classification of Class C with C Standards.

Flagging of the wetlands/waters on the site and data collection along the boundaries were performed by TES on November 10-13, 2008. The boundaries were delineated using the federal criteria for vegetation, soils, and hydrology (Environmental Laboratory 1987, Reed 1988, and USSCS 1989).

Eleven wetlands were delineated on the site and are referred to as Wetland A (9.09 acres), Wetland B (0.75 acre), Wetland C (0.16 acre), Wetland D (0.27 acre), Wetland E (2.75 acres), Wetland F (0.73 acre), Wetlands G (0.12 acre), H (0.54 acre), Wetland I (1,203 linear feet), and Wetland J (3.29 acre and 987 linear feet), and Wetland K (0.84 acre and 584 linear feet). Wetland A, which corresponds with state-regulated Wetland MD-24, contains a portion of Echo Lake. Wetland B is also a portion of state-regulated Wetland MD-24. Wetlands K and J are associated with the Wallkill River. These wetlands are Corps-jurisdictional areas since they are associated with tributary systems to navigable waters.

Wetlands C through I are not considered to be jurisdictional wetlands, because they would appear to meet the definition of an isolated wetland in the U.S. Supreme Court decision in the case of Solid Waste Agency of Northern Cook County v. the U.S. Army Corps of Engineers (SWANCC). There is no regulated wetland adjacent area (buffer) in the federal regulations. If no work is proposed in the wetland proper, no permit is required.

6.0 REFERENCES

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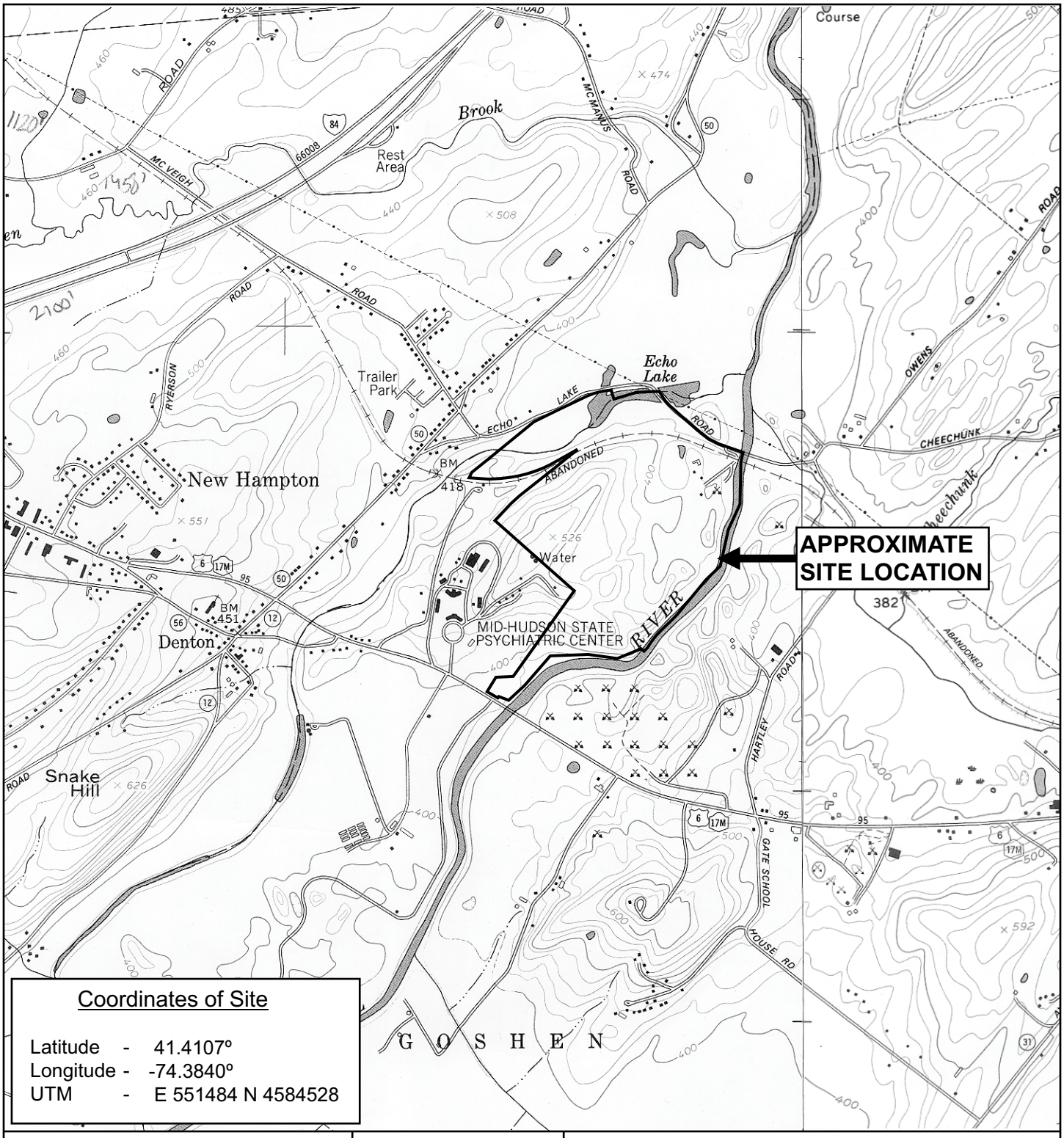
USDA NRCS. 1995. Field Indicators of Hydric Soils In the United States. USDA NRCS, Washington, D.C.



QUADRANGLE LOCATION

0 1000' 2000'

SCALE 1" = 2000'

NORTH

Figure 1. Site location

NYS DOT Topographic Map

Middletown & Goshen Quadrangles
1986 & 1986

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES file: ROS-3294\3294fig1-revisedsite.dsf\8-31-09

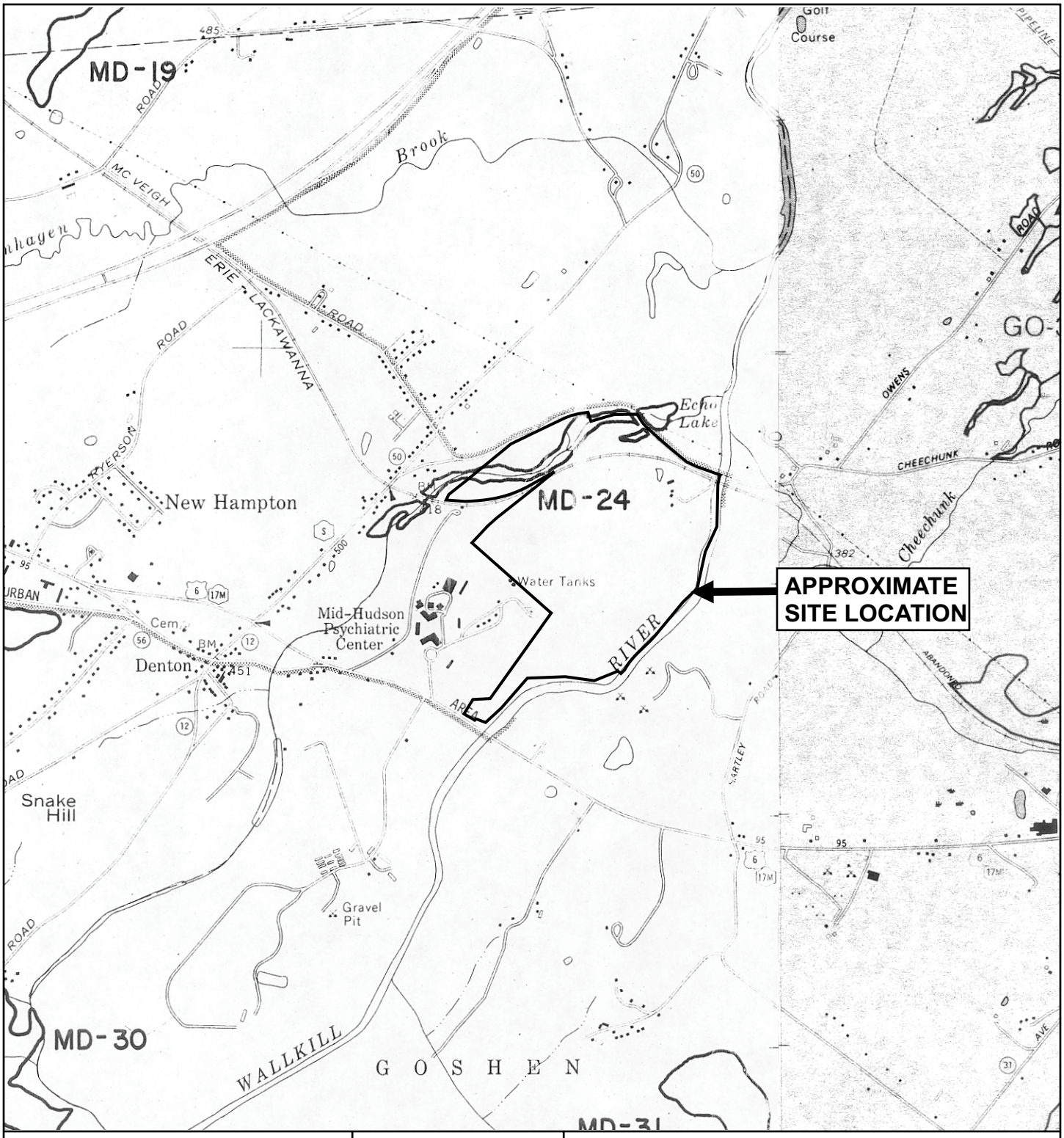


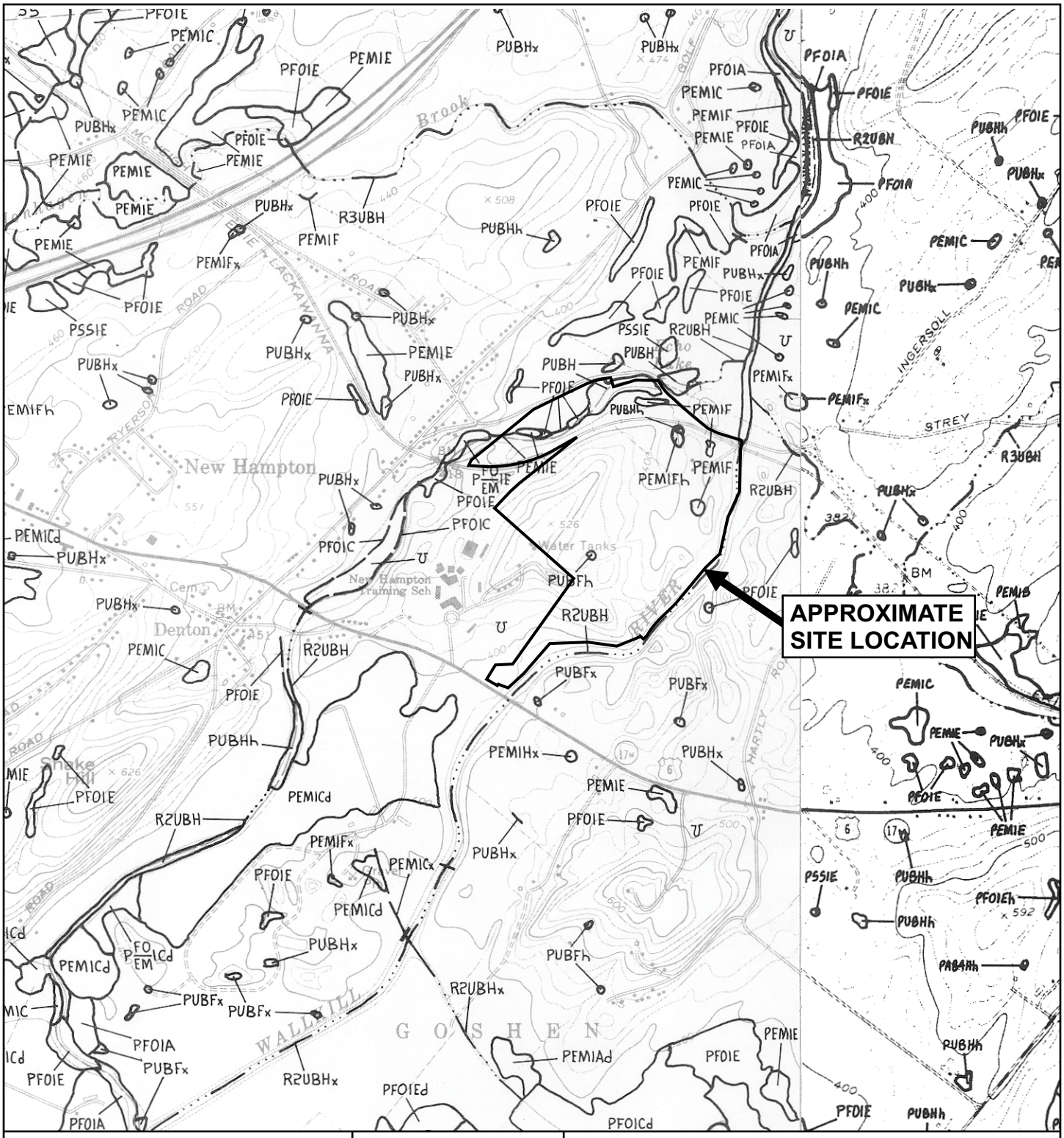
Figure 2. NYS Freshwater Wetlands Map

NYS Department of Environmental Conservation

Middletown & Goshen Quadrangles
1985 & 1991

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES file: ROS-3294/3294fig2-revisedsite.dsf\8-31-09



QUADRANGLE LOCATION

0 1000' 2000'

SCALE 1" = 2000'

NORTH

Figure 3. National Wetlands Inventory Map

U.S. Fish & Wildlife Service

Middletown & Goshen Quadrangles
1984 & 1984

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES file: ROS-3294\3294fig3-revisedsite.dsf\8-31-09

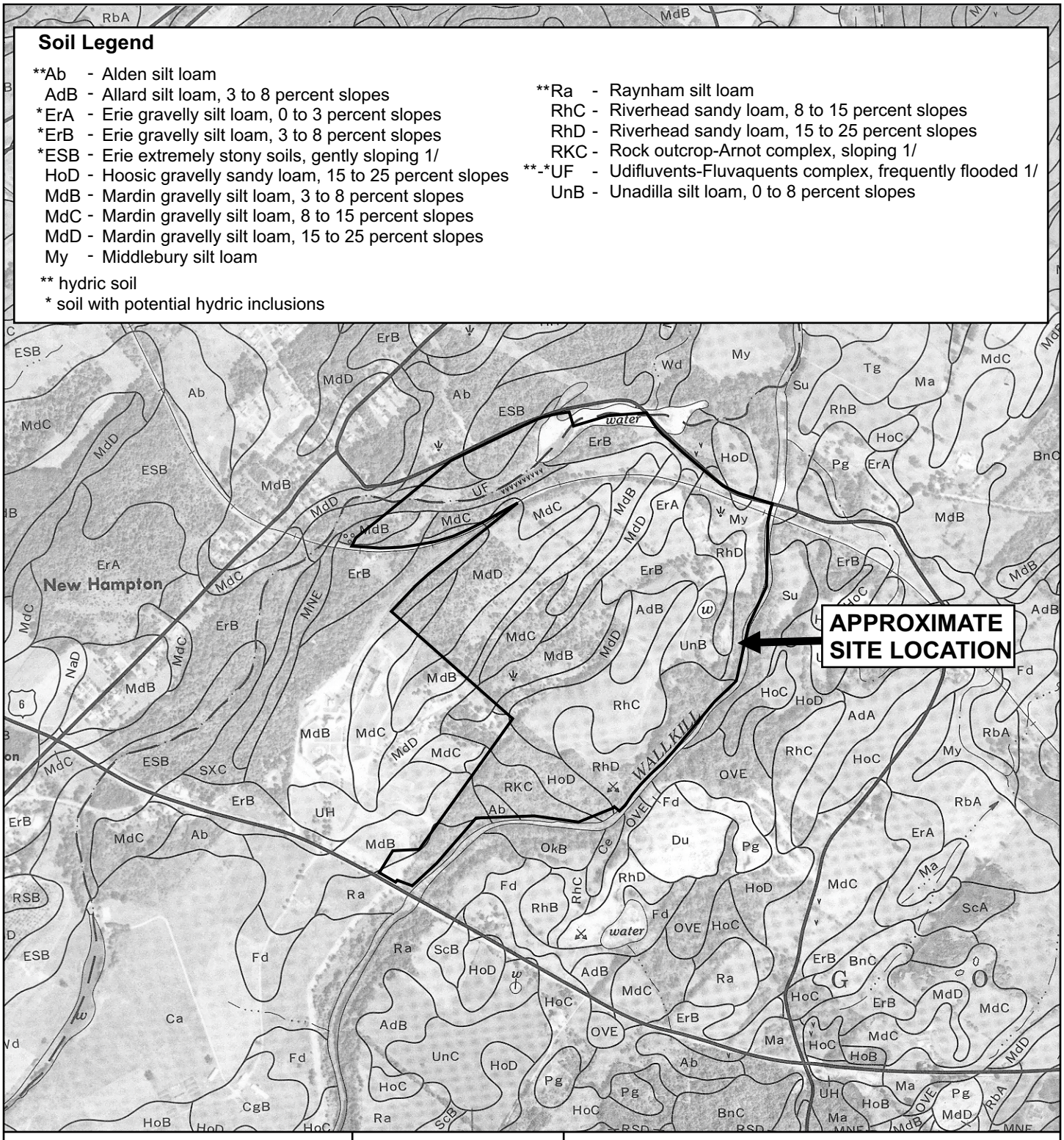


Figure 4. Soil Survey Map

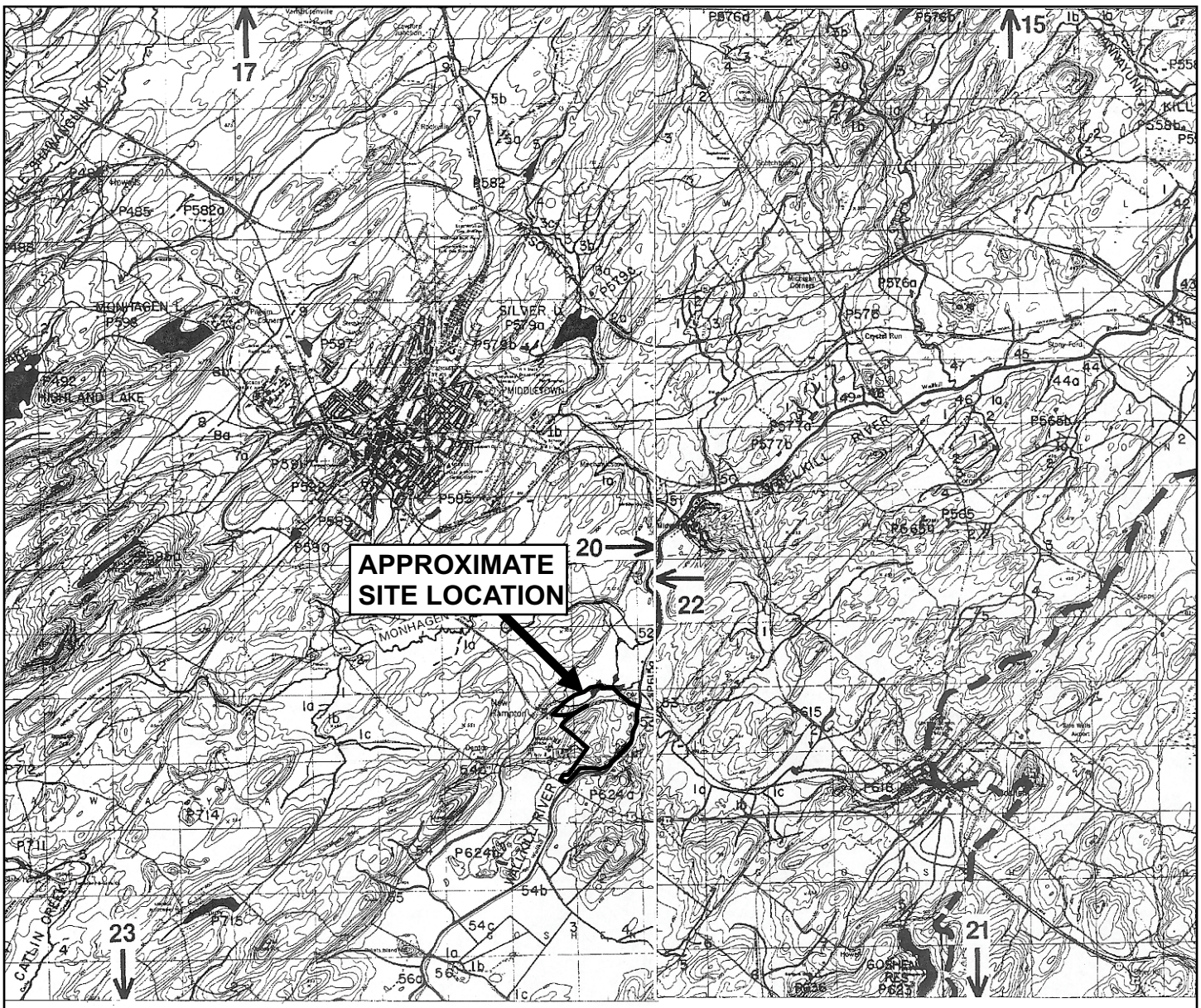
Orange County Soil Survey

1981

Sheet 49

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES file: ROS-3294/3294fig4-revisedsite.dsf/8-31-09



Item No.	*Waters Index Number*	*Name*	*Description*	*Map Ref. No.*	*Class*	*Standards*
1	H-139-13 portion	Wallkill River	From Rondout River to Rio Grande. (Rio Grande is designated as item no. 193.)	3, 11, 12, 13, 15, 20, 22	B	B
2	H-139-13 portion	Wallkill River	From Rio Grande to New York-New Jersey state line.	22, 23, 25	C	C

NOTE: Item No. 1 includes Echo Lake.

Title 6 NYCRR, Chapter X
Article 10, Part 855.3 (2001)

Map 20 & 22

0 3571' 7143'

SCALE 1" = 7143'

NORTH

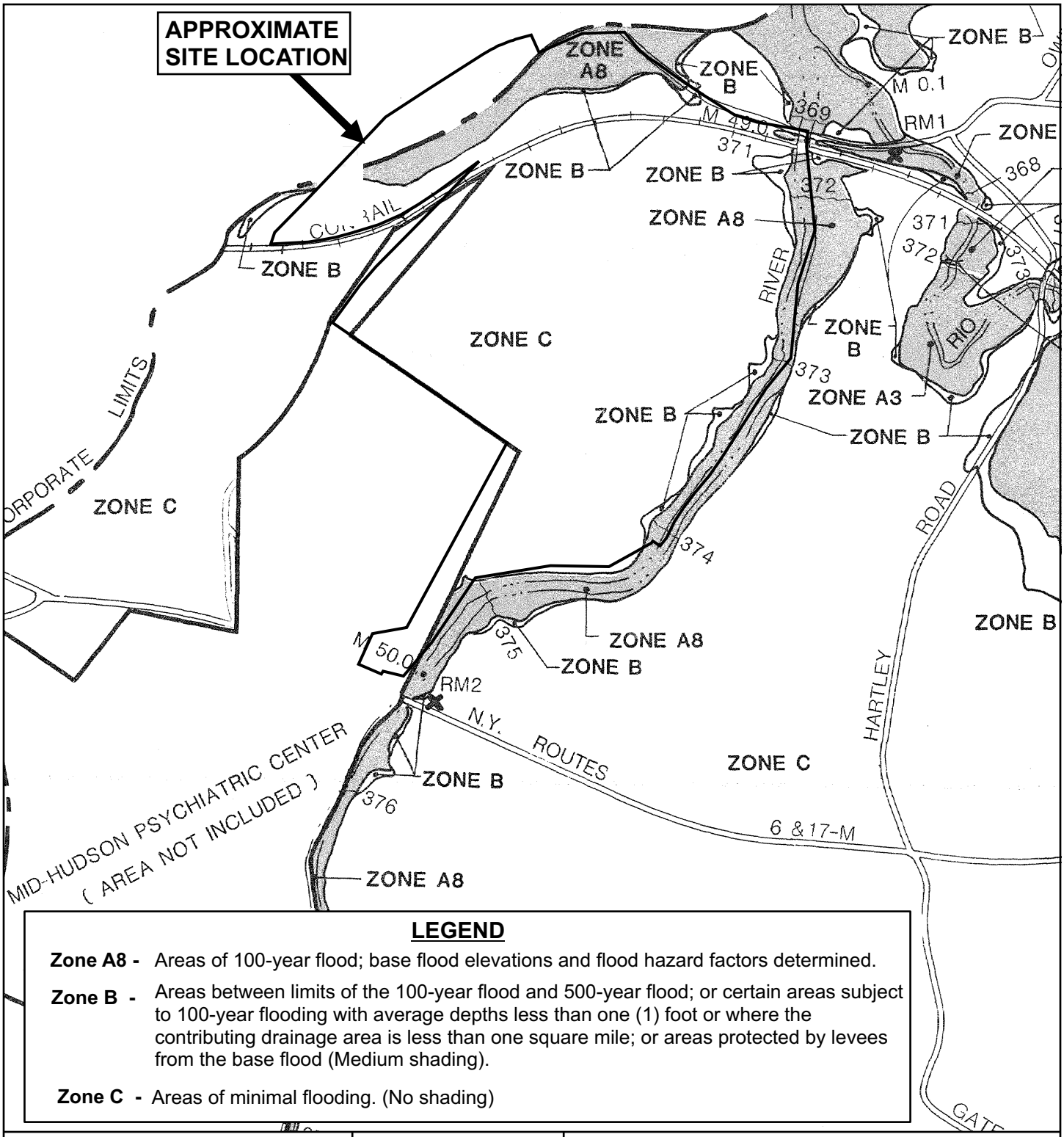
Figure 5. Stream Classification Map

NYSDEC

Middletown & Goshen Quadrangles

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES file: ROS-3294\3294fig5-revisedsite.dsf\5-4-09



LEGEND

Zone A8 - Areas of 100-year flood; base flood elevations and flood hazard factors determined.

Zone B - Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood (Medium shading).

Zone C - Areas of minimal flooding. (No shading)

Panel Numbers:

360614 0005 B
(Effective Date 4/30/86)

0 500' 1000'

SCALE 1" = 1000'

NORTH

Figure 6. Flood Insurance Rate Map

Federal Emergency Management Agency

Town of Goshen, NY

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES File: ROS-3294/3294fig6-revisedsite.dsf/8-31-09

NORTH

0 300' 600'

APPROXIMATE SCALE IN FEET

Aerial Photograph obtained from NYS GIS Clearinghouse 2007

Figure Prepared by Terrestrial Environmental Specialists, Inc.

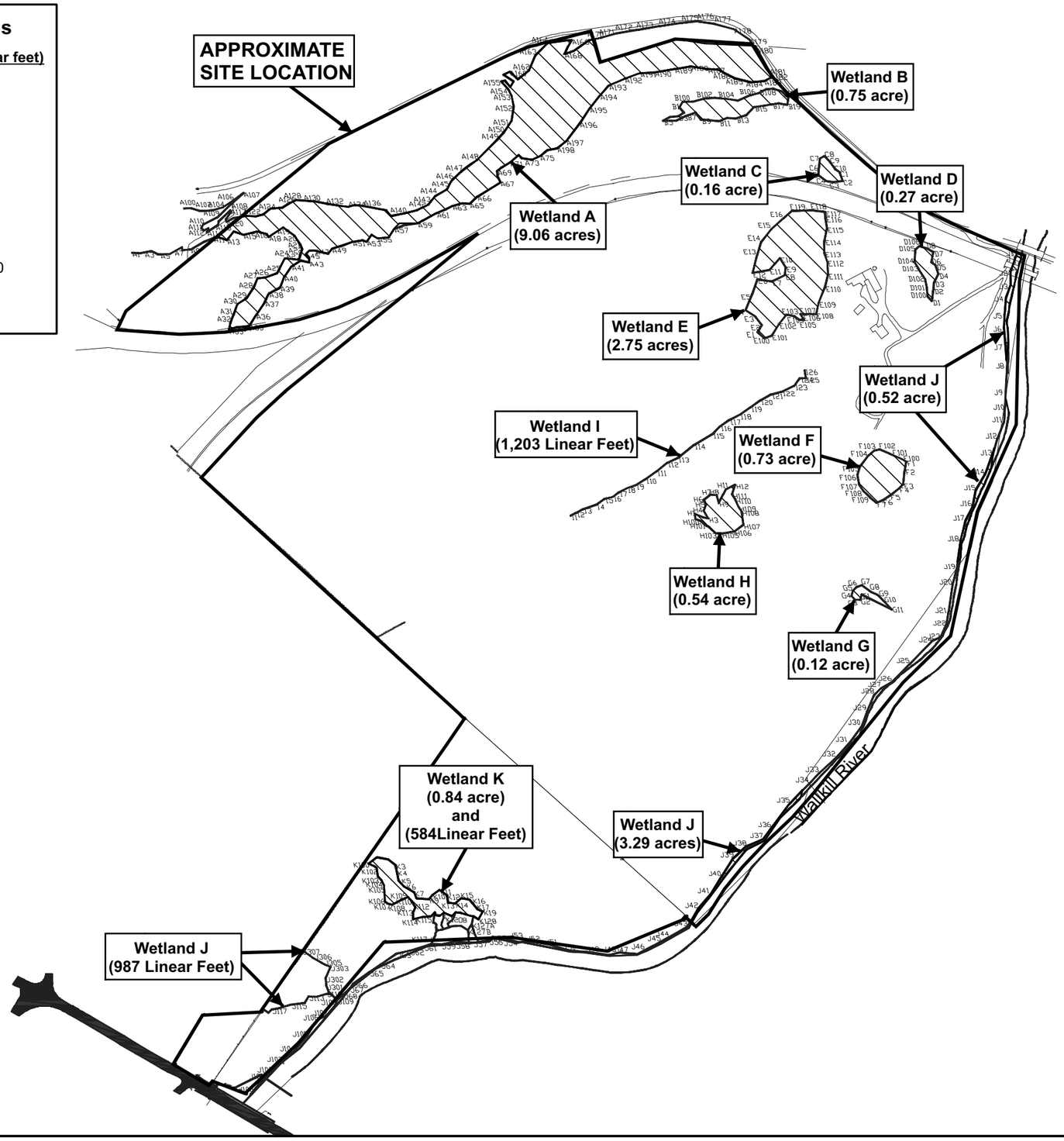
Figure 7.

Aerial Photograph of Site

TES File: ROS-3294\3294aerial-revisedsite.dsf\8-31-09

Wetland Acreages and Lengths

Wetland	Area (Acres)	Length (Linear feet)
A	9.06	-
B	0.75	-
C	0.16	-
D	0.27	-
E	2.75	-
F	0.73	-
G	0.12	-
H	0.54	-
I	-	1,203.00
J	3.29	987.00
K	0.84	584.00



NORTH

0 250' 500'

APPROXIMATE SCALE IN FEET

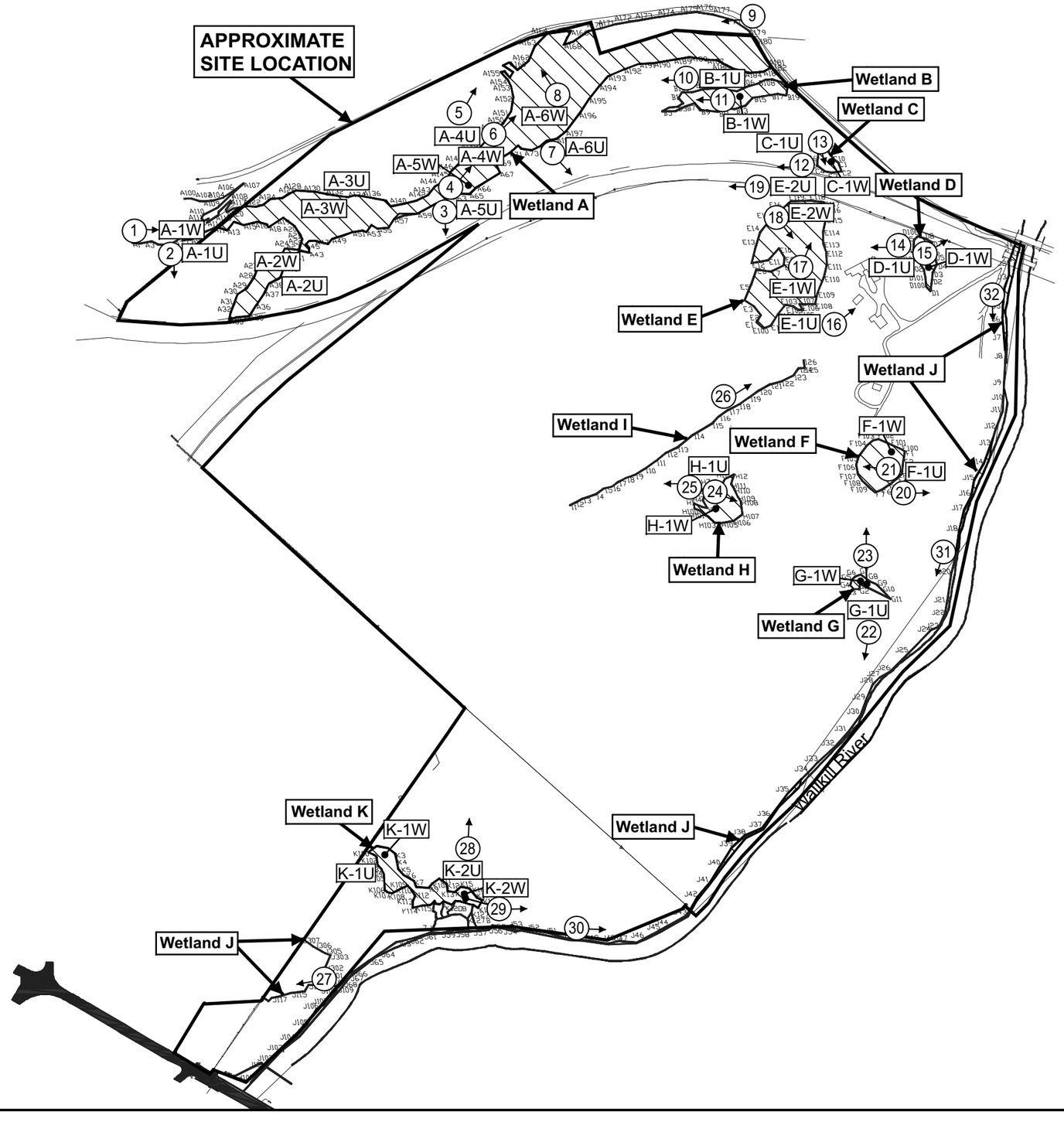
Figure Prepared by Terrestrial Environmental Specialists, Inc.

Base Map Provided by Mercurio-Norton-Tarolli Land Surveying-Engineering, P.C.

Figure 8.

Wetland Location Map

TES File: ROS-3294\3294-wet-location.dsf\8-31-09



LEGEND

Wetland

B-1W Sample Plot Location

1 Photo Location and Direction

NORTH

0 250' 500'

APPROXIMATE SCALE IN FEET

Figure Prepared by Terrestrial Environmental Specialists, Inc.

Base Map Provided by Mercurio-Norton-Tarolli Land Surveying-Engineering, P.C.

Figure 9.

Wetland Boundaries with Sample Plot and Photograph Locations

TES File: ROS-3294\3294-plot&photo.dsf\8-31-09

APPENDIX A – Photographs

Photo 1.

Photo 2.

Photo 3.

Photo 4.

Photo 5.

Photo 6.

Photo 7.

Photo 8.

Photo 9.

Photo 10.

Photo 11.

Photo 12.

Photo 13.

Photo 14.

Photo 15.

Photo 16.

Photo 17.

Photo 18.

Photo 19.

Photo 20.

Photo 21.

Photo 22.

Photo 23.

Photo 24.

Photo 25.

Photo 26.

Photo 27.

Photo 28.

Photo 29.

Photo 30.

Photo 31.

Photo 32.

APPENDIX B – Wetland Determination Data Sheets

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-1U **Date:** 11/10/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** **Field Photo** (roll/frame): 22

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Quercus rubra	40%	FACU-	*
Tsuga canadensis	30%	FACU	*
Acer saccharum	20%	FACU	*

Dominance = 90 **50% =** 45.0 **20% =**18.0

SHRUBS

Species	Cover	Status	*
Acer saccharum	30%	FACU	*

Dominance = 30 **50% =** 15.0 **20% =**6.0

HERBS

Species	Cover	Status	*
Dryopteris marginalis	10%	FACU-	*
Dryopteris intermedia	5%	FACU	*
Solidago sp.	5%	FAC	*

Dominance = 20 **50% =** 10.0 **20% =**4.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **14.3%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Udifluvents-Fluvaquents complex

Different than mapped? Yes

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 8 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

3
2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

4
3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-1W **Date:** 11/10/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** **Field Photo** (roll/frame): 21

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Acer rubrum	60%	FAC	*
Fraxinus pennsylvanica	15%	FACW	*

Dominance = 75 **50% =** 37.5 **20% =** 15.0

SHRUBS

Species	Cover	Status	*
Lindera benzoin	35%	FACW-	*
Berberis vulgaris	5%	FACU	

Dominance = 40 **50% =** 20.0 **20% =** 8.0

HERBS

Species	Cover	Status	*
Onoclea sensibilis	35%	FACW	*
Cinna sp.	20%	FACW	*
Carex sp.	10%	FAC	

Dominance = 65 **50% =** 32.5 **20% =** 13.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Udifluvents-Fluvaquents complex

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 4 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

4/1

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☑ Drainage Patterns in Wetlands

Secondary indicators:

☑ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-2U **Date:** 11/10/2008

Town/County/State Goshen / Orange / NY **Community Type:** Mixed Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-39 **Field Photo** (roll/frame): 25&26

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Tsuga canadensis	85%	FACU	*
Ulmus americana	25%	FACW-	*

Dominance = 110 **50% =** 55.0 **20% =** 22.0

SHRUBS

Species	Cover	Status	*
Rhamnus cathartica	25%	FACU+	*
Rosa multiflora	15%	FACU	*
Berberis vulgaris	10%	FACU	
Carpinus caroliniana	10%	FAC	

Dominance = 60 **50% =** 30.0 **20% =** 12.0

HERBS

Species	Cover	Status	*
Acer saccharum	10%	FACU	*

Dominance = 10 **50% =** 5.0 **20% =** 2.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **20.0%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Mardin gravelly silt loam, 8 to 15% slopes

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Loam

B horizon soil texture: (sand/silt/clay/loam/other)

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks: *No B horizon rock below.*

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-2W **Date:** 11/10/2008

Town/County/State Goshen / Orange / NY **Community Type:** Scrub-Shrub Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-25 **Field Photo** (roll/frame): 24

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Species	Cover	Status	*
Alnus incana	75%	FACW	*
Rosa multiflora	30%	FACU	*
Lonicera sp.	20%	FAC-	

Dominance = 125 **50% =** 62.5 **20% =** 25.0

HERBS

Species	Cover	Status	*
Onoclea sensibilis	40%	FACW	*
Solidago sp.	30%	FAC	*
Aster sp.	10%	FAC	
Agrimonia parviflora	5%	FACW	

Dominance = 85 **50% =** 42.5 **20% =** 17.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **75.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Erie gravelly silt loam, 3 to 8% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☑ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 1 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☑ Other - 2.5 / 1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☑ Other - 4 / 1

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Clay/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Clay

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** (in.)

% Area inundated: ☑ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☑ Inundated ☑ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-3U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-131 **Field Photo** (roll/frame): 27

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Fraxinus americana	20%	FACU	*
Platanus occidentalis	20%	FACW-	*
Acer rubrum	10%	FAC	*

Dominance = 50 **50% =** 25.0 **20% =** 10.0

SHRUBS

Species	Cover	Status	*
Ligustrum vulgare	45%	FACU	*
Rhamnus cathartica	35%	FACU+	*
Rosa multiflora	30%	FACU	*
Acer rubrum	20%	FAC	
Lonicera sp.	10%	FAC-	

Dominance = 140 **50% =** 70.0 **20% =** 28.0

HERBS

Dominance = **50% =** **20% =**

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: 33.3%

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Alden silt loam **Different than mapped?** Yes

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 13 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑ 3

2.5 y ☐ 5 y ☐ Other - 2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐ 5

2.5 y ☑ 5 y ☐ Other - 3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐

2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Clay

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime

☐ Histic Epipedon ☐ Redoximorphic Features

☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer

☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.

☐ Water Marks ☐ Drift Lines

☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches

☐ Water-Stained Leaves

☐ Local Soil Survey Data

☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-3W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Emergent Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-131 **Field Photo** (roll/frame): 28

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Quercus palustris	15%	FACW	*
Acer rubrum	10%	FAC	*

Dominance = 25 **50% =** 12.5 **20% =**5.0

SHRUBS

Species	Cover	Status	*
Betula nigra	25%	FACW	*

Dominance = 25 **50% =** 12.5 **20% =**5.0

HERBS

Species	Cover	Status	*
Phalaris arundinacea	100%	FACW	*
Scirpus cyperinus	15%	FACW+	
Aster sp.	10%	FAC	
Juncus effusus	10%	FACW+	

Dominance = 135 **50% =** 67.5 **20% =**27.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100.0%

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Udifluvents-Fluvaquents complex

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 12+ (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other - Gleyed

3
N

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/ Loam

B horizon soil texture: (sand/silt/clay/loam/other)

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☑ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks: *No B horizon rock below.*

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☑ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☑ Inundated ☑ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-4U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-148 **Field Photo** (roll/frame): 32

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Quercus alba	30%	FACU	*
Carya ovata	10%	FACU	*
Acer rubrum	10%	FAC	*

Dominance = 50 **50% =** 25.0 **20% =** 10.0

SHRUBS

Species	Cover	Status	*
Acer rubrum	45%	FAC	*
Berberis vulgaris	25%	FACU	*
Rosa multiflora	15%	FACU	
Lonicera sp.	10%	FAC-	

Dominance = 95 **50% =** 47.5 **20% =** 19.0

HERBS

Species	Cover	Status	*
Solidago sp.	15%	FAC	*
Rosa multiflora	5%	FACU	*
Carex sp.	5%	FAC	*

Dominance = 25 **50% =** 12.5 **20% =** 5.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **50.0%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Erie gravelly silt loam, 3 to 8% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☑ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 2 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 2/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other)

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks: *No B horizon rock below.*

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-4W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Emergent Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-148 **Field Photo** (roll/frame): 31

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Betula nigra	40%	FACW	*

Dominance = 40 **50% =** 20.0 **20% =**8.0

SHRUBS

Species	Cover	Status	*
Acer rubrum	20%	FAC	*

Dominance = 20 **50% =** 10.0 **20% =**4.0

HERBS

Species	Cover	Status	*
Polygonum sagittatum	80%	OBL	*
Epilobium coloratum	35%	FACW+	*
Panicum clandestinum	15%	FACU	
Carex sp.	10%	FAC	
Lythrum salicaria	10%	FACW+	
Veronica anagallis-aquatica	5%	OBL	

Dominance = 155 **50% =** 77.5 **20% =**31.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100.0%

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Udifluvents-Fluvaquents complex

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 5 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - ____

2 / 1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other - Glyed

3 / N

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - ____

5 / 6

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Clay/Loam

Mottle abundance: (few/common/many) Many

Mottle contrast: (faint/distinct/prominent) Prominent

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☑ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☑ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☑ Inundated ☑ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-5U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Mixed Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-65 **Field Photo** (roll/frame): B-2

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Tsuga canadensis	60%	FACU	*
Ailanthus altissima	30%	FACU-	*
Acer rubrum	10%	FAC	

Dominance = 100 **50% =** 50.0 **20% =** 20.0

SHRUBS

Species	Cover	Status	*
Tsuga canadensis	10%	FACU	*
Acer rubrum	5%	FAC	*

Dominance = 15 **50% =** 7.5 **20% =** 3.0

HERBS

Species	Cover	Status	*
Dryopteris intermedia	40%	FACU	*
Alliaria petiolata	10%	FACU-	
Acer saccharum	5%	FACU	
Polystichum acrostichoides	5%	FACU-	
Veronica officinalis	2%	FACU-	

Dominance = 62 **50% =** 31.0 **20% =** 12.4

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **20.0%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks: *Steep rocky slopes*

SOILS

Mapping Unit: Mardin gravelly silt loam, 8 to 15% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑

2.5 y ☐ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑

2.5 y ☐ 5 y ☐ Other - 5/4

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐

2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Loam/Stony

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime

☐ Histic Epipedon ☐ Redoximorphic Features

☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer

☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks: *Stony/bouldery*

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.

☐ Water Marks ☐ Drift Lines

☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches

☐ Water-Stained Leaves

☐ Local Soil Survey Data

☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-5W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-65 **Field Photo** (roll/frame): B-3

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Acer rubrum	60%	FAC	*
Ulmus americana	10%	FACW-	
Fraxinus pennsylvanica	5%	FACW	
Quercus bicolor	2%	FACW+	

Dominance = 77 **50% =** 38.5 **20% =** 15.4

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Onoclea sensibilis	40%	FACW	*
Lysimachia nummularia	20%	FACW-	*
Thelypteris palustris	20%	FACW+	*
Decodon verticillatus	10%	OBL	
Mimulus ringens	5%	OBL	
Bidens sp.	5%	OBL	
Toxicodendron radicans	3%	FAC	

Dominance = 103 **50% =** 51.5 **20% =** 20.6

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Udifluvents-Fluvaquents complex

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 6 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - ____ **2/1**

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☑ Other - ____ **4/1**

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - ____ **5/6**

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Prominent

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** 4 (in.)

% Area inundated: ☑ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☑ Water Marks ☑ Drift Lines
☐ Sediment Deposits ☑ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-6U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-199 **Field Photo** (roll/frame): 37

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Betula lenta	75%	FACU	*

Dominance = 75 **50% =** 37.5 **20% =** 15.0

SHRUBS

Species	Cover	Status	*
Juniperus virginiana	20%	FACU	*
Betula lenta	15%	FACU	*

Dominance = 35 **50% =** 17.5 **20% =** 7.0

HERBS

Species	Cover	Status	*
Poa sp.	15%	FAC	*
Mitchella repens	5%	FACU	*

Dominance = 20 **50% =** 10.0 **20% =** 4.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **20.0%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Erie gravelly silt loam, 3 to 8% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☑ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 6 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 5/4

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** A-6W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Echo Lake

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** A-199 **Field Photo** (roll/frame): 36

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Decodon verticillatus	65%	OBL	*
Lythrum salicaria	30%	FACW+	*
Cuscuta sp.	25%	FAC	
Epilobium coloratum	20%	FACW+	
Thelypteris palustris	15%	FACW+	
Ranunculus sp.	10%	FAC	
Bidens sp.	10%	OBL	

Dominance = 175 **50% =** 87.5 **20% =** 35.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Water **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 2 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 2/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☑ Other - 3/1

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☑ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☑ Inundated ☑ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** B-1U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** B-105 **Field Photo** (roll/frame): 39

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Betula lenta	40%	FACU	*
Quercus palustris	20%	FACW	*

Dominance = 60 **50% =** 30.0 **20% =** 12.0

SHRUBS

Species	Cover	Status	*
Quercus palustris	40%	FACW	*
Cornus amomum	30%	FACW	*
Betula lenta	15%	FACU	

Dominance = 85 **50% =** 42.5 **20% =** 17.0

HERBS

Dominance = **50% =** **20% =**

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: 75.0%

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Erie gravelly silt loam, 3 to 8% slopes

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☑ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 4 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 4/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other - ____

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** B-1W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Scrub-Shrub Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** B-105 **Field Photo** (roll/frame): 38

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Betula lenta	25%	FACU	*
Quercus palustris	10%	FACW	*
Ulmus americana	10%	FACW-	*

Dominance = 45 **50% =** 22.5 **20% =** 9.0

SHRUBS

Species	Cover	Status	*
Cephalanthus occidentalis	75%	OBL	*

Dominance = 75 **50% =** 37.5 **20% =** 15.0

HERBS

Dominance = **50% =** **20% =**

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **75.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Erie gravelly silt loam, 3 to 8% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☑ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 2 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 2/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/1

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Clay/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☑ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☑ Inundated ☑ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** C-1U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Scrub-Shrub Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** C-6 **Field Photo** (roll/frame): 42

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Species	Cover	Status	*
Rubus allegheniensis	50%	FACU-	*
Cornus foemina ssp. racemosa	50%	FAC-	*
Rosa multiflora	20%	FACU	
Lonicera morrowii	20%	FACU	
Quercus palustris	5%	FACW	

Dominance = 145 **50% =** 72.5 **20% =** 29.0

HERBS

Species	Cover	Status	*
Solidago canadensis	40%	FACU	*
Poa sp.	30%	FAC	*
Aster sp.	20%	FAC	
Veronica officinalis	10%	FACU-	
Alliaria petiolata	5%	FACU-	

Dominance = 105 **50% =** 52.5 **20% =** 21.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **25.0%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Mardin gravelly silt loam, 15 to 25% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 5 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 4/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other - ____

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Sand/Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No **Is the Sample Plot a Wetland?** No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** C-1W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Wet Meadow

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** C-9 **Field Photo** (roll/frame): 41

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Species	Cover	Status	*
Ulmus americana	15%	FACW-	*

Dominance = 15 **50% =** 7.5 **20% =** 3.0

HERBS

Species	Cover	Status	*
Lythrum salicaria	50%	FACW+	*
Carex sp.	50%	FAC	*
Solidago rugosa	30%	FAC	
Juncus effusus	15%	FACW+	
Epilobium coloratum	10%	FACW+	
Solidago gigantea	10%	FACW	
Agrimonia parviflora	5%	FACW	
Galium mollugo	5%	FACU	
Aster sp.	3%	FAC	

Dominance = 178 **50% =** 89.2 **20% =** 35.7

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Mardin gravelly silt loam, 15 to 25% slopes

Different than mapped? Yes

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 12 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 3/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 4/1

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☑ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** D-1U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Open Field

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** D-102 **Field Photo** (roll/frame): 44

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Asclepias syriaca	35%	FACU-	*
Solanum carolinense	20%	UPL	*
Juncus effusus	10%	FACW+	
Elytrigia repens	10%	FACU-	

Dominance = 75 **50% =** 37.5 **20% =** 15.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0.0%

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Middlebury silt loam **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 6 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 4/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam/Gravelly

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** D-1W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Wet Meadow

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** D-102 **Field Photo** (roll/frame): 43

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Phalaris arundinacea	90%	FACW	*
Epilobium coloratum	25%	FACW+	
Carex sp.	15%	FAC	

Dominance = 130 **50% =** 65.0 **20% =** 26.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Middlebury silt loam

Different than mapped? Yes

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 12 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 4/2

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/6

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Distinct

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☑ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** E-1U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Open Field

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** E-105 **Field Photo** (roll/frame): 45

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Elytrigia repens	80%	FACU-	*
Galium mollugo	45%	FACU	*
Solidago canadensis	30%	FACU	
Solanum carolinense	20%	UPL	
Phleum pratense	15%	FACU	
Cirsium sp.	5%	FACU	
Agrimonia parviflora	5%	FACW	

Dominance = 200 **50% =** 100.0 **20% =** 40.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0.0%

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Erie gravelly silt loam, 3 to 8% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☑ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 8 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** E-1W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Wet Meadow

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** E-105 **Field Photo** (roll/frame): 46

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Polygonum sagittatum	80%	OBL	*
Juncus effusus	45%	FACW+	*
Solidago sp.	35%	FAC	
Epilobium coloratum	20%	FACW+	
Aster sp.	15%	FAC	
Mimulus ringens	15%	OBL	
Verbena hastata	10%	FACW+	

Dominance = 220 **50% =** 110.0 **20% =** 44.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Erie gravelly silt loam, 0 to 3% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☑ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 10 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/2

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/6

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Distinct

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☑ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** E-2U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Open Field

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** E-119 **Field Photo** (roll/frame): 50

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Species	Cover	Status	*
Rosa multiflora	5%	FACU	*

Dominance = 5 **50% =** 2.5 **20% =** 1.0

HERBS

Species	Cover	Status	*
Poa sp.	80%	FAC	*
Galium mollugo	50%	FACU	*
Solidago canadensis	20%	FACU	
Dactylis glomerata	10%	FACU	

Dominance = 160 **50% =** 80.0 **20% =** 32.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **33.3%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Mardin gravelly silt loam, 15 to 25% slopes

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 8 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

4/3

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

4/4

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Loam/Gravelly

B horizon soil texture: (sand/silt/clay/loam/other) Sand/Loam/Gravelly

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** E-2W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Emergent Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** E-16 **Field Photo** (roll/frame): 49

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Epilobium coloratum	50%	FACW+	*
Juncus effusus	45%	FACW+	*
Sparganium sp.	30%	OBL	
Carex intumescens	15%	FACW+	
Eleocharis sp.	10%	FACW	
Aster sp.	10%	FAC	

Dominance = 160 **50% =** 80.0 **20% =** 32.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Erie gravelly silt loam, 0 to 3% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☑ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 10 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/2

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/6

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Clay/Loam

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Distinct

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☑ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☑ Inundated ☑ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☑ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** F-1U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** F-2 **Field Photo** (roll/frame): 52

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Prunus serotina	45%	FACU	*
Quercus rubra	25%	FACU-	*
Quercus palustris	20%	FACW	
Carya ovata	15%	FACU	

Dominance = 105 **50% =** 52.5 **20% =**21.0

SHRUBS

Species	Cover	Status	*
Acer rubrum	30%	FAC	*
Lonicera sp.	15%	FAC-	*

Dominance = 45 **50% =** 22.5 **20% =**9.0

HERBS

Species	Cover	Status	*
Lonicera sp.	10%	FAC-	*
Carex sp.	5%	FAC	*

Dominance = 15 **50% =** 7.5 **20% =**3.0

VINES

Species	Cover	Status	*
Vitis sp.	30%	FAC	*

Dominance = 30 **50% =** 15.0 **20% =**6.0

Percent of Dominant Species that are OBL, FACW, and/or FAC: **42.9%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Unadilla silt loam, 0 to 8% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 2 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 4/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** F-1W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Emergent Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** F-1 **Field Photo** (roll/frame): 51

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Acer rubrum	20%	FAC	*

Dominance = 20 **50% =** 10.0 **20% =**4.0

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Vernonia noveboracensis	60%	FACW+	*
Juncus effusus	20%	FACW+	
Decodon verticillatus	20%	OBL	
Carex comosa	15%	OBL	

Dominance = 115 **50% =** 57.5 **20% =**23.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Water

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 16 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other -

2.5 / 1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other -

5 / 1

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Loam

B horizon soil texture: (sand/silt/clay/loam/other) Clay

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☑ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☑ Inundated ☑ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** G-1U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** G-2 **Field Photo** (roll/frame): 55

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Prunus serotina	30%	FACU	*
Ulmus americana	20%	FACW-	*
Fraxinus americana	10%	FACU	
Quercus rubra	10%	FACU-	

Dominance = 70 **50% =** 35.0 **20% =** 14.0

SHRUBS

Species	Cover	Status	*
Lonicera sp.	40%	FAC-	*
Rhamnus cathartica	10%	FACU+	*

Dominance = 50 **50% =** 25.0 **20% =** 10.0

HERBS

Species	Cover	Status	*
Alliaria petiolata	20%	FACU-	*
Carex sp.	10%	FAC	*
Geum sp.	3%	FAC	

Dominance = 33 **50% =** 16.5 **20% =** 6.6

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: 33.3%

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Riverhead sandy loam, 15 to 25% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 4 (in.)

Mottled No

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 4/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other -

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam/Gravelly

Mottle abundance: (few/common/many)

Mottle contrast: (faint/distinct/prominent)

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No **Is the Sample Plot a Wetland?** No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** G-1W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Wet Meadow

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** G-1 **Field Photo** (roll/frame): 54

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Polygonum sp.	100%	FAC	*
Vernonia noveboracensis	15%	FACW+	
Onoclea sensibilis	15%	FACW	
Polygonum sagittatum	10%	OBL	
Scirpus cyperinus	3%	FACW+	

Dominance = 143 **50% =** 71.5 **20% =** 28.6

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Riverhead sandy loam, 15 to 25% slopes **Different than mapped?** Yes

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 18 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 2/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/2

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/6

A horizon soil texture: (sand/silt/clay/loam/other) Muck

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many) Many

Mottle contrast: (faint/distinct/prominent) Prominent

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks: *6" silt, 10yr 5/4 Buried A horizon*

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☑ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** H-1U **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Open Field

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** H-9 **Field Photo** (roll/frame): 57

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Solidago sp.	75%	FAC	*
Poa sp.	25%	FAC	*
Aster sp.	20%	FAC	
Juncus effusus	15%	FACW+	
Rosa multiflora	10%	FACU	
Tanacetum vulgare	5%	FACU	
Malva neglecta	3%	FACU	

Dominance = 153 **50% =** 76.5 **20% =** 30.6

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Mardin gravelly silt loam, 15 to 25% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 8 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/6

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Distinct

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** H-1W **Date:** 11/11/2008

Town/County/State Goshen / Orange / NY **Community Type:** Wet Meadow

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** H-3 **Field Photo** (roll/frame): 56

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Dominance = **50% =** **20% =**

SHRUBS

Dominance = **50% =** **20% =**

HERBS

Species	Cover	Status	*
Lythrum salicaria	90%	FACW+	*
Solidago sp.	30%	FAC	*
Juncus effusus	30%	FACW+	*
Aster sp.	25%	FAC	
Polygonum sagittatum	15%	OBL	
Epilobium coloratum	10%	FACW+	
Solidago rugosa	10%	FAC	
Galium palustre	10%	OBL	
Agrimonia parviflora	5%	FACW	

Dominance = 225 **50% =** 112.5 **20% =** 45.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **100.0%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Mardin gravelly silt loam, 15 to 25% slopes **Different than mapped?** Yes

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 8 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

5/2

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other -

5/6

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Clay/Loam

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Distinct

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☑ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** K-1U **Date:** 11/12/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** K-103 **Field Photo** (roll/frame): 74

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Acer rubrum	45%	FAC	*
Quercus rubra	20%	FACU-	*
Fraxinus americana	15%	FACU	
Prunus serotina	10%	FACU	

Dominance = 90 **50% =** 45.0 **20% =** 18.0

SHRUBS

Species	Cover	Status	*
Lonicera sp.	50%	FAC-	*
Lindera benzoin	15%	FACW-	
Rubus allegheniensis	15%	FACU-	
Rhamnus cathartica	15%	FACU+	

Dominance = 95 **50% =** 47.5 **20% =** 19.0

HERBS

Species	Cover	Status	*
Solidago canadensis	25%	FACU	*
Alliaria petiolata	20%	FACU-	*
Galium mollugo	15%	FACU	*
Geum sp.	5%	FAC	

Dominance = 65 **50% =** 32.5 **20% =** 13.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: 16.7%

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Mardin gravelly silt loam, 3 to 8% slopes **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 12 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 4/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 5/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☑ 5 y ☐ Other - 5/6

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Distinct

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** K-1W **Date:** 11/12/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** K-102 **Field Photo** (roll/frame): 72

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Acer rubrum	85%	FAC	*

Dominance = 85 **50% =** 42.5 **20% =** 17.0

SHRUBS

Species	Cover	Status	*
Lindera benzoin	40%	FACW-	*
Lonicera sp.	25%	FAC-	*

Dominance = 65 **50% =** 32.5 **20% =** 13.0

HERBS

Species	Cover	Status	*
Solidago canadensis	10%	FACU	*
Geum sp.	5%	FAC	*
Acer rubrum	5%	FAC	*
Alliaria petiolata	3%	FACU-	

Dominance = 23 **50% =** 11.5 **20% =** 4.6

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **66.7%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Alden silt loam **Different than mapped?** No

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 2 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 2/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 4/1

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 4/6

A horizon soil texture: (sand/silt/clay/loam/other) Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Clay/Loam

Mottle abundance: (few/common/many) Many

Mottle contrast: (faint/distinct/prominent) Prominent

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☑ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** K-2U **Date:** 11/12/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Upland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** K-15 **Field Photo** (roll/frame): 76

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Acer rubrum	75%	FAC	*
Prunus serotina	15%	FACU	

Dominance = 90 **50% =** 45.0 **20% =** 18.0

SHRUBS

Species	Cover	Status	*
Lindera benzoin	60%	FACW-	*

Dominance = 60 **50% =** 30.0 **20% =** 12.0

HERBS

Species	Cover	Status	*
Alliaria petiolata	35%	FACU-	*
Lonicera japonica	20%	FAC-	*
Toxicodendron radicans	10%	FAC	

Dominance = 65 **50% =** 32.5 **20% =** 13.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **50.0%**

Greater than 50% of plant species are FAC or wetter. ☐

Less than or equal to 50% of plant species are FAC or wetter. ☑

Remarks:

SOILS

Mapping Unit: Rock outcrop-Arnot complex

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☐ Hydric ☐ Soil with potential hydric inclusions ☑ Non-hydric

Depth of A horizon: 12 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - ____ 3/2

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - ____ 4/3

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - ____ 5/6

A horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Silt/Loam

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Distinct

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☐ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☐ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☑ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? No **Depth of surface water:** (in.)

% Area inundated: ☐ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? No **Depth to saturated soil:** ____ (in.) **or** ☐ **Surface**

Other evidence of hydrology? ☐ **Yes (see Hydrology Indicators)** ☑ **No**

Primary indicators:

☐ Inundated ☐ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☑ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? No

Is the Hydric Soil Criterion Met? No

Is the Hydrology Criterion Met? No

Is the Sample Plot a Wetland? No

Additional Remarks:

WETLAND DETERMINATION DATA SHEET

Project: ROS-3294 Echo Lake Goshen **Sample Plot No.:** K-2W **Date:** 11/12/2008

Town/County/State Goshen / Orange / NY **Community Type:** Deciduous Forest Wetland

Investigators: M.Caves, J.McMullen, S.Sheridan **Flag No.:** K-15 **Field Photo** (roll/frame): 75

Do normal environmental conditions exist at the plant community? (if no, explain): Yes

VEGETATION

(* = Dominant species in each stratum)

TREES

Species	Cover	Status	*
Acer rubrum	60%	FAC	*
Fraxinus pennsylvanica	25%	FACW	*

Dominance = 85 **50% =** 42.5 **20% =** 17.0

SHRUBS

Species	Cover	Status	*
Lindera benzoin	65%	FACW-	*
Ulmus americana	10%	FACW-	

Dominance = 75 **50% =** 37.5 **20% =** 15.0

HERBS

Species	Cover	Status	*
Lonicera japonica	25%	FAC-	*
glyceria sp.	15%	OBL	*
Osmunda cinnamomea	15%	FACW	*
Carex sp.	10%	FAC	

Dominance = 65 **50% =** 32.5 **20% =** 13.0

VINES

Dominance = **50% =** **20% =**

Percent of Dominant Species that are OBL, FACW, and/or FAC: **83.3%**

Greater than 50% of plant species are FAC or wetter. ☑

Less than or equal to 50% of plant species are FAC or wetter. ☐

Remarks:

SOILS

Mapping Unit: Alden silt loam

Different than mapped? No

The mapped soil type is recognized by the NRCS as:

☑ Hydric ☐ Soil with potential hydric inclusions ☐ Non-hydric

Depth of A horizon: 6 (in.)

Mottled Yes

A horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 3/1

B horizon matrix color

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☐
2.5 y ☐ 5 y ☐ Other - Gleyed 1 5/N

B horizon mottle color, if present

2.5 yr ☐ 5 yr ☐ 7.5 yr ☐ 10 yr ☑
2.5 y ☐ 5 y ☐ Other - 5/6

A horizon soil texture: (sand/silt/clay/loam/other) Sand/Silt/Loam

B horizon soil texture: (sand/silt/clay/loam/other) Sand/Clay

Mottle abundance: (few/common/many) Common

Mottle contrast: (faint/distinct/prominent) Distinct

Hydric soil indicators:

☐ Histosol ☐ Aquic Moisture Regime
☐ Histic Epipedon ☑ Redoximorphic Features
☐ Sulfidic Odor ☐ Sandy Soils with Organic Streaking or High Organic Content in Surface Layer
☑ Gleyed

Upland soil indicators:

☐ Matrix chroma of 2 without mottle ☐ Matrix chroma greater than 2

Remarks:

HYDROLOGY

Is the ground surface inundated ? Yes **Depth of surface water:** (in.)

% Area inundated: ☑ 1-25 ☐ 26-75 ☐ 76-100

Is soil saturated ? Yes **Depth to saturated soil:** ____ (in.) **or** ☑ **Surface**

Other evidence of hydrology? ☑ **Yes (see Hydrology Indicators)** ☐ **No**

Primary indicators:

☑ Inundated ☑ Saturated in Upper 12 in.
☐ Water Marks ☐ Drift Lines
☐ Sediment Deposits ☐ Drainage Patterns in Wetlands

Secondary indicators:

☐ Oxidized Root Channels in Upper 12 Inches
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test

Upland Indicators:

☐ Insufficient hydrologic indicators met. No primary indicators and less than two secondary indicators observed.

Remarks:

JURISDICTIONAL DETERMINATION

Is the Hydrophytic Vegetation Criterion Met? Yes

Is the Hydric Soil Criterion Met? Yes

Is the Hydrology Criterion Met? Yes

Is the Sample Plot a Wetland? Yes

Additional Remarks:

APPENDIX C – JD Information

CHECKLIST OF INFORMATION INCLUDED WITH REQUESTS FOR JURISDICTIONAL DETERMINATIONS (JD)

1. Name (including POC if a corporation or other entity), complete mailing addresses and phone numbers of the following:

Current Property Owner:

Name:	BPG Development Company, L. P.
Address:	3000 Centre Square West, 1500 Market Street Philadelphia, PA 19102
Phone Number:	1-215-575-2309

Applicant (Project Sponsor):

Name:	BPG Development Company, L. P.
Address:	3000 Centre Square West, 1500 Market Street Philadelphia, PA 19102
Phone Number:	1-215-575-2309

Wetland Consultant:

Name:	Terrestrial Environmental Specialists, Inc.
Address:	23 County Route 6, Suite A, Phoenix, New York 13135
Phone Number:	315-695-7228

2. 8½ x 11 Location Map **(see Figure 10)** showing:
   - UTM Grid Coordinates
   - Stream order and location
   - Head and discharge coordinates of each stream
   - Stream identification (TNWs, perennial RPWs, seasonal RPWs, or non-RPWs)

3. Cover letter **(included in report or to be provided)** describing the purpose of the request, a general description of the proposed project, the size (acres) of the parcel, and the size of the limits of the project site or review area (if smaller than the parcel).

4. Delineation report, including the following supporting information:

   - Description of any current and/or historic land uses on the site **(see Section 4.1 Site Description)**

   - DEC Wetlands Maps, NWI Maps, Soil Survey Maps **(see Figures 2, 3, and 4, respectively)**

   - Watershed size, drainage area size **(see Figure 10)**

   - Discussion of whether tributaries (streams) on the site are TNWs, perennial RPWs, seasonal RPWs, or non-RPWs **(see Figure 10)**

   - Waters of the U.S. – indicate presence of waters of U.S. in review area (check all that apply):
     - ☒ TNWs, including territorial seas
     - ☒ Wetlands adjacent to TNWs
     - ☐ Relatively permanent waters (RPWs) that flow directly or indirectly into TNWs

☐ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☒ Isolated (interstate or intrastate) waters, including isolated wetlands

- If wetland on the site either abuts or is adjacent to a tributary, identify which tributary and discuss below:

Explanation: Wetland A is associated with Echo Lake and Wetlands K and J are associated with the Wallkill River.

- If connection to a TNW, explain connection below:

Explanation: Wetland A is associated with Echo Lake and Wetlands K and J are associated with the Wallkill River.

- Project wetlands are **1 (or less)** aerial (straight) miles and **1 (or less)** river miles from TNW.
- Project waters are **1 (or less)** aerial (straight) miles and **1 (or less)** river miles from TNW.

- Description of tributary substrate composition (e.g. silts, sands, gravel, etc.) **(see Appendix B Wetland Determination Data Sheets)**

- Justification for proposed "isolated" (SWANCC) or non-jurisdictional determinations on any wetlands or streams **(see Section 5.0 Summary)**

- Description of vegetative cover types on the site **(see Section 4.2 Site Ecology and Section 4.3 Wetlands Descriptions)**

- Wetland Delineation Forms for each cover type **(see Appendix B, Wetland Determination Data Sheets)**

- Color photographs of all representative areas of the site **(see Appendix A, Photographs)**

AKRF

Environmental and Planning Consultants

34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

October 22, 2015

Brian A. Orzel
Project Manager/Civil Engineer
NY District U.S. Army Corps of Engineers
26 Federal Plaza, Room 1937
New York, NY 10278

Re: Amy's Kitchen, Goshen NY (Orange County) – JD Request

Dear Mr. Orzel:

We are writing to request a jurisdictional determination (JD) for wetlands/waters delineated on the Project Site referenced above. Enclosed are two (2) wetland delineation reports and large scale plans showing the location and extent of delineated wetlands/waters onsite. One portion of the Project Site, the "Echo Lake Property" was issued a JD on April 5, 2010. Wetlands on the other three (3) properties that comprise the Project Site have been delineated in the Spring/Summer of 2015. We are requesting that the Corps review the enclosed JD Request materials for completeness and schedule a site inspection to confirm the boundaries of federally regulated wetlands/waters on the entire Project Site at your earliest convenience.

The Project Site is located adjacent to the Wallkill River, perennial "relatively permanent water" (RPW) that flows directly into the Hudson River – a traditional navigable water (TNW). It is approximately 54 river miles from the Project Site to the Hudson River and 18.5 direct/aerial miles. The Project Site also contains Cheechunk Creek, a perennial RPW that flows directly into the Wallkill River. A majority of the wetlands delineated onsite are adjacent to these two onsite water bodies and are therefore regulated as "waters of the U.S." However, several wetlands delineated onsite consist of depressional wetlands, some created as a result of former mining activities, without evident surface connections to the two onsite streams or to other wetlands. It is presumed that such wetlands are either non-jurisdictional based on the Corps' prior jurisdictional determination for the Echo Lake Parcel (4/5/10), or will require a significant nexus determination by the Corps.

The attached JD Request Checklist summarizes the material included in this submission. The complete list of onsite wetlands and their relationship to onsite waters is as follows:

Wetlands of the Ver Hage, Lipoff, and Strong Farm Properties (Delineated by AKRF, Inc. June/July 2015):

Wetland A: Depressional wetland with no evident surface connections to other waters/wetlands and located outside the boundaries of the 100-year floodplain – *Significant Nexus Determination Required.*

Wetland B: Riparian/floodplain wetland adjacent to Wallkill River (perennial RPW).

Wetland C: Riparian/floodplain adjacent to Cheechunk Creek (perennial RPW).

Wetland D: Depressional wetland with no evident surface connection to other waters/wetlands and located within the boundaries of the 100-year floodplain – *Significant Nexus Determination Required.*

Wetland E: Depressional wetland adjacent to and within floodplain of Wallkill River (perennial RPW).

Wetland F: Wetland Meadow wetland connected by agricultural ditches to the Wallkill River (perennial RPW).

Wetlands of the Echo Lake Property (Delineated by TES, Inc. August 2009):

Wetland A: Forested, Open Water and Emergent wetlands associated with Echo Lake (perennial RPW, NYSDEC Wetland MD-24).

Wetland B: Scrub-shrub wetland adjacent to Echo Lake (perennial RPW, NYSDEC Wetland MD-24).

Wetland C: Wet meadow with no evident surface connection to other waters/wetlands – *the Corps' April 5, 2010 JD issued for the Echo Lake Property found this wetland to be non-jurisdictional.*

Wetland D: Wet meadow with no evident surface connection to other waters/wetlands – *the Corps' April 5, 2010 JD issued for the Echo Lake Property found this wetland to be non-jurisdictional.*

Wetland E: Depressional wetland from past mining activity, with no evident surface connection to other waters/wetlands – *the Corps' April 5, 2010 JD issued for the Echo Lake Property found this wetland to be non-jurisdictional.*

Wetland F: Emergent/forested wetland with no evident surface connection to other waters/wetlands – *the Corps' April 5, 2010 JD issued for the Echo Lake Property found this wetland to be non-jurisdictional.*

Wetland G: Wet meadow and drainageway with no evident surface connection to other waters/wetlands – *the Corps' April 5, 2010 JD issued for the Echo Lake Property found this wetland to be non-jurisdictional.*

Wetland H: Wet meadow with no evident surface connection to other waters/wetlands – *Significant Nexus Determination Required (Wetland "H" not cited in the Corps' April 5, 2010 JD issued for Echo Lake Property).*

Wetland I: Forested linear drainage feature with no evident surface connection to other waters/wetlands – *the Corps' April 5, 2010 JD issued for the Echo Lake Property found this wetland to be non-jurisdictional.*

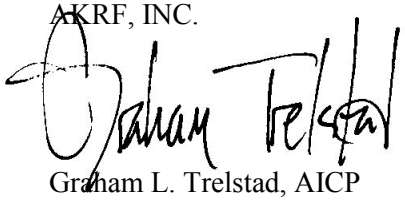
Wetland J: Forested riparian wetland adjacent to the Wallkill River (perennial RPW).

Please let me know when you would be able to schedule a site inspection to confirm the boundaries of federally regulated wetlands/waters on the entire Project Site. I can be reached at (914) 922-2355.

Thank you for your assistance in this matter.

Sincerely,

AKRF, INC.



Graham L. Trelstad, AICP
Senior Vice President, Director of Planning

cc: Mark Rudolph, Amy's Kitchen
Dominic Cordisco, Drake Loeb
John O'Rourke, Lanc & Tully

Encl:

- Wetland Delineation Report for the ver Hage, Lipoff, and Strong Farm properties, AKRF (October, 2015)
- Wetland Delineation Report for the Echo Lake Property, TES, Inc. (August, 2009)
- Large Scale Plans of delineated wetlands
- USACE JD Issued for Echo Lake Property, April 5, 2010

CHECKLIST OF INFORMATION INCLUDED WITH REQUESTS FOR JURISDICTIONAL DETERMINATIONS (JD)

1. Name (including POC if a corporation or other entity), complete mailing addresses and phone numbers of the following:

Current Property Owner:
Name: **Properties are under multiple and separate ownerships.**
Address:
Phone Number:

Applicant (Project Sponsor):
Name: **Mark Rudolph, Amy's Kitchen**
Address: **1650 Corporate Circle, Suite 200, Petaluma, CA 94954**
Phone Number: **707-781-7618**

Wetland Consultant:
Name: **AKRF, Inc.**
Address: **34 S. Broadway, Suite 401, White Plains, NY 10601**
Phone Number: **914-922-2350**

2. 8½ x 11 Location Map showing:

- UTM Grid Coordinates
- Stream order and location
- Head and discharge coordinates of each stream
- Stream identification (TNWs, perennial RPWs, seasonal RPWs, or non-RPWs)

See Figure 1 Site Location in attached Delineation Report.

3. Cover letter (included in report or to be provided) describing the purpose of the request, a general description of the proposed project, the size (acres) of the parcel, and the size of the limits of the project site or review area (if smaller than the parcel). **See Attached Cover Letter**.

4. Delineation report, including the following supporting information:

- Description of any current and/or historic land uses on the site. **Undeveloped including former mined land, agricultural, and forested. See AKRF and TES Wetlands Delineation Report – enclosed.**
- DEC Wetlands Maps, NWI Maps, Soil Survey Maps. **See AKRF Wetlands Delineation Report Figures – enclosed.**
- Watershed size, drainage area size. **Wallkill river watershed is 785 square miles. See AKRF and TES Wetlands Delineation Reports – enclosed.**
- Discussion of whether tributaries (streams) on the site are TNWs, perennial RPWs, seasonal RPWs, or non-RPWs. **Onsite Wallkill River and Cheechunk Creek are both perennial**

RPW's tributary to the Hudson River a TNW. See Cover Letter and AKRF Wetlands Delineation Report – enclosed.

- Description of whether each wetland on the site either abuts or is adjacent to a tributary, identify which tributary and provide a discussion of the justification for this determination. **See Cover Letter and AKRF and TES Wetlands Delineation Reports – enclosed.**
- Description of tributary substrate composition (e.g. silts, sands, gravel, etc.). **Silt primarily, both Wallkill and Cheechunk are low-gradient streams in level portions of the watershed**. **See AKRF and TES Wetlands Delineation Reports – enclosed.**
- Description of tributary connections to a TNW for each aquatic resource on the site, including a discussion of wetland and/or other connections. **See Cover Letter and AKRF Wetlands Delineation Reports – enclosed.**
- River miles to a TNW; aerial (straight) miles to a TNW. **It is 54 River miles and 18.5 aerial miles from Project Site to Hudson River (TNW).**
- Identify potential pollutants. **Formerly agricultural, portions subject to topsoil mining to cap the adjacent Al Turi Landfill.**
- Identify potential habitat for species. **Wildlife adapted to agricultural landscapes. A 2015 bog turtle Phase 1 habitat assessment failed to find suitable habitat onsite. A 2015 acoustical survey for Indiana Bat and Northern Long-Eared Bat positively identified the calls of both species onsite. The applicant is in communication with the USFWS about these matters. See also, AKRF and TES Wetlands Delineation Reports – enclosed.**
- Justification for proposed "isolated" (SWANCC) or non-jurisdictional determinations on any wetlands or streams. **See Cover Letter, AKRF and TES Wetlands Delineation Reports, and JD issued by the Corps for Echo Lake property April 5, 2010 – enclosed.**
- Description of vegetative cover types on the site **See AKRF and TES Wetlands Delineation Reports – enclosed.**
- Wetland Delineation Forms for each cover type. **See AKRF and TES Wetland Delineation Reports – enclosed.**
- Color photographs of all representative areas of the site including any connections between tributaries or between tributaries and wetlands. **See photo exhibits in AKRF and TES Wetland Delineation Reports – enclosed.**

5. Surveyed delineation drawing, including the following:

- Title block, including drawing date, scale, revision dates, north arrow, existing topographic contours (if available), benchmarks, and the stamp of a licensed surveyor or a narrative describing how the GPS data were obtained
- Boundary lines of the parcel, AND of the project site, clearly marked with the acres shown on the drawing.
- Delineation flags shown as points that are connected by straight lines (or extend off-site at parcel boundaries), and are identified on the drawing with the corresponding number and/or letter that is written on the flag in the field.
- Appropriate hatching and/or shading to identify the extent of waters of the US, including jurisdictional wetlands, and any "isolated" or non-jurisdictional waterbodies or wetlands

- All defined tributaries on the site, identified either via flagging or a standard tributary symbol that is in the legend, and locations of any other connections between waters (e.g. culverts, ditches and/or swales)
- Table outlining the acres of the waters of the US, and "isolated" or non-jurisdictional waters, in addition to the linear feet of all tributaries within the boundaries of the project site or parcel

See Enclosed Large- Scale Delineation Drawings

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

APR 5 - 2010

RECEIVED 4/7/10

REPLY TO
ATTENTION OF:
Regulatory Branch

SUBJECT: Permit Application Number NAN-2009-01100-WOR
by BPG Development Company, LLC

Stephen Sheridan
Terrestrial Environmental Specialists, Inc.
23 County Route 6, Suite A
Phoenix, New York 13135

Dear Mr. Sheridan:

On September 3, 2009, the New York District of the U.S. Army Corps of Engineers received a request for a Department of the Army jurisdictional determination for the above referenced project. The site consists of approximately 212.267 acres, in the Rondout Creek watershed, located on Echo Lake Road in the Towns of Goshen and Wawayanda, Orange County, New York.

In the letter received on September 3, 2009, your office submitted a proposed delineation of the extent of waters of the United States within the subject property. A site inspection was conducted by a representative of this office on October 21, 2009, in which it was agreed that changes would be made to the delineation and that the modified delineation would be submitted to this office. On March 5, 2010, this office received the complete modified delineation.

Based on the material submitted and the observations of the representative of this office during the site visit, this site has been determined to contain jurisdictional waters of the United States based on: the presence of wetlands determined by the occurrence of hydrophytic vegetation, hydric soils and wetland hydrology according to criteria established in the 1987 "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1 that are either adjacent to or part of a tributary system; the presence of a defined water body (e.g. stream channel, lake, pond, river, etc.) which is part of a tributary system; and the fact that the location includes property below the ordinary high water mark, high tide line or mean high water mark of a water body as determined by known gage data or by the presence of physical markings including, but not limited to, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter or debris or other characteristics of the surrounding area.

These jurisdictional waters of the United States are shown on the drawing entitled "Wetland Survey Map of Lands of Concrete Properties, LLC and the Tetz Family, LLC - Situate in the Towns of Goshen & Waywayanda Orange County, New York State", prepared by Mercurio Norton Tarolli Land Surveying-Engineering, P.C., dated May, 2009, and last revised November 19, 2009. This drawing

indicates that there are five (5) principal jurisdictional waters on the project site which are part of a tributary system, and are considered to be waters of the United States.

The first water (Wetland "A") is located on the northern portion of the property and is approximately 9.09 acres within the subject property. The second water (Wetland "B") is located just south of Wetland A and is approximately 0.75 acres within the subject property. The third water (flag numbers J109 through J119 and J300 through J307) is a seasonal stream, located on the southern portion of the property and is a total of approximately 0.07 acres within the subject property. The fourth water (Wetland "K") is located approximately 400 feet north of the third water and is approximately 0.84 acres within the subject property. The fifth water (flag numbers J1 through J43) is a portion of the Wallkill River and is approximately 3.29 acres within the subject property.

It should be noted that, in light of the U.S. Supreme Court decision (Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, No. 99-1178, January 9, 2001), the remainder of the waters shown on the above referenced drawing (Wetlands "C", "D", "E", "F", "G" and "I") do not meet the current criteria of waters of the United States under Section 404 of the Clean Water Act. The Court ruled that isolated, intrastate waters can no longer be considered waters of the United States, based solely upon their use by migratory birds.

This determination regarding the delineation shall be considered valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

This determination was documented using the Approved Jurisdictional Determination Form. A copy of that document is enclosed with this letter, and will be posted on the New York District website at: http://www.nan.usace.army.mil/business/buslinks/regulat/jurisdet/index.htm.

This delineation/determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed is a combined Notification of Appeal Process (NAP) and Request For Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

Michael G. Vissichelli, Administrative Appeals Review Officer
North Atlantic Division, U.S. Army Engineer Division
Fort Hamilton Military Community
General Lee Avenue, Building 301
Brooklyn, New York 11252-6700

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Park 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by JUN 4 - 2010. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

It is strongly recommended that the development of the site be carried out in such a manner as to avoid as much as possible the discharge of dredged or fill material into the delineated waters of the United States. If the activities proposed for the site involve such discharges, authorization from this office may be necessary prior to the initiation of the proposed work. The extent of such discharge of fill will determine the level of authorization that would be required.

If any questions should arise concerning this matter, please contact Brian A. Orzel, of my staff, at (917) 790-8413.

Sincerely,

Christopher S. Mallery

Christopher S. Mallery, Ph.D.
Chief, Western Section

Enclosures

MASER CONSULTING P. A.

Engineers Planners Surveyors Landscape Architects Environmental Scientists

Structure Justification Report

Preliminary Bridge Design for Amy's Kitchen Bridge Connection Over the Wallkill River

Town of Goshen, Orange County, NY

February 4, 2016
REVISED MARCH 18, 2016

Prepared For

Amy's Kitchen & Science of the Soul
Goshen, NY

Prepared By

Maser Consulting P.A.
12 Metro Park Road, Suite 104
Albany, NY 12205
518.459.3252

Brett Reynolds, PE
Project Manager

MC Project No. 13001659B

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Appendix A – HYDRAULIC ANALYSIS BACKUP DATA
- **Flood Boundary and Floodway Map**
- **FEMA Wallkill River Flood Profile**
- **HEC-2 Stream Data**
- **HEC-RAS Existing FEMA Plan**
- **HEC-RAS Proposed Hydraulic Run Plan**
- **HEC-RAS Proposed Stream Encroachment Run Plan**

Appendix B – ALTERNATIVE STRUCTURE DETAILS
- **Galvanized Steel Truss Structure**

EXECUTIVE SUMMARY

Maser Consulting (or "Maser") conducted an alternative structure analysis to recommend a viable bridge crossing option for the Amy's Kitchen Production Facility. As part of the analysis, Maser provided three possible structure options to span the Wallkill River, including a detailed description and cost estimate for each.

After a review of the three options, Alternative 1, the Prefabricated Galvanized Steel Truss was selected as the most suitable structural option. The truss was deemed the most suitable option due to a combination of cost, the truss option's constructability on the site, and aesthetic appeal. The estimated cost of the truss was approximately $2.08 Million.

A hydraulic analysis was also conducted for the proposed bridge site. The hydraulic analysis determined possible flood event elevations on site and was used to size determine the appropriate span length and design elevations of the proposed bridge.

Following the alternative structure analysis, detailed design can commence. A crucial step in the design process will be to correlate the existing survey with the HEC-RAS analysis provided in this report. Once this is completed, construction plans can be developed for the proposed bridge.

STRUCTURE JUSTIFICATION REPORT

AMY'S KITCHEN BRIDGE CONNECTIONOVER WALLKILL RIVER

SECTION 1 – NEED FOR STRUCTURE

As part of the proposed Amy's Kitchen Production Facility development, a bridge crossing is required spanning the Wallkill River providing a direct connection between Amy's Kitchen Facility and NYS Route 17M via a new access roadway to be constructed as part of the project. The new access roadway will intersect NYS Route 17M opposite a realigned Training Center Lane creating a full movements signalized intersection. The proposed bridge shall accommodate three (3) 12' wide travel lanes with two (2) 2' shoulders. The bridge will also include a 5' wide pedestrian walkway.

Note that for the discussion of the proposed bridge structure herein, the project begins on the eastern side of the river and crosses to the western side of the Wallkill River.

SECTION2 – PREFERRED ALTERNATIVE

A review of the proposed bridge location over the Wallkill River included an initial analysis of several bridge alternatives including: a Truss bridge, a Steel Girder bridge, and a Concrete Box Beam bridge. Based on the needs of the development, the length of the required bridge span, Client's satisfaction, and several other factors, it was determined that a Single Span Galvanized Steel Warren Truss Structure is the optimal bridge structure for this location.

Figure 1 -Warren Truss Structure

Table 1 – Preferred Alternative Bridge

	ALTERNATIVE 1 (Truss)
NO. OF SPANS:	1 (One)
SPAN LENGTH:	115'-0" (center to center of bearings)
WIDTH:	40'-0" (to face of rails), with a 5' cantilevered walkway on north side of bridge
SUPERSTRUCTURE:	Single Span Prefabricated Galvanized Bolted Steel Truss with Concrete Deck Slab
SUBSTRUCTURE:	Concrete abutments on a Footing w/ Piles
APPROXIMATE STRUCTURE DEPTH	53"
SKEW:	0 Degrees

PROPOSED STRUCTURE DESCRIPTION

The truss structure is a galvanized single span structure approximately 115' long x 40'-0" wide (face of rail-to-face of rail dimension), with a 5'-0" cantilevered sidewalk. The sidewalk will be located on the downstream side of the bridge (northern fascia). The proposed 12" gas main will be attached to the underside of the cantilevered sidewalk. The superstructure depth will be approximately 53". The proposed decking will consist of a $10^1/_2$" thick monolithic concrete deck surface. The deck will have a standard cross slope of 2.0% to accommodate for adequate drainage of the structure. A steel bridge railing (four-rail) system will be anchored into the concrete deck. The truss superstructure and floor beam system will be galvanized. The substructure will consist of concrete abutments supported on deep foundations. **Estimated 2016 structure cost is $2.08 Million[1].**

Other design considerations include:

M&PT: The proposed bridge and roadway are new and will be closed to traffic until the completion of the project.

UTILITIES: A 12" gas main will be required to be mounted on the proposed structure.

[1] Cost estimates are conceptual in nature and may vary during final design.

SLOPE PROTECTION: The project will require protection from potential scour and slope erosion. In order to minimize bridge spans, the proposed abutments will be placed within the flood plain. However, the abutments will be outside of the floodway.

The NYSDOT requires all bridges over waterways to consider protection against scour of the abutments. It is anticipated that deep foundations (piles) will be required. In addition to the deep foundations, stone filling will be placed along the front slopes of the abutments to further prevent slope failure.

Constructability:

The truss will be delivered to the site in sections and will be assembled on site. No special requirements should be required to deliver the truss to the site. The time required to construct the truss will take approximately 6 months.

The truss structure has the smallest superstructure depth of the three alternatives, resulting in the least amount of grading and imported fill required to meet the minimum freeboard (1% + 1 foot). The deck elevation will be set based on the design depth of the superstructure to allow for the 1 foot freeboard between the bottom chord and 1% flood elevation. Although the proposed floor beam size is still to be determined, the depth of the floor beams will not affect the proposed deck elevation. The floor beams will be aligned parallel to the stream, therefore if a portion of the required beam extends below the bottom chord of the truss, it will not act as a deterrent to flow and will not require a raise in the proposed deck elevation.

Aesthetics:
Aesthetically, the truss option provides a pleasing "turn of the century" visual background for the project and surrounding area.

Figure 2 - Warren Truss

The Warren truss is an efficient use of steel and is a classic choice for rural or industrial settings. It is a common type of truss bridge built due to its ease of construction and amount of materials needed for construction compared to other trusses.

Figure 3 - Galvanized Warren Truss

SECTION 3 – DESIGN CRITERIA

The design criteria for the preferred alternative will conform to the NYSDOT Standards & Specifications, as well as AASHTO LRFD Bridge Design Specifications.

The NYSDOT Bridge Design Manual will be used as a guideline to the design and development of the bridge and as a supplement to the NYSDOT LRFD Bridge Design Specifications and the NYSDOT Standard Specifications for Highway Bridges. Design regulations such as scour protection and minimum freeboard, shall conform to The NYSDOT Bridge Design Manual, specifically Section 3.4 Hydraulics. Slope and bank protection was determined based on Section 3.4.3. Other design considerations were determined in accordance with Section 3.5 Structure Selection Process.

SECTION 4 – PERMITTING

Maser Consulting reviewed the environmental and cultural resource requirements the preferred alternative would require prior to construction. The following permits are applicable and will need to be obtained for this project:

- NYSDEC Section 401 Water Quality Certification
- NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity
- SHPO Determination

SECTION 5 – HYDRAULIC ANALYSIS

Description

A hydraulic analysis was performed for this site.

Data Sources

The hydraulic analysis included a review of the most recent FEMA Flood Insurance Study (FIS) for Orange County dated August 2009. The detailed hydraulic analysis was originally developed for the Wallkill River in 1983, using HEC-2. The F.I.S. was performed using cross section data taken at seventeen (17) locations along the Wallkill River. The first cross section is located approximately 9,000 feet downstream of the proposed bridge site. The last cross section is located approximately 4,000 feet upstream of the proposed bridge site. The total length of the model was 13,000 feet. All existing hydraulic data used for the analysis and all generated models and proposed cross-section data can be found in Appendix B of this report.

*****ALL ELEVATIONS ARE BASED ON DATUM USING NGVD29 COORDINATE SYSTEM*****

Design flows were found from the FEMA F.I.S. study conducted in 1983. Flowrates were given for four different station locations along the stream. The following flow rates are the upstream flow rates for the 10%, 2%, 1%, and 0.2% flood events:

$Q_{10\%}$ = 6958 cfs

$Q_{2\%}$ = 10360 cfs

$Q_{1\%}$ = 12025 cfs

$Q_{0.5\%}$ = 15324 cfs

For this hydraulic study, the $Q_{2\%}$ and $Q_{1\%}$ were used to determine the minimum bottom chord elevation and design freeboard requirement.

Methodology

Maser Consulting P.A. (MC) used the FIS and 1983 HEC-2 data to model the Wallkill River corridor for the 10%, 2%, 1% and 0.2% flood events with HEC-RAS. These minimum elevations account for any changes in the stream profile that have occurred between now and when the data was originally collected and is a contingency for any changes in the stream profile that may happen after construction of the bridge.

Results/Findings

The water surface profiles for the 2% and 1% flood events through the proposed alternative structure are shown in Table 2. Calculated freeboards to the proposed bottom chord of the preferred alternative structure are shown in Table 2 for the upstream and downstream bridge fascias.

A minimum bottom chord elevation for the preferred alternative was determined based on the higher elevation of the following: the 2% flood elevation with 2 feet of freeboard; the 1% flood elevation with 1 foot of freeboard. These elevations were found to be 373.73 and 374.79 respectively; therefore the 1% flood elevation was used as the governing design criteria. The proposed bridge low chord will be located at the proposed elevation of 375.00. This will result in the proposed minimum freeboard as follows.

Table 2 - Proposed Water Surface Profiles

Flood	Upstream FreeBoard (Low Chord El 375.00)	Downstream FreeBoard (Low Chord El 375.00)
50 Year	3'-3 1/4" ±	3'-3 3/4" ±
100 Year	1'-2 1/2" ±	1'-3" ±

The proposed structure meets the free board design recommendations for the 2% and 1% flood event. For design considerations, it is important to note that in no case shall the proposed structure have negative freeboard.

Calculated flow velocities at the proposed bridge are as follows in Table 3:

Table 3 - Stream Velocity at Proposed Bridge Site	
Flood	**Velocity (ft/sec)**
50 Year	5.98±
100 Year	6.52±

The velocities of the stream in the proximity of the proposed bridge are less than 10 ft/sec. Therefore, in accordance with Section 3.4.3 of the Bridge Design Manual, medium stone fill is required for erosion and scour protection.

Results/Findings

The proposed alternative bridge structure will meet the requirement of the NYSDOT Bridge Design Manual for minimum freeboard in a 2% and 1% flood event. Due to the proposed condition velocities, medium stone fill will be required to be placed along the embankment, directly adjacent to the upstream wingwalls for slope protection.

SECTION 6 – MAINTENANCE

Preferred Alternative: Galvanized Steel Truss Bridge

The anticipated service life of a galvanized truss system is greater than 75 years. It is expected that only typical routine maintenance (same as required by other structural systems) will be required for this truss system throughout the life of the structure. Deterioration of structural members for the truss option is more easily identifiable than other options. The main types of deterioration associated with trusses are a result of rust and potential corrosion to the steel members. The bridge must still be inspected on a regular cycle, once every 2 years, by a certified bridge inspector. However, one of the main advantages to steel is that the service life for members can be extended and/or fixed. This will offset the need for a new bridge and create one of the lowest life cycle cost alternatives.

Routine Maintenance

The preferred alternative option requires standard maintenance to ensure the bridge is functioning correctly and prevent deterioration. Standard maintenance for the Warren Truss Bridge involves items such as cleaning and washing salt from the roadway and exterior structural members, and repairing the wearing surface as needed. The primary steel members must also be

maintained. A list of routine maintenance items and the estimated costs can be found in Table 2.

Table 4 - Maintenance Cost Estimate

	Action Frequency Cycle (yrs.)	Cost Per Cycle
Bridge Washing and/or Cleaning	**Annual**	$2,000.00
Drainage Clean Out	**Annual**	$1,200.00
Professional Bridge Inspection [2]	**2**	$1,500.00
Cleaning & Lubricating Bridge Bearings	**2 to 4**	$1,650.00
Channel Clean Out	**2 to 4**	$4,600.00
Sealing Deck Joints	**5 to 10**	$9,200.00
Install Deck Overlay	**15**	$20,000.00
Steel Painting & Blasting	**35**	$260,000.00

*Note: All cost estimates are based on 2016 pricing.

SECTION 7 – CONCLUSION

Maser Consulting and the Client have selected the Prefabricated Single Span Steel Warren Truss Bridge for the proposed Amy's Kitchen Wallkill River Bridge. The main factors in this decision were: proposed structure depth, cost of alternative, constructability and aesthetics.

The proposed structure depth of the prefabricated truss is 53" This depth is approximately 6" shorter than the steel multi-girder bridge alternative, and approximately 13" shorter than the prestressed concrete box beam alternative. Due to this difference in depth, the truss alternative will involve less grading and fill in order to meet the required bottom chord elevation, based on the 1% flood elevation. This will result in reduced construction costs.

The truss will provide an ease of delivery and installation. The truss will be delivered in sections and will be assembled on site. These multiple sections and pieces will be easier to transport and may not require as large of a crane to set and install, as opposed to other bridge types. This can result in reduced mobilization costs.

[2] This cost reflects inspection of a newly installed bridge. The cost of inspection will increase as the bridge deteriorates over time.

The truss also stands out the most in terms of aesthetics. A majority of the structure is located above the bridge deck, which makes the truss design more prevalent and visible to the public. Ultimately though, aesthetics should be based on the client's preferences as they relate to their futuristic vision of the project site.

Due to the majority of the structure being located above the deck, maintenance and inspection of the truss is easier than other bridge types. Deterioration can be identified and repaired quickly, and due to the nature of steel, repairs can extend the service life of the structure, resulting in lower life cycle costs than other bridge types.

Maser Consulting P.A.

Brett Reynolds, P.E
Project Manager

APPENDIX A
HYDRAULIC ANALYSIS BACKUP DATA

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT.NGVD)[1]	DESCRIPTION OF LOCATION
RM1	370.27	PK NAIL SET IN SOUTH EDGE OF PAVEMENT AT CENTER OF CHEECHUNK ROAD BRIDGE, APPROXIMATELY 350' WEST OF HARTLEY ROAD.
RM2	396.72	PK NAIL SET IN NORTH EDGE OF PAVEMENT OF N.Y. ROUTE 17M ON EAST SIDE OF WALLKILL RIVER ACROSS ROAD FROM UTILITY POLE #91.

[1]NATIONAL GEODETIC VERTICAL DATUM OF 1929

KEY TO MAP

50-Year Flood Boundary
100-Year Flood Boundary
FLOODWAY FRINGE
FLOODWAY
100-Year Flood Boundary
50-Year Flood Boundary

Cross Section Line (A — A)

Elevation Reference Mark RM7 ×

River Mile •M1.5

APPROXIMATE SCALE
400 0 400 FEET

NOTES TO USER

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Insurance Administration.

This map was prepared to facilitate flood plain management activities only; it may not show all special flood hazard areas in the community or all planimetric features outside of the flood plain. Refer to the latest official Flood Insurance Rate Map for any additional areas of special flood hazard.

For adjoining map panels, see separately printed Index To Map Panels.

NATIONAL FLOOD INSURANCE PROGRAM

FLOODWAY

FLOOD BOUNDARY AND FLOODWAY MAP

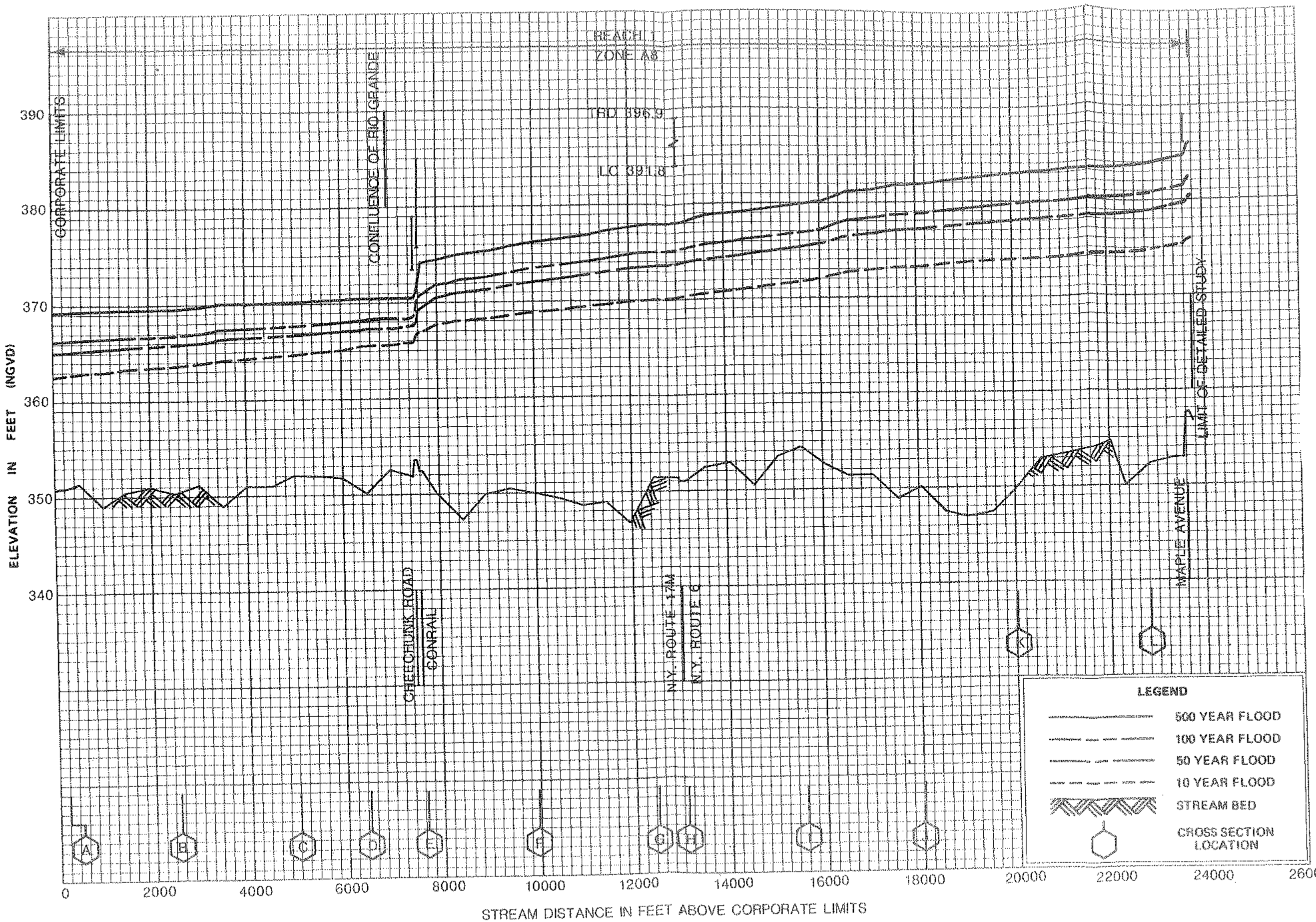
TOWN OF
GOSHEN,
NEW YORK
ORANGE COUNTY

PANEL 1 OF 7

VOID
As Of AUG - 3 2009

COMMUNITY-PANEL NUMBER
360614 0001
EFFECTIVE DATE:
APRIL 30,1986

Federal Emergency Management Agency



FLOOD PROFILES

WALLKILL RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GOSHEN, NY

(ORANGE CO.)

01P

KEY TO CROSS SECTION LABELLING
PAGE 3

Cross-Section Letter from Final Published FIS	Stationing from Printout
G	9490.000
H	11165.000
I	12315.000
J	13684.000
K	14816.000
WALLKILL RIVER	
A	8.706
B	2000.000
C	4500.000
D	6500.000
E	7180.000
F	9500.000
G	12000.000
H	12640.000
I	15100.000
J	17600.000
K	19600.000
L	22400.000

```
T1      WALLKILL  RIVER REACH 4R      ** XFUS  ** REV **
T2      FLOOD PROFILES   **   GOSHEN    :   AGLAS INPUT  **
T3      Q10
J1            2.                                                  362.83
J2     1             -1.
QT     4    7905    11993    14062    18554
NC  .063    .063     .038       .3       .5
X1 8.706      42     1040     1160      000      000      000        1
GR 383.0             378.9       40    372.0       80    368.0      100    365.5      150
GR 362.3     190     361.1      240    360.8      305    362.5      340    365.0      350
GR 360.8     370     359.7      440    359.9      520    361.0      570    361.0      625
GR 360.5     680     360.0      690    360.0      740    359.5      800    359.3      865
GR 362.3     920     362.1     1005    359.8     1015    359.8     1030    356.1     1040
GR 351.8    1050     351.0     1090    351.9     1150    356.1     1160    359.1     1190
GR 359.2    1220     360.5     1270    360.4     1360    360.2     1470    361.4     1530
GR 360.8    1590     362.1     1625    366.2     1655    370.8     1680    373.8     1730
GR 380.5    1770     381.4     1800
QT4.    7508.   11315.   13216.   17219.
X11.0   13.     2005.    2170.    290.     290.     290.
GR371.  965.    362.5    1045.    357.7    1535.    361.5    1975.    360.2    2000.
GR354.5 2005.   352.     2020.    351.7    2075.    351.5    2120.    360.5    2170.
GR365.7 2290.   366.     2480.    384.4    2645.
X1500.  15.     2010.    2115.    500.     500.     500.
GR370.2 825.    368.4    850.     363.     940.     359.7    1060.    362.2    1310.
GR360.5 1620.   361.1    1985.    354.5    2010.    349.     2050.    351.     2095.
GR355.2 2115.   361.7    2120.    364.     2160.    368.6    2205.    400.     2600.
X11000. 14.     3010.    3155.    400.     600.     500.
GR380.  600.    363.     1200.    364.8    1255.    362.6    1870.    358.5    2170.
GR361.4 3000.   354.7    3010.    350.5    3030.    351.5    3080.    352.     3135.
GR354.7 3155.   359.6    3165.    358.7    3180.    374.4    3235.
X11500. 20.     2010.    2145.    500.     500.     500.
GR370.5 1045.   364.     1080.    359.8    1290.    361.6    1610.    362.5    1955.
GR361.5 1970.   362.8    1980.    361.6    1990.    361.7    2000.    354.5    2010.
GR351.2 2025.   351.     2080.    351.4    2125.    354.5    2145.    361.1    2155.
GR357.5 2260.,  355.8    2305.    357.5    2350.    366.1    2395.    385.     2555.
X12000. 15.     2033.    2155.    600.     400.     500.
GR371.2 1735.   361.7    1775.    362.8    1960.    359.8    1970.    358.2    2030.
GR354.8 2033.   350.8    2055.    350.4    2090.    350.8    2120.    354.8    2140.
GR362.5 2155.   361.5    2240.    357.5    2280.    356.3    2320.    357.5    2370.
GR386.7 2500.
X12500. 20.     2020.    2130.    500.     500.     500.
GR371.1 1830.   360.     1935.    363.     1990.    363.     2000.    360.5    2005.
GR360.5 2015.   355.5    2020.    351.3    2040.    351.8    2075.    351.2    2105.
GR355.4 2125.   359.5    2130.    363.     2145.    363.     2160.    357.5    2235.
GR355.5 2280.   357.5    2320.    364.     2380.    370.     2635.    380.     4500.
X13000. 26.     2010.    2095.    550.     450.     500.
GR380.2 1375.   363.     1630.    362.2    1730.    362.6    1850.    362.     1940.
GR362.9 1990.   361.     2000.    355.     2010.    349.     2030.    355.     2095.
GR358.  2105.   360.5    2115.    362.5    2160.    357.     2195.    359.2    2255.
GR357.1 2295.   360.6    2340.    362.6    2410.    361.     2450.    359.5    2485.
GR359.2 2590.   362.2    2710.    361.9    3085.    367.5    3130.    370.     3150.
GR380.  3250.
X13500. 20.     2030.    2130.    600.     400.     500.
GR370.2 1830.   361.6    1940.    363.4    1990.    362.9    2000.    361.2    2015.
GR354.8 2030.   351.6    2040.    351.     2075.    351.     2110.    355.     2130.
GR362.7 2155.   362.5    2300.    357.     2440.    362.4    2490.    362.     2650.
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QT4.    7117.   10638.   12372.   15878.
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GR352.    2045.   351.    2085.   352.1   2120.   355.5   2135.   362.    2140.
GR364.5   2160.   360.5   2240.   364.2   2425.   362.8   2525.   355.5   2550.
GR352.5   2555.   355.5   2625.   360.    2675.   360.    2695.   354.    2715.
GR355.    2725.   353.9   2730.   355.2   2775.   360.5   2820.   360.5   2900.
GR360.    2950.   355.8   2960.   354.7   2965.   355.9   2990.   360.4   3005.
GR360.2   3015.   364.    3300.   368.    3970.   372.    4040.
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GR358.4   1900.   363.5   1955.   363.8   2000.   360.5   2020.   355.6   2025.
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GR356.    2135.   362.    2150.   362.    3400.   364.    3445.   367.7   3650
GR364.    3900.   364.    4180.   368.    4205.   372.    4210.   376.    4230.
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GR368.9   1000.   366.    1460.   366.5   1745.   366.6   1995.   366.4   2005.
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GR356.5   2135.   361.6   2145.   366.1   2165.   362.7   2205.   364.1   2540.
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X310.                                                 372.5   373.5
GR380.    1200.   376.    1400.   374.7   1420.   372.5   1440.   373.    1500.
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GR375.6   2190.   376.    2220.   382.    2700.   385.    3000.
S81.      1.5     2.5             60.             1720    1.4     354.    354.
X1703R.                           30.     30.     30.
X2                1.      373.5   375.2
X310.                                                 375.5   380.
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8T1440.   375.6   372.5   1500.   375.2   373.    1580.   375.2   374.8   1640.
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8T369.2 1960.  377.6  368.5  1995.  378.2  370.7  2005.  379.   366.2
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8T379.8 372.2  2220.  381.2  376.   2700.  382.   382.
X17068.                     30.    30.    30.
X310.                                             375.5  380.
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GR369.6 2139.  369.7  2140.  373.8  2240.  375.5  2280.  376.2  2345.
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S81.25  1.5    2.5           50.    5.     2100.  2.
X17130.                     30.    30.    30.
X2             1.     375.8  383.8
X310.                                             382.5  385.5
8T18.   1180.  384.2  384.2  1300.  383.   375.5  1520.  382.3  374.8
8T1640. 382.4  371.3  1800.  382.6  370.   1900.  383.2  369.5  1960.
8T383.8 368.5  2005.  384.1  371.   2006.  384.2  375.   2100.  385.
8T375.8 2110.  385.1  380.5  2139.  385.3  380.5  2140.  385.3  369.7
8T2240. 385.6  373.8  2280   386.   375.5  2345.  386.5  376.2  2500.
8T386.5 378.   2560.  386.5  386.5
NC.1    .1     .046   .3     .5
X17180.                     50.    50.    50.
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GR369.7 1960.  369.7  1970.  370.   1980.  370.   1990.  369.   2000.
GR366.  2010.  365.   2020   357.2  2025.  354.   2030.  348.   2042.
GR347.3 2060.  348.   2092.  354.2  2108   357.3  2115.  379.   2155.
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GR370.  2000.  366.   2011.  368.   2028.  354.   2032.  351.   2040.
GR350.  2060.  351.   2100.  354.   2105.  359.   2112.  374.1  2142.
GR376.  2150.  376.1  2182.  376.4  2188.  376.4  2205.  376.   2215.
GR377.5 2228.  380.   2300.
X19000. 18.    2020.  2100.  650.   350.   500.
GR377.5 1925.  377.   1945.  376.   1960.  375.   1965.  372.   1980.
GR358.3 2020.  353.2  2025.  351.   2030.  350.5  2060.  351.   2090.
GR353.2 2095.  358.3  2100.  360.   2105.  361.   2110.  373.   2128.
GR375.  2138.  375    2170.  385.   2185.
X19500. 21.    2025.  2105.  500.   500.   500.
GR380.  1945.  372.   1955.  371.   1970.  371.   1990.  372.8  1995.
GR370.0 2000.  357.8  2025.  354.   2028.  351.   2030.  350.   2060.
GR351.  2100.  354.   2105.  360.   2115.  373.   2140.  373.7  2170.
GR374.  2205.  375.   2224.  376.   2226.  377.   2235.  377.   2255.
GR380.  2260.
X110000.16.    2015.  2100.  500.   500.   500.
GR377.1 1910.  376.   1920.  375.   1950.  375.   1985.  370.   2000.
GR360.  2015.  353.8  2025.  351.   2030.  349.5  2060.  350.9  2090.
GR353.9 2095.  358.   2100.  360.   2110.  373.   2130.  374.   2185.
GR380.  2210.
X110500.18.    2025.  2100.  550.   450.   500.
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GR380.  1960.  375.  1965.  372.1  1995.  368.  2005.  362.  2018.
GR360.  2022.  358.  2025.  349.3  2035.  348.7  2050.  351.  2085.
GR358.  2100.  360.  2110.  361.  2115.  362.  2115.  363.  2125.
GR370.  2135.  375.  2150.  380.  2160.
X111000.17.  2025.  2115.  650.  350.  500.
GR380.  1925.  375.  1945.  373.  1965.  372.  1995.  370.  2000.
GR368.5 2002.  360.  2020.  358.2  2025  350.  2040.  349.  2065.
GR351.  2095.  358.4  2115.  370.  2138.  371.  2145.  372.  2150.
GR375.  2165.  380.  2175.
X111500.16.  2035.  2140.  500.  500.  500.
GR396.5 1815.  376.  1865.  373.5  1985.  368.2  2000.  364.5  2020.
GR355.8 2035.  353.2  2038.  347.2  2040.  346.8  2070.  347.2  2100.
GR352.5 2105.  355.8  2105.  370.  2140.  400.  2200.  406.5  2215.
GR406.5 2300.
X112000.22.  2035.  2108.  350.  650.  500.
GR380.  1965.  377.  1975.  376.  1998.  365.  2021.  360.  2025.
GR355.  2035.  352.2  2045.  351.5  2070.  353.  2102.  354.5  2108.
GR358.5 2112.  360.  2118.  365.  2132.  367.  2135.  368.6  2150.
GR366.  2175.  363.  2185.  362.5  2192.  363.  2205.  364.  2240.
GR365.1 2255.  380.  2285.
X112530.13.  2030.  2100.  430.  630.  530.
GR380.0 1960.  369.  2000.  359.  2025.  358.5  2030.  354.7  2035.
GR352.  2040.  351.5  2060.  352.  2095.  354.7  2100.  359.  2110.
GR369.  2125.  371.  2140.  380.  2180.
NC.1  .1  .046  .6  .8
X112550.24.  2075.  2160.  20.  20.  20.
X310.  368.2  373.5
GR397.  1985.  392.  2000.  375.  2045.  370.  2048.  368.2  2060.
GR377.5 2060.  381.5  2064.  381.5  2065.  377.5  2070.  361.  2070.
GR359.5 2075.  351.  2100.  351.  2140.  359.5  2160.  366.5  2175.
GR377.5 2175.  381.5  2179.  381.5  2180.  377.5  2185.  373.5  2185.
GR380.2 2195.  391.9  2244.  392.  2245.  397.  2265.
S81.05  1.5  2.5  60.  7.  5200.  1.7  351.  351.
X112590.  40.  40.  40.
X2  1.  392.  397.
X310.  368.2  373.5
BT8.  1985.  397.  397.  2000.  397.  392.  2064.  397.  392.
BT2065.  397.  381.7  2179.  397.  381.7  2180.  397.  392.  2245.
BT397.  392.  2265.  397.  397.
NC.1  .1  .046  .5  .5
X112640.  50.  50.  50.
X113100.18.  2025.  2110.  460.  460.  460.
GR376.  1880.0  376.3  1895.  376.1  1920.  375.  1965.  369.  1987.
GR368.2 2000.  367.3  2005.  359.  2025.  356.  2030.  353.  2040.
GR352.5 2065.  353.5  2105.  356.  2110.  359.  2115.  365.  2120.
GR368.  2135.  369.  2155.  380.  2190.
X113600.16.  2025.  2092.  500.  500.  500.
GR380.  1945.  376.  1950.  375.  1960.  366.  2000.  359.  2025.
GR355.  2035.  353.5  2039.  353.  2055.  353.5  2090.  355.  2092.
GR359.  2100.  360.  2105.  365.  2110.  370.  2125.  371.  2148.
GR380.  2181.
X114100.12.  2020.  2095.  350.  650.  500.
GR380.  1970.  366.5  2000.  359.  2020.  351.  2040.  350.6  2053.
GR351.  2080.  359.  2095.  365.  2105.  367.  2115.  371.  2125.
GR375.  2148.  380.  2175.
X114600.12.  2008.  2093.  500.  500.  500.
GR380.  1968.  367.2  2003.  365.  2008.  359.5  2015.  353.7  2020.
GR353.5 2060.  354.  2090.  359.5  2093.  365.  2097.  371.9  2115.
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GR373.  2140.   380.   2160.
X115100.13.     2015.   2080.   600.    400.    500.
GR380.  1952.   370.   1980.   365.    2000.   359.2   2015.   356.5   2020.
GR355.2 2023.   354.5  2045.   356.4   2075.   359.2   2080.   365.    2084.
GR370.  2105.   375.   2115.   380.    2122.
X115600.13.     2010.   2070.   500.    500.    500.
GR380.  1965.   375.   1975.   370.    1990.   365.    2000.   359.    2010.
GR353.  2020.   352.7  2045.   353.4   2065.   359.    2070.   365.    2080.
GR370.  2090.   375.   2103.   380.    2112.
X116100.15.     2005    2080    500.    500.    500.
GR380.  1965.   378.   1970.   375.    1978.   370.    1988.   365.5   2000.
GR359.5 2005.   353.   2010.   351.5   2055.   351.8   2070.   355.5   2075.
GR359.5 2080.   365.   2100.   370.    2125.   375.    2138.   380.    2155.
NC1.    .1      .046   .2      .4
X116600.12.     2005.   2085.   500.    500.    500.
GR380.  1951.   372.   1970.   367.    1995.   365.    2000.   360.    2005.
GR354.  2007.   352.5  2015.   351.5   2030.   353.5   2070.   360.    2085.
GR365.  2095.   380.   2125.
X117100.13.     2005.   2095.   500.    500.    500.
GR381.7 800.    380.   1970.   365.    2000.   360.1   2005.   359.6   2012.
GR355.5 2018.   349.8  2020.   349.    2060.   350.    2080.   359.6   2095
GR360.  2105.   365.   2108.   385.    2155.
X117600.13.     2008.   2075.   550.    450.    500.
GR382.  900.    380.   1965.   370.    1990.   365.    2000.   359.8   2008.
GR351.5 2020.   350.2  2050.   350.5   2060.   359.9   2075.   360.1   2085.
GR365.  2090.   370.   2115.   385.    2140.
X118100.11.     2000.   2078.   500.    500.    500.
GR384.  30.     380.   1950.   365.    1995.   360.    2000.   360.    2008.
GR347.6 2030.   347.6  2050.   360.    2078.   370.    2110.   380.    2120.
GR385.  2140.
X118600.12.     2008.   2095.   500.    500.    500.
GR384.  210.    380.   1970.   370.    1975.   365.    2000.   360.    2008.
GR347.9 2015.   347.   2019.   347.5   2020.   347.5   2045.   365.    2095.
GR380.  2135.   385.   2142.
X119100.12.     2020.   2095.   500.    500.    500.
GR384.0 100.    380.2  1960.   370.    1980.   360.    2020.   358.5   2025.
GR347.5 2055.   360.   2095.   365.    2115.   370.    2130.   378.5   2150.
GR382.  2155.   385.   2200.
X119600.12.     2020.   2095.   500.    500.    500.
GR383.  900.    380.   1945.   370.    1975.   365.1   2000.   360.    2020.
GR352.  2030.   350.   2055.   351.5   2085.   360.    2095.   365.    2110.
GR366.  2125.   385.   2170.
X120100.15.     2015.   2105.   500.    500.    500.
GR380.  1945.   370.   1968.   365.    2000.   365.    2005.   360.    2015.
GR354.  2025.   353.   2055.   354.    2090.   360.    2105.   363.2   2112.
GR365.  2135.   370.   2165.   372.    2170.   372.    2180.   382.2   2200.
X120600.12.     2008.   2095.   500.    500.    500.
GR380.  1958.   370.   1975.   365.    2000.   361.    2008.   355.    2015.
GR353.5 2050.   361.   2095.   362.    2100.   365.    2135.   378.    2165.
GR380.  2188.   383.   2200.
NC1.    1.      .046
X121100.15.     2075.   2150.   500.    500.    500.
GR381.6 1850.   381.4  1960.   380.7   2000.   380.    2005.   374.5   2015.
GR367.3 2065.   359.5  2075.   358.5   2080.   354.    2095.   354.    2105.
GR356.5 2125.   359.5  2135.   362.5   2150.   377.    2195.   380.5   2245.
X121600.15.     2085.   2185.   450.    550.    500.
GR381.  100.    380.   1300.   376.    2000.   372.    2020.   369.3   2035.
GR369.  2065.   359.9  2085.   355.    2095.   355.    2120.   354.8   2152.
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GR355.3 2156.   360.   2185.   380.   2235.   382.   2810.   384.   2820.
X121900.18.     2095.  2210.   300.   300.    300.
GR380.  1150.   376.   2040.   372.   2050.   363.5  2075.   363.5  2085.
GR358.3 2095.   353.3  2105.   350.2  2145.   353.8  2192.   358.3  2210.
GR361.4 2215.   361.4  2230.   366.   2235.   366.   2270.   370.5  2275.
GR370.5 2285.   374.   2320.   385.   2350.
X122400.14.     2085.  2141.   450.   550.    500.
GR381.0 300.    380.4  600.    380.0  990.    376.0  2010.   370.9  2035.
GR368.5 2060.   361.   2082.   360.5  2085.   352.4  2090.   352.4  2110.
GR361.  2141.   365.   2150.   381.9  2220.   381.9  2265.
X122900.14.     2065.  2125.   500.   500.    500.
GR382.  1200.   381.   1600.   380.   2000.   376.   2010.   368.5  2035
GR366.5 2050.   361.5  2065.   354.5  2070.   353.   2095.   355.   2120.
GR361.5 2125.   366.   2135.   379.   2170.   382.5  2212.
X123117.                       217.   217.    217.
NC.1    .1      .046   .6      .8
X123167.19.     2065.  2130.   50.    50.     50.
X310.                                         385.4  386.2
GR386.  1800.   388.2  1965.   385.4  2000.   378.   2020.   369.8  2045.
GR385.4 2045.   385.4  2049.   369.   2049.   362.   2065.   359.   2075.
GR357.8 2095.   359.   2115.   362.   2130.   371.   2165.   385.9  2165.
GR386.  2170.   374.   2170.   386.2  2200.   389.5  2220.
S81.05  1.5     2.5                  60      8.     3643.   3.
X123207.                             40.     40.    40.
X2              1.     386.2  388.2
X310.                                         386.   388.2
BT8.    1965.   388.2  388.2  2000.  389.   385.4  2045.   389.   385.5
BT2049. 389.1   385.6  2165.  389.5  386.   2170.  389.6   389.1  2200.
BT389.7 386.2   2220.  389.5  389.5
NC.1    .1      .046   .3     .5
X123257.                             50.    50.    50.
X123327.9.      2050.  2125.  70.    70.    70.
GR378.5 1910.   378.   2000.  364.5  2040.  360.   2050.   356.8  2069.
GR359.8 2075.   361.8  2125.  386.8  2225.  385.6  2265.
EJ
T1      WALLKILL RIVER
T2      FLOOD PROFILES
T3      Q50
J1              3                                          365.34
J2    2                 -1
T1      WALLKILL RIVER
T2      FLOOD PROFILES
T3      0100
J1              4                                          366.46
J2    3                 -1
T1      WALLKILL RIVER
T2      FLOOD PROFILES
T3      0500
J1              5                                          369.47
J2   15                 -1


ER
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1

THIS RUN EXECUTED 25 FEB 82 14:55:29

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

T1      WALLKILL  RIVER REACH 4R      ** XFUS  ** REV **
T2      FLOOD PROFILES   **   GOSHEN    :   AGLAS INPUT  **
T3      Q10

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     0         WSEL      FQ

        0.        2.        0.        0.  0.000000      0.00      0.0       0.   362.830     0.000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

QT      4.000  7905.000 11993.000 14062.000 18554.000     0.000     0.000     0.000     0.000     0.800
NC      0.063     0.063     0.038     0.300     0.500     0.000     0.000     0.000     0.000     0.080

X1      8.706    42.000  1040.000  1160.000     0.000     0.000     0.000     1.000     0.000     0.000
GR    383.000     0.000   378.900    40.000   372.000    80.000   368.000   100.000   365.500   150.000
GR    362.300   190.000   361.100   240.000   360.800   305.000   362.500   340.000   365.000   350.000
GR    360.800   370.000   359.700   440.000   359.900   520.000   361.000   570.000   361.000   625.000
GR    360.500   680.000   360.000   690.000   360.000   740.000   359.500   800.000   359.300   865.000
GR    362.300   920.000   362.100  1005.000   359.800  1015.000   359.800  1030.000   356.100  1040.000
GR    351.800  1050.000   351.000  1090.000   351.900  1150.000   356.100  1160.000   359.100  1190.000
GR    359.200  1220.000   360.500  1270.000   360.400  1360.000   360.200  1470.000   361.400  1530.000
GR    360.800  1590.000   362.100  1625.000   366.200  1655.000   370.800  1680.000   373.800  1730.000
GR    380.500  1770.000   381.400  1800.000     0.000     0.000     0.000     0.000     0.000     0.000
QT      4.000  7508.000 11315.000 13216.000 17219.000     0.000     0.000     0.000     0.000     0.000

X1      1.000    13.000  2005.000  2170.000   290.000   290.000   290.000     0.000     0.000     0.000
GR    371.000   965.000   362.500  1045.000   357.700  1535.000   361.500  1975.000   360.200  2000.000
GR    354.500  2005.000   352.000  2020.000   351.700  2075.000   351.500  2120.000   360.500  2170.000
GR    365.700  2290.000   366.000  2480.000   384.400  2645.000     0.000     0.000     0.000     0.000

X1    500.000    15.000  2010.000  2115.000   500.000   500.000   500.000     0.000     0.000     0.000
GR    370.200   825.000   368.400   850.000   363.000   940.000   359.700  1060.000   362.200  1310.000
GR    360.500  1620.000   361.100  1985.000   354.500  2010.000   349.000  2050.000   351.000  2095.000
GR    355.200  2115.000   361.700  2120.000   364.000  2160.000   368.600  2205.000   400.000  2600.000

X1   1000.000    14.000  3010.000  3155.000   400.000   600.000   500.000     0.000     0.000     0.000
GR    380.000   600.000   363.000  1200.000   364.800  1255.000   362.600  1870.000   358.500  2170.000
GR    361.400  3000.000   354.700  3010.000   350.500  3030.000   351.500  3080.000   352.000  3135.000
GR    354.700  3155.000   359.600  3165.000   358.700  3180.000   374.400  3235.000     0.000     0.000

X1   1500.000    20.000  2010.000  2145.000   500.000   500.000   500.000     0.000     0.000     0.000
GR    370.500  1045.000   364.000  1080.000   359.800  1290.000   361.600  1610.000   362.500  1955.000
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GR	361.500	1970.000	362.800	1980.000	361.600	1990.000	361.700	2000.000	354.500	2010.000
GR	351.200	2025.000	351.000	2080.000	351.400	2125.000	354.500	2145.000	361.100	2155.000
GR	357.500	2260.000	355.800	2305.000	357.500	2350.000	366.100	2395.000	385.000	2555.000
X1	2000.000	16.000	2033.000	2155.000	600.000	400.000	500.000	0.000	0.000	0.000
GR	371.200	1735.000	361.700	1775.000	362.800	1960.000	359.800	1970.000	358.200	2030.000
GR	354.800	2033.000	350.800	2055.000	350.400	2090.000	350.800	2120.000	354.800	2140.000
GR	362.500	2155.000	361.500	2240.000	357.500	2280.000	356.300	2320.000	357.500	2370.000
GR	386.700	2500.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2500.000	20.000	2020.000	2130.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	371.100	1830.000	360.000	1935.000	363.000	1990.000	363.000	2000.000	360.500	2005.000
GR	360.500	2015.000	355.500	2020.000	351.300	2040.000	351.800	2075.000	351.200	2105.000
GR	355.400	2125.000	359.500	2130.000	363.000	2145.000	363.000	2160.000	357.500	2235.000
GR	355.500	2280.000	357.500	2320.000	364.000	2380.000	370.000	2635.000	380.000	4500.000
X1	3000.000	26.000	2010.000	2095.000	550.000	450.000	500.000	0.000	0.000	0.000
GR	380.200	1375.000	363.000	1630.000	362.200	1730.000	362.600	1850.000	362.000	1940.000
GR	362.900	1990.000	361.000	2000.000	355.000	2010.000	349.000	2030.000	355.000	2095.000
GR	358.000	2105.000	360.500	2115.000	362.500	2160.000	357.000	2195.000	359.200	2255.000
GR	357.100	2295.000	360.600	2340.000	362.600	2410.000	361.000	2450.000	359.500	2485.000
GR	359.200	2590.000	362.200	2710.000	361.900	3085.000	367.500	3130.000	370.000	3150.000
GR	380.000	3250.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3500.000	20.000	2030.000	2130.000	600.000	400.000	500.000	0.000	0.000	0.000
GR	370.200	1830.000	361.600	1940.000	363.400	1990.000	362.900	2000.000	361.200	2015.000
GR	354.800	2030.000	351.600	2040.000	351.000	2075.000	351.000	2110.000	355.000	2130.000
GR	362.700	2155.000	362.500	2300.000	357.000	2440.000	362.400	2490.000	362.000	2650.000
GR	361.500	2850.000	360.600	3070.000	364.000	3780.000	368.000	3880.000	372.000	4090.000
QT	4.000	7117.000	10638.000	12372.000	15878.000	0.000	0.000	0.000	0.000	0.000
NC	0.100	0.100	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	4000.000	34.000	2030.000	2135.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	372.000	1900.000	368.000	1920.000	364.000	2000.000	360.000	2030.000	355.500	2040.000
GR	352.000	2045.000	351.000	2085.000	352.100	2120.000	355.500	2135.000	362.000	2140.000
GR	364.500	2160.000	360.500	2240.000	364.200	2425.000	362.800	2525.000	355.500	2550.000
GR	352.500	2555.000	355.500	2625.000	360.000	2675.000	360.000	2695.000	354.000	2715.000
GR	355.000	2725.000	353.900	2730.000	355.200	2775.000	360.500	2820.000	360.500	2900.000
GR	360.000	2950.000	355.800	2960.000	354.700	2965.000	355.900	2990.000	360.400	3005.000
GR	360.200	3015.000	364.000	3300.000	368.000	3970.000	372.000	4040.000	0.000	0.000
X1	4500.000	18.000	2025.000	2130.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	371.700	1815.000	396.500	1820.000	362.500	1840.000	359.200	1845.000	359.200	1890.000
GR	358.400	1900.000	363.500	1955.000	363.800	2000.000	360.500	2020.000	355.600	2025.000
GR	352.200	2035.000	352.700	2075.000	352.700	2115.000	355.600	2130.000	362.000	2135.000
GR	364.000	4110.000	368.000	4130.000	372.000	4150.000	0.000	0.000	0.000	0.000
X1	5000.000	20.000	2030.000	2135.000	450.000	550.000	500.000	0.000	0.000	0.000
GR	376.000	1550.000	372.000	1630.000	368.000	1700.000	364.000	1710.000	362.000	1730.000
GR	362.000	2000.000	356.000	2030.000	353.700	2040.000	352.100	2075.000	352.200	2130.000
GR	356.000	2135.000	362.000	2150.000	362.000	3400.000	364.000	3445.000	367.700	3650.000

GR	364.000	3900.000	364.000	4180.000	368.000	4205.000	372.000	4210.000	376.000	4230.000
X1	5500.000	30.000	2030.000	2135.000	450.000	550.000	500.000	0.000	0.000	0.000
GR	368.900	1000.000	366.000	1460.000	366.500	1745.000	366.600	1995.000	366.400	2005.000
GR	361.600	2020.000	356.500	2030.000	354.100	2050.000	352.000	2085.000	351.800	2110.000
GR	356.500	2135.000	361.600	2145.000	366.100	2165.000	362.700	2205.000	364.100	2540.000
GR	364.500	2630.000	364.500	2740.000	363.500	2840.000	364.200	2940.000	362.200	3040.000
GR	362.000	3140.000	366.200	3390.000	365.600	3655.000	367.200	3860.000	366.700	4145.000
GR	367.800	4415.000	366.600	4680.000	367.100	4905.000	369.000	5045.000	380.000	5300.000
X1	6000.000	21.000	2035.000	2150.000	450.000	550.000	500.000	0.000	0.000	0.000
GR	376.000	630.000	372.000	755.000	368.000	800.000	367.100	1200.000	366.000	1900.000
GR	364.000	2000.000	360.000	2020.000	356.000	2035.000	350.200	2055.000	352.700	2090.000
GR	352.500	2130.000	356.000	2150.000	356.000	2400.000	360.000	2430.000	364.000	2450.000
GR	364.000	2620.000	362.000	3100.000	362.000	3230.000	364.000	3700.000	368.000	3980.000
GR	372.000	4435.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	6958.000	10360.000	12025.000	15324.000	0.000	0.000	0.000	0.000	0.000
X1	6500.000	18.000	2021.000	2130.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	375.500	1795.000	370.500	1805.000	362.100	1845.000	356.100	1865.000	354.200	1875.000
GR	356.100	1885.000	364.200	1900.000	365.500	1935.000	365.200	2000.000	356.200	2021.000
GR	353.100	2027.000	352.600	2070.000	353.600	2110.000	356.200	2130.000	361.800	2140.000
GR	367.600	2165.000	367.700	2330.000	380.000	2390.000	0.000	0.000	0.000	0.000
X1	6987.000	18.000	2020.000	2095.000	487.000	487.000	487.000	0.000	0.000	0.000
GR	373.800	1410.000	372.500	1440.000	373.800	1540.000	371.200	1640.000	370.600	1740.000
GR	369.200	1925.000	368.500	1960.000	370.500	1985.000	370.700	1995.000	366.100	1995.000
GR	366.100	2000.000	356.000	2020.000	352.000	2025.000	352.000	2085.000	356.000	2095.000
GR	371.100	2120.000	374.600	2190.000	376.600	2195.000	0.000	0.000	0.000	0.000
NC	0.100	0.100	0.046	0.600	0.800	0.000	0.000	0.000	0.000	0.000
X1	7008.000	24.000	2025.000	2095.000	21.000	21.000	21.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	372.500	373.500	0.000
GR	380.000	1200.000	376.000	1400.000	374.700	1420.000	372.500	1440.000	373.000	1500.000
GR	374.800	1580.000	371.000	1640.000	370.600	1740.000	370.000	1800.000	369.200	1925.000
GR	368.500	1960.000	370.700	1995.000	366.200	2005.000	355.500	2025.000	355.000	2030.000
GR	353.700	2050.000	354.500	2090.000	357.500	2095.000	362.500	2110.000	372.200	2115.000
GR	375.600	2190.000	376.000	2220.000	382.000	2700.000	385.000	3000.000	0.000	0.000
SB	1.000	1.500	2.500	0.000	60.000	0.000	1720.000	1.400	354.000	354.000
X1	7038.000	0.000	0.000	0.000	30.000	30.000	30.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	373.500	375.200	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	375.500	380.000	0.000
BT	19.000	1200.000	380.000	380.000	1400.000	376.000	376.000	1420.000	375.700	374.700
BT	1440.000	375.600	372.500	1500.000	375.200	373.000	1580.000	375.200	374.800	1640.000
BT	375.300	371.000	1740.000	375.500	370.600	1800.000	375.500	370.000	1925.800	377.200
BT	369.200	1960.000	377.600	368.500	1995.000	378.200	370.700	2005.000	379.000	366.200
BT	2006.000	379.100	372.200	2109.000	380.500	373.500	2110.000	380.500	362.500	2115.000
BT	379.800	372.200	2220.000	381.200	376.000	2700.000	382.000	382.000	0.000	0.000
X1	7068.000	0.000	0.000	0.000	30.000	30.000	30.000	0.000	0.000	0.000

X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	375.500	380.000	0.000
X1	7100.000	27.000	2015.000	2095.000	32.000	32.000	32.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	375.000	380.500	0.000
GR	384.200	1180.000	375.500	1300.000	374.800	1520.000	371.300	1640.000	370.000	1800.000
GR	369.500	1900.000	368.500	1960.000	371.000	2005.000	371.000	2006.000	365.000	2006.000
GR	362.200	2015.000	357.500	2025.000	352.500	2030.000	352.500	2080.000	357.500	2085.000
GR	362.200	2095.000	367.000	2100.000	375.200	2100.000	375.200	2110.000	368.500	2110.000
GR	369.600	2139.000	369.700	2140.000	373.800	2240.000	375.500	2280.000	376.200	2345.000
GR	378.000	2495.000	386.500	2560.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	1.250	1.500	2.500	0.000	50.000	5.000	2100.000	2.000	0.000	0.000
X1	7130.000	0.000	0.000	0.000	30.000	30.000	30.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	375.800	383.800	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	382.500	385.500	0.000
BT	18.000	1180.000	384.200	384.200	1300.000	383.000	375.500	1520.000	382.300	374.800
BT	1640.000	382.400	371.300	1800.000	382.600	370.000	1900.000	383.200	369.500	1960.000
BT	383.800	368.500	2005.000	384.100	371.000	2006.000	384.200	375.000	2100.000	385.000
BT	375.800	2110.000	385.100	380.500	2139.000	385.300	380.500	2140.000	385.300	369.700
BT	2240.000	385.600	373.800	2280.000	386.000	375.500	2345.000	386.500	376.200	2500.000
BT	386.500	378.000	2560.000	386.500	386.500	0.000	0.000	0.000	0.000	0.000
NC	0.100	0.100	0.046	0.300	0.500	0.000	0.000	0.000	0.000	0.000
X1	7180.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X1	7500.000	20.000	2030.000	2110.000	300.000	340.000	320.000	0.000	0.000	0.000
GR	367.900	1945.000	368.200	1955.000	368.200	1965.000	369.500	1985.000	368.000	2000.000
GR	360.000	2025.000	357.000	2030.000	351.100	2042.000	350.000	2060.000	351.100	2095.000
GR	357.000	2110.000	375.000	2140.000	375.500	2155.000	375.500	2165.000	375.000	2175.000
GR	374.000	2180.000	373.500	2200.000	374.000	2220.000	375.000	2245.000	380.000	2305.000
X1	8000.000	17.000	2025.000	2108.000	550.000	450.000	500.000	0.000	0.000	0.000
GR	369.700	1960.000	369.700	1970.000	370.000	1980.000	370.000	1990.000	369.000	2000.000
GR	366.000	2010.000	365.000	2020.000	357.200	2025.000	354.000	2030.000	348.000	2042.000
GR	347.300	2060.000	348.000	2092.000	354.200	2108.000	357.300	2115.000	379.000	2155.000
GR	380.000	2180.000	381.000	2191.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	8500.000	22.000	2032.000	2112.000	600.000	400.000	500.000	0.000	0.000	0.000
GR	378.000	1945.000	380.000	1962.000	380.500	1965.000	380.500	1975.000	380.000	1985.000
GR	370.000	2000.000	366.000	2011.000	368.000	2028.000	354.000	2032.000	351.000	2040.000
GR	350.000	2060.000	351.000	2100.000	354.000	2105.000	359.000	2112.000	374.100	2142.000
GR	376.000	2150.000	376.100	2182.000	376.400	2188.000	376.400	2205.000	376.000	2215.000
GR	377.500	2228.000	380.000	2300.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	9000.000	18.000	2020.000	2100.000	650.000	350.000	500.000	0.000	0.000	0.000
GR	377.500	1925.000	377.000	1945.000	376.000	1960.000	375.000	1965.000	372.000	1980.000
GR	358.300	2020.000	353.200	2025.000	351.000	2030.000	350.500	2060.000	351.000	2090.000
GR	353.200	2095.000	358.300	2100.000	360.000	2105.000	361.000	2110.000	373.000	2128.000
GR	375.000	2138.000	375.000	2170.000	385.000	2185.000	0.000	0.000	0.000	0.000

X1	9500.000	21.000	2025.000	2105.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	380.000	1945.000	372.000	1955.000	371.000	1970.000	371.000	1990.000	372.800	1995.000
GR	370.000	2000.000	357.800	2025.000	354.000	2028.000	351.000	2030.000	350.000	2060.000
GR	351.000	2100.000	354.000	2105.000	360.000	2115.000	373.000	2140.000	373.700	2170.000
GR	374.000	2205.000	375.000	2224.000	376.000	2226.000	377.000	2235.000	377.000	2255.000
GR	380.000	2260.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	10000.000	16.000	2015.000	2100.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	377.100	1910.000	376.000	1920.000	375.000	1950.000	375.000	1985.000	370.000	2000.000
GR	360.000	2015.000	353.800	2025.000	351.000	2030.000	349.500	2060.000	350.900	2090.000
GR	353.900	2095.000	358.000	2100.000	360.000	2110.000	373.000	2130.000	374.000	2185.000
GR	380.000	2210.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	10500.000	18.000	2025.000	2100.000	550.000	450.000	500.000	0.000	0.000	0.000
GR	380.000	1960.000	375.000	1965.000	372.100	1995.000	368.000	2005.000	362.000	2018.000
GR	360.000	2022.000	358.000	2025.000	349.300	2035.000	348.700	2050.000	351.000	2085.000
GR	358.000	2100.000	360.000	2110.000	361.000	2115.000	362.000	2115.000	363.000	2125.000
GR	370.000	2135.000	375.000	2150.000	380.000	2160.000	0.000	0.000	0.000	0.000
X1	11000.000	17.000	2025.000	2115.000	650.000	350.000	500.000	0.000	0.000	0.000
GR	380.000	1925.000	375.000	1945.000	373.000	1965.000	372.000	1995.000	370.000	2000.000
GR	368.500	2002.000	360.000	2020.000	358.200	2025.000	350.000	2040.000	349.000	2065.000
GR	351.000	2095.000	358.400	2115.000	370.000	2138.000	371.000	2145.000	372.000	2150.000
GR	373.000	2165.000	380.000	2175.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11500.000	16.000	2035.000	2140.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	396.500	1815.000	376.000	1865.000	373.500	1985.000	368.200	2000.000	364.500	2020.000
GR	355.800	2035.000	353.200	2038.000	347.200	2040.000	346.800	2070.000	347.200	2100.000
GR	352.500	2105.000	355.800	2105.000	370.000	2140.000	400.000	2200.000	406.500	2215.000
GR	406.500	2300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12000.000	22.000	2035.000	2108.000	350.000	650.000	500.000	0.000	0.000	0.000
GR	380.000	1965.000	377.000	1975.000	376.000	1998.000	365.000	2021.000	360.000	2025.000
GR	355.000	2035.000	352.200	2045.000	351.500	2070.000	353.000	2102.000	354.500	2108.000
GR	358.500	2112.000	360.000	2118.000	365.000	2132.000	367.000	2135.000	368.600	2150.000
GR	366.000	2175.000	363.000	2185.000	362.500	2192.000	363.000	2205.000	364.000	2240.000
GR	365.100	2255.000	380.000	2285.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12530.000	13.000	2030.000	2100.000	430.000	630.000	530.000	0.000	0.000	0.000
GR	380.000	1960.000	369.000	2000.000	359.000	2025.000	358.500	2030.000	354.700	2035.000
GR	352.000	2040.000	351.500	2060.000	352.000	2095.000	354.700	2100.000	359.000	2110.000
GR	369.000	2125.000	371.000	2140.000	380.000	2180.000	0.000	0.000	0.000	0.000
NC	0.100	0.100	0.046	0.600	0.800	0.000	0.000	0.000	0.000	0.000
X1	12550.000	24.000	2075.000	2160.000	20.000	20.000	20.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	368.200	373.500	0.000
GR	397.000	1985.000	392.000	2000.000	375.000	2045.000	370.000	2048.000	368.200	2060.000
GR	377.500	2060.000	381.500	2064.000	381.500	2065.000	377.500	2070.000	361.000	2070.000
GR	359.500	2075.000	351.000	2100.000	351.000	2140.000	359.500	2160.000	366.500	2175.000
GR	377.500	2175.000	381.500	2179.000	381.500	2180.000	377.500	2185.000	373.500	2185.000
GR	380.200	2195.000	391.900	2244.000	392.000	2245.000	397.000	2265.000	0.000	0.000

SB	1.050	1.500	2.500	0.000	60.000	7.000	5200.000	1.700	351.000	351.000
X1	12590.000	0.000	0.000	0.000	40.000	40.000	40.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	392.000	397.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	368.200	373.500	0.000
BT	8.000	1985.000	397.000	397.000	2000.000	397.000	392.000	2064.000	397.000	392.000
BT	2065.000	397.000	381.700	2179.000	397.000	381.700	2180.000	397.000	392.000	2245.000
BT	397.000	392.000	2265.000	397.000	397.000	0.000	0.000	0.000	0.000	0.000
NC	0.100	0.100	0.046	0.500	0.500	0.000	0.000	0.000	0.000	0.000
X1	12640.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X1	13100.000	18.000	2025.000	2110.000	460.000	460.000	460.000	0.000	0.000	0.000
GR	376.000	1880.000	376.300	1895.000	376.100	1920.000	375.000	1965.000	369.000	1987.000
GR	368.200	2000.000	367.300	2005.000	359.000	2025.000	356.000	2030.000	353.000	2040.000
GR	352.500	2065.000	353.500	2105.000	356.000	2110.000	359.000	2115.000	365.000	2120.000
GR	368.000	2135.000	369.000	2155.000	380.000	2190.000	0.000	0.000	0.000	0.000
X1	13600.000	16.000	2025.000	2092.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	380.000	1945.000	376.000	1950.000	375.000	1960.000	366.000	2000.000	359.000	2025.000
GR	355.000	2035.000	353.500	2039.000	353.000	2055.000	353.500	2090.000	355.000	2092.000
GR	359.000	2100.000	360.000	2105.000	365.000	2110.000	370.000	2125.000	371.000	2148.000
GR	380.000	2181.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	14100.000	12.000	2020.000	2095.000	350.000	650.000	500.000	0.000	0.000	0.000
GR	380.000	1970.000	366.500	2000.000	359.000	2020.000	351.000	2040.000	350.600	2053.000
GR	351.000	2080.000	359.000	2095.000	365.000	2105.000	367.000	2115.000	371.000	2125.000
GR	375.000	2148.000	380.000	2175.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	14600.000	12.000	2008.000	2093.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	380.000	1968.000	367.200	2003.000	365.000	2008.000	359.500	2015.000	353.700	2020.000
GR	353.500	2060.000	354.000	2090.000	359.500	2093.000	365.000	2097.000	371.900	2115.000
GR	373.000	2140.000	380.000	2160.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	15100.000	13.000	2015.000	2080.000	600.000	400.000	500.000	0.000	0.000	0.000
GR	380.000	1952.000	370.000	1980.000	365.000	2000.000	359.200	2015.000	356.500	2020.000
GR	355.200	2023.000	354.500	2045.000	356.400	2075.000	359.200	2080.000	365.000	2084.000
GR	370.000	2105.000	375.000	2115.000	380.000	2122.000	0.000	0.000	0.000	0.000
X1	15600.000	13.000	2010.000	2070.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	380.000	1965.000	375.000	1975.000	370.000	1990.000	365.000	2000.000	359.000	2010.000
GR	353.000	2020.000	352.700	2045.000	353.400	2065.000	359.000	2070.000	365.000	2080.000
GR	370.000	2090.000	375.000	2103.000	380.000	2112.000	0.000	0.000	0.000	0.000
X1	16100.000	15.000	2005.000	2080.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	380.000	1965.000	378.000	1970.000	375.000	1978.000	370.000	1988.000	365.500	2000.000
GR	359.500	2005.000	353.000	2010.000	351.500	2055.000	351.800	2070.000	355.500	2075.000
GR	359.500	2080.000	365.000	2100.000	370.000	2125.000	375.000	2138.000	380.000	2155.000
NC	1.000	0.100	0.046	0.200	0.400	0.000	0.000	0.000	0.000	0.000

X1	16600.000	12.000	2005.000	2085.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	380.000	1951.000	372.000	1970.000	367.000	1995.000	365.000	2000.000	360.000	2005.000
GR	354.000	2007.000	352.500	2015.000	351.500	2030.000	353.500	2070.000	360.000	2085.000
GR	365.000	2095.000	380.000	2125.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	17100.000	13.000	2005.000	2095.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	381.700	800.000	380.000	1970.000	365.000	2000.000	360.100	2005.000	359.600	2012.000
GR	355.500	2018.000	349.800	2020.000	349.000	2060.000	350.000	2080.000	359.600	2095.000
GR	360.000	2105.000	365.000	2108.000	385.000	2155.000	0.000	0.000	0.000	0.000
X1	17600.000	13.000	2008.000	2075.000	550.000	450.000	500.000	0.000	0.000	0.000
GR	382.000	900.000	380.000	1965.000	370.000	1990.000	365.000	2000.000	359.800	2008.000
GR	351.500	2020.000	350.200	2050.000	350.500	2060.000	359.900	2075.000	360.100	2085.000
GR	365.000	2090.000	370.000	2115.000	385.000	2140.000	0.000	0.000	0.000	0.000
X1	18100.000	11.000	2000.000	2078.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	384.000	30.000	380.000	1950.000	365.000	1995.000	360.000	2000.000	360.000	2008.000
GR	347.600	2030.000	347.600	2050.000	360.000	2078.000	370.000	2110.000	380.000	2120.000
GR	385.000	2140.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	18600.000	12.000	2008.000	2095.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	384.000	210.000	380.000	1970.000	370.000	1975.000	365.000	2000.000	360.000	2008.000
GR	347.900	2015.000	347.000	2019.000	347.500	2020.000	347.500	2045.000	365.000	2095.000
GR	380.000	2135.000	385.000	2142.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	19100.000	12.000	2020.000	2095.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	384.000	100.000	380.200	1960.000	370.000	1980.000	360.000	2020.000	358.500	2025.000
GR	347.500	2055.000	360.000	2095.000	365.000	2115.000	370.000	2130.000	378.500	2150.000
GR	382.000	2155.000	385.000	2200.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	19600.000	12.000	2020.000	2095.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	383.000	900.000	380.000	1945.000	370.000	1975.000	365.100	2000.000	360.000	2020.000
GR	352.000	2030.000	350.000	2055.000	351.500	2085.000	360.000	2095.000	365.000	2110.000
GR	366.000	2125.000	385.000	2170.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	20100.000	15.000	2015.000	2105.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	380.000	1945.000	370.000	1968.000	365.000	2000.000	365.000	2005.000	360.000	2015.000
GR	354.000	2025.000	353.000	2055.000	354.000	2090.000	360.000	2105.000	363.200	2112.000
GR	365.000	2135.000	370.000	2165.000	372.000	2170.000	372.000	2180.000	382.200	2200.000
X1	20600.000	12.000	2008.000	2095.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	380.000	1958.000	370.000	1975.000	365.000	2000.000	361.000	2008.000	355.000	2015.000
GR	353.500	2050.000	361.000	2095.000	362.000	2100.000	365.000	2135.000	370.000	2165.000
GR	380.000	2188.000	383.000	2200.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	1.000	1.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	21100.000	15.000	2075.000	2150.000	500.000	500.000	500.000	0.000	0.000	0.000

GR	381.600	1850.000	381.400	1960.000	380.700	2000.000	380.000	2005.000	374.500	2015.000
GR	367.300	2065.000	359.500	2075.000	358.500	2080.000	354.000	2095.000	354.000	2105.000
GR	356.500	2125.000	359.500	2135.000	362.500	2150.000	377.000	2195.000	380.500	2245.000
X1	21600.000	15.000	2085.000	2185.000	450.000	550.000	500.000	0.000	0.000	0.000
GR	381.000	100.000	380.000	1300.000	376.000	2000.000	372.000	2020.000	369.300	2035.000
GR	369.000	2065.000	359.900	2085.000	355.000	2095.000	355.000	2120.000	354.800	2152.000
GR	355.300	2156.000	360.000	2185.000	380.000	2235.000	382.000	2810.000	384.000	2820.000
X1	21900.000	18.000	2095.000	2210.000	300.000	300.000	300.000	0.000	0.000	0.000
GR	380.000	1150.000	376.000	2040.000	372.000	2050.000	363.500	2075.000	363.500	2085.000
GR	358.300	2095.000	353.300	2105.000	350.200	2145.000	353.800	2192.000	358.300	2210.000
GR	361.400	2215.000	361.400	2230.000	366.000	2235.000	366.000	2270.000	370.500	2275.000
GR	370.500	2285.000	374.000	2320.000	385.000	2350.000	0.000	0.000	0.000	0.000
X1	22400.000	14.000	2085.000	2141.000	450.000	550.000	500.000	0.000	0.000	0.000
GR	381.000	300.000	380.400	600.000	380.000	990.000	376.000	2010.000	370.900	2035.000
GR	368.500	2060.000	361.000	2082.000	360.500	2085.000	352.400	2090.000	352.400	2110.000
GR	361.000	2141.000	365.000	2150.000	381.900	2220.000	381.900	2265.000	0.000	0.000
X1	22900.000	14.000	2065.000	2125.000	500.000	500.000	500.000	0.000	0.000	0.000
GR	382.000	1200.000	381.000	1600.000	380.000	2000.000	376.000	2010.000	368.500	2035.000
GR	366.500	2050.000	361.500	2065.000	354.500	2070.000	353.000	2095.000	355.000	2120.000
GR	361.500	2125.000	366.000	2135.000	379.000	2170.000	382.500	2212.000	0.000	0.000
X1	23117.000	0.000	0.000	0.000	217.000	217.000	217.000	0.000	0.000	0.000
NC	0.100	0.100	0.046	0.600	0.800	0.000	0.000	0.000	0.000	0.000
X1	23167.000	19.000	2065.000	2130.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	385.400	386.200	0.000
GR	386.000	1800.000	388.200	1965.000	385.400	2000.000	378.000	2020.000	369.800	2045.000
GR	385.400	2045.000	385.400	2049.000	369.000	2049.000	362.000	2065.000	359.000	2075.000
GR	357.800	2095.000	359.000	2115.000	362.000	2130.000	371.000	2165.000	385.900	2165.000
GR	386.000	2170.000	374.000	2170.000	386.200	2200.000	389.500	2220.000	0.000	0.000
SB	1.050	1.500	2.500	0.000	60.000	8.000	3643.000	3.000	0.000	0.000
X1	23207.000	0.000	0.000	0.000	40.000	40.000	40.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	386.200	388.200	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	386.000	388.200	0.000
BT	8.000	1965.000	388.200	388.200	2000.000	389.000	385.400	2045.000	389.000	385.500
BT	2049.000	389.100	385.600	2165.000	389.500	386.000	2170.000	389.600	389.100	2200.000
BT	389.700	386.200	2220.000	389.500	389.500	0.000	0.000	0.000	0.000	0.000
NC	0.100	0.100	0.046	0.300	0.500	0.000	0.000	0.000	0.000	0.000
X1	23257.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X1	23327.000	9.000	2050.000	2125.000	70.000	70.000	70.000	0.000	0.000	0.000
GR	378.500	1910.000	378.000	2000.000	364.500	2040.000	360.000	2050.000	356.800	2069.000
GR	359.800	2075.000	361.800	2125.000	386.800	2225.000	385.600	2265.000	0.000	0.000

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 3265 DIVIDED FLOW
  23257.00     18.19    375.99      0.00      0.00    376.43      0.44      0.05      0.07    362.00
     6958.      281.     6142.      534.      226.     1091.      337.     1495.      280.     362.00
     1.84       1.24      5.63      1.58     0.100     0.046     0.100     0.045    357.80   2026.13
 0.000719        50.       50.       50.         2         0         0      0.00    139.77   2174.89
0
 *SECNO 23327.000
  23327.00     19.39    376.19      0.00      0.00    376.51      0.32      0.04      0.04    360.00
     6958.      493.     5930.      535.      342.     1215.      414.     1498.      280.     361.80
     1.85       1.44      4.88      1.29     0.100     0.046     0.100     0.045    356.80   2005.36
 0.000567        70.       70.       70.         2         0         0      0.00    177.19   2182.56
0
1
                                                                    THIS RUN EXECUTED  25  FEB  82  14:56:58
 ****************************************************
   HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
   ERROR CORR -  01,02
   MODIFICATION -  50,51,52,53
 ****************************************************

 T1      WALLKILL RIVER
 T2      FLOOD PROFILES
 T3      Q50

 J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        3.        0.        0.  0.000000      0.00      0.0       0.    365.340     0.000

 J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
       2.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.800

1
 *PROF 2

 CCHV=   0.300 CEHV=   0.500
 *SECNO 8.706
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

      8.71     14.34    365.34      0.00    365.34    365.43      0.09      0.00      0.00    356.10
     11993.    4066.     5390.     2537.     4011.     1618.     2388.        0.        0.    356.10
      0.00      1.01      3.33      1.06     0.063     0.038     0.063     0.000    351.00    152.00
 0.000230        0.        0.        0.         0         0         0      0.00   1496.71   1648.71
0
 *SECNO 1.000
      1.00     13.92    365.42      0.00      0.00    365.49      0.07      0.06      0.00    354.50
     11315.    5406.     5744.      164.     5356.     2021.      279.       52.       9.    360.50
      0.04      1.01      2.84      0.59     0.063     0.038     0.063     0.038    351.50   1017.58
 0.000189       290.      290.      290.         1         0         0      0.00   1265.81   2283.39
0
 *SECNO 500.000
    500.00     16.51    365.51      0.00      0.00    365.64      0.13      0.12      0.03    354.50
     11315.    5375.     5816.      123.     4900.     1497.      153.      134.       24.    355.20
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  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
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T1      WALLKILL RIVER
T2      FLOOD PROFILES
T3      Q100

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ

       0.        4.         0.         0.  0.000000       0.00       0.0        0.   366.460       0.000

J2  NPROF      IPLOT      PREVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE

      3.000      0.000     -1.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

1
 *PROF 3

 CCHV=   0.300 CEHV=   0.500
 *SECNO 8.706
    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN        SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID       ENDST

      8.71      15.46     366.46       0.00     366.46     366.53       0.07       0.00       0.00     356.10
     14062.     5267.     5585.      3211.      5017.      1753.      2940.         0.         0.     356.10
      0.00       1.05      3.19       1.09      0.063      0.038      0.063      0.000     351.00     130.80
  0.000190         0.        0.         0.          0          0          0       0.00    1525.61    1656.41
0
 *SECNO 1.000
      1.00      15.02     366.52       0.00       0.00     366.59       0.06       0.05       0.00     354.50
     13216.     6777.     6132.       307.      6449.      2202.       537.        63.        10.     360.50
      0.04       1.05      2.78       0.57      0.063      0.038      0.063      0.038     351.50    1007.21
  0.000161        290.      290.        290.          0          0          0       0.00    1477.40    2484.62
0
 *SECNO 500.000
    500.00      17.60     366.60       0.00       0.00     366.71       0.11       0.10       0.02     354.50
     13216.     7028.     5997.       190.      6119.      1611.       224.       161.        26.     355.20
      0.10       1.15      3.72       0.85      0.063      0.038      0.063      0.038     349.00     879.94
  0.000240        500.      500.        500.          1          0          0       0.00    1305.52    2185.47
0
 *SECNO 1000.000
   1000.00      16.25     366.75       0.00       0.00     366.79       0.04       0.07       0.02     354.70
     13216.     7667.     5275.       273.      9875.      2164.       324.       260.        42.     354.70
       0.19       0.78      2.44       0.85      0.063      0.038      0.063      0.040     350.50    1067.59
  0.000106        400.      500.        600.          2          0          0       0.00    2140.62    3208.21
0
 *SECNO 1500.000
    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
    O          QLOB       OCH        OROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN        SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IOC        ICONT      CORAR      TOPWIO       ENDST

   1500.00      15.80     366.80       0.00       0.00     366.88       0.08       0.06       0.02     354.50
     13216.     4510.     6226.      2481.      4943.      2052.      2018.       383.        62.     354.50
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1

THIS RUN EXECUTED 25 FEB 82 15:00:10

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  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Q10
SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
8.706	0.00	0.00	0.00	351.00	7905.00	362.83	0.00	362.99	4.16	3.90	4343.88	3876.68
8.706	0.00	0.00	0.00	351.00	11993.00	365.34	0.00	365.43	2.30	3.33	8017.57	7901.68
8.706	0.00	0.00	0.00	351.00	14062.00	366.46	0.00	366.53	1.90	3.19	9709.69	10213.82
8.706	0.00	0.00	0.00	351.00	18554.00	369.47	0.00	369.52	1.08	2.72	14400.81	17869.98
1.000	290.00	0.00	0.00	351.50	7508.00	363.01	0.00	363.11	2.85	3.02	4706.36	4449.85
1.000	290.00	0.00	0.00	351.50	11315.00	365.42	0.00	365.49	1.89	2.84	7655.11	8237.01
1.000	290.00	0.00	0.00	351.50	13216.00	366.52	0.00	366.59	1.61	2.78	9189.03	10404.17
1.000	290.00	0.00	0.00	351.50	17219.00	369.50	0.00	369.55	0.94	2.43	13682.97	17765.29
500.000	500.00	0.00	0.00	349.00	7508.00	363.13	0.00	363.35	4.70	4.39	3578.97	3463.81
500.000	500.00	0.00	0.00	349.00	11315.00	365.51	0.00	365.64	2.89	3.88	6549.87	6661.55
500.000	500.00	0.00	0.00	349.00	13216.00	366.60	0.00	366.71	2.40	3.72	7954.23	8529.25
500.000	500.00	0.00	0.00	349.00	17219.00	369.55	0.00	369.61	1.35	3.14	11920.07	14804.70
1000.000	500.00	0.00	0.00	350.50	7508.00	363.45	0.00	363.52	1.85	2.72	5789.62	5521.17
1000.000	500.00	0.00	0.00	350.50	11315.00	365.69	0.00	365.74	1.28	2.54	10116.42	10007.98
1000.000	500.00	0.00	0.00	350.50	13216.00	366.75	0.00	366.79	1.06	2.44	12362.22	12812.78
1000.000	500.00	0.00	0.00	350.50	17219.00	369.64	0.00	369.66	0.59	2.05	18702.39	22357.46
1500.000	500.00	0.00	0.00	351.00	7508.00	363.54	0.00	363.64	2.31	3.10	4724.22	4939.87
1500.000	500.00	0.00	0.00	351.00	11315.00	365.75	0.00	365.83	1.82	3.07	7620.07	8396.53
1500.000	500.00	0.00	0.00	351.00	13216.00	366.80	0.00	366.88	1.61	3.03	9013.05	10420.12
1500.000	500.00	0.00	0.00	351.00	17219.00	369.66	0.00	369.72	1.02	2.71	12894.44	17065.54
2000.000	500.00	0.00	0.00	350.40	7508.00	363.65	0.00	363.83	4.21	3.98	2963.17	3657.29
2000.000	500.00	0.00	0.00	350.40	11315.00	365.82	0.00	366.02	3.98	4.36	4362.25	5669.42
2000.000	500.00	0.00	0.00	350.40	13216.00	366.86	0.00	367.06	3.78	4.46	5037.28	6797.43
2000.000	500.00	0.00	0.00	350.40	17219.00	369.68	0.00	369.85	2.72	4.26	6936.90	10431.50
2500.000	500.00	0.00	0.00	351.20	7508.00	363.86	0.00	364.08	4.90	4.32	2670.32	3391.92
2500.000	500.00	0.00	0.00	351.20	11315.00	366.02	0.00	366.27	4.90	4.86	3818.47	5109.93
2500.000	500.00	0.00	0.00	351.20	13216.00	367.04	0.00	367.30	4.72	5.00	4445.83	6084.24
2500.000	500.00	0.00	0.00	351.20	17219.00	369.82	0.00	370.03	3.42	4.78	6425.17	9306.75
3000.000	500.00	0.00	0.00	349.00	7508.00	364.19	0.00	364.29	2.91	3.50	5183.31	4400.83
3000.000	500.00	0.00	0.00	349.00	11315.00	366.40	0.00	366.47	1.94	3.19	8530.24	8129.91
3000.000	500.00	0.00	0.00	349.00	13216.00	367.42	0.00	367.48	1.66	3.09	10118.64	10269.55
3000.000	500.00	0.00	0.00	349.00	17219.00	370.12	0.00	370.16	1.02	2.69	14423.81	17086.00

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SECNO XLCH ELTRD ELLC ELMIN Q CWSEL CRIWS EG 10K*S VCH AREA .01K

3500.000	500.00	0.00	0.00	351.00	7508.00	364.32	0.00	364.42	2.44	3.29	5804.58	4808.03
3500.000	500.00	0.00	0.00	351.00	11315.00	366.49	0.00	366.55	1.52	2.89	9981.02	9175.12
3500.000	500.00	0.00	0.00	351.00	13216.00	367.50	0.00	367.55	1.27	2.75	11987.84	11734.30
3500.000	500.00	0.00	0.00	351.00	17219.00	370.17	0.00	370.20	0.74	2.33	17536.98	20018.79
4000.000	500.00	0.00	0.00	351.00	7117.00	364.50	0.00	364.55	2.60	2.68	6152.23	4412.87
4000.000	500.00	0.00	0.00	351.00	10638.00	366.58	0.00	366.64	2.36	2.84	9457.71	6919.48
4000.000	500.00	0.00	0.00	351.00	12372.00	367.58	0.00	367.63	2.16	2.84	11331.52	8423.88
4000.000	500.00	0.00	0.00	351.00	15878.00	370.22	0.00	370.25	1.38	2.53	16784.78	13537.39
4500.000	500.00	0.00	0.00	352.20	7117.00	364.63	0.00	364.80	5.81	3.99	5113.27	2951.99
4500.000	500.00	0.00	0.00	352.20	10638.00	366.71	0.00	366.79	3.36	3.38	9870.49	5806.78
4500.000	500.00	0.00	0.00	352.20	12372.00	367.69	0.00	367.76	2.69	3.17	12123.79	7541.34
4500.000	500.00	0.00	0.00	352.20	15878.00	370.29	0.00	370.33	1.46	2.60	18071.28	13134.84
5000.000	500.00	0.00	0.00	352.10	7117.00	364.96	0.00	365.05	3.60	3.22	6497.96	3749.89
5000.000	500.00	0.00	0.00	352.10	10638.00	366.89	0.00	366.95	2.59	3.01	10886.44	6605.63
5000.000	500.00	0.00	0.00	352.10	12372.00	367.84	0.00	367.89	2.19	2.89	13214.82	8369.00
5000.000	500.00	0.00	0.00	352.10	15878.00	370.37	0.00	370.40	1.24	2.42	19584.26	14234.60
5500.000	500.00	0.00	0.00	351.80	7117.00	365.13	0.00	365.41	8.27	4.76	3174.64	2474.45
5500.000	500.00	0.00	0.00	351.80	10638.00	367.02	0.00	367.23	6.40	4.63	6698.72	4204.14
5500.000	500.00	0.00	0.00	351.80	12372.00	367.95	0.00	368.10	4.76	4.17	10039.40	5672.81
5500.000	500.00	0.00	0.00	351.80	15878.00	370.44	0.00	370.48	1.82	2.87	19968.35	11773.61
6000.000	500.00	0.00	0.00	350.20	7117.00	365.61	0.00	365.66	1.71	2.32	7764.20	5446.10
6000.000	500.00	0.00	0.00	350.20	10638.00	367.39	0.00	367.43	1.69	2.51	11873.09	8192.68
6000.000	500.00	0.00	0.00	350.20	12372.00	368.22	0.00	368.26	1.57	2.51	14427.56	9882.28
6000.000	500.00	0.00	0.00	350.20	15878.00	370.53	0.00	370.56	0.99	2.18	22149.87	15972.82
6500.000	500.00	0.00	0.00	352.60	6958.00	365.65	0.00	365.93	7.08	4.54	2035.23	2614.16
6500.000	500.00	0.00	0.00	352.60	10360.00	367.36	0.00	367.79	9.40	5.70	2611.71	3379.70
6500.000	500.00	0.00	0.00	352.60	12025.00	368.16	0.00	368.64	10.08	6.13	2972.28	3787.25
6500.000	500.00	0.00	0.00	352.60	15324.00	370.42	0.00	370.89	8.73	6.28	4163.51	5186.23
6987.000	487.00	0.00	0.00	352.00	6958.00	365.92	0.00	366.58	13.47	6.60	1193.22	1895.59
6987.000	487.00	0.00	0.00	352.00	10360.00	367.66	0.00	368.76	19.49	8.61	1397.35	2346.91
6987.000	487.00	0.00	0.00	352.00	12025.00	368.44	0.00	369.76	22.01	9.46	1490.64	2563.04
6987.000	487.00	0.00	0.00	352.00	15324.00	370.52	0.00	372.09	22.78	10.44	1943.45	3210.45
7008.000	21.00	0.00	0.00	353.70	6958.00	365.86	0.00	367.03	32.02	8.66	803.10	1229.64
7008.000	21.00	0.00	0.00	353.70	10360.00	367.55	0.00	369.51	46.13	11.25	921.22	1525.42
7008.000	21.00	0.00	0.00	353.70	12025.00	368.30	0.00	370.67	52.30	12.35	973.52	1662.76
7008.000	21.00	0.00	0.00	353.70	15324.00	370.32	0.00	373.25	55.76	13.74	1114.94	2052.11
7038.000	30.00	375.20	373.50	353.70	6958.00	366.00	0.00	367.14	30.82	8.56	812.84	1253.25
7038.000	30.00	375.20	373.50	353.70	10360.00	367.80	0.00	369.69	43.48	11.04	938.77	1571.09
7038.000	30.00	375.20	373.50	353.70	12025.00	368.61	0.00	370.88	48.88	12.09	994.87	1719.89
7038.000	30.00	375.20	373.50	353.70	15324.00	370.69	0.00	373.49	51.91	13.43	1141.15	2126.98
7068.000	30.00	0.00	0.00	353.70	6958.00	366.13	0.00	367.24	29.76	8.46	821.99	1275.54
7068.000	30.00	0.00	0.00	353.70	10360.00	368.03	0.00	369.86	41.26	10.85	954.68	1612.86
7068.000	30.00	0.00	0.00	353.70	12025.00	368.90	0.00	371.07	45.84	11.84	1015.68	1776.16
7068.000	30.00	0.00	0.00	353.70	15324.00	371.02	0.00	373.71	48.84	13.17	1163.93	2192.70

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K

7100.000	32.00	0.00	0.00	352.50	6958.00	366.70	0.00	367.51	20.76	7.22	964.04	1527.24
7100.000	32.00	0.00	0.00	352.50	10360.00	369.05	0.00	370.30	26.08	9.00	1151.65	2028.49
7100.000	32.00	0.00	0.00	352.50	12025.00	370.16	0.00	371.62	27.77	9.69	1240.65	2282.07
7100.000	32.00	0.00	0.00	352.50	15324.00	372.61	0.00	374.38	28.44	10.66	1436.98	2873.58
7130.000	30.00	383.80	375.80	352.50	6958.00	366.85	0.00	367.64	19.93	7.13	976.36	1558.70
7130.000	30.00	383.80	375.80	352.50	10360.00	369.31	0.00	370.52	24.60	8.83	1173.06	2088.61
7130.000	30.00	383.80	375.80	352.50	12025.00	370.48	0.00	371.88	26.05	9.50	1266.04	2356.12
7130.000	30.00	383.80	375.80	352.50	15324.00	372.99	0.00	374.68	26.66	10.45	1467.10	2968.00
7180.000	50.00	0.00	0.00	352.50	6958.00	366.99	0.00	367.75	18.18	7.00	1029.94	1631.88
7180.000	50.00	0.00	0.00	352.50	10360.00	369.54	0.00	370.66	21.26	8.58	1325.49	2246.77
7180.000	50.00	0.00	0.00	352.50	12025.00	370.87	0.00	372.06	20.44	8.90	1788.05	2660.03
7180.000	50.00	0.00	0.00	352.50	15324.00	374.27	0.00	375.05	12.32	7.85	3830.09	4365.21
7500.000	320.00	0.00	0.00	350.00	6958.00	367.78	0.00	368.18	6.72	5.22	1521.42	2685.04
7500.000	320.00	0.00	0.00	350.00	10360.00	370.62	0.00	371.22	8.20	6.42	2004.79	3618.36
7500.000	320.00	0.00	0.00	350.00	12025.00	371.93	0.00	372.61	8.55	6.86	2253.29	4112.60
7500.000	320.00	0.00	0.00	350.00	15324.00	374.59	0.00	375.38	8.63	7.48	2801.79	5217.74
8000.000	500.00	0.00	0.00	347.30	6958.00	368.19	0.00	368.47	3.66	4.27	1836.96	3635.87
8000.000	500.00	0.00	0.00	347.30	10360.00	371.15	0.00	371.58	4.83	5.40	2298.91	4714.87
8000.000	500.00	0.00	0.00	347.30	12025.00	372.50	0.00	372.99	5.21	5.84	2543.46	5265.89
8000.000	500.00	0.00	0.00	347.30	15324.00	375.16	0.00	375.77	5.63	6.52	3038.39	6459.04
8500.000	500.00	0.00	0.00	350.00	6958.00	368.36	0.00	368.75	5.82	5.03	1508.59	2884.22
8500.000	500.00	0.00	0.00	350.00	10360.00	371.36	0.00	371.95	7.26	6.26	1906.92	3844.18
8500.000	500.00	0.00	0.00	350.00	12025.00	372.72	0.00	373.40	7.73	6.75	2098.07	4325.48
8500.000	500.00	0.00	0.00	350.00	15324.00	375.39	0.00	376.22	8.16	7.50	2495.51	5365.02
9000.000	500.00	0.00	0.00	350.50	6958.00	368.70	0.00	369.05	5.51	4.83	1663.44	2965.00
9000.000	500.00	0.00	0.00	350.50	10360.00	371.80	0.00	372.32	6.73	5.97	2094.39	3993.80
9000.000	500.00	0.00	0.00	350.50	12025.00	373.20	0.00	373.79	7.09	6.41	2303.92	4514.76
9000.000	500.00	0.00	0.00	350.50	15324.00	375.94	0.00	376.64	7.37	7.07	2793.45	5644.10
9500.000	500.00	0.00	0.00	350.00	6958.00	369.00	0.00	369.31	4.48	4.55	1774.94	3287.07
9500.000	500.00	0.00	0.00	350.00	10360.00	372.18	0.00	372.65	5.54	5.65	2246.33	4400.34
9500.000	500.00	0.00	0.00	350.00	12025.00	373.61	0.00	374.14	5.86	6.06	2518.55	4969.09
9500.000	500.00	0.00	0.00	350.00	15324.00	376.48	0.00	377.00	5.99	6.62	3255.86	6262.47
10000.000	500.00	0.00	0.00	349.50	6958.00	369.23	0.00	369.53	4.50	4.47	1731.29	3280.50
10000.000	500.00	0.00	0.00	349.50	10360.00	372.47	0.00	372.92	5.52	5.55	2149.10	4408.06
10000.000	500.00	0.00	0.00	349.50	12025.00	373.91	0.00	374.43	5.86	5.97	2372.02	4965.55
10000.000	500.00	0.00	0.00	349.50	15324.00	376.69	0.00	377.31	6.08	6.58	3039.63	6212.99
10500.000	500.00	0.00	0.00	348.70	6958.00	369.45	0.00	369.78	4.82	4.73	1749.82	3168.47
10500.000	500.00	0.00	0.00	348.70	10360.00	372.74	0.00	373.22	5.84	5.81	2215.13	4286.80
10500.000	500.00	0.00	0.00	348.70	12025.00	374.19	0.00	374.74	6.18	6.24	2454.38	4838.76
10500.000	500.00	0.00	0.00	348.70	15324.00	376.99	0.00	377.64	6.48	6.90	2973.21	6019.73
11000.000	500.00	0.00	0.00	349.00	6958.00	369.75	0.00	370.00	3.55	4.10	1915.86	3693.39
11000.000	500.00	0.00	0.00	349.00	10360.00	373.13	0.00	373.50	4.27	5.04	2440.72	5015.42
11000.000	500.00	0.00	0.00	349.00	12025.00	374.62	0.00	375.04	4.48	5.40	2743.36	5679.57
11000.000	500.00	0.00	0.00	349.00	15324.00	377.46	0.00	377.96	4.65	5.94	3386.12	7104.28

SECNO	XLCH	ELTRD	FLLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K

11500.000	500.00	0.00	0.00	346.80	6958.00	369.99	0.00	370.19	3.48	3.72	2038.56	3727.34
11500.000	500.00	0.00	0.00	346.80	10360.00	373.42	0.00	373.73	4.09	4.54	2565.47	5123.70
11500.000	500.00	0.00	0.00	346.80	12025.00	374.93	0.00	375.28	4.28	4.87	2861.27	5811.66
11500.000	500.00	0.00	0.00	346.80	15324.00	377.80	0.00	378.21	4.37	5.34	3664.44	7328.63
12000.000	500.00	0.00	0.00	351.50	6958.00	370.15	0.00	370.41	4.18	4.47	2374.84	3401.50
12000.000	500.00	0.00	0.00	351.50	10360.00	373.63	0.00	373.95	4.37	5.15	3284.23	4956.44
12000.000	500.00	0.00	0.00	351.50	12025.00	375.15	0.00	375.50	4.40	5.41	3698.15	5733.92
12000.000	500.00	0.00	0.00	351.50	15324.00	378.06	0.00	378.44	4.30	5.79	4550.27	7394.11
12530.000	530.00	0.00	0.00	351.50	6958.00	370.36	0.00	370.71	5.35	5.01	1719.51	3007.63
12530.000	530.00	0.00	0.00	351.50	10360.00	373.81	0.00	374.32	6.16	6.05	2258.83	4172.50
12530.000	530.00	0.00	0.00	351.50	12025.00	375.33	0.00	375.89	6.41	6.45	2525.59	4749.94
12530.000	530.00	0.00	0.00	351.50	15324.00	378.20	0.00	378.87	6.60	7.08	3082.85	5964.19
12550.000	20.00	0.00	0.00	351.00	6958.00	370.38	0.00	370.73	5.14	4.75	1521.36	3068.79
12550.000	20.00	0.00	0.00	351.00	10360.00	373.84	0.00	374.34	5.88	5.74	2041.07	4273.47
12550.000	20.00	0.00	0.00	351.00	12025.00	375.34	0.00	375.92	6.22	6.19	2224.29	4822.24
12550.000	20.00	0.00	0.00	351.00	15324.00	378.21	0.00	378.92	6.64	6.94	2597.94	5948.49
12590.000	40.00	397.00	392.00	351.00	6958.00	370.42	0.00	370.76	5.10	4.74	1525.77	3081.82
12590.000	40.00	397.00	392.00	351.00	10360.00	373.89	0.00	374.38	5.82	5.73	2047.83	4293.48
12590.000	40.00	397.00	392.00	351.00	12025.00	375.40	0.00	375.97	6.16	6.17	2231.38	4843.62
12590.000	40.00	397.00	392.00	351.00	15324.00	378.28	0.00	378.99	6.58	6.92	2606.61	5974.36
12640.000	50.00	0.00	0.00	351.00	6958.00	370.47	0.00	370.80	4.88	4.65	1643.19	3149.39
12640.000	50.00	0.00	0.00	351.00	10360.00	373.92	0.00	374.41	5.79	5.72	2051.33	4303.87
12640.000	50.00	0.00	0.00	351.00	12025.00	375.43	0.00	376.00	6.13	6.17	2235.21	4855.17
12640.000	50.00	0.00	0.00	351.00	15324.00	378.31	0.00	379.03	6.55	6.91	2611.21	5988.08
13100.000	460.00	0.00	0.00	352.50	6958.00	370.74	0.00	371.03	4.38	4.45	1890.70	3323.15
13100.000	460.00	0.00	0.00	352.50	10360.00	374.31	0.00	374.70	4.77	5.27	2577.72	4741.99
13100.000	460.00	0.00	0.00	352.50	12025.00	375.89	0.00	376.32	4.85	5.57	2924.00	5461.05
13100.000	460.00	0.00	0.00	352.50	15324.00	378.93	0.00	379.40	4.69	5.97	3827.78	7072.95
13600.000	500.00	0.00	0.00	353.00	6958.00	370.95	0.00	371.35	6.55	5.39	1680.64	2718.71
13600.000	500.00	0.00	0.00	353.00	10360.00	374.53	0.00	375.06	6.95	6.31	2341.26	3929.48
13600.000	500.00	0.00	0.00	353.00	12025.00	376.11	0.00	376.68	6.97	6.64	2669.00	4553.84
13600.000	500.00	0.00	0.00	353.00	15324.00	379.13	0.00	379.76	6.74	7.10	3346.19	5903.83
14100.000	500.00	0.00	0.00	350.60	6958.00	371.34	0.00	371.66	4.57	4.70	1761.64	3256.21
14100.000	500.00	0.00	0.00	350.60	10360.00	374.94	0.00	375.39	5.27	5.67	2308.56	4514.75
14100.000	500.00	0.00	0.00	350.60	12025.00	376.50	0.00	377.02	5.48	6.06	2578.75	5136.67
14100.000	500.00	0.00	0.00	350.60	15324.00	379.47	0.00	380.08	5.66	6.66	3141.56	6439.74
14600.000	500.00	0.00	0.00	353.50	6958.00	371.58	0.00	371.92	5.59	4.75	1586.21	2942.83
14600.000	500.00	0.00	0.00	353.50	10360.00	375.21	0.00	375.69	6.18	5.68	2129.89	4166.34
14600.000	500.00	0.00	0.00	353.50	12025.00	376.79	0.00	377.32	6.34	6.05	2397.39	4776.09
14600.000	500.00	0.00	0.00	353.50	15324.00	379.76	0.00	380.39	6.41	6.61	2939.81	6052.14
15100.000	500.00	0.00	0.00	354.50	6958.00	371.84	0.00	372.37	8.97	6.09	1423.89	2322.85
15100.000	500.00	0.00	0.00	354.50	10360.00	375.48	0.00	376.17	9.25	7.08	1944.62	3406.16
15100.000	500.00	0.00	0.00	354.50	12025.00	377.06	0.00	377.82	9.32	7.48	2186.89	3937.99
15100.000	500.00	0.00	0.00	354.50	15324.00	380.02	0.00	380.89	9.21	8.10	2672.98	5050.26

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K

15600.000	500.00	0.00	0.00	352.70	6958.00	372.29	0.00	372.79	7.25	5.83	1430.88	2584.66
15600.000	500.00	0.00	0.00	352.70	10360.00	375.91	0.00	376.61	8.32	7.04	1875.20	3590.93
15600.000	500.00	0.00	0.00	352.70	12025.00	377.49	0.00	378.28	8.65	7.51	2087.51	4088.46
15600.000	500.00	0.00	0.00	352.70	15324.00	380.44	0.00	381.38	8.99	8.28	2509.66	5111.21
16100.000	500.00	0.00	0.00	351.50	6958.00	372.88	0.00	373.15	3.58	4.29	1983.27	3675.35
16100.000	500.00	0.00	0.00	351.50	10360.00	376.69	0.00	377.06	4.13	5.17	2589.94	5096.99
16100.000	500.00	0.00	0.00	351.50	12025.00	378.34	0.00	378.76	4.31	5.53	2879.23	5792.89
16100.000	500.00	0.00	0.00	351.50	15324.00	381.40	0.00	381.90	4.51	6.10	3453.78	7216.00
16600.000	500.00	0.00	0.00	351.50	6958.00	373.06	0.00	373.34	3.67	4.30	1922.21	3632.81
16600.000	500.00	0.00	0.00	351.50	10360.00	376.87	0.00	377.29	4.39	5.29	2502.02	4947.24
16600.000	500.00	0.00	0.00	351.50	12025.00	378.52	0.00	379.01	4.66	5.70	2772.59	5572.91
16600.000	500.00	0.00	0.00	351.50	15324.00	381.58	0.00	382.18	5.04	6.41	3299.55	6825.05
17100.000	500.00	0.00	0.00	349.00	6958.00	373.31	0.00	373.49	2.15	3.46	2312.58	4748.62
17100.000	500.00	0.00	0.00	349.00	10360.00	377.21	0.00	377.49	2.67	4.31	2907.37	6340.13
17100.000	500.00	0.00	0.00	349.00	12025.00	378.90	0.00	379.22	2.87	4.67	3185.11	7093.58
17100.000	500.00	0.00	0.00	349.00	15324.00	382.01	0.00	382.42	3.16	5.27	5089.33	8613.87
17600.000	500.00	0.00	0.00	350.20	6958.00	373.37	0.00	373.69	4.06	4.68	1896.31	3451.14
17600.000	500.00	0.00	0.00	350.20	10360.00	377.27	0.00	377.74	4.82	5.71	2470.01	4718.32
17600.000	500.00	0.00	0.00	350.20	12025.00	378.96	0.00	379.49	5.10	6.14	2737.51	5323.32
17600.000	500.00	0.00	0.00	350.20	15324.00	382.07	0.00	382.72	5.47	6.85	4396.49	6549.36
18100.000	500.00	0.00	0.00	347.60	6958.00	373.63	0.00	373.88	3.10	4.10	2071.87	3949.54
18100.000	500.00	0.00	0.00	347.60	10360.00	377.60	0.00	377.97	3.70	5.03	2676.09	5386.73
18100.000	500.00	0.00	0.00	347.60	12025.00	379.31	0.00	379.73	3.93	5.42	2956.23	6067.28
18100.000	500.00	0.00	0.00	347.60	15324.00	382.46	0.00	382.98	4.24	6.06	4954.50	7445.70
18600.000	500.00	0.00	0.00	347.00	6958.00	373.82	0.00	374.04	2.81	3.80	2162.61	4151.59
18600.000	500.00	0.00	0.00	347.00	10360.00	377.82	0.00	378.15	3.39	4.69	2769.09	5630.49
18600.000	500.00	0.00	0.00	347.00	12025.00	379.54	0.00	379.93	3.61	5.06	3046.12	6332.61
18600.000	500.00	0.00	0.00	347.00	15324.00	382.72	0.00	383.20	3.88	5.67	5192.28	7779.29
19100.000	500.00	0.00	0.00	347.50	6958.00	373.94	0.00	374.21	3.49	4.31	2226.17	3727.06
19100.000	500.00	0.00	0.00	347.50	10360.00	377.97	0.00	378.36	4.00	5.21	2933.48	5177.82
19100.000	500.00	0.00	0.00	347.50	12025.00	379.70	0.00	380.15	4.19	5.59	3259.35	5874.75
19100.000	500.00	0.00	0.00	347.50	15324.00	382.89	0.00	383.43	4.41	6.19	5661.13	7298.19
19600.000	500.00	0.00	0.00	350.00	6958.00	374.15	0.00	374.37	2.72	3.96	2451.36	4222.40
19600.000	500.00	0.00	0.00	350.00	10360.00	378.21	0.00	378.55	3.24	4.85	3234.53	5754.47
19600.000	500.00	0.00	0.00	350.00	12025.00	379.96	0.00	380.35	3.44	5.22	3599.12	6483.96
19600.000	500.00	0.00	0.00	350.00	15324.00	383.17	0.00	383.64	3.70	5.82	6041.66	7967.95
20100.000	500.00	0.00	0.00	353.00	6958.00	374.33	0.00	374.51	2.37	3.57	2766.44	4522.96
20100.000	500.00	0.00	0.00	353.00	10360.00	378.46	0.00	378.71	2.59	4.24	3738.50	6432.07
20100.000	500.00	0.00	0.00	353.00	12025.00	380.24	0.00	380.52	2.68	4.52	4179.71	7351.91
20100.000	500.00	0.00	0.00	353.00	15324.00	383.49	0.00	383.83	2.79	4.99	5005.55	9180.97
20600.000	500.00	0.00	0.00	353.50	6958.00	374.45	0.00	374.65	3.06	3.85	2558.68	3978.24
20600.000	500.00	0.00	0.00	353.50	10360.00	378.59	0.00	378.86	3.19	4.50	3453.69	5800.29
20600.000	500.00	0.00	0.00	353.50	12025.00	380.37	0.00	380.67	3.24	4.77	3860.65	6682.49
20600.000	500.00	0.00	0.00	353.50	15324.00	383.63	0.00	383.99	3.29	5.23	4633.01	8443.87

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K

21100.000	500.00	0.00	0.00	354.00	6958.00	374.52	0.00	374.95	6.03	5.26	1827.37	2834.07
21100.000	500.00	0.00	0.00	354.00	10360.00	378.61	0.00	379.22	6.55	6.31	2586.57	4046.70
21100.000	500.00	0.00	0.00	354.00	12025.00	380.36	0.00	381.06	6.76	6.76	2980.85	4624.15
21100.000	500.00	0.00	0.00	354.00	15324.00	383.56	0.00	384.42	7.05	7.52	4092.08	5772.27
21600.000	500.00	0.00	0.00	354.80	6958.00	374.98	0.00	375.18	2.54	3.63	2652.78	4365.63
21600.000	500.00	0.00	0.00	354.80	10360.00	379.19	0.00	379.49	2.84	4.39	4501.90	6144.81
21600.000	500.00	0.00	0.00	354.80	12025.00	381.01	0.00	381.34	2.92	4.68	6908.88	7036.05
21600.000	500.00	0.00	0.00	354.80	15324.00	384.36	0.00	384.73	2.85	5.02	15866.73	9080.95
21900.000	300.00	0.00	0.00	350.20	6958.00	375.14	0.00	375.25	1.13	2.68	3859.29	6556.21
21900.000	300.00	0.00	0.00	350.20	10360.00	379.40	0.00	379.57	1.37	3.32	6376.99	8855.02
21900.000	300.00	0.00	0.00	350.20	12025.00	381.24	0.00	381.43	1.45	3.58	8517.96	9985.65
21900.000	300.00	0.00	0.00	350.20	15324.00	384.58	0.00	384.82	1.56	4.00	12508.88	12259.19
22400.000	500.00	0.00	0.00	352.40	6958.00	374.98	0.00	375.55	7.70	6.16	1864.87	2507.48
22400.000	500.00	0.00	0.00	352.40	10360.00	379.14	0.00	379.98	8.75	7.45	3912.39	3502.43
22400.000	500.00	0.00	0.00	352.40	12025.00	380.95	0.00	381.87	8.87	7.88	6402.48	4036.98
22400.000	500.00	0.00	0.00	352.40	15324.00	384.30	0.00	385.25	8.38	8.31	12943.28	5294.11
22900.000	500.00	0.00	0.00	353.00	6958.00	375.45	0.00	375.91	5.81	5.49	1860.58	2885.62
22900.000	500.00	0.00	0.00	353.00	10360.00	379.70	0.00	380.39	6.86	6.75	2542.74	3955.12
22900.000	500.00	0.00	0.00	353.00	12025.00	381.48	0.00	382.29	7.29	7.28	3321.85	4455.05
22900.000	500.00	0.00	0.00	353.00	15324.00	384.69	0.00	385.66	7.75	8.09	6510.08	5505.01
23117.000	217.00	0.00	0.00	353.00	6958.00	375.58	0.00	376.04	5.68	5.45	1881.36	2918.41
23117.000	217.00	0.00	0.00	353.00	10360.00	379.86	0.00	380.54	6.71	6.70	2572.06	3999.34
23117.000	217.00	0.00	0.00	353.00	12025.00	381.66	0.00	382.45	7.12	7.23	3467.27	4506.97
23117.000	217.00	0.00	0.00	353.00	15324.00	384.88	0.00	385.83	7.57	8.03	6692.30	5569.30
23167.000	50.00	0.00	0.00	357.80	6958.00	375.58	0.00	376.24	11.87	6.54	1064.16	2019.80
23167.000	50.00	0.00	0.00	357.80	10360.00	379.85	0.00	380.78	12.97	7.72	1341.91	2877.04
23167.000	50.00	0.00	0.00	357.80	12025.00	381.65	0.00	382.71	13.59	8.24	1458.82	3261.71
23167.000	50.00	0.00	0.00	357.80	15324.00	384.86	0.00	386.17	14.84	9.19	1667.38	3977.82
23207.000	40.00	388.20	386.20	357.80	6958.00	375.66	0.00	376.32	11.69	6.51	1069.45	2035.30
23207.000	40.00	388.20	386.20	357.80	10360.00	379.96	0.00	380.88	12.77	7.68	1348.90	2899.67
23207.000	40.00	388.20	386.20	357.80	12025.00	381.77	0.00	382.82	13.38	8.20	1466.66	3287.97
23207.000	40.00	388.20	386.20	357.80	15324.00	385.01	0.00	386.30	14.59	9.14	1676.89	4011.31
23257.000	50.00	0.00	0.00	357.80	6958.00	375.99	0.00	376.43	7.19	5.63	1654.19	2595.48
23257.000	50.00	0.00	0.00	357.80	10360.00	380.48	0.00	381.03	6.77	6.40	2336.52	3982.06
23257.000	50.00	0.00	0.00	357.80	12025.00	382.39	0.00	382.99	6.68	6.73	2658.89	4653.57
23257.000	50.00	0.00	0.00	357.80	15324.00	385.89	0.00	386.54	6.25	7.15	3299.75	6130.76
23327.000	70.00	0.00	0.00	356.80	6958.00	376.19	0.00	376.51	5.67	4.88	1970.74	2921.81
23327.000	70.00	0.00	0.00	356.80	10360.00	380.78	0.00	381.13	4.79	5.30	3072.53	4731.31
23327.000	70.00	0.00	0.00	356.80	12025.00	382.75	0.00	383.10	4.44	5.42	3654.04	5709.58
23327.000	70.00	0.00	0.00	356.80	15324.00	386.30	0.00	386.66	3.93	5.61	4748.50	7732.88

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Q10
SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
8.706	7905.00	362.83	0.00	0.00	0.00	1427.95	0.00

8.706	11993.00	365.34	2.51	0.00	0.00	1496.71	0.00
8.706	14062.00	366.46	1.12	0.00	0.00	1525.61	0.00
8.706	18554.00	369.47	3.01	0.00	0.00	1580.12	0.00
1.000	7508.00	363.01	0.00	0.18	0.00	1187.71	290.00
1.000	11315.00	365.42	2.41	0.08	0.00	1265.81	290.00
1.000	13216.00	366.52	1.10	0.06	0.00	1477.40	290.00
1.000	17219.00	369.50	2.98	0.03	0.00	1532.29	290.00
500.000	7508.00	363.13	0.00	0.12	0.00	1206.95	500.00
500.000	11315.00	365.51	2.38	0.09	0.00	1276.75	500.00
500.000	13216.00	366.60	1.09	0.08	0.00	1305.52	500.00
500.000	17219.00	369.55	2.95	0.04	0.00	1383.01	500.00
1000.000	7508.00	363.45	0.00	0.32	0.00	1594.09	500.00
1000.000	11315.00	365.69	2.24	0.19	0.00	2099.52	500.00
1000.000	13216.00	366.75	1.06	0.15	0.00	2140.62	500.00
1000.000	17219.00	369.64	2.89	0.09	0.00	2252.60	500.00
1500.000	7508.00	363.54	0.00	0.09	0.00	1278.53	500.00
1500.000	11315.00	365.75	2.21	0.06	0.00	1322.61	500.00
1500.000	13216.00	366.80	1.05	0.05	0.00	1336.00	500.00
1500.000	17219.00	369.66	2.86	0.02	0.00	1375.65	500.00
2000.000	7508.00	363.65	0.00	0.11	0.00	630.53	500.00
2000.000	11315.00	365.82	2.18	0.07	0.00	649.46	500.00
2000.000	13216.00	366.86	1.03	0.06	0.00	658.41	500.00
2000.000	17219.00	369.68	2.83	0.02	0.00	682.94	500.00
2500.000	7508.00	363.86	0.00	0.21	0.00	480.17	500.00
2500.000	11315.00	366.02	2.16	0.19	0.00	587.64	500.00
2500.000	13216.00	367.04	1.02	0.18	0.00	640.71	500.00
2500.000	17219.00	369.82	2.78	0.13	0.00	784.99	500.00
3000.000	7508.00	364.19	0.00	0.34	0.00	1491.14	500.00
3000.000	11315.00	366.40	2.21	0.38	0.00	1541.60	500.00
3000.000	13216.00	367.42	1.02	0.39	0.00	1564.97	500.00
3000.000	17219.00	370.12	2.70	0.31	0.00	1626.80	500.00
3500.000	7508.00	364.32	0.00	0.13	0.00	1882.81	500.00
3500.000	11315.00	366.49	2.17	0.09	0.00	1964.85	500.00
3500.000	13216.00	367.50	1.01	0.08	0.00	2003.08	500.00
3500.000	17219.00	370.17	2.67	0.05	0.00	2163.78	500.00
4000.000	7117.00	364.50	0.00	0.18	0.00	1393.01	500.00
4000.000	10638.00	366.58	2.09	0.09	0.00	1783.34	500.00
4000.000	12372.00	367.58	1.00	0.08	0.00	1970.53	500.00
4000.000	15878.00	370.22	2.64	0.05	0.00	2099.89	500.00
4500.000	7117.00	364.63	0.00	0.13	0.00	2274.36	500.00
4500.000	10638.00	366.71	2.08	0.12	0.00	2286.02	500.00
4500.000	12372.00	367.69	0.98	0.11	0.00	2291.52	500.00
4500.000	15878.00	370.29	2.60	0.07	0.00	2305.98	500.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
5000.000	7117.00	364.96	0.00	0.33	0.00	2140.94	500.00

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5000.000	10638.00	366.89	1.93	0.18	0.00	2395.79	500.00
5000.000	12372.00	367.84	0.95	0.14	0.00	2503.59	500.00
5000.000	15878.00	370.37	2.53	0.08	0.00	2549.26	500.00
5500.000	7117.00	365.13	0.00	0.17	0.00	1301.28	500.00
5500.000	10638.00	367.02	1.89	0.13	0.00	3077.70	500.00
5500.000	12372.00	367.95	0.94	0.12	0.00	3819.33	500.00
5500.000	15878.00	370.44	2.48	0.07	0.00	4078.29	500.00
6000.000	7117.00	365.61	0.00	0.49	0.00	1893.42	500.00
6000.000	10638.00	367.39	1.78	0.37	0.00	2865.10	500.00
6000.000	12372.00	368.22	0.83	0.27	0.00	3207.56	500.00
6000.000	15878.00	370.53	2.31	0.09	0.00	3495.58	500.00
6500.000	6958.00	365.65	0.00	0.03	0.00	328.46	500.00
6500.000	10360.00	367.36	1.71	-0.03	0.00	344.01	500.00
6500.000	12025.00	368.16	0.80	-0.06	0.00	516.07	500.00
6500.000	15324.00	370.42	2.26	-0.12	0.00	537.86	500.00
6987.000	6958.00	365.92	0.00	0.28	0.00	111.08	487.00
6987.000	10360.00	367.66	1.74	0.30	0.00	119.31	487.00
6987.000	12025.00	368.44	0.78	0.28	0.00	120.60	487.00
6987.000	15324.00	370.52	2.08	0.10	0.00	359.13	487.00
7008.000	6958.00	365.86	0.00	-0.06	0.00	70.00	21.00
7008.000	10360.00	367.55	1.69	-0.11	0.00	70.00	21.00
7008.000	12025.00	368.30	0.75	-0.14	0.00	70.00	21.00
7008.000	15324.00	370.32	2.02	-0.20	0.00	70.00	21.00
7038.000	6958.00	366.00	0.00	0.14	0.00	70.00	30.00
7038.000	10360.00	367.80	1.80	0.25	0.00	70.00	30.00
7038.000	12025.00	368.61	0.81	0.31	0.00	70.00	30.00
7038.000	15324.00	370.69	2.08	0.37	0.00	70.00	30.00
7068.000	6958.00	366.13	0.00	0.13	0.00	70.00	30.00
7068.000	10360.00	368.03	1.90	0.23	0.00	70.00	30.00
7068.000	12025.00	368.90	0.87	0.29	0.00	70.00	30.00
7068.000	15324.00	371.02	2.12	0.32	0.00	70.00	30.00
7100.000	6958.00	366.70	0.00	0.56	0.00	80.00	32.00
7100.000	10360.00	369.05	2.35	1.02	0.00	80.00	32.00
7100.000	12025.00	370.16	1.11	1.26	0.00	80.00	32.00
7100.000	15324.00	372.61	2.45	1.60	0.00	80.00	32.00
7130.000	6958.00	366.85	0.00	0.16	0.00	80.00	30.00
7130.000	10360.00	369.31	2.46	0.27	0.00	80.00	30.00
7130.000	12025.00	370.48	1.16	0.32	0.00	80.00	30.00
7130.000	15324.00	372.99	2.51	0.37	0.00	80.00	30.00
7180.000	6958.00	366.99	0.00	0.14	0.00	93.99	50.00
7180.000	10360.00	369.54	2.55	0.22	0.00	207.64	50.00
7180.000	12025.00	370.87	1.34	0.40	0.00	462.86	50.00
7180.000	15324.00	374.27	3.40	1.28	0.00	702.91	50.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
7500.000	6958.00	367.78	0.00	0.78	0.00	127.27	320.00

7500.000	10360.00	370.62	2.84	1.08	0.00	187.70	320.00
7500.000	12025.00	371.93	1.32	1.06	0.00	189.89	320.00
7500.000	15324.00	374.59	2.66	0.32	0.00	251.96	320.00
8000.000	6958.00	368.19	0.00	0.42	0.00	132.40	500.00
8000.000	10360.00	371.15	2.96	0.53	0.00	180.53	500.00
8000.000	12025.00	372.50	1.35	0.56	0.00	183.01	500.00
8000.000	15324.00	375.16	2.67	0.57	0.00	187.93	500.00
8500.000	6958.00	368.36	0.00	0.17	0.00	126.11	500.00
8500.000	10360.00	371.36	3.00	0.21	0.00	138.61	500.00
8500.000	12025.00	372.72	1.36	0.22	0.00	143.34	500.00
8500.000	15324.00	375.39	2.67	0.23	0.00	155.53	500.00
9000.000	6958.00	368.70	0.00	0.33	0.00	131.91	500.00
9000.000	10360.00	371.80	3.11	0.44	0.00	145.63	500.00
9000.000	12025.00	373.20	1.40	0.48	0.00	155.02	500.00
9000.000	15324.00	375.94	2.73	0.54	0.00	211.08	500.00
9500.000	6958.00	369.00	0.00	0.30	0.00	130.22	500.00
9500.000	10360.00	372.18	3.18	0.38	0.00	180.85	500.00
9500.000	12025.00	373.61	1.43	0.41	0.00	213.22	500.00
9500.000	15324.00	376.40	2.79	0.46	0.00	280.08	500.00
10000.000	6958.00	369.23	0.00	0.23	0.00	123.08	500.00
10000.000	10360.00	372.47	3.24	0.29	0.00	136.59	500.00
10000.000	12025.00	373.91	1.44	0.29	0.00	191.56	500.00
10000.000	15324.00	376.69	2.79	0.29	0.00	282.52	500.00
10500.000	6958.00	369.45	0.00	0.22	0.00	132.77	500.00
10500.000	10360.00	372.74	3.29	0.27	0.00	154.92	500.00
10500.000	12025.00	374.19	1.45	0.29	0.00	174.31	500.00
10500.000	15324.00	376.99	2.79	0.30	0.00	190.98	500.00
11000.000	6958.00	369.75	0.00	0.30	0.00	137.18	500.00
11000.000	10360.00	373.13	3.37	0.39	0.00	191.91	500.00
11000.000	12025.00	374.62	1.49	0.42	0.00	214.26	500.00
11000.000	15324.00	377.46	2.84	0.47	0.00	234.77	500.00
11500.000	6958.00	369.99	0.00	0.23	0.00	145.02	500.00
11500.000	10360.00	373.42	3.44	0.29	0.00	161.62	500.00
11500.000	12025.00	374.93	1.51	0.31	0.00	233.58	500.00
11500.000	15324.00	377.80	2.87	0.34	0.00	295.01	500.00
12000.000	6958.00	370.15	0.00	0.17	0.00	254.98	500.00
12000.000	10360.00	373.63	3.48	0.21	0.00	269.22	500.00
12000.000	12025.00	375.15	1.53	0.22	0.00	275.46	500.00
12000.000	15324.00	378.06	2.91	0.26	0.00	309.63	500.00
12530.000	6958.00	370.36	0.00	0.20	0.00	140.08	530.00
12530.000	10360.00	373.81	3.46	0.19	0.00	170.02	530.00
12530.000	12025.00	375.33	1.51	0.17	0.00	182.26	530.00
12530.000	15324.00	378.20	2.87	0.14	0.00	205.48	530.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPW10	XLCH
12550.000	6958.00	370.38	0.00	0.03	0.00	102.22	20.00

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12550.000	10360.00	373.84	3.46	0.02	0.00	119.79	20.00
12550.000	12025.00	375.34	1.50	0.01	0.00	123.65	20.00
12550.000	15324.00	378.21	2.87	0.00	0.00	138.76	20.00
12590.000	6958.00	370.42	0.00	0.03	0.00	102.25	40.00
12590.000	10360.00	373.89	3.47	0.05	0.00	119.91	40.00
12590.000	12025.00	375.40	1.51	0.06	0.00	123.88	40.00
12590.000	15324.00	378.28	2.88	0.07	0.00	139.30	40.00
12640.000	6958.00	370.47	0.00	0.05	0.00	117.28	50.00
12640.000	10360.00	373.92	3.45	0.03	0.00	119.97	50.00
12640.000	12025.00	375.43	1.51	0.03	0.00	124.01	50.00
12640.000	15324.00	378.31	2.88	0.04	0.00	139.58	50.00
13100.000	6958.00	370.74	0.00	0.27	0.00	179.90	460.00
13100.000	10360.00	374.31	3.58	0.39	0.00	204.39	460.00
13100.000	12025.00	375.89	1.58	0.46	0.00	248.46	460.00
13100.000	15324.00	378.93	3.04	0.62	0.00	306.59	460.00
13600.000	6958.00	370.95	0.00	0.21	0.00	168.74	500.00
13600.000	10360.00	374.53	3.58	0.22	0.00	198.86	500.00
13600.000	12025.00	376.11	1.58	0.22	0.00	216.88	500.00
13600.000	15324.00	379.13	3.02	0.20	0.00	231.72	500.00
14100.000	6958.00	371.34	0.00	0.39	0.00	137.70	500.00
14100.000	10360.00	374.94	3.60	0.41	0.00	166.38	500.00
14100.000	12025.00	376.50	1.57	0.39	0.00	178.35	500.00
14100.000	15324.00	379.47	2.97	0.34	0.00	200.97	500.00
14600.000	6958.00	371.58	0.00	0.24	0.00	123.14	500.00
14600.000	10360.00	375.21	3.63	0.27	0.00	165.21	500.00
14600.000	12025.00	376.79	1.58	0.28	0.00	174.03	500.00
14600.000	15324.00	379.76	2.97	0.29	0.00	190.66	500.00
15100.000	6958.00	371.84	0.00	0.26	0.00	133.80	500.00
15100.000	10360.00	375.48	3.64	0.27	0.00	151.04	500.00
15100.000	12025.00	377.06	1.58	0.27	0.00	157.64	500.00
15100.000	15324.00	380.02	2.97	0.26	0.00	170.00	500.00
15600.000	6958.00	372.29	0.00	0.46	0.00	112.85	500.00
15600.000	10360.00	375.91	3.62	0.43	0.00	131.47	500.00
15600.000	12025.00	377.49	1.58	0.44	0.00	137.47	500.00
15600.000	15324.00	380.44	2.95	0.42	0.00	147.00	500.00
16100.000	6958.00	372.88	0.00	0.59	0.00	150.27	500.00
16100.000	10360.00	376.69	3.80	0.77	0.00	170.23	500.00
16100.000	12025.00	378.34	1.65	0.85	0.00	180.19	500.00
16100.000	15324.00	381.40	3.07	0.96	0.00	190.00	500.00
16600.000	6958.00	373.06	0.00	0.17	0.00	143.63	500.00
16600.000	10360.00	376.87	3.82	0.19	0.00	160.32	500.00
16600.000	12025.00	378.52	1.65	0.19	0.00	167.54	500.00
16600.000	15324.00	381.58	3.06	0.18	0.00	174.00	500.00

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SECNO	Q	CWSEL	01FWSP	01FWSX	01FKWS	TOPW10	XLCH
17100.000	6958.00	373.31	0.00	0.26	0.00	144.17	500.00

17100.000	10360.00	377.21	3.90	0.34	0.00	161.12	500.00
17100.000	12025.00	378.90	1.69	0.37	0.00	168.45	500.00
17100.000	15324.00	382.01	3.12	0.43	0.00	1347.98	500.00
17600.000	6958.00	373.37	0.00	0.06	0.00	139.06	500.00
17600.000	10360.00	377.27	3.90	0.06	0.00	155.30	500.00
17600.000	12025.00	378.96	1.68	0.06	0.00	162.32	500.00
17600.000	15324.00	382.07	3.11	0.06	0.00	1235.12	500.00
18100.000	6958.00	373.63	0.00	0.26	0.00	144.54	500.00
18100.000	10360.00	377.60	3.96	0.32	0.00	160.39	500.00
18100.000	12025.00	379.31	1.71	0.35	0.00	167.23	500.00
18100.000	15324.00	382.46	3.15	0.39	0.00	1360.22	500.00
18600.000	6958.00	373.82	0.00	0.18	0.00	145.41	500.00
18600.000	10360.00	377.82	4.00	0.22	0.00	158.07	500.00
18600.000	12025.00	379.54	1.73	0.24	0.00	163.52	500.00
18600.000	15324.00	382.72	3.18	0.26	0.00	1361.68	500.00
19100.000	6958.00	373.94	0.00	0.13	0.00	167.01	500.00
19100.000	10360.00	377.97	4.03	0.15	0.00	184.37	500.00
19100.000	12025.00	379.70	1.74	0.16	0.00	190.75	500.00
19100.000	15324.00	382.89	3.19	0.17	0.00	1527.56	500.00
19600.000	6958.00	374.15	0.00	0.20	0.00	181.73	500.00
19600.000	10360.00	378.21	4.07	0.24	0.00	203.55	500.00
19600.000	12025.00	379.96	1.75	0.26	0.00	212.95	500.00
19600.000	15324.00	383.17	3.21	0.28	0.00	1265.67	500.00
20100.000	6958.00	374.33	0.00	0.18	0.00	226.52	500.00
20100.000	10360.00	378.46	4.13	0.25	0.00	244.12	500.00
20100.000	12025.00	380.24	1.78	0.28	0.00	251.15	500.00
20100.000	15324.00	383.49	3.25	0.32	0.00	255.00	500.00
20600.000	6958.00	374.45	0.00	0.12	0.00	207.82	500.00
20600.000	10360.00	378.59	4.14	0.13	0.00	224.39	500.00
20600.000	12025.00	380.37	1.78	0.13	0.00	231.53	500.00
20600.000	15324.00	383.63	3.26	0.14	0.00	242.00	500.00
21100.000	6958.00	374.52	0.00	0.08	0.00	172.36	500.00
21100.000	10360.00	378.61	4.08	0.02	0.00	210.43	500.00
21100.000	12025.00	380.36	1.75	-0.01	0.00	240.60	500.00
21100.000	15324.00	383.56	3.20	-0.07	0.00	395.00	500.00
21600.000	6958.00	374.98	0.00	0.46	0.00	217.35	500.00
21600.000	10360.00	379.19	4.21	0.59	0.00	791.81	500.00
21600.000	12025.00	381.01	1.82	0.65	0.00	2426.26	500.00
21600.000	15324.00	384.36	3.35	0.80	0.00	2720.00	500.00
21900.000	6958.00	375.14	0.00	0.16	0.00	280.96	300.00
21900.000	10360.00	379.40	4.26	0.21	0.00	1051.56	300.00
21900.000	12025.00	381.24	1.84	0.23	0.00	1189.74	300.00
21900.000	15324.00	384.58	3.34	0.22	0.00	1198.85	300.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
22400.000	6958.00	374.98	0.00	-0.16	0.00	176.30	500.00

22400.000	10360.00	379.14	4.17	-0.26	0.00	999.80	500.00
22400.000	12025.00	380.95	1.81	-0.29	0.00	1892.64	500.00
22400.000	15324.00	384.30	3.35	-0.28	0.00	1965.00	500.00
22900.000	6958.00	375.45	0.00	0.47	0.00	148.60	500.00
22900.000	10360.00	379.70	4.25	0.55	0.00	177.60	500.00
22900.000	12025.00	381.48	1.79	0.53	0.00	793.85	500.00
22900.000	15324.00	384.69	3.21	0.39	0.00	1012.00	500.00
23117.000	6958.00	375.58	0.00	0.13	0.00	149.44	217.00
23117.000	10360.00	379.86	4.27	0.16	0.00	179.98	217.00
23117.000	12025.00	381.66	1.80	0.17	0.00	866.04	217.00
23117.000	15324.00	384.88	3.22	0.19	0.00	1012.00	217.00
23167.000	6958.00	375.58	0.00	-0.00	0.00	65.00	50.00
23167.000	10360.00	379.85	4.27	-0.00	0.00	65.00	50.00
23167.000	12025.00	381.65	1.80	-0.00	0.00	65.00	50.00
23167.000	15324.00	384.86	3.21	-0.02	0.00	65.00	50.00
23207.000	6958.00	375.66	0.00	0.08	0.00	65.00	40.00
23207.000	10360.00	379.96	4.30	0.11	0.00	65.00	40.00
23207.000	12025.00	381.77	1.81	0.12	0.00	65.00	40.00
23207.000	15324.00	385.01	3.23	0.15	0.00	65.00	40.00
23257.000	6958.00	375.99	0.00	0.33	0.00	139.77	50.00
23257.000	10360.00	380.48	4.49	0.52	0.00	163.65	50.00
23257.000	12025.00	382.39	1.91	0.62	0.00	173.52	50.00
23257.000	15324.00	385.89	3.49	0.88	0.00	200.34	50.00
23327.000	6958.00	376.19	0.00	0.20	0.00	177.19	70.00
23327.000	10360.00	380.78	4.59	0.29	0.00	290.90	70.00
23327.000	12025.00	382.75	1.97	0.35	0.00	298.79	70.00
23327.000	15324.00	386.30	3.55	0.41	0.00	336.30	70.00

SUMMARY OF ERRORS

1

THIS RUN EXECUTED 25 FEB 82 15:01:46

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HEC2 RELEASE DATED NOV 76 UPDATED AUG1977

ERROR CORR - 01,02

MODIFICATION - 50,51,52,53

****

HEC-RAS Plan: FEMA River: Wallkill HEC2 Reach: Reach-1

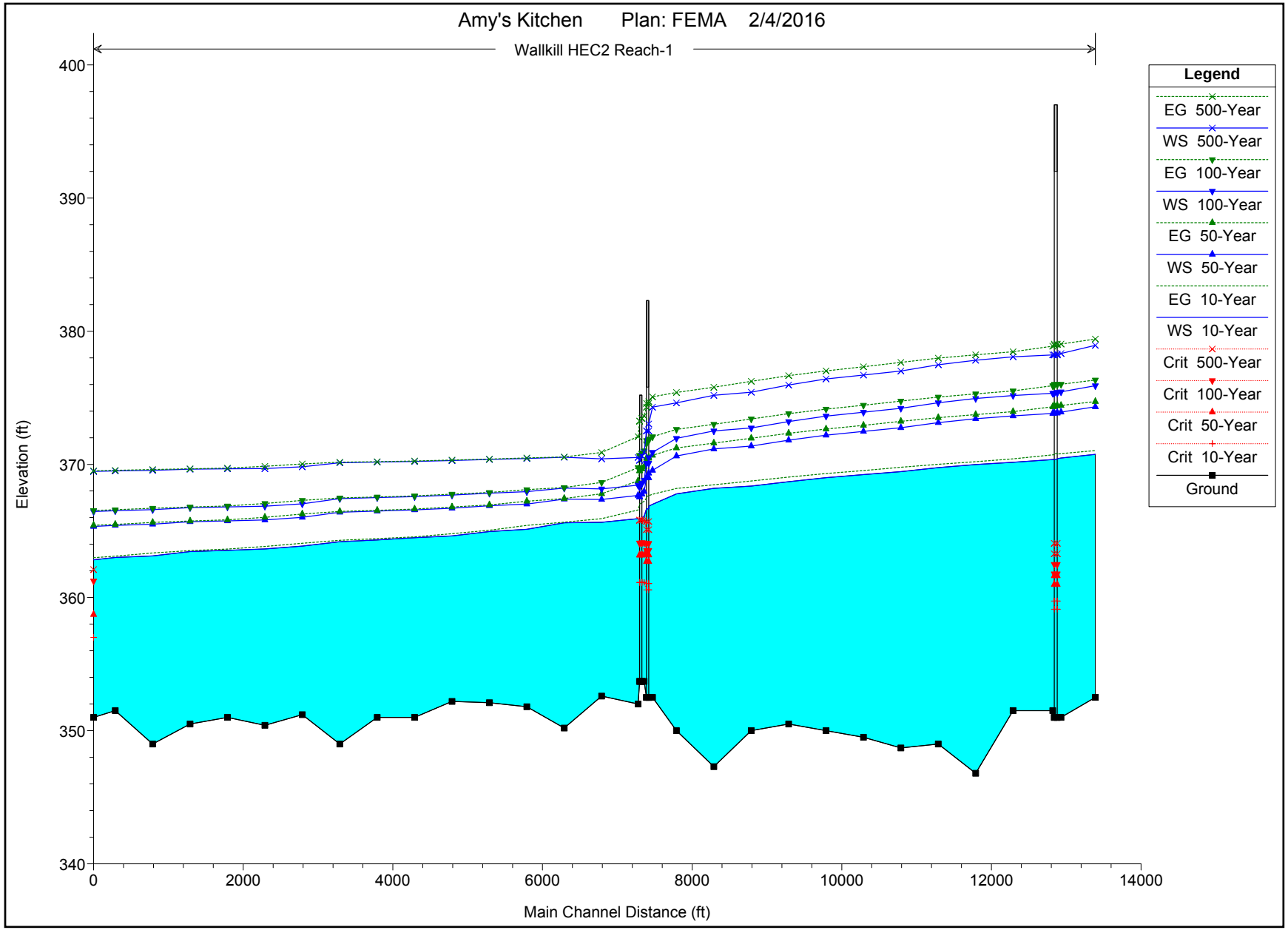
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	13100	10-Year	6958.00	352.50	370.75		371.04	0.000438	4.45	1892.43	179.97	0.19
Reach-1	13100	50-Year	10360.00	352.50	374.32		374.71	0.000477	5.27	2579.49	204.45	0.20
Reach-1	13100	100-Year	12025.00	352.50	375.90		376.33	0.000484	5.57	2926.83	248.96	0.21
Reach-1	13100	500-Year	15324.00	352.50	378.94		379.41	0.000468	5.97	3832.08	306.64	0.21
Reach-1	12640	10-Year	6958.00	351.00	370.48		370.81	0.000487	4.64	1644.35	117.29	0.20
Reach-1	12640	50-Year	10360.00	351.00	373.93		374.42	0.000579	5.71	2052.66	120.00	0.22
Reach-1	12640	100-Year	12025.00	351.00	375.44		376.01	0.000612	6.16	2237.00	124.07	0.23
Reach-1	12640	500-Year	15324.00	351.00	378.33		379.04	0.000653	6.91	2613.75	139.74	0.24
Reach-1	12590	10-Year	6958.00	351.00	370.43	359.12	370.77	0.000509	4.74	1526.82	117.26	0.20
Reach-1	12590	50-Year	10360.00	351.00	373.90	360.98	374.39	0.000582	5.72	2048.81	119.93	0.22
Reach-1	12590	100-Year	12025.00	351.00	375.41	361.78	375.98	0.000615	6.17	2232.75	123.93	0.23
Reach-1	12590	500-Year	15324.00	351.00	378.29	363.28	379.01	0.000657	6.92	2608.65	139.43	0.24
Reach-1	12570		Bridge									
Reach-1	12550	10-Year	6958.00	351.00	370.38	359.12	370.73	0.000513	4.75	1522.53	117.23	0.20
Reach-1	12550	50-Year	10360.00	351.00	373.85	360.98	374.34	0.000586	5.74	2042.93	119.83	0.22
Reach-1	12550	100-Year	12025.00	351.00	375.35	361.78	375.93	0.000621	6.19	2225.76	123.70	0.23
Reach-1	12550	500-Year	15324.00	351.00	378.22	363.28	378.94	0.000663	6.94	2598.94	138.82	0.24
Reach-1	12530	10-Year	6958.00	351.50	370.36		370.72	0.000535	5.01	1720.11	140.13	0.21
Reach-1	12530	50-Year	10360.00	351.50	373.82		374.33	0.000616	6.05	2260.29	170.09	0.23
Reach-1	12530	100-Year	12025.00	351.50	375.34		375.91	0.000640	6.45	2527.81	182.36	0.24
Reach-1	12530	500-Year	15324.00	351.50	378.22		378.88	0.000659	7.08	3086.18	205.62	0.25
Reach-1	12000	10-Year	6958.00	351.50	370.15		370.42	0.000419	4.47	2374.63	255.08	0.19
Reach-1	12000	50-Year	10360.00	351.50	373.64		373.96	0.000436	5.14	3287.96	269.33	0.20
Reach-1	12000	100-Year	12025.00	351.50	375.17		375.51	0.000438	5.40	3705.01	275.60	0.20
Reach-1	12000	500-Year	15324.00	351.50	378.08		378.46	0.000428	5.78	4557.76	309.74	0.20
Reach-1	11500	10-Year	6958.00	346.80	369.99		370.20	0.000348	3.71	2038.96	145.03	0.16
Reach-1	11500	50-Year	10360.00	346.80	373.43		373.74	0.000408	4.54	2566.94	161.67	0.18
Reach-1	11500	100-Year	12025.00	346.80	374.94		375.29	0.000427	4.87	2864.22	234.21	0.18
Reach-1	11500	500-Year	15324.00	346.80	377.82		378.23	0.000436	5.33	3669.49	295.09	0.19
Reach-1	11000	10-Year	6958.00	349.00	369.76		370.01	0.000355	4.10	1916.27	137.19	0.17
Reach-1	11000	50-Year	10360.00	349.00	373.14		373.51	0.000426	5.03	2442.52	192.05	0.19
Reach-1	11000	100-Year	12025.00	349.00	374.63		375.05	0.000447	5.39	2746.19	214.46	0.20
Reach-1	11000	500-Year	15324.00	349.00	377.48		377.98	0.000464	5.94	3390.29	234.88	0.21
Reach-1	10500	10-Year	6958.00	348.70	369.45		369.78	0.000483	4.73	1749.48	132.76	0.19
Reach-1	10500	50-Year	10360.00	348.70	372.75		373.23	0.000584	5.81	2215.59	154.96	0.22
Reach-1	10500	100-Year	12025.00	348.70	374.21		374.75	0.000617	6.24	2455.85	174.43	0.23
Reach-1	10500	500-Year	15324.00	348.70	377.01		377.66	0.000647	6.89	2975.55	191.02	0.24
Reach-1	10000	10-Year	6958.00	349.50	369.23		369.53	0.000451	4.48	1730.50	123.06	0.19
Reach-1	10000	50-Year	10360.00	349.50	372.48		372.93	0.000552	5.54	2150.42	136.63	0.21
Reach-1	10000	100-Year	12025.00	349.50	373.92		374.44	0.000585	5.97	2374.72	192.37	0.22
Reach-1	10000	500-Year	15324.00	349.50	376.71		377.33	0.000607	6.57	3045.02	282.77	0.23
Reach-1	9500	10-Year	6958.00	350.00	369.00		369.31	0.000447	4.55	1776.48	130.27	0.19
Reach-1	9500	50-Year	10360.00	350.00	372.19		372.65	0.000554	5.64	2248.09	180.92	0.22
Reach-1	9500	100-Year	12025.00	350.00	373.63		374.15	0.000584	6.05	2521.61	213.85	0.22
Reach-1	9500	500-Year	15324.00	350.00	376.42		377.02	0.000597	6.61	3261.46	280.29	0.23
Reach-1	9000	10-Year	6958.00	350.50	368.70		369.05	0.000551	4.83	1663.84	131.92	0.21
Reach-1	9000	50-Year	10360.00	350.50	371.81		372.33	0.000672	5.97	2095.95	145.68	0.23
Reach-1	9000	100-Year	12025.00	350.50	373.22		373.81	0.000708	6.40	2306.28	155.18	0.24
Reach-1	9000	500-Year	15324.00	350.50	375.96		376.66	0.000735	7.07	2797.88	211.22	0.25
Reach-1	8500	10-Year	6958.00	350.00	368.37		368.75	0.000582	5.03	1508.99	126.12	0.21
Reach-1	8500	50-Year	10360.00	350.00	371.37		371.96	0.000725	6.26	1908.52	138.65	0.25
Reach-1	8500	100-Year	12025.00	350.00	372.74		373.41	0.000771	6.74	2100.36	143.39	0.26
Reach-1	8500	500-Year	15324.00	350.00	375.41		376.24	0.000813	7.49	2499.03	155.66	0.27
Reach-1	8000	10-Year	6958.00	347.30	368.20		368.47	0.000366	4.27	1837.36	132.41	0.17
Reach-1	8000	50-Year	10360.00	347.30	371.16		371.59	0.000482	5.40	2301.05	180.55	0.20
Reach-1	8000	100-Year	12025.00	347.30	372.51		373.01	0.000520	5.83	2546.47	183.04	0.21
Reach-1	8000	500-Year	15324.00	347.30	375.19		375.79	0.000561	6.52	3042.76	187.97	0.23
Reach-1	7500	10-Year	6958.00	350.00	367.78		368.19	0.000671	5.22	1521.84	127.28	0.23
Reach-1	7500	50-Year	10360.00	350.00	370.63		371.23	0.000818	6.42	2007.16	187.72	0.26
Reach-1	7500	100-Year	12025.00	350.00	371.95		372.63	0.000852	6.86	2256.65	189.92	0.27
Reach-1	7500	500-Year	15324.00	350.00	374.62		375.40	0.000858	7.47	2810.02	252.99	0.28
Reach-1	7180	10-Year	6958.00	352.50	367.00		367.75	0.001817	7.00	1030.30	94.00	0.35
Reach-1	7180	50-Year	10360.00	352.50	369.55		370.68	0.002118	8.56	1329.02	211.76	0.39

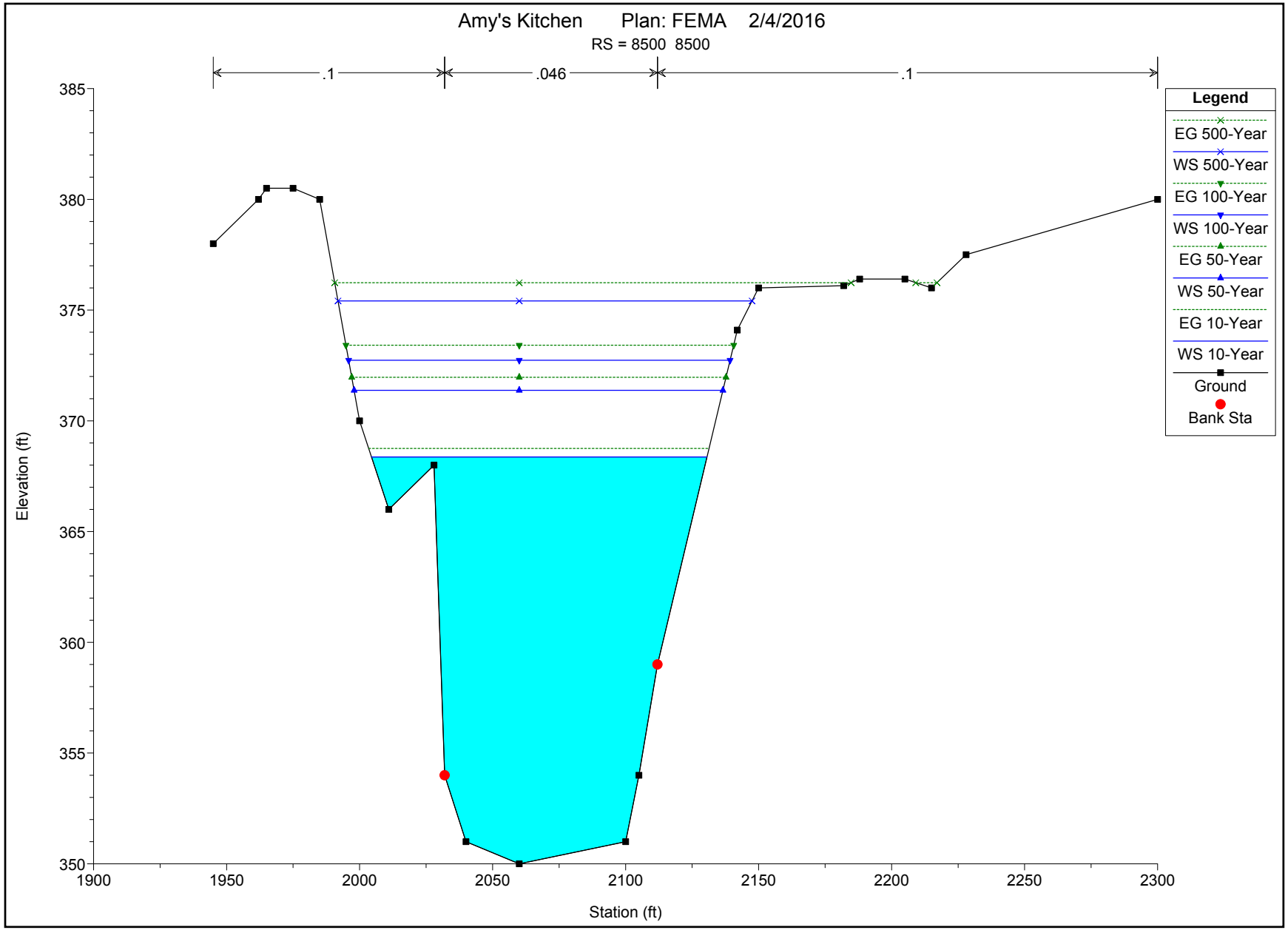
HEC-RAS Plan: FEMA River: Wallkill HEC2 Reach: Reach-1 (Continued)

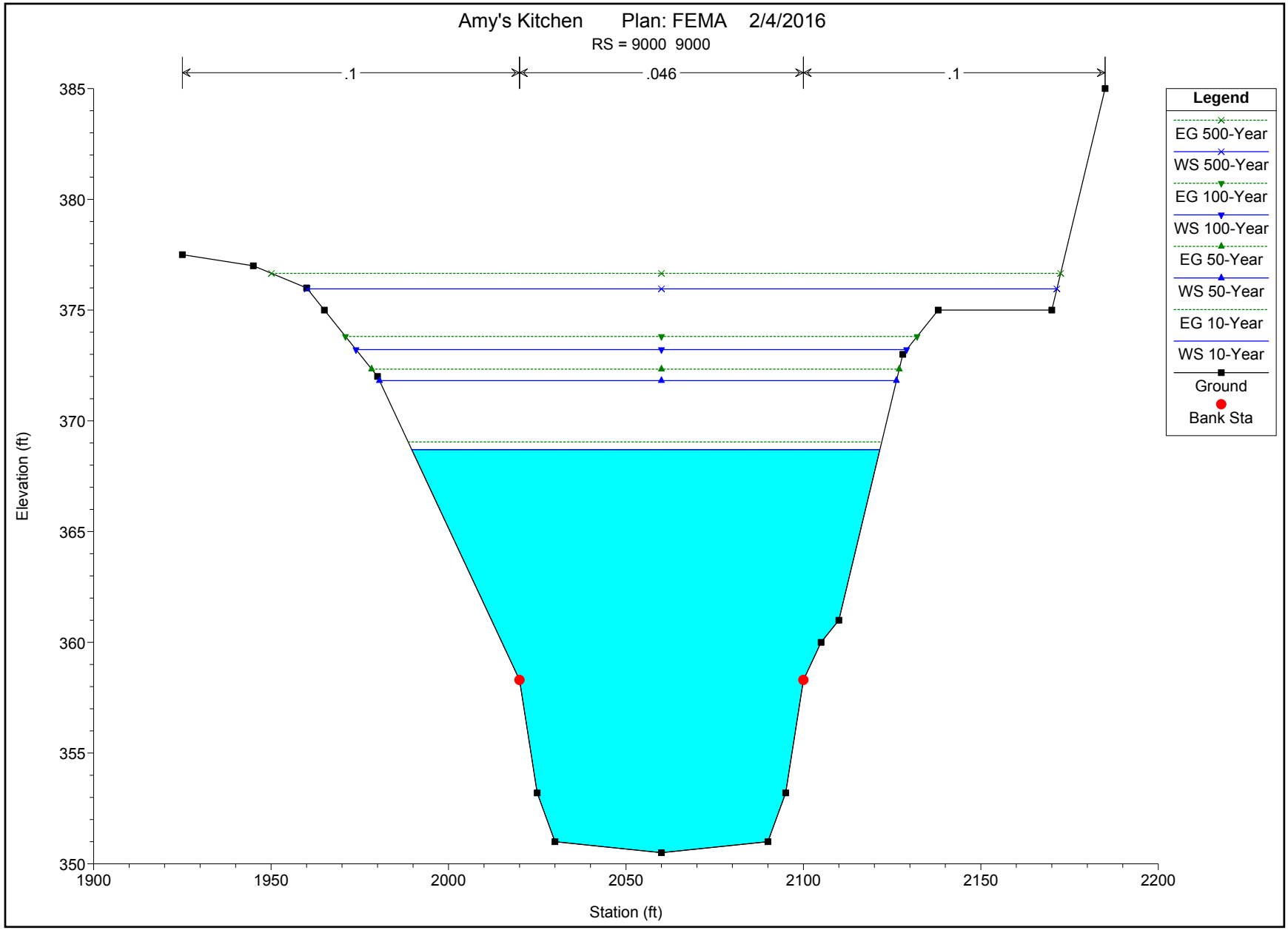
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	7180	100-Year	12025.00	352.50	370.90		372.08	0.002030	8.88	1800.34	467.24	0.39
Reach-1	7180	500-Year	15324.00	352.50	374.30		375.07	0.001234	7.86	3848.22	704.40	0.31
Reach-1	7130	10-Year	6958.00	352.50	366.86	360.57	367.65	0.001911	7.12	976.93	93.86	0.36
Reach-1	7130	50-Year	10360.00	352.50	369.33	362.70	370.54	0.002291	8.82	1174.77	181.10	0.41
Reach-1	7130	100-Year	12025.00	352.50	370.50	363.54	371.90	0.002390	9.48	1268.39	401.86	0.42
Reach-1	7130	500-Year	15324.00	352.50	373.03	365.10	374.72	0.002371	10.42	1470.62	630.70	0.43
Reach-1	7115		Bridge									
Reach-1	7100	10-Year	6958.00	352.50	366.66	360.57	367.48	0.002019	7.24	960.90	93.65	0.37
Reach-1	7100	50-Year	10360.00	352.50	368.98	362.70	370.25	0.002484	9.03	1146.65	144.42	0.42
Reach-1	7100	100-Year	12025.00	352.50	370.08	363.54	371.56	0.002616	9.74	1234.54	331.85	0.44
Reach-1	7100	500-Year	15324.00	352.50	372.51	365.10	374.30	0.002608	10.72	1429.17	600.30	0.45
Reach-1	7068	10-Year	6958.00	353.70	366.10	361.13	367.22	0.002641	8.49	819.73	106.67	0.44
Reach-1	7068	50-Year	10360.00	353.70	367.96	363.19	369.81	0.003580	10.90	950.16	111.73	0.52
Reach-1	7068	100-Year	12025.00	353.70	368.81	364.11	371.02	0.003938	11.91	1009.71	134.74	0.55
Reach-1	7068	500-Year	15324.00	353.70	370.90	365.81	373.63	0.004075	13.26	1155.86	449.71	0.57
Reach-1	7038	10-Year	6958.00	353.70	365.98	361.13	367.12	0.002731	8.57	811.55	106.39	0.44
Reach-1	7038	50-Year	10360.00	353.70	367.76	363.19	369.67	0.003760	11.07	936.27	111.19	0.53
Reach-1	7038	100-Year	12025.00	353.70	368.57	364.11	370.85	0.004169	12.11	992.62	117.98	0.57
Reach-1	7038	500-Year	15324.00	353.70	370.63	365.81	373.45	0.004311	13.48	1136.57	379.34	0.59
Reach-1	7023		Bridge									
Reach-1	7008	10-Year	6958.00	353.70	365.86	361.14	367.03	0.002830	8.67	802.97	106.10	0.45
Reach-1	7008	50-Year	10360.00	353.70	367.55	363.19	369.51	0.003971	11.25	921.06	110.60	0.55
Reach-1	7008	100-Year	12025.00	353.70	368.29	364.09	370.66	0.004450	12.35	973.35	112.64	0.58
Reach-1	7008	500-Year	15324.00	353.70	370.31	365.81	373.25	0.004601	13.75	1114.58	338.18	0.61
Reach-1	6987	10-Year	6958.00	352.00	365.92		366.58	0.001348	6.60	1193.24	111.08	0.32
Reach-1	6987	50-Year	10360.00	352.00	367.66		368.76	0.001949	8.61	1397.49	119.31	0.39
Reach-1	6987	100-Year	12025.00	352.00	368.44		369.76	0.002202	9.46	1490.66	120.60	0.42
Reach-1	6987	500-Year	15324.00	352.00	370.52		372.09	0.002279	10.44	1943.59	359.20	0.43
Reach-1	6500	10-Year	6958.00	352.60	365.65		365.93	0.000709	4.54	2035.17	328.45	0.23
Reach-1	6500	50-Year	10360.00	352.60	367.36		367.79	0.000940	5.70	2611.99	344.02	0.27
Reach-1	6500	100-Year	12025.00	352.60	368.16		368.64	0.001008	6.13	2973.13	516.09	0.28
Reach-1	6500	500-Year	15324.00	352.60	370.42		370.89	0.000873	6.28	4163.24	537.86	0.27
Reach-1	6000	10-Year	7117.00	350.20	365.61		365.65	0.000171	2.32	7763.69	1893.39	0.11
Reach-1	6000	50-Year	10638.00	350.20	367.39		367.43	0.000169	2.51	11875.44	2865.52	0.11
Reach-1	6000	100-Year	12372.00	350.20	368.22		368.26	0.000157	2.51	14431.84	3207.73	0.11
Reach-1	6000	500-Year	15878.00	350.20	370.53		370.56	0.000099	2.18	22180.65	3496.68	0.09
Reach-1	5500	10-Year	7117.00	351.80	365.13		365.41	0.000828	4.76	3174.00	1301.24	0.25
Reach-1	5500	50-Year	10638.00	351.80	367.02		367.23	0.000640	4.63	6701.54	3079.29	0.22
Reach-1	5500	100-Year	12372.00	351.80	367.95		368.10	0.000477	4.18	10018.98	3818.09	0.19
Reach-1	5500	500-Year	15878.00	351.80	370.44		370.48	0.000182	2.86	19980.35	4078.36	0.12
Reach-1	5000	10-Year	7117.00	352.10	364.96		365.05	0.000360	3.22	6496.14	2140.83	0.16
Reach-1	5000	50-Year	10638.00	352.10	366.89		366.95	0.000259	3.01	10888.08	2395.87	0.14
Reach-1	5000	100-Year	12372.00	352.10	367.84		367.89	0.000219	2.89	13215.59	2503.59	0.13
Reach-1	5000	500-Year	15878.00	352.10	370.37		370.40	0.000124	2.41	19605.49	2549.41	0.10
Reach-1	4500	10-Year	7117.00	352.20	364.63		364.80	0.000579	3.99	5126.99	2279.21	0.21
Reach-1	4500	50-Year	10638.00	352.20	366.71		366.80	0.000335	3.38	9893.39	2295.58	0.16
Reach-1	4500	100-Year	12372.00	352.20	367.69		367.76	0.000268	3.17	12156.35	2303.31	0.15
Reach-1	4500	500-Year	15878.00	352.20	370.29		370.33	0.000145	2.59	18161.91	2323.25	0.11
Reach-1	4000	10-Year	7117.00	351.00	364.50		364.55	0.000260	2.68	6152.47	1393.06	0.14
Reach-1	4000	50-Year	10638.00	351.00	366.59		366.64	0.000236	2.84	9471.80	1784.83	0.13
Reach-1	4000	100-Year	12372.00	351.00	367.58		367.63	0.000215	2.84	11342.32	1971.56	0.13
Reach-1	4000	500-Year	15878.00	351.00	370.22		370.26	0.000137	2.53	16789.81	2099.95	0.11
Reach-1	3500	10-Year	7508.00	351.00	364.32		364.42	0.000244	3.29	5804.79	1882.82	0.16
Reach-1	3500	50-Year	11315.00	351.00	366.49		366.55	0.000152	2.88	9983.82	1964.91	0.13
Reach-1	3500	100-Year	13216.00	351.00	367.50		367.55	0.000127	2.75	11989.75	2003.12	0.12
Reach-1	3500	500-Year	17219.00	351.00	370.17		370.20	0.000074	2.33	17538.98	2163.84	0.10
Reach-1	3000	10-Year	7508.00	349.00	364.19		364.29	0.000291	3.50	5183.09	1491.13	0.18
Reach-1	3000	50-Year	11315.00	349.00	366.40		366.47	0.000194	3.19	8532.15	1541.63	0.15
Reach-1	3000	100-Year	13216.00	349.00	367.42		367.48	0.000166	3.09	10119.87	1564.99	0.14
Reach-1	3000	500-Year	17219.00	349.00	370.12		370.16	0.000102	2.69	14425.07	1626.82	0.11
Reach-1	2500	10-Year	7508.00	351.20	363.86		364.08	0.000490	4.32	2670.36	480.18	0.23
Reach-1	2500	50-Year	11315.00	351.20	366.02		366.27	0.000490	4.85	3819.35	587.71	0.23

HEC-RAS Plan: FEMA River: Wallkill HEC2 Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	2500	100-Year	13216.00	351.20	367.04		367.30	0.000472	5.00	4446.48	640.76	0.23
Reach-1	2500	500-Year	17219.00	351.20	369.82		370.03	0.000342	4.78	6425.81	785.03	0.20
Reach-1	2000	10-Year	7508.00	350.40	363.65		363.83	0.000421	3.98	2965.98	630.56	0.21
Reach-1	2000	50-Year	11315.00	350.40	365.82		366.02	0.000399	4.36	4358.79	649.42	0.21
Reach-1	2000	100-Year	13216.00	350.40	366.86		367.06	0.000379	4.46	5034.02	658.36	0.21
Reach-1	2000	500-Year	17219.00	350.40	369.68		369.85	0.000273	4.27	6930.84	682.86	0.18
Reach-1	1500	10-Year	7508.00	351.00	363.54		363.64	0.000231	3.10	4724.53	1278.54	0.16
Reach-1	1500	50-Year	11315.00	351.00	365.75		365.84	0.000182	3.07	7621.38	1322.62	0.14
Reach-1	1500	100-Year	13216.00	351.00	366.80		366.88	0.000161	3.03	9013.71	1336.00	0.14
Reach-1	1500	500-Year	17219.00	351.00	369.66		369.72	0.000102	2.71	12894.91	1375.65	0.11
Reach-1	1000	10-Year	7508.00	350.50	363.45		363.52	0.000185	2.72	5789.91	1594.16	0.14
Reach-1	1000	50-Year	11315.00	350.50	365.69		365.74	0.000128	2.54	10118.47	2099.56	0.12
Reach-1	1000	100-Year	13216.00	350.50	366.75		366.79	0.000106	2.44	12363.25	2140.64	0.11
Reach-1	1000	500-Year	17219.00	350.50	369.64		369.66	0.000059	2.05	18703.28	2252.62	0.09
Reach-1	500	10-Year	7508.00	349.00	363.13		363.35	0.000470	4.39	3579.09	1206.95	0.22
Reach-1	500	50-Year	11315.00	349.00	365.51		365.64	0.000290	3.89	6538.05	1276.51	0.18
Reach-1	500	100-Year	13216.00	349.00	366.60		366.71	0.000241	3.73	7946.19	1305.36	0.17
Reach-1	500	500-Year	17219.00	349.00	369.55		369.61	0.000136	3.14	11912.55	1382.87	0.13
Reach-1	9	10-Year	7508.00	351.50	363.01		363.11	0.000285	3.02	4706.46	1187.72	0.17
Reach-1	9	50-Year	11315.00	351.50	365.42		365.49	0.000188	2.84	7663.98	1266.04	0.14
Reach-1	9	100-Year	13216.00	351.50	366.52		366.59	0.000161	2.78	9199.32	1477.53	0.13
Reach-1	9	500-Year	17219.00	351.50	369.50		369.55	0.000094	2.43	13685.78	1532.33	0.11
Reach-1	8.706	10-Year	7905.00	351.00	362.83	357.01	362.99	0.000416	3.90	4343.87	1427.95	0.21
Reach-1	8.706	50-Year	11993.00	351.00	365.34	358.72	365.43	0.000230	3.33	8017.56	1496.71	0.16
Reach-1	8.706	100-Year	14062.00	351.00	366.46	361.24	366.53	0.000190	3.19	9709.69	1525.61	0.15
Reach-1	8.706	500-Year	18554.00	351.00	369.47	362.10	369.52	0.000108	2.72	14400.81	1580.12	0.11


Amy's Kitchen Plan: FEMA 2/4/2016
Wallkill HEC2 Reach-1
Elevation (ft)
Main Channel Distance (ft)
400
390
380
370
360
350
340
0
2000
4000
6000
8000
10000
12000
14000
Legend
EG 500-Year
WS 500-Year
EG 100-Year
WS 100-Year
EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Crit 500-Year
Crit 100-Year
Crit 50-Year
Crit 10-Year
Ground


Amy's Kitchen Plan: FEMA 2/4/2016
RS = 8500 8500
.1
.046
.1
Legend
EG 500-Year
WS 500-Year
EG 100-Year
WS 100-Year
EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
385
380
375
370
365
360
355
350
1900
1950
2000
2050
2100
2150
2200
2250
2300
Station (ft)


Amy's Kitchen Plan: FEMA 2/4/2016
RS = 9000 9000
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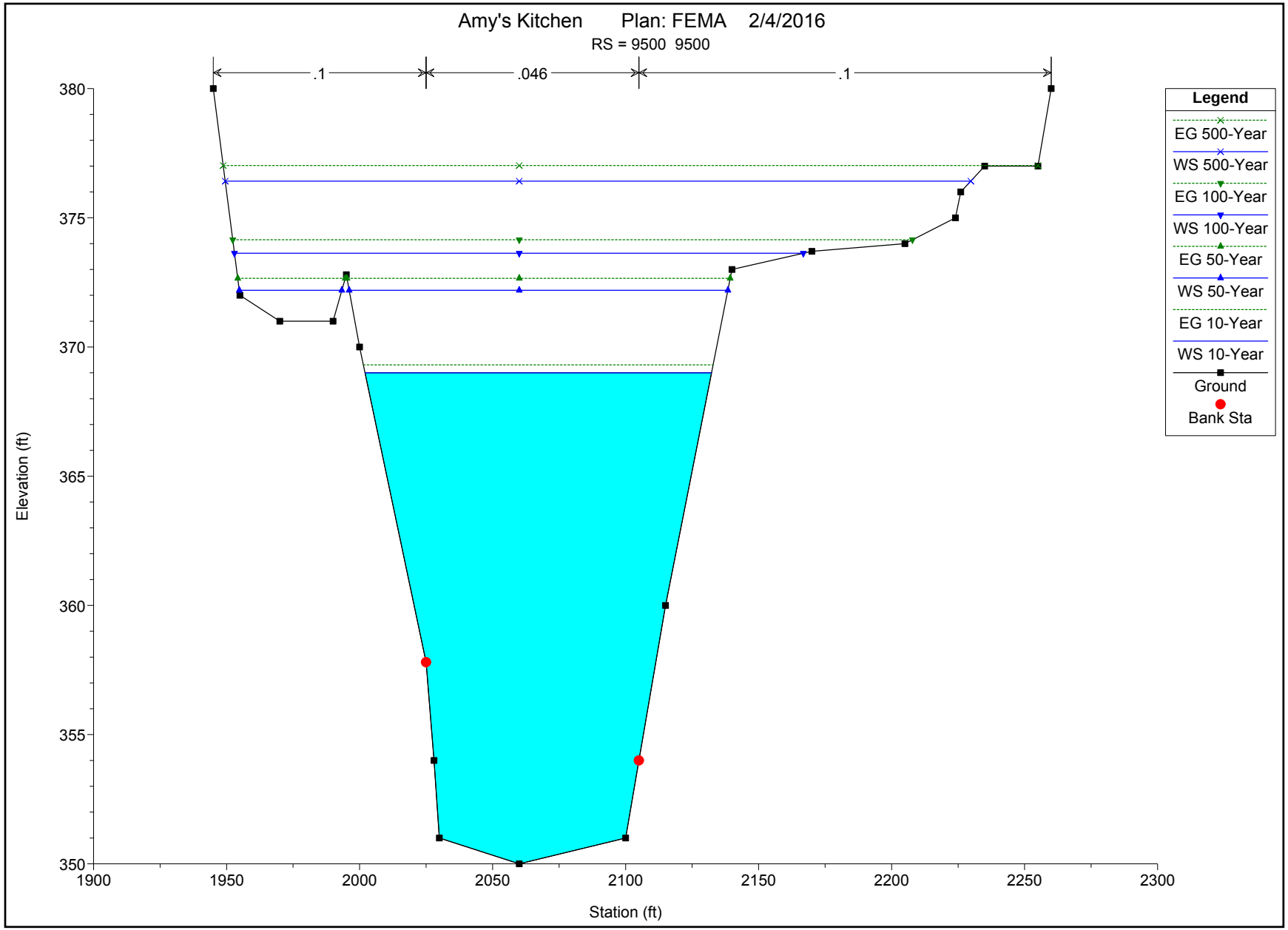
.046
.1
Legend
EG 500-Year
WS 500-Year
EG 100-Year
WS 100-Year
EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
385
380
375
370
365
360
355
350
1900
1950
2000
2050
2100
2150
2200
Station (ft)


Amy's Kitchen Plan: FEMA 2/4/2016
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.1
.046
.1
Legend
EG 500-Year
WS 500-Year
EG 100-Year
WS 100-Year
EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
380
375
370
365
360
355
350
1900
1950
2000
2050
2100
2150
2200
2250
2300

HEC-RAS Plan: Proposed River: Wallkill HEC2 Reach: Reach-1

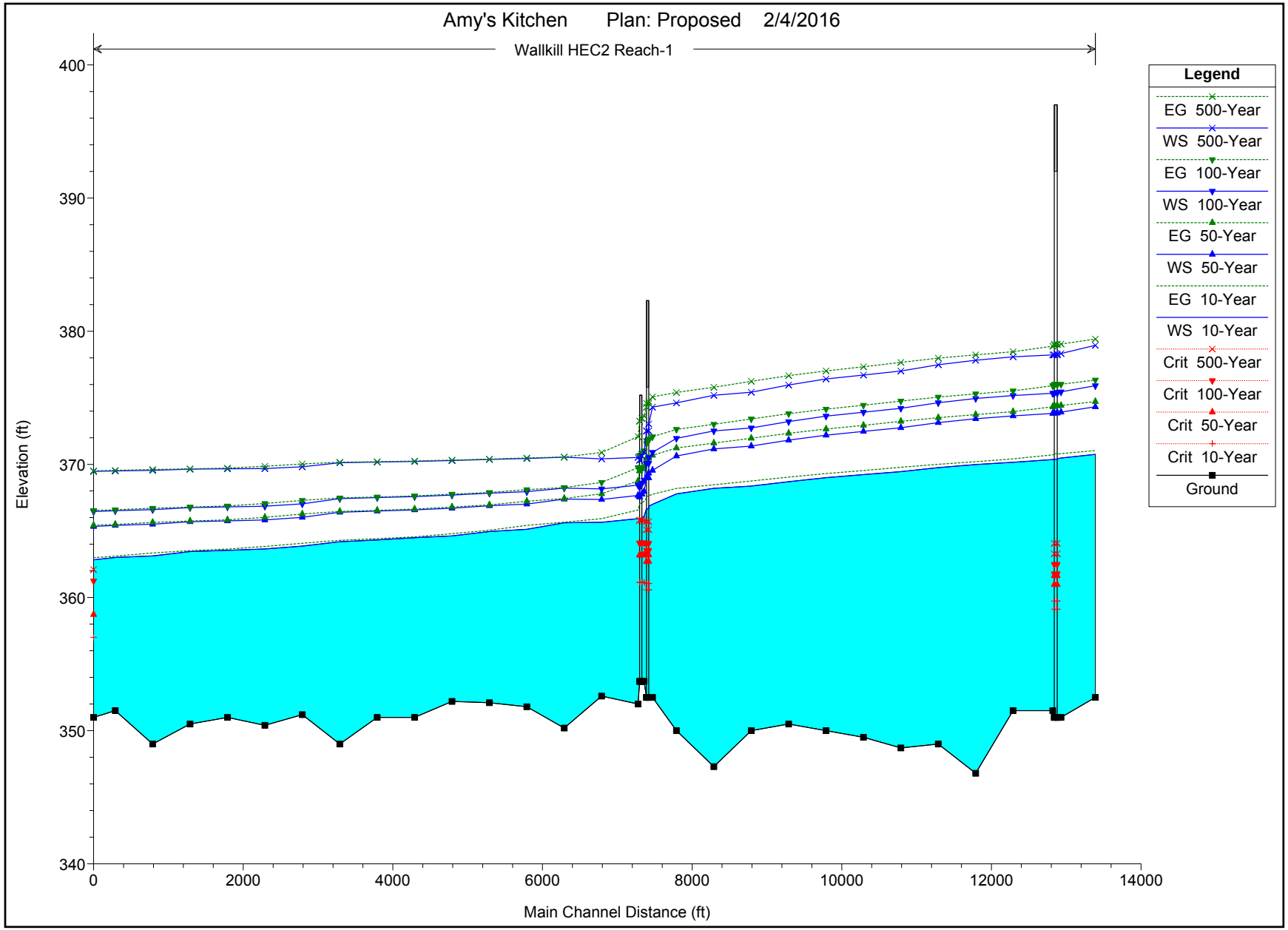
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	13100	10-Year	6958.00	352.50	370.75		371.04	0.000438	4.45	1892.43	179.97	0.19
Reach-1	13100	50-Year	10360.00	352.50	374.32		374.71	0.000477	5.27	2579.49	204.45	0.20
Reach-1	13100	100-Year	12025.00	352.50	375.90		376.33	0.000484	5.57	2926.83	248.96	0.21
Reach-1	13100	500-Year	15324.00	352.50	378.94		379.41	0.000468	5.97	3832.08	306.64	0.21
Reach-1	12640	10-Year	6958.00	351.00	370.48		370.81	0.000487	4.64	1644.35	117.29	0.20
Reach-1	12640	50-Year	10360.00	351.00	373.93		374.42	0.000579	5.71	2052.66	120.00	0.22
Reach-1	12640	100-Year	12025.00	351.00	375.44		376.01	0.000612	6.16	2237.00	124.07	0.23
Reach-1	12640	500-Year	15324.00	351.00	378.33		379.04	0.000653	6.91	2613.75	139.74	0.24
Reach-1	12590	10-Year	6958.00	351.00	370.43	359.12	370.77	0.000509	4.74	1526.82	117.26	0.20
Reach-1	12590	50-Year	10360.00	351.00	373.90	360.98	374.39	0.000582	5.72	2048.81	119.93	0.22
Reach-1	12590	100-Year	12025.00	351.00	375.41	361.78	375.98	0.000615	6.17	2232.75	123.93	0.23
Reach-1	12590	500-Year	15324.00	351.00	378.29	363.28	379.01	0.000657	6.92	2608.65	139.43	0.24
Reach-1	12570		Bridge									
Reach-1	12550	10-Year	6958.00	351.00	370.38	359.12	370.73	0.000513	4.75	1522.53	117.23	0.20
Reach-1	12550	50-Year	10360.00	351.00	373.85	360.98	374.34	0.000586	5.74	2042.93	119.83	0.22
Reach-1	12550	100-Year	12025.00	351.00	375.35	361.78	375.93	0.000621	6.19	2225.76	123.70	0.23
Reach-1	12550	500-Year	15324.00	351.00	378.22	363.28	378.94	0.000663	6.94	2598.94	138.82	0.24
Reach-1	12530	10-Year	6958.00	351.50	370.36		370.72	0.000535	5.01	1720.11	140.13	0.21
Reach-1	12530	50-Year	10360.00	351.50	373.82		374.33	0.000616	6.05	2260.29	170.09	0.23
Reach-1	12530	100-Year	12025.00	351.50	375.34		375.91	0.000640	6.45	2527.81	182.36	0.24
Reach-1	12530	500-Year	15324.00	351.50	378.22		378.88	0.000659	7.08	3086.18	205.62	0.25
Reach-1	12000	10-Year	6958.00	351.50	370.15		370.42	0.000419	4.47	2374.63	255.08	0.19
Reach-1	12000	50-Year	10360.00	351.50	373.64		373.96	0.000436	5.14	3287.96	269.33	0.20
Reach-1	12000	100-Year	12025.00	351.50	375.17		375.51	0.000438	5.40	3705.01	275.60	0.20
Reach-1	12000	500-Year	15324.00	351.50	378.08		378.46	0.000428	5.78	4557.76	309.74	0.20
Reach-1	11500	10-Year	6958.00	346.80	369.99		370.20	0.000348	3.71	2038.96	145.03	0.16
Reach-1	11500	50-Year	10360.00	346.80	373.43		373.74	0.000408	4.54	2566.94	161.67	0.18
Reach-1	11500	100-Year	12025.00	346.80	374.94		375.29	0.000427	4.87	2864.22	234.21	0.18
Reach-1	11500	500-Year	15324.00	346.80	377.82		378.23	0.000436	5.33	3669.49	295.09	0.19
Reach-1	11000	10-Year	6958.00	349.00	369.76		370.01	0.000355	4.10	1916.27	137.19	0.17
Reach-1	11000	50-Year	10360.00	349.00	373.14		373.51	0.000426	5.03	2442.52	192.05	0.19
Reach-1	11000	100-Year	12025.00	349.00	374.63		375.05	0.000447	5.39	2746.19	214.46	0.20
Reach-1	11000	500-Year	15324.00	349.00	377.48		377.98	0.000464	5.94	3390.29	234.88	0.21
Reach-1	10500	10-Year	6958.00	348.70	369.45		369.78	0.000483	4.73	1749.48	132.76	0.19
Reach-1	10500	50-Year	10360.00	348.70	372.75		373.23	0.000584	5.81	2215.59	154.96	0.22
Reach-1	10500	100-Year	12025.00	348.70	374.21		374.75	0.000617	6.24	2455.85	174.43	0.23
Reach-1	10500	500-Year	15324.00	348.70	377.01		377.66	0.000647	6.89	2975.55	191.02	0.24
Reach-1	10000	10-Year	6958.00	349.50	369.23		369.53	0.000451	4.48	1730.50	123.06	0.19
Reach-1	10000	50-Year	10360.00	349.50	372.48		372.93	0.000552	5.54	2150.42	136.63	0.21
Reach-1	10000	100-Year	12025.00	349.50	373.92		374.44	0.000585	5.97	2374.72	192.37	0.22
Reach-1	10000	500-Year	15324.00	349.50	376.71		377.33	0.000607	6.57	3045.02	282.77	0.23
Reach-1	9500	10-Year	6958.00	350.00	369.00		369.31	0.000447	4.55	1776.48	130.27	0.19
Reach-1	9500	50-Year	10360.00	350.00	372.19		372.65	0.000554	5.64	2248.09	180.92	0.22
Reach-1	9500	100-Year	12025.00	350.00	373.63		374.15	0.000584	6.05	2521.61	213.85	0.22
Reach-1	9500	500-Year	15324.00	350.00	376.42		377.02	0.000597	6.61	3261.46	280.29	0.23
Reach-1	9000	10-Year	6958.00	350.50	368.70		369.05	0.000551	4.83	1663.84	131.92	0.21
Reach-1	9000	50-Year	10360.00	350.50	371.81		372.33	0.000672	5.97	2095.95	145.68	0.23
Reach-1	9000	100-Year	12025.00	350.50	373.22		373.81	0.000708	6.40	2306.28	155.18	0.24
Reach-1	9000	500-Year	15324.00	350.50	375.96		376.66	0.000735	7.07	2797.88	211.22	0.25
Reach-1	8500	10-Year	6958.00	350.00	368.37		368.75	0.000582	5.03	1508.99	126.12	0.21
Reach-1	8500	50-Year	10360.00	350.00	371.37		371.96	0.000725	6.26	1908.52	138.65	0.25
Reach-1	8500	100-Year	12025.00	350.00	372.74		373.41	0.000771	6.74	2100.36	143.39	0.26
Reach-1	8500	500-Year	15324.00	350.00	375.41		376.24	0.000813	7.49	2499.03	155.66	0.27
Reach-1	8000	10-Year	6958.00	347.30	368.20		368.47	0.000366	4.27	1837.36	132.41	0.17
Reach-1	8000	50-Year	10360.00	347.30	371.16		371.59	0.000482	5.40	2301.05	180.55	0.20
Reach-1	8000	100-Year	12025.00	347.30	372.51		373.01	0.000520	5.83	2546.47	183.04	0.21
Reach-1	8000	500-Year	15324.00	347.30	375.19		375.79	0.000561	6.52	3042.76	187.97	0.23
Reach-1	7500	10-Year	6958.00	350.00	367.78		368.19	0.000671	5.22	1521.84	127.28	0.23
Reach-1	7500	50-Year	10360.00	350.00	370.63		371.23	0.000818	6.42	2007.16	187.72	0.26
Reach-1	7500	100-Year	12025.00	350.00	371.95		372.63	0.000852	6.86	2256.65	189.92	0.27
Reach-1	7500	500-Year	15324.00	350.00	374.62		375.40	0.000858	7.47	2810.02	252.99	0.28
Reach-1	7180	10-Year	6958.00	352.50	367.00		367.75	0.001817	7.00	1030.30	94.00	0.35
Reach-1	7180	50-Year	10360.00	352.50	369.55		370.68	0.002118	8.56	1329.02	211.76	0.39

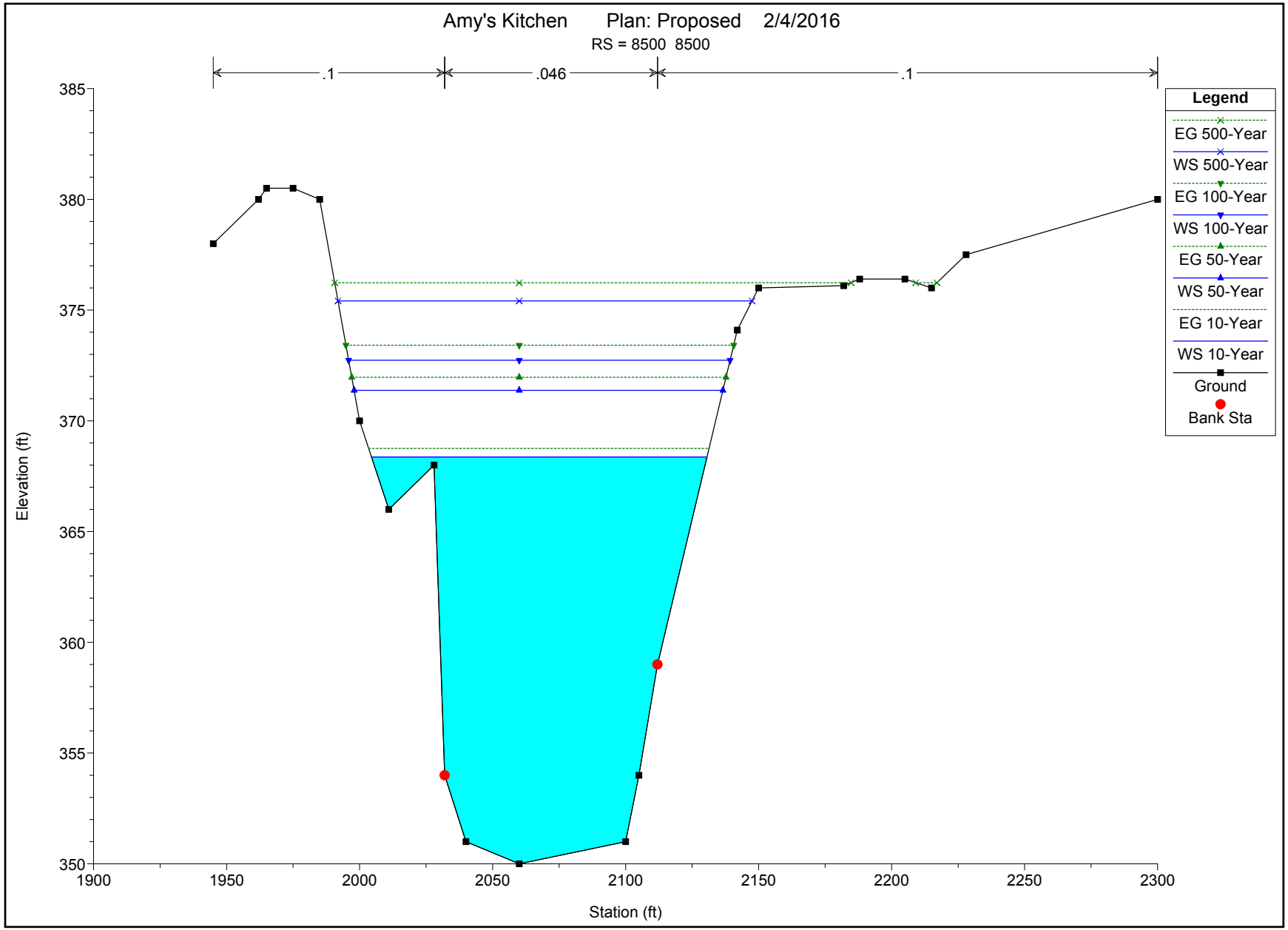
HEC-RAS Plan: Proposed River: Wallkill HEC2 Reach: Reach-1 (Continued)

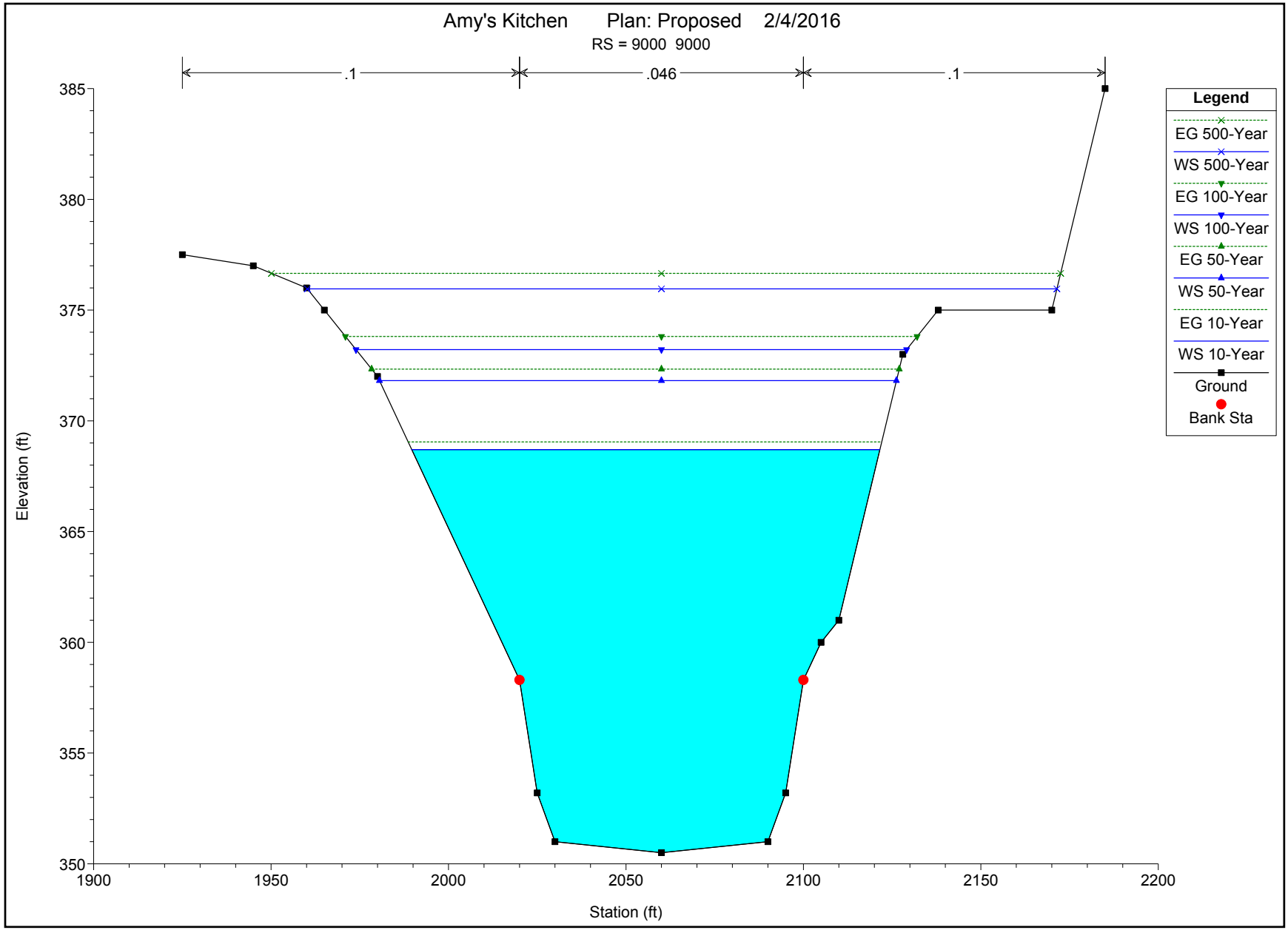
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	7180	100-Year	12025.00	352.50	370.90		372.08	0.002030	8.88	1800.34	467.24	0.39
Reach-1	7180	500-Year	15324.00	352.50	374.30		375.07	0.001234	7.86	3848.22	704.40	0.31
Reach-1	7130	10-Year	6958.00	352.50	366.86	360.57	367.65	0.001911	7.12	976.93	93.86	0.36
Reach-1	7130	50-Year	10360.00	352.50	369.33	362.70	370.54	0.002291	8.82	1174.77	181.10	0.41
Reach-1	7130	100-Year	12025.00	352.50	370.50	363.54	371.90	0.002390	9.48	1268.39	401.86	0.42
Reach-1	7130	500-Year	15324.00	352.50	373.03	365.10	374.72	0.002371	10.42	1470.62	630.70	0.43
Reach-1	7115		Bridge									
Reach-1	7100	10-Year	6958.00	352.50	366.66	360.57	367.48	0.002019	7.24	960.90	93.65	0.37
Reach-1	7100	50-Year	10360.00	352.50	368.98	362.70	370.25	0.002484	9.03	1146.65	144.42	0.42
Reach-1	7100	100-Year	12025.00	352.50	370.08	363.54	371.56	0.002616	9.74	1234.54	331.85	0.44
Reach-1	7100	500-Year	15324.00	352.50	372.51	365.10	374.30	0.002608	10.72	1429.17	600.30	0.45
Reach-1	7068	10-Year	6958.00	353.70	366.10	361.13	367.22	0.002641	8.49	819.73	106.67	0.44
Reach-1	7068	50-Year	10360.00	353.70	367.96	363.19	369.81	0.003580	10.90	950.16	111.73	0.52
Reach-1	7068	100-Year	12025.00	353.70	368.81	364.11	371.02	0.003938	11.91	1009.71	134.74	0.55
Reach-1	7068	500-Year	15324.00	353.70	370.90	365.81	373.63	0.004075	13.26	1155.86	449.71	0.57
Reach-1	7038	10-Year	6958.00	353.70	365.98	361.13	367.12	0.002731	8.57	811.55	106.39	0.44
Reach-1	7038	50-Year	10360.00	353.70	367.76	363.19	369.67	0.003760	11.07	936.27	111.19	0.53
Reach-1	7038	100-Year	12025.00	353.70	368.57	364.11	370.85	0.004169	12.11	992.62	117.98	0.57
Reach-1	7038	500-Year	15324.00	353.70	370.63	365.81	373.45	0.004311	13.48	1136.57	379.34	0.59
Reach-1	7023		Bridge									
Reach-1	7008	10-Year	6958.00	353.70	365.86	361.14	367.03	0.002830	8.67	802.97	106.10	0.45
Reach-1	7008	50-Year	10360.00	353.70	367.55	363.19	369.51	0.003971	11.25	921.06	110.60	0.55
Reach-1	7008	100-Year	12025.00	353.70	368.29	364.09	370.66	0.004450	12.35	973.35	112.64	0.58
Reach-1	7008	500-Year	15324.00	353.70	370.31	365.81	373.25	0.004601	13.75	1114.58	338.18	0.61
Reach-1	6987	10-Year	6958.00	352.00	365.92		366.58	0.001348	6.60	1193.24	111.08	0.32
Reach-1	6987	50-Year	10360.00	352.00	367.66		368.76	0.001949	8.61	1397.49	119.31	0.39
Reach-1	6987	100-Year	12025.00	352.00	368.44		369.76	0.002202	9.46	1490.66	120.60	0.42
Reach-1	6987	500-Year	15324.00	352.00	370.52		372.09	0.002279	10.44	1943.59	359.20	0.43
Reach-1	6500	10-Year	6958.00	352.60	365.65		365.93	0.000709	4.54	2035.17	328.45	0.23
Reach-1	6500	50-Year	10360.00	352.60	367.36		367.79	0.000940	5.70	2611.99	344.02	0.27
Reach-1	6500	100-Year	12025.00	352.60	368.16		368.64	0.001008	6.13	2973.13	516.09	0.28
Reach-1	6500	500-Year	15324.00	352.60	370.42		370.89	0.000873	6.28	4163.24	537.86	0.27
Reach-1	6000	10-Year	7117.00	350.20	365.61		365.65	0.000171	2.32	7763.69	1893.39	0.11
Reach-1	6000	50-Year	10638.00	350.20	367.39		367.43	0.000169	2.51	11875.44	2865.52	0.11
Reach-1	6000	100-Year	12372.00	350.20	368.22		368.26	0.000157	2.51	14431.84	3207.73	0.11
Reach-1	6000	500-Year	15878.00	350.20	370.53		370.56	0.000099	2.18	22180.65	3496.68	0.09
Reach-1	5500	10-Year	7117.00	351.80	365.13		365.41	0.000828	4.76	3174.00	1301.24	0.25
Reach-1	5500	50-Year	10638.00	351.80	367.02		367.23	0.000640	4.63	6701.54	3079.29	0.22
Reach-1	5500	100-Year	12372.00	351.80	367.95		368.10	0.000477	4.18	10018.98	3818.09	0.19
Reach-1	5500	500-Year	15878.00	351.80	370.44		370.48	0.000182	2.86	19980.35	4078.36	0.12
Reach-1	5000	10-Year	7117.00	352.10	364.96		365.05	0.000360	3.22	6496.14	2140.83	0.16
Reach-1	5000	50-Year	10638.00	352.10	366.89		366.95	0.000259	3.01	10888.08	2395.87	0.14
Reach-1	5000	100-Year	12372.00	352.10	367.84		367.89	0.000219	2.89	13215.59	2503.59	0.13
Reach-1	5000	500-Year	15878.00	352.10	370.37		370.40	0.000124	2.41	19605.49	2549.41	0.10
Reach-1	4500	10-Year	7117.00	352.20	364.63		364.80	0.000579	3.99	5126.99	2279.21	0.21
Reach-1	4500	50-Year	10638.00	352.20	366.71		366.80	0.000335	3.38	9893.39	2295.58	0.16
Reach-1	4500	100-Year	12372.00	352.20	367.69		367.76	0.000268	3.17	12156.35	2303.31	0.15
Reach-1	4500	500-Year	15878.00	352.20	370.29		370.33	0.000145	2.59	18161.91	2323.25	0.11
Reach-1	4000	10-Year	7117.00	351.00	364.50		364.55	0.000260	2.68	6152.47	1393.06	0.14
Reach-1	4000	50-Year	10638.00	351.00	366.59		366.64	0.000236	2.84	9471.80	1784.83	0.13
Reach-1	4000	100-Year	12372.00	351.00	367.58		367.63	0.000215	2.84	11342.32	1971.56	0.13
Reach-1	4000	500-Year	15878.00	351.00	370.22		370.26	0.000137	2.53	16789.81	2099.95	0.11
Reach-1	3500	10-Year	7508.00	351.00	364.32		364.42	0.000244	3.29	5804.79	1882.82	0.16
Reach-1	3500	50-Year	11315.00	351.00	366.49		366.55	0.000152	2.88	9983.82	1964.91	0.13
Reach-1	3500	100-Year	13216.00	351.00	367.50		367.55	0.000127	2.75	11989.75	2003.12	0.12
Reach-1	3500	500-Year	17219.00	351.00	370.17		370.20	0.000074	2.33	17538.98	2163.84	0.10
Reach-1	3000	10-Year	7508.00	349.00	364.19		364.29	0.000291	3.50	5183.09	1491.13	0.18
Reach-1	3000	50-Year	11315.00	349.00	366.40		366.47	0.000194	3.19	8532.15	1541.63	0.15
Reach-1	3000	100-Year	13216.00	349.00	367.42		367.48	0.000166	3.09	10119.87	1564.99	0.14
Reach-1	3000	500-Year	17219.00	349.00	370.12		370.16	0.000102	2.69	14425.07	1626.82	0.11
Reach-1	2500	10-Year	7508.00	351.20	363.86		364.08	0.000490	4.32	2670.36	480.18	0.23
Reach-1	2500	50-Year	11315.00	351.20	366.02		366.27	0.000490	4.85	3819.35	587.71	0.23

HEC-RAS Plan: Proposed River: Wallkill HEC2 Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	2500	100-Year	13216.00	351.20	367.04		367.30	0.000472	5.00	4446.48	640.76	0.23
Reach-1	2500	500-Year	17219.00	351.20	369.82		370.03	0.000342	4.78	6425.81	785.03	0.20
Reach-1	2000	10-Year	7508.00	350.40	363.65		363.83	0.000421	3.98	2965.98	630.56	0.21
Reach-1	2000	50-Year	11315.00	350.40	365.82		366.02	0.000399	4.36	4358.79	649.42	0.21
Reach-1	2000	100-Year	13216.00	350.40	366.86		367.06	0.000379	4.46	5034.02	658.36	0.21
Reach-1	2000	500-Year	17219.00	350.40	369.68		369.85	0.000273	4.27	6930.84	682.86	0.18
Reach-1	1500	10-Year	7508.00	351.00	363.54		363.64	0.000231	3.10	4724.53	1278.54	0.16
Reach-1	1500	50-Year	11315.00	351.00	365.75		365.84	0.000182	3.07	7621.38	1322.62	0.14
Reach-1	1500	100-Year	13216.00	351.00	366.80		366.88	0.000161	3.03	9013.71	1336.00	0.14
Reach-1	1500	500-Year	17219.00	351.00	369.66		369.72	0.000102	2.71	12894.91	1375.65	0.11
Reach-1	1000	10-Year	7508.00	350.50	363.45		363.52	0.000185	2.72	5789.91	1594.16	0.14
Reach-1	1000	50-Year	11315.00	350.50	365.69		365.74	0.000128	2.54	10118.47	2099.56	0.12
Reach-1	1000	100-Year	13216.00	350.50	366.75		366.79	0.000106	2.44	12363.25	2140.64	0.11
Reach-1	1000	500-Year	17219.00	350.50	369.64		369.66	0.000059	2.05	18703.28	2252.62	0.09
Reach-1	500	10-Year	7508.00	349.00	363.13		363.35	0.000470	4.39	3579.09	1206.95	0.22
Reach-1	500	50-Year	11315.00	349.00	365.51		365.64	0.000290	3.89	6538.05	1276.51	0.18
Reach-1	500	100-Year	13216.00	349.00	366.60		366.71	0.000241	3.73	7946.19	1305.36	0.17
Reach-1	500	500-Year	17219.00	349.00	369.55		369.61	0.000136	3.14	11912.55	1382.87	0.13
Reach-1	9	10-Year	7508.00	351.50	363.01		363.11	0.000285	3.02	4706.46	1187.72	0.17
Reach-1	9	50-Year	11315.00	351.50	365.42		365.49	0.000188	2.84	7663.98	1266.04	0.14
Reach-1	9	100-Year	13216.00	351.50	366.52		366.59	0.000161	2.78	9199.32	1477.53	0.13
Reach-1	9	500-Year	17219.00	351.50	369.50		369.55	0.000094	2.43	13685.78	1532.33	0.11
Reach-1	8.706	10-Year	7905.00	351.00	362.83	357.01	362.99	0.000416	3.90	4343.87	1427.95	0.21
Reach-1	8.706	50-Year	11993.00	351.00	365.34	358.72	365.43	0.000230	3.33	8017.56	1496.71	0.16
Reach-1	8.706	100-Year	14062.00	351.00	366.46	361.24	366.53	0.000190	3.19	9709.69	1525.61	0.15
Reach-1	8.706	500-Year	18554.00	351.00	369.47	362.10	369.52	0.000108	2.72	14400.81	1580.12	0.11


Amy's Kitchen Plan: Proposed 2/4/2016
Wallkill HEC2 Reach-1
Elevation (ft)
Main Channel Distance (ft)
400
390
380
370
360
350
340
0
2000
4000
6000
8000
10000
12000
14000
Legend
EG 500-Year
WS 500-Year
EG 100-Year
WS 100-Year
EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Crit 500-Year
Crit 100-Year
Crit 50-Year
Crit 10-Year
Ground


Amy's Kitchen Plan: Proposed 2/4/2016
RS = 8500 8500
.1
.046
.1
Legend
EG 500-Year
WS 500-Year
EG 100-Year
WS 100-Year
EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
385
380
375
370
365
360
355
350
1900
1950
2000
2050
2100
2150
2200
2250
2300
Station (ft)


Amy's Kitchen Plan: Proposed 2/4/2016
RS = 9000 9000
.1
.046
.1
Legend
EG 500-Year
WS 500-Year
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WS 50-Year
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WS 10-Year
Ground
Bank Sta
Elevation (ft)
385
380
375
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365
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1900
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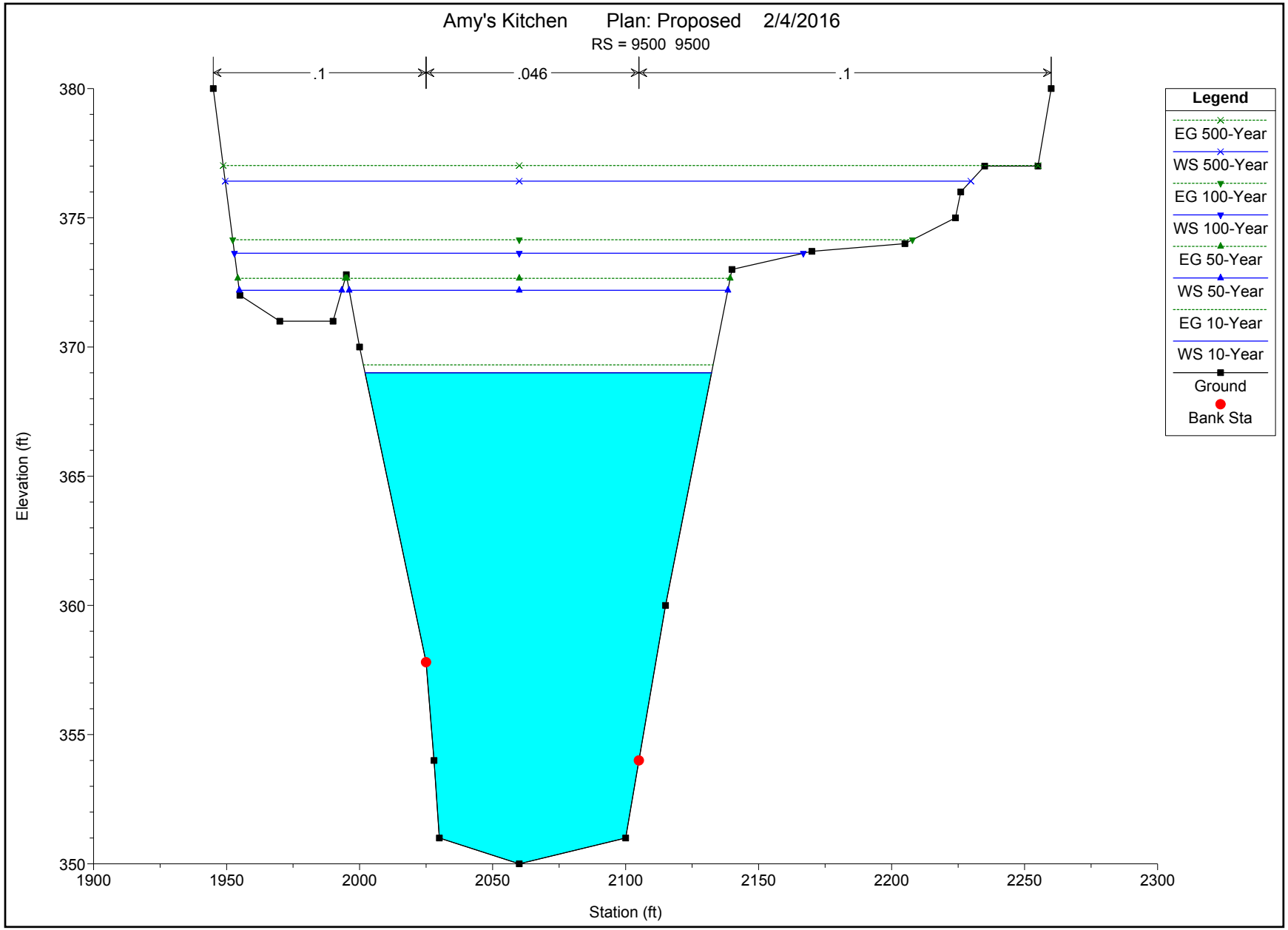
Station (ft)


Amy's Kitchen Plan: Proposed 2/4/2016
RS = 9500 9500
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EG 500-Year
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Ground
Bank Sta
Elevation (ft)
380
375
370
365
360
355
350
1900
1950
2000
2050
2100
2150
2200
2250
2300
Station (ft)

HEC-RAS Plan: Proposed SE River: Wallkill HEC2 Reach: Reach-1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	13100	10-Year	6958.00	352.50	370.75		371.04	0.000437	4.45	1892.98	179.99	0.19
Reach-1	13100	50-Year	10360.00	352.50	374.33		374.72	0.000476	5.26	2580.44	204.48	0.20
Reach-1	13100	100-Year	12025.00	352.50	376.75		377.25	0.000499	5.80	2340.25	107.69	0.21
Reach-1	13100	500-Year	15324.00	352.50	379.14		379.60	0.000454	5.90	3892.27	307.26	0.21
Reach-1	12640	10-Year	6958.00	351.00	370.48		370.81	0.000487	4.64	1644.72	117.29	0.20
Reach-1	12640	50-Year	10360.00	351.00	373.93		374.42	0.000578	5.71	2053.24	120.01	0.22
Reach-1	12640	100-Year	12025.00	351.00	376.32		376.90	0.000886	6.13	1961.02	85.00	0.22
Reach-1	12640	500-Year	15324.00	351.00	378.53		379.23	0.000635	6.85	2642.66	141.52	0.24
Reach-1	12590	10-Year	6958.00	351.00	370.43	359.12	370.78	0.000509	4.73	1527.14	117.26	0.20
Reach-1	12590	50-Year	10360.00	351.00	373.90	360.98	374.39	0.000581	5.72	2049.39	119.94	0.22
Reach-1	12590	100-Year	12025.00	351.00	376.27	361.78	376.86	0.000891	6.14	1956.89	85.00	0.23
Reach-1	12590	500-Year	15324.00	351.00	378.50	363.28	379.20	0.000638	6.86	2637.65	141.21	0.24
Reach-1	12570		Bridge									
Reach-1	12550	10-Year	6958.00	351.00	370.39	359.12	370.73	0.000513	4.75	1522.86	117.23	0.20
Reach-1	12550	50-Year	10360.00	351.00	373.85	360.98	374.35	0.000586	5.74	2043.52	119.84	0.22
Reach-1	12550	100-Year	12025.00	351.00	376.19	361.78	376.78	0.000900	6.17	1950.08	85.00	0.23
Reach-1	12550	500-Year	15324.00	351.00	378.43	363.28	379.14	0.000644	6.88	2628.14	140.63	0.24
Reach-1	12530	10-Year	6958.00	351.50	370.36		370.72	0.000535	5.01	1720.56	140.17	0.21
Reach-1	12530	50-Year	10360.00	351.50	373.83		374.33	0.000615	6.04	2261.15	170.13	0.23
Reach-1	12530	100-Year	12025.00	351.50	376.10		376.74	0.000652	6.65	2147.31	98.33	0.24
Reach-1	12530	500-Year	15324.00	351.50	378.43		379.08	0.000638	7.01	3129.49	207.31	0.24
Reach-1	12000	10-Year	6958.00	351.50	370.16		370.42	0.000419	4.47	2375.49	255.10	0.19
Reach-1	12000	50-Year	10360.00	351.50	373.64		373.96	0.000436	5.14	3289.40	269.36	0.20
Reach-1	12000	100-Year	12025.00	351.50	375.97		376.32	0.000414	5.37	3455.51	215.07	0.20
Reach-1	12000	500-Year	15324.00	351.50	378.29		378.66	0.000413	5.71	4625.06	310.90	0.20
Reach-1	11500	10-Year	6958.00	346.80	369.99		370.20	0.000348	3.71	2039.46	145.05	0.16
Reach-1	11500	50-Year	10360.00	346.80	373.44		373.74	0.000408	4.54	2567.83	161.69	0.18
Reach-1	11500	100-Year	12025.00	346.80	375.72		376.09	0.000447	4.94	2526.32	111.09	0.18
Reach-1	11500	500-Year	15324.00	346.80	378.05		378.44	0.000421	5.27	3735.90	296.08	0.18
Reach-1	11000	10-Year	6958.00	349.00	369.76		370.01	0.000355	4.10	1916.76	137.20	0.17
Reach-1	11000	50-Year	10360.00	349.00	373.14		373.51	0.000426	5.03	2443.64	192.14	0.19
Reach-1	11000	100-Year	12025.00	349.00	375.38		375.84	0.000449	5.52	2305.08	100.25	0.20
Reach-1	11000	500-Year	15324.00	349.00	377.71		378.20	0.000448	5.87	3445.73	236.29	0.20
Reach-1	10500	10-Year	6958.00	348.70	369.46		369.78	0.000482	4.73	1749.99	132.78	0.19
Reach-1	10500	50-Year	10360.00	348.70	372.75		373.24	0.000583	5.81	2216.54	155.04	0.22
Reach-1	10500	100-Year	12025.00	348.70	374.95		375.54	0.000613	6.35	2158.23	99.85	0.23
Reach-1	10500	500-Year	15324.00	348.70	377.26		377.89	0.000623	6.81	3023.59	191.77	0.23
Reach-1	10000	10-Year	6958.00	349.50	369.24		369.54	0.000450	4.47	1730.99	123.07	0.19
Reach-1	10000	50-Year	10360.00	349.50	372.49		372.94	0.000551	5.54	2151.30	136.66	0.21
Reach-1	10000	100-Year	12025.00	349.50	374.64		375.20	0.000704	6.04	2103.50	94.25	0.22
Reach-1	10000	500-Year	15324.00	349.50	376.98		377.57	0.000582	6.48	3120.15	286.27	0.23
Reach-1	9500	10-Year	6958.00	350.00	369.01		369.31	0.000447	4.55	1777.02	130.28	0.19
Reach-1	9500	50-Year	10360.00	350.00	372.20		372.66	0.000553	5.64	2249.33	180.98	0.22
Reach-1	9500	100-Year	12025.00	350.00	374.30		374.87	0.000585	6.18	2129.40	95.43	0.22
Reach-1	9500	500-Year	15324.00	350.00	376.70		377.28	0.000571	6.51	3339.64	283.13	0.23
Reach-1	9000	10-Year	6958.00	350.50	368.71		369.05	0.000550	4.83	1664.43	131.94	0.21
Reach-1	9000	50-Year	10360.00	350.50	371.82		372.34	0.000671	5.97	2096.95	145.71	0.23
Reach-1	9000	100-Year	12025.00	350.50	373.88		374.53	0.000709	6.54	2007.28	95.44	0.24
Reach-1	9000	500-Year	15324.00	350.50	376.25		376.93	0.000702	6.96	2860.93	215.67	0.25
Reach-1	8896.95	10-Year	6958.00	350.39	368.65	357.62	369.00	0.000565	4.79	1566.85	133.05	0.21
Reach-1	8896.95	50-Year	10360.00	350.39	371.73	359.59	372.26	0.000698	5.96	1896.89	148.66	0.24
Reach-1	8896.95	100-Year	12025.00	350.39	373.79	360.40	374.45	0.000731	6.51	1864.41	85.52	0.25
Reach-1	8896.95	500-Year	15324.00	350.39	376.08	362.04	376.83	0.000771	7.15	2361.56	222.51	0.26
Reach-1	8871.95		Bridge									
Reach-1	8846.95	10-Year	6958.00	350.35	368.61	357.61	368.97	0.000576	4.81	1552.88	132.43	0.21
Reach-1	8846.95	50-Year	10360.00	350.35	371.69	359.56	372.23	0.000712	5.99	1881.95	149.21	0.24
Reach-1	8846.95	100-Year	12025.00	350.35	373.75	360.40	374.41	0.000868	6.52	1861.43	85.52	0.25
Reach-1	8846.95	500-Year	15324.00	350.35	375.86	362.03	376.55	0.000742	6.94	2743.86	206.98	0.25
Reach-1	8500	10-Year	6958.00	350.00	368.37		368.75	0.000582	5.03	1508.99	126.12	0.21
Reach-1	8500	50-Year	10360.00	350.00	371.37		371.96	0.000725	6.26	1908.52	138.65	0.25
Reach-1	8500	100-Year	12025.00	350.00	373.31		374.04	0.001207	6.84	1756.87	80.00	0.26
Reach-1	8500	500-Year	15324.00	350.00	375.41		376.24	0.000813	7.49	2499.03	155.66	0.27

HEC-RAS Plan: Proposed SE River: Wallkill HEC2 Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	8000	10-Year	6958.00	347.30	368.20		368.47	0.000366	4.27	1837.36	132.41	0.17
Reach-1	8000	50-Year	10360.00	347.30	371.16		371.59	0.000482	5.40	2301.05	180.55	0.20
Reach-1	8000	100-Year	12025.00	347.30	372.97		373.51	0.000663	5.97	2087.57	90.06	0.22
Reach-1	8000	500-Year	15324.00	347.30	375.19		375.79	0.000561	6.52	3042.76	187.97	0.23
Reach-1	7500	10-Year	6958.00	350.00	367.78		368.19	0.000671	5.22	1521.84	127.28	0.23
Reach-1	7500	50-Year	10360.00	350.00	370.63		371.23	0.000818	6.42	2007.16	187.72	0.26
Reach-1	7500	100-Year	12025.00	350.00	372.25		373.04	0.000926	7.21	1747.69	87.65	0.28
Reach-1	7500	500-Year	15324.00	350.00	374.62		375.40	0.000858	7.47	2810.02	252.99	0.28
Reach-1	7180	10-Year	6958.00	352.50	367.00		367.75	0.001817	7.00	1030.30	94.00	0.35
Reach-1	7180	50-Year	10360.00	352.50	369.55		370.68	0.002118	8.56	1329.02	211.76	0.39
Reach-1	7180	100-Year	12025.00	352.50	371.13		372.42	0.002699	9.12	1318.64	80.00	0.40
Reach-1	7180	500-Year	15324.00	352.50	374.30		375.07	0.001234	7.86	3848.22	704.40	0.31
Reach-1	7130	10-Year	6958.00	352.50	366.86	360.57	367.65	0.001911	7.12	976.93	93.86	0.36
Reach-1	7130	50-Year	10360.00	352.50	369.33	362.70	370.54	0.002291	8.82	1174.77	181.10	0.41
Reach-1	7130	100-Year	12025.00	352.50	370.96	363.54	372.28	0.002783	9.22	1304.88	80.00	0.40
Reach-1	7130	500-Year	15324.00	352.50	373.03	365.10	374.72	0.002371	10.42	1470.62	630.70	0.43
Reach-1	7115		Bridge									
Reach-1	7100	10-Year	6958.00	352.50	366.66	360.57	367.48	0.002019	7.24	960.90	93.65	0.37
Reach-1	7100	50-Year	10360.00	352.50	368.98	362.70	370.25	0.002484	9.03	1146.65	144.42	0.42
Reach-1	7100	100-Year	12025.00	352.50	370.59	363.54	371.97	0.002978	9.43	1275.00	80.00	0.42
Reach-1	7100	500-Year	15324.00	352.50	372.51	365.10	374.30	0.002608	10.72	1429.17	600.30	0.45
Reach-1	7068	10-Year	6958.00	353.70	366.10	361.13	367.22	0.002641	8.49	819.73	106.67	0.44
Reach-1	7068	50-Year	10360.00	353.70	367.96	363.19	369.81	0.003580	10.90	950.16	111.73	0.52
Reach-1	7068	100-Year	12025.00	353.70	369.44	364.11	371.46	0.005179	11.42	1053.26	70.00	0.52
Reach-1	7068	500-Year	15324.00	353.70	370.90	365.81	373.63	0.004075	13.26	1155.86	449.71	0.57
Reach-1	7038	10-Year	6958.00	353.70	365.98	361.13	367.12	0.002731	8.57	811.55	106.39	0.44
Reach-1	7038	50-Year	10360.00	353.70	367.76	363.19	369.67	0.003760	11.07	936.27	111.19	0.53
Reach-1	7038	100-Year	12025.00	353.70	369.15	364.11	371.25	0.005480	11.64	1033.14	70.00	0.53
Reach-1	7038	500-Year	15324.00	353.70	370.63	365.81	373.45	0.004311	13.48	1136.57	379.34	0.59
Reach-1	7023		Bridge									
Reach-1	7008	10-Year	6958.00	353.70	365.86	361.14	367.03	0.002830	8.67	802.97	106.10	0.45
Reach-1	7008	50-Year	10360.00	353.70	367.55	363.19	369.51	0.003971	11.25	921.06	110.60	0.55
Reach-1	7008	100-Year	12025.00	353.70	368.94	364.09	371.10	0.005714	11.81	1018.43	70.00	0.55
Reach-1	7008	500-Year	15324.00	353.70	370.31	365.81	373.25	0.004601	13.75	1114.58	338.18	0.61
Reach-1	6987	10-Year	6958.00	352.00	365.92		366.58	0.001348	6.60	1193.24	111.08	0.32
Reach-1	6987	50-Year	10360.00	352.00	367.66		368.76	0.001949	8.61	1397.49	119.31	0.39
Reach-1	6987	100-Year	12025.00	352.00	369.02		370.43	0.002152	9.58	1315.75	80.70	0.41
Reach-1	6987	500-Year	15324.00	352.00	370.52		372.09	0.002279	10.44	1943.59	359.20	0.43
Reach-1	6500	10-Year	6958.00	352.60	365.65		365.93	0.000709	4.54	2035.17	328.45	0.23
Reach-1	6500	50-Year	10360.00	352.60	367.36		367.79	0.000940	5.70	2611.99	344.02	0.27
Reach-1	6500	100-Year	12025.00	352.60	368.75		369.25	0.001100	6.12	2663.04	270.51	0.28
Reach-1	6500	500-Year	15324.00	352.60	370.42		370.89	0.000873	6.28	4163.24	537.86	0.27
Reach-1	6000	10-Year	7117.00	350.20	365.61		365.65	0.000171	2.32	7763.69	1893.39	0.11
Reach-1	6000	50-Year	10638.00	350.20	367.39		367.43	0.000169	2.51	11875.44	2865.52	0.11
Reach-1	6000	100-Year	12372.00	350.20	368.79		368.84	0.000183	2.59	11055.51	1359.96	0.11
Reach-1	6000	500-Year	15878.00	350.20	370.53		370.56	0.000099	2.18	22180.65	3496.68	0.09
Reach-1	5500	10-Year	7117.00	351.80	365.13		365.41	0.000828	4.76	3174.00	1301.24	0.25
Reach-1	5500	50-Year	10638.00	351.80	367.02		367.23	0.000640	4.63	6701.54	3079.29	0.22
Reach-1	5500	100-Year	12372.00	351.80	368.40		368.62	0.000682	4.75	6049.44	1049.67	0.22
Reach-1	5500	500-Year	15878.00	351.80	370.44		370.48	0.000182	2.86	19980.35	4078.36	0.12
Reach-1	5000	10-Year	7117.00	352.10	364.96		365.05	0.000360	3.22	6496.14	2140.83	0.16
Reach-1	5000	50-Year	10638.00	352.10	366.89		366.95	0.000259	3.01	10888.08	2395.87	0.14
Reach-1	5000	100-Year	12372.00	352.10	368.27		368.34	0.000260	3.21	10329.52	1471.92	0.14
Reach-1	5000	500-Year	15878.00	352.10	370.37		370.40	0.000124	2.41	19605.49	2549.41	0.10
Reach-1	4500	10-Year	7117.00	352.20	364.63		364.80	0.000579	3.99	5126.99	2279.21	0.21
Reach-1	4500	50-Year	10638.00	352.20	366.71		366.80	0.000335	3.38	9893.39	2295.58	0.16
Reach-1	4500	100-Year	12372.00	352.20	368.07		368.17	0.000354	3.70	9049.05	1448.19	0.17
Reach-1	4500	500-Year	15878.00	352.20	370.29		370.33	0.000145	2.59	18161.91	2323.25	0.11
Reach-1	4000	10-Year	7117.00	351.00	364.50		364.55	0.000260	2.68	6152.47	1393.06	0.14
Reach-1	4000	50-Year	10638.00	351.00	366.59		366.64	0.000236	2.84	9471.80	1784.83	0.13
Reach-1	4000	100-Year	12372.00	351.00	367.93		368.00	0.000265	3.05	8704.20	978.23	0.14
Reach-1	4000	500-Year	15878.00	351.00	370.22		370.26	0.000137	2.53	16789.81	2099.95	0.11

HEC-RAS Plan: Proposed SE River: Wallkill HEC2 Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	3500	10-Year	7508.00	351.00	364.32		364.42	0.000244	3.29	5804.79	1882.82	0.16
Reach-1	3500	50-Year	11315.00	351.00	366.49		366.55	0.000152	2.88	9983.82	1964.91	0.13
Reach-1	3500	100-Year	13216.00	351.00	367.83		367.89	0.000176	3.03	9162.98	1252.03	0.13
Reach-1	3500	500-Year	17219.00	351.00	370.17		370.20	0.000074	2.33	17538.98	2163.84	0.10
Reach-1	3000	10-Year	7508.00	349.00	364.19		364.29	0.000291	3.50	5183.09	1491.13	0.18
Reach-1	3000	50-Year	11315.00	349.00	366.40		366.47	0.000194	3.19	8532.15	1541.63	0.15
Reach-1	3000	100-Year	13216.00	349.00	367.72		367.80	0.000207	3.50	8097.44	1053.23	0.16
Reach-1	3000	500-Year	17219.00	349.00	370.12		370.16	0.000102	2.69	14425.07	1626.82	0.11
Reach-1	2500	10-Year	7508.00	351.20	363.86		364.08	0.000490	4.32	2670.36	480.18	0.23
Reach-1	2500	50-Year	11315.00	351.20	366.02		366.27	0.000490	4.85	3819.35	587.71	0.23
Reach-1	2500	100-Year	13216.00	351.20	367.23		367.57	0.000561	5.50	3521.41	351.03	0.25
Reach-1	2500	500-Year	17219.00	351.20	369.82		370.03	0.000342	4.78	6425.81	785.03	0.20
Reach-1	2000	10-Year	7508.00	350.40	363.65		363.83	0.000421	3.98	2965.98	630.56	0.21
Reach-1	2000	50-Year	11315.00	350.40	365.82		366.02	0.000399	4.36	4358.79	649.42	0.21
Reach-1	2000	100-Year	13216.00	350.40	367.00		367.28	0.000469	5.00	3956.85	409.47	0.23
Reach-1	2000	500-Year	17219.00	350.40	369.68		369.85	0.000273	4.27	6930.84	682.86	0.18
Reach-1	1500	10-Year	7508.00	351.00	363.54		363.64	0.000231	3.10	4724.53	1278.54	0.16
Reach-1	1500	50-Year	11315.00	351.00	365.75		365.84	0.000182	3.07	7621.38	1322.62	0.14
Reach-1	1500	100-Year	13216.00	351.00	366.95		367.05	0.000192	3.33	7706.76	1039.24	0.15
Reach-1	1500	500-Year	17219.00	351.00	369.66		369.72	0.000102	2.71	12894.91	1375.65	0.11
Reach-1	1000	10-Year	7508.00	350.50	363.45		363.52	0.000185	2.72	5789.91	1594.16	0.14
Reach-1	1000	50-Year	11315.00	350.50	365.69		365.74	0.000128	2.54	10118.47	2099.56	0.12
Reach-1	1000	100-Year	13216.00	350.50	366.88		366.95	0.000161	2.86	8595.53	1057.87	0.13
Reach-1	1000	500-Year	17219.00	350.50	369.64		369.66	0.000059	2.05	18703.28	2252.62	0.09
Reach-1	500	10-Year	7508.00	349.00	363.13		363.35	0.000470	4.39	3579.09	1206.95	0.22
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Reach-1	9	10-Year	7508.00	351.50	363.01		363.11	0.000285	3.02	4706.46	1187.72	0.17
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Reach-1	8.706	50-Year	11993.00	351.00	365.34	358.72	365.43	0.000230	3.33	8017.56	1496.71	0.16
Reach-1	8.706	100-Year	14062.00	351.00	366.46	361.04	366.58	0.000274	3.83	7310.57	1015.51	0.18
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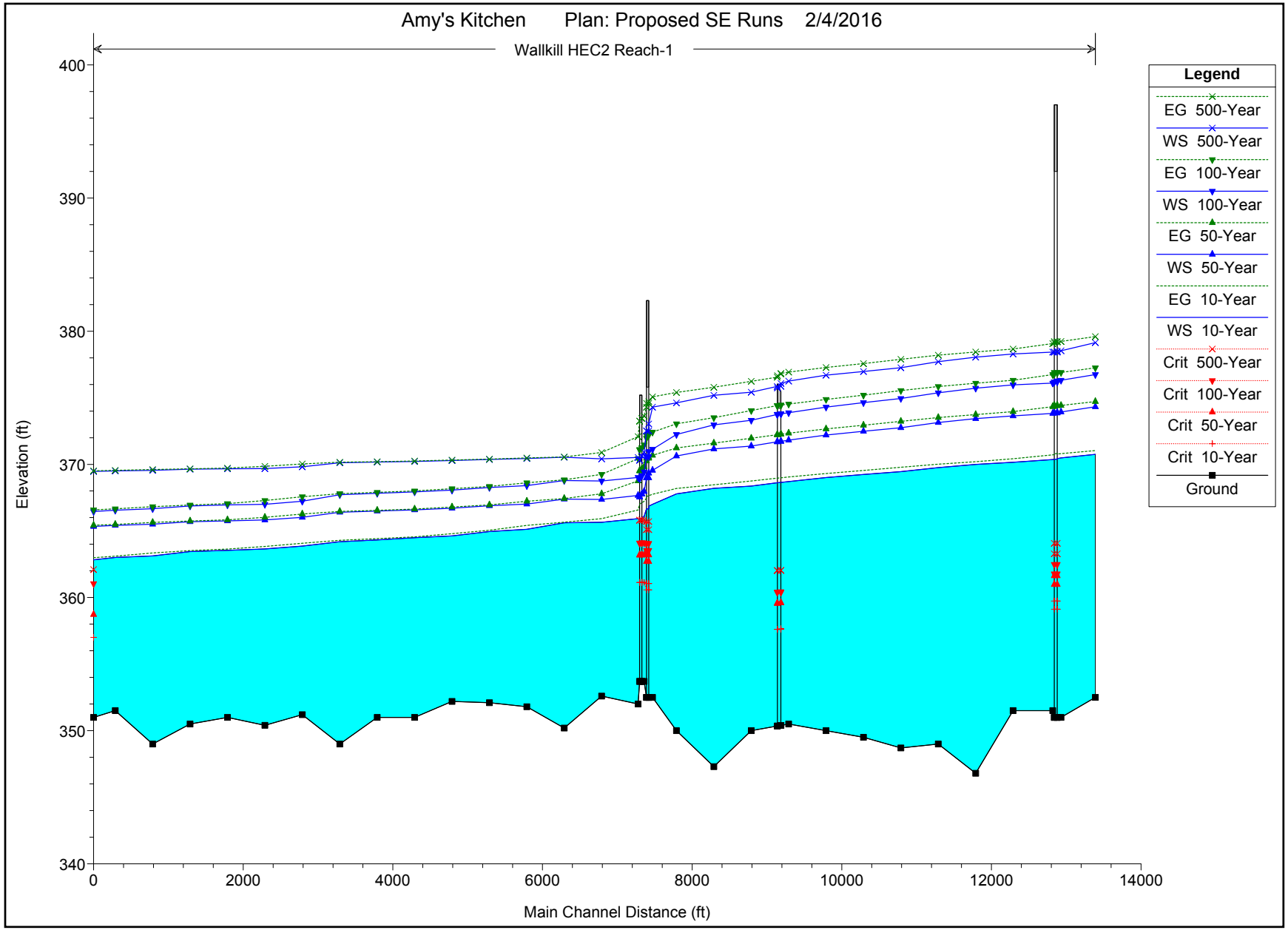
Amy's Kitchen Plan: Proposed SE Runs 2/4/2016
Wallkill HEC2 Reach-1
Legend
EG 500-Year
WS 500-Year
EG 100-Year
WS 100-Year
EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Crit 500-Year
Crit 100-Year
Crit 50-Year
Crit 10-Year
Ground
Elevation (ft)
400
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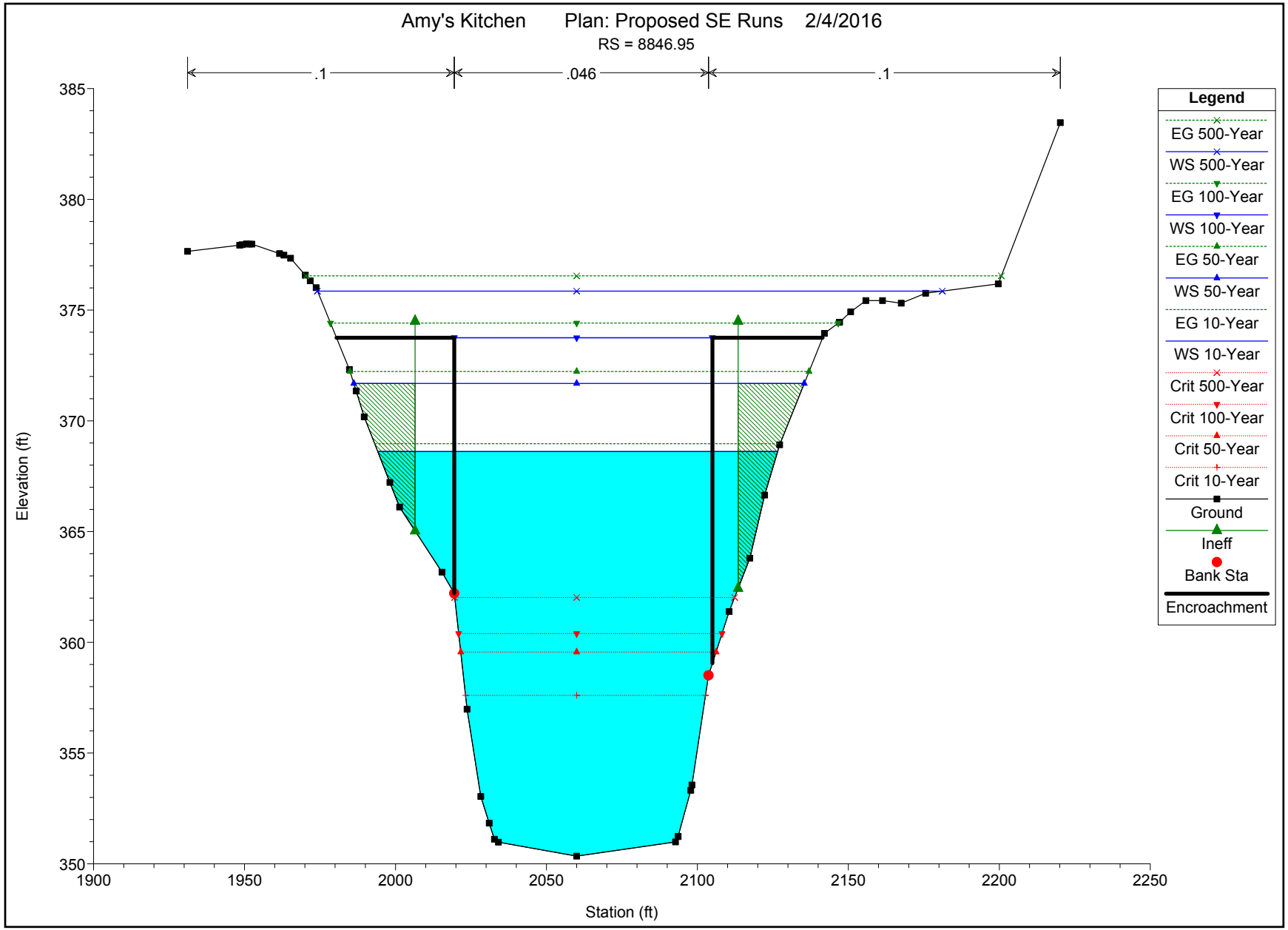
4000
6000
8000
10000
12000
14000
Main Channel Distance (ft)


Amy's Kitchen Plan: Proposed SE Runs 2/4/2016
RS = 8846.95
.1
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Elevation (ft)
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Station (ft)
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WS 500-Year
EG 100-Year
WS 100-Year
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EG 10-Year
WS 10-Year
Crit 500-Year
Crit 100-Year
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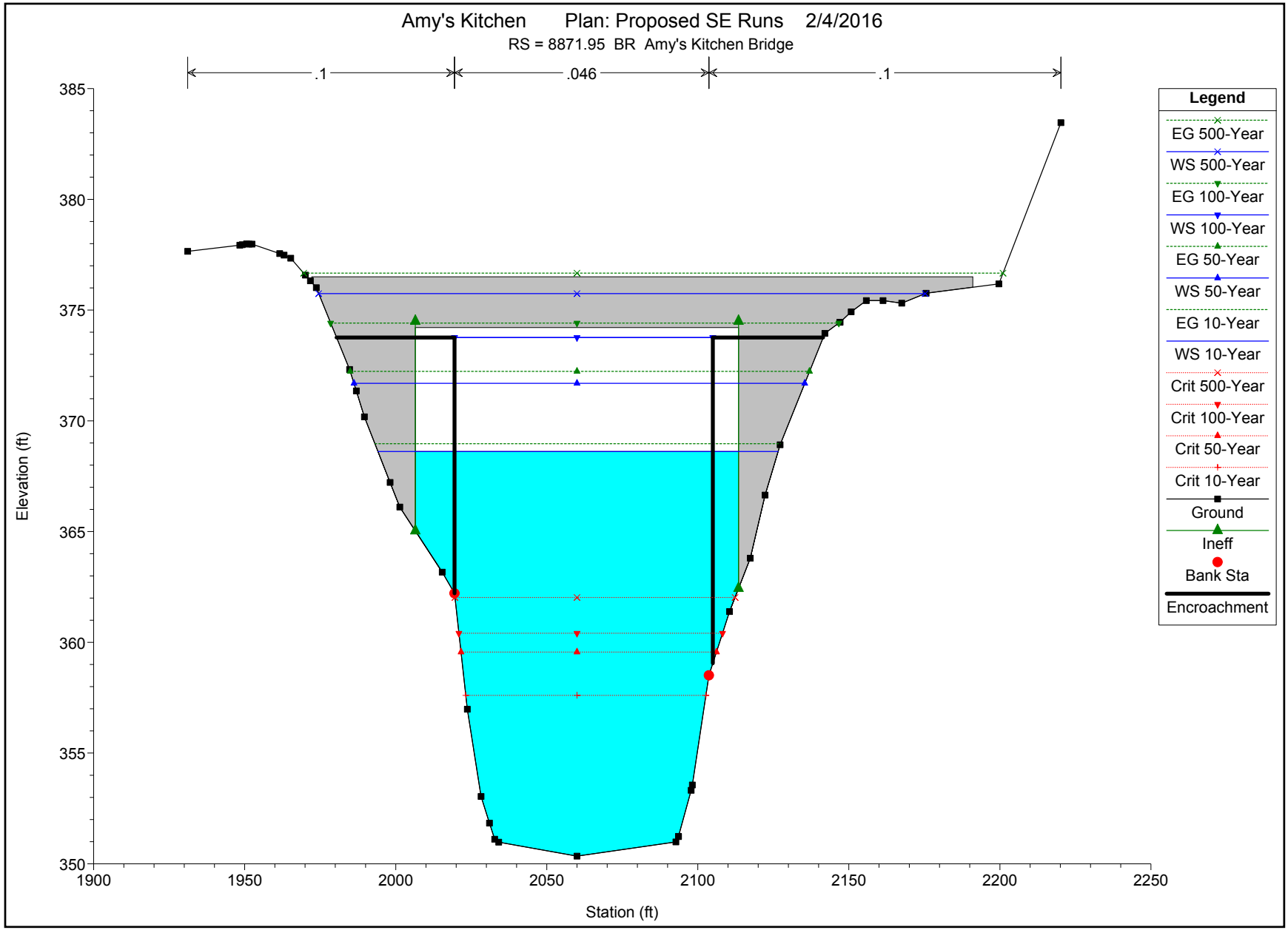
Encroachment


Amy's Kitchen Plan: Proposed SE Runs 2/4/2016
RS = 8871.95 BR Amy's Kitchen Bridge
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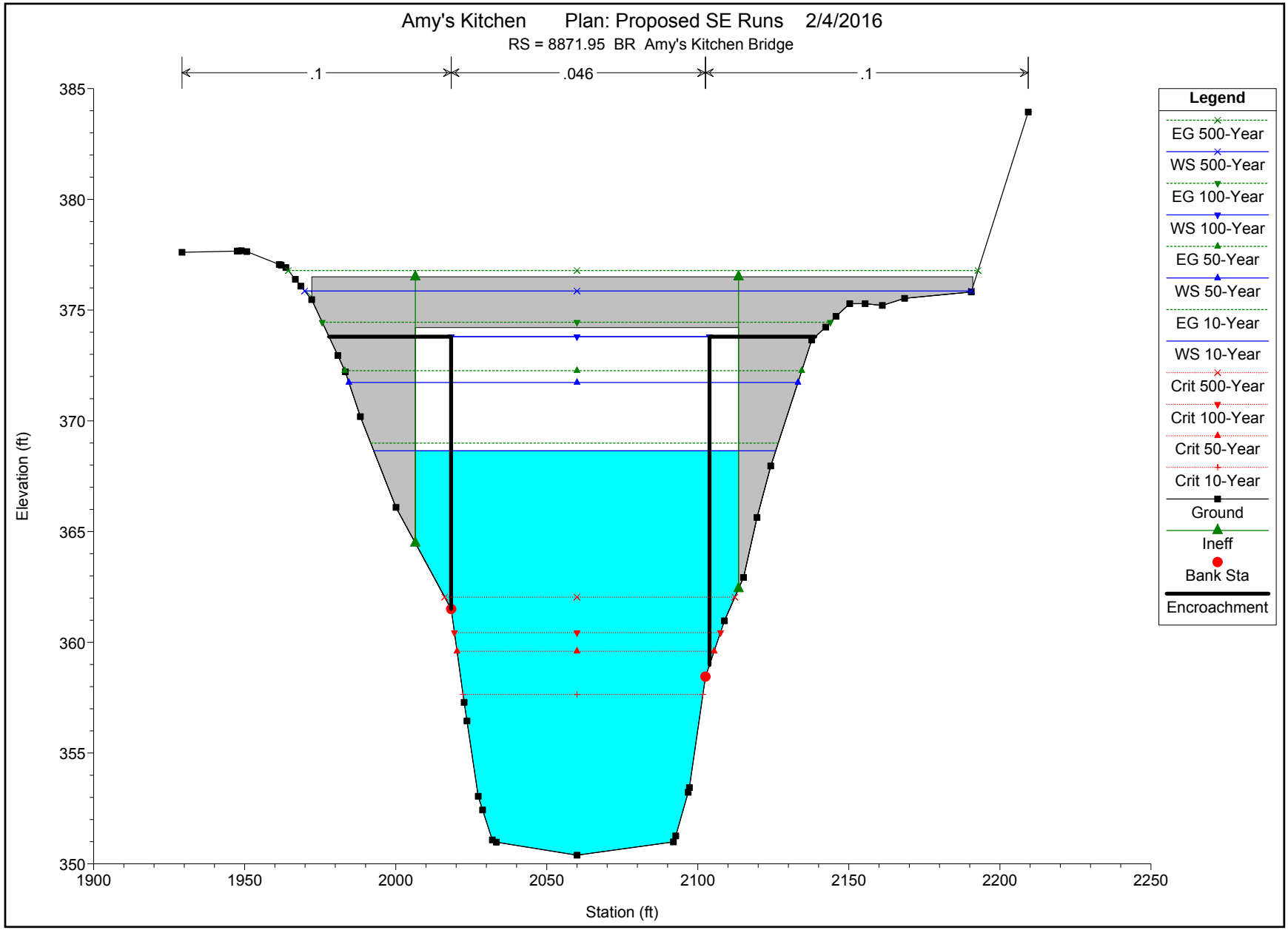
Amy's Kitchen Plan: Proposed SE Runs 2/4/2016
RS = 8871.95 BR Amy's Kitchen Bridge
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Station (ft)
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EG 100-Year
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EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Crit 500-Year
Crit 100-Year
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Ground
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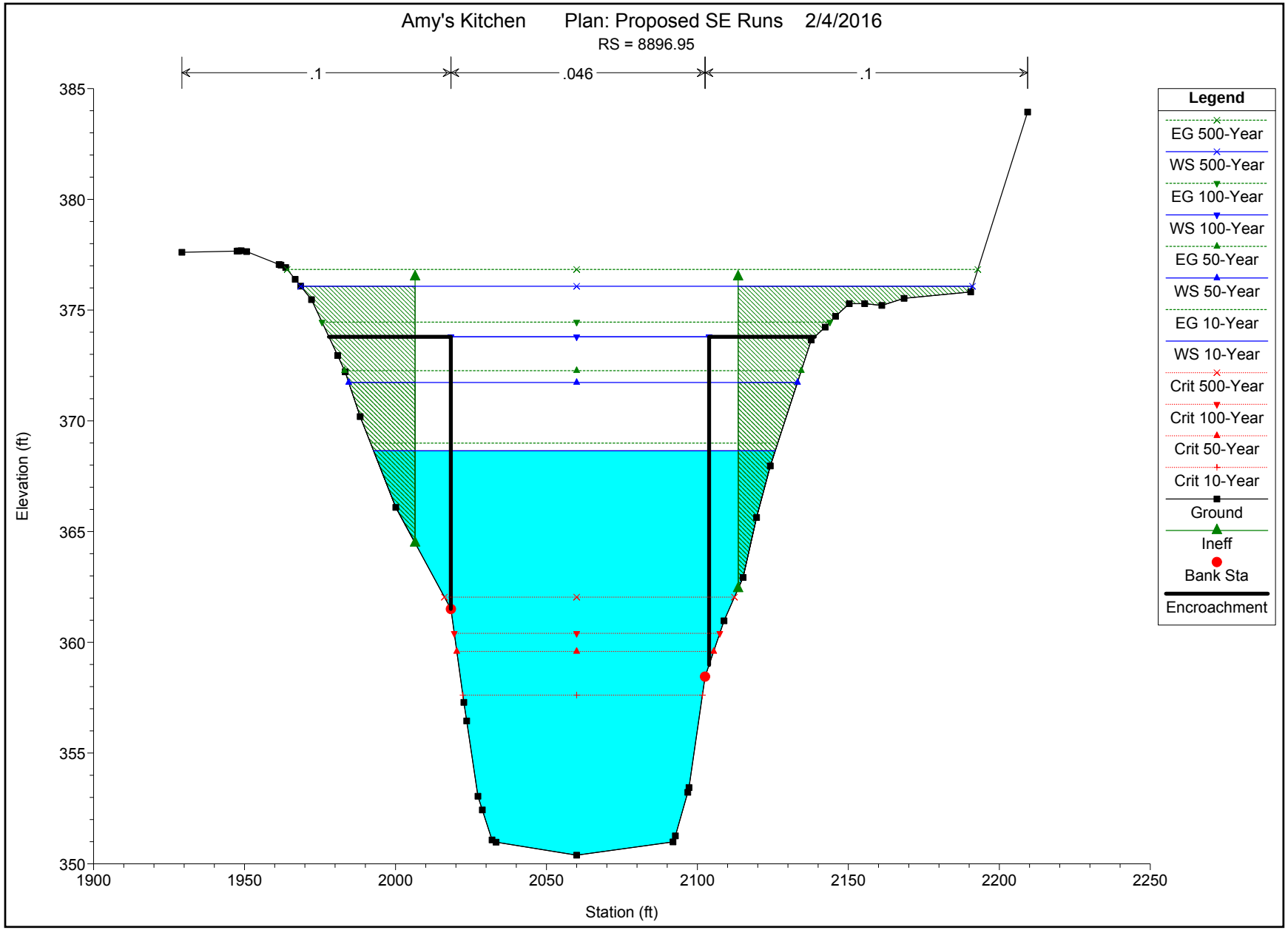
Encroachment


Amy's Kitchen Plan: Proposed SE Runs 2/4/2016
RS = 8896.95
.1
.046
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Elevation (ft)
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2250
Station (ft)
Legend
EG 500-Year
WS 500-Year
EG 100-Year
WS 100-Year
EG 50-Year
WS 50-Year
EG 10-Year
WS 10-Year
Crit 500-Year
Crit 100-Year
Crit 50-Year
Crit 10-Year
Ground
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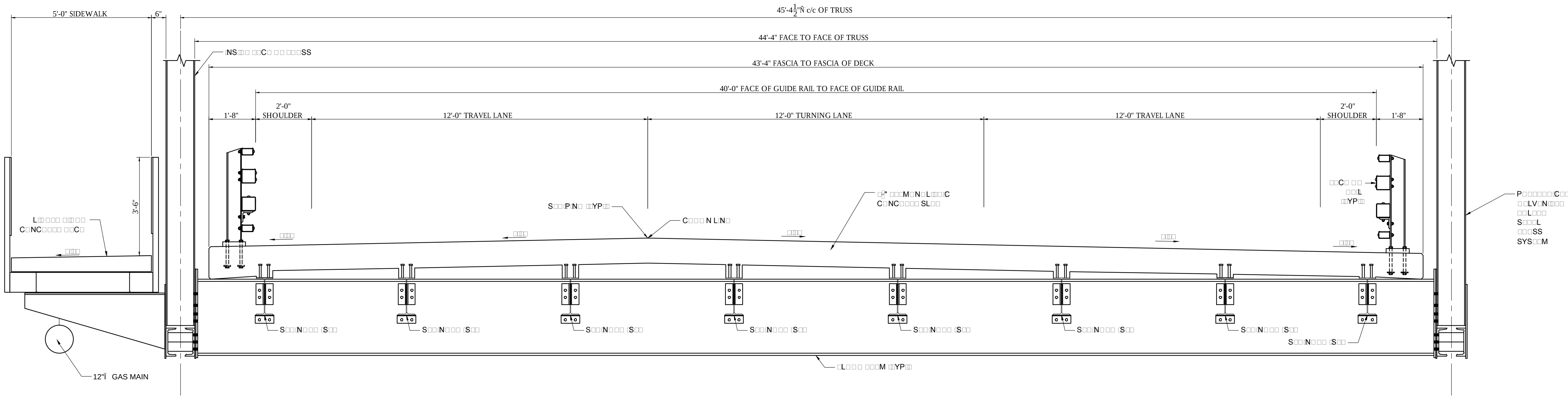
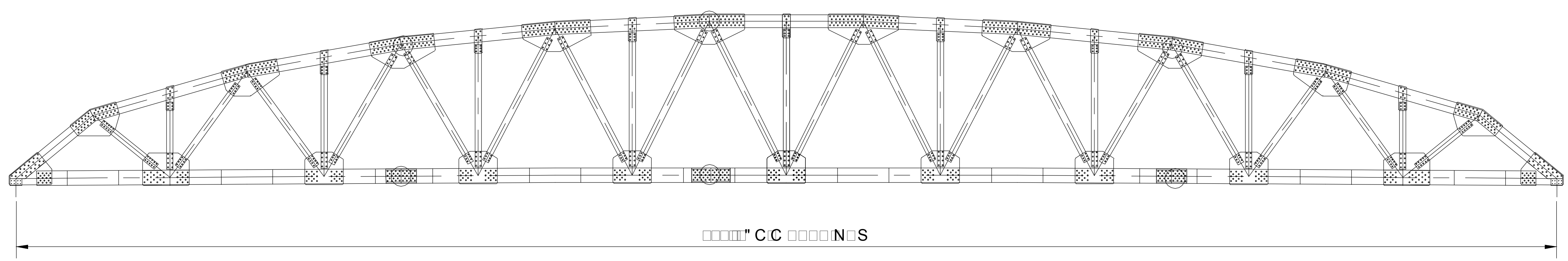
Encroachment

APPENDIX B
ALTERNATIVE STRUCTURE DETAILS



1 / CS-1 PROPOSED GALVANIZED STEEL BOLTED TRUSS BRIDGE TYPICAL SECTION

SCALE: 1" = 2'-0"



2 / CS-1 PROPOSED GALVANIZED STEEL BOLTED TRUSS BRIDGE ELEVATION

SCALE: NTS

SAMPLE ELEVATION

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State of N.Y. Certificate of Authorization: 0008671 / 0008821

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

BRETT D. REYNOLDS
NEW YORK LICENSED PROFESSIONAL ENGINEER - LICENSE NUMBER: 084906

PRELIMINARY
BRIDGE SECTIONS

FOR

AMY'S KITCHEN
SCIENCE OF THE SOUL
PIN:AW0 .0 .70P
NYS ROUTE 17M
U.S. ROUTE 6 (S.H. 95)
AT
TRAINING CENTER LANE
HARTLEY ROAD
TOWN OF GOSHEN
ORANGE COUNTY
NEW YORK

WESTCHESTER OFFICE
11 Bradhurst Avenue
Hawthorne, NY 10532
Phone: 914.347.7500
Fax: 914.347.7266

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/16	PAM	BDR

PROJECT NUMBER:	DRAWING NAME:
13001659B	C-XSEC

SHEET TITLE:
TRUSS BRIDGE CROSS SECTION AND ELEVATION

SHEET NUMBER:
1 of 1

AKRF

Environmental and Planning Consultants

34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

June 3, 2015

NY Natural Heritage Program
Information Services (NaturalHeritage@dec.ny.gov)
NYS DEC
625 Broadway, 5th Floor
Albany, NY 12233-4757

Re: Amy's Kitchen – Goshen NY

Dear NHP:

I am writing to request a search of your Natural Heritage Program files for any records of state-listed or federally-listed plant or animal species, or significant habitats in the vicinity of a proposed project located in the Town of Goshen, NY – as shown on the attached figure.

The proposed action is the commercial development of one or more of the four (4) parcels shown on the attached Aerial Map (**Figure 1**) – totaling approximately 350 acres. (Comprised of the Echo Lake Parcel: 173 acres; Ver Hage Parcel: 72 acres; Lipoff Wells Parcel: 12 acres; and Strong Farm Parcel: 96 acres.)

The geographic center of the project site is approximately 41.410974, -74.376342.

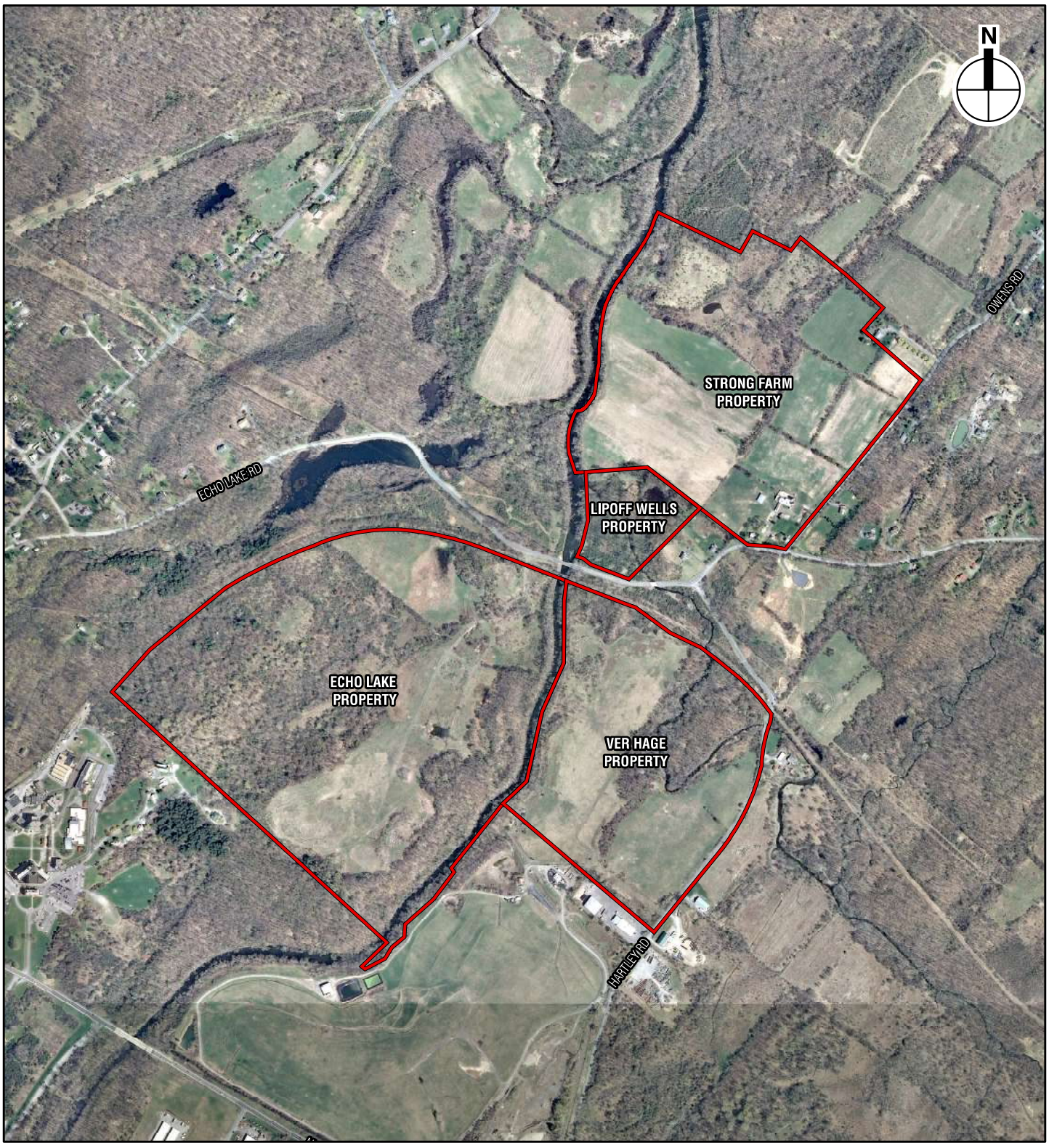
The information provided by NYNHP will be used for the environmental evaluations of the project. However, map(s) showing specific locations of sensitive species or habitats developed from lists provided by NYNHP will not be published in any document. Please send the requested information to me either via email or at the address above.

I can be reached by phone at (914)-922-2367 or by email at jnash@akrf.com if you have any questions regarding this request. Thank you for your time and assistance.

Sincerely,

James Nash
Technical Director

6/3/2015



Project Site

0 1,000 FEET

Amy's Kitchen
Science of the Soul

Aerial Map
Figure 1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

Joe Martens
Commissioner

July 01, 2015

Jim Nash
AKRF
34 South Broadway, Suite 401
White Plains, NY 10601

Re: Amy's Kitchen
Town/City: Goshen. County: Orange.

Dear Jim Nash :

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities, that our database indicates occur, or may occur, on your site or in the immediate vicinity of your site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Andrea Chaloux

Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program

652

The following state-listed animals have been documented in the vicinity of your project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about potential impacts of your project on these populations, how to avoid, minimize, or mitigate any impacts, and any permit considerations, contact the Wildlife Manager or the Fisheries Manager at the NYSDEC Regional Office for the region where the project is located. A listing of Regional Offices is at http://www.dec.ny.gov/about/558.html.

The following species have been documented within 2.5 mi of the project site. Individual animals may travel 2.5 mi from documented locations.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Mammals				
Indiana Bat *Maternity colony*	*Myotis sodalis*	Endangered	Endangered	11288

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

Environmental, Planning, and Engineering Consultants

34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

September 24, 2015

Mr. Daniel Whitehead
Regional Permit Administrator
New York State Department of Environmental Conservation, Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1696

Re: Consultation under Articles 11, 15, and 17 of the New York Environmental Conservation Law (ECL) for proposed Amy's Kitchen and Science of the Soul Development, Town of Goshen, NY.

Dear Mr. Whitehead:

We are writing on behalf of Amy's Kitchen and Science of the Soul to initiate consultation with your office under, at a minimum, Article 11 of the Environmental Conservation Law (ECL) (Incidental Take), Article 15 of the ECL (Protection of Waters and groundwater withdrawal), and Article 17 of the ECL (SPDES for wastewater and stormwater discharges) for a Proposed Project on a 350-acre Project Site in the Town of Goshen, New York (see **Figure 1a**).

Amy's Kitchen, Inc. ("Amy's Kitchen") proposes to construct an approximately 369,000 square-foot food manufacturing facility on an approximately 73-acre property (the "ver Hage property") located on Hartley Road, on the eastern bank of the Wallkill River. Amy's Kitchen proposes to use an existing water supply well on the "Lipoff property" to supply its proposed manufacturing facility. Science of the Soul proposes to construct a conference center comprising an approximately 200,000 square-foot open-air pavilion, an 80,000 square-foot Family Area Building, a 33,100 square-foot building, four (4) restroom buildings, two (2) caretaker cottages, and a 5-bedroom guest house on an approximately 195-acre property (the "Echo Lake property") located on NYS Route 17M and Echo Lake Road, on the western bank of the Wallkill River. Access to Amy's Kitchen is proposed to be provided from a new private driveway from NYS Route 17M that crosses the Wallkill River on a new private bridge. Cheechunk Creek runs through the ver Hage and Lipoff properties before discharging to the Wallkill River. Science of the Soul also owns the "Strong Farm property" on Owens Road which will be maintained as an agricultural use. See **Figure 1b** for location of Project Site properties. See **Figure 1c** for the proposed layout of the Amy's Kitchen and Science of the Soul facilities.

The two entities, Amy's Kitchen and Science of the Soul, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents. The Town of Goshen Planning Board is serving as the SEQRA Lead Agency and adopted a Final Scope for the Draft Environmental Impact Statement (DEIS) on July 16, 2015. Amy's Kitchen and Science of the Soul are currently preparing the DEIS.

We respectfully request an opportunity to meet with you to discuss any concerns you may have with respect to the Proposed Project and its potential to affect the Wallkill River and Cheechunk Creek, and three (3) federally- and state-listed animal species identified as having the potential to occur on the Project Site—Indiana Bat, northern long-eared bat and bog turtle. As described in more detail below, we

believe that the Proposed Project will have no significant adverse impact on the bog turtle and will not result in any incidental take on Indiana bat and northern long-eared bat, through compliance with the Federal seasonal prohibitions on tree clearing for Indiana bat and northern long-eared bat, conducting all tree clearing during the period from October 31 to March 31.

Background

The US Fish and Wildlife Service (USFWS) IPaC Trust Resources Report (June 23, 2015) for the Project Site, identifies three (3) federally-listed animal species as having the potential to occur within the Project Site — northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), and bog turtle (*Clemmys muhlenbergii*). Correspondence from the New York Natural Heritage Program (July 1, 2015) identifies a summer maternity colony of the Indiana bat within 2.5 miles of the Project Site.

To further investigate the potential for these species to occur on the Project Site, targeted surveys were conducted to assess the occurrence of northern long-eared bat, Indiana bat, and bog turtle. An acoustic survey of bats was conducted in accordance with the USFWS *Range-wide Indiana Bat Summer Survey Guidelines* (USFWS 2015) over an eight (8) detector-night survey period between August 6 and 15, 2015 (see **Appendix A**). Phase 1 bog turtle surveys were conducted in accordance with the *Bog Turtle Northern Population Recovery Plan* (USFWS, 2001) in September 2014 and August 2015 (see **Appendix B** and **Appendix C**).

Summary of Findings

Indiana Bat

The Project Site contains several habitat types (see **Figure 2**) with which Indiana bats may be associated during the summer breeding season, including mature forest, stream corridors, and old fields with forested edges. Forested habitats located on the Project Site and the dominant tree species of each habitat include: successional southern hardwoods (cottonwood, A. sycamore, black walnut, black cherry, honey locust, sugar maple, black oak white oak, scarlet oak, white ash), floodplain forest (green ash, pin oak, red maple, black willow, silver maple), and beech-maple mesic forest (American beech, red oak, black birch) (Edinger et al 2014). **Figure 3** provides photos of the forested conditions on all parcels that comprise the Project Site. Forested portions of the Site are second growth, at an early successional stage.

USFWS-approved automated species identification software recognized calls of Indiana bat in acoustic surveys conducted on the Project Site. The acoustic bat survey (**Appendix A**) recorded calls recognized as Indiana bat on the Project Site during the August 2015 survey, indicating presence of this species in August and the potential for summer roosting habitat to be present within the forested habitats of the Project Site. Approximately 60 acres of forested habitat on the Project Site is anticipated to be cleared for the Proposed Project. Minimal disturbance would occur on the Lipoff property where bat activity was substantially higher, as indicated by recorded bat calls, than the other two monitoring locations within the Project Site. Consistent with the *USFWS NY Field Office Indiana Bat Project Fact Sheet* (USFWS 2012) all tree clearing activity will take place during the period from October 31 to March 31 to avoid potential impacts to Indiana bat during the summer roosting period. After construction, approximately 120 acres of forested habitat would remain on the Project Site, including a wooded buffer along most of the Wallkill River on both banks that would be generally 100 feet wide. With these measures in place, we conclude that construction of the Proposed Project would not result in any incidental take for Indiana bat.

Northern Long-Eared Bat

USFWS-approved automated species identification software recognized calls of northern long-eared bat in acoustic surveys conducted on the Project Site. The acoustic bat survey (**Appendix A**) recorded calls recognized as northern long-eared bat on the Project Site during the August 2015 survey, indicating presence of this species in August and the potential for summer roosting habitat to be present within the forested habitats of the Project Site. Approximately 60 acres of forested habitat on the Project Site are anticipated to be cleared for the Proposed Project (see **Figure 2**). Minimal disturbance would occur on the Lipoff property where bat activity was substantially higher, as indicated by recorded bat calls, than the

other two monitoring locations within the Project Site. With the proposed restriction of tree clearing to October 31 to March 31 and the preservation of approximately 120 acres of woodland within the Project Site, we conclude that the Proposed Project would not result in any incidental take for northern long-eared bat.

Bog Turtle

The bog turtle is a federally-listed *threatened* and New York State-listed *endangered* species. The bog turtle is a habitat specialist that relies on early successional, groundwater-driven, emergent wetlands. Primary bog turtle habitat typically consists of wetlands with wet, mucky soils, and open, sunny, emergent vegetation. The classic example of bog turtle habitat is a spring-fed meadow with dominant vegetation consisting of low pedestal forming grasses and sedges, often containing a scrub-shrub wetland component, and with soft mud or "mucky" soils (USFWS 2001). Parts of the Project Site, specifically the sedge meadow on the Strong Farm property and the shallow emergent marsh on the Lipoff property, were identified as potential habitat for bog turtles. Therefore, a formal Phase I Bog Turtle Habitat Survey was conducted in August 2015 (see **Appendix C**) on these parcels by a USFWS-recognized surveyor (Jason Tesauro Consulting, Inc.). A prior bog turtle habitat investigation of the Echo Lake property, which also contains areas of emergent marsh habitat, was conducted in 2014 (TES, Inc) (see **Appendix B**). These assessments found no habitats suitable for bog turtle anywhere on the Project Site. Therefore, it is the applicant's opinion that no impacts to the bog turtle or its habitat would occur with implementation of the Proposed Project.

We hope that the information provided in this letter and its appendices is sufficient for NYSDEC to concur with our conclusions that the Proposed Project would either have no significant adverse impact on bog turtle or will avoid, to the maximum extent practicable, any incidental take of Indiana bat and northern long-eared bat through compliance with seasonal prohibitions on tree clearing for these two species. We would welcome the opportunity to meet with you to discuss this matter, as well as the potential for the Proposed Project to affect surface waters, further.

Sincerely,

AKRF, INC.

Sandy Collins
Vice President

Graham L. Trelstad, AICP
Senior Vice President, Director of Planning

cc: Martin Brand, NYSDEC Region 3 Director

Figures

- Figure 1a: Project Location
- Figure 1b: Properties Comprising the Project Site
- Figure 1c: Proposed Project
- Figure 2: Vegetation Communities
- Figure 3: Photo Exhibit

Appendices:

- A: Acoustic Bat Survey Report, Amy's Kitchen Project Site, Goshen, NY, AKRF, Inc., September, 2015.
- B: Federal Endangered Species and Bank Swallow Assessment, Terrestrial Environmental Specialists, Inc., September, 2014.
- C: Bog Turtle Habitat Assessment, Jason Tesauro Consulting, LLC, September, 2015.

---------- Forwarded message ----------
From: **Crist, Rebecca S (DEC)** <rebecca.crist@dec.ny.gov>
Date: Fri, Sep 25, 2015 at 11:31 AM
Subject: Amy's Kitchen - Request for Article 11 jurisdiction
To: "gtrelstad@akrf.com" <gtrelstad@akrf.com>

Mr. Trelstad,

I have received your request dated September 24, 2015. I am the assigned analyst for the DEC review of this project for SEQR and permitting, please address all submissions to my attention and reference the DEC pre-application ID # 3-3330-00231/00001, /00002.

Please note, as previously indicated in the DEC response to SEQR Lead Agency and revised Draft Scope, the Wallkill River is Class C. A protection of waters permit is not required to disturb the bed or banks of a Class C stream without a trout standard. The stream that runs through the ver Hage and Lipoff properties is identified in the DEC regulations as the Rio Grande, NYS Waters Index # H-139-13-53, Class C. Again, no permit is required to disturb the bed and banks. Any work in the streams or adjacent wetlands which requires a Section 404 permit from the Army Corps of Engineers, will require a Section 401 Water Quality Certification from DEC.

I am sending the hard copy to our endangered species biologist for review. As soon as our biologist has reviewed the submission, we can arrange a meeting to discuss.

Can you please provide an electronic copy of the submission for my records?

Rebecca Crist
Deputy Permit Administrator, Division of Environmental Permits

New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, NY 12561
P: (845) 256-3014 | F: (845) 255-4659 | rebecca.crist@dec.ny.gov
www.dec.ny.gov
| | |

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September 24, 2015

Patricia Cole
Deputy Field Supervisor
New York Field Office
U.S. Fish and Wildlife Service
3817 Luker Road
Cortland, NY 13045

Re: Threatened or Endangered Species Consultation for proposed Amy's Kitchen and Science of the Soul Development, Town of Goshen, NY.

Dear Ms. Cole:

We are writing on behalf of Amy's Kitchen and Science of the Soul to initiate consultation with your office in accordance with the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.) with respect to three (3) federally-listed animal species identified as having the potential to occur on a 350-acre project site in the Town of Goshen, New York (see **Figure 1a**).

Amy's Kitchen, Inc. ("Amy's Kitchen") proposes to construct an approximately 369,000 square-foot food manufacturing facility on an approximately 73-acre property (the "ver Hage property") located on Hartley Road. Amy's Kitchen proposes to use an existing water supply well on the "Lipoff property" to supply its proposed manufacturing facility. Science of the Soul proposes to construct a conference center comprising an approximately 200,000 square-foot open-air pavilion, an 80,000 square-foot Family Area Building, a 33,100 square-foot building, four (4) restroom buildings, two (2) caretaker cottages, and a 5-bedroom guest house on an approximately 195-acre property (the "Echo Lake property") located on NYS Route 17M and Echo Lake Road. Science of the Soul also owns the "Strong Farm property" on Owens Road which will be maintained as an agricultural use. (See **Figure 1b** for location of Project Site properties).

The two entities, Amy's Kitchen and Science of the Soul, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents. The Town of Goshen Planning Board is serving as the SEQRA Lead Agency and adopted a Final Scope for the Draft Environmental Impact Statement (DEIS) on July 16, 2015. Amy's Kitchen and Science of the Soul are currently preparing the DEIS.

We respectfully request an opportunity to meet with you to discuss any concerns you may have with respect to the Proposed Project and its potential impacts on the Indiana Bat, northern long-eared bat and bog turtle. As described in more detail below, we believe that the Proposed Project will have no significant adverse impact on the bog turtle and will not result in any incidental take on Indiana bat and northern long-eared bat, through compliance with the seasonal prohibitions on tree clearing for Indiana bat and northern long-eared bat, conducting all tree clearing during the period from October 31 to March 31.

Background

The US Fish and Wildlife Service (USFWS) IPaC Trust Resources Report (June 23, 2015) for the Project Site, identifies three (3) federally-listed animal species as having the potential to occur within the Project Site — northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), and bog turtle (*Clemmys muhlenbergii*). Correspondence from the New York Natural Heritage Program (July 1, 2015) identifies a summer maternity colony of the Indiana bat within 2.5 miles of the Project Site.

To further investigate the potential for these species to occur on the Project Site, targeted surveys were conducted to assess the occurrence of northern long-eared bat, Indiana bat, and bog turtle. An acoustic survey of bats was conducted in accordance with the USFWS *Range-wide Indiana Bat Summer Survey Guidelines* (USFWS 2015) over an eight (8) detector-night survey period between August 6 and 15, 2015 (see **Appendix A**). Phase 1 bog turtle surveys were conducted in accordance with the *Bog Turtle Northern Population Recovery Plan* (USFWS, 2001) in September 2014 and August 2015 (see **Appendix B** and **Appendix C**).

Summary of Findings

Indiana Bat

The Project Site contains several habitat types (see **Figure 2**) with which Indiana bats may be associated during the summer breeding season, including mature forest, stream corridors, and old fields with forested edges. Forested habitats located on the Project Site and the dominant tree species of each habitat include: successional southern hardwoods (cottonwood, A. sycamore, black walnut, black cherry, honey locust, sugar maple, black oak white oak, scarlet oak, white ash), floodplain forest (green ash, pin oak, red maple, black willow, silver maple), and beech-maple mesic forest (American beech, red oak, black birch) (Edinger et al 2014). **Figure 3** provides photos of the forested conditions on all parcels that comprise the Project Site. Forested portions of the Site are second growth, at an early successional stage.

USFWS-approved automated species identification software recognized calls of Indiana bat in acoustic surveys conducted on the Project Site. The acoustic bat survey (**Appendix A**) recorded calls recognized as Indiana bat on the Project Site during the August 2015 survey, indicating presence of this species in August and the potential for summer roosting habitat to be present within the forested habitats of the Project Site. Approximately 60 acres of forested habitat on the Project Site is anticipated to be cleared for the Proposed Project. Minimal disturbance would occur on the Lipoff property where bat activity was substantially higher, as indicated by recorded bat calls, than the other two monitoring locations within the Project Site. Consistent with the *USFWS NY Field Office Indiana Bat Project Fact Sheet* (USFWS 2012) all tree clearing activity will take place during the period from October 31 to March 31 to avoid potential impacts to Indiana bat during the summer roosting period. After construction, approximately 120 acres of forested habitat would remain on the Project Site, including a wooded buffer along most of the Wallkill River on both banks that would be generally 100 feet wide. With these measures in place, we conclude that construction of the Proposed Project would not result in any incidental take for Indiana bat.

Northern Long-Eared Bat

USFWS-approved automated species identification software recognized calls of northern long-eared bat in acoustic surveys conducted on the Project Site. The acoustic bat survey (**Appendix A**) recorded calls recognized as northern long-eared bat on the Project Site during the August 2015 survey, indicating presence of this species in August and the potential for summer roosting habitat to be present within the forested habitats of the Project Site. Approximately 60 acres of forested habitat on the Project Site are anticipated to be cleared for the Proposed Project (see **Figure 2**). Minimal disturbance would occur on the Lipoff property where bat activity was substantially higher, as indicated by recorded bat calls, than the other two monitoring locations within the Project Site. With the proposed restriction of tree clearing to October 31 to March 31 and the preservation of approximately 120 acres of woodland within the Project Site, we conclude that the Proposed Project would not result in any incidental take for northern long-eared bat.

Bog Turtle

The bog turtle is a federally-listed *threatened* and New York State-listed *endangered* species. The bog turtle is a habitat specialist that relies on early successional, groundwater-driven, emergent wetlands. Primary bog turtle habitat typically consists of wetlands with wet, mucky soils, and open, sunny, emergent vegetation. The classic example of bog turtle habitat is a spring-fed meadow with dominant vegetation consisting of low pedestal forming grasses and sedges, often containing a scrub-shrub wetland component, and with soft mud or "mucky" soils (USFWS 2001). Parts of the Project Site, specifically the sedge meadow on the Strong Farm property and the shallow emergent marsh on the Lipoff property, were identified as potential habitat for bog turtles. Therefore, a formal Phase I Bog Turtle Habitat Survey was conducted in August 2015 (see **Appendix C**) on these parcels by a USFWS-recognized surveyor (Jason Tesauro Consulting, Inc.). A prior bog turtle habitat investigation of the Echo Lake property, which also contains areas of emergent marsh habitat, was conducted in 2014 (TES, Inc) (see **Appendix B**). These assessments found no habitats suitable for bog turtle anywhere on the Project Site. Therefore, it is the applicant's opinion that no impacts to the bog turtle or its habitat would occur with implementation of the Proposed Project.

We hope that the information provided in this letter and its appendices is sufficient for USFWS to concur with our conclusions that the Proposed Project would either have no significant adverse impact on bog turtle or will avoid, to the maximum extent practicable, any incidental take of Indiana bat and northern long-eared bat through compliance with seasonal prohibitions on tree clearing for these two species. We would welcome the opportunity to meet with you to discuss this matter further.

Sincerely,

AKRF, INC.

Sandy Collins
Vice President

Graham L. Trelstad, AICP
Senior Vice President, Director of Planning

cc: A. Ley, C. Seewagen

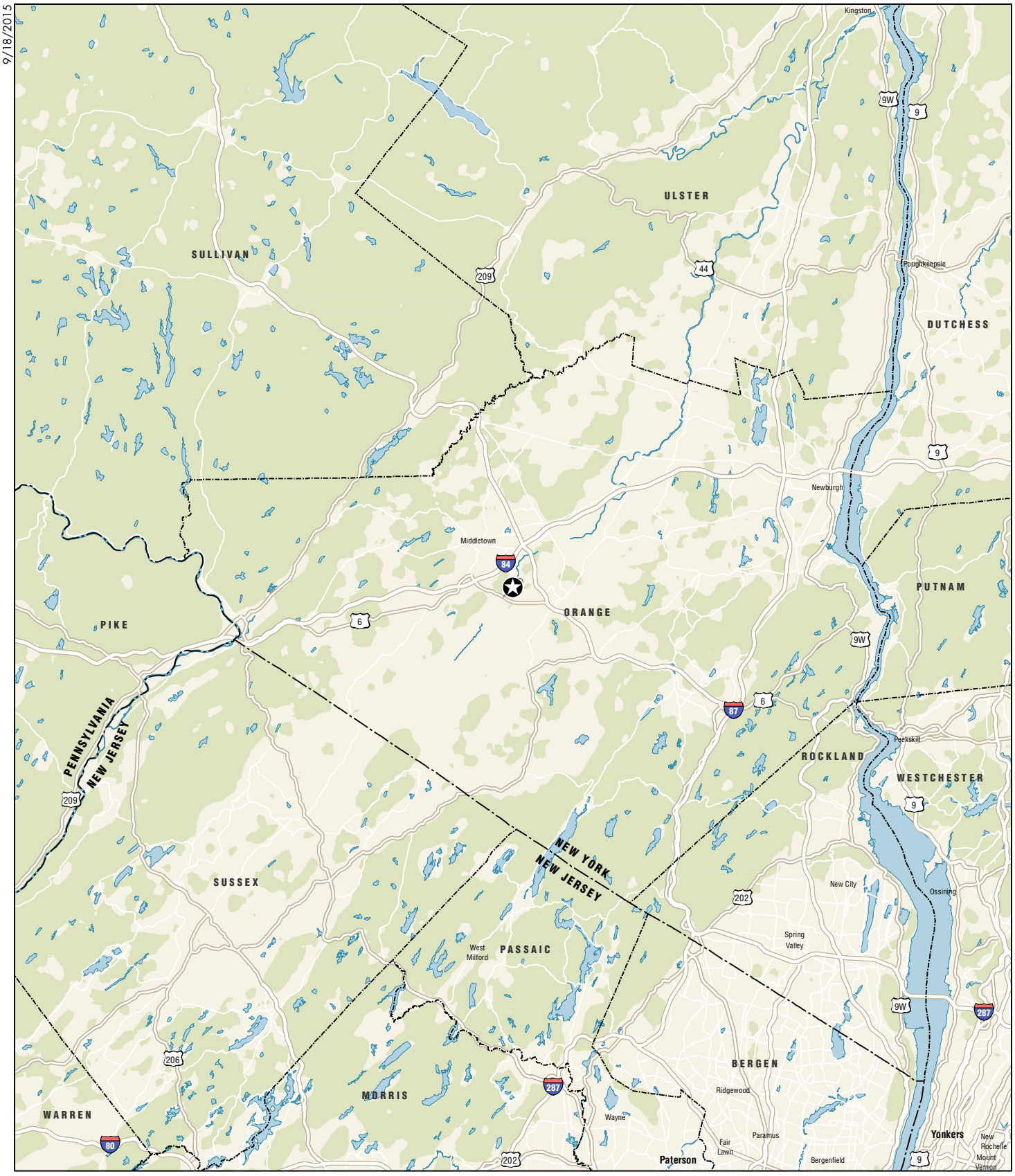
Figures

- Figure 1a: Project Location
- Figure 1b: Properties Comprising the Project Site
- Figure 2: Vegetation Communities
- Figure 3: Photo Exhibit

Appendices:

- A: Acoustic Bat Survey Report, Amy's Kitchen Project Site, Goshen, NY, AKRF, Inc., September, 2015.
- B: Federal Endangered Species and Bank Swallow Assessment, Terrestrial Environmental Specialists, Inc., September, 2014.
- C: Bog Turtle Habitat Assessment, Jason Tesauro Consulting, LLC, September, 2015.

9/18/2015

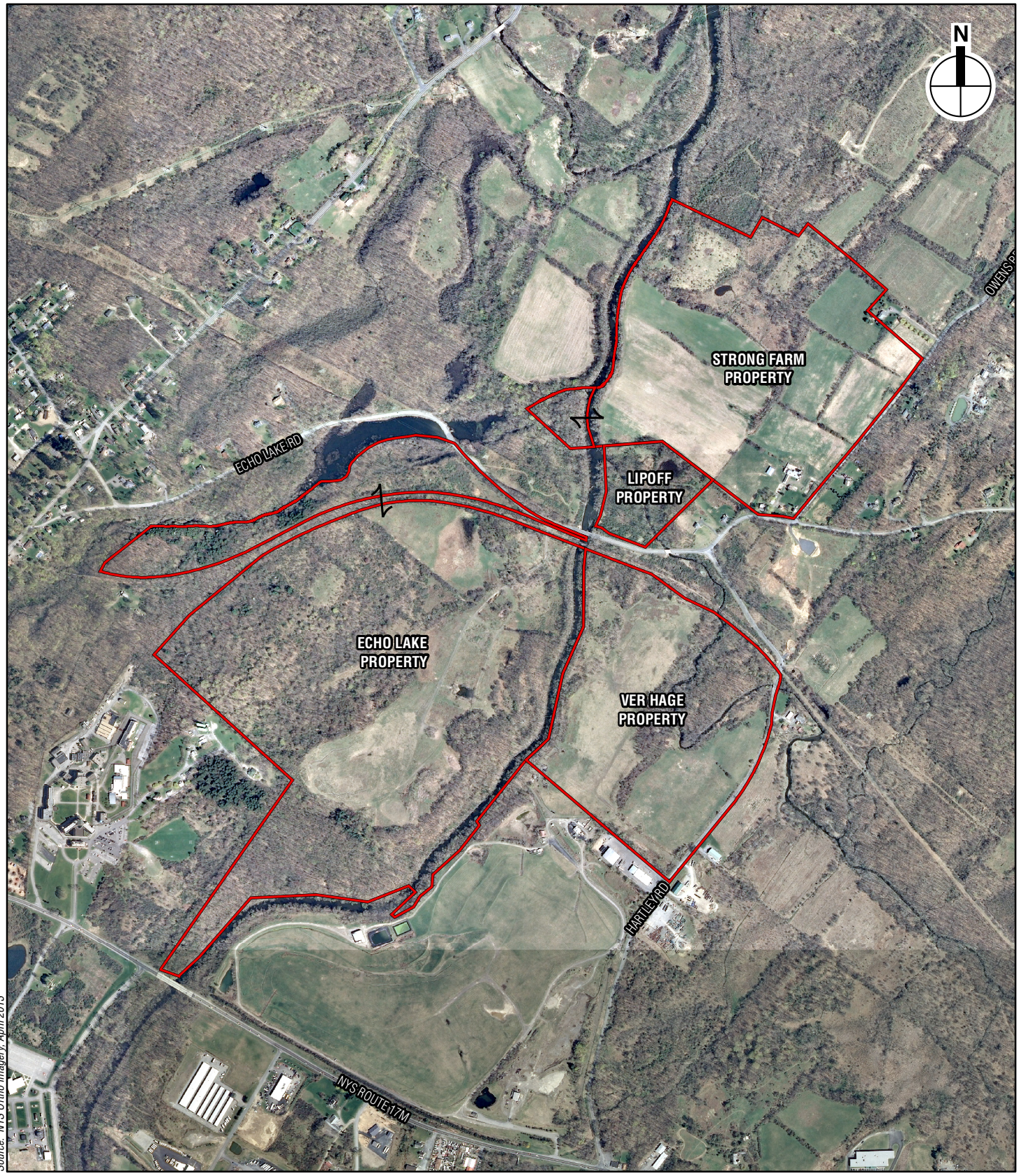


Project Location

0 10 MILES

Amy's Kitchen
Science of the Soul

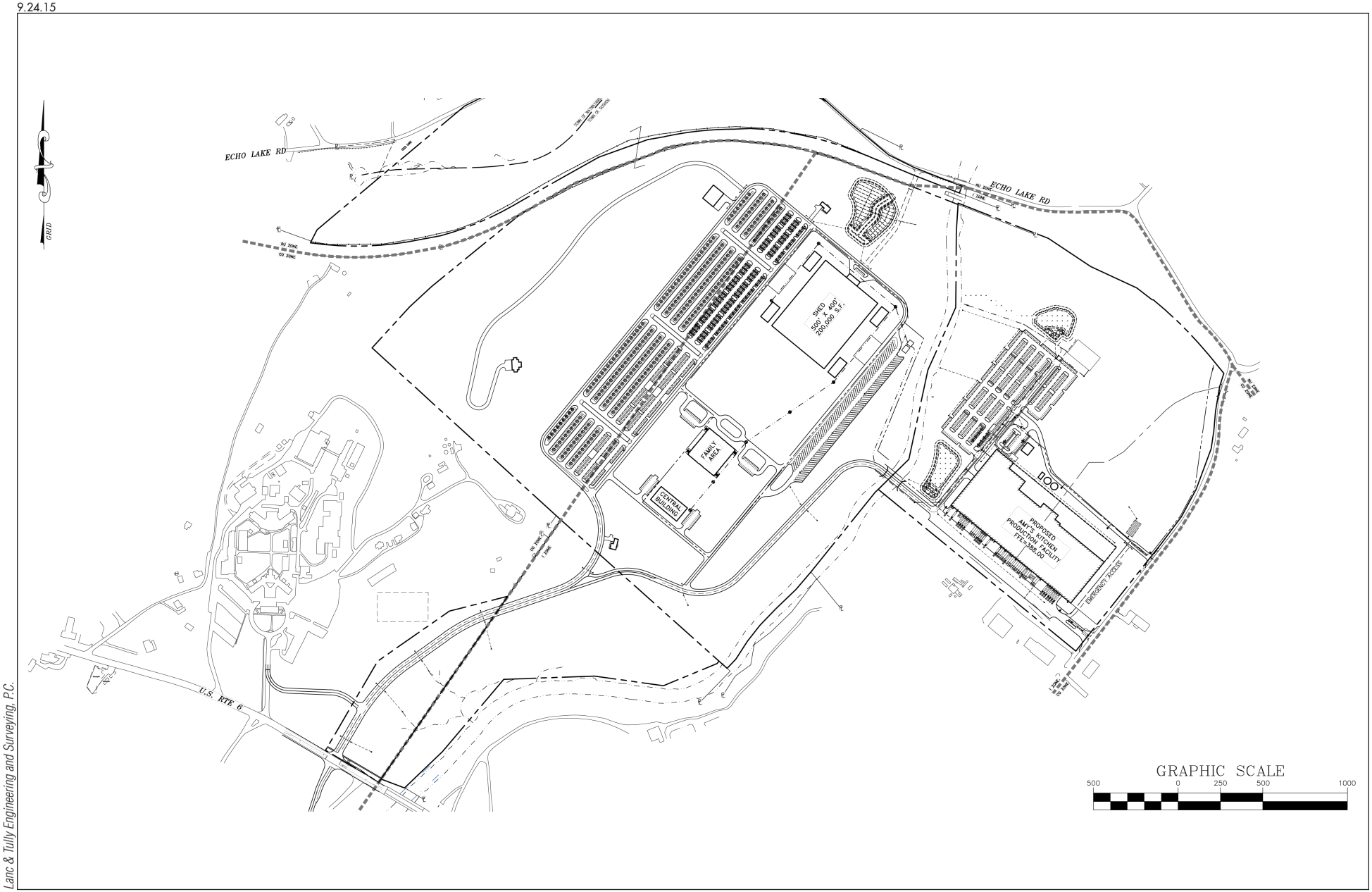
Regional Location
Figure 1a



Amy's Kitchen
Science of the Soul

Aerial Map
Figure 1b

9.24.15



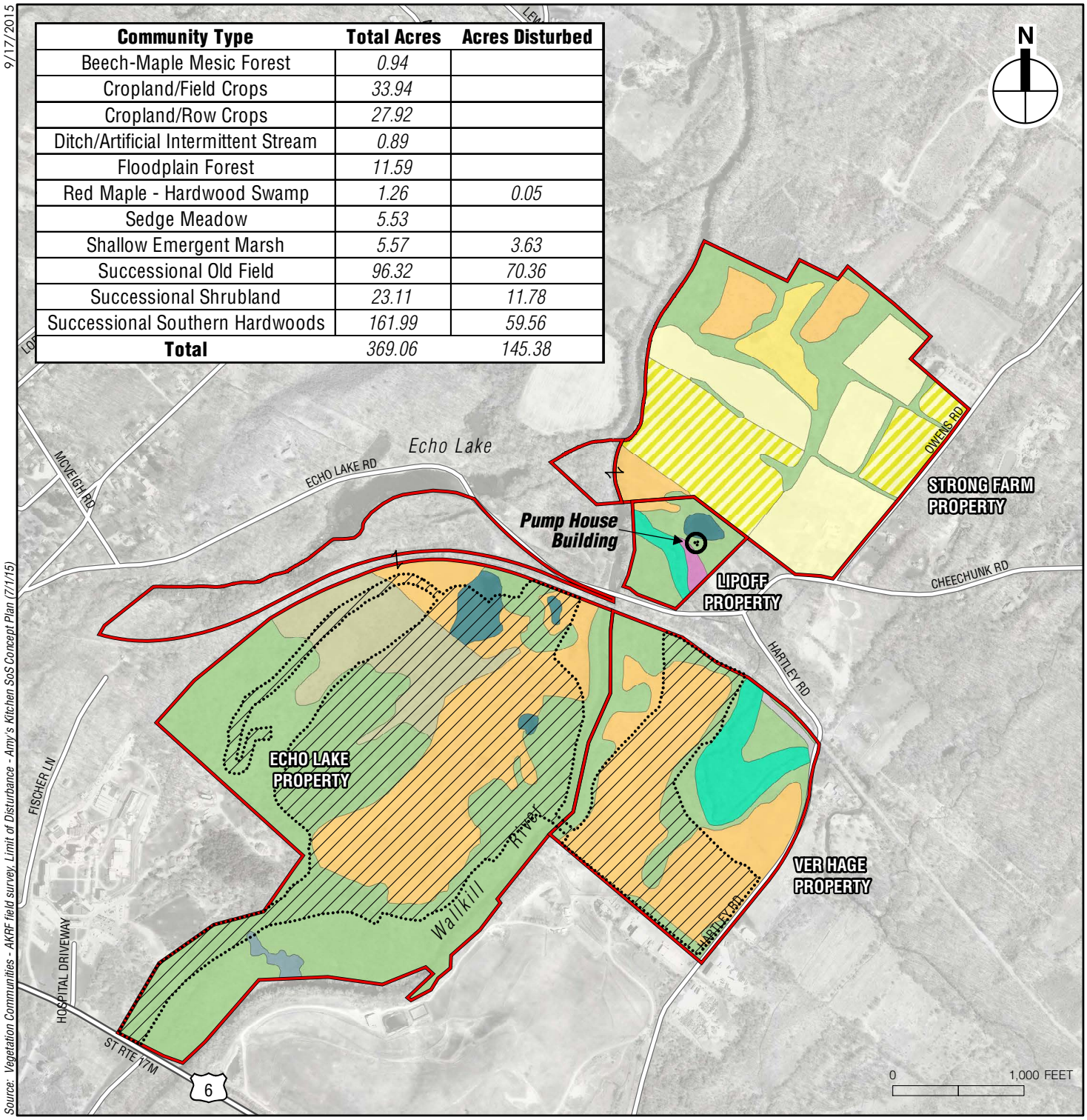
Lanc & Tully Engineering and Surveying, P.C.

Overall Site Layout

Figure 1c

Amy's Kitchen
Science of the Soul

Community Type	Total Acres	Acres Disturbed
Beech-Maple Mesic Forest	0.94	
Cropland/Field Crops	33.94	
Cropland/Row Crops	27.92	
Ditch/Artificial Intermittent Stream	0.89	
Floodplain Forest	11.59	
Red Maple - Hardwood Swamp	1.26	0.05
Sedge Meadow	5.53	
Shallow Emergent Marsh	5.57	3.63
Successional Old Field	96.32	70.36
Successional Shrubland	23.11	11.78
Successional Southern Hardwoods	161.99	59.56
Total	369.06	145.38



Project Site

Approximate Limit of Disturbance

Vegetation Communities

- *Beech-Maple Mesic Forest*
- *Cropland/Field Crops*
- *Cropland/Row Crops*
- *Ditch/Artificial Intermittent Stream*
- *Floodplain Forest*
- *Red Maple - Hardwood Swamp*
- *Sedge Meadow*
- *Shallow Emergent Marsh*
- *Successional Old Field*
- *Successional Shrubland*
- *Successional Southern Hardwoods*

Amy's Kitchen
Science of the Soul

Vegetation Communities
Figure 2

Ver hage floodplain forest near Cheechunk **1**

Ver hage floodplain forest near Wallkill **2**

Ver hage upland forest and heritage trail **3**

Ver hage upland forest **4**

Ver hage floodplain forest near Cheechunk **5**

Lipoff upland forest between Wallkill and Cheechunk **6**

Lipoff floodplain forest near Cheechunk **7**

Lipoff floodplain forest near Cheechunk **8**

Strong farm floodplain forest and agricultural field **9**

Strong farm pond and upland forest **10**

Strong farm forested wetland **11**

Echo Lake Route 17M upland forest **12**

Echo Lake Route 17M forested wetland **13**

ACOUSTIC BAT SURVEY REPORT
AMY'S KITCHEN PROJECT SITE
GOSHEN, NY

September 2015

Prepared for:

Amy's Kitchen
1650 Corporate Circle, Suite 200
Petaluma, CA 94954-6970

Prepared by:

AKRF, Inc.
34 South Broadway
White Plains, NY 10601

Submitted to:

U.S. Fish & Wildlife Service
New York Field Office
3817 Luker Road
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New York State Department of
Environmental Conservation
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EXECUTIVE SUMMARY

An acoustic survey of bats was conducted to help determine the presence or probable absence of the federally-listed Indiana bat (*Myotis sodalis*; Endangered) and northern long-eared bat (*M. septentrionalis*; Threatened) on an approximately 350 acre project site comprising four parcels in the town of Goshen, NY (Orange County). Both species are listed by the U.S. Fish and Wildlife Service as occurring within Orange County and there is suitable habitat on the project site to potentially support both species. In addition, there is a record of an Indiana bat maternity colony approximately 2.5 miles from the project site. In accordance with the the USFWS *2015 Range-wide Indiana Bat Summer Survey Guidelines*, acoustic recordings were collected at three different locations within the project site over an 8 detector-night survey period between August 6 and 15, 2015. The recordings were then processed using the automated species identification features of Kaleidoscope Pro Version 3.1.2 and EchoClass Version 3.1. A total of 919 recordings collected during the survey were recognized as bat call sequences by Kaleidoscope Pro and 662 recordings were recognized as bat call sequences by EchoClass. Six species of bats were identified by one or both programs with a significant level of confidence (i.e., Maximum Likelihood Estimate [MLE] < 0.05) at one or more of the recording locations, including Indiana bat and northern long-eared bat. There was agreement between Kaleidoscope Pro and EchoClass that Indiana bats and northern long-eared bats were recorded at Site 1, whereas only EchoClass identified the Indiana bat as also occurring at Site 2. Neither software program detected Indiana bats or northern log-eared bats at Site 3 with a significant level of confidence. However, because the home ranges of Indiana and northern long-eared bats can span hundreds of acres and their daily movements can be multiple miles in length, the individuals detected at Site 1 and Site 2 are likely to also utilize other portions of the project site for roosting and/or foraging during the course of their summer breeding period. Given that numerous call sequences were identified as Indiana bat and northern long-eared bat with a significant level of confidence and there was a large degree of agreement between two species identification software programs, it can be concluded that it is likely that Indiana and northern long-eared bats are present within the project site.

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A. BACKGROUND

An acoustic survey of bats was conducted on an approximately 350 acre project site comprising four parcels in the town of Goshen, NY (Orange County) (**Figure 1**). The project site contains habitat types with which the federally-listed Indiana bat (*Myotis sodalis*; Endangered), and to a lesser extent, northern long-eared bat (*M. septentrionalis*; Threatened), are associated during their summer breeding season, including hardwood forest fragments, stream corridors, and old fields with shelter belts and forest edges. Both species are listed by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) System as occurring within Orange County and the New York Natural Heritage Program (NYNHP) has a record of an Indiana bat maternity colony within 2.5 miles of the project site. For these reasons, an acoustic bat survey was conducted in accordance with the USFWS *2015 Range-wide Indiana Bat Summer Survey Guidelines* (USFWS 2015a) to help determine the presence or absence of these species within the project site.

B. NATURAL HISTORY AND POPULATION STATUS OF THE INDIANA BAT AND NORTHERN LONG-EARED BAT

INDIANA BAT

The Indiana bat is a cave-hibernating, insectivorous bat that is federally- and New York State-listed as Endangered. Its life cycle consists of two primary phases- reproduction and hibernation. Indiana bats emerge from the caves or mines in which they hibernate in early spring; males disperse and remain solitary until mating season at the end of the summer, and pregnant females form maternity colonies in which to rear their young. Maternity roosts, roosting sites of post-lactating females, and roosting sites of solitary males are usually under loose bark or in the crevices of trees. Indiana bat roosting sites have been documented in numerous species of deciduous trees; tree availability, diameter, height, bark characteristics, and sun exposure appear to be more important factors in roost site selection than tree species (Kurta 2004, USFWS 2007). Roost trees in New York (Britzke et al. 2006) and elsewhere (USFWS 2007) are typically in trees with a diameter greater than 16 inches and a height taller than 52 feet, but roosts in much smaller trees are not uncommon (USFWS 2007). Trees are usually dead or nearly dead and decayed (Menzel et al. 2001, Kitchell 2008).

Indiana bats often roost near forest gaps or edges where trees receive direct sunlight for much of the day (Callahan et al. 1997, Menzel et al. 2001). Habitats used by Indiana bats during summer are varied and include riparian, bottomland/floodplain, and upland forests (Humphrey et al. 1977, Britzke et al. 2006, Watrous et al. 2006) often within highly fragmented agricultural landscapes (Murray and Kurta 2004, Watrous et al. 2006, USFWS 2007). Maternity colonies are commonly located in areas with abundant natural or artificial freshwater sources (Carter et al. 2002, Kurta et al. 2002, Watrous et al. 2006, and USFWS 2007). Spring and autumn habitats of Indiana bats have not been well described, but appear to be largely similar to their summer habitat (Britzke et al. 2006, USFWS 2007).

During autumn, Indiana bats mate and deposit fat stores in preparation for winter hibernation. Hibernacula are typically in caves or abandoned mines where ambient temperatures remain above freezing (USFWS 2007). There are only 10 Indiana bat hibernacula known in New York State, none of which are located within Orange County (NYNHP 2013). Four of these hibernacula, however, are located in neighboring Ulster County (NYNHP 2013), and Indiana

bats may migrate upwards of 100 miles from their hibernaculum to their summer territory (Winhold and Kurta 2006, USFWS 2011).

The Indiana bat has recently undergone steep population declines due to the outbreak of White-nose Syndrome (WNS) - an emerging infectious disease caused by the fungus *Geomyces destructans*, which was first discovered in Howe's Cave in New York in 2006 and has since spread to over 200 bat hibernacula in more than 25 states and Canadian provinces (Reeder and Moore 2013, PAGC 2015). Bats infected with WNS suffer structural damage to their wing membranes and exhibit aberrant hibernation behavior and physiology, the consequences of which are usually fatal (Reeder and Moore 2013). Range-wide, Indiana bat populations have been declining by approximately 10% per year since the outbreak of WNS in 2006 (Thogmartin et al. 2012). In New York State, pre- and post-WNS count data on hibernating Indiana bats showed an average statewide population decline of 72% between 2006 and 2011 (Turner et al. 2011). Population models indicate that extirpation of the Indiana bat is likely to be caused by WNS throughout much of the species' range (Thogmartin et al. 2013).

NORTHERN LONG-EARED BAT

The northern long-eared bat is also a temperate, insectivorous bat that hibernates in caves, mines, and the like during winter, and then emerges in early spring to disperse to summer habitat. Like Indiana bats, the males remain solitary until mating season at the end of the summer and the pregnant females form maternity colonies in which to rear their pups. Summer habitat typically includes mature, closed-canopy, upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008), usually within about 60 miles of their hibernaculum (Caceras and Barclay 2000, USFWS 2014).

The northern long-eared bat is considered to be an interior forest-dependent species that is sensitive to fragmentation and requires large tracts of unbroken forest for both foraging and breeding (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008, Segers and Broders 2014). Unlike many other bats of the Northeast, northern long-eared bats will commonly glean prey from leaves and other surfaces rather than strictly hawking flying insects in the air, and are thereby well-adapted to foraging in cluttered, structurally complex, forest interior habitat (Owen et al. 2003, Lacki et al. 2007). Most foraging occurs above the understory and below the canopy (Brack and Whitaker 2001, Harvey et al. 2011, USFWS 2014) in interior areas with a tall and closed canopy (Owen et al. 2003, Patriquin and Barclay 2003, Adams 2013). Northern long-eared bats do not concentrate along riparian corridors or other linear landscape features as much as strictly aerial-foraging species (Owen et al. 2003, Ford et al. 2005, Harvey et al. 2011, USFWS 2014), and most radio-telemetry and acoustic studies have found that they typically avoid roads and other sharp forest edges (Owen et al. 2003, Patriquin and Barclay 2003, Carter and Feldhammer 2005, Morris et al. 2010, Segers and Broders 2014), where prey availability is expected to be lower than in the forest interior (Owen et al. 2003). Mature forest is considered to be the most important foraging habitat for the northern long-eared bat (USFWS 2013, 2014).

Roost trees are also usually in intact forest, close to the core and away from large clearings, roads, or other sharp edges (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). Roosts are usually in cavities or, less often, under exfoliating bark of large-diameter trees that form a high and dense canopy (Foster and Kurta 1999, Menzel et al. 2002, Carter and Feldhammer 2005; reviewed by Barclay and Kurta 2007), but trees as small as 3 inches DBH can be used as roost sites (USFWS 2014). Northern long-eared bats, including lactating females, will use many different summer roost trees, often switching roosts every 1 to 5 days and moving

hundreds of feet between successive locations (Menzel et al. 2002, Owen et al. 2002, Johnson et al. 2009).

The northern long-eared bat has experienced the steepest population decline of the six species of bats in the Northeast that are affected by WNS, with numbers at monitored hibernacula in several states dropping by an average of 98% between 2006 and 2011 (Turner et al. 2011, Langwig et al. 2012, Reeder and Moore 2013). Population models for the closely-related Indiana bat and little brown bat (*M. lucifugus*), which have experienced lower relative population declines of 72% and 91%, respectively, project imminent broad-scale extirpation of these species throughout much of their range (Frick et al. 2010, Thogmartin et al. 2013), indicating that the northern long-eared bat is also at extremely high risk of extinction. In New York State, pre- and post-WNS count data available from 18 northern long-eared bat hibernacula show local population extinction at all but 4 of the sites and suggest an average statewide population decline of 97% (Turner et al. 2011). Even prior to the outbreak of WNS, the northern long-eared bat was uncommon in New York State and many other parts of eastern North America relative to most other bats (Turner et al. 2011, Langwig et al. 2012, Moosman et al. 2013), possibly in part due to their sensitivity to deforestation and fragmentation (Henderson et al. 2008).

C. SURVEY METHODS

SITE SELECTION

Three survey locations were chosen on the basis of the microhabitat associations and feeding behaviors of Indiana bats, and to a lesser extent, northern long-eared bats (**Figure 2**). Site 1 was on the Lipoff Parcel of the project site, on the eastern bank of Cheechunk Creek, near the creek's junction with the Wallkill River. The surrounding area consists of a fragment of successional southern hardwood and beech-maple mesic forest bordered by former agricultural land that has succeeded into old field habitat (*after* Edinger et al. 2014). The site was chosen because of the propensity of Indiana bats, and sometimes northern long-eared bats, to forage along riparian corridors. Microphone placement was parallel with the stream corridor and intended to capture bats that were moving along the Wallkill River and Cheechunk Creek. Site 2 was also located along a forested segment of Cheechunk Creek, farther to the south, in the Ver Hage parcel of the project site. There, the stream corridor is narrower and more closed in by dense understory vegetation, but still potentially traveled by foraging Indiana bats. Northern long-eared bats were also considered to have the potential to occur within the stream corridor or the floodplain forest bordering the stream at this recording site. The microphone had to be oriented slightly perpendicular to the stream corridor to avoid vegetation that would have cluttered the detection cone if it were oriented parallel with the stream. Site 3 was near the southern boundary of the Ver Hage parcel of the project site, along a successional southern hardwood forest fragment's edge with abandoned farmland that is now successional old field habitat (*after* Edinger et al. 2014). Indiana bats were expected to occur in this portion of the project site because of their tendency to concentrate along linear landscape features like woodland edges that border agricultural fields or similar open habitats. The microphone was oriented to the northwest, roughly parallel with the edge of the forest where it juts out to the west, and angled slightly upwards to detect bats moving along the woodland/field edge. At each location, the microphone had a clear cone of detection, without any direct obstruction by vegetation or other objects within 10 meters. Photographs and GPS coordinates of each location are shown in **Figures 3 to 5** and **Table 1**, respectively.

Table 1
Recording Site Coordinates and Survey Dates

	Coordinates	Start Date	End Date
Site 1	41° 24' 48.3" N, 74° 22' 35.9" W	8/6/2015	8/9/2015
Site 2	41° 24' 31.6" N, 74° 22' 28.4" W	8/10/2015	8/12/2015
Site 3	41° 24' 24.7" N, 74° 22' 34.9" W	8/12/2015	8/15/2015

SURVEY DATES AND WEATHER CONDITIONS

Recordings were collected at Site 1 from the night of August 6 until the morning of August 9, at Site 2 from the night of August 10 until the morning of August 12, and at Site 3 from the night of August 12 until the morning of August 15. During the 8 detector-night survey period, overnight low temperatures recorded at the nearest National Weather Service weather station (Dutchess County Airport, Poughkeepsie, NY) ranged from 52° to 65° F. August 11 was the only date during the survey period on which there was precipitation; 1.08 inches of rain was recorded at Dutchess County Airport between approximately 05:00 and 18:00, which should not have affected bat activity except during the last hour before sunrise.

RECORDING EQUIPMENT AND SOFTWARE

All recordings were made with a Song Meter SM2BAT+ recording unit and SMX-II weatherproof microphone (Wildlife Acoustics Inc., Maynard, MA). At each site, the microphone was mounted at the top of a 10 foot pole and angled upwards at approximately 45 degrees (Weller and Zabel 2002, Britzke et al. 2010). The microphone was oriented to minimize the amount of vegetation cluttering the cone of detection and maximize the amount of time passing bats would be within the detection cone (Britzke et al. 2013). The recording unit was configured to collect triggered recordings in mono on the left channel at a sampling rate of 384 kHz and save files in full-spectrum .WAV format. Preamplification gain was set to 48 dB as recommended by the manufacturer. The recording schedule was programmed to begin at 19:55 and end at 06:00 each recording day. Prior to the start of the scheduled recording, proper functioning of the recorder, microphone, and trigger setting were confirmed by rubbing fingers together in front of the microphone to generate high frequency sound.

Sound files were analyzed using the automatic species classification features of Kaleidoscope Pro Version 3.1.2 (Wildlife Acoustics Inc., Maynard, MA) and EchoClass Version 3.1 (U.S. Army Engineer Research and Development Center, Vicksburg, MS). As per current *Indiana Bat Summer Survey Guidance* instructions for software analyses (USFWS 2015b), all full-spectrum .WAV files were converted to zero-crossing format using Kaleidoscope Pro prior to analyses. The division ratio for the conversion was 8. Automatic classification of the zero-crossing files was then performed in Kaleidoscope Pro using the "-1 more sensitive (Liberal)" setting and Bats of North America 3.1.0 New York State species list, and in EchoClass using Species Set 2. Automated species identifications from both programs were accepted as accurate when Maximum Likelihood Estimator (MLE) probability values were < 0.05 (USFWS 2015a). The probability values are derived by both programs from maximum likelihood tests of the null hypothesis that a given species is absent from a given set of recordings (Britzke et al. 2002, 2013). Values < 0.05 indicate that there is less than a 5% chance that the species was incorrectly identified and is not present.

PERSONNEL

Site selection, recorder configuration and deployment, automated software analyses, and report preparation were performed by Dr. Chad Seewagen. Dr. Seewagen has 13 years of experience as a professional wildlife biologist in New York State and has a strong working knowledge of the biology of Indiana and northern long-eared bats from his work preparing section 7 Biological Evaluations and similar impact assessments for these species as a consultant to numerous public and private clients. Throughout his four years of graduate studies at the University of Western Ontario, Dr. Seewagen had extensive collegial interaction with renowned bat biologist Dr. Brock Fenton and the graduate students in his lab, from which much of his knowledge about North American bat ecology, behavior, and physiology was gained. Prior to conducting acoustic bat surveys of his own, Dr. Seewagen spent a day at Fordham University in 2014 receiving training on the use of the SM2BAT+ recording unit and Sonobat software from Dr. Alan Clark and his graduate student Kaitlyn Parkins. He also studied several review articles on acoustic bat survey methodology (e.g., Parsons and Szewczak 2009; Adams et al. 2012; Adams 2013; Britzke et al. 2002, 2013) and sought advice from and asked questions of biologists with extensive experience conducting acoustic bat surveys, such as Michael Fishman of Natural Resource Group LLC and Dr. Amanda Adams of Texas A&M University. Dr. Seewagen also has prior bioacoustics experience from his research involving song learning in passerine birds and spectrographic analysis of bird songs using Raven Pro. Dr. Seewagen trained himself in the use of EchoClass Version 3.1 and Kaleidoscope Pro Version 3.1.2 by reading all supporting documentation associated with the software and corresponding with Wildlife Acoustics' technical support staff when necessary.

D. RESULTS

SITE 1

Bat activity was substantially higher at Site 1 than the other two sites. Over 600 files were recorded during the 3 detector-nights at Site 1, of which Kaleidoscope Pro identified 473 to species, categorized an additional 86 as unidentifiable, and classified 54 as noise (non-bat sounds). Species that were identified among the recordings with a significant level of confidence included big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), little brown bat, Indiana bat, and northern long-eared bat (**Table 2**). Identifications of silver-haired bat (*Lasionycteris noctivagans*) were marginally significant ($P = 0.064$). The majority of the call sequences identified as these species were from little brown bats, followed by eastern red bats and Indiana bats (**Table 2**). Both Indiana and northern long-eared bat identifications had highly significant MLE probability values of 0 and 0.0009, respectively. Many of the 137 Indiana bat call sequences contained 20 or more pulses that were identified as Indiana bat, and most occurred on the second and third nights of the 3 detector-nights at this location. The 21 northern long-eared bat call sequences were recorded across the first three nights of the survey and often contained 10 or more pulses that were identified as northern long-eared bat.

EchoClass identified 336 files to five species of bat with a significant level of confidence at Site 1: big brown bat, eastern red bat, little brown bat, Indiana bat, and northern long-eared bat (**Table 2**). The vast majority (N = 255) were identified as eastern red bat (**Table 2**). EchoClass identified a total of 30 Indiana bats and 17 northern long-eared bats on all three nights at this location, with each night-level analysis having highly significant MLE probability values of ≤ 0.0005 for both species.

SITE 2

Kaleidoscope Pro identified a total of 79 call sequences to species and categorized 53 files as either unidentifiable bats or noise during the 2 detector-nights at Site 2. Five species were among the 79 identified call sequences, including big brown bat, eastern red bat, silver-haired bat, little brown bat, and Indiana bat, but MLE probability values indicated confident identifications of only big brown bat and eastern red bat (**Table 3**). Big brown bat was the most dominant species, representing 44 of the 79 (56%) identified call sequences. The two call sequences identified as Indiana bat had a highly non-significant MLE probability value of 0.56.

Table 2
Bat Species Identifications at Recording Site 1 and Corresponding Maximum Likelihood Estimator Values and Call Sequence Sample Sizes

Software	Big brown bat	Silver-haired bat	Red bat	Small-footed bat	Little brown bat	Indiana bat	Northern long-eared bat	Tri-colored bat
Kaleidoscope Pro	**<0.00001** (N = 40)	0.064 (N = 15)	**<0.00001** (N = 104)	0.98 (N = 4)	**<0.00001** (N = 151)	**<0.00001** (N = 137)	**0.001** (N = 21)	1 (N = 1)
EchoClass	**<0.00001** (N = 25)		**<0.00001** (N = 255)	0.99 (N = 4)	**0.015** (N = 5)	**<0.00001** (N = 30)	**<0.00001** (N = 17)	

Notes: Maximum Likelihood Estimator (MLE) probability values <0.05 are considered significant and indicative of accurate species identification (shown above in bold). MLE values presented for EchoClass represent the lowest values among the 3 detector-nights. Kaleidoscope provides one overall MLE value whereas EchoClass reports MLE values individually for each night of the survey. Sample sizes shown in parentheses represent the number of files in which a given species was identified as the predominant species. An EchoClass value of 1 represents a case where only 1call sequence for that species was detected on a given night, which is insufficient for the program to calculate an MLE value.

Table 3
Bat Species Identifications at Recording Site 2 and Corresponding Maximum Likelihood Estimator Values and Call Sequence Sample Sizes

Software	Big brown bat	Silver-haired bat	Red bat	Hoary bat	Little brown bat	Indiana bat	Tri-colored bat
Kaleidoscope Pro	**<0.00001** (N = 44)	0.92 (N = 10)	**<0.0001** (N = 9)		**<0.00001** (N = 14)	0.56 (N = 2)	
EchoClass	**<0.00001** (N = 16)		**0.007** (N = 9)	1		**<0.00001** (N = 2)	1

Notes: Maximum Likelihood Estimator (MLE) probability values <0.05 are considered significant and indicative of accurate species identification (shown above in bold). MLE values presented for EchoClass represent the lowest values among the 2 detector-nights. Kaleidoscope provides one overall MLE value whereas EchoClass reports MLE values individually for each night of the survey. Sample sizes shown in parentheses represent the number of files in which a given species was identified as the predominant species. An EchoClass value of 1 represents a case where only 1call sequence for that species was detected on a given night, which is insufficient for the program to calculate an MLE value.

EchoClass identified 32 call sequences from Site 2 to five different species: big brown bat, eastern red bat, hoary bat (*Lasiurus cinereus*), tri-colored bat (*Perimyotis subflavus*), and Indiana bat (**Table 3**). Hoary bat and tri-colored bat, however, each had only one call sequence detected, and an MLE probability value therefore could not be calculated. The other three species each had highly significant MLE probability values of < 0.007 on at least one of the two nights at Site

2 (**Table 3**). The identification of Indiana bat at Site 2 consisted of two call sequences that were both recorded on August 10. One of these call sequences was also classified as Indiana bat by Kaleidoscope Pro. Kaleidocope Pro identified little brown bat as the predominant species in the other sequence, but classified 3 of the 10 pulses within this mixed species sequence as Indiana bat.

SITE 3

Among the recordings collected over the 3 detector-night survey period at Site 3, Kaleidoscope Pro identified 367 call sequences to eight different species and categorized 77 files as unidentifiable or noise. The eight species included, in order of decreasing abundance, big brown bat, eastern red bat, silver-haired bat, little brown bat, tri-colored bat, hoary bat, eastern small-footed bat (*M. leibii*), and northern long-eared bat. However, species identifications were only confident for big brown bat and eastern red bat (**Table 4**). The detection of northern long-eared bat was limited to only one sequence in which it was identified as the predominant species, and had a non-significant MLE probability value of 0.43.

EchoClass classified 294 call sequences from Site 3 to species. The "Night Level Info" output showed that 7 bat species were identified, including big brown bat, eastern red bat, silver-haired bat, little brown bat, tri-colored bat, hoary bat, and Indiana bat, but only big brown bat, eastern red bat, and tri-colored bat had significant MLE probability values (**Table 4**). The "MLE Results" output displayed "1" for hoary bat, little brown bat, and Indiana bat, meaning that only one call sequence from each of these species was detected in a given night which is insufficient for EchoClass to calculate MLE values. The one call sequence identified as Indiana bat by EchoClass was identified by Kaleidoscope Pro as eastern red bat, but Kaleidoscope Pro also identified 1 of the 6 pulses within this mixed species call sequence as Indiana bat and listed Indiana bat as an "alternate" species.

Table 4
Bat Species Identifications at Recording Site 3 and Corresponding Maximum Likelihood Estimator Values and Call Sequence Sample Sizes

Software	Big brown bat	Silver-haired bat	Red bat	Hoary bat	Small-footed bat	Little brown bat	Indiana bat	Northern long-eared bat	Tri-colored bat
Kaleidoscope Pro	**<0.00001** (N = 221)	0.17 (N = 58)	**<0.00001** (N = 71)	1 (N = 3)	1 (N = 1)	1 (N = 8)		0.43 (N = 1)	0.76 (N = 4)
EchoClass	**<0.00001** (N = 183)	0.32 (N = 29)	**<0.00001** (N = 63)	1		1	1		**<0.00001** (N = 3)

Notes: Maximum Likelihood Estimator (MLE) probability values <0.05 are considered significant and indicative of accurate species identification (shown above in bold). MLE values presented for EchoClass represent the lowest values among the 3 detector-nights. Kaleidoscope provides one overall MLE value whereas EchoClass reports MLE values individually for each night of the survey. Sample sizes shown in parentheses represent the number of files in which a given species was identified as the predominant species. An EchoClass value of 1 represents a case where only 1call sequence for that species was detected on a given night, which is insufficient for the program to calculate an MLE value.

E. CONCLUSION

Eight detector-nights of survey effort at the project site captured 919 recordings recognized as bat call sequences by Kaleidoscope Pro and 662 recordings recognized as bat call sequences by EchoClass. Six species of bats were confidently identified by one or both programs as being present within the project site, including Indiana bat and northern long-eared bat.

Kaleidoscope Pro identified Indiana bat with a highly significant level of confidence at Site 1, while EchoClass identified Indiana bat with a highly significant level of confidence at Site 1 and Site 2. At Site 3, EchoClass classified one call sequence as Indiana bat, but an MLE value could not be calculated from this single sequence to provide a measure of confidence. However, 1 of the 6 pulses within this mixed species call sequence was also tagged by Kaliedoscope Pro as Indiana bat, which supports the likelihood that Indiana bats were present among the bats recorded at Site 3. Given the agreement between Kaliedoscope Pro and EchoClass at Site 1, the significant identification of Indiana bat at Site 2 by EchoClass, and the possible detection of Indiana bat at Site 3 by both programs, it can be concluded that Indiana bats are likely present within the project site. Because Indiana bats often travel multiple miles between successive roosting locations and foraging areas (Kurta et al. 2002, Murray and Kurta 2004) and the majority of the project site contains habitat types that are used by Indiana bats for foraging and/or roosting, it is likely that each of the four parcels that comprise the project site are within the home ranges of the Indiana bats that were detected during the survey.

Northern long-eared bat was identified with a highly significant level of confidence at Site 1 by both software programs and the identifications were based upon several call sequences. It can therefore be concluded that northern long-eared bats are likely present in this area. Neither software program detected northern long-eared bats at Site 2, and at Site 3, only one call sequence was classified (with a non-significant level of confidence) by one of the two software programs as possibly being from a northern long-eared bat. A single echolocation call is considered insufficient for determining presence of a species (Britzke et al. 2013). The lack of detection of northern long-eared bats as Site 3 may reflect the tendency of this species to avoid sharp edges and forage within forested habitats rather than over open fields (e.g., Owen et al. 2003, Patriquin and Barclay 2003, Morris et al. 2010). Because home ranges of northern long-eared bats can span hundreds of acres and their daily movements can be multiple miles (Owen et al. 2003, Broders et al. 2006, Timpone et al. 2010), the individuals detected at Site 1 are likely to also utilize other forested portions of the project site for roosting and/or foraging.

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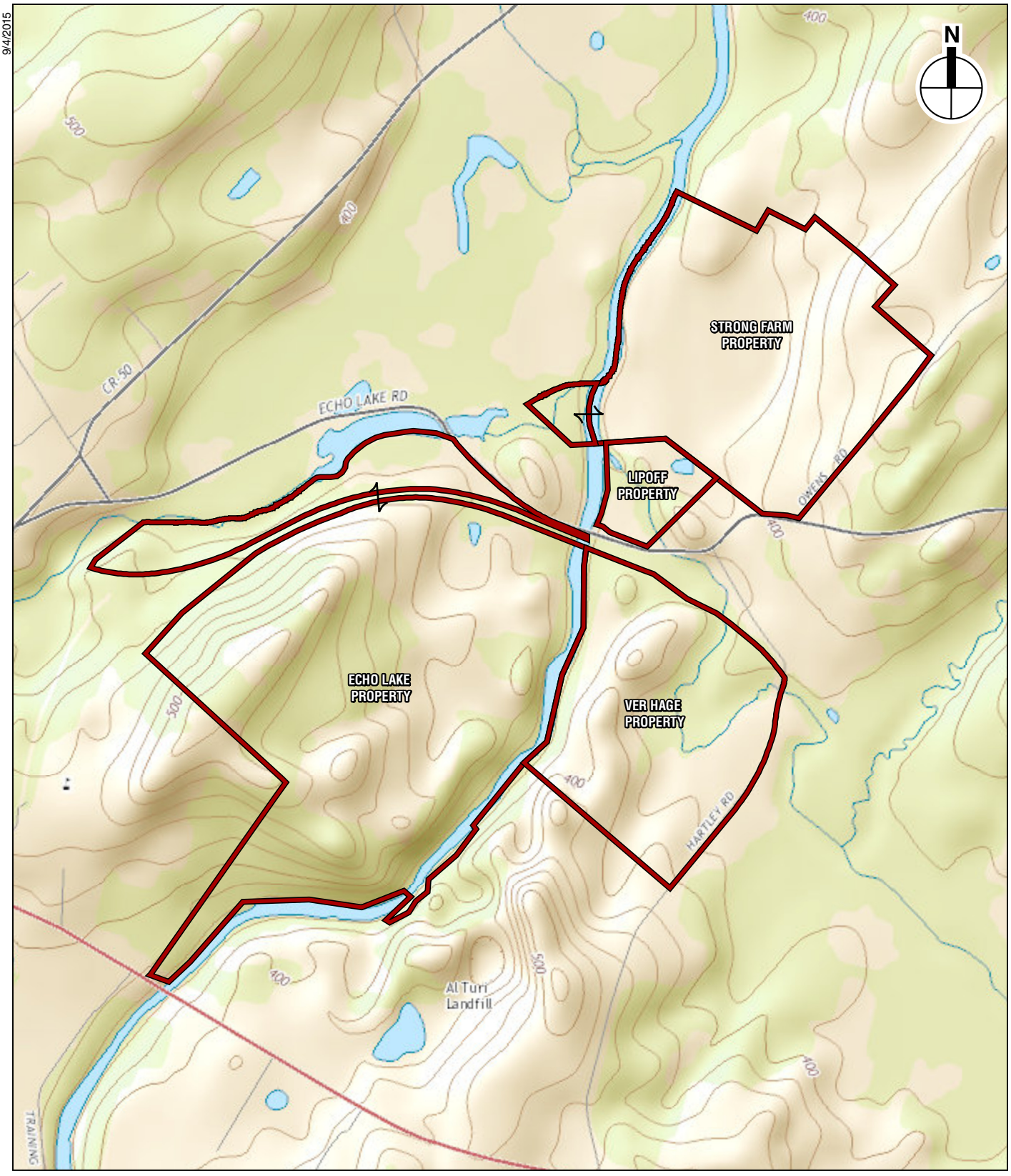
FIGURES

9/4/2015

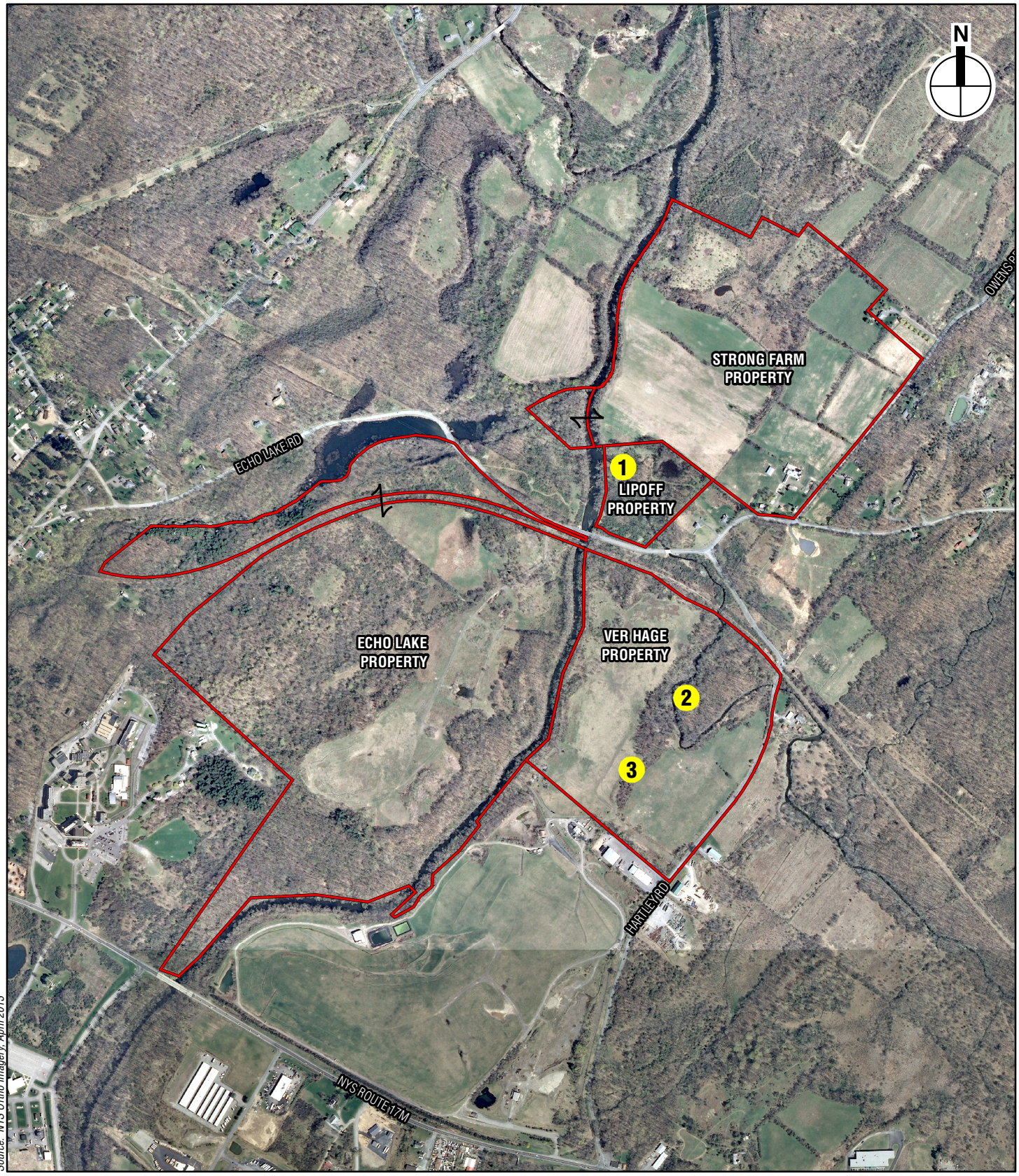


Project Site

0 2,000 FEET

USGS 7.5 Minute Topographic Map
Middletown Quad and Goshen Quad
Figure 1

Amy's Kitchen
Science of the Soul



Amy's Kitchen
Science of the Soul

Bat Recording Locations

Figure 2

Recording equipment set-up at Site 1 (view from the west)

Microphone angle and approximate cone of detection aimed towards canopy break and stream corridor at Site 1

View in front (north) of the microphone at Site 1

View behind (south of) the microphone at Site 1

View to the west of the microphone at Site 1

View to the east of the microphone at Site 1

Microphone angle and approximate cone of detection aimed towards the canopy opening over Cheechunk Creek at Site 2

View in front (north) of the microphone at Site 2

View behind (south of) the microphone at Site 2

View to the west of the microphone at Site 2

Woodland edge with old field at Site 3 (view to the north/northeast)

Microphone angle and approximate cone of detection aimed towards open sky along woodland/old field edge at Site 3

View in front (north) of the microphone at Site 3

View behind (south of) the microphone at Site 3

View to the east of the microphone at Site 3

View to the west of the microphone at Site 3

FEDERAL ENDANGERED SPECIES AND BANK SWALLOW ASSESSMENT

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1.0 INTRODUCTION

The United States Fish and Wildlife Service (USFWS) issued a letter regarding potential endangered species present and a bank swallow colony on the Amy's Kitchen Inc. parcel (Appendix A). The parcel is approximately 172.5 acres and located South of Echo Lake Road and north of the Grand Army of the Republic (GAR) Highway in the Town of Goshen, Orange County, New York (Figure 1).

Terrestrial Environmental Specialists, Inc. (TES) previously conducted studies on the project site documenting the wetlands, vegetation, and wildlife resources on the project site. This report responds directly to the USFWS comments related to bog turtle (*Clemmys muhlenbergii*), dwarf wedge mussel (*Alasmidonta heterodon*), small whorled pogonia (*Isotria medeoloides*), and bank swallow (*Riparia riparia*).

2.0 BOG TURTLE

2.1 Natural History

Bog turtles are small and elusive semi-aquatic turtles that spend much of their life underground or hidden in vegetation. These turtles reach a maximum length of 4.5 inches and can be easily identified by their small size and the presence of large yellow or orange blotches on both sides of the neck.

Bog turtles exhibit a seasonal pattern of activity. They are most active during the spring and early summer months, while the fall and winter months are spent in hibernation. The turtles emerge from hibernation in late March or early April, and commence foraging and mating activities. Nesting occurs in mid-June, and during the later summer months turtles often aestivate, or enter a period of inactivity.

Bog turtles have specific habitat requirements that include open-canopy wetlands with shallow, slow-moving water, deep mucky soils, and low growing herbaceous or moss (*Sphagnum* spp.) covered hummocks. These wetlands are typically fed by springs or seeps and are often associated with a stream system that is bordered by woods. Other indicators of bog turtle habitat are shallow, slow-moving rivulets and tussock-forming vegetation. A diversity of microhabitats within these wetlands provides areas that the turtles require for basking, foraging, nesting, and hibernation. Typical bog turtle habitats include fens, bogs, swamps, marshes, and wet meadows (Ernst *et al*. 1994, Gibbs *et al*. 2007; NYSDEC Bog Turtle Fact Sheet 2013, USFWS 2001).

In New York State, the bog turtle range occurs in two separate regions, the Hudson Valley Region and the Lake Plain Region along the southern and eastern shores of Lake Ontario. The majority of bog turtle populations in New York occur in the Hudson Valley. Two recovery units occur in this region, the Hudson/Housatonic and Delaware Recovery Units. The majority of the Delaware Recovery Unit occurs in eastern Pennsylvania and western New Jersey. However, a small portion of the Delaware Recovery Unit occurs in northwestern Orange County

and southeastern Sullivan County (USFWS 2001). The Amy's Kitchen Inc. parcel is located entirely within the Hudson/Housatonic Recovery Unit.

2.2 Field Review

A Phase 1 bog turtle survey is an evaluation of the wetlands on a site for their potential as suitable bog turtle habitat. The survey is completed by assessing the presence and suitability of three key habitat criteria: hydrology, soils, and vegetation. Suitable hydrology and soils are considered to be the primary determinants of suitable bog turtle habitat (USFWS 2006).

Suitable hydrology is identified by the presence of springs or seeps, year-round saturated soils, shallow surface water, and particularly slow-moving rivulets; although, the wetland can be interspersed with both wet and dry pockets (USFWS 2001, USFWS 2006).

Suitable soils are generically described as mucky. The term "mucky" does not refer to a technical soil type, rather, mucky soils are described as soft and penetrable (to a depth of at least 3 to 5 inches). During a Phase 1 survey, soils can be probed with a blunt-ended pole to determine depth of muck. Sinking to your ankles or deeper can also be a sign of suitable soils (USFWS 2001, 2006). Soil types present in the wetlands are shown on Figure 2.

Suitable vegetation includes shrub and herbaceous species, primarily sedges, grasses, and rushes. Fen species, such as yellow sedge (*Carex flava*), grass-of-parnassus (*Parnassia glauca*), and shrubby cinquefoil (*Potentilla fruticosa*), are other good indicators of suitable vegetation. Other plant species commonly found in bog turtle habitat include, but are not limited to, sphagnum moss, sensitive fern (*Onoclea sensibilis*), tussock sedge (*Carex stricta*), jewelweed (*Impatiens capensis*), skunk cabbage (*Symplocarpus foetidus*), poison sumac (*Toxicodendron vernix*), alder (*Alnus* spp.), and red maple (*Acer rubrum*) (USFWS 2001, USFWS 2006). Wetland communities are classified according to the Cowardin classification system into four potential groups; palustrine emergent (PEM), palustrine shrub swamp (PSS), palustrine forested (PFO), and palustrine open water (POW) (Cowardin 1979).

Vegetation cover types were characterized according to *Ecological Communities of New York State* (Edinger *et al.* 2002). Scientific nomenclature for each plant species were determined using the *National Wetland Plant List* (Lichvar 2013) and *A Checklist of New York State Plants* (Mitchell and Tucker 1997). Plant species were primarily identified using the *Manual of Vascular Plants of Northeastern United States and Adjacent Canada* (Gleason and Cronquist 1991), *New Britton and Brown Illustrated Flora* (Gleason 1952), and *Gray's Manual of Botany* (Fernald 1950).

Wetlands within the parcel were previously located by TES during a field effort performed on November 10, 2008. Wetlands were located and ArcGIS shapefiles were created to depict the location of each wetland. All wetlands found were included in the Phase 1 survey and are depicted in Figure 5.

Observations were made within each wetland sufficient to characterize the wetland and assess each for its overall suitability for bog turtles. The habitat evaluation field form (data

sheet) for Phase 1 bog turtle surveys was originally developed by the USFWS in conjunction with the Pennsylvania Fish and Boat Commission (PFBC). In 2013, the field forms were modified by bog turtle surveyors to reflect New York field conditions. One data sheet was completed for each wetland, and representative photographs were taken. The data sheets and photographs are provided in Appendix B and C, respectively.

2.3 Survey Results

TES had previously documented eight (8) wetlands within the Amy's Kitchen Inc. parcel (Figure 5). Of these eight wetlands, none of the wetlands displayed characteristics indicating the potential for bog turtle habitat. Habitat descriptions of the wetlands are as follows.

Wetland D

Wetland D is a shallow emergent marsh also located in the northeastern corner of the parcel. This wetland occurred in a previously mined area and it is dominated by smartweed (*Polygonum sp.*), reed canary grass (*Phalaris arundinacea*), and fox sedge (*Carex vulpinoidea*). The mapped soil type in this wetland is Middlebury silt loam (My). Soils were non-mucky and no hydrology was present in this wetland at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland E

Wetland E is a shallow emergent marsh located in the northeastern corner of the parcel. This wetland is dominated by burreed (*Sparganium sp.*), hop sedge (*Carex lupulina*), broom sedge (*Carex scoparia*), soft rush (*Juncus effusus*), spike rush (*Eleocharus palustris*), purple loosestrife (*Lythrum salicaria*), and swamp milkweed (*Asclepias incarnata*). The mapped soil types in this wetland are Erie gravelly silt loam, 0 to 3 percent slopes (ErA), Erie gravelly silt loam, 3 to 8 percent slopes (ErB), and Riverhead sandy loam, 15 to 25 percent slopes (RhD). Soils were non-mucky and no hydrology was present in this wetland at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland F

Wetland F is a shallow emergent marsh located in the central-eastern part of the parcel. This wetland is dominated by woolgrass (*Scirpus cyperinus*), cypress sedge (*Carex pseudocyperus*), soft rush (*Juncus effusus*), and purple loosestrife. The mapped soil types in this wetland are Unadilla silt loam, 0 to 8 percent slopes (UnB), and Riverhead sandy loam, 8 to 15 percent slopes (RhC). Soils were non-mucky and saturated with 5 inches of larger pools of water present on the surface. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland G

Wetland G is a shallow emergent marsh also located in the central-eastern part of the parcel. This wetland is dominated by small-spike false nettle (*Boehmeria cylindrica*), and rice

cut grass (*Leersia oryzoides*). The mapped soil type in this wetland is Unadilla silt loam, 0 to 8 percent slopes (UnB). Wetland G is a dry stream channel with non-mucky soils and no hydrology present at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland H

Wetland H is a shallow emergent marsh located centrally in the parcel. This wetland is dominated by woolgrass, fox sedge, broom sedge, boneset (*Eupatorium perfoliatum*), ironweed (*Vernonia noveboracensis*), and purple loosestrife. The mapped soil types in this wetland are Allard silt loam, 3 to 8 percent slopes (AdB), and Mardin gravelly silt loam, 15 to 25 percent slopes (MdD). Wetland H is a wet meadow with non-mucky soils and no hydrology present at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland I

Wetland I is a drainage swale that cuts across the central portion of the parcel. This wetland is dominated by jewel weed (*Impatiens capensis*), and late goldenrod (*Solidago gigantea*). The mapped soil types in this wetland are Erie gravelly silt loam, 3 to 8 percent slopes (ErB), and Mardin gravelly silt loam, 3 to 8 percent slopes (MdB). Wetland I is a dry drainage swale with non-mucky soils and no hydrology present at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland J

Wetland J is the Wallkill River, which runs along the entire eastern side of the parcel. This river has a Class and Standard of C (Figure 3). Rivers do not provide appropriate habitat for bog turtles and therefore Wetland J does not represent suitable bog turtle habitat.

Wetland K

Wetland K is located in the southern part of the parcel and is mostly a deciduous forest wetland with a small portion of scrub-shrub wetland. This wetland is dominated by green ash (*Fraxinus pennsylvanica*), skunk cabbage (*Symplocarpus foetidus*), cinnamon fern (*Osmunda cinnamomea*), virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*), spice bush (*Lindera benzoin*), and sallow sedge (*Carex lurida*). The mapped soil types in this wetland are Alden silt loam (AB), and rock outcrop-Arnot complex, sloping 1/ (RKC). Soils were non-mucky and no hydrology was present in this wetland at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

3.0 DWARF WEDGE MUSSEL

3.1 Natural History

The dwarf wedge mussel (*Alasmidonta heterodon*) is a small freshwater mussel that is federally and state listed as endangered. This rare mussel has a dark brown to yellowish brown ovate bivalve shell. The mussel has a bluish to silvery white inside and can reach a maximum length of 1.5 inches. The dwarf wedge mussel used to have a large distribution ranging north from New Brunswick, Canada all the way south to North Carolina, United States. Today the small mussel only has 30 small populations consisting of 100 or more in each population (Michaelson & Nieves 1995). These populations are located in New Hampshire, Vermont, Maryland, North Carolina, New York, Connecticut, Virginia and New Jersey.

The dwarf wedge mussel has many predators including raccoons, muskrats, otters, bears, herons, waterfowl, turtles, and large fish. However, their main current threats to their populations include degradation and loss of habitat and competing for space and food with exotic mussel species such as the Asian clam. Degradation and loss of habitat are caused by several things from dam construction, channelization, dredging, siltation, and contaminants (USFWS 1993).

Siltation and contaminants affect the dwarf wedge mussel habitat and foraging behaviors. They favor clean, shallow water with a small amount of silt deposition in rivers and creeks that have a slow to moderate current and a substrate consisting of muddy sand, sand, gravel or small pebbles. These substrates allow the clam to submerge themselves at the bottom of the water body. The dwarf wedge mussel adults are filter feeders, straining plankton, bacteria and other particles out of the water. Contaminants and siltation have a direct negative impact on both their habitat and foraging behaviors.

Dam construction, channelization, and dredging have a big impact on the larval stage of the dwarf wedge mussel through impacts to the host fish the larvae depend on (USFWS 1993). Unlike most species of mollusks, the dwarf wedge mussels have separate sexes. Fertilization happens during mid-summer to fall and the larval hatch from the eggs the following spring. The larval stage, known as glochidia, are external parasites that are completely dependent on host fish. They prefer host fish species that are small bottom-dwelling fish; this includes the tessellated darter, mottled sculpin, and slimy sculpin. If the glochidia do not find a host fish immediately they die. It takes the glochidia anywhere from 6 to 160 days to transform into a juvenile mussel stage at which point they are able to fall off of their host fish and start their life in the substrate of the water body.

The only known location of the dwarf wedge mussel in New York State is in the lower reaches of the Neversink River in Orange County. No other location in New York State hosts this species. This population consists of several thousand individuals.

3.2 Field Review

TES conducted a habitat based assessment of the Wallkill River which forms the eastern property boundary. The Wallkill River is subject to extreme hydrologic fluctuations in this area. TES noted drift lines with leaves and sticks that were six to seven feet above the water surface. In addition, the Wallkill River was heavily silted and flowing tan/brown in color.

Based on the habitat requirements of the dwarf wedge mussel for clean, shallow water with a minimum of silt deposition, it was concluded that conditions to support the dwarf wedge mussel are not present on the project site.

4.0 SMALL WHORLED POGONIA

4.1 Natural History

Small whorled pogonia (*Isotria medeoloides*) is a federally listed threatened species and a state endangered species. This species has been located only 7 times in New York State. The first time it was recorded in New York was in 1887 and it has only two recent records, it was found in 1976 in the White Lake area in Onondaga County and then again in Schunnemunk Mountain State Park in Orange County in 2010 (Young 2010).

Small whorled pogonia is in the *Orchidaceae* family. It has 5 to 6 leaves (1 to 3 inches long), arranged in a whorl at the top of the stalk and is 3 to 10 inches in height (Chapman 1997). This species superficially resembles Indian cucumber (*Medeola virginiana*). The flowers bloom in May or June and last up to 10 days. As this species does not flower every year, its dormancy adds to the difficulty of locating it. The flowers are greenish yellow in color and are about 1 inch

The botanical literature lists a wide variety of habitats for this species. These habitats include acid soil in dry woods (Gleason & Cronquist 1993), dry woodlands (Fernald 1950), open stands of second-growth hardwoods or pine hardwoods (Gleason & Cronquist 1993).

Natural Heritage literature from Massachusetts and the USFWS provides the following habitat information. The small whorled pogonia favors open, dry, deciduous forests with low nutrient, acidic soils that are very stony, fine sandy loams and contain a thick layer of dead leaves. These forests are usually dominated by such tree species as maple, oak, beech, hickory, pine and sometimes hemlock. They require filtered sunlight and sparse shrub and herbaceous layers. They often grow on slopes near small streams. They also require a slow movement of water, often restricted by a characteristic in soil referred to as a fragipan. Fragipan are “brittle, loamy, cement-like layers below the surface of the soil which are low in porosity and force the water to drain laterally instead of vertically.” (USFWS 2008, Massachusetts Natural Heritage Endangered Species Program 2009).

The botanical literature provides a confusing picture of the habitat requirements for small whorled pogonia. The best habitat description is that “the species does not exhibit any pronounced habitat requirements other than a need for forest cover” (Mitchell & Sheviak 1983).

long. Technical characteristics that separate this species from larger whorled pogonia (*Isotria verticillata*) include its larger leaf size, longer sepals, and longer peduncles.

4.2 Field Review

TES conducted several extensive vegetation field surveys on the project site when small whorled pogonia stalks, leaves, or flowers would have been visible.

On June 27 and 28, 2011, TES's senior botanist conducted a vegetation inventory within all the forested areas on the site. A complete listing of herbaceous species recorded on the site is presented in table format (Table 1). Prior to this inventory, several TES biologists conducted a wetland delineation on the property over several days.

On August 27 and 28, a senior TES botanist assisted by a junior botanist conducted a meander survey in the wooded portions of the project site. Some forested areas were considered inappropriate habitat due to a dense understory of shrubs. TES carefully searched forested portions of the site examining the site for the vegetative or fruiting body of small whorled pogonia.

TES did not locate small whorled pogonia on the site and it is our professional opinion that it does not occur on the site.

5.0 BANK SWALLOW

5.1 Natural History

Bank swallows (*Riparia riparia*) are one of the most widely distributed swallows in the world (Garrison, B. A. 1999). Their worldwide distribution ranges from Eurasia to North America. In North America, their range extends from Alaska to Newfoundland and south into New York, Pennsylvania, the Delmarva Peninsula, and parts of the Appalachian Mountains. Bank swallows migrate through the southern half of North America to winter in the tropics. This species is not considered rare in Orange County or in New York State.

Bank swallows are the smallest of the swallows in North America and are easily distinguishable from other swallow species. They have a brown back that is distinctly paler near the rump than the upper back. Their belly is dull white in color with a distinct brown band and they have a notched/forked tail as most of the swallows do.

Bank swallows occupy several major habitat niches. The bank swallow is usually found in areas near rivers, creeks, reservoirs, and seashores. They are found in those areas because they nest along steep sandy banks along the water, generally preferring vertical banks and bluffs in lowland areas. Males dig out burrows and tunnels within a sand bank for nesting and their colonies can consist of a couple pairs to hundreds of birds. They have also adapted to human activities and can be found in man-made excavations such as sand and gravel quarries. However, they still require these areas to be near bodies of water for foraging.

The bank swallow feeds exclusively on flying and jumping insects including bees, wasps, ants, butterflies and moths either over water or open areas like meadows.

Based on the New York State Breeding Bird Atlas there has been a decline in the number of breeding blocks this species was reported in. Two man-made factors are cited in this decline. One is the loss of nesting habitat due to flood control projects and the second is the decline of sand and gravel excavation. It further cites the fact that "New York State law now requires the grading of banks following excavation, leaving slopes unsuitable for nesting" (McGowan & Corwin 2008).

5.2 Field Review

Terrestrial Environmental Specialists, Inc. (TES) visited the site on numerous occasions since 2007. A breeding bird survey was conducted over a two day period on June 27 and 28, 2011. A complete listing of bird species recorded on the site is presented in table format (Table 2). During that survey, no bank swallows were recorded on the site. TES did note the presence of tree swallows and barn swallows during the 2011 site investigation. On August 11 and 12, 2014 TES conducted a further follow-up investigation of potential bank swallow use of the site. TES searched for bank swallows and potential nest sites during the 2014 survey. TES did not record any bank swallows using the site and no evidence of nesting (bank holes) or suitable banks were recorded on the site.

TES is unable to substantiate the current use of the site by a bank swallow colony. There may have been bank swallow habitat in the mined area prior to the mine reclamation, however, at the present time the entire site is covered with vegetation (open field, shrub upland, mixed deciduous forest, and deciduous forest) and there are no steep banks where bank swallows would nest. There is no potential for a nesting bank swallow colony on the site formerly occupied by mining activity.

TES also investigated the edge of the Wallkill River as there are steep banks in places. Bank swallow habitat is not present as these banks are forested and densely vegetated thereby eliminating potential for nesting areas. There were no bank swallow nest holes or bank swallows present during our survey.

TES determined that there currently is no nesting habitat for bank swallows on the site.

6.0 SUMMARY

TES conducted additional field surveys to collect additional information relative to the potential occurrence of the bog turtle, dwarf wedge mussel, small whorled pogonia, and bank swallow on the project site. The project site is approximately 17.25 acres in size and is located south of Echo Lake Road and north of the Grand Army of the Republic Highway in the Town of Goshen, Orange County, New York.

TES conducted a Phase 1 bog turtle survey on wetlands within the project site. None of the wetlands examined provided habitat for the bog turtle.

TES reviewed the conditions of the Wallkill River along the edge of the project site. TES found a highly silted river with extreme variability in hydrologic regime. These conditions do not provide habitat for the dwarf wedge mussel.

TES conducted a search in the forested portions of the site for small whorled pogonia. TES found that the site did not harbor any small whorled pogonia.

TES recorded bird species present during a two day survey and examined the site for potential nesting habitat for the bank swallow. The site has been reclaimed and re-vegetated from its former use as a mine. A search for bank swallows or bank swallow nests on the project site led to the conclusion that there are no bank swallows nesting on the site. There is no bank swallow nesting habitat presently on the project site.

None of the federally-listed species were located on the site and are not expected to occur.

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TABLES

Table 1.

Plant Species Observed, Echo Lake Site,
Town of Goshen, Orange County, New York

TREES

Scientific Name[a]	Common Name	VEGETATION COVER TYPES[b]				
		OF/RM	SSU	DFU	WM	DFW
Acer saccharum	Sugar maple		X	X		
Acer rubrum	Red maple	X	X	X		X
Acer saccharinum	Silver maple			X		X
Ailanthus altissima	Tree-of-heaven	X	X	X		
Amelanchier arborea	Serviceberry			X		
Betula lenta	Sweet birch			X		
Betula papyrifera	Paper birch			X		
Betula populifolia	Gray birch		X	X		
Ostrya virginiana	Ironwood			X		
Carya cordiformis	Bitternut hickory			X		
Carya glabra	Pignut hickory			X		
Carya ovata	Shagbark hickory		X	X		
Catalpa speciosa	Indian cigar tree		X	X		
Fagus grandifolia	American beech			X		
Fraxinus americana	White ash		X	X		
Fraxinus pennsylvanica	Green ash	X	X	X		X
Juniperus virginiana	Eastern red cedar		X			
Liriodendron tulipifera	Tulip poplar			X		
Malus pumila	Apple		X	X		
Pinus strobus	White pine		X	X		
Platanus occidentalis	Sycamore			X		
Populus deltoides	Eastern cottonwood	X	X	X		
Populus tremuloides	Trembling aspen	X	X	X		
Prunus serotina	Black cherry		X	X		
Quercus alba	White oak			X		
Quercus coccinea	Scarlet oak			X		
Quercus palustris	Pin oak		X	X		X
Quercus rubra	Red oak			X		
Quercus velutina	Black oak			X		
Tsuga canadensis	Eastern hemlock			X		
Ulmus americana	American elm			X		X
Ulmus rubra	Slippery elm			X		

a. Scientific nomenclature follows Mitchell and Tucker (1997).
b. Vegetation cover types are as follows: OF/RM = Open Field/Reclaimed Mine, SSU = Scrub-Shrub Upland, DFU = Deciduous Forest Upland, WM = Wet Meadow, DFW = Deciduous Forest Wetland.

Table 1. (cont.)

SHRUBS

Scientific Name[(a)]	Common Name	VEGETATION COVER TYPES[(b)]				
		OF/RM	SSU	DFU	WM	DFW
Aralia spinosa	Prickly-ash		X	X		
Berberis thunbergii	Japanese barberry	X	X	X		
Carpinus caroliniana	Musclewood			X		
Cephalanthus occidentalis	Buttonbush				X	
Cornus foemina ssp. *racemosa*	Gray-stem dogwood	X	X	X		
Crataegus spp.	Hawthorns	X	X			
Ligustrum vulgare	Privet		X	X		
Lindera benzoin	Spicebush					X
Lonicera morrowii	Morrow's honeysuckle	X	X	X		
Prunus virginiana	Choke cherry		X	X		
Rhamnus cathartica	Common buckthorn	X	X	X		
Rhus hirta	Staghorn sumac		X			
Rosa multiflora	Multiflora rose	X	X	X		
Rubus allegheniensis	Blackberry	X	X			
Rubus occidentalis	Black raspberry	X	X	X		
Sambucus canadensis	Elderberry		X			
Viburnum dentatum	Arrowwood	X	X			
Viburnum lentago	Nannyberry		X		X	
Viburnum prunifolium	Blackhaw	X	X	X		X
Vitis sp.	Grape		X	X		

HERBACEOUS

Scientific Name[(a)]	Common Name	VEGETATION COVER TYPES[(b)]				
		OF/RM	SSU	DFU	WM	DFW
Agrimonia sp.	Agrimony	X	X			
Agrostis gigantea	Redtop	X				
Alliaria petiolata	Garlic mustard	X	X	X		X
Allium tricoccum	Wild leek			X		
Ambrosia artemisiifolia	Common ragweed	X	X			
Anthoxanthum odoratum	Sweet vernal grass	X	X			
Apocynum sp.	Dogbane	X	X			
Arisaema triphyllum	Jack-in-the-pulpit			X		
Artemisia vulgaris	Common mugwort	X	X			
Asclepias incarnata	Swamp milkweed				X	
Asclepias syriaca	Common milkweed	X				
Aster divaricatus	White wood aster			X		
Aster spp.	Asters	X	X	X	X	X
Athyrium felix-femina	Lady fern			X		
Botrychium virginianum	Rattlesnake fern			X		

Table 1. (cont.)

HERBACEOUS

Scientific Name[(a)]	Common Name	VEGETATION COVER TYPES[(b)]				
		OF/RM	SSU	DFU	WM	DFW
Bromus inermis	Brome grass	X	X			
Carex cristosella	Sedge				X	
Carex lupulina	Sedge				X	
Carex pensylvanica	Pennsylvania sedge		X	X		
Carex scirpoides	Sedge				X	
Carex spp.	Sedges		X	X	X	
Carex squarrosa	Sedge				X	
Carex stricta	Tussock sedge				X	X
Carex vulpinoidea	Fox sedge	X	X		X	
Centaurea maculosa	Spotted knapweed	X	X			
Cichorium intybus	Chickory	X				
Circaea lutetiana	Enchanter's nightshade		X	X		
Cirsium canadensis	Canada thistle	X	X			
Coronilla varia	Crown-vetch	X				
Cynoglossum officinale	Hound's tongue		X	X		
Dactylis glomerata	Orchard grass	X	X			
Datura stramonium	Jimson weed	X				
Dennstaedtia punctilobula	Hay-scented fern		X	X		
Dianthus armeria	Deptford pink	X				
Dryopteris cristata	Crested wood fern				X	X
Dryopteris intermedia	Wood fern			X		
Eleocharis sp.	Spikerush				X	
Elytrigia repens	Quackgrass	X	X			
Epigaea repens	Partridgeberry		X	X		
Equisetum arvense	Common horsetail	X	X	X		
Erigeron annuus	Daisy fleabane	X				
Euphorbia sp.	Spurge	X				
Euthamia graminifolia	Narrow-leaved goldenrod	X				
Fragaria virginiana	Strawberry	X	X	X		
Galium mollugo	White bedstraw	X				
Galium palustre	Marsh bedstraw				X	
Geum canadense	White avens		X	X		
Glyceria melicaria	Manna grass				X	X
Glyceria sp.	Mannagrass			X		
Hieracium sp.	Hawkweed	X	X			
Hypericum punctatum	Spotted St. John's wort	X				
Impatiens capensis	Spotted touch-me-not				X	X
Juncus effusus	Soft rush				X	X
Lepidium sp.	Peppergrass	X				
Lolium arundinaceum	Tall fescue	X				
Lolium perenne	Perennial rye	X				
Lonicera japonica	Japanese honeysuckle	X	X			

Table 1. (cont.)

HERBACEOUS

Scientific Name[(a)]	Common Name	VEGETATION COVER TYPES[(b)]				
		OF/RM	SSU	DFU	WM	DFW
Lotus corniculata	Bird's-foot trefoil	X				
Lychnis flos-cuculi	Ragged-robin	X	X			
Lysimachia nummularia	Moneywort		X		X	X
Lythrum salicaria	Purple loosestrife				X	
Melilotus alba	White sweet clover	X				
Melilotus officinalis	Yellow sweet-clover	X				
Onoclea sensibilis	Sensitive fern		X	X	X	X
Osmunda cinnamomea	Cinnamon fern				X	X
Osmunda claytoniana	Interrupted fern			X		
Oxalis sp.	Sorrel	X	X			
Panicum sp.	Panic grass	X				
Parthenocissus quinquefolia	Virginia creeper	X	X	X		X
Phalaris arundinacea	Reed canary grass	X			X	
Phleum pratense	Timothy	X	X			
Phragmites australis	Common reed grass	X	X		X	
Phytolacca americana	Pokeweed		X			
Pilea pumila	Clearweed		X	X		
Plantago lanceolata	Narrow-leaf plantain	X	X			
Plantago major	Broad-leaf plantain	X	X			
Poa compressa	Canada bluegrass	X				
Poa palustris	Fowl mannagrass				X	
Poa pratensis	Kentucky bluegrass	X	X			
Podophyllum peltatum	May-apple			X		
Polygonum persicaria	Tearthumb				X	
Polygonum spp.	Smartweeds				X	
Polypodium virginianium	Rock polypody			X		
Polystichum acrostichoides	Christmas fern			X		
Potentilla recta	Sulfur cinquefoil	X	X			
Potentilla simplex	Common cinquefoil	X	X			
Prunella vulgaris	Heal-all	X				
Ranunculus acris	Tall buttercup	X	X			
Rubus odoratus	Large-flowered raspberry	X	X			
Rumex sp.	Sorrel	X				
Silene vulgaris	Bladder campion	X				
Smilacina racemosa	False Solomon's seal			X		
Solidago canadensis	Canada goldenrod	X	X			
Solidago canadensis var. *scabra*	Tall goldenrod	X	X			
Solidago gigantea	Late goldenrod	X			X	
Solidago rugosa	Rough-stem goldenrod	X	X	X		
Sparganium sp.	Burreed				X	
Stylophorum diphyllum	Celandine poppy		X			
Symplocarpus foetidus	Skunk cabbage				X	X

Table 1. (cont.)

HERBACEOUS

Scientific Name[a]	Common Name	VEGETATION COVER TYPES[b]				
		OF/RM	SSU	DFU	WM	DFW
Thelypteris noveboracensis	New York fern			X		
Thelypteris palustris	Marsh fern				X	
Toxicodendron radicans	Poison ivy	X	X	X	X	X
Trifolium aureum	Hop-clover	X				
Trifolium hybridum	Alsike clover	X	X			
Trifolium pratense	Red clover	X	X			
Typha latifolia	Broad-leaf cattail				X	
Urtica procera	Tall nettles		X			
Vernonia noveboracensis	Ironweed		X			
Veronica officinalis	Common speedwell	X				
Vicia sp.	Vetch	X				

Table 2.

Bird Species Recorded, Echo Lake Site,
Town of Goshen, Orange County, New York
June 27 and 28, 2011
August 11 and 12, 2014

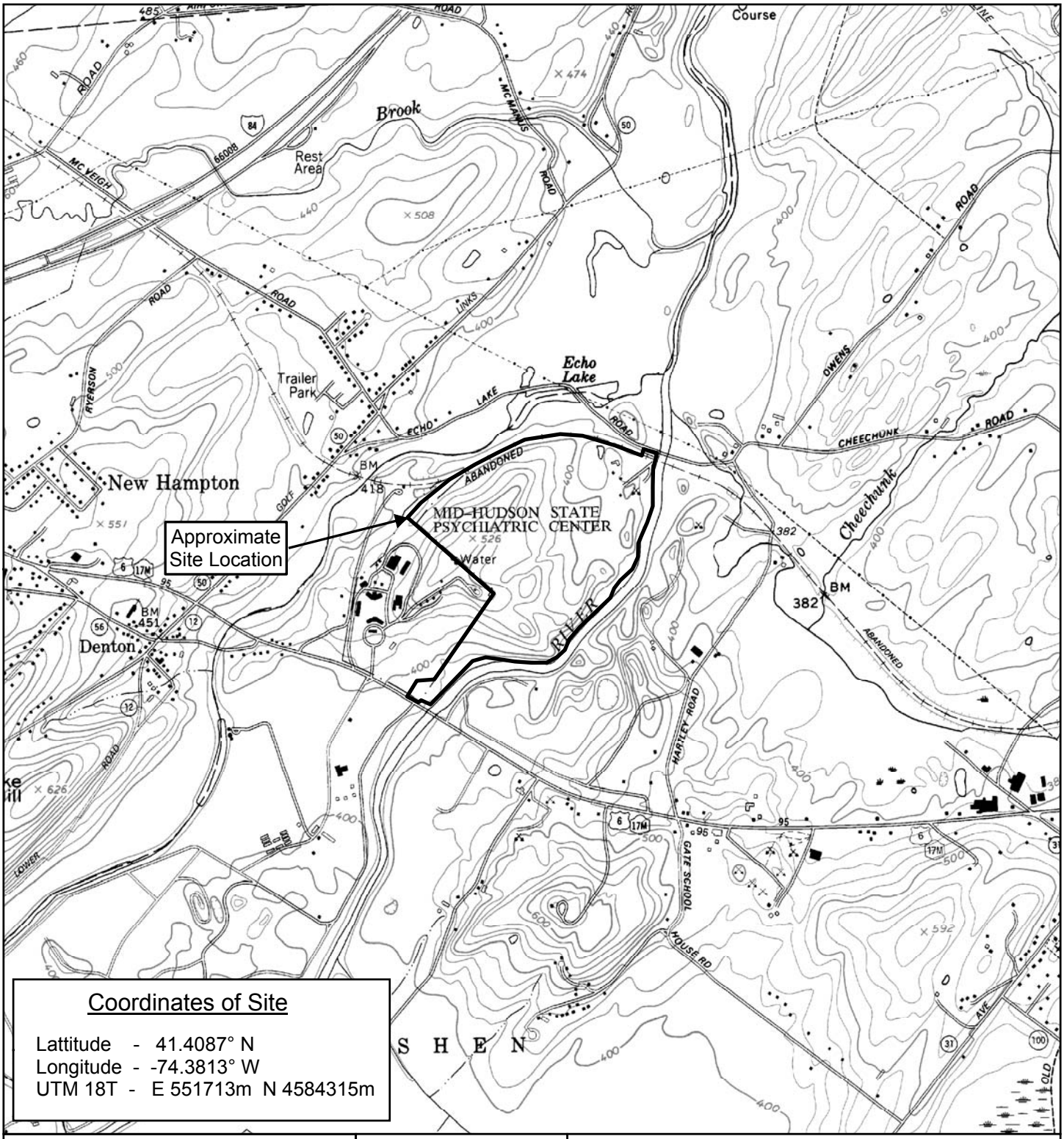
BIRDS[(a)]	
Common Name	**Scientific Name**
Ruffed Grouse	*Bonasa umbellus*
Wild Turkey	*Meleagris gallopavo*
Great Blue Heron	*Ardea herodias*
Green Heron	*Butorides virescens*
Turkey Vulture	*Cathartes aura*
Red-tailed Hawk	*Buteo jamaicensis*
Killdeer	*Charadrius vociferus*
Spotted Sandpiper	*Actitis macularius*
Mourning Dove	*Zenaida macroura*
Chimney Swift	*Chaetura pelagica*
Ruby-throated Hummingbird	*Archilochus colubris*
Red-bellied Woodpecker	*Melanerpes carolinus*
Downy Woodpecker	*Picoides pubescens*
Hairy Woodpecker	*Picoides villosus*
Northern Flicker	*Colaptes auratus*
Eastern Wood-pewee	*Contopus virens*
Eastern Phoebe	*Sayornis phoebe*
Great Crested Flycatcher	*Myiarchus crinitus*
Eastern Kingbird	*Tyrannus tyrannus*
Warbling Vireo	*Vireo gilvus*
Blue Jay	*Cyanocitta cristata*
American Crow	*Corvus brachyrhynchos*
Fish Crow	*Corvus ossifragus*
Tree Swallow	*Tachycineta bicolor*
Barn Swallow	*Hirundo rustica*
Black-capped Chickadee	*Poecile atricapillus*
Tufted Titmouse	*Baeolophus bicolor*
White-breasted Nuthatch	*Sitta carolinensis*
House Wren	*Troglodytes aedon*
Veery	*Catharus fuscescens*
Wood Thrush	*Hylocichla mustelina*
American Robin	*Turdus migratorius*
Gray Catbird	*Dumetella carolinensis*
Northern Mockingbird	*Mimus polyglottos*
Brown Thrasher	*Toxostoma rufum*
European Starling	*Sturnus vulgaris*
Cedar Waxwing	*Bombycilla cedrorum*
Yellow Warbler	*Setophaga petechia*
Chestnut-sided Warbler	*Setophaga pensylvanica*

[(a)] Common and scientific names according to AOU (1998) and supplements through 2010.

Table 2. (cont.)

BIRDS[(a)]	
Common Name	**Scientific Name**
Pine Warbler	*Setophaga pinus*
Ovenbird	*Seiurus aurocapilla*
Common Yellowthroat	*Geothlypis trichas*
Eastern Towhee	*Pipilo erythrophthalmus*
Chipping Sparrow	*Spizella passerina*
Field Sparrow	*Spizella pusilla*
Song Sparrow	*Melospiza melodia*
Scarlet Tanager	*Piranga olivacea*
Northern Cardinal	*Cardinalis cardinalis*
Rose-breasted Grosbeak	*Pheucticus ludovicianus*
Indigo Bunting	*Passerina cyanea*
American Goldfinch	*Spinus tristis*

FIGURES



0 2,000 Feet

1 inch = 2,000 feet

N

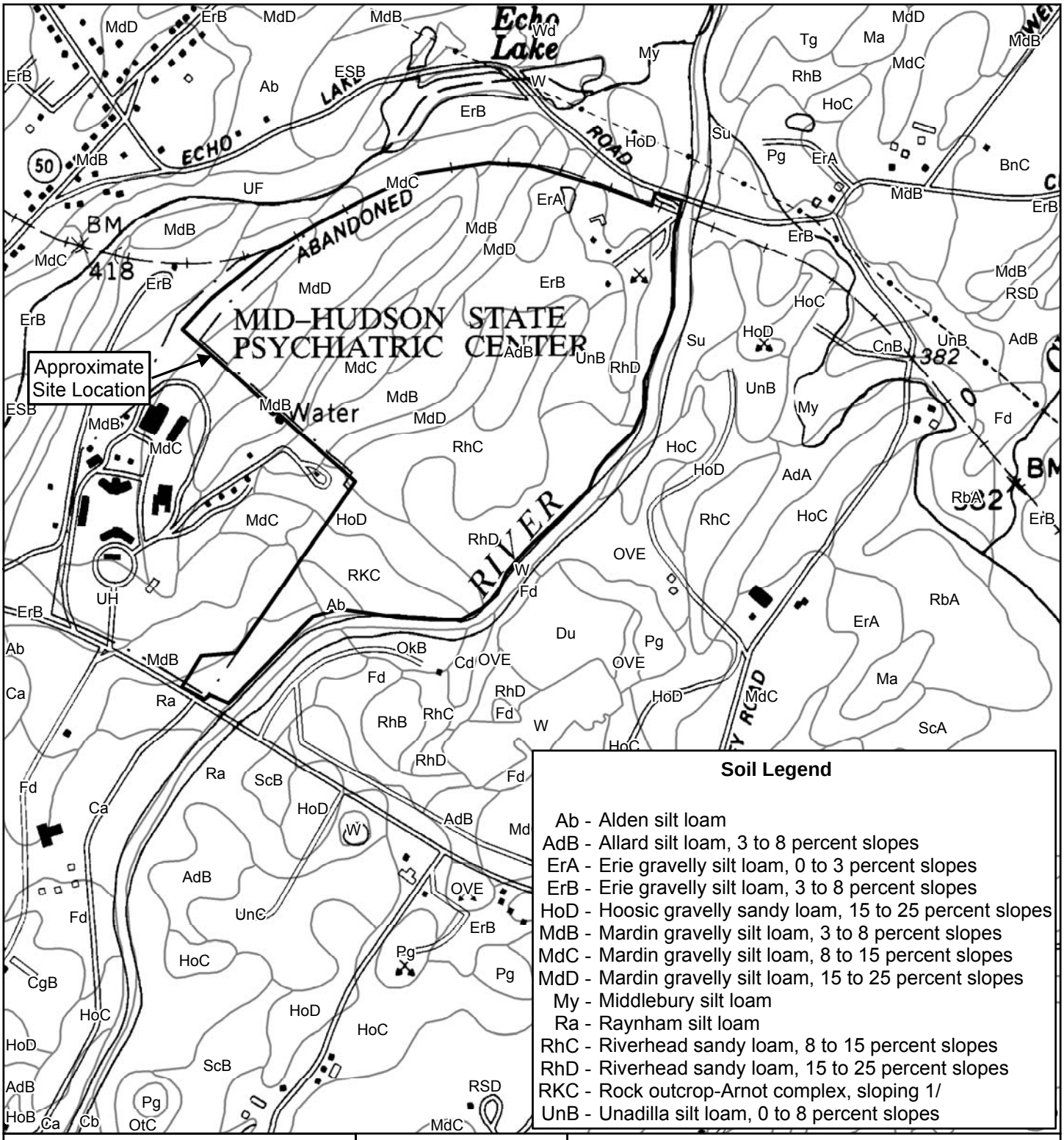
Figure 1. NYS DOT Topographic Map

Site Location

Middletown Quadrangle
2002

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES File: AKI-3999\3999-Fig1.mxd\8-29-2014



Soil Legend

Ab -	Alden silt loam
AdB -	Allard silt loam, 3 to 8 percent slopes
ErA -	Erie gravelly silt loam, 0 to 3 percent slopes
ErB -	Erie gravelly silt loam, 3 to 8 percent slopes
HoD -	Hoosic gravelly sandy loam, 15 to 25 percent slopes
MdB -	Mardin gravelly silt loam, 3 to 8 percent slopes
MdC -	Mardin gravelly silt loam, 8 to 15 percent slopes
MdD -	Mardin gravelly silt loam, 15 to 25 percent slopes
My -	Middlebury silt loam
Ra -	Raynham silt loam
RhC -	Riverhead sandy loam, 8 to 15 percent slopes
RhD -	Riverhead sandy loam, 15 to 25 percent slopes
RKC -	Rock outcrop-Arnot complex, sloping 1/
UnB -	Unadilla silt loam, 0 to 8 percent slopes

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

0 1,000 Feet

1 inch = 1,000 feet

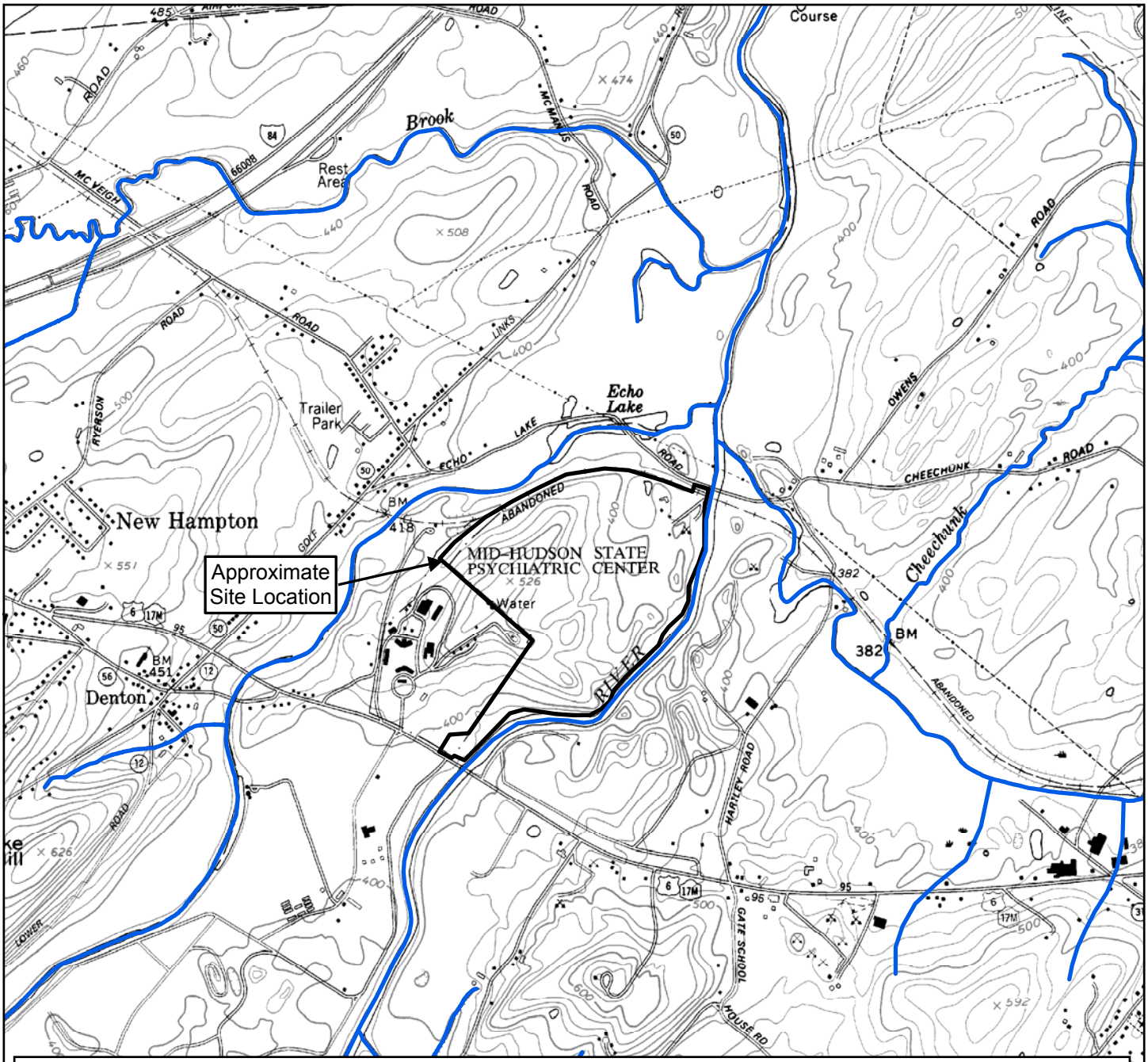
N

Figure 2. Soil Survey Map

Natural Resources Conservation Service
SoilDataMart.nrcs.usda.gov

Orange County Soil Survey
Year

TES File: AKI-3999\3999-Fig2.mxd\8-29-2014



Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
2	H-139-13 portion	Wallkill River	From Rio Grande to New York-New Jersey state line.	22, 23, 25	C	C

Title 6 NYCRR, Chapter X
Article 10, Part 855.5 (2011)

Map 22

0 2,000 Feet

1 inch = 2,000 feet

N

Figure 3. Surface Water Classification Map

NYS DEC

Middletown Quadrangle

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES File: AKI-3999\3999-Fig3.mxd\8-29-2014

N

0 500

Feet

1 inch = 500 feet

Aerial Photograph Obtained from NYS GIS Clearinghouse 2013

Figure Prepared by Terrestrial Environmental Specialists, Inc.

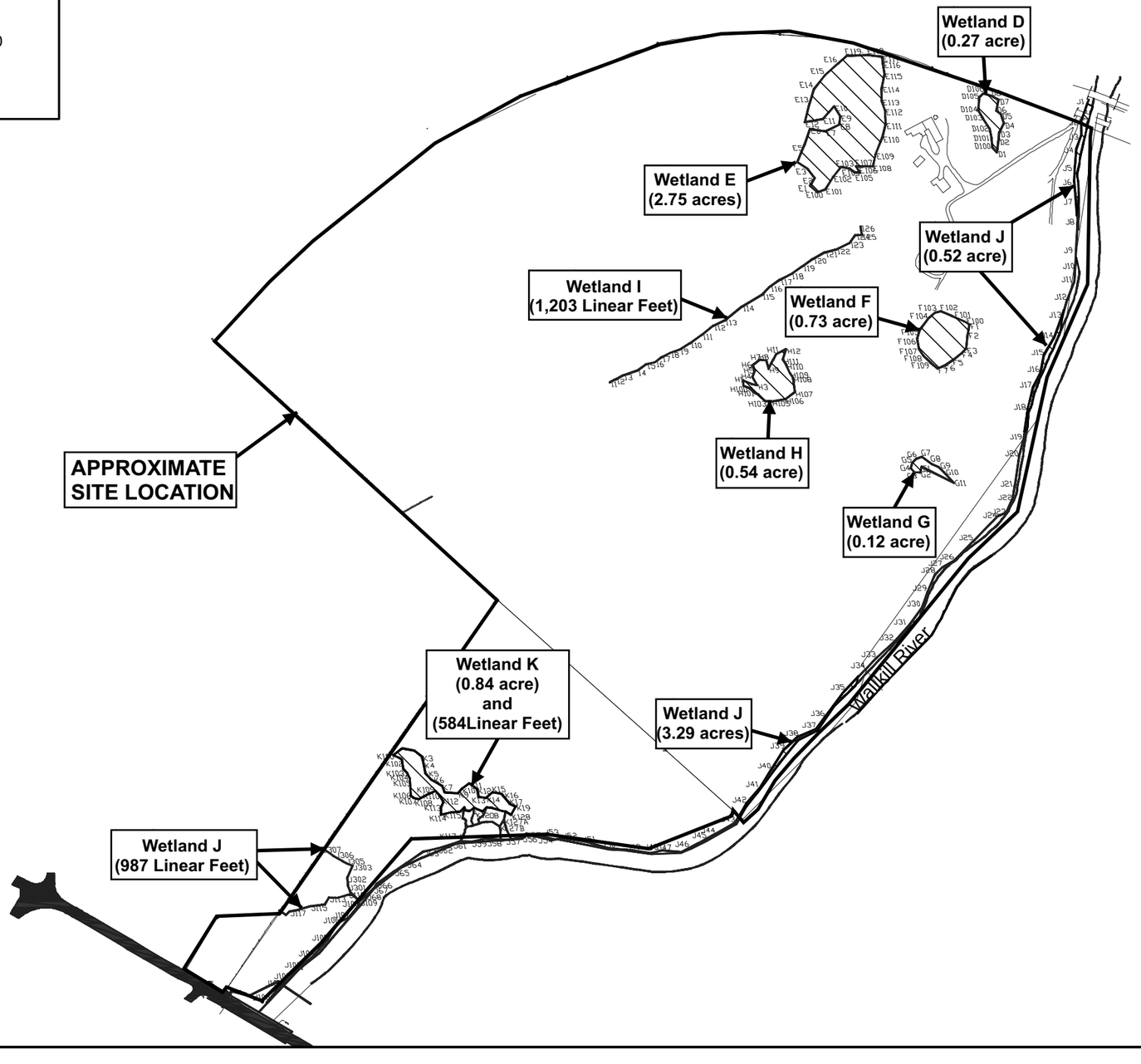
Figure 4.

Aerial Photograph of Site

TES File: AKI-3999\3999-Aerial\8-29-2014

Wetland Acreages and Lengths

Wetland	Area (Acres)	Length (Linear feet)
D	0.27	-
E	2.75	-
F	0.73	-
G	0.12	-
H	0.54	-
I	-	1,203.00
J	3.29	987.00
K	0.84	584.00



NORTH

0 250' 500'

APPROXIMATE SCALE IN FEET

Figure Prepared by
Terrestrial Environmental
Specialists, Inc.

Base Map Provided by
Mercurio-Norton-Tarolli
Land Surveying-Engineering,
P.C.

Figure 5.

Wetland Location Map

TES File: AKI-3999\3999-WetLocation.cdr\8-29-2014

APPENDIX A – Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, NY 13045

June 19, 2014

RECEIVED
JUN 25 2014
TOWN OF GOSHEN
TOWN CLERK

Mr. Lee Bergus
Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, NY 10924

Dear Mr. Bergus:

The U.S. Fish and Wildlife Service (Service) has reviewed the site plan and State Environmental Quality Review Act document submitted May 22, 2014. The applicant, Amy's Kitchen, Inc., proposes to construct a 579,680-square-foot manufacturing plant to manufacture and distribute frozen food products, as well as a 200,000 square foot open-air shed structure for annual conferences. The proposed project will be situated on approximately 200 acres located between Echo Lake Road and New York Route 17M in the Town of Goshen, Orange County, New York.

On May 28, 2014, Ms. Noelle Rayman of my staff left a voicemail for you requesting additional information to assist with our review and to better understand potential species impacts as a result of this project. On that same day, you were copied on an email from Mr. Neal Halloran from the Town of Goshen Planning Board who inquired if I had spoken with you regarding this project. On June 11, 2014, Mr. Halloran again asked if I had spoken with you; Ms. Rayman replied the same day indicating she had not.

In an effort to promote early coordination, the following comments are submitted pursuant to our authorities under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*), the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d), and the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755).

Endangered Species Act

Listed Species

Four federally-listed species are known to occur in Orange County – the Indiana bat (*Myotis sodalis*; Endangered), the bog turtle (*Clemmys* [=*Glyptemys*] *muhlenbergii*; Threatened), the dwarf wedgemussel (*Alasmidonta heterodon*; Endangered), and the small-whorled pogonia (*Isotria medeoloides*; Threatened). Terrestrial Environmental Specialists, Inc. (TES) prepared a report entitled, "Vegetation and Wildlife Resources at the Echo Lake Site," revised December 2013, and stated that the Indiana bat was likely the only listed species present due to potential presence of summer roosting habitat. The other three species are likely not present due to lack of suitable habitat, but no information was provided to justify the reasoning. Please provide data sheets, reports, photos of potential habitat, etc., if available, that will help in our review of any potential impacts to these species.

Page 9 of TES's report states that, "any tree clearing activity will take place during the period from October 15 to March 31, when bats would not be present." The nearest Indiana bat hibernaculum (which is considered a Priority 4 hibernaculum) is to the southeast approximately 9.5 miles. To be consistent with the time periods identified on the New York Field Office's Indiana Bat Project Fact Sheet (dated May 2012), the time period stated in the report should be changed to October 31 to March 31. In addition, please provide our office with the estimated amount of tree clearing needed for this project.

In addition to the recommended time period for tree clearing, the Service also recommends the following conservation measures to further avoid and minimize impacts to Indiana bats:

1. Bright orange construction flagging or fencing should be used to clearly demarcate trees to be protected compared with those to be cut prior to the initiation of any construction activities at these sites. This will help to ensure that contractors do not accidentally remove more trees than anticipated;

2. Avoid impacting potential roost trees to the greatest extent practicable as bats may use them in the future. This can be done by retaining standing live trees that have exfoliating (separated from cambium) bark and are greater than 12 inches diameter at breast height [dbh], by retaining black locust, shellbark, shagbark and bitternut hickories as much as possible, regardless of size and condition (live, dead or dying), and by retaining snags or trees with cavities as much as possible regardless of species;

3. No artificial dyes, coloring, insecticide, algaecide, and/or herbicide will be used on the ground for long-term maintenance of the property; and

4. Limit the number of lights, including motion sensors or timers, directing the lights towards the ground and buildings, and including shields to direct the light downward.

Incorporating these measures should reduce the likelihood of impacts to Indiana bats.

Proposed Species

The northern long-eared bat (*Myotis septentrionalis*) (NLEB) is currently proposed for listing under the ESA. The final listing decision for the NLEB is expected in October 2014. At this time no critical habitat has been proposed for the NLEB. The entire state of New York is within the range of the NLEB, and this species can occur above the 900-foot elevation, unlike Indiana bats. During the summer, the NLEB typically roosts singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically ≥ 3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices, or the presence of peeling bark. It has also been occasionally found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable). They forage for insects in upland and lowland woodlots and tree lined corridors. During the winter, the NLEB predominately hibernates in caves and abandoned mine portals. Additional habitat types may be identified as new information is obtained.

Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective, the prohibition against jeopardizing its continued existence and "take"[1] applies regardless of an action's stage of completion. If federal involvement (in this case, the U.S. Army Corps of Engineers) retains any discretionary involvement over actions that may affect the species after listing, Section 7 consultation procedures apply.

The nearest known occurrence for NLEB is approximately 9 miles to the northeast. Although no known occurrences are within or adjacent to the proposed project, suitable habitat for foraging and roosting may potentially be present. If the final decision is to list NLEB as endangered and if the project construction is anticipated to continue beyond October 2014, then we recommend incorporating the conservation measures listed above for Indiana bats. These measures should also reduce the likelihood of impacts to NLEB.

Additional information on NLEB and conference procedures can be found at: http://www.fws.gov/midwest/endangered/mammals/nlba/index.html.

Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered. The most recent compilation of federally-listed and proposed endangered and threatened species in New York is available for your information.* Until the proposed project is complete, we recommend that you check our website every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project is current.*

Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act

The bald eagle (*Haliaeetus leucocephalus*) is also found in the county. Eagles have been delisted pursuant to the ESA, but remain protected under the BGEPA, MBTA, and by the state of New York (State). There is a bald eagle nest to the east approximately 8 miles. Due to the

[1] Take is defined in Section 3 of the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

distance involved, we do not anticipate any impacts to bald eagles as a result of this project. However, if eagles are found within or near the project area, the Service recommends that you follow the Bald Eagle Management Guidelines found on the Service's website at: http://www.fws.gov/migratorybirds/baldandgoldeneaglemanagement.htm.

The above-listed species are also listed by the State, with the exception of NLEB. Any additional information regarding the proposed project and its potential to impact listed species should be coordinated with both this office and with the New York State Department of Environmental Conservation's Region 4 Stamford Office.

The MBTA protects over 1,000 species of birds including numerous species that are not considered to be state- or federally-listed as threatened or endangered species. As such, the MBTA does prohibit the taking[2], killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The unauthorized taking of birds is legally considered a "take" under the MBTA and is a violation of the law. Neither the MBTA nor its implementing regulations, 50 CFR Part 21, provide for permitting of "incidental take" of migratory birds. However, we do recognize that some birds may be killed, even if all reasonable measures to avoid it are implemented.

We have been informed that there is a colony of approximately 100 bank swallows (*Riparia riparia*) inhabitating the project site. Please provide information which substantiates this report, if available, and also measures that may be taken to protect this colony, if necessary.

Fish and Wildlife Coordination Act

We understand a Draft Environmental Impact Statement (DEIS) is in preparation. Please forward it to us for our review when it becomes available. Please make sure to include information, if applicable, on the timeline for construction, alternatives analysis, stormwater and wastewater management, impacts to wetlands and/or streams, and proposed wetland and/or stream mitigation, as well as information on project effects on listed species and any proposed conservation measures to avoid and minimize potential impacts.

In addition, please provide information regarding the federal nexus for this proposed project, if any.

[2] Take is defined under the MBTA as "to pursue, hunt, take, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product" (U.S. Fish and Wildlife Service MBTA website).

Thank you for the opportunity to comment on this proposed project. Please contact Noelle Rayman at 607-753-9334 if there are any questions regarding this letter and reference file number 14TA0645.

Sincerely,

for David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at: http://www.fws.gov/northeast/nyfo/es/section7.htm

cc: Town of Goshen Planning Board, Goshen, NY (N. Halloran)
NYSDEC, Stamford, NY (Env. Permits and L. Masi)
COE, New York, NY (B. Orzel)

APPENDIX B – Field Data Sheets

Data Sheet No: D

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 172.5 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: D **WETLAND SIZE:** 0.27 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551876 N: 4584679 or Waypoint:

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/12/2014 Time In: 7:00am Time Out: 11:30am
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

DFU, open field

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☒Y ☐N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☒Y ☐N
If yes, describe Previously mined area.

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe

Data Sheet No: D

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☒N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☒Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Polygonum sp., Phalaris arundinacea, Carex vulpinoidea*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 43, 45, 46.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza — Investigator's Name (print)
Investigator's Signature
8/12/14 — Date

Data Sheet No: E

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 172.5 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: E **WETLAND SIZE:** 2.75 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551705 N: 4584691 or Waypoint:

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/12/2014 Time In: 7:00am Time Out: 11:30am
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☒Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

Old quarry, deciduous forest upland, open field.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☒Y ☐N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: E

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☒Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Carex lupilina, Carex scoparia, Juncus effusus, Eleocharus palustris, Lythrum salicaria, Sparganium sp., Asclepias incarnata*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil
☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 39 and 40.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☐No ☒Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza		8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: F

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 172.5 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: F **WETLAND SIZE:** 0.75 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551824 N: 4584419 or Waypoint:

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/11/2014 Time In: 3:30pm Time Out: 4:00pm
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☐N ☒Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N ☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

DFU, open field

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☒Y ☐N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: F

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☒Y ☐N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☒Unknown
☒Y ☐N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☒Larger pools/ponds (5" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☒Semi-permanently flooded ☐Seasonally flooded ☐Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Juncus effusus, Scirpus cyperinus, Carex pseudocyperus, Lythrum salicaria*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 33-36.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☐No ☒Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza		8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: G

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 175.2 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: G **WETLAND SIZE:** 0.12 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551811 N: 4584242 or Waypoint: _____

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/12/2014 Time In: 7:00am Time Out: 11:30am
Last precipitation: ☒<24 hours ☐1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

Deciduous forest upland, open field, and old quarry.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☐Y ☒N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: G

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes: Swale; old stream channel.

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☐Yes ☒No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Boehmeria cylindrica, Leersia oryzoides*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other

Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☒Observed ☐Previously observed: American toad.
Additional Comments/Observations: (use additional sheets if necessary) Field photos 57-60.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza		8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: H

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 175.2 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: H **WETLAND SIZE:** 0.54 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551623 N: 4584363 or Waypoint: _____

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/12/2014 Time In: 7:00am Time Out: 11:30am
Last precipitation: ☒<24 hours ☐1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

Open field, formerly mine.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☐Y ☒N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: H

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes: Wet meadow

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Lythrum salicaria, Carex vulpinoidea, Carex scoparia, Eupatorium perfoliatum, Scirpus cyperinus,* ironweed
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 61-62.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza		8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: I

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 175.2 **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: I **WETLAND SIZE:** 1,203 **linear feet**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☒<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551547 N: 4584443 or Waypoint: _____

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/11/2014 Time In: 7:15am Time Out: 7:45am
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

DFU

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☐PEM _____ ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☐Y ☒N
Edinger *et al.* (2002) Community Types: Drainage swale

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: I

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Impatiens capensis, Solidago gigantea*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza	Bernard C Phil Rizza	8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: K

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 175.2 **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: K **WETLAND SIZE:** 0.84 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☒>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551236 N: 4583849 or Waypoint: _____

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/11/2014 Time In: 1:35pm Time Out: 2:00pm
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☐None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☒None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

Deciduous forest upland, reclaimed quarry, river.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☐PEM _____ ☒PSS 20 ☒PFO 80 ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☐Y ☒N
Edinger *et al.* (2002) Community Types: Red maple-hardwood swamp

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: K

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☒N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☐Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Fraxinus pennsylvanica, Symplocarpus foetidus, Osmunda cinnamomea, Parthenocissus quinquefolia, Toxicodendron radicans, Lindera benzoin, Carex lurida*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 8-9.

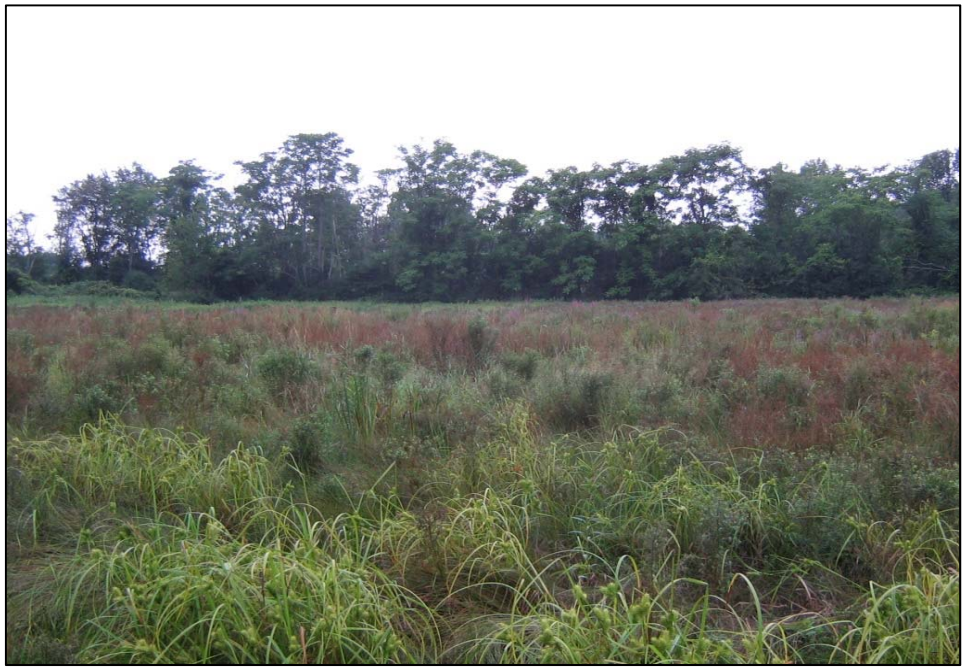
INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza — Investigator's Name (print)
Bernard Carr, Phil Rizza — Investigator's Signature
Date

APPENDIX C – Photographs

Representative Photo of Wetland D



Representative Photo of Wetland E

Representative Photo of Wetland F

Representative Photo of Wetland G

Representative Photo of Wetland H

Representative Photo of Wetland I

Representative Photo of Wetland F

Representative Photo of Wetland J

Representative Photo of Wallkill River Aquatic Habitat

Representative Photo of Wallkill River Aquatic Habitat

Representative Photo of Upland Forested Area

Representative Photo of Upland Forested Area

Representative Photo of Forested Slope Area

Representative Photo of Forested Slope Area

Panoramic Photo of Reclaimed Mine Area

REPORT ON A PHASE 1 BOG TURTLE (*Glyptemys muhlenbergii*) SURVEY CONDUCTED AT THE LIPOFF PROPERTY, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK

Report to:

Amy's Kitchen, Inc.
PO Box 4759
Petaluma, CA 94955

Prepared by:

Jason Tesauro
Jason Tesauro Consulting, LLC
P.O. Box 908
Millbrook, NY 12545
tesaurojason@gmail.com

September 10, 2015

INTRODUCTION

Amy's Kitchen, Inc. retained the services of Jason Tesauro Consulting, LLC to conduct a Phase 1 Bog Turtle (*Glyptemys muhlenbergii*) Survey at the 11.8-acre Lipoff property located in the Town of Goshen, Orange County, New York (Figure 1). The proposed land use for the Lipoff site entails the construction of an industrial-capacity well that will be used as water supply for a proposed food manufacturing plant located south of the site. Wetland delineations by AKRF, Inc. identified two wetland areas onsite, which were the focus of the Phase 1 survey. The results of the survey are summarized in this report.

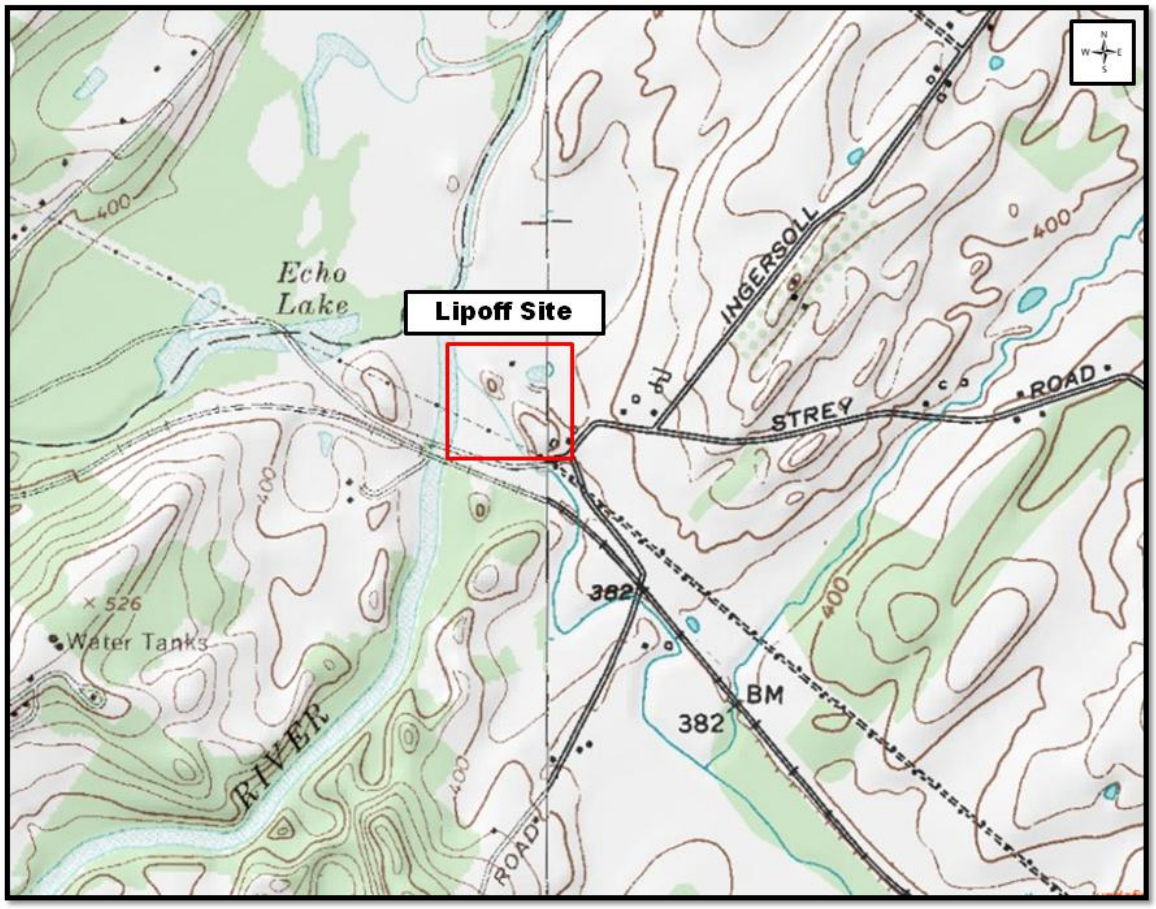


Figure 1. Location of project area mapped on USGS topographic map

METHODS

The Phase 1 Bog Turtle habitat survey entailed a field evaluation of wetlands associated with the floodplain of the Cheechunk Creek and a seasonally-wet impoundment bordered by upland woods and cropland (Figure 2). Data was collected on three primary Bog Turtle habitat parameters: soils, hydrology, and vegetation (USFWS, 2001). Photographs of the wetlands were taken from various vantage points throughout the property.

Figure 2. Satellite photo of Phase 1 survey area

RESULTS

The wetlands occurring on the Lipoff site did not contain conditions suitable for supporting Bog Turtles. The floodplain wetland associated with Cheechunk Creek was closed canopy, flood-prone, and lacked groundwater discharge. Substrates consisted of mineral soils, and while hydric, lacked permanent saturation. Flora documented in the floodplain wetland included American elm (*Ulmus americana*), silver maple (*Acer saccharinum*), honey locust (*Gleditsia triacanthos*), multiflora rose (*Rosa multiflora*), stinging nettle (*Urtica dioica*), clearweed (*Pilea pumila*), and an unidentified species of woodland sedge (*Carex*).

The impoundment wetland, which may historically have been used for irrigation, ice, and/or watering livestock, was devoid of any surface water during the time of survey. The mineral soil substrate was dry and had very little penetrability. Over ninety percent of herbaceous cover within the dry basin was rice cut-grass (*Leersia oryzoides*). Other vegetation documented within the wetland included swamp beggar-tick (*Bidens*), common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), buttonbush (*Cephalanthus occidentalis*), pin oak (*Quercus palustris*), and red maple (*Acer rubrum*). The impoundment appeared to hold water seasonally, and therefore may be an important breeding habitat for amphibians.

SUMMARY

Two wetlands were surveyed for the presence of suitable Bog Turtle habitat on the Lipoff property. The wetlands included a forested floodplain and an impoundment, neither of which supported conditions that were suitable for Bog Turtles. The impoundment wetland contained thick stand of rice cut-grass, which is found in many Bog Turtle sites (USFWS, 2001); however, the seasonally-ponded hydrology and lack of soft, muddy substrates limited the potential for Bog Turtles to occur.

REFERENCES

U.S. Fish and Wildlife Service. 2001. Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan. Hadley, Mass.103 pp.

SITE PHOTOGRAPHS

Forested floodplain habitat along Cheechunk Creek

Seasonally-wet impoundment dominated by rice cut-grass

REPORT ON A PHASE 1 BOG TURTLE (*Glyptemys muhlenbergii*) SURVEY CONDUCTED AT THE STRONG FARM PROPERTY, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK

Report to:

Radha Soami Society Beas
4115 Gillespie Street
Fayetteville, North Carolina 28306

Prepared by:

Jason Tesauro
Jason Tesauro Consulting, LLC
P.O. Box 908
Millbrook, NY 12545
tesaurojason@gmail.com

September 11, 2015

INTRODUCTION

Radha Soami Society Beas (RSSB) retained the services of Jason Tesauro Consulting, LLC to conduct a Phase 1 Bog Turtle (*Glyptemys muhlenbergii*) Survey at the 96-acre Strong Farm property located in the Town of Goshen, Orange County, New York (Figure 1). RSSB proposes to continue the use the Strong Farm for agricultural purposes and for temporary parking during its three-day annual event held on a nearby property. Wetland delineations by AKRF, Inc. identified two wetland areas onsite, which were the focus of the Phase 1 survey. The results of the survey are summarized in this report.

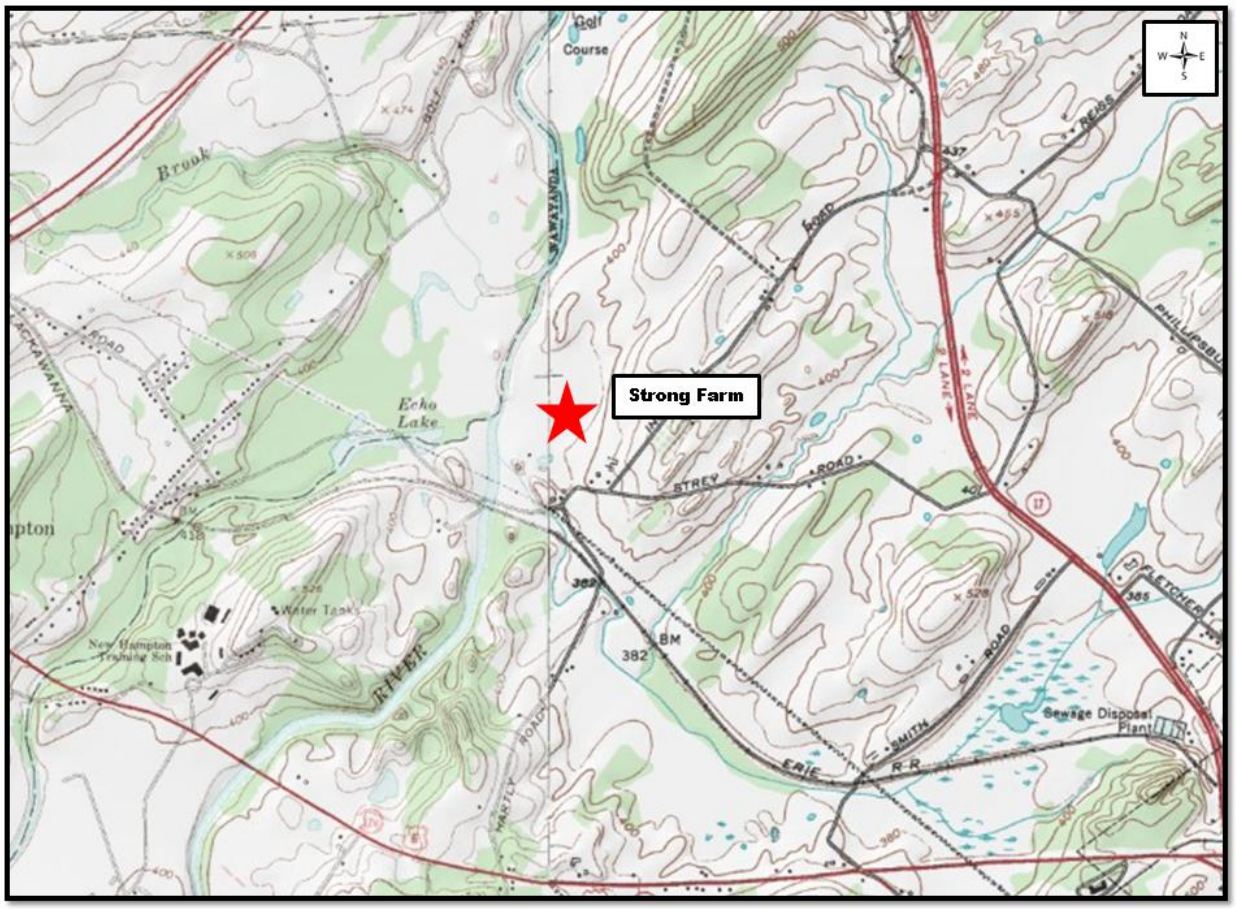


Figure 1. Approximate location of the Strong Farm mapped on USGS topographic map

METHODS

The Phase 1 Bog Turtle habitat survey entailed a field evaluation of two wetlands identified on the site: 1) a formerly pastured scrub-shrub/emergent area bordered to the south by fallow cropland and 2) vernal pond in the floodplain of the Wallkill River (Figure 2). Data was collected on three primary Bog Turtle habitat parameters: soils, hydrology, and vegetation (USFWS, 2001). Photographs of the wetlands were taken from various vantage points throughout the property.

Figure 2. Satellite photo of Phase 1 survey area illustrating approximate wetland boundaries

RESULTS

The wetlands occurring on the Strong Farm did not contain conditions suitable for supporting Bog Turtles. The emergent/scrub-shrub wetland that had been previously used as pasture (as indicated by the presence of a livestock watering pond and barbed wire fencing) contained an abundance of plant species that occur in Bog Turtle habitat, e.g. tussock sedge (*Carex stricta*), spike-rush (*Eleocharis*), rice cut-grass (*Leersia oryzoides*), wool grass (*Scirpus cyperinus*), reed canarygrass (*Phalaris arundinacea*), jewelweed (*Impatiens capensis*), ironweed (*Vernonia noveboracensis*), boneset (*Eupatorium perfoliatum*), purple loosestrife (*Lythrum salicaria*), smartweed (*Polygonum*), and silky dogwood (*Cornus amomum*). The hydrology, however, did not contain perennial groundwater discharge, thus leaving the mineral soil substrates dry with poor penetrability. The only surface water present during the survey were the few inches retained in the center of the old livestock pond. Several portions of the emergent area appeared to hold water seasonally and may be important amphibian breeding habitat.

The emergent/scrub-shrub wetlands were drained by a ditch that drained west along the edge of the fallow fields into the Wallkill River. This ditch was densely canopied by a variety of woody species, e.g., pin oak (*Quercus palustris*), swamp white oak (*Quercus bicolor*), spicebush (*Lindera benzoin*), red maple (*Acer rubrum*), white ash (*Fraxinus americana*), *Viburnum*, and non-natives including honeysuckle (*Lonicera*) and rose. Much of the ditch was bare soil, leaf litter, and stone; however, partial open-canopy sections of the ditch contained sedges including,

tussock sedge. Portions of the ditch appeared to hold standing water seasonally; other portions were incised and by surges of run-off.

The second wetland area also appeared to be located within the former livestock enclosure but was further west on the property, closer to the Wallkill River. This wetland was a shallow, elliptically-shaped depression that contained a community dominated by sedges (*Carex*) and reed canarygrass. A single buttonbush (*Cephalanthus occidentalis*) occurred in the southern end of the depression. The hydrology of the wetland consisted of seasonal ponding (winter-spring) and poor drainage. Groundwater discharge was not detected but likely contributes to the hydrology of the site when water table levels are high. Soils were mineral in composition and were firm and dry, given the lack of water/saturation. This wetland was a classic vernal pond and is likely used as breeding habitat by a variety of amphibians.

SUMMARY

Two wetlands were surveyed for the presence of suitable Bog Turtle habitat on the Strong Farm property. The wetlands included an emergent/scrub-shrub complex and a vernal pond, neither of which supported conditions that were suitable for Bog Turtles. The emergent/scrub-shrub area was rich with flora that was indicative of Bog Turtle habitat; however, the hydrology did not contain enough of a groundwater component to maintain the softness of the substrate and other habitat features (e.g. rivulets, flowages, subsurface channels) required by Bog Turtles. The vernal pond contained potential habitat for amphibians and aquatic organisms, not Bog Turtles.

REFERENCES

U.S. Fish and Wildlife Service. 2001. Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan. Hadley, Mass.103 pp.

SITE PHOTOGRAPHS

Sedges, grasses, and forbs within the emergent portion of the formerly pastured wetland

Scrub-shrub portion of the wetland containing silky dogwood, purple loosestrife, and a downed tree

Ditch along the field edge that drains much of the emergent/scrub-shrub wetland

Vernal pond wetland along the Wallkill River floodplain

JASON TESAURO

P.O. Box 908, Millbrook, New York 12545
Phone: 201.841.6879 Email: tesaurojason@gmail.com

EDUCATION:

1998-2002

Rutgers the State University of New Jersey
Graduate School
M.S. Ecology and Evolution
Advisor: Dr. David Ehrenfeld
Thesis: The Effects of Livestock Grazing on the Bog Turtle (*Clemmys muhlenbergii*)

1992-1997

Rutgers the State University of New Jersey
Rutgers College
B.A. Anthropology
Minor – Biological Sciences

PROFESSIONAL EXPERIENCE:

Owner – **Jason Tesauro Consulting, LLC**, a consulting firm specializing in the recovery, management, and protection of rare, threatened & endangered wildlife. Skills/areas of expertise include: species habitat assessments, presence/absence surveys, radio-telemetry research, wetland ecology, conservation planning, habitat management & restoration, wetland mitigation, and landowner outreach & education

Current Projects:

USDA Natural Resources Conservation Service, Syracuse, New York (2011-present)
Position: Consultant under the *Mid-Atlantic Center for Herpetology & Conservation (MACHAC)*. Oversee, coordinate, and implement all phases of wetland habitat restoration projects funded under the federal Wetlands Reserve Program (WRP) on private lands in southeastern New York and Connecticut. Provide expertise, guidance, and oversight on all wildlife-related issues for each WRP project, particularly related to the federally-listed Bog Turtle (*Glyptemys muhlenbergii*)

U.S. Fish and Wildlife Service (2005-present)
Position: Contracting Biologist. Assist with the development of national habitat management guidelines and recovery strategies for the Bog Turtle; develop habitat management plans for individual Bog Turtle sites; perform Bog Turtle habitat evaluations, population studies, habitat analyses, habitat management, and de novo surveys in Pennsylvania, New York, Maryland, and Connecticut

Hudsonia Ltd., Annandale, New York (2000-present)

Position: Contracting Biologist. Perform habitat assessments and surveys for rare wildlife in New York and Connecticut; Serve as project manager for long-term Bog Turtle radio-telemetry/habitat use study; Review/provide commentary on environmental impact statements and wetland mitigation plans; assist with lectures and training seminars on field biology techniques. *www.hudsonia.org*

Previous Employment:

Environmental Defense Fund, Washington, D.C. (2003-2010)

Contracting Ecologist. Assist Environmental Defense Fund's long-term effort to promote the conservation and recovery of the federally-listed Bog Turtle on privately owned land in New York, Pennsylvania, and Maryland; major responsibilities included habitat assessments, landowner outreach & education, conservation planning, biological monitoring, coordinating with federal and state agencies (NRCS, USFWS, NYSDEC, DEP, DNR), and the development & implementation of habitat restoration plans

New Jersey Division of Fish and Wildlife, Endangered and Nongame Species Program, Trenton, NJ (1994-2003)

Biologist (salaried). Implement the conservation, protection, and management of non-game wildlife with emphasis on state-threatened, endangered and/or rare herpetofauna and insects; serves program specialist/project manager for various species and/or species-driven projects. Other responsibilities: field research, prepare and submit grants and year-end reports; analyze and provide commentary on endangered species regulatory issues; conduct public educational seminars; coordinate volunteers; author publications; train and supervise staff

PUBLICATIONS/ARTICLES:

Tesauro, J. 2001. Restoring wetland habitats with cows and other livestock. *Conservation Biology in Practice* **2**:26-30.

Tesauro, J. and David Ehrenfeld. 2007. The effects of livestock grazing on the bog turtle [*Glyptemys* (=*Clemmys*) *mulenberghii*]. *Herpetologica* **63**:293-300.

Lathrop, R., P. Montesano, J. Tesauro, and B. Zarate. 2005. Statewide mapping and assessment of vernal pools: A New Jersey case Study. *Journal of Environmental Management* 76:230-238.

PROFESSIONAL CERTIFICATIONS:

- U.S. Fish and Wildlife Service Qualified Bog Turtle Surveyor/Trapper for PA, NJ, and NY

PROFESSIONAL AFFILATIONS:

- Advisory board member for the non-profit wetlands conservation entity, The Wetlands Conservancy based in Brooktondale, NY (March 2014-present)

VOLUNTEER EXPERIENCE

- Woodstock Land Conservancy BioBlitz, Woodstock, NY (2014) - lead herpetologist
- NEPARC Northeast Wood Turtle Survey Working Group - assisted with surveys for Wood Turtle (*Glyptemys insculpta*) in PA, NY, and ME (2014-present)
- NYSDEC Division of Fish and Wildlife, Region 3, Ulster County, NY - assistance with northern cricket frog (*Acris crepitans*) habitat use and movement study (2013)
- Project Orianne, Lumberton, GA (2008) – assistance with eastern indigo snake (*Drymarchon couperi*) conservation efforts
- Westchester Land Conservancy BioBlitz, Westchester County, NY (2007) – herpetological survey team
- Great Swamp Watershed Association BioBlitz, Morris County, NJ (2007) – herpetological survey team
- NJ Division of Fish and Wildlife's timber rattlesnake radio-telemetry project, New Jersey Highlands (2004-2006) – assisted with tracking and capturing snakes for implantation
- The Nature Conservancy, Warren County, NJ (2006-2007) – invasive plant control
- Hudsonia Ltd., Dutchess County, NY – Arlington School Blanding's turtle project (2004)

---------- Forwarded message ----------
From: **Crist, Rebecca S (DEC)** <rebecca.crist@dec.ny.gov>
Date: Fri, Sep 25, 2015 at 11:31 AM
Subject: Amy's Kitchen - Request for Article 11 jurisdiction
To: "gtrelstad@akrf.com" <gtrelstad@akrf.com>

Mr. Trelstad,

I have received your request dated September 24, 2015. I am the assigned analyst for the DEC review of this project for SEQR and permitting, please address all submissions to my attention and reference the DEC pre-application ID # 3-3330-00231/00001, /00002.

Please note, as previously indicated in the DEC response to SEQR Lead Agency and revised Draft Scope, the Wallkill River is Class C. A protection of waters permit is not required to disturb the bed or banks of a Class C stream without a trout standard. The stream that runs through the ver Hage and Lipoff properties is identified in the DEC regulations as the Rio Grande, NYS Waters Index # H-139-13-53, Class C. Again, no permit is required to disturb the bed and banks. Any work in the streams or adjacent wetlands which requires a Section 404 permit from the Army Corps of Engineers, will require a Section 401 Water Quality Certification from DEC.

I am sending the hard copy to our endangered species biologist for review. As soon as our biologist has reviewed the submission, we can arrange a meeting to discuss.

Can you please provide an electronic copy of the submission for my records?

Rebecca Crist
Deputy Permit Administrator, Division of Environmental Permits

New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, NY 12561
P: (845) 256-3014 | F: (845) 255-4659 | rebecca.crist@dec.ny.gov
www.dec.ny.gov
| | |

IMPACT ASSESSMENT FOR THE INDIANA AND NORTHERN LONG-EARED BAT

AMY'S KITCHEN

&

SCIENCE OF THE SOUL

GOSHEN, NY

April 2016

Prepared for:

Amy's Kitchen
1650 Corporate Circle, Suite 200
Petaluma, CA 94954-6970

Prepared by:

AKRF, Inc.
34 South Broadway
White Plains, NY 10601

A. INTRODUCTION

Amy's Kitchen, Inc. ("Amy's Kitchen") proposes to construct an approximately 369,000 square-foot food manufacturing facility on an approximately 71 acre property located on Hartley Road in the Town of Goshen, Orange County, New York, hereafter referred to as the "Ver Hage property." Concomitantly, Science of the Soul ("SoS") proposes to construct a multi-structure conference center on an approximately 195 acre property, hereafter referred to as the "Echo Lake property," located on NYS Route 17M and Echo Lake Road, adjacent to the Amy's Kitchen food manufacturing facility (**Figure 1**). The two entities, Amy's Kitchen and SoS, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) and other environmental compliance documents, and to share certain access, water supply, and wastewater treatment infrastructure. The Amy's Kitchen manufacturing facility and the SoS Conference Center, together with certain related facilities and improvements, comprise the "proposed project."

This document evaluates potential impacts of the proposed project to the Indiana bat (*Myotis sodalis*; federally and New York State listed Endangered) and northern long-eared bat (*M. septentrionalis*; federally and New York State listed Threatened) to address compliance with and provide the information that is required in support of an incidental take permit under Article 11 of the New York Environmental Conservation Law (ECL) as implemented in 6 NYCRR Part 182.

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation System identifies the Indiana bat and northern long-eared bat as occurring in the vicinity of the project site. The closest known Indiana bat and northern long-eared bat hibernaculum is approximately 9.25 miles from the project site, and an Indiana bat summer roost tree has been documented within 2.5 miles of the project site. No northern long-eared bat roost trees have been documented near the project site (NYNHP 2015, NYSDEC 2015). An acoustic bat survey that was conducted within the project site during August 2015 indicated that Indiana and northern long-eared bats were present (**Appendix A**). Acoustic surveys inform the presence of foraging bats by detecting feeding buzzes and echolocation calls, but cannot be used to determine whether bats also roost within the survey location. Therefore, it could not be determined from the acoustic survey whether the project site is only used by Indiana and northern long-eared bats as foraging habitat, or if one or both species also roost within the site. For the purposes of this evaluation, both species of bats are considered to forage within the site, while having the potential to roost within the site based on the presence of suitable roosting habitat.

B. NATURAL HISTORY AND LOCAL DISTRIBUTION OF THE INDIANA AND NORTHERN LONG-EARED BAT

INDIANA BAT

The Indiana bat is a temperate, insectivorous bat that is federally and New York State-listed as Endangered. Indiana bats emerge from the caves or mines in which they hibernate in early spring; males then disperse and remain solitary until mating season at the end of the summer, and pregnant females form maternity colonies in which to rear their young. Maternity roosts, roosting sites of post-lactating females, and roosting sites of solitary males are usually under loose bark or in the crevices of trees. Indiana bat roosting sites have been documented in numerous species of deciduous trees; tree availability, diameter, height, bark characteristics, and sun exposure appear to be more important factors in roost site selection than tree species (Kurta

2004, USFWS 2007). Roost trees in New York (Britzke et al. 2006) and elsewhere (USFWS 2007) are typically in trees with a diameter at breast height (DBH) greater than 16 inches and a height taller than 52 feet, but roosts in smaller trees are not uncommon (USFWS 2007). Trees are usually dead or nearly dead and decayed (Menzel et al. 2001, Kitchell 2008).

Indiana bats often roost near forest gaps or edges where trees receive direct sunlight for much of the day (Callahan et al. 1997, Menzel et al. 2001). Habitats used by Indiana bats during summer are varied and include riparian, bottomland/floodplain, and upland forests (Humphrey et al. 1977, Britzke et al. 2006, Watrous et al. 2006) often within highly fragmented agricultural landscapes (Murray and Kurta 2004, Watrous et al. 2006, USFWS 2007). They will forage in the forest canopy, over open fields, over impounded waterbodies, along riparian corridors, and along forest edges (USFWS 2007). Maternity colonies are commonly located in areas with abundant natural or artificial freshwater sources (Carter et al. 2002, Kurta et al. 2002, Watrous et al. 2006, and USFWS 2007). Spring and autumn habitats of Indiana bats have not been well described, but appear to be largely similar to their summer habitat (Britzke et al. 2006, USFWS 2007).

During autumn, Indiana bats mate and deposit fat stores in preparation for winter hibernation. Hibernacula are typically in caves or abandoned mines where ambient temperatures remain above freezing (USFWS 2007). There are only 10 Indiana bat hibernacula known in New York State, none of which are located within Orange County (NYNHP 2013). Four of these hibernacula, however, are located in neighboring Ulster County (NYNHP 2013), and Indiana bats may migrate upwards of 100 miles from their hibernaculum to their summer territory (Winhold and Kurta 2006, USFWS 2011). The closest hibernaculum to the project site is approximately 9.25 miles away (NYSDEC 2015).

The Indiana bat has recently undergone steep population declines due to the outbreak of White-nose Syndrome (WNS)—an emerging infectious disease caused by the fungus *Geomyces destructans*, which was first discovered in New York's Howe's Cave in 2006 and has since spread to over 200 bat hibernacula in more than 25 states and Canadian provinces (Reeder and Moore 2013, PAGC 2015). Bats infected with WNS suffer structural damage to their wing membranes and exhibit aberrant hibernation behavior and physiology, the consequences of which are usually fatal (Reeder and Moore 2013). Range-wide, Indiana bat populations have been declining by approximately 10% per year since the outbreak of WNS in 2006 (Thogmartin et al. 2012). In New York State, pre- and post-WNS count data on hibernating Indiana bats showed an average statewide population decline of 72% between 2006 and 2011 (Turner et al. 2011). Population models indicate that extirpation of the Indiana bat is likely to be caused by WNS throughout much of the species' range (Thogmartin et al. 2013).

The Indiana bat is listed by the USFWS Information for Planning and Conservation (IPaC) System as occurring in Orange County, and the New York Natural Heritage Program (NYNHP) has a record of an Indiana bat maternity colony approximately 2.5 miles from the project site (NYNHP 2015). An acoustic bat survey that was conducted in August 2015 indicated the presence of Indiana bats foraging within the project site (**Appendix A**). It is unknown whether the project site is only used by Indiana bats as foraging habitat, or if Indiana bats also roost within the site.

NORTHERN LONG-EARED BAT

The northern long-eared bat is also a temperate, insectivorous bat that hibernates in caves and mines during winter, and then emerges in early spring to disperse to summer habitat. Like Indiana bats, the males remain solitary until mating season at the end of the summer and the

pregnant females form maternity colonies in which they rear their pups. Summer habitat typically includes mature, closed-canopy, upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008), usually within about 60 miles of the hibernaculum (Caceras and Barclay 2000, USFWS 2014).

The northern long-eared bat is considered to be an interior forest-dependent species that is sensitive to fragmentation and requires large tracts of unbroken forest for both foraging and breeding (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008, Segers and Broders 2014). Unlike many other bats of the Northeast, northern long-eared bats will commonly glean prey from leaves and other surfaces rather than strictly hawking flying insects in the air, and are thereby well-adapted to foraging in cluttered, structurally complex, forest interior habitat (Owen et al. 2003, Lacki et al. 2007). Most foraging occurs above the understory and below the canopy (Brack and Whitaker 2001, Harvey et al. 2011, USFWS 2014) in interior areas with a tall and closed canopy (Owen et al. 2003, Patriquin and Barclay 2003, Adams 2013). Northern long-eared bats do not concentrate along riparian corridors or other linear landscape features as much as strictly aerial-foraging species do (Owen et al. 2003, Ford et al. 2005, Harvey et al. 2011, USFWS 2014), and most radio-telemetry and acoustic studies have found that they typically avoid roads and other sharp forest edges (Owen et al. 2003, Patriquin and Barclay 2003, Carter and Feldhammer 2005, Morris et al. 2010, Segers and Broders 2014), where prey availability is expected to be lower than in the forest interior (Owen et al. 2003). Mature forest is considered to be the most important foraging habitat for the northern long-eared bat (USFWS 2013, 2014).

Roost trees are also usually in intact forest, close to the core and away from large clearings, roads, or other sharp edges (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). Roosts are usually in cavities or, less often, under exfoliating bark of large-diameter trees that form a high and dense canopy (Foster and Kurta 1999, Menzel et al. 2002, Carter and Feldhammer 2005; reviewed by Barclay and Kurta 2007), but the USFWS (2014) considers trees as small as 3 inches DBH to be potential roost sites. Northern long-eared bats, including lactating females, will use many different summer roost trees, often switching roosts every 1 to 5 days and moving hundreds of feet between successive locations (Menzel et al. 2002, Owen et al. 2002, Johnson et al. 2009).

The northern long-eared bat has experienced the steepest population decline of the six species of bats in the Northeast that are affected by WNS, with numbers at monitored hibernacula in several states dropping by an average of 98% between 2006 and 2011 (Turner et al. 2011, Langwig et al. 2012, Reeder and Moore 2013). Population models for the closely-related Indiana bat and little brown bat (*M. lucifugus*), which have experienced lower relative population declines of 72% and 91%, respectively, project imminent broad-scale extirpation of these species throughout much of their range (Frick et al. 2010, Thogmartin et al. 2013), indicating that the northern long-eared bat is also at extremely high risk of extinction. In New York State, pre- and post-WNS count data from 18 northern long-eared bat hibernacula showed local population extinction at all but 4 of the sites as of 2011 and suggested an average statewide population decline of 97% (Turner et al. 2011). Surveys at these 18 hibernacula in New York State during the winter of 2012-2013 found only 14 northern long-eared bats where there had previously been over 1,100 before WNS (Niver 2015). Although geographically widespread, the northern long-eared bat was uncommon in New York State and many other parts of eastern North America even prior to the outbreak of WNS, relative to most other bats (Turner et al. 2011, Langwig et al. 2012, Moosman et al. 2013). This was possibly due in part to their sensitivity to deforestation and fragmentation (Henderson et al. 2008).

The USFWS IPaC System lists the northern long-eared bat as occurring within Orange County, and the acoustic bat survey conducted in August 2015 indicated the presence of northern long-eared bats foraging within the project site (**Appendix A**). As with the Indiana bat, it is unknown whether the project site is only used by northern long-eared bats as foraging habitat, or if they roost within the site as well. With the exception of the woodland on the western and southern sides of the Echo Lake property, the wooded areas within the project site are small fragments that have a high amount of edge relative to their area and are therefore unlikely to be selected by northern long-eared bats for roosting, given their preference for interior forest (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). NYNHP does not have any records of northern long-eared bat maternity colonies or roosts in the vicinity of the project site (NYNHP 2015).

C. ECOLOGICAL COMMUNITIES OF THE PROJECT SITE

The Project Site consists of the Ver Hage and Echo Lake properties as well as two additional, adjacent properties herein referred to as the "Lipoff" and "Strong Farm" properties (**Figure 1**). The four properties total approximately 374 acres and are located in Commercial/Office Mixed-Use, Industrial, and Rural Zoning Districts of Goshen, NY **(Table 1)**. Land uses in the immediate vicinity of the Project Site include rural residential, farmland, institutional, and rural commercial uses.

Table 1
Properties Comprising the Project Site

Property	Address	SBL[1]	Zoning[2]	Acres
Amy's Kitchen Properties				
Ver Hage property[5]	111 Hartley Road	12-1-1.222	I	54.6
	103 Hartley Road	12-1-19.2	I	17.1
Lipoff property	12 Echo Lake Road	12-1-1.41	RU	11.8
Science of the Soul Properties				
Echo Lake property	41 Echo Lake Road[3]	12-1-24.2	CO, I, and RU	172.9
	2832 NYS Route 17M	12-1-23.2	I	21.7
Strong Farm property[4]	212 Cheechunk Road	10-1-11.2	RU	96
			TOTAL	374.1

Notes:
1 SBL 12-1-101 is currently owned by the State of New York (NYS). NYS has stated its intent to transfer 7.58 acres of this land to the Town of Goshen for the purpose of improving road access to Route 17M for the project and surrounding uses.
2 Town of Goshen Zoning Designations: Commercial/Office Mixed-Use (CO); Industrial (I); and Rural (RU).
3 The portion of this property in the Town of Wawayanda (SBL 1-1-40) is also owned, but is not included in the above Table. There are no proposed modifications to the portion of the parcel in Wawayanda.
4 SoS also owns a 2.9 acre parcel at 51 Owens Road (SBL 10-1-11.1) and a 14.2 acre parcel at 117 Owens Road (SBL 10-1-9). There are no proposed modifications to these properties. The existing residence at 51 Owens Road would continue to be used as a residential use.
5 It is anticipated that 10 to 12 acres of this property would be subdivided off for use by a third party. This would leave approximately 60 to 62 acres for use by Amy's Kitchen.

Below are general descriptions of the ecological communities (*sensu* Edinger et al. 2002; **Figure 2**) and dominant vegetation occurring within each of the four properties that comprise the Project Site. More detailed information on forest composition and structure, and potential roosting habitat for the Indiana and northern long-eared bat within and outside of the proposed project's limits of disturbance is presented below in **Section E**.

VER HAGE

The Ver Hage property is bordered to the south by a closed landfill and an active waste processing facility, to the west by the Wallkill River, to the north by a former railroad right-of-way intended for improvement by Orange County as a continuation of the Heritage Trail, and to the east by Hartley Road. It consists of successional old field, woodland, wetland, and fresh surface waters (Wallkill River and Cheechunk Creek) and associated riparian/floodplain forest. The successional old field occupies approximately two-thirds of the property (**Figure 2**). Dominant herbaceous plants in the field include wild madder (*Rubia peregrina*), common milkweed (*Asclepias syriaca*), Canada goldenrod (*Solidago canadensis*), common mugwort (*Artemisa vulgaris*), cow vetch (*Vicia cracca*), yellow vetchling (*Lathyrus aphaca*), and tall thistle (*Cirsium altissimum*). Grasses in the herbaceous layer include foxtail grass (*Alopecurus* sp.), switchgrass (*Panicum virgatum*), and dactylis (*Dactylis* sp.). The shrub layer is dominated by bush honeysuckle (*Lonicera* sp), multiflora rose (*Rosa multiflora*), common red raspberry (*Rubus idaeus*), and autumn olive (*Elaeagnus umbellata*).

The woodland consists of two fragments of successional southern hardwood forest on the east and west sides of the property that are separated by the successional old field. The forest-field edges are feathered with transitional zones of woody shrubs. The dominant canopy tree species near the edges include eastern cottonwood (*Populus deltoides*), American sycamore (*Platanus occidentalis*), and black walnut (*Juglans nigra*). Red panicled dogwood (*Cornus racemosa*) dominates the shrub layer, and grape (*Vitis* sp.), poison ivy (*Toxicodendron radicans*), and Virginia creeper (*Parthenocissus quinquefolia*) are abundant vines. The more interior portions of the forest fragments are dominated by black cherry (*Prunus serotina*), honey locust (*Gleditsia triacanthos*), sugar maple (*Acer saccharum*), and red maple (*Acer rubrum*). Bush honeysuckle, barberry (*Berberis* sp.), and wineberry (*Rubus phoenicolasius*) are the dominant shrub species and Virginia creeper is the predominant vine. Garlic mustard (*Alliaria petiolata*) and common jewelweed (*Impatiens capensis*) are dominant in the herbaceous layer. The woodland fragments on the eastern and western sides of the property include riparian and floodplain forest where they border Cheechunk Creek and the Wallkill River, respectively. There, green ash (*Fraxinus pennsylvanica*), American sycamore, eastern cottonwood, and pin oak (*Quercus palustris*) are the dominant canopy tree species and the herbaceous layer consists of primarily jewelweed, stinging nettle (*Urtica dioica*), moneywort (*Lysimachia nummularia*), and beggar's tick (*Bidens frondosa*). The forest bordering Cheechunk Creek extends towards the southern end of the property, forming a narrow peninsula of young trees that divides the old field to the east and west. This early seral stage area is composed of several species of young and small trees, including shagbark hickory, black cherry, slippery elm, ash (*Fraxinus* sp.), and butternut hickory.

LIPOFF

The Lipoff property is bordered to the south by Echo Lake Road, to the west by the Wallkill River, to the north by the Strong Farm property, and to the east by residential properties. The property primarily consists of successional old field, woodland, and wetlands. The successional old field represents a small portion of the property, in the northwestern corner (**Figure 2**). The herbaceous layer of the field is predominantly orchard grass (*Dactylis glomerata*), switchgrass, common milkweed, and common mugwort. The limited shrub layer is dominated by common red raspberry.

The woodland includes successional southern hardwood and beech-maple mesic forest. The successional southern hardwoods community occupies more than 50 percent of the property and

is located both north and south of Cheechunk Creek. Dominant trees include green ash, European black alder (*Alnus glutinosa*), honey locust, and American sycamore. There is a well-developed shrub layer consisting primarily of wineberry, bush honeysuckle, common red raspberry, and spicebush (*Lindera benzoin*). The herbaceous layer is predominantly Virginia creeper and garlic mustard, with grape in the vine layer. The beech-maple mesic forest occupies a small portion of the property on a steep hill that runs parallel to Cheechunk Creek on its north side. The tree canopy predominantly consists of American beech (*Fagus grandifolia*), sugar maple, red oak (*Quercus rubra*), black cherry, and black birch (*Betula lenta*). The shrub layer is sparse and primarily consists of barberry. The herbaceous layer is equally sparse and dominated by common yellow wood sorrel (*Oxalis stricta*).The floodplain forest along the Wallkill River and Cheechunk Creek is narrow and dominated by pin oak, green ash, honey locust, and red maple. The shrub layer is primarily a mixture of multiflora rose and hawthorn (*Crataegus* sp.). The herbaceous layer is primarily stinging nettle, poison ivy, and sedge (*Carex* sp.). The northeastern corner of the property contains a shallow emergent marsh with sedges (*Carex* sp.) and rushes (*Juncus* sp.).

STRONG FARM

The Strong Farm property is bordered to the south by the Lipoff property, to the west by the Wallkill River, to the north by primarily forested land, and to the east by Owens Road. The Strong Farm property consists of primarily successional old field, active crop fields, woodland, and wetlands (**Figure 2**). The majority of the property contains successional old fields that are divided by shelter belts and dominated by common mugwort, common milkweed, tall thistle, and orchard grass.

The upland portion of the woodland is successional southern hardwood forest, and is located primarily in the northwestern portion of the property and in narrow strips separating the fields. The predominant tree species in this area include eastern cottonwood, silver maple (*Acer saccharinum*), red maple, and American sycamore. The shrub layer is dominated by multiflora rose and common red raspberry. The most common species within the herbaceous layer are Virginia creeper and garlic mustard. The upland forest transitions to floodplain forest along the Wallkill River. There, the tree canopy is predominantly a mixture of eastern cottonwood, green ash, black willow (*Salix nigra*), and American sycamore. The shrub layer is dominated by European black alder, while the herbaceous layer is commonly Japanese stiltgrass (*Microstegium vimineum*).

The northern end of the property contains a sedge meadow that has a shrub layer of mostly red panicled dogwood and elderberry (*Sambucus canadensis*) and a herbaceous layer of sedge, rush, sensitive fern (*Onoclea sensibilis*), and purple loosestrife (*Lythrum salicaria*).

The active crop fields include a corn field and a hayfield dominated by orchard grass, switchgrass, foxtail grass, and red clover (*Trifolium pratense*).

ECHO LAKE

The Echo Lake property is bordered to the south by the New York State Mid-Hudson Psychiatric Center and New York State Route 17M, to the north and west by Echo Lake and Echo Lake Road, and to the east by the Wallkill River. The Echo Lake property consists of primarily successional old field, forest, shrubland, and wetlands (**Figure 2**).

Successional old field covers 46 acres (26 percent) of the property. This habitat type extends south from Echo Lake Road into an area that was previously mined and was reclaimed.

Dominant plants include spotted knapweed (*Centaurea maculosa*), red clover, Canada goldenrod, common mugwort, sweet vernal grass (*Anthoxanthum odoratum*), perennial rye (*Lolium perenne*), tall fescue (*Lolium arundinaceum*), and orchard grass. Successional shrubland covers 26 acres (15 percent), primarily in the north-central portion of the property. Rock walls and hedgerows of trees also occur in this area. The dominant shrubs are common buckthorn (*Rhamnus cathartica*), blackhaw (*Viburnum prunifolium*), gray-stem dogwood (*Cornus foemina*), blackberry (*Rubus allegheniensis*), multiflora rose, and young red maple. Red maple and tree-of-heaven (*Ailanthus altissima*) are common tree species in the area. In more open portions, sweet vernal grass, rough-stem goldenrod (*Solidago rugosa*), poison ivy, and Virginia creeper are common. Many of the species found in the successional old field community also occur in the successional shrubland community.

The forested uplands within the Echo Lake property consist of successional southern hardwoods. This is the most common cover type on the property, occupying approximately 99 acres (57 percent). It is common along the slopes adjacent to the Wallkill River and in the western and southern portions of the property. The woodland varies somewhat in dominant tree species and tree sizes, but significant trees over 12 inches DBH are prevalent. The forest in the western portion of the site has evidence of past disturbance and contains stone walls and old hedgerows. Large trees occur along the stone walls, but young forest with a dense shrub layer occurs in some areas. The dominant tree species are tree-of-heaven, eastern cottonwood, black cherry, and sugar maple. There are also areas heavily dominated by red maple saplings. Honeysuckle (*Lonicera morrowii*), common buckthorn, blackhaw, and multiflora rose are abundant shrubs, and poison ivy, Virginia creeper, clearweed (*Pilea pumila*), and hound's tongue (*Cynoglossum officinale*) occur in the herbaceous layer.

In the southern portion of the site and the areas near the Wallkill River Eastern cottonwood is abundant; American sycamore occurs near the river and black cherry, sugar maple, and white ash (*Fraxinus americana*) are common on the drier slopes.

The shallow emergent marsh in the northern portion of the property covers approximately 4 acres. It is a result of mining and other past activities on the site; it is not a wetland under the jurisdiction of the US Army Corps of Engineers (USACE) or the NYSDEC. Dominant plants include rice cut grass (*Leersia oryzoides*), spike rush (*Eleocharis* sp), sedges, fox sedge (*Carex vulpinoides*), hop sedge (*C. lupulina*), purple loosestrife, late goldenrod (*Solidago gigantea*), and burreed (*Sparganium* sp.).

A small red maple-hardwood swamp occurs in the southern portion of the property and occupies 0.8 acres. It is a wetland that falls under the jurisdiction of the USACE. It is not a NYSDEC mapped freshwater wetland. Red maple and green ash are the dominant tree species. Many of the trees in this area are mature and over 12 inches DBH. Spicebush is abundant in some places and forms a dense, tall shrub layer. Common herbaceous species include skunk cabbage (*Symplocarpus foetidus*), common jewelweed, poison ivy, cinnamon fern (*Osmunda cinnamomea*), and Virginia creeper.

D. PROJECT DESCRIPTION

The Proposed Project consists of four primary components (see site layout in **Figure 3a-d**):

- Amy's Kitchen manufacturing facility on the Ver Hage property;
- Potential subdivision of approximately 10 to 12 acres from the Ver Hage property for future warehouse use;

- Science of the Soul Conference Center on the Echo Lake property;
- Potable water supply line and wastewater conveyance line within the existing Heritage Trail; and
- Use of the Strong Farm property for agricultural use and volunteer parking for Science of the Soul.

The proposed project also involves a land transfer of an approximately 7.58 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen to construct a project site access road from NYS Route 17M into the main portion of the Echo Lake property (see **Figure 3a**). The portion of the Echo Lake property that currently has road frontage on NYS Route 17M (SBL 12-1-23.2) is too narrow and too close to the existing bridge that carries NYS Route 17M over the Wallkill River to permit the site access road. The new access road would also serve the Mid-Hudson Psychiatric Center (one of the two existing driveways to which would be closed on NYS Route 17M) and Science of the Soul. The new roadway would be located approximately 300 feet west of the existing Training Center Lane, which would be relocated to align opposite the new site access road to form a full movement signalized intersection.

AMY'S KITCHEN

Amy's Kitchen proposes to construct an approximately 369,000 square-foot manufacturing facility where food is prepared, packaged and frozen (**Figure 3b**). The manufacturing facility is proposed to be constructed on the Ver Hage property, with initial site access from Hartley Road. Ultimately, a new roadway would provide direct access for Amy's Kitchen to NYS Route 17M across the Echo Lake property and across a new vehicular bridge over the Wallkill River.

Operation of the manufacturing facility would include three shifts, five days per week and occasionally on weekends. The shift times would generally start/end during the 5:00 am to 7:00 am time period, during the 2:00 pm to 5:00 pm time period, and overnight during the 10:00 pm to 1:00 am time period. At full operation, it is estimated that there would be approximately 321 Day Shift, 304 Swing Shift, and 56 Graveyard Shift employees. The maximum number of individuals to be in the manufacturing facility at any one time is projected to be approximately 325 people. General operations at the facility would include processing, cooking, assembling, packaging and freezing meals for distribution.

Stormwater management measures would include a combination of filtration and infiltration, the use of porous pavement, bio-retention areas, and dry swales. In order to minimize site disturbance and mimic existing drainage patterns, alteration of existing topography would be minimized to the greatest extent possible when determining the proposed site grading. The stormwater management system would be designed to comply with the New York State Stormwater Management Design Manual dated January 2015. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared in accordance with NYSDEC General Permit GP-0-15-002, or its successor, and a Notice of Intent to discharge stormwater under this General Permit will be submitted to NYSDEC.

Initial site access to the Amy's Kitchen facility would be from Hartley Road and the Proposed Project would include the following improvements to the intersection of NYS Route 17M and Hartley Road to accommodate the project: replacement of the existing traffic signal, installation of east-bound and west-bound left-turn lanes on NYS Route 17M, and installation of a northbound left-turn lane on Gate Schoolhouse Road. In addition, Hartley Road would be resurfaced and re-striped. Eventually, site access would be from a new access road that would extend north from NYS Route 17M and bisect an area of shrubland and a successional southern

hardwood forest that is between the Wallkill River and the Mid-Hudson Psychiatric Center before connecting to the Echo Lake property. From the Echo Lake property, the proposed road would cross a proposed bridge over the Wallkill River and terminate at the Ver Hage property.

Based on initial consultations with NYSDOT, this new entry road for the Proposed Project would need to upgrade the intersection of NYS Route 17M at the location of the proposed site entrance. To facilitate these improvements, the Proposed Project would include a land transfer of an approximately 7 to 10 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen. The purpose of the land transfer would be to improve access to NYS Route 17M and safety along NYS Route 17M, not only for the Project, but also for the Mid-Hudson Psychiatric Center and the Orange County Transfer Station. The new access road would serve the Mid-Hudson Psychiatric Center, SoS, and Amy's Kitchen. The new roadway would be located approximately 300 feet west of the existing Training Center Lane, which would be relocated to align opposite the SoS and Amy's Kitchen access to form a full movement signalized intersection.

Full build-out of Amy's Kitchen (**Figure 3b**) would occur in two phases. Phase 1 would total 226,000 square feet: 215,000 square feet of production space and 11,000 square feet of office space. An accessory 3,000 square-foot medical clinic would be constructed in a free-standing building on the Project Site. Phase 1 would also include construction of internal driveways and employee parking, and water supply and wastewater conveyance lines. Site landscaping, stormwater management, and lighting would also be completed. It is anticipated that Phase 1 would take approximately 18 months to complete. Production would be expected to begin in the first quarter of 2018. Phase 2 of Amy's Kitchen would total 140,000 square feet: a 134,000 square feet expansion of production space and an additional 6,000 square feet of office space. Phase 2 construction would be completed by approximately 2023.

The full footprint of disturbance for the Amy's Kitchen facility, including all buildings and other permanent impervious surfaces, would be approximately 37 acres. Approximately 34 acres (approximately 48 percent) of the property (excluding the 10 to 12 acres for the potential subdivision explained below) would remain undisturbed as open space.

WAREHOUSE

As part of the proposed project, approximately 10 to 12 acres of the Ver Hage property would be subdivided and a warehouse would be constructed. The warehouse would be 70,350 square feet and have an approximately 10,000 square foot parking area and loading bays for six tractor trailers. The total footprint would be expected to be around 6 acres. It would be located adjacent to the Amy's Kitchen food manufacturing facility, on the eastern side of the Ver Hage property, between Cheechunk Creek and Hartley Road. The LOD would be centered on what is now successional old field such that tree removal would be limited to only an approximately 0.1 acre portion of floodplain and successional southern hardwood forest bordering Cheechunk Creek. The warehouse would be accessed from Hartley Road through the same entrance that would be initially used for the Amy's Kitchen manufacturing facility.

SCIENCE OF THE SOUL

SoS is an international, non-denominational philosophy based on the teachings that are universal to all religions. SoS, also known as Radha Soami Satsang Beas, has been in the United States since 1911 and is a registered 501(c)(3) religious non-profit organization. SoS proposes to construct a Conference Center on the Echo Lake property. The Conference Center would consist of an approximately 200,000 square-foot open-air pavilion, ancillary buildings for administration

and support, parking areas (both paved and gravel and/or grass) to accommodate approximately 2,043 cars and an additional 130 buses, two approximately 2,600 square-foot caretaker residences, and one five-bedroom guest-house (see **Figure 3c**)

The Conference Center would be used to host one annual three-day national conference ("National Conference"), with anticipated attendance of up to 12,000 people. The National Conference would typically be held over a three day period, either Friday through Sunday or Saturday through Monday. Each day's program for a National Conference would run from 9:00 AM until 1:00 PM. In addition, SoS would hold one regional conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees over a weekend. The Regional Conference would be held in the two-story Multi-Purpose/Family Area Building. A lecture would occur on one floor, and the other floor would be used for the family area. Regular weekly meetings on Sunday mornings for local congregants ("Weekly Meeting"), estimated between 200 and 400 people, would be held in the Central Building. The Central Building would also be used for administrative purposes, temporary accommodation for volunteers staying for short periods, and small volunteer meetings. During the week, a small number of volunteers (10 to 15 people) would attend to normal administrative and property management tasks. The Central Building would also contain a commercial kitchen, which would be used to provide meals for volunteers.

During the National and Regional Conferences, all sound amplification would take place within the 200,000 square-foot steel-frame open-air pavilion. The amplified sound would consist of an approximately two-hour lecture preceded by approximately 30 minutes of spiritual chanting. At Weekly Meetings, the amplified sound would be contained in the multi-purpose building. SoS does not contemplate large nighttime events; nighttime uses would be limited to preparation for the National and Regional events, night watch, and periodic evening "Study Sessions" during which a small group of people would come to the center to study. The Study Sessions would be held only one or two evenings per week, from approximately 7:00 pm to 8:00 pm. Attendance would likely consist of only 20 to 25 people who live locally and would leave the property shortly after the sessions end. Other than preparation for the National and Regional events, all activities would cease and the Center would close at 9:00 pm.

Access to SoS would be from the new entrance roadway off NYS Route 17M, which, as discussed above, would also eventually serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface. The primary parking for the SoS Conference Center would be on the Echo Lake property. The main parking area would have a combination of approximately 660 paved and 1,280 gravel and/or grass parking spaces. Four additional parking areas containing approximately 24 parking spaces each would be located adjacent to the Central Building and Family Area building. Another small parking area with approximately 7 spaces would be located in the rear of the open-air pavilion. In addition, a parking area to accommodate 130 bus parking spaces would be located on the eastern side of the Center. During the larger National Conference, parking for volunteers would be provided on an as-needed basis on portions of the Strong Farm property that are currently fields or otherwise already cleared space. No impervious surface parking areas would be created on the Strong Farm property. The gravel/grass parking area on the Echo Lake property would be heavily planted with a grid of trees (hereafter referred to as the "orchard parking area"), which would help to offset losses of trees from clearing some of the currently wooded areas of the property and would provide a soft edge or buffer between the Conference Center and the western portion of the property that would remain wooded and be preserved.

SoS purchased the Strong Farm property and intends to continue and enhance its current agricultural use. SoS would also restore the main residence and some of the agricultural structures on the property; the two other residential structures would be rented to tenants or used for volunteer housing during the National and Regional Conferences. Continuation of the former dairy farm use is not proposed. As noted above, the Strong Farm property would also be used for volunteer parking for the SoS Conference Center during the National Conference.

POTABLE WATER AND WASTEWATER

Potable water supply to the Amy's Kitchen manufacturing facility, warehouse, and SoS would be provided by a new private utility connection to the City of Middletown water supply. An approximately 8 inch diameter line would be trenched within the Heritage Trail corridor and would connect with existing City of Middletown water supply lines in the vicinity of the City of Middletown wastewater treatment plant. An approximately 8 inch diameter wastewater conveyance line servicing Amy's Kitchen, the warehouse, and SoS would be also be trenched within the Heritage Trail corridor and would connect to the City of Middletown wastewater treatment plant. Two below-ground pumping stations would be required to ensure pre-treated wastewater effluent conveyance to the treatment plant. One pumping station would be located within the Echo Lake property and one pumping station would be located within the Ver Hage property. The Echo Lake pumping station would be approximately 10 feet in diameter and 14 feet in depth. The Ver Hage pumping station would be approximately 20 feet by 46 feet and 12 feet in depth. Since minimal clearing of ruderal vegetation and no tree clearing would be required to construct the water and wastewater conveyance lines, these project elements would not have any effect on the Indiana or northern long-eared bat.total Acreage of Disturbance

It is estimated that the total footprint of the proposed project would disturb approximately 147 of the 410 total acres that comprise the four properties of the project site. The majority of the acreage that would be disturbed to construct the proposed project is currently old field and successional southern hardwoods habitat. The remainder of the area of disturbance currently consists of successional shrubland, shallow emergent marsh, and red maple swamp (**Table 2**). The areas of disturbance in relation to the current distribution of habitat types occurring within the project site are shown in **Table 2** and illustrated in **Figure 2**.

Table 2
Acreages of Disturbance to Different Habitat Types on the Project Site

Habitat Type	Total Acres on Project Site	Acres of Disturbance
Beech-maple mesic forest	0.9	0.0
Field crops	33.9	0.0
Row crops	27.9	0.0
Ditch/artificial intermittent stream	0.9	0.0
Floodplain forest	11.6	0.0
Red maple-hardwood swamp	1.3	0.1
Sedge meadow	5.5	0.0
Shallow emergent marsh	5.6	3.6
Successional old field	96.3	79.2
Successional shrubland	31.1	19.4
Successional southern hardwoods	194.8	48.9
Total	**409.9**	**151.2**

E. FOREST COMPOSITION AND BAT HABITAT CHARACTERIZATION

Woodland habitat within the project site was characterized on December 9, 15, and 16, 2015 following the methods described by James and Shugart (1970) for the purposes of assessing potential impacts to Indiana bat and northern long-eared bat habitat due to construction and operation of the proposed project, as well as the net conservation benefit to the two bat species that would result from the protection of undeveloped portions of the properties. Twenty three 0.1 acre (0.04 ha) circular plots were haphazardly established within wooded portions of the Ver Hage, Echo Lake, and Lipoff properties, both within and outside of the proposed project's limits of disturbance (LOD) in order to characterize the woodland habitat that would be lost to construct the proposed project as well as the remaining woodland habitat on these three properties that would be preserved (**Figure 4**). Within each plot, all shrubs (woody stems < 3 inches diameter at breast height [DBH]) that were intersected while walking two perpendicular transects across the 0.1 acre circle were identified to species and counted. All trees (woody stems ≥ 3 inches DBH) within each plot were counted, identified to species, and measured. Additionally, all living trees and snags within the plots that were considered to have the potential to be a quality roost tree for either Indiana or northern long-eared bats were recorded. Criteria for a quality potential roost tree for either species included DBH greater than or equal to (≥) 4 inches, height greater than (>) 10 feet, and the presence of significantly peeling/sloughing bark or cavities that were visible from the ground (USFWS 2014). Distance to the nearest edge and degree of sun exposure were not considered because Indiana bats prefer roosts near edges and with direct sun exposure (Callahan et al. 1997, Menzel et al. 2001, USFWS 2014), but northern long-eared bats usually do not (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005, USFWS 2014). Therefore, all trees that are considered to be quality potential roost trees are trees that are thought to be quality potential roost trees for Indiana bats, northern long-eared bats, or both.

The shrub and tree data collected within the plots were used to calculate the following standard parameters that describe forest structure: (1) shrub density (stems/acre), (2) relative shrub density (%), (3) tree density (trees/acre), (4) relative tree density (%), (5) tree basal area (ft^2/acre), and (6) percentage of total basal area per tree species (i.e., dominance). Data from plots within and outside the LOD were analyzed independently to separately describe the woodland areas that would be lost and preserved. Because of the heterogeneity of the project site's woodlands, both within and outside of the LOD, and their fragmented distribution among multiple properties, plots were grouped into the areas described below rather than pooling them together and extrapolating the results across the entire project site.

AMY'S KITCHEN MANUFACTURING FACILITY

Two sampling plots were located within the narrow peninsula of trees at the southern end of the Ver Hage property that would be removed to construct the main building of the Amy's Kitchen manufacturing facility (Plots 20-21, **Figure 4**). This approximately 1.6 acre woodland fragment is in a very early seral stage, with tree DBH averaging 6.3 inches. The maximum DBH of any tree within the two sampling plots in this location was only 15 inches. No species are overwhelmingly dominant; the area is composed of a nearly even mix of several young trees, including shagbark hickory, black cherry, slippery elm, ash (*Fraxinus* sp.), and butternut hickory (**Table 3**). Invasive and/or domesticated tree species are also present, including tree of heaven, Bradford pear, and apple (*Malus* sp.). The understory shrub community is dominated by invasive multiflora rose, Tatarian honeysuckle, and common buckthorn (**Table 4**). Three quality potential

roost trees were found within the two sampling plots, two of which were small snags (4 and 7 inch DBH) and a 15 inch DBH shagbark hickory. This equates to an average density of 15 quality potential roost trees per acre, and 24 total quality potential roost trees when extrapolated to the approximately 1.6 acre area that would be cleared.

AMY'S KITCHEN ENTRY ROAD

Forest composition was sampled in four plots in the forested areas through which the proposed entry road would pass on the Echo Lake parcel (Plots 12-15, **Figure 4**). Dominant trees in these areas include red maple, white oak, and American sycamore (**Table 5**), and the understory shrub layer is primarily composed of Japanese barberry and privet (**Table 6**). DBH averages 9 inches across all tree species, and several large-diameter, saw-timber trees (> 10 inches DBH) are present. Six quality potential roost trees were counted in the four sampling plots, which equates to an average density of 15 quality potential roost trees per acre and an estimate of 210 total quality potential roost trees that would be removed within the approximately 14.0 acre area of woodland disturbance.

Table 3
Tree Composition In the Area of Disturbance of the Proposed Amy's Kitchen Facility, Ver Hage Property

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Shagbark hickory	7.9 ± 4.1	10.4	25	9.8	16.2
Black cherry	7.4 ± 2.2	9.7	30	11.8	15.1
Slippery elm	5.5 ± 2.7	9.0	45	17.6	14.1
Unidentified ash sp.	6.5 ± 3.4	7.0	25	9.8	11.0
Butternut hickory	9.8 ± 6.7	6.4	10	3.9	10.0
White ash	4.8 ± 0.9	6.4	50	19.6	10.0
Tree of heaven	6.5 ± 0.5	3.5	15	5.9	5.4
Bradford pear	6.5 ± 2.1	2.4	10	3.9	3.8
Eastern red cedar	6.0 ± 2.1	2.1	10	3.9	3.3
Pin oak	7.5	2.1	5	2.0	3.3
Red maple	5.8 ± 1.1	1.8	10	3.9	2.9
Apple	5.0 ± 2.8	1.6	10	3.9	2.5
Red oak	6.5	1.2	5	2.0	1.8
Sugar maple	7.0 ± 0.0	2.7	10	3.9	1.0
Common buckthorn	4.0	0.4	5	2.0	0.7

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 20-21 shown in Figure 4. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 4
Shrub Composition In the Area of Disturbance of the Proposed Amy's Kitchen Facility, Ver Hage Property

Species	Density (stems/acre)	Relative density (%)
Multiflora rose	120	28.2
Common buckthorn	110	25.9
Tatarian honeysuckle	70	16.5
Gray dogwood	30	7.1
Black raspberry	20	4.7
Japanese barberry	15	3.5
White ash	15	3.5
Wineberry	15	3.5
Privet	10	2.4
Burning bush	5	1.2
Shagbark hickory	5	1.2
Slippery elm	5	1.2
Unidentified shrub	5	1.2
Total	425	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 20-21 shown in Figure 4. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 5
Tree Composition In the Vicinity of the Proposed Amy's Kitchen Entry Road, Echo Lake Property

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Red maple	10.3 ± 5.4	44.0	60.0	24.7	30.5
White oak	8.9 ± 4.5	24.3	45.0	18.6	16.9
American sycamore	20.0 ± 5.1	22.9	10.0	4.1	15.9
White ash	10.0 ± 6.4	16.8	22.5	9.3	11.6
Black cherry	7.6 ± 2.7	13.2	37.5	15.5	9.2
Sugar maple	6.9 ± 3.9	6.6	20.0	8.2	4.6
Eastern red cedar	5.8 ± 2.9	6.2	27.5	11.3	4.3
Red oak	13.3 ± 4.6	5.1	5.0	2.1	3.5
Pin oak	11.0 ± 3.5	3.5	5.0	2.1	2.4
Pignut hickory	8.0	0.9	2.5	1.0	0.6
Black oak	4.5 ± 2.5	0.8	7.5	3.1	0.6

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 12-15 shown in Figure 4. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 6
Shrub Composition In the Vicinity of the Proposed Amy's Kitchen Entry Road, Echo Lake Property

Species	Density (stems/acre)	Relative density (%)
Japanese barberry	75.0	30.0
Privet	37.5	15.0
Red raspberry	20.0	8.0
Lowbush blueberry	17.5	7.0
Spicebush	17.5	7.0
Tatarian honeysuckle	17.5	7.0
Multiflora rose	12.5	5.0
Wineberry	10.0	4.0
Gray dogwood	7.5	3.0
Japanese honeysuckle	7.5	3.0
Black cherry	5.0	2.0
Common buckthorn	5.0	2.0
Alder	2.5	1.0
American beech	2.5	1.0
Eastern red cedar	2.5	1.0
Oak sp.	2.5	1.0
Unidentified shrub	2.5	1.0
White oak	2.5	1.0
Witch hazel	2.5	1.0
Total	250	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 12-15 shown in Figure 4. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

SCIENCE OF THE SOUL ORCHARD PARKING AREA, GUEST HOUSE, AND DRIVEWAY

The orchard parking area that would be for regional and national events, the guest house, and the guest house driveway would all be located on the western side of the Echo Lake property, which consists of a large area of successional southern hardwoods to the south and a large area of shrubland/early seral stage forest to the north. The footprints of the orchard parking area and its adjacent clearings, guest house, and guest house driveway would occupy approximately 20.4 total acres that are currently wooded while the remaining areas of disturbance for these elements presently contain shrubland. Eleven sampling plots were distributed on this western half of the Echo Lake property, including seven plots within and four plots outside the limits of disturbance of the parking area, guest house, and driveway to accurately characterize this large area. Nine of the eleven plots were within the successional southern hardwood forest (Plots 1-6 and 9-11) while the other two plots were within the shrubland/early seral stage forest in the northwestern portion of the property (Plots 7-8; **Figure 4**).

Sugar maple is the most dominant tree in the successional southern hardwood forest, comprising 36 percent of the basal area, followed by pin oak, which represents 14 percent (**Table 7**). Total tree density averages 204 trees per acre and tree size averages 7.8 inches, although several trees > 12 inches are present. Quality potential roost trees occur at an overall density of 40 per acre, which extrapolates to an estimate of 816 total quality potential roost trees that would be removed within the approximately 20.4 acre area of woodland disturbance. The shrub layer is overwhelmingly dominated by privet, followed by smaller amounts common buckthorn, gray dogwood, multiflora rose, bush honeysuckle, and 18 other species (**Table 8**).

The northwestern portion of the Echo Lake property consists of shrubland mixed with areas of former shrubland that has recently succeeded into very early seral stage forest and has a high density of saplings. Among the two sampling plots surveyed in this area, the tree community was dominated by red maple and white ash, both averaging < 5 inches DBH (**Table 9**). Overall, DBH averaged only 4.2 inches and there were only three trees with a DBH over 6 inches. Red maple saplings < 3 inches DBH dominated the understory, with a density of 120 stems per acre. Common buckthorn was also abundant in the understory (**Table 10**). There were no quality potential roost trees within the plots.

SCIENCE OF THE SOUL BUS PARKING AREA

One sampling plot was surveyed within the area of disturbance of the SoS bus parking area, on the eastern side of the Echo Lake property, adjacent to the Wallkill River (Plot 16, **Figure 4**). The tree community is dominated by sugar maple and black cherry (**Table 11**) and has an average DBH of 8.0 inches. Five quality potential roost trees were found within the sampling plot, which equates to an estimated density of 50 quality potential roost trees per acre and an estimate of 130 quality potential roost trees that would be removed from this approximately 2.6 acre area of woodland. The understory is relatively dense and consists of mostly red maple saplings and common buckthorn (**Table 12**).

Table 7

Tree Composition in the Hardwood Forest Within and Adjacent to the Areas of Disturbance of the Science of the Soul Event Parking Area, Guest House and Driveway, Echo Lake Property

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Sugar maple	11.0 ± 6.8	31.1	34.4	16.9	35.7
Pin oak	8.4 ± 6.4	11.9	20.0	9.8	13.7
Red maple	5.8 ± 3.1	10.0	43.3	21.2	11.5
White oak	18.3 ± 14.8	8.8	3.3	1.6	10.1
White ash	6.7 ± 4.3	6.0	17.8	8.7	6.9
Ironwood	6.8 ± 2.2	2.7	10.0	4.9	3.1
Red oak	8.2 ± 4.6	2.6	5.6	2.7	2.9
Yellow birch	11.3 ± 3.4	2.5	3.3	1.6	2.8
Black cherry	6.4 ± 2.6	1.7	6.7	3.3	2.0
Eastern hemlock	16.0	1.6	1.1	0.5	1.8
Black birch	5.3 ± 2.0	1.5	8.9	4.4	1.8
Common buckthorn	3.8 ± 1.0	1.3	15.4	7.5	1.5
Slippery elm	3.1 ± 2.3	0.8	4.4	2.2	1.0
Butternut hickory	11.5	0.8	1.1	0.5	0.9
White pine	10.5	0.7	1.1	0.5	0.8
American beech	9.0	0.5	1.1	0.5	0.6
Hawthorn	5.0 ± 2.0	0.5	3.3	1.6	0.6
Paper birch	5.2 ± 0.8	0.5	3.3	1.6	0.6
Gray birch	4.3 ± 1.6	0.5	4.4	2.2	0.5
Privet	3.5 ± 0.7	0.5	6.7	3.3	0.5
Musclewood	3.5 ± 0.7	0.2	2.2	1.1	0.2
Eastern cottonwood	4.7	0.1	1.1	0.5	0.2
Shagbark hickory	4.5	0.1	1.1	0.5	0.1
Norway maple	3.1 ± 0.1	0.1	2.2	1.1	0.1
Flowering dogwood	4.0	0.1	1.1	0.5	0.1
Eastern red cedar	7.5	0.0	1.1	0.5	0.0

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 1-6 and 9-11 shown in Figure 4. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 8

Shrub Composition in the Hardwood Forest Within and Adjacent to the Areas of Disturbance of the Science of the Soul Event Parking Area, Guest House and Driveway, Echo Lake Property

Species	Density (stems/acre)	Relative density (%)
Privet	74.4	33.0
Common buckthorn	20.0	8.9
Gray dogwood	20.0	8.9
Multiflora rose	20.0	8.9
Bush honeysuckle	18.9	8.4
Red maple	11.1	4.9
Slippery elm	10.0	4.4
Japanese barberry	8.9	3.9
Musclewood	5.6	2.5
Witch hazel	5.6	2.5
American beech	3.3	1.5
Black locust	3.3	1.5
Hawthorn	3.3	1.5
Hickory sp.	3.3	1.5
Norway maple	3.3	1.5
Pin oak	3.3	1.5
Spicebush	3.3	1.5
Unidentified	2.2	1.0
Black cherry	1.1	0.5
Highbush blueberry	1.1	0.5
Ironwood	1.1	0.5
Red oak	1.1	0.5
White oak	1.1	0.5
Total	225.3	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 1-6 and 9-11 shown in Figure 4. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 9
Tree Composition in the Shrubland and Early Seral Stage Forest Within and Adjacent to the Areas of Disturbance of the Science of the Soul Event Parking Area and Guest House Driveway, Echo Lake Property

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Red maple	4.2 ± 1.4	1.6	155.0	62.0	44.7
White ash	4.3 ± 0.5	1.0	10.0	4.0	28.6
Hawthorn	3.8 ± 0.6	0.2	30.0	12.0	7.0
Common buckthorn	4.1 ± 0.8	0.2	25.0	10.0	6.9
Pin oak	7.6	0.2	5.0	2.0	4.6
Southern catalpa	5.9	0.1	5.0	2.0	2.7
Black cherry	3.8 ± 0.9	0.1	10.0	4.0	2.3
Slippery elm	3.8 ± 0.9	0.1	10.0	4.0	2.3

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 7-8 shown in Figure 4. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 10
Shrub Composition in the Shrubland and Early Seral Stage Forest Within and Adjacent to the Areas of Disturbance of the Science of the Soul Event Parking Area and Guest House Driveway, Echo Lake Property

Species	Density (stems/acre)	Relative density (%)
Red maple	120.0	45.3
Common buckthorn	80.0	30.2
Bush honeysuckle	30.0	11.3
Multiflora rose	20.0	7.5
White ash	10.0	3.8
Bush honeysuckle	5.0	1.9
Total	265.0	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 7-8 shown in Figure 4. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 11
Tree Composition in the Science of the Soul Bus Parking Area, Echo Lake Property

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Black cherry	11.4 ± 4.5	31.5	40.0	19.0	35.2
Sugar maple	7.4 ± 4.4	27.0	70.0	33.3	30.2
Red maple	6.0 ± 3.4	9.7	40.0	19.0	10.9
White oak	7.8 ± 3.9	7.4	20.0	9.5	8.3
Pin oak	11.5	7.2	10.0	4.8	8.1
Red oak	6.5 ± 0.7	4.6	20.0	9.5	5.1
White ash	6.0	2.0	10.0	4.8	2.2

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plot 16 shown in Figure 4. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 12
Shrub Composition in the Science of the Soul Bus Parking Area, Echo Lake Property

Species	Density (stems/acre)	Relative density (%)
Red maple	60.0	19.4
Common buckthorn	50.0	16.1
Sugar maple	40.0	12.9
Red oak	30.0	9.7
Musclewood	30.0	9.7
Pin oak	20.0	6.5
White ash	20.0	6.5
Privet	20.0	6.5
American beech	20.0	6.5
Japanese barberry	10.0	3.2
Hickory sp.	10.0	3.2
Total	310.0	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plot 16 shown in Figure 4. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

ECHO LAKE PROPERTY PRESERVATION AREAS

Approximately 36.6 acres of successional southern hardwood forest and shrubland/early seral stage forest on the western side of the Echo Lake property would be outside of the limits of disturbance of the SoS orchard parking area, guest house, and guest house driveway, and would be preserved. Tree and understory composition and structure in these areas were characterized in sampling plots 1 through 11 and are summarized in **Tables 7-10** above. Tree size in the successional southern hardwood forest averages 7.8 inches, larger diameter trees are abundant, and quality potential roost trees occur at an estimated density of 40 per acre. At the southern end of the Echo Lake property, where sampling plots 12-15 were located, approximately 21 acres of woodland would be outside of the limits of disturbance of the entry road and preserved. Here, quality potential roost trees occur at an average density of 15 per acre.

The northernmost portion of the property consists of shrubland mixed with areas of former shrubland that has recently succeeded into very early seral stage forest and has a high density of saplings. No quality roost trees are currently present and the habitat is unlikely to be used for foraging by Indiana or northern long-eared bats. However, over time, as the forest matures, it will be expected to eventually represent suitable roosting and foraging habitat for both species.

In addition, the Echo Lake property includes an approximately 40.2 acre area that is north of the railroad tracks, up to Echo Lake and Echo Lake Road, that would also be preserved as potential foraging and/or roosting habitat for the Indiana and northern long-eared bat. The habitat in this area was characterized in three sampling plots (Plots 17-19; **Figure 4**). A large portion of this wooded area is dominated by a stand of eastern hemlocks, many of which are > 12 inches DBH. White oak and American sycamore are dominant in the more deciduous portions of the woodland (**Table 13**), and the shrub layer is mostly privet and highbush blueberry (**Table 14**). Quality potential roost trees occur at an estimated density of 10 per acre. Outside of the sampling plots, but within the area that would be preserved, two large (>20 inch DBH, > 30 feet tall) snags that have direct sun exposure, hollows, cavities, and crevices, and are adjacent to Echo Lake

were noted. There is also a 56 inch DBH white oak tree in this area that has several cavities, peeling bark, and crevices. These trees are considered to have strong potential to host maternity colonies of Indiana bats and northern long-eared bats.

Table 13
Tree Composition in the Preservation Area on the Far Western Side of the Echo Lake Property

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Eastern hemlock	8.7 ± 4.9	69.8	133.2	46.0	46.6
White oak	17.9 ± 9.5	35.6	16.5	5.7	23.8
American sycamore	23.5	10.0	3.3	1.1	6.7
Tree of heaven	7.4 ± 1.6	8.2	26.6	9.2	5.5
Common buckthorn	5.1 ± 1.9	8.2	50.0	17.3	5.4
Ash sp.	8.9 ± 1.7	5.9	13.3	4.6	3.9
Sugar maple	9.3 ± 7.4	4.1	6.6	2.3	2.7
Gray birch	8.2 ± 2.9	3.8	10.0	3.5	2.5
Red oak	9.5	1.6	3.3	1.1	1.1
Elm sp.	4.0 ± 1.0	0.9	10.0	3.5	0.6
Musclewood	4.5 ± 2.1	0.8	6.7	2.3	0.6
Privet	4.0	0.3	3.3	1.1	0.2
White ash	4.0	0.3	3.3	1.1	0.2
Black cherry	3.5	0.2	3.3	1.1	0.2

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 17-19 shown in Figure 4. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 14
Shrub Composition in the Preservation Area on the Far Western Side of the Echo Lake Property

Species	Density (stems/acre)	Relative density (%)
Privet	183.2	48.2
Highbush blueberry	53.3	14.0
Multiflora rose	40.0	10.5
Tatarian honeysuckle	26.6	7.0
Burning bush	23.3	6.1
Common buckthorn	13.3	3.5
Japanese honeysuckle	6.7	1.8
Sugar maple	6.7	1.8
White oak	3.3	0.9
Unidentified tree	3.3	0.9
Highbush blueberry	3.3	0.9
Unidentified shrub	3.3	0.9
Eastern hemlock	3.3	0.9
Sugar maple	3.3	0.9
Eastern hemlock	3.3	0.9
Japanese barberry	3.3	0.9
Total	379.6	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 17-19 shown in Figure 4. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

LIPOFF PROPERTY PRESERVATION AREA

Two plots were sampled on the Lipoff property - one on the east side of Cheechunk Creek and one on the west side (Plots 22-23; **Figure 4**). The forest on the east side of the creek is dominated by pin oak and red oak saplings, whereas the forest on the west side of the creek is mostly pignut hickory saplings and large-diameter honey locust trees. Overall, honey locust is the most dominant tree in the area on the basis of basal area (**Table 15**), and overall tree DBH across both areas of forest averages 6.7 inches. Two quality potential roost trees were noted within the two sampling plots, which extrapolates to an average density of 10 quality potential roost trees per acre and a total of 93 quality potential roost trees in this approximately 9.3 acre area. The understory is dominated by tatarian honeysuckle and red oak saplings (**Table 16**).

Table 15

Tree Composition on the Lipoff Property Preservation Area

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Honey locust	16.1 ± 8.4	51.9	30	9.7	44.2
Pin oak	5.7 ± 4.5	29.5	105	33.9	25.1
Red oak	5.1 ± 2.1	14.5	90	29.0	12.3
Pignut hickory	7.7 ± 2.4	12.3	35	11.3	10.5
Ash sp.	11.0	3.3	5	1.6	2.8
Shagbark hickory	8.0	1.7	5	1.6	1.5
Black oak	5.5 ± 0.0	1.6	10	3.2	1.4
Black cherry	5.5	0.8	5	1.6	0.7
American sycamore	4.5	0.6	5	1.6	0.5
Honeysuckle	3.5	0.3	5	1.6	0.3
Unidentified tree	3.5	0.3	5	1.6	0.3
American beech	3.0	0.2	5	1.6	0.2
White oak	3.0	0.2	5	1.6	0.2

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 22 and 23 shown in Figure 4. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 16

Shrub Composition on the Lipoff Property Preservation Area

Species	Density (stems/acre)	Relative density (%)
Tatarian honeysuckle	100	37.7
Red oak	90	34.0
Green ash	15	5.7
Black cherry	10	3.8
Privet	10	3.8
Japanese barberry	10	3.8
Unidentified shrub	5	1.9
White oak	5	1.9
Common buckthorn	5	1.9
American beech	5	1.9
Multiflora rose	5	1.9
Total	260	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 7-8 shown in Figure 4. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

ADDITIONAL PRESERVED AREAS

Additional wooded areas on the Ver Hage and Strong Farm properties that were not surveyed would also be outside of the project's area of disturbance and protected to provide potential habitat for Indiana and northern long-eared bats. On the Ver Hage property, this includes the floodplain/riparian forest bordering Cheechunk Creek where it makes a sharp bend in the northeastern corner of the property. This approximately 5.4 acre area within and outside the bend is young forest that is generally composed of green ash, American sycamore, eastern cottonwood, and pin oak. Indiana bats were identified in this area during the August 2015 acoustic bat survey that was conducted for the proposed project. A minimum of 75 feet, and in most places, more than 200 feet, of this floodplain/riparian forest would remain between the Cheechunk Creek corridor and the LOD for the food manufacturing facility and warehouse in order to maintain commuting routes and foraging habitat quality for Indiana and northern long-eared bats. Similarly, the approximately 0.35 mile long segment of riparian forest currently bordering the eastern side of the Wallkill River along the Ver Hage property's western boundary would remain as potential foraging habitat and a commuting route for Indiana and northern long-eared bats. The mix of woodland and old field at the northern end of the Ver Hage property would also remain undeveloped and preserved. Altogether, approximately 27 acres of the Ver Hage property would be left undeveloped after construction of the approximately 37 acre food manufacturing facility and approximately 6 acre warehouse.

The Strong Farm property contains approximately 5.8 acres of successional southern hardwood forest fragments distributed within a mix of cropland, old field, sedge meadow, and successional shrubland. Included is the floodplain forest that stretches nearly 0.4 miles along the eastern bank of the Wallkill River on the property's western boundary. High levels of Indiana and northern long-eared bat activity that were found at the junction of the Wallkill River and Cheechunk Creek, just south of the Strong Farm property, during the August 2015 acoustic bat survey suggests that this forested river corridor is a heavily used commuting route and/or foraging habitat for both species. No development would occur on the Strong Farm property, and its use for the proposed project would be limited to volunteer parking on the fields a few days of the year during the SoS national and regional events.

F. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

Elements of the proposed project's construction and/or operation that would have the potential to affect Indiana and northern long-eared bats, evaluated below, include: loss of foraging and potential roosting habitat, fragmentation of foraging and potential roosting habitat, and disturbances from noise, nighttime lighting, and human activity.

CONSTRUCTION IMPACTS

Construction of the proposed project would not have any direct or indirect effects on hibernating Indiana or northern long-eared bats, or their hibernacula, because the closest hibernaculum to the project site is more than 9 miles away (NYSDEC 2015). Also for this reason, the proposed project would not affect fall swarming bats or fall swarming habitat which occur near the entrance of a hibernaculum (Ormsbee et al. 2007, Adams 2013, USFWS 2014).

All tree clearing for the proposed project would be conducted during the October 31 to March 31 hibernation period of Indiana and northern long-eared bats to avoid removal of a potentially active roost tree. As such, construction of the proposed project would not have any direct impacts to Indiana or northern long-eared bats. Potential impacts caused by the construction of

the proposed project would therefore be limited to indirect effects from the loss and fragmentation of foraging and potential roosting habitat within and around the project's areas of disturbance, and construction noise disturbances to bats occurring in the vicinity of the project site.

HABITAT LOSS AND FRAGMENTATION

As discussed above, construction of the proposed project would directly disturb approximately 151 total acres, consisting primarily of successional southern hardwood forest (48.9acres) and successional old field and shrubland (95.7 acres). For Amy's Kitchen, the warehouse subdivision, and SoS, the LOD would be centered on the large expanses of old field and shrubland on the Ver Hage and Echo Lake properties, respectively, in order to minimize tree removal and encroachment into wooded areas. Tree removal on the Ver Hage property for Amy's Kitchen would be limited to approximately 7.2acres of trees in the center of the property, as well as 0.4 acres on both sides of the Wallkill River where the entry road and bridge would be constructed (see **Figures 2 and 4**). Another 0.1 acres of trees would be removed near Cheechunk Creek for the warehouse. The SoS Conference Center on the Echo Lake property would require a larger amount of tree removal to accommodate the orchard parking area described above and the guest house and its driveway that would run north-south through the forest on the western side of the property (see **Figure 3c**). The entry road that would support both Amy's Kitchen and SoS would also require approximately 14 acres of tree removal within the forest that occurs between the southern end of the Echo Lake property and Route 17M (**Figure 3a**). There would be no tree removal or any other construction disturbances on the Lipoff or Strong Farm properties, and as discussed below under "Mitigation," these properties would be preserved through a conservation easement or similar legal agreement to provide protected roosting and foraging habitat for the Indiana and northern long-eared bat.

Amy's Kitchen

Foraging habitat

The Amy's Kitchen food manufacturing facility would have a footprint of approximately 37 acres, not including the facility's entry road that would be constructed through the Echo Lake property to connect to Route 17M. The majority of the facility would be sited on what is now old field bordered by narrow woodland fragments to the east and west, and would include the removal of the narrow peninsula of trees that currently bisects the area of old field at the southern end of the project site. Indiana bats are expected to currently use these areas of the Ver Hage property as foraging habitat given their association with foraging over open areas of early successional vegetation and along woodland edges in fragmented, agricultural landscapes (e.g., Watrous et al. 2006, USFWS 2007). Northern long-eared bats, in contrast, often avoid foraging along forest edges or over open fields (e.g., Owen et al. 2003, Patriquin and Barclay 2003), and potential foraging by northern long-eared bats within the Ver Hage property is therefore likely to be limited primarily to the Cheechunk Creek and Wallkill River corridors.

Construction of the Amy's Kitchen facility would remove approximately 30 acres of open field foraging habitat for Indiana bats and would be expected to displace Indiana bats from foraging along most of the property's remaining woodland edges. With the proposed project, the woodland fragments on the eastern and western sides of the property would be bordered by buildings and surface parking areas rather than the old field and shrubland habitat that is there now, making it unlikely that Indiana bats would forage along these approximately 4,000 linear feet of woodland edge. However, the Cheechunk Creek corridor and the majority of the Wallkill River corridor, which are likely areas of high foraging activity of both Indiana bats and northern

long-eared bats within the Ver Hage property, would not be directly disturbed by the proposed project. Approximately 200 feet of existing woodland and successional old field/shrubland would remain between Cheechunk Creek and the facility's LOD, providing a buffer between the developed areas of the property and the high quality foraging habitat likely provided by the creek's corridor. Indiana and northern long-eared bats would be expected to continue using the creek's corridor for foraging and/or as a commuting route to the same extent as at present. The approximately 0.35 mile long segment of riparian forest currently bordering the eastern side of the Wallkill River along the Ver Hage property's western boundary would also be undeveloped and remain as potential foraging habitat and a potential commuting route for both Indiana and northern long-eared bats.

The entry road that would be constructed for the Amy's Kitchen facility would extend northeast from Route 17M, through the shrubland and forested areas at the southern end of the Echo Lake property, and along a forested ridge paralleling the Wallkill River before crossing the river on a bridge that would be constructed to bring the entry road into the southwestern corner of the Ver Hage property (see **Figure**s **3 and 4**). Construction of the entry road through these areas would entail grading and clearing of approximately 14.0 acres of forest and 3.3 acres of shrubland. The forest at the southern end of the Echo Lake property through which the entry road would be constructed is approximately 0.35 miles long and approximately 0.35 miles wide at its widest point, and is connected to the large forested area on the western side of the Echo Lake property and beyond. This area may therefore provide forest interior foraging habitat for northern long-eared bats (approximately 35 acres). Construction of the entry road would be expected to cause this area to no longer have the potential to be used as foraging habitat for northern long-eared bats, given their sensitivity to forest fragmentation and well-documented avoidance of the sharp edges created by roads (Owen et al. 2003, Patriquin and Barclay 2003, Henderson et al. 2008, Morris et al. 2010, Segers and Broders 2014). Road noise has an interfering, masking effect on the prey detection abilities of clutter-adapted, gleaning bat species, such as the northern long-eared bat, which degrades foraging conditions in roadside habitats (reviewed by Altringham and Kerth 2016) and may largely account for the avoidance of roads by northern long-eared bats.

Foraging Indiana bats are also known to avoid roads, often reversing course when a road is encountered, and this appears to be due more so to the presence of vehicles and the noise they emit than the physical presence of the road itself (Zurcher et al. 2010, Bennett et al. 2013). Zurcher et al. (2010) found that Indiana bats reversed course 32% of the time when they approached a road and no vehicles were present, whereas they reversed course 60% of the time when there was a passing vehicle. A similar study also found that gaps in commuting routes caused by roads alone (with no vehicles) often caused multiple species of bats, including the Indiana bat and northern long-eared bat, to turn away from the road upon approach, and the likelihood of a bat turning away from a road significantly increased with the presence of a vehicle (Bennett et al. 2013).

Based on operations at Amy's Kitchen's comparable food manufacturing facility in Medford, OR, approximately 530 employee automobiles would be expected to enter or exit the facility via the entry road between the hours of 7 pm and 6 am, when bats in the area would be active. Presence of the proposed entry road and these vehicles along the eastern side of the Echo Lake parcel, where it would parallel remnant old field/shrubland to the west and the Wallkill River to the east, would be expected to cause Indiana bats to avoid foraging along this approximately 700 linear foot segment of field-woodland edge and approximately 700 foot segment of riparian corridor. Along this segment of the proposed road, an approximately 200 foot wide, wooded buffer would separate the road from the Wallkill River to the west and potentially attenuate

some of the vehicle noise and filter some of the light emitted from the vehicles' headlights and the motion-activated road lighting (described in detail under "Lighting"), but the crossing of the entry road over the Wallkill River by way of the proposed bridge would introduce vehicle noise and lighting directly to the river's corridor. Passage of approximately 530 vehicles along the river and over the proposed bridge at night, along with the road lighting on both sides of the bridge, would be expected to displace Indiana and northern long-eared bats from potentially using this segment of the Wallkill River corridor as a commuting route and/or foraging area, and require them to use alternative areas up- or down-river.

Roosting Habitat

Removal of the 1.6 acre, linear peninsula of trees that is part of the woodland fragment to the east and currently bisects the area of old field at the southern end of the Ver Hage property would not be expected to directly eliminate roosting habitat for either Indiana bats or northern long-eared bats given its extremely narrow width (< 100 feet), small size, and young seral stage. Indiana bats prefer to roost in large-diameter, tall trees, and northern long-eared bats prefer to roost in mature, interior forest, away from edges. On the northern fringe of the peninsula, however, there are four large-diameter (18.5 - 32 inch DBH) shagbark hickory trees that would be within the LOD and require removal. Shagbark hickory is a preferred roost tree species of Indiana bats (USFWS 2014), and the 4 trees have excessive peeling bark and direct solar exposure that Indiana bats prefer.

The proposed entry road for the Amy's Kitchen facility would require grading and clearing of approximately 14 acres of forest on the Echo Lake parcel. The route of the proposed entry road extends north from Route 17M through successional southern hardwood forest, then runs parallel along the Wallkill River on a steep ridge of successional southern hardwood forest that would be graded, before crossing the proposed bridge into the Ver Hage property. Dominant trees in these areas include red maple, white oak, and American sycamore (**Table 5**). Several large-diameter, sawtimber trees (> 10 inches DBH) are present. The habitat characterization survey indicated that quality potential roost trees occur at a density of 15 per acre; when extrapolated to the total acreage of disturbance for the proposed entry road, it is estimated that approximately 210 quality potential roost trees would be removed.

Simultaneous loss of roosting and foraging habitat may have negative impacts on the social structure of Indiana bat colonies, but in landscapes with relatively large amounts of tree cover, such as that in which the project site is located, it is expected that bats can disperse only short distances to locate new roosts and successfully maintain the social network (Silvis et al. 2014a). The same likely holds true for the northern long-eared bat (Silvis et al. 2014b). Social networks of Indiana and northern long-eared bats have been shown to be robust to the removal of more than 20% of their roost trees, and this adaptability to roost loss is likely due to the ephemeral nature of the dead and dying trees that they usually use as roost sites (Silvis et al. 2014a,b). Both species are known to change roost trees daily or every few days on a scale of hundreds of feet to more than a mile (Kurta et al. 2002, Menzel et al. 2002, Owen et al. 2002, Johnson et al. 2009), and when primary roosts are lost, the bats relocate the concentration of their network's activity to the vicinity of a new primary roost (Silvis et al. 2014a,b).

It is possible that Indiana bats would continue to have the potential to roost in the areas of remaining forest on either side of the entry road because they are tolerant of fragmented landscapes and, as noted above, are known to sometimes acclimate to roosting in close proximity to places with high levels of anthropogenic activity, such as highways, airports, and active construction sites (Sparks et al. 1998, ESI 2008, Niver 2009, USFS 2011, U.S. Army 2011). In

contrast, northern long-eared bats are notably sensitive to fragmentation and sharp edges created by roads, and would no longer be expected to have the potential to roost in this forested area at the southern portion of the property following construction of the entry road. Any northern long-eared bats that potentially roost in the roughly 35 acres of forest interior in this area would be expected to be displaced by the presence of the proposed entry road and required to relocate.

Losses of potential roosting habitat to construct the entry road would not be expected to significantly impact Indiana or northern long-eared bat populations because roost tree availability is unlikely to currently be a limiting factor in the regulation of their population sizes now that there are so few tree-roosting bats in the landscape due to WNS. Even prior to the recent loss of more than 90% of Indiana and northern long-eared bats to WNS, it was uncertain whether roost tree availability limited population sizes of these or other tree-roosting bat species (Sedgeley and O'Donnell, 1999, Crampton and Barclay 1998, Kunz and Lumsden, 2003, Hayes and Loeb 2007). As WNS has greatly reduced the size of bat populations, unoccupied roosting habitat has become increasingly available for remaining bats (USFWS 2016a). The USFWS recently concluded that loss of roosting habitat to forest conversion activities will not jeopardize populations or the continued existence of the northern long-eared bat in the near future (USFWS 2016a,b).

Warehouse

Foraging Habitat

The warehouse would be sited on what is now old field, with the exception of an approximately 0.1 acre area of trees that is within the northwestern corner of the warehouse's LOD. Indiana bats are expected to currently use this area of old field and bordering woodland along Cheechunk Creek as foraging habitat given their association with foraging over open areas of early successional vegetation and along woodland edges in fragmented, agricultural landscapes (e.g., Watrous et al. 2006, USFWS 2007). Northern long-eared bats, however, often avoid foraging along forest edges or over open fields (e.g., Owen et al. 2003, Patriquin and Barclay 2003). Potential foraging by northern long-eared bats in the vicinity of the warehouse would likely be limited to the Cheechunk Creek corridor, which would be buffered from the warehouse by floodplain forest that would be approximately 75 feet wide at its narrowest point.

As discussed above for Amy's Kitchen, the presence of the warehouse along with the food manufacturing facility would be expected to displace Indiana bats from potentially foraging over the open fields and woodland edges in this portion of the Ver Hage property. However, the adjacent Cheechunk Creek corridor and the majority of the Wallkill River corridor on the opposite side of the property, which are likely areas of high foraging activity of both Indiana bats and northern long-eared bats, would not be directly disturbed by the proposed project. At least 75 feet of existing floodplain forest would remain between Cheechunk Creek and the warehouse's LOD at the closest point, providing a buffer between the developed areas of the property and the high quality foraging habitat likely provided by the creek's corridor. Indiana and northern long-eared bats would be expected to continue using the creek's corridor for foraging and/or as a commuting route to the same extent as at present after the warehouse was constructed.

Roosting Habitat

Construction of the warehouse would require removal of approximately 0.1 acres of trees that are part of the floodplain forest and successional southern hardwoods between Cheechunk Creek and the area of old field to the east. At the widest point, the tree removal would extend roughly 75 feet into the woodland from its existing edge with the old field. Given that northern long-

eared bats typically avoid roosting near forest edges in favor of more interior forest (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005), tree removal for the warehouse would not be expected to eliminate any viable roosting habitat for northern long-eared bats. Indiana bats, in contrast, may roost near edges where trees receive direct solar exposure, and would have the potential to roost in this area if suitable roost trees are present. Clearing of 0.1 acres of trees for the warehouse would represent a negligible reduction in potential roosting habitat available to Indiana bats in the surrounding landscape area. As discussed above for Amy's Kitchen, Indiana bats are robust to roost tree loss (Silvis et al. 2014a) and are adapted to frequently relocating to new roost sites (Kurta et al. 2002, Menzel et al. 2002, Owen et al. 2002, Johnson et al. 2009). Furthermore, roost tree availability is not known to be a limiting factor in the population sizes of Indiana bats or similar tree-roosting bat species (Sedgeley and O'Donnell, 1999, Crampton and Barclay 1998, Kunz and Lumsden, 2003, Hayes and Loeb 2007), particularly now that WNS has substantially reduced bat populations and unoccupied roosting habitat has become increasingly available for remaining bats (USFWS 2016a).

Science of the Soul

Foraging Habitat

The SoS Conference Center would have a total area of approximately 85.3 acres on the Echo Lake property, not including the shared entry road analyzed above for Amy's Kitchen. Several different portions of the property are expected to currently provide foraging habitat for either Indiana or northern long-eared bats. Much of the Conference Center would be sited on what is now old field bordered by woodland to the south, east, and west. Indiana bats are expected to currently forage over the old field and along the field-woodland edges because of their association with these habitat types for foraging (Watrous et al. 2006, USFWS 2007). Northern long-eared bats are not expected to forage along the edges or over the open expanses of old field given their general avoidance of edges in favor of interior forest (e.g., Owen et al. 2003, Patriquin and Barclay 2003). Indiana bats, and to a lesser extent, northern long-eared bats, may currently forage in the area of successional southern hardwood forest bordering the Wallkill River to the east and old field to the west, where the Conference Center's bus parking area would be constructed. Approximately 17.1 acres of successional southern hardwood forest that is expected to currently provide foraging habitat for northern long-eared bats and Indiana bats would be cleared and graded within and around the area in which the orchard parking area would be located on the western side of the Conference Center. The guest house and driveway would also be constructed in this forest on the property's western side and involve clearing of approximately 3.3 acres of trees. The orchard parking area and guest house driveway would also eliminate a few existing openings in the forest that were created by past disturbances and now contain successional shrubland that are expected to be used as foraging areas by Indiana bats.

Construction of the Conference Center's open air pavilion and ancillary buildings on the area of successional old field, combined with the removal of most of the wooded area on the eastern side of the property to construct the bus parking area, would remove roughly 56 total acres of open field, field-woodland edge, and shrubland habitat that is expected to currently be used for foraging by Indiana bats. East of the bus parking area, however, a wooded buffer would remain between the conference center and the Wallkill River corridor, and Indiana bats would be expected to forage and commute along this approximately 0.3 mile long segment of the river corridor between the proposed entry road bridge over the river and the northern boundary of the property at Echo Lake Road. On the basis of the acoustic bat survey conducted in August 2015, the Wallkill/Cheechunk Creek corridors appear to be areas of much greater Indiana bat foraging activity than the project site's open field and field-woodland edges (**Appendix A**). Additionally,

the open air pavilion and ancillary buildings would not occupy the entire expanse of old field; some undeveloped portions in between the buildings would be maintained as manicured lawn, which would retain some open space within the Conference Center grounds over which Indiana bats might forage.

The 29.6 acre orchard parking area and adjacent clearing would require pushing the existing forest edge northwest by approximately 900 feet and would replace the existing edge of the forest that is expected to be traveled by foraging and commuting Indiana bats. To increase the likelihood that the new edge that would be created between the orchard parking area and the remnant forest to the north and west would be used for foraging and/or commuting by Indiana bats, the parking area would have an impervious surface, be heavily planted with trees, and kept unlit at night except for a small portion farthest from the forest (see "Lighting" below). This would also soften the eastern edge of the orchard parking area with undeveloped portions of old field to the east that would be left in a natural state and increase its potential use as edge habitat by foraging Indiana bats. The rows of trees within the parking area could possibly provide additional foraging habitat for Indiana bats since the trees would be a mix of native species that would be expected to host invertebrate prey.

The guest house and long driveway would bisect the remaining area of forest to the northwest and pass through existing gaps in the forest created by past disturbances. As noted above, the orchard parking area would also eliminate a previously-disturbed, linear area that is regenerating and is currently in a successional shrubland stage. Gaps with early successional vegetation within forests are a preferred foraging habitat of Indiana bats (USFWS 2007). Loss of potential foraging habitat for Indiana bats from the construction of the guest house and driveway would be expected to include the forest and successional shrubland removed within the limits of disturbance, as well as potential secondary effects on immediately adjacent areas. As discussed above, under "Amy's Kitchen," roads can disrupt foraging and commuting behaviors of Indiana bats (Zurcher et al. 2010, Bennett et al. 2013), like many other bat species (Altringham and Kerth 2016). However, the infrequent passage of vehicles along the driveway by guests, who would be expected to occupy the house only three days a year, would be likely to greatly reduce potential effects of the driveway on Indiana bat foraging and commuting behaviors since the presence of vehicles is thought to account for the observed effects of roads on Indiana bats more so than the presence of the roads themselves (Zurcher et al. 2010, Bennett et al. 2013). The driveway would also be unlit at night to further reduce the effects that roads can have on Indiana bats. As such, Indiana bats would be expected to continue to have the potential to forage in the remnant forest to the northwest and southeast of the guest house driveway.

As noted above, northern long-eared bats are expected to currently forage in the area of successional southern hardwood forest that borders the Wallkill River to the east and old field to the west, where the Conference Center's bus parking area would be constructed, and in the interior of the large area of successional southern hardwood forest on the property's western side, where the orchard parking area, guest house, and guest house driveway would be constructed. Northern long-eared bats would no longer be expected to occur in the vicinity of the bus parking area following its construction due to the removal of the majority of the area's trees. However, a wooded buffer would remain between the bus parking area and the Wallkill River to the east, which would be part of an approximately 0.3 mile long contiguous segment of forested river corridor between the proposed entry road bridge and the northern boundary of the property. The acoustic bat survey conducted in August 2015 documented northern long-eared bats at the junction of the Wallkill River with Cheechunk Creek, just north of the Echo Lake property

(**Appendix A**), and this maintained segment of wooded river corridor would be expected to provide northern long-eared bats with quality foraging habitat in the area.

Construction of the guest house and its driveway would bisect the forest that would remain between the orchard parking area and the northwestern boundary of the Echo Lake property (see **Figure 3c**). As discussed previously, the northern long-eared bat is an interior forest species that typically avoids roads and other sharp edges, and is therefore sensitive to forest fragmentation (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008, Segers and Broders 2014). The driveway would be roughly 0.25 miles long and have a 110 foot wide limit of disturbance to accommodate the necessary grading and clearing, and would fragment the forest to the extent that much of it would no longer be likely to contain suitable interior habitat for northern long-eared bats. The remnant forest between the driveway/guest house and the orchard parking area to the southeast would be approximately 300 feet at its widest point and approximately 140 feet where the driveway would double back to the northeast and end at the guest house. The curve in the driveway before reaching the guest house would create an approximately 2 acre clearing with no foraging habitat, and the narrow fragment remaining between the driveway and orchard parking area would be unlikely to provide interior forest foraging habitat for northern long-eared bats. Northwest of the driveway, however, approximately 40 acres of nearly contiguous undeveloped forest would extend for approximately 1,000 feet all the way to Echo Lake Road. This nearly contiguous forested area would be interrupted only by a defunct railroad track that is currently overgrown with shrubby vegetation and will eventually be improved as part of the Heritage Trail system, and would likely be of sufficient size to provide interior foraging habitat for northern long-eared bats. As discussed under **Sections E** and **G**, this area between the guest house driveway and Echo Lake to the northwest, excepting the railroad corridor, is part of the Echo Lake property and would be preserved as habitat for northern long-eared bats and Indiana bats to partially offset impacts from the proposed project.

Roosting Habitat

Tree removal would occur in the areas in which the bus parking area, orchard parking area and its adjacent clearings, and guest house and driveway would be constructed. Not including the entry road evaluated under "Amy's Kitchen," approximately 28 total acres of woodland would be cleared on the Echo Lake property for the SoS Conference Center. All wooded portions of the Echo Lake property are considered to represent potential Indiana bat roosting habitat given that Indiana bats will roost in large tracts of forest as well as in small fragments and along edges (Callahan et al. 1997, Menzel et al. 2001, USFWS 2007). Northern long-eared bats, in contrast, are only considered to have the potential to roost in the large area of contiguous forest that occupies the western and southern portions of the property. This area is expected to be sufficiently large to provide interior forest habitat that northern long-eared bats use for roosting (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008).

As detailed in **Section E**, the bus parking area is presently a sugar maple and black cherry dominated fragment of successional southern hardwood forest between a large expanse of old field and shrubland to the west and the Wallkill River to the east. Several mature trees are present, and the habitat characterization survey indicated that the area has an average of 50 quality potential roost trees per acre. The bus parking area would have a footprint of 3.4 acres, of which 2.6 acres is woodland, and would therefore be estimated to remove roughly 130 quality potential roost trees. Construction of the orchard parking area and its adjacent clearings would remove approximately 17.1 acres of mostly successional southern hardwood forest that is estimated to have an average of 40 quality potential roost trees per acre, and the guest house and driveway would remove an additional 3.3 acres of this forested area.

Given that Indiana bats are not sensitive to fragmentation and are known to sometimes roost in close proximity to areas with high levels of disturbance and human activity, they would be expected to have the potential to roost in the forested areas that would remain outside of the limits of disturbance of the bus parking area, orchard parking area, and guest house and driveway. As discussed under "Foraging Habitat," a wooded corridor would remain to the east of the bus parking area, along a 0.3 mile segment of the Wallkill River, and approximately 36 acres on the western side of the property, adjacent to the orchard parking area, guest house, and driveway, would remain forested and would be preserved. Potential roosting sites are abundant in these areas, and given the robustness of Indiana bats to the loss of roost trees (Silvis et al. 2014a), any Indiana bats that previously roosted in the areas in which the bus parking area, orchard parking area, guest house, and driveway would be constructed would likely be able to acquire alternative roosts. In areas with abundant tree cover, such as that in which the project site is located, Indiana bats are thought to have to disperse only short distances to locate new roosts and maintain their social network (Silvis et al. 2014a).

In contrast to Indiana bats, northern long-eared bats are sensitive to fragmentation of their roosting habitat, and do not roost near sharp forest edges. Construction of the orchard parking area, guest house, and driveway would therefore have greater effects on roosting habitat for northern long-eared bats than those discussed above for the Indiana bat. The orchard parking area and adjacent clearings would push the existing forest edge west by approximately 900 feet, reducing the size of the forest by approximately 17.1 acres. The forest remaining between the orchard parking area and Echo Lake road to the north and west would then be bisected by the guest house driveway into two narrower fragments. As discussed under "Foraging Habitat," the remnant forest between the driveway/guest house and the orchard parking area to the east would be approximately 300 feet at its widest point and approximately 140 feet wide where the driveway would double back to the northeast and end at the guest house. This curve in the driveway before reaching the guest house would create an approximately 2 acre clearing with no roosting habitat, and the fragment remaining between the driveway and orchard parking area would likely be too narrow and closely bounded by edges to provide interior forest needed by northern long-eared bats for roosting. However, approximately 40 acres of nearly contiguous forest would remain for approximately 1,000 feet northwest of the driveway all the way to Echo Lake Road. This nearly contiguous forested area would only be interrupted by a defunct railroad track that is currently overgrown with ruderal vegetation and will eventually be improved as part of the Heritage Trail system, and would likely be of sufficient size to provide interior roosting habitat for northern long-eared bats. As discussed in **Sections E** and **G**, this approximately 40 acre woodland between the guest house driveway and Echo Lake to the northwest is part of the Echo Lake property, has numerous quality potential roost trees, and would be preserved as habitat for northern long-eared bats to partially offset impacts from the proposed project. As with Indiana bats, any northern long-eared bats that previously roosted in the areas of forest that would be directly and indirectly affected by the orchard parking area, guest house, and driveway would potentially be able to relocate to this preserved portion of the forest on the far northwestern side of the property.

CONSTRUCTION NOISE

In contrast to the well-documented sensitivity of bats during hibernation, the sensitivity of bats to disturbances during the summer is poorly understood. As with most animals, it is likely that non-hibernating bats initially experience increased acute stress levels in response to new and unfamiliar disturbances, such as loud noises (Bowles 1995, Niver 2009), but any effects this may subsequently have on their condition, reproduction, or survival are unknown. Some studies

outside of the hibernation season have shown foraging and nursing behaviors of bats to be easily disrupted by disturbances from human activities, including cave tourism (Mann et al. 2002), music concerts (Shirley et al. 2001), and even minor vegetation clearing near roost trees (Callahan 1993). Bats have also been shown to avoid foraging in noisy environments, including roadside areas that are subjected to traffic noise (Schaub et al. 2008, Murphy et al. 2009, Siemers and Schaub 2011, Bennett et al. 2013). Reductions in maternity colony size and complete colony abandonment following disturbances have been reported (Barbour and Davis 1969, Stihler and Hall 1993). Other studies, however, have found loud, low frequency noises and reverberations associated with aircrafts and military training activities to have no noticeable effect on foraging or roosting locations of bats (Shapiro and Hohmann 2005, Le Roux 2010). Some bats, including the Indiana bat, are known to roost along interstate highways, near airports, and under bridges (Sparks et al. 1998, Keeley and Tutle 1999, Niver 2009), suggesting they are tolerant of roosting amidst some noises and vibrations associated with human activity. The foraging behaviors and roosting locations of Indiana bats on military bases were found to be similar between nights with and without loud artillery training exercises (Shapiro and Hohmann 2005), which also suggests that they are not easily disturbed by certain loud noises outside of the hibernation period. Similarly, Indiana bats have been found to continue to roost adjacent to areas with active construction activities, which indicates an ability to acclimate to construction noises (ESI 2008, USFS 2011, U.S. Army 2011). To our knowledge, there have not been any studies of the sensitivity of northern long-eared bats to construction noises or other forms of noise disturbance. However, northern long-eared bats have been observed roosting in areas with substantial noise levels, such as at the Indianapolis International Airport (Sparks et al. 1998), which is anecdotal evidence that they can be tolerant of certain noise disturbances during roosting. Foraging northern long-eared bats, in contrast, are expected to be sensitive and vulnerable to acoustic habitat degradation caused by road traffic noise (Schaub et al. 2008), like other gleaning *Myotis* bats are (Schaub et al. 2008, Siemers and Schaub 2011).

The hearing ranges of the Indiana and northern long-eared bat have not been described, but are likely similar to that of the congeneric little brown bat. Little brown bats detect sounds of 10-130 kHz (Moss and Schnitzler 1995), with peak sensitivity between 35 and 40 kHz (Grinnell 1963). Echolocation calls of Indiana and northern long-eared bats range 41-75 kHz and 49-117 kHz, respectively (Fenton and Bell 1981, Miller and Treat 1993). Noises from heavy construction equipment (e.g., rock crushers, graders, dozers and loaders) typically fall well below these frequency ranges (Delaney and Grubb 2004, Niver 2009), and are therefore unlikely to be highly audible to *Myotis* bats or interfere with their ability to echolocate (Niver 2009). However, higher frequency noises that might be generated during construction, such as those that are comparable to passing cars and light trucks, can displace *Myotis* bats from foraging and affect foraging efficiency (Schaub et al. 2008, Siemers and Schaub 2011). Nighttime construction activity for the proposed project would not occur during the non-hibernation period when Indiana and northern long-eared bats may be present (April through October), and therefore would not have the potential to disturb their foraging activity. Potential effects of construction noise on Indiana and northern long-eared bats would be limited to the daytime when the bats are inactive and occupying their day roosts.

All tree removal for the proposed project would be conducted during the winter hibernation period, when Indiana and northern long-eared bats would not be present. As such, no roosting habitat would be available to Indiana or northern long-eared bats within the construction areas when they return in the spring, and construction noises would only have the potential to affect Indiana or northern long-eared bats potentially roosting in areas of remnant forest adjacent to the

project's limits of disturbance. As discussed above under "Habitat Loss and Fragmentation," Indiana bats would be expected to have the potential to roost in several wooded areas of the project site that would be outside of the limits of disturbance for the Amy's Kitchen facility, warehouse, and SoS Conference Center, whereas northern long-eared bats would likely be limited to roosting in the largest area of remnant forest, between the SoS guest house driveway and western boundary of the Echo Lake property.

Because much of the construction noise would likely be below their hearing range and Indiana bats have been observed roosting near active construction sites (ESI 2008, USFS 2011, U.S. Army 2011) and comparably noisy areas (e.g., Sparks et al. 1998, Shapiro and Hohmann 2005), any Indiana bats potentially roosting in close proximity to the project's areas of disturbance during construction may habituate to and tolerate the noise and continue using the same roost sites. It is also possible that some individuals would flee from their roost and seek alternative roosting sites farther away from the construction. Given that Indiana bats have large home ranges and naturally change roost sites daily or every few days throughout the non-hibernating seasons (Kurta et al. 2002), they would be expected to be able to relocate away from the disturbances.

Northern long-eared bats potentially roosting in the remnant forest on the western side of the Echo Lake property would only have the potential to experience construction noises generated by the construction of the guest house and the grading and paving of the driveway. All other elements of the proposed project would likely be far from this area, and noises from their construction would be attenuated by the woodland fragment between the driveway and orchard parking area. Similarly, because northern long-eared bats do not usually roost near edges, construction noises from the guest house and driveway would be greatly attenuated by the forest before reaching northern long-eared bats that would be potentially roosting towards the interior. Additionally, observations of northern long-eared bats roosting near airports (Sparks et al. 1998) and under bridges (Feldhamer et al. 2003) suggest that they may not have a high level of sensitivity to noises that would be generated by the construction of a house and driveway while they are roosting. Overall, construction noises generated by the proposed project would not be expected to significantly impact daytime roosting behaviors or roosting habitat of the northern long-eared bat.

OPERATIONS IMPACTS

LIGHTING

Within the same landscape and ecosystem, artificial nighttime lighting can simultaneously benefit some bat species while being detrimental to others. The species that benefit are those that forage in illuminated areas to take advantage of the increased density and weakened predator avoidance abilities of insects that are attracted to the light. Both foraging activity and food intake rates of such species can be substantially greater in artificially illuminated areas than in dark areas (Geggie and Fenton 1985, Rydell, 1992, Blake et al., 1994, Azam et al. 2015), although there is sometimes a tradeoff with a higher risk of predation and vehicle collision mortality (Rydell, 1991, Stone et al. 2015). Most of the bat species that are attracted to, and can benefit from artificial night lighting are "fast-flying" species that are adapted to foraging over large open spaces, with many belonging to the genera *Pipistrellus* and *Eptesicus* (Geggie and Fenton 1985, Murphy et al. 2009, Patriarca and Debernardi 2010, Stone 2013).

Many other species of bats, in contrast, avoid foraging in areas with artificial night lighting and are often otherwise adversely affected by lights (Furlonger et al. 1987; Rydell, 1992; Stone et al.

2009, 2012; Polak et al. 2011). Common among them are "slow-flying" species of the genus *Myotis*, which includes the Indiana bat and northern long-eared bat (Furlonger et al. 1987; Murphy et al. 2009; Stone et al. 2009, 2011, 2012; McGuire and Fenton 2010, Azam et al. 2015, Rowse et al. 2016). Lighting can disrupt commuting routes and/or delay emergence of *Myotis* bats, and in turn, shorten their feeding time in a given night and reduce the growth rates of juveniles (Downs et al. 2003, Boldogh et al. 2007, Patriarca and Debernardi 2010). The avoidance of night lighting by some bat species and the attraction to it by others within the same community can lead to a competitive advantage for the latter and competitive exclusion of the former, as the species that are able to benefit can sometimes proliferate in abundance at the others' expense (Arlettaz et al. 2000). Indirectly, lighting can also negatively affect bat species that avoid lighting by drawing their prey away from dark areas, reducing insect reproduction (Perkin et al. 2011), and altering insect community composition and trophic interactions (Stone 2013).

The effects of artificial night lighting on the Indiana bat and northern long-eared bat have not been directly studied. As noted above, both species belong to the genus *Myotis*, which contains several species in North America and Europe that have been shown to be adversely affected by artificial light. However, Indiana bats are known to occur where there is abundant light pollution, including within suburban residential neighborhoods (Bellwood et al. 2002), along interstate highways (USFWS 2008), and at major international airports (Sparks et al. 1998, 2005), suggesting that this species may not strongly avoid artificial illumination, at least at a broad spatial scale. Indiana bats radio-tracked at the Indianapolis International Airport exhibited a significant preference for foraging in dark versus light areas of the airport, but it could not be determined whether this was due to differences in lighting rather than differences in habitat type and natural prey availability (Sparks et al. 2005).

The northern long-eared bat tends to avoid foraging and roosting near edges and open areas in favor of interior forest (Owen et al. 2003, Patriquin and Barclay 2003, Carter and Feldhammer 2005, Morris et al. 2010, Segers and Broders 2014). As such, exposure of northern long-eared bats to light pollution is likely to be limited to general sky glow rather than direct, local light sources in most cases, and is therefore less likely to have either beneficial or adverse effects to this species than bats that forage in open areas where artificial night lighting is most prevalent.

Amy's Kitchen

Outdoor nighttime lighting for the proposed food preparation facility on the Ver Hage property would include 78 pole-mounted, white light-emitting diode (LED) lights in parking areas and roadways, and 12 wall-mounted, warm white LED lights on the sides of the building. White LED lights have been recommended over more traditional metal halide and mercury lights for minimizing impacts to bats because they do not produce light in the ultraviolet spectrum and are therefore expected to be less attractive to insects (Patriarca and Debernardi 2010, Stone 2013). White LED lights nevertheless have strong emissions in blue-green spectra and have been found in some cases to be highly attractive to insects (Pawson and Bader 2014) and negatively affect commuting and foraging conditions for *Myotis* bats (Stone et al. 2012, Rowse et al. 2016). Yet, LED lights are energy efficient and can help minimize the breadth of light pollution because they are highly directional, easily dimmable, and well-suited to being switched on and off in concert with demand since they operate at full efficiency with no time required to warm up (Gaston et al. 2012).

The outdoor lighting plan for the Amy's Kitchen manufacturing facility would incorporate several recommended measures to minimize potential impacts to bats (Gaston et al. 2012, Stone

2013). First, a Variable Lighting Regime (VLR; Gaston et al. 2012, Stone et al. 2015) would be implemented, and include the use of motion sensors and the dimming of lights to 50 percent illumination between motion sensor activations. Second, the majority of the pole-mounted lights (64) would be only 15 feet tall (the remaining 14 pole-mounted lights would be 19 feet tall) in order to keep the light close to the ground and reduce the volume of illuminated space, allowing bats the ability to still fly through the dark air space above the lights (Stone 2013). Third, all lighting would be downward directional and angled no more than 30 degrees above the horizontal plane to limit spill outside of the intended areas (Gaston et al. 2012, Stone 2013). Additionally, the 12 wall-mounted fixtures on the sides of the building would use warm white LED lighting, which has lesser negative impact to bats than bright white LED lighting (Stone 2013, Rowse et al. 2016). With these measures in place, lighting would be greatly minimized and highly constrained within the boundaries of the facility, where Indiana and northern long-eared bats would not be expected to occur regardless of lighting because no suitable foraging habitat would be present following the development of the facility. These measures, in combination with the maintenance of a wooded buffer between the manufacturing facility and Cheechunk Creek to the east and the Wallkill River to the west, would limit the facility's outdoor lighting from reaching the creek and river. Riparian corridors are highly preferred foraging habitat for Indiana bats, and to a lesser extent, northern long-eared bats, and the acoustic bat survey conducted for the proposed project found activity levels of these and other bat species to be substantially greater at the two survey locations along Cheechunk Creek than the upland survey location (**Appendix A**). With wooded buffers remaining in place, outdoor lighting around the manufacturing facility would not be expected to affect the use of the Cheechunk and Wallkill riparian corridors as foraging habitat by Indiana and northern long-eared bats.

The entry road that would be constructed for the Amy's Kitchen facility would extend northeast from Route 17M, through the forested area at the southern end of the Echo Lake property, and along a forested ridge paralleling the Wallkill River before crossing the river on a bridge that would be constructed to bring the entry road into the southwestern corner of the Ver Hage property (see **Figures 3** and **4**). The proposed lighting plan for the entry road would include 13 pole-mounted, white LED lights between the new entrance to the Mid-Hudson Psychiatric Center that would split off from the entry road near its southern end, and the new bridge that would cross the Wallkill River to bring the entry road into the Ver Hage property. Three of these lights would be clustered together along the western side of the bridge; the other 10 lights would be spaced approximately every 385 feet along the road and have non-overlapping distribution such that there would be approximately 255 feet of non-illuminated roadway between each light.

The entry road lights would turn on at dusk to 50% illumination and have motion sensors that would increase illumination to 100% when activated. Based on operations at Amy's Kitchen's comparable food manufacturing facility in Medford, OR, it is estimated that approximately 530 employee automobiles would enter or exit the facility via the entry road between the hours of 7pm and 6am, when bats in the area would be active. As such, the road lights would be frequently activated to 100% illumination, and when combined with the emissions of the automobiles' headlights, would potentially cause Indiana and/or northern long-eared bats to avoid foraging in the vicinity of the roadway. Further, *Myotis* bats are known to avoid LED lights even when they are dimmed (Rowse et al. 2016), although dimming still reduces the spatial extent of the affected area. An approximately 200 foot wide, wooded buffer that would separate a long segment of the road from the Wallkill River to the west before crossing the proposed bridge would block much of the light from reaching the river corridor (both at full

illumination and when dimmed), where foraging activity of the bats is expected to be the greatest. The effects of isolated light sources on bats are not far reaching when the light is filtered by forest vegetation (Altringham and Kerth 2016). Where the entry road would approach and cross the Wallkill River, however, some direct illumination of this segment of the river corridor would be caused by the road lights on the approaches and the headlights of automobiles crossing the bridge. This lighting, combined with the physical presence of the road and the noise of the automobiles (discussed above under "Habitat Loss and Fragmentation") would be expected to have cumulative effects (Altringham and Kerth 2016) that would displace Indiana and northern long-eared bats from using this segment of the Wallkill River corridor as a commuting route and/or foraging area, and require them to use alternative areas up- or down-river. To minimize any such potential effects, the entry road lights would have a maximum mounting height of 19 feet to help keep the light close to the ground and reduce the volume of illuminated space so bats might still fly through the dark air space above the lights (Stone 2013), and the lights would be downward directional and angled no more than 30 degrees above the horizontal plane to reduce spill outside of the roadway (Gaston et al. 2012, Stone 2013).

Warehouse

The future warehouse has not been designed in detail and no lighting plan has been developed. However, the warehouse's frontage, parking area, and tractor trailer loading docks would face Hartley Road immediately to the east and the Amy's Kitchen food manufacturing facility immediately to the west, such that areas in which most outdoor nighttime lighting would likely be needed would not be in close proximity to foraging or roosting habitat for either Indiana or northern long-eared bats. The rear of the building that would abut the floodplain forest along Cheechunk Creek would be expected to have minimal, if any, outdoor lighting, which would not be likely to reach the creek's corridor and affect foraging conditions for Indiana or northern long-eared bats.

Science of the Soul

Excluding the entry road, outdoor lighting infrastructure for the SoS Conference Center would include 48 pole-mounted, white LED lights and 12 wall-mounted warm white LED lights. The lights would be concentrated around the open air pavilion, ancillary buildings and their small parking areas, internal roads, and the southeastern quadrant of the orchard parking area.

Operation of outdoor lights for the proposed SoS Conference Center would be minimal because large nighttime events are not anticipated and nighttime uses would be infrequent. Nighttime uses would be limited to preparation for the National and Regional events, night watch, and the periodic evening Study Sessions. Outdoor lighting for these uses would generally be limited to pathways, roads, and small portions of the parking areas that are the closest to the center's buildings. Three fourths of the orchard parking area would lack light fixtures and be dark at night year-round.

As with the Amy's Kitchen facility, all lighting would be downward directional and angled no more than 30 above the horizontal plane in order to limit spill and follow recommendations for minimizing the effects of artificial lighting on bats (Stone 2013) and wildlife in general (Gaston et al. 2012). The pole-mounted lights would have a height of only 15-19 feet which would help keep the light close to the ground and reduce the volume of illumination so bats might still fly through the dark air space above the lights (Stone 2013), In addition, the proposed lighting would be zoned so that only those fixtures needed to support site activities would be turned on.

Other than preparation for the National and Regional events, all activities would cease and the Center would close at 9:00 pm.

Given this limited usage of outdoor artificial lighting during operation of the Conference Center, both spatially and temporally, it is unlikely that foraging or roosting conditions for Indiana bats and northern long-eared bats would be significantly degraded in the adjacent, undeveloped portions of the property. Lighting would be directional and downward such that it would be contained within the limits of the conference facility, where both species may be unlikely to forage or roost regardless of lighting. Adjacent, undeveloped portions of the property, where potential foraging and roosting habitat for both species would remain, would be exposed to little to no artificial lighting coming from the grounds of the Conference Center. The orchard parking area would be unlit as to encourage its potential use as foraging habitat and to buffer any light from the Conference Center from reaching the remnant forest to the west. Therefore, any Indiana or northern long-eared bats foraging adjacent to the Conference Center would not be expected to be affected by the nighttime lights operated within the Center's grounds.

NOISE AND HUMAN ACTIVITY

Motor vehicle noise from Hartley Road, Cheechunk Road, Route 17M, and Echo Lake Road are the predominant sources of anthropogenic noise to which the four properties of the project site are exposed. In addition, heavy truck and machinery activity associated with the operation of a waste processing facility, adjacent to the Ver Hage and Echo Lake properties, is a significant contribution of noise under existing conditions. A noise analysis conducted for the proposed project's SEQRA Draft Environmental Impact Statement determined that operation of the Amy's Kitchen manufacturing facility would result in a negligible increase of 2.1 dBA above current daytime ambient noise levels. Operation of the SoS Conference Center would also result in a negligible daytime increase of 2.0 dBA, except during the national and regional events, when the maximum predicted noise level increment would be 7.6 dBA. However, because the national and regional events would only take place a few days each year, operation of the Conference Center would not produce a continuous and regular increase in noise levels. Nighttime noise associated with the operation of the Amy's Kitchen manufacturing facility would be primarily limited to the entry and exit of an estimated 530 employee vehicles and 9 delivery trucks along the entry road between the hours of 7 pm and 6 am. The rooftop HVAC system would also be operational. The warehouse is largely conceptual at this time, but minimal nighttime activity and noise would be expected. The SoS Conference Center would not be operational after 9 pm, and as such, would not cause a measurable increase in existing nighttime noise levels on the Echo Lake property.

As discussed under "Construction Noise," roosting Indiana bats have demonstrated a tolerance of high levels of certain anthropogenic noises, including those associated with interstate highways, major airports, and military artillery ranges. The small incremental increases in daytime and nighttime noises that would be generated by the operation of the proposed project would not be expected to cause roost site abandonment or other significant effects to roosting Indiana bats. It should be noted that the projected increases in existing noise levels do not consider attenuation factors, such as ground, air absorption, and vegetation, and are therefore highly conservative. Wooded portions of the project site used for roosting by Indiana bats would greatly attenuate noises coming from the food manufacturing facility, entry road, and conference center such that the increases in many portions of the project site would be even further negligible. Similarly, roosting northern long-eared bats, which tend to avoid open areas and

edges, and would be most likely to occur in the forest interior, would be expected to perceive little if any change in anthropogenic noise levels during the operation of the proposed project.

Road noise and the physical presence of vehicles can disrupt foraging behaviors of Indiana bats (Zurcher et al. 2010, Bennett et al. 2013) and likely northern long-eared bats as well given the effects of road noise on other gleaning bat species of the same genus (Schaub et al. 2008, Siemers and Schaub 2011, Altringham and Kerth 2016). Nighttime operation of the entry road would therefore potentially displace Indiana bats from foraging in the vicinity of the road; northern long-eared bats would not be expected to occur in the roadside habitat regardless of the road's operation because of their common avoidance of sharp edges like those that would be created by constructing the road through this forested area. Road noise effects on Indiana and northern long-eared bats would likely be greatest where the proposed bridge would cross the Wallkill River. There, road noise, combined with the nighttime lighting (discussed above) would potentially affect usage of this segment of the river corridor as a foraging area and require the bats to forage up- or down-river. While vehicle noise would potentially degrade foraging conditions for Indiana bats elsewhere along the entry road, these effects would likely be limited to within about 200 feet of the road (Schaub et al. 2008, Siemers and Schaub 2011) due to the attenuation of the sound provided by the bordering woodland. Assuming a 200 foot effect zone extending from both sides of the road, the road would be expected to impact approximately 41.3 acres of potential foraging habitat for Indiana bats. Large amounts of foraging habitat in this portion of the Echo Lake property would therefore be expected to be unaffected by noises generated by the nighttime operation of the entry road, and remain available to Indiana bats.

G. CONCLUSION AND MITIGATION

Construction and operation of the proposed project would directly affect approximately 151 total acres of land that represents potential foraging and/or roosting habitat for the Indiana bat and/or northern long-eared bat. An additional 41 acres of potential foraging habitat for the Indiana bat, and 42 acres of potential foraging and roosting habitat for the northern long-eared bat also may be affected by the indirect impacts of fragmentation, motor vehicle traffic and noise, and nighttime lighting (**Table 17**).

To offset any incidental take of the Indiana and northern long-eared bat, and comply with the Net Conservation Benefit requirements of Article 11 of the ECL, the proposed project would include the preservation of approximately 160 total acres of woodland (successional southern hardwood forest, floodplain forest, red maple-hardwood swamp, and beech-maple mesic forest combined) among the four properties that would provide Indiana and northern long-eared bats with potential foraging and roosting habitat (**Figure 2**). This would exceed the 3:1 ratio of preserved woodland area (approximately 160 acres) to developed woodland area (approximately 49 acres) that is a recommended Indiana bat conservation guideline of the USFWS (2011). In addition to the woodland preservation areas, approximately 17 acres of old field, 12 acres of shrubland, 5 acres of sedge meadow, 2 acres of shallow emergent marsh, and 62 acres of cropland would also be preserved on the project site and represent additional potential foraging habitat for Indiana bats (**Figure 2**). By preserving these undeveloped portions of the project site, indirect impacts would be reduced and both species of bats would be expected to continue to occupy the project site in the future. The project would not jeopardize the continued existence of either bat species. As shown in **Table 1**, the properties of the project site are zoned for industrial, commercial, or residential uses, and therefore, could be subject to development without the proposed project and its proposed conservation measures. The Echo Lake and Ver Hage properties in particular have been previously disturbed by soil and gravel mining and are prime

development locations due to their zoning and access. The upland portions of the Ver Hage property within the oxbow of Cheechunk Creek are also suitable for development, pending appropriate floodplain and stream crossing permits, and the Strong Farm property has development potential as a residential subdivision. As such, the proposed project would preserve a substantial amount of potential Indiana and/or northern long-eared bat habitat that would otherwise have a strong likelihood of being lost in the future.

Table 17
Approximate Acreage of Potential Foraging and Roosting Habitat Directly and Indirectly Affected by the Proposed Project

	Amy's Kitchen				Science of the Soul			
	Directly Affected Habitat		Indirectly Affected Habitat		Directly Affected Habitat		Indirectly Affected Habitat	
	Foraging[1]	Roosting[2]	Foraging[3]	Roosting[4]	Foraging[1]	Roosting[2]	Foraging[3]	Roosting[4]
Indiana bat	46	14	41	0	85	28	0	0
Northern long-eared bat	14	14	28	27	25	25	14	14

Notes: [1] Direct impacts to potential foraging habitat includes woodland and old field/shrubland within the limits of disturbance for the Indiana bat, and woodland within the limits of disturbance for the northern long-eared bat.

[2] Direct impacts to potential roosting habitat for the Indiana bat includes all woodland within the limits of disturbance. For the northern long-eared bat, it includes only the limits of disturbance within woodland areas with interior forest (e.g., western side of Echo Lake property). See Section F.

[3] Indirect impacts to foraging habitat of Indiana bats includes a 200 foot area in each direction of the entry road that is expected to be degraded by motor vehicle noise. See Section F. Indirect impacts to foraging habitat of northern long-eared bats includes areas of woodland that would be fragmented and/or affected by road noise (e.g., woodland between the SoS guest house driveway and orchard parking area). See Section F.

[4] Indirect impacts to Indiana bat roosting habitat assumes no avoidance of roosting near edges or in fragmented woodland. Indirect impacts to northern long-eared bat roosting habitat was evaluated as noted above for foraging habitat (e.g., considers fragmentation effects and edge avoidance during roosting).

Preservation of the Strong Farm and Lipoff properties, along with the large portions of the Echo Lake and Ver Hage properties that would be outside of the proposed project's limits of disturbance, would contribute to the USFWS goal of maintaining a minimum of 35 percent forest cover in the landscapes surrounding Indiana bat maternity colonies (USFWS 2012). A Geographic Information Systems analysis using the U.S. Geological Survey's National Land Cover Database showed that forest (i.e., combined categories of "Deciduous Forest", "Evergreen Forest", and "Mixed Forest") currently covers approximately 42.5 percent of the land within 2.5 miles of the center point of the project site; following the removal of approximately 49 acres of forest to construct the proposed project, that percentage would only decrease to _41.9. The approximately 160 total acres of woodland that would be preserved on the four properties would represent a sizable amount of forest cover in Goshen that would be protected from development and ensure the availability of potential foraging and roosting habitat for both Indiana and northern long-eared bats. As discussed in **Section F**, the majority of the wooded areas, including the smaller fragments, would be expected to be suitable roosting and foraging habitat for Indiana bats, and the far western side of the Echo Lake property would be expected to be a large enough tract of nearly contiguous forest to provide interior foraging and roosting habitat for northern long-eared bats. The wooded margins of the Wallkill River and Cheechunk Creek that would be preserved within the

project site would also be expected to provide foraging and commuting corridors for both species. As detailed in **Section E**, forest composition and structure, and the availability of quality potential roost trees in the majority of these portions of the project site that would be preserved are characteristic of the habitat associations of Indiana and/or northern long-eared bats.

Other features of the proposed project and measures that would be implemented to minimize potential impacts to Indiana and northern long-eared bats would include:

- **Wintertime tree clearing**: By limiting all tree clearing for the proposed project to the October 31 to March 31 hibernation period, there would be no potential for the removal of an active roost tree or other direct impacts to Indiana and northern long-eared bats.
- **Project footprints centered on old field and shrubland:** The design layout of the Amy's Kitchen manufacturing facility and SoS Conference Center is centered on existing areas of old field and shrubland in order to minimize tree removal and encroachment into wooded areas.
- **Best management practices for outdoor nighttime lighting**: As discussed in **Section F**, the outdoor lighting plan for the proposed project would include several practices that are recommended for reducing effects on bats (Patriarca and Debernardi 2010, Gaston et al. 2012, Stone 2013). All lights would have motion sensors and dimmers, pole heights would be limited to a maximum of 19 feet in order to keep the light close to the ground and allow bats to potentially still fly through the dark air space above, the lights would be downward directional and angled no more than 30 degrees above the horizontal plane to limit spill outside of the intended areas, and wall-mounted lights on the sides of the building would use warm white LED lighting.
- **Minimal nighttime operation of the SoS Conference Center**: Operation of the SoS Conference Center would end by 9 pm and nighttime lighting would be limited to small parking areas, paths, and internal roads, which would leave the vast majority of the Echo Lake property dark and minimize potential lighting effects on bats.
- **Orchard-style design of the SoS parking area:** The orchard-style parking area for the SoS Conference Center would be heavily planted with native trees, have an impervious surface, and kept unlit at night except for a small portion in order to soften the edge between the Conference Center's grounds and the preserved woodland area to the west, and buffer sound and light.

These protective steps would greatly exceed the two conservation measures imposed on tree removal projects by the USFWS' Final 4(d) Rule for the northern long-eared bat, which only prohibit tree removal within 0.25 miles of a known hibernaculum and removal of a known maternity roost tree or any trees within 150 feet of a known maternity roost tree during the pup season (June 1-July 31) (USFWS 2016a). The project site is 9 miles from the closest hibernaculum and contains no known maternity roost trees (NYNHP 2015). In addition, while the proposed project would result in the loss and fragmentation of northern long-eared bat foraging habitat and potential roosting habitat, the USFWS expects that such forest conversion activities do not have the potential to jeopardize the continued existence of the northern long-eared bat in the near future (USFWS 2016a,b). Regarding the Indiana bat, nearly 42 percent of the land within 2.5 miles of the center point of the project site would remain forested following construction of the proposed project and the preservation of the undeveloped portions of its four properties, which would meet the USFWS' conservation goal of maintaining a minimum of 35 percent forest cover in the landscapes surrounding Indiana bat maternity colonies (USFWS 2012). By preserving approximately 160 total acres of woodland habitat for Indiana and northern

long-eared bats through a conservation easement or similar legal agreement, the proposed project would be expected to offset any incidental take and result in a Net Conservation Benefit to these species, as required under Article 11 of the ECL and also exceed the 3:1 ratio of preserved to developed woodland that is recommended by the USFWS for the conservation of the Indiana bat. Collectively, these project features and measures constitute the project's mitigation plan.

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ACOUSTIC BAT SURVEY REPORT
AMY'S KITCHEN PROJECT SITE
GOSHEN, NY

September 2015

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EXECUTIVE SUMMARY

An acoustic survey of bats was conducted to help determine the presence or probable absence of the federally-listed Indiana bat (*Myotis sodalis*; Endangered) and northern long-eared bat (*M. septentrionalis*; Threatened) on an approximately 350 acre project site comprising four parcels in the town of Goshen, NY (Orange County). Both species are listed by the U.S. Fish and Wildlife Service as occurring within Orange County and there is suitable habitat on the project site to potentially support both species. In addition, there is a record of an Indiana bat maternity colony approximately 2.5 miles from the project site. In accordance with the the USFWS *2015 Range-wide Indiana Bat Summer Survey Guidelines*, acoustic recordings were collected at three different locations within the project site over an 8 detector-night survey period between August 6 and 15, 2015. The recordings were then processed using the automated species identification features of Kaleidoscope Pro Version 3.1.2 and EchoClass Version 3.1. A total of 919 recordings collected during the survey were recognized as bat call sequences by Kaleidoscope Pro and 662 recordings were recognized as bat call sequences by EchoClass. Six species of bats were identified by one or both programs with a significant level of confidence (i.e., Maximum Likelihood Estimate [MLE] < 0.05) at one or more of the recording locations, including Indiana bat and northern long-eared bat. There was agreement between Kaleidoscope Pro and EchoClass that Indiana bats and northern long-eared bats were recorded at Site 1, whereas only EchoClass identified the Indiana bat as also occurring at Site 2. Neither software program detected Indiana bats or northern log-eared bats at Site 3 with a significant level of confidence. However, because the home ranges of Indiana and northern long-eared bats can span hundreds of acres and their daily movements can be multiple miles in length, the individuals detected at Site 1 and Site 2 are likely to also utilize other portions of the project site for roosting and/or foraging during the course of their summer breeding period. Given that numerous call sequences were identified as Indiana bat and northern long-eared bat with a significant level of confidence and there was a large degree of agreement between two species identification software programs, it can be concluded that it is likely that Indiana and northern long-eared bats are present within the project site.

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A. BACKGROUND

An acoustic survey of bats was conducted on an approximately 350 acre project site comprising four parcels in the town of Goshen, NY (Orange County) (**Figure 1**). The project site contains habitat types with which the federally-listed Indiana bat (*Myotis sodalis*; Endangered), and to a lesser extent, northern long-eared bat (*M. septentrionalis*; Threatened), are associated during their summer breeding season, including hardwood forest fragments, stream corridors, and old fields with shelter belts and forest edges. Both species are listed by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) System as occurring within Orange County and the New York Natural Heritage Program (NYNHP) has a record of an Indiana bat maternity colony within 2.5 miles of the project site. For these reasons, an acoustic bat survey was conducted in accordance with the USFWS *2015 Range-wide Indiana Bat Summer Survey Guidelines* (USFWS 2015a) to help determine the presence or absence of these species within the project site.

B. NATURAL HISTORY AND POPULATION STATUS OF THE INDIANA BAT AND NORTHERN LONG-EARED BAT

INDIANA BAT

The Indiana bat is a cave-hibernating, insectivorous bat that is federally- and New York State-listed as Endangered. Its life cycle consists of two primary phases- reproduction and hibernation. Indiana bats emerge from the caves or mines in which they hibernate in early spring; males disperse and remain solitary until mating season at the end of the summer, and pregnant females form maternity colonies in which to rear their young. Maternity roosts, roosting sites of post-lactating females, and roosting sites of solitary males are usually under loose bark or in the crevices of trees. Indiana bat roosting sites have been documented in numerous species of deciduous trees; tree availability, diameter, height, bark characteristics, and sun exposure appear to be more important factors in roost site selection than tree species (Kurta 2004, USFWS 2007). Roost trees in New York (Britzke et al. 2006) and elsewhere (USFWS 2007) are typically in trees with a diameter greater than 16 inches and a height taller than 52 feet, but roosts in much smaller trees are not uncommon (USFWS 2007). Trees are usually dead or nearly dead and decayed (Menzel et al. 2001, Kitchell 2008).

Indiana bats often roost near forest gaps or edges where trees receive direct sunlight for much of the day (Callahan et al. 1997, Menzel et al. 2001). Habitats used by Indiana bats during summer are varied and include riparian, bottomland/floodplain, and upland forests (Humphrey et al. 1977, Britzke et al. 2006, Watrous et al. 2006) often within highly fragmented agricultural landscapes (Murray and Kurta 2004, Watrous et al. 2006, USFWS 2007). Maternity colonies are commonly located in areas with abundant natural or artificial freshwater sources (Carter et al. 2002, Kurta et al. 2002, Watrous et al. 2006, and USFWS 2007). Spring and autumn habitats of Indiana bats have not been well described, but appear to be largely similar to their summer habitat (Britzke et al. 2006, USFWS 2007).

During autumn, Indiana bats mate and deposit fat stores in preparation for winter hibernation. Hibernacula are typically in caves or abandoned mines where ambient temperatures remain above freezing (USFWS 2007). There are only 10 Indiana bat hibernacula known in New York State, none of which are located within Orange County (NYNHP 2013). Four of these hibernacula, however, are located in neighboring Ulster County (NYNHP 2013), and Indiana

bats may migrate upwards of 100 miles from their hibernaculum to their summer territory (Winhold and Kurta 2006, USFWS 2011).

The Indiana bat has recently undergone steep population declines due to the outbreak of White-nose Syndrome (WNS) - an emerging infectious disease caused by the fungus *Geomyces destructans*, which was first discovered in Howe's Cave in New York in 2006 and has since spread to over 200 bat hibernacula in more than 25 states and Canadian provinces (Reeder and Moore 2013, PAGC 2015). Bats infected with WNS suffer structural damage to their wing membranes and exhibit aberrant hibernation behavior and physiology, the consequences of which are usually fatal (Reeder and Moore 2013). Range-wide, Indiana bat populations have been declining by approximately 10% per year since the outbreak of WNS in 2006 (Thogmartin et al. 2012). In New York State, pre- and post-WNS count data on hibernating Indiana bats showed an average statewide population decline of 72% between 2006 and 2011 (Turner et al. 2011). Population models indicate that extirpation of the Indiana bat is likely to be caused by WNS throughout much of the species' range (Thogmartin et al. 2013).

NORTHERN LONG-EARED BAT

The northern long-eared bat is also a temperate, insectivorous bat that hibernates in caves, mines, and the like during winter, and then emerges in early spring to disperse to summer habitat. Like Indiana bats, the males remain solitary until mating season at the end of the summer and the pregnant females form maternity colonies in which to rear their pups. Summer habitat typically includes mature, closed-canopy, upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008), usually within about 60 miles of their hibernaculum (Caceras and Barclay 2000, USFWS 2014).

The northern long-eared bat is considered to be an interior forest-dependent species that is sensitive to fragmentation and requires large tracts of unbroken forest for both foraging and breeding (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008, Segers and Broders 2014). Unlike many other bats of the Northeast, northern long-eared bats will commonly glean prey from leaves and other surfaces rather than strictly hawking flying insects in the air, and are thereby well-adapted to foraging in cluttered, structurally complex, forest interior habitat (Owen et al. 2003, Lacki et al. 2007). Most foraging occurs above the understory and below the canopy (Brack and Whitaker 2001, Harvey et al. 2011, USFWS 2014) in interior areas with a tall and closed canopy (Owen et al. 2003, Patriquin and Barclay 2003, Adams 2013). Northern long-eared bats do not concentrate along riparian corridors or other linear landscape features as much as strictly aerial-foraging species (Owen et al. 2003, Ford et al. 2005, Harvey et al. 2011, USFWS 2014), and most radio-telemetry and acoustic studies have found that they typically avoid roads and other sharp forest edges (Owen et al. 2003, Patriquin and Barclay 2003, Carter and Feldhammer 2005, Morris et al. 2010, Segers and Broders 2014), where prey availability is expected to be lower than in the forest interior (Owen et al. 2003). Mature forest is considered to be the most important foraging habitat for the northern long-eared bat (USFWS 2013, 2014).

Roost trees are also usually in intact forest, close to the core and away from large clearings, roads, or other sharp edges (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). Roosts are usually in cavities or, less often, under exfoliating bark of large-diameter trees that form a high and dense canopy (Foster and Kurta 1999, Menzel et al. 2002, Carter and Feldhammer 2005; reviewed by Barclay and Kurta 2007), but trees as small as 3 inches DBH can be used as roost sites (USFWS 2014). Northern long-eared bats, including lactating females, will use many different summer roost trees, often switching roosts every 1 to 5 days and moving

hundreds of feet between successive locations (Menzel et al. 2002, Owen et al. 2002, Johnson et al. 2009).

The northern long-eared bat has experienced the steepest population decline of the six species of bats in the Northeast that are affected by WNS, with numbers at monitored hibernacula in several states dropping by an average of 98% between 2006 and 2011 (Turner et al. 2011, Langwig et al. 2012, Reeder and Moore 2013). Population models for the closely-related Indiana bat and little brown bat (*M. lucifugus*), which have experienced lower relative population declines of 72% and 91%, respectively, project imminent broad-scale extirpation of these species throughout much of their range (Frick et al. 2010, Thogmartin et al. 2013), indicating that the northern long-eared bat is also at extremely high risk of extinction. In New York State, pre- and post-WNS count data available from 18 northern long-eared bat hibernacula show local population extinction at all but 4 of the sites and suggest an average statewide population decline of 97% (Turner et al. 2011). Even prior to the outbreak of WNS, the northern long-eared bat was uncommon in New York State and many other parts of eastern North America relative to most other bats (Turner et al. 2011, Langwig et al. 2012, Moosman et al. 2013), possibly in part due to their sensitivity to deforestation and fragmentation (Henderson et al. 2008).

C. SURVEY METHODS

SITE SELECTION

Three survey locations were chosen on the basis of the microhabitat associations and feeding behaviors of Indiana bats, and to a lesser extent, northern long-eared bats (**Figure 2**). Site 1 was on the Lipoff Parcel of the project site, on the eastern bank of Cheechunk Creek, near the creek's junction with the Wallkill River. The surrounding area consists of a fragment of successional southern hardwood and beech-maple mesic forest bordered by former agricultural land that has succeeded into old field habitat (*after* Edinger et al. 2014). The site was chosen because of the propensity of Indiana bats, and sometimes northern long-eared bats, to forage along riparian corridors. Microphone placement was parallel with the stream corridor and intended to capture bats that were moving along the Wallkill River and Cheechunk Creek. Site 2 was also located along a forested segment of Cheechunk Creek, farther to the south, in the Ver Hage parcel of the project site. There, the stream corridor is narrower and more closed in by dense understory vegetation, but still potentially traveled by foraging Indiana bats. Northern long-eared bats were also considered to have the potential to occur within the stream corridor or the floodplain forest bordering the stream at this recording site. The microphone had to be oriented slightly perpendicular to the stream corridor to avoid vegetation that would have cluttered the detection cone if it were oriented parallel with the stream. Site 3 was near the southern boundary of the Ver Hage parcel of the project site, along a successional southern hardwood forest fragment's edge with abandoned farmland that is now successional old field habitat (*after* Edinger et al. 2014). Indiana bats were expected to occur in this portion of the project site because of their tendency to concentrate along linear landscape features like woodland edges that border agricultural fields or similar open habitats. The microphone was oriented to the northwest, roughly parallel with the edge of the forest where it juts out to the west, and angled slightly upwards to detect bats moving along the woodland/field edge. At each location, the microphone had a clear cone of detection, without any direct obstruction by vegetation or other objects within 10 meters. Photographs and GPS coordinates of each location are shown in **Figures 3 to 5** and **Table 1**, respectively.

Table 1
Recording Site Coordinates and Survey Dates

	Coordinates	Start Date	End Date
Site 1	41° 24' 48.3" N, 74° 22' 35.9" W	8/6/2015	8/9/2015
Site 2	41° 24' 31.6" N, 74° 22' 28.4" W	8/10/2015	8/12/2015
Site 3	41° 24' 24.7" N, 74° 22' 34.9" W	8/12/2015	8/15/2015

SURVEY DATES AND WEATHER CONDITIONS

Recordings were collected at Site 1 from the night of August 6 until the morning of August 9, at Site 2 from the night of August 10 until the morning of August 12, and at Site 3 from the night of August 12 until the morning of August 15. During the 8 detector-night survey period, overnight low temperatures recorded at the nearest National Weather Service weather station (Dutchess County Airport, Poughkeepsie, NY) ranged from 52° to 65° F. August 11 was the only date during the survey period on which there was precipitation; 1.08 inches of rain was recorded at Dutchess County Airport between approximately 05:00 and 18:00, which should not have affected bat activity except during the last hour before sunrise.

RECORDING EQUIPMENT AND SOFTWARE

All recordings were made with a Song Meter SM2BAT+ recording unit and SMX-II weatherproof microphone (Wildlife Acoustics Inc., Maynard, MA). At each site, the microphone was mounted at the top of a 10 foot pole and angled upwards at approximately 45 degrees (Weller and Zabel 2002, Britzke et al. 2010). The microphone was oriented to minimize the amount of vegetation cluttering the cone of detection and maximize the amount of time passing bats would be within the detection cone (Britzke et al. 2013). The recording unit was configured to collect triggered recordings in mono on the left channel at a sampling rate of 384 kHz and save files in full-spectrum .WAV format. Preamplification gain was set to 48 dB as recommended by the manufacturer. The recording schedule was programmed to begin at 19:55 and end at 06:00 each recording day. Prior to the start of the scheduled recording, proper functioning of the recorder, microphone, and trigger setting were confirmed by rubbing fingers together in front of the microphone to generate high frequency sound.

Sound files were analyzed using the automatic species classification features of Kaleidoscope Pro Version 3.1.2 (Wildlife Acoustics Inc., Maynard, MA) and EchoClass Version 3.1 (U.S. Army Engineer Research and Development Center, Vicksburg, MS). As per current *Indiana Bat Summer Survey Guidance* instructions for software analyses (USFWS 2015b), all full-spectrum .WAV files were converted to zero-crossing format using Kaleidoscope Pro prior to analyses. The division ratio for the conversion was 8. Automatic classification of the zero-crossing files was then performed in Kaleidoscope Pro using the "-1 more sensitive (Liberal)" setting and Bats of North America 3.1.0 New York State species list, and in EchoClass using Species Set 2. Automated species identifications from both programs were accepted as accurate when Maximum Likelihood Estimator (MLE) probability values were < 0.05 (USFWS 2015a). The probability values are derived by both programs from maximum likelihood tests of the null hypothesis that a given species is absent from a given set of recordings (Britzke et al. 2002, 2013). Values < 0.05 indicate that there is less than a 5% chance that the species was incorrectly identified and is not present.

PERSONNEL

Site selection, recorder configuration and deployment, automated software analyses, and report preparation were performed by Dr. Chad Seewagen. Dr. Seewagen has 13 years of experience as a professional wildlife biologist in New York State and has a strong working knowledge of the biology of Indiana and northern long-eared bats from his work preparing section 7 Biological Evaluations and similar impact assessments for these species as a consultant to numerous public and private clients. Throughout his four years of graduate studies at the University of Western Ontario, Dr. Seewagen had extensive collegial interaction with renowned bat biologist Dr. Brock Fenton and the graduate students in his lab, from which much of his knowledge about North American bat ecology, behavior, and physiology was gained. Prior to conducting acoustic bat surveys of his own, Dr. Seewagen spent a day at Fordham University in 2014 receiving training on the use of the SM2BAT+ recording unit and Sonobat software from Dr. Alan Clark and his graduate student Kaitlyn Parkins. He also studied several review articles on acoustic bat survey methodology (e.g., Parsons and Szewczak 2009; Adams et al. 2012; Adams 2013; Britzke et al. 2002, 2013) and sought advice from and asked questions of biologists with extensive experience conducting acoustic bat surveys, such as Michael Fishman of Natural Resource Group LLC and Dr. Amanda Adams of Texas A&M University. Dr. Seewagen also has prior bioacoustics experience from his research involving song learning in passerine birds and spectrographic analysis of bird songs using Raven Pro. Dr. Seewagen trained himself in the use of EchoClass Version 3.1 and Kaleidoscope Pro Version 3.1.2 by reading all supporting documentation associated with the software and corresponding with Wildlife Acoustics' technical support staff when necessary.

D. RESULTS

SITE 1

Bat activity was substantially higher at Site 1 than the other two sites. Over 600 files were recorded during the 3 detector-nights at Site 1, of which Kaleidoscope Pro identified 473 to species, categorized an additional 86 as unidentifiable, and classified 54 as noise (non-bat sounds). Species that were identified among the recordings with a significant level of confidence included big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), little brown bat, Indiana bat, and northern long-eared bat (**Table 2**). Identifications of silver-haired bat (*Lasionycteris noctivagans*) were marginally significant ($P = 0.064$). The majority of the call sequences identified as these species were from little brown bats, followed by eastern red bats and Indiana bats (**Table 2**). Both Indiana and northern long-eared bat identifications had highly significant MLE probability values of 0 and 0.0009, respectively. Many of the 137 Indiana bat call sequences contained 20 or more pulses that were identified as Indiana bat, and most occurred on the second and third nights of the 3 detector-nights at this location. The 21 northern long-eared bat call sequences were recorded across the first three nights of the survey and often contained 10 or more pulses that were identified as northern long-eared bat.

EchoClass identified 336 files to five species of bat with a significant level of confidence at Site 1: big brown bat, eastern red bat, little brown bat, Indiana bat, and northern long-eared bat (**Table 2**). The vast majority (N = 255) were identified as eastern red bat (**Table 2**). EchoClass identified a total of 30 Indiana bats and 17 northern long-eared bats on all three nights at this location, with each night-level analysis having highly significant MLE probability values of ≤ 0.0005 for both species.

SITE 2

Kaleidoscope Pro identified a total of 79 call sequences to species and categorized 53 files as either unidentifiable bats or noise during the 2 detector-nights at Site 2. Five species were among the 79 identified call sequences, including big brown bat, eastern red bat, silver-haired bat, little brown bat, and Indiana bat, but MLE probability values indicated confident identifications of only big brown bat and eastern red bat (**Table 3**). Big brown bat was the most dominant species, representing 44 of the 79 (56%) identified call sequences. The two call sequences identified as Indiana bat had a highly non-significant MLE probability value of 0.56.

Table 2
Bat Species Identifications at Recording Site 1 and Corresponding Maximum Likelihood Estimator Values and Call Sequence Sample Sizes

Software	Big brown bat	Silver-haired bat	Red bat	Small-footed bat	Little brown bat	Indiana bat	Northern long-eared bat	Tri-colored bat
Kaleidoscope Pro	**<0.00001** (N = 40)	0.064 (N = 15)	**<0.00001** (N = 104)	0.98 (N = 4)	**<0.00001** (N = 151)	**<0.00001** (N = 137)	**0.001** (N = 21)	1 (N = 1)
EchoClass	**<0.00001** (N = 25)		**<0.00001** (N = 255)	0.99 (N = 4)	**0.015** (N = 5)	**<0.00001** (N = 30)	**<0.00001** (N = 17)	

Notes: Maximum Likelihood Estimator (MLE) probability values <0.05 are considered significant and indicative of accurate species identification (shown above in bold). MLE values presented for EchoClass represent the lowest values among the 3 detector-nights. Kaleidoscope provides one overall MLE value whereas EchoClass reports MLE values individually for each night of the survey. Sample sizes shown in parentheses represent the number of files in which a given species was identified as the predominant species. An EchoClass value of 1 represents a case where only 1call sequence for that species was detected on a given night, which is insufficient for the program to calculate an MLE value.

Table 3
Bat Species Identifications at Recording Site 2 and Corresponding Maximum Likelihood Estimator Values and Call Sequence Sample Sizes

Software	Big brown bat	Silver-haired bat	Red bat	Hoary bat	Little brown bat	Indiana bat	Tri-colored bat
Kaleidoscope Pro	**<0.00001** (N = 44)	0.92 (N = 10)	**<0.0001** (N = 9)		**<0.00001** (N = 14)	0.56 (N = 2)	
EchoClass	**<0.00001** (N = 16)		**0.007** (N = 9)	1		**<0.00001** (N = 2)	1

Notes: Maximum Likelihood Estimator (MLE) probability values <0.05 are considered significant and indicative of accurate species identification (shown above in bold). MLE values presented for EchoClass represent the lowest values among the 2 detector-nights. Kaleidoscope provides one overall MLE value whereas EchoClass reports MLE values individually for each night of the survey. Sample sizes shown in parentheses represent the number of files in which a given species was identified as the predominant species. An EchoClass value of 1 represents a case where only 1call sequence for that species was detected on a given night, which is insufficient for the program to calculate an MLE value.

EchoClass identified 32 call sequences from Site 2 to five different species: big brown bat, eastern red bat, hoary bat (*Lasiurus cinereus*), tri-colored bat (*Perimyotis subflavus*), and Indiana bat (**Table 3**). Hoary bat and tri-colored bat, however, each had only one call sequence detected, and an MLE probability value therefore could not be calculated. The other three species each had highly significant MLE probability values of < 0.007 on at least one of the two nights at Site

2 (**Table 3**). The identification of Indiana bat at Site 2 consisted of two call sequences that were both recorded on August 10. One of these call sequences was also classified as Indiana bat by Kaleidoscope Pro. Kaleidocope Pro identified little brown bat as the predominant species in the other sequence, but classified 3 of the 10 pulses within this mixed species sequence as Indiana bat.

SITE 3

Among the recordings collected over the 3 detector-night survey period at Site 3, Kaleidoscope Pro identified 367 call sequences to eight different species and categorized 77 files as unidentifiable or noise. The eight species included, in order of decreasing abundance, big brown bat, eastern red bat, silver-haired bat, little brown bat, tri-colored bat, hoary bat, eastern small-footed bat (*M. leibii*), and northern long-eared bat. However, species identifications were only confident for big brown bat and eastern red bat (**Table 4**). The detection of northern long-eared bat was limited to only one sequence in which it was identified as the predominant species, and had a non-significant MLE probability value of 0.43.

EchoClass classified 294 call sequences from Site 3 to species. The "Night Level Info" output showed that 7 bat species were identified, including big brown bat, eastern red bat, silver-haired bat, little brown bat, tri-colored bat, hoary bat, and Indiana bat, but only big brown bat, eastern red bat, and tri-colored bat had significant MLE probability values (**Table 4**). The "MLE Results" output displayed "1" for hoary bat, little brown bat, and Indiana bat, meaning that only one call sequence from each of these species was detected in a given night which is insufficient for EchoClass to calculate MLE values. The one call sequence identified as Indiana bat by EchoClass was identified by Kaleidoscope Pro as eastern red bat, but Kaleidoscope Pro also identified 1 of the 6 pulses within this mixed species call sequence as Indiana bat and listed Indiana bat as an "alternate" species.

Table 4
Bat Species Identifications at Recording Site 3 and Corresponding Maximum Likelihood Estimator Values and Call Sequence Sample Sizes

Software	Big brown bat	Silver-haired bat	Red bat	Hoary bat	Small-footed bat	Little brown bat	Indiana bat	Northern long-eared bat	Tri-colored bat
Kaleidoscope Pro	**<0.00001** (N = 221)	0.17 (N = 58)	**<0.00001** (N = 71)	1 (N = 3)	1 (N = 1)	1 (N = 8)		0.43 (N = 1)	0.76 (N = 4)
EchoClass	**<0.00001** (N = 183)	0.32 (N = 29)	**<0.00001** (N = 63)	1		1	1		**<0.00001** (N = 3)

Notes: Maximum Likelihood Estimator (MLE) probability values <0.05 are considered significant and indicative of accurate species identification (shown above in bold). MLE values presented for EchoClass represent the lowest values among the 3 detector-nights. Kaleidoscope provides one overall MLE value whereas EchoClass reports MLE values individually for each night of the survey. Sample sizes shown in parentheses represent the number of files in which a given species was identified as the predominant species. An EchoClass value of 1 represents a case where only 1call sequence for that species was detected on a given night, which is insufficient for the program to calculate an MLE value.

E. CONCLUSION

Eight detector-nights of survey effort at the project site captured 919 recordings recognized as bat call sequences by Kaleidoscope Pro and 662 recordings recognized as bat call sequences by EchoClass. Six species of bats were confidently identified by one or both programs as being present within the project site, including Indiana bat and northern long-eared bat.

Kaleidoscope Pro identified Indiana bat with a highly significant level of confidence at Site 1, while EchoClass identified Indiana bat with a highly significant level of confidence at Site 1 and Site 2. At Site 3, EchoClass classified one call sequence as Indiana bat, but an MLE value could not be calculated from this single sequence to provide a measure of confidence. However, 1 of the 6 pulses within this mixed species call sequence was also tagged by Kaliedoscope Pro as Indiana bat, which supports the likelihood that Indiana bats were present among the bats recorded at Site 3. Given the agreement between Kaliedoscope Pro and EchoClass at Site 1, the significant identification of Indiana bat at Site 2 by EchoClass, and the possible detection of Indiana bat at Site 3 by both programs, it can be concluded that Indiana bats are likely present within the project site. Because Indiana bats often travel multiple miles between successive roosting locations and foraging areas (Kurta et al. 2002, Murray and Kurta 2004) and the majority of the project site contains habitat types that are used by Indiana bats for foraging and/or roosting, it is likely that each of the four parcels that comprise the project site are within the home ranges of the Indiana bats that were detected during the survey.

Northern long-eared bat was identified with a highly significant level of confidence at Site 1 by both software programs and the identifications were based upon several call sequences. It can therefore be concluded that northern long-eared bats are likely present in this area. Neither software program detected northern long-eared bats at Site 2, and at Site 3, only one call sequence was classified (with a non-significant level of confidence) by one of the two software programs as possibly being from a northern long-eared bat. A single echolocation call is considered insufficient for determining presence of a species (Britzke et al. 2013). The lack of detection of northern long-eared bats as Site 3 may reflect the tendency of this species to avoid sharp edges and forage within forested habitats rather than over open fields (e.g., Owen et al. 2003, Patriquin and Barclay 2003, Morris et al. 2010). Because home ranges of northern long-eared bats can span hundreds of acres and their daily movements can be multiple miles (Owen et al. 2003, Broders et al. 2006, Timpone et al. 2010), the individuals detected at Site 1 are likely to also utilize other forested portions of the project site for roosting and/or foraging.

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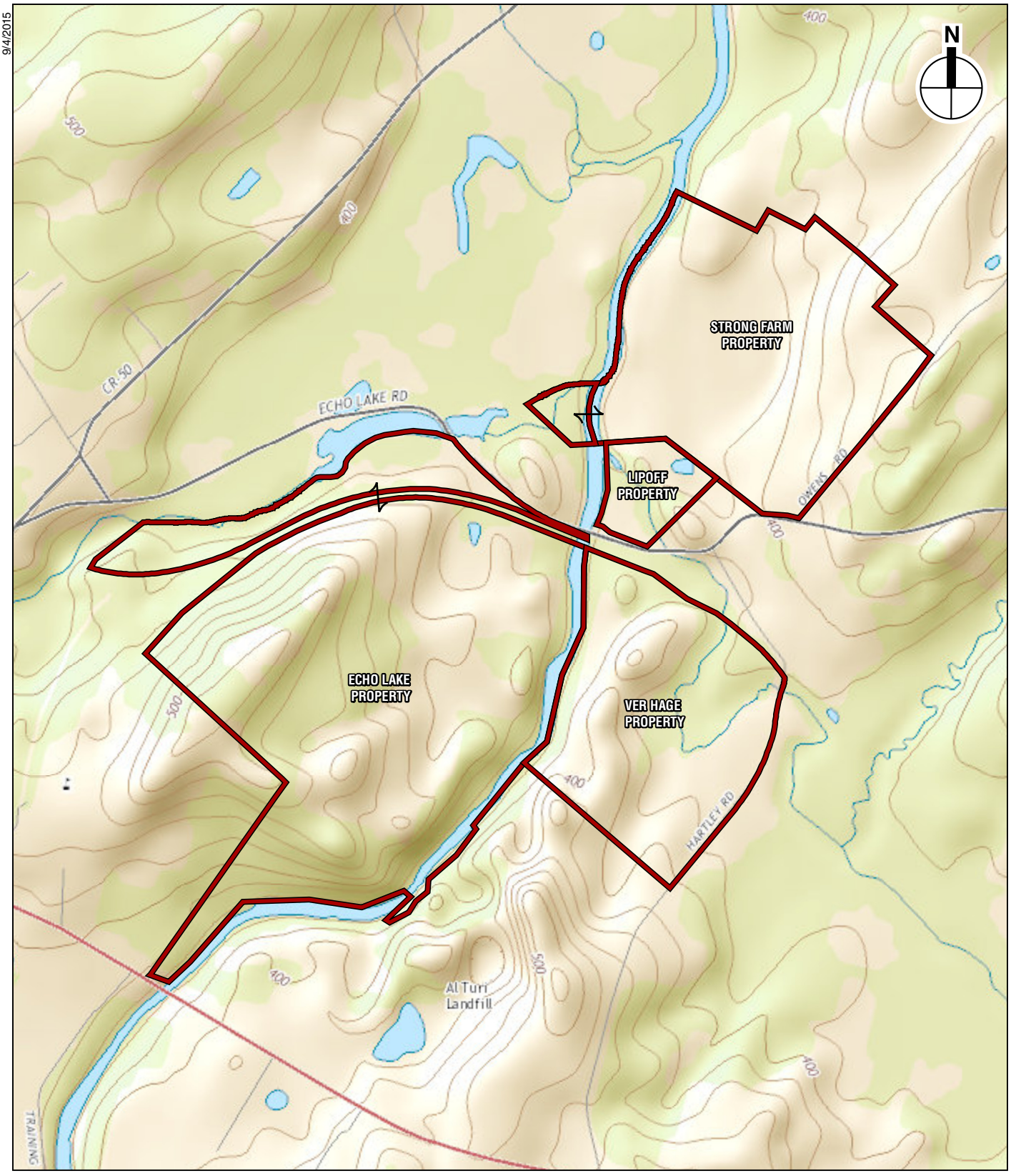
FIGURES

9/4/2015

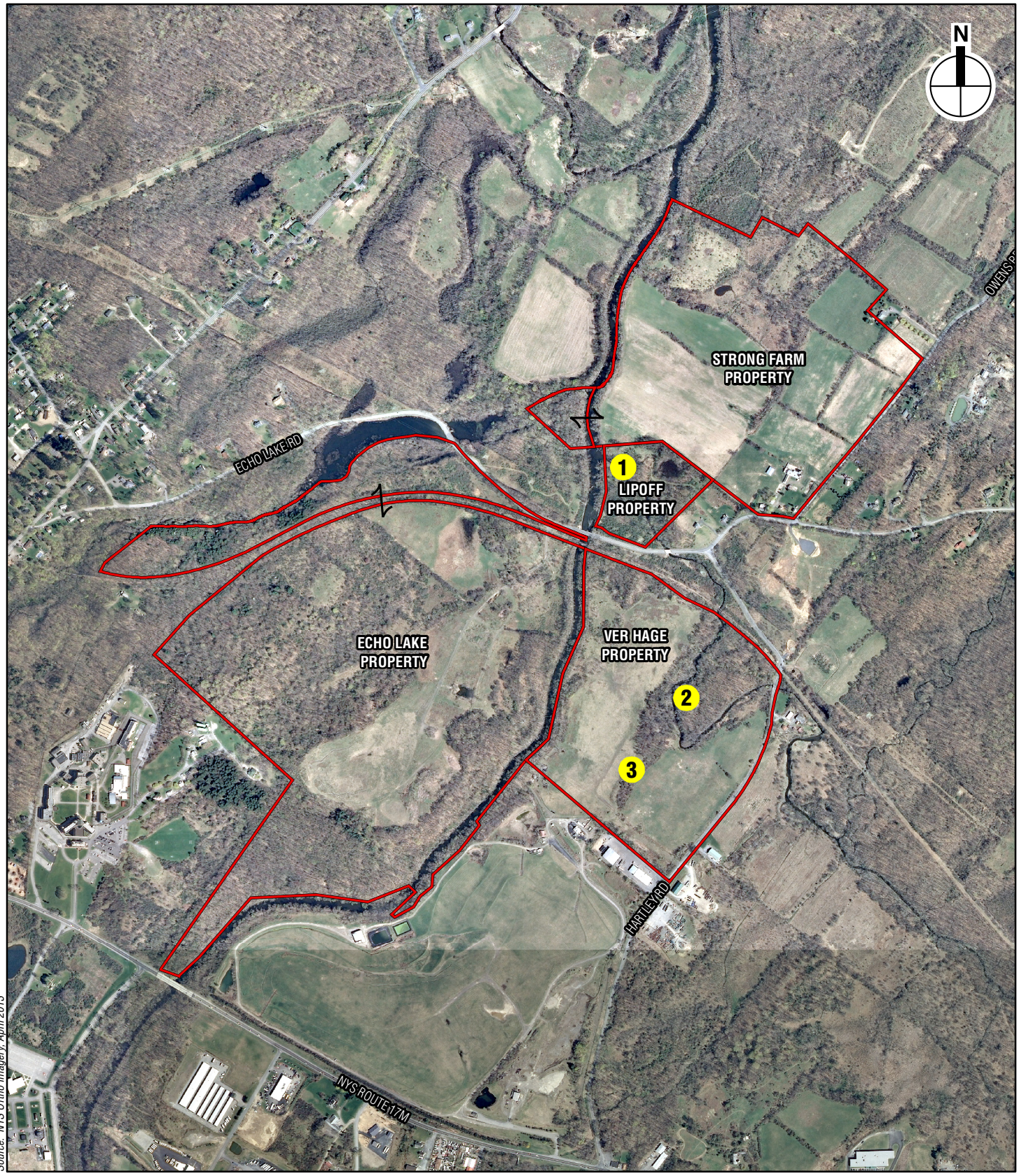


Project Site

0 2,000 FEET

USGS 7.5 Minute Topographic Map
Middletown Quad and Goshen Quad
Figure 1

Amy's Kitchen
Science of the Soul



Amy's Kitchen
Science of the Soul

Bat Recording Locations

Figure 2

Recording equipment set-up at Site 1 (view from the west)

Microphone angle and approximate cone of detection aimed towards canopy break and stream corridor at Site 1

View in front (north) of the microphone at Site 1

View behind (south of) the microphone at Site 1

View to the west of the microphone at Site 1

View to the east of the microphone at Site 1

Microphone angle and approximate cone of detection aimed towards the canopy opening over Cheechunk Creek at Site 2

View in front (north) of the microphone at Site 2

View behind (south of) the microphone at Site 2

View to the west of the microphone at Site 2

Woodland edge with old field at Site 3 (view to the north/northeast)

Microphone angle and approximate cone of detection aimed towards open sky along woodland/old field edge at Site 3

View in front (north) of the microphone at Site 3

View behind (south of) the microphone at Site 3

View to the east of the microphone at Site 3

View to the west of the microphone at Site 3

FEDERAL ENDANGERED SPECIES AND BANK SWALLOW ASSESSMENT

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September 2014

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1.0 INTRODUCTION

The United States Fish and Wildlife Service (USFWS) issued a letter regarding potential endangered species present and a bank swallow colony on the Amy's Kitchen Inc. parcel (Appendix A). The parcel is approximately 172.5 acres and located South of Echo Lake Road and north of the Grand Army of the Republic (GAR) Highway in the Town of Goshen, Orange County, New York (Figure 1).

Terrestrial Environmental Specialists, Inc. (TES) previously conducted studies on the project site documenting the wetlands, vegetation, and wildlife resources on the project site. This report responds directly to the USFWS comments related to bog turtle (*Clemmys muhlenbergii*), dwarf wedge mussel (*Alasmidonta heterodon*), small whorled pogonia (*Isotria medeoloides*), and bank swallow (*Riparia riparia*).

2.0 BOG TURTLE

2.1 Natural History

Bog turtles are small and elusive semi-aquatic turtles that spend much of their life underground or hidden in vegetation. These turtles reach a maximum length of 4.5 inches and can be easily identified by their small size and the presence of large yellow or orange blotches on both sides of the neck.

Bog turtles exhibit a seasonal pattern of activity. They are most active during the spring and early summer months, while the fall and winter months are spent in hibernation. The turtles emerge from hibernation in late March or early April, and commence foraging and mating activities. Nesting occurs in mid-June, and during the later summer months turtles often aestivate, or enter a period of inactivity.

Bog turtles have specific habitat requirements that include open-canopy wetlands with shallow, slow-moving water, deep mucky soils, and low growing herbaceous or moss (*Sphagnum* spp.) covered hummocks. These wetlands are typically fed by springs or seeps and are often associated with a stream system that is bordered by woods. Other indicators of bog turtle habitat are shallow, slow-moving rivulets and tussock-forming vegetation. A diversity of microhabitats within these wetlands provides areas that the turtles require for basking, foraging, nesting, and hibernation. Typical bog turtle habitats include fens, bogs, swamps, marshes, and wet meadows (Ernst *et al*. 1994, Gibbs *et al*. 2007; NYSDEC Bog Turtle Fact Sheet 2013, USFWS 2001).

In New York State, the bog turtle range occurs in two separate regions, the Hudson Valley Region and the Lake Plain Region along the southern and eastern shores of Lake Ontario. The majority of bog turtle populations in New York occur in the Hudson Valley. Two recovery units occur in this region, the Hudson/Housatonic and Delaware Recovery Units. The majority of the Delaware Recovery Unit occurs in eastern Pennsylvania and western New Jersey. However, a small portion of the Delaware Recovery Unit occurs in northwestern Orange County

and southeastern Sullivan County (USFWS 2001). The Amy's Kitchen Inc. parcel is located entirely within the Hudson/Housatonic Recovery Unit.

2.2 Field Review

A Phase 1 bog turtle survey is an evaluation of the wetlands on a site for their potential as suitable bog turtle habitat. The survey is completed by assessing the presence and suitability of three key habitat criteria: hydrology, soils, and vegetation. Suitable hydrology and soils are considered to be the primary determinants of suitable bog turtle habitat (USFWS 2006).

Suitable hydrology is identified by the presence of springs or seeps, year-round saturated soils, shallow surface water, and particularly slow-moving rivulets; although, the wetland can be interspersed with both wet and dry pockets (USFWS 2001, USFWS 2006).

Suitable soils are generically described as mucky. The term "mucky" does not refer to a technical soil type, rather, mucky soils are described as soft and penetrable (to a depth of at least 3 to 5 inches). During a Phase 1 survey, soils can be probed with a blunt-ended pole to determine depth of muck. Sinking to your ankles or deeper can also be a sign of suitable soils (USFWS 2001, 2006). Soil types present in the wetlands are shown on Figure 2.

Suitable vegetation includes shrub and herbaceous species, primarily sedges, grasses, and rushes. Fen species, such as yellow sedge (*Carex flava*), grass-of-parnassus (*Parnassia glauca*), and shrubby cinquefoil (*Potentilla fruticosa*), are other good indicators of suitable vegetation. Other plant species commonly found in bog turtle habitat include, but are not limited to, sphagnum moss, sensitive fern (*Onoclea sensibilis*), tussock sedge (*Carex stricta*), jewelweed (*Impatiens capensis*), skunk cabbage (*Symplocarpus foetidus*), poison sumac (*Toxicodendron vernix*), alder (*Alnus* spp.), and red maple (*Acer rubrum*) (USFWS 2001, USFWS 2006). Wetland communities are classified according to the Cowardin classification system into four potential groups; palustrine emergent (PEM), palustrine shrub swamp (PSS), palustrine forested (PFO), and palustrine open water (POW) (Cowardin 1979).

Vegetation cover types were characterized according to *Ecological Communities of New York State* (Edinger *et al.* 2002). Scientific nomenclature for each plant species were determined using the *National Wetland Plant List* (Lichvar 2013) and *A Checklist of New York State Plants* (Mitchell and Tucker 1997). Plant species were primarily identified using the *Manual of Vascular Plants of Northeastern United States and Adjacent Canada* (Gleason and Cronquist 1991), *New Britton and Brown Illustrated Flora* (Gleason 1952), and *Gray's Manual of Botany* (Fernald 1950).

Wetlands within the parcel were previously located by TES during a field effort performed on November 10, 2008. Wetlands were located and ArcGIS shapefiles were created to depict the location of each wetland. All wetlands found were included in the Phase 1 survey and are depicted in Figure 5.

Observations were made within each wetland sufficient to characterize the wetland and assess each for its overall suitability for bog turtles. The habitat evaluation field form (data

sheet) for Phase 1 bog turtle surveys was originally developed by the USFWS in conjunction with the Pennsylvania Fish and Boat Commission (PFBC). In 2013, the field forms were modified by bog turtle surveyors to reflect New York field conditions. One data sheet was completed for each wetland, and representative photographs were taken. The data sheets and photographs are provided in Appendix B and C, respectively.

2.3 Survey Results

TES had previously documented eight (8) wetlands within the Amy's Kitchen Inc. parcel (Figure 5). Of these eight wetlands, none of the wetlands displayed characteristics indicating the potential for bog turtle habitat. Habitat descriptions of the wetlands are as follows.

Wetland D

Wetland D is a shallow emergent marsh also located in the northeastern corner of the parcel. This wetland occurred in a previously mined area and it is dominated by smartweed (*Polygonum sp.*), reed canary grass (*Phalaris arundinacea*), and fox sedge (*Carex vulpinoidea*). The mapped soil type in this wetland is Middlebury silt loam (My). Soils were non-mucky and no hydrology was present in this wetland at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland E

Wetland E is a shallow emergent marsh located in the northeastern corner of the parcel. This wetland is dominated by burreed (*Sparganium sp.*), hop sedge (*Carex lupulina*), broom sedge (*Carex scoparia*), soft rush (*Juncus effusus*), spike rush (*Eleocharus palustris*), purple loosestrife (*Lythrum salicaria*), and swamp milkweed (*Asclepias incarnata*). The mapped soil types in this wetland are Erie gravelly silt loam, 0 to 3 percent slopes (ErA), Erie gravelly silt loam, 3 to 8 percent slopes (ErB), and Riverhead sandy loam, 15 to 25 percent slopes (RhD). Soils were non-mucky and no hydrology was present in this wetland at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland F

Wetland F is a shallow emergent marsh located in the central-eastern part of the parcel. This wetland is dominated by woolgrass (*Scirpus cyperinus*), cypress sedge (*Carex pseudocyperus*), soft rush (*Juncus effusus*), and purple loosestrife. The mapped soil types in this wetland are Unadilla silt loam, 0 to 8 percent slopes (UnB), and Riverhead sandy loam, 8 to 15 percent slopes (RhC). Soils were non-mucky and saturated with 5 inches of larger pools of water present on the surface. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland G

Wetland G is a shallow emergent marsh also located in the central-eastern part of the parcel. This wetland is dominated by small-spike false nettle (*Boehmeria cylindrica*), and rice

cut grass (*Leersia oryzoides*). The mapped soil type in this wetland is Unadilla silt loam, 0 to 8 percent slopes (UnB). Wetland G is a dry stream channel with non-mucky soils and no hydrology present at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland H

Wetland H is a shallow emergent marsh located centrally in the parcel. This wetland is dominated by woolgrass, fox sedge, broom sedge, boneset (*Eupatorium perfoliatum*), ironweed (*Vernonia noveboracensis*), and purple loosestrife. The mapped soil types in this wetland are Allard silt loam, 3 to 8 percent slopes (AdB), and Mardin gravelly silt loam, 15 to 25 percent slopes (MdD). Wetland H is a wet meadow with non-mucky soils and no hydrology present at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland I

Wetland I is a drainage swale that cuts across the central portion of the parcel. This wetland is dominated by jewel weed (*Impatiens capensis*), and late goldenrod (*Solidago gigantea*). The mapped soil types in this wetland are Erie gravelly silt loam, 3 to 8 percent slopes (ErB), and Mardin gravelly silt loam, 3 to 8 percent slopes (MdB). Wetland I is a dry drainage swale with non-mucky soils and no hydrology present at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

Wetland J

Wetland J is the Wallkill River, which runs along the entire eastern side of the parcel. This river has a Class and Standard of C (Figure 3). Rivers do not provide appropriate habitat for bog turtles and therefore Wetland J does not represent suitable bog turtle habitat.

Wetland K

Wetland K is located in the southern part of the parcel and is mostly a deciduous forest wetland with a small portion of scrub-shrub wetland. This wetland is dominated by green ash (*Fraxinus pennsylvanica*), skunk cabbage (*Symplocarpus foetidus*), cinnamon fern (*Osmunda cinnamomea*), virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*), spice bush (*Lindera benzoin*), and sallow sedge (*Carex lurida*). The mapped soil types in this wetland are Alden silt loam (AB), and rock outcrop-Arnot complex, sloping 1/ (RKC). Soils were non-mucky and no hydrology was present in this wetland at the time of observation. The vegetation, soils, and hydrology in this wetland do not represent suitable bog turtle habitat.

3.0 DWARF WEDGE MUSSEL

3.1 Natural History

The dwarf wedge mussel (*Alasmidonta heterodon*) is a small freshwater mussel that is federally and state listed as endangered. This rare mussel has a dark brown to yellowish brown ovate bivalve shell. The mussel has a bluish to silvery white inside and can reach a maximum length of 1.5 inches. The dwarf wedge mussel used to have a large distribution ranging north from New Brunswick, Canada all the way south to North Carolina, United States. Today the small mussel only has 30 small populations consisting of 100 or more in each population (Michaelson & Nieves 1995). These populations are located in New Hampshire, Vermont, Maryland, North Carolina, New York, Connecticut, Virginia and New Jersey.

The dwarf wedge mussel has many predators including raccoons, muskrats, otters, bears, herons, waterfowl, turtles, and large fish. However, their main current threats to their populations include degradation and loss of habitat and competing for space and food with exotic mussel species such as the Asian clam. Degradation and loss of habitat are caused by several things from dam construction, channelization, dredging, siltation, and contaminants (USFWS 1993).

Siltation and contaminants affect the dwarf wedge mussel habitat and foraging behaviors. They favor clean, shallow water with a small amount of silt deposition in rivers and creeks that have a slow to moderate current and a substrate consisting of muddy sand, sand, gravel or small pebbles. These substrates allow the clam to submerge themselves at the bottom of the water body. The dwarf wedge mussel adults are filter feeders, straining plankton, bacteria and other particles out of the water. Contaminants and siltation have a direct negative impact on both their habitat and foraging behaviors.

Dam construction, channelization, and dredging have a big impact on the larval stage of the dwarf wedge mussel through impacts to the host fish the larvae depend on (USFWS 1993). Unlike most species of mollusks, the dwarf wedge mussels have separate sexes. Fertilization happens during mid-summer to fall and the larval hatch from the eggs the following spring. The larval stage, known as glochidia, are external parasites that are completely dependent on host fish. They prefer host fish species that are small bottom-dwelling fish; this includes the tessellated darter, mottled sculpin, and slimy sculpin. If the glochidia do not find a host fish immediately they die. It takes the glochidia anywhere from 6 to 160 days to transform into a juvenile mussel stage at which point they are able to fall off of their host fish and start their life in the substrate of the water body.

The only known location of the dwarf wedge mussel in New York State is in the lower reaches of the Neversink River in Orange County. No other location in New York State hosts this species. This population consists of several thousand individuals.

3.2 Field Review

TES conducted a habitat based assessment of the Wallkill River which forms the eastern property boundary. The Wallkill River is subject to extreme hydrologic fluctuations in this area. TES noted drift lines with leaves and sticks that were six to seven feet above the water surface. In addition, the Wallkill River was heavily silted and flowing tan/brown in color.

Based on the habitat requirements of the dwarf wedge mussel for clean, shallow water with a minimum of silt deposition, it was concluded that conditions to support the dwarf wedge mussel are not present on the project site.

4.0 SMALL WHORLED POGONIA

4.1 Natural History

Small whorled pogonia (*Isotria medeoloides*) is a federally listed threatened species and a state endangered species. This species has been located only 7 times in New York State. The first time it was recorded in New York was in 1887 and it has only two recent records, it was found in 1976 in the White Lake area in Onondaga County and then again in Schunnemunk Mountain State Park in Orange County in 2010 (Young 2010).

Small whorled pogonia is in the *Orchidaceae* family. It has 5 to 6 leaves (1 to 3 inches long), arranged in a whorl at the top of the stalk and is 3 to 10 inches in height (Chapman 1997). This species superficially resembles Indian cucumber (*Medeola virginiana*). The flowers bloom in May or June and last up to 10 days. As this species does not flower every year, its dormancy adds to the difficulty of locating it. The flowers are greenish yellow in color and are about 1 inch

The botanical literature lists a wide variety of habitats for this species. These habitats include acid soil in dry woods (Gleason & Cronquist 1993), dry woodlands (Fernald 1950), open stands of second-growth hardwoods or pine hardwoods (Gleason & Cronquist 1993).

Natural Heritage literature from Massachusetts and the USFWS provides the following habitat information. The small whorled pogonia favors open, dry, deciduous forests with low nutrient, acidic soils that are very stony, fine sandy loams and contain a thick layer of dead leaves. These forests are usually dominated by such tree species as maple, oak, beech, hickory, pine and sometimes hemlock. They require filtered sunlight and sparse shrub and herbaceous layers. They often grow on slopes near small streams. They also require a slow movement of water, often restricted by a characteristic in soil referred to as a fragipan. Fragipan are “brittle, loamy, cement-like layers below the surface of the soil which are low in porosity and force the water to drain laterally instead of vertically.” (USFWS 2008, Massachusetts Natural Heritage Endangered Species Program 2009).

The botanical literature provides a confusing picture of the habitat requirements for small whorled pogonia. The best habitat description is that “the species does not exhibit any pronounced habitat requirements other than a need for forest cover” (Mitchell & Sheviak 1983).

long. Technical characteristics that separate this species from larger whorled pogonia (*Isotria verticillata*) include its larger leaf size, longer sepals, and longer peduncles.

4.2 Field Review

TES conducted several extensive vegetation field surveys on the project site when small whorled pogonia stalks, leaves, or flowers would have been visible.

On June 27 and 28, 2011, TES's senior botanist conducted a vegetation inventory within all the forested areas on the site. A complete listing of herbaceous species recorded on the site is presented in table format (Table 1). Prior to this inventory, several TES biologists conducted a wetland delineation on the property over several days.

On August 27 and 28, a senior TES botanist assisted by a junior botanist conducted a meander survey in the wooded portions of the project site. Some forested areas were considered inappropriate habitat due to a dense understory of shrubs. TES carefully searched forested portions of the site examining the site for the vegetative or fruiting body of small whorled pogonia.

TES did not locate small whorled pogonia on the site and it is our professional opinion that it does not occur on the site.

5.0 BANK SWALLOW

5.1 Natural History

Bank swallows (*Riparia riparia*) are one of the most widely distributed swallows in the world (Garrison, B. A. 1999). Their worldwide distribution ranges from Eurasia to North America. In North America, their range extends from Alaska to Newfoundland and south into New York, Pennsylvania, the Delmarva Peninsula, and parts of the Appalachian Mountains. Bank swallows migrate through the southern half of North America to winter in the tropics. This species is not considered rare in Orange County or in New York State.

Bank swallows are the smallest of the swallows in North America and are easily distinguishable from other swallow species. They have a brown back that is distinctly paler near the rump than the upper back. Their belly is dull white in color with a distinct brown band and they have a notched/forked tail as most of the swallows do.

Bank swallows occupy several major habitat niches. The bank swallow is usually found in areas near rivers, creeks, reservoirs, and seashores. They are found in those areas because they nest along steep sandy banks along the water, generally preferring vertical banks and bluffs in lowland areas. Males dig out burrows and tunnels within a sand bank for nesting and their colonies can consist of a couple pairs to hundreds of birds. They have also adapted to human activities and can be found in man-made excavations such as sand and gravel quarries. However, they still require these areas to be near bodies of water for foraging.

The bank swallow feeds exclusively on flying and jumping insects including bees, wasps, ants, butterflies and moths either over water or open areas like meadows.

Based on the New York State Breeding Bird Atlas there has been a decline in the number of breeding blocks this species was reported in. Two man-made factors are cited in this decline. One is the loss of nesting habitat due to flood control projects and the second is the decline of sand and gravel excavation. It further cites the fact that "New York State law now requires the grading of banks following excavation, leaving slopes unsuitable for nesting" (McGowan & Corwin 2008).

5.2 Field Review

Terrestrial Environmental Specialists, Inc. (TES) visited the site on numerous occasions since 2007. A breeding bird survey was conducted over a two day period on June 27 and 28, 2011. A complete listing of bird species recorded on the site is presented in table format (Table 2). During that survey, no bank swallows were recorded on the site. TES did note the presence of tree swallows and barn swallows during the 2011 site investigation. On August 11 and 12, 2014 TES conducted a further follow-up investigation of potential bank swallow use of the site. TES searched for bank swallows and potential nest sites during the 2014 survey. TES did not record any bank swallows using the site and no evidence of nesting (bank holes) or suitable banks were recorded on the site.

TES is unable to substantiate the current use of the site by a bank swallow colony. There may have been bank swallow habitat in the mined area prior to the mine reclamation, however, at the present time the entire site is covered with vegetation (open field, shrub upland, mixed deciduous forest, and deciduous forest) and there are no steep banks where bank swallows would nest. There is no potential for a nesting bank swallow colony on the site formerly occupied by mining activity.

TES also investigated the edge of the Wallkill River as there are steep banks in places. Bank swallow habitat is not present as these banks are forested and densely vegetated thereby eliminating potential for nesting areas. There were no bank swallow nest holes or bank swallows present during our survey.

TES determined that there currently is no nesting habitat for bank swallows on the site.

6.0 SUMMARY

TES conducted additional field surveys to collect additional information relative to the potential occurrence of the bog turtle, dwarf wedge mussel, small whorled pogonia, and bank swallow on the project site. The project site is approximately 17.25 acres in size and is located south of Echo Lake Road and north of the Grand Army of the Republic Highway in the Town of Goshen, Orange County, New York.

TES conducted a Phase 1 bog turtle survey on wetlands within the project site. None of the wetlands examined provided habitat for the bog turtle.

TES reviewed the conditions of the Wallkill River along the edge of the project site. TES found a highly silted river with extreme variability in hydrologic regime. These conditions do not provide habitat for the dwarf wedge mussel.

TES conducted a search in the forested portions of the site for small whorled pogonia. TES found that the site did not harbor any small whorled pogonia.

TES recorded bird species present during a two day survey and examined the site for potential nesting habitat for the bank swallow. The site has been reclaimed and re-vegetated from its former use as a mine. A search for bank swallows or bank swallow nests on the project site led to the conclusion that there are no bank swallows nesting on the site. There is no bank swallow nesting habitat presently on the project site.

None of the federally-listed species were located on the site and are not expected to occur.

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TABLES

Table 1.

Plant Species Observed, Echo Lake Site,
Town of Goshen, Orange County, New York

TREES

Scientific Name[a]	Common Name	VEGETATION COVER TYPES[b]				
		OF/RM	SSU	DFU	WM	DFW
Acer saccharum	Sugar maple		X	X		
Acer rubrum	Red maple	X	X	X		X
Acer saccharinum	Silver maple			X		X
Ailanthus altissima	Tree-of-heaven	X	X	X		
Amelanchier arborea	Serviceberry			X		
Betula lenta	Sweet birch			X		
Betula papyrifera	Paper birch			X		
Betula populifolia	Gray birch		X	X		
Ostrya virginiana	Ironwood			X		
Carya cordiformis	Bitternut hickory			X		
Carya glabra	Pignut hickory			X		
Carya ovata	Shagbark hickory		X	X		
Catalpa speciosa	Indian cigar tree		X	X		
Fagus grandifolia	American beech			X		
Fraxinus americana	White ash		X	X		
Fraxinus pennsylvanica	Green ash	X	X	X		X
Juniperus virginiana	Eastern red cedar		X			
Liriodendron tulipifera	Tulip poplar			X		
Malus pumila	Apple		X	X		
Pinus strobus	White pine		X	X		
Platanus occidentalis	Sycamore			X		
Populus deltoides	Eastern cottonwood	X	X	X		
Populus tremuloides	Trembling aspen	X	X	X		
Prunus serotina	Black cherry		X	X		
Quercus alba	White oak			X		
Quercus coccinea	Scarlet oak			X		
Quercus palustris	Pin oak		X	X		X
Quercus rubra	Red oak			X		
Quercus velutina	Black oak			X		
Tsuga canadensis	Eastern hemlock			X		
Ulmus americana	American elm			X		X
Ulmus rubra	Slippery elm			X		

a. Scientific nomenclature follows Mitchell and Tucker (1997).
b. Vegetation cover types are as follows: OF/RM = Open Field/Reclaimed Mine, SSU = Scrub-Shrub Upland, DFU = Deciduous Forest Upland, WM = Wet Meadow, DFW = Deciduous Forest Wetland.

Table 1. (cont.)

SHRUBS

Scientific Name[(a)]	Common Name	VEGETATION COVER TYPES[(b)]				
		OF/RM	SSU	DFU	WM	DFW
Aralia spinosa	Prickly-ash		X	X		
Berberis thunbergii	Japanese barberry	X	X	X		
Carpinus caroliniana	Musclewood			X		
Cephalanthus occidentalis	Buttonbush				X	
Cornus foemina ssp. *racemosa*	Gray-stem dogwood	X	X	X		
Crataegus spp.	Hawthorns	X	X			
Ligustrum vulgare	Privet		X	X		
Lindera benzoin	Spicebush					X
Lonicera morrowii	Morrow's honeysuckle	X	X	X		
Prunus virginiana	Choke cherry		X	X		
Rhamnus cathartica	Common buckthorn	X	X	X		
Rhus hirta	Staghorn sumac		X			
Rosa multiflora	Multiflora rose	X	X	X		
Rubus allegheniensis	Blackberry	X	X			
Rubus occidentalis	Black raspberry	X	X	X		
Sambucus canadensis	Elderberry		X			
Viburnum dentatum	Arrowwood	X	X			
Viburnum lentago	Nannyberry		X		X	
Viburnum prunifolium	Blackhaw	X	X	X		X
Vitis sp.	Grape		X	X		

HERBACEOUS

Scientific Name[(a)]	Common Name	VEGETATION COVER TYPES[(b)]				
		OF/RM	SSU	DFU	WM	DFW
Agrimonia sp.	Agrimony	X	X			
Agrostis gigantea	Redtop	X				
Alliaria petiolata	Garlic mustard	X	X	X		X
Allium tricoccum	Wild leek			X		
Ambrosia artemisiifolia	Common ragweed	X	X			
Anthoxanthum odoratum	Sweet vernal grass	X	X			
Apocynum sp.	Dogbane	X	X			
Arisaema triphyllum	Jack-in-the-pulpit			X		
Artemisia vulgaris	Common mugwort	X	X			
Asclepias incarnata	Swamp milkweed				X	
Asclepias syriaca	Common milkweed	X				
Aster divaricatus	White wood aster			X		
Aster spp.	Asters	X	X	X	X	X
Athyrium felix-femina	Lady fern			X		
Botrychium virginianum	Rattlesnake fern			X		

Table 1. (cont.)

HERBACEOUS

Scientific Name[(a)]	Common Name	VEGETATION COVER TYPES[(b)]				
		OF/RM	SSU	DFU	WM	DFW
Bromus inermis	Brome grass	X	X			
Carex cristosella	Sedge				X	
Carex lupulina	Sedge				X	
Carex pensylvanica	Pennsylvania sedge		X	X		
Carex scirpoides	Sedge				X	
Carex spp.	Sedges		X	X	X	
Carex squarrosa	Sedge				X	
Carex stricta	Tussock sedge				X	X
Carex vulpinoidea	Fox sedge	X	X		X	
Centaurea maculosa	Spotted knapweed	X	X			
Cichorium intybus	Chickory	X				
Circaea lutetiana	Enchanter's nightshade		X	X		
Cirsium canadensis	Canada thistle	X	X			
Coronilla varia	Crown-vetch	X				
Cynoglossum officinale	Hound's tongue		X	X		
Dactylis glomerata	Orchard grass	X	X			
Datura stramonium	Jimson weed	X				
Dennstaedtia punctilobula	Hay-scented fern		X	X		
Dianthus armeria	Deptford pink	X				
Dryopteris cristata	Crested wood fern				X	X
Dryopteris intermedia	Wood fern			X		
Eleocharis sp.	Spikerush				X	
Elytrigia repens	Quackgrass	X	X			
Epigaea repens	Partridgeberry		X	X		
Equisetum arvense	Common horsetail	X	X	X		
Erigeron annuus	Daisy fleabane	X				
Euphorbia sp.	Spurge	X				
Euthamia graminifolia	Narrow-leaved goldenrod	X				
Fragaria virginiana	Strawberry	X	X	X		
Galium mollugo	White bedstraw	X				
Galium palustre	Marsh bedstraw				X	
Geum canadense	White avens		X	X		
Glyceria melicaria	Manna grass				X	X
Glyceria sp.	Mannagrass			X		
Hieracium sp.	Hawkweed	X	X			
Hypericum punctatum	Spotted St. John's wort	X				
Impatiens capensis	Spotted touch-me-not				X	X
Juncus effusus	Soft rush				X	X
Lepidium sp.	Peppergrass	X				
Lolium arundinaceum	Tall fescue	X				
Lolium perenne	Perennial rye	X				
Lonicera japonica	Japanese honeysuckle	X	X			

Table 1. (cont.)

HERBACEOUS

Scientific Name[(a)]	Common Name	VEGETATION COVER TYPES[(b)]				
		OF/RM	SSU	DFU	WM	DFW
Lotus corniculata	Bird's-foot trefoil	X				
Lychnis flos-cuculi	Ragged-robin	X	X			
Lysimachia nummularia	Moneywort		X		X	X
Lythrum salicaria	Purple loosestrife				X	
Melilotus alba	White sweet clover	X				
Melilotus officinalis	Yellow sweet-clover	X				
Onoclea sensibilis	Sensitive fern		X	X	X	X
Osmunda cinnamomea	Cinnamon fern				X	X
Osmunda claytoniana	Interrupted fern			X		
Oxalis sp.	Sorrel	X	X			
Panicum sp.	Panic grass	X				
Parthenocissus quinquefolia	Virginia creeper	X	X	X		X
Phalaris arundinacea	Reed canary grass	X			X	
Phleum pratense	Timothy	X	X			
Phragmites australis	Common reed grass	X	X		X	
Phytolacca americana	Pokeweed		X			
Pilea pumila	Clearweed		X	X		
Plantago lanceolata	Narrow-leaf plantain	X	X			
Plantago major	Broad-leaf plantain	X	X			
Poa compressa	Canada bluegrass	X				
Poa palustris	Fowl mannagrass				X	
Poa pratensis	Kentucky bluegrass	X	X			
Podophyllum peltatum	May-apple			X		
Polygonum persicaria	Tearthumb				X	
Polygonum spp.	Smartweeds				X	
Polypodium virginianium	Rock polypody			X		
Polystichum acrostichoides	Christmas fern			X		
Potentilla recta	Sulfur cinquefoil	X	X			
Potentilla simplex	Common cinquefoil	X	X			
Prunella vulgaris	Heal-all	X				
Ranunculus acris	Tall buttercup	X	X			
Rubus odoratus	Large-flowered raspberry	X	X			
Rumex sp.	Sorrel	X				
Silene vulgaris	Bladder campion	X				
Smilacina racemosa	False Solomon's seal			X		
Solidago canadensis	Canada goldenrod	X	X			
Solidago canadensis var. *scabra*	Tall goldenrod	X	X			
Solidago gigantea	Late goldenrod	X			X	
Solidago rugosa	Rough-stem goldenrod	X	X	X		
Sparganium sp.	Burreed				X	
Stylophorum diphyllum	Celandine poppy		X			
Symplocarpus foetidus	Skunk cabbage				X	X

Table 1. (cont.)

HERBACEOUS

Scientific Name[a]	Common Name	VEGETATION COVER TYPES[b]				
		OF/RM	SSU	DFU	WM	DFW
Thelypteris noveboracensis	New York fern			X		
Thelypteris palustris	Marsh fern				X	
Toxicodendron radicans	Poison ivy	X	X	X	X	X
Trifolium aureum	Hop-clover	X				
Trifolium hybridum	Alsike clover	X	X			
Trifolium pratense	Red clover	X	X			
Typha latifolia	Broad-leaf cattail				X	
Urtica procera	Tall nettles		X			
Vernonia noveboracensis	Ironweed		X			
Veronica officinalis	Common speedwell	X				
Vicia sp.	Vetch	X				

Table 2.

Bird Species Recorded, Echo Lake Site,
Town of Goshen, Orange County, New York
June 27 and 28, 2011
August 11 and 12, 2014

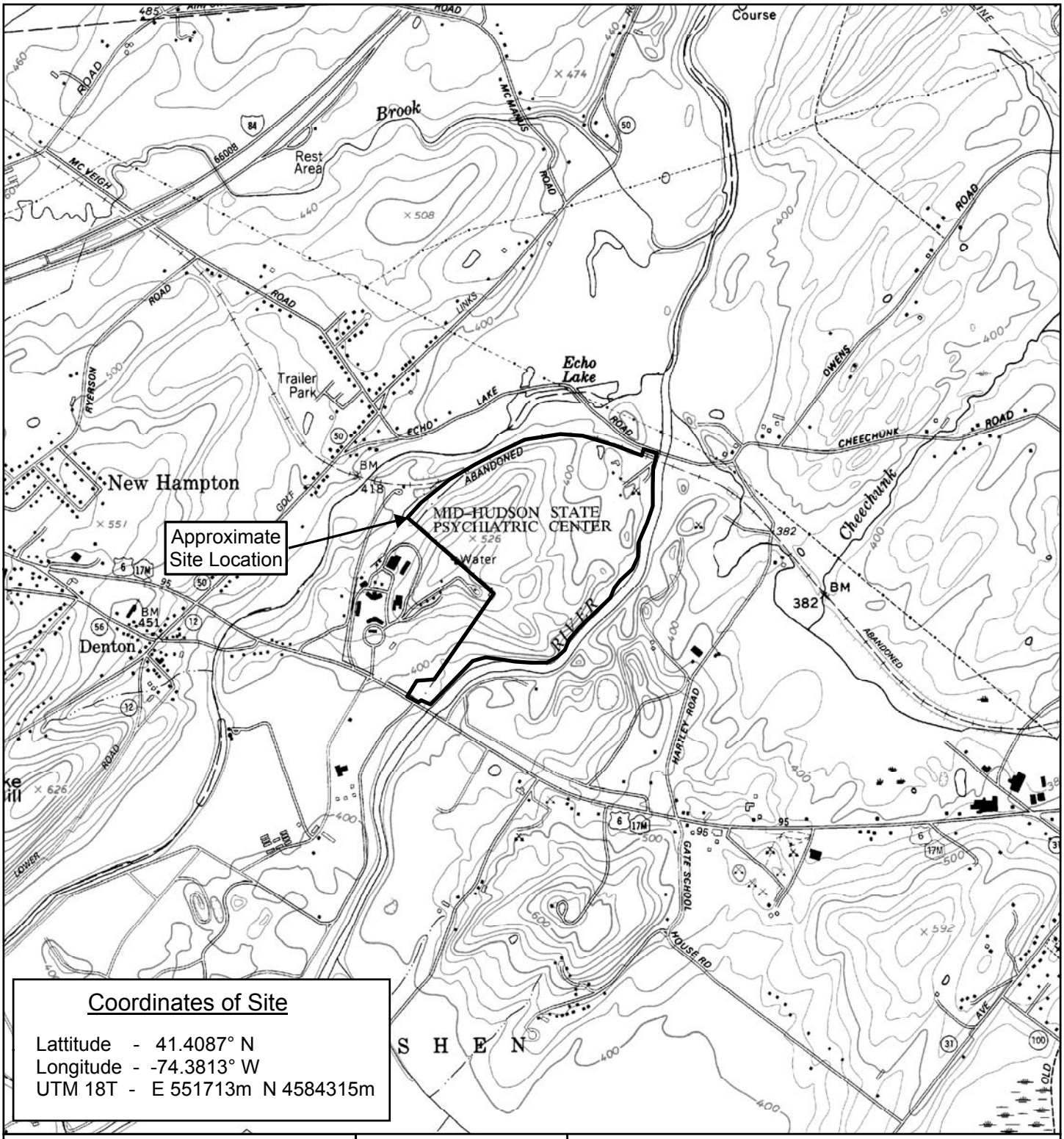
BIRDS[(a)]	
Common Name	**Scientific Name**
Ruffed Grouse	*Bonasa umbellus*
Wild Turkey	*Meleagris gallopavo*
Great Blue Heron	*Ardea herodias*
Green Heron	*Butorides virescens*
Turkey Vulture	*Cathartes aura*
Red-tailed Hawk	*Buteo jamaicensis*
Killdeer	*Charadrius vociferus*
Spotted Sandpiper	*Actitis macularius*
Mourning Dove	*Zenaida macroura*
Chimney Swift	*Chaetura pelagica*
Ruby-throated Hummingbird	*Archilochus colubris*
Red-bellied Woodpecker	*Melanerpes carolinus*
Downy Woodpecker	*Picoides pubescens*
Hairy Woodpecker	*Picoides villosus*
Northern Flicker	*Colaptes auratus*
Eastern Wood-pewee	*Contopus virens*
Eastern Phoebe	*Sayornis phoebe*
Great Crested Flycatcher	*Myiarchus crinitus*
Eastern Kingbird	*Tyrannus tyrannus*
Warbling Vireo	*Vireo gilvus*
Blue Jay	*Cyanocitta cristata*
American Crow	*Corvus brachyrhynchos*
Fish Crow	*Corvus ossifragus*
Tree Swallow	*Tachycineta bicolor*
Barn Swallow	*Hirundo rustica*
Black-capped Chickadee	*Poecile atricapillus*
Tufted Titmouse	*Baeolophus bicolor*
White-breasted Nuthatch	*Sitta carolinensis*
House Wren	*Troglodytes aedon*
Veery	*Catharus fuscescens*
Wood Thrush	*Hylocichla mustelina*
American Robin	*Turdus migratorius*
Gray Catbird	*Dumetella carolinensis*
Northern Mockingbird	*Mimus polyglottos*
Brown Thrasher	*Toxostoma rufum*
European Starling	*Sturnus vulgaris*
Cedar Waxwing	*Bombycilla cedrorum*
Yellow Warbler	*Setophaga petechia*
Chestnut-sided Warbler	*Setophaga pensylvanica*

[(a)] Common and scientific names according to AOU (1998) and supplements through 2010.

Table 2. (cont.)

BIRDS[(a)]	
Common Name	**Scientific Name**
Pine Warbler	*Setophaga pinus*
Ovenbird	*Seiurus aurocapilla*
Common Yellowthroat	*Geothlypis trichas*
Eastern Towhee	*Pipilo erythrophthalmus*
Chipping Sparrow	*Spizella passerina*
Field Sparrow	*Spizella pusilla*
Song Sparrow	*Melospiza melodia*
Scarlet Tanager	*Piranga olivacea*
Northern Cardinal	*Cardinalis cardinalis*
Rose-breasted Grosbeak	*Pheucticus ludovicianus*
Indigo Bunting	*Passerina cyanea*
American Goldfinch	*Spinus tristis*

FIGURES



0 2,000 Feet

1 inch = 2,000 feet

N

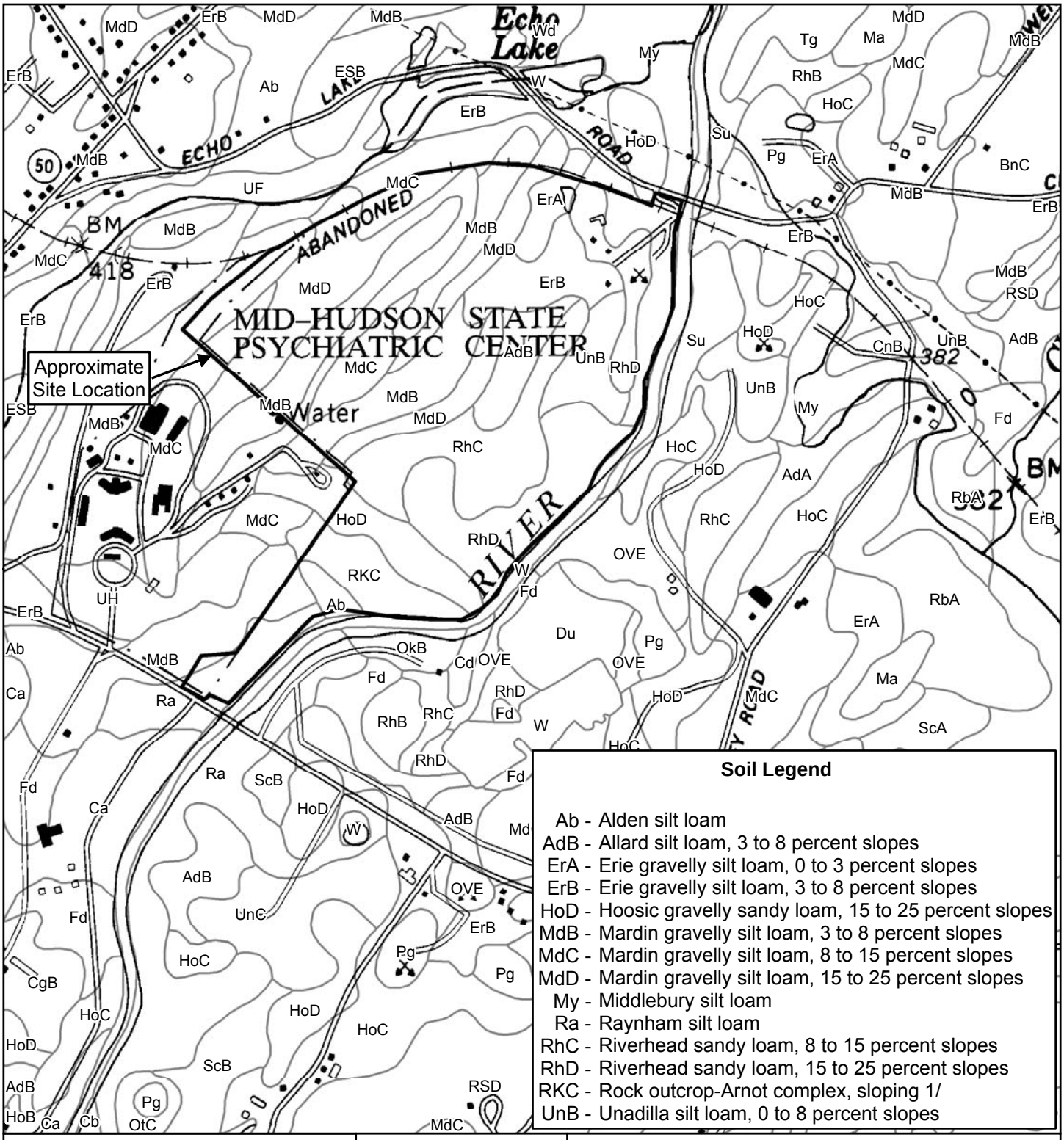
Figure 1. NYS DOT Topographic Map

Site Location

Middletown Quadrangle
2002

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES File: AKI-3999\3999-Fig1.mxd\8-29-2014



Soil Legend

Ab -	Alden silt loam
AdB -	Allard silt loam, 3 to 8 percent slopes
ErA -	Erie gravelly silt loam, 0 to 3 percent slopes
ErB -	Erie gravelly silt loam, 3 to 8 percent slopes
HoD -	Hoosic gravelly sandy loam, 15 to 25 percent slopes
MdB -	Mardin gravelly silt loam, 3 to 8 percent slopes
MdC -	Mardin gravelly silt loam, 8 to 15 percent slopes
MdD -	Mardin gravelly silt loam, 15 to 25 percent slopes
My -	Middlebury silt loam
Ra -	Raynham silt loam
RhC -	Riverhead sandy loam, 8 to 15 percent slopes
RhD -	Riverhead sandy loam, 15 to 25 percent slopes
RKC -	Rock outcrop-Arnot complex, sloping 1/
UnB -	Unadilla silt loam, 0 to 8 percent slopes

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

0 1,000 Feet

1 inch = 1,000 feet

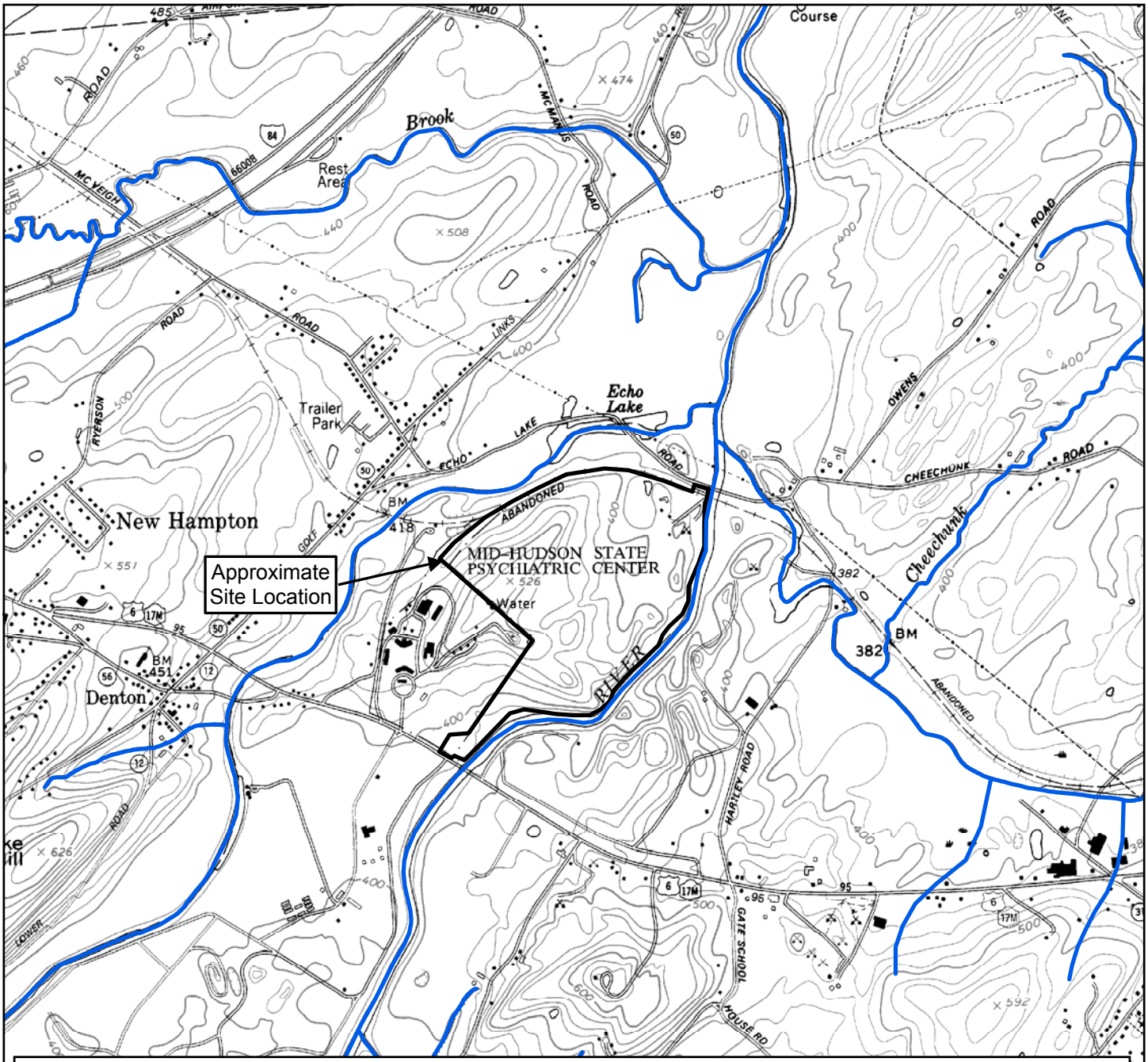
N

Figure 2. Soil Survey Map

Natural Resources Conservation Service
SoilDataMart.nrcs.usda.gov

Orange County Soil Survey
Year

TES File: AKI-3999\3999-Fig2.mxd\8-29-2014



Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
2	H-139-13 portion	Wallkill River	From Rio Grande to New York-New Jersey state line.	22, 23, 25	C	C

Title 6 NYCRR, Chapter X
Article 10, Part 855.5 (2011)

Map 22

0 2,000 Feet

1 inch = 2,000 feet

N

Figure 3. Surface Water Classification Map

NYS DEC

Middletown Quadrangle

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES File: AKI-3999\3999-Fig3.mxd\8-29-2014

N

0 500

Feet

1 inch = 500 feet

Aerial Photograph Obtained from NYS GIS Clearinghouse 2013

Figure Prepared by Terrestrial Environmental Specialists, Inc.

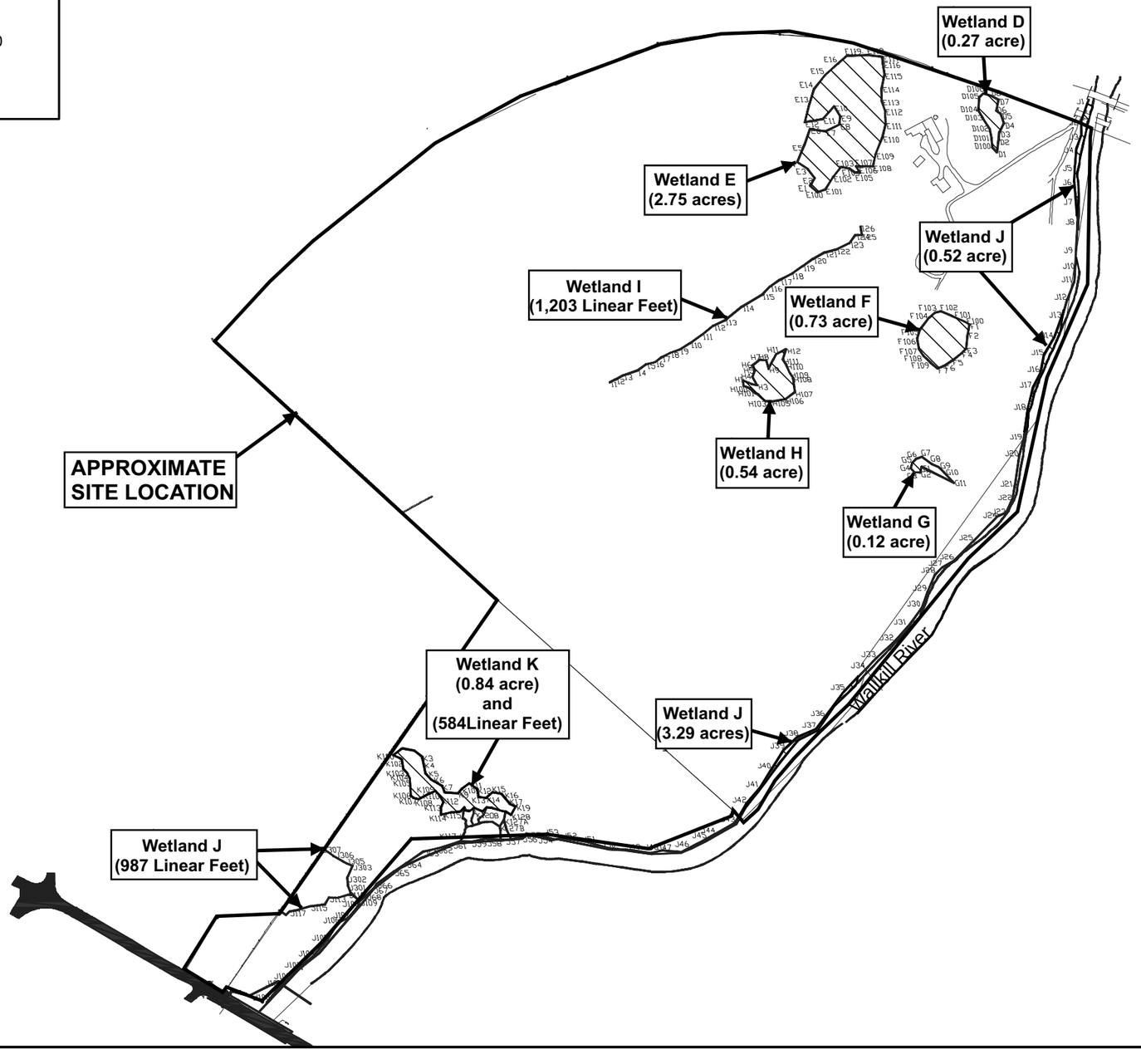
Figure 4.

Aerial Photograph of Site

TES File: AKI-3999\3999-Aerial\8-29-2014

Wetland Acreages and Lengths

Wetland	Area (Acres)	Length (Linear feet)
D	0.27	-
E	2.75	-
F	0.73	-
G	0.12	-
H	0.54	-
I	-	1,203.00
J	3.29	987.00
K	0.84	584.00



NORTH

0 250' 500'

APPROXIMATE SCALE IN FEET

Figure Prepared by
Terrestrial Environmental
Specialists, Inc.

Base Map Provided by
Mercurio-Norton-Tarolli
Land Surveying-Engineering,
P.C.

Figure 5.

Wetland Location Map

TES File: AKI-3999\3999-WetLocation.cdr\8-29-2014

APPENDIX A – Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, NY 13045

June 19, 2014

RECEIVED
JUN 25 2014
TOWN OF GOSHEN
TOWN CLERK

Mr. Lee Bergus
Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, NY 10924

Dear Mr. Bergus:

The U.S. Fish and Wildlife Service (Service) has reviewed the site plan and State Environmental Quality Review Act document submitted May 22, 2014. The applicant, Amy's Kitchen, Inc., proposes to construct a 579,680-square-foot manufacturing plant to manufacture and distribute frozen food products, as well as a 200,000 square foot open-air shed structure for annual conferences. The proposed project will be situated on approximately 200 acres located between Echo Lake Road and New York Route 17M in the Town of Goshen, Orange County, New York.

On May 28, 2014, Ms. Noelle Rayman of my staff left a voicemail for you requesting additional information to assist with our review and to better understand potential species impacts as a result of this project. On that same day, you were copied on an email from Mr. Neal Halloran from the Town of Goshen Planning Board who inquired if I had spoken with you regarding this project. On June 11, 2014, Mr. Halloran again asked if I had spoken with you; Ms. Rayman replied the same day indicating she had not.

In an effort to promote early coordination, the following comments are submitted pursuant to our authorities under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*), the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d), and the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755).

Endangered Species Act

Listed Species

Four federally-listed species are known to occur in Orange County – the Indiana bat (*Myotis sodalis*; Endangered), the bog turtle (*Clemmys* [=*Glyptemys*] *muhlenbergii*; Threatened), the dwarf wedgemussel (*Alasmidonta heterodon*; Endangered), and the small-whorled pogonia (*Isotria medeoloides*; Threatened). Terrestrial Environmental Specialists, Inc. (TES) prepared a report entitled, "Vegetation and Wildlife Resources at the Echo Lake Site," revised December 2013, and stated that the Indiana bat was likely the only listed species present due to potential presence of summer roosting habitat. The other three species are likely not present due to lack of suitable habitat, but no information was provided to justify the reasoning. Please provide data sheets, reports, photos of potential habitat, etc., if available, that will help in our review of any potential impacts to these species.

Page 9 of TES's report states that, "any tree clearing activity will take place during the period from October 15 to March 31, when bats would not be present." The nearest Indiana bat hibernaculum (which is considered a Priority 4 hibernaculum) is to the southeast approximately 9.5 miles. To be consistent with the time periods identified on the New York Field Office's Indiana Bat Project Fact Sheet (dated May 2012), the time period stated in the report should be changed to October 31 to March 31. In addition, please provide our office with the estimated amount of tree clearing needed for this project.

In addition to the recommended time period for tree clearing, the Service also recommends the following conservation measures to further avoid and minimize impacts to Indiana bats:

1. Bright orange construction flagging or fencing should be used to clearly demarcate trees to be protected compared with those to be cut prior to the initiation of any construction activities at these sites. This will help to ensure that contractors do not accidentally remove more trees than anticipated;

2. Avoid impacting potential roost trees to the greatest extent practicable as bats may use them in the future. This can be done by retaining standing live trees that have exfoliating (separated from cambium) bark and are greater than 12 inches diameter at breast height [dbh], by retaining black locust, shellbark, shagbark and bitternut hickories as much as possible, regardless of size and condition (live, dead or dying), and by retaining snags or trees with cavities as much as possible regardless of species;

3. No artificial dyes, coloring, insecticide, algaecide, and/or herbicide will be used on the ground for long-term maintenance of the property; and

4. Limit the number of lights, including motion sensors or timers, directing the lights towards the ground and buildings, and including shields to direct the light downward.

Incorporating these measures should reduce the likelihood of impacts to Indiana bats.

Proposed Species

The northern long-eared bat (*Myotis septentrionalis*) (NLEB) is currently proposed for listing under the ESA. The final listing decision for the NLEB is expected in October 2014. At this time no critical habitat has been proposed for the NLEB. The entire state of New York is within the range of the NLEB, and this species can occur above the 900-foot elevation, unlike Indiana bats. During the summer, the NLEB typically roosts singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically ≥ 3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices, or the presence of peeling bark. It has also been occasionally found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable). They forage for insects in upland and lowland woodlots and tree lined corridors. During the winter, the NLEB predominately hibernates in caves and abandoned mine portals. Additional habitat types may be identified as new information is obtained.

Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective, the prohibition against jeopardizing its continued existence and "take"[1] applies regardless of an action's stage of completion. If federal involvement (in this case, the U.S. Army Corps of Engineers) retains any discretionary involvement over actions that may affect the species after listing, Section 7 consultation procedures apply.

The nearest known occurrence for NLEB is approximately 9 miles to the northeast. Although no known occurrences are within or adjacent to the proposed project, suitable habitat for foraging and roosting may potentially be present. If the final decision is to list NLEB as endangered and if the project construction is anticipated to continue beyond October 2014, then we recommend incorporating the conservation measures listed above for Indiana bats. These measures should also reduce the likelihood of impacts to NLEB.

Additional information on NLEB and conference procedures can be found at: http://www.fws.gov/midwest/endangered/mammals/nlba/index.html.

Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered. The most recent compilation of federally-listed and proposed endangered and threatened species in New York is available for your information.* Until the proposed project is complete, we recommend that you check our website every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project is current.*

Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act

The bald eagle (*Haliaeetus leucocephalus*) is also found in the county. Eagles have been delisted pursuant to the ESA, but remain protected under the BGEPA, MBTA, and by the state of New York (State). There is a bald eagle nest to the east approximately 8 miles. Due to the

[1] Take is defined in Section 3 of the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

distance involved, we do not anticipate any impacts to bald eagles as a result of this project. However, if eagles are found within or near the project area, the Service recommends that you follow the Bald Eagle Management Guidelines found on the Service's website at: http://www.fws.gov/migratorybirds/baldandgoldeneaglemanagement.htm.

The above-listed species are also listed by the State, with the exception of NLEB. Any additional information regarding the proposed project and its potential to impact listed species should be coordinated with both this office and with the New York State Department of Environmental Conservation's Region 4 Stamford Office.

The MBTA protects over 1,000 species of birds including numerous species that are not considered to be state- or federally-listed as threatened or endangered species. As such, the MBTA does prohibit the taking[2], killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The unauthorized taking of birds is legally considered a "take" under the MBTA and is a violation of the law. Neither the MBTA nor its implementing regulations, 50 CFR Part 21, provide for permitting of "incidental take" of migratory birds. However, we do recognize that some birds may be killed, even if all reasonable measures to avoid it are implemented.

We have been informed that there is a colony of approximately 100 bank swallows (*Riparia riparia*) inhabitating the project site. Please provide information which substantiates this report, if available, and also measures that may be taken to protect this colony, if necessary.

Fish and Wildlife Coordination Act

We understand a Draft Environmental Impact Statement (DEIS) is in preparation. Please forward it to us for our review when it becomes available. Please make sure to include information, if applicable, on the timeline for construction, alternatives analysis, stormwater and wastewater management, impacts to wetlands and/or streams, and proposed wetland and/or stream mitigation, as well as information on project effects on listed species and any proposed conservation measures to avoid and minimize potential impacts.

In addition, please provide information regarding the federal nexus for this proposed project, if any.

[2] Take is defined under the MBTA as "to pursue, hunt, take, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product" (U.S. Fish and Wildlife Service MBTA website).

Thank you for the opportunity to comment on this proposed project. Please contact Noelle Rayman at 607-753-9334 if there are any questions regarding this letter and reference file number 14TA0645.

Sincerely,

for David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at: http://www.fws.gov/northeast/nyfo/es/section7.htm

cc: Town of Goshen Planning Board, Goshen, NY (N. Halloran)
NYSDEC, Stamford, NY (Env. Permits and L. Masi)
COE, New York, NY (B. Orzel)

APPENDIX B – Field Data Sheets

Data Sheet No: D

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 172.5 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: D **WETLAND SIZE:** 0.27 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551876 N: 4584679 or Waypoint:

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/12/2014 Time In: 7:00am Time Out: 11:30am
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

DFU, open field

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☒Y ☐N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☒Y ☐N
If yes, describe Previously mined area.

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe

Data Sheet No: D

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☒N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☒Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Polygonum sp., Phalaris arundinacea, Carex vulpinoidea*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 43, 45, 46.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza — Investigator's Name (print)
Investigator's Signature
8/12/14 — Date

Data Sheet No: E

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 172.5 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: E **WETLAND SIZE:** 2.75 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551705 N: 4584691 or Waypoint:

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/12/2014 Time In: 7:00am Time Out: 11:30am
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☒Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

Old quarry, deciduous forest upland, open field.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☒Y ☐N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: E

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☒Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Carex lupilina, Carex scoparia, Juncus effusus, Eleocharus palustris, Lythrum salicaria, Sparganium sp., Asclepias incarnata*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil
☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 39 and 40.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☐No ☒Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza		8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: F

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 172.5 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: F **WETLAND SIZE:** 0.75 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551824 N: 4584419 or Waypoint:

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/11/2014 Time In: 3:30pm Time Out: 4:00pm
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☐N ☒Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N ☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

DFU, open field

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☒Y ☐N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: F

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☒Y ☐N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☒Unknown
☒Y ☐N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☒Larger pools/ponds (5" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☒Semi-permanently flooded ☐Seasonally flooded ☐Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Juncus effusus, Scirpus cyperinus, Carex pseudocyperus, Lythrum salicaria*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 33-36.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☐No ☒Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza		8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: G

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 175.2 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: G **WETLAND SIZE:** 0.12 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551811 N: 4584242 or Waypoint: _____

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/12/2014 Time In: 7:00am Time Out: 11:30am
Last precipitation: ☒<24 hours ☐1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

Deciduous forest upland, open field, and old quarry.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☐Y ☒N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: G

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes: Swale; old stream channel.

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☐Yes ☒No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Boehmeria cylindrica, Leersia oryzoides*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other

Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☒Observed ☐Previously observed: American toad.
Additional Comments/Observations: (use additional sheets if necessary) Field photos 57-60.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza		8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: H

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 175.2 ac. **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: H **WETLAND SIZE:** 0.54 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551623 N: 4584363 or Waypoint: _____

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/12/2014 Time In: 7:00am Time Out: 11:30am
Last precipitation: ☒<24 hours ☐1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

Open field, formerly mine.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒PEM 100 ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☐Y ☒N
Edinger *et al.* (2002) Community Types: Shallow emergent marsh

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: H

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes: Wet meadow

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Lythrum salicaria, Carex vulpinoidea, Carex scoparia, Eupatorium perfoliatum, Scirpus cyperinus,* ironweed
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 61-62.

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza		8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: I

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 175.2 **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: I **WETLAND SIZE:** 1,203 **linear feet**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☒<0.1 acre ☐0.1-0.5 acre ☐>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551547 N: 4584443 or Waypoint: _____

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/11/2014 Time In: 7:15am Time Out: 7:45am
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☒None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

DFU

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☐PEM _____ ☐PSS _____ ☐PFO _____ ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☐Y ☒N
Edinger *et al.* (2002) Community Types: Drainage swale

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: I

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☐N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☒Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☒>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☐No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Impatiens capensis, Solidago gigantea*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza	Bernard C Phil Rizza	8/12/14
Investigator's Name (print)	Investigator's Signature	Date

Data Sheet No: K

USFWS HHRU Bog Turtle Habitat Evaluation Field Form

Project/Property Name: Echo Lake
Project Name/Type: Industrial
Applicant/Landowner Name: Amy's Kitchen, Inc.
County: Orange Township/Municipality: Goshen
NYNHP Species Hit ☐Y ☒N Map attached ☒Y ☐N Aerial attached ☒Y ☐N

ACTION AREA

Action area size: 175.2 **Does the Phase 1 survey include all wetlands in the action area?** ☒Y ☐N

WETLAND ID: K **WETLAND SIZE:** 0.84 **acres**

Wetland size estimation – If actual acreage is not known at time of investigation, check one:

☐<0.1 acre ☐0.1-0.5 acre ☒>0.5 to <1 acre ☐1-2 acres ☐2-4 acres ☐5+ acres ☐12+ acres

WETLAND LOCATION: UTM – E: 551236 N: 4583849 or Waypoint: _____

(Approximate center of wetland) GPS Datum (check one): ☐NAD 27 ☒NAD 83 ☐WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 8/11/2014 Time In: 1:35pm Time Out: 2:00pm
Last precipitation: ☐<24 hours ☒1-7 Days ☐>1 week ☐Unknown
Drought conditions? ☐Y ☒N ☐Unknown

How much of this wetland is located *off-site* (*i.e.*, outside the property boundaries or right-of-way)?

☐None of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐Some of it - _____ acres or _____ of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☒None of it ☐All of it ☐Part of it (at least _____ acres) ☐None of it

Are there any wetlands located off-site and close enough to be affected by this project? ☐Y ☐N
☐Unknown If yes, *could* they be potential bog turtle habitat? ☐Y ☐N ☐Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, *etc.*):

Deciduous forest upland, reclaimed quarry, river.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☐PEM _____ ☒PSS 20 ☒PFO 80 ☐POW _____
NYSDEC Mapped Wetland ☐Y ☒N NWI Mapped Wetland ☐Y ☒N
Edinger *et al.* (2002) Community Types: Red maple-hardwood swamp

Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, *etc.*)? ☐Y ☒N
If yes, describe _____

Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, *etc.*)? ☐Y ☒N
If yes describe _____

Data Sheet No: K

HYDROLOGY

☐Y ☒N Springs or seeps ☐visible or ☐likely? Muskgrass (*Chara* spp.) present? ☐Y ☒N
☐Y ☒N Saturated soils present? If yes, year-round? ☐Likely ☐Unlikely ☐Unknown
☐Y ☒N Water visible on surface? Check all that apply: ☐Small puddles/depressions(" deep)
☐Rivulets (" deep) ☐Larger pools/ponds (" deep)
☐Y ☒N Evidence of flooding? If yes, describe indicators
Hydrological Regime (Cowardin 1979): ☐Semi-permanently flooded ☐Seasonally flooded ☒Other
Notes:

Soils Mapping Unit (optional):
Field observations confirm mapped type? ☐Y ☐N ☐Unknown

Soils – PEM Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it (PEM) is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"
Non-mucky? ☐Yes ☐No	How much of it (PEM) is non-mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%		

Soils – PSS and PFO Portions of Wetland			
Mucky? ☐Yes ☒No	How much of it is mucky? ☐<10% ☐10-29% ☐30-49% ☐50-70% ☐>70%	Mucky soils range in depth from " to "	Most of the mucky part(s) of the wetland can be probed: ☐3-5" ☐6-8" ☐9-11" ☐≥12"

Notes:

Wetland Vegetation (characterize the wetland as a whole)
Dominant Vegetation: *Fraxinus pennsylvanica, Symplocarpus foetidus, Osmunda cinnamomea, Parthenocissus quinquefolia, Toxicodendron radicans, Lindera benzoin, Carex lurida*
Calciphiles** (See list for examples) ☐Yellow sedge ☐Grass-of-Parnassus ☐Poison sumac ☐Shrubby cinquefoil ☐Other
Reptiles and Amphibians
Were any bog turtles observed? ☐Yes ☒No If yes, how many?
Other reptiles or amphibians ☐Observed ☐Previously observed:
Additional Comments/Observations: (use additional sheets if necessary) Field photos 8-9.

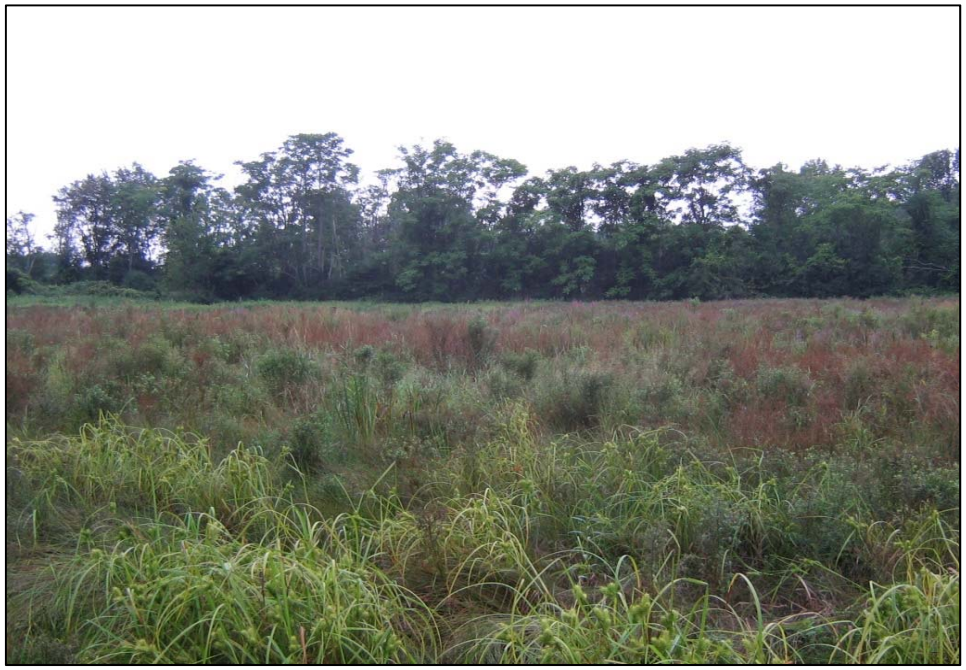
INVESTIGATOR'S OPINION
The hydrology criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The soils criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
The vegetation criterion for bog turtle habitat is met. ☐Yes ☒No ☐Unsure
This wetland is potential bog turtle habitat. ☐Yes ☒No ☐Unsure

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Bernard Carr and Philip Rizza — Investigator's Name (print)
Bernard Carr, Phil Rizza — Investigator's Signature
Date

APPENDIX C – Photographs

Representative Photo of Wetland D



Representative Photo of Wetland E

Representative Photo of Wetland F

Representative Photo of Wetland G

Representative Photo of Wetland H

Representative Photo of Wetland I

Representative Photo of Wetland F

Representative Photo of Wetland J

Representative Photo of Wallkill River Aquatic Habitat

Representative Photo of Wallkill River Aquatic Habitat

Representative Photo of Upland Forested Area

Representative Photo of Upland Forested Area

Representative Photo of Forested Slope Area

Representative Photo of Forested Slope Area

Panoramic Photo of Reclaimed Mine Area

Joseph M. DeStefano
Mayor

Tel 845-346-4100
Fax 845-343-7439
mayor@middletown-ny.com

City of Middletown

16 James Street, Middletown, New York 10940
Established 1888

January 21, 2016

Mark Rudolph – CFO, EVP New Business Development
Amy's Kitchen, Inc.
1600 Corporate Circle – Suite 200
Petaluma, California 94854

Re: Will Serve Letter

Dear Mr. Rudolph:

This letter confirms that the City of Middletown is able and willing to provide sanitary sewage treatment and potable water for the Amy's Kitchen food processing plant and its associated facilities, as well as the Science of the Soul facility, both to be located in the Town of Goshen, Orange County, New York. Amy's has indicated that it will require up to 300,000 gallons +/- per day for sanitary sewage treatment and 375,000 +/- gallons per day for potable water. Small additional sanitary sewage treatment and potable water will also be required by Science of the Soul for its twice annual meeting events, the weekend weekly attendance of congregants of approximately 200 persons, two or three groundskeeper and visitor residences on its property, as well as the two or three offices thereon. The City has adequate capacity to meet this demand for both water and sewer.

Service by the City is subject to Amy's physical connection to sewage treatment and potable water infrastructure at locations designated by the City and compliance with applicable requirements of the City of Middletown Code and New York State Law.

Very truly yours,

Joseph M. DeStefano
Mayor, City of Middletown

Orange & Rockland
Pike County Light & Power Co.
Rockland Electric Company

New
Construction
Services
845 577 3324

Orange and Rockland Utilities, Inc. and Subsidiaries
390 West Route 59 Spring Valley NY 10977-5320
500 Route 208 Monroe NY 10950-9986
71 Dolson Avenue Middletown NY 10940-6501
One Lethbridge Plaza Mahwah NJ 07430-2113
www.oru.com

March 23, 2016

Hudson Valley Area LLC
Mr Mark Rudolph CPA
Po Box 4759
Petaluma, CA 94955

Re: 36-97 Hartley Road Goshen NY

Dear Mr. Rudolph:

Please be advised that O&R will provide electric facilities to the above referenced project in accordance with filed tariffs.

If you have any questions, or if I can be of further assistance, please feel free to contact me.

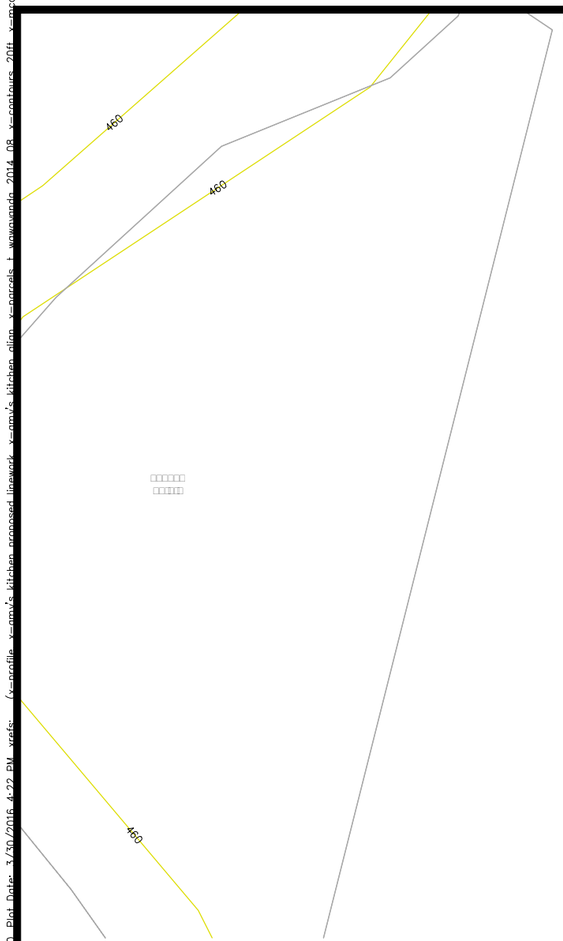
Sincerely,

Ana Dunn

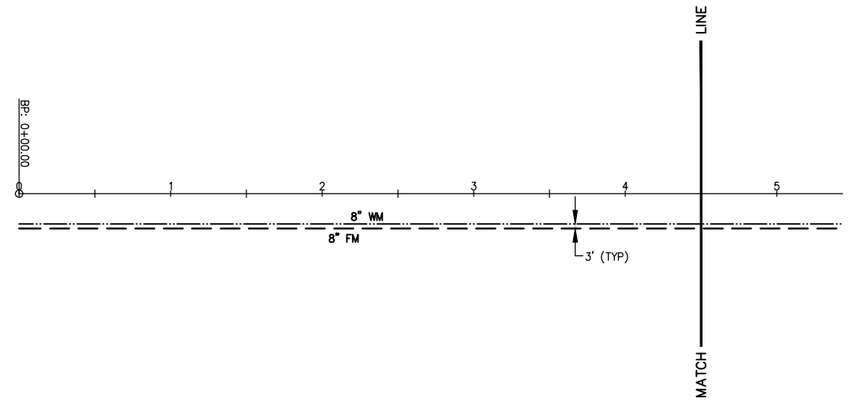
Ana Dunn
Major Accounts Engineer
New Construction Services
845-577-3324

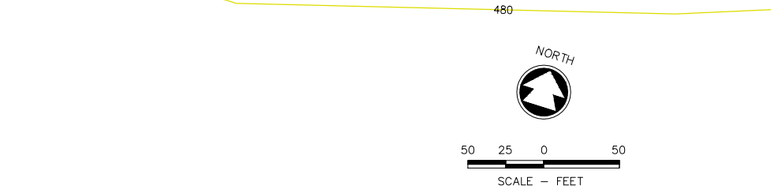
NOTES:

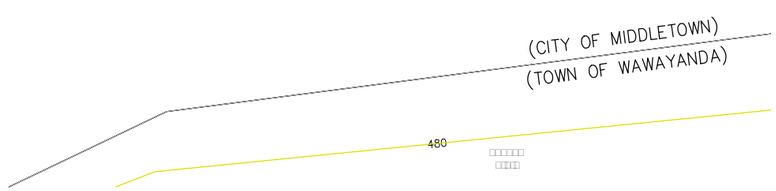
1. FORCEMAIN DESIGN BASED ON A PEAK WASTEWATER FLOW OF 450,000 GPD FROM THE WASTEWATER PRETREATMENT FACILITY AND 36,000 GPD FROM THE SCIENCE OF THE SOUL FACILITY.
2. WATER MAIN HAS A DESIGN PEAK FLOW OF 500 GPM WHICH EXCEEDS THE PROJECTED MAXIMUM WATER DEMAND OF AMY'S KITCHEN IS 375,000 GPD (260 GPM) AND 36,000 GPD (25 GPM) FOR THE SCIENCE OF THE SOUL FACILTY.

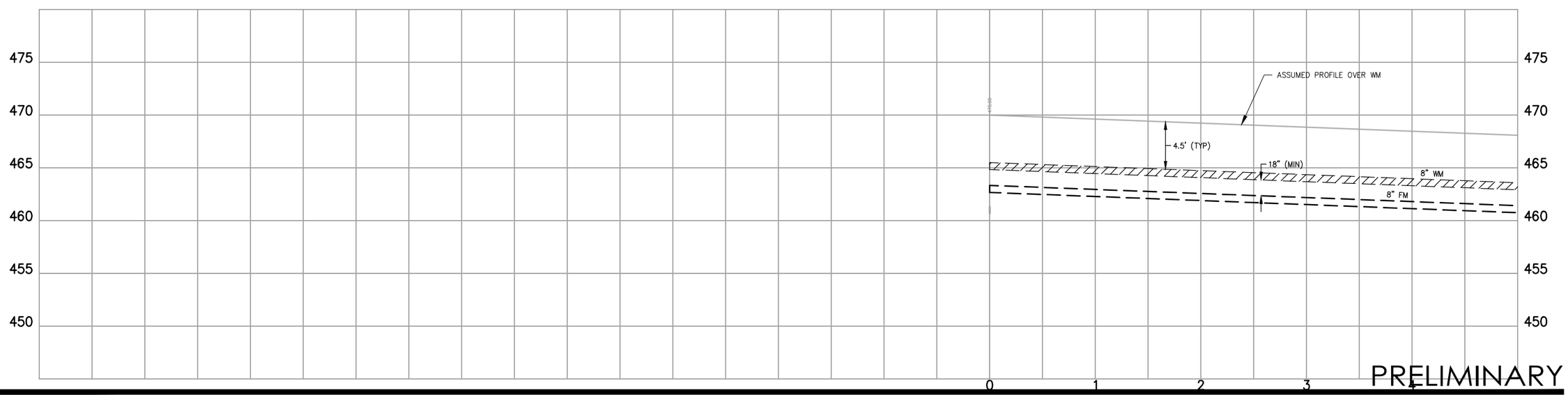


NOTE:
LOCATION OF CONNECTION TO WASTE WATER TREATMENT PLANT UNKNOWN AT THIS TIME









PRELIMINARY

The Probst Group
17035 W. WISCONSIN AVE.
SUITE 120
BROOKFIELD, WIS. 53005
TEL: (262) 264-5665
FAX: (262) 436-1359

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AMY'S KITCHEN
GOSHEN, NEW YORK
INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM
PROCESS FLOW DIAGRAM

REVISIONS
NO. DATE

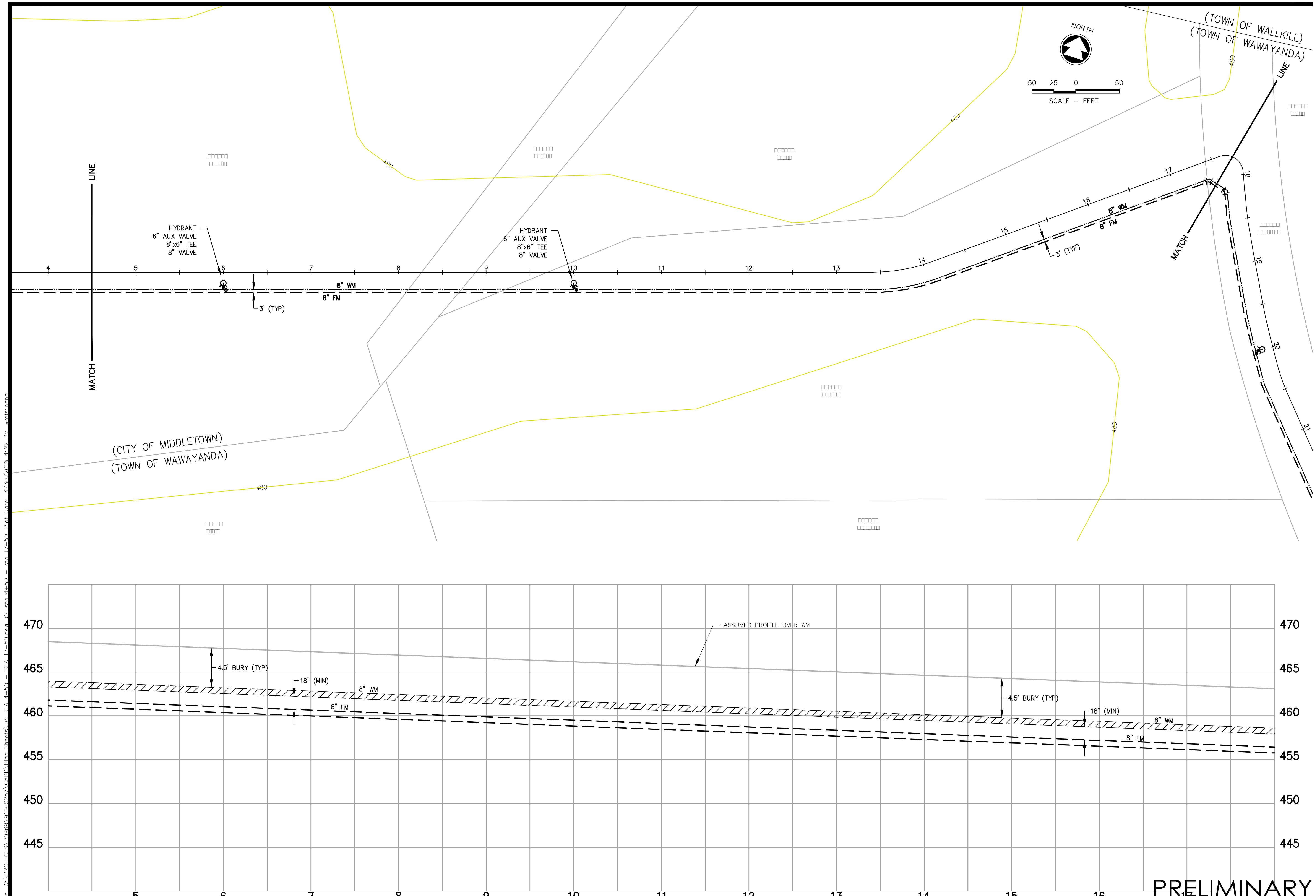
DRAWN BY:
CHK'D BY:
PROJ. ENG:
ISSUE DATE: MAR., 2016

PROJECT NUMBER:

SHEET

PFD-1

Plotted: W:\PROJECTS\P0960\01600257\CADD\Plan Sheets\03 STA 0+00 – STA 4+50.dwg, 03 sta 0+00 – sta 4+50, Plot Date: 3/30/2016 4:22 PM, vrefs: (x-profile, x-amy's kitchen proposed linework, x-amy's kitchen plan, x-parcels, x-waywanda 2014 08, x-contours 20ft, x-mod



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AMY'S KITCHEN

GOSHEN, NEW YORK
INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM
PROCESS FLOW DIAGRAM

REVISIONS

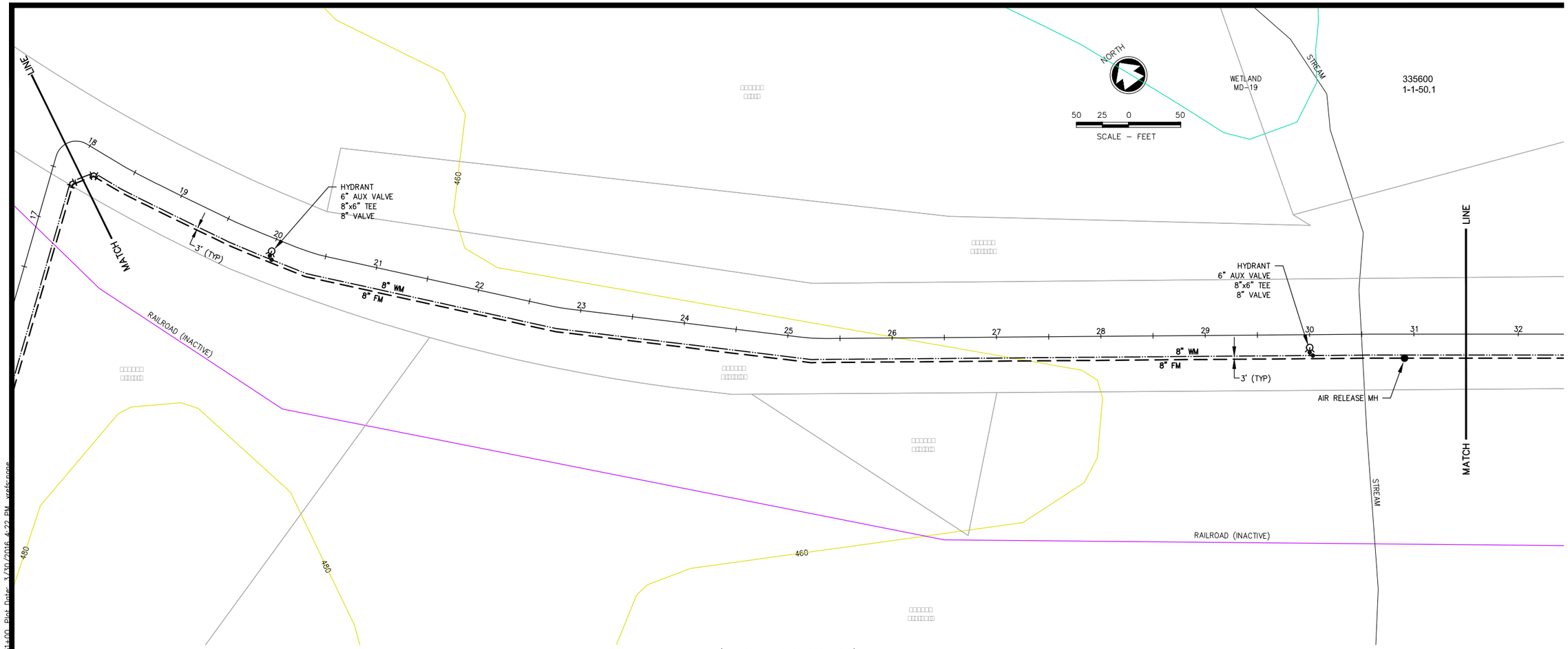
NO.	DATE

DRAWN BY:
CHK'D BY:
PROJ. ENG:
ISSUE DATE: MAR., 2016

PROJECT NUMBER:

SHEET

PFD-2



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AMY'S KITCHEN

GOSHEN, NEW YORK

INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM

PROCESS FLOW DIAGRAM

REVISIONS

NO.	DATE

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ISSUE DATE: MAR., 2016

PROJECT NUMBER:

SHEET

PFD-3

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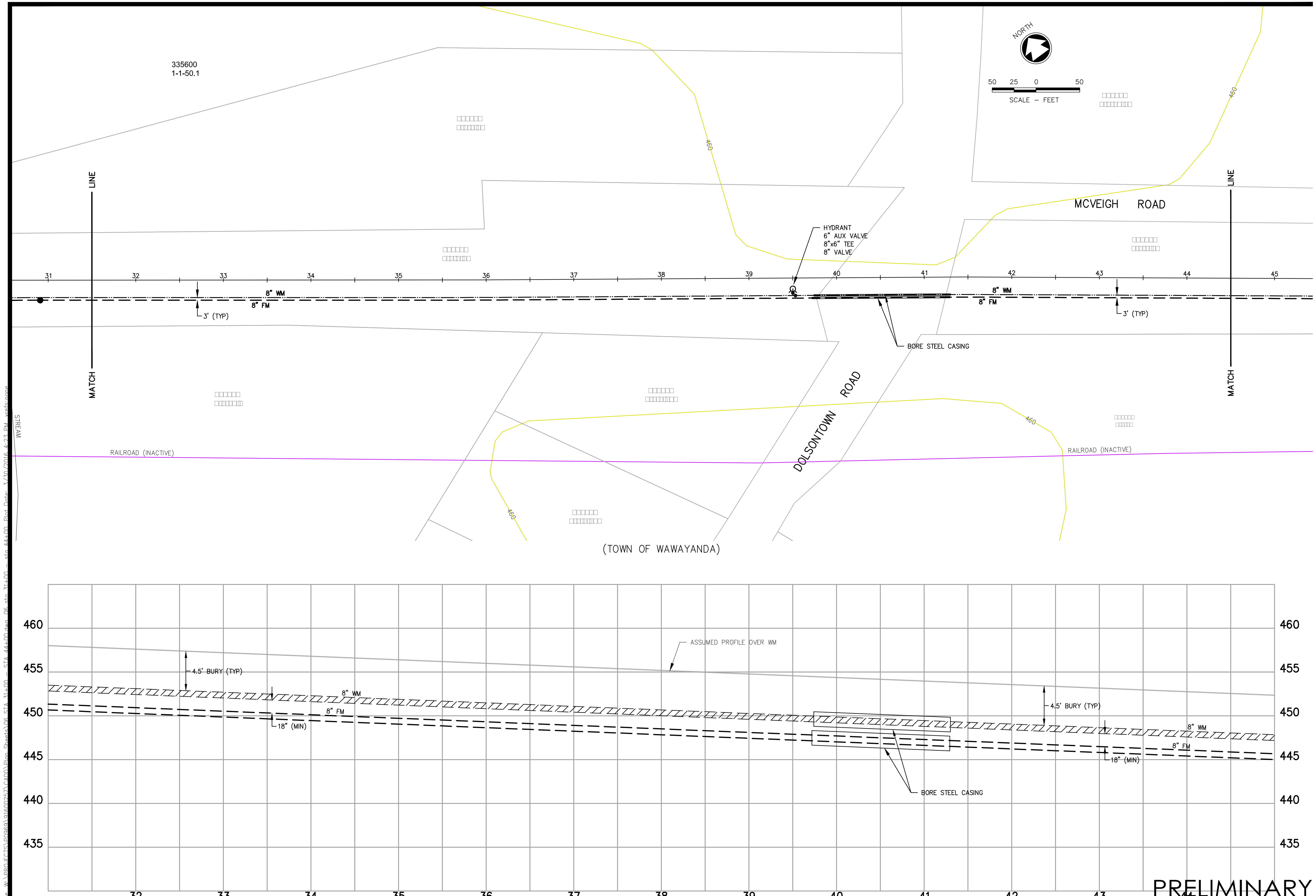

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AMY'S KITCHEN

GOSHEN, NEW YORK
INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM
PROCESS FLOW DIAGRAM

REVISIONS

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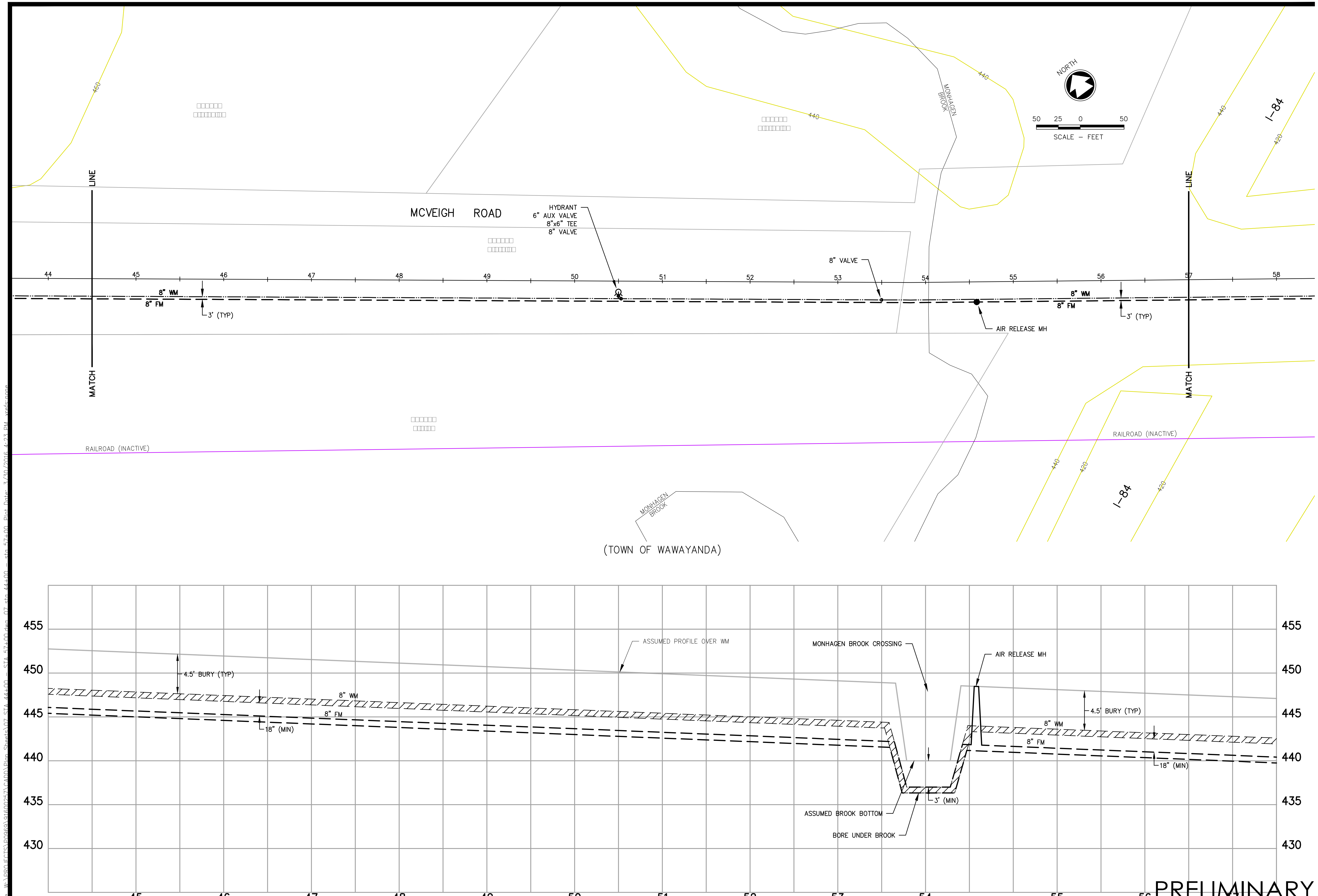
PROJ. ENG:
ISSUE DATE: MAR., 2016

PROJECT NUMBER:

SHEET

PFD-4



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AMY'S KITCHEN
GOSHEN, NEW YORK
INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM
PROCESS FLOW DIAGRAM

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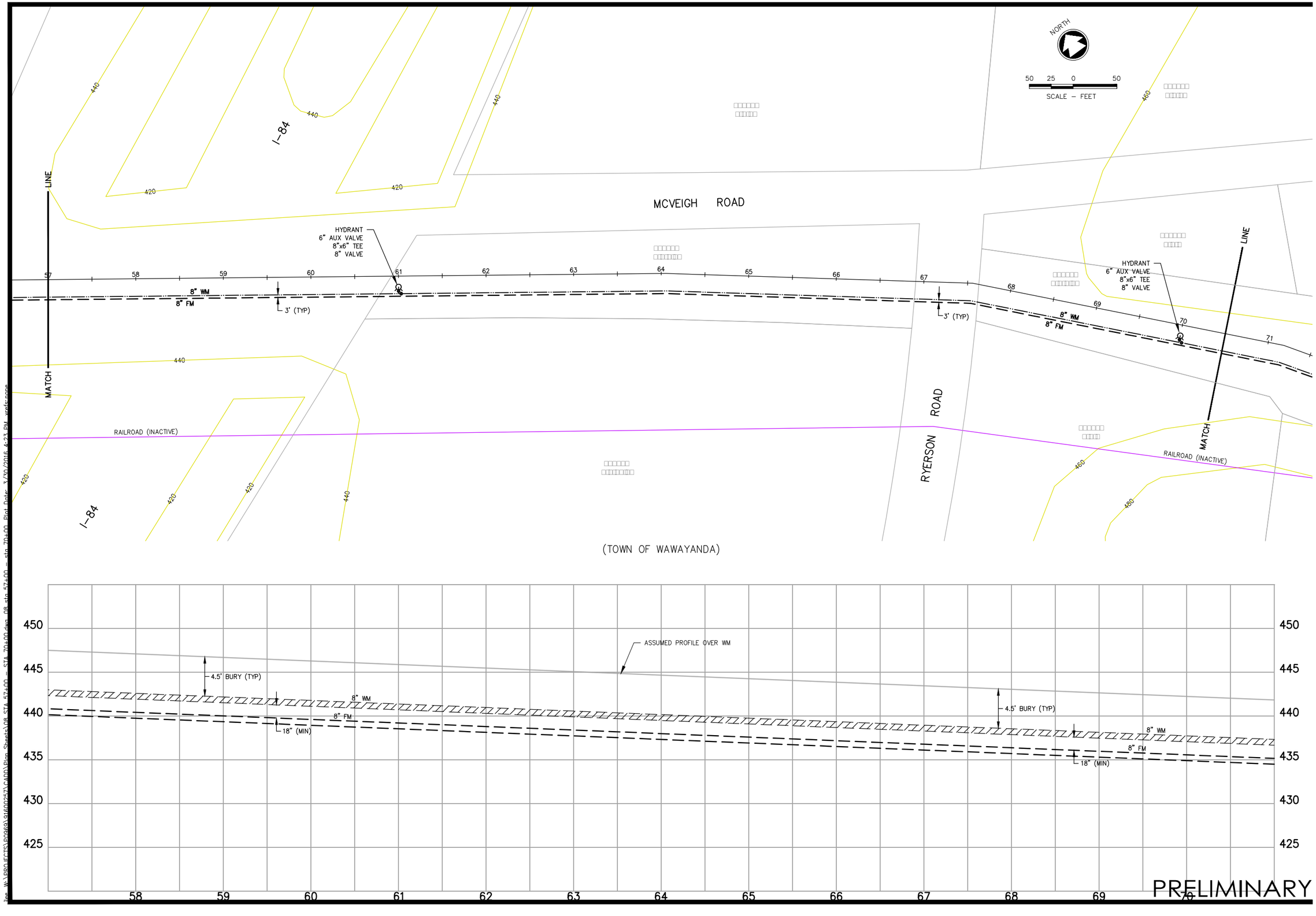
PROJ. ENG:
ISSUE DATE: MAR., 2016

PROJECT NUMBER:

SHEET

PFD-5



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AMY'S KITCHEN
GOSHEN, NEW YORK
INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM
PROCESS FLOW DIAGRAM

REVISIONS

NO.	DATE

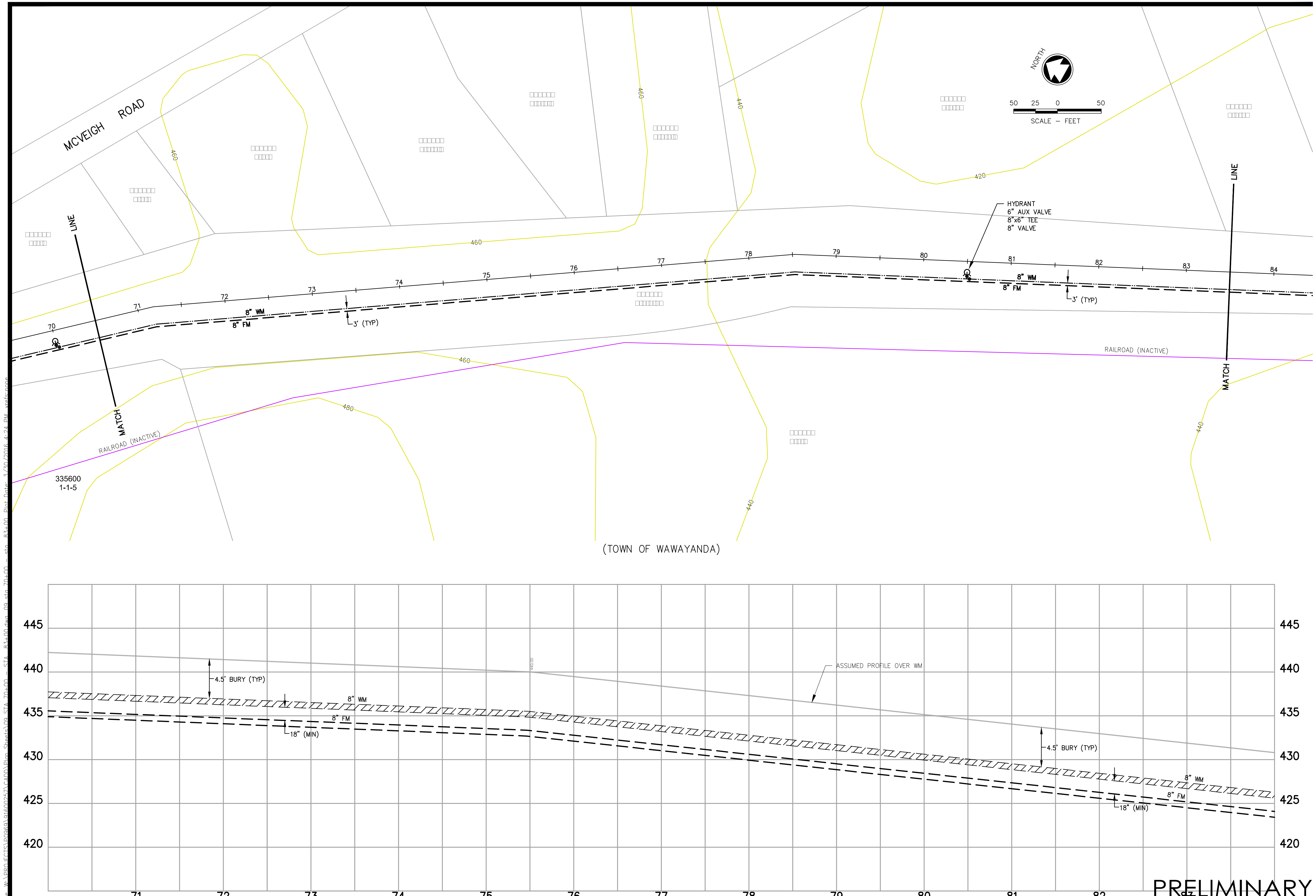
DRAWN BY:
CHK'D BY:
PROJ. ENG:
ISSUE DATE: MAR., 2016

PROJECT NUMBER:

SHEET

PFD-6

Plot Date: 3/30/2016 4:23 PM yesfc0008 File: W:\PROJECTS\P0960\Q1600257\CADD\Plan Sheets\08 STA 57+00 – STA 70+00.dwg 08 sta 57+00 – sta 70+00



PRELIMINARY

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AMY'S KITCHEN
GOSHEN, NEW YORK
INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM
PROCESS FLOW DIAGRAM

REVISIONS

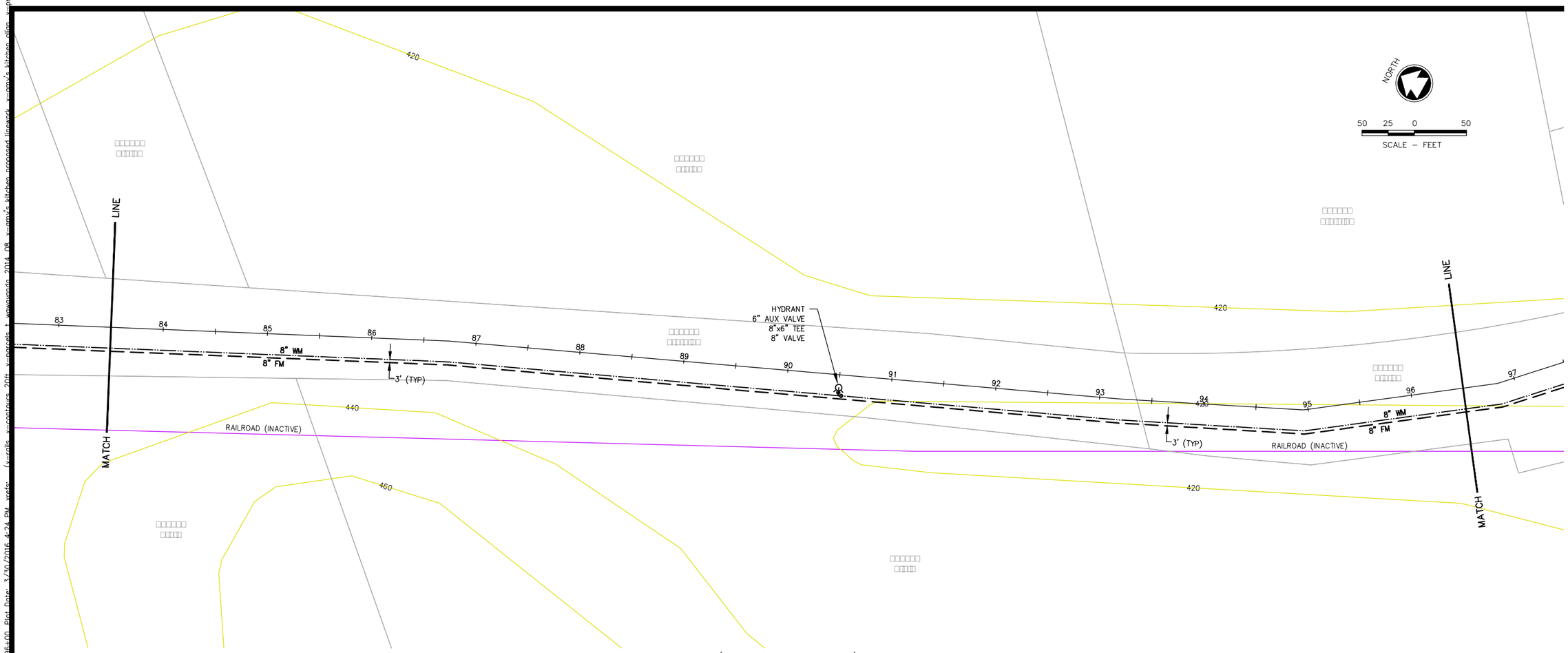
NO.	DATE

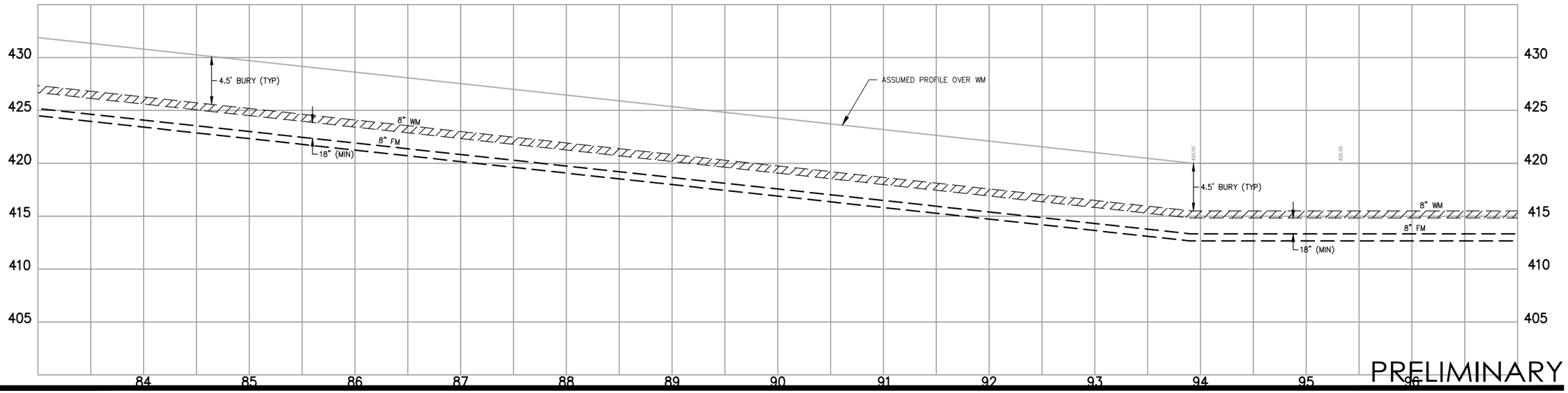
DRAWN BY:
CHK'D BY:
PROJ. ENG:
ISSUE DATE: MAR., 2016

PROJECT NUMBER:

SHEET

PFD-7





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AMY'S KITCHEN
GOSHEN, NEW YORK
INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM
PROCESS FLOW DIAGRAM

REVISIONS
NO. DATE

DRAWN BY:
CHK'D BY:
PROJ. ENG:
ISSUE DATE: MAR., 2016

PROJECT NUMBER:

SHEET

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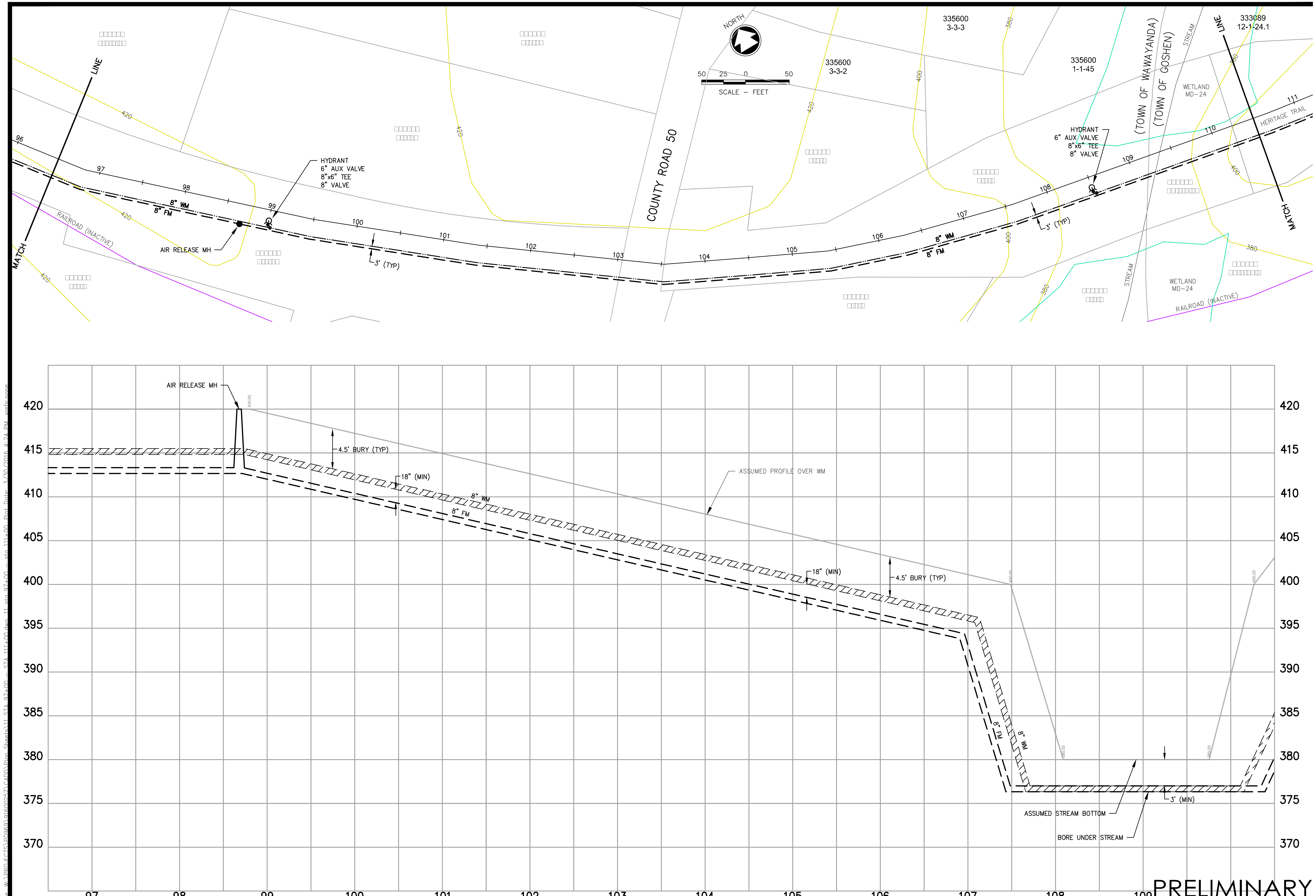

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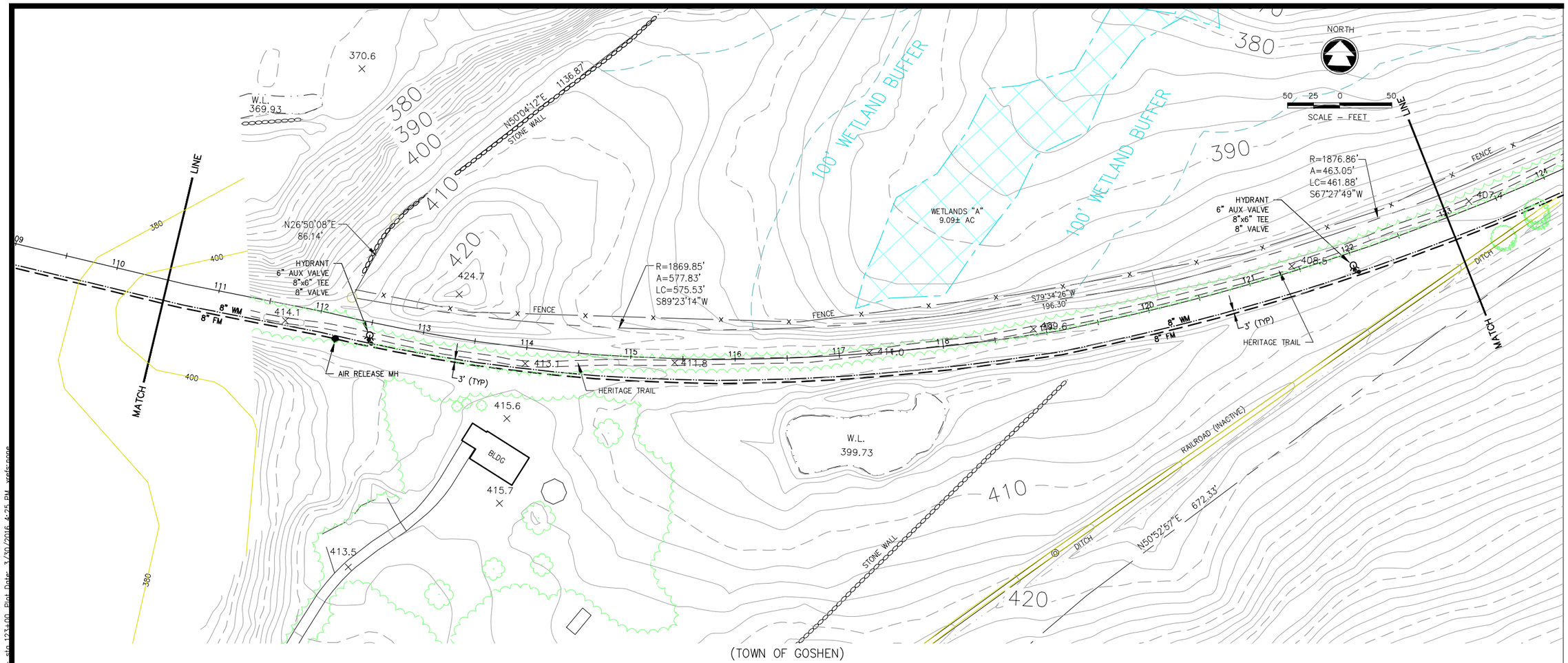

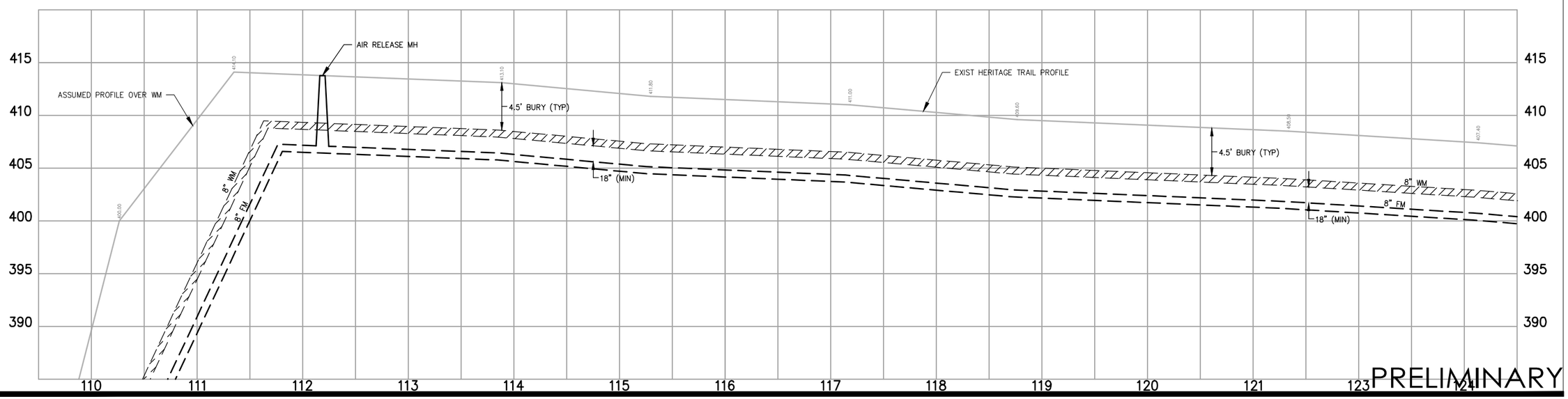

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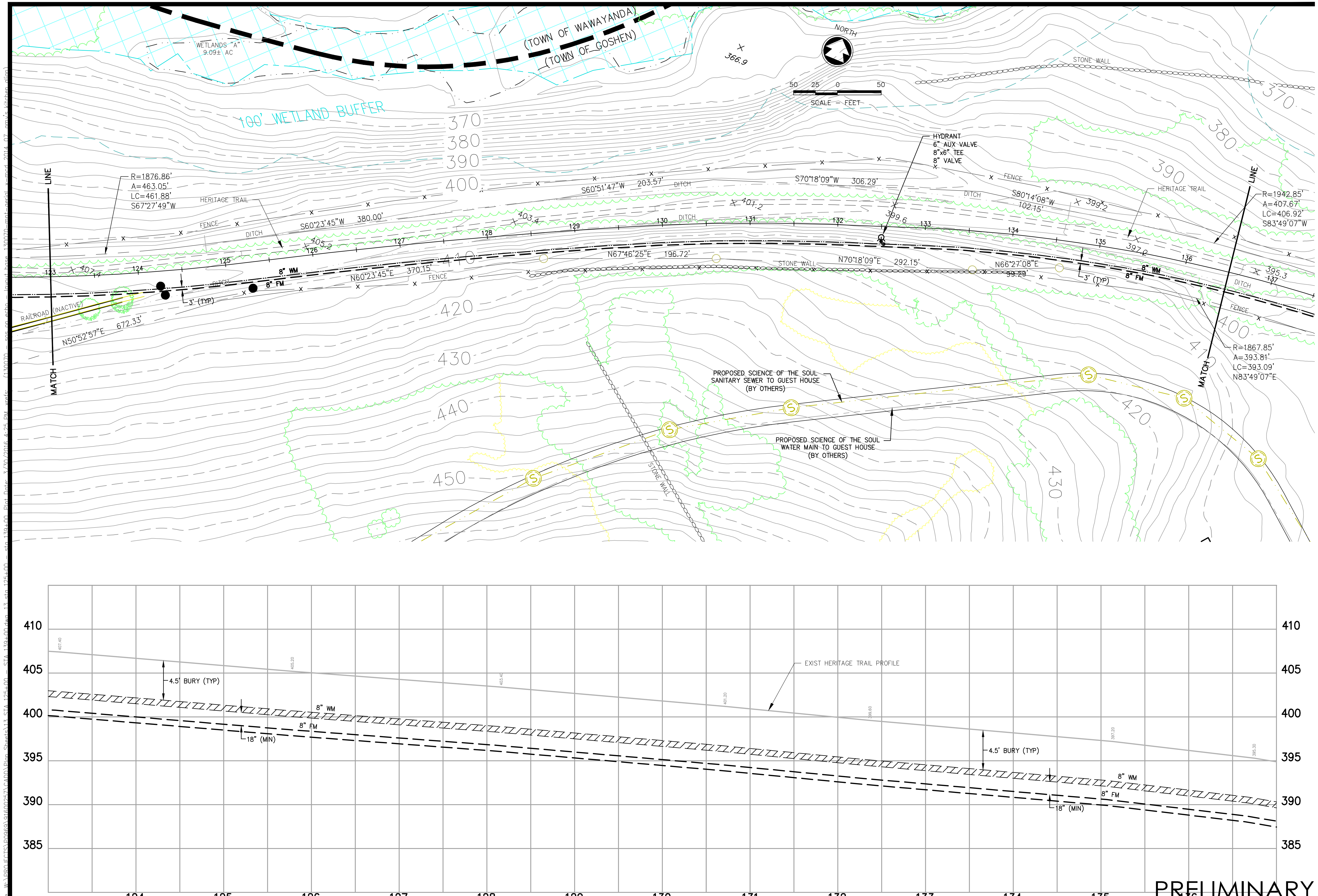

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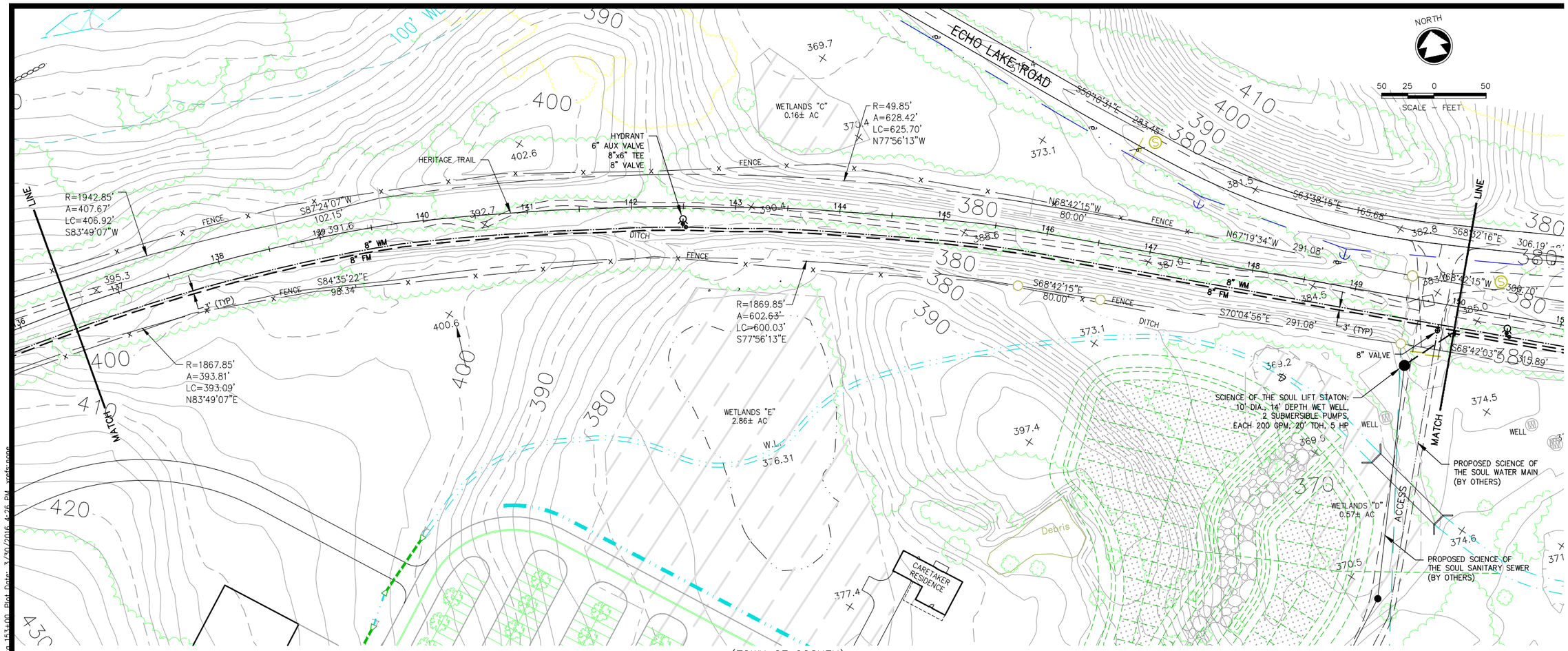

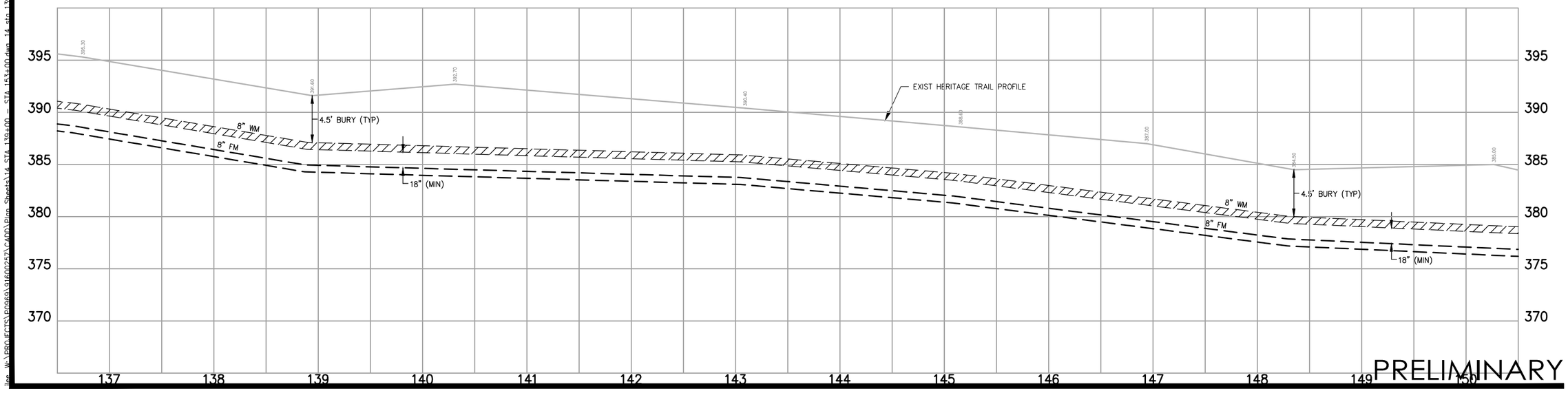

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AMY'S KITCHEN

GOSHEN, NEW YORK

INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM

PROCESS FLOW DIAGRAM

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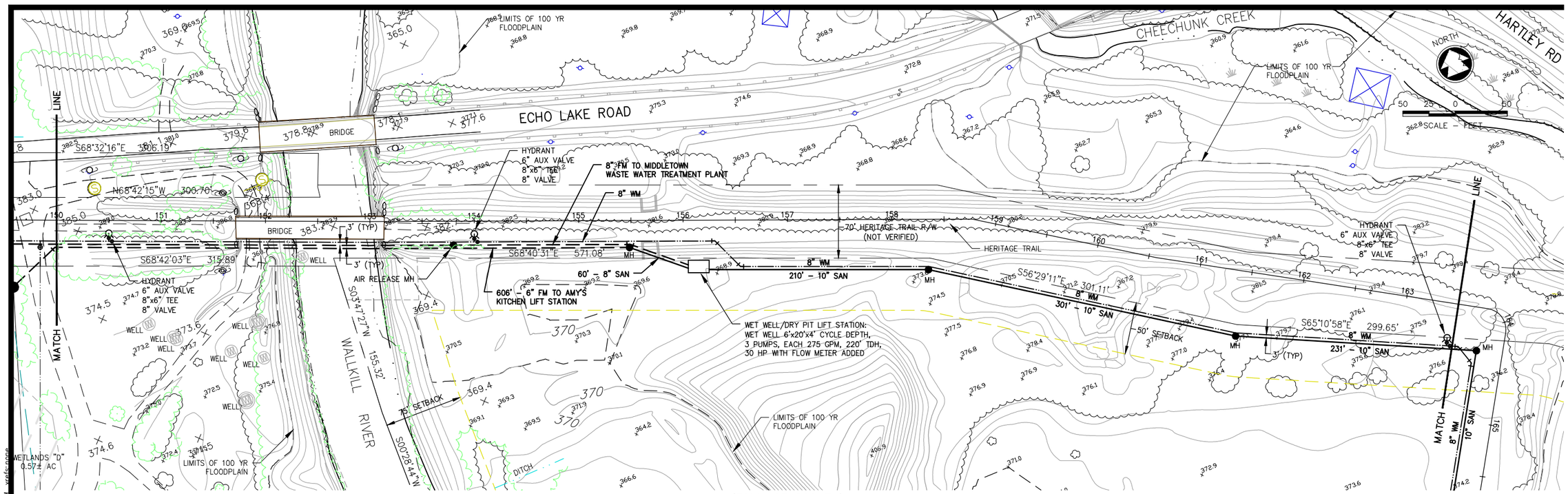

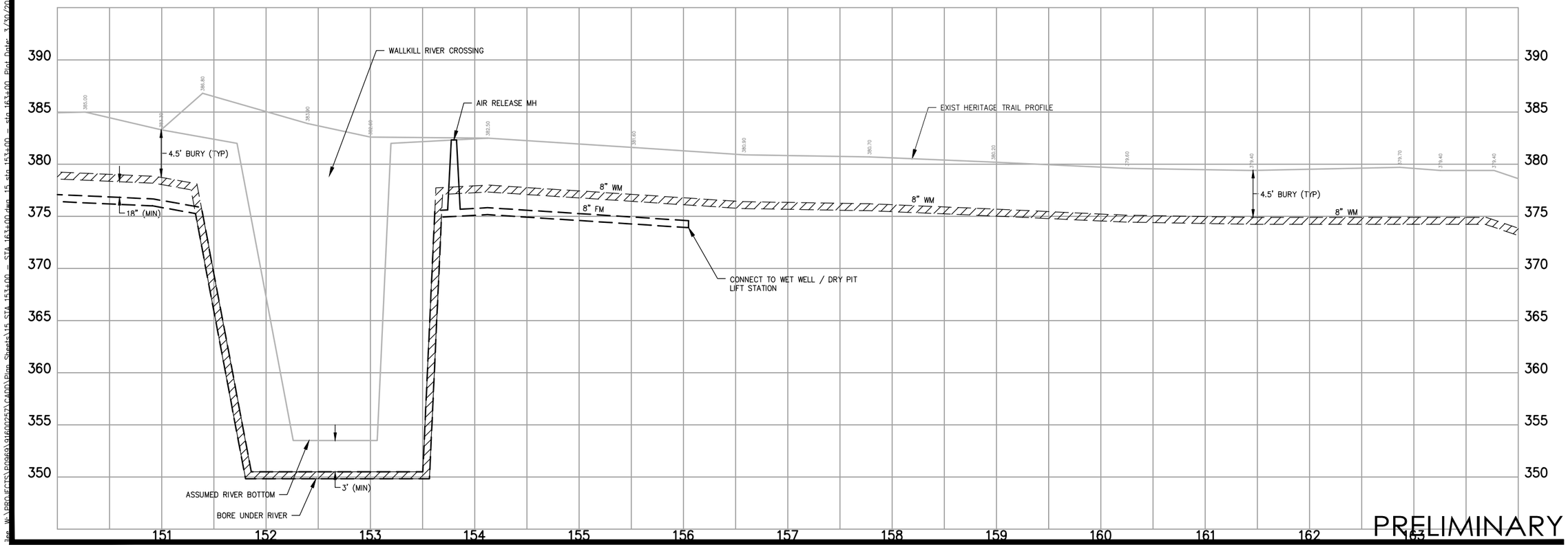

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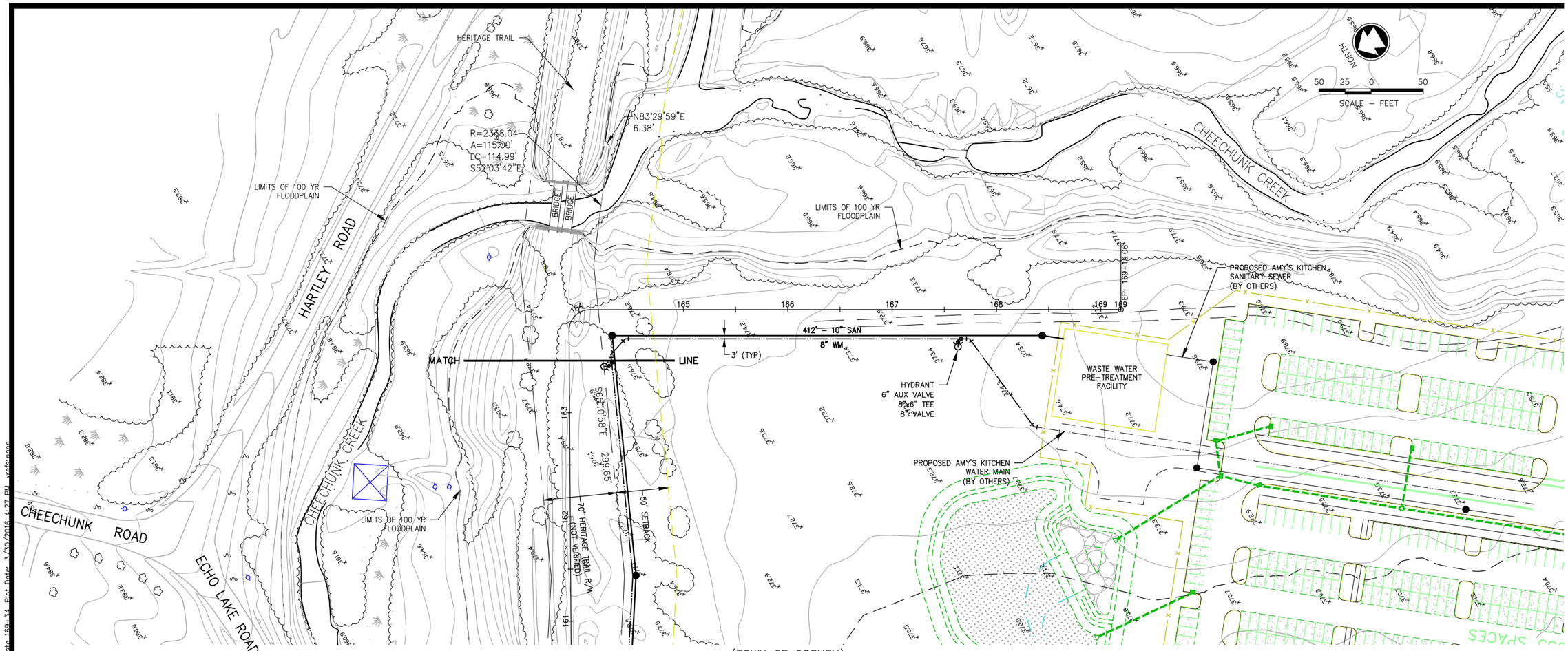

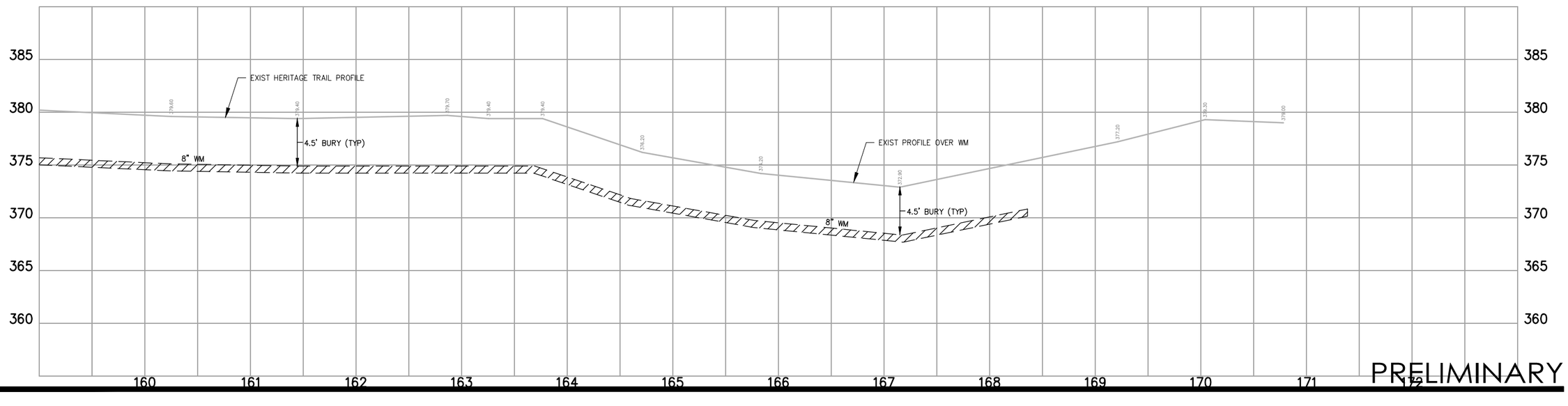

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AMY'S KITCHEN

GOSHEN, NEW YORK

INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM

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SCIENCE OF THE SOUL/ AMY'S KITCHEN TOWN OF GOSHEN, NEW YORK

STORMWATER POLLUTION PREVENTION PLAN

PREPARED BY
LANC & TULLY P.C.

SEPTEMBER 21, 2015

SCIENCE OF THE SOUL/AMY'S KITCHEN **SEPTEMBER 21, 2015**
STORMWATER POLLUTION PREVENTION PLAN
TOWN OF GOSHEN, ORANGE COUNTY, NY

I. INTRODUCTION

This report has been prepared for two separate projects that have been designed concurrently. The first project is a the Science of the Soul conference center located in the Town of Goshen and Town of Wawayanda on the West side of the Wallkill River between NYS Route 17M and Echo Lake Road. The second project is an Amy's Kitchen food production facility in the Town of Gosheu on the East side of the Wallkill River on Hartley Road. Each of the projects has been designed to meet all New York State Department of Environmental Conservation (NYSDEC) and local requirements individually and will be obtaining individual State Pollutant Discharge Elimination System (SPDES) permits for stormwater discharges due to construction activity. Each of the projects is further described below.

The Amy's Kitchen project includes the construction of a production facility, to be built in to be two stages, totaling 388,280 square foot at full buildout, 3,000 square foot clinic, and wastewater treatment facility. Main access to the site will be via a proposed bridge over the Wallkill River and access through the adjacent Science of the Soul project to a proposed entrance on NYS Route 17M (US Route 6). Secondary access will be provided by two connections to Hartley Road. The project will be serviced by existing wells on a parcel to the north of Echo Lake Road. Sewer service is provided via an on-site treatment facility and a discharge to the Wallkill River. Stormwater will be collected on-site and treated through several different NYSDEC approved stormwater management practices. The majority of the Amy's Kitchen project is located on the Wallkill River, a 5th order waterbody, and will discharge directly to the river and a small portion of the site discharges to the Cheechunk Creek. The project is anticipated to disturb a total of approximately 32.5 acres. Based on the size of the proposed building and the grading required, the applicant will seek a waiver from the MS4 to allow greater than 5 acres to be disturbed at a time. The proposed production facility and warehouse will be built in 2 stages, this SWPPP and sizing of the stormwater practices take into account the full buildout of the site.

The Science of the Soul project includes the construction of several pavilions, two caretaker buildings, guest house, and parking areas. Main access to the site will be via a proposed entrance on NYS Route 17M (US Route 6). Emergency access will be provided through the Town of Wawayanda on Echo Lake Road. The project will be serviced by existing wells on a parcel to the north of Echo Lake Road. Sewer service is provided via a connection to the Amy's Kitchen site treatment facility. Stormwater will be collected on-site and treated through several different NYSDEC approved stormwater management practices. The project is located on the Wallkill River, a 5th order waterbody, and will discharge directly to the river. The project is anticipated to disturb a total of approximately 103.6 acres. Based on the size of the proposed building and the grading required, the applicant will seek a waiver from the MS4 to allow greater than 5 acres to be disturbed at a time.

The impacts of this type of development must be evaluated, and if necessary, mitigated to ensure minimal impact on the stormwater drainage patterns within the site watershed areas. The purpose of this study is to evaluate if any impacts are associated with the proposed development, ensure treatment of the water quality volume as per current NYSDEC stormwater standards, and make certain that no increases in the peak

discharge from the proposed construction are created as part of SPDES General Stormwater Permit GP-0-15-002.

II. APPENDICES TO THIS PLAN

The following is a list of the Appendices included with this report.

A. Site Location Map
   Soils Report for Project
B. Stormwater System Model
C. Stormwater System Watershed Map
   Stormwater Practice Map
   Wallkill River Stream Order Identification Map
D. Calculations:
   Water Quality/Runoff Reduction Volume
   Stormwater Practice Design
   Channel Protection Volume
E. Excerpts from the "New York State Stormwater Design Manual"
   Construction Specifications
F. Standard Construction and Maintenance Inspections Forms
G. Notice of Intent
   Notice of Termination
H. Construction Site Log Book
   Contractor's Certification Statement
I. Pipe Sizing Analysis
J. Site Plans

III. CURRENT REGULATIONS

Stormwater runoff and its subsequent impact to receiving water bodies led Federal, State and Local officials to set new standards on stormwater discharge to attempt to restore stream water quality and control peak flow rates for specific storm events. According to 40 CFR, Part 122 prohibits point source discharges of stormwater to waters of the United States without a permit issued under the National Pollutant Discharge Elimination System (NPDES). The EPA to administer the NPDES program approves the New York State DEC; therefore SPDES regulations are currently in effect. Current regulations require that any construction site proposing a disturbance of one acre or greater prepare a Stormwater Pollution Prevention Plan. This SWPPP consists of the following: water quality treatment and control, water quantity control and an Erosion and Sediment Control Plan. Preparation of each portion of the SWPPP depends on the type and level of construction proposed. The proposed development requires the preparation of a full Stormwater Pollution Prevention Plan that includes all of the items mentioned above. Also as part of the SWPPP, the filing of a Notice of Intent five days prior to construction to the NYSDEC Bureau of Water Permits located at 625 Broadway, Albany, New York (see Appendix G) is required. This NOI identifies all of the major requirements and design criteria that are necessary for the site drainage design. This form shall be signed and certified by the owner/operator of the site. A contractor's certification statement (see Appendix H) shall also be completed

by the general contractor and subcontractors and submitted to the Town of Goshen Building Department to ensure on site compliance with local regulations.

IV. METHODOLOGY

The analysis presented in this report was developed using the Bentley Systems computer software program called PondPack. PondPack is based upon and implements the Soil Conservation Service Technical Release 55 (SCS TR-55) "Urban Hydrology for Small Watersheds Methodology" for computing CN, Tc, Runoff values, and hydrographs for the development of drainage and hydraulic calculations. For purposes of this report and in accordance with the regulations set forth by the NYSDEC as part of a SPDES Permit for Stormwater Discharges from Construction Activities, the 1-(Channel Protection), 10-(Over bank Flood), and 100-year (Extreme Storm) storm events were analyzed. This analysis is specific for this site and is based on current and proposed land cover, underlying soil types, weighted runoff coefficients, theoretical flow paths, and rain events. These were then input into the computer model, which developed hydrographs for the site. This information is shown in Appendix B.

V. WATER QUANTITY

The NYSDEC has selected three criteria as part of the stormwater quantity regulations. They are summarized as follows:

Channel Protection:	24-hour extended detention of post-developed one-year, 24-hour storm event
Over bank Flood:	Control the peak discharge from the 10-year storm to 10-year pre-development rates
Extreme Storm:	Control the peak discharge from 100-year storm to 100-year pre-development rates

The Science of the Soul site and the majority of the Amy's Kitchen site are located adjacent to and drain directly to the Wallkill River. Under pre-development and post-development drainage conditions from the site directly discharge to the Wallkill River. It has been determined using the Strahler-Horton method, in accordance with Section 4.9 "Stream Order Identification" of the NYSDEC Stormwater Management Design Manual, that the Wallkill River is a fifth-order stream. In the case that the site drainage is directly discharged to a fifth-order stream, water quantity control for the 1, 10, and 100-year storm events are **not** required as per NYSDEC stormwater regulations. Mapping showing the determination of the Wallkill River classification is included in Appendix C of this report. The analysis presented here-in for these areas focuses solely on water quality control of site runoff and design of the proposed stormwater treatment areas.

The portion of the Amy's Kitchen site that drains to the Cheechunk Creek has been designed to limit post-development flow rates to less than or equal to pre-development flow rates at the study point. In post-development conditions this area was split into 3 sub areas. These watershed areas have detailed summations

of the characteristics for both pre- and post-development as listed in Section VI & VII of this report. Channel protection volume control has been provided in underground system B through infiltration.

VI. PRE-DEVELOPMENT CONDITIONS

Science of the Soul to Wallkill is approximately 225.56 acres of land that drain directly to the Wallkill River. The site was mined in the past, grades in the field areas in the center of the site have changed substantially due to the mining activity. Ground cover in the project area is currently fields in the mined areas and woods surrounding the mined area. The site borders the Wallkill River to the east, Echo Lake Road to the north, and Mid-Hudson Psychiatric Center to the southwest. The site is generally gently sloped in the center with steeper slopes along the western boundary and along the Wallkill River. The entire area generally slopes to the northeast to the Wallkill River. Several federal jurisdictional wetlands areas are located along the Wallkill River and several isolated wetlands are located throughout the interior of the site. NYSDEC wetlands surround Echo Lake to the north of the Heritage Trail. Soils in the previously mined area of the site consist of Riverhead sandy loam (HSG A), Allard silt loam (HSG B), and Unadilla silt loam (HSG B). Soils along the western sloped area is generally Mardin gravelly silt loam (HSG D) and Erie gravelly silt loam (HSG B). Soils along the Wallkill River generally consist of Middlebury silt loam (HSG B/D), Riverhead sandy loam (HSG A) and Alden silt loam (HSG C/D).

Amy's Kitchen to Wallkill is approximately 37.12 acres of land that drain directly to the Wallkill River. Ground cover is currently fields with wetlands and woods along the Wallkill River. The site is generally gently sloped from the center to the Wallkill River. Federal jurisdictional wetlands areas are located along Wallkill River. Soils in the area of the site consist of Suncook sandy loam (HSG A), Hoosic gravelly sandy loam (HSG A), Erie gravelly silt loam (HSG D), Riverhead sandy loam (HSG A), Chenango gravelly silt loam (HSG A), and Allard silt loam (HSG B). Soils in the wetland area are Middlebury silt loam (HSG B/D).

Area A consists of approximately 4.30 acres of land encompassing the area that drain to the east, under Hartley Road, eventually to the Cheechunk Creek. Soils in the area of the site consist of Hoosic gravelly sandy loam (HSG A). The pre-development peak discharge for this watershed is summarized in Table 1, located below, as well as in the pre-development model located in Appendix B.

Area B1 consists of approximately 23.28 acres of land encompassing the north end of the area that drains to the Cheechunk Creek. Federal jurisdictional wetlands areas are located along the Cheechunk Creek. Soils in the area of the site consist of Chenango gravelly silt loam (HSG A) and Allard silt loam (HSG B). Soils in the wetland area are Middlebury silt loam (HSG B/D). The pre-development peak discharge for this watershed is summarized in Table 1, located below, as well as in the pre-development model located in Appendix B.

Area B2 consists of approximately 13.34 acres of land encompassing the south end of the area that drains to the Cheechunk Creek that will be developed as part of the Amy's Kitchen project. Soils in the area of the site consist of Hoosic gravelly sandy loam (HSG A), Riverhead sandy loam (HSG A), and Allard silt loam (HSG B).The pre-development peak discharge for this watershed is summarized in Table 1, located below, as well as in the pre-development model located in Appendix B.

Watershed Area	Area (Ac.)	CN	Tc (hrs.)	1 Year Peak Runoff (cfs)	10 Year Peak Runoff (cfs)	100 Year Peak Runoff (cfs)
Area A	4.30	38	.213	0.00	0.07	3.06
Area B1	23.28	61	.543	1.81	15.60	53.10
Area B2	13.34	47	.324	0.02	2.32	19.27
Study Point A	**4.30**	--	--	**0.00**	**0.07**	**3.06**
Study Point B	**36.62**	--	--	**1.81**	**15.71**	**65.21**

Table 1: Pre-Development Conditions

VII. POST-DEVELOPMENT CONDITIONS

Science of the Soul to Wallkill is approximately 143.42 acres of land that drain directly to the Wallkill River. This area includes all developed areas that do not drain to the proposed bio-retention area 1, including the entrance road, road to Amy's Kitchen, guest house, and all perimeter areas. 8.51 acres of impervious cover is proposed in this area. This area drains directly to the Wallkill River and does not require water quantity controls. Water quality treatment and runoff reduction volume is provided by dry swales in this area.

Swale Area consists of approximately 24.64 acres of land that drain through a proposed swale directly to the Wallkill River. Approximately 0.93 acres of impervious cover is proposed in this area, including a portion of the internal loop road. Stormwater runoff from this area will be collected by swales and catch basins and conveyed to the outlet swale. A dry swale along the internal road provides water quality treatment and runoff reduction volume for this area. This area drains directly to the Wallkill River and does not require water quantity controls. Refer to the stormwater model in Appendix B.

Area Bio 1 consists of approximately 57.50 acres of land that drains to proposed bio-retention area 1. Approximately 25.22 acres of impervious cover is proposed in this area, including the portions of internal roads, pavilions, and buildings. Stormwater runoff from this area will be collected by swales, dry swales, and catch basins and conveyed to bio-retention area 1. The bio-retention area includes a diversion forebay which allows larger storms to bypass the filter bed. The bio-retention area discharges through a swale to the Wallkill River. Bio-retention area 1 and several dry swales provides water quality treatment and runoff reduction volume for this area. This area drains directly to the Wallkill River and does not require water quantity controls. Refer to the stormwater model in Appendix B.

Amy's Kitchen to Wallkill is approximately 27.39 acres of land that drains directly to the Wallkill River. This area includes all developed areas that do not drain to the proposed bio-retention areas or the Cheechunk Creek. 4.49 acres of impervious cover is proposed in this area, including paved areas and porous pavement areas. Stormwater runoff from the proposed parking area will be collected by several porous pavement areas with catch basins to handle any larger storms. The porous pavement underdrains and catch basins convey flows to the Wallkill River. The porous pavement provides water quality treatment and runoff reduction volume for this area. This area drains directly to the Wallkill River and does not require water quantity controls.

Post A consists of approximately 3.27 acres of land encompassing the area that drain to the east, under Hartley Road, eventually to the Cheechunk Creek. Approximately 0.04 acres of impervious cover is proposed in this area, including a small portion of the entrance roads. 3.11 acres of existing impervious area is also in this area. Due to the small amount of development in this area no water quality treatment is proposed. The post-development peak discharge for this watershed is summarized in Table 2, located below, as well as in the post-development model located in Appendix B.

Post UG B consists of approximately 2.73 acres of land encompassing the area that drains to the proposed underground stormwater system B and to the Cheechunk Creek. Approximately 0.60 acres of impervious cover is proposed in this area, including a portion of the paved entrance road and the gravel emergency access road. Stormwater runoff from this area will be collected by dry swales and catch basins and conveyed to underground stormwater system B. The underground stormwater system discharges through a pipe to the Cheechunk Creek. The underground stormwater system and dry swales provide water quality treatment and runoff reduction volume for this area. The underground stormwater system also provides quantity control for the area. The post-development peak discharge for this watershed is summarized in Table 2, located below, as well as in the post-development model located in Appendix B.

Area B2 consists of approximately 23.28 acres of land encompassing the northern end of the area that drains to the Cheechunk Creek. No development is proposed in this area. The post-development peak discharge for this watershed is summarized in Table 2, located below, as well as in the post-development model located in Appendix B.

Area Bio 2 consists of approximately 9.92 acres of land that drains to proposed bio-retention area 2. Approximately 8.08 acres of impervious cover is proposed in this area, including the portions of internal road and a portion of the proposed building. Stormwater runoff from this area will be collected by swales and catch basins and conveyed to bio-retention area 2. The bio-retention area includes a diversion forebay which allows larger storms to bypass the filter bed. The bio-retention area discharges to the Wallkill River. Bio-retention area 2 provides water quality treatment and runoff reduction volume for this area. This area drains directly to the Wallkill River and does not require water quantity controls. Refer to the stormwater model in Appendix B.

Area Bio 3 consists of approximately 11.45 acres of land that drains to proposed bio-retention area 3. Approximately 7.21 acres of impervious cover is proposed in this area, including the portions of internal road, a portion of the proposed building, and portions of the parking area. Stormwater runoff from this area will be collected by swales and catch basins and conveyed to bio-retention area 3. The bio-retention area includes a diversion forebay which allows larger storms to bypass the filter bed. The outlet of the bio-retention area has a swale to the Wallkill River that is an extension of the bio-retention area filter bed. Bio-retention area 3, the outlet swale, and porous pavement areas provide water quality treatment and runoff reduction volume for this area. This area drains directly to the Wallkill River and does not require water quantity controls. Refer to the stormwater model in Appendix B.

Watershed Area	Area (Ac.)	CN	Tc (hrs.)	1 Year Peak Runoff (cfs)	10 Year Peak Runoff (cfs)	100 Year Peak Runoff (cfs)
Post A	3.27	38	.213	0.00	0.05	2.09
Post UG B	2.73	57	.166	0.12	2.05	8.16
Post B2	23.28	61	.543	1.81	15.60	53.10
Study Point A	**3.27**	--	--	**0.00**	**0.05**	**2.09**
Study Point B	**29.28**	--	--	**1.81**	**15.63**	**53.89**

Table 2: Post-Development Conditions

VIII. WATER QUALITY AND RUNOFF REDUCTION

The water quality volume denoted as WQ_v is designed to improve water quality sizing to capture and treat 90% of the average annual stormwater runoff volume. The WQ_v is directly related to the amount impervious cover created at a site. New York State Department of Environmental Conservation has developed the following equation to determine the water quality storage volume. As of 2010, the NYSDEC requires that the water quality volume be treated through use of specific green infrastructure practices. The design of these practices is based on promoting infiltration of the water quality volume. The treatment provided by the green infrastructure practices is called the runoff reduction volume (RRv). The NYSDEC requires the RRv to equal the WQv unless site specific conditions do not allow the full treatment using green infrastructure practices. Table 3, shown below, describes the feasibility of the NYSDEC's Green Infrastructure Techniques.

Table 3: Green Infrastructure Technique Feasibility

Conservation of Natural Areas	
Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas, stream and wetland buffers by restoring and/or permanently conserving these areas on a site.	No natural areas exist within the project disturbance area delineated for the water quality calculation.
Sheetflow to Riparian Buffers or Filter Strips	
Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	A portion of Amy's Kitchen perimeter sheet flows to the wetland surrounding the Cheechunk Creek. See the description of this technique below.
Vegetated Open Swale	
The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	Swales are proposed where possible throughout the project to convey runoff to the proposed bio-retention areas. All swales with appropriate slopes have been designed as dry swales.

Table 3: Green Infrastructure Technique Feasibility (continued)

Tree Planting / Tree Box	
Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control.	Trees are proposed throughout the Science of the Soul parking area. See the description of this technique below.
Disconnection of Rooftop Runoff	
Direct runoff from residential rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	The proposed roofs are directed to the bio-retention areas, building roofs are too large to use this technique.
Stream Daylighting for Redevelopment Projects	
Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	The project is not a redevelopment, therefore this technique is not applicable.
Rain Garden	
Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	Several bio-retention areas are proposed throughout the project areas. See the description of this technique below.
Green Roof	
Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	The structural design of the proposed buildings does not allow this technique.
Stormwater Planter	
Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters nse soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	Runoff from the building roofs is being treated by the bio-retention areas.
Rain Tank / Cistern	
Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	Landscape irrigation or rainwater reuse is not proposed, building roofs will be treated by the proposed bio-retention areas. No cisterns are proposed.
Porous Pavement	
Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	The employee parking area for Amy's Kitchen and the lower parking area for Science of the Soul will use sections of porous pavement to allow for stormwater infiltration. See the description of this technique below.

Separate water quality calculations were prepared for Amy's Kitchen and Science of the Soul. Below are calculations developed specifically for each site. Details for the water quality volume and runoff reduction volume calculations are provided in Appendix D of this report. Below is summary of the required and provided water quality and runoff reduction volumes.

Amy's Kitchen

Required Water Quality Volume (WQ_v) = 100,172 cubic feet
Required Minimum Runoff Reduction Volume (RR_v) = 46,482 cubic feet
Provided Runoff Reduction Volume (RR_v) = 95,474 cubic feet
Required WQv minus the provided RRv = 4,698 cubic feet
Provided Water Quality Volume (WQ_v) = 7,481 cubic feet
Total Treatment Volume Provided $WQ_v + RR_v$ = 102,955 cubic feet

Science of the Soul

Required Water Quality Volume (WQ_v) = 178,066 cubic feet
Required Minimum Runoff Reduction Volume (RR_v) = 51,776 cubic feet
Provided Runoff Reduction Volume (RR_v) = 80,142 cubic feet
Required WQv minus the provided RRv = 97,924 cubic feet
Provided Water Quality Volume (WQ_v) = 125,981 cubic feet
Total Treatment Volume Provided $WQ_v + RR_v$ = 206,123 cubic feet

Several different practices are being proposed throughout the site for treatment of the water quality volume. Descriptions for practices are shown below.

Sheetflow to Riparian Buffers

Areas that drain to the wetland buffers can be deducted from the water quality volume. In order to claim this practice, all flow must enter the buffer in sheetflow form. Areas along the north side of the perimeter of Amy's Kitchen have been removed from the water quality volume using this practice. 28,122 square feet has been removed from the drainage area and 6,575 square feet has been removed from the impervious cover area.

Tree Planting

Trees planted adjacent to impervious cover allow the drainage area to be reduced when calculating the water quality volume. The method of reduction chosen for this site is 100 square feet of drainage area for each tree. The Science of the Soul site design calls for trees planted throughout the parking area. A total of 237 trees are proposed, allowing a 23,700 square foot reduction of the drainage area.

Bio-Retention Areas

Bio-retention area 1 at Science of the Soul is proposed for treating runoff from the majority of the project area. It has been designed to treat runoff from the lawn area, proposed paved areas, and the building roofs. Soil types in this area of the bio-retention area are hydrologic soil group D, the system will be installed

with underdrains. 40% of the treatment volume of the bio-retention area can be claimed as runoff reduction volume and remaining volume will be claimed as water quality volume. The bio-retention area filter bed will be located off-line from larger storms through use of a large forebay with an overflow to a swale leading to the Wallkill River. Provided treatment volume for the bio-retention area is listed in Table 4 below.

Bio-retention areas 2 and 3 at Amy's Kitchen are proposed for treating runoff from the majority of the project area. They have been designed to treat runoff from the proposed paved areas and the building roofs. Soil types in this area of the bio-retention areas at Science of the Soul are hydrologic soil group A, the systems will be installed without underdrains. 100% of the treatment volume of the bio-retention areas can be claimed as runoff reduction volume. The bio-retention area filter beds will be located off-line from larger storms through use of a large forebay with an overflow to a swale leading to the Wallkill River. Bio-retention area 3 has a discharge swale that will also have a filter bed and will act as an extension to the bio-retention area. Provided treatment volumes for the bio-retention areas are listed in Table 4 below.

Bio-Retention Area	Total Treatment Volume (CF)	RRv (CF)	WQv (CF)
1	70,948	28,379	42,569
2	33,076	33,076	0
3	32,560	32,560	0

Table 4: Bio-Retention Area Treatment Volumes

Porous Pavement

Porous pavement is proposed for the employee parking area at Amy's Kitchen and lower parking area at Science of Soul. Standard asphalt pavement will be used in the drive aisles. Porous pavement consists of a high permeability asphalt pavement and layers of stone beneath the pavement designed to temporarily hold the water quality volume while it infiltrates. Swales and catch basins will be installed at the low points and an underdrain pipe raised above the subgrade will be installed to allow stormwater from storm events larger than the water quality storm to exit the stone reservoir, if necessary, through the underdrain. The area of porous pavement at Amy's Kitchen is 84,888 square feet and will treat 22,637 cubic feet of water quality volume. The area of porous pavement at Amy's Kitchen is 106,915 square feet and will treat 28,511 cubic feet of water quality volume.

Dry Swales

Dry swales are proposed for treating runoff from road areas at both Amy's Kitchen and Science of the Soul. The swales will be installed along a majority of the pavement edges, but only the areas with 4% slope or less will be claimed as dry swales. The total length of swales with a slope of 4% or less at Amy's Kitchen is 1,470 feet. The dry swales will have a either a 2 or 4.5 foot bottom width, 1 foot deep, with 3 horizontal to 1 vertical side slopes. Soil types at the Amy's Kitchen site area are hydrologic soil group A, meaning the up to 40% of the treatment volume of the dry swale can be claimed as runoff reduction volume and remaining volume will be claimed as water quality volume. 4,987 cubic feet of treatment will deducted from the water quality volume, the remaining 7,481 cubic feet will treat standard water quality.

The total length of swales with a slope of 4% or less at Science of the Soul is 12,780 feet. The dry swales will have a either a 2 or 3 foot bottom width, 1 foot deep, with 3 horizontal to 1 vertical side slopes. Soil types at the Amy's Kitchen site area are hydrologic soil group D, meaning the up to 20% of the treatment volume of the dry swale can be claimed as runoff reduction volume and remaining volume will be claimed as water quality volume. 20,853 cubic feet of treatment will deducted from the water quality volume, the remaining 83,412 cubic feet will treat standard water quality.

Underground Infiltration System

An underground infiltration system at Amy's Kitchen is proposed for treating runoff from Post UG B area. The system will provide treatment through infiltration. Soil types in this area are hydrologic soil group A, an infiltration rate of 2 inches/hour was assumed for the model based on NRCS soil mapping. The infiltration rate will be verified though infiltration testing prior to system construction. 100% of the treatment volume of the infiltration system can be claimed as runoff reduction volume. Underground infiltration area B allows the deduction of 1,390 cubic feet.

IX. EROSION AND SEDIMENT CONTROL MEASURES

The general SPDES Permit (GP-0-15-002) for construction activities requires that an Erosion and Sediment Control Plan be developed. This plan has provided in as part of the Site Plans, and will be available at Town Hall and the project site at the time of construction. It will also be in compliance with current and proposed regulations, including construction sequence, both short- and long-term maintenance of facilities, storage of materials and temporary and permanent structures. Separate Erosion and Sediment Control Plans have been developed for Amy's Kitchen and Science of the Soul.

The following temporary and permanent erosion control practices are proposed for use during construction and for long-term protection:

A. Stabilized Construction Entrance:
A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area. The purpose of stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets. Stabilized construction entrances will be placed as shown on the Sediment and Erosion Control Plans.

B. Siltation Fence:
A temporary barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil. The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment loads. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used (approximately one year). Silt fence will be placed as shown on the Sediment and Erosion Control Plans.

C. Sediment Traps:

A temporary sediment control device formed by excavation and/or embankment to intercept sediment laden runoff and retain the sediment. The purpose of the structure is to intercept sediment-laden runoff and trap the sediment in order to protect drainage ways, properties, and rights-of-way below the sediment trap from sedimentation. Stone outlet sediment traps will be used at the locations shown on the Sediment and Erosion Control Plans.

D. Sediment Basins:

A temporary barrier or dam constructed across a drainage way or at other suitable locations to intercept sediment laden runoff to trap and retain the sediment to reduce the amount of sediment leaving the disturbed area in order to protect drainage ways, properties, and rights-of-way below the sediment basin. Sediment basins are proposed in the areas of the proposed bio-retention areas, calculations for the sizing of the temporary sediment basins are provided in Appendix D.

E. Diversion Swales:

A temporary excavated drainage way. The purpose of a temporary swale is to prevent runoff from entering disturbed areas by intercepting and diverting it to a stabilized outlet or to intercept sediment laden water and divert it to a sediment trapping device. Diversion swales will be used for diverting clean runoff around the project area and for intercept sediment laden runoff and directing it to sediment traps/basins. Diversion swales will be placed as shown on the Sediment and Erosion Control Plans.

F. Water Bars

A ridge or ridge and channel constructed diagonally across a sloping road or utility right-of-way that is subject to erosion. The purpose is to limit the accumulation of erosive velocity of water by diverting surface runoff at pre-designed intervals. Water bars will be placed as necessary during construction.

G. Storm Drain Inlet Protection:

A temporary, somewhat permeable barrier, installed around inlets in the form of a fence, berm, or excavation around an opening, trapping water and thereby reducing the sediment content of sediment laden water by settling. The purpose is to prevent heavily sediment laden water from entering a storm drain system through inlets. Curb drop, filter fabric drop, and excavated drop inlet protection will be used throughout the site. Inlet protection will only be used in road areas before pavement is placed. Locations of inlet protection are shown on Sediment and Erosion Control Plans.

H. Level Spreaders:

A temporary non-erosive outlet for concentrated runoff, constructed to disperse flow uniformly across a slope. The purpose is to convert concentrated flow to sheet flow and release it uniformly over a stabilized area. Level spreaders will be used at the ends of diversion swales used for diverting clean runoff around the project area. Level spreader locations are shown on the Sediment and Erosion Control Plans.

I. Slope Stabilization Matting:
Matting made synthetic or natural fibers that is placed on steep slopes to allow newly planted vegetation to take root and protect the slope from erosion before vegetation is fully established. Locations of slope stabilization matting are shown on Sediment and Erosion Control Plans.

J. Rock Outlet Protection:
A section of rock protection placed at the outlet of the culverts, conduits, or channels. The purpose of the rock outlet protection is to reduce the depth, velocity, and energy of water, such that the flow will not erode the receiving downstream reach. Rock outlet protection is proposed at all pipe discharge points. See the Sediment and Erosion Control Plans for locations of rock outlet protection.

K. Pipe Slope Drain:
A temporary structure placed from the top of a slope to the bottom of a slope to convey surface runoff down slopes without causing erosion. Pipe slope drains are proposed along the benched slopes along the western side of the project. See the Sediment and Erosion Control Plans for locations of pipe slope drains.

X. IMPLEMENTATION SCHEDULE & MAINTENANCE

A. Schedule

As part of the development of the erosion and sediment control plans for the projects, preparation of construction sequencing was completed to ensure water quality discharges are maintained during construction. The following construction schedule for implementing stormwater management during construction is proposed. Please refer to the Site Plans for specific sequencing and scheduling.

General Notes:

1. The owner or operator shall have a qualified inspector conduct at least two (2) site inspections in accordance with Part IV.C. every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

2. In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased.

3. Temporary Stabilization means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

4. Final Stabilization means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

Amy's Kitchen Construction Sequence:

1. Pre-construction meeting: Before construction activities an evaluation of the site will be performed with the site contractor, Town personnel and site design engineer to discuss general construction procedures and sequencing. During this meeting sensitive areas of the property shall be delineated and marked-out with orange construction fence (i.e.: trees, wetlands, wells, etc.).

2. Delineate total site disturbance limits: Placement of orange construction fencing along the limit of disturbance throughout the site.

3. Protect existing buffers: Place erosion control devices (silt fencing, diversion berms, etc.) upstream of any existing watercourse within or outside of construction areas, prior to the start of any construction.

4. Construction entrances/siltation controls: Temporary construction entrances will be installed at the entrances to the site on Hartley Road as shown on the Erosion and Sediment Control Plans. During wet weather, it may necessary to wash vehicle tires at this location. Therefore, this entrance is to be graded so that runoff is directed to the adjacent sediment trap. In addition, any other siltation control devices, as shown on the erosion control plan are to be installed adjacent to the temporary entrance and staging area.

5. Construction of temporary sediment basins: Construction of the temporary sediment basins prior to the start of any major earthwork movement or site construction.

6. Construction of temporary diversion swales: The installation of temporary diversion swales to convey stormwater around the construction area.

7. Staging area: The staging area will be graded for storage of equipment and placement of construction trailers.

8. Strip topsoil: Topsoil will be stripped from the active work areas and will be stockpiled for later reuse.

9. Land grading: Bulk soil grading will commence, soil to be moved from the western side of the project area and placed in the fill area along the east side of the project area. At this time, temporary stockpile areas should be utilized. The building pad areas will be graded.

10. Building foundation construction: Upon completion of grading in building footprint areas, building foundation construction for the buildings will commence.

11. Utility installation: Install water, sewer, and stormwater throughout the project. Inlet protection will be installed at all stormwater catch basins.

12. Pavement construction: Construct paved areas and concrete parking areas.

13. Stormwater installation: Install porous pavement areas when all contributing areas have been stabilized. Convert temporary sediment basins to bio-retention areas when all contributing areas have been stabilized. Riprap outlet protection areas will be installed.

14. Erosion control practice removal: Remove any remaining erosion control practices including inlet protection, and temporary diversions swales when areas have been temporarily stabilized.

15. Landscaping and final stabilization: All open areas to be stabilized with topsoil and seeded as per the seeding schedule specified on the erosion and sediment control plans. Removal of all temporary measures, flushing/cleaning of all catch basins and pipe, and removal and disposal of all trapped sediment on site shall be completed.

16. Final site inspection and certification: At the end of construction a site evaluation of the site will be performed with site contractor, Town personnel, and site engineer to ensure that all stormwater facilities were constructed as per the SWPPP design and that the site has been stabilized. A Notice of Termination will be submitted to the NYSDEC.

Science of the Soul Construction Sequence:

1. Pre-construction meeting: Before construction activities an evaluation of the site will be performed with the site contractor, Town personnel and site design engineer to discuss general construction procedures and sequencing. During this meeting sensitive areas of the property shall be delineated and marked-out with orange construction fence (i.e.: trees, wetlands, wells, etc.).

2. Delineate total site disturbance limits: Placement of orange construction fencing along the limit of disturbance throughout the site.

3. Protect existing buffers: Place erosion control devices (silt fencing, diversion berms, etc.) upstream of any existing watercourse within or outside of construction areas, prior to the start of any construction.

4. Construction entrances/siltation controls: Temporary construction entrances will be installed at the entrances to the site on NYS Route 17M and Echo Lake Road as shown on the Erosion and Sediment Control Plans. During wet weather, it may necessary to wash vehicle tires at this location. Therefore, this entrance is to be graded so that runoff is directed to the adjacent sediment trap. In addition, any other siltation control devices, as shown on the erosion control plan are to be installed adjacent to the temporary entrance and staging area. Install temporary culvert diverting the existing roadside swale at the NYS Route 17M entrance.

5. Construction of temporary sediment basins: Construction of the temporary sediment basins prior to the start of any major earthwork movement or site construction.

6. Construction of temporary diversion swales: The installation of temporary diversion swales to convey stormwater around the construction area.

7. Staging area: The staging area will be graded for storage of equipment and placement of construction trailers.

8. Strip topsoil: Topsoil will be stripped from the active work areas and will be stockpiled for later reuse.

9. Land grading: Bulk soil grading will commence, soil to be moved from the western side of the project area and placed in the fill area along the east side of the project area. At this time, temporary stockpile areas should be utilized. The building pad areas will be graded.

10. Building foundation construction: Upon completion of grading in building footprint areas, building foundation construction for the buildings will commence.

11. Utility installation: Install water, sewer, and stormwater throughout the project. Inlet protection will be installed at all stormwater catch basins.

12. Pavement construction: Construct paved areas and concrete parking areas.

13. Bridge construction: Construct bridge across Wallkill River to the Amy's Kitchen site.

14. Stormwater installation: Install porous pavement areas when all contributing areas have been stabilized. Convert temporary sediment basins to bio-retention areas when all contributing areas have been stabilized. Riprap outlet protection areas will be installed.

15. Erosion control practice removal: Remove any remaining erosion control practices including inlet protection, and temporary diversions swales when areas have been temporarily stabilized.

16. Landscaping and final stabilization: All open areas to be stabilized with topsoil and seeded as per the seeding schedule specified on the erosion and sediment control plans. Removal of all temporary measures, flushing/cleaning of all catch basins and pipe, and removal and disposal of all trapped sediment on site shall be completed.

17. Final site inspection and certification: At the end of construction a site evaluation of the site will be performed with site contractor, Town personnel, and site engineer to ensure that all stormwater facilities were constructed as per the SWPPP design and that the site has been stabilized. A Notice of Termination will be submitted to the NYSDEC.

Please refer to the Erosion and Sediment Control Plans within the Site Plans for construction notes and seeding schedule for disturbance and final stabilization.

B. Pollution Prevention Measures:

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner conforms to all applicable Federal and State regulations that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well organized, and free of debris. If required, BMPs to be implemented to control specific sources of pollutants are discussed below.

Vehicles, construction equipment, and/or petroleum product storage/dispensing:

1. All vehicles, equipment, and petroleum product storage/dispensing areas will be observed regularly during site observations to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.

2. On-site fueling tanks and petroleum product storage containers shall include secondary containment.

3. Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.

4. In order to perform emergency repairs on site, temporary plastic will be placed beneath and, if raining, over the vehicle.

5. Contaminated surfaces shall be cleaned immediately following any discharge or spill incident. Contaminated soil shall be removed from site and disposed of in accordance with all current Federal and State Regulations.

Chemical storage:

1. Any chemicals stored in the construction areas will conform to the appropriate manufacturer's recommendations and or the appropriate State/Federal Regulations. All chemicals shall have cover, containment, and protection provided on site, per all Federal and New York State DEC regulations.

2. Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations for application procedures and rates shall be followed.

Demolition:

1. Dust released from demolished sidewalks, buildings, structures or on site grading operations will be controlled using Dust Control measures as specified in the N.Y.S. Erosion and Sediment Control Specification Manual.

2. Storm drain inlets vulnerable to stormwater discharge carrying dust, soil, or debris will be protected using Storm Drain Inlet Protection.

3. Process water and slurry resulting from saw cutting and surfacing operations will be prevented from entering the waters of the State by implementing Saw cutting and Surfacing Pollution Prevention measures.

Concrete and grout:

1. Process water and slurry resulting from concrete work will be prevented from entering the waters of the State by implementing Concrete Handling measures.

Sanitary wastewater:

1. Portable sanitation facilities will be firmly secured, regularly maintained, and emptied when necessary.

2. Wheel wash or tire bath wastewater shall be discharged to a temporary erosion and sediment control facility which has been constructed on site.

Solid Waste:

1. Solid waste will be stored in secure, clearly marked containers.

Litter/Trash:

1. Litter and Trash shall be cleaned and disposed of in secure clearly marked dumpsters or trash receptacles.

2. Site is to be cleaned daily of debris and disposed of on a daily basis.

Other:

1. Other BMPs will be administered as necessary to address any other additional pollutant sources on site.

C. Maintenance (Construction/Long-Term)

1. The property owner/operator will be responsible for the maintenance and operation of all site related stormwater management facilities during construction and the property owner will be responsible for long-term maintenance.

2. A standalone Operation and Maintenance Plan will be prepared and will include the following: schedules, procedures, forms for inspections, maps showing stormwater practice areas, and the

maintenance agreement. Please refer to Appendix F for standard Inspection and Maintenance Forms.

3. Construction and long-term maintenance shall be carried out in accordance with the following notes:

   a. Bio-retention Areas: Inspection shall be made weekly by a licensed professional and after every ½" rainfall event by the owner or contractor during construction. During the first growing season inspections shall be conducted monthly and annually thereafter. The following tasks shall be performed as needed:

      (1) Removal of accumulated sediment and cleaning and/or restoration of the filter bed areas whenever accumulated sediment reaches a volume of 50% of the available capacity.

      (2) Restoration of any disturbed plant material and any eroded embankments.

      (3) Removal of accumulated debris within the filter bed areas and at all inlet and outfall structures.

      (4) Annual mowing of the berm and surrounding area of the basins. Removal of any fallen trees or limbs. No mowing or trimming is to occur within the constructed area of the wetland. Replacement of proposed plants shall occur if more then 50% of the coverage of the facility is not achieved.

   b. Porous Pavement: Pavement shall be protected from silt and sediment during construction of surrounding areas, if possible, the asphalt pavement should be installed after stabilization of surrounding areas. During winter conditions, sand and salt should be avoided being utilized to the porous pavement sections. The following tasks shall be performed as needed:

      (1) Clean debris and sediment from pavement monthly.

      (2) Ensure pavement fully drains after storms monthly and after storms greater than 0.5 inches.

      (3) Mow and seed bare areas upland and adjacent to the pavement as needed.

      (4) Vacuum pavement surface 2 to 3 times a year depending on site conditions.

      (5) Inspection pavement surface for deterioration or spalling.

   c. Swales: Inspection shall be made weekly and after every ½" rainfall event during construction. During the first growing season inspections shall be conducted monthly, and on an annual basis thereafter. The following tasks shall be performed as needed:

(1) Removal of accumulated sediment and cleaning and/or restoratiou whenever accumulated sediment reaches a volume of 50% of the available capacity.

(2) Restoration of any eroded embankments. Infrequent reshaping of the swale line should be completed as needed.

(3) Removal of accumulated debris/trash within the swale and at all inlet and outfall structures.

(4) Seasonal mowing of the swale bottom and surrounding side slopes. Removal of auy fallen trees or limbs. Replacement and/or restoration of proposed grasses shall occur if more then 50% of the coverage of the facility is not achieved. Grasses should be kept at a maximum height of 6" – 8".

d. Underground Infiltration System: Inspection shall be made weekly by a qualified professional and after every ½" rainfall event by the contractor during construction. The following tasks shall be performed as needed:

(1) Removal of accumulated sediment every 5 or 6 years or whenever accumulated sediment reaches a volume of 50% of the available capacity of the system.

(2) Restoration and repair of any damaged portion of the system.

(3) Removal of accumulated debris within the system and at all inlet and outfall structures.

(4) Inspection of the outlet structure to ensure structural stability and proper functioning.

e. Roadway Pavements: Roadway pavements shall be swept on a regular basis to remove accumulated sediment. Collected sediment shall be removed, which will not allow the re-entrance of silt into the storm water drainage system.

f. Catch Basins: Catch basins shall be flushed and cleaned of any collected sediment within the bottom of the basin approximately every 4-5 years. Collected sediment shall be removed, which will not allow the reentrance of silt into the storm water drainage system.

g. Vegetative Stabilization:

(1) All vegetative planting on areas that have been disturbed and are finish graded shall be inspected monthly during the first growing season and annually thereafter. Planting (or seeding) shall be maintained in viable conditions to stabilize the soil and to prevent soil erosion. Restore all site planting and/or seeding which has been damaged to a viable condition.

(2) If vegetative stabilization has been damaged from storm water erosion, correct upstream conditions that caused the erosion. Check dams may be required in drainage ways and stone outfall aprons may be required to be repaired on storm water outfall sites.

h. Temporary erosion and sediment control maintenance:

(1) All erosion and sediment control practices will be checked for stability and operation following every runoff-producing rainfall, but in no case less than once every week. Any needed repairs will be made immediately to maintain all practices as designed and installed for their appropriate phase of the project.

(2) Sediment will be removed from the sediment trap and inlet protection device when storage capacity has been approximately 50% filled.

(3) Sediment will be removed from behind the sediment fence when it becomes about 0.5 ft deep at the fence. The sediment fence will be repaired as necessary to maintain a barrier.

XI. ANALYSIS AND CONCLUSION

After analyzing the site's drainage area and determining the stream classification order of the Wallkill River, water quantity control is not applicable for the Science of the Soul site and portion of the Amy's Kitchen site since the receiving water body, the Wallkill River, is classified as a fifth order stream. The water quality facilities designed will be used in accordance with NYSDEC Regulations to provide for the required water quality volume treatment and runoff reduction volume. The proposed underground stormwater system provides quantity control for the portions of Amy's Kitchen that drain to the Cheechunk Creek. Based upon the results of this analysis, the site has demonstrated the ability to meet all requirements for stormwater quantity and quality and an impact to the existing watershed and downstream waters should be negligible.

Table 5 below summarizes the pre- and post-development discharges for the portions of the Amy's Kitchen site requiring quantity control. Please refer to Appendix B for detailed analysis and calculations of the individual watershed subareas.

	Condition	1 Year Peak Runoff (cfs)	10 Year Peak Runoff (cfs)	100 Year Peak Runoff (cfs)
Study Point A	Pre-Development	0.00	0.07	3.06
	Post-Development	0.00	0.05	2.09
	Difference	-	**-0.02 (-28.6%)**	**-0.97 (-31.7%)**
Study Point B	Pre-Development	1.81	15.71	65.21
	Post-Development	1.81	15.63	53.89
	Difference	-	**-0.08 (-0.5%)**	**-11.32 (-17.4%)**

Table 5: Comparison of Pre- and Post-Development Conditions at Study Point

By implementing both the Stormwater Pollution Prevention Plan and Erosion and Sediment Control Plans during the construction of the proposed project, current New York State Department of Environmental Conservation and Town regulations can be met. However, the owner and contractor are responsible for implementation of the project's erosion and sedimentation controls and any required maintenance. In addition, this also includes filing the NOI and meeting all requirements of the General Permit, including necessary site assessment and weekly inspections.

Respectfully submitted,
LANC & TULLY, P.C.

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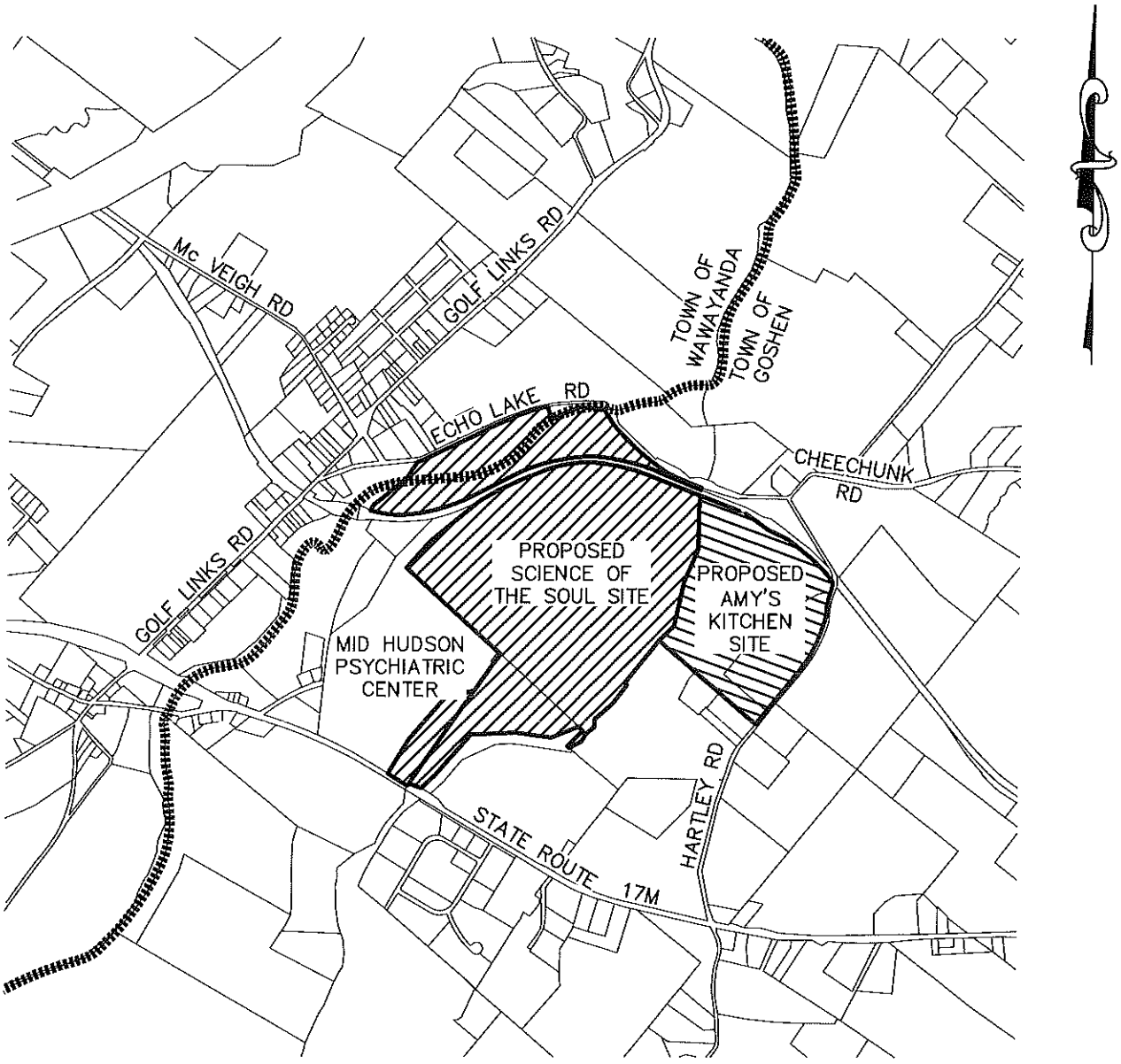
SITE LOCATION MAP
SOILS REPORT FOR PROJECT



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LANC & TULLY
ENGINEERING AND SURVEYING, P.C.

P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

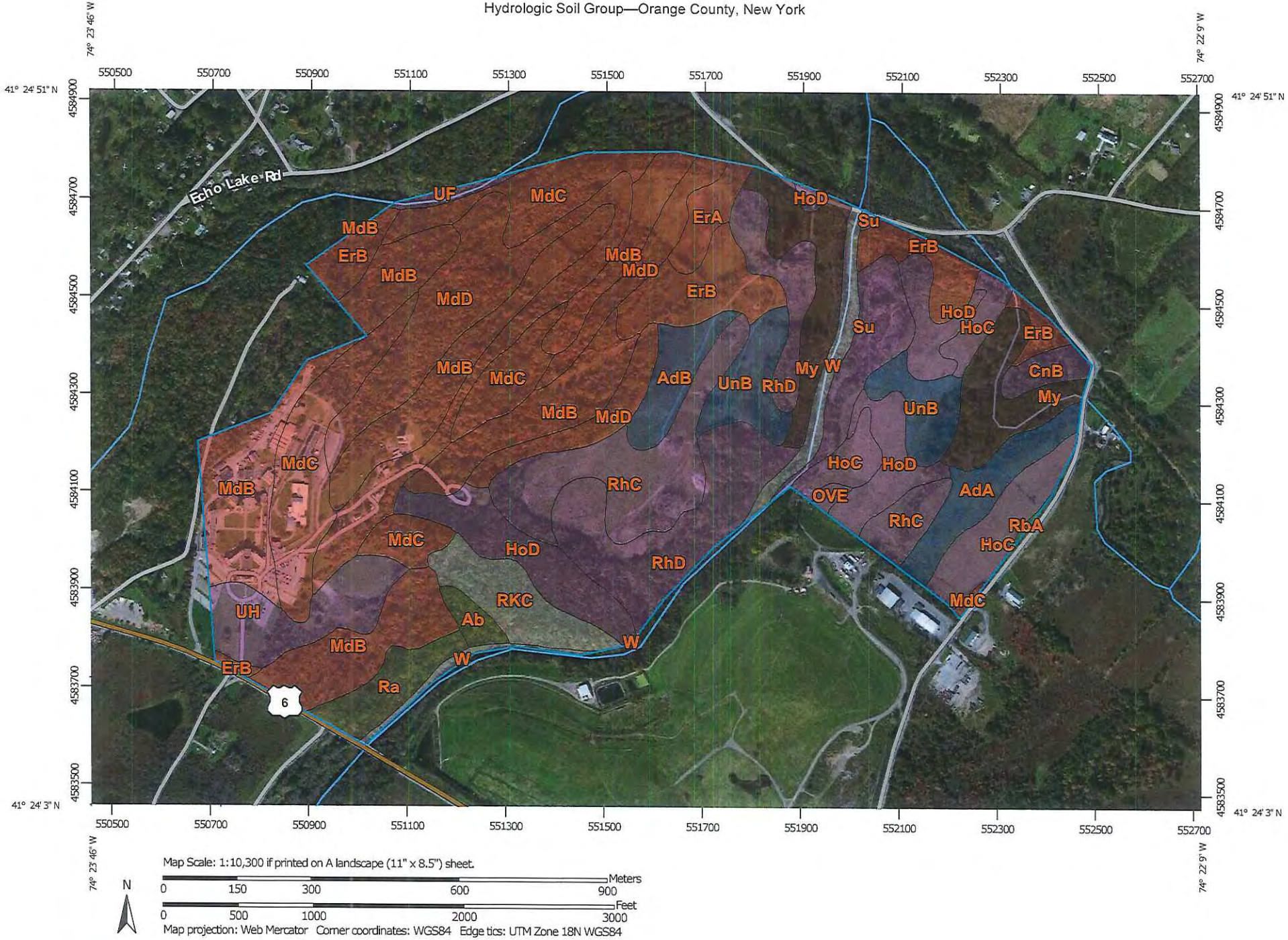
SITE LOCATION MAP

SCIENCE OF THE SOUL/AMY'S KITCHEN

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By: ESR	Checked By:	Scale: 1" = 2,000'	Tax Map No.: 12-1-23.2, 24, & 101 1-1-40, 16-1-9.3, 12-1-1.222, 19.2	Drawing No.: C3D F - 13 - 0070 - 01

Date: SEPTEMBER 21, 2015
Revisions:
CAD File: 130070-DRAINAGE
Layout: LOCATION
Sheet No.: 1 OF 5


74° 23' 46" W
74° 22' 9" W
41° 24' 51" N
41° 24' 3" N
550500
550700
550900
551100
551300
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551700
551900
552100
552300
552500
552700
4584900
4584700
4584500
4584300
4584100
4583900
4583700
4583500
Echo Lake Rd
UF
MdC
HoD
ErA
Su
MdB
ErB
MdD
HoC
CnB
My
W
AdB
UnB
RhD
RhC
OVE
AdA
RbA
UH
RKC
Ab
Ra
6
Map Scale: 1:10,300 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 150 300 600 900
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County, New York
Survey Area Data: Version 15, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2011—Oct 10, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Orange County, New York (NY071)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ab	Alden silt loam	C/D	2.1	0.6%
AdA	Allard silt loam, 0 to 3 percent slopes	B	8.0	2.3%
AdB	Allard silt loam, 3 to 8 percent slopes	B	6.2	1.8%
CnB	Chenango gravelly silt loam, 3 to 8 percent slopes	A	2.9	0.8%
ErA	Erie gravelly silt loam, 0 to 3 percent slopes	D	4.0	1.2%
ErB	Erie gravelly silt loam, 3 to 8 percent slopes	D	20.3	5.9%
HoC	Hoosic gravelly sandy loam, 8 to 15 percent slopes	A	14.5	4.2%
HoD	Hoosic gravelly sandy loam, 15 to 25 percent slopes	A	22.4	6.5%
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	D	62.0	18.1%
MdC	Mardin gravelly silt loam, 8 to 15 percent slopes	D	33.5	9.8%
MdD	Mardin gravelly silt loam, 15 to 25 percent slopes	D	41.7	12.1%
My	Middlebury silt loam	B/D	20.3	5.9%
OVE	Otisville and Hoosic soils, steep	A	0.7	0.2%
Ra	Raynham silt loam	C/D	6.2	1.8%
RbA	Rhinebeck silt loam, 0 to 3 percent slopes	C/D	0.2	0.1%
RhC	Riverhead sandy loam, 8 to 15 percent slopes	A	22.5	6.6%
RhD	Riverhead sandy loam, 15 to 25 percent slopes	A	26.1	7.6%
RKC	Rock outcrop-Arnot complex, sloping		8.9	2.6%
Su	Suncook sandy loam	A	8.8	2.6%
UF	Udifluvents-Fluvaquents complex, frequently flooded	A	1.3	0.4%
UH	Udorthents, smoothed	A	11.3	3.3%

Hydrologic Soil Group— Summary by Map Unit — Orange County, New York (NY071)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
UnB	Unadilla silt loam, 0 to 8 percent slopes	B	12.7	3.7%
W	Water		6.6	1.9%
Totals for Area of Interest			**343.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

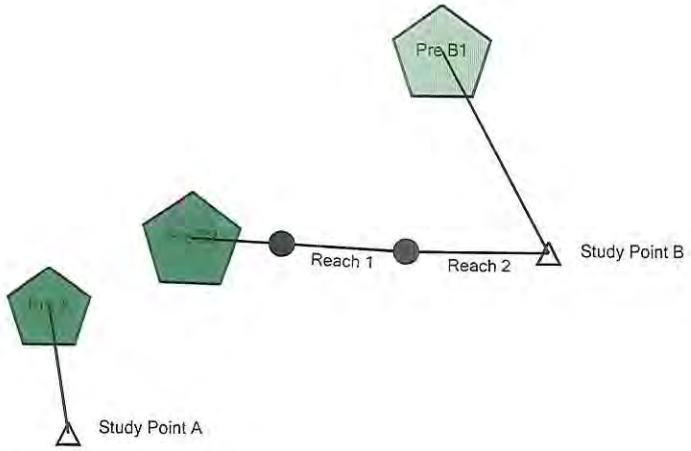
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

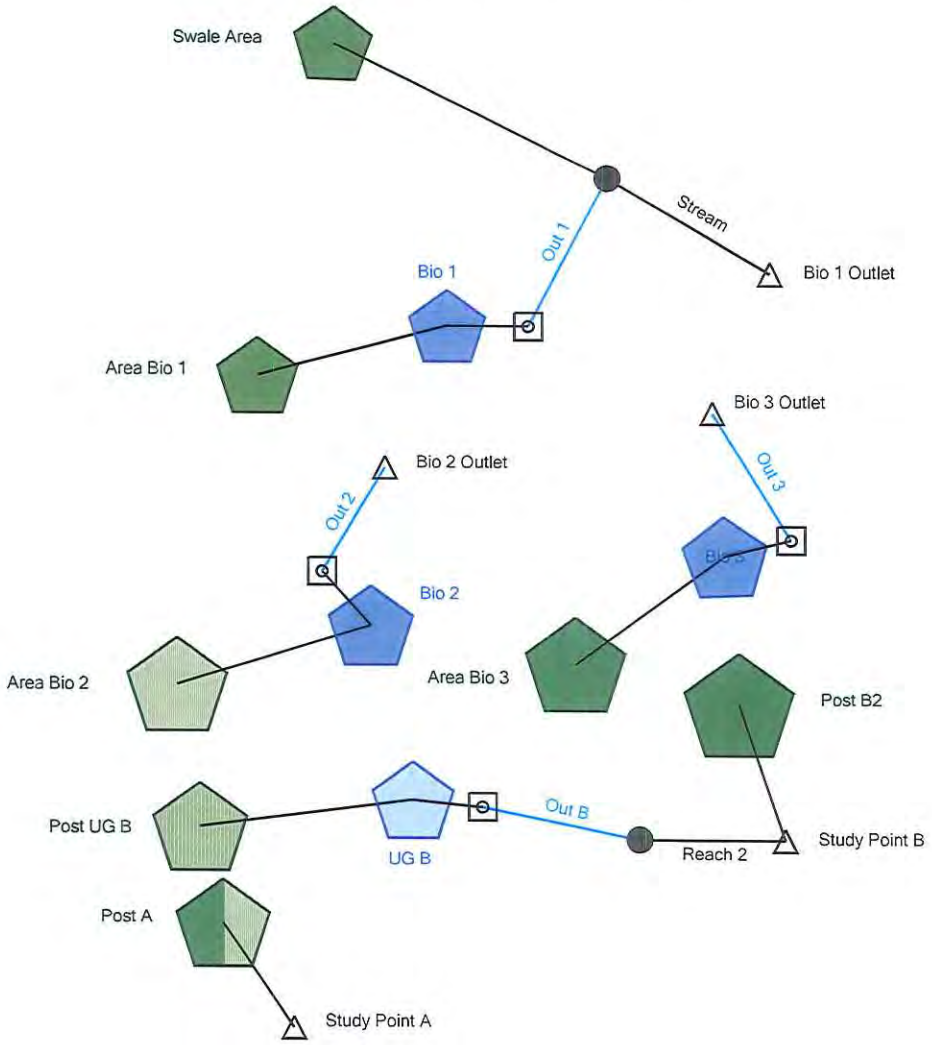
APPENDIX B

STORMWATER SYSTEM WATERSHED MODEL

Scenario: Pre-Dev 1-Year



Scenario: Post-Dev 1-Year



Project Summary	
Title	Science of the Soul/Amy's Kitchen
Engineer	Eric Rogge
Company	Lanc & Tully
Date	9/10/2015

Notes	Pre/Post-Development Comparison

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Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
Area Bio 1	Post-Dev 1-Year	1	4.980	12.250	44.03
Area Bio 1	Post-Dev 10-Year	10	13.000	12.250	118.07
Area Bio 1	Post-Dev 100-Year	100	28.704	12.250	255.85
Pre A	Pre-Dev 1-Year	1	0.000	0.000	0.00
Pre A	Pre-Dev 10-Year	10	0.041	14.750	0.07
Pre A	Pre-Dev 100-Year	100	0.421	12.250	3.06
Pre B2	Pre-Dev 1-Year	1	0.014	21.450	0.02
Pre B2	Pre-Dev 10-Year	10	0.480	12.450	2.32
Pre B2	Pre-Dev 100-Year	100	2.320	12.250	19.27
Post A	Post-Dev 1-Year	1	0.000	0.000	0.00
Post A	Post-Dev 10-Year	10	0.028	14.750	0.05
Post A	Post-Dev 100-Year	100	0.287	12.250	2.09
Area Bio 2	Post-Dev 1-Year	1	1.239	12.150	13.54
Area Bio 2	Post-Dev 10-Year	10	2.793	12.150	29.87
Area Bio 2	Post-Dev 100-Year	100	5.646	12.150	58.20
Area Bio 3	Post-Dev 1-Year	1	0.887	12.200	8.71
Area Bio 3	Post-Dev 10-Year	10	2.422	12.200	24.60
Area Bio 3	Post-Dev 100-Year	100	5.491	12.200	54.76
Post B2	Post-Dev 1-Year	1	0.457	12.600	1.81
Post B2	Post-Dev 10-Year	10	2.294	12.450	15.60
Post B2	Post-Dev 100-Year	100	7.053	12.400	53.10
Post UG B	Post-Dev 1-Year	1	0.033	12.450	0.12
Post UG B	Post-Dev 10-Year	10	0.215	12.150	2.05
Post UG B	Post-Dev 100-Year	100	0.727	12.150	8.16
Pre B1	Pre-Dev 1-Year	1	0.457	12.600	1.81
Pre B1	Pre-Dev 10-Year	10	2.294	12.450	15.60
Pre B1	Pre-Dev 100-Year	100	7.053	12.400	53.10
Swale Area	Post-Dev 1-Year	1	2.018	12.250	17.70
Swale Area	Post-Dev 10-Year	10	5.389	12.250	48.98
Swale Area	Post-Dev 100-Year	100	12.057	12.250	107.94

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
Bio 1 Outlet	Post-Dev 1-Year	1	5.469	12.650	30.01
Bio 1 Outlet	Post-Dev 10-Year	10	16.820	12.400	145.21
Bio 1 Outlet	Post-Dev 100-Year	100	39.132	12.350	328.80
Study Point A	Post-Dev 1-Year	1	0.000	0.000	0.00
Study Point A	Pre-Dev 1-Year	1	0.000	0.000	0.00
Study Point A	Post-Dev 10-Year	10	0.028	14.750	0.05
Study Point A	Pre-Dev 10-Year	10	0.041	14.750	0.07
Study Point A	Post-Dev 100-Year	100	0.287	12.250	2.09
Study Point A	Pre-Dev 100-Year	100	0.421	12.250	3.06
Study Point B	Post-Dev 1-Year	1	0.457	12.600	1.81
Study Point B	Pre-Dev 1-Year	1	0.464	12.600	1.81
Study Point B	Post-Dev 10-Year	10	2.365	12.450	15.63
Study Point B	Pre-Dev 10-Year	10	2.743	12.450	15.71
Study Point B	Post-Dev 100-Year	100	7.559	12.400	53.89
Study Point B	Pre-Dev 100-Year	100	9.309	12.450	65.21
Bio 2 Outlet	Post-Dev 1-Year	1	0.000	0.000	0.00

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
Bio 2 Outlet	Post-Dev 10-Year	10	1.108	12.950	3.90
Bio 2 Outlet	Post-Dev 100-Year	100	3.956	12.250	46.21
Bio 3 Outlet	Post-Dev 1-Year	1	0.609	12.650	3.27
Bio 3 Outlet	Post-Dev 10-Year	10	2.139	12.350	19.42
Bio 3 Outlet	Post-Dev 100-Year	100	5.201	12.250	47.94
J-5	Pre-Dev 1-Year	1	0.014	21.450	0.02
J-5	Pre-Dev 10-Year	10	0.480	12.450	2.32
J-5	Pre-Dev 100-Year	100	2.320	12.250	19.27
J-7	Post-Dev 1-Year	1	0.000	0.000	0.00
J-7	Pre-Dev 1-Year	1	0.012	22.300	0.02
J-7	Post-Dev 10-Year	10	0.072	12.600	0.48
J-7	Pre-Dev 10-Year	10	0.473	12.600	2.06
J-7	Post-Dev 100-Year	100	0.511	12.500	2.67
J-7	Pre-Dev 100-Year	100	2.306	12.350	18.77
J-8	Post-Dev 1-Year	1	5.499	12.600	30.62
J-8	Post-Dev 10-Year	10	16.869	12.350	147.07
J-8	Post-Dev 100-Year	100	39.206	12.300	330.58

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Bio 1 (IN)	Post-Dev 1-Year	1	4.980	12.250	44.03	(N/A)	(N/A)
Bio 1 (OUT)	Post-Dev 1-Year	1	3.481	12.650	21.04	376.33	1.856
Bio 1 (IN)	Post-Dev 10-Year	10	13.000	12.250	118.07	(N/A)	(N/A)
Bio 1 (OUT)	Post-Dev 10-Year	10	11.481	12.400	102.51	377.09	2.834
Bio 1 (IN)	Post-Dev 100-Year	100	28.704	12.250	255.85	(N/A)	(N/A)
Bio 1 (OUT)	Post-Dev 100-Year	100	27.148	12.350	230.62	377.88	4.054
Bio 2 (IN)	Post-Dev 1-Year	1	1.239	12.150	13.54	(N/A)	(N/A)
Bio 2 (OUT)	Post-Dev 1-Year	1	0.000	0.000	0.00	373.61	1.237
Bio 2 (IN)	Post-Dev 10-Year	10	2.793	12.150	29.87	(N/A)	(N/A)
Bio 2 (OUT)	Post-Dev 10-Year	10	1.108	12.950	3.90	374.34	1.746
Bio 2 (IN)	Post-Dev 100-Year	100	5.646	12.150	58.20	(N/A)	(N/A)
Bio 2 (OUT)	Post-Dev 100-Year	100	3.956	12.250	46.21	374.93	2.196
Bio 3 (IN)	Post-Dev 1-Year	1	0.887	12.200	8.71	(N/A)	(N/A)
Bio 3 (OUT)	Post-Dev 1-Year	1	0.609	12.650	3.27	366.14	0.337

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Bio 3 (IN)	Post-Dev 10-Year	10	2.422	12.200	24.60	(N/A)	(N/A)
Bio 3 (OUT)	Post-Dev 10-Year	10	2.139	12.350	19.42	366.68	0.585
Bio 3 (IN)	Post-Dev 100-Year	100	5.491	12.200	54.76	(N/A)	(N/A)
Bio 3 (OUT)	Post-Dev 100-Year	100	5.201	12.250	47.94	367.21	0.860
UG B (IN)	Post-Dev 1-Year	1	0.033	12.450	0.12	(N/A)	(N/A)
UG B (OUT)	Post-Dev 1-Year	1	0.000	0.000	0.00	370.64	0.005
UG B (IN)	Post-Dev 10-Year	10	0.215	12.150	2.05	(N/A)	(N/A)
UG B (OUT)	Post-Dev 10-Year	10	0.072	12.600	0.48	371.42	0.054
UG B (IN)	Post-Dev 100-Year	100	0.727	12.150	8.16	(N/A)	(N/A)
UG B (OUT)	Post-Dev 100-Year	100	0.511	12.500	2.67	373.87	0.215

Subsection: Time-Depth Curve
Label: Orange County

Return Event: 100 years
Storm Event: 100-Year

Time-Depth Curve: 100-Year	
Label	100-Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.02	0.02	0.03
0.500	0.04	0.05	0.06	0.07	0.07
1.000	0.08	0.09	0.10	0.11	0.12
1.500	0.12	0.13	0.14	0.15	0.16
2.000	0.17	0.17	0.18	0.19	0.20
2.500	0.21	0.22	0.23	0.24	0.25
3.000	0.25	0.26	0.27	0.28	0.29
3.500	0.30	0.31	0.32	0.33	0.35
4.000	0.36	0.37	0.38	0.39	0.40
4.500	0.41	0.42	0.43	0.45	0.46
5.000	0.47	0.48	0.49	0.51	0.52
5.500	0.53	0.54	0.56	0.57	0.58
6.000	0.60	0.61	0.62	0.64	0.65
6.500	0.67	0.68	0.70	0.72	0.73
7.000	0.75	0.77	0.78	0.80	0.82
7.500	0.84	0.86	0.88	0.90	0.92
8.000	0.94	0.97	0.99	1.01	1.04
8.500	1.06	1.09	1.12	1.15	1.18
9.000	1.21	1.24	1.27	1.30	1.34
9.500	1.37	1.41	1.45	1.49	1.52
10.000	1.56	1.61	1.65	1.70	1.74
10.500	1.79	1.84	1.90	1.95	2.01
11.000	2.07	2.13	2.21	2.29	2.37
11.500	2.47	2.60	2.81	3.09	3.44
12.000	4.14	4.84	5.19	5.47	5.68
12.500	5.81	5.91	5.99	6.07	6.15
13.000	6.21	6.27	6.33	6.38	6.44
13.500	6.49	6.54	6.58	6.63	6.67
14.000	6.72	6.76	6.79	6.83	6.87
14.500	6.91	6.94	6.98	7.01	7.04
15.000	7.07	7.10	7.13	7.16	7.19
15.500	7.22	7.24	7.27	7.29	7.31
16.000	7.34	7.36	7.38	7.40	7.42
16.500	7.44	7.46	7.48	7.50	7.51
17.000	7.53	7.55	7.56	7.58	7.60
17.500	7.61	7.63	7.64	7.66	7.67
18.000	7.68	7.70	7.71	7.72	7.74
18.500	7.75	7.76	7.77	7.79	7.80
19.000	7.81	7.82	7.83	7.85	7.86
19.500	7.87	7.88	7.89	7.90	7.91
20.000	7.92	7.93	7.95	7.96	7.97
20.500	7.98	7.99	8.00	8.01	8.02

Subsection: Time-Depth Curve
Label: Orange County

Return Event: 100 years
Storm Event: 100-Year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
21.000	8.03	8.04	8.05	8.06	8.07
21.500	8.07	8.08	8.09	8.10	8.11
22.000	8.12	8.13	8.14	8.15	8.16
22.500	8.16	8.17	8.18	8.19	8.20
23.000	8.20	8.21	8.22	8.23	8.24
23.500	8.24	8.25	8.26	8.27	8.27
24.000	8.28	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 10-Year	
Label	10-Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.00	0.01	0.01	0.02
0.500	0.02	0.03	0.03	0.04	0.04
1.000	0.05	0.05	0.06	0.06	0.07
1.500	0.07	0.08	0.08	0.08	0.09
2.000	0.09	0.10	0.10	0.11	0.11
2.500	0.12	0.12	0.13	0.13	0.14
3.000	0.14	0.15	0.16	0.16	0.17
3.500	0.17	0.18	0.18	0.19	0.20
4.000	0.20	0.21	0.21	0.22	0.23
4.500	0.23	0.24	0.25	0.25	0.26
5.000	0.27	0.27	0.28	0.29	0.29
5.500	0.30	0.31	0.32	0.32	0.33
6.000	0.34	0.35	0.35	0.36	0.37
6.500	0.38	0.39	0.40	0.41	0.42
7.000	0.43	0.44	0.45	0.46	0.47
7.500	0.48	0.49	0.50	0.51	0.52
8.000	0.54	0.55	0.56	0.57	0.59
8.500	0.60	0.62	0.63	0.65	0.67
9.000	0.69	0.70	0.72	0.74	0.76
9.500	0.78	0.80	0.82	0.84	0.87
10.000	0.89	0.91	0.94	0.96	0.99
10.500	1.02	1.05	1.08	1.11	1.14
11.000	1.17	1.21	1.25	1.30	1.35
11.500	1.40	1.48	1.60	1.75	1.96
12.000	2.35	2.74	2.95	3.10	3.22
12.500	3.30	3.35	3.40	3.45	3.49
13.000	3.52	3.56	3.59	3.62	3.65
13.500	3.68	3.71	3.74	3.76	3.79
14.000	3.81	3.83	3.86	3.88	3.90
14.500	3.92	3.94	3.96	3.98	4.00
15.000	4.01	4.03	4.05	4.07	4.08
15.500	4.10	4.11	4.13	4.14	4.15
16.000	4.16	4.18	4.19	4.20	4.21
16.500	4.22	4.23	4.24	4.25	4.26
17.000	4.27	4.28	4.29	4.30	4.31
17.500	4.32	4.33	4.34	4.35	4.35
18.000	4.36	4.37	4.38	4.38	4.39
18.500	4.40	4.41	4.41	4.42	4.43
19.000	4.43	4.44	4.45	4.45	4.46
19.500	4.47	4.47	4.48	4.49	4.49
20.000	4.50	4.50	4.51	4.52	4.52
20.500	4.53	4.53	4.54	4.55	4.55

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
21.000	4.56	4.56	4.57	4.57	4.58
21.500	4.58	4.59	4.59	4.60	4.60
22.000	4.61	4.61	4.62	4.62	4.63
22.500	4.63	4.64	4.64	4.65	4.65
23.000	4.66	4.66	4.67	4.67	4.68
23.500	4.68	4.68	4.69	4.69	4.70
24.000	4.70	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 1-Year	
Label	1-Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.00	0.01	0.01	0.01
0.500	0.01	0.02	0.02	0.02	0.02
1.000	0.03	0.03	0.03	0.03	0.04
1.500	0.04	0.04	0.04	0.05	0.05
2.000	0.05	0.06	0.06	0.06	0.06
2.500	0.07	0.07	0.07	0.08	0.08
3.000	0.08	0.08	0.09	0.09	0.09
3.500	0.10	0.10	0.10	0.11	0.11
4.000	0.11	0.12	0.12	0.12	0.13
4.500	0.13	0.13	0.14	0.14	0.15
5.000	0.15	0.15	0.16	0.16	0.17
5.500	0.17	0.17	0.18	0.18	0.19
6.000	0.19	0.19	0.20	0.20	0.21
6.500	0.21	0.22	0.22	0.23	0.23
7.000	0.24	0.24	0.25	0.26	0.26
7.500	0.27	0.27	0.28	0.29	0.29
8.000	0.30	0.31	0.32	0.32	0.33
8.500	0.34	0.35	0.36	0.37	0.38
9.000	0.38	0.39	0.41	0.42	0.43
9.500	0.44	0.45	0.46	0.47	0.49
10.000	0.50	0.51	0.53	0.54	0.56
10.500	0.57	0.59	0.61	0.62	0.64
11.000	0.66	0.68	0.70	0.73	0.76
11.500	0.79	0.83	0.90	0.99	1.10
12.000	1.32	1.54	1.65	1.74	1.81
12.500	1.85	1.88	1.91	1.94	1.96
13.000	1.98	2.00	2.02	2.03	2.05
13.500	2.07	2.08	2.10	2.11	2.13
14.000	2.14	2.15	2.17	2.18	2.19
14.500	2.20	2.21	2.22	2.23	2.25
15.000	2.26	2.26	2.27	2.28	2.29
15.500	2.30	2.31	2.32	2.32	2.33
16.000	2.34	2.35	2.35	2.36	2.37
16.500	2.37	2.38	2.38	2.39	2.40
17.000	2.40	2.41	2.41	2.42	2.42
17.500	2.43	2.43	2.44	2.44	2.45
18.000	2.45	2.45	2.46	2.46	2.47
18.500	2.47	2.47	2.48	2.48	2.49
19.000	2.49	2.49	2.50	2.50	2.51
19.500	2.51	2.51	2.52	2.52	2.52
20.000	2.53	2.53	2.53	2.54	2.54
20.500	2.54	2.55	2.55	2.55	2.56

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
21.000	2.56	2.56	2.57	2.57	2.57
21.500	2.57	2.58	2.58	2.58	2.59
22.000	2.59	2.59	2.59	2.60	2.60
22.500	2.60	2.61	2.61	2.61	2.61
23.000	2.62	2.62	2.62	2.62	2.63
23.500	2.63	2.63	2.63	2.64	2.64
24.000	2.64	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: Area Bio 1

Return Event: 1 years
Storm Event: 1-Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.255 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	231.00 ft
Is Paved?	False
Slope	0.035 ft/ft
Average Velocity	3.02 ft/s
Segment Time of Concentration	0.021 hours

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	36.00 ft
Is Paved?	True
Slope	0.035 ft/ft
Average Velocity	3.80 ft/s
Segment Time of Concentration	0.003 hours

Segment #4: TR-55 Shallow Concentrated Flow	
Hydraulic Length	68.00 ft
Is Paved?	False
Slope	0.024 ft/ft
Average Velocity	2.50 ft/s
Segment Time of Concentration	0.008 hours

Segment #5: TR-55 Shallow Concentrated Flow	
Hydraulic Length	41.00 ft
Is Paved?	True
Slope	0.037 ft/ft
Average Velocity	3.91 ft/s
Segment Time of Concentration	0.003 hours

Segment #6: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	1,015.00 ft
Manning's n	0.012
Slope	0.020 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	7.96 ft/s

Subsection: Time of Concentration Calculations
Label: Area Bio 1

Return Event: 1 years
Storm Event: 1-Year

Segment #6: TR-55 Channel Flow	
Segment Time of Concentration	0.035 hours

Segment #7: TR-55 Channel Flow	
Flow Area	18.0 ft²
Hydraulic Length	500.00 ft
Manning's n	0.030
Slope	0.010 ft/ft
Wetted Perimeter	15.60 ft
Average Velocity	5.46 ft/s
Segment Time of Concentration	0.025 hours

Segment #8: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	190.00 ft
Manning's n	0.012
Slope	0.080 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	15.92 ft/s
Segment Time of Concentration	0.003 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.354 hours

Subsection: Time of Concentration Calculations
Label: Area Bio 1

Return Event: 1 years
Storm Event: 1-Year

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =
Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =
(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: Area Bio 2

Return Event: 1 years
Storm Event: 1-Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	75.00 ft
Manning's n	0.240
Slope	0.041 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.15 ft/s
Segment Time of Concentration	0.142 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	42.00 ft
Is Paved?	True
Slope	0.032 ft/ft
Average Velocity	3.64 ft/s
Segment Time of Concentration	0.003 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	950.00 ft
Manning's n	0.012
Slope	0.010 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	5.72 ft/s
Segment Time of Concentration	0.046 hours

Segment #4: TR-55 Sheet Flow	
Hydraulic Length	25.00 ft
Manning's n	0.013
Slope	0.032 ft/ft
2 Year 24 Hour Depth	3.50 in
Average Velocity	1.15 ft/s
Segment Time of Concentration	0.006 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.198 hours

Subsection: Time of Concentration Calculations
Label: Area Bio 2

Return Event: 1 years
Storm Event: 1-Year

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Tc =
Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =
(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: Area Bio 3

Return Event: 1 years
Storm Event: 1-Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.030 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.14 ft/s
Segment Time of Concentration	0.203 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	107.00 ft
Is Paved?	False
Slope	0.043 ft/ft
Average Velocity	3.35 ft/s
Segment Time of Concentration	0.009 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	850.00 ft
Manning's n	0.012
Slope	0.010 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	5.72 ft/s
Segment Time of Concentration	0.041 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.253 hours

==== SCS Channel Flow

R = Qa / Wp
Tc = V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Tc = Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600
V= Velocity, ft/sec
Where: Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Tc= Time of concentration, hours
n= Manning's n
Where: Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.050 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.17 ft/s
Segment Time of Concentration	0.166 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	377.00 ft
Is Paved?	False
Slope	0.019 ft/ft
Average Velocity	2.22 ft/s
Segment Time of Concentration	0.047 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.213 hours

Subsection: Time of Concentration Calculations
Label: Post A

Return Event: 1 years
Storm Event: 1-Year

==== SCS Channel Flow

Tc =

R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:

V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Subsection: Time of Concentration Calculations
Label: Post B2

Return Event: 1 years
Storm Event: 1-Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.011 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.09 ft/s
Segment Time of Concentration	0.304 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	106.00 ft
Is Paved?	False
Slope	0.056 ft/ft
Average Velocity	3.82 ft/s
Segment Time of Concentration	0.008 hours

Segment #3: TR-55 Channel Flow	
Flow Area	33.2 ft²
Hydraulic Length	1,457.00 ft
Manning's n	0.030
Slope	0.001 ft/ft
Wetted Perimeter	28.40 ft
Average Velocity	1.74 ft/s
Segment Time of Concentration	0.232 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.543 hours

Subsection: Time of Concentration Calculations
Label: Post B2

Return Event: 1 years
Storm Event: 1-Year

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Tc =
Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =
(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: Post UG B

Return Event: 1 years
Storm Event: 1-Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.078 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.20 ft/s
Segment Time of Concentration	0.139 hours

Segment #2: TR-55 Channel Flow	
Flow Area	9.8 ft²
Hydraulic Length	472.00 ft
Manning's n	0.030
Slope	0.022 ft/ft
Wetted Perimeter	11.49 ft
Average Velocity	6.60 ft/s
Segment Time of Concentration	0.020 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	153.00 ft
Manning's n	0.012
Slope	0.010 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	5.72 ft/s
Segment Time of Concentration	0.007 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.166 hours

Subsection: Time of Concentration Calculations
Label: Post UG B

Return Event: 1 years
Storm Event: 1-Year

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: Pre A

Return Event: 1 years
Storm Event: 1-Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.050 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.17 ft/s
Segment Time of Concentration	0.166 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	377.00 ft
Is Paved?	False
Slope	0.019 ft/ft
Average Velocity	2.22 ft/s
Segment Time of Concentration	0.047 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.213 hours

Subsection: Time of Concentration Calculations
Label: Pre A

Return Event: 1 years
Storm Event: 1-Year

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =
Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Subsection: Time of Concentration Calculations
Label: Pre B1

Return Event: 1 years
Storm Event: 1-Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.011 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.09 ft/s
Segment Time of Concentration	0.304 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	106.00 ft
Is Paved?	False
Slope	0.056 ft/ft
Average Velocity	3.82 ft/s
Segment Time of Concentration	0.008 hours

Segment #3: TR-55 Channel Flow	
Flow Area	33.2 ft²
Hydraulic Length	1,457.00 ft
Manning's n	0.030
Slope	0.001 ft/ft
Wetted Perimeter	28.40 ft
Average Velocity	1.74 ft/s
Segment Time of Concentration	0.232 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.543 hours

Subsection: Time of Concentration Calculations
Label: Pre B1

Return Event: 1 years
Storm Event: 1-Year

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Tc =
Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =
(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: Pre B2

Return Event: 1 years
Storm Event: 1-Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.255 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	525.00 ft
Is Paved?	False
Slope	0.017 ft/ft
Average Velocity	2.10 ft/s
Segment Time of Concentration	0.069 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.324 hours

==== SCS Channel Flow

Tc =

R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:

V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.400
Slope	0.037 ft/ft
2 Year 24 Hour Depth	3.17 in
Average Velocity	0.10 ft/s
Segment Time of Concentration	0.281 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	375.00 ft
Is Paved?	False
Slope	0.175 ft/ft
Average Velocity	6.75 ft/s
Segment Time of Concentration	0.015 hours

Segment #3: TR-55 Channel Flow	
Flow Area	18.0 ft²
Hydraulic Length	1,800.00 ft
Manning's n	0.030
Slope	0.029 ft/ft
Wetted Perimeter	15.60 ft
Average Velocity	9.30 ft/s
Segment Time of Concentration	0.054 hours

Segment #4: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	200.00 ft
Manning's n	0.012
Slope	0.029 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	9.59 ft/s
Segment Time of Concentration	0.006 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.356 hours

Subsection: Time of Concentration Calculations
Label: Swale Area

Return Event: 1 years
Storm Event: 1-Year

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =
Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Runoff CN-Area
Label: Area Bio 1

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	25.218	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	17.313	0.0	0.0	80.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	4.277	0.0	0.0	39.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	10.693	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN -->	(N/A)	57.502	(N/A)	(N/A)	81.311

Subsection: Runoff CN-Area
Label: Area Bio 2

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	8.068	0.0	0.0	98.000
Impervious Areas - Gravel (w/ right-of-way) - Soil A	76.000	0.016	0.0	0.0	76.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	1.529	0.0	0.0	39.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.306	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	9.919	(N/A)	(N/A)	87.727

Subsection: Runoff CN-Area
Label: Area Bio 3

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	7.207	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	2.828	0.0	0.0	39.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	1.414	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	11.449	(N/A)	(N/A)	78.855

Subsection: Runoff CN-Area
Label: Post A

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Existing impevious	98.000	0.311	0.0	0.0	98.000
Meadow - cont. grass (non grazed) - ---- - Soil A	30.000	2.578	0.0	0.0	30.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.007	0.0	0.0	39.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	0.038	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2.935	(N/A)	(N/A)	38.107

Subsection: Runoff CN-Area
Label: Post B2

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	8.262	0.0	0.0	77.000
Woods - good - Soil A	30.000	2.989	0.0	0.0	30.000
Woods - good - Soil B	55.000	1.770	0.0	0.0	55.000
Meadow - cont. grass (non grazed) - ---- - Soil B	58.000	3.129	0.0	0.0	58.000
Existing impervious	98.000	0.161	0.0	0.0	98.000
Brush - brush, weed, grass mix - good - Soil A	30.000	0.893	0.0	0.0	30.000
Brush - brush, weed, grass mix - good - Soil B	48.000	0.496	0.0	0.0	48.000
Brush - brush, weed, grass mix - good - Soil D	73.000	3.538	0.0	0.0	73.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	0.187	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.608	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	0.118	0.0	0.0	80.000
Meadow - cont. grass (non grazed) - ---- - Soil A	30.000	1.132	0.0	0.0	30.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	23.284	(N/A)	(N/A)	61.338

Subsection: Runoff CN-Area
Label: Post UG B

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	0.354	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.736	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	0.123	0.0	0.0	80.000
Meadow - cont. grass (non grazed) - ----- - Soil A	30.000	0.272	0.0	0.0	30.000
Impervious Areas - Gravel (w/ right-of-way) - Soil A	76.000	0.243	0.0	0.0	76.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	1.001	0.0	0.0	39.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2.729	(N/A)	(N/A)	56.826

Subsection: Runoff CN-Area
Label: Pre A

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Meadow - cont. grass (non grazed) - ----- - Soil A	30.000	3.771	0.0	0.0	30.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	0.529	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	4.300	(N/A)	(N/A)	38.361

Subsection: Runoff CN-Area
Label: Pre B1

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	8.262	0.0	0.0	77.000
Woods - good - Soil A	30.000	3.013	0.0	0.0	30.000
Woods - good - Soil B	55.000	1.770	0.0	0.0	55.000
Meadow - cont. grass (non grazed) - ----- - Soil B	58.000	3.425	0.0	0.0	58.000
Existing impervious	98.000	0.161	0.0	0.0	98.000
Brush - brush, weed, grass mix - good - Soil A	30.000	0.893	0.0	0.0	30.000
Brush - brush, weed, grass mix - good - Soil B	48.000	0.496	0.0	0.0	48.000
Brush - brush, weed, grass mix - good - Soil D	73.000	3.835	0.0	0.0	73.000
Meadow - cont. grass (non grazed) - ----- - Soil A	30.000	1.429	0.0	0.0	30.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	23.284	(N/A)	(N/A)	60.632

Subsection: Runoff CN-Area
Label: Pre B2

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Meadow - cont. grass (non grazed) - ----- - Soil A	30.000	7.724	0.0	0.0	30.000
Meadow - cont. grass (non grazed) - ----- - Soil B	58.000	3.483	0.0	0.0	58.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	1.499	0.0	0.0	98.000
Brush - brush, weed, grass mix - good - Soil D	73.000	0.631	0.0	0.0	73.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	13.336	(N/A)	(N/A)	46.989

Subsection: Runoff CN-Area
Label: Swale Area

Return Event: 1 years
Storm Event: 1-Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	0.903	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	10.490	0.0	0.0	80.000
Woods - grass combination - good - Soil D	79.000	13.245	0.0	0.0	79.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	24.638	(N/A)	(N/A)	80.122

Subsection: Unit Hydrograph Summary
Label: Area Bio 1

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.354 hours
Area (User Defined)	57.502 acres
Computational Time Increment	0.047 hours
Time to Peak (Computed)	12.255 hours
Flow (Peak, Computed)	44.24 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	44.03 ft³/s
Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	57.502 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.04 in
Runoff Volume (Pervious)	5.000 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	4.980 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.354 hours
Computational Time Increment	0.047 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	184.30 ft³/s
Unit peak time, Tp	0.236 hours
Unit receding limb, Tr	0.943 hours
Total unit time, Tb	1.178 hours

Subsection: Unit Hydrograph Summary
Label: Area Bio 1

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.354 hours
Area (User Defined)	57.502 acres
Computational Time Increment	0.047 hours
Time to Peak (Computed)	12.255 hours
Flow (Peak, Computed)	118.36 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	118.07 ft³/s
Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	57.502 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.72 in
Runoff Volume (Pervious)	13.043 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	13.000 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.354 hours
Computational Time Increment	0.047 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	184.30 ft³/s
Unit peak time, Tp	0.236 hours
Unit receding limb, Tr	0.943 hours
Total unit time, Tb	1.178 hours

Subsection: Unit Hydrograph Summary
Label: Area Bio 1

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.354 hours
Area (User Defined)	57.502 acres
Computational Time Increment	0.047 hours
Time to Peak (Computed)	12.255 hours
Flow (Peak, Computed)	256.20 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	255.85 ft³/s
Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	57.502 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.01 in
Runoff Volume (Pervious)	28.784 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	28.704 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.354 hours
Computational Time Increment	0.047 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	184.30 ft³/s
Unit peak time, Tp	0.236 hours
Unit receding limb, Tr	0.943 hours
Total unit time, Tb	1.178 hours

Subsection: Unit Hydrograph Summary
Label: Area Bio 2

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.198 hours
Area (User Defined)	9.919 acres
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.158 hours
Flow (Peak, Computed)	13.59 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	13.54 ft³/s
Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	9.919 acres
Maximum Retention (Pervious)	1.36 in
Maximum Retention (Pervious, 20 percent)	0.27 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.50 in
Runoff Volume (Pervious)	1.242 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.239 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.198 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	56.82 ft³/s
Unit peak time, Tp	0.132 hours
Unit receding limb, Tr	0.527 hours
Total unit time, Tb	0.659 hours

Subsection: Unit Hydrograph Summary
Label: Area Bio 2

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.198 hours
Area (User Defined)	9.919 acres
Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.158 hours
Flow (Peak, Computed)	29.90 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	29.87 ft³/s
Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	9.919 acres
Maximum Retention (Pervious)	1.36 in
Maximum Retention (Pervious, 20 percent)	0.27 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.38 in
Runoff Volume (Pervious)	2.798 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.793 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.198 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	56.82 ft³/s
Unit peak time, Tp	0.132 hours
Unit receding limb, Tr	0.527 hours
Total unit time, Tb	0.659 hours

Subsection: Unit Hydrograph Summary
Label: Area Bio 2

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.198 hours
Area (User Defined)	9.919 acres

Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.132 hours
Flow (Peak, Computed)	58.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	58.20 ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	9.919 acres
Maximum Retention (Pervious)	1.36 in
Maximum Retention (Pervious, 20 percent)	0.27 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.84 in
Runoff Volume (Pervious)	5.656 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5.646 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.198 hours
Computational Time Increment	0.026 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	56.82 ft³/s
Unit peak time, Tp	0.132 hours
Unit receding limb, Tr	0.527 hours
Total unit time, Tb	0.659 hours

Subsection: Unit Hydrograph Summary
Label: Area Bio 3

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.253 hours
Area (User Defined)	11.449 acres

Computational Time Increment	0.034 hours
Time to Peak (Computed)	12.193 hours
Flow (Peak, Computed)	8.73 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	8.71 ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	11.449 acres
Maximum Retention (Pervious)	2.66 in
Maximum Retention (Pervious, 20 percent)	0.53 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.93 in
Runoff Volume (Pervious)	0.890 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.887 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.253 hours
Computational Time Increment	0.034 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	51.21 ft³/s
Unit peak time, Tp	0.169 hours
Unit receding limb, Tr	0.676 hours
Total unit time, Tb	0.844 hours

Subsection: Unit Hydrograph Summary
Label: Area Bio 3

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.253 hours
Area (User Defined)	11.449 acres

Computational Time Increment	0.034 hours
Time to Peak (Computed)	12.193 hours
Flow (Peak, Computed)	24.75 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	24.60 ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	11.449 acres
Maximum Retention (Pervious)	2.66 in
Maximum Retention (Pervious, 20 percent)	0.53 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.55 in
Runoff Volume (Pervious)	2.428 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.422 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.253 hours
Computational Time Increment	0.034 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	51.21 ft³/s
Unit peak time, Tp	0.169 hours
Unit receding limb, Tr	0.676 hours
Total unit time, Tb	0.844 hours

Subsection: Unit Hydrograph Summary
Label: Area Bio 3

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.253 hours
Area (User Defined)	11.449 acres

Computational Time Increment	0.034 hours
Time to Peak (Computed)	12.193 hours
Flow (Peak, Computed)	55.18 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	54.76 ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	11.449 acres
Maximum Retention (Pervious)	2.66 in
Maximum Retention (Pervious, 20 percent)	0.53 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.77 in
Runoff Volume (Pervious)	5.504 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5.491 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.253 hours
Computational Time Increment	0.034 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	51.21 ft³/s
Unit peak time, Tp	0.169 hours
Unit receding limb, Tr	0.676 hours
Total unit time, Tb	0.844 hours

Subsection: Unit Hydrograph Summary
Label: Post A

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.213 hours
Area (User Defined)	3.274 acres
Computational Time Increment	0.028 hours
Time to Peak (Computed)	0.000 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s
Drainage Area	
SCS CN (Composite)	38.000
Area (User Defined)	3.274 acres
Maximum Retention (Pervious)	16.32 in
Maximum Retention (Pervious, 20 percent)	3.26 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.00 in
Runoff Volume (Pervious)	0.000 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.000 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.213 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	15.63 ft³/s
Unit peak time, Tp	0.142 hours
Unit receding limb, Tr	0.567 hours
Total unit time, Tb	0.709 hours

Subsection: Unit Hydrograph Summary
Label: Post A

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.213 hours
Area (User Defined)	3.274 acres
Computational Time Increment	0.028 hours
Time to Peak (Computed)	14.777 hours
Flow (Peak, Computed)	0.05 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	14.750 hours
Flow (Peak Interpolated Output)	0.05 ft³/s
Drainage Area	
SCS CN (Composite)	38.000
Area (User Defined)	3.274 acres
Maximum Retention (Pervious)	16.32 in
Maximum Retention (Pervious, 20 percent)	3.26 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.12 in
Runoff Volume (Pervious)	0.028 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.028 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.213 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	15.63 ft³/s
Unit peak time, Tp	0.142 hours
Unit receding limb, Tr	0.567 hours
Total unit time, Tb	0.709 hours

Subsection: Unit Hydrograph Summary
Label: Post A

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.213 hours
Area (User Defined)	3.274 acres
Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.224 hours
Flow (Peak, Computed)	2.10 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	2.09 ft³/s
Drainage Area	
SCS CN (Composite)	38.000
Area (User Defined)	3.274 acres
Maximum Retention (Pervious)	16.32 in
Maximum Retention (Pervious, 20 percent)	3.26 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.18 in
Runoff Volume (Pervious)	0.289 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.287 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.213 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	15.63 ft³/s
Unit peak time, Tp	0.142 hours
Unit receding limb, Tr	0.567 hours
Total unit time, Tb	0.709 hours

Subsection: Unit Hydrograph Summary
Label: Post B2

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.543 hours
Area (User Defined)	23.284 acres
Computational Time Increment	0.072 hours
Time to Peak (Computed)	12.608 hours
Flow (Peak, Computed)	1.81 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.600 hours
Flow (Peak Interpolated Output)	1.81 ft³/s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	23.284 acres
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.24 in
Runoff Volume (Pervious)	0.464 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.457 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.543 hours
Computational Time Increment	0.072 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.55 ft³/s
Unit peak time, Tp	0.362 hours
Unit receding limb, Tr	1.449 hours
Total unit time, Tb	1.811 hours

Subsection: Unit Hydrograph Summary
Label: Post B2

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.543 hours
Area (User Defined)	23.284 acres
Computational Time Increment	0.072 hours
Time to Peak (Computed)	12.463 hours
Flow (Peak, Computed)	15.65 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.450 hours
Flow (Peak Interpolated Output)	15.60 ft³/s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	23.284 acres
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.19 in
Runoff Volume (Pervious)	2.314 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.294 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.543 hours
Computational Time Increment	0.072 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.55 ft³/s
Unit peak time, Tp	0.362 hours
Unit receding limb, Tr	1.449 hours
Total unit time, Tb	1.811 hours

Subsection: Unit Hydrograph Summary
Label: Post B2

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.543 hours
Area (User Defined)	23.284 acres
Computational Time Increment	0.072 hours
Time to Peak (Computed)	12.390 hours
Flow (Peak, Computed)	53.26 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.400 hours
Flow (Peak Interpolated Output)	53.10 ft³/s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	23.284 acres
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.66 in
Runoff Volume (Pervious)	7.101 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	7.053 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.543 hours
Computational Time Increment	0.072 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.55 ft³/s
Unit peak time, Tp	0.362 hours
Unit receding limb, Tr	1.449 hours
Total unit time, Tb	1.811 hours

Subsection: Unit Hydrograph Summary
Label: Post UG B

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	2.729 acres
Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.433 hours
Flow (Peak, Computed)	0.12 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.450 hours
Flow (Peak Interpolated Output)	0.12 ft³/s
Drainage Area	
SCS CN (Composite)	57.000
Area (User Defined)	2.729 acres
Maximum Retention (Pervious)	7.54 in
Maximum Retention (Pervious, 20 percent)	1.51 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.15 in
Runoff Volume (Pervious)	0.034 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.033 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.166 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	18.63 ft³/s
Unit peak time, Tp	0.111 hours
Unit receding limb, Tr	0.442 hours
Total unit time, Tb	0.553 hours

Subsection: Unit Hydrograph Summary
Label: Post UG B

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	2.729 acres
Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	2.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.05 ft³/s
Drainage Area	
SCS CN (Composite)	57.000
Area (User Defined)	2.729 acres
Maximum Retention (Pervious)	7.54 in
Maximum Retention (Pervious, 20 percent)	1.51 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.95 in
Runoff Volume (Pervious)	0.216 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.215 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.166 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	18.63 ft³/s
Unit peak time, Tp	0.111 hours
Unit receding limb, Tr	0.442 hours
Total unit time, Tb	0.553 hours

Subsection: Unit Hydrograph Summary
Label: Post UG B

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	2.729 acres
Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.146 hours
Flow (Peak, Computed)	8.19 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	8.16 ft³/s
Drainage Area	
SCS CN (Composite)	57.000
Area (User Defined)	2.729 acres
Maximum Retention (Pervious)	7.54 in
Maximum Retention (Pervious, 20 percent)	1.51 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.20 in
Runoff Volume (Pervious)	0.728 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.727 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.166 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	18.63 ft³/s
Unit peak time, Tp	0.111 hours
Unit receding limb, Tr	0.442 hours
Total unit time, Tb	0.553 hours

Subsection: Unit Hydrograph Summary
Label: Pre A

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.213 hours
Area (User Defined)	4.300 acres
Computational Time Increment	0.028 hours
Time to Peak (Computed)	0.000 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s
Drainage Area	
SCS CN (Composite)	38.000
Area (User Defined)	4.300 acres
Maximum Retention (Pervious)	16.32 in
Maximum Retention (Pervious, 20 percent)	3.26 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.00 in
Runoff Volume (Pervious)	0.000 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.000 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.213 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	22.90 ft³/s
Unit peak time, Tp	0.142 hours
Unit receding limb, Tr	0.567 hours
Total unit time, Tb	0.709 hours

Subsection: Unit Hydrograph Summary
Label: Pre A

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.213 hours
Area (User Defined)	4.300 acres
Computational Time Increment	0.028 hours
Time to Peak (Computed)	14.777 hours
Flow (Peak, Computed)	0.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	14.750 hours
Flow (Peak Interpolated Output)	0.07 ft³/s
Drainage Area	
SCS CN (Composite)	38.000
Area (User Defined)	4.300 acres
Maximum Retention (Pervious)	16.32 in
Maximum Retention (Pervious, 20 percent)	3.26 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.12 in
Runoff Volume (Pervious)	0.042 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.041 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.213 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	22.90 ft³/s
Unit peak time, Tp	0.142 hours
Unit receding limb, Tr	0.567 hours
Total unit time, Tb	0.709 hours

Subsection: Unit Hydrograph Summary
Label: Pre A

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.213 hours
Area (User Defined)	4.300 acres
Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.224 hours
Flow (Peak, Computed)	3.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	3.06 ft³/s
Drainage Area	
SCS CN (Composite)	38.000
Area (User Defined)	4.300 acres
Maximum Retention (Pervious)	16.32 in
Maximum Retention (Pervious, 20 percent)	3.26 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.18 in
Runoff Volume (Pervious)	0.423 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.421 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.213 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	22.90 ft³/s
Unit peak time, Tp	0.142 hours
Unit receding limb, Tr	0.567 hours
Total unit time, Tb	0.709 hours

Subsection: Unit Hydrograph Summary
Label: Pre B1

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.543 hours
Area (User Defined)	23.284 acres
Computational Time Increment	0.072 hours
Time to Peak (Computed)	12.608 hours
Flow (Peak, Computed)	1.81 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.600 hours
Flow (Peak Interpolated Output)	1.81 ft³/s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	23.284 acres
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.24 in
Runoff Volume (Pervious)	0.464 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.457 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.543 hours
Computational Time Increment	0.072 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.55 ft³/s
Unit peak time, Tp	0.362 hours
Unit receding limb, Tr	1.449 hours
Total unit time, Tb	1.811 hours

Subsection: Unit Hydrograph Summary
Label: Pre B1

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.543 hours
Area (User Defined)	23.284 acres
Computational Time Increment	0.072 hours
Time to Peak (Computed)	12.463 hours
Flow (Peak, Computed)	15.65 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.450 hours
Flow (Peak Interpolated Output)	15.60 ft³/s
Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	23.284 acres
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.19 in
Runoff Volume (Pervious)	2.314 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.294 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.543 hours
Computational Time Increment	0.072 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.55 ft³/s
Unit peak time, Tp	0.362 hours
Unit receding limb, Tr	1.449 hours
Total unit time, Tb	1.811 hours

Subsection: Unit Hydrograph Summary
Label: Pre B1

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.543 hours
Area (User Defined)	23.284 acres

Computational Time Increment	0.072 hours
Time to Peak (Computed)	12.390 hours
Flow (Peak, Computed)	53.26 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.400 hours
Flow (Peak Interpolated Output)	53.10 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	23.284 acres
Maximum Retention (Pervious)	6.39 in
Maximum Retention (Pervious, 20 percent)	1.28 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.66 in
Runoff Volume (Pervious)	7.101 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	7.053 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.543 hours
Computational Time Increment	0.072 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.55 ft³/s
Unit peak time, Tp	0.362 hours
Unit receding limb, Tr	1.449 hours
Total unit time, Tb	1.811 hours

Subsection: Unit Hydrograph Summary
Label: Pre B2

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.324 hours
Area (User Defined)	13.336 acres

Computational Time Increment	0.043 hours
Time to Peak (Computed)	21.449 hours
Flow (Peak, Computed)	0.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	21.450 hours
Flow (Peak Interpolated Output)	0.02 ft³/s

Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	13.336 acres
Maximum Retention (Pervious)	11.28 in
Maximum Retention (Pervious, 20 percent)	2.26 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.01 in
Runoff Volume (Pervious)	0.014 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.014 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.324 hours
Computational Time Increment	0.043 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	46.59 ft³/s
Unit peak time, Tp	0.216 hours
Unit receding limb, Tr	0.865 hours
Total unit time, Tb	1.081 hours

Subsection: Unit Hydrograph Summary
Label: Pre B2

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.324 hours
Area (User Defined)	13.336 acres
Computational Time Increment	0.043 hours
Time to Peak (Computed)	12.454 hours
Flow (Peak, Computed)	2.32 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.450 hours
Flow (Peak Interpolated Output)	2.32 ft³/s
Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	13.336 acres
Maximum Retention (Pervious)	11.28 in
Maximum Retention (Pervious, 20 percent)	2.26 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.44 in
Runoff Volume (Pervious)	0.484 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.480 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.324 hours
Computational Time Increment	0.043 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	46.59 ft³/s
Unit peak time, Tp	0.216 hours
Unit receding limb, Tr	0.865 hours
Total unit time, Tb	1.081 hours

Subsection: Unit Hydrograph Summary
Label: Pre B2

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.324 hours
Area (User Defined)	13.336 acres
Computational Time Increment	0.043 hours
Time to Peak (Computed)	12.281 hours
Flow (Peak, Computed)	19.45 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	19.27 ft³/s
Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	13.336 acres
Maximum Retention (Pervious)	11.28 in
Maximum Retention (Pervious, 20 percent)	2.26 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.10 in
Runoff Volume (Pervious)	2.332 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.320 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.324 hours
Computational Time Increment	0.043 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	46.59 ft³/s
Unit peak time, Tp	0.216 hours
Unit receding limb, Tr	0.865 hours
Total unit time, Tb	1.081 hours

Subsection: Unit Hydrograph Summary
Label: Swale Area

Return Event: 1 years
Storm Event: 1-Year

Storm Event	1-Year
Return Event	1 years
Duration	24.000 hours
Depth	2.64 in
Time of Concentration (Composite)	0.356 hours
Area (User Defined)	24.638 acres
Computational Time Increment	0.047 hours
Time to Peak (Computed)	12.250 hours
Flow (Peak, Computed)	17.70 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	17.70 ft³/s
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	24.638 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.99 in
Runoff Volume (Pervious)	2.026 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.018 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.356 hours
Computational Time Increment	0.047 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	78.39 ft³/s
Unit peak time, Tp	0.237 hours
Unit receding limb, Tr	0.950 hours
Total unit time, Tb	1.187 hours

Subsection: Unit Hydrograph Summary
Label: Swale Area

Return Event: 10 years
Storm Event: 10-Year

Storm Event	10-Year
Return Event	10 years
Duration	24.000 hours
Depth	4.70 in
Time of Concentration (Composite)	0.356 hours
Area (User Defined)	24.638 acres
Computational Time Increment	0.047 hours
Time to Peak (Computed)	12.250 hours
Flow (Peak, Computed)	48.99 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	48.98 ft³/s
Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	24.638 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.63 in
Runoff Volume (Pervious)	5.406 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	5.389 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.356 hours
Computational Time Increment	0.047 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	78.39 ft³/s
Unit peak time, Tp	0.237 hours
Unit receding limb, Tr	0.950 hours
Total unit time, Tb	1.187 hours

Subsection: Unit Hydrograph Summary
Label: Swale Area

Return Event: 100 years
Storm Event: 100-Year

Storm Event	100-Year
Return Event	100 years
Duration	24.000 hours
Depth	8.28 in
Time of Concentration (Composite)	0.356 hours
Area (User Defined)	24.638 acres
Computational Time Increment	0.047 hours
Time to Peak (Computed)	12.250 hours
Flow (Peak, Computed)	107.96 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	107.94 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	24.638 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.89 in
Runoff Volume (Pervious)	12.089 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12.057 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.356 hours
Computational Time Increment	0.047 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	78.39 ft³/s
Unit peak time, Tp	0.237 hours
Unit receding limb, Tr	0.950 hours
Total unit time, Tb	1.187 hours

Subsection: Elevation-Volume-Flow Table (Channel)
Label: Reach 1

Return Event: 1 years
Storm Event: 1-Year

Modified Puls Results Summary	
Length (Channel)	210.00 ft
Travel Time (Channel)	0.931 hours
Number of Sections	1
Length (Section)	210.00 ft
Flow (Weighted)	0.02 ft³/s
Overflow Channel	No Overflow Data
Elevation (Overflow)	375.00 ft

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Starting Water Surface)	374.00 ft
Volume (Starting, per section)	0.000 ac-ft
Flow (Out Starting)	0.00 ft³/s
Infiltration (Starting, per section)	0.00 ft³/s
Flow (Total Out Starting)	0.00 ft³/s
Time Increment	0.050 hours

Number of sections = 1
Storage, Area, Infiltration (per 210.00 ft section)

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
374.00	0.00	0.000	0.000	0.00	0.00	0.00
374.01	0.03	0.002	0.242	0.00	0.03	1.20
374.02	0.10	0.005	0.242	0.00	0.10	2.44
374.04	0.32	0.010	0.243	0.00	0.32	5.00
374.06	0.62	0.015	0.244	0.00	0.62	7.66
374.08	1.01	0.019	0.245	0.00	1.01	10.41
374.10	1.46	0.024	0.246	0.00	1.46	13.24
374.12	1.98	0.029	0.247	0.00	1.98	16.15
374.14	2.56	0.034	0.248	0.00	2.56	19.12
374.16	3.20	0.039	0.249	0.00	3.20	22.17
374.18	3.90	0.044	0.250	0.00	3.90	25.28
374.20	4.65	0.049	0.251	0.00	4.65	28.45
374.22	5.45	0.054	0.252	0.00	5.45	31.69
374.24	6.31	0.059	0.253	0.00	6.31	34.98
374.26	7.21	0.064	0.254	0.00	7.21	38.34
374.28	8.17	0.069	0.255	0.00	8.17	41.75
374.30	9.17	0.074	0.256	0.00	9.17	45.22
374.32	10.22	0.080	0.256	0.00	10.22	48.75
374.34	11.31	0.085	0.257	0.00	11.31	52.33
374.36	12.45	0.090	0.258	0.00	12.45	55.96
374.38	13.64	0.095	0.259	0.00	13.64	59.65
374.40	14.86	0.100	0.260	0.00	14.86	63.40
374.42	16.13	0.105	0.261	0.00	16.13	67.19
374.44	17.45	0.111	0.262	0.00	17.45	71.04
374.46	18.80	0.116	0.263	0.00	18.80	74.94

Subsection: Elevation-Volume-Flow Table (Channel)
Label: Reach 1

Return Event: 1 years
Storm Event: 1-Year

Number of sections = 1
Storage, Area, Infiltration (per 210.00 ft section)

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
374.48	20.20	0.121	0.264	0.00	20.20	78.88
374.50	21.63	0.127	0.265	0.00	21.63	82.88
374.52	23.11	0.132	0.266	0.00	23.11	86.93
374.54	24.63	0.137	0.267	0.00	24.63	91.03
374.56	26.19	0.143	0.268	0.00	26.19	95.18
374.58	27.78	0.148	0.269	0.00	27.78	99.38
374.60	29.42	0.153	0.270	0.00	29.42	103.62
374.62	31.10	0.159	0.271	0.00	31.10	107.91
374.64	32.81	0.164	0.272	0.00	32.81	112.25
374.66	34.56	0.170	0.273	0.00	34.56	116.64
374.68	36.35	0.175	0.274	0.00	36.35	121.08
374.70	38.18	0.181	0.275	0.00	38.18	125.56
374.72	40.04	0.186	0.276	0.00	40.04	130.09
374.74	41.94	0.192	0.277	0.00	41.94	134.67
374.76	43.88	0.197	0.278	0.00	43.88	139.29
374.78	45.86	0.203	0.279	0.00	45.86	143.96
374.80	47.87	0.208	0.280	0.00	47.87	148.67
374.82	49.92	0.214	0.281	0.00	49.92	153.43
374.84	52.00	0.219	0.282	0.00	52.00	158.24
374.86	54.13	0.225	0.283	0.00	54.13	163.09
374.88	56.28	0.231	0.283	0.00	56.28	167.98
374.90	58.47	0.236	0.284	0.00	58.47	172.92
374.92	60.70	0.242	0.285	0.00	60.70	177.91
374.94	62.97	0.248	0.286	0.00	62.97	182.94
374.96	65.26	0.254	0.287	0.00	65.26	188.02
374.98	67.60	0.259	0.288	0.00	67.60	193.14
375.00	69.97	0.265	0.289	0.00	69.97	198.30

Subsection: Elevation-Volume-Flow Table (Channel)
Label: Reach 2

Return Event: 1 years
Storm Event: 1-Year

Modified Puls Results Summary	
Length (Channel)	1,370.00 ft
Travel Time (Channel)	0.000 hours
Number of Sections	1
Length (Section)	1,370.00 ft
Flow (Weighted)	0.00 ft³/s
Overflow Channel	No Overflow Data
Elevation (Overflow)	366.00 ft

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Starting Water Surface)	364.00 ft
Volume (Starting, per section)	0.000 ac-ft
Flow (Out Starting)	0.00 ft³/s
Infiltration (Starting, per section)	0.00 ft³/s
Flow (Total Out Starting)	0.00 ft³/s
Time Increment	0.050 hours

Number of sections = 1
Storage, Area, Infiltration (per 1,370.00 ft section)

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
364.00	0.00	0.000	0.000	0.00	0.00	0.00
364.01	0.01	0.005	0.504	0.00	0.01	2.45
364.04	0.13	0.020	0.508	0.00	0.13	9.93
364.08	0.43	0.041	0.513	0.00	0.43	20.11
364.12	0.84	0.061	0.518	0.00	0.84	30.51
364.16	1.36	0.082	0.523	0.00	1.36	41.11
364.20	1.97	0.103	0.528	0.00	1.97	51.90
364.24	2.68	0.124	0.533	0.00	2.68	62.89
364.28	3.47	0.146	0.538	0.00	3.47	74.05
364.32	4.34	0.167	0.543	0.00	4.34	85.39
364.36	5.28	0.189	0.549	0.00	5.28	96.91
364.40	6.30	0.211	0.554	0.00	6.30	108.60
364.44	7.40	0.234	0.559	0.00	7.40	120.46
364.48	8.57	0.256	0.564	0.00	8.57	132.49
364.52	9.80	0.279	0.569	0.00	9.80	144.68
364.56	11.10	0.302	0.574	0.00	11.10	157.04
364.60	12.47	0.325	0.579	0.00	12.47	169.57
364.64	13.91	0.348	0.584	0.00	13.91	182.25
364.68	15.41	0.371	0.589	0.00	15.41	195.10
364.72	16.97	0.395	0.594	0.00	16.97	208.12
364.76	18.60	0.419	0.599	0.00	18.60	221.29
364.80	20.29	0.443	0.604	0.00	20.29	234.62
364.84	22.04	0.467	0.609	0.00	22.04	248.11
364.88	23.86	0.492	0.614	0.00	23.86	261.76
364.92	25.73	0.516	0.619	0.00	25.73	275.57

Subsection: Elevation-Volume-Flow Table (Channel)
Label: Reach 2

Return Event: 1 years
Storm Event: 1-Year

Number of sections = 1
Storage, Area, Infiltration (per 1,370.00 ft section)

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
364.96	27.67	0.541	0.624	0.00	27.67	289.54
365.00	29.66	0.566	0.629	0.00	29.66	303.66
365.04	31.71	0.591	0.634	0.00	31.71	317.94
365.08	33.83	0.617	0.639	0.00	33.83	332.38
365.12	36.00	0.642	0.644	0.00	36.00	346.97
365.16	38.23	0.668	0.649	0.00	38.23	361.72
365.20	40.52	0.694	0.654	0.00	40.52	376.63
365.24	42.87	0.721	0.659	0.00	42.87	391.69
365.28	45.27	0.747	0.664	0.00	45.27	406.90
365.32	47.74	0.774	0.669	0.00	47.74	422.28
365.36	50.26	0.801	0.674	0.00	50.26	437.80
365.40	52.84	0.828	0.679	0.00	52.84	453.48
365.44	55.47	0.855	0.684	0.00	55.47	469.32
365.48	58.17	0.883	0.689	0.00	58.17	485.31
365.52	60.92	0.910	0.694	0.00	60.92	501.46
365.56	63.73	0.938	0.699	0.00	63.73	517.76
365.60	66.59	0.966	0.704	0.00	66.59	534.22
365.64	69.51	0.994	0.710	0.00	69.51	550.83
365.68	72.49	1.023	0.715	0.00	72.49	567.59
365.72	75.53	1.052	0.720	0.00	75.53	584.51
365.76	78.62	1.081	0.725	0.00	78.62	601.59
365.80	81.78	1.110	0.730	0.00	81.78	618.82
365.84	84.98	1.139	0.735	0.00	84.98	636.20
365.88	88.25	1.168	0.740	0.00	88.25	653.74
365.92	91.57	1.198	0.745	0.00	91.57	671.43
365.96	94.95	1.228	0.750	0.00	94.95	689.27
366.00	98.39	1.258	0.755	0.00	98.39	707.28

Subsection: Elevation-Volume-Flow Table (Channel)
Label: Stream

Return Event: 1 years
Storm Event: 1-Year

Modified Puls Results Summary	
Length (Channel)	1,350.00 ft
Travel Time (Channel)	0.116 hours
Number of Sections	1
Length (Section)	1,350.00 ft
Flow (Weighted)	11.90 ft³/s
Overflow Channel	No Overflow Data
Elevation (Overflow)	406.30 ft

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Starting Water Surface)	403.30 ft
Volume (Starting, per section)	0.000 ac-ft
Flow (Out Starting)	0.00 ft³/s
Infiltration (Starting, per section)	0.00 ft³/s
Flow (Total Out Starting)	0.00 ft³/s
Time Increment	0.050 hours

Number of sections = 1
Storage, Area, Infiltration (per 1,350.00 ft section)

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
403.30	0.00	0.000	0.000	0.00	0.00	0.00
403.31	0.04	0.004	0.374	0.00	0.04	1.85
403.36	0.86	0.023	0.383	0.00	0.86	11.82
403.42	2.75	0.046	0.394	0.00	2.75	25.00
403.48	5.43	0.070	0.405	0.00	5.43	39.28
403.54	8.81	0.095	0.417	0.00	8.81	54.60
403.60	12.84	0.120	0.428	0.00	12.84	70.89
403.66	17.49	0.146	0.439	0.00	17.49	88.12
403.72	22.73	0.173	0.450	0.00	22.73	106.27
403.78	28.55	0.200	0.461	0.00	28.55	125.32
403.84	34.93	0.228	0.472	0.00	34.93	145.26
403.90	41.88	0.257	0.483	0.00	41.88	166.08
403.96	49.37	0.286	0.495	0.00	49.37	187.77
404.02	57.41	0.316	0.506	0.00	57.41	210.34
404.08	65.99	0.347	0.517	0.00	65.99	233.77
404.14	75.12	0.378	0.528	0.00	75.12	258.07
404.20	84.79	0.410	0.539	0.00	84.79	283.24
404.26	95.00	0.443	0.550	0.00	95.00	309.27
404.32	105.75	0.476	0.562	0.00	105.75	336.17
404.38	117.05	0.510	0.573	0.00	117.05	363.94
404.44	128.89	0.545	0.584	0.00	128.89	392.57
404.50	141.28	0.580	0.595	0.00	141.28	422.08
404.56	154.23	0.616	0.606	0.00	154.23	452.47
404.62	167.72	0.653	0.617	0.00	167.72	483.73
404.68	181.77	0.690	0.629	0.00	181.77	515.87

Subsection: Elevation-Volume-Flow Table (Channel)
Label: Stream

Return Event: 1 years
Storm Event: 1-Year

Number of sections = 1
Storage, Area, Infiltration (per 1,350.00 ft section)

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
404.74	196.39	0.728	0.640	0.00	196.39	548.90
404.80	211.56	0.767	0.651	0.00	211.56	582.81
404.86	227.31	0.806	0.662	0.00	227.31	617.62
404.92	243.62	0.846	0.673	0.00	243.62	653.32
404.98	260.51	0.887	0.684	0.00	260.51	689.92
405.04	277.99	0.929	0.695	0.00	277.99	727.43
405.10	296.04	0.971	0.707	0.00	296.04	765.84
405.16	314.68	1.013	0.718	0.00	314.68	805.16
405.22	333.92	1.057	0.729	0.00	333.92	845.41
405.28	353.75	1.101	0.740	0.00	353.75	886.57
405.34	374.18	1.146	0.751	0.00	374.18	928.66
405.40	395.22	1.191	0.762	0.00	395.22	971.67
405.46	416.87	1.237	0.774	0.00	416.87	1,015.63
405.52	439.14	1.284	0.785	0.00	439.14	1,060.52
405.58	462.03	1.331	0.796	0.00	462.03	1,106.35
405.64	485.54	1.379	0.807	0.00	485.54	1,153.14
405.70	509.68	1.428	0.818	0.00	509.68	1,200.88
405.76	534.45	1.478	0.829	0.00	534.45	1,249.57
405.82	559.86	1.528	0.840	0.00	559.86	1,299.23
405.88	585.92	1.578	0.852	0.00	585.92	1,349.86
405.94	612.63	1.630	0.863	0.00	612.63	1,401.46
406.00	639.98	1.682	0.874	0.00	639.98	1,454.03
406.06	668.00	1.735	0.885	0.00	668.00	1,507.59
406.12	696.68	1.788	0.896	0.00	696.68	1,562.14
406.18	726.03	1.842	0.907	0.00	726.03	1,617.68
406.24	756.05	1.897	0.919	0.00	756.05	1,674.21
406.30	786.75	1.952	0.930	0.00	786.75	1,731.75

Subsection: Elevation-Area Volume Curve
Label: Bio 1

Return Event: 1 years
Storm Event: 1-Year

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
372.00	0.0	0.166	0.000	0.000	0.000
374.90	0.0	0.166	0.497	0.480	0.480
375.00	0.0	0.828	1.364	0.045	0.526
378.00	0.0	1.709	3.727	3.727	4.252

Subsection: Elevation-Area Volume Curve
Label: Bio 2

Return Event: 1 years
Storm Event: 1-Year

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
369.00	0.0	0.099	0.000	0.000	0.000
371.90	0.0	0.099	0.296	0.286	0.286
372.00	0.0	0.494	0.813	0.027	0.313
375.00	0.0	0.815	1.942	1.942	2.256

Subsection: Elevation-Area Volume Curve
Label: Bio 3

Return Event: 1 years
Storm Event: 1-Year

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
363.00	0.0	0.086	0.000	0.000	0.000
365.90	0.0	0.086	0.259	0.250	0.250
366.00	0.0	0.432	0.711	0.024	0.274
369.00	0.0	0.718	1.706	1.706	1.980

Subsection: Storage Chamber System
Label: UG B

Return Event: 1 years
Storm Event: 1-Year

Storage Chamber			
ID	124	Notes	Created on 06/23/2009. Check with manufacturer for updates.
Label	Recharger (R) V8IHD Intermediate		

Storage Chamber			
Effective Length	7.50 ft	End Section Length	4.58 ft
Section Length Varies?	True	Manufacturer	CULTEC
Start Section Length	4.58 ft	Default Spacing	0.50 ft

Depth-Incremental Volume Per Unit Length Curve

Depth (ft)	Incremental Volume Per Unit Length (ft³/ft)
0.00	0.00
0.08	0.38
0.17	0.38
0.25	0.37
0.33	0.37
0.42	0.37
0.50	0.37
0.58	0.37
0.67	0.37
0.75	0.37
0.83	0.35
0.92	0.35
1.00	0.34
1.08	0.34
1.17	0.33
1.25	0.32
1.33	0.32
1.42	0.31
1.50	0.30
1.58	0.29
1.67	0.28
1.75	0.27
1.83	0.25
1.92	0.24
2.00	0.22
2.08	0.20
2.17	0.18
2.25	0.16
2.33	0.13
2.42	0.08
2.50	0.04
2.58	0.03
2.67	0.01

Subsection: Storage Chamber System
Label: UG B

Return Event: 1 years
Storm Event: 1-Year

Storage Chamber			
Storage Chamber Type	Incremental Volume Per Unit Length	Maximum Width	5.00 ft

Storage Chamber (Pond)	
Chamber System Invert	370.50 ft
Chamber System Rows	8
Chambers per Row	13
Chamber System Fill Void Space	40.0 %
Chamber System Row Spacing	6.0 in
Chamber System Side Fill	6.0 in
Chamber System Fill Cover Depth	12.0 in
Chamber System Fill Base Depth	6.0 in
Chamber System Fill Side Slope	0.000 H:V
Chamber System End Fill	6.0 in
Chamber System Includes Header?	False

Subsection: Outlet Input Data
Label: Bio 1

Return Event: 1 years
Storm Event: 1-Year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	372.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	378.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir	Forward	TW	376.00	378.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Outlet Input Data
Label: Bio 1

Return Event: 1 years
Storm Event: 1-Year

Structure ID: Weir Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	376.00 ft
Weir Length	30.00 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Individual Outlet Curves
Label: Bio 1

Return Event: 1 years
Storm Event: 1-Year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Weir (Rectangular Weir)

Upstream ID = (Pond Water Surface)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
372.00	0.00	(N/A)	0.00
372.50	0.00	(N/A)	0.00
373.00	0.00	(N/A)	0.00
373.50	0.00	(N/A)	0.00
374.00	0.00	(N/A)	0.00
374.50	0.00	(N/A)	0.00
375.00	0.00	(N/A)	0.00
375.50	0.00	(N/A)	0.00
376.00	0.00	(N/A)	0.00
376.50	31.71	(N/A)	0.00
377.00	89.40	(N/A)	0.00
377.50	163.69	(N/A)	0.00
378.00	251.16	(N/A)	0.00

Computation Messages

HW & TW below Inv.El.=376.000
HW & TW below Inv.El.=376.000
HW & TW below Inv.El.=376.000
HW & TW below Inv.El.=376.000
HW & TW below Inv.El.=376.000
HW & TW below Inv.El.=376.000
HW & TW below Inv.El.=376.000
HW & TW below Inv.El.=376.000
H=.00; Htw=.00; Qfree=.00;
H=.50; Htw=.00; Qfree=31.71;
H=1.00; Htw=.00; Qfree=89.40;
H=1.50; Htw=.00; Qfree=163.69;
H=2.00; Htw=.00; Qfree=251.16;

Subsection: Composite Rating Curve
Label: Bio 1

Return Event: 1 years
Storm Event: 1-Year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
372.00	0.00	(N/A)	0.00
372.50	0.00	(N/A)	0.00
373.00	0.00	(N/A)	0.00
373.50	0.00	(N/A)	0.00
374.00	0.00	(N/A)	0.00
374.50	0.00	(N/A)	0.00
375.00	0.00	(N/A)	0.00
375.50	0.00	(N/A)	0.00
376.00	0.00	(N/A)	0.00
376.50	31.71	(N/A)	0.00
377.00	89.40	(N/A)	0.00
377.50	163.69	(N/A)	0.00
378.00	251.16	(N/A)	0.00

Contributing Structures
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
Weir
Weir
Weir
Weir
Weir

Subsection: Outlet Input Data
Label: Bio 2

Return Event: 1 years
Storm Event: 1-Year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	369.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	375.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser 1	Forward	Culvert	374.25	375.00
Inlet Box	Riser 2	Forward	Culvert	374.25	375.00
Culvert-Circular	Culvert	Forward	TW	369.00	375.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Riser 1 Structure Type: Inlet Box	
Number of Openings	1
Elevation	374.25 ft
Orifice Area	12.3 ft²
Orifice Coefficient	0.600
Weir Length	14.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	30.0 in
Length	109.00 ft
Length (Computed Barrel)	109.04 ft
Slope (Computed)	0.028 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.009
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0078
M	2.0000
C	0.0379
Y	0.6900
T1 ratio (HW/D)	1.122
T2 ratio (HW/D)	1.283
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	371.80 ft	T1 Flow	27.16 ft³/s
T2 Elevation	372.21 ft	T2 Flow	31.05 ft³/s

Subsection: Outlet Input Data
Label: Bio 2

Return Event: 1 years
Storm Event: 1-Year

Structure ID: Riser 2 Structure Type: Inlet Box	
Number of Openings	1
Elevation	374.25 ft
Orifice Area	12.3 ft²
Orifice Coefficient	0.600
Weir Length	14.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Individual Outlet Curves
Label: Bio 2

Return Event: 1 years
Storm Event: 1-Year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)	Message
369.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
369.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
370.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
370.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
371.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
371.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
372.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
372.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
373.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
373.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
374.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
374.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00	WS below an invert; no flow.
374.50	5.25	374.50	Free Outfall	370.70	0.00	0.00	(N/A)	0.00	Weir: H =0.25ft
375.00	27.28	375.00	375.00	375.00	0.00	0.00	(N/A)	0.00	FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.75ft

Subsection: Individual Outlet Curves
Label: Bio 2

Return Event: 1 years
Storm Event: 1-Year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert (Culvert-Circular)

Mannings open channel maximum capacity: 73.20 ft³/s
Upstream ID = Riser 1, Riser 2
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
369.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
369.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
370.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
370.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
371.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
371.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
372.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
372.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
373.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
373.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
374.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
374.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
374.50	10.50	370.70	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
375.00	52.33	375.00	Free Outfall	Free Outfall	0.00	2.23	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .412ft Dcr= 1.084ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =6.00

Subsection: Individual Outlet Curves
Label: Bio 2

Return Event: 1 years
Storm Event: 1-Year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser 2 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
369.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
369.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
370.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
370.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
371.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
371.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
372.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
372.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
373.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
373.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
374.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
374.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
374.50	5.25	374.50	Free Outfall	370.70	0.00	0.00	(N/A)	0.00
375.00	27.28	375.00	375.00	375.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.25ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.75ft

Subsection: Composite Rating Curve
Label: Bio 2

Return Event: 1 years
Storm Event: 1-Year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
369.00	0.00	(N/A)	0.00
369.50	0.00	(N/A)	0.00
370.00	0.00	(N/A)	0.00
370.50	0.00	(N/A)	0.00
371.00	0.00	(N/A)	0.00
371.50	0.00	(N/A)	0.00
372.00	0.00	(N/A)	0.00
372.50	0.00	(N/A)	0.00
373.00	0.00	(N/A)	0.00
373.50	0.00	(N/A)	0.00
374.00	0.00	(N/A)	0.00
374.25	0.00	(N/A)	0.00
374.50	10.50	(N/A)	0.00
375.00	52.33	(N/A)	0.00

Contributing Structures
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
(no Q: Riser 1,Riser 2,Culvert)
Riser 1,Riser 2,Culvert
Riser 1,Riser 2,Culvert

Subsection: Outlet Input Data
Label: Bio 3

Return Event: 1 years
Storm Event: 1-Year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	363.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	369.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir	Weir	Forward	TW	366.00	369.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir
Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	3.00
6.00	0.00
16.00	0.00
22.00	3.00

Lowest Elevation	366.00 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Weir (Irregular Weir)

Upstream ID = (Pond Water Surface)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
363.00	0.00	(N/A)	0.00
363.50	0.00	(N/A)	0.00
364.00	0.00	(N/A)	0.00
364.50	0.00	(N/A)	0.00
365.00	0.00	(N/A)	0.00
365.50	0.00	(N/A)	0.00
366.00	0.00	(N/A)	0.00
366.50	11.36	(N/A)	0.00
367.00	34.24	(N/A)	0.00
367.50	66.80	(N/A)	0.00
368.00	108.85	(N/A)	0.00
368.50	160.51	(N/A)	0.00
369.00	222.02	(N/A)	0.00

Computation Messages

E < Y min=366.00
E < Y min=366.00
E < Y min=366.00
E < Y min=366.00
E < Y min=366.00
E < Y min=366.00
E = Y min=366.00
Max.H=.50; Max.Htw=free out;; W(ft) =12.00
Max.H=1.00; Max.Htw=free out;; W(ft) =14.00
Max.H=1.50; Max.Htw=free out;; W(ft) =16.00
Max.H=2.00; Max.Htw=free out;; W(ft) =18.00
Max.H=2.50; Max.Htw=free out;; W(ft) =20.00
Max.H=3.00; Max.Htw=free out;; W(ft) =22.00

Subsection: Composite Rating Curve
Label: Bio 3

Return Event: 1 years
Storm Event: 1-Year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
363.00	0.00	(N/A)	0.00
363.50	0.00	(N/A)	0.00
364.00	0.00	(N/A)	0.00
364.50	0.00	(N/A)	0.00
365.00	0.00	(N/A)	0.00
365.50	0.00	(N/A)	0.00
366.00	0.00	(N/A)	0.00
366.50	11.36	(N/A)	0.00
367.00	34.24	(N/A)	0.00
367.50	66.80	(N/A)	0.00
368.00	108.85	(N/A)	0.00
368.50	160.51	(N/A)	0.00
369.00	222.02	(N/A)	0.00

Contributing Structures
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
Weir
Weir
Weir
Weir
Weir
Weir
Weir

Subsection: Outlet Input Data
Label: UG B

Return Event: 1 years
Storm Event: 1-Year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	370.50 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	374.67 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice	Forward	TW	371.00	374.67
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Outlet Input Data
Label: UG B

Return Event: 1 years
Storm Event: 1-Year

Structure ID: Orifice Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	371.00 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Individual Outlet Curves
Label: UG B

Return Event: 1 years
Storm Event: 1-Year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Orifice (Orifice-Circular)

Upstream ID = (Pond Water Surface)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
370.50	0.00	(N/A)	0.00
371.00	0.00	(N/A)	0.00
371.50	0.58	(N/A)	0.00
372.00	1.37	(N/A)	0.00
372.50	1.81	(N/A)	0.00
373.00	2.17	(N/A)	0.00
373.50	2.47	(N/A)	0.00
374.00	2.74	(N/A)	0.00
374.50	2.99	(N/A)	0.00
374.67	3.07	(N/A)	0.00

Computation Messages

HW & TW below invert
Upstream HW & DNstream TW < Inv.El
CRIT.DEPTH CONTROL Vh= .143ft
Dcr= .357ft CRIT.DEPTH Hev= .00ft
H =.67
H =1.17
H =1.67
H =2.17
H =2.67
H =3.17
H =3.33

Subsection: Composite Rating Curve
Label: UG B

Return Event: 1 years
Storm Event: 1-Year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
370.50	0.00	(N/A)	0.00
371.00	0.00	(N/A)	0.00
371.50	0.58	(N/A)	0.00
372.00	1.37	(N/A)	0.00
372.50	1.81	(N/A)	0.00
373.00	2.17	(N/A)	0.00
373.50	2.47	(N/A)	0.00
374.00	2.74	(N/A)	0.00
374.50	2.99	(N/A)	0.00
374.67	3.07	(N/A)	0.00

Contributing Structures
None Contributing
None Contributing
Orifice
Orifice
Orifice
Orifice
Orifice
Orifice
Orifice
Orifice

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio 1

Return Event: 1 years
Storm Event: 1-Year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	372.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
372.00	0.00	0.000	0.166	0.00	0.00	0.00
372.50	0.00	0.083	0.166	0.00	0.00	40.09
373.00	0.00	0.166	0.166	0.00	0.00	80.18
373.50	0.00	0.248	0.166	0.00	0.00	120.27
374.00	0.00	0.331	0.166	0.00	0.00	160.36
374.50	0.00	0.414	0.166	0.00	0.00	200.44
375.00	0.00	0.526	0.828	0.00	0.00	254.53
375.50	0.00	0.971	0.953	0.00	0.00	469.91
376.00	0.00	1.481	1.087	0.00	0.00	716.56
376.50	31.71	2.059	1.229	0.00	31.71	1,028.31
377.00	89.40	2.711	1.380	0.00	89.40	1,401.53
377.50	163.69	3.441	1.540	0.00	163.69	1,828.96
378.00	251.16	4.252	1.709	0.00	251.16	2,309.33

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio 2

Return Event: 1 years
Storm Event: 1-Year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	369.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
369.00	0.00	0.000	0.099	0.00	0.00	0.00
369.50	0.00	0.049	0.099	0.00	0.00	23.89
370.00	0.00	0.099	0.099	0.00	0.00	47.78
370.50	0.00	0.148	0.099	0.00	0.00	71.67
371.00	0.00	0.197	0.099	0.00	0.00	95.56
371.50	0.00	0.247	0.099	0.00	0.00	119.44
372.00	0.00	0.313	0.494	0.00	0.00	151.67
372.50	0.00	0.572	0.542	0.00	0.00	276.87
373.00	0.00	0.855	0.592	0.00	0.00	413.94
373.50	0.00	1.164	0.644	0.00	0.00	563.42
374.00	0.00	1.500	0.699	0.00	0.00	725.84
374.25	0.00	1.678	0.727	0.00	0.00	812.07
374.50	10.50	1.863	0.755	0.00	10.50	912.24
375.00	52.33	2.256	0.815	0.00	52.33	1,144.00

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio 3

Return Event: 1 years
Storm Event: 1-Year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	363.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
363.00	0.00	0.000	0.086	0.00	0.00	0.00
363.50	0.00	0.043	0.086	0.00	0.00	20.89
364.00	0.00	0.086	0.086	0.00	0.00	41.78
364.50	0.00	0.129	0.086	0.00	0.00	62.67
365.00	0.00	0.173	0.086	0.00	0.00	83.56
365.50	0.00	0.216	0.086	0.00	0.00	104.44
366.00	0.00	0.274	0.432	0.00	0.00	132.63
366.50	11.36	0.500	0.474	0.00	11.36	253.55
367.00	34.24	0.749	0.519	0.00	34.24	396.58
367.50	66.80	1.020	0.566	0.00	66.80	560.34
368.00	108.85	1.315	0.614	0.00	108.85	745.13
368.50	160.51	1.634	0.665	0.00	160.51	951.57
369.00	222.02	1.980	0.718	0.00	222.02	1,180.38

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UG B

Return Event: 1 years
Storm Event: 1-Year

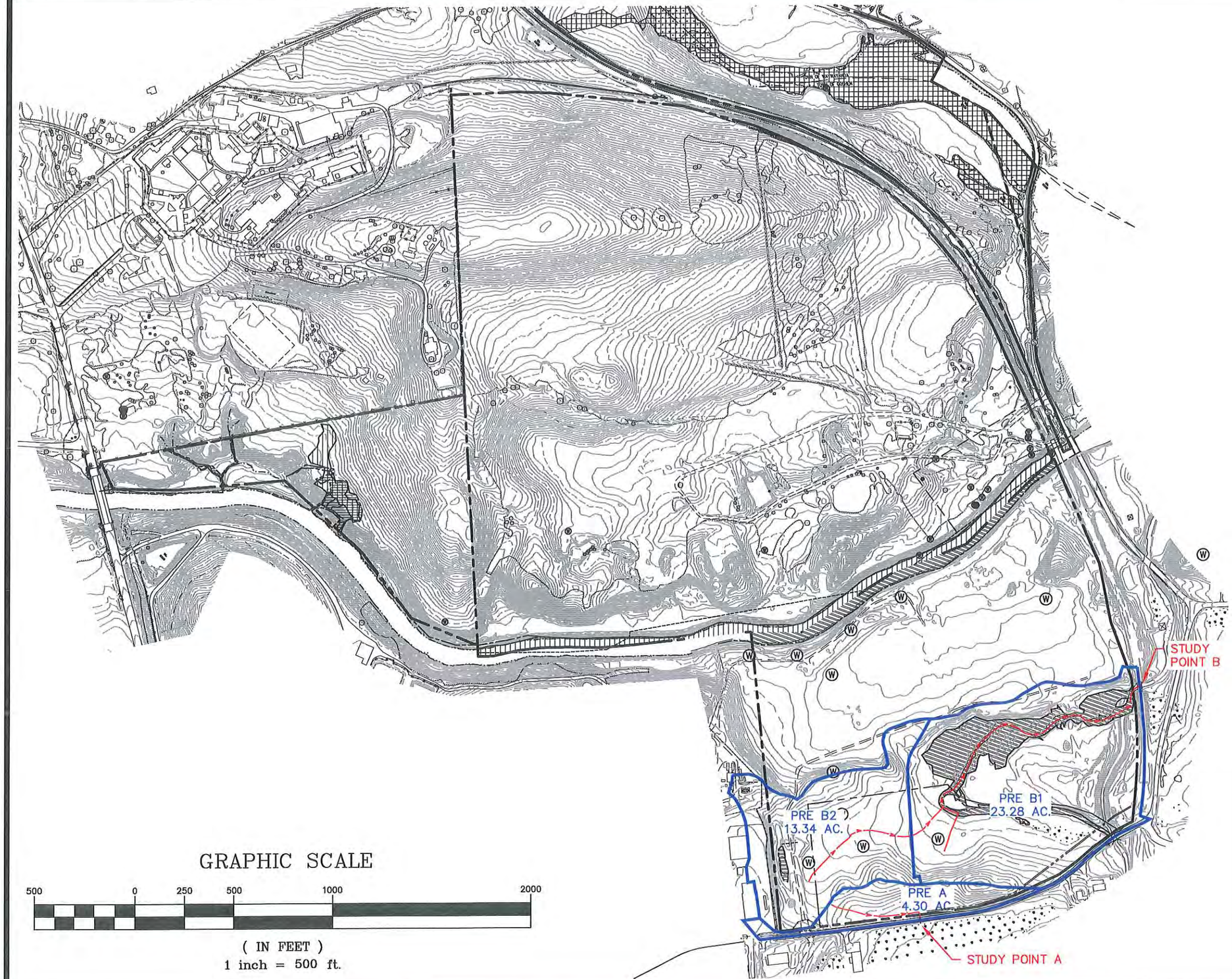
Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	2.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	370.50 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
370.50	0.00	0.000	0.095	0.00	0.00	0.00
371.00	0.00	0.019	0.095	0.19	0.19	9.35
371.50	0.58	0.061	0.095	0.19	0.77	30.07
372.00	1.37	0.101	0.095	0.19	1.56	50.55
372.50	1.81	0.139	0.095	0.19	2.01	69.48
373.00	2.17	0.174	0.095	0.19	2.36	86.54
373.50	2.47	0.201	0.095	0.19	2.66	99.91
374.00	2.74	0.220	0.095	0.19	2.93	109.50
374.50	2.99	0.239	0.095	0.19	3.18	118.91
374.67	3.07	0.245	0.095	0.19	3.26	122.04

APPENDIX C

STORMWATER SYSTEM WATERSHED MAP
STORMWATER PRACTICE MAP
WALLKILL RIVER STREAM ORDER IDENTIFICATION MAP



GRAPHIC SCALE

500 0 250 500 1000 2000

(IN FEET)

1 inch = 500 ft.

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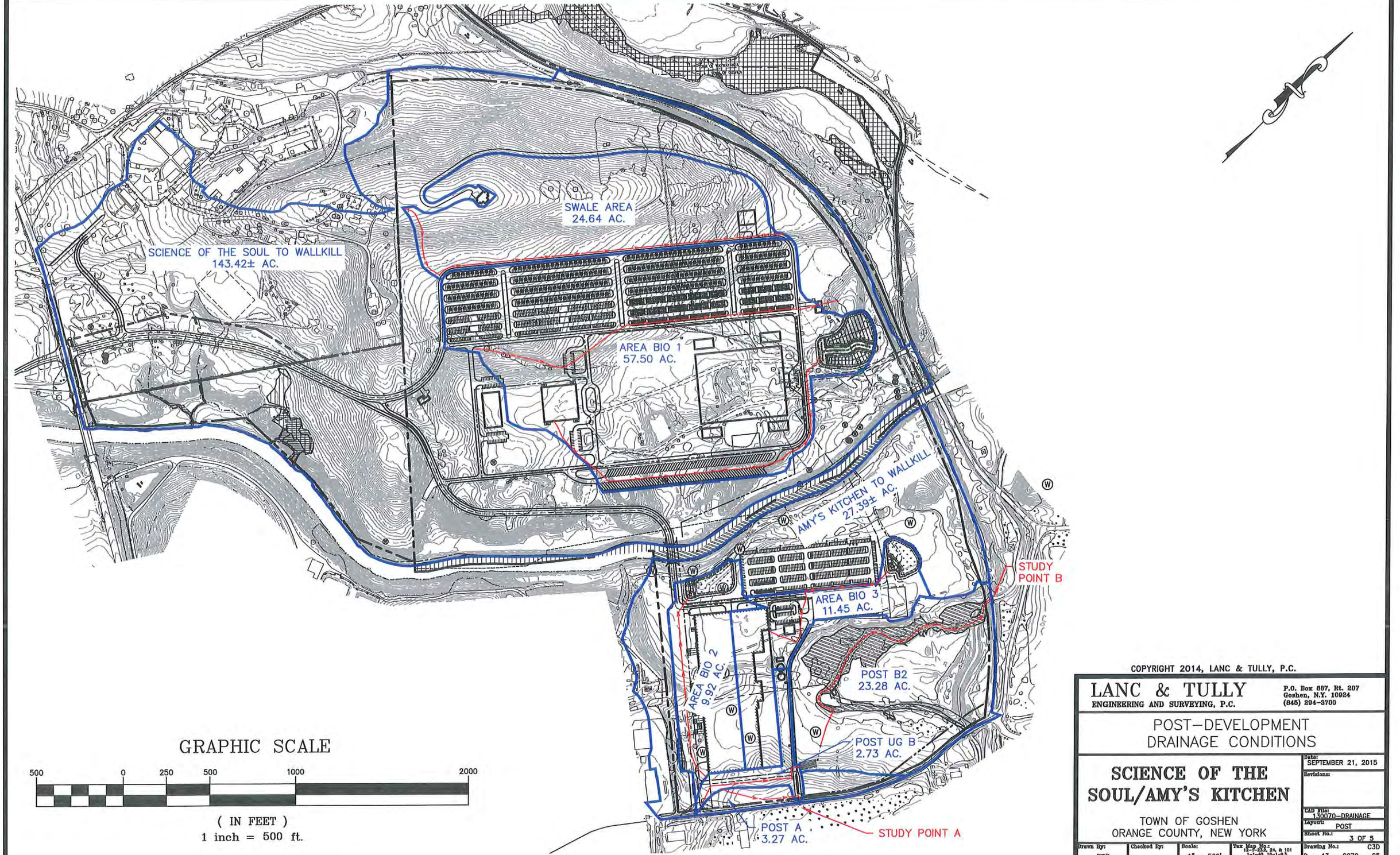
Goshen, N.Y. 10924
(845) 294-3700

PRE-DEVELOPMENT DRAINAGE CONDITIONS

SCIENCE OF THE SOUL/AMY'S KITCHEN

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By: ESR	Checked By:	Scale: 1" = 500'	Tax Map No.: 12-1-2.2, 24, & 101; 1-1-40, 16-1-2.3, 12-1-1.222, 19.2	Date: SEPTEMBER 21, 2015 Revisions: CAD File: 130070-DRAINAGE Layout: PRE Sheet No.: 2 OF 5 Drawing No.: C3D D - 13 - 0070 - 02



GRAPHIC SCALE

500 0 250 500 1000 2000

(IN FEET)

1 inch = 500 ft.

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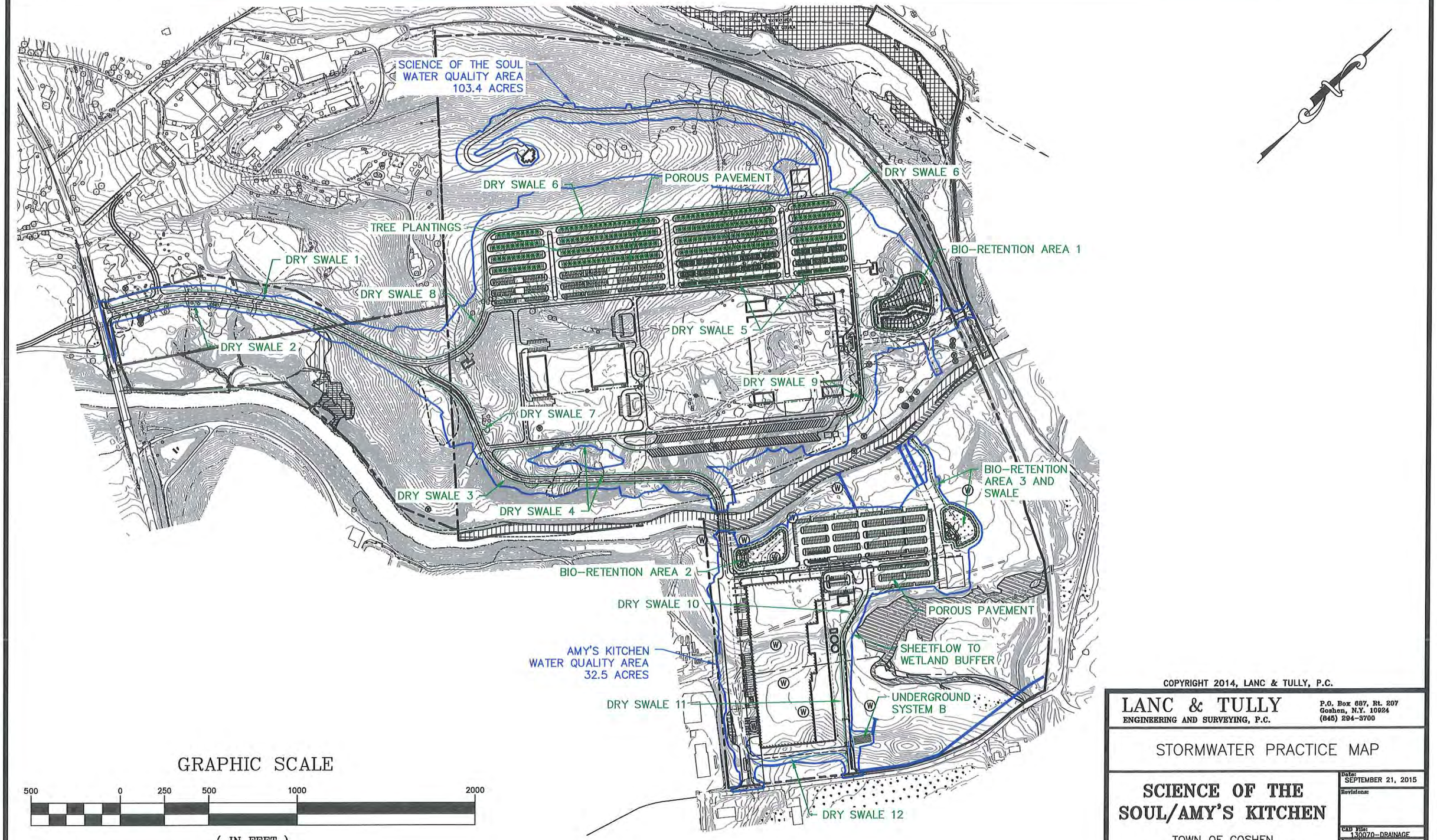
POST-DEVELOPMENT
DRAINAGE CONDITIONS

SCIENCE OF THE SOUL/AMY'S KITCHEN

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 21, 2015
Revisions:
CAD File: 130070-DRAINAGE
Layout: POST
Sheet No.: 3 OF 5
Drawing No.: C3D
D - 13 - 0070 - 05

Drawn By: ESR
Checked By:
Scale: 1" = 500'
Tax Map No.: 13-1-23.2, 24, & 101; 1-1-10, 18-1-9.3, 12-1-1.222, 18.2



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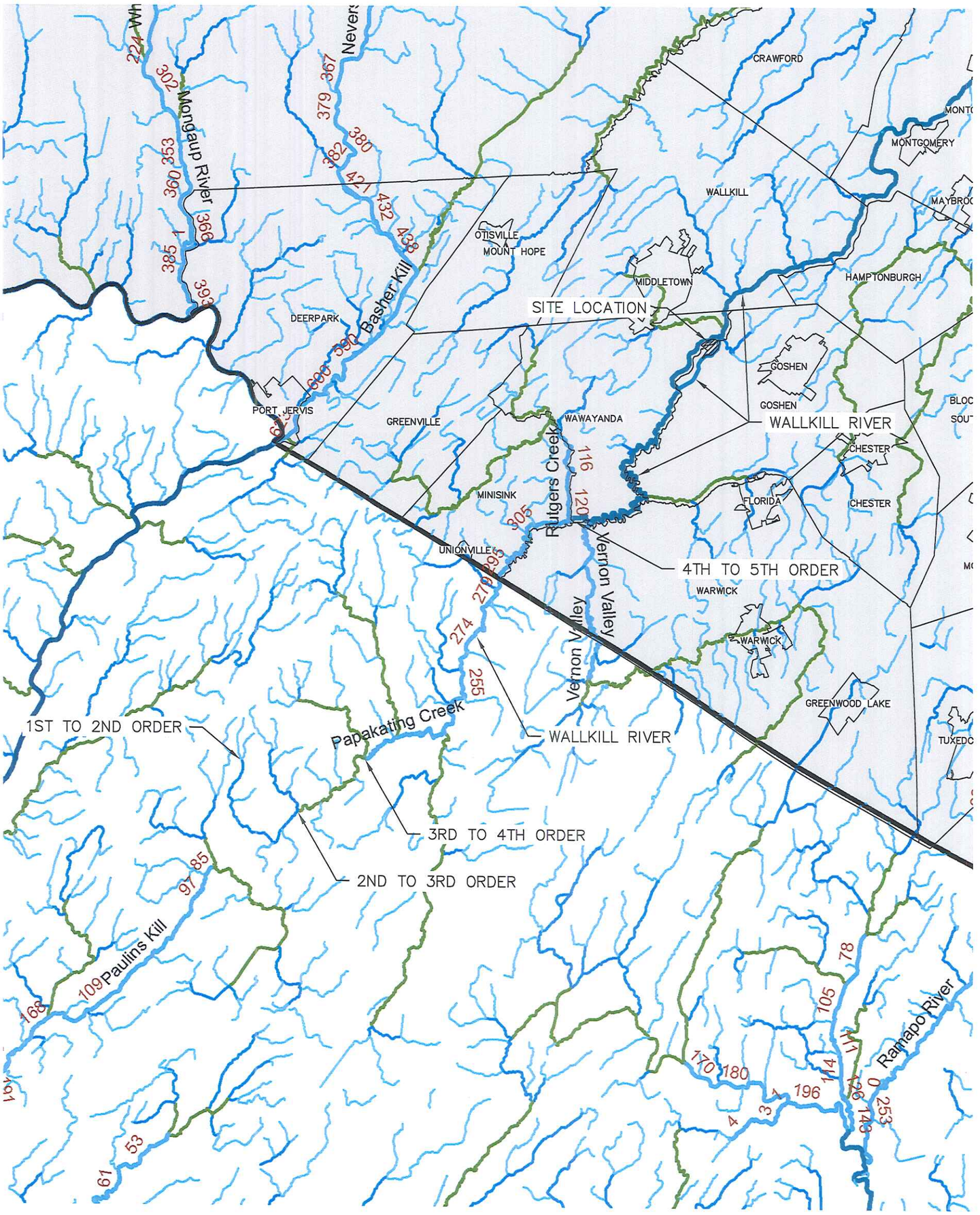
STORMWATER PRACTICE MAP

SCIENCE OF THE SOUL/AMY'S KITCHEN

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 21, 2015
Revisions:	
CAD File:	130070-DRAINAGE
Layout:	WQ
Sheet No.:	4 OF 5
Drawing No.:	C3D
D - 13 - 0070 - 04	

Drawn By:	Checked By:	Scale:	Tax Map No.:
ESR		1" = 500'	12-1-2.5, 24, & 101 1-1-10, 16-1-8.3, 12-1-1.222, 19.2



Stream Order:

1
2
3
4
5
6
7

GRAPHIC SCALE

20,000 0 10,000 20,000 40,000 80,000

(IN FEET)
1 inch = 20,000 ft.

NOTES:

1. BASE MAP TAKEN FROM "REGIONS 3 & 4 STREAM ORDER CLASSIFICATIONS MAP," FROM THE NYSDEC.

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WALLKILL RIVER STREAM ORDER IDENTIFICATION MAP

SCIENCE OF THE SOUL/AMY'S KITCHEN

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By: ESR
Checked By:
Scale: 1" = 20,000'
Tax Map No.: 1-1-12.2, 24, & 101; 1-1-40, 19-1-8.3; 12-1-1.222, 18.2
Date: SEPTEMBER 21, 2015
Revisions:
CAD File: 130070-DRAINAGE
Layout: STREAM ORDER
Sheet No.: 5 OF 5
Drawing No.: C3D
D - 13 - 0070 - 04

APPENDIX D

CALCULATIONS:
WATER QUALITY/RUNOFF REDUCTION VOLUME
STORMWATER PRACTICE DESIGN

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Town of Goshen, New York

Water Quality/Runoff Reduction Volume Summary
Total Site

Required Water Quality Volume (WQv)

Drainage Area = 4,503,417 SF
Impervious Area = 1,508,483 SF
Required WQv = 178,066 CF (from water quality calc sheet)

NYSDEC requires that WQv be treated through use of Green Infrastructure Practices. These practices reduce the required WQv by reducing the drainage area or impervious area in the WQv calculation or by direct volume reduction of the required WQv. WQv treatment provided by the Green Infrastructure Practices is called Runoff Reduction Volume (RRv). The project must provide a minimum amount of WQv treatment in the Green Infrastructure Practices based on the Hydrologic Soil Group at the site.

Runoff Reduction/Water Quality Treatment Practices	RRv Deductions: Drainage Area (SF)	RRv Deductions: Impervious Area (SF)	RRv Deductions: Volume (CF)	WQv Treatment Volume (CF)
Tree Planting/Tree Pit (Area Based Deduction)				
Notes: Trees located in gravel parking area, see plans for locations.		23,700		
Number of Roadside Proposed Trees = 237				
Drainage Area Reduction (100 SF/Trec)= **23,700** SF				
Porous Pavement (Volume Based Deduction)				
Notes: Porous pavement located in a portion of parking area, see plans for locations.			28,511	
Porous Pavement Treatment Capacity = **28,511** CF (from pavement calc sheet)				
Standard SMP - Dry Swale (Volume Based Deduction)				
Notes: 9 dry swales throughout project, mostly located in HSG D soils, see plans for locations.			20,853	83,412
Total Dry Swale Treatment Capacity = 104,265 CF (from dry swale calc sheet)				
Maximum Deduction Allowed = **20,853** CF Deduction = 20%				
Remaining Treatment is standard WQv = **83,412** CF				
Standard SMP - Bio-Retention Area 1 (Volume Based Deduction)				
Notes: Located at north end of site, treats center of site, located in HSG D soils.			28,379	42,569
Total Bio. 1 Treatment Capacity = 70,948 CF (from bio calc sheet)				
Maximum Deduction Allowed = **28,379** CF Deduction = 40%				
Remaining Treatment is standard WQv = **42,569** CF				
Total	0	23,700	77,743	125,981

Provided Runoff Reduction Volume Calculation

Drainage Area = 4,503,417 SF
Drainage Area Deduction = 0 SF
New Drainage Area = 4,503,417 SF

Impervious Area = 1,508,483 SF
Impervious Area Deduction = 23,700 SF
New Impervious Area = 1,484,783 SF

New Drainage Area = 4,503,417
New Impervious Area = 1,484,783
Rv = 0.35
Reduced WQv = 175,666 CF
Volume Deduction = 77,743 CF
Reduced WQv = 97,923 CF

Provided RRv = Original WQv - Reduced WQv
Provided RRv = 80,142 CF

Required Water Quality Volume (WQv) =	**178,066**	**CF**
Provided Runoff Reduction Volume (RRv) =	**80,142**	**CF**
Provided Water Quality Volume (WQv) =	**125,981**	**CF**
Total Provided RRv and WQv =	**206,123**	**CF**

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Town of Goshen, New York

Minimum Required Runoff Reduction Volume Treatment

$$\text{Minimum RRv} = \frac{P * Rv * Ai}{12}$$

P = 1.35 inch

Rv = 0.05+0.009*I (I=100%)

Ai (Impervious for Runoff Reduction) = S* Aic

Aic (New Impervious Cover) = 1,508,483 SF

Specific Reduction Factor (HSG C) = 0.321

Ai = 484,449 SF

Minimum RRv =	**51,776**	**CF**
Provided RRv =	**80,142**	**CF**
Provided RRv is Greater than the Minimum.		

Specific Reduction Factor Calculation

HSG	Reduction Factor	Percent of Site	Weighted Reduction Factor
A	0.55	30.10%	0.166
B	0.40	5.90%	0.024
C	0.30	4.00%	0.012
D	0.20	60.00%	0.120
			0.321

Lanc and Tully Engineering, P.C.

Project Name: Science of the Soul - Total Site
Project Location: Town of Goshen, NY

Water Quality Volume Calculation:

$$WQv = \frac{(P) * (Rv) * (A)}{12}$$

$$Rv = 0.05 + 0.009(I)$$

WQv = Water Quality Volume (ac-ft)
P = 90% Rainfall Event (in)
Rv = Runoff Coffecient
I = % impervious of the site
A = Area of the site (Contributing Acreage)

Impervious Acreage	=	34.630	Acres
Contributing Site Area	=	103.384	Acres
I (% Impervious)	=	33.5	%

Runoff Coffecient (Rv) = 0.35 * Use Minimum of 0.2 for regulated sites
Sheet has been designed to maintain 0.2 min.

90% Rainfall Event	P	1.35	*Rainfall from NYSDEC SWM Figure 4.1
Site Area (Contributing)	A	103.384	

REQUIRED WATER QUALITY VOLUME	=	4.088	AC-FT
		178,066	CU-FT

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Town of Goshen, New York

Bio-Retention Area Water Quality Volume and Design

Bio-Retention Area Characteristics

Af = (WQv x df)/(k (hf+df) tf)

Af = surface area of filter bed, sf
df = filter bed depth, ft
k = media permeability, ft/day 0.5
hf = average water height, ft 0.25
tf = bed drain time, days 2

Area I.D.	Filter Bed Area (SF)	Filter Bed Depth (FT)	Underdrain Inv. El.	Bed El.	Berm El.	Riser El.	Provided Water Quality Volume (CF)	Provided Pre-Treatment (CF)	Total Provided Treatment (CF)
1	35,000	2.5	372.00	375.00	378.00	Swale @ 376.00	38,500	32,448	70,948

Bio-Retention Area Underdrain System Length

L = 10% Af/W

Area I.D.	Filter Bed Area (SF)	10% of Filter Area (SF)	Width (FT)	Required Underdrain Length (FT)	Provided Underdrain Length (FT)
1	35,000	3,500	3.0	1,167	2,065

Forebay Water Quality Volume (Pre-Treatment)

Area I.D.	Bottom Area (SF)	Top Area (SF)	Depth (FT)	Required Pre-Treatment Volume (25%) (CF)	Provided Pre-Treatment Volume (CF)
1	796	15,428	4	9,625	32,448

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Town of Goshen, New York

Dry Swale Water Quality Volume

d = filter media depth 2.5
n = media porosity 0.2

Swale I.D.	Swale Segment Slope (%)	Length (FT)	Swale Dimensions					Provided Water Quality Volume (CF)	Provided Pre-Treatment (CF)	Total Provided Treatment (CF)
			Depth (FT)	Side Slope (y:1)	Bottom Width (SF)	Underdrain Volume (SF)	Area (SF)			
1	2.00%	1,750	1	3.0	3	1.5	6	13,125	1,313	14,438
2	2.00%	1,940	1	3.0	3	1.5	6	14,550	1,455	16,005
3	4.00%	1,880	1	3.0	3	1.5	6	14,100	1,410	15,510
4	4.00%	2,290	1	3.0	3	1.5	6	17,175	1,718	18,893
5	1.60%	780	1	3.0	2	1	5	4,680	585	5,265
6	3.80%	2,200	1	3.0	3	1.5	6	16,500	1,650	18,150
7	4.00%	550	1	3.0	3	1.5	6	4,125	413	4,538
8	2.00%	820	1	3.0	3	1.5	6	6,150	615	6,765
9	0.90%	570	1	3.0	3	1.5	6	4,275	428	4,703
Total										104,265

Gravel Diaphragm Water Quality Volume

n = stone porosity 0.4

Gravel Diaphragm I.D.	Length (FT)	Width (FT)	Depth (FT)	Volume (CF)	Required Pre-Treatment Volume (10%) (CF)	Provided Water Quality Pre-Treatment Volume (CF)
1	1,750	1.5	1.25	1,313	1,313	1,313
2	1,940	1.5	1.25	1,455	1,455	1,455
3	1,880	1.5	1.25	1,410	1,410	1,410
4	2,290	1.5	1.25	1,718	1,718	1,718
5	780	1.5	1.25	585	468	585
6	2,200	1.5	1.25	1,650	1,650	1,650
7	550	1.5	1.25	413	413	413
8	820	1.5	1.25	615	615	615
9	570	1.5	1.25	428	428	428

SCIENCE OF THE SOUL
Town of Goshen, New York

Porous Pavement Water Quality Volume and Design

n = stone porosity 0.4

Area I.D.	Filter Bed Area (SF)	Stone Layer Depth (ft)	Total Stone Volume (CF)	Depth of Stone Below Outlet Pipe (ft)	Stone Volume Below Outlet (CF)	Provided Water Quality Volume (CF)
Employee Parking	106,915	1	42,766	0.67	28,511	28,511

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, Sep 22 2015

Lower Swale

Trapezoidal

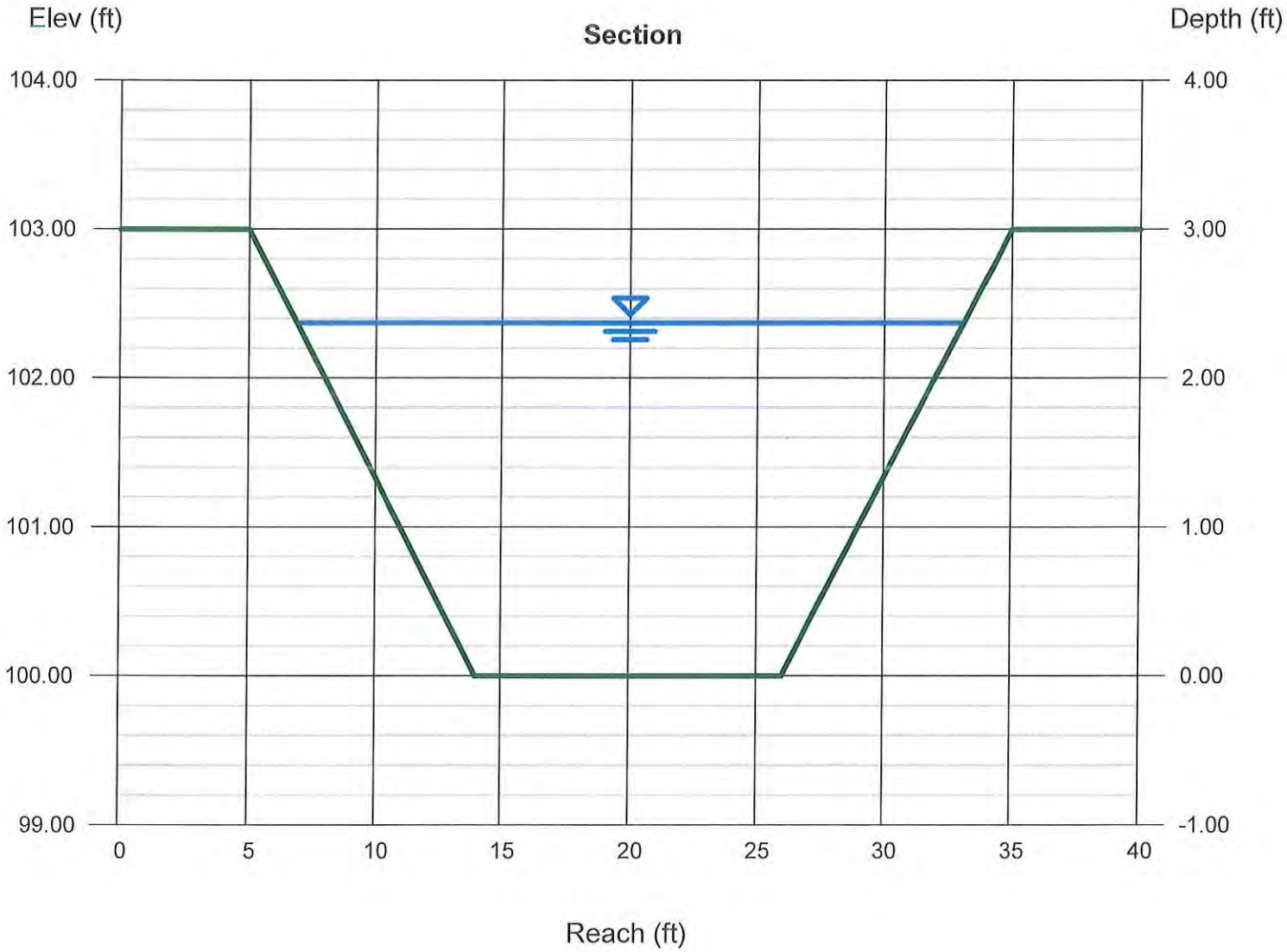
Bottom Width (ft)	= 12.00
Side Slopes (z:1)	= 3.00, 3.00
Total Depth (ft)	= 3.00
Invert Elev (ft)	= 100.00
Slope (%)	= 1.00
N-Value	= 0.030

Calculations

Compute by:	Known Q
Known Q (cfs)	= 316.00

Highlighted

Depth (ft)	= 2.37
Q (cfs)	= 316.00
Area (sqft)	= 45.29
Velocity (ft/s)	= 6.98
Wetted Perim (ft)	= 26.99
Crit Depth, Yc (ft)	= 2.29
Top Width (ft)	= 26.22
EGL (ft)	= 3.13



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, Sep 22 2015

Upper Swale

Trapezoidal

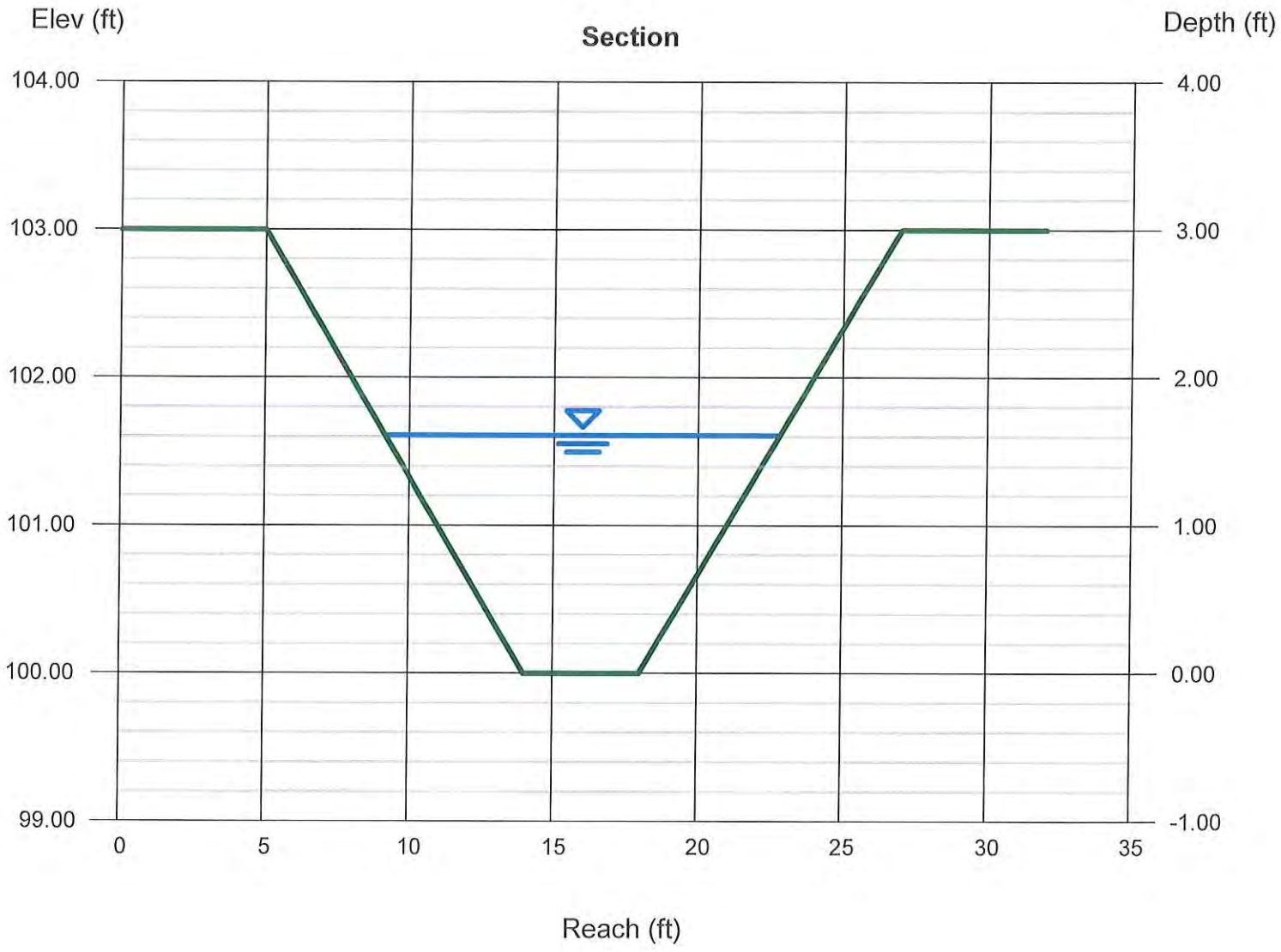
Bottom Width (ft)	= 4.00
Side Slopes (z:1)	= 3.00, 3.00
Total Depth (ft)	= 3.00
Invert Elev (ft)	= 100.00
Slope (%)	= 1.00
N-Value	= 0.020

Calculations

Compute by:	Known Q
Known Q (cfs)	= 105.00

Highlighted

Depth (ft)	= 1.61
Q (cfs)	= 105.00
Area (sqft)	= 14.22
Velocity (ft/s)	= 7.39
Wetted Perim (ft)	= 14.18
Crit Depth, Yc (ft)	= 1.83
Top Width (ft)	= 13.66
EGL (ft)	= 2.46



Culvert Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, Sep 22 2015

Emergency Access Culvert

Invert Elev Dn (ft)	= 372.27
Pipe Length (ft)	= 44.00
Slope (%)	= 1.00
Invert Elev Up (ft)	= 372.71
Rise (in)	= 53.0
Shape	= Box
Span (in)	= 147.0
No. Barrels	= 1
n-Value	= 0.012
Culvert Type	= Flared Wingwalls
Culvert Entrance	= 30D to 75D wingwall flares
Coeff. K,M,c,Y,k	= 0.026, 1, 0.0347, 0.81, 0.4

Embankment

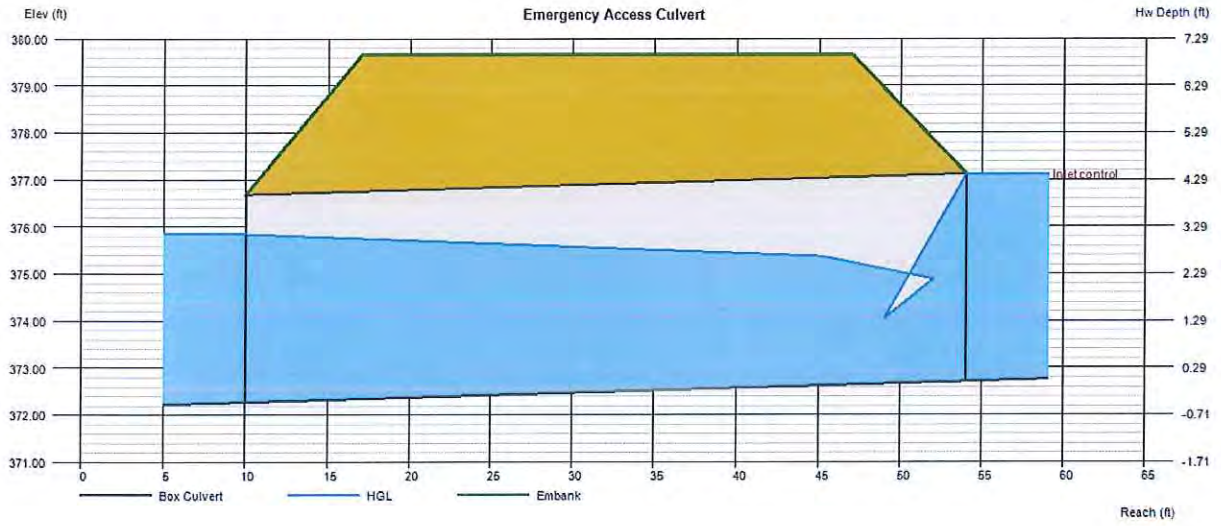
Top Elevation (ft)	= 379.66
Top Width (ft)	= 30.00
Crest Width (ft)	= 50.00

Calculations

Qmin (cfs)	= 316.00
Qmax (cfs)	= 316.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted

Qtotal (cfs)	= 316.00
Qpipe (cfs)	= 316.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 7.21
Veloc Up (ft/s)	= 9.41
HGL Dn (ft)	= 375.85
HGL Up (ft)	= 375.45
Hw Elev (ft)	= 377.13
Hw/D (ft)	= 1.00
Flow Regime	= Inlet Control



Box Culvert Shell-Plate and Rib Data (H-20, HS-20)

TABLE 48. SHELL DATA – H-20, HS-20 LOADING
PLATE AND RIB COMBINATIONS WITH ALLOWABLE HEIGHT OF COVER

Structure Number	Span "A" (Ft.-In.)	Rise "B" (Ft.-In.)	Area (Sq. Ft.)	A6 HG\CG (Gauge)	A6 HRS/CRS (Inches)	A6 Min. (Feet)[5]	A6 Max. (Feet)[5]	B6 HG\CG (Gauge)	B6 HRS/CRS (Inches)	B6 Min. (Feet)[5]	B6 Max. (Feet)[5]	C6 HG\CG (Gauge)	C6 HRS/CRS (Inches)	C6 Min. (Feet)[5]	C6 Max. (Feet)[5]	Max. Shell Wt./Ft. (Lbs.)
STRUCTURES 1 THROUGH 26 HAVE TYPE II HAUNCH AND TYPE IV CROWN RIBS																
1	8-9	2-6	18.4	2\2	54/18	1.4	5.0									43
2	9-2	3-3	25.4	2\2	54/18	1.4	5.0									50
3	9-7	4-1	32.6	2\2	54/18	1.4	5.0									54
4	10-0	4-10	40.2	2\2	54/18	1.4	5.0									58
5	10-6	5-7	48.1	2\2	54/18	1.7	5.0	3\3	54/18	1.4	5.0					71
6	10-11	6-4	56.4	2\2	54/18	2.0	5.0	2\2	27/18	1.4	5.0					74
7	11-4	7-2	65.0	2\2	54/18	2.5	5.0	2\2	54/9	1.4	5.0					79
8	10-2	2-8	23.0	2\2	54/18	1.7	5.0	3\3	54/18	1.4	5.0					60
9	10-7	3-5	31.1	2\2	54/18	2.0	5.0	3\3	54/18	1.4	5.0					65
10	10-11	4-3	39.5	2\2	54/18	2.0	5.0	3\3	54/18	1.4	5.0					70
11	11-4	5-0	48.2	2\2	54/18	2.5	5.0	3\3	54/18	1.7	5.0	2\2	54/9	1.4	5.0	79
12	11-8	5-9	57.2	2\2	54/18	2.5	5.0	3\3	54/18	1.7	5.0	2\2	54/9	1.4	5.0	83
13	12-1	6-7	66.4	2\2	54/18	3.0	5.0	2\2	27/18	2.0	5.0	2\2	54/9	1.4	5.0	86
14	12-5	7-4	76.0	2\2	54/18	3.0	5.0	2\2	27/18	2.5	5.0	2\2	27/9	1.4	5.0	98
15	11-7	2-10	28.1	2\2	54/18	2.5	5.0	3\3	54/18	1.7	5.0	3\3	27/18	1.4	5.0	75
16	11-11	3-7	37.4	2\2	54/18	2.5	5.0	3\3	54/18	2.0	5.0	4\4	54/18	1.4	5.0	81
17	12-3	4-5	46.9	2\2	54/18	3.0	5.0	3\3	54/18	2.0	5.0	3\3	27/18	1.4	5.0	87
18	12-7	5-2	56.6	2\2	54/18	3.0	5.0	2\2	27/18	2.5	5.0	2\2	27/9	1.4	5.0	98
19	12-11	6-0	66.6	2\2	54/18	3.0	5.0	2\2	27/18	2.5	5.0	2\2	27/9	1.4	5.0	102
20	13-3	6-9	76.9	3\3	54/18	2.5	5.0	3\3	27/18	2.0	5.0	2\2	27/9	1.4	5.0	105
21	13-0	3-0	33.8	3\3	54/18	2.5	5.0	4\4	54/18	2.0	5.0	3\3	27/18	1.4	5.0	91
22	13-4	3-10	44.2	3\3	54/18	3.0	5.0	3\3	27/18	2.0	5.0	3\3	54/9	1.4	5.0	102
23	13-7	4-7	54.8	3\3	54/18	3.0	5.0	3\3	27/18	2.5	5.0	3\3	54/9	1.4	5.0	107
24	13-10	5-5	65.6	2\2	27/18	3.0	5.0	3\3	27/18	2.5	5.0	3\3	54/9	1.4	5.0	112
25	14-1	6-2	76.6	3\3	54/18	3.0	5.0	3\3	27/18	2.5	5.0	2\2	18/9	1.4	5.0	121
26	14-5	3-3	40.0	3\3	27/18	3.0	5.0	4\4	27/18	2.5	5.0	5\5	18/18	1.4	5.0	114
STRUCTURES 27 THROUGH 39 HAVE TYPE II HAUNCH AND TYPE VI CROWN RIBS[10]																
27	14-8	4-1	51.5	2\2	27/18	1.4	5.0									100
28	14-10	4-10	63.2	2\2	27/18	1.4	5.0									112
29	15-1	5-8	75.1	3\2	27/18	1.4	5.0									117
30	15-4	6-5	87.2	3\2	27/18	1.4	5.0									121
31	15-6	7-3	99.4	3\2	27/18	1.4	5.0									125
32	15-9	8-0	111.8	2\2	27/18	2.0	5.0	3\2	18/18	1.4	5.0					138
33	15-10	3-6	46.8	2\2	27/18	2.1	5.0	3\2	18/18	1.4	5.0					115
34	16-0	4-3	59.5	2\2	27/18	2.3	5.0	3\2	18/18	1.4	5.0					122
35	16-2	5-1	72.3	2\2	27/18	2.4	4.9	3\2	18/18	1.4	5.0					129
36	16-4	5-11	85.2	2\2	27/18	2.6	4.5	3\2	18/18	1.4	5.0					133
37	16-6	6-8	98.3	3\2	27/18	1.8	5.0	4\2	18/18	1.4	5.0					146
38	16-8	7-6	111.5	3\2	27/18	1.9	5.0	4\2	18/18	1.4	5.0					151
39	16-10	8-3	124.8	3\2	27/18	2.0	5.0	4\2	18/18	1.4	5.0					165
STRUCTURES 40 THROUGH 87 USE ALL TYPE VI RIBS[10]																
40	17-9	3-10	54.4	2\2	54/18	2.0	5.0	2\2	27/18	1.4	5.0					124
41	18-2	4-7	68.3	2\2	54/18	2.2	5.0	2\2	27/18	1.4	5.0					131
42	18-7	5-4	82.5	2\2	54/18	2.4	5.0	2\2	27/18	1.4	5.0					138
43	19-0	6-1	97.1	2\2	54/18	2.6	5.0	2\2	27/18	1.4	5.0					142
44	19-5	6-11	111.9	2\2	54/18	2.8	5.0	2\2	18/18	1.4	5.0					154
45	19-10	7-8	127.1	2\2	54/18	2.9	5.0	2\2	18/18	1.4	5.0					164
46	20-3	8-5	142.6	2\2	54/18	1.9	5.0	2\2	18/18	1.4	5.0					167
47	19-1	4-2	63.3	2\2	54/18	2.6	5.0	2\2	18/18	1.4	5.0					133
48	19-5	4-11	78.3	2\2	54/18	2.8	5.0	2\2	18/18	1.4	5.0					153
49	19-9	5-8	93.6	2\2	54/18	2.9	4.8	2\2	18/18	1.4	5.0					162
50	20-1	6-6	109.2	2\2	27/18	1.9	5.0	2\2	18/18	1.4	5.0					165
51	20-6	7-3	125	2\2	27/18	2.0	5.0	2\2	18/18	1.4	5.0					169
52	20-10	8-1	141.2	2\2	27/18	2.1	5.0	2\2	18/18	1.4	5.0					173
53	21-2	8-10	157.6	2\2	27/18	2.2	5.0	2\2	18/18	1.4	5.0					176
54	20-4	4-6	73.1	2\2	27/18	2.0	5.0	2\2	18/18	1.4	5.0					153
55	20-7	5-3	89.2	2\2	27/18	2.1	5.0	2\2	18/18	1.4	5.0					162
56	20-11	6-1	105.5	2\2	27/18	2.2	5.0	2\2	18/18	1.4	5.0					171
57	21-3	6-10	122.1	2\2	27/18	2.3	5.0	2\2	18/18	1.4	5.0					174
58	21-6	7-8	139.0	2\2	27/18	2.3	5.0	2\2	18/18	1.4	5.0					178
59	21-10	8-5	156.0	2\2	27/18	2.5	5.0	2\2	18/18	1.4	5.0					182
60	22-1	9-3	173.3	2\2	27/18	2.5	4.8	2\3	18/18	1.4	5.0					190
61	21-7	4-11	83.8	2\2	27/18	2.4	5.0	2\2	18/18	1.4	5.0					162
62	21-10	5-8	101	2\2	27/18	2.5	5.0	2\2	18/18	1.4	5.0					171
63	22-1	6-6	118.4	2\2	27/18	2.5	4.8	2\3	18/18	1.4	5.0					185
64	22-3	7-3	135.9	2\2	27/18	2.6	4.6	2\3	18/18	1.4	5.0					188
65	22-6	8-1	153.7	2\2	27/18	2.7	4.4	2\3	18/18	1.4	5.0					192
66	22-9	8-10	171.6	2\2	27/18	2.8	4.2	2\4	18/18	1.4	5.0					191
67	23-0	9-8	189.8	2\2	27/18	2.8	4.0	2\4	18/18	1.4	5.0					204
68	22-9	5-4	95.5	2\2	27/18	2.8	4.2	2\4	18/18	1.4	5.0					181
69	23-0	6-1	113.7	2\2	27/18	2.8	4.0	2\4	18/18	1.4	5.0					190
70	23-2	6-11	132.1	3\3	27/18	2.6	4.4	2\5	18/18	1.4	5.0					203
71	23-4	7-8	150.6	3\3	27/18	2.6	4.3	2\5	18/18	1.4	5.0					207
72	23-6	8-6	169.3	3\3	27/18	2.7	4.2	2\5	18/18	1.4	5.0					211
73	23-8	9-3	188.1	3\3	27/18	2.7	4.0	2\5	18/18	1.4	5.0					214
74	23-10	10-1	207.0	3\3	27/18	2.8	3.9	2\5	18/18	1.4	5.0					213
75	24-0	5-9	108.2	2\2	18/18	1.7	5.0	2\5	18/18	1.4	5.0					196
76	24-1	6-6	127.5	2\2	18/18	1.7	5.0	2\6	18/18	1.4	5.0					211
77	24-3	7-4	146.8	2\2	18/18	1.8	5.0	2\6	18/18	1.4	5.0					220
78	24-4	8-2	166.2	2\2	18/18	1.8	5.0	2\6	18/18	1.4	5.0					224
79	24-5	8-11	185.7	2\2	18/18	1.8	5.0	2\6	18/18	1.4	5.0					227
80	24-7	9-9	205.3	2\2	18/18	1.8	5.0	2\6	18/18	1.4	5.0					231
81	24-8	10-6	225	2\2	18/18	1.8	5.0	2\6	18/18	1.4	5.0					234
82	25-2	6-2	122.0	2\2	18/18	1.9	4.9	2\6	18/18	1.4	5.0					214
83	25-2	7-0	142.2	2\2	18/18	1.9	4.9	2\7	18/18	1.4	5.0					226
84	25-3	7-9	162.4	2\2	18/18	1.9	4.9	2\7	18/18	1.4	5.0					235
85	25-4	8-7	182.6	2\2	18/18	1.9	4.8	2\7	18/18	1.4	5.0					238
86	25-4	9-5	202.9	2\2	18/18	1.9	4.8	2\7	18/18	1.4	5.0					242
87	25-5	10-2	223.3	2\2	18/18	2.0	4.5	2\7	18/18	1.4	5.0					245

See Notes page 67

AMY'S KITCHEN
Town of Goshen, New York

Water Quality/Runoff Reduction Volume Summary
Total Site

Required Water Quality Volume (WQv)

Drainage Area = 1,413,632 SF
Impervious Area = 910,819 SF
Required WQv = 100,172 CF (from water quality calc sheet)

NYSDEC requires that WQv be treated through use of Green Infrastructure Practices. These practices reduce the required WQv by reducing the drainage area or impervious area in the WQv calculation or by direct volume reduction of the required WQv. WQv treatment provided by the Green Infrastructure Practices is called Runoff Reduction Volume (RRv). The project must provide a minimum amount of WQv treatment in the Green Infrastructure Practices based on the Hydrologic Soil Group at the site.

Runoff Reduction/Water Quality Treatment Practices	RRv Deductions: Drainage Area (SF)	RRv Deductions: Impervious Area (SF)	RRv Deductions: Volume (CF)	WQv Treatment Volume (CF)
Sheetflow to Riparian Buffers or Filter Strips (Area Based Deduction)				
Notes:	28,122	6,575		
Total Drainage Area to Bnffers = **28,122** SF				
Impervious Area Draining to Buffers = **6,575** SF				
Porous Pavement (Volume Based Deduction)				
Notes:			22,637	
Porous Pavement Treatment Capacity = **22,637** CF (from pavement calc sheet)				
Standard SMP - Dry Swale (Volume Based Deduction)				
Notes: 3 dry swales throughout the project, located in HSG A soils, see plans for locations.			4,987	7,481
Total Dry Swale Treatment Capacity = 12,468 CF (from dry swale calc sheet)				
Maximum Deduction Allowed = **4,987** CF Deduction = 40%				
Remaining Treatment is standard WQv = **7,481** CF				
Standard SMP - Bio-Retention Area 2 (Volume Based Deduction)				
Notes: Located at southwest corner, treats half of site and building, located in HSG A soils.			33,076	0
Total Bio. 3 Treatment Capacity = 33,076 CF (from bio calc sheet)				
Maximum Deduction Allowed = **33,076** CF Deduction = 100%				
Remaining Treatment is standard WQv = **0** CF				
Standard SMP - Bio-Retention Area 3 (Volume Based Deduction)				
Notes: Located at northwest corner, treats half of site and building, located in HSG A soils.			32,560	0
Total Bio. 4 Treatment Capacity = 32,560 CF (from bio calc sheet)				
Maximum Deduction Allowed = **32,560** CF Deduction = 100%				
Remaining Treatment is standard WQv = **0** CF				
Standard SMP - Underground Area B (Volume Based Deduction)				
Notes: Located at employee entrance for controlling flows to Cheechunk Creek.			1,390	0
Total UG B Treatment Capacity = 1,390 CF (from PondPack model)				
Maximum Deduction Allowed = **1,390** CF Deduction = 100%				
Remaining Treatment is standard WQv = **0** CF				
Total	28,122	6,575	94,650	7,481

Provided Runoff Reduction Volume Calculation

Drainage Area = 1,413,632 SF
Drainage Area Dednction = 28,122 SF
New Drainage Area = 1,385,510 SF

Impervious Area = 910,819 SF
Impervious Area Deduction = 6,575 SF
New Impervious Area = 904,244 SF

New Drainage Area = 1,385,510
New Impervious Area = 904,244
Rv = 0.64
Reduced WQv = 99,348 CF
Volume Deduction = 94,650 CF
Reduced WQv = 4,698 CF

Provided RRv = Original WQv - Reduced WQv
Provided RRv = 95,474 CF

Required Water Quality Volume (WQv) =	**100,172**	**CF**
Provided Runoff Reduction Volume (RRv) =	**95,474**	**CF**
Provided Water Quality Volume (WQv) =	**7,481**	**CF**
Total Provided RRv and WQv =	**102,955**	**CF**

AMY'S KITCHEN
Town of Goshen, New York

Minimum Required Runoff Reduction Volume Treatment

$$\text{Minimum RRv} = \frac{P * Rv * Ai}{12}$$

P = 1.35 inch

Rv = 0.05+0.009*I (I=100%)

Ai (Impervious for Runoff Reduction) = S* Aic

Aic (New Impervious Cover) = 910,819 SF

Specific Reduction Factor (HSG C) = 0.478

Ai = 434,916 SF

Minimum RRv =	**46,482**	**CF**
Provided RRv =	**95,474**	**CF**
Provided RRv is Greater than the Minimum.		

Specific Reduction Factor Calculation

HSG	Reduction Factor	Percent of Site	Weighted Reduction Factor
A	0.55	65.00%	0.358
B	0.40	25.00%	0.100
C	0.30	0.00%	0.000
D	0.20	10.00%	0.020
			0.478

Lanc and Tully Engineering, P.C.

Project Name: Amy's Kitchen - Total Site
Project Location: Town of Goshen, NY

Water Quality Volume Calculation:

$$WQv = \frac{(P) * (Rv) * (A)}{12}$$

$$Rv = 0.05 + 0.009(I)$$

WQv = Water Quality Volume (ac-ft)
P = 90% Rainfall Event (in)
Rv = Runoff Coffecient
I = % impervious of the site
A = Area of the site (Contributing Acreage)

Impervious Acreage	=	20.910	Acres
Contributing Site Area	=	32.453	Acres
I (% Impervious)	=	64.4	%
Runoff Coffecient (Rv)	=	0.63	* Use Minimum of 0.2 for regulated sites Sheet has been designed to maintain 0.2 min.
90% Rainfall Event		P 1.35	*Rainfall from NYSDEC SWM Figure 4.1
Site Area (Contributing)		A 32.453	

REQUIRED WATER QUALITY VOLUME	=	2.300	AC-FT
		100,172	CU-FT

AMY'S KITCHEN
Town of Goshen, New York

Bio-Retention Area Water Quality Volume and Design

Bio-Retention Area Characteristics

Af = (WQv x df)/(k (hf+df) tf)

Af = surface area of filter bed, sf
df = filter bed depth, ft
k = media permeability, ft/day 0.5
hf = average water height, ft 0.25
tf = bed drain time, days 2

Area I.D.	Filter Bed Area (SF)	Filter Bed Depth (FT)	Underdrain Inv. El.	Bed El.	Berm El.	Riser El.	Provided Water Quality Volume (CF)	Provided Pre-Treatment (CF)	Total Provided Treatment (CF)
2	21,500	2.5	N/A	372.00	375.00	Grate @ 374.25	23,650	9,426	33,076
3	18,800	2.5	N/A	366.00	369.00	Swale @ 366.00	25,740	6,820	32,560
3-Swale	4,600	2.5	N/A	Varies	Varies	N/A			

Bio-Retention Area Underdrain System Length

L = 10% Af/W

Area I.D.	Filter Bed Area (SF)	10% of Filter Area (SF)	Width (FT)	Required Underdrain Length (FT)	Provided Underdrain Length (FT)
2	21,500	2,150	3.0	717	N/A*
3	18,800	1,880	3.0	627	N/A*

* Bio-Retention Areas located in HSG A soils, underdrains not required

Forebay Water Quality Volume (Pre-Treatment)

Area I.D.	Bottom Area (SF)	Top Area (SF)	Depth (FT)	Required Pre-Treatment Volume (25%) (CF)	Provided Pre-Treatment Volume (CF)
2	708	4,005	4	5,913	9,426
3	270	3,140	4	6,435	6,820

AMY'S KITCHEN
Town of Goshen, New York

Dry Swale Water Quality Volume

d = filter media depth 2.5

n = media porosity 0.2

Swale I.D.	Swale Segment Slope (%)	Length (FT)	Swale Dimensions					Provided Water Quality Volume (CF)	Provided Pre-Treatment (CF)	Total Provided Treatment (CF)
			Depth (FT)	Side Slope (y:1)	Bottom Width (SF)	Underdrain Volume (SF)	Area (SF)			
10	1.50%	280	1	3.0	2	1	5	1,680	252	1,932
11	3.00%	570	1	3.0	2	1	5	3,420	513	3,933
12	2.30%	620	1	3.0	4.5	2.25	7.5	6,045	558	6,603
Total										12,468

Gravel Diaphragm Water Quality Volume

n = stone porosity 0.4

Gravel Diaphragm I.D.	Length (FT)	Width (FT)	Depth (FT)	Volume (CF)	Required Pre-Treatment Volume (10%) (CF)	Provided Water Quality Pre-Treatment Volume (CF)
10	280	1.5	1.5	252	168	252
11	570	1.5	1.5	513	342	513
12	620	1.5	1.5	558	605	558

AMY'S KITCHEN
Town of Goshen, New York

Porous Pavement Water Quality Volume and Design

n = stone porosity 0.4

Area I.D.	Filter Bed Area (SF)	Stone Layer Depth (ft)	Total Stone Volume (CF)	Depth of Stone Below Outlet Pipe (ft)	Stone Volume Below Outlet (CF)	Provided Water Quality Volume (CF)
Employee Parking	84,888	1	33,955	0.67	22,637	22,637

CULTEC

Stormwater and Septic Solutions

Since 1986

1-800-4-CULTEC

Manufactured at ISO 9001:2000 certified facilities

Prepared For:	Project Information:	Engineer:	Calculations Performed By:
Name	Amy's Kitchen	Name	Name
Company Name		Company Name	Company Name
Street Address	Goshen	Street Address	Street Address
City	NY Zip	City	City
State Zip	Date: (mm/dd)	State Zip	State Zip
Phone		Phone	Phone
Fax		Fax	Fax
Email		Email	Email

Input Given Parameters

Unit of Measure	English	
Select Model	Recharger V8HD	
Stone Porosity	40.0%	
Number of Header Systems	1 Header	
Stone Depth **Above** Chamber	6	inches
Stone Depth **Below** Chamber	6	inches
Workable Bed Depth	8.00	feet
Max. Bed Width	50.00	feet
Storage Volume Required	10000.00	cu. feet

Image for visual reference only.May not reflect selected model.

Chamber Specifications

Height	32.0	inches
Width	60.00	inches
Length	8.00	feet
Installed Length	7.50	feet
Bare Chamber Volume	65.09	cu. feet
Installed Chamber Volume	99.56	cu. feet
Bed Depth	4.92	feet
Bed Width	45.50	feet
Storage Volume Provided	10073.26	cu. feet

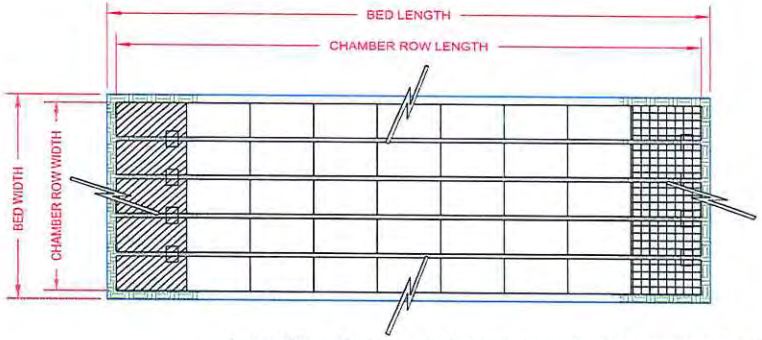
Materials List

Recharger V8HD Stormwater System by CULTEC, Inc.

Approx. Unit Count - not for construction	100	pieces
Actual Number of Chambers Required	104	pieces
Starter Chambers	8	pieces
Intermediate Chambers	88	pieces
End Chambers	8	pieces

HVLV F-110x4	7	pieces
CULTEC No. 410™ Filter Fabric	1166.51	sq. yards
CULTEC No. 20L Polyethylene Liner	45.50	feet
Stone	342.80	cu. yards
Volume of Excavation	776.07	cu. yards

Bed Detail



Number of Rows Wide	8	pieces
Number of Chambers Long	13	pieces
Chamber Row Width	43.50	feet
Chamber Row Length	91.67	feet
Bed Width	45.50	feet
Bed Length	93.67	feet
Bed Area Required	4261.80	sq. feet

Bed detail for reference only. Not project specific. Not to scale. Use CULTEC StormGenie to output project specific detail.

CULTEC, Inc.
P.O. Box 280, Brookfield, CT 06804 USA

Phone: 203-775-4416 - Fax: 203-775-1462 - www.cultec.com

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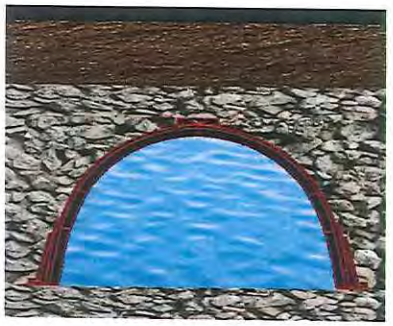
CULTEC SDC v. 2012-02

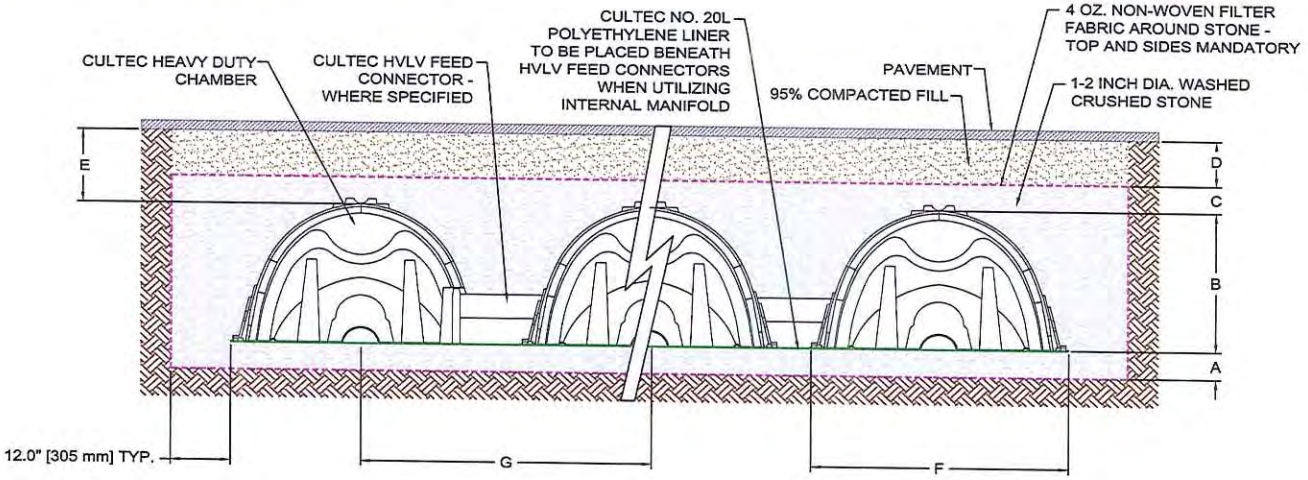
Project Name: Amy's Kitchen **Date:** (mm/dd)

Cross Section Detail

Conceptual graphic only. Not job specific.

Recharger V8HD		
Pavement	3	inches
95% Compacted Fill	12	inches
Stone Above	6	inches
Chamber Height	32.0	inches
Stone Below	6	inches
Effective Depth	44.0	inches
Bed Depth	59.0	inches





A	Depth of Stone Base	6.0	inches
B	Chamber Height	32.0	inches
C	Depth of Stone Above Units	6.0	inches
D	Depth of 95% Compacted Fill	12.0	inches
E	Max. Depth of Cover Allowed Above Crown of Chamber	12.0	feet
F	Chamber Width	60.0	inches
G	Center to Center Spacing	5.50	feet

Breakdown of Storage Provided by Recharger V8HD Stormwater System		
Chambers	6364.14	cu. feet
Feed Connectors	6.89	cu. feet
Stone	3702.23	cu. feet
Total Storage Provided	10073.26	cu. feet

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CULTEC SDC v. 2012-02

Lanc and Tully Engineering, P.C.

Project Name: Amy's Kitchen - UG B
Project Location: Town of Goshen, NY

Channel Protection Volume Calculation:

$$Vs = CPv = \frac{(Vs/Vr)(Q\text{-}1Year)(A)}{12}$$

CPv =Channel Protection Volume (ac-ft)
Vs = Required Storage Volume (ac-ft)
Vr = Runoff Volume (ac-ft)
Q-1 Year = Post Developed Runoff for 1 year Design Storm (in)
A = Drainage Area
CN = Site Curve Number
P = Rainfall for Storm event (in)

Site Curve Number (CN)	57
Precipitation (P) (in)	2.6
Time of Concentration (Hrs.)	0.1660
Q-1 Year Runoff (in.)	0.15
Site Area (acres)	2.729

Ia = Initial Abstraction

Ia=	1.5088
Ia/P=	0.5715

Using Exhibit 4-III - Unit Peak Discharge (Qu) Type III Distribution

Qu= 150 csm/in

Using Figure D.11.2 - Detention Time vs. Discharge Ratios for 24 hours

Qo/Qi= 0.110

Vs/Vr= 0.543

CPv=Vs= 0.0185 Ac-Ft

REQUIRED CHANNEL PROTECTION VOLUME	=	0.019	AC-FT
	=	808	CU-FT

Pond Detailed Report: Pond

<General>			
ID	121	Notes	
Label	UG B	Hyperlinks	<Collection: 0 items>

GIS-IDs

GIS-ID

Geometry

X (ft)	Y (ft)
524,944.66	937,323.59
524,835.23	937,244.08
524,877.03	937,115.44
525,012.30	937,115.44
525,054.09	937,244.08

Active Topology	
Is Active?	True

Infiltration			
Infiltration Method	Average Infiltration Rate	Infiltration Rate (Average)	2.0000 in/h

Initial Conditions			
Is Outflow Averaging On?	False	Define Starting Water Surface Elevation	Pond Invert

Output	
Detention Time	None

Runoff	
Scaled Area	0.723 acres

Volume			
Pond Type	Storage Chamber System	Chamber System Row Spacing	6.0 in
Storage Chamber	Recharger (R) V8IHD Intermediate	Chamber System Side Fill	6.0 in
Chamber System Elevation-Volume Increment	0.50 ft	Chamber System End Fill	6.0 in
Chamber System Invert	370.50 ft	Chamber System Fill Cover Depth	12.0 in
Chamber System Rows	8	Chamber System Fill Base Depth	6.0 in
Chambers per Row	13	Chamber System Fill Side Slope	0.000 H:V
Chamber System Fill Void Space	40.0 %	Chamber System Includes Header?	False

Pond Detailed Report: Pond

Results (Detention Time)			
Time to Peak (Outflow + Infiltration, Peak to Peak Detention Time)	(N/A) hours	Weighted Average Plug Time	(N/A) hours
Time to Peak (Inflow, Peak to Peak Detention Time)	(N/A) hours	Maximum Plug Volume Plug Time	(N/A) hours
Detention Time (Peak to Peak)	(N/A) hours	Maximum Inflow Plug Volume	(N/A) ac-ft
Time to Centroid (Outflow)	(N/A) hours	Time (Maximum Plug Volume, Start)	(N/A) hours
Time to Centroid (Inflow)	(N/A) hours	Time (Maximum Plug Volume, End)	(N/A) hours
Detention Time (Centroid to Centroid)	(N/A) hours		

Results (Flows)			
Flow (Outlet)	0.00 ft³/s	Flow (Peak Total)	0.05 ft³/s
Flow (Total In)	0.00 ft³/s	Time to Peak (Total Out)	14.4S0 hours
Flow (Total Out)	0.00 ft³/s	Volume (Total Out)	0.032 ac-ft

Results (ICPM Initial Conditions)			
Elevation (Starting Water Surface Computed)	(N/A) ft	Outflow (Starting)	(N/A) ft³/s
Volume (Starting)	(N/A) ac-ft	Infiltration (Starting ICPM)	(N/A) ft³/s

Results (ICPM Mass Balance)			
Volume (Initial ICPM)	(N/A) ac-ft	Difference	(N/A) ac-ft
Volume (Total In ICPM)	(N/A) ac-ft	Elevation (Ending)	(N/A) ft
Volume (Total Out ICPM)	(N/A) ac-ft	Percent of Inflow Volume (Interconnected Pond Mass Balance)	(N/A) %
Volume (Ending)	(N/A) ac-ft		

Results (ICPM Maximum Storage)			
Time to Maximum Storage	(N/A) hours	Volume (Maximum)	(N/A) ac-ft
Elevation (Maximum)	(N/A) ft		

Results (ICPM Routing)			
Time to Peak (Pond Inflow, Forward Flow)	(N/A) hours	Pond Inflow, Total Volume In	(N/A) ac-ft
Pond Inflow, Forward Flow Peak	(N/A) ft³/s	Direction (Forward, Total In)	(N/A)
Time to Peak (Infiltration, Forward Flow)	(N/A) hours	Pond Outflow, Total Volume In	(N/A) ac-ft
Infiltration, Forward Flow Peak	(N/A) ft³/s	Direction (Forward, Total Out)	(N/A)
Time to Peak (Pond Outflow, Forward Flow)	(N/A) hours	Pond Inflow, Total Volume Out	(N/A) ac-ft
Pond Outflow, Forward Flow Peak	(N/A) ft³/s	Direction (Reverse, Total In)	(N/A)
Time to Peak (Pond Inflow, Reverse Flow)	(N/A) hours	Pond Outflow, Total Volume Out	(N/A) ac-ft
Pond Inflow, Reverse Flow Peak	(N/A) ft³/s	Direction (Reverse, Total Out)	(N/A)
Time to Peak (Infiltration, Reverse Flow)	(N/A) hours	Infiltration, Total Volume Out	(N/A) ac-ft

Pond Detailed Report: Pond

Results (ICPM Routing)			
Infiltration, Reverse Flow Peak	(N/A) ft³/s	Direction (Reverse, Total Infiltration Out)	(N/A)
Time to Peak (Pond Ouflow, Reverse Flow)	(N/A) hours	Infiltration, Total Volume In	(N/A) ac-ft
Pond Outflow, Reverse Flow Peak	(N/A) ft³/s	Direction (Forward, Total Infiltration In)	(N/A)

Results (Infiltration)			
Infiltration	0.00 ft³/s	Infiltration Method (Computed)	Average Infiltration Rate

Results (Level Pool Initial Conditions)			
Elevation (Water Surface, Initial)	370.50 ft	Flow (Initial Infiltration)	0.00 ft³/s
Volume (Initial)	0.000 ac-ft	Flow (Initial, Total)	0.00 ft³/s
Flow (Initial Outlet)	0.00 ft³/s	Time Increment	0.050 hours

Results (Level Pool Mass Balance)			
Volume (Total Inflow)	0.033 ac-ft	Volume (Retained)	0.002 ac-ft
Volume (Total Infiltration)	0.032 ac-ft	Volume (Unrouted)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.000 ac-ft	Error (Mass Balance)	0.0 %

Results (Pond Routing)			
Flow (Peak In)	0.12 ft³/s	Time to Peak (Infiltration)	14.450 hours
Time to Peak (Flow, In)	12.450 hours	Elevation (Water Surface, Peak)	370.64 ft
Flow (Peak Outlet)	0.00 ft³/s	Volume (Peak)	0.005 ac-ft
Time to Peak (Flow, Outlet)	0.000 hours	2S/t - O	0.00 ft³/s
Infiltration (Peak)	0.05 ft³/s	2S/t + O	0.00 ft³/s

Elevation-Volume-Flow Table

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
370.50	0.00	0.000	0.095	0.00	0.00	0.00
371.00	0.00	0.019	0.095	0.19	0.19	9.35
371.50	0.58	0.061	0.095	0.19	0.77	30.07
372.00	1.37	0.101	0.095	0.19	1.56	50.55
372.50	1.81	0.139	0.095	0.19	2.01	69.48
373.00	2.17	0.174	0.095	0.19	2.36	86.54
373.50	2.47	0.201	0.095	0.19	2.66	99.91
374.00	2.74	0.220	0.095	0.19	2.93	109.50
374.50	2.99	0.239	0.095	0.19	3.18	118.91
374.67	3.07	0.245	0.095	0.19	3.26	122.04

Results			
Volume	0.000 ac-ft	Elevation	370.50 ft

Calculation Messages

Time (hours)	Message

APPENDIX E

EXCERPTS FROM THE "NY STATE STORMWATER DESIGN MANUAL"
CONSTRUCTION SPECIFICATIONS

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New York
Location	
Longitude	74.379 degrees West
Latitude	41.409 degrees North
Elevation	Unknown/Unavailable
Date/Time	Tue, 22 Sep 2015 10:54:12 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.33	0.50	0.62	0.82	1.02	1.27	**1yr**	0.88	1.18	1.45	1.78	2.17	2.64	3.07	**1yr**	2.34	2.95	3.38	4.08	4.71	**1yr**
2yr	0.39	0.60	0.75	0.98	1.24	1.54	**2yr**	1.07	1.44	1.76	2.16	2.62	3.17	3.63	**2yr**	2.81	3.49	4.00	4.71	5.36	**2yr**
5yr	0.46	0.71	0.89	1.20	1.53	1.92	**5yr**	1.32	1.77	2.21	2.71	3.29	3.97	4.58	**5yr**	3.51	4.41	5.03	5.81	6.58	**5yr**
10yr	0.51	0.81	1.02	1.38	1.80	2.28	**10yr**	1.55	2.08	2.62	3.22	3.91	4.70	5.47	**10yr**	4.16	5.26	5.98	6.81	7.68	**10yr**
25yr	0.60	0.95	1.21	1.67	2.23	2.85	**25yr**	1.92	2.57	3.30	4.06	4.92	5.88	6.91	**25yr**	5.21	6.64	7.53	8.41	9.43	**25yr**
50yr	0.68	1.09	1.39	1.95	2.63	3.38	**50yr**	2.27	3.02	3.92	4.83	5.84	6.98	8.26	**50yr**	6.18	7.94	8.96	9.87	11.02	**50yr**
100yr	0.77	1.24	1.60	2.27	3.10	4.02	**100yr**	2.67	3.55	4.67	5.75	6.94	8.28	9.87	**100yr**	7.33	9.49	10.68	11.59	12.88	**100yr**
200yr	0.87	1.42	1.84	2.64	3.65	4.77	**200yr**	3.15	4.18	5.55	6.84	8.26	9.83	11.80	**200yr**	8.70	11.35	12.73	13.62	15.07	**200yr**
500yr	1.04	1.71	2.24	3.25	4.55	5.98	**500yr**	3.93	5.19	6.98	8.61	10.39	12.34	14.96	**500yr**	10.92	14.39	16.07	16.86	18.57	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.45	0.54	0.73	0.90	1.11	**1yr**	0.78	1.09	1.25	1.59	1.99	2.39	2.69	**1yr**	2.12	2.58	2.91	3.49	3.82	**1yr**
2yr	0.37	0.58	0.71	0.97	1.19	1.44	**2yr**	1.03	1.40	1.63	2.07	2.57	3.09	3.52	**2yr**	2.73	3.39	3.90	4.57	5.23	**2yr**
5yr	0.42	0.65	0.81	1.11	1.41	1.66	**5yr**	1.22	1.62	1.89	2.42	3.02	3.68	4.26	**5yr**	3.26	4.09	4.69	5.40	6.15	**5yr**
10yr	0.46	0.71	0.88	1.24	1.60	1.86	**10yr**	1.38	1.82	2.11	2.68	3.40	4.21	4.92	**10yr**	3.73	4.73	5.37	6.07	6.84	**10yr**
25yr	0.53	0.80	1.00	1.43	1.88	2.14	**25yr**	1.62	2.09	2.48	3.19	3.94	5.03	5.97	**25yr**	4.45	5.74	6.46	7.02	7.86	**25yr**
50yr	0.58	0.88	1.10	1.58	2.13	2.41	**50yr**	1.84	2.35	2.78	3.61	4.43	5.77	6.94	**50yr**	5.11	6.67	7.44	7.84	8.74	**50yr**
100yr	0.64	0.97	1.22	1.76	2.42	2.69	**100yr**	2.08	2.63	3.13	4.09	4.98	6.64	8.09	**100yr**	5.88	7.78	8.57	9.02	9.67	**100yr**
200yr	0.72	1.08	1.37	1.98	2.76	3.01	**200yr**	2.38	2.95	3.52	4.65	5.61	7.64	9.45	**200yr**	6.76	9.09	9.91	10.15	10.66	**200yr**
500yr	0.83	1.24	1.59	2.32	3.30	3.51	**500yr**	2.84	3.43	4.12	5.54	6.61	9.22	11.65	**500yr**	8.16	11.20	12.05	11.86	12.13	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.36	0.55	0.68	0.91	1.12	1.35	**1yr**	0.96	1.32	1.54	1.95	2.40	2.84	3.29	**1yr**	2.52	3.17	3.65	4.37	5.04	**1yr**
2yr	0.41	0.63	0.78	1.05	1.30	1.55	**2yr**	1.12	1.51	1.76	2.23	2.78	3.30	3.76	**2yr**	2.92	3.62	4.17	4.96	5.62	**2yr**
5yr	0.50	0.77	0.95	1.31	1.67	1.98	**5yr**	1.44	1.94	2.26	2.89	3.59	4.30	4.90	**5yr**	3.81	4.71	5.36	6.24	6.98	**5yr**
10yr	0.59	0.91	1.13	1.58	2.04	2.44	**10yr**	1.76	2.39	2.75	3.54	4.40	5.27	6.01	**10yr**	4.66	5.78	6.51	7.51	8.44	**10yr**
25yr	0.75	1.14	1.41	2.02	2.65	3.23	**25yr**	2.29	3.16	3.63	4.65	5.74	6.87	7.84	**25yr**	6.08	7.54	8.43	9.62	10.76	**25yr**
50yr	0.89	1.35	1.68	2.42	3.25	3.75	**50yr**	2.81	3.67	4.45	5.69	7.02	8.39	9.59	**50yr**	7.43	9.22	10.26	11.60	12.96	**50yr**
100yr	1.06	1.60	2.00	2.89	3.97	4.57	**100yr**	3.43	4.47	5.46	6.96	8.58	10.26	11.73	**100yr**	9.08	11.28	12.47	14.12	15.63	**100yr**
200yr	1.26	1.90	2.41	3.48	4.86	5.57	**200yr**	4.19	5.44	6.70	8.53	10.50	12.55	14.35	**200yr**	11.11	13.80	15.18	17.08	18.87	**200yr**
500yr	1.60	2.38	3.07	4.45	6.33	7.23	**500yr**	5.46	7.06	8.79	11.15	13.71	16.37	18.68	**500yr**	14.49	17.96	19.66	21.99	24.26	**500yr**

Powered by ACIS
Northeast Regional Climate Center

Specifications for Bioretention

Material Specifications

The allowable materials to be used in bioretention area are detailed in Table G.2.

Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of noxious weeds.

The planting soil shall be tested and shall meet the following criteria:

pH range	5.2 - 7.0
organic matter	1.5 - 4%
magnesium	35 lb./ac
phosphorus P_2O_5	75 lb./ac
potassium K_2O	85 lb./ac
soluble salts	not to exceed 500 ppm

All bioretention areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the top soil was excavated.

Since different labs calibrate their testing equipment differently, all testing results shall come from the same testing facility.

Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

Compaction

It is very important to minimize compaction of both the base of the bioretention area and the required backfill. When possible, use excavation hoes to remove original soil. If bioretention areas are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high pressure tires will cause excessive compaction resulting in reduced infiltration rates and storage volumes and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before back filling the required sand layer. Pump any ponded water before preparing (rototilling) base.

When back filling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When back filling the bioretention facility, place soil in lifts 12" or greater. Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials by hand or with light equipment such as a compact loader or a dozer/loader with marsh tracks.

Plant Installation

Mulch around individual plants only. Shredded hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

The plant root ball should be planted so $1/8^{th}$ of the ball is above final grade surface.

Root stock of the plant material shall be kept moist during transport and on-site storage. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Trees shall be braced using 2" X 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed shall be tilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch is used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

Underdrains

Under drains to be placed on a 3'-0" wide section of filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of under drain pipes not terminating in an observation well shall be capped.

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

Miscellaneous

The bioretention facility may not be constructed until all contributing drainage area has been stabilized.

Table C.2 Materials Specifications for Bioretention

Parameter	Specification	Size	Notes
Plantings	see your local NRCS Standards and Specifications guidance.	n/a	plantings are site-specific
Planting Soil [4= deep]	sand 35 - 60% silt 30 - 55% clay 10 - 25%	n/a	USDA soil types loamy sand, sandy loam or loam
Mulch	shredded hardwood		aged 6 months, minimum
pea gravel diaphragm and curtain drain	pea gravel: ASTM D 448 ornamental stone: washed cobbles	pea gravel: No. 6 stone: 2" to 5"	
Geotextile	Class "C" apparent opening size (ASTM-D-4751) grab tensile strength (ASTM-D-4632) burst strength (ASTM-D-4833)	n/a	for use as necessary beneath underdrains only
underdrain gravel	AASHTO M-43. No. 67.	0.25" to 0.75"	
underdrain piping	ASTM D 1785 or AASHTO M-278	6" rigid schedule 40 PVC	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
poured in place concrete (if required)	See local DOT Standards and Specs.; f=c = 3500 psi. @ 28 days, normal weight, air-entrained; re-inforcing to meet ASTM 615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) *not using previously approved State or local standards* requires design drawings sealed and approved by a licensed professional structural engineer.
sand [1= deep]	AASHTO M-6 or ASTM C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

Specifications for Open Channels and Filter Strips

Material Specifications
The recommended construction materials for open channels and filter strips are detailed in Table G.3.

Dry Swales

Roto-till soil/gravel interface approximately 6" to avoid a sharp soil/gravel interface.

Permeable soil mixture (20" to 30" deep) should meet the bioretention planting soil specifications.

Check dams, if required, shall be placed as specified.

System to have 6" of freeboard, minimum.

Side slopes to be 3:1 minimum; (4:1 or greater preferred).

No gravel or perforated pipe is to be placed under driveways.

Bottom of facility to be above the seasonably high water table.

Seed with flood/drought resistant grasses; see your local NRCS Standards and Specifications guidance.

Longitudinal slope to be 1 to 2%, maximum [up to 5% with check dams].

Bottom width to be 8'= maximum to avoid braiding; larger widths may be used if proper berming is supplied. Width to be 2'= minimum.

Wet Swales
Follow above information for dry swales, with the following exceptions: the seasonally high water table may inundate the swale; but not above the design bottom of the channel [NOTE: if the water table is stable within the channel; the WQv storage may start at this point]

Excavate into undisturbed soils; do not use an underdrain system.

Filter Strips

Construct pea gravel diaphragms 12" wide, minimum, and 24" deep minimum.

Pervious berms to be a sand/gravel mix (35-60% sand, 30-55% silt, and 10-25% gravel). Berms to have overflow weirs with 6 inch minimum avilable head.

Slope range to be 2% minimum to 6% maximum.

Table C.3 Open Vegetated Swale and Filter Strip Materials Specifications

Parameter	Specification	Size	Notes
Dry swale soil	USCS; ML, SM, SC	n/a	soil with a higher percent organic content is preferred
Dry Swale sand	ASTM C-33 fine aggregate concrete sand	0.02" to 0.04"	
Check Dam (pressure treated)	AWPA Standard C6	6" by 6" or 8" by 8"	*do not* coat with creosote; embed at least 3= into side slopes
Check Dam (natural wood)	Black Locust, Red Mulberry, Cedars, Catalpa, White Oak, Chestnut Oak, Black Walnut	6" to 12" diameter; notch as necessary	*do not* use the following, as these species have a predisposition towards rot: Ash, Beech, Birch, Elm, Hackberry, hemlock, Hickories, Maples, Red and Black Oak, Pines, Poplar, Spruce, Sweetgum, Willow
Filter Strip sand/gravel pervious berm	sand: per dry swale sand gravel; AASHTO M-43 No. 57	sand: 0.02" to 0.04" gravel: 2" to 1"	mix with approximately 25% loan soil to support grass cover crop; see Bioretention planting soil notes for more detail.
pea gravel diaphragm and curtain drain	ASTM D 448	varies (No. 6) or (1/8" to 3/8")	use clean bank-run gravel
under drain gravel	AASHTO M-43 No. 67	0.25" to 0.75"	
under drain	ASTM D -1785 or AASHTO M-278	6" rigid Schedule 40 PVC	3/8" perf. @ 6" o.c.; 4 holes per row
Geotextile	See local DOT Standards and Specs	n/a	
rip rap	per local DOT criteria	size per New York State DOT requirements based on 10-year design flows	

APPENDIX F

STANDARD CONSTRUCTION INSPECTION FORMS
STANDARD MAINTENANCE INSPECTION FORMS

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Comments:

Actions to be Taken:

Open Channel System Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility location staked out		
2. Excavation		
Size and location		
Side slope stable		
Soil permeability		
Groundwater / bedrock		
Lateral slopes completely level		
Longitudinal slopes within design range		
Excavation does not compact subsoils		
3. Check dams		
Dimensions		
Spacing		
Materials		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
4. Structural Components		
Underdrain installed correctly		
Inflow installed correctly		
Pretreatment devices installed		
5. Vegetation		
Complies with planting specifications		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
6. Final inspection		
Dimensions		
Check dams		
Proper outlet		
Effective stand of vegetation and stabilization		
Contributing watershed stabilized before flow is routed to the factility		

Comments:

Actions to be Taken:

BIO-RETENTION AREA
MAINTENANCE AND INSPECTION CHECKLIST

Section A: General Information

Site:	NYSDEC SPDES Permit No.:
Site Location:	Bio-Retention Area ID:
Date:	Time:
Weather:	
Inspector:	

Section B: Debris Cleanout

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Bioretention and contributing areas clean of debris	☐	☐	☐	
2.No dumping of yard waste or trash into practice	☐	☐	☐	
3.Litter (branches, etc.) have been removed	☐	☐	☐	
4. Other (specify)	☐	☐	☐	

Section C: Vegetation

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Plant height	☐	☐	☐	
2.Fertilized per specifications	☐	☐	☐	
3.No placement or growth of inappropriate plants	☐	☐	☐	
4.Grass height not greater than 6 inches	☐	☐	☐	
5.No evidence of erosion	☐	☐	☐	
6. Other (specify)	☐	☐	☐	

Section D: Check Dams/Energy Dissipaters/Outlet Structure

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.No evidence of sediment buildup	☐	☐	☐	
2.Sumps should not be more than 50% full of sediment	☐	☐	☐	
3.No evidence of erosion at downstream toe of structure	☐	☐	☐	
4. Integrity of structure	☐	☐	☐	
5. Cleaning necessary	☐	☐	☐	
6. Other (Specify)	☐	☐	☐	

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BIO-RETENTION AREA
MAINTENANCE AND INSPECTION CHECKLIST

Section E: Dewatering

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Dewaters between storms within 2 days	☐	☐	☐	
2.No evidence of standing water	☐	☐	☐	
3. Other (specify)	☐	☐	☐	

Section F: Sediment Deposition/Pre-Treatment

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Sediments should not be >1" deep	☐	☐	☐	
2. Gravel Diaphragm Condition	☐	☐	☐	
3. Grass Filter Condition	☐	☐	☐	
4. Other (specify)	☐	☐	☐	

Section G: Outlet/Overflow Spillway

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Good Condition, no need for repair	☐	☐	☐	
2.No evidence of erosion	☐	☐	☐	
3.No evidence of any blockages	☐	☐	☐	
4. Other (specify)	☐	☐	☐	

Section H: Integrity of Filter Bed

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Filter bed has not been blocked or filled inappropriately	☐	☐	☐	
2.Other (specify)	☐	☐	☐	

Section I: Comments

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Section J: Actions Required

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OPEN CHANNEL (SWALE)
MAINTENANCE AND INSPECTION CHECKLIST

Section A: General Information

Site:	NYSDEC SPDES Permit No.:
Site Location:	Open Channel ID:
Date:	Time:
Weather:	
Inspector:	

Section B: Debris Cleanout

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Contributing areas clean of debris	□	□	□	
2. Other (specify)	□	□	□	

Section C: Check Dams or Energy Dissipators

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.No evidence of flow outside swale line	□	□	□	
2.No evidence of erosion within swale	□	□	□	
3. Other (specify)	□	□	□	

Section D: Vegetation

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Mowing done when needed	□	□	□	
2.Minimum mowing depth not exceeded 6"-8"	□	□	□	
3.No evidence of erosion	□	□	□	
4.Fertilized per specification	□	□	□	
5. Other (specify)	□	□	□	

Section E: Dewatering

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Dewaters between storms	□	□	□	
2. Other (specify)	□	□	□	

Section F: Sediment Deposition

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Clean of sediment	□	□	□	
2. Other (specify)	□	□	□	

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OPEN CHANNEL (SWALE)
MAINTENANCE AND INSPECTION CHECKLIST

Section G: Outlet/Overflow Spillway

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Good Condition, no need for repair	☐	☐	☐	
2.No evidence of erosion	☐	☐	☐	
3. Other (specify)	☐	☐	☐	

Section H: Comments

Section I: Actions Required

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UNDERGROUND STORMWATER SYSTEM MAINTENANCE AND INSPECTION CHECKLIST

Section A: General Information

Site:	NYSDEC SPDES Permit No.:
Site Location:	Area ID:
Date:	Time:
Weather:	
Inspector:	

Do not enter the system unless properly trained, equipped and qualified to enter a confined space as identified by local occupational safety and health regulations.

Section B: Debris Cleanout

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.System and contributing areas clean of debris	☐	☐	☐	
2. Facility clean of debris	☐	☐	☐	
3.Inlets/trash racks and outlets clear of debris	☐	☐	☐	
4. Other (specify)	☐	☐	☐	

Section C: Vegetation

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Contributing drainage area stabilized	☐	☐	☐	
2. No evidence of erosion in contributing areas	☐	☐	☐	
3. Other (specify)	☐	☐	☐	

Section D: Water Retention

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Water quantity areas temporarily holding water during storms	☐	☐	☐	
2.No evidence of leakage	☐	☐	☐	
3. Other (specify)	☐	☐	☐	

Section E: Sediment Deposition

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Sediments should not be 6" deep in filter bed area	☐	☐	☐	
2. Other (specify)	☐	☐	☐	

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UNDERGROUND STORMWATER SYSTEM
MAINTENANCE AND INSPECTION CHECKLIST

Section F: Structural Components

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.No evidence of structural deterioration	☐	☐	☐	
2.Any grates are in good condition	☐	☐	☐	
3. No evidence of erosion (if draining into a natural channel)	☐	☐	☐	
4. Other (specify)	☐	☐	☐	

Section G: Outlet/Overflow Spillway

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Good Condition, no need for repairs	☐	☐	☐	
2.No evidence of erosion (if draining into a natural channel)	☐	☐	☐	
3. Other (specify)	☐	☐	☐	

Section H: Overall Function of Facility

Maintenance Item	Satisfactory	Unsatisfactory	N/A	Comments
1.Evidence of flow bypassing facility	☐	☐	☐	
2.No noticeable odors outside of facility	☐	☐	☐	
3. Other (specify)	☐	☐	☐	

Section I: Comments

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Section J: Actions Required

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APPENDIX G

NOTICE OF INTENT
NOTICE OF TERMINATION

0806372691

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR ☐☐☐☐☐☐
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR **MUST SIGN FORM**

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Owner/Operator Contact Person First Name

Owner/Operator Mailing Address

City

State ☐☐ Zip ☐☐☐☐☐ - ☐☐☐☐

Phone (Owner/Operator) ☐☐☐ - ☐☐☐ - ☐☐☐☐

Fax (Owner/Operator) ☐☐☐ - ☐☐☐ - ☐☐☐☐

Email (Owner/Operator)

FED TAX ID ☐☐ - ☐☐☐☐☐☐☐ (not required for individuals)

Project Site Information

Project/Site Name

Street Address (NOT P.O. BOX)

Side of Street

○ **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)

State NY Zip - County DEC Region

Name of Nearest Cross Street

Distance to Nearest Cross Street (Feet)

Project In Relation to Cross Street

○ **North** ○ **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

Y Coordinates (Northing) 4

2. What is the nature of this construction project?

○ **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note:** for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	**Total Area To Be Disturbed**	**Existing Impervious Area To Be Disturbed**	**Future Impervious Area Within Disturbed Area**
.	.	.	.

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ○ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	**B**	**C**	**D**
%	%	%	%

7. Is this a phased project? ○ **Yes** ○ **No**

8. Enter the planned start and end dates of the disturbance activities. **Start Date** / / – **End Date** / /

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ○ Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? ○ **Yes** ○ **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ **Yes** ○ **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ○ **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ○ **No**
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ○ **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ○ Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ○ No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ○ No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ○ No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ○ No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ○ Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ○ Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ○ Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ○ **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer

Contact Name (Last, Space, First)

Mailing Address

City

State Zip -

Phone - -

Fax - -

Email

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name **MI**

Last Name

Signature

Date / /

25. Has a construction sequence schedule for the planned management practices been prepared? ○ Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ○ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ○ Silt Fence
- ○ Stabilized Construction Entrance
- ○ Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ○ Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ○ Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ○ Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- O **Preservation of Undisturbed Areas**
- O **Preservation of Buffers**
- O **Reduction of Clearing and Grading**
- O **Locating Development in Less Sensitive Areas**
- O **Roadway Reduction**
- O **Sidewalk Reduction**
- O **Driveway Reduction**
- O **Cul-de-sac Reduction**
- O **Building Footprint Reduction**
- O **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

O All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

O Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area (acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)	___.___	and/or	___.___
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	___.___	and/or	___.___
○ Tree Planting/Tree Pit (RR-3)	___.___	and/or	___.___
○ Disconnection of Rooftop Runoff (RR-4)	___.___	and/or	___.___
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			___.___
○ Rain Garden (RR-6)			___.___
○ Stormwater Planter (RR-7)			___.___
○ Rain Barrel/Cistern (RR-8)			___.___
○ Porous Pavement (RR-9)			___.___
○ Green Roof (RR-10)			___.___
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			___.___
○ Infiltration Basin (I-2)			___.___
○ Dry Well (I-3)			___.___
○ Underground Infiltration System (I-4)			___.___
○ Bioretention (F-5)			___.___
○ Dry Swale (O-1)			___.___
Standard SMPs			
○ Micropool Extended Detention (P-1)			___.___
○ Wet Pond (P-2)			___.___
○ Wet Extended Detention (P-3)			___.___
○ Multiple Pond System (P-4)			___.___
○ Pocket Pond (P-5)			___.___
○ Surface Sand Filter (F-1)			___.___
○ Underground Sand Filter (F-2)			___.___
○ Perimeter Sand Filter (F-3)			___.___
○ Organic Filter (F-4)			___.___
○ Shallow Wetland (W-1)			___.___
○ Extended Detention Wetland (W-2)			___.___
○ Pond/Wetland System (W-3)			___.___
○ Pocket Wetland (W-4)			___.___
○ Wet Swale (O-2)			___.___

Table 2 - Alternative SMPs
(DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area (acres)
○ Hydrodynamic	
○ Wet Vault	
○ Media Filter	
○ Other [ ]	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ○ **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

○ **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). [ ][ ][ ].[ ][ ][ ]

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ○ **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

CPv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

[ ][ ][ ].[ ][ ][ ] **CFS**

Post-development

[ ][ ][ ].[ ][ ][ ] **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

[ ][ ][ ].[ ][ ][ ] **CFS**

Post-development

[ ][ ][ ].[ ][ ][ ] **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ○ Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ○ None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ○ **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ○ **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ]

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name **MI**

Print Last Name

Owner/Operator Signature

Date / /

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ____ ____ ____ ____ ____ ____

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ____ ____ ____ ____ ____ ____
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

NEW YORK
STATE OF
OPPORTUNITY

Department of
Environmental
Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information
1. Owner/Operator Name:
2. Contact Person:
3. Street Address:
4. City/State/Zip:
II. Project Site Information
5. Project/Site Name:
6. Street Address:
7. City/State/Zip:
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4:
12. MS4 SPDES Permit Identification Number: NYR20A _____
13. Contact Person:
14. Street Address:
15. City/State/Zip:
16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

APPENDIX H

CONSTRUCTION SITE LOG BOOK
CONTRACTOR'S CERTIFICATION FORM

APPENDIX H

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

CONSTRUCTION SITE LOG BOOK

Table of Contents

I. Pre-Construction Meeting Documents
   a. Preamble to Site Assessment and Inspections
   b. Operator's Certification
   c. Qualified Professional's Credentials & Certification
   d. Pre-Construction Site Assessment Checklist

II. Construction Duration Inspections
   a. Directions
   b. Modification to the SWPPP

III. Monthly Summary Reports

IV. Monitoring, Reporting, and Three-Month Status Reports
   a. Operator's Compliance Response Form

Properly completing forms such as those contained in Appendix H meet the inspection requirement of NYS-DEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

I. PRE-CONSTRUCTION MEETING DOCUMENTS

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. Preamble to Site Assessment and Inspections

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified professional[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Operators Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

c. Qualified Professional's Credentials & Certification

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

d. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Perimeter Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:
Inspection Forms will be filled out during the entire construction phase of the project.
Required Elements:

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

(4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass
water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

Inspector (print name)	**Date of Inspection**
Qualified Professional (print name)	**Qualified Professional Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions
Yes No NA
[ ] [ ] [ ] Is construction site litter and debris appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing
Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Runoff Control Practices

1. Excavation Dewatering
Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader
Yes No NA
[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales
Yes No NA
[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

Runoff Control Practices (continued)

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation ___% of design capacity.

4. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:
1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

III. Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	Today's Date:	Reporting Month:
Location:	Permit Identification #:	
Name and Telephone Number of Site Inspector:		

Date of Inspection	Regular / Rainfall based Inspection	Name of Inspector	Items of Concern

Owner/Operator Certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

Signature of Permittee or Duly Authorized Representative

Name of Permittee or Duly Authorized Representative Date

Duly authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

Contractor/Subcontractor Certification Statement

Site Name:_____

Site Address:_____

In accordance with Part III.A.6 of the General Permit GP-0-15-002, all contractors and subcontractors identified in the SWPPP shall sign a copy of the following certification statement before undertaking any construction activity at the site identified in the SWPPP.

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Contractor Name: _____

Contractor Address: _____

Contractor Phone Number: _____

Name (please print): _____ **Title:** _____

Signature: _____ **Date:** _____

Contractor/Subeontractor SWPPP Responsibilities

The above reference contractor/subcontractor is responsible for the following elements of the SWPPP:

APPENDIX I

PIPE SIZING ANALYSIS
(TO BE PROVIDED)

APPENDIX J

SITE PLANS
(ATTACHED)

Engineers Planners Surveyors Landscape Architects Environmental Scientists

MASER CONSULTING P. A.

Traffic Impact Study

Amy's Kitchen & Science of the Soul

NYS Route 17M/U.S. Route 6/ and Hartley Road
Town of Goshen, Orange County, New York

April 22, 2016

Prepared For

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I. INTRODUCTION

A. PROJECT DESCRIPTION AND LOCATION (Figure No. 1)

Amy's Kitchen, Inc is planning a new manufacturing and distribution facility, consisting of approximately 360,000 sq.ft., to be constructed on a property herein referred to as the "ver Hage property," which is located on the west side of Hartley Road east of the Wallkill River and south of Echo Lake Road in the Town of Goshen, Orange County, New York. The Amy's Kitchen facility will be constructed in two phases. The first phase, which is expected to be completed by 2018, will consist of an approximately 226,000 sq.ft. manufacturing plant including 11,000 sq. ft. of office space. The Amy's Kitchen site is proposed to be accessed via a new roadway and bridge crossing of the Wallkill River that will provide direct access to NYS Route 17M/U.S. Route 6 (NYS Route 17M) via the "Echo Lake property". This new site access roadway, will also provide access to the Science of the Soul facility, which is proposed on the Echo Lake property (see below), as well as access to the existing Mid-Hudson Psychiatric Center, would connect to NYS Route 17M opposite a relocated Training Center Lane. Note that the existing easterly driveway to the Mid-Hudson Psychiatric Center will be closed as part of this access improvement. The second phase of the Amy's Kitchen development will consist of an approximately 134,000 sq.ft. expansion of the manufacturing plant.

In addition to the development of the Amy's Kitchen facility on the ver Hage property, a 10 to 12 acre portion of this property is also proposed to be subdivided for the construction of up to 70,000 sq. ft. of warehouse use. This warehouse is also proposed to be accessed via the new access roadway connection to NYS Route 17M and the proposed Wallkill River Bridge.

Science of the Soul (SoS) proposes to construct a conference center on the Echo Lake property located north of NYS Route 17M, south of Echo Lake Road and immediately west of the Wallkill River. The conference center will consist of an approximately 200,000 sq. ft. open-air pavilion, ancillary buildings for administration and support, parking areas (both paved and gravel) to accommodate approximately 2,000 cars and an additional 130 buses, two (2) 2,600 sq. ft. caretaker residences and one (1) 5 bedroom guest house all constructed on an approximately 195 acre property. The conference center would be utilized for weekly meetings on Sunday mornings for local congregants as well as to hold an annual three day national conference (for up to 12,000 people) and also a possible annual regional conference (for approximately 2,000-3,000 people). SoS has also purchased the Strong Farm property located on Owens Road and Cheechunk Road

for agricultural use and for volunteer parking for the SoS conference center during the annual conference. The SoS portion of the development is expected to be completed within a similar timeframe as the Amy's Kitchen Phase I development.

The location of the ver Hage, Echo Lake and Strong Farm properties are shown on Figure No. 1. As indicated Amy's Kitchen Phase I and the SoS Conference Center are expected to be completed by 2018, while the Amy's Kitchen Phase II development is expected to be completed by 2023. It is anticipated that all recommended improvements associated with the proposed development discussed herein will be required and will be completed at the time of opening of the Phase I and SoS development. Therefore, only an analysis of the future Phase II development with SoS Conference Center has been presented herein to ensure that those proposed improvements will accommodate both the Phase I and Phase II developments. Since the Phase II development is expected to be completed by 2023, as per the Scoping Document and NYSDOT requirements a Design Year of 2033 (Estimated Time of Completion plus 10 years: ETC+10) has been utilized for analyzing future traffic conditions associated with the Full Build-Out of the proposed development.

B. SCOPE OF STUDY

This study was prepared to evaluate the potential traffic impacts associated with the proposed development on the surrounding roadway network and based on the requirements of the adopted Scoping Document. Traffic counts collected by representatives of Maser Consulting, P.A. were utilized to establish the Existing Traffic Volumes for the study area intersections as identified in the Scoping Document.

The Existing Traffic Volumes were then projected to the future Design Years to take into account expected increases in traffic due to normal background traffic growth and to account for other potential development traffic in the area.

Estimates of the traffic to be generated by Amy's Kitchen, the ver Hage warehouse parcel and SoS under typical conditions were computed based on information published by the Institute of Transportation Engineers and data from Amy's Kitchen and SoS based on their other existing facilities. Anticipated distribution patterns were established to assign the site generated traffic to the roadway network. These distributions were based on existing travel patterns together with other input from Amy's Kitchen. These volumes were added to the No-Build Traffic Volumes to obtain the Design Year Build Traffic Volumes.

Based on the procedures contained in the *2010 Highway Capacity Manual*, the traffic volumes were then compared to roadway capacities to determine existing and future Levels of Service and operating conditions. Recommendations for improvements were then made where necessary based on the results of the analyses.

A separate analysis was also conducted for the SoS Annual Event Conditions. Trip generation estimates were computed for the event conditions based on information provided by SoS for similar existing conference centers as well as assumptions relative to the proposed site and it's operation. This separate analysis is discussed in detail in Section V.

II. EXISTING TRAFFIC AND ROADWAY DESCRIPTIONS

A. DESCRIPTION OF EXISTING ROADWAYS

As shown on Figure No. 1, the Amy's Kitchen and SoS sites are located with frontage along NYS Route 17M and Hartley Road and are served by this and other area roadways including NYS Route 17. A description of these roadways follows.

1. NYS Route 17M/ U.S. Route 6

   NYS Route 17M/U.S. Route 6, which is classified as an urban minor arterial, travels parallel to NYS Route 17 in Orange County. NYS Route 17M traverses through the Town of Goshen and provides access to many existing commercial facilities. It traverses in a generally northwest/southeast direction and generally has one lane in each direction plus separate turn lanes at key intersections and paved shoulders varying in width between 3 ft. and 10 ft. In the vicinity of the Lower Road (CR 12) intersection, NYS Route 17M has two lanes in the westbound direction for a distance of approximately 2,500 ft. Also, in the vicinity of the I-84 interchange the roadway widens to two lanes in each direction and this roadway section continues to the west. The total width of the traveled way along the roadway varies between 24 ft. and 52 ft. with 11 to 12 ft. wide travel lanes and, as indicated by the latest pavement data report available from NYSDOT, the pavement is generally considered to be in fair to good condition. Parking is prohibited along NYS Route 17M throughout the study area. The terrain along NYS Route 17M is classified as rolling terrain and the roadway has varying grades of 3-8% as well as several horizontal curves throughout its length. NYS Route 17M has a posted speed limit of 55 MPH east of Hartley Road and a posted speed limit of 45 MPH west of Hartley Road. It connects with I-84 at a full clover leaf interchange approximately 2.0 miles to the west of the site location. Within the study area, the roadway has signalized intersections with Golf Links Road (CR 50)/Lower Road (CR 12), Hartley Road/Gate Schoolhouse Road and 6 ½ Station Road. There are no fixed bus stop locations along NYS Route 17M within the study area. A further description of public transportation options in the vicinity of the proposed site is provided in Section II.C below.

2. NYS Route 17 (Future I-86)

   NYS Route 17, which runs throughout Orange County, is classified as an urban principal arterial expressway. The roadway originates at the New Jersey State Line and runs parallel to I-87 through the Village of Sloatsburg and the Town of Tuxedo.

In the Woodbury/Harriman area, the roadway intersects with NYS Route 32 and separates at Exit 131, running in a westerly direction as a four-lane divided highway. The roadway continues and widens to six lanes in the Town of Goshen in the vicinity of Exit 124. It also has an interchange with NYS Route 17M at Exit 123. The roadway then transitions to a four-lane divided roadway with a diamond type interchange with Exit 122A (also in Goshen). The roadway continues into the Town of Wallkill and has interchanges with East Main Street/Crystal Run Road (Exit 122), I-84 (Exit 121) and NYS 211 (Exit 120). The roadway then continues north and into Sullivan County. Based on the latest pavement data report available from NYSDOT, the pavement is generally considered to be in excellent condition since the roadway was last repaved (mill and fill) in 2012. The terrain along the roadway is classified as rolling. The roadway generally has a 65 MPH posted speed limit, which is reduced in various sections to 55MPH. NYS Route 17 is planned to be transitioned to become Interstate 86 including associated improvements to the Exits 124 and 125 interchanges. These potential future improvements are discussed in further detail in section III.C, however the current timing of these improvements and the roadway's transition to I-86 is unknown.

3. Interstate 84

Interstate 84, which is classified as an urban principal arterial interstate, runs in an east/west direction throughout Putnam, Dutchess and Orange Counties, connecting from Connecticut through to Pennsylvania. In the vicinity of the site, the roadway is a four-lane divided highway with a posted speed limit of 65 MPH. It has a full cloverleaf interchange with NYS Route 17 and also has a full cloverleaf interchange with Route 17M (Exit 3), approximately 2.0 miles west of the project site. Based on the latest pavement data report available from NYSDOT, the pavement is generally considered to be in good condition and was last repaved (mill and fill) in 2008. The terrain along the roadway is classified as rolling It should be noted that all movements to and from NYS Route 17M are free flow movements with the exception of the I-84 westbound off-ramp to NYS Route 17M westbound, which is controlled by a "Stop" sign.

4. Golf Links Road (C.R. 50)

Golf Links Road (C.R. 50) is generally a two lane roadway classified as an urban major collector, which travels in a north/south direction, originating at a signalized intersection with East Main Street opposite Midway Park Drive, and continues in a southerly direction past the Orange County Golf Club in the Town of Wallkill. It continues south intersecting with McVeigh Road and Echo Lake Road where the speed limit changes to 35 MPH. South of this section, the roadway continues as a two lane roadway with a 45 MPH speed limit and terminates at a signalized full

movement intersection with NYS Route 17M, opposite Lower Road (C.R. 12). Lower Road continues south from the intersection as a two lane road and into the Town of Wawayanda. Golf Links Road has a varying pavement width of approximately 28-30 ft. including 2-4 ft. shoulders on both sides of the roadway and the pavement is generally in fair to good condition. The roadway has back-to-back horizontal curves in the vicinity of the McVeigh Road intersection as well as several other horizontal curves north of the this location in the Town of Wallkill. Golf Links Road has varying vertical grades of between 2-5%. There are no bus stop locations along the roadway and parking lanes are not provided.

5. 6 ½ Station Road

6 ½ Station Road, which is classified as an urban major collector and is under the jurisdiction of the Town of Goshen, originates at a signalized intersection with NYS Route 17M, opposite Maple Avenue. 6 ½ Station Road continues in a northerly direction providing access to the Orange County Jail and intersects with Cheechunk Road at a "Stop" sign controlled intersection. The roadway has a varying pavement width of approximately 22 to 26 ft. with one lane in each direction divided by a double yellow centerline. No striped shoulders or parking lanes are provided and the roadway has a 5 ton weight restriction. The pavement is generally in good condition. There are also no bus stops along the roadway. 6 ½ Station Road has a varying horizontal alignment including an approximately 150 ft. radius horizontal curve in the vicinity of the Hudson River Tractor Co. and Orange Hollow Racquet & Fitness Club. Immediately north of this area the roadway has a sag vertical curve in the vicinity of the Orange County Heritage Trail and generally the vertical grades vary between 2-6%.

6. Hartley Road

Hartley Road is a two lane roadway under the Town of Goshen jurisdiction, which intersects with NYS Route 17M at a signalized intersection opposite Gate Schoolhouse Road. Hartley Road continues in a northerly direction intersecting with Echo Lake Road and Cheechunk Road at a "T" type intersection also providing access to Owens Road. Hartley Road has a posted speed limit of 35MPH and a 5 ton weight limit restriction. The pavement is currently in poor condition with several sections of failing pavement and the roadway has no centerline striping. Several sections of pavement along Hartley Road should be repaired and/or resurfaced regardless of the proposed project as part of regular roadway maintenance activities.

The Hartley Road pavement width varies between 20 and 25 ft. and the roadway has not striped shoulders or available parking lanes. There are also no existing bus stop locations along the roadway. Hartley Road has a varying horizontal alignment including an approximately 125 ft. radius horizontal curve in the vicinity of the existing terminus of the Orange County Heritage Trail and generally the vertical grades vary between 2-6%.

7. Cheechunk Road

Cheechunk Road is a two lane Town roadway that serves primarily residential development. It has a 35MPH posted speed limit and a 5 ton weight limit restriction. It intersects with Owens Road at an "all way stop" controlled intersection. Cheechunk Road also provides access to Route 17 at Exit 122A via Fletcher Street. The pavement width varies between 20 and 24 ft. with one lane in each direction divided by a double yellow centerline and no striped shoulders or parking lanes. The pavement along the roadway is generally in good condition and there are no existing bus stops along its length. Cheechuck road has several horizontal curves along its length as well as varying vertical grades of between 3-6%.

8. Echo Lake Road

Echo Lake Road is a two-lane Town roadway, which extends from Golf Links Road and McVeigh Road to Cheechunk Road. Its intersection with Golf Links Road (C.R. 50) has two legs including one that aligns opposite McVeigh Road. The roadway has one lane in each direction and a white fog line on either side in the Town of Wallkill. It transitions into the Town of Goshen where the centerline is faded and has no white edge line. The pavement width along the roadway varies between 22 and 24 ft. and it has a posted speed limit of 35 MPH and a posted 5 ton weight restriction, except for local deliveries. The pavement is generally in good condition and some sections of the roadway west of the Wallkill River bridge crossing have striped 1 ft. wide shoulders. No parking lanes are provided along the roadway and there are not existing bus stops. Echo Lake Road has several horizontal curves along its length and mostly level terrain with steeper grades of up to 3% closer to McVeigh Road.

9. Gate Schoolhouse Road

Gate Schoolhouse Road is a two-lane Town roadway that intersects with NYS Route 17M at a signalized intersection opposite Hartley Road. It travels from that intersection in a southeasterly direction and terminates at an unsignalized intersection with Maple Avenue (C.R 31). The roadway has a varying pavement width of between 22 and 24 ft. with one lane in each direction divided by a double

yellow centerline and no striped shoulders. Parking is not provided along Gate School House Road, there are no existing bus stops and the roadway has a 5-ton weight restriction and a posted speed limit of 35MPH. The pavement is generally in good condition. Gate Schoolhouse Road has a varying horizontal alignment including an approximately 150 ft. radius horizontal curve south of Ruth Court and generally the vertical grades vary between 1-3%.

10. Maple Avenue (C.R. 31)

Maple Avenue (C.R. 31), which is classified as an urban major collector, is a two lane roadway, which runs in a generally east/west direction. The section in the Town of Goshen intersects with Cross Road, Houston Road, Gate Schoolhouse Road, Gibson Road and terminates at a signalized intersection with NYS Route 17M opposite 6½ Station Road. The roadway has a varying pavement width of approximately 26 to 28 ft. including approximately 2 ft. wide paved shoulders on either side of the roadway. In the immediate vicinity of the site the roadway has a posted speed limit of 35 MPH. The pavement is generally in good condition. Within the study area Maple Avenue has a large radius horizontal curve approaching NYS Route 17M as well as a somewhat tighter (approximate 425 ft. radius) horizontal curve at the intersection with Police Highway. Between Police Highway and NYS Route 17M, Maple Avenue has a crest vertical curve as the roadway climbs approximately 25 ft. with vertical grades of approximately 3-4%. There is no parking or bus stops provided along the roadway.

B. YEAR 2015 EXISTING TRAFFIC VOLUMES (Figures No. 2, 3, 4, 5, and 6)

Representatives of Maser Consulting P.A. collected detailed turning movement traffic counts at various intersections on various days during the AM, PM and Saturday peak hours during the months of November 2013; April, May and June 2014; as well as May and June 2015. In addition, New York State Department of Transportation (NYSDOT) machine traffic counts were obtained and used to compare the hourly volumes along NYS Route 17M and at the I-84 interchange to identify any daily and seasonal variations. Machine traffic count data was also collected by Maser Consulting along NYS Route 17M in the vicinity of the site to collect volume data on a 15 minute basis, as well as speed and classification data.

The specific intersections that were manually counted included the following.

1. NYS Route 17M and I-84
2. NYS Route 17M and Lower Road/ Golf Links Road;
3. NYS Route 17M and Mid-Hudson Psychiatric Center Access;
4. NYS Route 17M and Training Center Lane; and
5. NYS Route 17M and Hartley Road/Gate Schoolhouse Road
6. NYS Route 17M and 6 ½ Station Road
7. NYS Route 17M and Route 17
8. Hartley Road and Echo Lake Road
9. Golf Links Road and McVeigh Road
10. Echo Lake Road and McVeigh Road
11. Fletcher Street and NYS Route 17 (Exit 122A) Eastbound On/Off Ramps
12. Fletcher Street and NYS Route 17 (Exit 122A) Westbound On/Off Ramps
13. NYS Route 17M and Cannon Hill Drive

The manual field traffic counts were performed during the Weekday AM (6:00-9:00 AM) and PM (3:00-6:15 PM) hours as well as on Saturday from 11:00 AM to 2:00 PM at the above listed study area intersections. Based on this traffic volume data the existing peak hours for the study area were identified for each time period as follows:

- Weekday AM Peak Highway Hour 7:30 AM – 8:30 AM
- Weekday PM Peak Highway Hour 4:30 PM – 5:30 PM
- Saturday Peak Hour 12:30 PM – 1:30 PM

It should be noted that the while the Weekday AM Peak Highway Hour was found to occur between 7:30 AM and 8:30 AM, the peak hour of Amy's Kitchen traffic generation is expected to occur prior to the AM Peak between approximately 6:00 AM – 7:00 AM when the employee shift changes are expected to occur at the plant. As indicated by the ATR machine count data collected along NYS Route 17M, which is provided in Appendix "F", the traffic volumes during the 6:00 AM – 7:00 AM hour in the vicinity of the site are approximately 75-80% of the Weekday Peak AM Highway Hour traffic volumes. However, as discussed below, both the Amy's AM Peak Hour of Generation (6:00-7:00 AM) and the peak hour of the adjacent roadway system (AM Peak Highway Hour -7:30-8:30 AM) were analyzed.

In addition, it should be noted that the Scoping Document required an analysis of the 3:00 PM – 4:00 PM time period when there could be a shift change at the plant, when traffic volumes are 97%[1] of peak hour volumes and schools may be letting out. However, based on the traffic count data collected at the study area intersections, it was determined that the 4:30 PM – 5:30 PM time period was the peak time period along NYS Route 17M. This time period was determined to be the peak hour of traffic volumes along the roadway and the heavy vehicle percentages were found to be similar during this time period as was observed during the 3:00 – 4:00 PM time period. As discussed further in Section III.B below, the peak hour of traffic generation for Amy's Kitchen, which is expected to occur during the 3:00 PM – 4:00 PM time period, as well as the 4:30 PM – 5:30 PM peak hour traffic volumes were both analyzed for the study area intersections.

The 2015 Existing Traffic Volumes for the AM Peak Hour of Amy's Trip Generation, AM Peak Hour of Adjacent Roadway, PM Peak Hour of Amy's Trip Generation, PM Peak Hour of Adjacent Roadway and for the Saturday Peak Hour are summarized on Figures No. 2, 3, 4, 5 and 6 respectively.

C. SUMMARY OF EXISTING TRAFFIC OPERATING CONDITIONS

Capacity analyses were conducted for each of the study area intersections under existing conditions. The procedures for conducting these analyses are discussed in Section IV.E below and the analysis results for each of the study area intersections are discussed in detail in Section IV.F. The following provides a brief summary of the existing traffic conditions along the corridor.

- During the existing AM Peak Hour of Amy's Trip Generation (6:00 AM to 7:00 AM) and the AM Peak Hour of Highway Traffic (7:30 AM to 8:30 AM) the predominant traffic flow along NYS Route 17M is in the eastbound direction between Interstate 84 and NYS Route 17. This eastbound traffic is primarily commuter traffic, with a directional split of between 60% and 75% in the eastbound direction. The capacity analyses summarized in Tables No. 2 and 3 indicate that the eastbound movements at several of the study area intersections are currently operating near capacity based on the volume-to-capacity (v/c) ratios. In fact, at the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 the eastbound movement currently operates with a v/c ratio of 0.97 during the AM Peak Highway Hour. It should be noted that timing changes could be implemented at this intersection under existing conditions to improve the current

[1] Based on the ATR machine count traffic volume information collected along NYS Route 17M in the vicinity of the site, traffic volumes along the roadway during the 3:00 – 4:00 PM time period are approximately 94% of the peak hour traffic volumes (4:30 PM – 5:30 PM).

operation of the eastbound approach. In addition, several of the unsignalized intersections along the corridor operate with delays on the minor road left turn movements due to the high volume of traffic along NYS Route 17M, including at the Mid-Hudson Psychiatric Center driveway and Training Center Lane intersections.

- During the existing PM Peak Hour of Amy's Trip Generation (3:00 PM to 4:00 PM) and the PM Peak Hour of Highway Traffic (4:30 PM to 5:30 PM) the predominant traffic flow along NYS Route 17M is in the westbound direction between NYS Route 17 and Interstate 84. Similar to the morning peak hour this traffic is primarily commuter traffic, with a directional split of approximately 60% in the westbound direction. The capacity analyses summarized in Tables No. 4 and 5 indicate that the westbound movements at several of the study area intersections are currently operating near capacity. In addition, similar to AM conditions, several of the unsignalized intersections along the corridor operate with delays on the minor road left turn movements due to the high volume of traffic along NYS Route 17M, including at the Mid-Hudson Psychiatric Center driveway and Training Center Lane intersections.

- During the Saturday Peak Hour the traffic volumes along NYS Route 17M are significantly less than during the Weekday Morning and Evening Peak Highway Hours (75-80% of the AM and PM Peaks), with traffic volumes nearly evenly split in each direction. As a result the traffic operating conditions along the corridor are better than during AM and PM Peak time periods. The existing capacity analysis results for the Saturday Peak Hour are summarized in Table No. 6.

D. PUBLIC TRANSPORTATION AND PEDESTRIAN ACCESS (Appendix H)

Coach USA operates the ShortLine bus in Orange County providing public transportation options throughout Orange County as well as to other areas including New York City, Poughkeepsie, Monticello, Binghamton and Pennsylvania. The nearest bus stops to the Amy's Kitchen site is located at the Mid-Hudson Psychiatric Center adjacent to the proposed site. The bus that stops at this location is the Orange and Rockland County to New York commuter bus that travels between Port Jervis and New York City. Limited stops are made at the Mid –Hudson Psychiatric Center throughout the day, however there all buses on this route pass this location and there may be the ability to coordinate additional scheduled stops at this location with Coach USA for use by Amy's Kitchen employees since it is within a reasonable walking distance of the site location. More

regular scheduled stops are currently made by this bus at the Matthews Street Park and Ride in the Town of Goshen and at 14 Railroad Avenue in the Town of Middletown. Each of these locations is in excess of 2 miles from the proposed site.

New Jersey Transit (NJ TRANSIT) operates the Port Jervis train line, which runs through Orange County, Rockland County and New Jersey between Port Jervis and Secaucus Junction. Regular weekday and weekend service is provided on this line with weekday morning express trains to Seacaucus Junction and weekday afternoon express trains to Port Jervis. At Seacaucus Junction transfer is available to other NJ Transit trains including trains to New York City and Penn Station, which provides access to Amtrak Trains. The nearest Port Jervis Line train stations to the project site are located in the City of Middletown on N. Galleria Drive approximately 6 miles from the project site and in the Town of Campbell Hall on Egbertson Road/Watkins Road approximately 9 miles from the project site. The current Port Jervis Line train schedule for these stations is provided in Appendix "H" of this report.

The Orange County Heritage Trail currently runs for a distance of approximately 11 miles between the Village of Monroe in the vicinity of Airplane Park and the Town of Goshen terminating in the vicinity of Hartley Road and the proposed Amy's Kitchen Site. The trail is proposed to be extended to the west to the City of Middletown in the future. This extension will bring the trail past the Amy's Kitchen property directly along the northern property line of the ver Hage and Echo Lake properties.

E. ACCIDENT EVALUATION (Tables A-1 and A-2)

All available accident data for the latest three-year period from December 1, 2010 through November 30, 2013 was obtained from the New York State Department of Transportation (NYSDOT). In addition, as required by the Scoping Document, accident data were also obtained from the Town of Goshen police department for the period from January 1, 2012 through July 6, 2015. These accident data, which are contained in Appendix "F", were summarized according to the type, weather conditions, other contributing factors and related statistics. Table A-1, contained in Appendix "F", summarizes the State accident data for each of the intersections and roadway segments within the study area. Similarly, Table A-2 contained in Appendix "F" summarizes the Town accident data. It should be noted that there is some duplication of accidents contained in each of these separate data sets since they are included in both databases.

These data were then used to compute the average accident rates for each of the study area intersections where accidents were found to occur. These accident rates were then

compared to the statewide averages for similar intersection types. Table A-2, contained in Appendix "F", summarizes the number of accidents by type at each of the study area intersections and provides the calculated accident rates as well as a comparison to the statewide averages. Based on a review of this information, the average accident rate at the intersection of NYS Route 17M and Hartley Road was found to be below the statewide average, however a history of numerous rear-end type accidents does exist at this intersection likely resulting from the lack of left turn lanes along NYS Route 17M at the intersection. In consideration of this accident history and the east/west direction of NYS Route 17M in this vicinity, it may be beneficial to consider the installation of traffic signal back plates for signal heads on the NYS Route 17M approaches. This will help to make the traffic signal more visible during periods of high sun glare and may reduce some of the rear-end accidents that occur at this intersection. This should be considered regardless of the proposed project.

The average accident rate at the intersections of NYS Route 17M & Lower Road (C.R. 12)/C.R. 50 and NYS Route 17M & 6 ½ Station Road/Maple Avenue were found to be slightly above the statewide average. At each of these intersections, the most common accident type was rear end accidents resulting from driver inattention and vehicles following too closely.

The intersection of NYS Route 17M and the I-84 westbound off-ramp to Route 17M westbound as well as the intersection of NYS Route 17M and the Mid-Hudson Psychiatric Center Drive (including Training Center Lane) were both found to have a high rate of accidents (defined as twice the statewide average) during the time period analyzed. The I-84 westbound off-ramp experienced a total of 25 accidents during the time period analyzed, of which 24 were classified as rear end type accidents. These accidents are likely a result of the "Stop" sign control on the off-ramp approach and that there is no acceleration lane for vehicles to merge into the NYS Route 17M westbound traffic flow. The other I-84 ramp connections with NYS Route 17M have acceleration and deceleration lanes and exhibited limited accident history, therefore the construction of an acceleration lane for traffic merging onto NYS Route 17M westbound would help to alleviate this accident condition. However, it should be noted that the Amy's Kitchen development would not add any additional traffic to the I-84 off-ramp approach and therefore is not expected to contribute to further accidents at this intersection.

The intersection of NYS Route 17M and the Mid-Hudson Psychiatric Center Drive experienced a total of 17 accidents during the time period analyzed, with the most common accident type being rear end type accidents likely resulting from the lack of left turn lanes along NYS Route 17M at the intersection. As part of the proposed Amy's Kitchen development, the existing access to the Psychiatric Center is proposed to be

realigned to connect to the Amy's Kitchen access roadway, which is proposed to connect to NYS Route 17M opposite a relocated Training Center Lane. A traffic signal along with separate left and right turn lanes in both the eastbound and westbound directions and two lane approaches northbound and southbound at the intersection are proposed to be constructed. All traffic to and from the Mid-Hudson Psychiatric Center will use this intersection and the realigned driveway to access to the facility. This will provide improved traffic control through this area of NYS Route 17M and as a result of the separate turn lanes is expected to help alleviate existing accident conditions.

F. TRAVEL TIME EVALUATION (Tables TT-1 and TT-2)

As required in the Scoping Document, in addition to the traffic volume counts (both manual and machine) collected along the NYS Route 17M corridor, travel time runs were collected for each direction of NYS Route 17M during both the morning and afternoon school hours and the PM Peak Hours. The purpose of these runs was to identify the operation across the network especially as it relates to other factors such as school bus traffic, which influences the travel time along the corridor. Tables TT-1 and TT-2, contained in Appendix "B", summarize the results of these various runs, which were collected in June 2014 when schools were still in session. These tables provide the start and end time of each run, the total trip duration, the number of stops during each trip and the number of school buses observed along the corridor during each trip. It should be noted that a further discussion of the Amy's Kitchen shift times and their interaction with existing traffic along NYS Route 17M including existing school bus traffic is discussed in Section IV.D below.

The travel time runs were recorded in both the eastbound and westbound directions along NYS Route 17M. In the eastbound direction the trips began at the I-84 westbound on/off ramps and ended immediately east of the 6 ½ Station Road. Similarly in the westbound direction, the trips began immediately east of 6 ½ Station Road and ended at the I-84 westbound on/off ramps. The Weekday Peak AM Hour trip runs were collected between the hours of 6:30 AM and 9:00 AM, while the Weekday Peak PM Hour trip runs were collected between the hours of 2:45 PM and 5:30 PM.

As indicated by the information summarized in Table TT-1, the average duration of the AM Peak Hour trips in the eastbound direction was approximately 7 minutes 13 seconds and the average duration in the westbound direction was 6 minutes 53 seconds. In each direction the average number of stops observed was 2, while an average of 6 school buses were observed in the westbound direction and an average of 4 school buses were observed in the eastbound direction.

Similarly, as indicated by the information summarized in Table TT-2, the average duration of the PM Peak Hour trips in the eastbound direction was approximately 6 minutes 46 seconds and the average duration in the westbound direction was 7 minutes 15 seconds. In each direction, the average number of stops observed was 2, while an average of 3 school buses were observed in the eastbound direction and an average of 2 school buses were observed in the westbound direction.

III. EVALUATION OF FUTURE NO-BUILD TRAFFIC CONDITIONS

A. NO-BUILD TRAFFIC VOLUMES (Figures No. 7 through 21)

The Year 2015 Existing Traffic Volumes were increased by a growth factor of 0.5% per year (compounded yearly) to the 2033 design year for a total background growth factor of 9.4% to account for normal traffic growth in the area. This background growth factor is based on historical traffic volume data available from NYSDOT in its 2012 Traffic Data Report (a copy of which is provided in Appendix "G" for reference), which indicates that actual growth along NYS Route 17M for the period between 2000 and 2012 was at a rate of approximately 0.5% per year.

The resulting 2033 Projected Traffic Volumes are shown on Figures No. 7, 8, 9, 10, and 11. It should be noted that the full buildout of the Amy's Kitchen and SoS development is expected to be completed and operational by 2023, however the 2033 design year has been utilized for the traffic volume estimates to account for future growth in accordance with the Scoping Document and New York State Department of Transportation (NYSDOT) standards, which require an analysis of traffic conditions ten years beyond the full occupancy of the project.

In addition, to account for traffic associated with other significant potential developments in the area, including the proposed Medical Office Building expansion of the ORMC and the expansion of the Maple Fields Development both in the Town of Wallkill as well as the Kikkerfrosch's Brewery and the Cannon Hill Drive Flex Building both in the Town of Goshen, were also identified as other potentially significant traffic generators. The trips for these developments were developed separately, however, the traffic associated with the Cannon Hill Drive Flex building is considered to be included in the general background traffic growth. These other development volumes are shown on Figures No. 12, 13, 14, 15, and 16. These volumes were then added to the 2033 Projected Traffic Volumes to obtain the 2033 No-Build Traffic Volumes, which are shown on Figures No. 17, 18, 19, 20 and 21 for each of the peak hours, respectively.

B. SUMMARY OF NO-BUILD TRAFFIC OPERATING CONDITIONS

Capacity analyses were conducted for each of the study area intersections under the 2033 No-Build Conditions. The procedures for conducting these analyses are discussed in Section IV.E below and the analysis results for each off the study area intersections are discussed in detail in Section IV.F. The following provides a brief summary of the existing traffic conditions along the corridor.

- Similar to existing conditions, during the AM Peak Hour of Amy's Trip Generation (6:00 AM to 7:00 AM) and the AM Peak Hour of Highway Traffic (7:30 AM to 8:30 AM) the capacity analyses summarized in Tables No. 2 and 3 indicate that the eastbound movements at several of the study area intersections will operate near capacity. In fact, at the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 the eastbound movement is expected to operate at Level of Service "F" with a delay of 77.4 seconds and a v/c ratio of 1.09. It should be noted that signal timing changes have been identified for the future build conditions (See Section IV.F below) that would also improve the operation of the eastbound approach at this intersection under future No-Build conditions. Also, at the intersection of NYS Route 17M and Hartley Road it is expected that traffic will be impeded by the lack of left turn lanes at this intersection. In addition, it is expected that the Mid-Hudson Psychiatric Center and Training Center Lane intersection will continue to operate with delays on the minor road left turn movements approaches due to the high volume off traffic along NYS Route 17M.

- During the PM Peak Hour of Amy's Trip Generation (3:00 PM to 4:00 PM) and the PM Peak Hour of Highway Traffic (4:30 PM to 5:30 PM) the capacity analyses summarized in Tables No. 4 and 5 indicate that the westbound movements at several of the study area intersections are expected to continue to operate near capacity. In addition, similar to AM conditions, several of the unsignalized intersections along the corridor will continue to operate with delays on the minor road left turn movements due to the high volume of traffic along NYS Route 17M, including at the Mid-Hudson Psychiatric Center driveway and Training Center Lane intersections.

- During the Saturday Peak Hour, when traffic volumes along NYS Route 17M are significantly less than during the Weekday Morning and Evening peaks, it is expected that there will be some minor increases in delay as a result of background traffic growth and other area projects, however, in general similar levels of service to existing conditions will be experienced at the area study area

intersections. The capacity analysis results for the Saturday Peak Hour are summarized in Table No. 6.

C. POTENTIAL FUTURE AREA TRAFFIC IMPROVEMENTS

Previous studies have identified potential future area traffic improvements along NYS Route 17M and NYS Route 17 within the study area. These potential future improvements are discussed below for informational purposes. There is currently no plan to complete these improvements or timetable for when they would be implemented and therefore they have not been included in the analyses contained herein.

- NYS Route 17M at Maple Avenue (C.R. 31)/6½ Station Road - The Goshen Town Wide Traffic Study prepared by Stantec Consulting Service, Inc. dated December 2006 had recommended potential widening of NYS Route 17M at its intersection with Maple Avenue (C.R. 31) and 6½ Station Road to provide additional through lanes through this intersection as well as a potential widening of Maple Avenue (C.R. 31) to provide a second approach lane to the intersection in order to reduce delays on this approach. No plans have progressed for these improvements and it should be noted that most of the potential developments accounted for in the Town Wide Traffic Study never occurred. Based on the analysis of this intersection, the delays present at the intersection are a result of existing traffic volumes and future background traffic volumes. The proposed Amy's Kitchen development is not expected to significantly impact the operation of this intersection. As previously indicated there is currently no proposal to implement these improvements and therefore they have not been considered in the traffic analysis conducted herein.

- NYS Route 17M at NYS Route 17 (Future I-86) - Potential future improvements are proposed to be completed to the NYS Route 17 interchange (Exit 123) with NYS Route 17M in conjunction with the conversion of NYS Route 17 to Interstate 86 and the upgrade of Exits 124 and 125 also in the Town of Goshen. These potential NYSDOT improvements are diagramed in Exhibit 1 below.

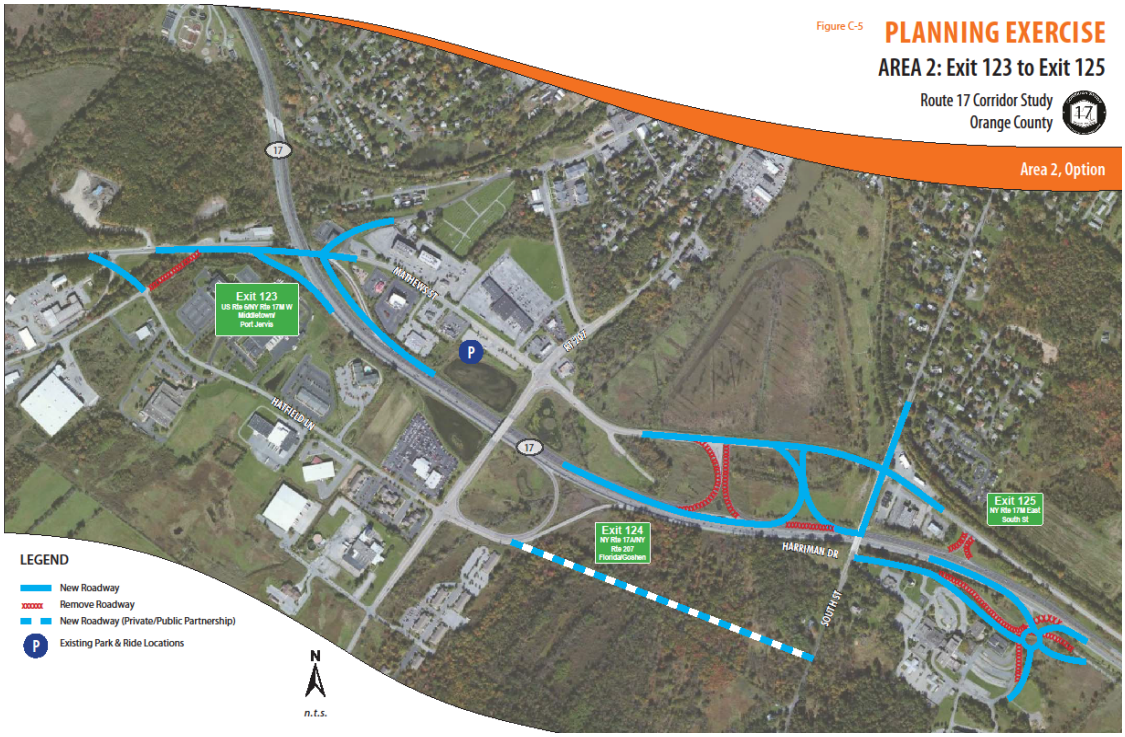


Exhibit 1
Source: NYSDOT Final Route 17 Transportation Corridor Study, Sullivan County and Orange County, May 2014

As part of these potential improvements Exit 123 would be reconfigured to a half diamond interchange configuration. To accommodate this option, NYS Route 17M would be realigned to connect with Mathews Street and West Main Street on the northeast side of NYS Route 17, rather than directly connecting to NYS Route 17 as it does currently. New ramps to and from the east would be built to connect NYS Route 17 to the newly realigned NYS Route 17M/Mathews Street. The short segment of Police Highway between Hatfield Lane and NYS Route 17M would be eliminated and replaced by an extension of Hatfield Lane. This would require the relocation of this street access to a point further from the new NYS Route 17 eastbound on-ramp.

The Exit 124 (NYS Route 17A/NYS Route 207) westbound on and off-ramps would be shifted to the east, closer to South Street. As part of this modification, the Exit 125 (NYS Route 17M/South Street) westbound on and off-ramps would be eliminated.

The eastbound on and off-ramps at Exit 124 (NYS Route 17A/NYS Route 207) would remain unchanged, but their terminus would be redesigned to connect with a potential extension of Hatfield Lane, built as part of a public/private partnership, that would run from NYS Route 207 to South St. The Exit 125 (NYS Route 17M/South Street) eastbound ramps would be reconstructed to terminate in a roundabout. This would also require the redesign of the intersecting access roadways.

Together these improvements would result in improved access to and from NYS Route 17 and NYS Route 17M. The modifications to the Exit 123 interchange would not significantly change the travel patterns for employees and visitors to the proposed Amy's Kitchen development. As previously indicated there is currently no timetable for the implementation of these improvements and therefore they have not been considered in the traffic analysis conducted herein.

IV. ANALYSIS OF FUTURE BUILD TRAFFIC CONDITIONS

A. SITE GENERATED TRAFFIC VOLUMES (Tables No. 1 & S-1)

Estimates of the amount of traffic to be generated by the full buildout of the proposed Amy's Kitchen facility during each of the peak hours were developed based on data provided for other existing Amy's Kitchen facilities including the existing Medford, Oregon facility. This information, which is summarized on Table S-1 contained in Appendix "B", included estimates of the number of employees on each shift. The trip generation estimates were developed assuming a one-to-one ratio of employees to trips. Trip generation data for both employee and truck trips was provided. It should be noted that the Medford, Oregon facility for which the trip generation estimates were based on is similar in size to the proposed Amy's Kitchen facility (i.e. Medford – 339,947 sq. ft., Proposed Amy's – 369,000 sq. ft.). The trip generation volumes shown in Table No. 1 were adjusted appropriately for the larger size building. In addition, data published by the Institute of Transportation Engineers (ITE) as contained in their publication entitled, *Trip Generation*, 9th Edition, 2012 was also referenced for the ver Hage warehouse use of up to 70,000 sq. ft. of warehouse space.

At full buildout the Amy's Kitchen facility is proposed to consist of an approximately 360,000 sq. ft. manufacturing plant including 11,000 sq. ft. of office space and a separate 3,000 sq. ft. medical facility for the on-site treatment of Amy's Kitchen employees only. The trip generation estimates for the full build out of the development, which also includes trip generation estimates for the ver Hage warehouse portion of the development based on ITE Land Use Category – 150 – Warehouse are summarized in Table No. 1. The table summarizes the Hourly Trip Generation Rates and Anticipated Site Generated Traffic Volumes including a breakdown of passenger cars and trucks for each of the peak hours. It should be noted that the equivalent number of passenger cars (i.e. 2 passenger cars per truck) has been shown in the table as required by the Scoping Document, however for the purposes of the capacity analysis, trucks have been accounted for based on the methods presented in the 2010 Highway Capacity Manual, which utilize heavy vehicle percentages to account for the number of trucks along the roadway and on each individual intersection movement. This is discussed further in Section III.G below. The table also provides trip generation estimates for the proposed SoS portion of the development under typical conditions, which is expected to include a small staff of 5 to 10 people daily that attend to administrative and property management responsibilities. Some of these people would reside at the site in the two proposed caretaker residences

and therefore the site is not expected to generate a significant number of trips under typical conditions.

As discussed previously in Section II.B, the morning peak hour of Amy's Trip Generation is expected to occur prior to the peak of the adjacent roadway system between 6:00 AM and 7:00AM when traffic volumes along NYS Route 17M are 75-80% of the peak hour (7:30-8:30 AM) traffic volumes along the corridor. The Amy's trip generation during the 7:30-8:30 AM time period is expected to be as much as 35% of the 6:00-7:00 AM time period. However, to provide a complete analysis of future traffic conditions, both time periods were analyzed.

Similarly, the afternoon peak hour of Amy's Trip Generation is expected to occur during the 3:00 PM to 4:00 PM time period when traffic volumes along NYS Route 17M are 94% of the peak hour (4:30–5:30 PM) traffic volumes along the corridor. The Amy's trip generation during the 4:30-5:30 PM time period is expected to be as much as 80% less than the generation during the 3:00-4:00 PM time period. Both time periods are analyzed herein.

A separate analysis of the SoS Event Conditions is discussed in Section V below. This includes a discussion of the estimated trips generated by the site during these special events.

B. ARRIVAL/DEPARTURE DISTRIBUTIONS (Figures No. 22 through 31)

Arrival and departure distributions for the site were established based on a review of the existing traffic volumes and consideration of the area roadways and location of the proposed site access connection. These distributions were used to assign the site generated traffic volumes to the intersections and surrounding roadway network.

The Amy's Kitchen and SoS development is proposed to be accessed via a new roadway connection to NYS Route 17M traversing through the Echo Lake site and over the Wallkill River via a proposed bridge. the proposed 70,000 sq. ft. ver Hage warehouse uses will also be accessed via the new roadway connection to NYS Route 17M and using the Wallkill River bridge.. Separate arrival and departure distributions have been developed for passenger cars and trucks for both the Amy's Kitchen and ver Hage warehouse uses. The arrival and departure distributions for the ver Hage warehouse uses are shown on Figures No. 22 through 25. The Amy's Kitchen arrival and departure distributions are shown on Figures No. 26 through 29. The arrival and departure distributions for the SoS typical conditions are shown on Figures No. 30 and 31.

A separate analysis of the SoS Event Conditions is discussed in Section V below. This includes a discussion of the arrival and departure distributions specific to that analysis.

It should be noted that the Scoping Document required that the arrival and departure distributions reflect the current use of Gate Schoolhouse Road by local motorists. Based on existing patterns, it has been assumed in the distributions for passenger cars that as much as 10% of the traffic destined to and from the site will use Gate Schoolhouse Road. It is not anticipated that truck traffic will utilize this route.

C. BUILD CONDITION TRAFFIC VOLUMES (Figures No. 32 through 61)

The site generated traffic volumes for each of the proposed development phases were assigned to the roadway network utilizing the above referenced arrival and departure distributions. The site generated traffic volumes for the full buildout of the Amy's Kitchen development, as summarized in Table No. 1, were applied to the roadway network based on the arrival and departure distributions discussed in section III.B above. The resulting site generated traffic volumes for each of the peak hours for the ver Hage warehouse uses are shown on Figures No. 32 through 36 for passenger cars and 37 through 41 for trucks. The resulting site generated traffic volumes for each of the peak hours for the Amy's Kitchen facility are shown on Figures No. 42 through 46 for passenger cars and 47 through 51 for trucks. The resulting typical conditions site generated traffic volumes for each of the peak hours for the SoS portion of the development are shown on Figures 52 through 56. Together, these site generated traffic volumes were added to the 2033 No-Build Traffic Volumes to obtain the 2033 Full Build Traffic Volumes, which are shown on Figures No. 57, 58, 59, 60 and 61 for each of the peak hours. Note that the 2033 Build Traffic Volumes also include a redistribution of traffic to and from the Mid-Hudson Psychiatric Center, which will be accessed via the proposed new NYS Route 17M access roadway connection under future conditions

D. TRAFFIC DEMAND MANAGEMENT (Table No. T-1)

Amy's Kitchen currently employs several initiatives at its existing locations, including the Medford, Oregon facility, to manage traffic and trips generated by these facilities. These include off-peak start of shifts, staggering of shift times, carpooling, and shuttle services. These initiatives are proposed to be employed at this facility as well.

Amy's Kitchen schedules its shift times to start and end during off-peak hours of traffic along the surrounding roadway system. The shift times generally start/end during the 5:00 AM to 7:00 AM time period, during the 2:00 PM to 5:00 PM time period and overnight during the 10:00 PM to 1:00 AM time period. During these periods, the start and end times of the shifts are also staggered to spread the trips generated by the facility over the two to three hour period in order to lessen the impacts of traffic on the surrounding roadway network. The actual peak hours of generation for the facility resulting from the shift changes are expected to occur during the 6:00 AM to 7:00 AM hour and during the 3:00 PM to 4:00 PM hour.

Table No. T-1 has been included in Appendix "B", which provides a comparison of the existing traffic volumes along NYS Route 17M in the vicinity of the site (including the number of buses spotted along the roadway) to the expected Amy's Kitchen Trip Generation. This information is provided on a half-hour basis for the AM and PM peak periods. As shown in the table the morning peak hour of trip generation occurs during the 6:00 – 7:00 AM time period, while the peak hour of traffic along NYS Route 17M occurs during the 7:30 AM - 8:30 AM time period and the peak hour of school bus traffic occurs during the 8:00 AM – 9:00 AM time period. During the PM Peak Period the table indicates that the PM Peak Hour of traffic along NYS Route 17M occurs during the 4:30 – 5:30 PM time period, while the peak hour of Amy's trip generation occurs during the 3:00 – 4:00 PM time period. School bus traffic also occurs during the 2:00 – 4:00 PM time period based on the data collected. However, based on the counts and the Goshen Central School District school dismissal times, which occur between 2:10 PM and 3:20: PM, the actual peak of school bus traffic occurs during the 2:30 – 3:30 PM time period.

Carpooling is also employed at other existing Amy's Kitchen facilities. Carpooling is encouraged by providing premium parking spaces near the entrance of the Amy's Facilities only to be used by employees carpooling to the facility. The proposed Amy's Kitchen development will include approximately 5 to 6 parking spaces proximate to the entrance that will be reserved for employees that carpool. In addition, the proposed facility will also provide two reserved electric vehicle charging spaces proximate to the building to encourage electric vehicle use by employees. In addition, other Amy's Kitchen facilities utilize a shuttle for employees to/from locations that are convenient to where employees live. This type of shuttle is also proposed to be employed for the proposed Amy's Kitchen facility.

In addition to these initiatives, the proposed Amy's Kitchen facility is also expected to provide bike lockers on the site to encourage use of the Heritage Trail by local employees for access to the site. The proximity of the Heritage Trail to the proposed site will allow for employees of the Amy's Kitchen facility to utilize the Heritage Trail for access to and from the site.

Together these traffic demand management initiatives will result in lower overall trip generation for the Amy's Kitchen facility, however no credit has been taken for these initiatives in the analysis as the trip generation estimates are based on the number of employees on each shift assuming a one-to-one ratio of employees to trips, therefore the analysis is conservative.

E. DESCRIPTION OF ANALYSIS PROCEDURES

It was necessary to perform capacity analyses in order to determine existing and future traffic operating conditions at the study area intersections using the SYNCHRO 8 analysis software. The following is a brief description of the analysis method utilized in this report:

- Signalized Intersection Capacity Analysis
  The capacity analysis for a signalized intersection was performed in accordance with the procedures described in the *2010 Highway Capacity Manual*, published by the Transportation Research Board. The terminology used in identifying traffic flow conditions is Levels of Service. A Level of Service "A" represents the best condition and a Level of Service "F" represents the worst condition. A Level of Service "C" is generally used as a design standard while a Level of Service "D" is acceptable during peak periods. A Level of Service "E" represents an operation near capacity. In order to identify an intersection's Level of Service, the average amount of vehicle delay is computed for each approach to the intersection as well as for the overall intersection.

- Unsignalized Intersection Capacity Analysis
  The unsignalized intersection capacity analysis method utilized in this report was also performed in accordance with the procedures described in the *2010 Highway Capacity Manual*. The procedure is based on total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. The average total delay for any particular critical movement is a function of the service rate or capacity of

the approach and the degree of saturation. In order to identify the Level of Service, the average amount of vehicle delay is computed for each critical movement to the intersection.

Additional information concerning signalized and unsignalized Levels of Service can be found in Appendix "C" of this report.

F. AMY'S KITCHEN FULL BUILDOUT ANALYSIS RESULTS (Tables No. 2 through 11)

A complete analysis of each of the study area intersections identified in the Scoping Document has been conducted to analyze the potential traffic impacts associated with the full buildout of the Amy's Kitchen Developement. The following provides a detailed description of that analysis, the results and any recommended mitigation measures. Note that the analysis also assumes typical operating conditions at the SoS site during each of the peak hours. A separate analysis of the SoS Event Conditions is discussed in Section V below.

Capacity analyses were performed at each of the study area intersections utilizing the procedures described above and the Synchro Version 8 analysis software (HCM 2010 results) to evaluate current and future operating conditions. Summarized below is a description of the existing geometrics, traffic control and a summary of the existing and future Levels of Service. Potential adverse impacts as defined in the Town of Goshen "Environmental Performance Standards" were identified and any recommended improvements to mitigate these impacts are identified for each location.

The volume-to-capacity ratio, Level of Service and delay results for the AM Peak Hour of Amy's Generation, AM Peak Highway Hour, PM Peak Hour of Amy's Generation, PM Peak Highway Hour and Saturday Peak Hours summarized on Tables No. 2, 3, 4, 5 and 6, respectively. The queuing analysis results for the signalized intersections are also summarized on Tables No. 7, 8, 9, 10 and 11 for each of the peak hours, respectively. Copies of the capacity analysis for each of the individual intersections are contained in Appendix "D" of this report.

1. U.S. Route 6/NYS Route 17M and Interstate 84

   U.S. Route 6/NYS Route 17M intersects with Interstate 84 at a grade-separated full clover leaf interchange. Through this interchange area NYS Route 17M consists of two through lanes in each direction. Separate acceleration and deceleration lanes are also provided for each of the ramp intersections with the exception of the I-84 westbound off-ramp to NYS Route 17M westbound, which is controlled by a "Stop" sign. The NYS Route 17M overpass has a third lane in each direction which allows for weaving movements for vehicles entering and exiting I-84 eastbound and westbound.

   It should be noted that the Levels of Service for each of the I-84 ramp intersections with NYS Route 17M, with the exception of the I-84 westbound off-ramp to NYS Route 17M, were computed utilizing the Highway Capacity Software (HCS) since Synchro does not provide analysis results for merge and diverge ramp intersections or weaving segment type intersections. Levels of Service for merge and diverge ramps and for weaving segments are measured by density which is expressed in units of passenger cars per mile per lane. A further explanation of the Levels of Service for merge and diverge ramp intersections as well as weaving segments is provided in Appendix "C" of this report. Based on the results of the analyses for these intersections, each of the ramps and weaving segments currently operate at Level of Service "B" or better during each of the peak hours. Similar Levels of Service are expected to be maintained in the future both with and without the proposed project.

   The I-84 westbound off-ramp to NYS Route 17M westbound is a "stop" sign controlled intersection and therefore the results for that intersection were computed utilizing the Synchro software. As summarized in the Level of Service Summary Tables, this intersection currently operates at a Level of Service "B" during the AM Peak Hour of Amy's Kitchen Generation, at a Level of Service "C during the AM Peak Highway Hour and the Saturday Peak Hours and at a Level of Service "D" during each of the PM Peak Hours analyzed.

   Under future No-Build and Build conditions this intersection is expected to continue to experience a Level of Service "B" during the AM Peak Hour of Amy's Kitchen Generation and a Level of Service "C" during the Saturday Peak Hour. During the AM Peak Highway Hour the intersection is expected to operate at a Level of Service "D" under both No-Build and Build conditions. During the PM Peak Hour of Amy's Kitchen Generation the intersection is expected to operate at a Level of Service "E" under both No-Build Build conditions, with an increase in delay of approximately 3.6 seconds. During the PM Peak Highway Hour the intersection is expected to operate at a Level of Service "E" under No-Build conditions and at a Level of Service "F" under

build conditions with an increase in delay of 1.5 seconds. It should be noted that the Amy's Kitchen project would not add any traffic to the westbound off-ramp approach and therefore is not expected to significantly impact the operation of this intersection. However the existing "Stop" sign could be replaced with a "Yield" sign in order to improve traffic flow from the Off-Ramp approach. This would require the approval of the NYSDOT.

2. U.S. Route 6/ NYS Route 17M and Lower Road (C.R. 12)/C.R. 50

   C.R. 50 and Lower Road (C.R. 12) intersect with U.S. Route 6/NYS Route 17M at a signalized full movement intersection. The eastbound NYS Route 17M approach consists of an approximately 675 ft. separate left turn lane and a shared through/right turn lane while the westbound approach consists of an approximately 485 ft. separate left turn lane, a through lane and an approximately 255 ft. shared through/right turn lane. The northbound and southbound approaches to the intersection each consist of a single lane for all movements.

   Capacity analyses were conducted at this intersection utilizing the 2015 Existing Traffic Volumes. The results indicate that the intersection currently operates at an overall Level of Service "C" during the each of the AM and PM Peak Hours, while an overall Level of Service "B" is experienced during the Saturday Peak Hour. It should be noted that during the AM Peak Highway Hour the eastbound approach is currently operating near capacity.

   The intersection was reanalyzed utilizing the 2033 No-Build and 2033 Build Traffic Volumes. A review of these analyses indicates that the intersection is expected to continue to operate at an overall Level of Service "C" during the each of the PM Peak Hours, while the overall Level of Service during the Saturday Peak Hour is expected to drop from Level of Service "B" under Existing conditions to Level of Service "C" under No-Build and Build conditions as a result of the background traffic growth. The Amy's Kitchen project is not expected to impact the operation of this intersection during the Saturday Peak Hour.

   During the AM Peak Hour of Amy's Generation the intersection is expected to operate at an overall Level of Service "C" under No-Build conditions and an overall Level of Service "D" under Build conditions. During the AM Peak Highway Hour the intersection is expected to operate at an overall Level of Service "D" under No-Build conditions and at an overall Level of Service "E" under Build conditions. It is anticipated that the eastbound approach will continue to operate with high v/c ratios and long delays during each of the AM Peak Hours. It should be noted that signal timing changes have been identified for this intersection during both of the AM Peak

Hours to address Existing and No-Build traffic conditions as well as to reduce potential project related impacts at the intersection, especially in the eastbound direction. The analysis indicates that with these timing improvements, the intersection would operate similar to future 2033 No-Build conditions with the proposed project.

As shown in Table No. 7 through 11 all queues are accommodated by the storage lengths at this intersection. In fact, based on the analysis, the eastbound and westbound left turn queues are significantly less than the storage lengths provided for those movements. This is likely due to the longer queues in each direction on the through movements especially on the eastbound through movements during the AM Peak Hour. The longer left turn lanes allow the left turning vehicles to enter the turning lanes sooner resulting in less overall delay along the corridor. As indicated in the tables, the signal timing improvements recommended for Build conditions analysis during the AM Peak Hours would result in queues similar to No-Build conditions.

3. U.S. Route 6/NYS Route 17M and Mid-Hudson Psychiatric Center Access

The Mid-Hudson Psychiatric Center currently has two access connections to U.S. Route 6/NYS Route 17M. These are unsignalized intersections and U.S. Route 6/NYS Route 17M in this vicinity consists of one lane in each direction. During peak hours, traffic exiting the facility experiences delays especially making left turns due to the "stop" sign control at this intersection.

Capacity analysis was conducted at this intersection utilizing the 2015 Existing Traffic Volumes. The results indicated that the intersection currently operates at a Level of Service "C" during the AM Peak Hour of Amy's Generation, at a Level of Service "F" during the AM Peak Highway Hour and each of the PM Peak Hours and at a Level of Service "E" during the Saturday Peak Hour. Analyses were also conducted at this intersection for 2033 No-Build conditions which indicate that similar levels of service would continue to be experienced in the future without the project.

It should be noted that this location was also identified as a high accident location based on the accident analysis discussed in Section II.E above. The Applicant for the Amy's Kitchen/SoS project is coordinating with the Mid-Hudson Psychiatric Center to provide a new access roadway that will connect to the Amy's Kitchen/SoS access roadway to provide the Psychiatric Center access to the traffic signal and separate turning lanes that are proposed to be installed at the Amy's Kitchen/SoS access roadway connection with NYS Route 17M. This access management, which combines the access connections to NYS Route 17M and the related intersection

improvements, which are discussed further in Item 4 below, will significantly improve access conditions for the Psychiatric Center as well as improve safety in the vicinity of these intersections.

4. U.S. Route 6/NYS Route 17M and Training Center Lane and Proposed Site Access
Training Center Lane, which provides access to the Orange County Transfer Station and the Orange County Fire Training Center, currently intersects with U.S. Route 6/NYS Route 17M at an unsignalized intersection. In this vicinity, NYS Route 17M consists of one lane per direction plus a paved shoulder and the Training Center Lane approach consists of one wide lane.

Based on a review of the existing traffic volumes along the corridor and the results of the existing conditions analysis, the intersection of NYS Route 17M and Training Center Lane currently experiences long delays during peak hours. This is primarily due to the lack of separate turning lanes, which inhibits through traffic movements along the corridor, especially in the westbound direction. Similar conditions occur at other intervening unsignalized intersections along this section of NYS Route 17M. In order to improve these conditions, the provision of a separate left turn lane would be required and the intersection would also have to be signalized.

Associated with the construction of the Amy's Kitchen/SoS facility, the Applicant is pursuing an access management strategy by constructing a new access roadway to serve the Amy's Kitchen and SoS developments as well as the Mid-Hudson Psychiatric Center as described above. The new roadway will intersect NYS Route 17M approximately 200 ft. west of the existing Training Center Lane, which will be relocated to align opposite the Amy's Kitchen/SoS access roadway to form a full movement signalized intersection. The intersection will be reconstructed to have multi-lane approaches; two lanes on each of the side roads and separate left and right turn lanes in each direction along NYS Route 17M. Drawing CP-1 contained in Appendix "I" shows the conceptual configuration of the access improvements and the relocation of Training Center Lane to the west away from the existing bridge crossing the Wallkill River. Based upon a review of the future traffic volumes, signalization of this intersection will also be required to accommodate the expected volumes. A new fully actuated traffic signal will be installed to control traffic movements and to enhance safety along this corridor. A Highway Work Permit will have to be obtained from the New York State Department of Transportation for these improvements, which will also have to be coordinated with the Orange County Department of Public Works regarding the relocation and improvements to Training Center Lane. These improvements are proposed to not only accommodate traffic associated with the Amy's Kitchen and SoS development, but to also improve existing capacity and

safety related conditions along NYS Route 17M as well as access to and from Training Center Lane by providing separate left and right turning lanes and the installation of a traffic signal to control traffic movements at the new intersection. These improvements will be completed at the time of opening of the Phase I and SoS development.

Based on the capacity analysis for this intersection under Build conditions, the intersection is projected to operate at an overall Level of Service "B" during the AM Peak Hour of Amy's Generation, while an overall Level of Service "C" is expected to be experienced during the AM Peak Highway Hour, PM Peak Hour of Amy's Generation, PM Peak Highway Hour and the Saturday Peak Hours.

Based on the queuing analysis results a 185 ft. left turn lane is proposed to be provided in the eastbound direction along NYS Route 17M while a 125 ft. left turn lane is proposed to be provided in the westbound direction. In addition an approximately 135 ft. westbound right turn lane for vehicles entering the Amy's Kitchen access driveway and a 100 ft. eastbound right turn lane for vehicles entering Training Center Lane will also be provided. The realigned Training Center Lane approach will consist of a left/through lane and an approximately 150 ft. separate right turn lane. It should be noted that similar to other intersections along the corridor, longer queues can be expected on the eastbound approach during the AM Peak Hour as well as on the westbound approach during the PM Peak Hour. As noted above, these improvements will not only serve the proposed development, but will significantly enhance the safety and efficiency of traffic movements to and from Training Center Lane and the Mid-Hudson Psychiatric Center.

5. U.S. Route 6/NYS Route 17M and Hartley Road/Gate Schoolhouse Road

   Hartley Road and Gate Schoolhouse Road intersect with NYS Route 17M at a signalized intersection. Each of the approaches to this intersection consists of one lane.

   The capacity analysis conducted at this intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at an overall Level of Service "A" during each of the peak hours. It should also be noted that left turns from NYS Route 17M to Hartley Road and Gate Schoolhouse Road currently prohibit the flow of through vehicles along NYS Route 17M at this intersection due to the lack of separate left turn lanes. Also, there is a history of severe rear-end type accidents at this intersection, as discussed in Section II.E.

The intersection was reanalyzed with the 2033 No-Build Traffic Volumes. A review of these analyses indicates that the intersection is expected to experience an overall Level of Service "B" during each of the Peak Hours. Similar Levels of Service would be expected to be experienced under 2033 Full Build Conditions during each of the peak hours, with some minor increases in delay and other more significant increase in v/c ratios in the eastbound and westbound directions as a result of the project.

As shown in the queue summary tables, long queues are currently experienced along NYS Route 17M during the AM and PM Peak Hours, some in excess of 600 ft. These queues may impact the ability of vehicles to turn into and out of other driveways along NYS Route 17M in the vicinity of this intersection. These conditions are expected to continue in the future under both No-Build and Build conditions. Some minor signal timing improvements have also been identified for this intersection to maximize the intersections efficiency under future conditions.

It should be noted that the Scoping Document required that the arrival and departure distributions reflect the current use of Gate Schoolhouse Road by local motorists. Although it is not expected that Gate Schoolhouse Road will be a major access route for employees and/or trucks to and from the site, as previously indicated in Section IV.B it has been assumed that as much as 10% percent of the Amy's Kitchen employee traffic will utilize this roadway for access to the site.

6. U.S. Route 6/NYS Route 17M and 6 ½ Station Road/Maple Avenue (C.R. 31)
Maple Avenue (C.R. 31) and 6 ½ Station Road intersect with U.S. Route 6/NYS Route 17M at a signalized intersection. The NYS Route 17M approaches each consist of a shared through/right turn lane and a 200 ft. separate left turn lane. The 6 ½ Station Road and Maple Avenue approaches consist of one lane that widens approaching the intersection.

The capacity analysis conducted at this intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at an overall Level of Service "B" during each of the peak hours with the exception of the PM Peak Hour of Amy's Generation during which the intersection currently operates at an overall Level of Service "C".

The intersection was reanalyzed with the 2033 No-Build and 2033 Full Build Traffic Volumes. A review of these analyses indicates that the intersection is expected to maintain an overall Level of Service "B" during the AM Peak Hour of Amy's Generation and the Saturday Peak Hour as well as maintain an overall Level of Service "C" during the PM Peak Hour of Amy's Generation. During the AM and PM

Peak Highway Hours the intersection is expected to go from an overall Level of Service "B" under Existing conditions to an overall Level of Service "C" under No-Build and Build conditions generally as a result of the background traffic growth along the corridor.

As shown in Table No. 3 long queues are currently experienced along NYS Route 17M during the AM and PM Peak Hours, some in excess of 600 ft. These queues likely impact the ability of vehicles to turn into and out of other driveways along NYS Route 17M in the vicinity of this intersection. However there is sufficient storage for left turn queues and on each of the side road approaches. These conditions are expected to be maintained in the future both with and without the proposed project.

As previously discussed in Section III.C, improvements along NYS Route 17M at this intersection had been identified in the Goshen Town Wide Traffic Study, however there is currently no proposal for the implementation of these improvements and therefore they have not been considered in the analysis. The analysis discussed above indicates that the intersection will continue to operate similar to existing conditions in the future both with and without the proposed project and therefore no improvements are proposed to be completed at this intersection in association with the Amy's Kitchen development.

7. U.S. Route 6/NYS Route 17M and NYS Route 17 (Future I-86)

   NYS Route 17M intersects with Route 17 at a directional interchange which serves traffic to and from the south. The movements generally operate as free flow a ramp movement, which is expected to continue under future conditions. The nearest intersection to these free-flow ramp locations, the intersection NYS Route 17M and Police Highway was analyzed as part of the traffic analysis. The intersection is a unsignalized, "stop" sign controlled intersection that consists of one lane in each direction along NYS Route 17M and one lane in each direction along Police Highway. Left turns from Police Highway to NYS Route 17M westbound are prohibited. The analysis results for the intersection indicate that it is currently operating at a Level of Service "B" during each of the peak hours. Similar Levels of Service are expected to be maintained under both future No-Build and Build conditions.

   As previously indicated in Section III.C potential future improvements have been identified for the NYS Route 17 Exits 123, 124, and 125 interchanges as part of the NYS Route 17 conversion to Interstate 86. However, there is currently no timetable for these improvements and therefore they have not been considered in the analysis.

8. Hartley Road and Echo Lake Road/Cheechunk Road

   Hartley Road intersects with Echo Lake Road and Cheechunk Road at an unsignalized "T" shaped intersection. Each of the intersecting roadways consists of one lane in each direction and the northbound Hartley Road intersection is controlled by a "stop" sign.

   Capacity analysis was conducted for this intersection under the 2015 Existing Traffic Volume conditions for each of the peak hours. The analysis indicates that the intersection is currently operating at a Level of Service "B" or better during each of the peak hours.

   The capacity analysis was recomputed utilizing the 2033 No-Build and Build Traffic Volumes. The intersection is expected to continue to operate at similar Levels of Service to existing conditions during each of the peak hours.

9. Golf Links Road (C.R. 50) and McVeigh Road

   Golf Links Road (C.R. 50) and McVeigh Road intersect at an unsignalized full movement intersection. Each of the intersection approaches consists on one lane and the McVeigh Road approaches are "Stop" sign controlled. Prior to the intersection in the northbound and southbound directions Golf Links Road has minor roadway intersections that function as channelized right turn movements and accommodate the majority of northbound and southbound right turn movements. In the northbound direction the channelized right turn roadway becomes Echo Lake Road. In the southbound direction the channelized right turn roadway accommodates two-way traffic and therefore also accommodates the majority of the eastbound left turn movements from McVeigh Road to Golf Links Road.

   The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at a Level of Service "B" or better during the AM Peak Hour of Amy's Generation as well as the AM Peak Highway Hour. During the PM Peak Hour of Amy's Generation the intersection currently experiences a Level of Service "F" on the westbound McVeigh Road approach, while a Level of Service "D" is experienced on the same approach during the PM Peak Highway Hour. During the Saturday Peak Hour the intersection operates at a Level of Service "C" or better.

   The intersection was reanalyzed utilizing the 2033 No-Build and Build Traffic Volumes. The results indicated that during the AM Peak Hour of Amy's Generation the intersection will continue to operate at a Level of Service "B" or better, while a Level of Service "C" or better will be experienced during the AM Peak Highway

Hour both with and without the project. During the PM Peak Hour of Amy's Kitchen Generation the intersection is expected experience a Level of Service "F" on the westbound McVeigh Road approach under both No-Build and Build conditions, while during the PM Peak Highway Hour a Level of Service "E" is expected to be experienced on the same approach both with and without the project. During the Saturday Peak Hour a Level of Service "C" or better is expected to be maintained under future conditions with and without the project. It should be noted that under typical conditions, the Amy's Kitchen development traffic is projected to result in an increase in traffic volumes at this intersection of approximately 4% or less during any of the peak hours.

A review of the traffic volumes and the existing and future traffic operating conditions at this intersection, especially during the PM Peak Hours, indicates that this intersection would benefit from the installation of All-Way stop control at the intersection to improve the overall traffic operating conditions. The sight distances at the intersection approaching from the north and south along Golf Links Road provide good visibility of the potential stop location. This modification should be considered regardless of the proposed project. Analyses of the intersection with All-Way stop control was conducted for each of the peak periods indicating that the intersection would operate at a Level of Service "C" or better on all approaches during each of the peak hours.

10. Echo Lake Road and McVeigh Road

Echo Lake Road and McVeigh Road intersect at an unsignalized "T" shaped intersection. Each of the intersection approaches consists of one lane and the McVeigh Road approach is controlled by a "Stop" sign. The eastbound Echo Lake Road a one-way road toward the intersection and therefore the westbound approach only permits right turns, while the southbound McVeigh Road approach only permit left turns.

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at a Level of Service "A" during the AM Peak Hour of Amy's Generation, while a Level of Service "B" is currently experienced during the AM Peak Highway Hour. During the PM Peak Hour of Amy's Generation the intersection currently experiences a Level of Service "B", while a Level of Service "A" is experienced the PM Peak Highway Hour. During the Saturday Peak Hour the intersection operates at a Level of Service "A". The capacity analysis was recomputed utilizing the 2033 No-Build and Build Traffic Volumes. The results of these analyses indicate that similar Level of Service will be maintained during each of the peak hours with and without the proposed

project. It is not expected that the proposed development will add any significant traffic to this intersection.

11. Fletcher Street and NYS Route 17 (Exit 122A) Eastbound On/Off-Ramp

The NYS Route 17 Eastbound On/Off Ramps intersect Fletcher Street at an unsignalized four-leg intersection. Each of the intersection approaches consist of one lane and the southbound NYS Route 17 Eastbound Off-Ramp approach is controlled by a "Stop" sign.

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at a Level of Service "A" during the AM Peak Hour of Amy's Generation, while a Level of Service "F" is currently experienced during the AM Peak Highway Hour on the NYS Route 17 Eastbound Off-Ramp approach primarily as a result of existing commuter and school related traffic. During the PM Peak Hour of Amy's Generation and the PM Peak Highway Hour the intersection currently experiences a Level of Service "C", while a Level of Service "A" is experienced the PM Peak Highway Hour. During the Saturday Peak Hour the intersection operates at a Level of Service "B".

The intersection was reanalyzed utilizing the 2028 No-Build and Build Traffic Volumes. The results indicate that during the AM Peak Hour of Amy's Generation the intersection will continue to operate at a Level of Service "A", while a Level of Service "F" will continue to be experienced during the AM Peak Highway Hour both with and without the project. During the PM Peak Hour of Amy's Kitchen Generation the intersection is expected to operate at a Level of Service "D" on the off-ramp approach, while during the PM Peak Highway Hour a Level of Service "C" is expected to be maintained both with and without the project. During the Saturday Peak Hour a Level of Service "B" or better is expected to be maintained under future conditions with and without the project. It should be noted that under typical conditions, the Amy's Kitchen development traffic is projected to result in an increase in traffic volumes at this intersection by approximately 2% or less over No-Build conditions during any of the peak hours. This intersection should be monitored in the future for potential signalization regardless of the project. With signalization, the intersection will operate at an overall Level of Service "C" or better in the future.

12. Fletcher Street and NYS Route 17 (Exit 122A) Westbound On/Off-Ramp

The NYS Route 17 Westbound On/Off Ramps intersect Fletcher Street at an unsignalized four-leg intersection. Each of the intersection approaches consist of one lane and the northbound NYS Route 17 Westbound Off-Ramp approach is controlled by a "Stop" sign.

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at a Level of Service "B" during the AM Peak Hour of Amy's Generation, while a Level of Service "C" is currently experienced during the AM Peak Highway Hour on the NYS Route 17 Eastbound Off-Ramp approach. During the PM Peak Hour of Amy's Generation and the PM Peak Highway Hour the intersection currently experiences a Level of Service "D", while a Level of Service "C" or better is experienced the PM Peak Highway Hour. During the Saturday Peak Hour the intersection operates at a Level of Service "B".

The intersection was reanalyzed utilizing the 2033 No-Build and Build Traffic Volumes. The results indicate that during the AM Peak Hour of Amy's Generation the intersection will continue to operate at a Level of Service "B", while a Level of Service "C" will continue to be experienced during the AM Peak Highway Hour both with and without the project. During the PM Peak Hour of Amy's Kitchen Generation the intersection is expected to operate at a Level of Service "E" on the off-ramp approach with average vehicle delay increase of less than 5 seconds form the No-Build to Build conditions, while during the PM Peak Highway Hour a Level of Service "C" is expected to be maintained both with and without the project. During the Saturday Peak Hour a Level of Service "B" or better is expected to be maintained under future conditions with and without the project. It should be noted that under typical conditions, the Amy's Kitchen development traffic is projected to result in an increase in traffic volumes at this intersection by approximately 2% or less over No-Build conditions during any of the peak hours. This intersection should be monitored in the future for potential signalization regardless of the project. With signalization, the intersection will operate at an overall Level of Service "B" or better in the future.

13. NYS Route 17M and Cannon Hill Drive

NYS Route 17M and Cannon Hill Drive currently intersection at an unsignalized "T" shaped intersection that is controlled by a "Stop" sign on the Cannon Hill Drive approach. The northbound Cannon Hill Drive approach consists of one 16-ft. wide lane for left and right turn movements. The NYS Route 17M approaches each consist of one lane.

The capacity analysis conducted for the intersection utilizing the 2015 Existing Traffic Volumes indicates that the intersection currently operates at a Level of Service "E" during the AM Peak Hour of Amy's Generation, while a Level of Service "F" is currently experienced during the AM Peak Highway Hour, the PM Peak Hour of Amy's Generation and the PM Peak Highway Hour for traffic exiting Cannon Hill Drive onto NYS Route 17M. During the Saturday Peak Hour a Level of Service "C" is currently experienced.

The intersection was reanalyzed utilizing the 2033 No-Build and Build Traffic Volumes. The results indicate that the intersection will operate at a Level of Service "F" during the AM Peak Hour of Amy's Generation, the AM Peak Highway Hour, the PM Peak Hour of Amy's Kitchen Generation and the PM Peak Highway Hour. A Level of Service "D" is expected to be experienced during the Saturday Peak Hour. It should be noted the Amy's Kitchen & SoS development will not add any additional turning movement traffic to this intersection. In addition, the presence of the proposed traffic signal to be installed at the intersection of NYS Route 17M & Training Center Lane/SoS Site Access roadway will provide additional gaps in the traffic flow along NYS Route 17M at this intersection which will improve the operation of this intersection under future conditions and reduce any delay increases.

It should be noted that there has been discussion regarding the potential signalization of the Cannon Hill Drive intersection in association with the Cannon Hill Drive Flex Building project to be developed along the roadway. The need for a traffic signal at this location should be addressed by that development in conjunction with the NYSDOT, however any potential signal at this location may also require the addition of a left turn lane along NYS Route 17M as well as potential coordination with the proposed traffic signal at Training Center Lane to ensure efficient traffic flow along NYS Route 17M is maintained.

G. POTENTIAL AMY'S KITCHEN DEVELOPMENT WITH ACCESS TO HARTLEY ROAD ONLY

As currently proposed the Amy's Kitchen Phase development will include the construction of a bridge crossing of the Wallkill River connecting the Amy's Kitchen site to the Echo Lake property and providing access for Amy's Kitchen to NYS Route 17M directly. This scenario was fully analyzed and discussed in Section IV.F above. As required by the Scoping Document, an alternative analysis was also conducted for the possibility that this bridge is not constructed or that the Amy's Kitchen development is completed prior to completion of the Wallkill River Bridge. In either case, the Amy's

Kitchen development would have to be accessed via a connection to Hartley Road. The analysis of this scenario focused on the potentially affected intersections of NYS Route 17M & the SoS Access/Training Center Lane, NYS Route 17M & Hartley Road/Gate Schoolhouse Road and Hartley Road & the Amy's Kitchen Access driveway. The traffic volumes associated with this alternative analysis are summarized on Figures No. 22-NB through 51-NB. The results of the capacity analysis for this scenario are summarized on Tables No. 2-NB through 11-NB. The results indicate that in addition to the proposed improvements at the Site Access Road/Training Center Lane intersection with NYS Route 17M additional improvements would also be required at the intersection of NYS Route 17M and Hartley Road/Gate School House Road. These improvements would include the construction of separate left turn lanes in each direction along NYS Route 17M as well as the potential need for a separate left turn lane in the northbound direction on Gate School House Road. Additional widening of Hartley Road would in the immediate vicinity of NYS Route 17M would also likely be required to accommodate the turning movements of trucks to and from NYS Route 17M. These improvements would require a replacement of the existing traffic signal at the intersection to accommodate the modified lane geometry. These improvements would require the review and approval of the NYSDOT as part of the Highway Work Permit project. It should be noted that this scenario would not change the operating condition results presented in Section IV.F at the other intersections not analyzed as part of this alternative.

H. SCIENCE OF THE SOUL WEEKLY MEETINGS & ANNUAL REGIONAL EVENTS

As previously indicated, SoS will hold weekly meetings at the conference center facility to be constructed on the Echo Lake property. These meetings, which will occur on Sunday mornings, are similar to typical church services and it is anticipated that the meetings will be attended by 200 to 400 people from the local area. A separate analysis of the traffic conditions during these Sunday morning conditions has not been conducted; however based on data provided by ITE it is estimated that up to approximately 244 vehicle trips could be generated by a meeting of approximately 400 attendees. Based on the ATR count data collected along NYS Route 17M, as contained in Appendix :G", the traffic volumes on a Sunday morning between 9:00 AM and 12:00 PM are between 15% and 40% lower than the Saturday Peak Hour traffic volumes along the roadway. The additional traffic volumes generated by the weekly meetings would equate to an approximately 20% increase in traffic volumes in the immediate vicinity of the site access. However, since the background volumes along NYS Route 17M are significantly lower than the Saturday Peak Hour or Weekday background volumes, it is not anticipated that this additional volume would have a significant impact on traffic conditions along

NYS Route 17M. Also, the access improvements identified above for the SoS Access/Training Center Lane intersection would be able to accommodate these additional site generated volumes.

In addition to the Weekly Meetings, the Science of the Soul facility is also expected to hold an Annual or Semi-Annual Regional Event and one (1) Annual National Event. The Annual National Event is discussed in greater detail in Section V of this report including a full analysis of event period traffic conditions. The Regional Event is anticipated to be attended by approximately 2,000-3,000 people and will be held over a 1 or 2 day period. The Regional Event typically last for approximately 2 hours and would typically occur over a weekend beginning on a Saturday morning and ending early on a Sunday afternoon. However, it is possible that these events could occur during the week. The regional event would require staffing by approximately 100 to 180 volunteers. It is anticipated that approximately 50% of the attendees would utilize area hotels for the duration of the event, typically staying for one night. Since the Regional Event would draw from a smaller area than the Annual National Event, it is anticipated that approximately 20% of the attendees would arrive by bus, with the balance of attendees arriving by passenger car. The SoS site would be able to accommodate all parking for the regional event on the site, including all volunteer parking.

A qualitative analysis of traffic conditions during a Regional Event was completed. Since this event is of a limited duration occurring once per year, it will not result in a significant adverse impact that requires additional mitigation. However, as part of the plan for this even, based on the analysis of the even conditions, it is anticipated that to ensure efficient traffic flow along NYS Route 17M in the vicinity of the site, manned police traffic control of the NYS Route 17M/SoS Access/Training Center Lane intersection may be required during this limited time period. It is recommended that manned police traffic control of this intersection be provided at this intersection for the first year or two with the need for this to be further evaluated with the Town based on actual operating conditions during the Regional Event. Furthermore, it is anticipated that the other area intersections could accommodate additional traffic that would be generated by the Regional Event, however, in order to ensure that there would be no significant impacts to the area roadways the peak entry and exit periods of these events should be arranged such that they do not coincide with the peak hours of traffic along NYS Route 17M.

I. FUTURE SAFETY CONDITIONS

As indicated in Section II.E several intersections currently experience accident rates above statewide averages. The intersection of NYS Route 17M and the Mid-Hudson Psychiatric Center Drive (including Training Center Lane) were both found to have a high rate of accidents (defined as twice the statewide average) during the time period analyzed. The proposed improvements at the Training Center Lane/Site Access intersection will help to reduce accidents in this area by controlling traffic movements entering and exiting the state highway and providing separate turning lanes for these movements to occur without impeding through traffic along NYS Route 17M. The elimination of the existing Mid-Hudson Psychiatric Center driveway, which will be accessed via the proposed Site Access roadway under future conditions with the project, will reduce conflicts and delays through this area of NYS Route 17M and therefore should help reduce current accident rates.

The average accident rate at the intersection of NYS Route 17M and Hartley Road was found to be below the statewide average, however a history of severe rear-end type accidents does exist at this intersection. As previously indicated the installation of traffic signal back plates on the eastbound and westbound approach traffic signal heads would help to make the signal more visible, especially during periods of significant sun glare and could help to reduce the number of rear-end type accidents at this location. This should be considered regardless of the proposed project.

The average accident rate at the intersections of NYS Route 17M & Lower Road (C.R. 12)/C.R. 50 and NYS Route 17M & 6 ½ Station Road/Maple Avenue were found to be slightly above the statewide average. At each of these intersections, the most common accident type was rear end accidents resulting from driver inattention and vehicles following too closely. As previously indicated, the Amy's Kitchen Traffic Generation generally occurs outside the peak hours along NYS Route 17M and the greatest increase in traffic volumes at these intersections will occur as a result of background traffic growth. In addition minor traffic signal timing improvements at the Lower Road intersection during the AM Peak Hour of Amy's Kitchen Generation and the AM Peak Highway Hour, which were identified in Section IV.F above, may help to somewhat reduce the existing congestion in the eastbound direction along NYS Route 17M, which contributes to the existing accident conditions at this intersection.

The intersection of NYS Route 17M and the I-84 westbound off-ramp to Route 17M westbound was also found to have a high rate of accidents (defined as twice the statewide average) during the time period analyzed. The Amy's Kitchen development would not add any additional traffic to the I-84 off-ramp approach and therefore is not expected to significantly change the future accident conditions at this intersection.

V. CONSIDERATION OF SCIENCE OF THE SOUL ANNUAL EVENT (Appendix E)

Science of the Soul ("SoS") is an international, non-denominational philosophy based on the teachings universal to all religions. SoS, also known as Radha Soami Satsang Beas, has been in the United States since in 1911 and is a registered 501(c)(3) religious non-profit organization.

SoS proposes to construct a conference center on the "Echo Lake property." The conference center would comprise an approximately 200,000 s.f. open-air pavilion, ancillary buildings for administration and support, parking areas (both paved and gravel) to accommodate up to approximately 2,000 cars and an additional 130 buses; two (2) 2,600 square foot caretaker residences; and one 5-bedroom guest house. Note that approximately 65% of the proposed parking spaces will be gravel and/or grass spaces.

The conference center would be used to host an annual three-day national conference, with attendance of up to 12,000 people per day. This annual conference could be held during the week, over a weekend or a combination of both. Approximately 60% of the attendees would arrive via passenger car and all required parking for the event would be accommodated on-site. The balance of attendees would arrive by bus from nearby hotels and/or urban centers. Based on information provided by SoS the duration of these events is approximately two hours and could either be morning or afternoon events, however morning events are more typical. It is also typical for some attendees to arrive as early as three hours prior to the start of the event and depart as late as 3 hours after the event.

In addition to the annual three-day conference, SoS would hold regular weekly meetings on Sunday mornings for local congregants, estimated between 200 and 400 people as well as regional meetings with an attendance of approximately 2,000-3,000 people. During the week, a small staff (5 to 10 people) would attend to normal administrative and property management tasks.

As previously indicated, access to SoS would be from a new entrance roadway connection to NYS Route 17M, which would also serve the Amy's Kitchen manufacturing plant under the Phase II development as well as the Mid-Hudson Psychiatric Center. This road will traverse an approximately 7 to 10 acre parcel of land currently owned by the State of New York. The State has agreed to transfer this land to the Town of Goshen for highway purposes, and an access arrangement (easement or other) will be sought from the Town to construct a road over this land. Emergency access

and such other access as the Town may require or that SoS may request and be granted will be provided from Echo Lake Road with a permeable hard surface.

SoS has also purchased the Strong Farm property on Owens Road for agricultural (crops only) use and volunteer parking during the three day national conference only.

Since this Annual Event is limited to a once per year occurrence, it will not result in any significant adverse impacts that require additional mitigation. However as part of the Proposed Project, various Traffic Management Strategies (TMS) and related measures are being incorporated to accommodate this event conditions. These measures, including the use of shuttle busses, manned police traffic control, on-site circulation, etc. will be coordinated with the Town of Goshen.

In any event, to satisfy the requirements of the Scoping Document and to help refine the planned Traffic Management Strategies, an analysis of the Annual Event conditions has been conducted to assess the traffic conditions associated with this event on the surrounding roadway networks. The following describes the procedures utilized in performing this analysis. It has been assumed that the Amy's Kitchen facility will be operational during the event in order to provide a conservative analysis of future conditions during the special event.

1. <u>2015 Existing Traffic Volumes</u>

The SoS Annual Events occur once per year and typically are held over a three (3) day period. As such, the event conditions have been analyzed during both typical weekday and weekend conditions, utilizing traffic volumes representing school traffic, in order to provide a complete analysis of the potential traffic conditions.

Based on information provided by SoS, the annual events typically have a duration of approximate two-hours. A Morning Event typically begins at 10:00 AM and ends at 12:00 PM. An afternoon event typically begins at 4:00 PM and ends at 6:00 PM. Information provided by SoS for their Petaluma, California conference center indicates the typical arrival and departure pattern of attendees prior to and after the events, which is summarized in Exhibit No. 3 below.

Exhibit No. 3 Anticipated Special Event Arrival and Departure Schedule		
Time Interval (Prior-to or After Event)	Arrivals	Departures
0:30	5%	20%
1:00	15%	20%
1:30	25%	15%
2:00	30%	20%
2:30	20%	15%
3:00	5%	10%

This information was utilized to determine the peak hours of entry and exit traffic prior to and after each event. Exhibit No. 4 below summarizes the anticipated peak hours of entering and exiting traffic for both morning and afternoon events.

Exhibit No. 4
Anticipated Event Entry and Exit Peak Hours

	Morning Event	Afternoon Event
Event Start	10:00 AM	4:00 PM
Event End	12:00 PM	6:00 PM
Entry Peak	8:30 AM – 9:30 AM	2:30 PM – 3:30 PM
Exit Peak	12:00 PM – 1:00 PM	6:00 PM – 7:00 PM

Based on the above information contained in Exhibits No. 3 and 4, the following is a discussion of the peak entry and exit time periods for an event occurring on a weekday or weekend and the analysis that is conducted herein for each of these time periods.

Weekday Event

- ***Weekday Morning Event Entry Period (8:30 AM – 9:30 AM)*:** The Peak Entry Period for a Morning Event occurring on a weekday would occur between 8:30 AM and 9:30 AM. This peak period falls just outside the AM Peak Highway Hour (7:30 AM – 8:30 AM) for NYS Route 17M. However, based on the machine count traffic volumes contained in Appendix "G", the existing background traffic volumes between 8:30 AM – 9:30 AM are approximately 97% of the AM Peak Highway Hour. Therefore, it was determined that a full quantitative analysis of the Weekday Morning Event Entry Period is require and for the purposes of the analysis the 2015 AM Peak Highway Hour (7:30 AM – 8:30 AM) traffic volumes

have been utilized as the base traffic volumes for this analysis. These volumes have been re--summarized on Figure No. 2-E in Appendix "E" for ease of reference.

- ***Weekday Morning Event Exit Period (12:00 PM – 1:00 PM):*** The Peak Exit Period for a Morning Event occurring on a Weekday would occur between 12:00 PM and 1:00 PM. Based on the machine count traffic volumes contained in Appendix "G", the existing background traffic volumes between 12:00 PM – 1:00 PM are approximately 84% of the PM Peak Hour of Amy's Kitchen Generation (3:00 PM – 4:00 PM) volumes and therefore it was determined that a full quantitative analysis of the Weekday Morning Event Exit Period conditions is required. Since during the 12:00 PM – 1:00 PM time period complete turning movement counts were not collected and was not required to be analyzed as part of the original scoping document, based on the machine count data an 84% factor was applied to the 3:00 PM – 4:00 PM traffic volumes to obtain the 12:00 PM – 1:00 PM Morning Event Exit Period 2015 Existing Traffic Volumes utilized for this analysis. These volumes are summarized on Figure No. 3-E in Appendix "E".

- ***Weekday Afternoon Event Entry Period (2:30 PM – 3:30 PM):*** The Peak Entry Period for an Afternoon Event occurring on a Weekday would occur between 2:30 PM and 3:30 PM. Based on the machine count traffic volumes contained in Appendix "G", the existing background traffic volumes from 2:30 PM – 3:30 PM are 98% of the PM Peak Hour of Amy's Generation (3:00 PM – 4:00 PM) existing traffic volumes. Therefore, it was determined that a full quantitative analysis of the Weekday Afternoon Event Entry Period conditions is required and the 3:00 PM – 4:00 PM time period traffic volumes have been utilized as the base traffic volumes for this analysis. These volumes have been re-summarized on Figure No. 4-E in Appendix "E" for ease of reference.

- ***Weekday Afternoon Event Exit Period (6:00 PM – 7:00 PM):*** The Peak Exit Period for an Afternoon Event occurring on a Weekday would occur between 6:00 PM and 7:00 PM, which is after the PM Peak Highway Hour (4:30 PM – 5:30 PM) along NYS Route 17M. Based on the machine count traffic volumes contained in Appendix "G", the existing background traffic volumes from 6:00 PM – 7:00 PM along NYS Route 17M are 75% of the 4:30 PM – 5:30 PM volumes along the roadway and are 90% of the 12:00 PM – 1:00 PM volumes. Therefore it was determined that a full quantitative analysis of the Weekday Afternoon Event Exit Period conditions is not required and that the Weekday Morning Event Exit Period conditions would be representative of the afternoon

conditions. A further qualitative discussion of this time period is provided in Section V.5 below.

Weekend Event

It should be noted that based on the collected traffic volume data the Saturday traffic volumes are the critical traffic volumes for a typical weekend and therefore have been utilized as the base traffic volumes for the weekend analysis. The daily traffic volumes on a Sunday are approximately 85% of the Saturday daily traffic volumes. A qualitative analysis of Sunday Event conditions is provided in Section V.5 below.

- ***Weekend Morning Event Entry Period (8:30 AM – 9:30 AM):*** The Peak Entry Period for a Morning Event occurring on a weekend would occur between 8:30 AM and 9:30 AM. Based on the machine count traffic volumes contained in Appendix "G", the existing background traffic volumes between 8:30 AM – 9:30 AM are approximately 85% of the Saturday Peak Hour (12:00 PM – 1:00 PM) traffic volumes. Therefore it was determined that a full quantitative analysis of the Weekend Morning Event Entry Period was not required and that the analysis of the Weekend Afternoon Entry Period (see below) would be representative of morning entry period conditions. A further qualitative discussion of this time period is provided in Section V.5 below.

- ***Weekend Morning Event Exit Period (12:00 PM – 1:00 PM):*** The Peak Exit Period for a Morning Event occurring on a Weekend would occur between 12:00 PM and 1:00 PM, which is coincident with the peak hour of traffic volumes along NYS Route 17M. Therefore it was determined that a full quantitative analysis of the Weekday Morning Event Exit Period conditions is required. The 2015 Existing Traffic Volumes of the 12:00 PM – 1:00 PM time period have been re-summarized on Figure No. 5-E in Appendix "E".

- ***Weekend Afternoon Event Entry Period (2:30 PM – 3:30 PM):*** The Peak Entry Period for an Afternoon Event occurring on a Weekday would occur between 2:30 PM and 3:30 PM. Based on the machine count traffic volumes contained in Appendix "G", the existing background traffic volumes on a Saturday from 2:30 PM – 3:30 PM are 91% of the Saturday Peak Hour (12:00 PM – 1:00 PM) existing traffic volumes. Therefore, it was determined that a full quantitative analysis of the Weekend Afternoon Event Entry Period conditions is required and it was conservatively assumed that the Weekend Afternoon Event Entry Period coincides with the Saturday Peak Hour Traffic Volumes. These volumes have been re-summarized on Figure No. 6-E in Appendix "E" for ease of reference.

- ***Weekend Afternoon Event Exit Period (6:00 PM – 7:00 PM):*** The Peak Exit Period for an Afternoon Event occurring on a Weekend would occur between 6:00 PM and 7:00 PM. Based on the machine count traffic volumes contained in Appendix "G", the existing background traffic volumes from 6:00 PM – 7:00 PM along NYS Route 17M are 65% of the Saturday Peak Hour 12:00 PM – 1:00 PM volumes along the roadway. Therefore it was determined that a full quantitative analysis of the Weekend Afternoon Event Exit Period conditions is not required and that the Weekend Morning Event Exit Period conditions would be representative of the afternoon conditions. A further qualitative discussion of this time period is provided in Section V.5 below.

Based the above, the following are the five time periods for which a full quantitative analysis of the SoS Annual Event conditions has been conducted herein.

- Weekday Morning Event Entry Period (8:30 AM – 9:30 AM)
- Weekday Morning Event Exit Period (12:00 PM – 1:00 PM)
- Weekday Afternoon Event Entry Period (2:30 PM – 3:30 PM)
- Weekend Morning Event Exit Period (12:00 PM – 1:00 PM)
- Weekend Afternoon Event Entry Period (2:30 PM – 3:30 PM)

It should be noted that similar growth and other development traffic volumes were also added to the existing traffic volumes for each of the time periods analyzed in order to project the traffic volumes to the future 2033 Design Year. The 2033 No-Build Traffic Volumes are summarized on Figures No. 17-E through 21-E contained in Appendix "E".

2. <u>Annual Event Traffic Generation</u>

It is assumed that the Amy's Kitchen facility and the ver Hage warehouse uses will remain operational during the SoS Annual Event for the purpose of the analysis contained herein. Thus, the Annual Event conditions analysis includes the traffic volumes associated with the full buildout of that portion of the development during the Weekday and Weekend Event Periods analyzed. The total site generated traffic volumes associated with this portion of the development are shown on Figures No. 22-E through 26-E.

In addition to the estimated 12,000 attendees for an Annual Event, SoS also relies on member volunteers to staff all events. SoS has indicated that the number of volunteers typically amounts to 5-6% of the number of attendees. Based on this information it is estimated that approximately 600 to 720 volunteers may be required for the Annual

Event. Volunteers typically arrive prior to the three-hour window prior to the start of an event when attendees begin to arrive. They also depart after the same three-hour window after the end of an event. Volunteer parking is expected to be accommodated on the Strong Farm site and will either walk to the Echo Lake site event location or be provided shuttle transport via one or two shuttle vans. It is anticipated that parking for approximately 300 to 360 vehicles will have to be accommodated on the Strong Farm site for volunteer parking. Since these volunteer trips will arrive well before the attendee peak and depart well after the attendee peak, volunteer trips have not been included in the quantitative analysis of the event peak time periods.

SoS has provided information on trip generation based on experience at the existing Petaluma, California and Fayetteville, North Carolina conference centers. Based on the information provided by SoS, greater than 20% of attendees arrive by bus at the Petaluma and Fayetteville conference centers. SoS anticipates a higher usage of busses for the proposed Goshen site. It is anticipated that this number will be closer to 40% arrivals by bus since a large portion of attendees for events at this location will arrive to the region from out-of-town locations by plane or long distance group buses. In addition, a combination of long distance group buses and shuttle buses from clusters of area hotels will be utilized. Based on SoS experience, the typical bus occupancy is approximately 40 persons per bus. For the purposes of the analysis it has been assumed that approximately 125 buses will arrive at the site to accommodate both attendees and staff volunteers, which would equate to approximately 5,000 attendees and staff. There is also a possibility of attendees utilizing area mass transit (including trains) however this has not been accounted for in the analysis. It should also be noted that for the purpose of the analysis, it has been assumed that not all 130 bus parking spaces will be utilized in order to provide a somewhat conservative analysis.

SoS encourages carpooling to their events and based on experience at their Petaluma and Fayetteville locations, a car occupancy of between 3.30 and 3.80 persons per vehicle can be expected. For the purposes of the Event Conditions analysis a somewhat conservative car occupancy ratio of 3.50 persons per vehicle has been utilized. Utilizing a somewhat conservative assumption of approximately 2,000 occupied parking spaces on the site, this would accommodate approximately 7,000 attendees and staff. Note that approximately 2,036 parking spaces are proposed to be provided on the SoS site.

Together the busing and passenger cars are expected to accommodate approximately 12,000 attendees with volunteer parking accommodated on the Strong Farm site. Therefore, all required parking is anticipated to be accommodated on the SoS site.The information associated with these and other assumptions utilized to determine the site generation characteristics of the Annual Event conditions are summarized in Table No. 1-E.

As previously indicated SoS has purchased the Strong Farm property on Owens Road for agricultural (crops only) use and for use as volunteer parking area for the SoS conference center during the three-day annual event. These volunteers would either walk or be shuttled to and from this location utilizing one or two smaller vans (i.e. 15 passenger vans).

Science of the Soul has also provided information on the typical arrival and departure schedule for these special events based on their experience at past events at the existing location in Petaluma, California. This information is summarized in Exhibit No. 3 in Section V.1 above and on Table No. 1-EC contained in Appendix "E". Utilizing this information hourly trip generation estimates were developed for the typical special event. This information is summarized in Table No. 1-E contained in Appendix "E".

3. <u>Annual Event Conditions Arrival and Departure Distributions</u>

Similar to the base condition analysis the site generated traffic volumes for the Annual Event condition analysis were applied to the roadway network based on arrival and departure distributions. The distributions vary slightly from the distributions utilized in the base analysis since it is expected that patrons of the SoS Annual Event will be traveling from locations further from the site (i.e. regional hotels, metropolitan areas within driving distance, etc.) and therefore the majority of the traffic destined to the site is expected to utilize NYS Route 17 and Interstate 84 to access the site. Separate arrival and departure distributions have also been computed for passenger cars and Long Distance/Hotel Shuttle Buses destined to the Echo Lake site.

The arrival and departure distributions for passenger vehicles to/from the Echo Lake Site are shown on Figures No. 27-E and 28-E while distributions for the Long Distance/Hotel Shuttle Buses are shown on Figures No. 29-E and 30-E. In general it is anticipated that the split of traffic along NYS Route 17M will be approximately 50/50 to and from the eastbound and westbound directions.

4. Build Traffic Volumes – Annual Event Conditions

The site generated traffic volumes shown in Table No. 1-E were added to the roadway network based on the arrival and departure distributions. The resulting Annual Event Condition Site Generated Traffic Volumes are shown on Figures No. 31-E through 35-E for the Echo Lake passenger cars and Figures No. 36-E and 40-E for the Long Distance/Hotel Shuttle Buses, respectively.

These site generated traffic volumes were added to the No-Build Traffic Volumes, along with the Site Generated Traffic Volumes associated with the full buildout of the Amy's Kitchen facility and the ver Hage warehouse uses. Together these volumes result in the Annual Event Conditions Build Traffic Volumes, which are shown on Figures No. 41-E through 45-E for the each of the Peak Periods analyzed.

5. Capacity Analysis Results

Capacity analyses were performed at each of the study area intersections utilizing the procedures described in Section III.F above and the Synchro Version 8 analysis software (HCM 2010 results) to evaluate the future operating conditions during the SoS Annual Event Weekday and Weekend Peak Periods. Tables No. 2-E through 6-E contained in Appendix "E" summarize the results of the capacity analysis for the Annual Event Conditions. Tables No. 7-E through 11-E, also contained in Appendix "E" summarize the queuing analysis results for each of the analyzed Event Condition peak periods. Copies of the capacity analysis for each of the individual intersections are contained in Appendix "E" of this report. The following provides a description of the analysis results for each of the peak periods analyzed as well as a qualitative discussion of those periods for which it was determined that a full analysis was not required. It should be noted that the annual event conditions analysis assumes that the previously identified improvements at the NYS Route 17M/Training Center Lane/Site Access Roadway intersection would be in place, since those improvements are required in order to accommodate the additional traffic generated by the Amy's Kitchen facility under typical conditions. Section V.6 below describes several other potential measures that could be used to further accommodate these future annual event conditions.

Weekday Event

- ***Weekday Morning Event Entry Period (8:30 AM – 9:30 AM):*** The capacity analysis conducted for the Weekday Morning Event Peak Entry Period, for which the results are summarized on Table No. 2-E, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will experience operating difficulties on the eastbound approach as a result of the event entry traffic and

would likely require manned police traffic control during the event entry period to accommodate the traffic volumes at the intersection.

The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the eastbound left turn and westbound right turn movements. The analysis indicates that the intersection can generally accommodate these volumes, but the eastbound left turn movement is expected require other measures to function adequately. Manned police traffic control is likely to be required to accommodate traffic movements at this intersection during the event entry period.

The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road indicates that the intersection will generally accommodate the traffic volumes associated with the event entry period. It should be noted that the westbound through movement may experience operating difficulties. This intersection should be considered for manned police traffic control during this period.

The intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is expected to operate at a Level of Service "D" on all movements during the event entry period with potential signal timing improvements. All other intersections are expected to operate a similar Levels of Service to No-Build conditions.

- ***Weekday Morning Event Exit Period (12:00 PM – 1:00 PM):*** The capacity analysis conducted for the Weekday Morning Event Peak Exit Period, for which the results are summarized on Table No. 3-E, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will operate at an overall Level of Service "C" and that the traffic volumes associated with the event exit period can be accommodate at the intersection without the need for manned police traffic control. The largest increase in traffic volumes at this intersection will be on the westbound through movement, which currently consists of two through lanes.

  The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the southbound site access approach. The capacity analysis indicates that the intersection would operate at an overall Level of Service "E" under signal control with long delays on the southbound left turn exiting movement. Manned police traffic control will likely be required to accommodate traffic movements at this intersection during the event exit period and to ensure efficient flow of traffic along NYS Route 17M.

The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road intersection indicates that the intersection will operate at an overall Level of Service "B" and that the traffic volumes associated with the event exit period can be accommodated without manned police traffic control. Similarly, the intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is also expected to operate at an overall Level of Service "B" during the event exit period. All other intersections are expected to operate a similar Levels of Service to No-Build conditions.

- ***Weekday Afternoon Event Entry Period (2:30 PM – 3:30 PM):*** The capacity analysis conducted for the Weekday Afternoon Event Peak Exit Period, for which the results are summarized on Table No. 4-E, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will experience operating difficulties on the eastbound approach as a result of the event entry traffic and would likely require manned police traffic control during the event entry period to accommodate the traffic volumes at the intersection.

  The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the eastbound left turn and westbound right turn movements. The analysis indicates that an overall Level of Service "F" would be experienced with long delays on the eastbound left turn and westbound through movements. Manned police traffic control will be required to accommodate traffic movements at this intersection during the event entry period and ensure efficient traffic flow along NYS Route 17M.

  The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road indicates that the intersection will experience operating difficulty on the westbound approach as a result of the traffic volumes associated with the event entry period. Manned police traffic control will be required to accommodate traffic movements at this intersection during the event entry period and ensure efficient traffic flow along NYS Route 17M. Similarly, the intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is expected to operate above capacity on the westbound approach during the event entry period and manned police traffic control will be required to accommodate traffic movements and ensure efficient traffic flow along NYS Route 17M. All other intersections are expected to operate a similar Levels of Service to No-Build conditions.

- ***Weekday Afternoon Event Exit Period (6:00 PM – 7:00 PM):*** As previously indicated the background traffic volumes during the Weekday Afternoon Event Peak Exit Period are 75% of the 4:30 PM – 5:30 PM volumes along the roadway and are 90% of the 12:00 PM – 1:00 PM volumes. Therefore it was determined that a full analysis of the Weekday Afternoon Event Exit Period conditions is not required and that the Weekday Morning Event Exit Period conditions would be representative of the afternoon conditions. Similar to the Weekday Morning Event Exit Period (12:00 PM – 1:00 PM), it is anticipated that the traffic volumes associated with the event exit period will generally be accommodated at the area intersections at acceptable levels of service. The need for manned police traffic control is anticipated to only be required at the NYS Route 17M and Training Center Lane/Site Access intersection during this period to ensure efficient and safe traffic flow along NYS Route 17M.

Weekend Event

- ***Weekend Morning Event Entry Period (8:30 AM – 9:30 AM):*** As previously indicated the existing background traffic volumes during the Weekend (Saturday) Morning Event Peak Entry Period are 85% of the Saturday Peak Hour (12:00 PM – 1:00 PM) traffic volumes. Therefore it was determined that a full analysis of the Weekend Morning Event Peak Entry Period conditions is not required and that the Weekend Afternoon Event Peak Entry Period (2:30 PM – 3:30 PM) conditions, which are discussed below. Based on this, it is anticipated that manned police traffic control will be required are the NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 intersection as well as at the NYS Route 17M and Training Center Lane/Site Access intersection during this period to ensure efficient and safe traffic flow along NYS Route 17M.

- ***Weekend Morning Event Exit Period (12:00 PM – 1:00 PM):*** The capacity analysis conducted for the Weekend Morning Event Peak Exit Period, for which the results are summarized on Table No. 5-E, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will operate at an overall Level of Service "C" and that the traffic volumes associated with the event exit period can be accommodated at the intersection without the need for manned police traffic control. The largest increase in traffic volumes at this intersection will be on the westbound through movement, which currently consists of two through lanes through this location.

The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the southbound site access approach. The capacity analysis indicates that the intersection would operate at an overall Level of Service "E" under signal control with long delays on the southbound site access exiting movements. Manned police traffic control will likely be required to accommodate traffic movements at this intersection during the event exit period and to ensure efficient flow of traffic along NYS Route 17M.

The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road indicates that the intersection will operate at an overall Level of Service "C" and that the traffic volumes associated with the event exit period can be accommodated without manned police traffic control. Similarly, the intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is also expected to operate at an overall Level of Service "C" during the event exit period. All other intersections are expected to operate a similar Levels of Service to No-Build conditions.

- ***Weekend Afternoon Event Entry Period (2:30 PM – 3:30 PM):*** The capacity analysis conducted for the Weekend Afternoon Event Peak Entry Period, for which the results are summarized on Table No. 6-E, indicates that the intersection of NYS Route 17M and Lower Road (C.R. 12)/C.R. 50 will experience operating difficulty on the eastbound approach as a result of the event entry traffic and would likely require manned police traffic control during the event entry period to accommodate the traffic volumes at the intersection.

  The NYS Route 17M & Training Center Lane/Site Access intersection is anticipated to accommodate a high volume of traffic on the eastbound left turn and westbound right turn movements. The analysis indicates that a Level of Service "F" would be experienced with the eastbound left turn movement. Manned police traffic control will be required to accommodate traffic movements at this intersection during the event entry period and ensure efficient traffic flow along NYS Route 17M.

  The analysis of NYS Route 17M and Hartley Road/Gate Schoolhouse Road indicates that the intersection will operate at an overall Level of Service "B" and that the traffic volumes associated with the event entry period can be accommodated without manned police traffic control. Similarly, the intersection of NYS Route 17M and 6½ Station Road/Maple Avenue is expected to operate at an overall Level of Service "D" and the traffic volumes associated with the event

entry period can be accommodate without manned police traffic control. All other intersections are expected to operate a similar Levels of Service to No-Build conditions.

It should be noted that the Saturday 12:00 PM – 1:00 PM traffic volumes were utilized as the base traffic volumes for the analysis of the Weekend Event Peak Entry Period (2:30 PM and 3:30 PM). However, since the traffic volumes from 2:30 PM – 3:30 PM on a Saturday are approximately 91% of the Saturday Peak Hour (12:00 PM – 1:00 PM) existing traffic volumes, this analysis can be considered somewhat conservative. Therefore, somewhat better operating conditions than those summarized in Table No. 6-E can be expected.

- ***Weekend Afternoon Event Exit Period (6:00 PM – 7:00 PM):*** As previously indicated the background traffic volumes during the Weekend Afternoon Event Peak Exit Period are 65% of the 12:00 PM – 1:00 PM volumes along the roadway. Therefore it was determined that a full quantitative analysis of the Weekend Afternoon Event Exit Period conditions is not required and that the Weekend Morning Event Exit Period conditions would be representative of the afternoon conditions. Similar to the Weekday Morning Event Exit Period (12:00 PM – 1:00 PM), it is anticipated that the traffic volumes associated with the event exit period will generally be accommodated at the area intersections at acceptable levels of service. The need for manned police traffic control is anticipated to only be required at the NYS Route 17M and Training Center Lane/Site Access intersection during this period to ensure efficient and safe traffic flow along NYS Route 17M.

- ***Weekend Event Sunday:*** As previously indicated the Sunday daily traffic volumes along NYS Route 17M are approximately 85% of the Saturday daily traffic volumes along the roadway and therefore it was determined that the Saturday traffic volumes would provide the most conservative analysis of Weekend Event conditions. More specifically, the traffic volumes between 8:30 AM and 9:30 AM on a Sunday are approximately 65% of the Saturday volumes for the same time period, while the traffic volumes between 12:00 PM and 1:00 PM on a Sunday are approximately 86% of the Saturday volumes for the same time period. The traffic volumes between 2:30 PM and 3:30 PM on a Sunday are approximately 89% of the Saturday volumes for the same time period, while the traffic volumes between 6:00 PM and 7:00 PM on a Sunday similar to Saturday. Therefore the conclusions regarding operating conditions and the need for manned police traffic control at area intersections described for each of the event entry and exit periods above also apply for a Sunday Event. In fact, in some case,

specifically a Sunday Morning Event during the Peak Entry Period, the operating conditions may be better than on a Saturday and there may be less of a need for manned police traffic control.

6. Recommended Traffic Management Measures for National Event Conditions

a. Staggering of Start Times

The scheduling of Science of the Soul special events should be coordinated with existing traffic volumes along NYS Route 17M in order to reduce overall traffic impacts to the corridor. The proposed start time for Weekday Morning Event of 10:00 AM ensures that Peak Entry Period occurs after the AM Peak Highway Hour along NYS Route 17M and the Peak Exit Period occurs during the 12:00 PM – 1:00 PM hour when volumes along Route 17M are as much 80% of the PM Peak Hour volumes along the roadway. Weekday Afternoon Events, currently proposed to begin at 4:00 PM should be avoided as much as possible since this results in the Peak Entry Period occurring during the 2:30 – 3:30 PM Hour when volumes are nearing the peak volumes along Route 17M. However, these Weekday afternoon events can be accommodated with the use of manned police traffic control and other mitigation measures discussed further below.

Weekend Morning events should be scheduled such that the Peak Exit Hour occurs prior to or after the 12:30-1:30 PM Peak Hour of traffic along NYS Route 17M when traffic volumes are as much as 10% lower than the highest Saturday peak period. Similarly, Weekend Afternoon Events could also be scheduled such that the Peak Entry Hour also does not occur during the Peak Hour of Traffic along NYS Route 17M.

Furthermore, if Amy's Kitchen is to be in operation during the SoS Annual Events, it would be beneficial to set the start times of the events such that the peak entry and/or exit periods do not coincide with the peak hours of Amy's Generation (i.e. 6:00 AM – 7:00 AM and 3:00 PM – 4:00 PM)..

b. On-site Bus Parking

Approximately 130 tour bus parking spaces are proposed to be provided on the Science of the Soul site. If the number of tour bus parking spaces could be increased, more people could be required to take buses to the event thereby decreasing the overall trip generation of the site during the annual events. This would require increased coordination on the part of SoS to ensure the use of additional tour buses.

c. Traffic Management

As indicated by the analysis results for the special event conditions, several of the study area intersections are expected to operate at capacity due to the large volume of traffic that is expected to be generated by the SoS site. During special events other arrangements with the Orange County Sheriff's office and/or State Police will also be necessary in order to manage the traffic flow along NYS Route 17M. This would be similar to what occurs at other regional venues that have special events such as the Bethel Woods Performing Arts Center in Sullivan County as well as the Orange County Fairgrounds. During these time periods, police control is provided at numerous off-site intersections to accommodate the peak flows along the corridor. Similar practices are also employed by SoS at their Petaluma and Fayetteville facilities.

SoS has indicated that coordination with both local law enforcement and Emergency Medical Technicians (EMTs) is an important component of their planning for special events. While events are typically staffed by volunteer security personnel, SoS will also seek to have 4-5 local law enforcement officers on site, typically off-duty officers. SoS also coordinates on traffic issues prior to events including meeting with town, county and state law enforcement agencies and go over plans and concerns.

Based on the results of the capacity analysis it is likely that coordination with local law enforcement for the management of traffic will be required for several area intersections including NYS Route 17M & C.R. 12/C.R. 50, NYS Route 17M & Training Center Lane/Site Access, NYS Route 17M & Hartley Road and NYS Route 17M & Maple Avenue/6½ Station Road.

Variable Message Signs (VMS) could also be utilized prior to events to inform local drivers of the upcoming events and potential delays along the NYS Route 17M corridor and the surrounding area. This would allow local drivers to avoid this area during the event weekends, utilizing other roadways in the area. The VMS signs could also be utilized during the event to direct attendees to appropriate locations as well as inform other drivers of delays on NYS Route 17M and the surrounding area. The placement of these VMS signs would have to be coordinated with the Town, County and State.

Another option to help distribute traffic volumes during the exit period after the event would be to request permission to use the emergency access connection to Echo Lake Road. This would lessen the potential impact on NYS Route 17M. Of course manual traffic control would be required at the emergency access location as well in the event of its use.

d. Parking Flow and Management (Internal Circulation):
As mentioned previously, SoS will rely on volunteers to manage parking and pedestrian flow both in and around the site. The SoS internal traffic plans for the Annual Events use the following elements:

- Pedestrian/Vehicle Separation – The parking plan for the SoS Annual Event is such that the spaces closest to the venue are filled first and then farther spaces are filled, row by row. This is done to separate pedestrians from newly parking cars. Bus parking is provided in a separate area so that those unloading from buses do not have to cross incoming traffic. As shown on the site plan the bus parking is on the opposite side of the event area from the passenger car parking.
- Special Needs Separation - Upon entry vehicles with elderly and handicapped stickers would separate from general traffic. Special needs vehicles would be directed to a dedicated parking area closer to the event area, again trying to avoid pedestrian-vehicle conflict.
- Shuttle – Shuttles are typically provided for those parking in faraway locations. Shuttle vans are utilized within the property for this purpose. Similar shuttle vans would also be used for shuttling of volunteers to the Strong Farm Volunteer Parking location as previously indicated.

The proposed site plans for the SoS site take into account SoS staff's long experience with traffic and pedestrian flow during these special events.

VI. SUMMARY AND CONCLUSION

As part of the Proposed Project, improvements at the intersection of NYS Route 17M & Training Center Lane/Project Site Access have been recommended and are included as part of the development plan. These improvements, which will be funded and implemented by the Applicant under a NYSDOT Highway Work Permit, will also address existing capacity and safety conditions in the vicinity of the intersection and provide improved access to Training Center Lane. The improvements include the relocation of Training Center Lane approximately 300 feet to the west of its current location in order to align opposite the Project Site. Separate left- and right-turn lanes along NYS Route 17M are proposed to be constructed as part of these improvements as well as a separate right-turn lane on Training Center Lane and Project Site access would also have two exiting lanes. These improvements would include the installation of a traffic signal at this intersection (See Drawing CP-1 in Appendix "I"). As part of the construction of the Project Site access roadway the existing access to the Mid-Hudson Psychiatric Center would be eliminated and that facility would be accessed via a connection to the site access roadway and be better served by this improved, signal controlled access. This also provides better access management for the corridor by aligning the main intersection on NYS Route 17M opposite the relocated Training Center Lane.

In addition, based on the results of the analyses, in comparison to the Town of Goshen "Environmental Performance Standards" as previously described, the following is a summary of the potential adverse impacts that could result from the additional traffic generated by the project as well as the potential measures identified to mitigate these impacts. Note that each of these intersections listed below is projected to experience Levels of Service "E" or "F" on one or more approaches of the intersections regardless of the Proposed Project and therefore certain improvements will be required to improve existing and/or future traffic conditions in the area without the Proposed Project.

1. The Interstate 84 Westbound Off-Ramp at NYS Route 17M was identified to experience increased delays during the PM Peak Hour of Amy's Kitchen Generation and the PM Peak Highway Hour. The Proposed Project will not add any additional traffic to the off-ramp approach, however the existing "Stop" sign could be replaced with a "Yield" sign in order to improve traffic flow from the Off-Ramp approach. This would require the approval of the NYSDOT, however would be funded and implemented by the Applicant as part of the NYSDOT Highway Work Permit it acceptable to the department.

2. The intersection of NYS Route 17M & CR 12/CR 50 currently experiences long delays in the eastbound direction during the AM Peak Hours. Under No-Build and Build conditions the volumes are anticipated to exceed the eastbound through/right movement capacity based on the currently allocated green time. Signal timing improvements have been recommended for this intersection to mitigate delays in the eastbound direction. These improvements are recommended regardless of the proposed project, however they will be coordinated by the Applicant with NYSDOT as part of the Highway Work Permit process.

3. The intersection of NYS Route 17M & Hartley Road has a history of numerous rear-end type accidents. Traffic signal back plates could be installed at this intersection on eastbound and westbound NYS Route 17M approaches in order to increase the visibility of the traffic signals, especially during periods of significant sun glare, which could help to reduce these accident types. This should be considered regardless of the proposed project. In addition, minor traffic signal timing improvements have been identified for this intersection to maximize the intersections efficiency under future conditions. The traffic signal timing modifications will be coordinated by the Applicant with NYSDOT as part of the Highway Work Permit process. The installation of traffic signal back plates on the signal heads will be funded and completed by the Applicant as part of the Highway Work Permit for the project.

4. The intersection of Golf Links Road and McVeigh Road is projected to experience increased vehicle delays during the PM Peak Hour of Amy's Kitchen Generation and the PM Peak Highway Hour. The installation of All-Way Stop control has been proposed to mitigate these delay increases. This improvement should be considered regardless of the project, but would be funded and completed by the Applicant if approved.

5. The NYS Route 17 Interchange 122A On/Off Ramps at Fletcher Street are projected to experience increased vehicle delays at the intersections of during the AM Peak Highway Hour for the Eastbound On/Off Ramp and during the PM Peak Hour of Amy's Kitchen Generation for the Westbound On/Off Ramp. These delay increase are projected to occur both with and without the proposed project. These intersections should be monitored for signalization and a traffic signal installed if warranted in the future. The Applicant will provide future monitoring of these intersections after completion of the development.

6. The intersection of NYS Route 17M and Cannon Hill Drive is currently operating at LOS F during all weekday time periods and some delay increases are projected to be experienced both with and without the proposed project. The reconstruction of the Training Center Lane and NYS Route 17M intersection and installation of a traffic signal, which are part of the Proposed Project, will provide increased gaps in the traffic stream along NYS Route 17M including at the intersection with Cannon Hill Drive. The increased gaps created by the signal will improve the ability for traffic to exit from Cannon Hill Drive, which will improve the operation and reduce delays at this intersection.

7. All truck traffic generated by both the Amy's Kitchen and the warehouse portions of the development will be directed to utilize NYS Route 17M only to access NYS Route 17 and Interstate 84 avoiding the use of local roadways, many of which have weight restrictions.

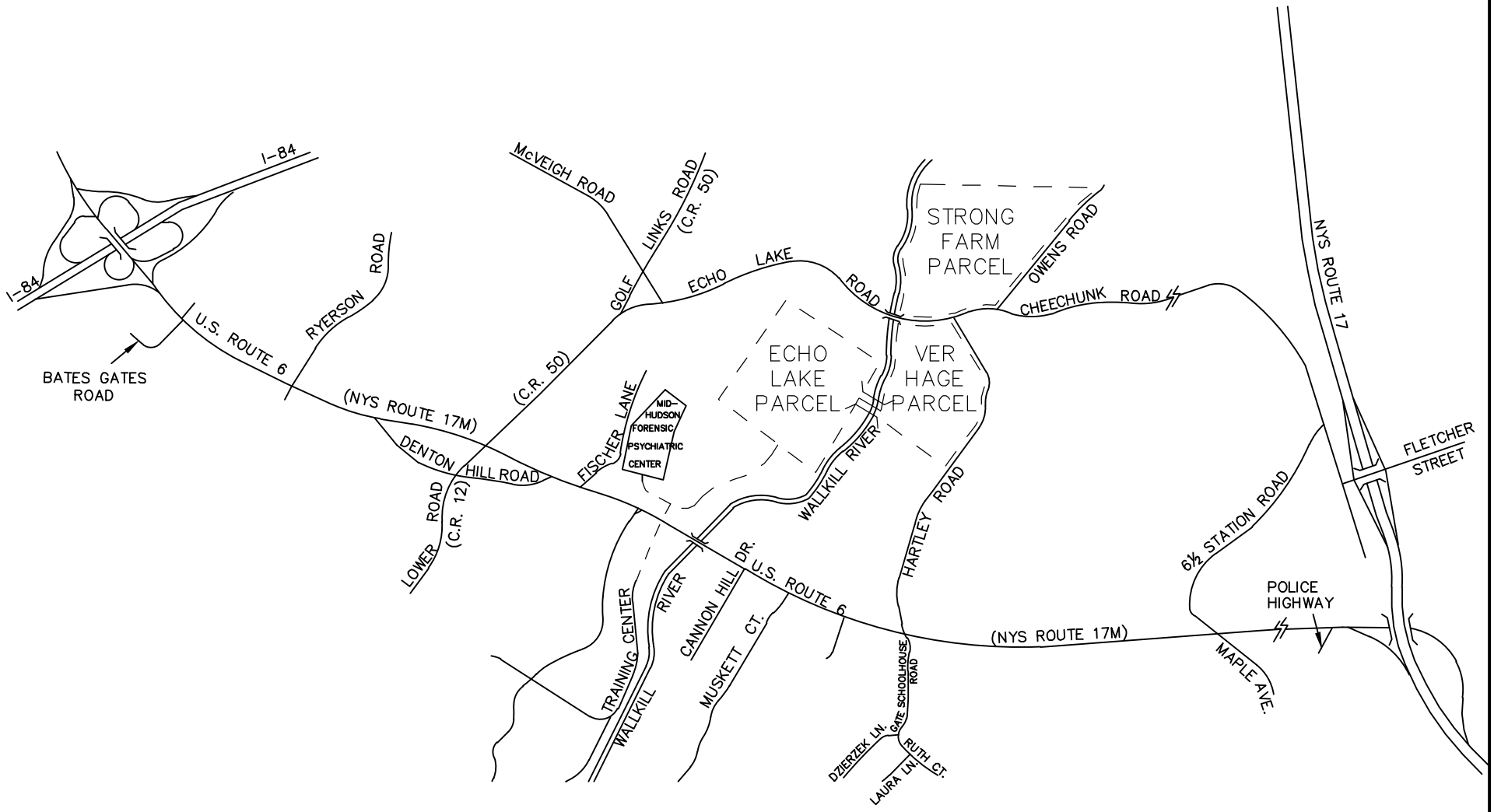
8. Temporary impacts during construction of roadway improvements at NYS Route 17M and Training Center Lane/Site Access may occur. The project will be subject to the New York State "Drivers First" Initiative which prioritizes the convenience of motorists and ensures that disruptions are as minimal as possible to drivers at all highway projects throughout the state. As a result detailed Maintenance and Protection of Traffic Plans will be prepared as part of the NYSDOT Highway Work Permit and will be funded and implemented by the Applicant to control traffic during the construction of the intersection improvements at NYS Route 17M and Training Center Lane/Site Access Roadway.

Based on the results of the capacity analysis contained herein, with the completion of the recommended improvements summarized above, the traffic generated by Amy's Kitchen and ver Hage warehouse uses can be accommodated on the roadway system. A NYSDOT Highway Work Permit will be required for the proposed access improvements as well as coordination with the Orange County Department of Public Works for the realignment of Training Center Lane. As discussed in Section V, to accommodate the Science of the Soul annual event conditions, certain traffic management strategies will have to be implemented to ensure that traffic to and from the site and on the surrounding roadways will operate efficiently and mitigate traffic impacts.

AMY'S KITCHEN & SCIENCE OF THE SOUL

APPENDIX A

FIGURES



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SITE LOCATION MAP

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
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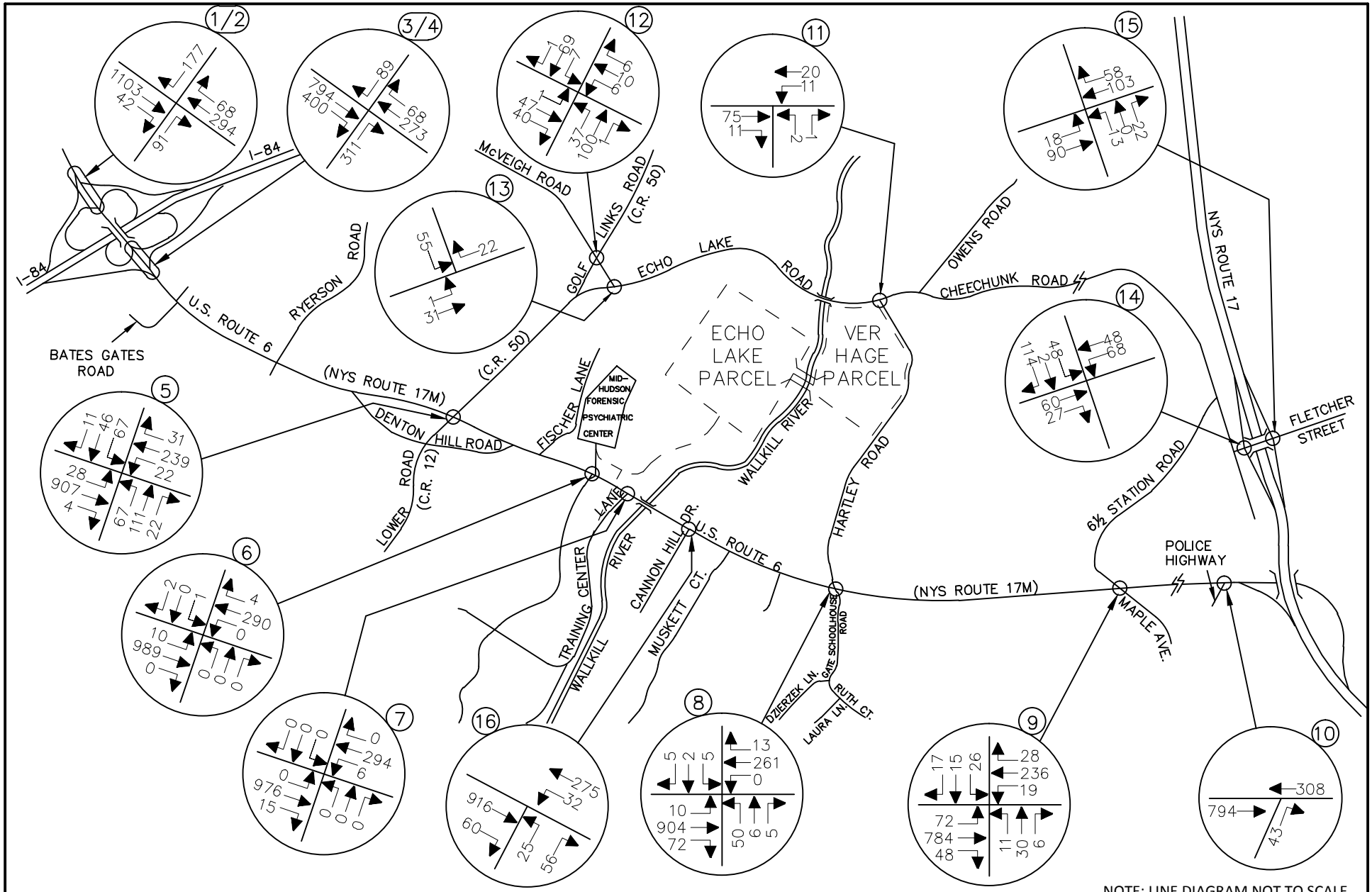

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AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
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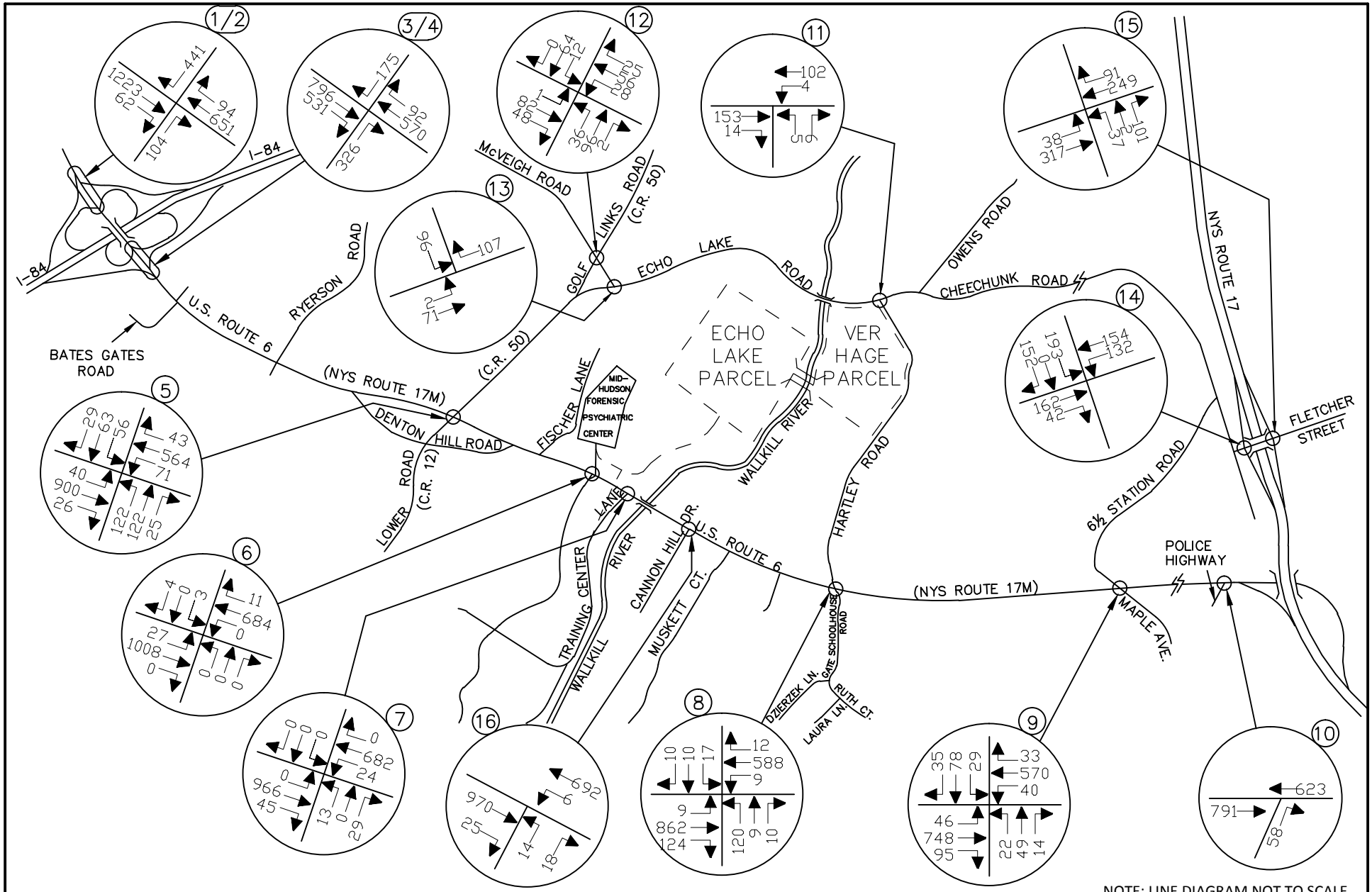

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2015 EXISTING TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
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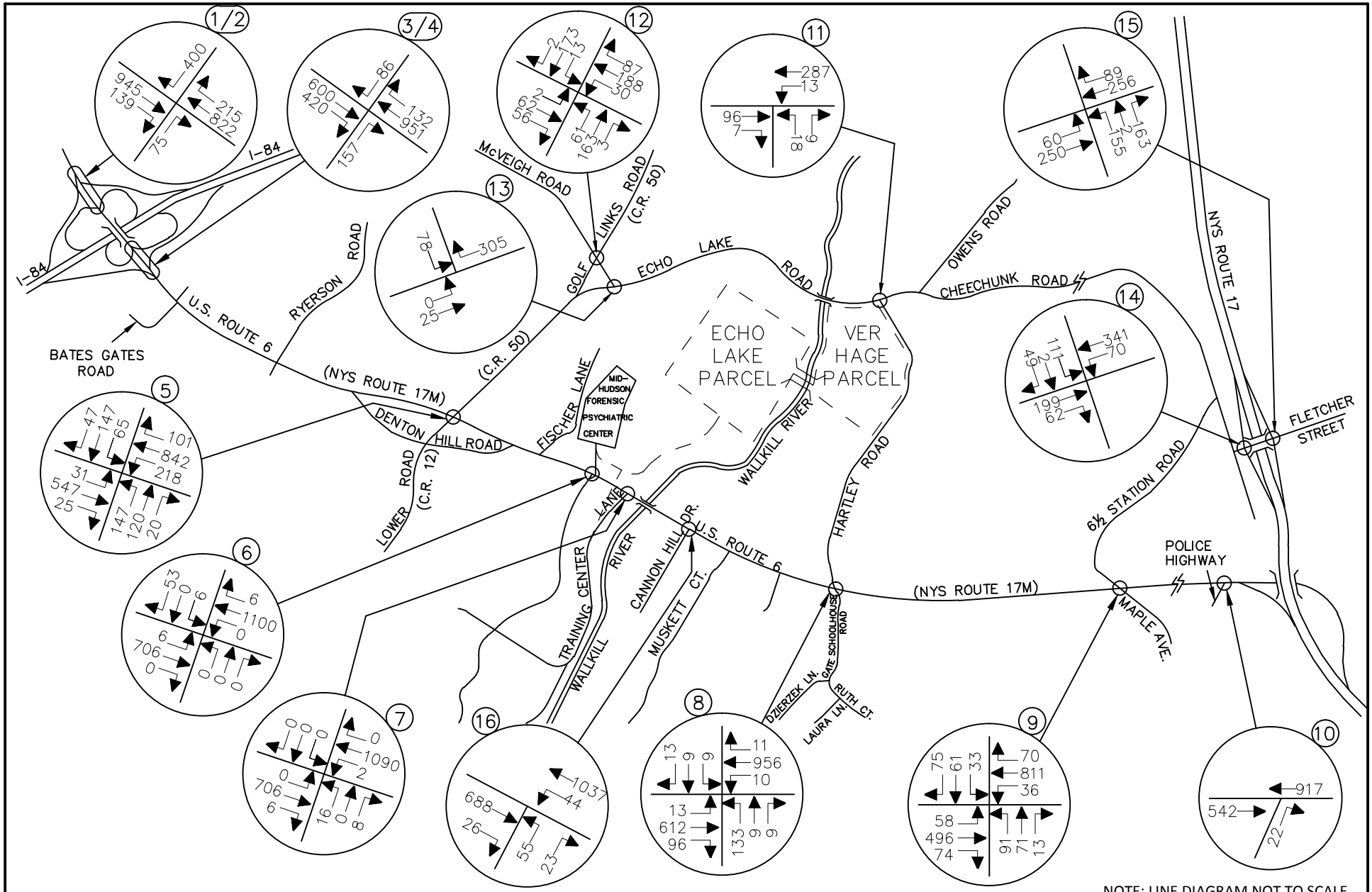

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2015 EXISTING TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

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13001659B	03/24/16
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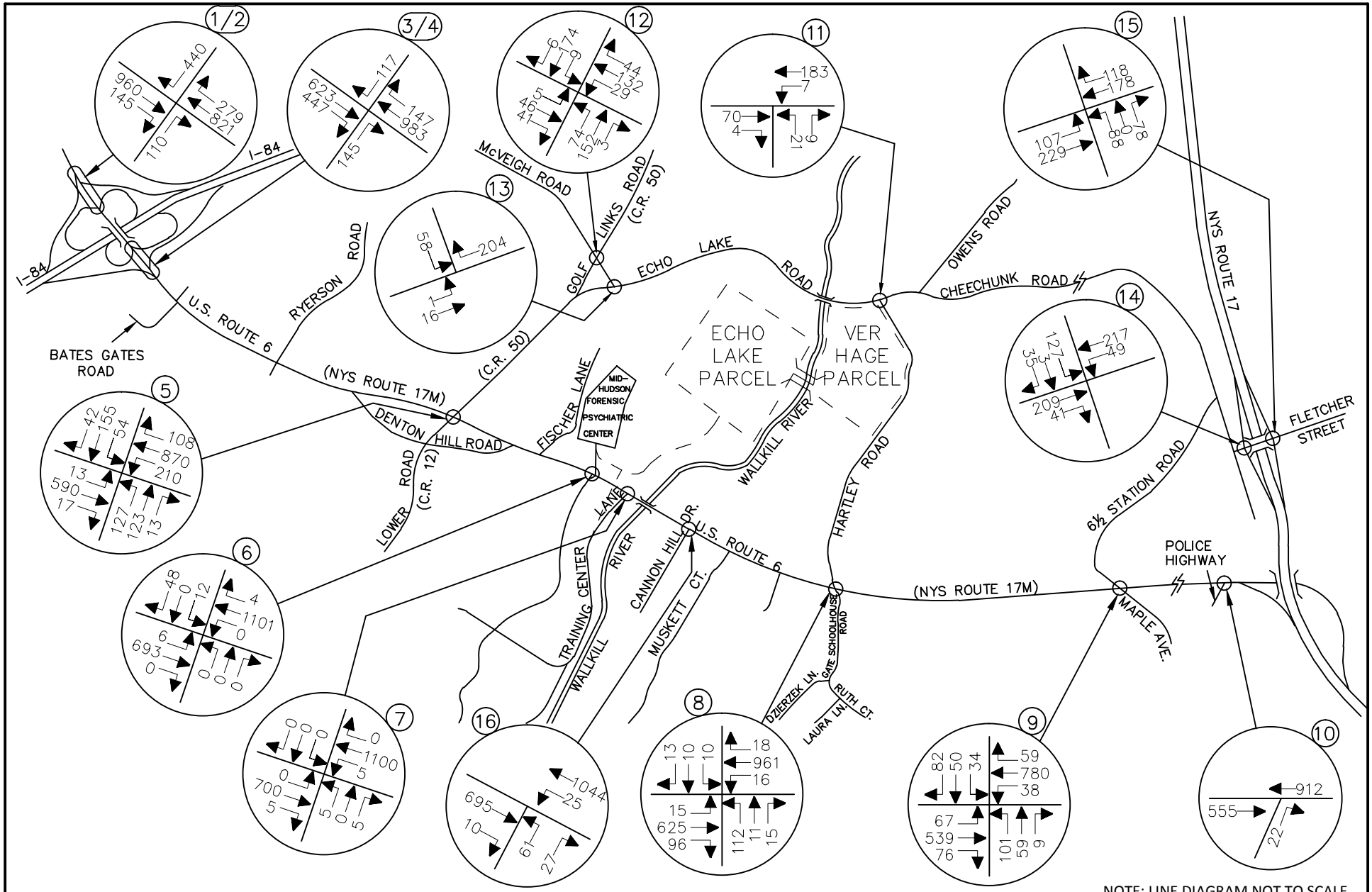

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2015 EXISTING TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

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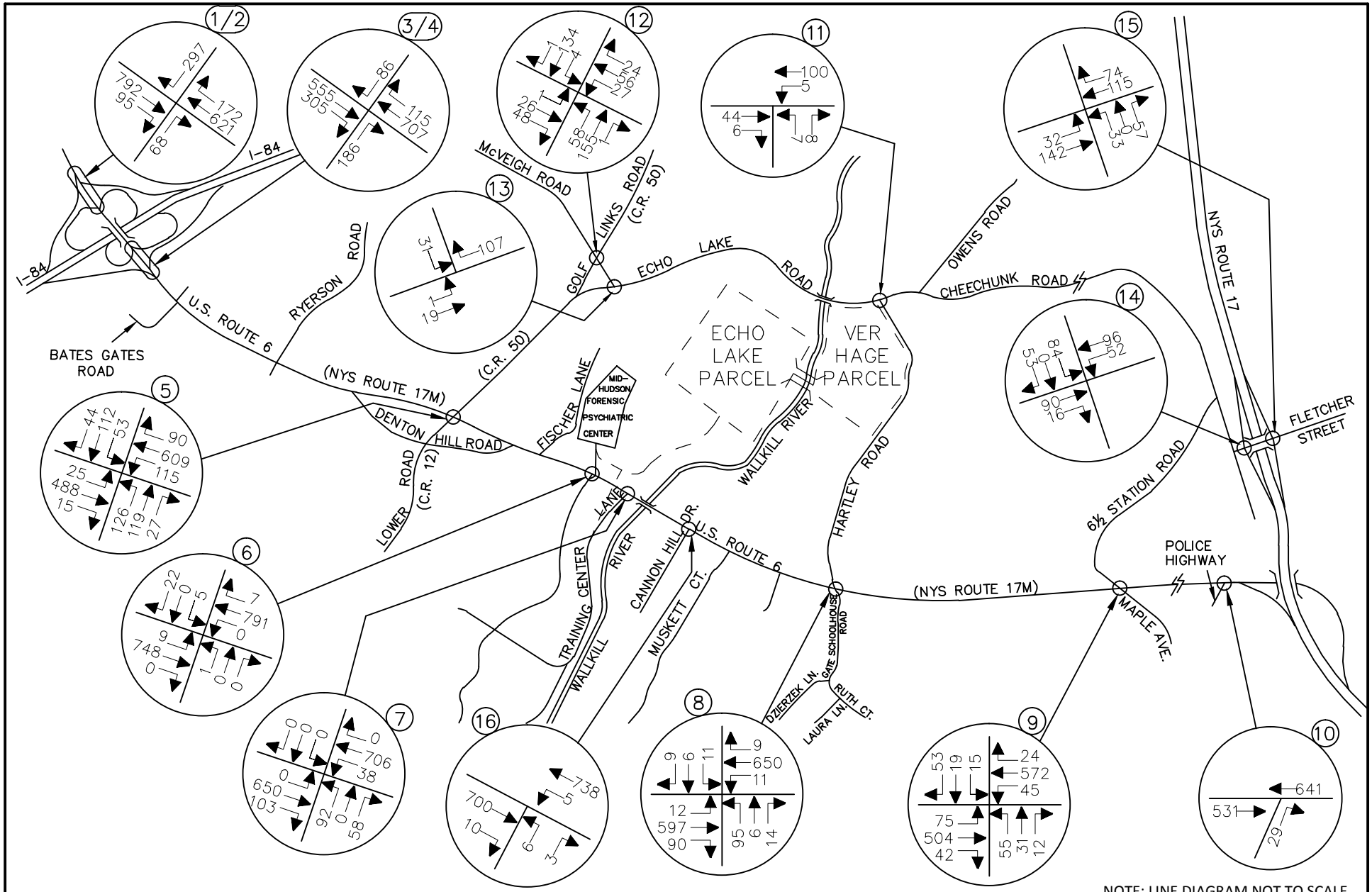

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2015 EXISTING TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
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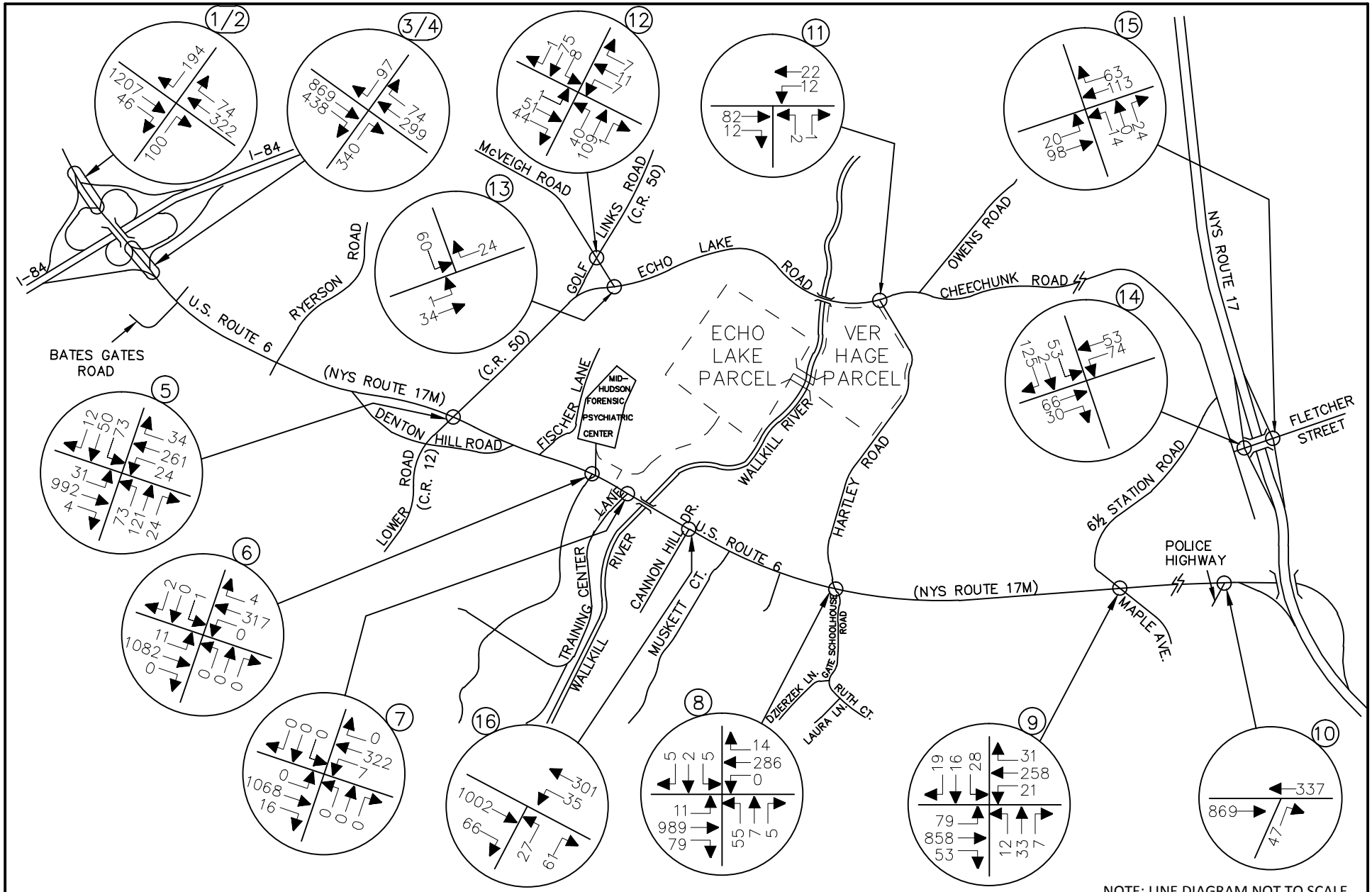

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AMY'S KITCHEN AND SCIENCE OF THE SOUL
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2033 PROJECTED TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
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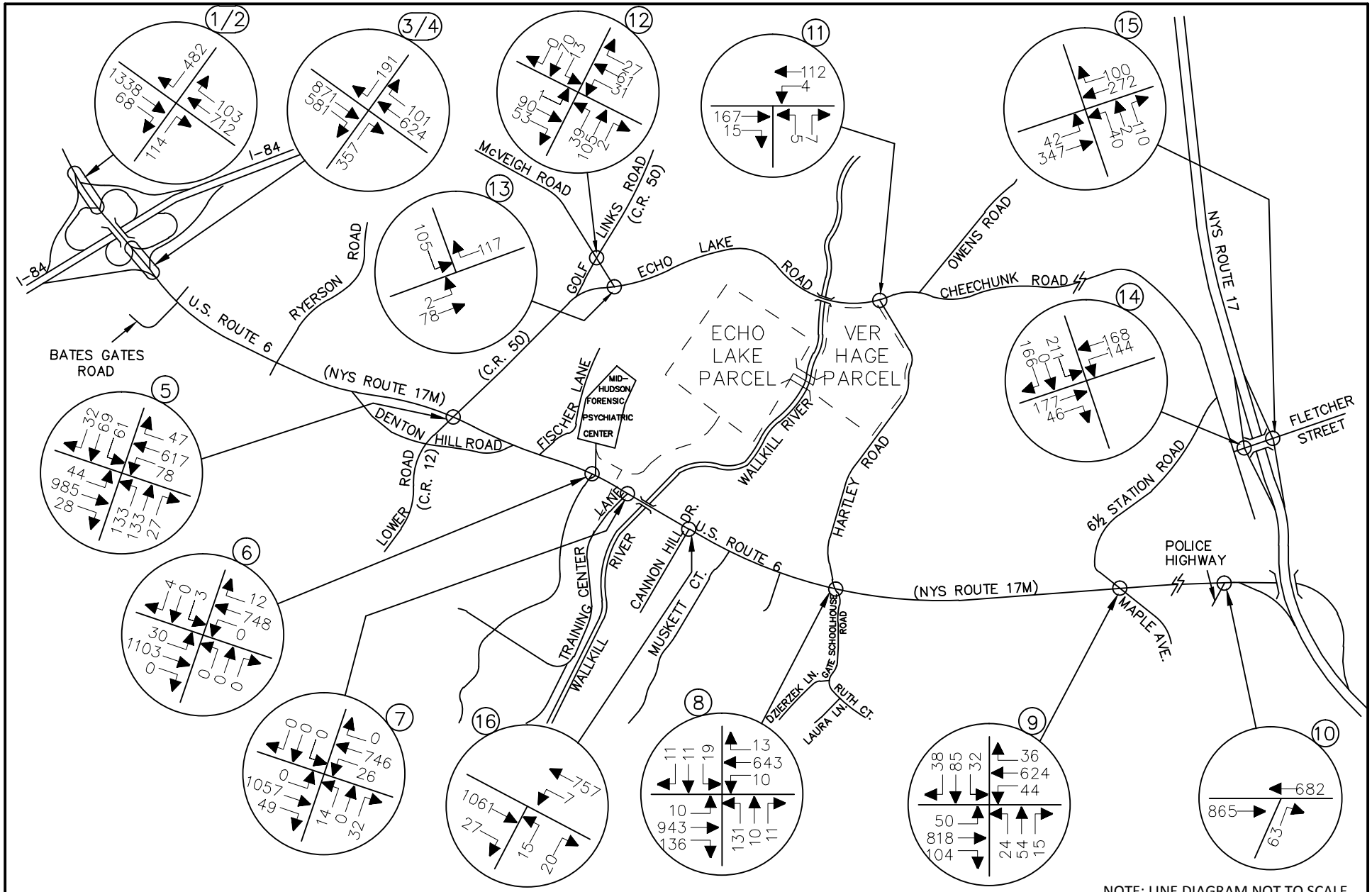

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GOSHEN, NEW YORK

2033 PROJECTED TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
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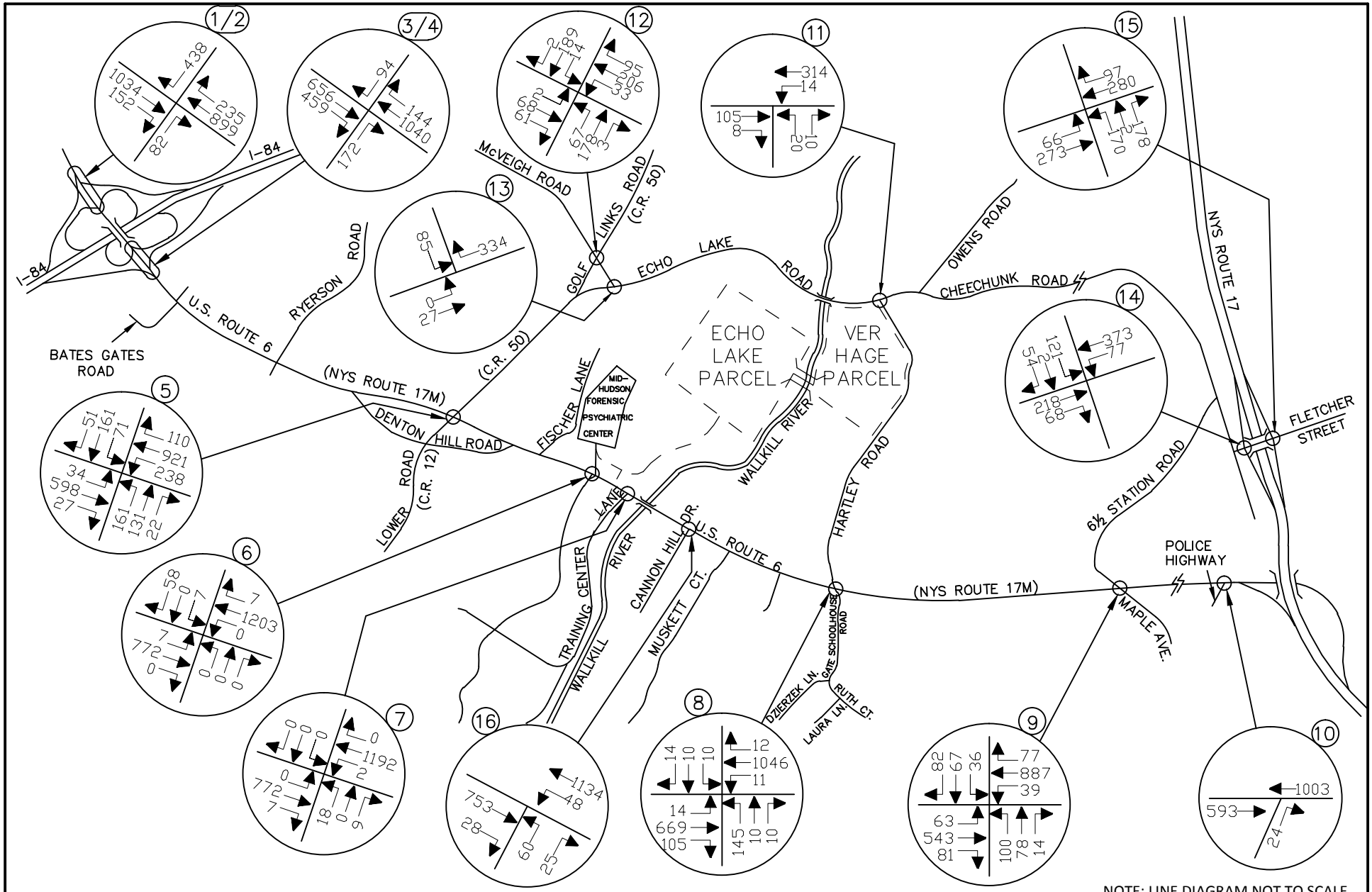

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WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
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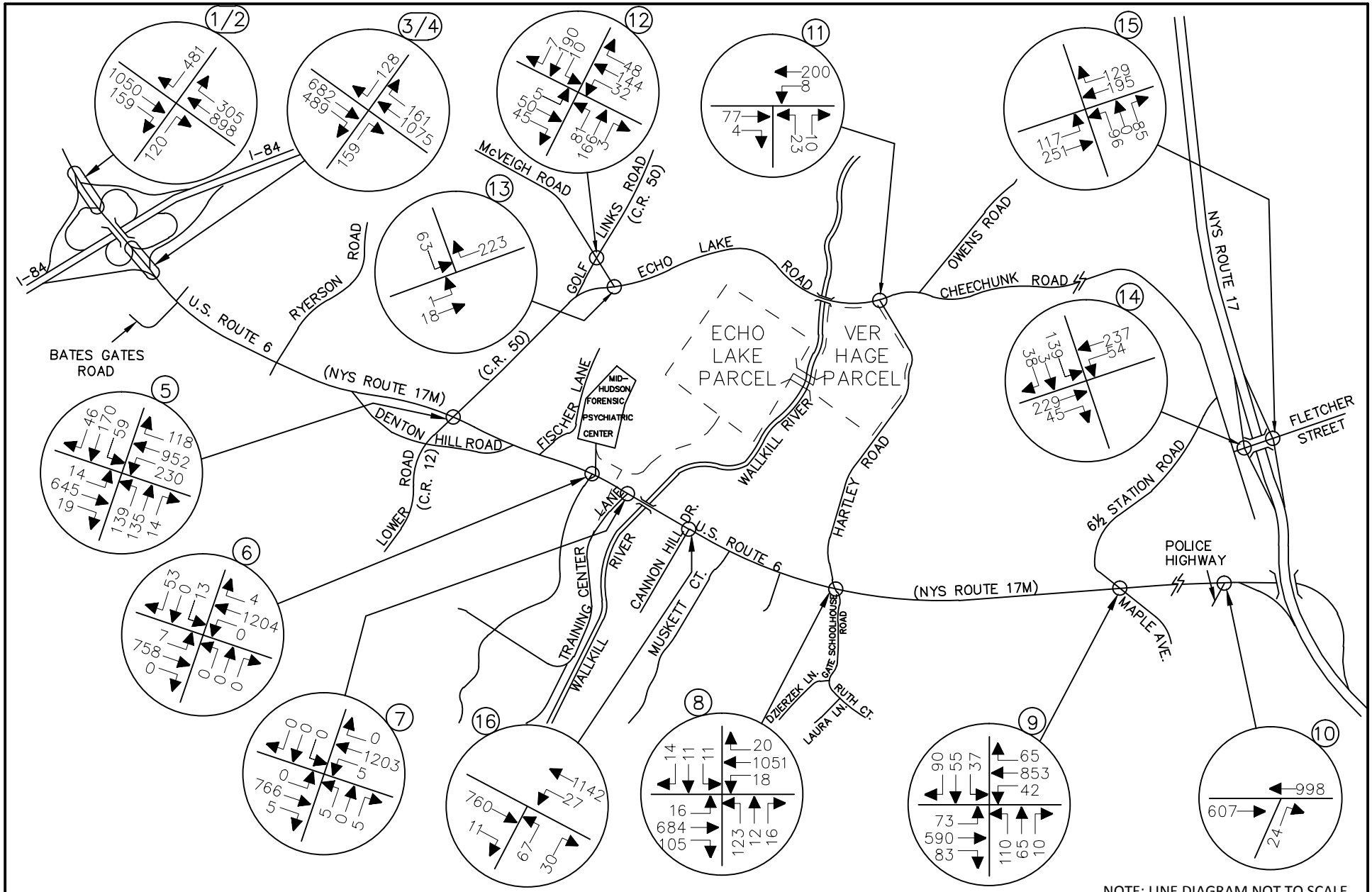

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WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

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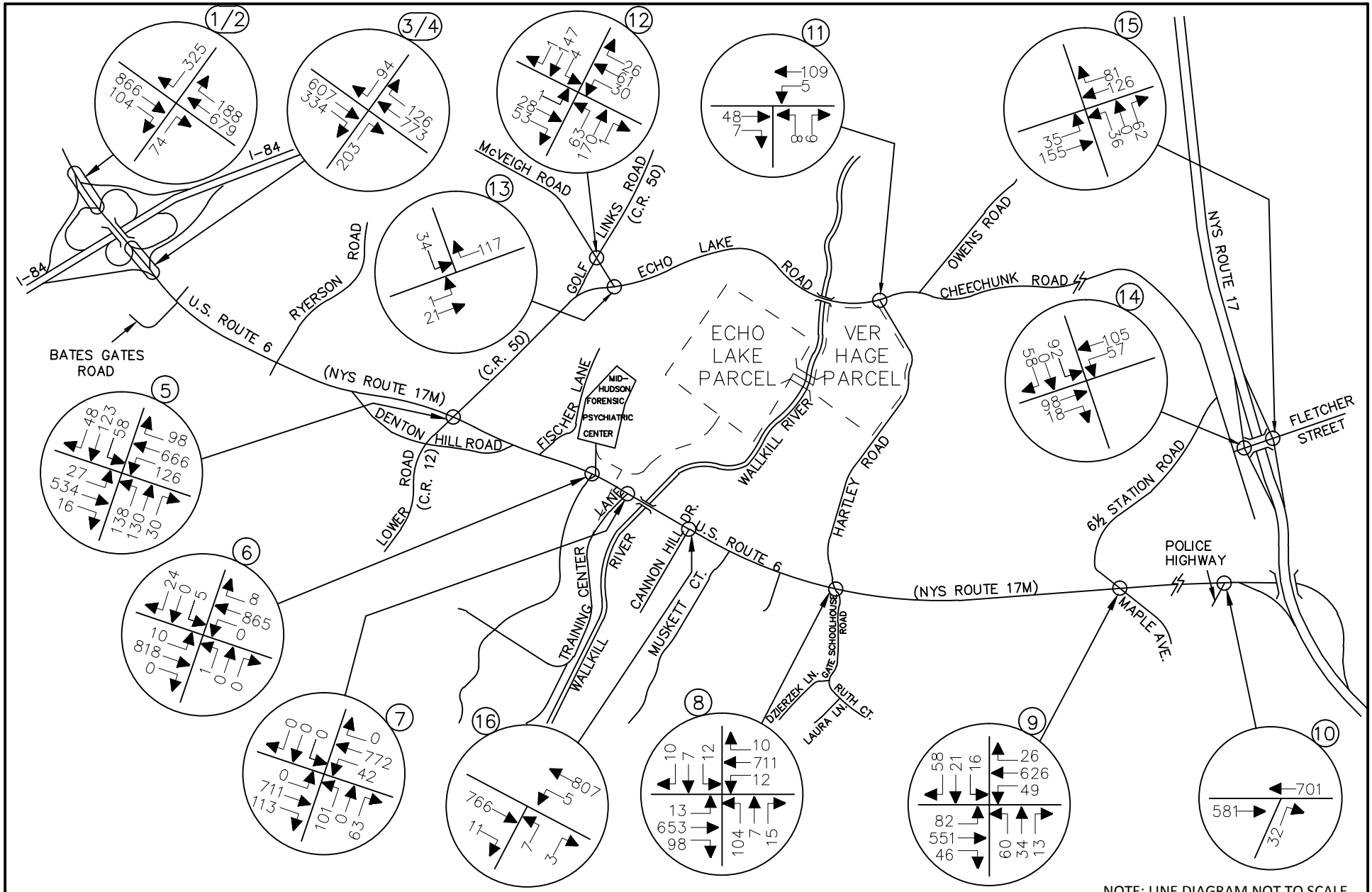

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2033 PROJECTED TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
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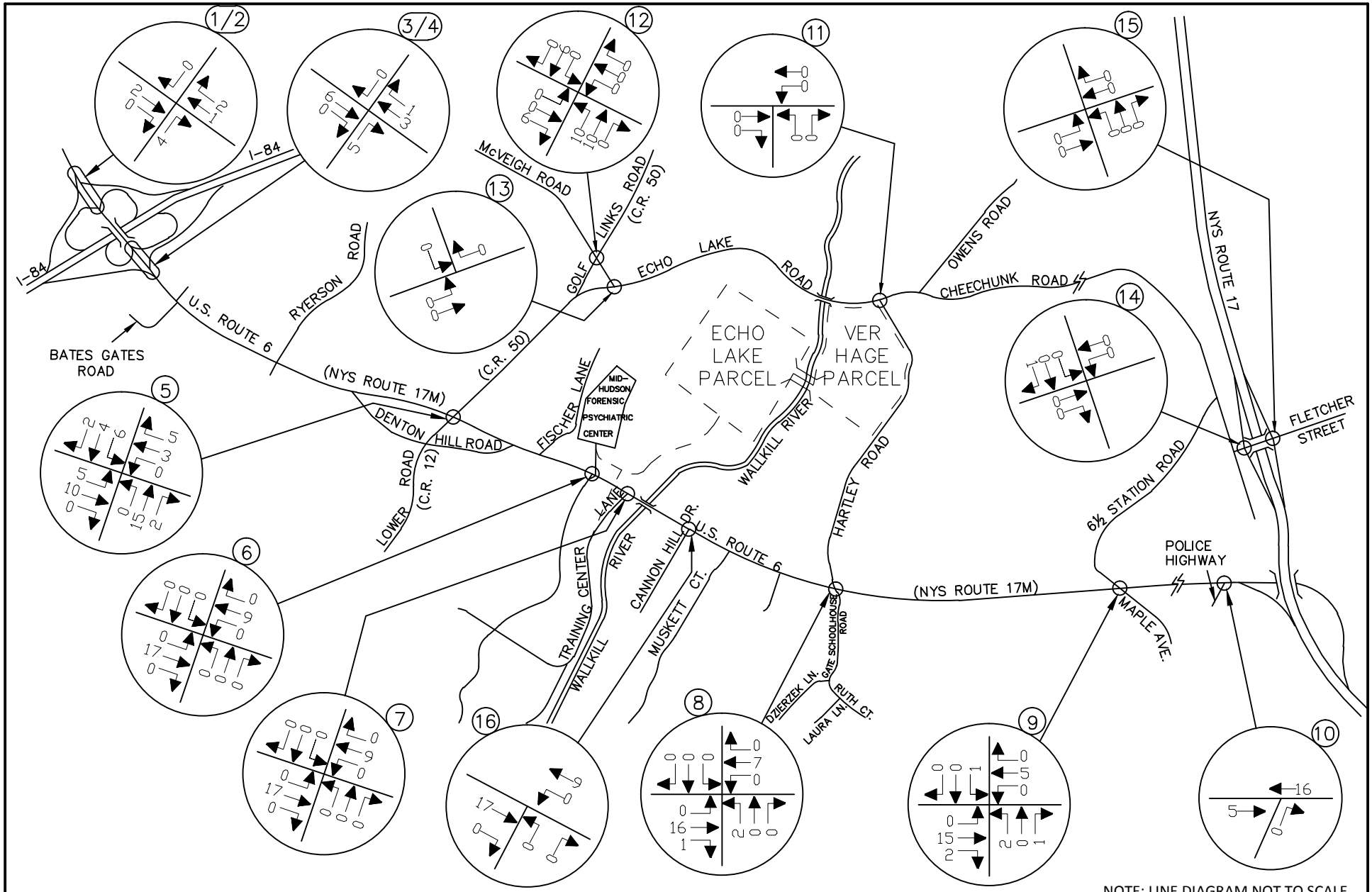

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AMY'S KITCHEN AND SCIENCE OF THE SOUL
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OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
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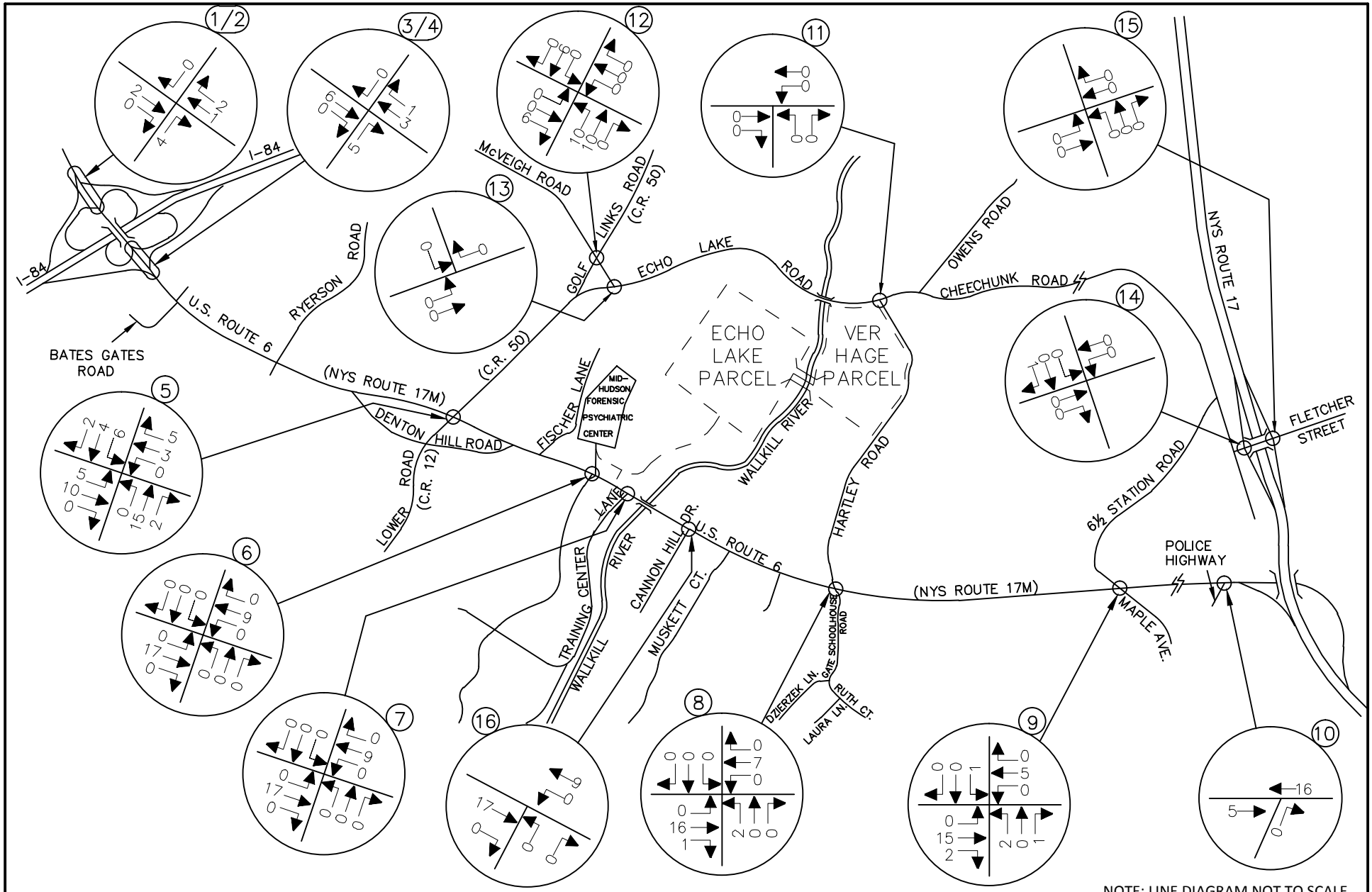

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OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
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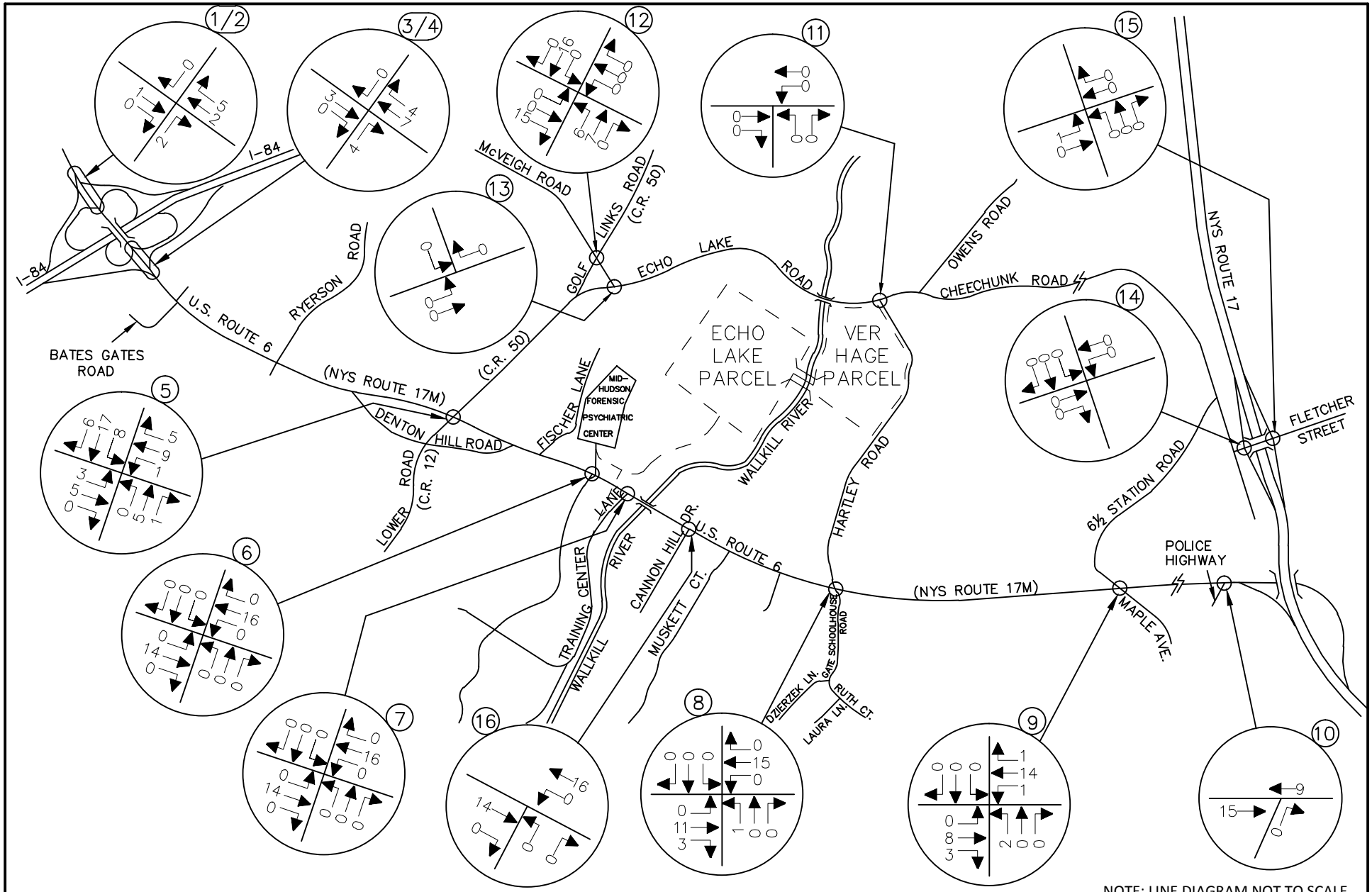

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(3:00 PM - 4:00 PM)

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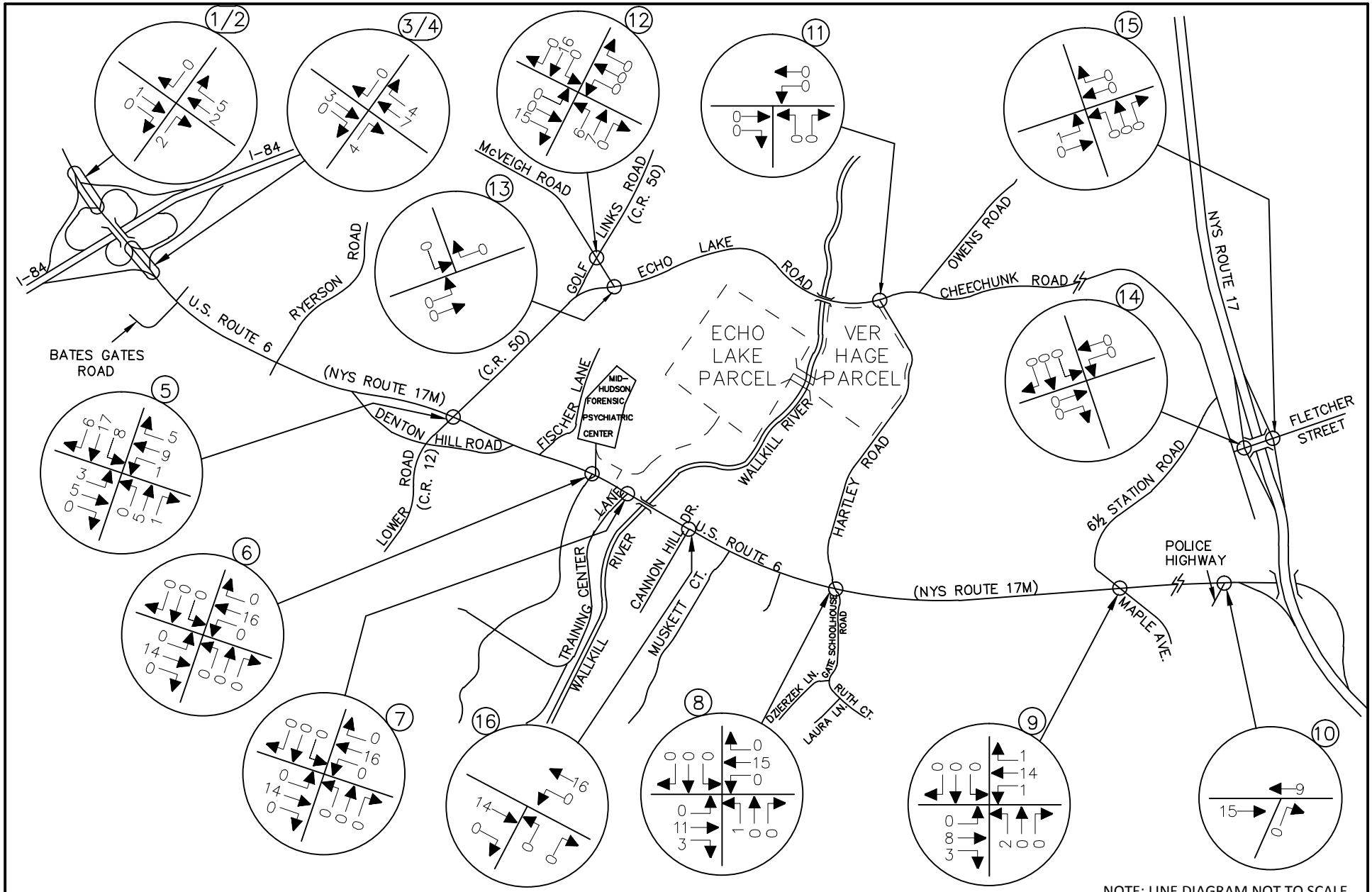
FIGURE NUMBER:	
14	



NOTE: LINE DIAGRAM NOT TO SCALE

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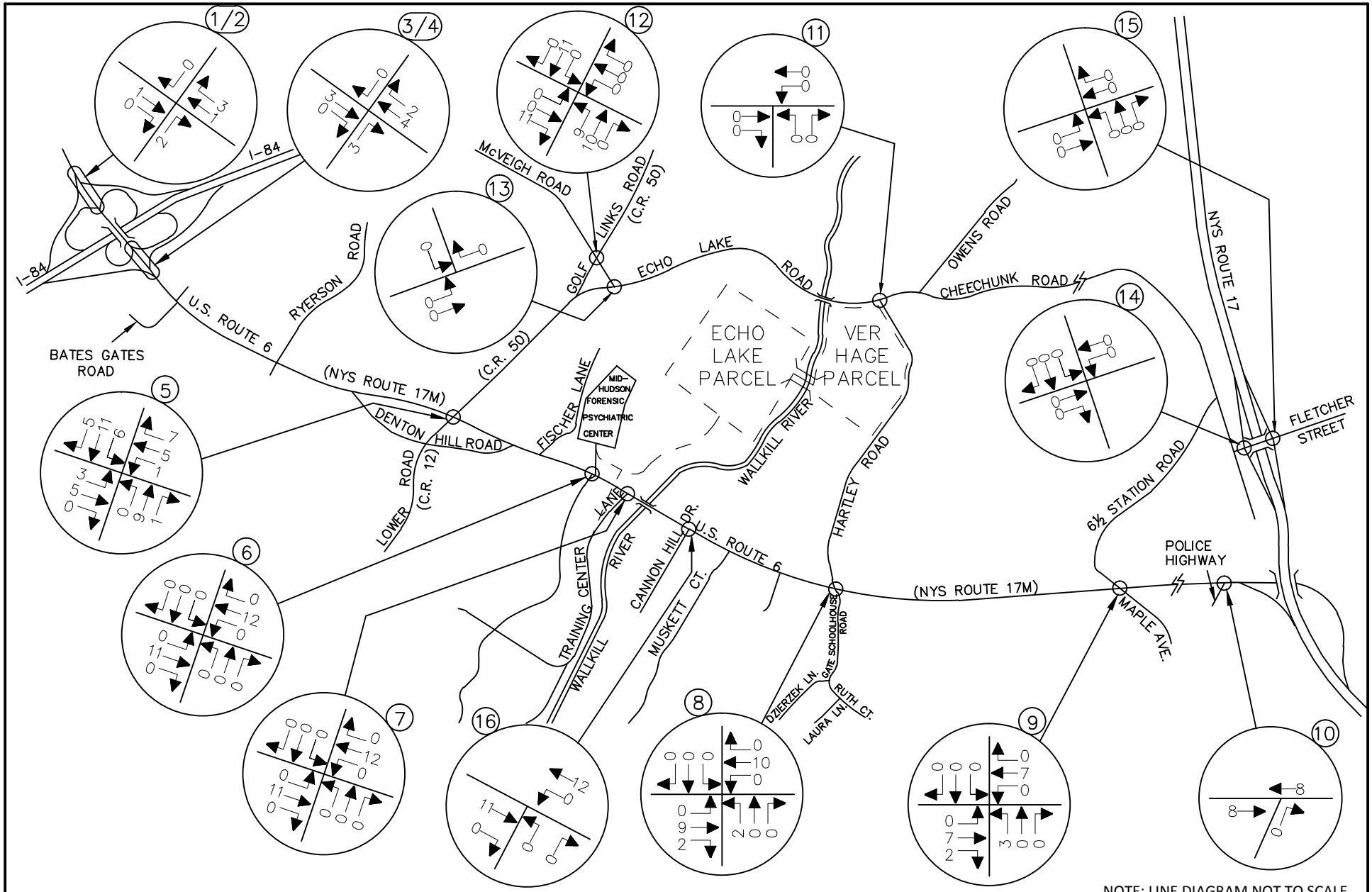
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
15	



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
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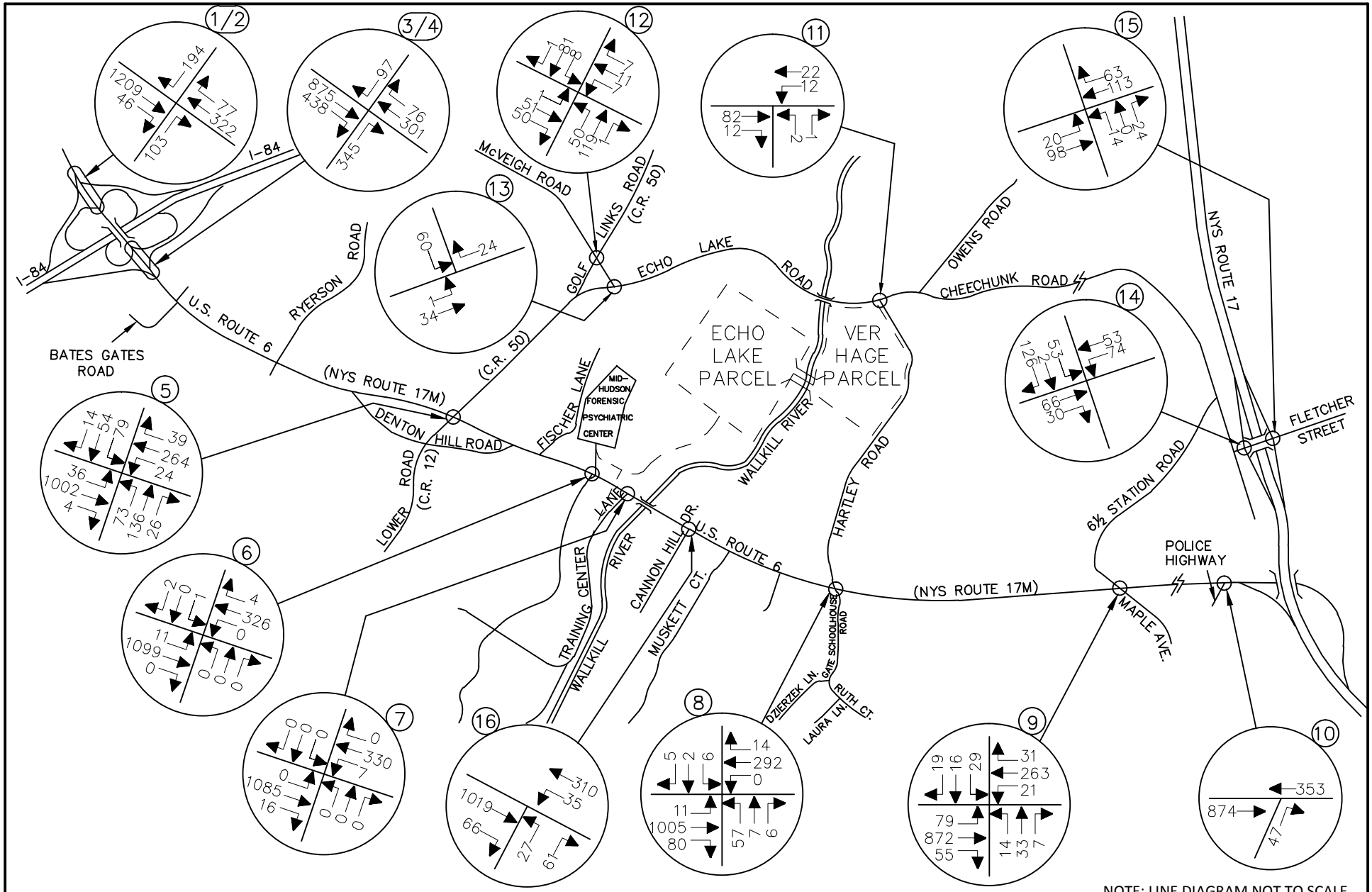
OTHER DEVELOPMENT TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
16	



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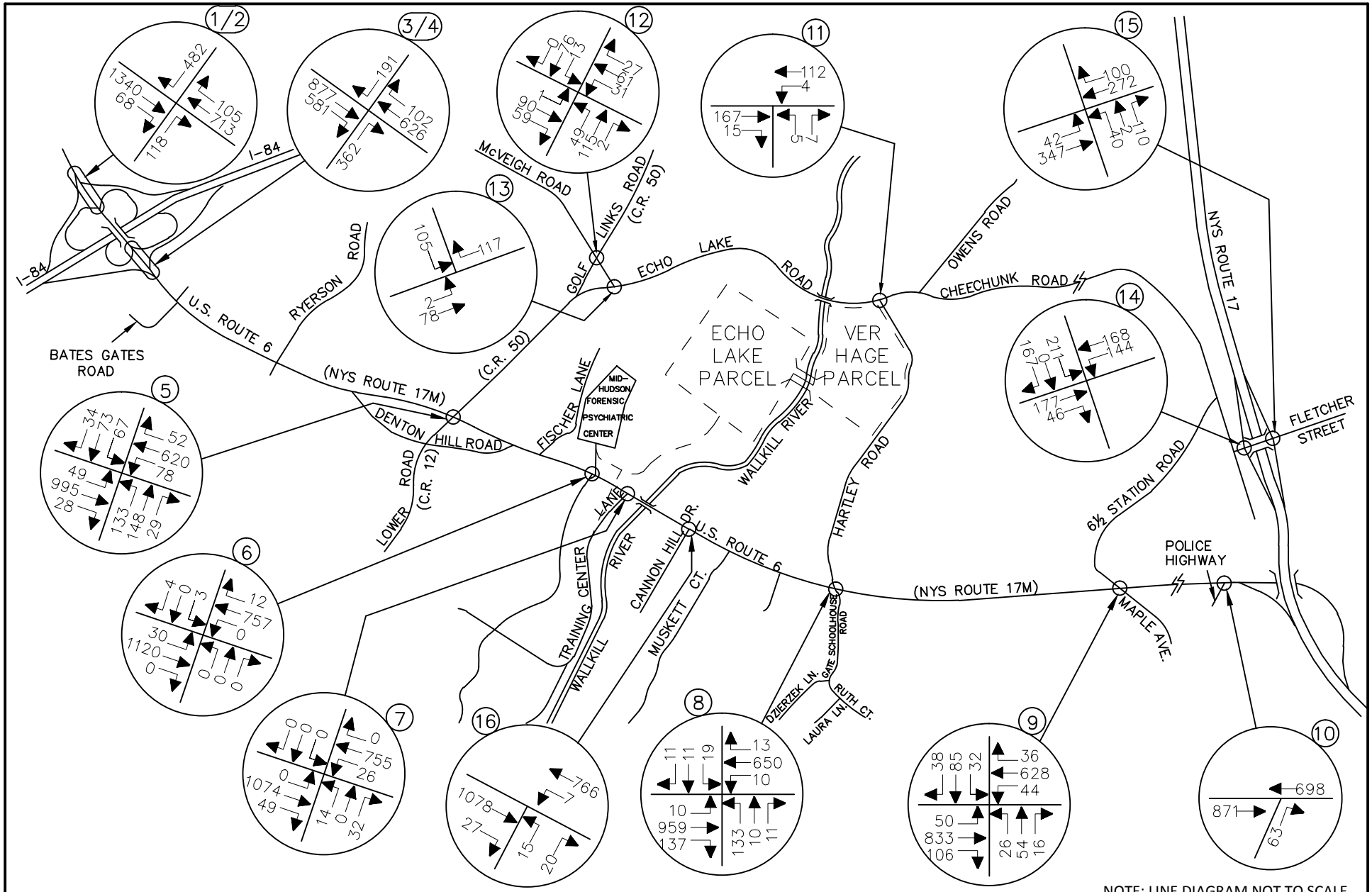
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
17	



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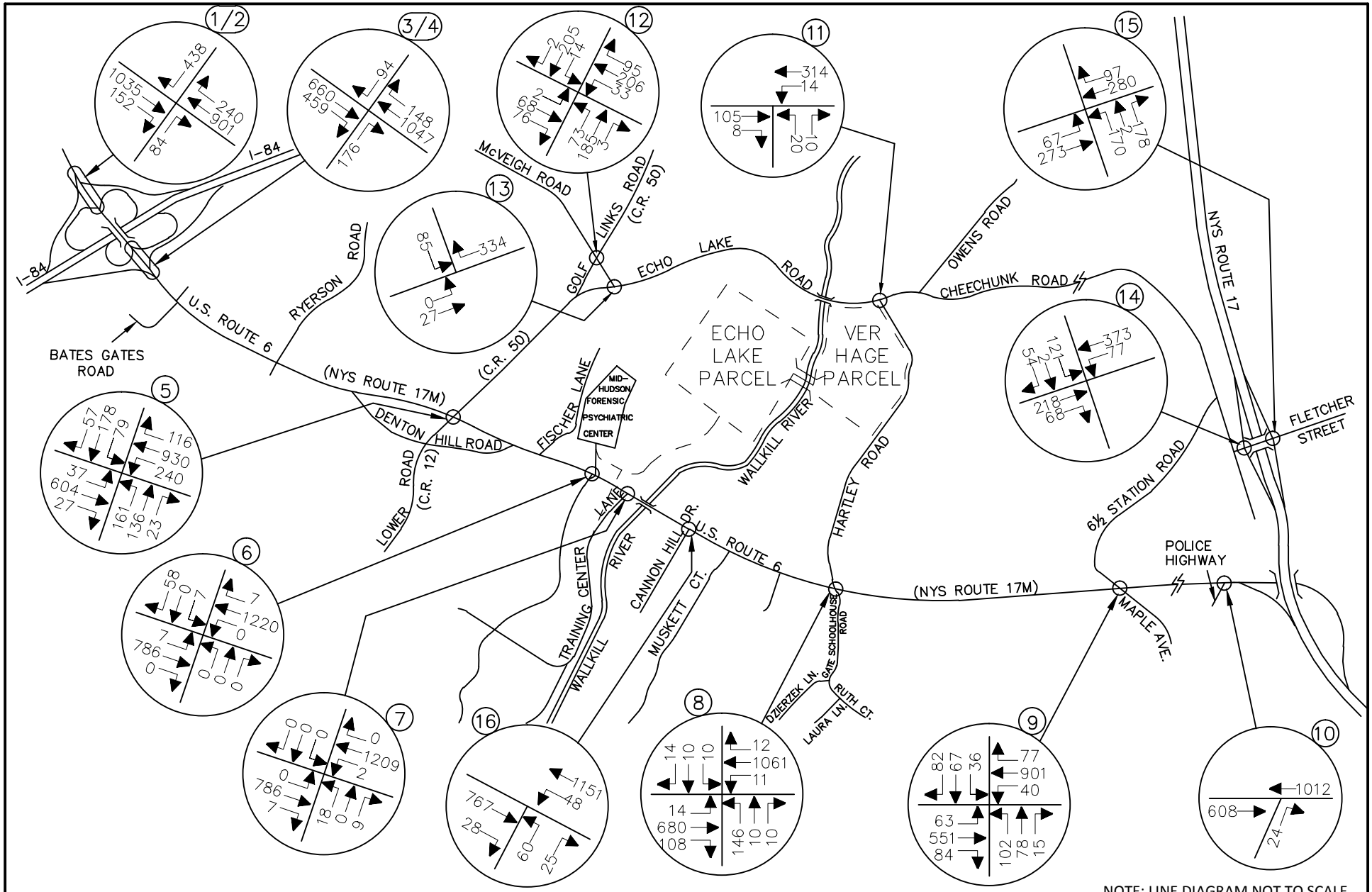
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
18	



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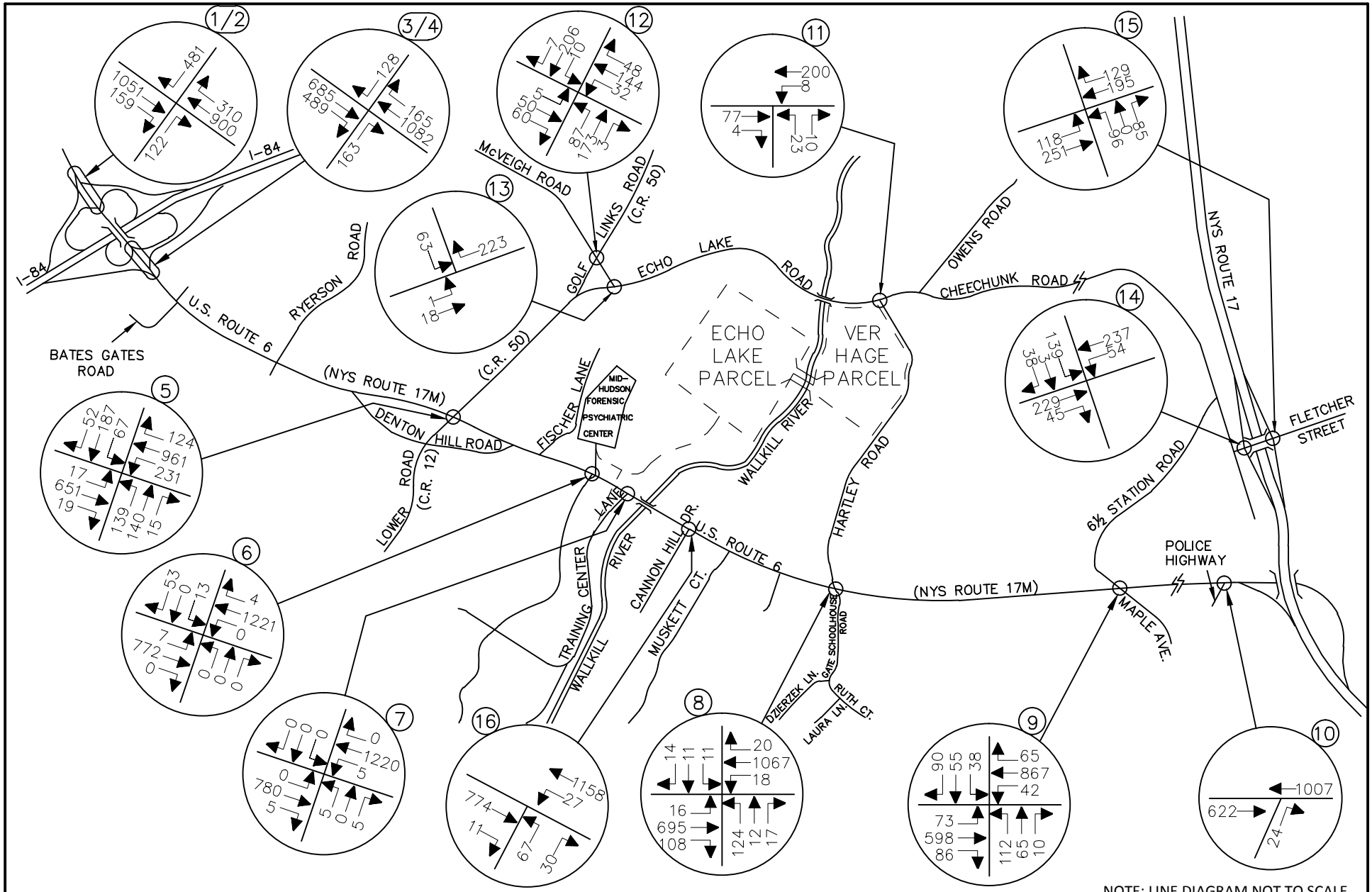
GOSHEN, NEW YORK

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
19	



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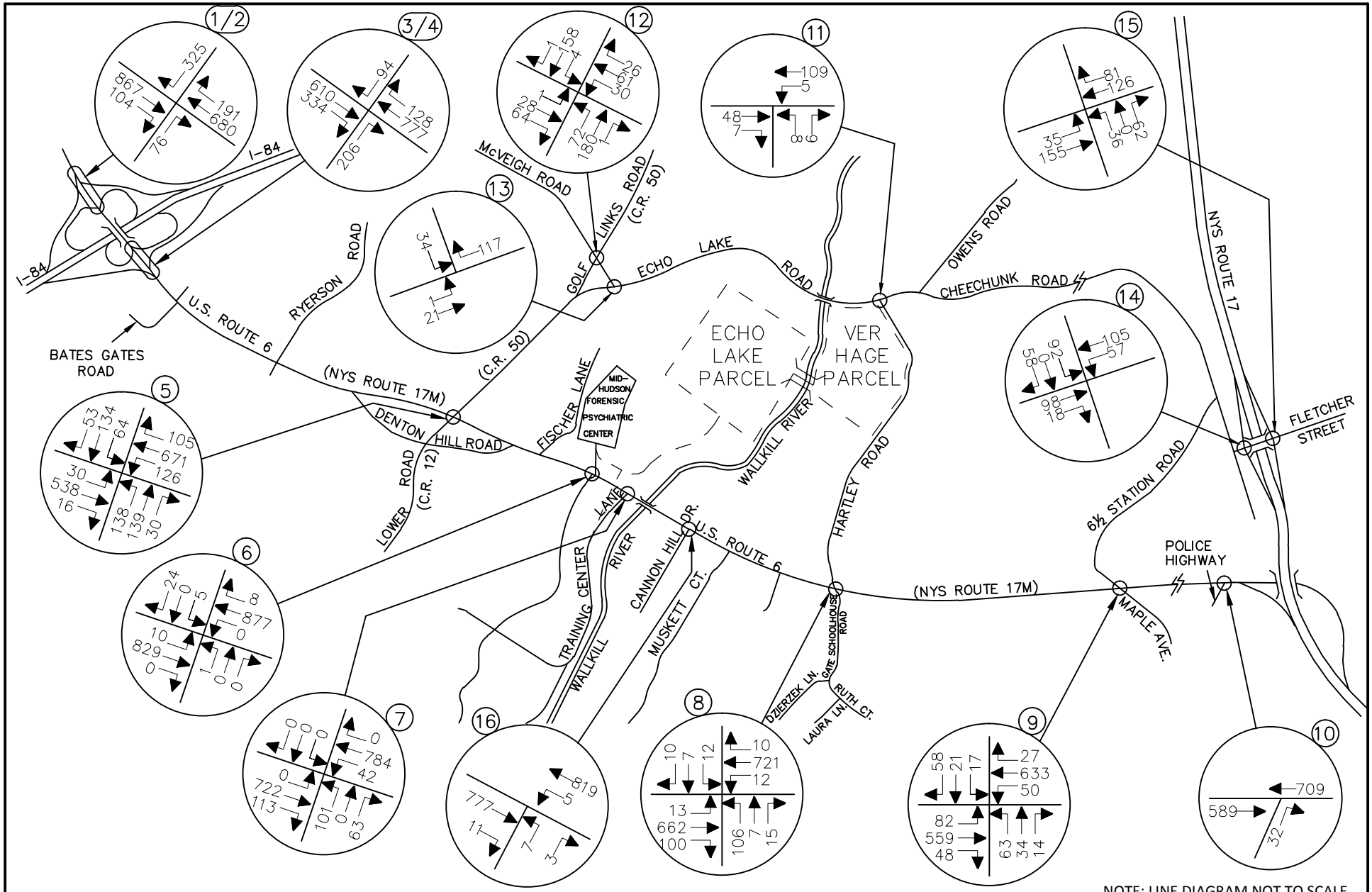
GOSHEN, NEW YORK

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
20	



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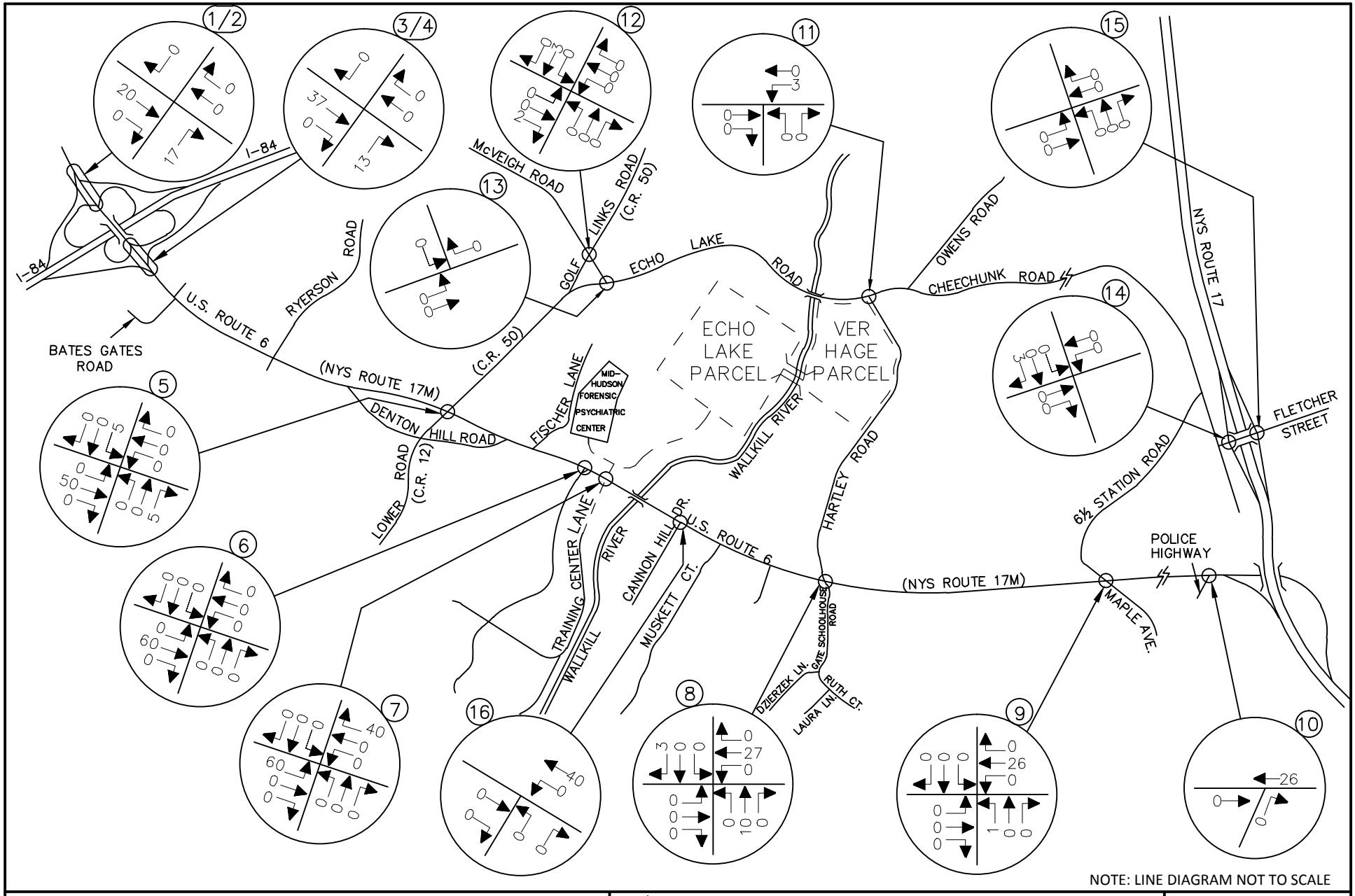
2033 NO-BUILD TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
21	



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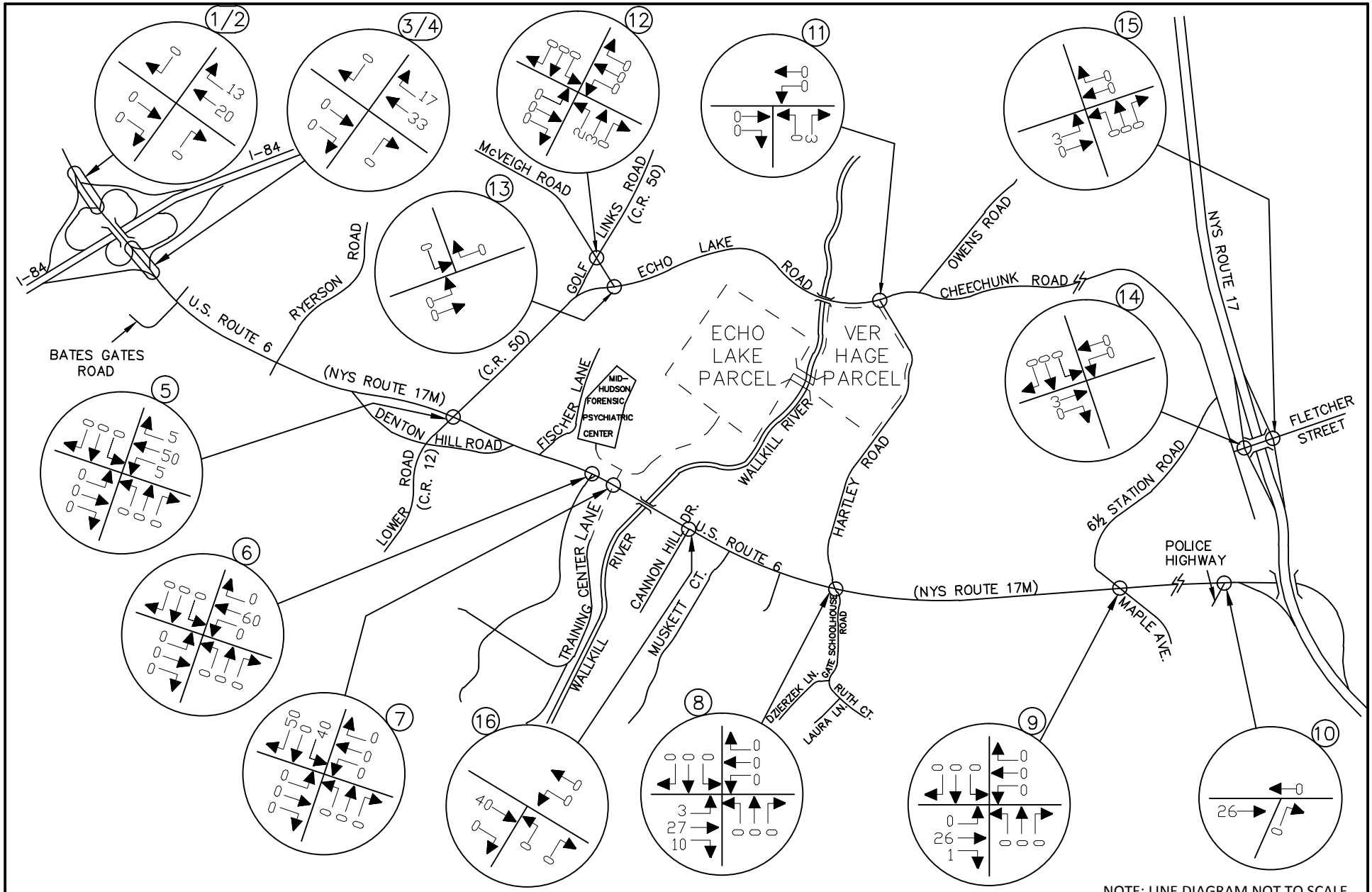
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
ARRIVAL DISTRIBUTION - CARS
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
22	



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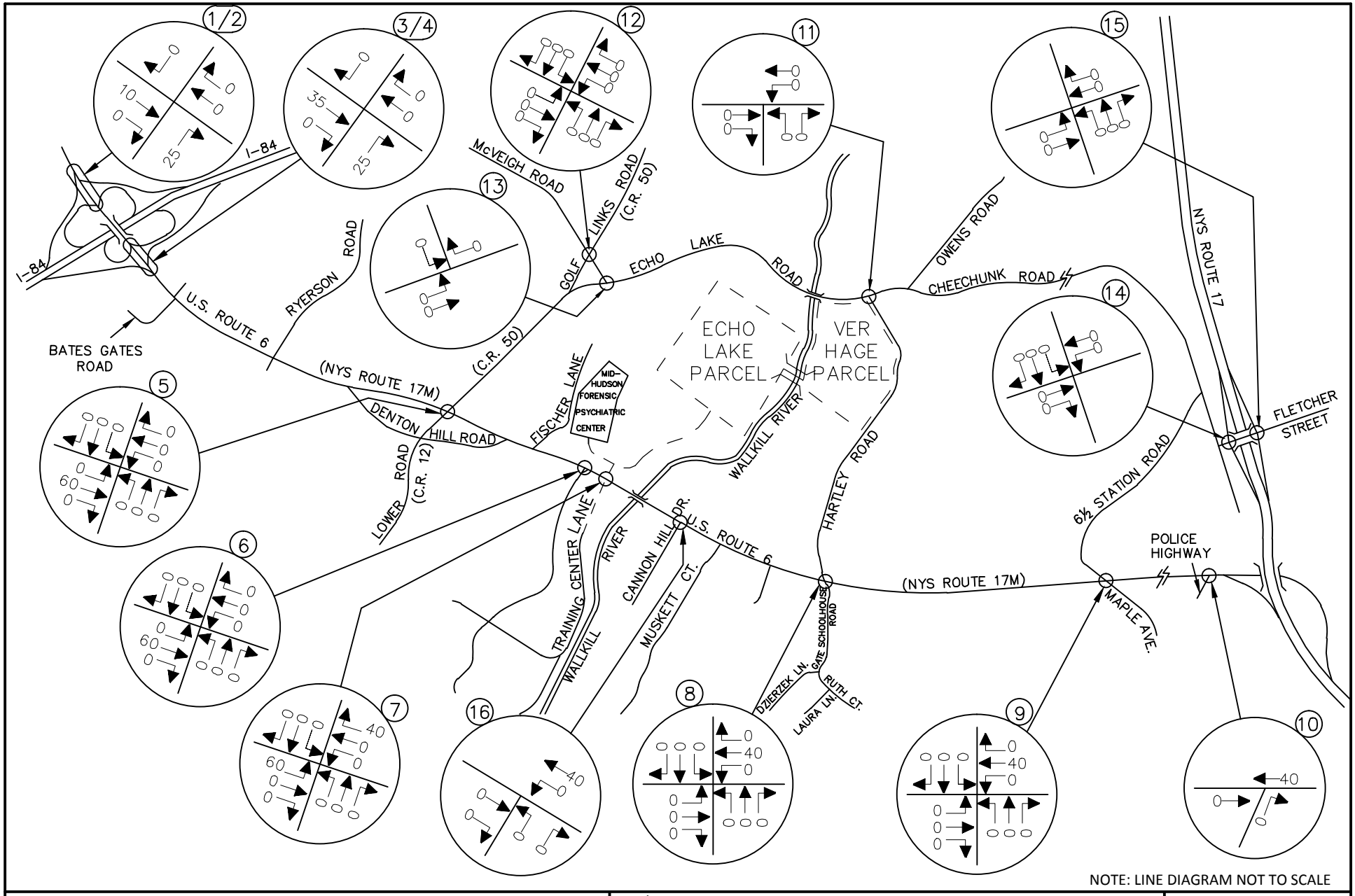
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
DEPARTURE DISTRIBUTION - CARS
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
23	



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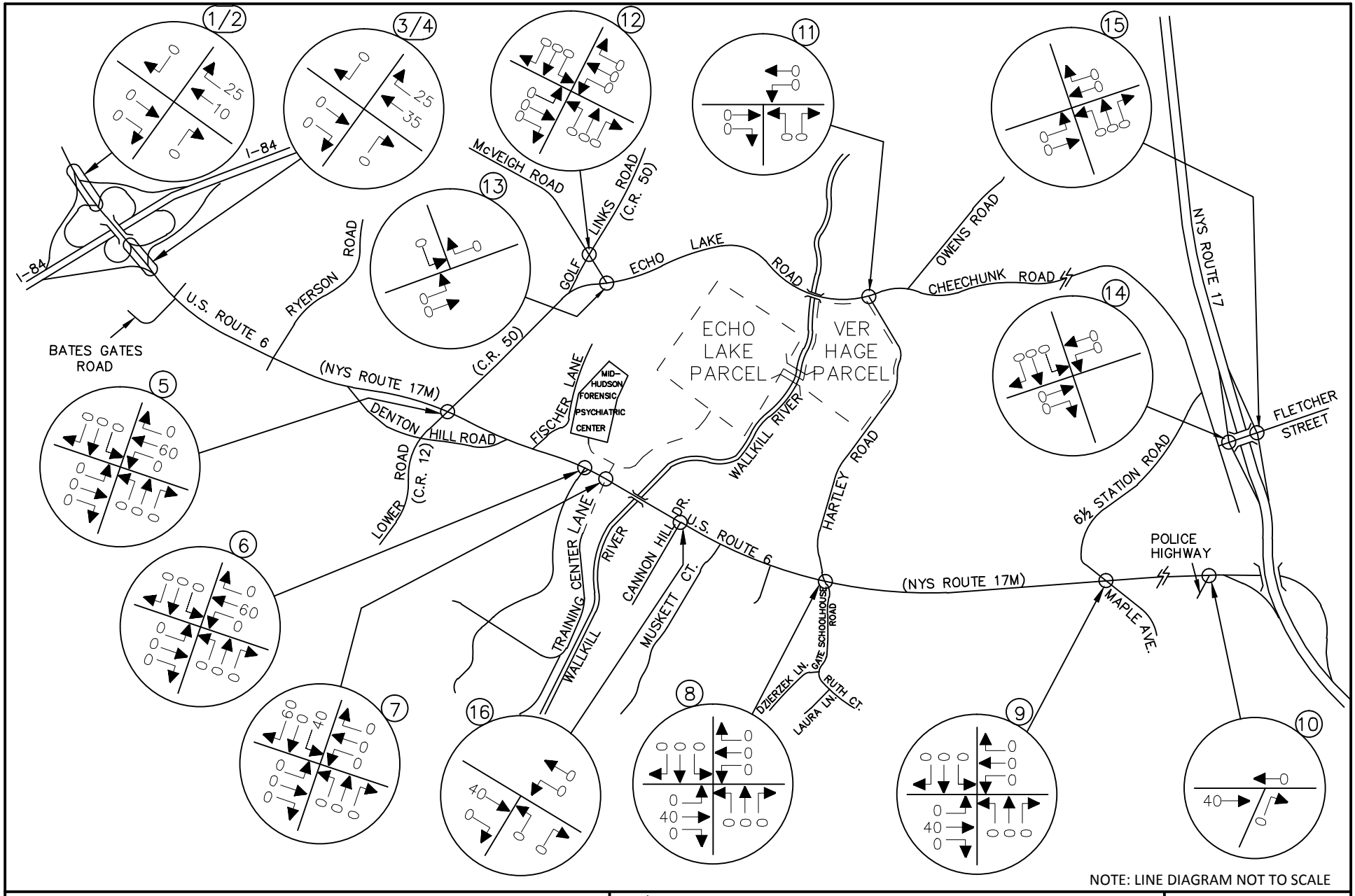
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
ARRIVAL DISTRIBUTION - TRUCKS
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
24	



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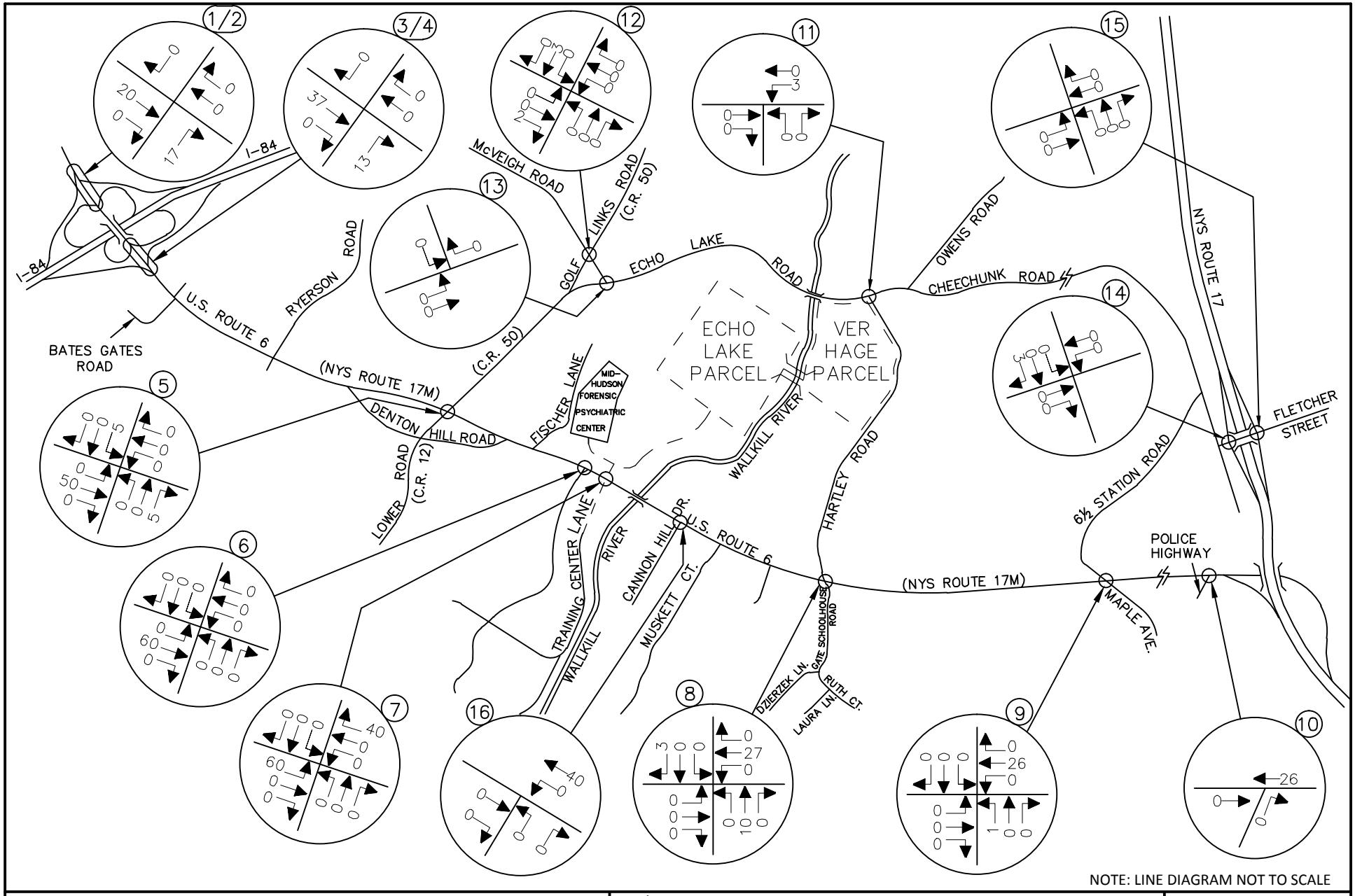
VER HAGE WAREHOUSE USES
DEPARTURE DISTRIBUTION - TRUCKS
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
25	



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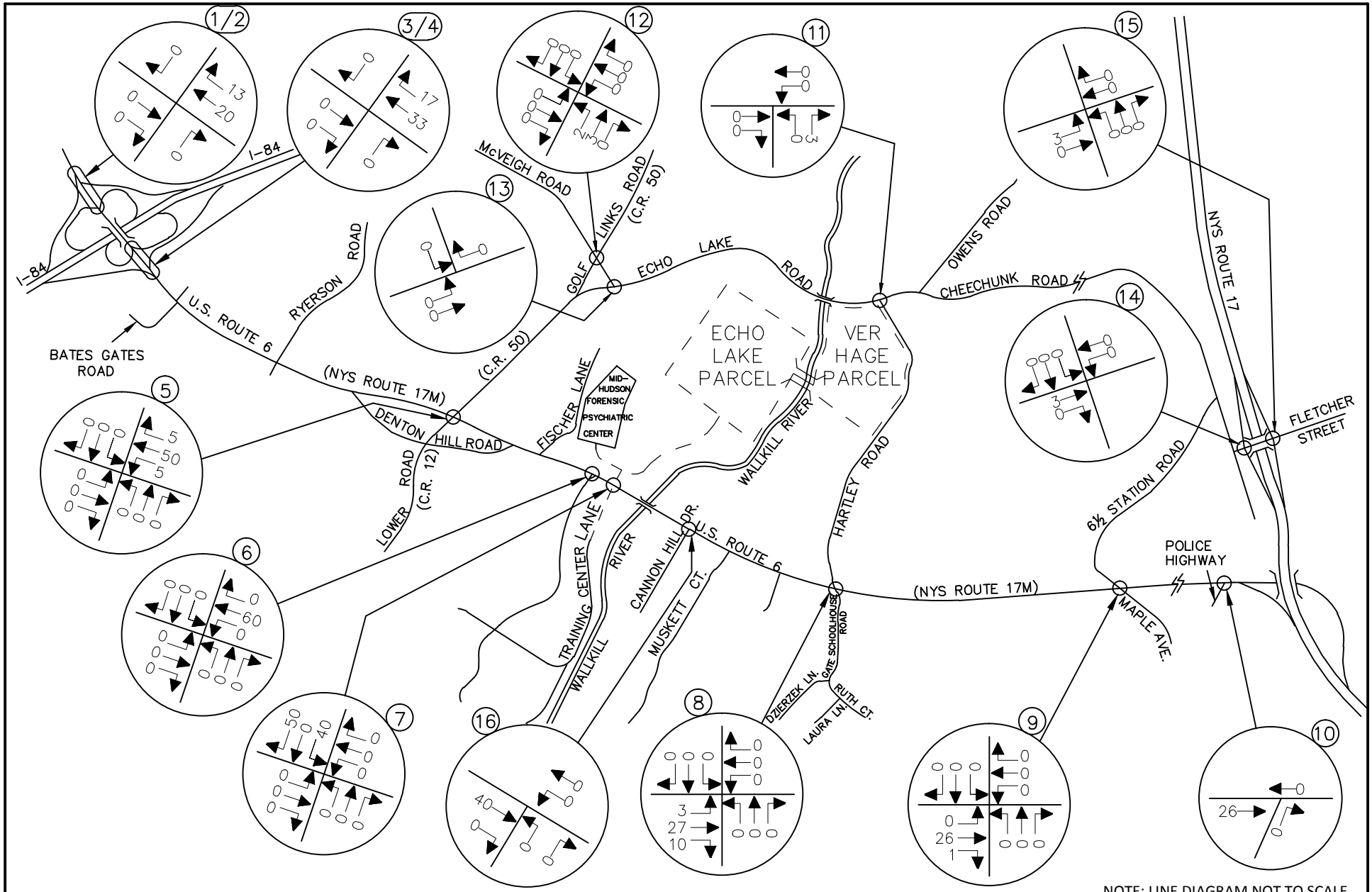
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
ARRIVAL DISTRIBUTION - CARS
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
26	



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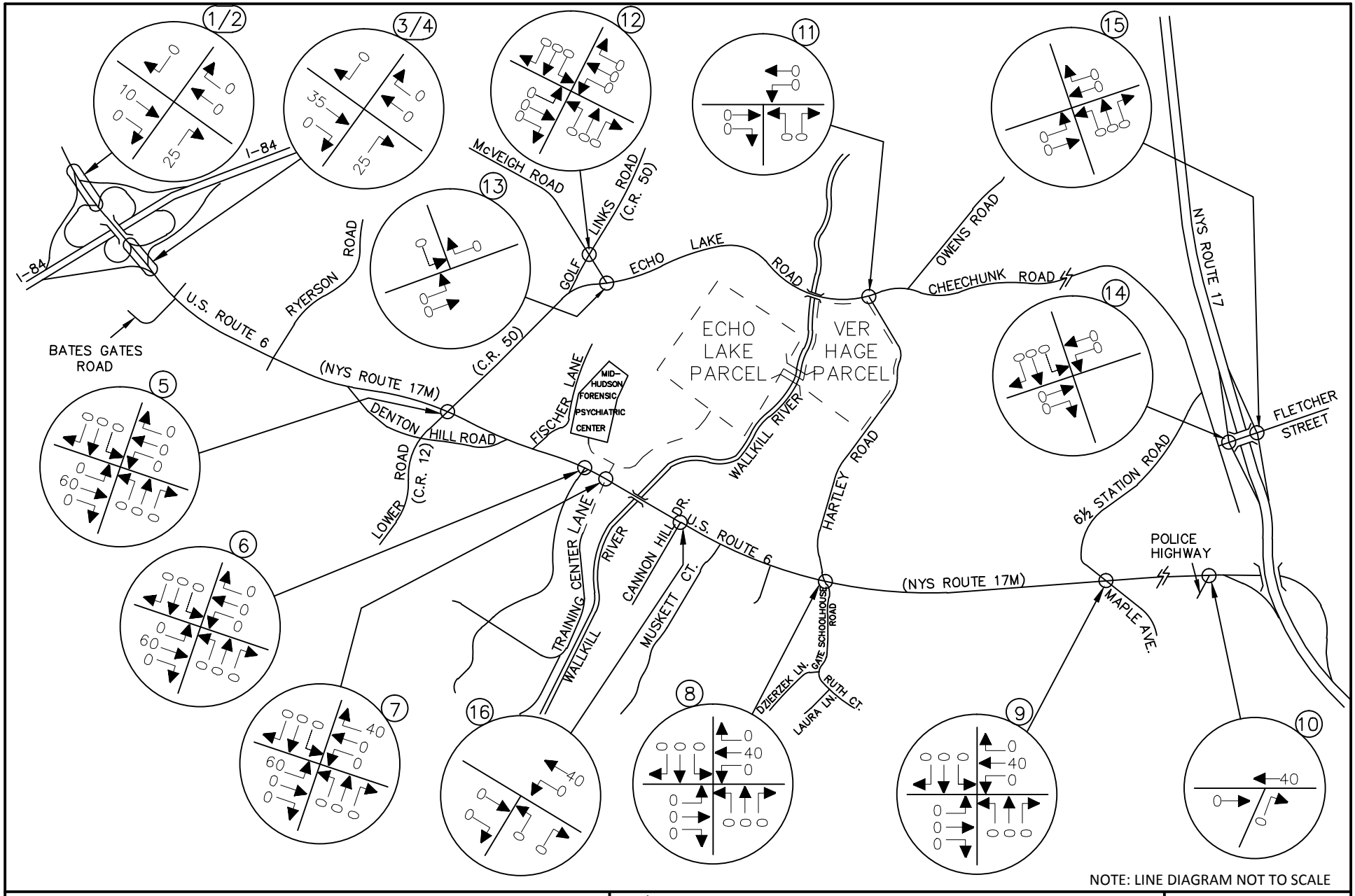
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
DEPARTURE DISTRIBUTION - CARS
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
27	



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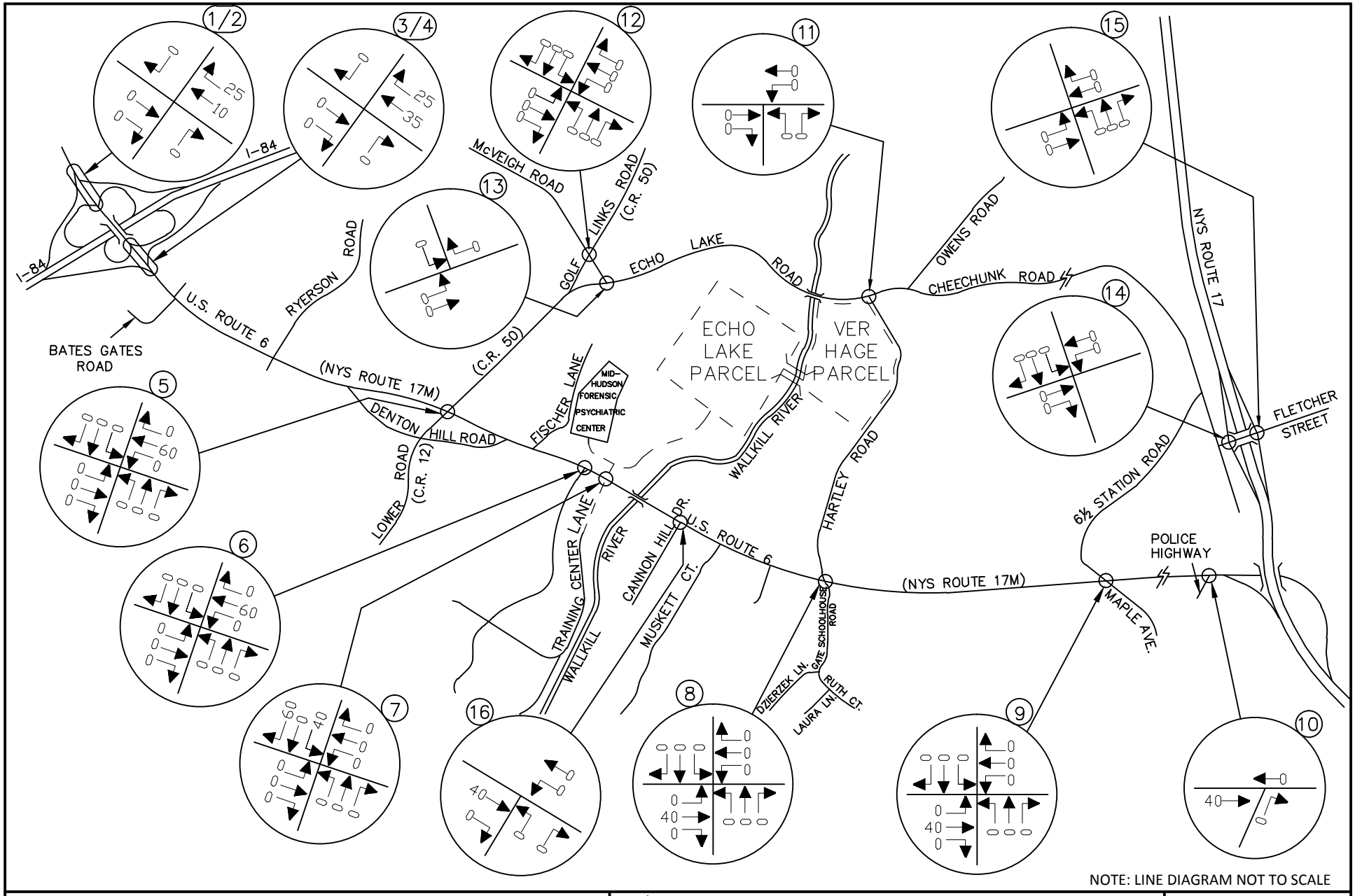
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
ARRIVAL DISTRIBUTION - TRUCKS
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
28	



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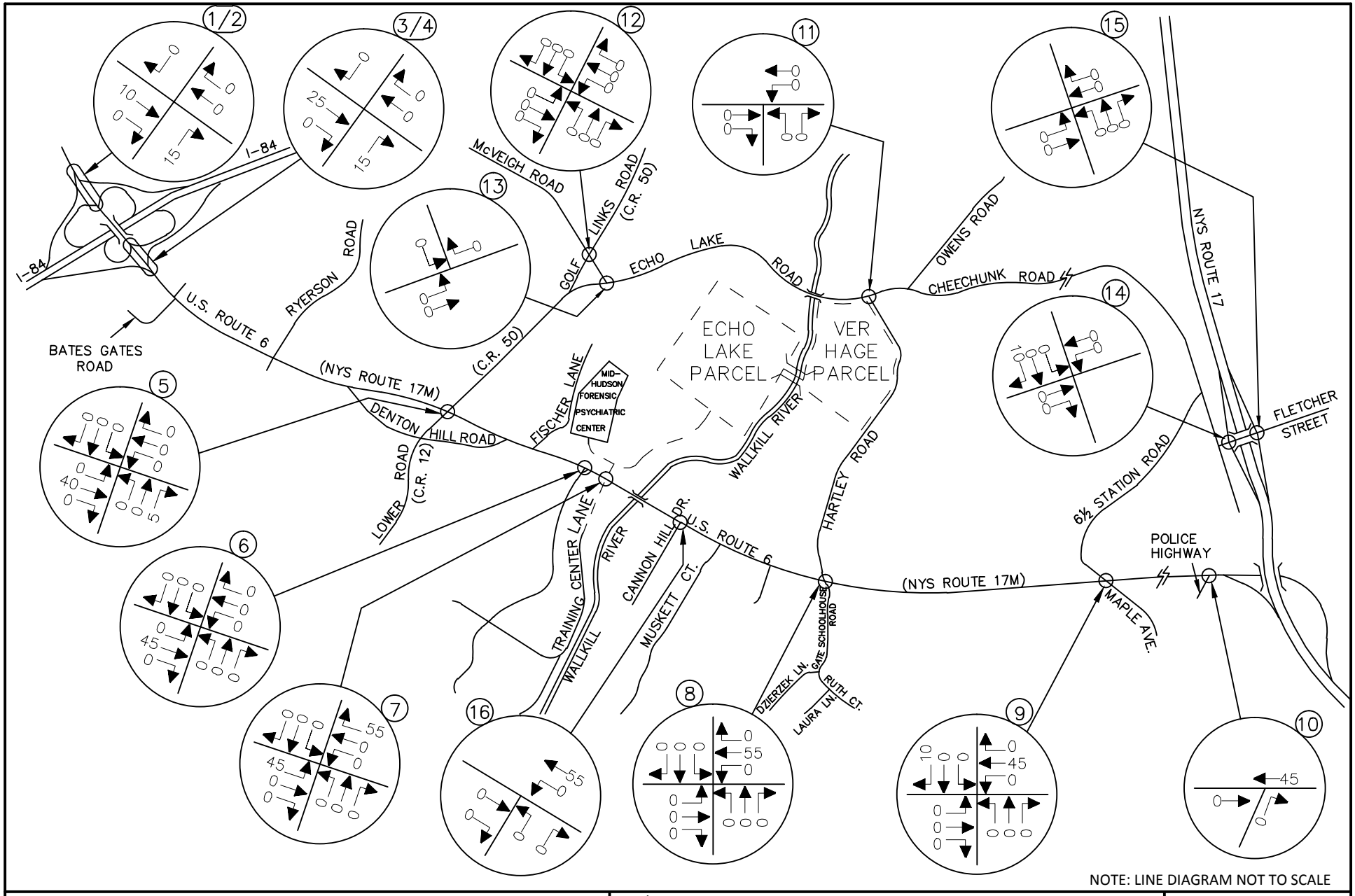
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
DEPARTURE DISTRIBUTION - TRUCKS
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
29	



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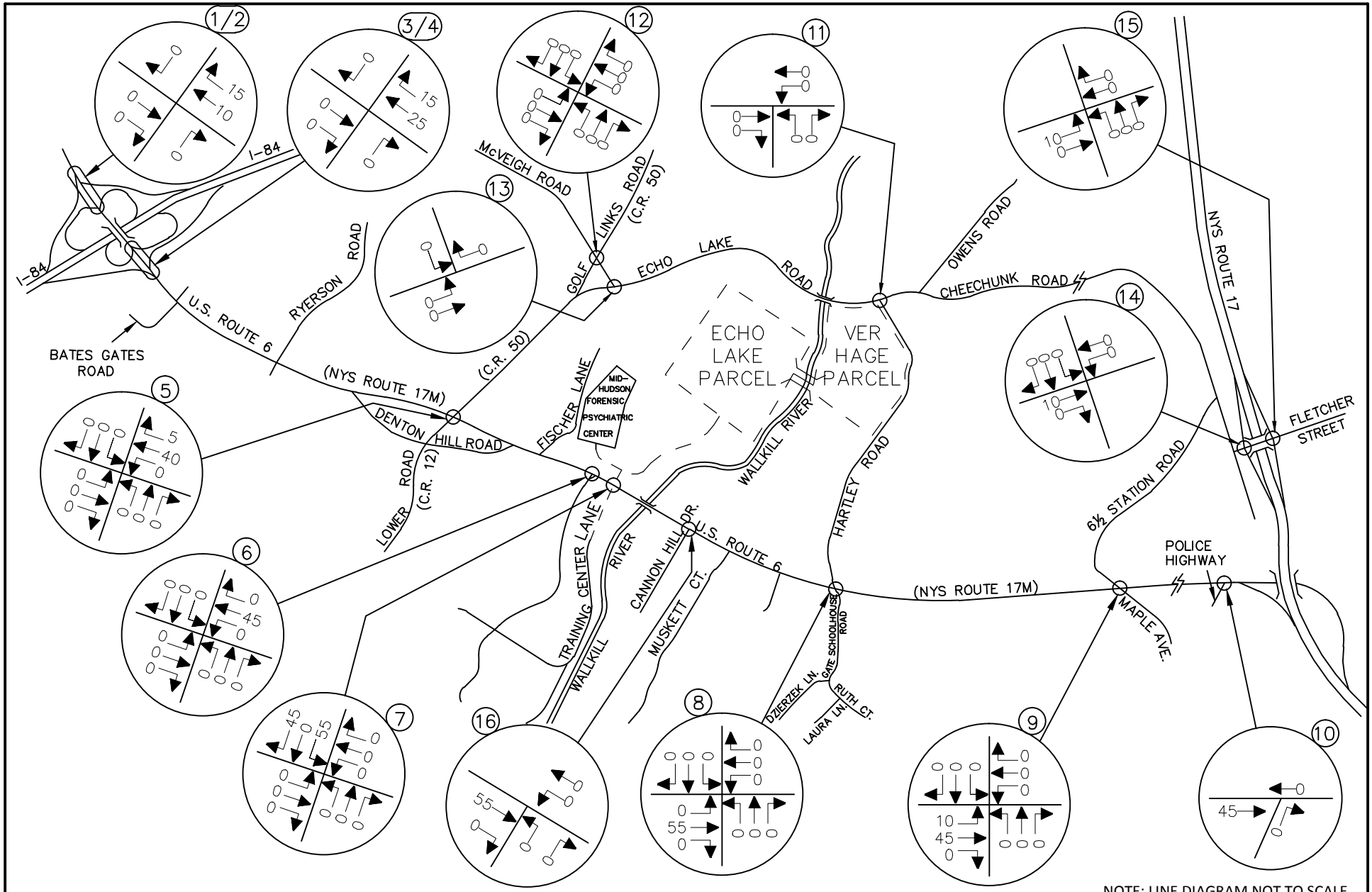
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
ARRIVAL DISTRIBUTION
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
30	



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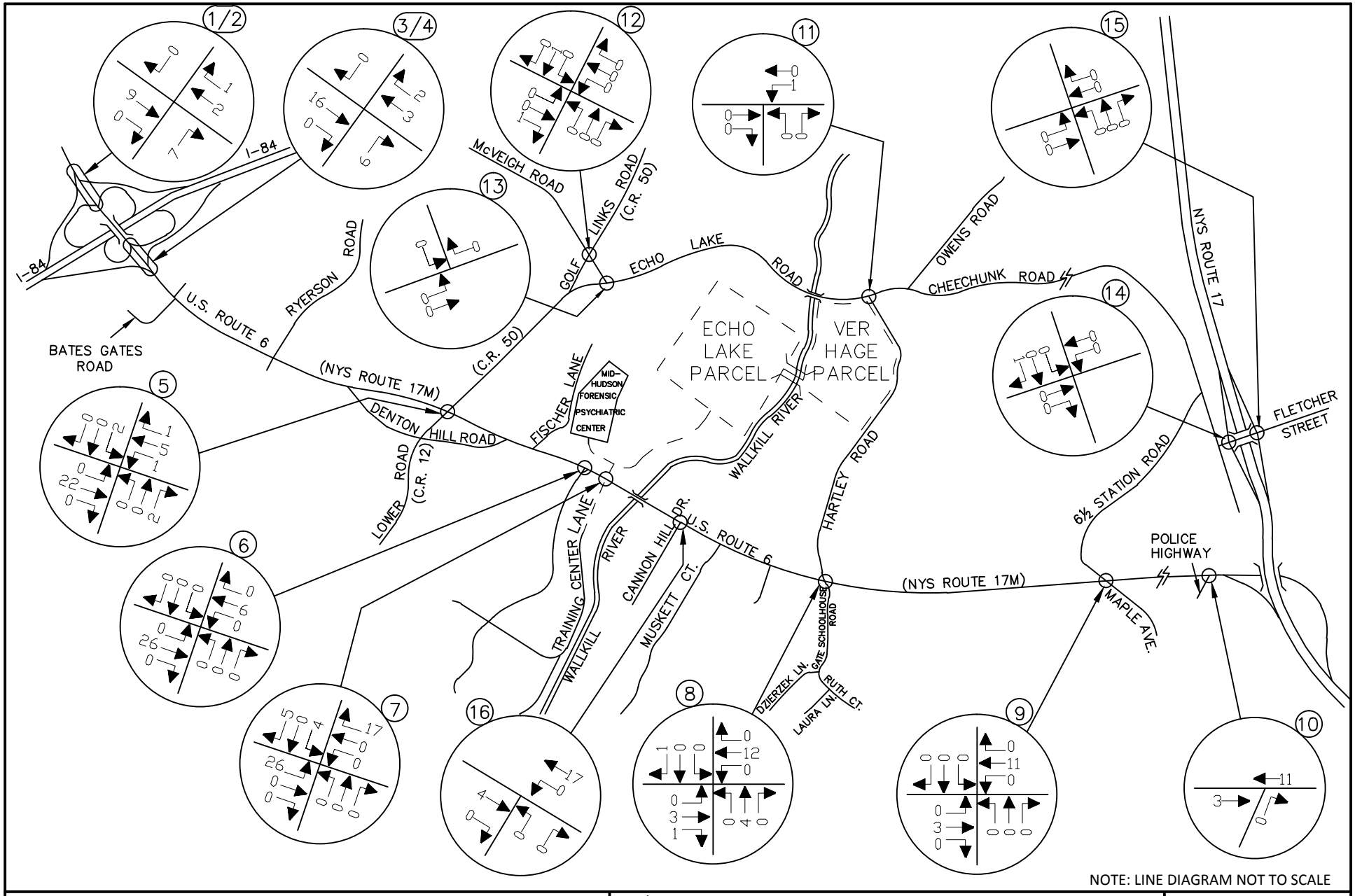
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
DEPARTURE DISTRIBUTION
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
31	



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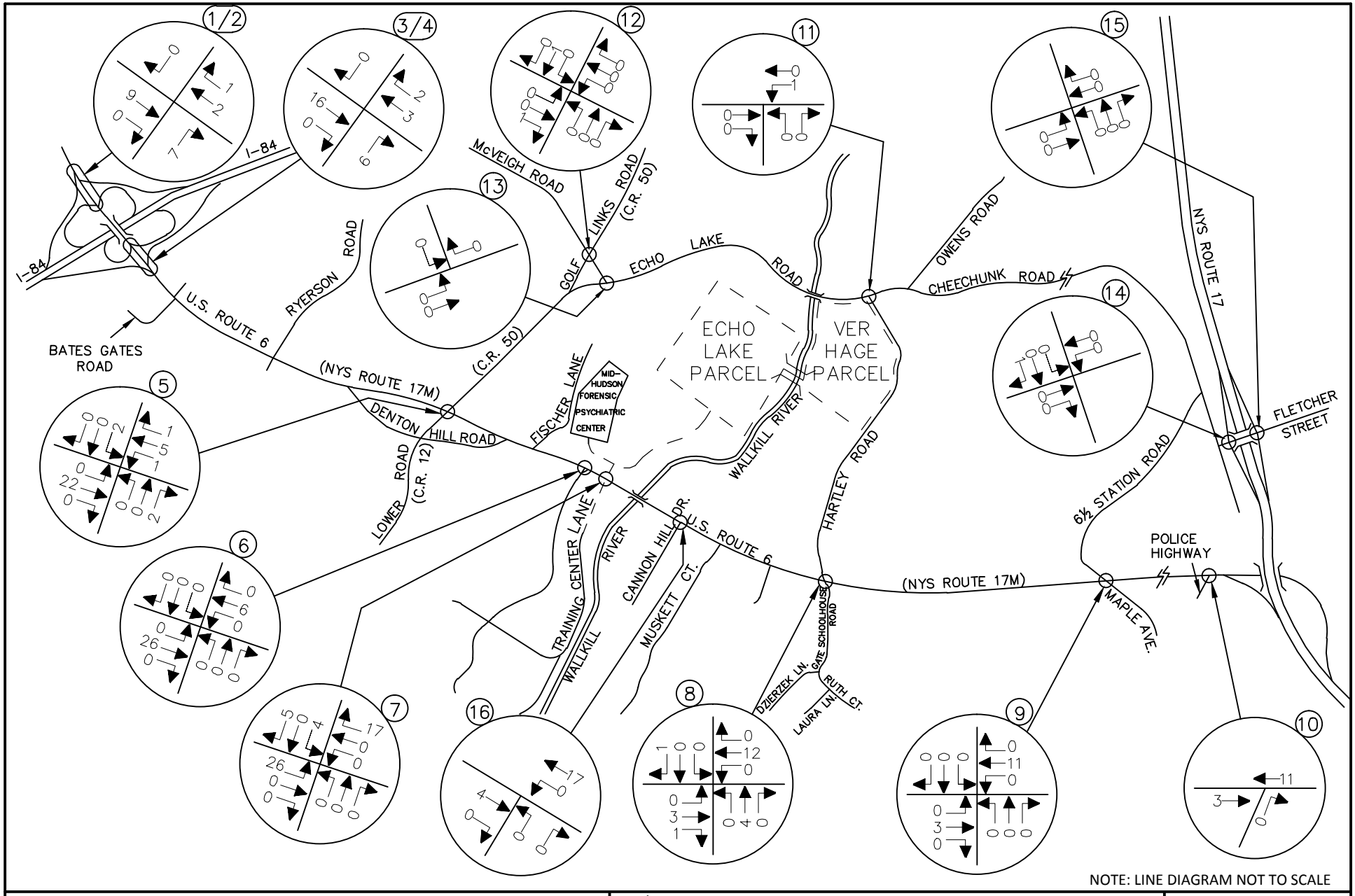
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
32	



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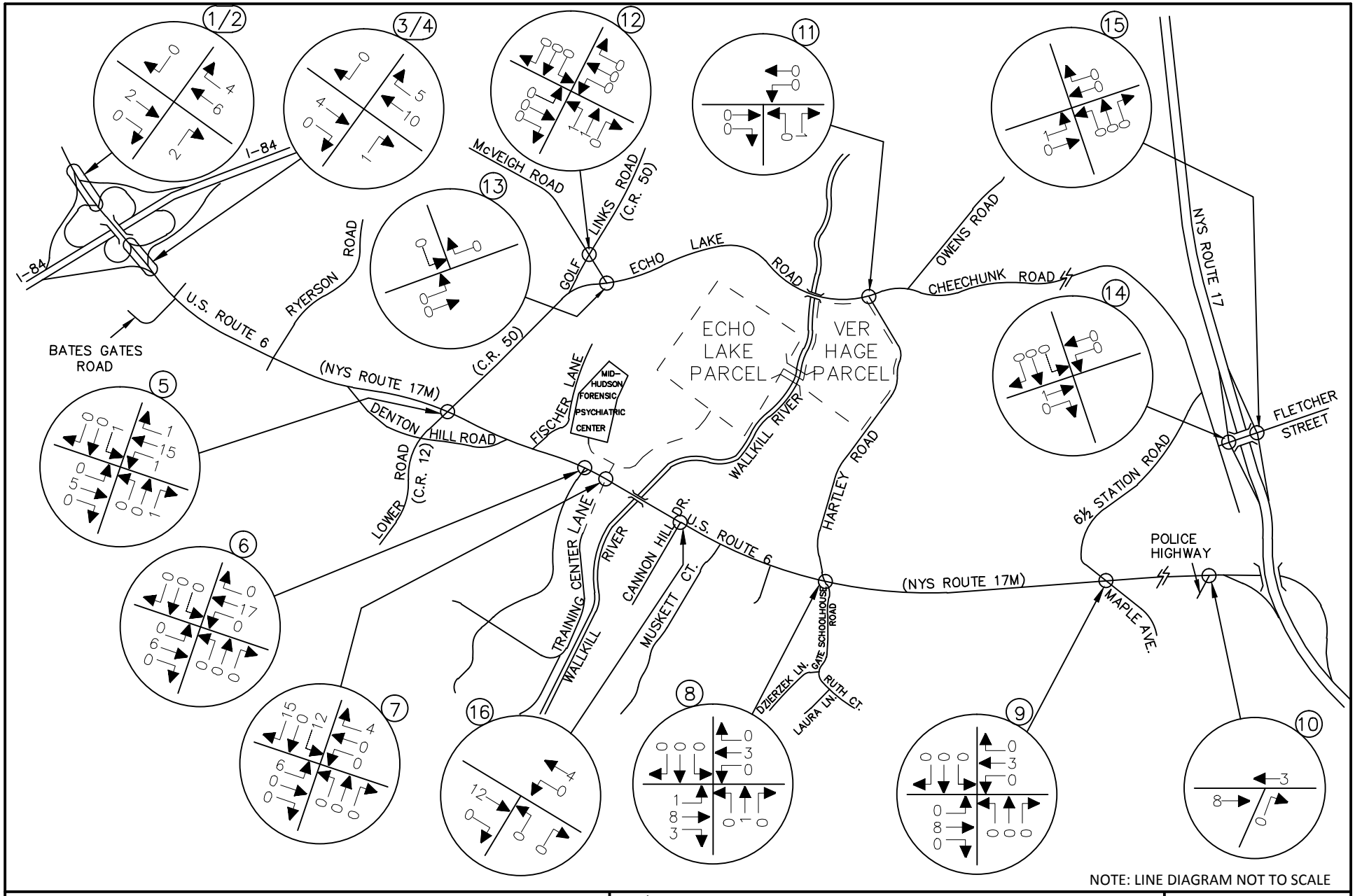
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
33	



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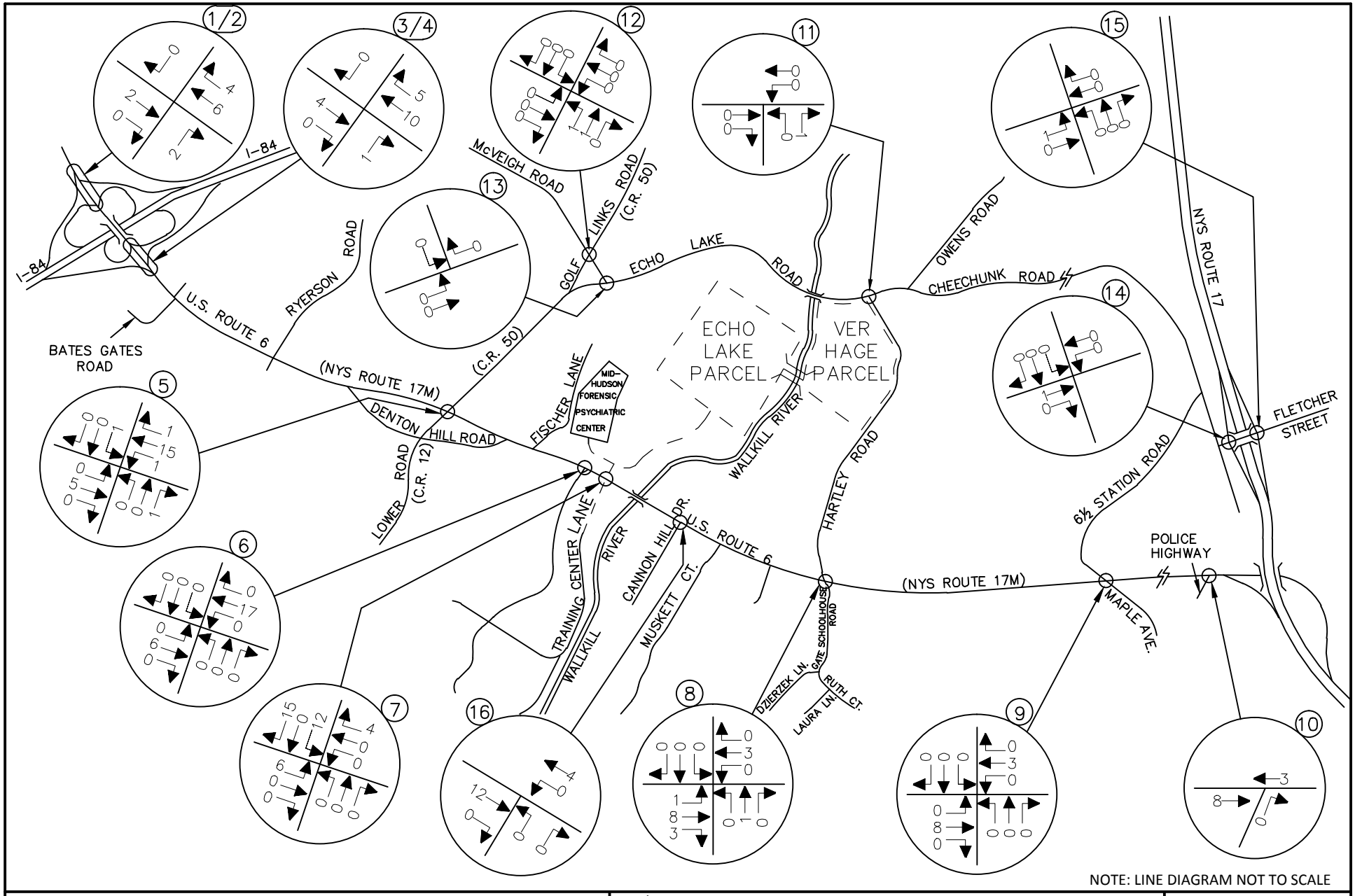
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
34	



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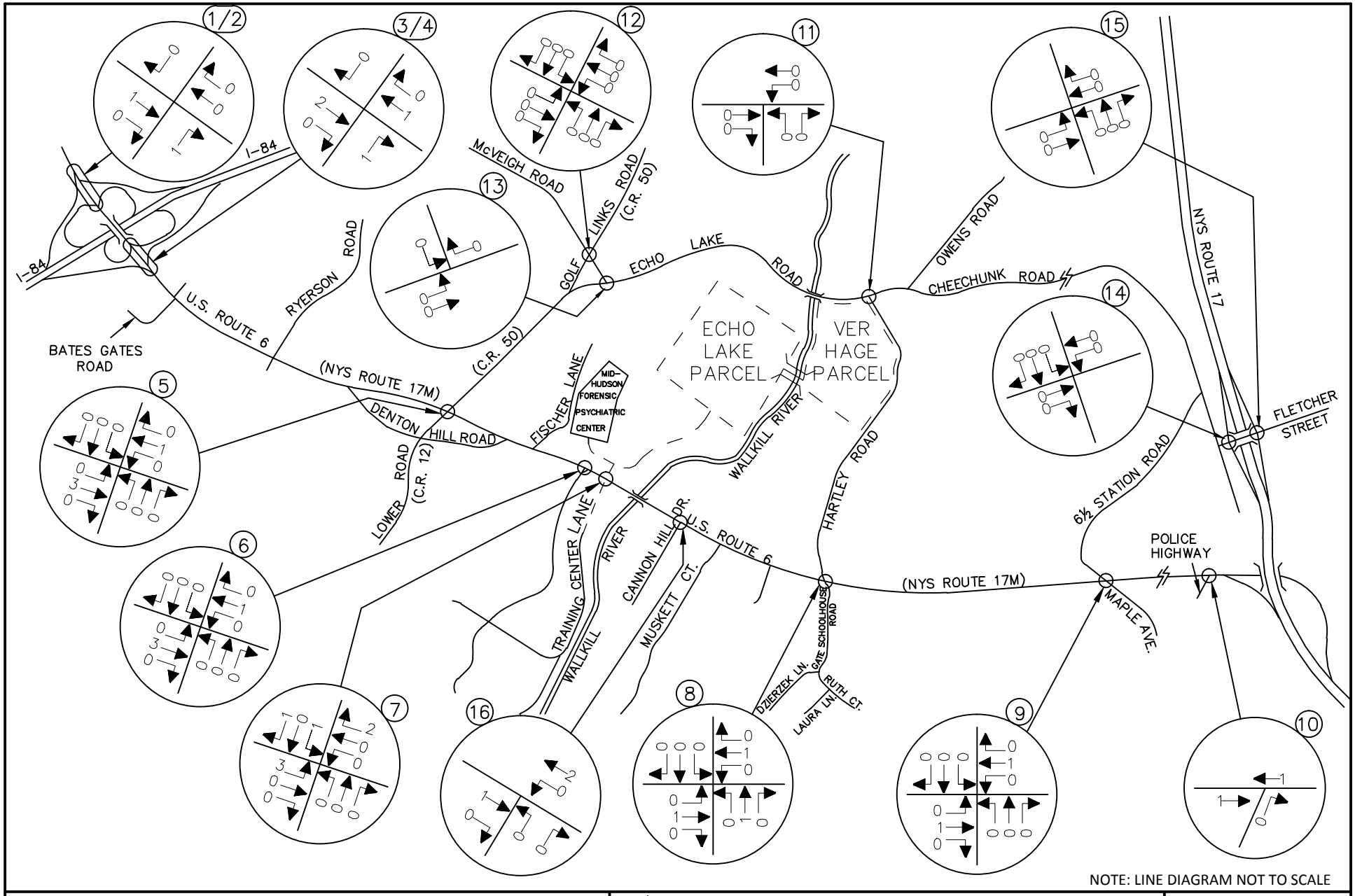
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
35	



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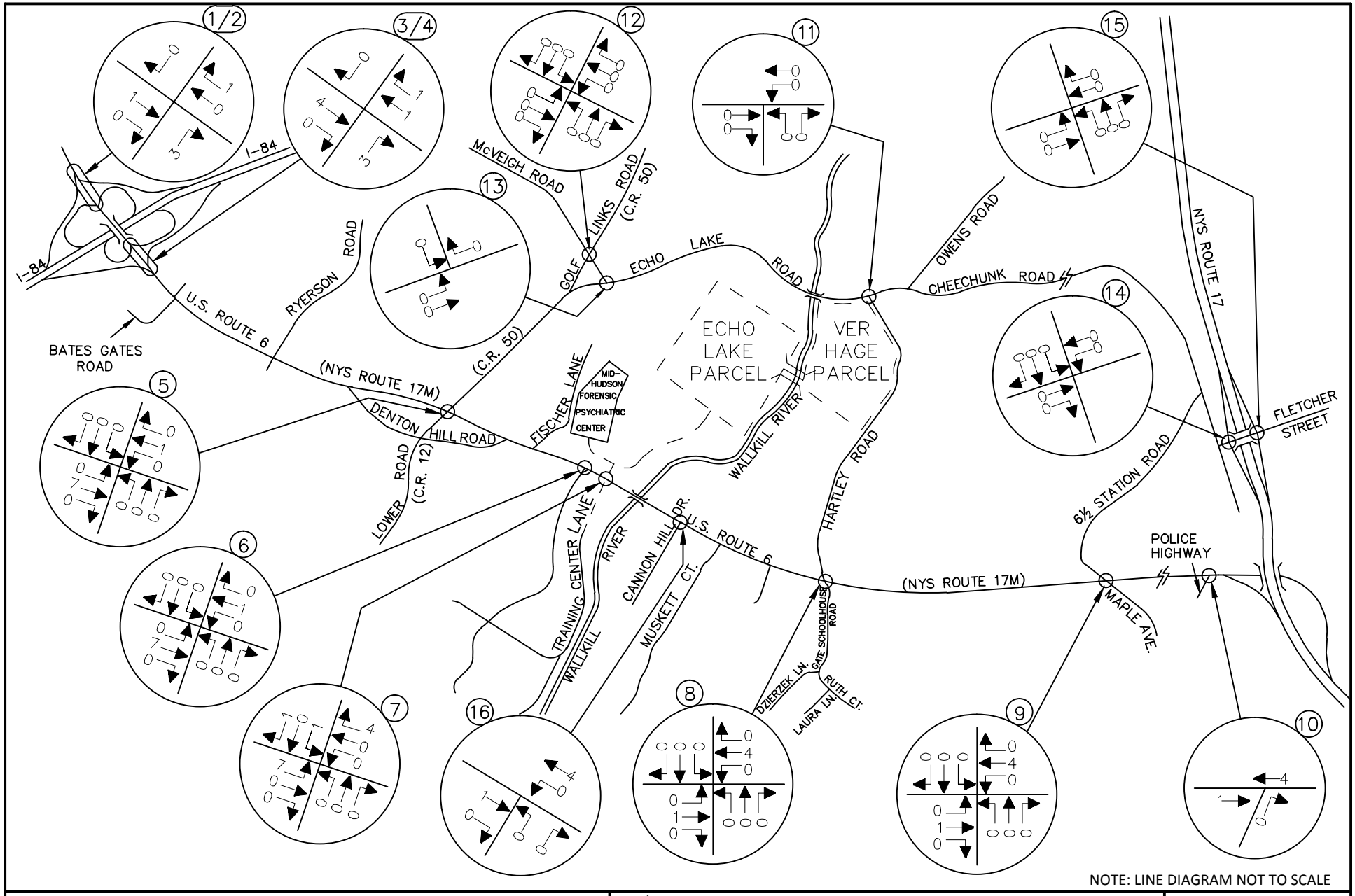
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
36	



NOTE: LINE DIAGRAM NOT TO SCALE

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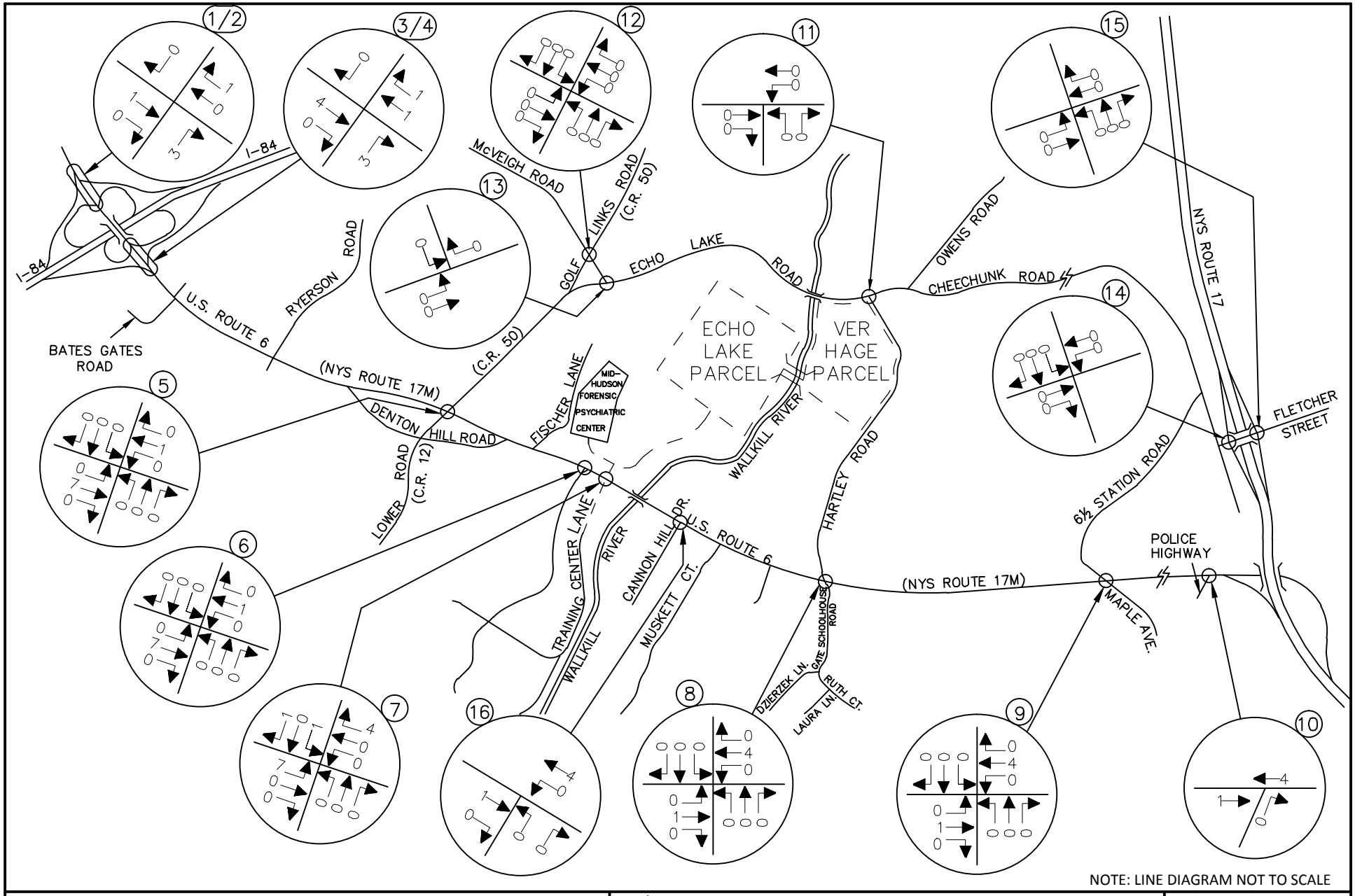
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
37	



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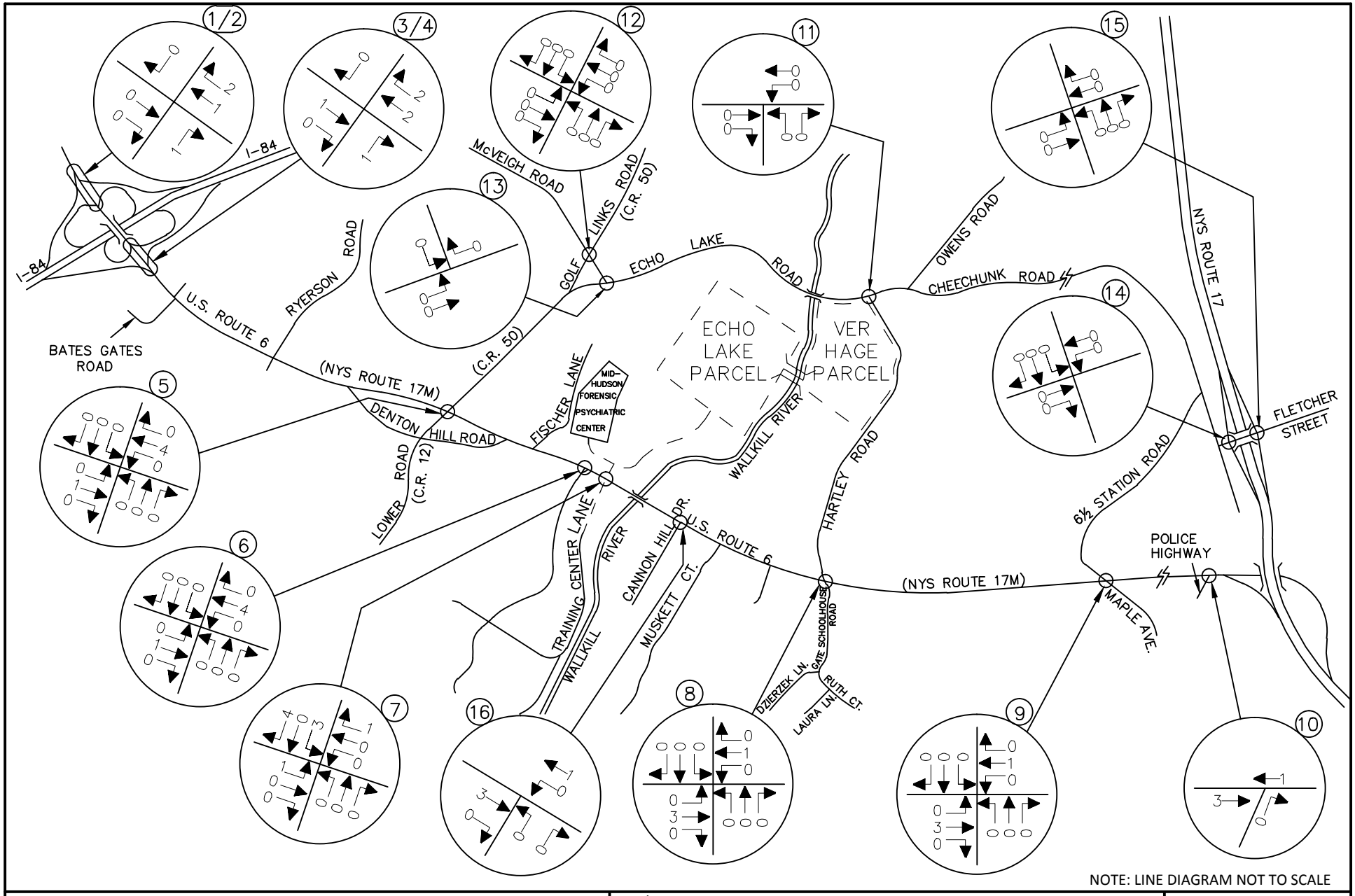
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
38	



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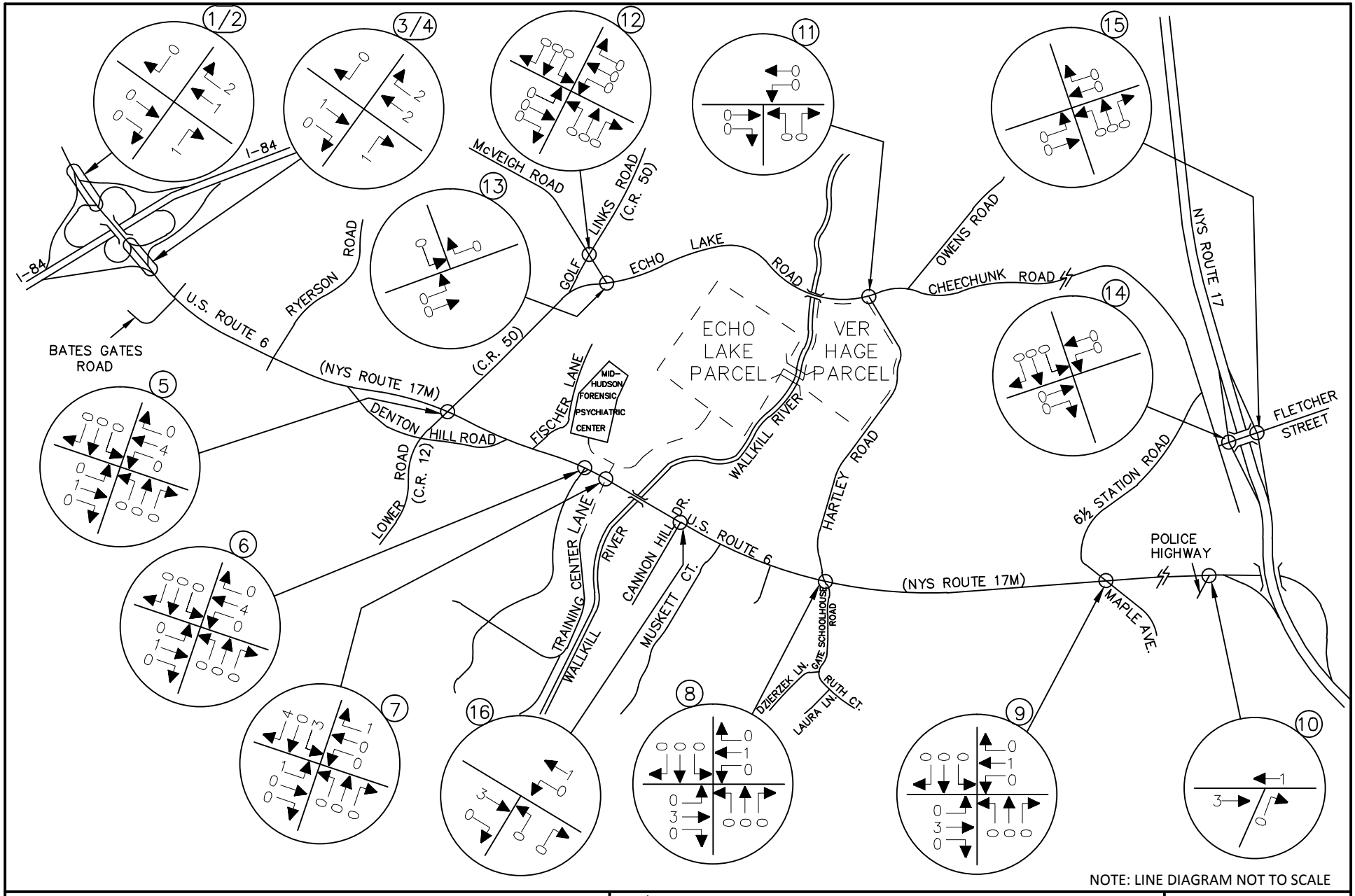
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
39	



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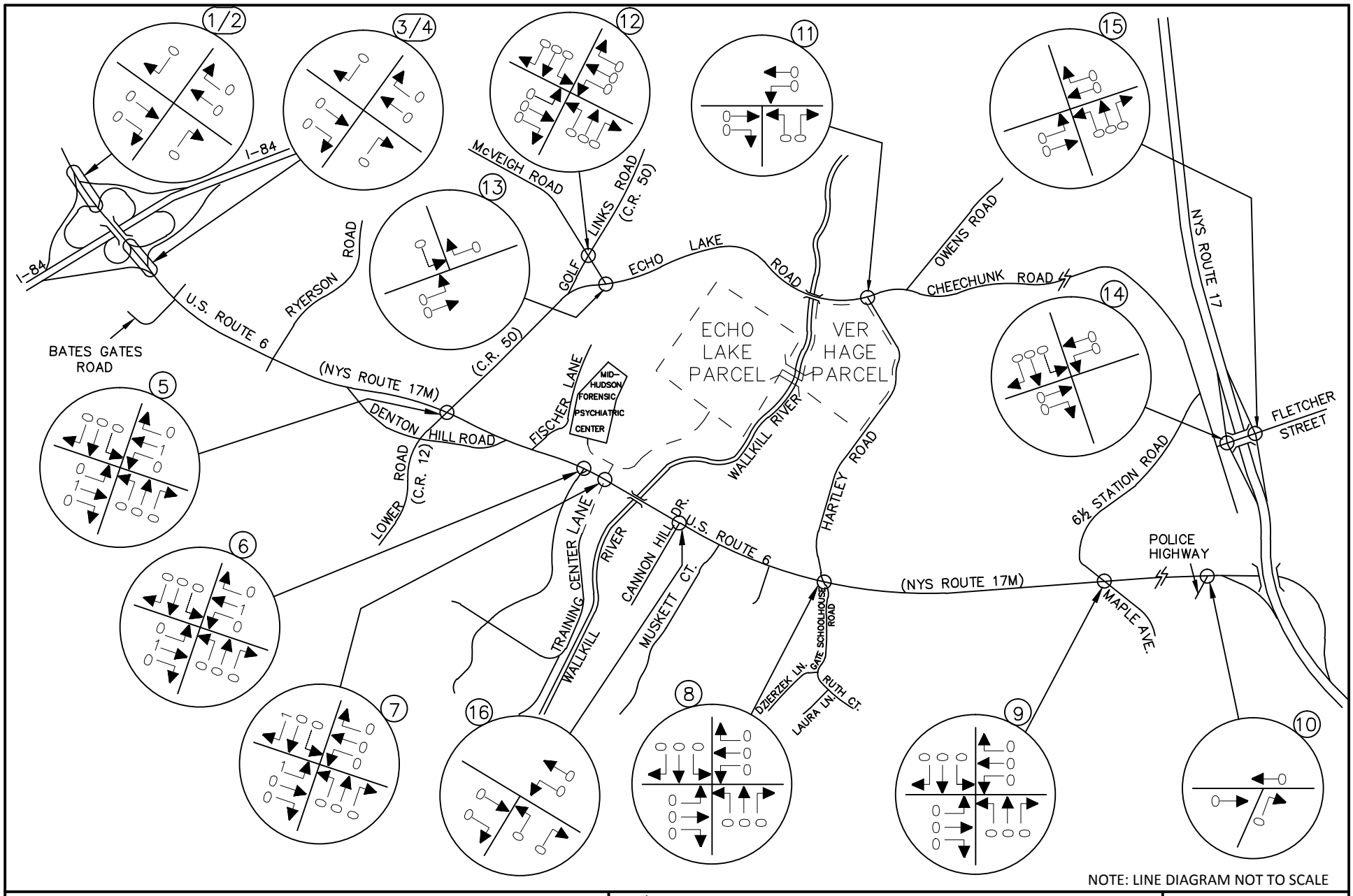
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
40	



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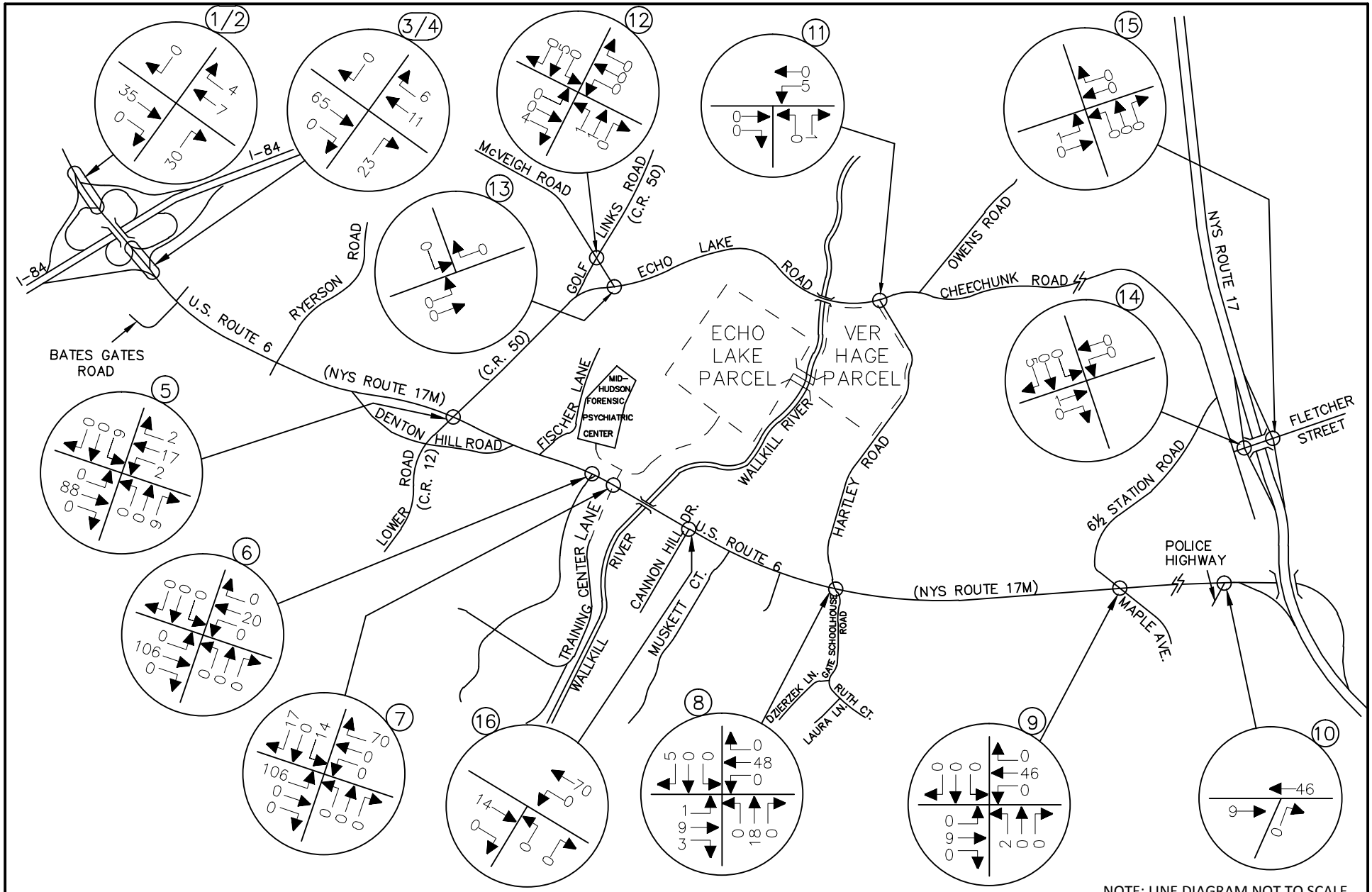
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
41	



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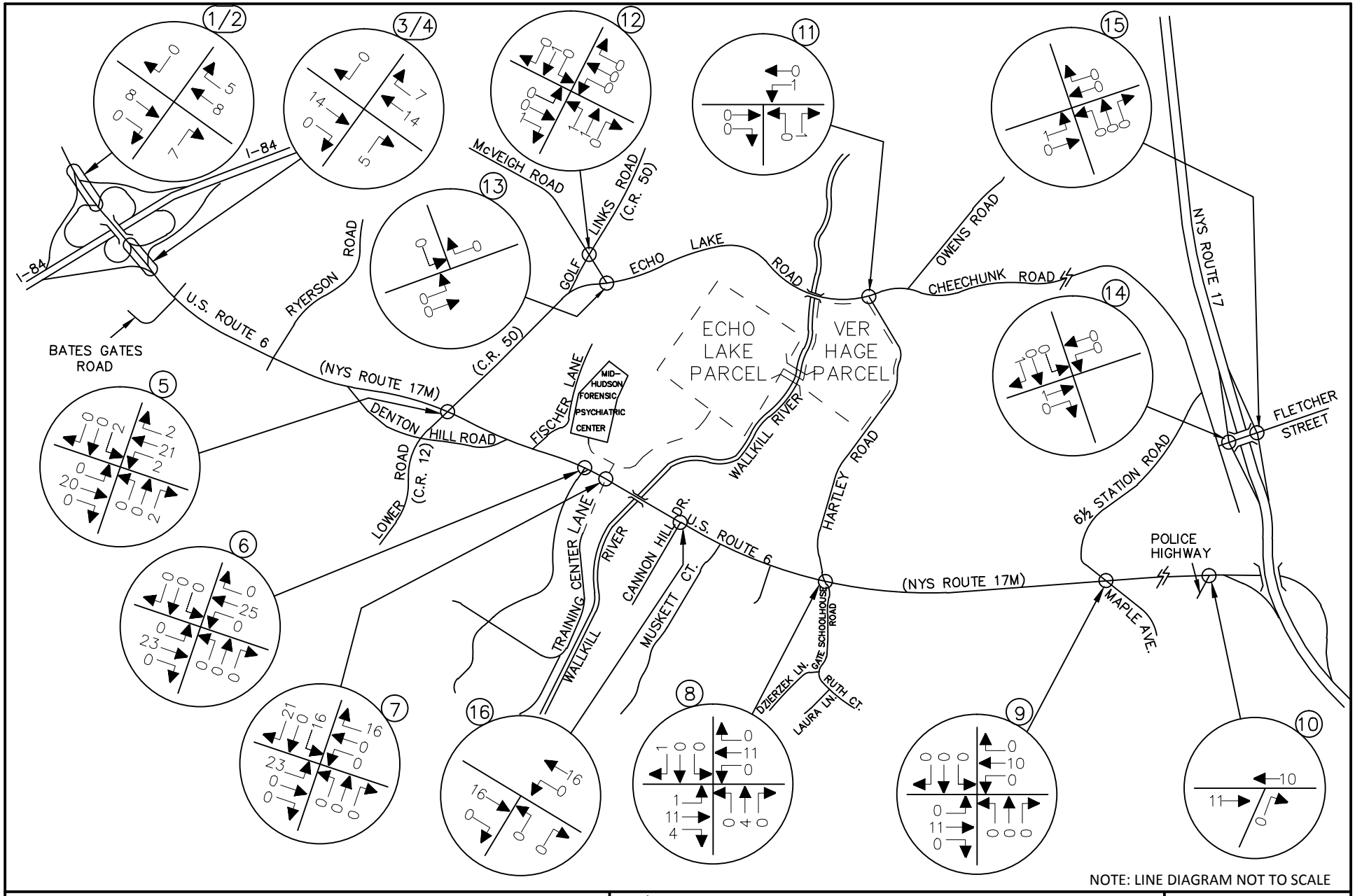
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
42	



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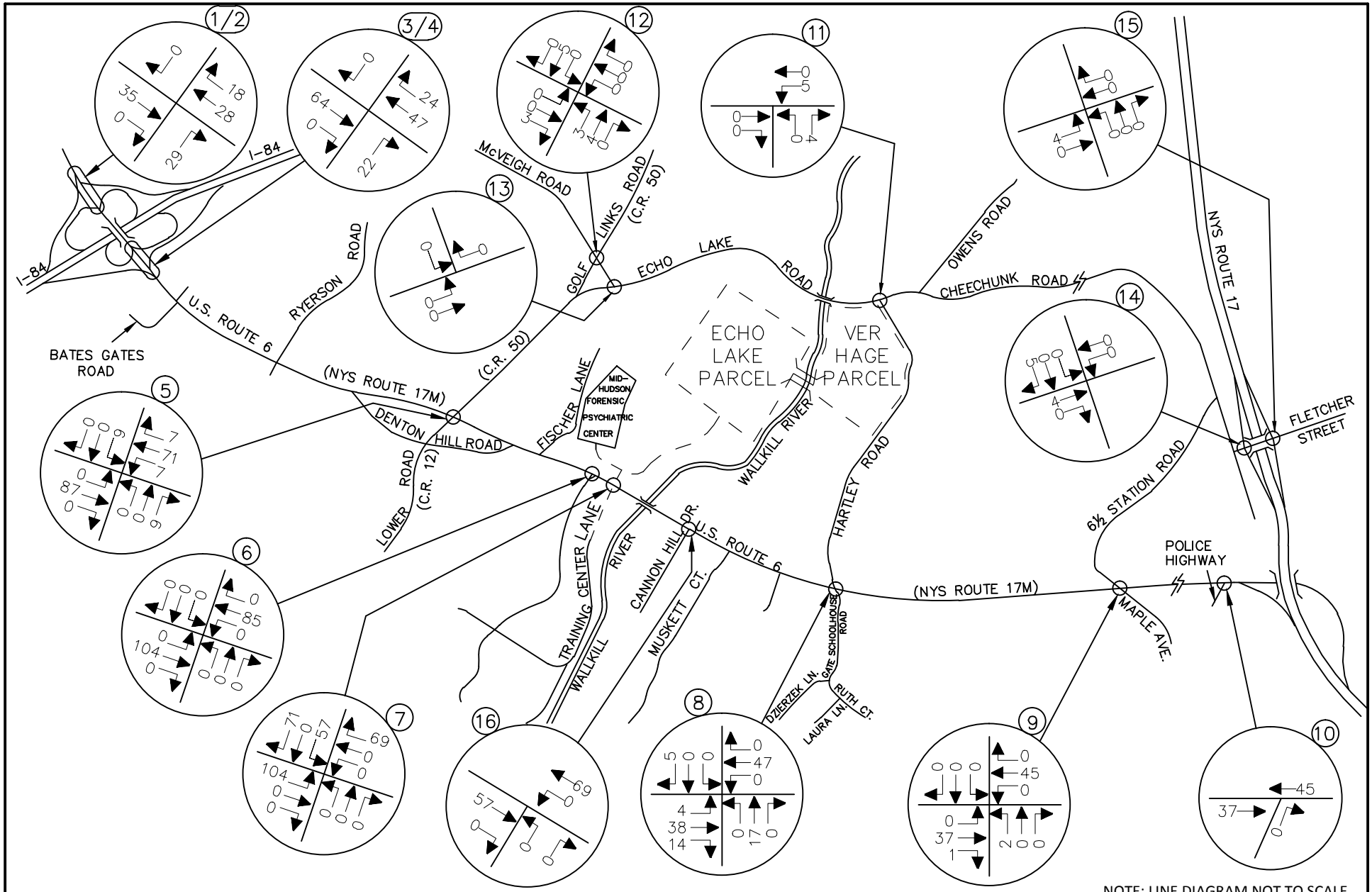
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
43	



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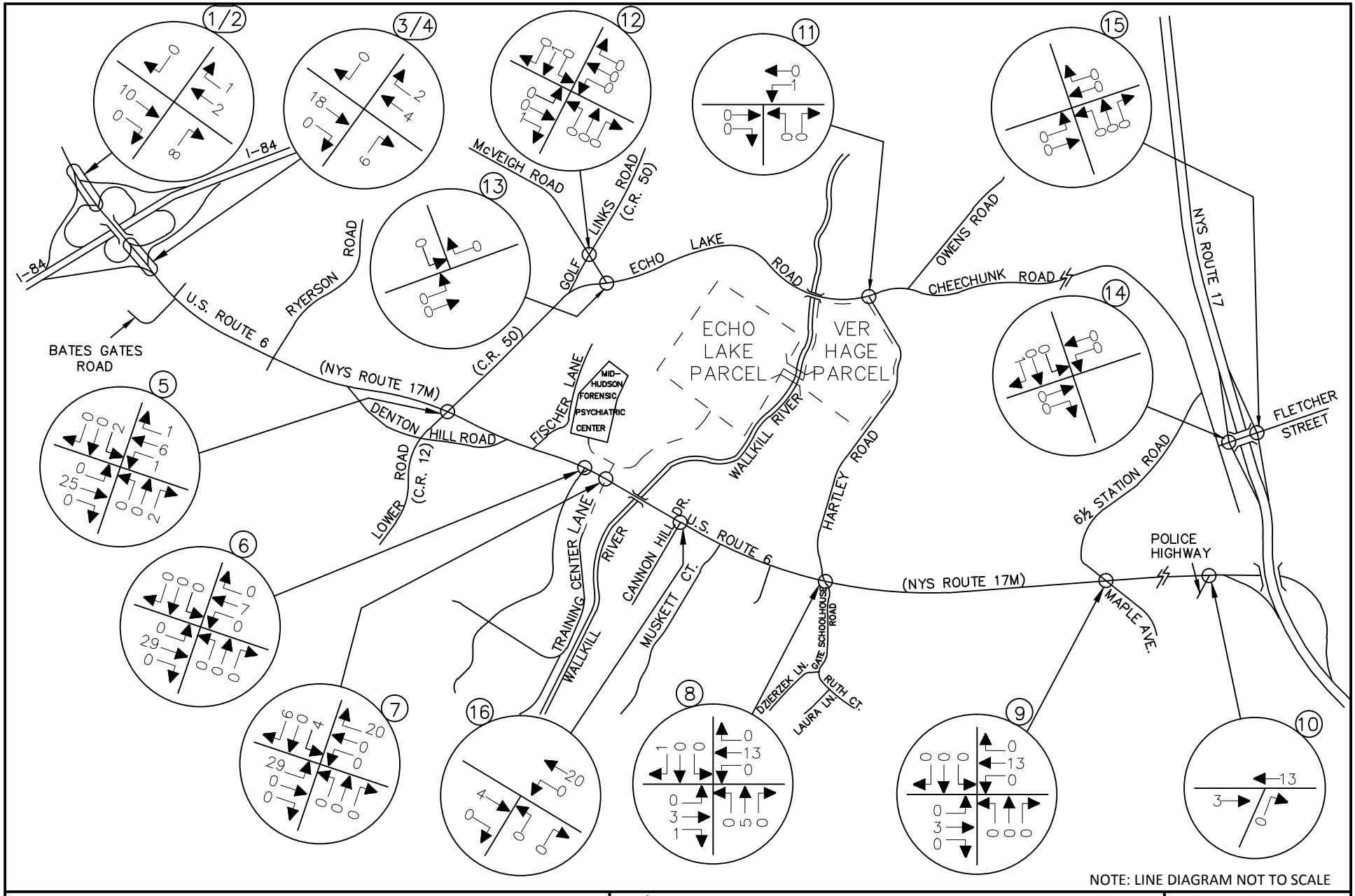
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
44	



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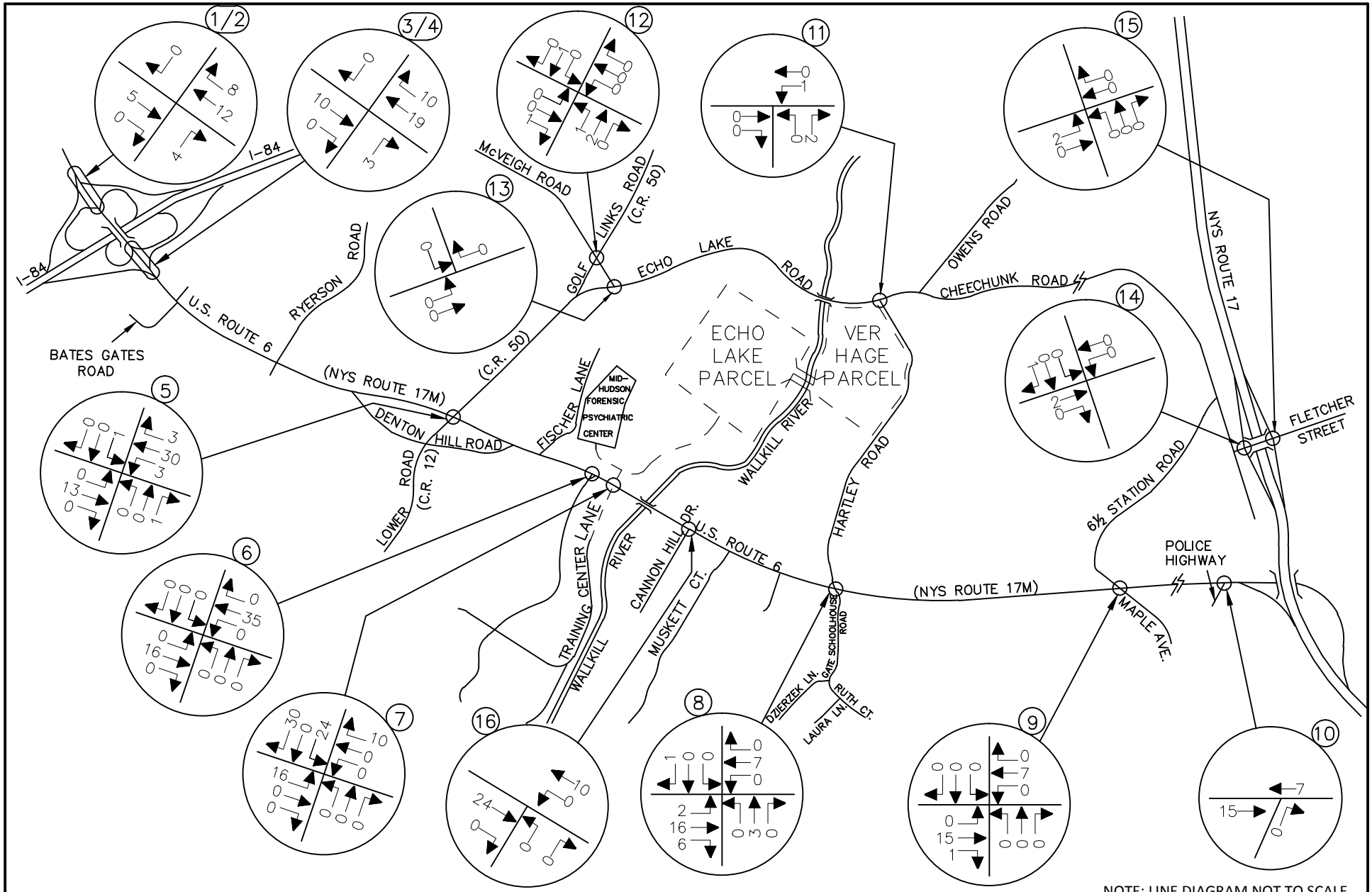
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
45	



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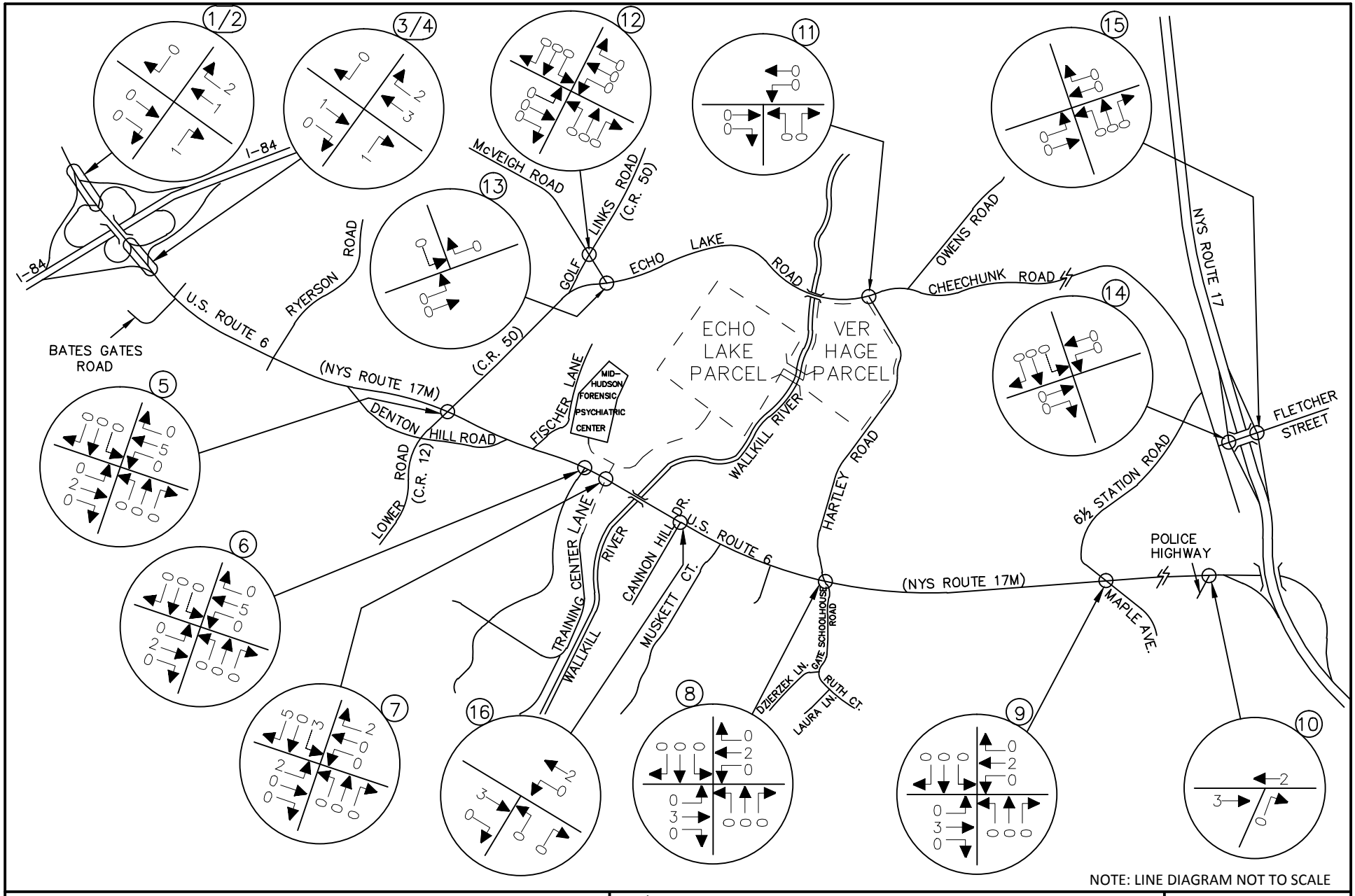
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
46	



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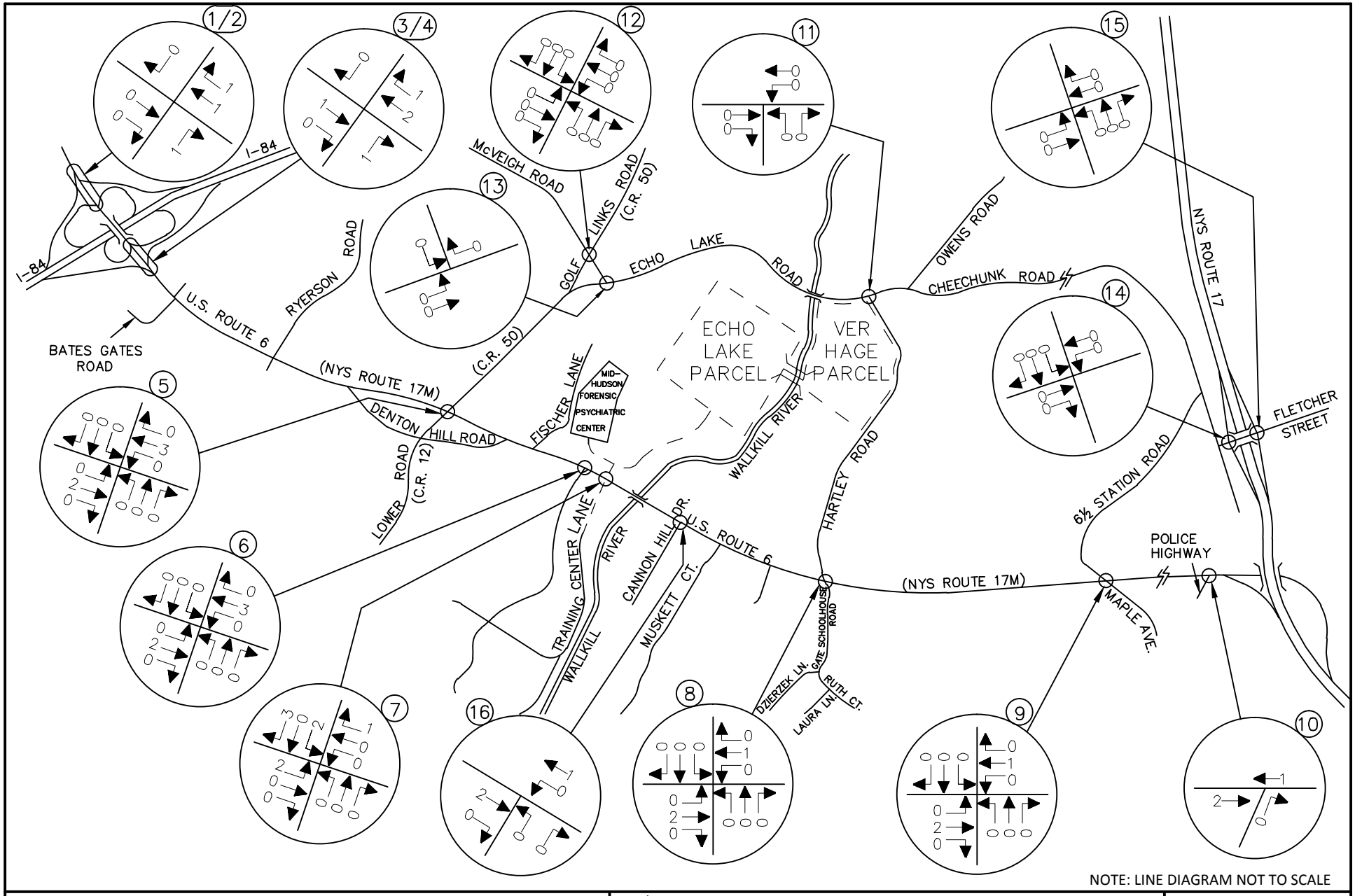
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
47	



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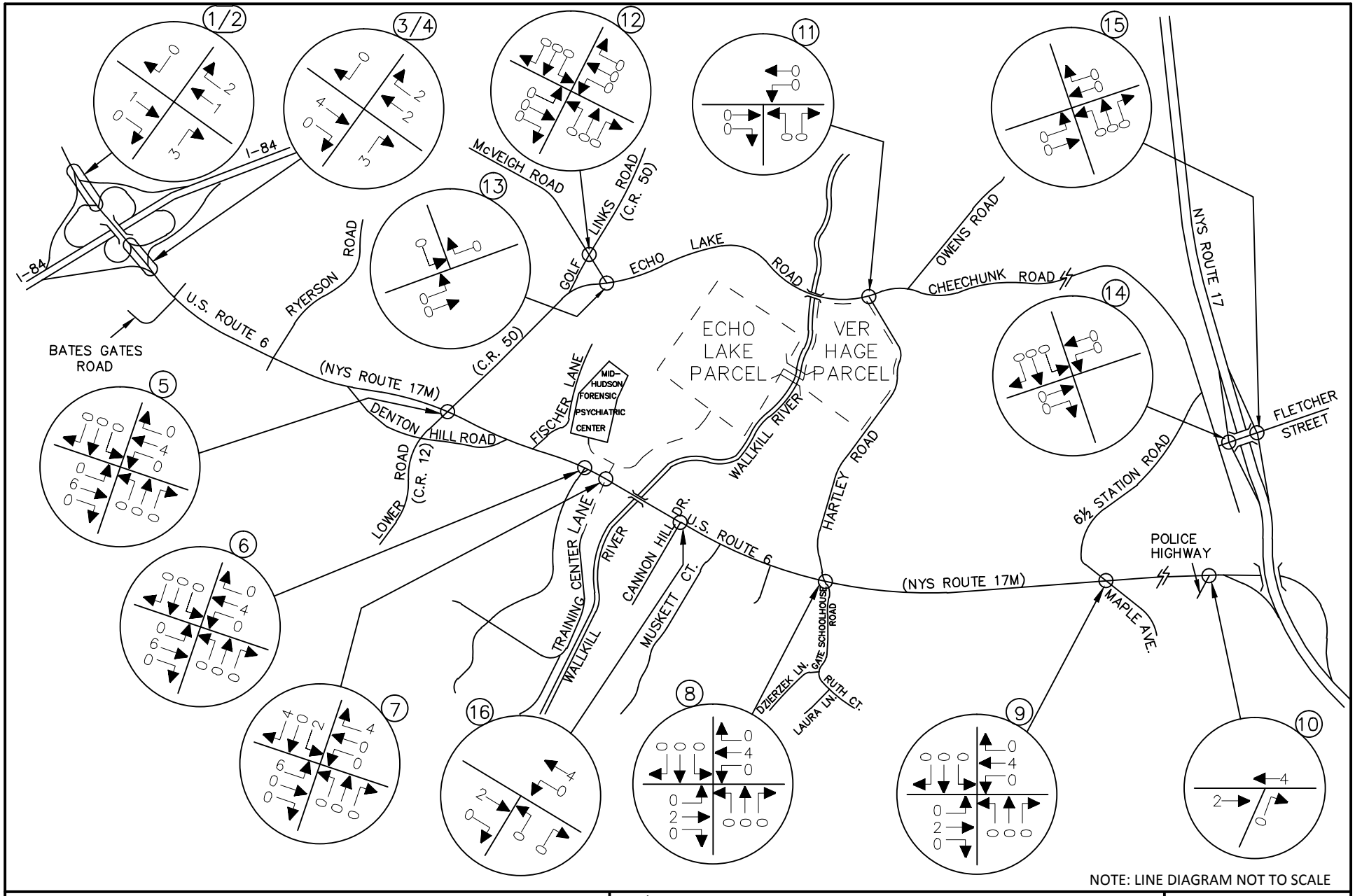
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
48	



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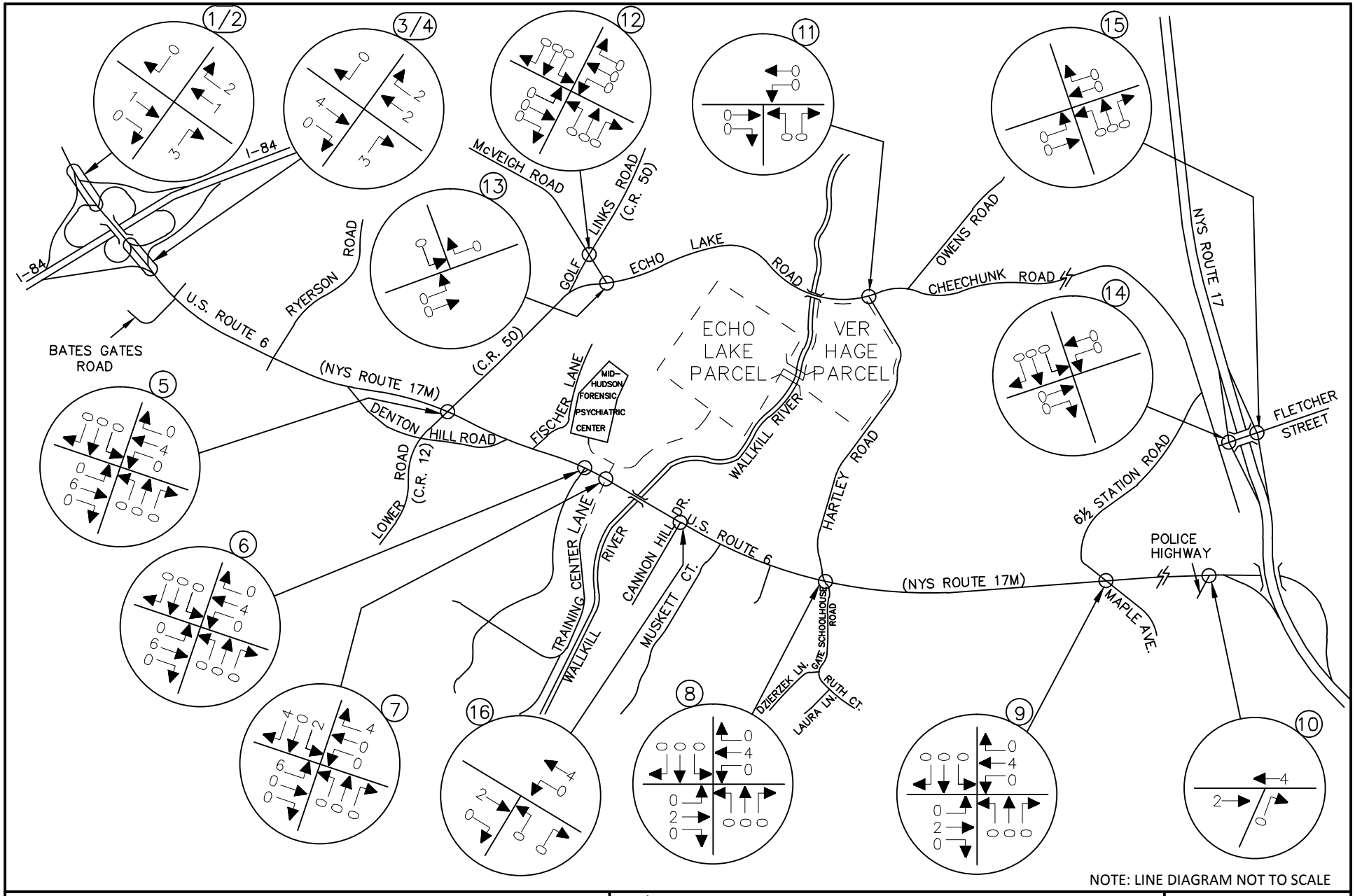
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
49	



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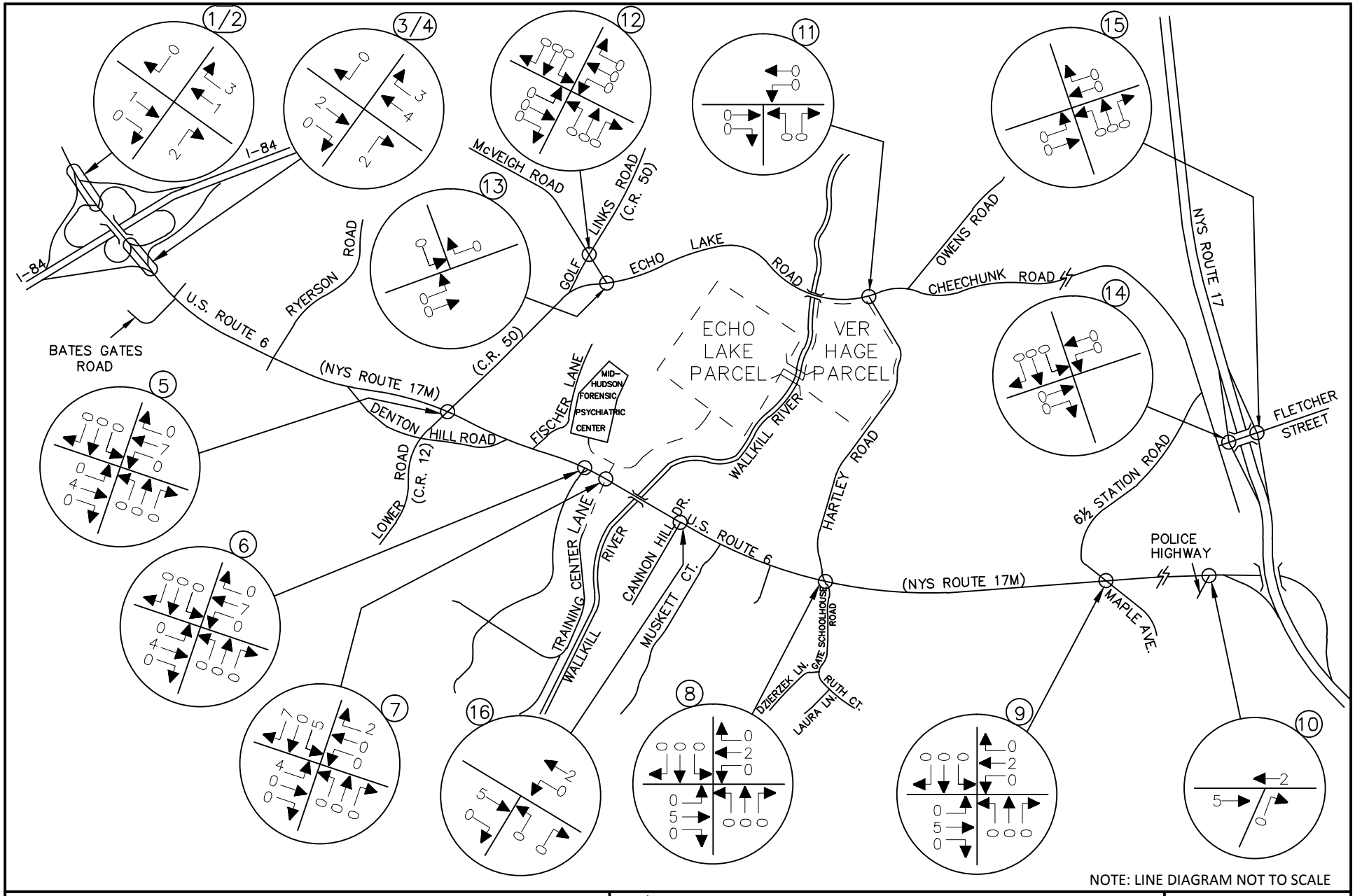
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
50	



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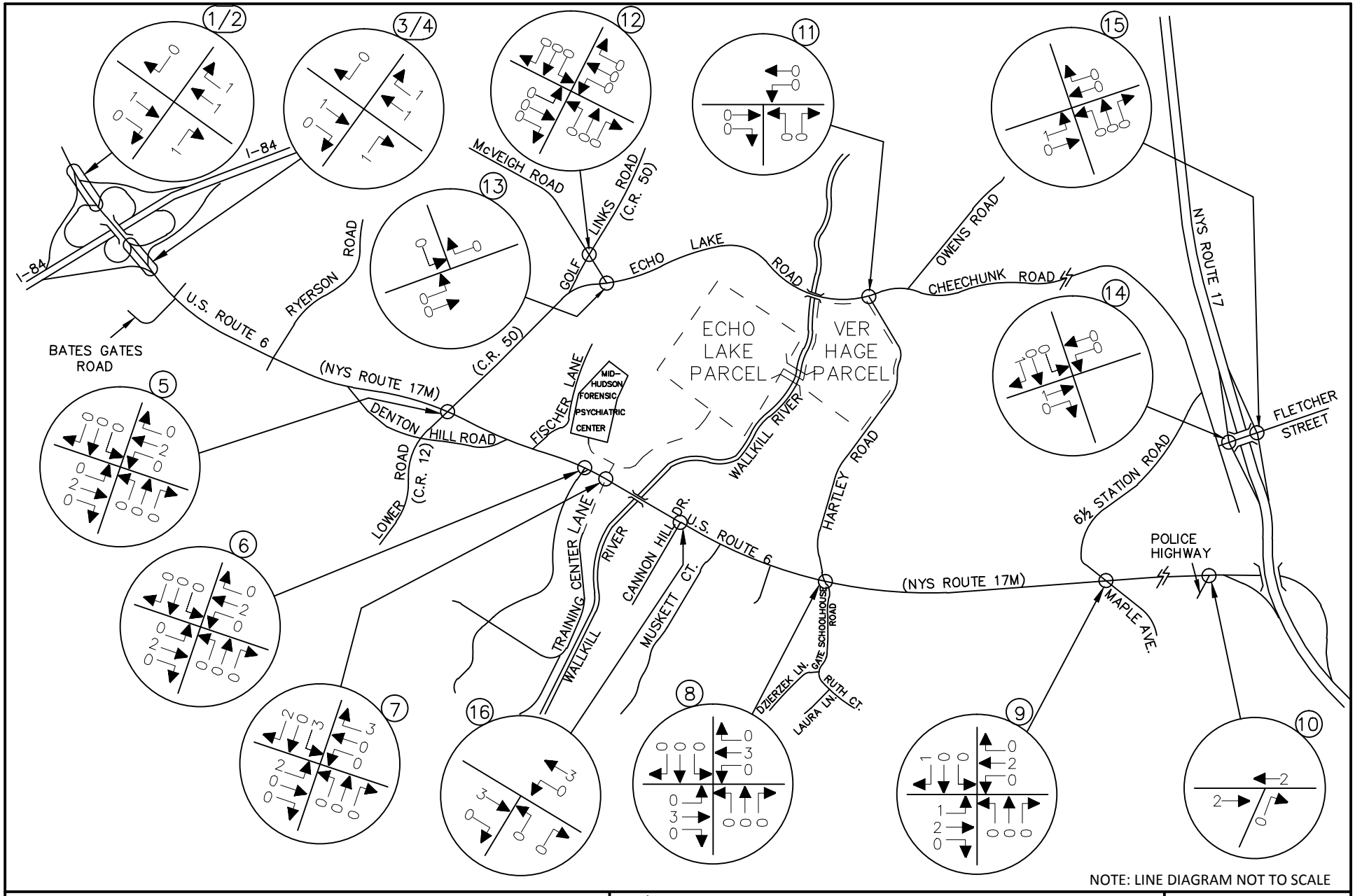
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
51	



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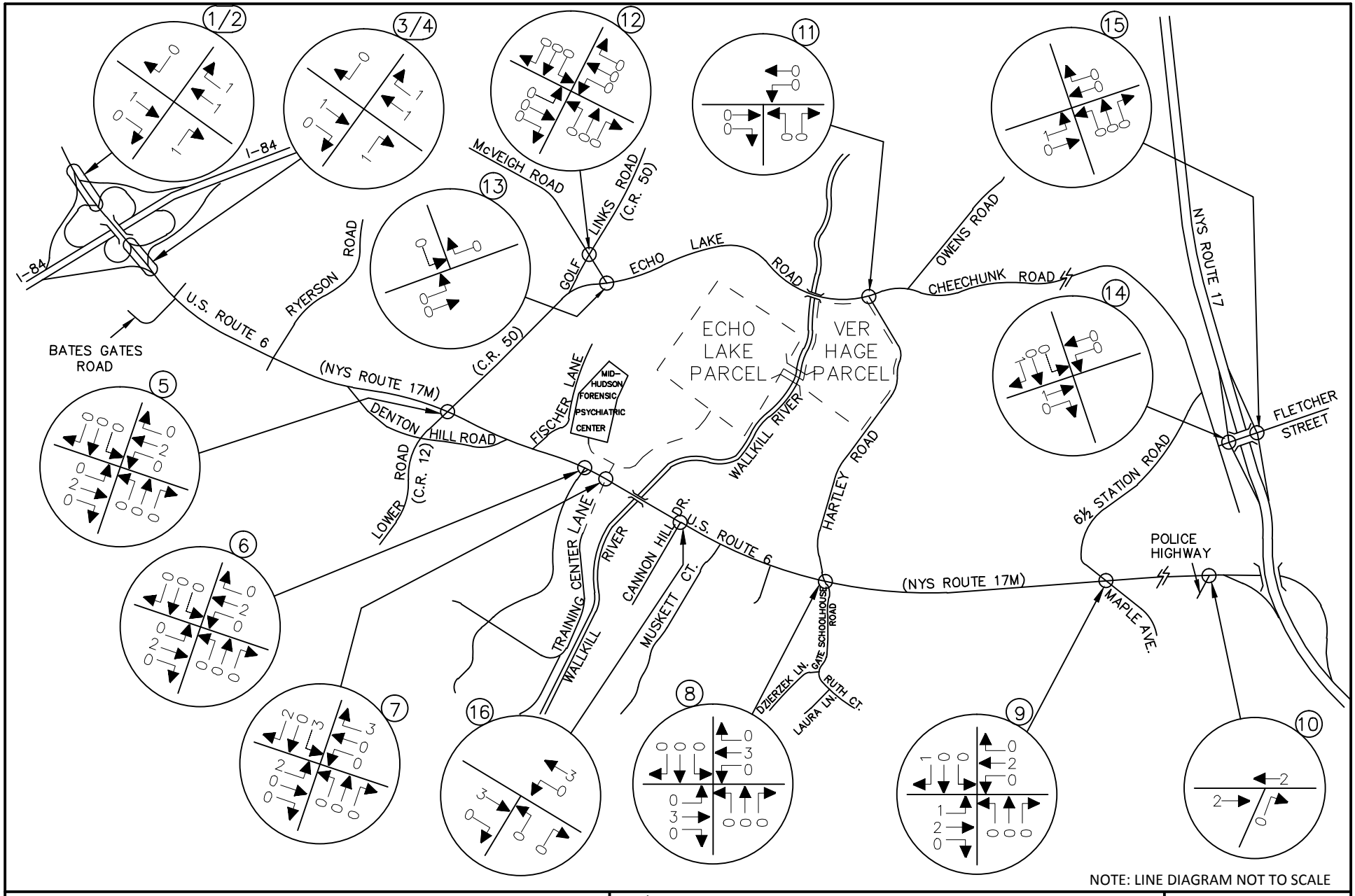
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
52	



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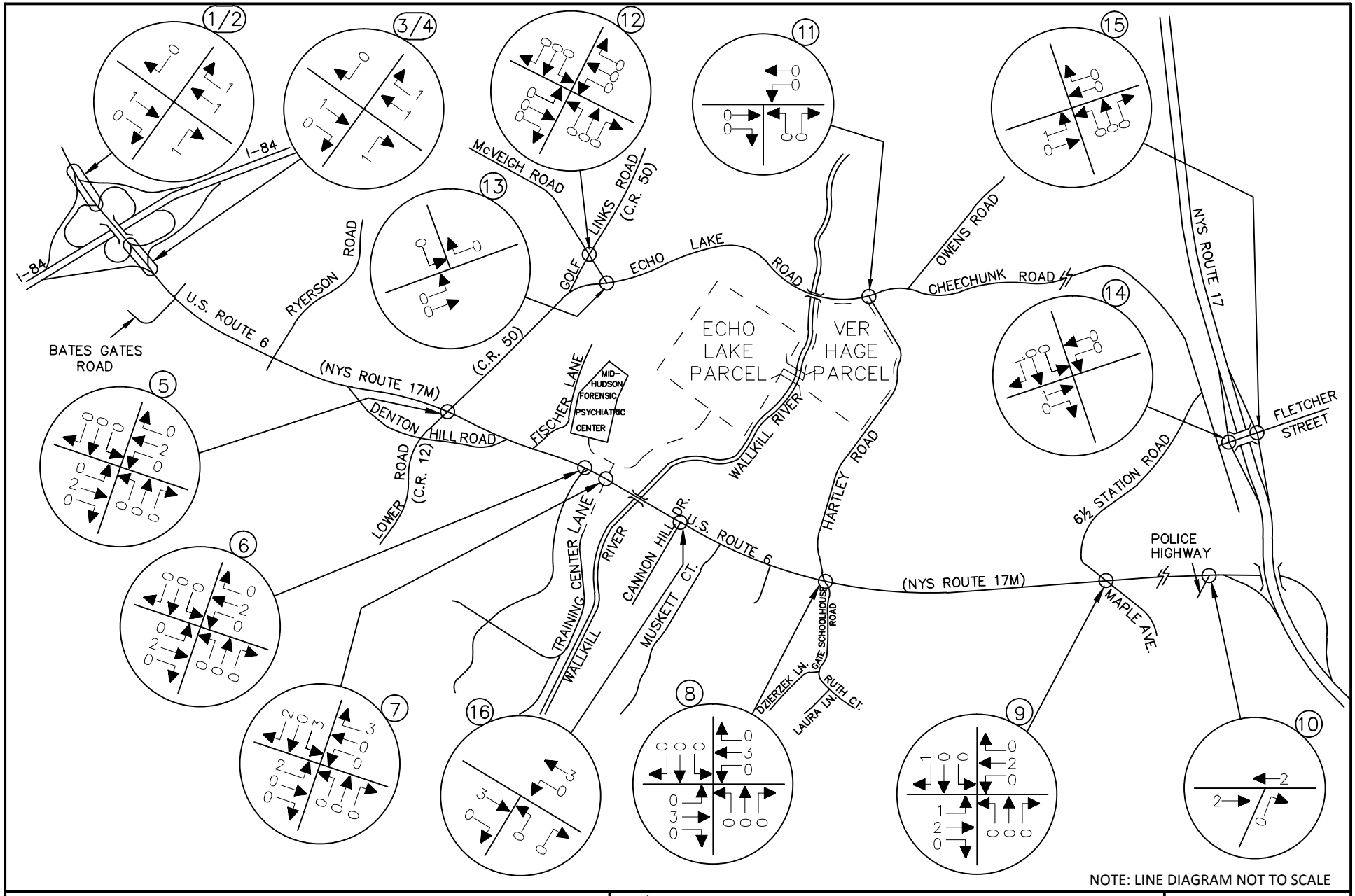
SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
53	



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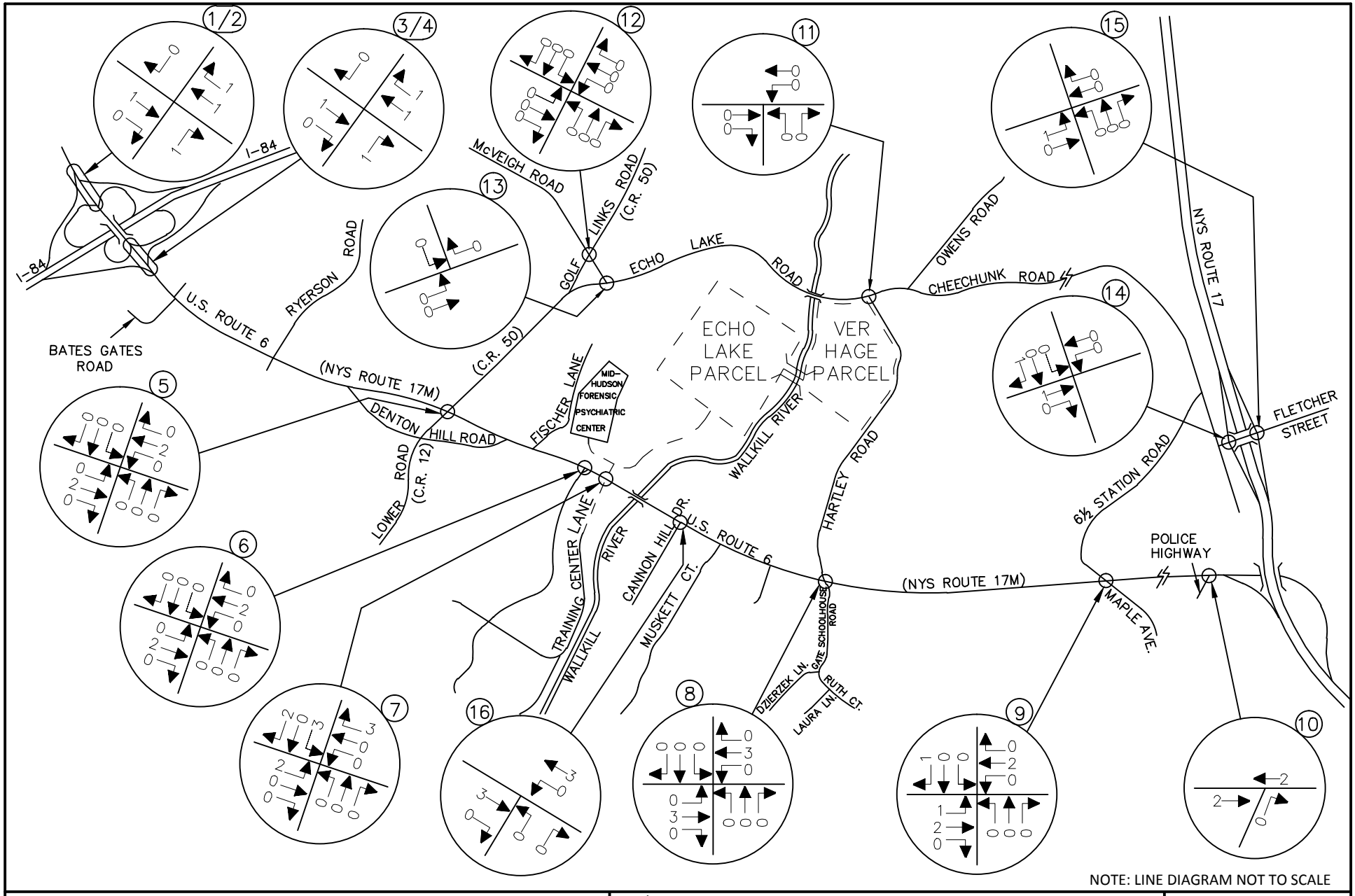
SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
54	



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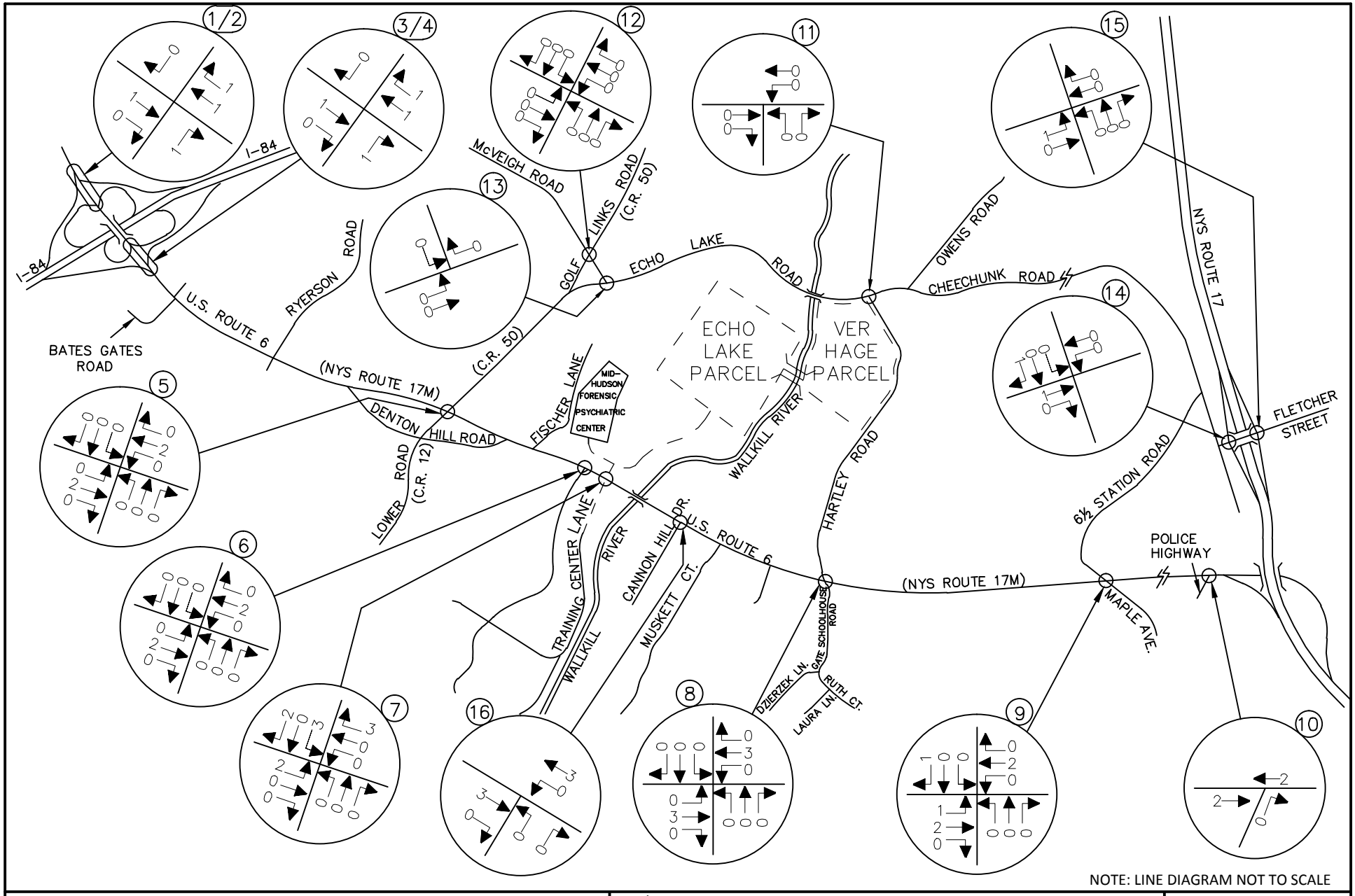
SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
55	



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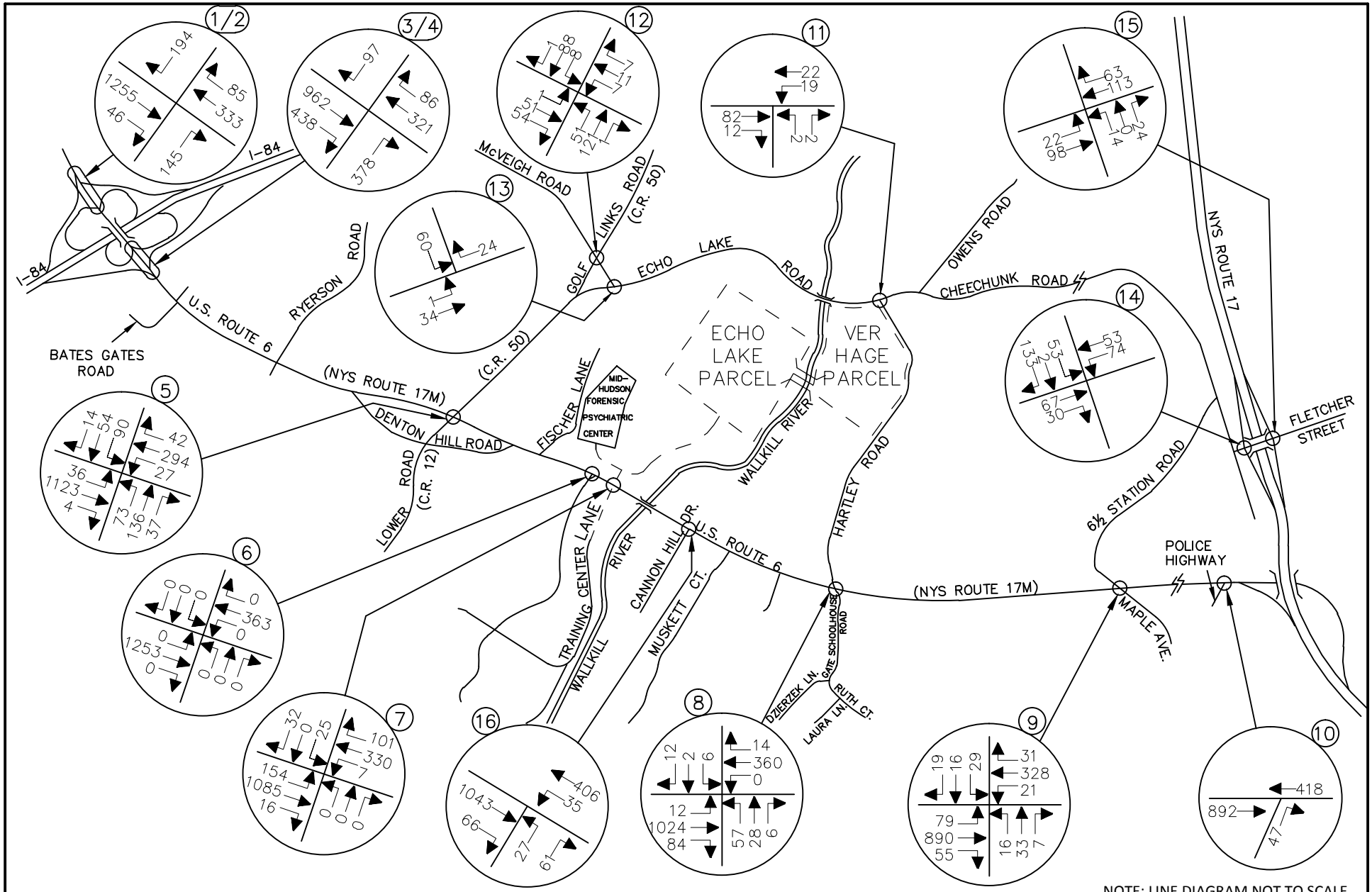
SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
56	



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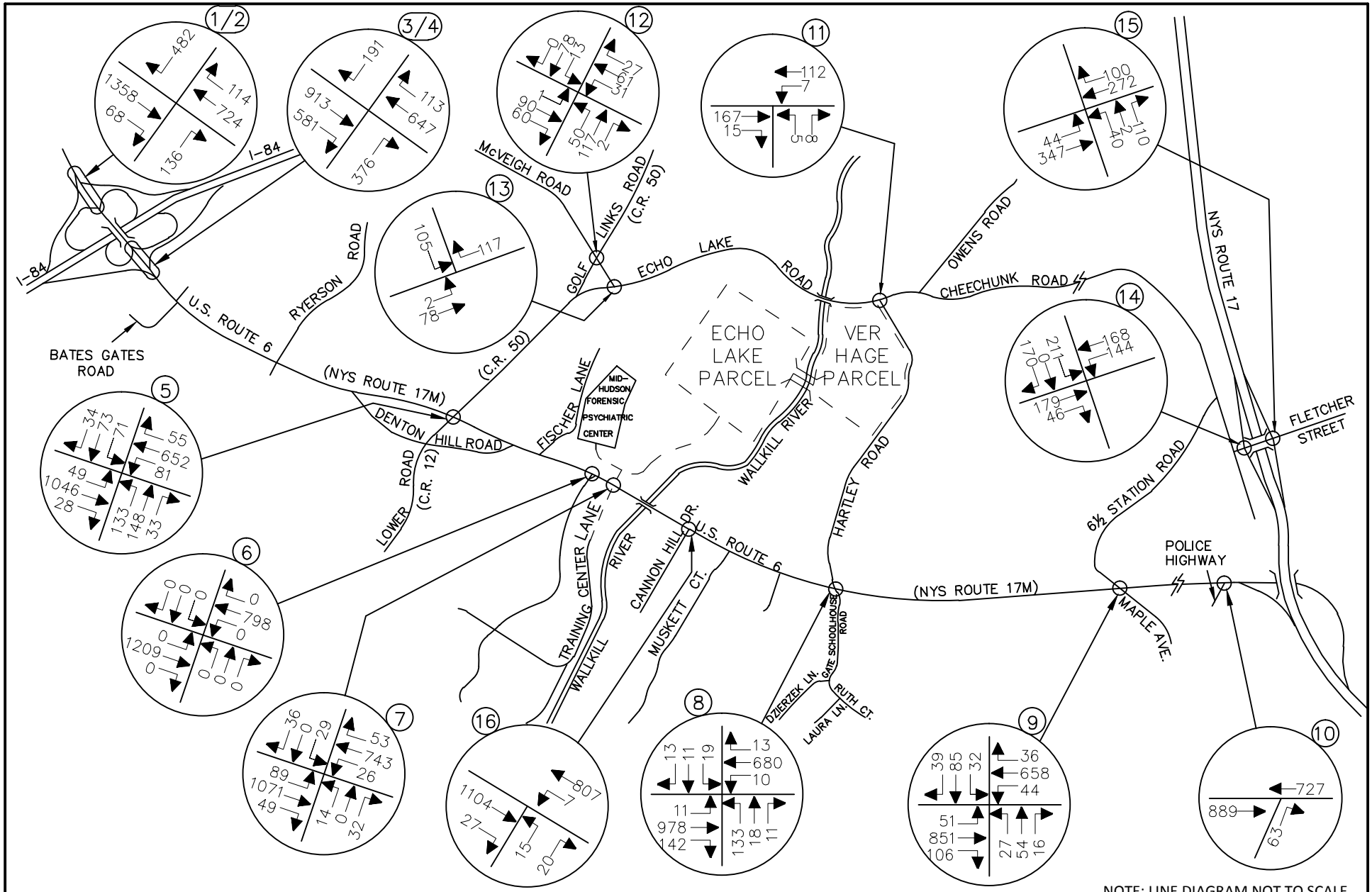
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
57	



NOTE: LINE DIAGRAM NOT TO SCALE

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State of N.Y. Certificate of Authorization: 0008671
New Jersey New York Pennsylvania Virginia
Customer Loyalty *through* Client Satisfaction

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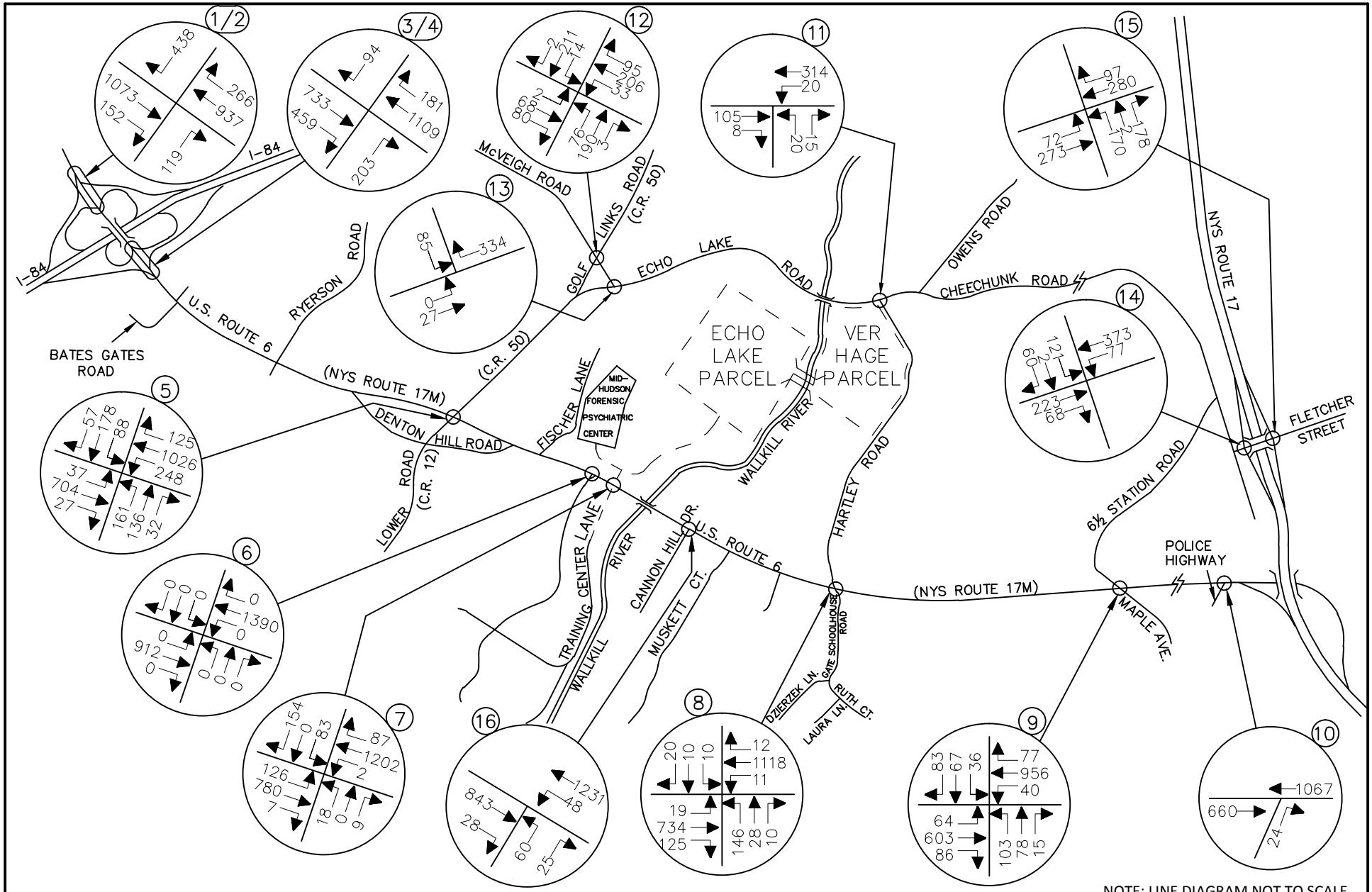
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
58	



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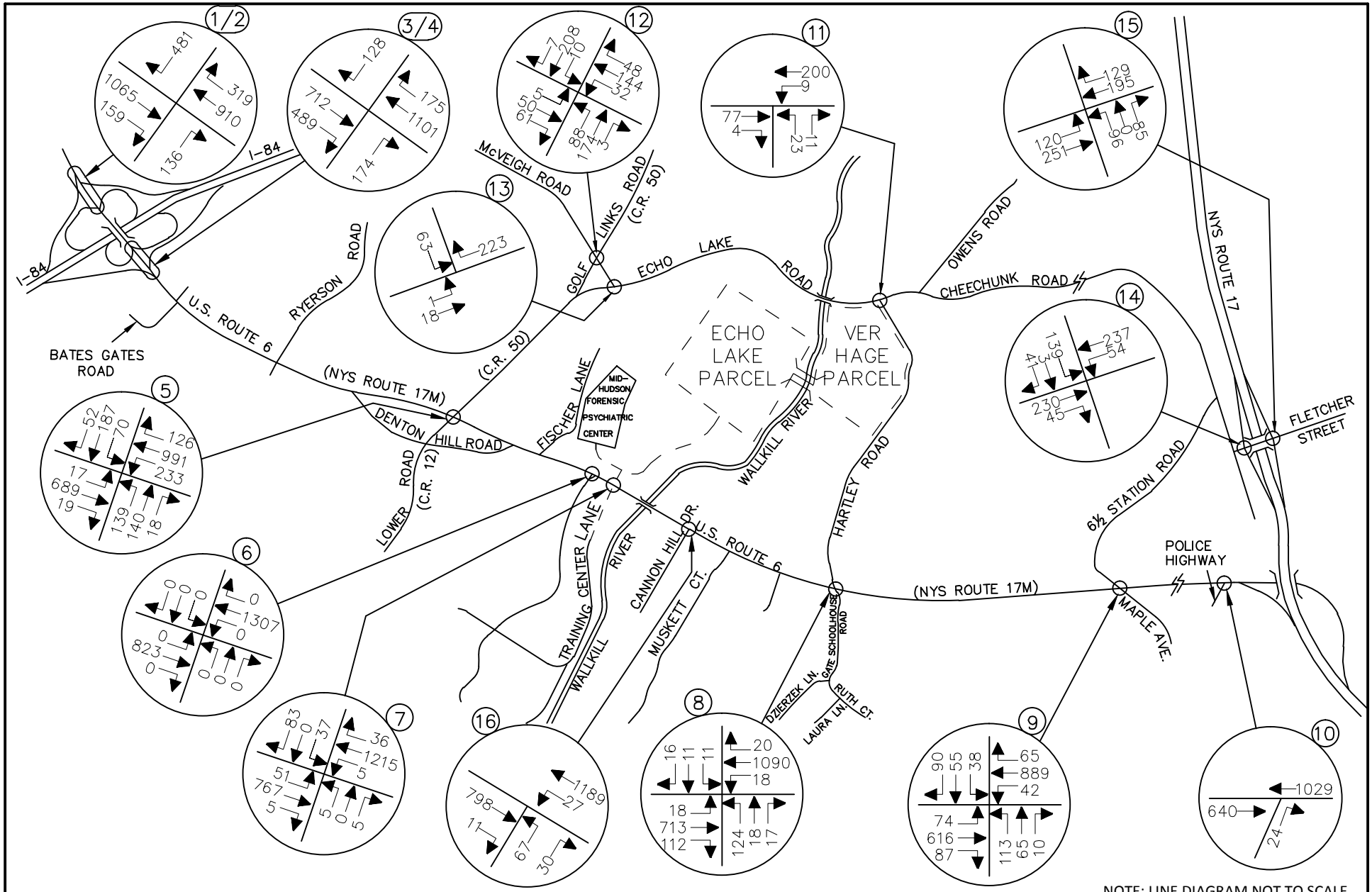
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
59	



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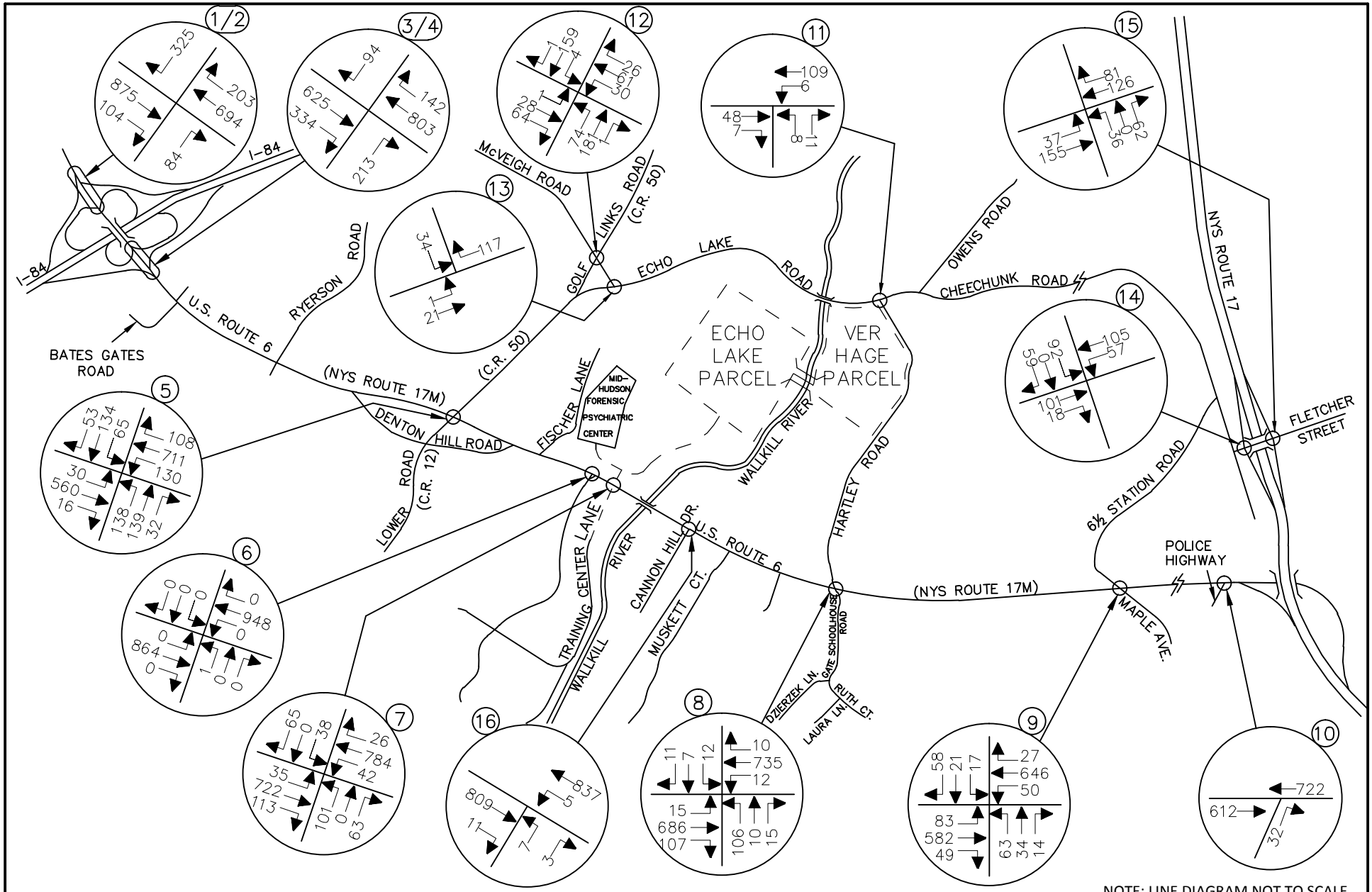
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
60	



NOTE: LINE DIAGRAM NOT TO SCALE

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AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
61	

AMY'S KITCHEN & SCIENCE OF THE SOUL

APPENDIX B

TABLES

TABLE NO. 1

HOURLY TRIP GENERATION RATES (HTGR) AND ANTICIPATED SITE GENERATED TRAFFIC VOLUMES

AMY'S KITCHEN GOSHEN, NEW YORK	ENTRY					EXIT				
	HTGR[1]	PASSENGER CARS	TRUCKS[2]	TRUCK PASSENGER CAR EQUIVALENT[3]	TOTAL	HTGR[1]	PASSENGER CARS	TRUCKS[2]	TRUCK PASSENGER CAR EQUIVALENT[3]	TOTAL
AMY'S KITCHEN PHASE II - FULL BUILD (360,000 S.F.)										
PEAK AM HOUR (6:00 AM - 7:00 AM)	0.50	176	4	8	184	0.14	34	8	16	50
PEAK AM HOUR (7:30 AM - 8:30 AM)	0.12	39	3	6	45	0.14	41	5	10	51
PEAK PM HOUR (3:00 PM - 4:00 PM)	0.52	173	10	20	193	0.42	142	6	12	154
PEAK PM HOUR (4:30 PM - 5:30 PM)	0.19	49	10	20	69	0.06	11	6	12	23
SATURDAY PEAK HOUR	0.10	26	6	12	38	0.19	59	6	12	71
VER HAGE OUT PARCEL WAREHOUSE (70,000 S.F.)										
PEAK AM HOUR (6:00 AM - 7:00 AM)	0.77	43	11	22	54	0.17	10	2	5	12
PEAK AM HOUR (7:30 AM - 8:30 AM)	0.77	43	11	22	54	0.17	10	2	5	12
PEAK PM HOUR (3:00 PM - 4:00 PM)	0.17	10	2	5	12	0.51	29	7	14	36
PEAK PM HOUR (4:30 PM - 5:30 PM)	0.17	10	2	5	12	0.51	29	7	14	36
SATURDAY PEAK HOUR	0.09	5	1	2	6	0.04	2	1	1	3
SCIENCE OF THE SOUL TYPICAL CONDITIONS										
PEAK AM HOUR (6:00 AM - 7:00 AM)	-	5	0	0	5	-	5	0	0	5
PEAK AM HOUR (7:30 AM - 8:30 AM)	-	5	0	0	5	-	5	0	0	5
PEAK PM HOUR (3:00 PM - 4:00 PM)	-	5	0	0	5	-	5	0	0	5
PEAK PM HOUR (4:30 PM - 5:30 PM)	-	5	0	0	5	-	5	0	0	5
SATURDAY PEAK HOUR	-	5	0	0	5	-	5	0	0	5
TOTAL										
PEAK AM HOUR (6:00 AM - 7:00 AM)	-	224	15	30	243	-	49	10	21	67
PEAK AM HOUR (7:30 AM - 8:30 AM)	-	87	14	28	104	-	56	7	15	68
PEAK PM HOUR (3:00 PM - 4:00 PM)	-	188	12	25	210	-	176	13	26	195
PEAK PM HOUR (4:30 PM - 5:30 PM)	-	64	12	25	86	-	45	13	26	64
SATURDAY PEAK HOUR	-	36	7	14	49	-	66	7	13	79

NOTES:

1) THE HOURLY TRIP GENERATION RATES (HTGR) FOR AMY'S KITCHEN FACILITY ARE BASED ON DATA PROVIDED BY AMY'S KITCHEN FOR THEIR EXISTING MEDFORD, OREG FACILITY (SEE TABLE S-1 FOR FURTHER DETAIL). THE HOULRY TRIP GENERATION RATES FOR THE VER HAGE OUT PARCEL WAREHOUSE ARE BASED ON DATA PROVIDED BY THE INSTUTE OF TRANSPORTATION ENGINEERS (ITE) IN THEIR PUBLICATION ENTITLED TRIP GENERATION 9TH EDITION DATED 2012 FOR LAND USE CODE - 150 - WAREHOUSING.

2) THE NUMBER OF TRUCKS FOR AMY'S KITCHEN FACILITY ARE BASED ON DATA PROVIDED BY AMY'S KITCHEN FOR THEIR EXISTING MEDFORD, OREGON FACILITY (SEE TABLE S-1 FOR FURTHER DETAIL). THE NUMBER OF TRUCKS OF THE VER HAGE OUT PARCEL WAREHOUSE ARE BASED ON ITE DATA FOR LAND USE CODE - 150 - WAREHOUSING, WHICH INDICATES THAT TYPICAL TRUCK GENERATION FOR A WAREHOUSE IS APPROXIMATELY 20% OF THE TOTAL SITE GENERATION.

3) "TRUCK PASSENGER CAR EQUIVALENT" ACCOUNTS FOR EACH TRUCK TRIP AS TWO PASSENGER CARS. THE TOTAL TRAFFIC VOLUMES HOWEVER ARE BASED ON THE ACTUAL NUMBER OF TRUCKS AND THE % HEAVY VEHICLE FACTORS IN THE TRAFFIC ANALYSIS HAS BEEN ADJUSTED TO REFLECT THIS.

4) TYPICAL OPERATION OF SCIENCE OF THE SOUL CONSISTS OF 5-10 PEOPLE ON SITE EACH DAY FOR TYPICAL DAILY MAINTENANCEACTIVITIES. SOME OF THESE PEOPLE MAY LIVE AT THE SITE FULL TIME.

TABLE S-1

EXISTING AMY'S KITCHEN FACILITY - MEDFORD, OREGON
EMPLOYEE SHIFT TIMES

	ENTRY		EXIT		HOURLY ENTRY		HOURLY EXIT		TOTAL	
TIME OF DAY	PASSENGER CARS	TRUCKS	PASSENGER CARS	TRUCKS	PASSENGER CARS	TRUCKS	PASSENGER CARS	TRUCKS	PASSENGER CARS	TRUCKS
MIDNIGHT	0	0	42	0	0	0	98	0	98	0
12:30 AM	0	0	56	0						
1:00 AM	12	0	47	0	12	0	55	0	67	0
1:30 AM	0	0	8	0						
2:00 AM	7	0	0	0	7	0	1	0	8	0
2:30 AM	0	0	1	0						
3:00 AM	7	0	0	0	16	0	0	0	16	0
3:30 AM	9	0	0	0						
4:00 AM	38	0	0	0	43	0	1	0	44	0
4:30 AM	5	0	1	0						
5:00 AM	19	1	2	2	47	2	10	2	57	4
5:30 AM	28	1	8	0						
6:00 AM	108	2	1	3	176	2	34	4	210	6
6:30 AM	68	0	33	1						
7:00 AM	47	1	1	1	80	1	37	1	117	2
7:30 AM	33	0	36	0						
8:00 AM	6	1	5	2	6	2	5	2	11	4
8:30 AM	0	1	0	0						
9:00 AM	1	1	0	0	2	2	7	0	9	2
9:30 AM	1	1	7	0						
10:00 AM	0	0	0	1	0	0	0	1	0	1
10:30 AM	0	0	0	0						
11:00 AM	0	1	0	1	0	1	2	1	2	2
11:30 AM	0	0	2	0						
NOON	17	0	6	1	23	0	43	3	66	3
12:30 PM	6	0	37	2						
1:00 PM	3	0	5	0	3	3	14	1	17	4
1:30 PM	0	3	9	1						
2:00 PM	42	0	31	0	56	0	116	1	172	1
2:30 PM	14	0	85	1						
3:00 PM	102	2	92	2	173	4	142	2	315	6
3:30 PM	71	2	50	0						
4:00 PM	21	2	33	1	68	5	38	2	106	7
4:30 PM	47	3	5	1						
5:00 PM	2	1	6	1	2	2	7	1	9	3
5:30 PM	0	1	1	0						
6:00 PM	1	0	10	3	1	1	10	4	11	5
6:30 PM	0	1	0	1						
7:00 PM	0	2	0	3	0	2	0	3	0	5
7:30 PM	0	0	0	0						
8:00 PM	1	0	0	0	3	0	0	0	3	0
8:30 PM	2	0	0	0						
9:00 PM	0	0	23	0	0	0	26	0	26	0
9:30 PM	0	0	3	0						
10:00 PM	33	0	12	0	41	0	40	0	81	0
10:30 PM	8	0	28	0						
11:00 PM	37	0	10	0	37	0	92	0	129	0
11:30 PM	0	0	82	0						
TOTAL	**796**	**27**	**778**	**28**	**823**		**806**		**1629**	

NOTES:

1) THE ABOVE SUMMARY IS BASED ON THE TOTAL NUMBER OF EMPLOYEES BY SHIFT START AND END TIMES AT THE EXISTING MEDFORD, OR AMY'S KITCHEN FACILITY.
2) THE SUMMARY DOES NOT INCLUDE ANY CREDIT FOR CARPOOLING OR OTHER RIDE SHARING THAT MAY OCCUR AT THAT FACILITY.

TABLE NO. T-1

CAMPARISON OF EXISTING TRAFFIC VOLUMES TO AMY'S KITCHEN TRIP GENERATION

Time Period		NYS Route 17M 2014 Existing Traffic Volumes		Number of School Buses Observed along NYS Route 17M		Amy's Kitchen Anticipated Trip Generation	
		EB	WB	EB	WB	ENTRY	EXIT
AM PEAK PERIOD							
6:00 AM	6:30 AM	503	89	-	-	110	4
6:30 AM	7:00 AM	522	148	6	9	68	34
7:00 AM	7:30 AM	505	218	7	9	48	2
7:30 AM	8:00 AM	541	263	6	8	33	36
8:00 AM	8:30 AM	520	285	5	19	7	7
8:30 AM	9:00 AM	437	345	11	12	0	1
PM PEAK PERIOD							
2:30 PM	3:00 PM	373	494	-	-	15	85
3:00 PM	3:30 PM	393	503	12	6	105	93
3:30 PM	4:00 PM	340	495	7	7	73	52
4:00 PM	4:30 PM	306	546	4	7	24	34
4:30 PM	5:00 PM	343	546	2	0	50	6
5:00 PM	5:30 PM	333	616	1	0	3	7
5:30 PM	6:00 PM	253	566	-	-	1	1

Notes:

1) The 2014 Existing Traffic Volumes are based on ATR Machine Count data collected by Maser Consulting, P.A. on Thursday June 26, 2014 along NYS Route 17M east of Training Center Lane and the proposed Amy's Kitchen Site Access location.

2) The Number of School Buses Observed along NYS Route 17M is based on Travel Time Run data collected by Maser Consulting, P.A. on June 18, 2014 during the AM and PM Peak Periods as summarized in Tables TT-1 and TT-2.

3) The Amy's Kitchen Anticipated Trip Generation is based on shift data provided by Amy's Kitchen based on there existing Medford, Oregon facility and the expected operation of the proposed facility.

TABLE TT-1
SUMMARY OF WEEKDAY AM TRAVEL TIME RUNS ALONG NYS ROUTE 17M

Trip No.	Direction	Start Time	End Time	Total Trip Duration (minutes)	Number of Stops[3]	Number of School Buses[4]
1	WB	6:30 AM	6:36 AM	06:00	1	3
	EB	6:37 AM	6:44 AM	07:00	2	1
2	WB	6:45 AM	6:52 AM	07:00	2	6
	EB	6:53 AM	7:00 AM	07:00	1	5
3	WB	7:01 AM	7:07 AM	06:00	0	5
	EB	7:08 AM	7:14 AM	06:00	1	4
4	WB	7:15 AM	7:22 AM	07:00	1	4
	EB	7:23 AM	7:29 AM	06:00	1	3
5	WB	7:31 AM	7:38 AM	07:00	3	5
	EB	7:40 AM	7:49 AM	09:00	3	5
6	WB	7:53 AM	8:01 AM	08:00	4	3
	EB	8:02 AM	8:10 AM	08:00	2	1
7	WB	8:11 AM	8:18 AM	07:00	2	13
	EB	8:19 AM	8:28 AM	09:00	3	3
8	WB	8:30 AM	8:36 AM	06:00	4	6
	EB	8:38 AM	8:45 AM	07:00	3	6
9	WB	8:46 AM	8:54 AM	08:00	3	6
	EB	8:55 AM	9:01 AM	06:00	2	5
AVERAGE	**WB**	**-**	**-**	**06:53**	**2**	**6**
	EB	**-**	**-**	**07:13**	**2**	**4**

NOTES:

1) WEEKDAY AM TRAVEL TIME RUN DATA WAS COLLECTED ON WEDNESDAY JUNE 18, 2014 WHEN SCHOOLS WERE IN SESSION BETWEEN THE HOURS OF 6:30 AM AND 9:00 AM.

2) TRAVEL TIME RUNS WERE RECORDED BEGINNING IMMEDIATELY EAST OF 6 1/2 STATION ROAD AND FINISHING AT THE WESTBOUND I-84 RAMP INTERSECTION FOR THE NYS ROUTE 17M WESTBOUND DIRECTION AND SIMILARLY BEGINNING AT THE WESTBOUND I-84 RAMP INTERSECTION AND FINISHING IMMEDIATELY EAST OF 6 1/2 STATION ROAD FOR THE NYS ROUTE 17M EASTBOUND DIRECTION.

3) NUMBER OF STOPS INCLUDES STOPS AT RED LIGHTS, STOPS FOR TURNING VEHICLES AND SCHOOL BUS STOPS ALONG NYS ROUTE 17M.

4) NUMBER OF SCHOOL BUSES INCLUDES THE TOTAL NUMBER OF BUSES ENCOUNTERED TRAVEL IN EITHER DIRECTION ALONG NYS ROUTE 17M DURING EACH TRIP.

TABLE TT-2
SUMMARY OF WEEKDAY PM TRAVEL TIME RUNS ALONG NYS ROUTE 17M

Trip No.	Direction	Start Time	End Time	Total Trip Duration (minutes)	Number of Stops[3]	Number of School Buses[4]
1	EB	2:50:28 PM	2:55:47 PM	05:19	2	9
	WB	2:59:29 PM	3:06:02 PM	06:33	2	4
2	EB	3:07:00 PM	3:14:51 PM	07:51	5	3
	WB	3:15:45 PM	3:22:34 PM	06:49	2	2
3	EB	3:23:30 PM	3:31:17 PM	07:47	2	3
	WB	3:33:28 PM	3:42:28 PM	09:00	1	4
4	EB	3:45:58 PM	3:52:21 PM	06:23	2	4
	WB	3:53:29 PM	4:00:54 PM	07:25	3	3
5	EB	4:02:03 PM	4:08:47 PM	06:44	3	0
	WB	4:09:56 PM	4:17:21 PM	07:25	1	6
6	EB	4:18:51 PM	4:25:32 PM	06:41	2	4
	WB	4:27:42 PM	4:35:05 PM	07:23	3	1
7	EB	4:36:50 PM	4:43:00 PM	06:10	2	1
	WB	4:43:48 PM	4:50:16 PM	06:28	1	0
8	EB	4:51:45 PM	4:59:00 PM	07:15	2	1
	WB	4:59:34 PM	5:06:35 PM	07:01	2	0
9	EB	5:08:34 PM	5:14:32 PM	05:58	1	0
	WB	5:15:08 PM	5:21:41 PM	06:33	0	0
AVERAGE	**EB**	**-**	**-**	**06:46**	**2**	**3**
	WB	**-**	**-**	**07:15**	**2**	**2**

NOTES:

1) WEEKDAY PM TRAVEL TIME RUN DATA WAS COLLECTED ON WEDNESDAY JUNE 18, 2014 WHEN SCHOOLS WERE IN SESSION BETWEEN THE HOURS OF 2:30 PM AND 5:30 PM.

2) TRAVEL TIME RUNS WERE RECORDED BEGINNING IMMEDIATELY EAST OF 6 1/2 STATION ROAD AND FINISHING AT THE WESTBOUND I-84 RAMP INTERSECTION FOR THE NYS ROUTE 17M WESTBOUND DIRECTION AND SIMILARLY BEGINNING AT THE WESTBOUND I-84 RAMP INTERSECTION AND FINISHING IMMEDIATELY EAST OF 6 1/2 STATION ROAD FOR THE NYS ROUTE 17M EASTBOUND DIRECTION.

3) NUMBER OF STOPS INCLUDES STOPS AT RED LIGHTS, STOPS FOR TURNING VEHICLES AND SCHOOL BUS STOPS ALONG NYS ROUTE 17M.

4) NUMBER OF SCHOOL BUSES INCLUDES THE TOTAL NUMBER OF BUSES ENCOUNTERED TRAVEL IN EITHER DIRECTION ALONG NYS ROUTE 17M DURING EACH TRIP.

AMY'S KITCHEN & SCIENCE OF THE SOUL

LEVEL OF SERVICE AND QUEUE SUMMARY TABLES

TABLE NO. 2

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HOUR OF AMY'S GENERATION (6:00 AM - 7:00 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.22	B	10.3	0.24	B	10.6	0.25	B	10.7	0.1
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	B	10.4	-	B	11.4	-	B	11.9	0.5
	NYS ROUTE 17M EB WEAVE			0.25	A	9.2	0.28	A	10.3	0.30	A	11.1	0.8
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	B	13.1	-	B	14.1	-	B	15.1	1.0
	NYS ROUTE 17M WB WEAVE			0.08	A	2.6	0.08	A	2.9	0.09	A	3.0	0.1
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	5.3	-	A	5.6	-	A	5.8	0.2
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.04	A	5.7	0.05	A	6.4	0.06	A	6.8	0.4
			TR	0.86	C	20.9	0.98	D	37.3	1.11	F	78.9	41.6
	ROUTE 6/17M	WB	L	0.11	B	12.9	0.19	B	19.0	0.24	B	20.0	1.0
			T	0.15	A	7.0	0.17	A	8.1	0.19	A	8.5	0.4
			TR	0.15	A	7.0	0.17	A	8.1	0.19	A	8.6	0.5
	LOWER ROAD (C.R. 12)	NB	LTR	0.56	C	31.0	0.61	C	31.3	0.62	C	31.3	0.0
	C.R. 50	SB	LTR	0.38	C	29.5	0.45	C	29.7	0.48	C	30.0	0.3
		OVERALL		**-**	**C**	**20.0**	**-**	**C**	**30.0**	**-**	**D**	**54.8**	24.8
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.05	A	5.6	-0.8
			TR	-	-	-	-	-	-	0.98	D	38.3	1.0
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.25	C	25.4	6.4
			T	-	-	-	-	-	-	0.17	A	7.1	-1.0
			TR	-	-	-	-	-	-	0.17	A	7.1	-1.0
	LOWER ROAD (C.R. 12)	NB	LTR	-	-	-	-	-	-	0.78	D	51.7	20.4
	C.R. 50	SB	LTR	-	-	-	-	-	-	0.67	D	46.2	16.5
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**34.4**	4.4

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

TABLE NO. 2 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HOUR OF AMY'S GENERATION (6:00 AM - 7:00 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER	**UNSIGNALIZED**											
	ROUTE 6/17M	EB	L	0.01	A	7.9	0.01	A	8.0	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.02	C	21.8	0.02	D	26.6	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.01	B	12.8	0.02	B	13.9	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.00	A	0.0	0.00	A	0.0	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.23	A	3.7	-
			T	-	-	-	-	-	-	0.90	B	18.7	-
			R	-	-	-	-	-	-	0.02	A	3.2	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.05	B	13.1	-
			T	-	-	-	-	-	-	0.32	A	6.1	-
			R	-	-	-	-	-	-	0.11	A	4.8	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.00	A	0.0	-
			R	-	-	-	-	-	-	0.00	A	0.0	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.17	D	37.3	-
			R	-	-	-	-	-	-	0.42	D	37.9	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**14.7**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 2 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HOUR OF AMY'S GENERATION (6:00 AM - 7:00 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.80	A	6.7	0.85	A	9.6	0.87	B	11.4	1.8
	ROUTE 6/17M	WB	LTR	0.26	A	3.3	0.27	A	3.0	0.33	A	3.3	0.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.19	B	17.7	0.25	C	21.7	0.33	C	23.4	1.7
	HARTLEY ROAD	SB	LTR	0.05	B	17.5	0.06	C	21.1	0.10	C	22.8	1.7
		OVERALL		**-**	**A**	**6.6**	**-**	**A**	**8.9**	**-**	**B**	**10.3**	1.4
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.09	A	9.8	0.10	A	9.9	0.10	B	11.2	1.3
			TR	0.90	B	12.6	0.92	B	14.9	0.92	B	15.8	0.9
	ROUTE 6/17M	WB	L	0.09	C	23.0	0.11	C	26.4	0.12	C	27.1	0.7
			TR	0.74	C	20.7	0.80	C	23.7	0.83	C	23.1	-0.6
	6 1/2 STATION ROAD	NB	LTR	0.22	C	22.5	0.22	C	25.7	0.23	C	26.3	0.6
	MAPLE AVENUE	SB	LTR	0.18	C	22.5	0.26	C	25.7	0.26	C	26.3	0.6
		OVERALL		**-**	**B**	**15.0**	**-**	**B**	**17.4**	**-**	**B**	**18.3**	0.9
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED** NB	R	0.13	C	16.5	0.16	C	18.3	0.16	B	18.7	0.4
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	**UNSIGNALIZED** WB	LT	0.01	A	7.5	0.01	A	7.5	0.02	A	7.5	0.0
		NB	LR	0.01	A	9.3	0.01	A	9.4	0.01	A	9.4	0.0
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.15	B	10.9	0.19	B	11.6	0.20	B	11.7	0.1
	McVEIGH ROAD	WB	LTR	0.05	B	11.7	0.06	B	12.8	0.07	B	13.0	0.2
	GOLF LINKS ROAD	NB	LTR	0.03	A	7.5	0.04	A	7.6	0.04	A	7.6	0.0
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.5	0.01	A	7.6	0.01	A	7.6	0.0
	WITH ALL-WAY STOP CONTROL[2]												
	McVEIGH ROAD	EB	LTR	-	-	-	0.04	A	8.0	0.04	A	8.1	0.1
	McVEIGH ROAD	WB	LTR	-	-	-	0.16	A	8.4	0.17	A	8.4	0.0
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.27	A	9.2	0.27	A	9.3	0.1
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.14	A	8.4	0.16	A	8.5	0.1

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE INTERSECTION OF GOLF LINKS ROAD AND MCVEIGH ROAD WILL OPERATE AT IMPROVED LEVELS OF SERVICE AS AN "ALL WAY" STOP CONTROL REGARDLESS OF THE PROPOSED PROJECT.

TABLE NO. 2 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HOUR OF AMY'S GENERATION (6:00 AM - 7:00 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	7.3	0.01	A	7.3	0.01	A	7.3	0.0
	McVEIGH ROAD	SB	L	0.09	A	9.1	0.10	A	9.2	0.10	A	9.2	0.0
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.06	A	7.6	0.07	A	7.6	0.07	A	7.6	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.27	B	10.9	0.30	B	11.4	0.31	B	11.4	0.0
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.18	B	11.5	0.18	B	11.6	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.25	B	13.0	0.27	B	13.0	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.36	B	13.5	0.38	B	13.7	0.2
		OVERALL		**-**	**-**	**-**	**-**	**B**	**12.9**	**-**	**B**	**13.0**	0.1
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.02	A	7.9	0.02	A	7.9	0.03	A	7.9	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.07	B	10.0	0.08	B	10.2	0.08	B	10.3	0.1
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.22	A	3.7	0.23	A	3.7	0.0
	FLETCHER STREET	WB	TR	-	-	-	0.37	B	13.5	0.37	B	13.5	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.08	B	10.8	0.08	B	10.8	0.0
		OVERALL		**-**	**-**	**-**	**-**	**B**	**9.7**	**-**	**B**	**9.7**	0.0
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.06	B	10.8	0.07	B	11.6	0.07	B	11.7	0.1
	CANNON HILL DRIVE	NB	LR	0.35	F	37.3	0.69	F	74.4	0.78	F	96.8	(SEE NOTE 2)

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD IMPROVE THE OPERATION OF THIS INTERSECTION AND REDUCE THIS DELAY INCREASE.

TABLE NO. 3

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HIGHWAY HOUR (7:30 AM - 8:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.71	C	22.6	0.81	D	30.4	0.82	D	31.3	0.9
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	B	11.6	-	B	12.7	-	B	12.9	0.2
	NYS ROUTE 17M EB WEAVE			0.30	A	10.5	0.33	A	11.7	0.34	B	12.1	0.4
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	B	13.2	-	B	14.2	-	B	14.7	0.5
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.17	A	6.1	0.17	A	6.2	0.1
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	8.1	-	A	8.7	-	A	8.9	0.2
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.09	A	8.4	0.12	A	9.9	0.13	B	10.2	0.3
			TR	0.97	D	40.8	1.13	F	92.9	1.20	F	119.8	26.9
	ROUTE 6/17M	WB	L	0.47	B	19.9	0.55	C	21.2	0.57	C	21.3	0.1
			T	0.36	B	11.2	0.42	B	13.6	0.44	B	14.1	0.5
			TR	0.36	B	11.2	0.42	B	13.5	0.44	B	14.0	0.5
	LOWER ROAD (C.R. 12)	NB	LTR	0.66	C	31.3	0.71	C	33.2	0.71	C	33.4	0.2
	C.R. 50	SB	LTR	0.37	C	28.3	0.42	C	28.1	0.43	C	28.1	0.0
		OVERALL		**-**	**C**	**28.6**	**-**	**D**	**52.8**	**-**	**E**	**65.4**	12.6
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.12	A	9.3	-0.6
			TR	-	-	-	-	-	-	1.09	F	75.2	-17.7
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.64	C	26.2	5.0
			T	-	-	-	-	-	-	0.40	B	12.8	-0.8
			TR	-	-	-	-	-	-	0.41	B	12.7	-0.8
	LOWER ROAD (C.R. 12)	NB	LTR	-	-	-	-	-	-	0.82	D	49.7	16.5
	C.R. 50	SB	LTR	-	-	-	-	-	-	0.50	C	34.3	6.2
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**47.6**	-5.2

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

TABLE NO. 3 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HIGHWAY HOUR (7:30 AM - 8:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER	**UNSIGNALIZED**											
	ROUTE 6/17M	EB	L	0.03	A	9.2	0.04	A	9.6	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.10	F	58.2	0.14	F	87.2	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.06	B	13.4	0.07	B	14.6	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.44	F	64.7	0.66	F	115.1	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.27	B	10.1	-
			T	-	-	-	-	-	-	0.95	C	29.4	-
			R	-	-	-	-	-	-	0.08	A	5.1	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.23	C	20.7	-
			T	-	-	-	-	-	-	0.74	B	14.8	-
			R	-	-	-	-	-	-	0.06	A	5.6	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.18	D	44.0	-
			R	-	-	-	-	-	-	0.25	C	33.7	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.39	D	44.7	-
			R	-	-	-	-	-	-	0.24	D	35.0	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**22.7**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 3 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HIGHWAY HOUR (7:30 AM - 8:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.83	B	10.1	0.90	B	17.4	0.92	C	20.6	3.2
	ROUTE 6/17M	WB	LTR	0.51	A	5.3	0.55	A	5.7	0.58	A	6.2	0.5
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.40	C	21.1	0.47	C	25.6	0.49	C	26.4	0.8
	HARTLEY ROAD	SB	LTR	0.14	C	20.1	0.16	C	24.1	0.16	C	24.6	0.5
		OVERALL		**-**	**A**	**9.5**	**-**	**B**	**14.2**	**-**	**B**	**16.1**	1.9
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												-
	ROUTE 6/17M	EB	LTR	-	-	-	-	-	-	0.92	B	19.6	2.2
	ROUTE 6/17M	WB	LTR	-	-	-	-	-	-	0.57	A	6.0	0.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	-	-	-	-	-	-	0.5	C	27.2	1.6
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.16	C	25.3	1.2
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**15.6**	1.4
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.10	B	18.8	0.11	C	21.5	0.10	C	23.6	2.1
			TR	0.92	B	15.6	0.94	C	22.3	0.98	D	36.6	14.3
	ROUTE 6/17M	WB	L	0.22	C	27.1	0.28	C	32.4	0.33	D	39.6	7.2
			TR	0.88	B	18.9	0.91	C	21.4	0.93	C	29.5	8.1
	6 1/2 STATION ROAD	NB	LTR	0.27	C	23.9	0.31	C	28.0	0.34	C	34.1	6.1
	MAPLE AVENUE	SB	LTR	0.45	C	25.1	0.51	C	29.5	0.56	D	36.0	6.5
		OVERALL		**-**	**B**	**18.3**	**-**	**C**	**23.1**	**-**	**C**	**33.7**	10.6
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED** NB	R	0.17	C	17.0	0.21	C	19.1	0.22	C	19.6	0.5
11	HARTLEY ROAD & ECHO LAKE ROAD & CHEECHUNK ROAD	**UNSIGNALIZED** WB	LT	0.00	A	7.7	0.00	A	7.7	0.01	A	7.7	0.0
		NB	LR	0.02	B	10.1	0.02	B	10.1	0.02	A	10.1	0.0
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.22	B	11.6	0.27	B	12.5	0.27	B	12.6	0.1
	McVEIGH ROAD	WB	LTR	0.23	B	13.4	0.29	C	15.4	0.29	C	15.6	0.2
	GOLF LINKS ROAD	NB	LTR	0.03	A	7.5	0.04	A	7.5	0.04	A	7.5	0.0
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.5	0.01	A	7.5	0.01	A	7.6	0.1
	WITH ALL-WAY STOP CONTROL[2]												
	McVEIGH ROAD	EB	LTR	-	-	-	0.19	A	9.1	0.19	A	9.1	0.0
	McVEIGH ROAD	WB	LTR	-	-	-	0.23	A	9.1	0.23	A	9.2	0.1
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.27	A	9.8	0.27	A	9.8	0.0
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.15	A	9.0	0.15	A	9.0	0.0

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE INTERSECTION OF GOLF LINKS ROAD AND MCVEIGH ROAD WILL OPERATE AT IMPROVED LEVELS OF SERVICE AS AN "ALL WAY" STOP CONTROL REGARDLESS OF THE PROPOSED PROJECT.

TABLE NO. 3 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HIGHWAY HOUR (7:30 AM - 8:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	7.5	0.01	A	7.5	0.01	A	7.5	0.0
	McVEIGH ROAD	SB	L	0.15	B	10.0	0.17	B	10.2	0.17	B	10.2	0.0
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.15	A	8.4	0.16	A	8.5	0.16	A	8.5	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	1.27	F	172.8	1.56	F	295.7	1.57	F	298.9	3.2
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.44	B	14.4	0.44	B	14.5	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.83	C	21.4	0.84	C	21.9	0.5
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.78	C	23.7	0.78	C	24.1	0.4
		OVERALL		**-**	**-**	**-**	**-**	**C**	**20.7**	**-**	**C**	**21.0**	0.3
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.05	A	8.9	0.06	A	9.1	0.07	A	9.1	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.45	C	19.7	0.53	C	23.9	0.54	C	24.2	0.3
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.90	C	24.9	0.92	C	28.2	3.3
	FLETCHER STREET	WB	TR	-	-	-	0.73	C	21.1	0.73	C	21.1	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.33	B	13.2	0.33	B	13.2	0.0
		OVERALL		**-**	**-**	**-**	**-**	**C**	**21.4**	**-**	**C**	**22.8**	1.4
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.04	B	12.5	0.02	B	13.3	0.02	B	13.6	0.3
	CANNON HILL DRIVE	NB	LR	0.34	F	54.7	0.46	F	77.9	0.50	F	88.8	(SEE NOTE 2)

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD IMPROVE THE OPERATION OF THIS INTERSECTION AND REDUCE THIS DELAY INCREASE.

TABLE NO. 4

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HOUR OF AMY'S GENERATION (3:00 PM - 4:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.73	D	25.9	0.84	E	37.4	0.87	E	41.0	(SEE NOTE 3)
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	8.7	-	A	9.6	-	A	9.9	0.3
	NYS ROUTE 17M EB WEAVE			0.23	A	7.6	0.25	A	8.4	0.26	A	9.0	0.6
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.9	-	B	10.5	-	B	11.4	0.9
	NYS ROUTE 17M WB WEAVE			0.20	A	7.3	0.21	A	8.1	0.23	A	8.6	0.5
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	B	11.4	-	B	12.2	-	B	12.8	0.6
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.10	B	13.1	0.14	B	15.2	0.16	B	15.9	0.7
			TR	0.68	C	23.3	0.79	C	30.0	0.92	D	41.5	11.5
	ROUTE 6/17M	WB	L	0.56	B	14.4	0.71	B	19.4	0.88	C	32.6	13.2
			T	0.55	B	16.2	0.63	B	19.4	0.69	C	21.2	1.8
			TR	0.55	B	16.2	0.63	B	19.4	0.69	C	21.1	1.7
	LOWER ROAD (C.R. 12)	NB	LTR	0.70	D	35.5	0.81	D	46.2	0.85	D	51.3	5.1
	C.R. 50	SB	LTR	0.54	C	29.9	0.64	C	32.8	0.68	C	34.6	1.8
		OVERALL		**-**	**C**	**21.6**	**-**	**C**	**26.8**	**-**	**C**	**32.4**	**5.6**

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

3) THE I-84 WESTBOUND OFF RAMP CONNECTION TO NYS ROUTE 17M IS PRESENTLY "STOP" CONTROLLED. REPLACING THIS WITH "YIELD" CONTROL WOULD REDUCE DELAYS ON THE WESTBOUND OFF-RAMP APPROACH.

TABLE NO. 4 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HOUR OF AMY'S GENERATION (3:00 PM - 4:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER **UNSIGNALIZED**												
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.8	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.00	0.00	A	0.00	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.00	0.00	A	0.00	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.45	F	50.9	0.67	F	93.3	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE **UNSIGNALIZED**												
	ROUTE 6/17M	WB	L	0.00	A	9.2	0.01	A	9.5	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.25	F	51.7	0.37	F	77.3	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.77	C	34.4	-
			TR	-	-	-	-	-	-	0.56	A	4.9	-
				-	-	-	-	-	-	0.01	A	1.8	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.00	A	6	-
			T	-	-	-	-	-	-	0.97	C	32.3	-
			R	-	-	-	-	-	-	0.09	A	4.7	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.24	D	45.6	-
			R	-	-	-	-	-	-	0.09	D	39.6	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	1.10	F	175.7	-
			R	-	-	-	-	-	-	0.14	A	3.0	-
	OVERALL			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**25.7**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 4 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HOUR OF AMY'S GENERATION (3:00 PM - 4:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.59	A	6.2	0.64	A	7.1	0.71	A	9.0	1.9
	ROUTE 6/17M	WB	LTR	0.78	A	8.4	0.86	B	13.7	0.91	B	19.0	5.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.41	B	19.3	0.48	C	24.2	0.53	C	26.2	2.0
	HARTLEY ROAD	SB	LTR	0.09	B	18.1	0.10	C	22.2	0.13	C	23.8	1.6
		OVERALL		**-**	**A**	**8.6**	**-**	**B**	**12.2**	**-**	**B**	**15.8**	3.6
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.32	C	30	0.43	D	38.1	0.48	D	42.1	4.0
			TR	0.89	C	21.8	0.92	C	26.7	0.93	C	32.3	5.6
	ROUTE 6/17M	WB	L	0.07	B	19.2	0.08	C	23.7	0.09	C	26.8	3.1
			TR	0.92	B	18.7	0.95	C	29.2	0.97	D	36.3	7.1
	6 1/2 STATION ROAD	NB	LTR	0.47	C	26.1	0.59	C	32.2	0.62	D	35.9	3.7
	MAPLE AVENUE	SB	LTR	0.51	C	26.2	0.51	C	31.2	0.52	C	34.0	2.8
		OVERALL		**-**	**C**	**21.4**	**-**	**C**	**29.1**	**-**	**C**	**34.9**	5.8
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED** NB	R	0.05	B	12.4	0.06	B	13.2	0.06	B	13.9	0.7
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	**UNSIGNALIZED** WB	LT	0.01	A	7.5	0.01	A	7.5	0.02	A	7.5	0.0
		NB	LR	0.05	B	10.8	0.06	B	11.1	0.06	B	11.0	-0.1
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.27	B	14.3	0.36	C	16.7	0.38	C	17.2	0.5
	McVEIGH ROAD	WB	LTR	0.90	F	56.4	1.16	F	135.3	1.21	F	153.9	18.6
	GOLF LINKS ROAD	NB	LTR	0.05	A	7.8	0.07	A	8.0	0.07	A	8.0	0.0
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.7	0.01	A	7.7	0.02	A	7.8	0.1
	WITH ALL-WAY STOP CONTROL[2]												
	McVEIGH ROAD	EB	LTR	-	-	-	0.66	C	20.3	0.67	C	20.9	0.6
	McVEIGH ROAD	WB	LTR	-	-	-	0.31	C	12.3	0.32	B	12.6	0.3
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.55	B	17.0	0.57	C	17.9	0.9
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.47	C	15.2	0.49	C	15.8	0.6

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE INTERSECTION OF GOLF LINKS ROAD AND MCVEIGH ROAD WILL OPERATE AT IMPROVED LEVELS OF SERVICE AS AN "ALL WAY" STOP CONTROL REGARDLESS OF THE PROPOSED PROJECT.

TABLE NO. 4 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HOUR OF AMY'S GENERATION (3:00 PM - 4:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	McVEIGH ROAD	SB	L	0.12	B	10.1	0.14	B	10.3	0.14	B	10.3	0.0
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.06	A	8.0	0.07	A	8.1	0.07	A	8.1	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.41	C	24.3	0.59	D	30.4	0.61	D	31.0	0.6
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.44	B	14.5	0.45	B	14.6	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.70	A	9.2	0.70	A	9.4	0.2
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.29	B	12.7	0.30	B	12.8	0.1
		OVERALL		**-**	**-**	**-**	**-**	**B**	**11.5**	**-**	**B**	**11.7**	0.2
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.06	A	0.06	0.07	A	8.5	0.07	A	8.6	0.1
	FLETCHER STREET	WB	TR	0.00	A	0.00	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.71	D	0.71	0.85	E	44.8	0.86	E	46.9	2.1
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.57	A	7.1	0.59	A	7.6	0.5
	FLETCHER STREET	WB	TR	-	-	-	0.56	B	16.5	0.56	B	16.5	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.56	B	16.6	0.56	B	16.6	0.0
		OVERALL		**-**	**-**	**-**	**-**	**B**	**13.5**	**-**	**B**	**13.6**	0.1
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.06	A	9.8	0.07	B	10.3	0.07	B	10.4	0.1
	CANNON HILL DRIVE	NB	LR	0.80	F	115.2	1.21	F	270.1	1.63	F	[-]	(SEE NOTE 2)

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD IMPROVE THE OPERATION OF THIS INTERSECTION AND REDUCE THIS DELAY INCREASE.

TABLE NO. 5

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HIGHWAY HOUR (4:30 PM - 5:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.80	D	31.2	0.93	E	49.8	0.93	F	51.3	(SEE NOTE 3)
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	8.9	-	A	9.7	-	A	9.9	0.2
	NYS ROUTE 17M EB WEAVE			0.25	A	8.1	0.28	A	8.9	0.28	A	9.2	0.3
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.9	-	B	10.6	-	B	10.9	0.3
	NYS ROUTE 17M WB WEAVE			0.21	A	7.9	0.23	A	8.8	0.24	A	9.0	0.2
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	B	11.7	-	B	12.6	-	B	12.7	0.1
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.04	B	12.1	0.07	B	15.0	0.07	B	15.3	0.3
			TR	0.70	C	22.1	0.82	C	31.6	0.88	D	36.0	4.4
	ROUTE 6/17M	WB	L	0.55	B	13.7	0.73	C	20.2	0.80	C	23.8	3.6
			T	0.55	B	14.6	0.64	B	18.9	0.66	B	19.6	0.7
			TR	0.55	B	14.5	0.64	B	18.9	0.66	B	19.6	0.7
	LOWER ROAD (C.R. 12)	NB	LTR	0.66	C	33.0	0.73	D	38.3	0.73	D	38.8	0.5
	C.R. 50	SB	LTR	0.54	C	30.2	0.62	C	32.0	0.62	C	32.3	0.3
		OVERALL		**-**	**C**	**20.1**	**-**	**C**	**25.9**	**-**	**C**	**27.8**	**1.9**

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

3) THE I-84 WESTBOUND OFF RAMP CONNECTION TO NYS ROUTE 17M IS PRESENTLY "STOP" CONTROLLED. REPLACING THIS WITH "YIELD" CONTROL WOULD REDUCE DELAYS ON THE WESTBOUND OFF-RAMP APPROACH.

TABLE NO. 5 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HIGHWAY HOUR (4:30 PM - 5:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER	**UNSIGNALIZED**											
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.61	F	84.1	0.91	F	174.0	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.01	A	9.2	0.01	A	9.5	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.09	E	37.0	0.11	E	48.6	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.37	C	26.0	-
			T	-	-	-	-	-	-	0.56	A	5.2	-
			R	-	-	-	-	-	-	0.00	A	2.0	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.01	A	6.6	-
			T	-	-	-	-	-	-	0.98	C	32.4	-
			R	-	-	-	-	-	-	0.04	A	4.3	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.06	D	45.1	-
			R	-	-	-	-	-	-	0.04	D	38.4	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.49	D	46.7	-
			R	-	-	-	-	-	-	0.08	A	2.4	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**21.4**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) NOTE THAT THERE IS LIMITED EXITING TRAFFIC FROM TRAINING CENTER LANE DURING THE PM PEAK HOUR (I.E. LESS THAN 10 VEHICLES) DUE TO THE HOURS OF OPERATION.

TABLE NO. 5 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HIGHWAY HOUR (4:30 PM - 5:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.60	A	5.9	0.65	A	6.9	0.67	A	7.4	0.5
	ROUTE 6/17M	WB	LTR	0.79	A	8.2	0.87	B	13.9	0.89	B	15.7	1.8
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.39	B	19.6	0.46	C	24.6	0.48	C	25.4	0.8
	HARTLEY ROAD	SB	LTR	0.10	B	18.5	0.12	C	22.8	0.13	C	23.6	0.8
		OVERALL		**-**	**A**	**8.4**	**-**	**B**	**12.1**	**-**	**B**	**13.4**	1.3
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.35	C	27.9	0.46	D	35.0	0.49	D	36.8	1.8
			TR	0.89	B	19.3	0.91	C	23.3	0.92	C	25.6	2.3
	ROUTE 6/17M	WB	L	0.09	C	20.0	0.10	C	24.6	0.11	C	25.8	1.2
			TR	0.91	B	15.9	0.94	C	24.7	0.94	C	26.9	2.2
	6 1/2 STATION ROAD	NB	LTR	0.47	C	24.3	0.56	C	29.5	0.57	C	30.8	1.3
	MAPLE AVENUE	SB	LTR	0.46	C	24.4	0.49	C	28.8	0.49	C	30.0	1.2
		OVERALL		**-**	**B**	**19.1**	**-**	**C**	**25.4**	**-**	**C**	**27.4**	2.0
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED** NB	R	0.05	B	12.5	0.06	B	13.4	0.06	B	13.6	0.2
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	**UNSIGNALIZED** WB	LT	0.01	A	7.4	0.01	A	7.4	0.01	A	7.4	0.0
		NB	LR	0.04	A	9.8	0.05	A	10.0	0.05	A	10.1	0.1
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.20	B	13.5	0.26	B	14.9	0.26	B	14.9	0.0
	McVEIGH ROAD	WB	LTR	0.58	D	26.2	0.75	E	41.8	0.76	E	43.2	1.4
	GOLF LINKS ROAD	NB	LTR	0.06	A	7.8	0.07	A	8.0	0.08	A	8.0	0.0
	GOLF LINKS ROAD	NB	LTR	0.01	A	7.6	0.01	A	7.7	0.01	A	7.7	0.0
	WITH ALL-WAY STOP CONTROL[2]												
	McVEIGH ROAD	EB	LTR	-	-	-	0.39	B	12.2	0.39	B	12.3	0.1
	McVEIGH ROAD	WB	LTR	-	-	-	0.20	B	10.1	0.20	B	10.2	0.1
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.45	B	13.1	0.45	B	13.2	0.1
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.38	B	12.0	0.39	B	12.1	0.1

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE INTERSECTION OF GOLF LINKS ROAD AND MCVEIGH ROAD WILLL OPERATE AT IMPROVED LEVELS OF SERVICE AS AN "ALL WAY" STOP CONTROL REGARDLESS OF THE PROPOSED PROJECT.

TABLE NO. 5 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HIGHWAY HOUR (4:30 PM - 5:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	7.7	0.01	A	7.7	0.01	A	7.7	0.0
	McVEIGH ROAD	SB	L	0.08	A	9.4	0.08	A	9.5	0.08	A	9.5	0.0
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.04	A	7.9	0.05	A	8.0	0.05	A	8.0	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.37	C	16.8	0.43	C	19.2	0.44	C	19.2	0.0
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.38	B	13.5	0.38	B	13.6	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.39	A	4.6	0.40	A	4.6	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.28	B	12.5	0.28	B	12.6	0.1
		OVERALL		**-**	**-**	**-**	**-**	**A**	**9.8**	**-**	**A**	**9.9**	0.1
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.09	A	8.2	0.11	A	8.3	0.11	A	8.3	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.41	C	18.4	0.49	C	22.1	0.49	C	22.3	0.2
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.66	A	9.6	0.67	A	9.9	0.3
	FLETCHER STREET	WB	TR	-	-	-	0.49	B	15.1	0.49	B	15.1	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.29	B	12.6	0.29	B	12.6	0.0
		OVERALL		**-**	**-**	**-**	**-**	**B**	**12.3**	**-**	**B**	**12.4**	0.1
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.04	B	10.7	0.05	B	11.2	0.05	B	11.4	0.2
	CANNON HILL DRIVE	NB	LR	0.99	F	165.7	1.52	F	391.8	1.68	F	[-]	(SEE NOTE 2)

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

3) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD IMPROVE THE OPERATION OF THIS INTERSECTION AND REDUCE THIS DELAY INCREASE.

TABLE NO. 6

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - SATURDAY PEAK HOUR

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.48	C	15.0	0.54	C	16.9	0.55	C	17.2	0.3
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	7.3	-	A	8.0	-	A	8.1	0.1
	NYS ROUTE 17M EB WEAVE			0.17	A	6.2	0.19	A	6.8	0.19	A	6.9	0.1
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.8	-	B	10.4	-	B	10.6	0.2
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.17	A	6.0	0.17	A	6.2	0.2
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	9.4	-	B	10.1	-	B	10.3	0.2
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.07	B	10.6	0.10	B	12.8	0.10	B	13.1	0.3
			TR	0.59	B	17.9	0.69	C	23.2	0.72	C	24.4	1.2
	ROUTE 6/17M	WB	L	0.31	B	11.4	0.40	B	14.4	0.43	B	15.1	0.7
			T	0.42	B	13.1	0.49	B	16.2	0.52	B	16.8	0.6
			TR	0.42	B	13.1	0.49	B	16.2	0.52	B	16.8	0.6
	LOWER ROAD (C.R. 12)	NB	LTR	0.68	C	32.3	0.74	D	36.4	0.74	D	36.7	0.3
	C.R. 50	SB	LTR	0.48	C	28.4	0.54	C	28.4	0.54	C	28.6	0.2
		OVERALL		**-**	**B**	**18.8**	**-**	**C**	**22.4**	**-**	**C**	**22.9**	**0.5**

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

TABLE NO. 6 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - SATURDAY PEAK HOUR

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER	**UNSIGNALIZED**											
	ROUTE 6/17M	EB	L	0.01	A	9.6	0.01	A	9.9	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.01	E	36.6	0.01	E	46.4	0.01	D	33.1	-13.3
	PSYCH. CENTER S.	SB	LTR	0.16	D	29.9	0.22	E	38.3	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.05	A	9.8	0.06	B	10.2	-	-	-	-
	TRAINING CENTER LANE	NB	LR	1.04	F	143.7	1.48	F	321.8	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.20	B	15.2	-
			T	-	-	-	-	-	-	0.87	C	24.6	-
			R	-	-	-	-	-	-	0.16	B	10.6	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.22	B	14.3	-
			T	-	-	-	-	-	-	0.92	C	29.6	-
			R	-	-	-	-	-	-	0.03	A	6.8	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.68	C	32.2	-
			R	-	-	-	-	-	-	0.40	C	28.9	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.39	C	31.4	-
			R	-	-	-	-	-	-	0.54	C	31.0	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**26.0**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) NOTE THAT THERE IS LIMITED EXITING TRAFFIC FROM TRAINING CENTER LANE DURING THE PM PEAK HOUR (I.E. LESS THAN 10 VEHICLES) DUE TO THE HOURS OF OPERATION.

TABLE NO. 6 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - SATURDAY PEAK HOUR

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.61	A	6.3	0.66	A	6.5	0.68	A	6.6	0.1
	ROUTE 6/17M	WB	LTR	0.59	A	6.1	0.63	A	6.2	0.63	A	6.2	0.0
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.26	B	12.7	0.3	B	14.3	0.32	B	15.0	0.7
	HARTLEY ROAD	SB	LTR	0.07	B	12.3	0.08	B	13.7	0.09	B	14.4	0.7
		OVERALL		**-**	**A**	**6.8**	**-**	**A**	**7.1**	**-**	**A**	**7.2**	0.1
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.24	B	17.8	0.29	B	19.7	0.28	B	19.3	-0.4
			TR	0.84	B	13.3	0.86	B	13.8	0.87	B	13.2	-0.6
	ROUTE 6/17M	WB	L	0.12	B	15.1	0.14	B	16.8	0.17	B	18.2	1.4
			TR	0.85	B	12.6	0.87	B	13	0.87	B	13.1	0.1
	6 1/2 STATION ROAD	NB	LTR	0.29	B	17.6	0.33	B	19.1	0.33	B	19.5	0.4
	MAPLE AVENUE	SB	LTR	0.27	B	18	0.30	B	19.4	0.31	B	19.7	0.3
		OVERALL		**-**	**B**	**18.8**	**-**	**B**	**14.6**	**-**	**B**	**14.4**	-0.2
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED** NB	R	0.06	B	12.4	0.08	B	13.2	0.08	B	13.5	0.3
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	**UNSIGNALIZED** WB	LT	0.01	A	7.3	0.01	A	7.3	0.01	A	7.3	0.0
		NB	LR	0.02	A	9.0	0.02	A	9.0	0.02	A	9.0	0.0
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.11	B	10.8	0.15	B	11.2	0.15	B	11.3	0.1
	McVEIGH ROAD	WB	LTR	0.24	C	15.1	0.31	C	17.8	0.31	C	18.0	0.2
	GOLF LINKS ROAD	NB	LTR	0.04	A	7.6	0.06	A	7.7	0.06	A	7.7	0.0
	GOLF LINKS ROAD	NB	LTR	0.01	A	7.6	0.01	A	7.6	0.01	A	7.6	0.0
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.18	A	9.2	0.18	A	9.2	0.0
	McVEIGH ROAD	WB	LTR	-	-	-	0.13	A	8.6	0.13	A	8.6	0.0
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.39	B	10.5	0.36	B	10.5	0.0
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.23	A	9.4	0.24	A	9.4	0.0

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD IMPROVE THE OPERATION OF THIS INTERSECTION AND REDUCE THIS DELAY INCREASE.

TABLE NO. 6 (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE
2033 BUILD CONDITIONS - SATURDAY PEAK HOUR

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.01	A	7.4	0.01	A	7.4	0.01	A	7.4	0.0
	McVEIGH ROAD	SB	L	0.04	A	8.9	0.04	A	9.0	0.04	A	9.0	0.0
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.04	A	7.6	0.05	A	7.6	0.05	A	7.6	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.23	B	11.6	0.26	B	12.1	0.26	B	12.2	0.1
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.18	B	11.5	0.18	B	11.5	0.0
	FLETCHER STREET	WB	LT	-	-	-	0.25	A	3.8	0.25	A	3.8	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.25	B	12.2	0.25	B	12.2	0.0
		OVERALL		**-**	**-**	**-**	**-**	**A**	**8.8**	**-**	**A**	**8.9**	0.1
15	FLETCHER STREET & NYS ROUTE 17 WB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.03	A	7.7	0.03	A	7.7	0.03	A	7.8	0.1
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.14	B	10.6	0.15	B	10.9	0.15	B	11.0	0.1
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.26	A	3.8	0.27	A	3.8	0.0
	FLETCHER STREET	WB	TR	-	-	-	0.31	B	12.8	0.31	B	12.8	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.16	B	11.4	0.16	B	11.4	0.0
		OVERALL		**-**	**-**	**-**	**-**	**A**	**9.1**	**-**	**A**	**9.1**	0.0
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.01	A	9.1	0.01	A	9.4	0.01	A	9.5	0.1
	CANNON HILL DRIVE	NB	LR	0.05	C	23.7	0.06	D	28.7	0.07	D	30.4	1.7

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE 7

QUEUE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HOUR OF AMY'S GENERATION (6:00 AM - 7:00 AM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	5'	16'	7'	21'	7'	21'
			TR	1500'+	307'	874'	423'	1041'	583'	1215'
		WB	L	485'	4'	14'	4'	16'	5'	17'
			TR	950'+	23'	69'	43'	81'	50'	91'
		NB	LTR	500'+	87'	180'	128'	211'	134'	222'
		SB	LTR	640'	52'	122'	78'	148'	86'	162'
	WITH TIMING IMPROVEMENTS	EB	L	675'	-	-	-	-	6'	13'
			TR	1500'+	-	-	-	-	831'	1095'
		WB	L	485'	-	-	-	-	4'	11'
			TR	950'+	-	-	-	-	42'	64'
		NB	LTR	500'+	-	-	-	-	198'	362'
		SB	LTR	640'	-	-	-	-	144'	282'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	0'	33'
			T	1500'+	-	-	-	-	0'	959'
			R	100'	-	-	-	-	0'	0'
		WB	L	200'	-	-	-	-	0'	4'
			T	1500'+	-	-	-	-	40'	149'
			R	135'	-	-	-	-	0'	19'
		NB	LT	250'	-	-	-	-	0'	0'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	12'	40'
			R	600'+	-	-	-	-	0'	22'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	257'	642'	354'	768'	396'	815'
	HARTLEY ROAD	WB	LTR	1500'+	33'	70'	39'	81'	53'	111'
		NB	LTR	300'+	28'	54'	31'	60'	37'	75'
		SB	LTR	300'+	3'	16'	3'	16'	3'	20'
9	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	6 1/2 STATION ROAD/	EB	L	200'	7'	19'	8'	21'	8'	21'
	MAPLE AVENUE		TR	1500'+	150'	513'	191'	741'	200'	764'
		WB	L	200'	2'	13'	4'	13'	4'	11'
			TR	1500'+	58'	209'	99'	228'	130'	266'
		NB	LTR	250'+	11'	57'	18'	63'	20'	65'
		SB	LTR	250'+	11'	61'	17'	66'	18'	65'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

TABLE 8

QUEUE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY AM PEAK HIGHWAY HOUR (7:30 AM - 8:30 AM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	9'	23'	12'	26'	12'	26'
			TR	1500'+	674'	971'	835'	1123'	905'	1199'
		WB	L	485'	17'	42'	19'	48'	20'	50'
			TR	950'+	122'	175'	145'	200'	155'	212'
		NB	LTR	500'+	155'	280'	189'	353'	191'	358'
		SB	LTR	640'	73'	137'	90'	164'	93'	170'
	WITH TIMING IMPROVEMENTS	EB	L	675'	-	-	-	-	10'	23'
			TR	1500'+	-	-	-	-	864'	1119'
		WB	L	485'	-	-	-	-	18'	62'
			TR	950'+	-	-	-	-	140'	187'
		NB	LTR	500'+	-	-	-	-	256'	434'
		SB	LTR	640'	-	-	-	-	110'	220'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	9'	21'
			T	1500'+	-	-	-	-	542'	955'
			R	100'	-	-	-	-	0'	2'
		WB	L	200'	-	-	-	-	3'	9'
			T	1500'+	-	-	-	-	269'	467'
			R	135'	-	-	-	-	0'	3'
		NB	LT	250'	-	-	-	-	8'	27'
			R	150'	-	-	-	-	0'	24'
		SB	LT	600'+	-	-	-	-	17'	45'
			R	600'+	-	-	-	-	0'	25'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	334'	701'	566'	821'	601'	848'
	HARTLEY ROAD	WB	LTR	1500'+	128'	235'	160'	280'	178'	303'
		NB	LTR	300'+	56'	112'	64'	136'	67'	145'
		SB	LTR	300'+	10'	36'	12'	38'	11'	38'
	WITH TIMING IMPROVEMENTS	EB	LTR	1500'+	-	-	-	-	589'	824'
		WB	LTR	1500'+	-	-	-	-	166'	273'
		NB	LTR	300'+	-	-	-	-	70'	163'
		SB	LTR	300'+	-	-	-	-	12'	39'
9	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	6 1/2 STATION ROAD/	EB	L	200'	6'	19'	7'	21'	8'	22'
	MAPLE AVENUE		TR	1500'+	355'	728'	461'	889'	526'	959'
		WB	L	200'	6'	18'	6'	19'	6'	19'
			TR	1500'+	264'	407'	349'	459'	367'	488'
		NB	LTR	250'+	39'	89'	50'	101'	50'	102'
		SB	LTR	250'+	66'	138'	83'	152'	83'	151'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

TABLE 9

QUEUE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HOUR OF AMY'S GENERATION (3:00 PM - 4:00 PM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	7'	18'	9'	21'	9'	21'
			TR	1500'+	289'	466'	357'	583'	475'	738'
		WB	L	485'	57'	92'	66'	152'	112'	233'
			TR	950'+	214'	282'	251'	329'	292'	381'
		NB	LTR	500'+	177'	377'	259'	446'	281'	459'
		SB	LTR	640'	141'	270'	191'	366'	209'	389'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	23'	105'
			T	1500'+	-	-	-	-	127'	191'
			R	100'	-	-	-	-	0'	0'
		WB	L	200'	-	-	-	-	0'	3'
			T	1500'+	-	-	-	-	695'	1024'
			R	135'	-	-	-	-	0'	11'
		NB	LT	250'	-	-	-	-	10'	33'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	53'	148'
			R	600'+	-	-	-	-	38'	97'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	171'	304'	224'	384'	277'	570'
	HARTLEY ROAD	WB	LTR	1500'+	300'	634'	431'	765'	591'	826'
		NB	LTR	300'+	60'	134'	70'	153'	79'	175'
		SB	LTR	300'+	7'	29'	8'	31'	8'	33'
9	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	6 1/2 STATION ROAD/	EB	L	200'	11'	23'	12'	25'	12'	25'
	MAPLE AVENUE		TR	1500'+	150'	390'	350'	424'	376'	471'
		WB	L	200'	10'	16'	8'	18'	8'	18'
			TR	1500'+	465'	787'	576'	926'	721'	1001'
		NB	LTR	250'+	105'	219'	121'	263'	122'	264'
		SB	LTR	250'+	79'	151'	90'	168'	90'	168'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

TABLE 10

QUEUE SUMMARY TABLE
2033 BUILD CONDITIONS - WEEKDAY PM PEAK HIGHWAY HOUR (4:30 PM - 5:30 PM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	3'	10'	4'	12'	4'	12'
			TR	1500'+	326'	547'	410'	644'	450'	702'
		WB	L	485'	55'	93'	78'	163'	101'	208'
			TR	950'+	167'	293'	195'	343'	204'	358'
		NB	LTR	500'+	162'	338'	233'	404'	237'	408'
		SB	LTR	640'	138'	239'	191'	349'	195'	357'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	5'	18'
			T	1500'+	-	-	-	-	133'	20'
			R	100'	-	-	-	-	0'	0'
		WB	L	200'	-	-	-	-	1'	5'
			T	1500'+	-	-	-	-	796'	1052'
			R	135'	-	-	-	-	0'	0'
		NB	LT	250'	-	-	-	-	3'	14'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	21'	53'
			R	600'+	-	-	-	-	4'	42'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	166'	318'	218'	408'	240'	485'
	HARTLEY ROAD	WB	LTR	1500'+	293'	655'	425'	793'	563'	817'
		NB	LTR	300'+	53'	110'	61'	125'	64'	137'
		SB	LTR	300'+	8'	30'	9'	32'	9'	33'
9	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	6 1/2 STATION ROAD/	EB	L	200'	13'	27'	14'	36'	14'	38'
	MAPLE AVENUE		TR	1500'+	303'	413'	378'	464'	388'	482'
		WB	L	200'	7'	17'	8'	18'	8'	18'
			TR	1500'+	419'	714'	524'	866'	551'	900'
		NB	LTR	250'+	91'	205'	117'	714'	118'	257'
		SB	LTR	250'+	64'	142'	84'	476'	84'	161'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

TABLE 11

QUEUE SUMMARY TABLE
2033 BUILD CONDITIONS - SATURDAY PEAK HOUR

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	6'	16'	7'	19'	7'	19'
			TR	1500'+	247'	374'	286'	432'	305'	469'
		WB	L	485'	30'	54'	33'	59'	34'	60'
			TR	950'+	152'	203'	176'	232'	190'	248'
		NB	LTR	500'+	171'	325'	225'	398'	227'	406'
		SB	LTR	640'	114'	192'	146'	264'	146'	272'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	7'	23'
			T	1500'+	-	-	-	-	354'	687'
			R	100'	-	-	-	-	0'	10'
		WB	L	200'	-	-	-	-	9'	27'
			T	1500'+	-	-	-	-	405'	757'
			R	135'	-	-	-	-	0'	0'
		NB	LT	250'	-	-	-	-	51'	103'
			R	150'	-	-	-	-	0'	8'
		SB	LT	600'+	-	-	-	-	19'	52'
			R	600'+	-	-	-	-	0'	13'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	116'	279'	150'	332'	168'	364'
	HARTLEY ROAD	WB	LTR	1500'+	109'	253'	139'	298'	148'	308'
		NB	LTR	300'+	23'	82'	31'	100'	34'	103'
		SB	LTR	300'+	3'	25'	5'	28'	5'	29'
9	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	6 1/2 STATION ROAD/	EB	L	200'	9'	26'	11'	31'	11'	31'
	MAPLE AVENUE		TR	1500'+	162'	302'	199'	370'	224'	421'
		WB	L	200'	5'	18'	6'	21'	6'	21'
			TR	1500'+	180'	337'	222'	416'	231'	433'
		NB	LTR	250'+	31'	89'	39'	109'	40'	112'
		SB	LTR	250'+	11'	54'	14'	63'	14'	64'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

AMY'S KITCHEN & SCIENCE OF THE SOUL

APPENDIX C

LEVEL OF SERVICE STANDARDS

LEVEL OF SERVICE STANDARDS

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay and volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a measure of driver discomfort and fuel consumption. The volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group.

LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate.

LOS D describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long.

LOS E describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long.

LOS F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long.

A lane group can incur a delay less than 80 s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

The Level of Service Criteria for signalized intersections are given in Exhibit 18-4 from the *2010 Highway Capacity Manual* published by the Transportation Research Board.

Exhibit 18-4

	LOS by Volume-to-Capacity Ratio	
Control Delay (s/veh)	**v/c ≤1.0**	**v/c >1.0**
≤10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

For approach-based and intersection wide assessments, LOS is defined solely by control delay.

LEVEL OF SERVICE CRITERIA
FOR TWO-WAY STOP-CONTROLLED (TWSC) UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) for a two-way stop-controlled (TWSC) intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. LOS is not defined for the intersection as a whole or for major-street approaches.

The Level of Service Criteria for TWSC unsignalized intersections are given in Exhibit 19-1 from the *2010 Highway Capacity Manual* published by the Transportation Research Board.

Exhibit 19-1

	LOS by Volume-to-Capacity Ratio	
Control Delay (s/veh)	**v/c ≤1.0**	**v/c >1.0**
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.

As Exhibit 19-1 notes, LOS F is assigned to the movement if the volume-to-capacity ratio for the movement exceeds 1.0, regardless of the control delay.

The Level of Service Criteria for unsignalized intersections are somewhat different from the criteria for signalized intersections.

LEVEL OF SERVICE CRITERIA
FOR ALL-WAY STOP-CONTROLLED (AWSC) UNSIGNALIZED INTERSECTIONS

The Levels of Service (LOS) for all-way stop-controlled (AWSC) intersections are given in Exhibit 20-2. As the exhibit notes, LOS F is assigned if the volume-to-capacity (v/c) ratio of a lane exceeds 1.0, regardless of the control delay. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay.

The Level of Service Criteria for AWSC unsignalized intersections are given in Exhibit 20-2 from the *2010 Highway Capacity Manual* published by the Transportation Research Board.

Exhibit 20-2

	LOS by Volume-to-Capacity Ratio	
Control Delay (s/veh)	**v/c ≤1.0**	**v/c >1.0**
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

For approaches and intersection wide assessment, LOS is defined solely by control delay.

LEVEL OF SERVICE CRITERIA FOR MERGE/DIVERGE AREA

Level of Service merge and diverge influence areas are determined by density for all cases of stable operations, represented by Level of Service A through E. Level of Service F exists when the total flow departing from the merge area or diverge area (v) exceeds the capacity of the downstream freeway segment.

Level of Service criteria for merge and diverge areas is listed in Exhibit 13-2. The density values shown for Level of Service A through E assume stable operations, with no breakdowns within the merge or diverge influence area.

Levels of Service thresholds for merge and diverge areas are summarized below:

Exhibit 13-4
Level of Service Criteria for Merge/Diverge Areas

Level of Service (LOS)	**Density Range (pc/mi/ln)**
A	≤10
B	>10-20
C	>20-28
D	>28-35
E	>35
F	Demand Exceeds Capacity

Criteria from the 2010 Highway Capacity Manual published by the Transportation Research Board

LEVEL OF SERVICE CRITERIA FOR WEAVING SEGMENTS

The Level of Service in a weaving segment, as in all freeway analysis, is related to the density in the segment. Exhibit 12-10 provides Level of Service criteria for weaving segments on freeways, collector-distributor (C-D) roadways and multilane highways. A single Level of Service is used to characterize total flow in the weaving segment, although it is recognized that in some situations (particularly in cases of constrained operations) non-weaving vehicles may achieve higher –quality operations than weaving vehicles.

Level of Service thresholds for weaving conditions are summarized below:

Exhibit 12-10

LOS	Density (pc/mi/ln)	
	Freeway Weaving Segments	**Weaving Segments on Multilane Highways or C-D Roadways**
A	0-10	0-12
B	>10-20	>12-24
C	>20-28	>24-32
D	>28-35	>32-36
E	>35	>36
F	Demand Exceeds Capacity	

Criteria from the 2010 Highway Capacity Manual published by the Transportation Research Board

AMY'S KITCHEN & SCIENCE OF THE SOUL

APPENDIX D

CAPACITY ANALYSIS

AMY'S KITCHEN & SCIENCE OF THE SOUL

SYNCHRO ANALYSIS

AMY'S KITCHEN & SCIENCE OF THE SOUL

2015 EXISTING CONDITIONS

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	177	0	294	0	0	1103	42	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1715	0	3490	0	0	3321	1419	0	0
Flt Permitted										
Satd. Flow (perm)	0	1715	0	3490	0	0	3321	1419	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	5%	6%	11%	5%	5%
Adj. Flow (vph)	0	186	0	309	0	0	1161	44	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	186	0	309	0	0	1161	44	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	177	0	294	0	0	1103	42	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	7	5	5	5	5	6	11	5	5
Mvmt Flow	0	186	0	309	0	0	1161	44	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	890	155	1161	0	0	309	0	0
Stage 1	309	-	-	-	-	-	-	-
Stage 2	581	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.74	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.37	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	321	859	581	-	-	1227	-	0
Stage 1	746	-	-	-	-	-	-	0
Stage 2	566	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	321	859	581	-	-	1227	-	-
Mov Cap-2 Maneuver	321	-	-	-	-	-	-	-
Stage 1	746	-	-	-	-	-	-	-
Stage 2	566	-	-	-	-	-	-	-

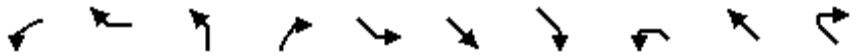
Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	581	-	-	859	1227	-
HCM Lane V/C Ratio	-	-	-	0.217	-	-
HCM Control Delay (s)	0	-	-	10.3	0	-
HCM Lane LOS	A	-	-	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	91	0	0	0	1103	0	0	294	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3406	0	0	3438	1455
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3406	0	0	3438	1455
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	13%	5%	5%	5%	6%	5%	5%	5%	11%
Adj. Flow (vph)	0	97	0	0	0	1173	0	0	313	72
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	97	0	0	0	1173	0	0	313	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	89	0	0	0	794	400	0	273	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1630	0	0	0	3343	1538	0	3406	0
Flt Permitted										
Satd. Flow (perm)	0	1630	0	0	0	3343	1538	0	3406	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	8%	5%	5%	6%	5%
Adj. Flow (vph)	0	94	0	0	0	836	421	0	287	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	94	0	0	0	836	421	0	287	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	311	0	0	0	794	0	0	273	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1624	0	0	0	3292	0	0	3423	1399
Flt Permitted										
Satd. Flow (perm)	0	1624	0	0	0	3292	0	0	3423	1399
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	8%	5%	5%	5%	8%	5%	5%	6%	16%
Adj. Flow (vph)	0	327	0	0	0	836	0	0	287	72
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	327	0	0	0	836	0	0	287	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	28	907	4	22	239	31	67	111	22	67	46	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.983			0.985			0.988	
Flt Protected	0.950			0.950				0.984			0.974	
Satd. Flow (prot)	1876	1898	0	1581	3145	0	0	1869	0	0	1728	0
Flt Permitted	0.572			0.087				0.850			0.651	
Satd. Flow (perm)	1130	1898	0	145	3145	0	0	1614	0	0	1155	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					18			6			5	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2935	
Travel Time (s)		23.3			14.7			15.3			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	30	986	4	24	260	34	73	121	24	73	50	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	990	0	24	294	0	0	218	0	0	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.04	0.87		0.13	0.16			0.69			0.60	
Control Delay	6.2	27.4		7.7	8.6			40.8			39.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.2	27.4		7.7	8.6			40.8			39.6	
Queue Length 50th (ft)	4	306		4	23			87			52	
Queue Length 95th (ft)	16	#873		14	69			180			122	
Internal Link Dist (ft)		1460			890			932			2855	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	851	1132		398	1883			538			386	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.04	0.87		0.06	0.16			0.41			0.35	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 76.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	28	907	4	22	239	31	67	111	22	67	46	11
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1900	1995	1665	1684	1814	1948	1928	1948	1910	1857	1910
Adj Flow Rate, veh/h	30	986	-7	24	260	23	73	121	13	73	50	1
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	778	1142	0	211	1780	156	143	161	16	183	102	2
Arrive On Green	0.02	0.60	0.00	0.02	0.60	0.60	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	1881	1900	0	1585	2976	261	544	1115	111	741	707	12
Grp Volume(v), veh/h	30	979	0	24	139	144	207	0	0	124	0	0
Grp Sat Flow(s),veh/h/ln	1881	1900	0	1585	1600	1638	1771	0	0	1460	0	0
Q Serve(g_s), s	0.5	31.9	0.0	0.4	2.9	2.9	2.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	31.9	0.0	0.4	2.9	2.9	8.1	0.0	0.0	5.6	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.16	0.35		0.06	0.59		0.01
Lane Grp Cap(c), veh/h	778	1142	0	211	957	979	367	0	0	325	0	0
V/C Ratio(X)	0.04	0.86	0.00	0.11	0.15	0.15	0.56	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	1043	1142	0	523	957	979	684	0	0	596	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.7	12.4	0.0	12.7	6.7	6.7	30.6	0.0	0.0	29.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	8.4	0.0	0.1	0.3	0.3	0.5	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	19.2	0.0	0.2	1.4	1.4	4.0	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	5.7	20.7	0.0	12.8	7.0	7.0	31.1	0.0	0.0	29.5	0.0	0.0
LnGrp LOS	A	C		B	A	A	C			C		
Approach Vol, veh/h		1009			307			207			124	
Approach Delay, s/veh		20.3			7.4			31.1			29.5	
Approach LOS		C			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	51.0		16.9	7.2	51.2		16.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.5	4.9		10.1	2.4	33.9		7.6
Green Ext Time (p_c), s	0.0	5.1		0.8	0.0	2.9		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	10	989	0	0	290	4	0	0	0	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998						0.910	
Flt Protected		0.999									0.984	
Satd. Flow (prot)	0	1878	0	0	1779	0	0	1928	0	0	1651	0
Flt Permitted		0.999									0.984	
Satd. Flow (perm)	0	1878	0	0	1779	0	0	1928	0	0	1651	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	11	1041	0	0	305	4	0	0	0	1	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1052	0	0	309	0	0	0	0	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	10	989	0	0	290	4	0	0	0	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	11	1041	0	0	305	4	0	0	0	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	309	0	0	1041	0	0	1370	1371	1041	1369	1369	307
Stage 1	-	-	-	-	-	-	1062	1062	-	307	307	-
Stage 2	-	-	-	-	-	-	308	309	-	1062	1062	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1257	-	-	672	-	-	182	215	324	92	109	711
Stage 1	-	-	-	-	-	-	365	405	-	659	619	-
Stage 2	-	-	-	-	-	-	767	721	-	214	238	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1257	-	-	672	-	-	179	210	324	91	107	711
Mov Cap-2 Maneuver	-	-	-	-	-	-	179	210	-	91	107	-
Stage 1	-	-	-	-	-	-	357	396	-	645	619	-
Stage 2	-	-	-	-	-	-	765	721	-	210	233	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	0	21.8
HCM LOS			A	C

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	1257	-	-	672	-	-	217
HCM Lane V/C Ratio	-	0.008	-	-	-	-	-	0.015
HCM Control Delay (s)	0	7.9	0	-	0	-	-	21.8
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	976	15	6	294	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998					
Flt Protected				0.999		
Satd. Flow (prot)	1819	0	0	1740	1188	0
Flt Permitted				0.999		
Satd. Flow (perm)	1819	0	0	1740	1188	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1259	806	
Travel Time (s)	10.3			15.6	27.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	60%	60%	8%	60%	60%
Adj. Flow (vph)	1073	16	7	323	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1089	0	0	330	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

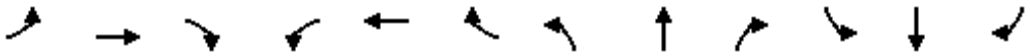
Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	976	15	6	294	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	5	60	60	8	60	60
Mvmt Flow	1073	16	7	323	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1089	0	1417	1081
Stage 1	-	-	-	-	1081	-
Stage 2	-	-	-	-	336	-
Critical Hdwy	-	-	4.7	-	7	6.8
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.74	-	4.04	3.84
Pot Cap-1 Maneuver	-	-	466	-	113	205
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	466	-	111	205
Mov Cap-2 Maneuver	-	-	-	-	111	-
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0.3	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	466	-
HCM Lane V/C Ratio	-	-	-	0.014	-
HCM Control Delay (s)	0	-	-	12.8	0
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	-	-	-	0	-

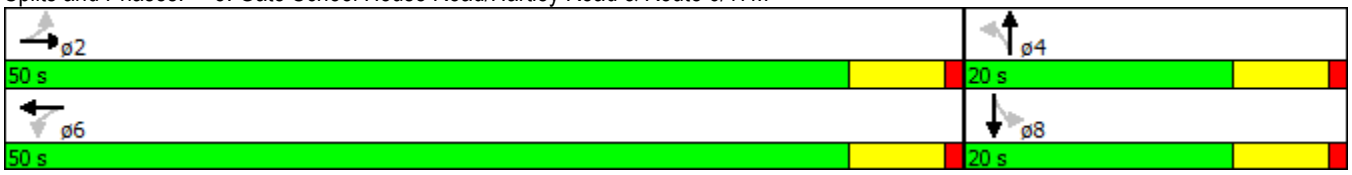


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	904	72	0	261	13	50	6	5	5	2	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.994			0.990			0.944	
Flt Protected		0.999						0.960			0.980	
Satd. Flow (prot)	0	1746	0	0	1764	0	0	1779	0	0	1108	0
Flt Permitted		0.996						0.763			0.835	
Satd. Flow (perm)	0	1741	0	0	1764	0	0	1414	0	0	944	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			7			5			5	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	11	972	77	0	281	14	54	6	5	5	2	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1060	0	0	295	0	0	65	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.74			0.20			0.36			0.10	
Control Delay		12.0			3.6			31.3			22.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.0			3.6			31.3			22.8	
Queue Length 50th (ft)		257			33			28			3	
Queue Length 95th (ft)		#642			70			54			16	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1429			1447			340			228	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.74			0.20			0.19			0.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 61.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	904	72	0	261	13	50	6	5	5	2	5
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1777	1881	1948	1786	1948	1919	1872	1919	1872	1198	1872
Adj Flow Rate, veh/h	11	972	50	0	281	14	54	6	5	5	2	5
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	93	1060	54	0	1073	53	249	10	8	152	16	31
Arrive On Green	0.68	0.64	0.64	0.00	0.64	0.64	0.12	0.07	0.07	0.12	0.07	0.07
Sat Flow, veh/h	6	1666	85	0	1687	84	1233	137	114	384	224	434
Grp Volume(v), veh/h	1033	0	0	0	0	295	65	0	0	12	0	0
Grp Sat Flow(s),veh/h/ln	1758	0	0	0	0	1771	1484	0	0	1042	0	0
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	3.0	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	19.2	0.0	0.0	0.0	0.0	3.0	1.6	0.0	0.0	0.4	0.0	0.0
Prop In Lane	0.01		0.05	0.00		0.05	0.83		0.08	0.42		0.42
Lane Grp Cap(c), veh/h	1292	0	0	0	0	1126	339	0	0	249	0	0
V/C Ratio(X)	0.80	0.00	0.00	0.00	0.00	0.26	0.19	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	2057	0	0	0	0	1901	732	0	0	517	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.2	0.0	0.0	0.0	0.0	3.3	17.6	0.0	0.0	17.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	0.0	0.0	1.4	0.6	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	6.7	0.0	0.0	0.0	0.0	3.3	17.7	0.0	0.0	17.5	0.0	0.0
LnGrp LOS	A					A	B			B		
Approach Vol, veh/h		1033			295			65			12	
Approach Delay, s/veh		6.7			3.3			17.7			17.5	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		32.1		8.9		32.1		8.9
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		21.2		3.6		5.0		2.4
Green Ext Time (p_c), s		4.9		0.1		5.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

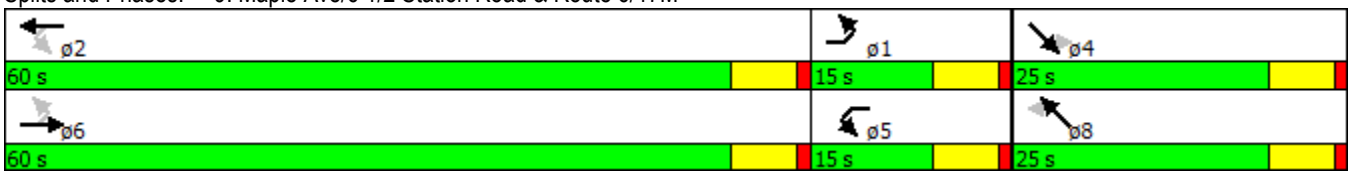
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	72	784	48	19	236	28	26	15	17	11	30	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.984			0.961			0.984	
Flt Protected	0.950			0.950				0.978			0.988	
Satd. Flow (prot)	1762	1867	0	1564	1889	0	0	1710	0	0	1770	0
Flt Permitted	0.578			0.143				0.831			0.899	
Satd. Flow (perm)	1072	1867	0	235	1889	0	0	1453	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			9			18			6	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	3%	9%	16%	3%	1%	1%	7%	12%	1%	9%	8%
Adj. Flow (vph)	77	843	52	20	254	30	28	16	18	12	32	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	895	0	20	284	0	0	62	0	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.08	0.63		0.08	0.26			0.29			0.23	
Control Delay	3.2	11.2		10.3	19.1			27.5			30.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.2	11.2		10.3	19.1			27.5			30.0	
Queue Length 50th (ft)	7	150		2	58			11			11	
Queue Length 95th (ft)	19	513		13	209			61			57	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	1060	1606		387	1625			591			647	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.56		0.05	0.17			0.10			0.08	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 56.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	72	784	48	19	236	28	26	15	17	11	30	6
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1855	1884	1948	1646	1932	1910	1862	1831	1862	1948	1821	1948
Adj Flow Rate, veh/h	77	843	30	20	254	19	28	16	18	12	32	6
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	3	3	16	3	3	7	7	7	9	9	9
Cap, veh/h	833	936	33	228	344	26	151	36	35	112	89	16
Arrive On Green	0.38	0.52	0.52	0.06	0.19	0.19	0.12	0.08	0.08	0.12	0.08	0.08
Sat Flow, veh/h	1766	1809	64	1568	1776	133	647	465	455	333	1151	202
Grp Volume(v), veh/h	77	0	873	20	0	273	62	0	0	50	0	0
Grp Sat Flow(s),veh/h/ln	1766	0	1873	1568	0	1909	1566	0	0	1686	0	0
Q Serve(g_s), s	0.0	0.0	21.7	0.0	0.0	6.9	0.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	21.7	0.0	0.0	6.9	1.7	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.07	0.45		0.29	0.24		0.12
Lane Grp Cap(c), veh/h	833	0	969	228	0	370	283	0	0	282	0	0
V/C Ratio(X)	0.09	0.00	0.90	0.09	0.00	0.74	0.22	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	833	0	1960	413	0	1997	721	0	0	760	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.8	0.0	11.3	23.0	0.0	19.6	22.3	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.3	0.1	0.0	1.1	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	11.3	0.3	0.0	3.8	0.8	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	9.8	0.0	12.6	23.0	0.0	20.7	22.5	0.0	0.0	22.5	0.0	0.0
LnGrp LOS	A		B	C		C	C			C		
Approach Vol, veh/h		950			293			62			50	
Approach Delay, s/veh		12.3			20.8			22.5			22.5	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.6	16.0		10.0	8.9	32.7		10.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	8.9		3.7	2.0	23.7		3.3
Green Ext Time (p_c), s	0.1	0.7		0.2	0.0	3.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	794	0	0	308	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1867	0	0	1844	0	1595
Flt Permitted						
Satd. Flow (perm)	1867	0	0	1844	0	1595
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	5%	5%	7%	5%	7%
Adj. Flow (vph)	854	0	0	331	0	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	854	0	0	331	0	46
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	794	0	0	308	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	5	5	7	5	7
Mvmt Flow	854	0	0	331	0	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	854	0	1185	854
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	331	-
Critical Hdwy	-	-	4.15	-	6.25	6.17
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	773	-	220	359
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	773	-	220	359
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	16.5
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	359	-	-	773	-
HCM Lane V/C Ratio	0.129	-	-	-	-
HCM Control Delay (s)	16.5	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	75	11	11	20	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.946	
Flt Protected				0.983	0.971	
Satd. Flow (prot)	1824	0	0	1839	1744	0
Flt Permitted				0.983	0.971	
Satd. Flow (perm)	1824	0	0	1839	1744	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles (%)	1%	0%	0%	4%	1%	0%
Adj. Flow (vph)	115	17	17	31	3	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	132	0	0	48	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	75	11	11	20	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	1	0	0	4	1	0
Mvmt Flow	115	17	17	31	3	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	132	0	189	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	65	-
Critical Hdwy	-	-	4.1	-	6.21	6.1
Critical Hdwy Stg 1	-	-	-	-	5.21	-
Critical Hdwy Stg 2	-	-	-	-	5.21	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1466	-	811	935
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1466	-	801	935
Mov Cap-2 Maneuver	-	-	-	-	801	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	952	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	841	-	-	1466	-
HCM Lane V/C Ratio	0.005	-	-	0.012	-
HCM Control Delay (s)	9.3	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	6	10	6	1	47	40	37	100	1	7	69	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.939			0.999			0.999	
Flt Protected		0.986						0.987			0.995	
Satd. Flow (prot)	0	1680	0	0	1716	0	0	1784	0	0	1808	0
Flt Permitted		0.986						0.987			0.995	
Satd. Flow (perm)	0	1680	0	0	1716	0	0	1784	0	0	1808	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		398			388			725			564	
Travel Time (s)		7.8			8.8			14.1			12.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	8	13	8	1	59	50	46	125	1	9	86	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	110	0	0	172	0	0	96	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

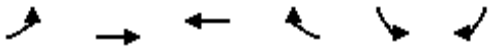
Intersection	
Int Delay, s/veh	4.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	6	10	6	1	47	40	37	100	1	7	69	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	8	12	8	1	59	50	46	125	1	9	86	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	377	323	126	332	323	87	88	0	0	126	0	0
Stage 1	218	218	-	104	104	-	-	-	-	-	-	-
Stage 2	159	105	-	228	219	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	529	549	904	639	611	968	1489	-	-	1442	-	-
Stage 1	741	683	-	905	813	-	-	-	-	-	-	-
Stage 2	807	784	-	788	734	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	449	527	904	603	587	968	1489	-	-	1442	-	-
Mov Cap-2 Maneuver	449	527	-	603	587	-	-	-	-	-	-	-
Stage 1	717	660	-	875	807	-	-	-	-	-	-	-
Stage 2	705	779	-	741	710	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	11.7	10.9	2	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1489	-	-	564	715	1442	-	-
HCM Lane V/C Ratio	0.031	-	-	0.049	0.154	0.006	-	-
HCM Control Delay (s)	7.5	0	-	11.7	10.9	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.5	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	31	0	22	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1862	1262	0	1850	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1862	1262	0	1850	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		583	424		398	
Travel Time (s)		11.4	8.3		7.8	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles (%)	0%	3%	0%	27%	0%	2%
Adj. Flow (vph)	2	48	0	34	85	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	50	34	0	85	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	31	0	22	55	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	0	3	0	27	0	2
Mvmt Flow	2	48	0	34	85	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	34	0	-	0	68	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	4.1	-	-	-	5.4	5.72
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1591	-	-	-	960	1064
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	991	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1591	-	-	-	959	1064
Mov Cap-2 Maneuver	-	-	-	-	959	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	990	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1591	-	-	-	959
HCM Lane V/C Ratio	0.001	-	-	-	0.088
HCM Control Delay (s)	7.3	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	48	2	114	0	0	0	0	60	27	68	48	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.906						0.958				
Flt Protected		0.986									0.972	
Satd. Flow (prot)	0	1649	0	0	0	0	0	1783	0	0	1723	0
Flt Permitted		0.986									0.972	
Satd. Flow (perm)	0	1649	0	0	0	0	0	1783	0	0	1723	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		303			283			282			342	
Travel Time (s)		6.9			6.4			6.4			7.8	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	6%	50%	0%	2%	2%	2%	2%	3%	0%	0%	16%	2%
Adj. Flow (vph)	65	3	154	0	0	0	0	81	36	92	65	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	0	0	0	0	0	117	0	0	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	48	2	114	0	0	0	0	60	27	68	48	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	6	50	0	2	2	2	2	3	0	0	16	2
Mvmt Flow	65	3	154	0	0	0	0	81	36	92	65	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	348	367	65	65	0	0	118	0	0
Stage 1	249	249	-	-	-	-	-	-	-
Stage 2	99	118	-	-	-	-	-	-	-
Critical Hdwy	6.66	7.2	6.3	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	5.66	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.66	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.45	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	629	483	1003	1537	-	-	1483	-	-
Stage 1	772	612	-	-	-	-	-	-	-
Stage 2	910	710	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	589	0	1003	1537	-	-	1483	-	-
Mov Cap-2 Maneuver	589	0	-	-	-	-	-	-	-
Stage 1	723	0	-	-	-	-	-	-	-
Stage 2	910	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	10.9	0	4.4
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1537	-	-	830	1483	-	-
HCM Lane V/C Ratio	-	-	-	0.267	0.062	-	-
HCM Control Delay (s)	0	-	-	10.9	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	13	0	22	18	90	0	0	103	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.915						0.951	
Flt Protected					0.982			0.992				
Satd. Flow (prot)	0	0	0	0	1699	0	0	1783	0	0	1716	0
Flt Permitted					0.982			0.992				
Satd. Flow (perm)	0	0	0	0	1699	0	0	1783	0	0	1716	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		342			297			342			452	
Travel Time (s)		7.8			6.8			7.8			10.3	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	11%	4%	2%	2%	8%	2%
Adj. Flow (vph)	0	0	0	19	0	32	26	132	0	0	151	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	51	0	0	158	0	0	236	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	13	0	22	18	90	0	0	103	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	0	2	0	11	4	2	2	8	2
Mvmt Flow	0	0	0	19	0	32	26	132	0	0	151	85

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	379	422	132	237	0	0	132	0	0
Stage 1	185	185	-	-	-	-	-	-	-
Stage 2	194	237	-	-	-	-	-	-	-
Critical Hdwy	6.6	6.72	6.3	4.21	-	-	4.12	-	-
Critical Hdwy Stg 1	5.6	5.72	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.6	5.72	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	2.299	-	-	2.218	-	-
Pot Cap-1 Maneuver	614	511	919	1279	-	-	1453	-	-
Stage 1	843	739	-	-	-	-	-	-	-
Stage 2	835	700	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	600	0	919	1279	-	-	1453	-	-
Mov Cap-2 Maneuver	600	0	-	-	-	-	-	-	-
Stage 1	824	0	-	-	-	-	-	-	-
Stage 2	835	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1279	-	-	767	1453	-	-
HCM Lane V/C Ratio	0.021	-	-	0.067	-	-	-
HCM Control Delay (s)	7.9	0	-	10	0	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	916	60	32	275	18	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.992				0.911	
Flt Protected				0.995	0.983	
Satd. Flow (prot)	1850	0	0	1779	1138	0
Flt Permitted				0.995	0.983	
Satd. Flow (perm)	1850	0	0	1779	1138	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1259			1011	842	
Travel Time (s)	15.6			12.5	19.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	7%	72%	63%
Adj. Flow (vph)	1018	67	36	306	20	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1085	0	0	342	59	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	916	60	32	275	18	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	7	72	63
Mvmt Flow	1018	67	36	306	20	39

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1084	0	1428	1051
Stage 1	-	-	-	-	1051	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	-	-	4.1	-	6.72	6.63
Critical Hdwy Stg 1	-	-	-	-	5.72	-
Critical Hdwy Stg 2	-	-	-	-	5.72	-
Follow-up Hdwy	-	-	2.2	-	4.148	3.867
Pot Cap-1 Maneuver	-	-	651	-	123	224
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	588	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	651	-	115	224
Mov Cap-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	549	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	37.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	169	-	-	651	-
HCM Lane V/C Ratio	0.348	-	-	0.055	-
HCM Control Delay (s)	37.3	-	-	10.8	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	1.5	-	-	0.2	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	441	0	651	0	0	1223	62	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1715	0	3490	0	0	3321	1419	0	0
Flt Permitted										
Satd. Flow (perm)	0	1715	0	3490	0	0	3321	1419	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	5%	6%	11%	5%	5%
Adj. Flow (vph)	0	464	0	685	0	0	1287	65	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	464	0	685	0	0	1287	65	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	441	0	651	0	0	1223	62	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	7	5	5	5	5	6	11	5	5
Mvmt Flow	0	464	0	685	0	0	1287	65	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1329	343	1287	0	0	685	0	0
Stage 1	685	-	-	-	-	-	-	-
Stage 2	644	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.74	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.37	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	178	657	519	-	-	885	-	0
Stage 1	509	-	-	-	-	-	-	0
Stage 2	531	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	178	657	519	-	-	885	-	-
Mov Cap-2 Maneuver	178	-	-	-	-	-	-	-
Stage 1	509	-	-	-	-	-	-	-
Stage 2	531	-	-	-	-	-	-	-

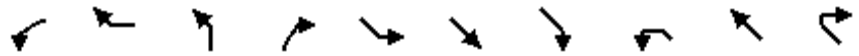
Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	519	-	-	657	885	-
HCM Lane V/C Ratio	-	-	-	0.707	-	-
HCM Control Delay (s)	0	-	-	22.6	0	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	5.8	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	104	0	0	0	1223	0	0	651	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3406	0	0	3438	1455
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3406	0	0	3438	1455
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	13%	5%	5%	5%	6%	5%	5%	5%	11%
Adj. Flow (vph)	0	111	0	0	0	1301	0	0	693	100
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	111	0	0	0	1301	0	0	693	100
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	175	0	0	0	796	531	0	570	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1630	0	0	0	3343	1538	0	3406	0
Flt Permitted										
Satd. Flow (perm)	0	1630	0	0	0	3343	1538	0	3406	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	8%	5%	5%	6%	5%
Adj. Flow (vph)	0	184	0	0	0	838	559	0	600	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	184	0	0	0	838	559	0	600	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	326	0	0	0	796	0	0	570	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1624	0	0	0	3292	0	0	3423	1399
Flt Permitted										
Satd. Flow (perm)	0	1624	0	0	0	3292	0	0	3423	1399
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	8%	5%	5%	5%	8%	5%	5%	6%	16%
Adj. Flow (vph)	0	343	0	0	0	838	0	0	600	97
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	343	0	0	0	838	0	0	600	97
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	40	900	26	71	564	43	122	122	25	56	63	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.989			0.988			0.973	
Flt Protected	0.950			0.950				0.978			0.981	
Satd. Flow (prot)	1876	1894	0	1581	3161	0	0	1863	0	0	1717	0
Flt Permitted	0.384			0.085				0.769			0.739	
Satd. Flow (perm)	758	1894	0	141	3161	0	0	1465	0	0	1294	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			10			5			12	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2983	
Travel Time (s)		23.3			14.7			15.3			45.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	43	978	28	77	613	47	133	133	27	61	68	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	1006	0	77	660	0	0	293	0	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.09	1.05		0.41	0.38			0.83			0.51	
Control Delay	8.0	67.5		15.7	13.8			52.0			33.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.0	67.5		15.7	13.8			52.0			33.0	
Queue Length 50th (ft)	9	~672		16	121			155			73	
Queue Length 95th (ft)	23	#971		42	175			#280			137	
Internal Link Dist (ft)		1460			890			932			2903	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	621	961		357	1727			432			386	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	1.05		0.22	0.38			0.68			0.42	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 86.6
Natural Cycle: 100
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	40	900	26	71	564	43	122	122	25	56	63	29
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1902	1995	1665	1682	1814	1948	1928	1948	1910	1861	1910
Adj Flow Rate, veh/h	43	978	17	77	613	36	133	133	16	61	68	21
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	499	1005	17	166	1704	100	209	161	18	161	159	42
Arrive On Green	0.02	0.54	0.54	0.04	0.56	0.56	0.22	0.20	0.20	0.22	0.20	0.20
Sat Flow, veh/h	1881	1864	32	1585	3069	180	718	809	92	494	799	211
Grp Volume(v), veh/h	43	0	995	77	319	330	282	0	0	150	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1896	1585	1598	1651	1619	0	0	1504	0	0
Q Serve(g_s), s	0.8	0.0	41.2	1.7	9.0	9.0	6.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	41.2	1.7	9.0	9.0	13.2	0.0	0.0	6.6	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.11	0.47		0.06	0.41		0.14
Lane Grp Cap(c), veh/h	499	0	1022	166	888	917	428	0	0	400	0	0
V/C Ratio(X)	0.09	0.00	0.97	0.46	0.36	0.36	0.66	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	735	0	1022	417	888	917	602	0	0	564	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.3	0.0	18.1	19.1	10.0	10.0	30.7	0.0	0.0	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	22.4	0.7	1.1	1.1	0.6	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	27.6	1.0	4.2	4.3	5.8	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	8.4	0.0	40.5	19.9	11.1	11.1	31.3	0.0	0.0	28.3	0.0	0.0
LnGrp LOS	A		D	B	B	B	C			C		
Approach Vol, veh/h		1038			726			282			150	
Approach Delay, s/veh		39.2			12.1			31.3			28.3	
Approach LOS		D			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	51.0		22.2	9.2	49.7		22.2
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.8	11.0		15.2	3.7	43.2		8.6
Green Ext Time (p_c), s	0.0	6.8		1.0	0.1	0.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	1008	0	0	684	11	0	0	0	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998						0.923	
Flt Protected		0.999									0.979	
Satd. Flow (prot)	0	1879	0	0	1780	0	0	1928	0	0	1666	0
Flt Permitted		0.999									0.979	
Satd. Flow (perm)	0	1879	0	0	1780	0	0	1928	0	0	1666	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	28	1061	0	0	720	12	0	0	0	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1089	0	0	732	0	0	0	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	27	1008	0	0	684	11	0	0	0	3	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	28	1061	0	0	720	12	0	0	0	3	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	732	0	0	1061	0	0	1846	1850	1061	1844	1844	726
Stage 1	-	-	-	-	-	-	1118	1118	-	726	726	-
Stage 2	-	-	-	-	-	-	728	732	-	1118	1118	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	877	-	-	660	-	-	96	125	317	38	50	393
Stage 1	-	-	-	-	-	-	345	387	-	355	367	-
Stage 2	-	-	-	-	-	-	510	525	-	197	221	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	877	-	-	660	-	-	89	115	317	36	46	393
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	115	-	36	46	-
Stage 1	-	-	-	-	-	-	318	357	-	327	367	-
Stage 2	-	-	-	-	-	-	505	525	-	182	204	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.2	0	0	58.2
HCM LOS			A	F

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	877	-	-	660	-	-	75
HCM Lane V/C Ratio	-	0.032	-	-	-	-	-	0.098
HCM Control Delay (s)	0	9.2	0	-	0	-	-	58.2
HCM Lane LOS	A	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.3

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	966	45	24	682	13	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.906	
Flt Protected				0.998	0.985	
Satd. Flow (prot)	1784	0	0	1728	1060	0
Flt Permitted				0.998	0.985	
Satd. Flow (perm)	1784	0	0	1728	1060	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1259	806	
Travel Time (s)	10.3			15.6	27.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	60%	60%	8%	60%	60%
Adj. Flow (vph)	1062	49	26	749	14	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1111	0	0	775	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

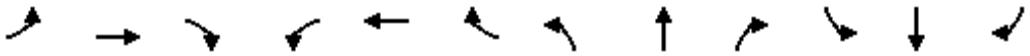
Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	966	45	24	682	13	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	5	60	60	8	60	60
Mvmt Flow	1062	49	26	749	14	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1111	0	1888	1086
Stage 1	-	-	-	-	1086	-
Stage 2	-	-	-	-	802	-
Critical Hdwy	-	-	4.7	-	7	6.8
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.74	-	4.04	3.84
Pot Cap-1 Maneuver	-	-	456	-	55	204
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	355	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	456	-	50	204
Mov Cap-2 Maneuver	-	-	-	-	50	-
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	320	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0.5	64.7
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	104	-	-	456	-
HCM Lane V/C Ratio	0.444	-	-	0.058	-
HCM Control Delay (s)	64.7	-	-	13.4	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	1.9	-	-	0.2	-



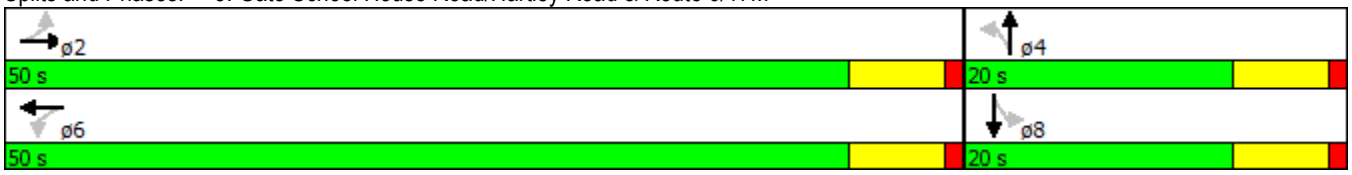
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	862	124	9	588	12	120	9	10	17	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.997			0.990			0.963	
Flt Protected					0.999			0.959			0.978	
Satd. Flow (prot)	0	1742	0	0	1780	0	0	1776	0	0	1166	0
Flt Permitted		0.994			0.983			0.728			0.841	
Satd. Flow (perm)	0	1732	0	0	1751	0	0	1348	0	0	1002	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			3			5			11	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	10	927	133	10	632	13	129	10	11	18	11	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1070	0	0	655	0	0	150	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.86			0.52			0.66			0.23	
Control Delay		20.5			8.4			39.5			22.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.5			8.4			39.5			22.4	
Queue Length 50th (ft)		334			128			56			10	
Queue Length 95th (ft)		#701			235			112			36	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1227			1235			302			230	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.87			0.53			0.50			0.17	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 64.7
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	862	124	9	588	12	120	9	10	17	10	10
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1784	1881	1948	1798	1948	1919	1871	1919	1872	1238	1872
Adj Flow Rate, veh/h	10	927	106	10	632	13	129	10	11	18	11	11
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	74	1003	114	76	1111	23	291	13	14	147	56	39
Arrive On Green	0.68	0.64	0.64	0.68	0.64	0.64	0.16	0.13	0.13	0.16	0.13	0.13
Sat Flow, veh/h	5	1562	177	9	1730	35	1285	100	110	363	449	308
Grp Volume(v), veh/h	1043	0	0	655	0	0	150	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	1745	0	0	1774	0	0	1494	0	0	1120	0	0
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.1	0.0	0.0	10.3	0.0	0.0	4.6	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.01		0.10	0.02		0.02	0.86		0.07	0.45		0.27
Lane Grp Cap(c), veh/h	1259	0	0	1279	0	0	375	0	0	285	0	0
V/C Ratio(X)	0.83	0.00	0.00	0.51	0.00	0.00	0.40	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	1621	0	0	1641	0	0	583	0	0	435	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.8	0.0	0.0	5.1	0.0	0.0	20.8	0.0	0.0	20.0	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	0.0	4.5	0.0	0.0	1.9	0.0	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	10.1	0.0	0.0	5.3	0.0	0.0	21.1	0.0	0.0	20.1	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		1043			655			150			40	
Approach Delay, s/veh		10.1			5.3			21.1			20.1	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		39.2		12.5		39.2		12.5
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		27.1		6.6		12.3		3.5
Green Ext Time (p_c), s		6.1		0.3		7.2		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	46	748	95	40	570	33	29	78	35	22	49	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.992			0.966			0.978	
Flt Protected	0.950			0.950				0.990			0.987	
Satd. Flow (prot)	1762	1847	0	1564	1902	0	0	1719	0	0	1761	0
Flt Permitted	0.278			0.105				0.921			0.870	
Satd. Flow (perm)	516	1847	0	173	1902	0	0	1599	0	0	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			4			15			9	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	3%	9%	16%	3%	1%	1%	7%	12%	1%	9%	8%
Adj. Flow (vph)	49	804	102	43	613	35	31	84	38	24	53	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	906	0	43	648	0	0	153	0	0	92	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.09	0.83		0.21	0.64			0.58			0.36	
Control Delay	5.2	22.2		10.9	19.2			38.6			33.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.2	22.2		10.9	19.2			38.6			33.8	
Queue Length 50th (ft)	6	355		6	264			66			39	
Queue Length 95th (ft)	19	#728		18	407			138			89	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	581	1410		295	1451			449			432	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.08	0.64		0.15	0.45			0.34			0.21	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 74.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	46	748	95	40	570	33	29	78	35	22	49	14
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1855	1878	1948	1646	1930	1910	1862	1809	1862	1948	1824	1948
Adj Flow Rate, veh/h	49	804	80	43	613	24	31	84	38	24	53	15
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	3	3	16	3	3	7	7	7	9	9	9
Cap, veh/h	492	878	87	198	693	27	104	125	52	116	140	35
Arrive On Green	0.20	0.52	0.52	0.05	0.38	0.38	0.16	0.13	0.13	0.16	0.13	0.13
Sat Flow, veh/h	1766	1682	167	1568	1845	72	250	989	409	312	1103	276
Grp Volume(v), veh/h	49	0	884	43	0	637	153	0	0	92	0	0
Grp Sat Flow(s),veh/h/ln	1766	0	1849	1568	0	1917	1648	0	0	1691	0	0
Q Serve(g_s), s	0.0	0.0	26.1	0.0	0.0	18.5	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	26.1	0.0	0.0	18.5	5.1	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.04	0.20		0.25	0.26		0.16
Lane Grp Cap(c), veh/h	492	0	965	198	0	720	336	0	0	347	0	0
V/C Ratio(X)	0.10	0.00	0.92	0.22	0.00	0.88	0.45	0.00	0.00	0.27	0.00	0.00
Avail Cap(c_a), veh/h	492	0	1674	357	0	1736	645	0	0	651	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.8	0.0	13.0	26.9	0.0	17.4	24.7	0.0	0.0	23.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.5	0.2	0.0	1.5	0.4	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	13.7	0.7	0.0	10.0	2.3	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	18.8	0.0	15.6	27.1	0.0	18.9	25.1	0.0	0.0	23.9	0.0	0.0
LnGrp LOS	B		B	C		B	C			C		
Approach Vol, veh/h		933			680			153			92	
Approach Delay, s/veh		15.7			19.4			25.1			23.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.7	28.4		13.5	9.0	37.1		13.5
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	20.5		7.1	2.0	28.1		4.8
Green Ext Time (p_c), s	0.1	1.9		0.6	0.0	3.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	791	0	0	623	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1867	0	0	1844	0	1595
Flt Permitted						
Satd. Flow (perm)	1867	0	0	1844	0	1595
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	5%	5%	7%	5%	7%
Adj. Flow (vph)	851	0	0	670	0	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	851	0	0	670	0	62
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	791	0	0	623	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	5	5	7	5	7
Mvmt Flow	851	0	0	670	0	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	851	0	1521	851
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	670	-
Critical Hdwy	-	-	4.15	-	6.25	6.17
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	775	-	140	361
Stage 1	-	-	-	-	434	-
Stage 2	-	-	-	-	522	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	775	-	140	361
Mov Cap-2 Maneuver	-	-	-	-	140	-
Stage 1	-	-	-	-	434	-
Stage 2	-	-	-	-	522	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	17
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	361	-	-	775	-
HCM Lane V/C Ratio	0.173	-	-	-	-
HCM Control Delay (s)	17	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	153	14	4	102	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.928	
Flt Protected				0.998	0.977	
Satd. Flow (prot)	1751	0	0	1793	1696	0
Flt Permitted				0.998	0.977	
Satd. Flow (perm)	1751	0	0	1793	1696	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	6%	1%	1%	7%	1%	3%
Adj. Flow (vph)	204	19	5	136	7	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	223	0	0	141	15	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	153	14	4	102	5	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	6	1	1	7	1	3
Mvmt Flow	204	19	5	136	7	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	223	0	360	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	147	-
Critical Hdwy	-	-	4.11	-	6.21	6.13
Critical Hdwy Stg 1	-	-	-	-	5.21	-
Critical Hdwy Stg 2	-	-	-	-	5.21	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.327
Pot Cap-1 Maneuver	-	-	1352	-	654	829
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1352	-	651	829
Mov Cap-2 Maneuver	-	-	-	-	651	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	886	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	737	-	-	1352	-
HCM Lane V/C Ratio	0.02	-	-	0.004	-
HCM Control Delay (s)	10	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	28	56	25	1	82	48	36	96	2	12	64	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.951			0.998				
Flt Protected		0.987						0.987			0.992	
Satd. Flow (prot)	0	1696	0	0	1738	0	0	1782	0	0	1804	0
Flt Permitted		0.987						0.987			0.992	
Satd. Flow (perm)	0	1696	0	0	1738	0	0	1782	0	0	1804	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		395			329			676			535	
Travel Time (s)		7.7			7.5			13.2			12.2	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	33	66	29	1	96	56	42	113	2	14	75	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	153	0	0	157	0	0	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

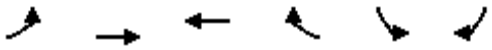
Intersection	
Int Delay, s/veh	7.4

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	28	56	25	1	82	48	36	96	2	12	64	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	33	66	29	1	96	56	42	113	2	14	75	0

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	379	303	114	350	304	75	75	0	0	115	0	0
Stage 1	199	199	-	104	104	-	-	-	-	-	-	-
Stage 2	180	104	-	246	200	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	527	566	919	623	625	982	1505	-	-	1455	-	-
Stage 1	762	699	-	905	813	-	-	-	-	-	-	-
Stage 2	783	785	-	772	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	423	544	919	531	600	982	1505	-	-	1455	-	-
Mov Cap-2 Maneuver	423	544	-	531	600	-	-	-	-	-	-	-
Stage 1	739	678	-	878	805	-	-	-	-	-	-	-
Stage 2	643	777	-	654	724	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	13.4	11.6	2	1.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1505	-	-	555	699	1455	-	-
HCM Lane V/C Ratio	0.028	-	-	0.231	0.22	0.01	-	-
HCM Control Delay (s)	7.5	0	-	13.4	11.6	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.8	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	71	0	107	96	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1897	1512	0	1745	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1897	1512	0	1745	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		499	358		395	
Travel Time (s)		9.7	7.0		7.7	
Confl. Peds. (#/hr)				96		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	1%	0%	6%	6%	0%
Adj. Flow (vph)	3	93	0	141	126	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	96	141	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	71	0	107	96	0
Conflicting Peds, #/hr	0	0	0	96	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	0	1	0	6	6	0
Mvmt Flow	3	93	0	141	126	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	141	0	-	0	169	70
Stage 1	-	-	-	-	70	-
Stage 2	-	-	-	-	99	-
Critical Hdwy	4.1	-	-	-	5.46	5.7
Critical Hdwy Stg 1	-	-	-	-	4.46	-
Critical Hdwy Stg 2	-	-	-	-	4.46	-
Follow-up Hdwy	2.2	-	-	-	3.554	3.3
Pot Cap-1 Maneuver	1455	-	-	-	851	1008
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	941	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1455	-	-	-	849	1008
Mov Cap-2 Maneuver	-	-	-	-	849	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1455	-	-	-	849
HCM Lane V/C Ratio	0.002	-	-	-	0.149
HCM Control Delay (s)	7.5	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	193	0	152	0	0	0	0	162	42	132	154	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.941						0.972				
Flt Protected		0.973									0.977	
Satd. Flow (prot)	0	1640	0	0	0	0	0	1720	0	0	1709	0
Flt Permitted		0.973									0.977	
Satd. Flow (perm)	0	1640	0	0	0	0	0	1720	0	0	1709	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		326			340			202			336	
Travel Time (s)		7.4			7.7			4.6			7.6	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	6%	0%	5%	2%	2%	2%	2%	8%	5%	7%	9%	2%
Adj. Flow (vph)	268	0	211	0	0	0	0	225	58	183	214	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	479	0	0	0	0	0	283	0	0	397	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	72.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	193	0	152	0	0	0	0	162	42	132	154	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	6	0	5	2	2	2	2	8	5	7	9	2
Mvmt Flow	268	0	211	0	0	0	0	225	58	183	214	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	835	864	214	214	0	0	283	0	0
Stage 1	581	581	-	-	-	-	-	-	-
Stage 2	254	283	-	-	-	-	-	-	-
Critical Hdwy	6.66	6.7	6.35	4.12	-	-	4.17	-	-
Critical Hdwy Stg 1	5.66	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.66	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.345	2.218	-	-	2.263	-	-
Pot Cap-1 Maneuver	317	280	814	1356	-	-	1251	-	-
Stage 1	534	487	-	-	-	-	-	-	-
Stage 2	768	670	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 264	0	814	1356	-	-	1251	-	-
Mov Cap-2 Maneuver	~ 264	0	-	-	-	-	-	-	-
Stage 1	445	0	-	-	-	-	-	-	-
Stage 2	768	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	172.8	0	3.9
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1356	-	-	376	1251	-	-
HCM Lane V/C Ratio	-	-	-	1.274	0.147	-	-
HCM Control Delay (s)	0	-	-	172.8	8.4	0	-
HCM Lane LOS	A	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	21.3	0.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	37	2	101	38	317	0	0	249	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.903						0.964	
Flt Protected					0.987			0.995				
Satd. Flow (prot)	0	0	0	0	1581	0	0	1818	0	0	1718	0
Flt Permitted					0.987			0.995				
Satd. Flow (perm)	0	0	0	0	1581	0	0	1818	0	0	1718	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		418			312			336			432	
Travel Time (s)		9.5			7.1			7.6			9.8	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	2%	2%	2%	3%	0%	8%	24%	1%	2%	2%	9%	2%
Adj. Flow (vph)	0	0	0	51	3	140	53	440	0	0	346	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	194	0	0	493	0	0	472	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	37	2	101	38	317	0	0	249	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	3	0	8	24	1	2	2	9	2
Mvmt Flow	0	0	0	51	3	140	53	440	0	0	346	126

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	955	1018	440	472	0	0	440	0	0
Stage 1	546	546	-	-	-	-	-	-	-
Stage 2	409	472	-	-	-	-	-	-	-
Critical Hdwy	6.63	6.7	6.38	4.34	-	-	4.12	-	-
Critical Hdwy Stg 1	5.63	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.63	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.372	2.416	-	-	2.218	-	-
Pot Cap-1 Maneuver	271	226	597	984	-	-	1120	-	-
Stage 1	561	506	-	-	-	-	-	-	-
Stage 2	653	548	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	252	0	597	984	-	-	1120	-	-
Mov Cap-2 Maneuver	252	0	-	-	-	-	-	-	-
Stage 1	521	0	-	-	-	-	-	-	-
Stage 2	653	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	19.7	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	984	-	-	437	1120	-	-
HCM Lane V/C Ratio	0.054	-	-	0.445	-	-	-
HCM Control Delay (s)	8.9	0	-	19.7	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.2	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	970	25	16	692	14	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.923	
Flt Protected				0.999	0.979	
Satd. Flow (prot)	1785	0	0	1846	1385	0
Flt Permitted				0.999	0.979	
Satd. Flow (perm)	1785	0	0	1846	1385	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1259			1011	794	
Travel Time (s)	15.6			12.5	18.0	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	12%	38%	2%	36%	39%
Adj. Flow (vph)	1115	29	18	795	16	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1144	0	0	813	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	970	25	16	692	14	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	12	38	2	36	39
Mvmt Flow	1115	29	18	795	16	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1144	0	1961	1129
Stage 1	-	-	-	-	1129	-
Stage 2	-	-	-	-	832	-
Critical Hdwy	-	-	4.48	-	6.36	6.39
Critical Hdwy Stg 1	-	-	-	-	5.36	-
Critical Hdwy Stg 2	-	-	-	-	5.36	-
Follow-up Hdwy	-	-	2.542	-	3.824	3.651
Pot Cap-1 Maneuver	-	-	497	-	70	223
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	411	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	497	-	65	223
Mov Cap-2 Maneuver	-	-	-	-	65	-
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	54.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	108	-	-	497	-
HCM Lane V/C Ratio	0.341	-	-	0.037	-
HCM Control Delay (s)	54.7	-	-	12.5	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	400	0	822	0	0	945	139	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	421	0	865	0	0	995	146	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	421	0	865	0	0	995	146	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	400	0	822	0	0	945	139	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	421	0	865	0	0	995	146	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1362	433	995	0	0	865	0	0
Stage 1	865	-	-	-	-	-	-	-
Stage 2	497	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	170	580	673	-	-	755	-	0
Stage 1	422	-	-	-	-	-	-	0
Stage 2	617	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	170	580	673	-	-	755	-	-
Mov Cap-2 Maneuver	170	-	-	-	-	-	-	-
Stage 1	422	-	-	-	-	-	-	-
Stage 2	617	-	-	-	-	-	-	-

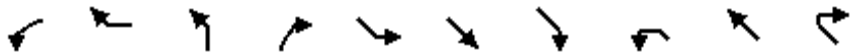
Approach	WB	NB	SB
HCM Control Delay, s	25.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	673	-	-	580	755	-
HCM Lane V/C Ratio	-	-	-	0.726	-	-
HCM Control Delay (s)	0	-	-	25.9	0	-
HCM Lane LOS	A	-	-	D	A	-
HCM 95th %tile Q(veh)	0	-	-	6.1	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	75	0	0	0	945	0	0	822	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	77	0	0	0	974	0	0	847	222
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	77	0	0	0	974	0	0	847	222
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	86	0	0	0	600	420	0	951	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	91	0	0	0	632	442	0	1001	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	91	0	0	0	632	442	0	1001	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	157	0	0	0	600	0	0	951	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	164	0	0	0	625	0	0	991	138
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	164	0	0	0	625	0	0	991	138
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	547	25	218	842	101	147	120	20	65	147	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.984			0.991			0.976	
Flt Protected	0.950			0.950				0.975			0.988	
Satd. Flow (prot)	1876	1892	0	1690	3272	0	0	1855	0	0	1744	0
Flt Permitted	0.256			0.196				0.607			0.825	
Satd. Flow (perm)	506	1892	0	349	3272	0	0	1155	0	0	1456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			17			4			11	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2972	
Travel Time (s)		23.3			14.7			15.3			45.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	33	576	26	229	886	106	155	126	21	68	155	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	602	0	229	992	0	0	302	0	0	272	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.10	0.74		0.62	0.56			0.99			0.70	
Control Delay	9.0	29.8		15.9	16.5			85.7			42.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.0	29.8		15.9	16.5			85.7			42.0	
Queue Length 50th (ft)	7	289		57	214			177			141	
Queue Length 95th (ft)	18	466		92	282			#377			#270	
Internal Link Dist (ft)		1460			890			932			2892	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	454	816		438	1775			306			390	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.74		0.52	0.56			0.99			0.70	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 95.3
Natural Cycle: 80
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	31	547	25	218	842	101	147	120	20	65	147	47
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1903	1995	1779	1750	1814	1948	1920	1948	1910	1871	1910
Adj Flow Rate, veh/h	33	576	15	229	886	95	155	126	10	68	155	38
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	322	848	22	406	1616	173	224	150	11	132	259	58
Arrive On Green	0.02	0.46	0.46	0.09	0.53	0.53	0.27	0.25	0.25	0.27	0.25	0.25
Sat Flow, veh/h	1881	1847	48	1694	3030	325	660	610	45	329	1053	236
Grp Volume(v), veh/h	33	0	591	229	486	495	291	0	0	261	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1895	1694	1663	1693	1315	0	0	1618	0	0
Q Serve(g_s), s	0.8	0.0	21.9	5.9	17.2	17.2	6.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	21.9	5.9	17.2	17.2	19.3	0.0	0.0	12.4	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.19	0.53		0.03	0.26		0.15
Lane Grp Cap(c), veh/h	322	0	870	406	887	903	415	0	0	486	0	0
V/C Ratio(X)	0.10	0.00	0.68	0.56	0.55	0.55	0.70	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	540	0	870	552	887	903	464	0	0	540	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.1	0.0	19.0	13.9	13.7	13.7	32.4	0.0	0.0	29.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	4.3	0.5	2.4	2.4	3.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	12.4	2.7	8.4	8.6	6.9	0.0	0.0	5.5	0.0	0.0
LnGrp Delay(d),s/veh	13.1	0.0	23.2	14.3	16.2	16.1	35.5	0.0	0.0	29.9	0.0	0.0
LnGrp LOS	B		C	B	B	B	D			C		
Approach Vol, veh/h		624			1210			291			261	
Approach Delay, s/veh		22.7			15.8			35.5			29.9	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	53.6		28.0	14.3	47.0		28.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.8	19.2		21.3	7.9	23.9		14.4
Green Ext Time (p_c), s	0.0	5.5		0.7	0.4	5.0		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	6	706	0	0	1100	6	0	0	0	6	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.878	
Flt Protected											0.995	
Satd. Flow (prot)	0	1880	0	0	1780	0	0	1928	0	0	1611	0
Flt Permitted											0.995	
Satd. Flow (perm)	0	1880	0	0	1780	0	0	1928	0	0	1611	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	6	743	0	0	1158	6	0	0	0	6	0	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	749	0	0	1164	0	0	0	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	6	706	0	0	1100	6	0	0	0	6	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	6	743	0	0	1158	6	0	0	0	6	0	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1164	0	0	743	0	0	1945	1920	743	1917	1917	1161
Stage 1	-	-	-	-	-	-	756	756	-	1161	1161	-
Stage 2	-	-	-	-	-	-	1189	1164	-	756	756	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	604	-	-	869	-	-	84	115	462	34	44	210
Stage 1	-	-	-	-	-	-	496	515	-	185	209	-
Stage 2	-	-	-	-	-	-	320	373	-	340	353	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	604	-	-	869	-	-	61	113	462	34	43	210
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	113	-	34	43	-
Stage 1	-	-	-	-	-	-	488	506	-	182	209	-
Stage 2	-	-	-	-	-	-	235	373	-	334	347	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	0	50.9
HCM LOS			A	F

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	604	-	-	869	-	-	138
HCM Lane V/C Ratio	-	0.01	-	-	-	-	-	0.45
HCM Control Delay (s)	0	11	0	-	0	-	-	50.9
HCM Lane LOS	A	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	2

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	706	6	2	1090	16	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.953	
Flt Protected					0.968	
Satd. Flow (prot)	1835	0	0	1827	1735	0
Flt Permitted					0.968	
Satd. Flow (perm)	1835	0	0	1827	1735	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	1%	4%	1%	1%
Adj. Flow (vph)	751	6	2	1160	17	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	757	0	0	1162	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

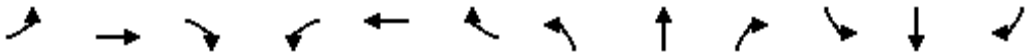
Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	706	6	2	1090	16	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	1	1	4	1	1
Mvmt Flow	751	6	2	1160	17	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	757	0	1918	754
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	1164	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	858	-	75	411
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	298	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	858	-	74	411
Mov Cap-2 Maneuver	-	-	-	-	74	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	296	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	51.7
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	102	-	-	858	-
HCM Lane V/C Ratio	0.25	-	-	0.002	-
HCM Control Delay (s)	51.7	-	-	9.2	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0	-

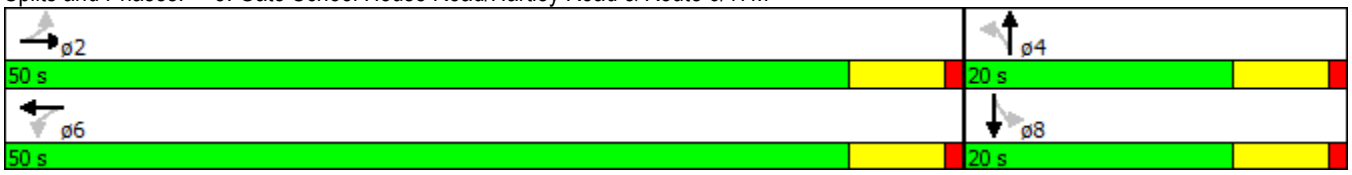


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	612	96	10	956	11	133	9	9	9	9	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.992			0.944	
Flt Protected		0.999			0.999			0.958			0.986	
Satd. Flow (prot)	0	1820	0	0	1929	0	0	1767	0	0	1554	0
Flt Permitted		0.977			0.991			0.728			0.893	
Satd. Flow (perm)	0	1780	0	0	1913	0	0	1343	0	0	1407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			2			4			14	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	5%	2%	10%	4%	0%	3%	9%	0%	10%	20%	8%
Adj. Flow (vph)	14	658	103	11	1028	12	143	10	10	10	10	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	775	0	0	1051	0	0	163	0	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.69			0.87			0.68			0.13	
Control Delay		11.7			20.3			40.1			17.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		11.7			20.3			40.1			17.9	
Queue Length 50th (ft)		171			300			60			7	
Queue Length 95th (ft)		304			#634			#134			29	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1267			1356			305			328	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.61			0.78			0.53			0.10	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 62.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	612	96	10	956	11	133	9	9	9	9	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1868	1881	1948	1947	1948	1919	1860	1919	1872	1669	1872
Adj Flow Rate, veh/h	14	658	76	11	1028	12	143	10	10	10	10	14
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	5	5	4	4	4	9	9	9	20	20	20
Cap, veh/h	83	987	112	80	1166	14	317	12	12	135	86	87
Arrive On Green	0.65	0.61	0.61	0.65	0.61	0.61	0.18	0.14	0.14	0.18	0.14	0.14
Sat Flow, veh/h	12	1612	184	7	1904	22	1273	89	89	274	617	624
Grp Volume(v), veh/h	748	0	0	1051	0	0	163	0	0	34	0	0
Grp Sat Flow(s),veh/h/ln	1808	0	0	1932	0	0	1451	0	0	1515	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.3	0.0	0.0	20.5	0.0	0.0	4.9	0.0	0.0	0.9	0.0	0.0
Prop In Lane	0.02		0.10	0.01		0.01	0.88		0.06	0.29		0.41
Lane Grp Cap(c), veh/h	1258	0	0	1339	0	0	402	0	0	370	0	0
V/C Ratio(X)	0.59	0.00	0.00	0.78	0.00	0.00	0.41	0.00	0.00	0.09	0.00	0.00
Avail Cap(c_a), veh/h	1783	0	0	1911	0	0	615	0	0	585	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.0	0.0	0.0	7.6	0.0	0.0	19.1	0.0	0.0	18.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.8	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	0.0	9.9	0.0	0.0	1.9	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	6.2	0.0	0.0	8.4	0.0	0.0	19.3	0.0	0.0	18.1	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		748			1051			163			34	
Approach Delay, s/veh		6.2			8.4			19.3			18.1	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.6		12.7		35.6		12.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		14.3		6.9		22.5		2.9
Green Ext Time (p_c), s		7.7		0.3		7.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	58	496	74	36	811	70	33	61	75	91	71	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.988			0.940			0.990	
Flt Protected	0.950			0.950				0.990			0.975	
Satd. Flow (prot)	1729	1871	0	1711	1879	0	0	1721	0	0	1794	0
Flt Permitted	0.085			0.303				0.899			0.682	
Satd. Flow (perm)	155	1871	0	546	1879	0	0	1563	0	0	1255	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			7			35			4	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	61	522	78	38	854	74	35	64	79	96	75	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	600	0	38	928	0	0	178	0	0	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.29	0.57		0.08	0.91			0.53			0.74	
Control Delay	17.3	17.2		7.2	32.6			34.4			54.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	17.3	17.2		7.2	32.6			34.4			54.5	
Queue Length 50th (ft)	11	150		10	465			79			105	
Queue Length 95th (ft)	23	390		16	#787			151			#219	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	284	1289		502	1247			410			311	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.21	0.47		0.08	0.74			0.43			0.59	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 84.3
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	58	496	74	36	811	70	33	61	75	91	71	13
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1914	1910	1862	1862	1862	1948	1859	1948
Adj Flow Rate, veh/h	61	522	57	38	854	63	35	64	79	96	75	14
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	189	588	64	515	926	68	104	108	116	194	107	18
Arrive On Green	0.05	0.35	0.35	0.22	0.53	0.53	0.18	0.15	0.15	0.18	0.15	0.15
Sat Flow, veh/h	1733	1692	185	1716	1761	130	245	707	760	723	699	116
Grp Volume(v), veh/h	61	0	579	38	0	917	178	0	0	185	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1877	1716	0	1891	1713	0	0	1538	0	0
Q Serve(g_s), s	0.0	0.0	19.0	0.0	0.0	29.1	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	19.0	0.0	0.0	29.1	6.0	0.0	0.0	7.0	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.07	0.20		0.44	0.52		0.08
Lane Grp Cap(c), veh/h	189	0	652	515	0	994	380	0	0	366	0	0
V/C Ratio(X)	0.32	0.00	0.89	0.07	0.00	0.92	0.47	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	350	0	1556	515	0	1568	603	0	0	569	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.7	0.0	20.1	19.2	0.0	14.2	25.8	0.0	0.0	25.8	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.7	0.0	0.0	4.5	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	10.1	0.5	0.0	16.3	2.9	0.0	0.0	3.0	0.0	0.0
LnGrp Delay(d),s/veh	30.0	0.0	21.8	19.2	0.0	18.7	26.1	0.0	0.0	26.2	0.0	0.0
LnGrp LOS	C		C	B		B	C			C		
Approach Vol, veh/h		640			955			178			185	
Approach Delay, s/veh		22.5			18.8			26.1			26.2	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	40.2		15.9	20.6	28.6		15.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	31.1		8.0	2.0	21.0		9.0
Green Ext Time (p_c), s	0.1	3.1		0.9	0.1	1.7		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	542	0	0	917	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	589	0	0	997	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	589	0	0	997	0	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	542	0	0	917	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	589	0	0	997	0	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	589	0	1586	589
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	997	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	972	-	128	511
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	372	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	972	-	128	511
Mov Cap-2 Maneuver	-	-	-	-	128	-
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	372	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	511	-	-	972	-
HCM Lane V/C Ratio	0.047	-	-	-	-
HCM Control Delay (s)	12.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	96	7	13	287	18	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.955	
Flt Protected				0.998	0.968	
Satd. Flow (prot)	1680	0	0	1760	1759	0
Flt Permitted				0.998	0.968	
Satd. Flow (perm)	1680	0	0	1760	1759	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	11%	2%	5%	9%	0%	1%
Adj. Flow (vph)	109	8	15	326	20	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	0	341	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	96	7	13	287	18	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	2	5	9	0	1
Mvmt Flow	109	8	15	326	20	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	117	0	469	113
Stage 1	-	-	-	-	113	-
Stage 2	-	-	-	-	356	-
Critical Hdwy	-	-	4.15	-	6.2	6.11
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1453	-	571	946
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	728	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1453	-	564	946
Mov Cap-2 Maneuver	-	-	-	-	564	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	652	-	-	1453	-
HCM Lane V/C Ratio	0.047	-	-	0.01	-
HCM Control Delay (s)	10.8	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	188	87	2	62	56	61	163	3	13	173	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.937			0.998			0.999	
Flt Protected		0.995			0.999			0.987			0.997	
Satd. Flow (prot)	0	1697	0	0	1711	0	0	1782	0	0	1811	0
Flt Permitted		0.995			0.999			0.987			0.997	
Satd. Flow (perm)	0	1697	0	0	1711	0	0	1782	0	0	1811	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			701			542	
Travel Time (s)		7.7			8.6			13.7			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	35	221	102	2	73	66	72	192	4	15	204	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	358	0	0	141	0	0	268	0	0	221	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

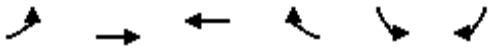
Intersection	
Int Delay, s/veh	23.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	30	188	87	2	62	56	61	163	3	13	173	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	35	221	102	2	73	66	72	192	4	15	204	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	642	573	194	734	574	205	206	0	0	195	0	0
Stage 1	337	337	-	235	235	-	-	-	-	-	-	-
Stage 2	305	236	-	499	339	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	332	375	822	360	453	838	1348	-	-	1360	-	-
Stage 1	623	590	-	782	724	-	-	-	-	-	-	-
Stage 2	652	668	-	579	659	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	251	348	822	147	421	838	1348	-	-	1360	-	-
Mov Cap-2 Maneuver	251	348	-	147	421	-	-	-	-	-	-	-
Stage 1	586	555	-	735	715	-	-	-	-	-	-	-
Stage 2	533	660	-	287	619	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	56.4	14.3	2.1	0.5
HCM LOS	F	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1348	-	-	398	527	1360	-	-
HCM Lane V/C Ratio	0.053	-	-	0.902	0.268	0.011	-	-
HCM Control Delay (s)	7.8	0	-	56.4	14.3	7.7	0	-
HCM Lane LOS	A	A	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	9.4	1.1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	25	0	305	78	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1488	1556	0	1729	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1488	1556	0	1729	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		589	347		397	
Travel Time (s)		11.5	6.8		7.7	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	29%	0%	3%	7%	2%
Adj. Flow (vph)	0	31	0	381	98	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	31	381	0	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	25	0	305	78	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	29	0	3	7	2
Mvmt Flow	0	31	0	381	98	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	381	0	-	0	222	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	4.1	-	-	-	5.47	5.72
Critical Hdwy Stg 1	-	-	-	-	4.47	-
Critical Hdwy Stg 2	-	-	-	-	4.47	-
Follow-up Hdwy	2.2	-	-	-	3.563	3.318
Pot Cap-1 Maneuver	1189	-	-	-	803	874
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1189	-	-	-	803	874
Mov Cap-2 Maneuver	-	-	-	-	803	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	987	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1189	-	-	-	803
HCM Lane V/C Ratio	-	-	-	-	0.121
HCM Control Delay (s)	0	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	111	2	0	0	0	0	0	199	62	70	341	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.968				
Flt Protected		0.953									0.992	
Satd. Flow (prot)	0	1670	0	0	0	0	0	1734	0	0	1778	0
Flt Permitted		0.953									0.992	
Satd. Flow (perm)	0	1670	0	0	0	0	0	1734	0	0	1778	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	123	2	0	0	0	0	0	221	69	78	379	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	0	0	0	290	0	0	457	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	111	2	0	0	0	0	0	199	62	70	341	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	8	0	4	2	2	2	2	8	0	3	6	2
Mvmt Flow	123	2	0	0	0	0	0	221	69	78	379	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	790	824	379	379	0	0	290	0	0
Stage 1	534	534	-	-	-	-	-	-	-
Stage 2	256	290	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.34	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.336	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	336	296	657	1179	-	-	1266	-	-
Stage 1	559	512	-	-	-	-	-	-	-
Stage 2	762	665	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	310	0	657	1179	-	-	1266	-	-
Mov Cap-2 Maneuver	310	0	-	-	-	-	-	-	-
Stage 1	515	0	-	-	-	-	-	-	-
Stage 2	762	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	24.3	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1179	-	-	310	1266	-	-
HCM Lane V/C Ratio	-	-	-	0.405	0.061	-	-
HCM Control Delay (s)	0	-	-	24.3	8	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.9	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	155	2	163	60	250	0	0	256	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931						0.965	
Flt Protected					0.976			0.990				
Satd. Flow (prot)	0	0	0	0	1644	0	0	1737	0	0	1747	0
Flt Permitted					0.976			0.990				
Satd. Flow (perm)	0	0	0	0	1644	0	0	1737	0	0	1747	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	167	2	175	65	269	0	0	275	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	344	0	0	334	0	0	371	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	10

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	155	2	163	60	250	0	0	256	89
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	5	0	4	15	6	2	2	7	1
Mvmt Flow	0	0	0	167	2	175	65	269	0	0	275	96

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	721	769	269	371	0	0	269	0	0
Stage 1	398	398	-	-	-	-	-	-	-
Stage 2	323	371	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.7	6.34	4.25	-	-	4.12	-	-
Critical Hdwy Stg 1	5.65	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.336	2.335	-	-	2.218	-	-
Pot Cap-1 Maneuver	374	320	759	1119	-	-	1295	-	-
Stage 1	657	593	-	-	-	-	-	-	-
Stage 2	714	610	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	349	0	759	1119	-	-	1295	-	-
Mov Cap-2 Maneuver	349	0	-	-	-	-	-	-	-
Stage 1	612	0	-	-	-	-	-	-	-
Stage 2	714	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	28.8	1.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1119	-	-	483	1295	-	-
HCM Lane V/C Ratio	0.058	-	-	0.712	-	-	-
HCM Control Delay (s)	8.4	0	-	28.8	0	-	-
HCM Lane LOS	A	A	-	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	5.6	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	688	26	44	1037	55	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.960	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1792	0	0	1830	1958	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1792	0	0	1830	1958	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	796	
Travel Time (s)	15.7			12.5	18.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	46%	18%	3%	0%	0%
Adj. Flow (vph)	724	27	46	1092	58	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	751	0	0	1138	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	688	26	44	1037	55	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	46	18	3	0	0
Mvmt Flow	724	27	46	1092	58	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	752	0	1922	738
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	1184	-
Critical Hdwy	-	-	4.28	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.362	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	790	-	92	439
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	334	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	790	-	78	439
Mov Cap-2 Maneuver	-	-	-	-	78	-
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	285	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	115.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	103	-	-	790	-
HCM Lane V/C Ratio	0.797	-	-	0.059	-
HCM Control Delay (s)	115.2	-	-	9.8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	4.4	-	-	0.2	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	440	0	821	0	0	960	145	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	463	0	864	0	0	1011	153	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	463	0	864	0	0	1011	153	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	440	0	821	0	0	960	145	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	463	0	864	0	0	1011	153	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1369	432	1011	0	0	864	0	0
Stage 1	864	-	-	-	-	-	-	-
Stage 2	505	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	168	581	664	-	-	756	-	0
Stage 1	422	-	-	-	-	-	-	0
Stage 2	612	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	168	581	664	-	-	756	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-	-	-
Stage 1	422	-	-	-	-	-	-	-
Stage 2	612	-	-	-	-	-	-	-

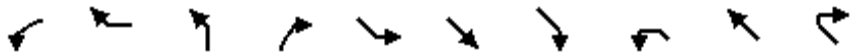
Approach	WB	NB	SB
HCM Control Delay, s	31.2	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	664	-	-	581	756	-
HCM Lane V/C Ratio	-	-	-	0.797	-	-
HCM Control Delay (s)	0	-	-	31.2	0	-
HCM Lane LOS	A	-	-	D	A	-
HCM 95th %tile Q(veh)	0	-	-	7.7	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	110	0	0	0	960	0	0	821	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	113	0	0	0	990	0	0	846	288
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	113	0	0	0	990	0	0	846	288
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	117	0	0	0	623	447	0	983	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	123	0	0	0	656	471	0	1035	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	123	0	0	0	656	471	0	1035	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	145	0	0	0	623	0	0	983	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	151	0	0	0	649	0	0	1024	153
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	151	0	0	0	649	0	0	1024	153
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	13	590	17	210	870	108	127	123	13	54	155	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.983			0.993			0.977	
Flt Protected	0.950			0.950				0.976			0.989	
Satd. Flow (prot)	1876	1894	0	1690	3269	0	0	1860	0	0	1748	0
Flt Permitted	0.268			0.180				0.604			0.848	
Satd. Flow (perm)	529	1894	0	320	3269	0	0	1151	0	0	1499	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			17			3			10	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2988	
Travel Time (s)		23.3			14.7			15.3			45.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	14	621	18	221	916	114	134	129	14	57	163	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	639	0	221	1030	0	0	277	0	0	264	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.04	0.78		0.60	0.53			0.94			0.68	
Control Delay	8.6	32.2		15.6	13.0			76.7			41.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.6	32.2		15.6	13.0			76.7			41.5	
Queue Length 50th (ft)	3	326		55	167			162			138	
Queue Length 95th (ft)	10	#547		93	293			#338			239	
Internal Link Dist (ft)		1460			890			932			2908	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	465	819		429	1959			305			402	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.03	0.78		0.52	0.53			0.91			0.66	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 95.2
Natural Cycle: 80
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	13	590	17	210	870	108	127	123	13	54	155	42
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1902	1995	1779	1750	1814	1948	1919	1948	1910	1871	1910
Adj Flow Rate, veh/h	14	621	7	221	916	103	134	129	3	57	163	33
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	313	894	10	399	1674	188	204	161	3	115	262	49
Arrive On Green	0.01	0.48	0.48	0.09	0.56	0.56	0.25	0.23	0.23	0.25	0.23	0.23
Sat Flow, veh/h	1881	1877	21	1694	3014	339	627	714	15	281	1162	216
Grp Volume(v), veh/h	14	0	628	221	505	514	266	0	0	253	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1898	1694	1663	1690	1356	0	0	1659	0	0
Q Serve(g_s), s	0.3	0.0	22.3	5.3	16.7	16.7	4.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	22.3	5.3	16.7	16.7	16.4	0.0	0.0	11.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.20	0.50		0.01	0.23		0.13
Lane Grp Cap(c), veh/h	313	0	904	399	924	939	400	0	0	464	0	0
V/C Ratio(X)	0.04	0.00	0.69	0.55	0.55	0.55	0.66	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	557	0	904	564	924	939	497	0	0	571	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.0	0.0	17.6	13.2	12.2	12.2	31.8	0.0	0.0	29.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	4.4	0.4	2.3	2.3	1.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	12.6	2.4	8.2	8.3	5.9	0.0	0.0	5.2	0.0	0.0
LnGrp Delay(d),s/veh	12.0	0.0	22.0	13.7	14.5	14.5	33.1	0.0	0.0	30.3	0.0	0.0
LnGrp LOS	B		C	B	B	B	C			C		
Approach Vol, veh/h		642			1240			266			253	
Approach Delay, s/veh		21.8			14.4			33.1			30.3	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	53.8		25.4	13.7	47.0		25.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.3	18.7		18.4	7.3	24.3		13.5
Green Ext Time (p_c), s	0.0	5.9		1.0	0.4	5.2		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	6	693	0	0	1101	4	0	0	0	12	0	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt											0.892	
Flt Protected											0.990	
Satd. Flow (prot)	0	1880	0	0	1782	0	0	1928	0	0	1628	0
Flt Permitted											0.990	
Satd. Flow (perm)	0	1880	0	0	1782	0	0	1928	0	0	1628	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	6	729	0	0	1159	4	0	0	0	13	0	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	735	0	0	1163	0	0	0	0	0	64	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	6	693	0	0	1101	4	0	0	0	12	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	6	729	0	0	1159	4	0	0	0	13	0	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1163	0	0	729	0	0	1928	1905	729	1903	1903	1161
Stage 1	-	-	-	-	-	-	742	742	-	1161	1161	-
Stage 2	-	-	-	-	-	-	1186	1163	-	742	742	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	604	-	-	879	-	-	86	117	470	34	45	210
Stage 1	-	-	-	-	-	-	503	521	-	185	209	-
Stage 2	-	-	-	-	-	-	321	373	-	347	359	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	604	-	-	879	-	-	64	115	470	34	44	210
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	115	-	34	44	-
Stage 1	-	-	-	-	-	-	494	512	-	182	209	-
Stage 2	-	-	-	-	-	-	244	373	-	341	353	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	0	84.1
HCM LOS			A	F

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	604	-	-	879	-	-	103
HCM Lane V/C Ratio	-	0.01	-	-	-	-	-	0.613
HCM Control Delay (s)	0	11	0	-	0	-	-	84.1
HCM Lane LOS	A	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	3

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	700	5	5	1100	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.932	
Flt Protected					0.976	
Satd. Flow (prot)	1835	0	0	1827	1711	0
Flt Permitted					0.976	
Satd. Flow (perm)	1835	0	0	1827	1711	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	1%	4%	1%	1%
Adj. Flow (vph)	745	5	5	1170	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	750	0	0	1175	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

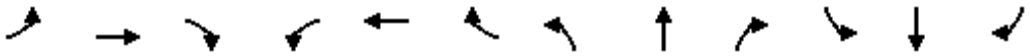
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	700	5	5	1100	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	1	1	4	1	1
Mvmt Flow	745	5	5	1170	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	750	0	1928	747
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	1181	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	864	-	73	415
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	293	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	864	-	72	415
Mov Cap-2 Maneuver	-	-	-	-	72	-
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	288	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	37
HCM LOS			E

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	123	-	-	864	-
HCM Lane V/C Ratio	0.086	-	-	0.006	-
HCM Control Delay (s)	37	-	-	9.2	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

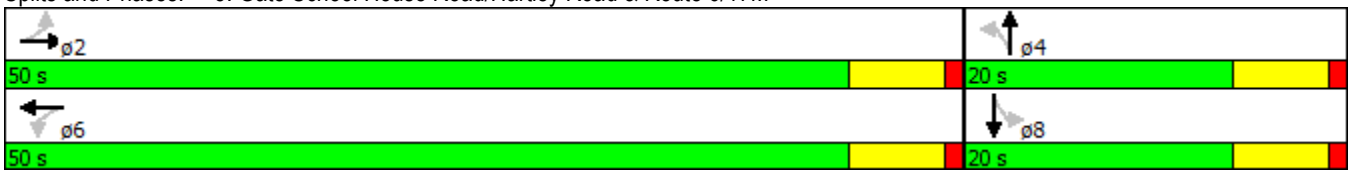


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	625	96	16	961	18	112	11	15	10	10	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.985			0.947	
Flt Protected		0.999			0.999			0.961			0.985	
Satd. Flow (prot)	0	1820	0	0	1929	0	0	1761	0	0	1555	0
Flt Permitted		0.974			0.985			0.742			0.887	
Satd. Flow (perm)	0	1774	0	0	1902	0	0	1360	0	0	1400	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			3			8			14	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	5%	2%	10%	4%	0%	3%	9%	0%	10%	20%	8%
Adj. Flow (vph)	16	672	103	17	1033	19	120	12	16	11	11	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	1069	0	0	148	0	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.63			0.79			0.61			0.14	
Control Delay		10.1			15.9			35.4			18.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.1			15.9			35.4			18.3	
Queue Length 50th (ft)		166			293			53			8	
Queue Length 95th (ft)		318			#655			110			30	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1312			1401			345			359	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.60			0.76			0.43			0.10	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 59.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	625	96	16	961	18	112	11	15	10	10	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1867	1881	1948	1947	1948	1919	1860	1919	1872	1667	1872
Adj Flow Rate, veh/h	16	672	76	17	1033	19	120	12	16	11	11	14
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	5	5	4	4	4	9	9	9	20	20	20
Cap, veh/h	85	1005	112	83	1170	21	287	15	20	136	79	75
Arrive On Green	0.67	0.62	0.62	0.67	0.62	0.62	0.17	0.13	0.13	0.17	0.13	0.13
Sat Flow, veh/h	14	1611	179	12	1876	34	1193	119	159	302	621	587
Grp Volume(v), veh/h	764	0	0	1069	0	0	148	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	1804	0	0	1922	0	0	1471	0	0	1511	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.3	0.0	0.0	20.7	0.0	0.0	4.4	0.0	0.0	1.0	0.0	0.0
Prop In Lane	0.02		0.10	0.02		0.02	0.81		0.11	0.31		0.39
Lane Grp Cap(c), veh/h	1277	0	0	1355	0	0	383	0	0	352	0	0
V/C Ratio(X)	0.60	0.00	0.00	0.79	0.00	0.00	0.39	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1784	0	0	1904	0	0	618	0	0	584	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.7	0.0	0.0	7.3	0.0	0.0	19.4	0.0	0.0	18.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.0	9.8	0.0	0.0	1.8	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	5.9	0.0	0.0	8.2	0.0	0.0	19.6	0.0	0.0	18.5	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		764			1069			148			36	
Approach Delay, s/veh		5.9			8.2			19.6			18.5	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		36.0		12.1		36.0		12.1
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		14.3		6.4		22.7		3.0
Green Ext Time (p_c), s		8.0		0.3		7.4		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	67	539	76	38	780	59	34	50	82	101	59	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.989			0.934			0.993	
Flt Protected	0.950			0.950				0.990			0.971	
Satd. Flow (prot)	1729	1873	0	1711	1880	0	0	1707	0	0	1799	0
Flt Permitted	0.099			0.247				0.905			0.677	
Satd. Flow (perm)	180	1873	0	445	1880	0	0	1560	0	0	1254	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6			43			2	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	71	567	80	40	821	62	36	53	86	106	62	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	647	0	40	883	0	0	175	0	0	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.33	0.68		0.09	0.90			0.50			0.69	
Control Delay	17.6	21.5		6.7	31.2			31.0			49.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	17.6	21.5		6.7	31.2			31.0			49.6	
Queue Length 50th (ft)	13	303		7	419			64			91	
Queue Length 95th (ft)	27	413		17	#714			142			#205	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	303	1290		477	1293			441			331	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.23	0.50		0.08	0.68			0.40			0.53	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 80.2
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	67	539	76	38	780	59	34	50	82	101	59	9
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1913	1910	1862	1858	1862	1948	1865	1948
Adj Flow Rate, veh/h	71	567	59	40	821	51	36	53	86	106	62	9
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	203	639	66	447	899	56	110	91	125	222	90	12
Arrive On Green	0.05	0.38	0.38	0.18	0.50	0.50	0.18	0.15	0.15	0.18	0.15	0.15
Sat Flow, veh/h	1733	1701	177	1716	1783	111	258	604	833	845	596	77
Grp Volume(v), veh/h	71	0	626	40	0	872	175	0	0	177	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1878	1716	0	1894	1695	0	0	1519	0	0
Q Serve(g_s), s	0.0	0.0	19.0	0.0	0.0	25.7	0.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	19.0	0.0	0.0	25.7	5.5	0.0	0.0	6.3	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.06	0.21		0.49	0.60		0.05
Lane Grp Cap(c), veh/h	203	0	705	447	0	955	382	0	0	373	0	0
V/C Ratio(X)	0.35	0.00	0.89	0.09	0.00	0.91	0.46	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	375	0	1670	447	0	1684	640	0	0	605	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.5	0.0	17.8	20.0	0.0	13.8	24.1	0.0	0.0	23.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.6	0.0	0.0	2.1	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	10.0	0.6	0.0	13.9	2.6	0.0	0.0	2.7	0.0	0.0
LnGrp Delay(d),s/veh	27.9	0.0	19.3	20.0	0.0	15.9	24.4	0.0	0.0	24.3	0.0	0.0
LnGrp LOS	C		B	C		B	C			C		
Approach Vol, veh/h		697			912			175			177	
Approach Delay, s/veh		20.2			16.1			24.4			24.3	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	36.6		15.1	16.8	28.8		15.1
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	27.7		7.5	2.0	21.0		8.3
Green Ext Time (p_c), s	0.1	2.9		0.9	0.1	1.8		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	555	0	0	912	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	603	0	0	991	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	603	0	0	991	0	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	555	0	0	912	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	603	0	0	991	0	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	603	0	1594	603
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	991	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	960	-	126	502
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	375	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	960	-	126	502
Mov Cap-2 Maneuver	-	-	-	-	126	-
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	375	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	502	-	-	960	-
HCM Lane V/C Ratio	0.048	-	-	-	-
HCM Control Delay (s)	12.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	70	4	7	183	21	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.959	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1841	0	0	1897	1769	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1841	0	0	1897	1769	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	76	4	8	199	23	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	207	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	70	4	7	183	21	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	76	4	8	199	23	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	80	0	292	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	214	-
Critical Hdwy	-	-	4.1	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1531	-	715	990
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1531	-	711	990
Mov Cap-2 Maneuver	-	-	-	-	711	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	777	-	-	1531	-
HCM Lane V/C Ratio	0.042	-	-	0.005	-
HCM Control Delay (s)	9.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	29	132	44	5	46	41	74	152	3	9	174	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.940			0.998			0.995	
Flt Protected		0.993			0.997			0.984			0.998	
Satd. Flow (prot)	0	1710	0	0	1713	0	0	1777	0	0	1806	0
Flt Permitted		0.993			0.997			0.984			0.998	
Satd. Flow (perm)	0	1710	0	0	1713	0	0	1777	0	0	1806	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		393			417			691			665	
Travel Time (s)		7.7			9.5			13.5			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	32	147	49	6	51	46	82	169	3	10	193	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	228	0	0	103	0	0	254	0	0	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

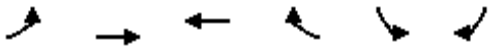
Intersection	
Int Delay, s/veh	10.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	29	132	44	5	46	41	74	152	3	9	174	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	32	147	49	6	51	46	82	169	3	10	193	7

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	600	555	171	650	554	197	200	0	0	172	0	0
Stage 1	335	335	-	217	217	-	-	-	-	-	-	-
Stage 2	265	220	-	433	337	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	357	385	849	406	464	846	1354	-	-	1387	-	-
Stage 1	624	591	-	798	735	-	-	-	-	-	-	-
Stage 2	692	681	-	625	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	290	356	849	246	429	846	1354	-	-	1387	-	-
Mov Cap-2 Maneuver	290	356	-	246	429	-	-	-	-	-	-	-
Stage 1	582	551	-	745	729	-	-	-	-	-	-	-
Stage 2	604	676	-	403	616	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	26.2	13.5	2.5	0.4
HCM LOS	D	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1354	-	-	392	523	1387	-	-
HCM Lane V/C Ratio	0.061	-	-	0.581	0.195	0.007	-	-
HCM Control Delay (s)	7.8	0	-	26.2	13.5	7.6	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	3.5	0.7	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	16	0	204	58	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.997			0.950	
Satd. Flow (prot)	0	1718	1571	0	1814	0
Flt Permitted		0.997			0.950	
Satd. Flow (perm)	0	1718	1571	0	1814	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		524	487		393	
Travel Time (s)		10.2	9.5		7.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	12%	0%	2%	2%	0%
Adj. Flow (vph)	1	18	0	234	67	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	19	234	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	16	0	204	58	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	12	0	2	2	0
Mvmt Flow	1	18	0	234	67	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	234	0	-	0	138	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	21	-
Critical Hdwy	4.1	-	-	-	5.42	5.7
Critical Hdwy Stg 1	-	-	-	-	4.42	-
Critical Hdwy Stg 2	-	-	-	-	4.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1345	-	-	-	889	956
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1345	-	-	-	888	956
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1345	-	-	-	888
HCM Lane V/C Ratio	0.001	-	-	-	0.075
HCM Control Delay (s)	7.7	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	127	3	35	0	0	0	0	209	41	49	217	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971						0.978				
Flt Protected		0.963									0.991	
Satd. Flow (prot)	0	1665	0	0	0	0	0	1858	0	0	1837	0
Flt Permitted		0.963									0.991	
Satd. Flow (perm)	0	1665	0	0	0	0	0	1858	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		348			379			150			322	
Travel Time (s)		7.9			8.6			3.4			7.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	0%	0%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Adj. Flow (vph)	135	3	37	0	0	0	0	222	44	52	231	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	0	0	0	0	0	266	0	0	283	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	127	3	35	0	0	0	0	209	41	49	217	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	8	0	0	2	2	2	2	0	0	2	2	2
Mvmt Flow	135	3	37	0	0	0	0	222	44	52	231	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	579	601	231	231	0	0	266	0	0
Stage 1	335	335	-	-	-	-	-	-	-
Stage 2	244	266	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.3	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	452	403	808	1337	-	-	1298	-	-
Stage 1	698	634	-	-	-	-	-	-	-
Stage 2	772	682	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	431	0	808	1337	-	-	1298	-	-
Mov Cap-2 Maneuver	431	0	-	-	-	-	-	-	-
Stage 1	666	0	-	-	-	-	-	-	-
Stage 2	772	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	16.8	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1337	-	-	479	1298	-	-
HCM Lane V/C Ratio	-	-	-	0.366	0.04	-	-
HCM Control Delay (s)	0	-	-	16.8	7.9	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	88	0	78	107	229	0	0	178	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.937						0.946	
Flt Protected					0.974			0.984				
Satd. Flow (prot)	0	0	0	0	1677	0	0	1860	0	0	1778	0
Flt Permitted					0.974			0.984				
Satd. Flow (perm)	0	0	0	0	1677	0	0	1860	0	0	1778	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		353			325			322			478	
Travel Time (s)		8.0			7.4			7.3			10.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	1%	0%	5%	0%	0%	2%	2%	2%	1%
Adj. Flow (vph)	0	0	0	97	0	86	118	252	0	0	196	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	183	0	0	370	0	0	326	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	88	0	78	107	229	0	0	178	118
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	1	0	5	0	0	2	2	2	1
Mvmt Flow	0	0	0	97	0	86	118	252	0	0	196	130

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	747	812	252	325	0	0	252	0	0
Stage 1	487	487	-	-	-	-	-	-	-
Stage 2	260	325	-	-	-	-	-	-	-
Critical Hdwy	6.61	6.7	6.35	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	5.61	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.61	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4	3.345	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	366	301	774	1246	-	-	1313	-	-
Stage 1	603	539	-	-	-	-	-	-	-
Stage 2	775	641	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	326	0	774	1246	-	-	1313	-	-
Mov Cap-2 Maneuver	326	0	-	-	-	-	-	-	-
Stage 1	537	0	-	-	-	-	-	-	-
Stage 2	775	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	18.4	2.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1246	-	-	448	1313	-	-
HCM Lane V/C Ratio	0.094	-	-	0.407	-	-	-
HCM Control Delay (s)	8.2	0	-	18.4	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.9	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	695	10	25	1044	61	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.959	
Flt Protected				0.999	0.966	
Satd. Flow (prot)	1837	0	0	1859	1956	0
Flt Permitted				0.999	0.966	
Satd. Flow (perm)	1837	0	0	1859	1956	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	834	
Travel Time (s)	15.7			12.5	19.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	20%	48%	1%	0%	0%
Adj. Flow (vph)	772	11	28	1160	68	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	783	0	0	1188	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	695	10	25	1044	61	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	20	48	1	0	0
Mvmt Flow	772	11	28	1160	68	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	783	0	1994	778
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	1216	-
Critical Hdwy	-	-	4.58	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.632	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	663	-	84	417
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	324	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	663	-	74	417
Mov Cap-2 Maneuver	-	-	-	-	74	-
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	285	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	165.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	99	-	-	663	-
HCM Lane V/C Ratio	0.988	-	-	0.042	-
HCM Control Delay (s)	165.7	-	-	10.7	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	6	-	-	0.1	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	297	0	621	0	0	792	95	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1817	0	3592	0	0	3485	1559	0	0
Flt Permitted										
Satd. Flow (perm)	0	1817	0	3592	0	0	3485	1559	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	1%	5%	2%	5%	5%	1%	1%	5%	5%
Adj. Flow (vph)	0	323	0	675	0	0	861	103	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	323	0	675	0	0	861	103	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	297	0	621	0	0	792	95	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	1	5	2	5	5	1	1	5	5
Mvmt Flow	0	323	0	675	0	0	861	103	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1105	338	861	0	0	675	0	0
Stage 1	675	-	-	-	-	-	-	-
Stage 2	430	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.62	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.31	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	241	680	758	-	-	892	-	0
Stage 1	514	-	-	-	-	-	-	0
Stage 2	661	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	241	680	758	-	-	892	-	-
Mov Cap-2 Maneuver	241	-	-	-	-	-	-	-
Stage 1	514	-	-	-	-	-	-	-
Stage 2	661	-	-	-	-	-	-	-

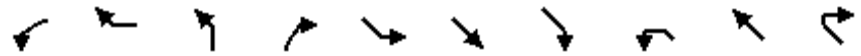
Approach	WB	NB	SB
HCM Control Delay, s	15	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	758	-	-	680	892	-
HCM Lane V/C Ratio	-	-	-	0.475	-	-
HCM Control Delay (s)	0	-	-	15	0	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	2.6	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	68	0	0	0	792	0	0	621	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1755	0	0	0	3574	0	0	3539	1583
Flt Permitted										
Satd. Flow (perm)	0	1755	0	0	0	3574	0	0	3539	1583
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	3%	5%	5%	5%	1%	5%	5%	2%	2%
Adj. Flow (vph)	0	71	0	0	0	825	0	0	647	179
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	71	0	0	0	825	0	0	647	179
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	86	0	0	0	555	305	0	707	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1710	0	0	0	3505	1553	0	3505	0
Flt Permitted										
Satd. Flow (perm)	0	1710	0	0	0	3505	1553	0	3505	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	2%	5%	5%	5%	3%	4%	5%	3%	5%
Adj. Flow (vph)	0	89	0	0	0	572	314	0	729	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	89	0	0	0	572	314	0	729	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	186	0	0	0	555	0	0	707	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1686	0	0	0	3452	0	0	3522	1576
Flt Permitted										
Satd. Flow (perm)	0	1686	0	0	0	3452	0	0	3522	1576
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	4%	5%	5%	5%	3%	5%	5%	3%	3%
Adj. Flow (vph)	0	200	0	0	0	597	0	0	760	124
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	200	0	0	0	597	0	0	760	124
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	25	488	15	115	609	90	126	119	27	53	112	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.981			0.987			0.972	
Flt Protected	0.950			0.950				0.977			0.987	
Satd. Flow (prot)	1876	1907	0	1690	3349	0	0	1832	0	0	1737	0
Flt Permitted	0.328			0.250				0.676			0.819	
Satd. Flow (perm)	648	1907	0	445	3349	0	0	1268	0	0	1441	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			21			5			13	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			3007	
Travel Time (s)		23.3			14.7			15.3			45.6	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	7%	2%	1%	1%	3%	1%	7%	4%	1%	2%
Adj. Flow (vph)	28	548	17	129	684	101	142	134	30	60	126	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	565	0	129	785	0	0	306	0	0	235	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.07	0.66		0.36	0.44			0.88			0.59	
Control Delay	8.4	24.5		10.9	15.0			60.3			34.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.4	24.5		10.9	15.0			60.3			34.9	
Queue Length 50th (ft)	6	247		30	152			171			114	
Queue Length 95th (ft)	16	374		54	203			#325			192	
Internal Link Dist (ft)		1460			890			932			2927	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	535	860		482	1770			348			400	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.05	0.66		0.27	0.44			0.88			0.59	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 92.1
Natural Cycle: 80
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	25	488	15	115	609	90	126	119	27	53	112	44
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1917	1995	1779	1797	1814	1948	1900	1948	1910	1873	1910
Adj Flow Rate, veh/h	28	548	6	129	684	90	142	134	19	60	126	38
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	2	1	1	1	1	1	1	1	1
Cap, veh/h	413	934	10	421	1628	214	213	162	21	130	235	63
Arrive On Green	0.02	0.49	0.49	0.06	0.54	0.54	0.26	0.23	0.23	0.26	0.23	0.23
Sat Flow, veh/h	1881	1892	21	1694	3034	399	644	700	93	324	1013	273
Grp Volume(v), veh/h	28	0	554	129	384	390	295	0	0	224	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1913	1694	1707	1726	1437	0	0	1611	0	0
Q Serve(g_s), s	0.6	0.0	17.3	3.1	11.3	11.3	6.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	17.3	3.1	11.3	11.3	16.5	0.0	0.0	9.8	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.23	0.48		0.06	0.27		0.17
Lane Grp Cap(c), veh/h	413	0	944	421	916	926	431	0	0	466	0	0
V/C Ratio(X)	0.07	0.00	0.59	0.31	0.42	0.42	0.68	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	650	0	944	642	916	926	530	0	0	572	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.6	0.0	15.1	11.2	11.6	11.6	30.7	0.0	0.0	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.7	0.2	1.4	1.4	1.6	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	9.8	1.4	5.6	5.7	6.5	0.0	0.0	4.4	0.0	0.0
LnGrp Delay(d),s/veh	10.6	0.0	17.8	11.3	13.0	13.0	32.3	0.0	0.0	28.4	0.0	0.0
LnGrp LOS	B		B	B	B	B	C			C		
Approach Vol, veh/h		582			903			295			224	
Approach Delay, s/veh		17.5			12.8			32.3			28.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	51.0		25.4	11.0	47.4		25.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.6	13.3		18.5	5.1	19.3		11.8
Green Ext Time (p_c), s	0.0	4.4		1.0	0.2	4.2		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	9	748	0	0	791	7	1	0	0	5	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.889	
Flt Protected		0.999						0.950			0.991	
Satd. Flow (prot)	0	1878	0	0	1781	0	0	1832	0	0	1624	0
Flt Permitted		0.999						0.950			0.991	
Satd. Flow (perm)	0	1878	0	0	1781	0	0	1832	0	0	1624	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	9	787	0	0	833	7	1	0	0	5	0	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	796	0	0	840	0	0	1	0	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	9	748	0	0	791	7	1	0	0	5	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	9	787	0	0	833	7	1	0	0	5	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	840	0	0	787	0	0	1654	1646	787	1642	1642	836
Stage 1	-	-	-	-	-	-	806	806	-	836	836	-
Stage 2	-	-	-	-	-	-	848	840	-	806	806	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	799	-	-	837	-	-	125	158	439	56	70	336
Stage 1	-	-	-	-	-	-	472	496	-	301	319	-
Stage 2	-	-	-	-	-	-	452	483	-	315	331	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	799	-	-	837	-	-	115	155	439	55	69	336
Mov Cap-2 Maneuver	-	-	-	-	-	-	115	155	-	55	69	-
Stage 1	-	-	-	-	-	-	463	486	-	295	319	-
Stage 2	-	-	-	-	-	-	421	483	-	309	324	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	36.6	29.9
HCM LOS			E	D

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	115	799	-	-	837	-	-	173
HCM Lane V/C Ratio	0.009	0.012	-	-	-	-	-	0.164
HCM Control Delay (s)	36.6	9.6	0	-	0	-	-	29.9
HCM Lane LOS	E	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.6

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	650	103	38	706	92	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981				0.948	
Flt Protected				0.997	0.970	
Satd. Flow (prot)	1852	0	0	1852	1671	0
Flt Permitted				0.997	0.970	
Satd. Flow (perm)	1852	0	0	1852	1671	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1273	806	
Travel Time (s)	10.3			15.8	27.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	8%	2%	3%	7%
Adj. Flow (vph)	691	110	40	751	98	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	801	0	0	791	160	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

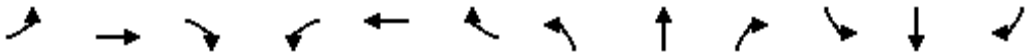
Intersection	
Int Delay, s/veh	13.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	650	103	38	706	92	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	3	8	2	3	7
Mvmt Flow	691	110	40	751	98	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	801	0	1578	746
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	832	-
Critical Hdwy	-	-	4.18	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.272	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	796	-	120	405
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	796	-	110	405
Mov Cap-2 Maneuver	-	-	-	-	110	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	389	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0.5	143.7
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	153	-	-	796	-
HCM Lane V/C Ratio	1.043	-	-	0.051	-
HCM Control Delay (s)	143.7	-	-	9.8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	8.2	-	-	0.2	-

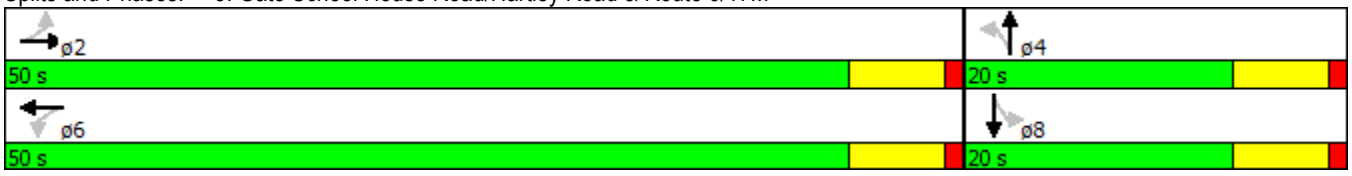


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	597	90	11	650	9	95	6	14	11	6	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.998			0.983			0.952	
Flt Protected		0.999			0.999			0.960			0.979	
Satd. Flow (prot)	0	1853	0	0	1941	0	0	1796	0	0	1460	0
Flt Permitted		0.986			0.986			0.743			0.805	
Satd. Flow (perm)	0	1829	0	0	1916	0	0	1390	0	0	1200	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			2			9			10	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	33%
Adj. Flow (vph)	13	635	96	12	691	10	101	6	15	12	6	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	744	0	0	713	0	0	122	0	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.62			0.57			0.46			0.12	
Control Delay		10.2			9.4			23.9			15.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.2			9.4			23.9			15.8	
Queue Length 50th (ft)		116			109			23			3	
Queue Length 95th (ft)		279			253			82			25	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1656			1733			450			390	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.45			0.41			0.27			0.07	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 46.4	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	597	90	11	650	9	95	6	14	11	6	9
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1900	1881	1948	1959	1948	1919	1903	1919	1872	1566	1872
Adj Flow Rate, veh/h	13	635	69	12	691	10	101	6	15	12	6	10
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	122	840	90	121	961	14	350	8	21	217	47	57
Arrive On Green	0.57	0.51	0.51	0.57	0.51	0.51	0.18	0.12	0.12	0.18	0.12	0.12
Sat Flow, veh/h	13	1657	178	12	1896	27	1238	74	184	482	404	492
Grp Volume(v), veh/h	717	0	0	713	0	0	122	0	0	28	0	0
Grp Sat Flow(s),veh/h/ln	1848	0	0	1936	0	0	1496	0	0	1378	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.1	0.0	0.0	8.5	0.0	0.0	2.3	0.0	0.0	0.5	0.0	0.0
Prop In Lane	0.02		0.10	0.02		0.01	0.83		0.12	0.43		0.36
Lane Grp Cap(c), veh/h	1169	0	0	1218	0	0	474	0	0	408	0	0
V/C Ratio(X)	0.61	0.00	0.00	0.59	0.00	0.00	0.26	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	2764	0	0	2890	0	0	949	0	0	828	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	0.0	5.9	0.0	0.0	12.6	0.0	0.0	12.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.0	3.9	0.0	0.0	0.9	0.0	0.0	0.2	0.0	0.0
LnGrp Delay(d),s/veh	6.3	0.0	0.0	6.1	0.0	0.0	12.7	0.0	0.0	12.3	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		717			713			122			28	
Approach Delay, s/veh		6.3			6.1			12.7			12.3	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.1		9.7		22.1		9.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		11.1		4.3		10.5		2.5
Green Ext Time (p_c), s		5.0		0.3		5.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

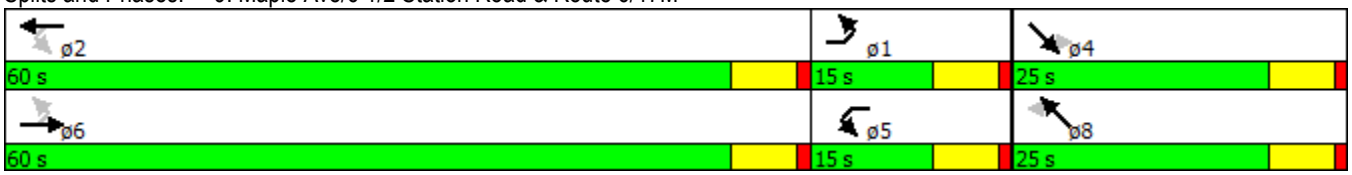
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	75	504	42	45	572	24	15	19	53	55	31	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.994			0.917			0.984	
Flt Protected	0.950			0.950				0.991			0.973	
Satd. Flow (prot)	1832	1888	0	1796	1924	0	0	1731	0	0	1846	0
Flt Permitted	0.251			0.304				0.932			0.797	
Satd. Flow (perm)	484	1888	0	575	1924	0	0	1628	0	0	1512	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			3			60			6	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	84	566	47	51	643	27	17	21	60	62	35	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	613	0	51	670	0	0	98	0	0	110	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.20	0.54		0.11	0.62			0.31			0.43	
Control Delay	7.2	13.7		5.8	15.9			15.1			28.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	7.2	13.7		5.8	15.9			15.1			28.8	
Queue Length 50th (ft)	9	162		5	180			11			31	
Queue Length 95th (ft)	26	302		18	337			54			89	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	562	1718		589	1751			654			577	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.15	0.36		0.09	0.38			0.15			0.19	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 54.9
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	75	504	42	45	572	24	15	19	53	55	31	12
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1928	1911	1948	1891	1948	1910	1862	1917	1862	1948	1928	1948
Adj Flow Rate, veh/h	84	566	25	51	643	16	17	21	60	62	35	13
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	2	2	1	1	1	1	1	1
Cap, veh/h	348	674	30	421	759	19	124	45	111	227	61	21
Arrive On Green	0.07	0.37	0.37	0.10	0.40	0.40	0.15	0.11	0.11	0.15	0.11	0.11
Sat Flow, veh/h	1836	1816	80	1801	1892	47	232	424	1037	887	565	195
Grp Volume(v), veh/h	84	0	591	51	0	659	98	0	0	110	0	0
Grp Sat Flow(s),veh/h/ln	1836	0	1897	1801	0	1939	1693	0	0	1646	0	0
Q Serve(g_s), s	0.0	0.0	12.2	0.0	0.0	13.2	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	12.2	0.0	0.0	13.2	2.2	0.0	0.0	2.3	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.02	0.17		0.61	0.56		0.12
Lane Grp Cap(c), veh/h	348	0	704	421	0	777	360	0	0	385	0	0
V/C Ratio(X)	0.24	0.00	0.84	0.12	0.00	0.85	0.27	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	606	0	2399	620	0	2453	912	0	0	904	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.6	0.0	12.3	15.0	0.0	11.6	17.8	0.0	0.0	17.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.0	0.0	1.0	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	6.4	0.5	0.0	7.2	1.0	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	17.8	0.0	13.3	15.1	0.0	12.6	18.0	0.0	0.0	17.6	0.0	0.0
LnGrp LOS	B		B	B		B	B			B		
Approach Vol, veh/h		675			710			98			110	
Approach Delay, s/veh		13.9			12.8			18.0			17.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	23.1		10.6	10.3	21.8		10.6
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	15.2		4.2	2.0	14.2		4.3
Green Ext Time (p_c), s	0.1	2.0		0.5	0.1	1.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	531	0	0	641	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1939	0	0	1934	0	1690
Flt Permitted						
Satd. Flow (perm)	1939	0	0	1934	0	1690
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	5%	5%	2%	5%	1%
Adj. Flow (vph)	590	0	0	712	0	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	590	0	0	712	0	32
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	531	0	0	641	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	5	5	2	5	1
Mvmt Flow	590	0	0	712	0	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	590	0	1302	590
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	712	-
Critical Hdwy	-	-	4.15	-	6.25	6.11
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.309
Pot Cap-1 Maneuver	-	-	971	-	188	518
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	500	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	971	-	188	518
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	500	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	518	-	-	971	-
HCM Lane V/C Ratio	0.062	-	-	-	-
HCM Control Delay (s)	12.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	44	6	5	100	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.929	
Flt Protected				0.997	0.977	
Satd. Flow (prot)	1840	0	0	1913	1733	0
Flt Permitted				0.997	0.977	
Satd. Flow (perm)	1840	0	0	1913	1733	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	49	7	6	111	8	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	0	117	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	44	6	5	100	7	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	49	7	6	111	8	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	56	0	174	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	-	-	4.1	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1562	-	829	1023
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	915	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1562	-	826	1023
Mov Cap-2 Maneuver	-	-	-	-	826	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	921	-	-	1562	-
HCM Lane V/C Ratio	0.018	-	-	0.004	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	56	24	1	26	48	58	155	1	4	134	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.913			0.999			0.999	
Flt Protected		0.988			0.999			0.987			0.999	
Satd. Flow (prot)	0	1748	0	0	1716	0	0	1837	0	0	1868	0
Flt Permitted		0.988			0.999			0.987			0.999	
Satd. Flow (perm)	0	1748	0	0	1716	0	0	1837	0	0	1868	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	29	60	26	1	28	52	62	167	1	4	144	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	81	0	0	230	0	0	149	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

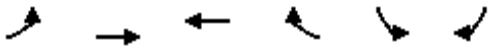
Intersection	
Int Delay, s/veh	5.4

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	27	56	24	1	26	48	58	155	1	4	134	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	60	26	1	28	52	62	167	1	4	144	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	485	446	167	488	445	145	145	0	0	168	0	0
Stage 1	292	292	-	153	153	-	-	-	-	-	-	-
Stage 2	193	154	-	335	292	-	-	-	-	-	-	-
Critical Hdwy	7.92	7.32	6.62	6.72	6.12	6.02	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	442	459	861	517	534	910	1437	-	-	1410	-	-
Stage 1	671	629	-	864	784	-	-	-	-	-	-	-
Stage 2	775	744	-	705	693	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	384	436	861	431	507	910	1437	-	-	1410	-	-
Mov Cap-2 Maneuver	384	436	-	431	507	-	-	-	-	-	-	-
Stage 1	639	599	-	823	782	-	-	-	-	-	-	-
Stage 2	703	742	-	586	660	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	15.1	10.8	2.1	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1437	-	-	472	705	1410	-	-
HCM Lane V/C Ratio	0.043	-	-	0.244	0.114	0.003	-	-
HCM Control Delay (s)	7.6	0	-	15.1	10.8	7.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.4	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	19	0	107	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1915	1587	0	1850	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1915	1587	0	1850	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		504	501		397	
Travel Time (s)		9.8	9.8		7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1	20	0	115	33	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	115	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	19	0	107	31	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	1	20	0	115	33	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	115	0	-	0	81	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	4.1	-	-	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1487	-	-	-	947	1022
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1487	-	-	-	946	1022
Mov Cap-2 Maneuver	-	-	-	-	946	-
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1487	-	-	-	946
HCM Lane V/C Ratio	0.001	-	-	-	0.035
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	84	0	53	0	0	0	0	90	16	52	96	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948						0.979				
Flt Protected		0.970									0.983	
Satd. Flow (prot)	0	1717	0	0	0	0	0	1860	0	0	1845	0
Flt Permitted		0.970									0.983	
Satd. Flow (perm)	0	1717	0	0	0	0	0	1860	0	0	1845	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	98	0	62	0	0	0	0	105	19	60	112	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	0	0	0	0	0	124	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	84	0	53	0	0	0	0	90	16	52	96	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	0	0	2	2	2	2	0	0	2	0	2
Mvmt Flow	98	0	62	0	0	0	0	105	19	60	112	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	347	356	112	112	0	0	123	0	0
Stage 1	233	233	-	-	-	-	-	-	-
Stage 2	114	123	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	637	562	944	1478	-	-	1464	-	-
Stage 1	795	706	-	-	-	-	-	-	-
Stage 2	905	793	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	609	0	944	1478	-	-	1464	-	-
Mov Cap-2 Maneuver	609	0	-	-	-	-	-	-	-
Stage 1	760	0	-	-	-	-	-	-	-
Stage 2	905	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	11.6	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1478	-	-	706	1464	-	-
HCM Lane V/C Ratio	-	-	-	0.226	0.041	-	-
HCM Control Delay (s)	0	-	-	11.6	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	33	0	57	32	142	0	0	115	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.915						0.947	
Flt Protected					0.982			0.991				
Satd. Flow (prot)	0	0	0	0	1686	0	0	1873	0	0	1794	0
Flt Permitted					0.982			0.991				
Satd. Flow (perm)	0	0	0	0	1686	0	0	1873	0	0	1794	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	37	0	63	36	158	0	0	128	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	100	0	0	194	0	0	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	33	0	57	32	142	0	0	115	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	0	0	0	0	2	2	0	2
Mvmt Flow	0	0	0	37	0	63	36	158	0	0	128	82

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	398	439	158	210	0	0	158	0	0
Stage 1	229	229	-	-	-	-	-	-	-
Stage 2	169	210	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	594	502	889	1373	-	-	1422	-	-
Stage 1	799	709	-	-	-	-	-	-	-
Stage 2	853	724	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	577	0	889	1373	-	-	1422	-	-
Mov Cap-2 Maneuver	577	0	-	-	-	-	-	-	-
Stage 1	776	0	-	-	-	-	-	-	-
Stage 2	853	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10.6	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1373	-	-	742	1422	-	-
HCM Lane V/C Ratio	0.026	-	-	0.135	-	-	-
HCM Control Delay (s)	7.7	0	-	10.6	0	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	700	10	5	738	6	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1860	0	0	1881	1951	0
Flt Permitted					0.968	
Satd. Flow (perm)	1860	0	0	1881	1951	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1273			998	821	
Travel Time (s)	15.8			12.4	18.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	722	10	5	761	6	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	732	0	0	766	9	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	700	10	5	738	6	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	722	10	5	761	6	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	732	0	1498	727
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	771	-
Critical Hdwy	-	-	4.1	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	882	-	161	445
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	501	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	882	-	159	445
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	496	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	202	-	-	882	-
HCM Lane V/C Ratio	0.046	-	-	0.006	-
HCM Control Delay (s)	23.7	-	-	9.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

AMY'S KITCHEN & SCIENCE OF THE SOUL

2033 NO-BUILD CONDITIONS

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	194	0	322	0	0	1209	46	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1715	0	3490	0	0	3321	1419	0	0
Flt Permitted										
Satd. Flow (perm)	0	1715	0	3490	0	0	3321	1419	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	5%	6%	11%	5%	5%
Adj. Flow (vph)	0	204	0	339	0	0	1273	48	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	204	0	339	0	0	1273	48	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	194	0	322	0	0	1209	46	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	7	5	5	5	5	6	11	5	5
Mvmt Flow	0	204	0	339	0	0	1273	48	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	975	169	1273	0	0	339	0	0
Stage 1	339	-	-	-	-	-	-	-
Stage 2	636	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.74	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.37	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	287	842	525	-	-	1196	-	0
Stage 1	724	-	-	-	-	-	-	0
Stage 2	535	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	287	842	525	-	-	1196	-	-
Mov Cap-2 Maneuver	287	-	-	-	-	-	-	-
Stage 1	724	-	-	-	-	-	-	-
Stage 2	535	-	-	-	-	-	-	-

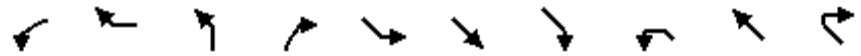
Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	525	-	-	842	1196	-
HCM Lane V/C Ratio	-	-	-	0.243	-	-
HCM Control Delay (s)	0	-	-	10.6	0	-
HCM Lane LOS	A	-	-	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	103	0	0	0	1209	0	0	322	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3406	0	0	3438	1455
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3406	0	0	3438	1455
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	13%	5%	5%	5%	6%	5%	5%	5%	11%
Adj. Flow (vph)	0	110	0	0	0	1286	0	0	343	82
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	110	0	0	0	1286	0	0	343	82
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	97	0	0	0	875	438	0	301	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1630	0	0	0	3343	1538	0	3406	0
Flt Permitted										
Satd. Flow (perm)	0	1630	0	0	0	3343	1538	0	3406	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	8%	5%	5%	6%	5%
Adj. Flow (vph)	0	102	0	0	0	921	461	0	317	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	102	0	0	0	921	461	0	317	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	345	0	0	0	875	0	0	301	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1624	0	0	0	3292	0	0	3423	1399
Flt Permitted										
Satd. Flow (perm)	0	1624	0	0	0	3292	0	0	3423	1399
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	8%	5%	5%	5%	8%	5%	5%	6%	16%
Adj. Flow (vph)	0	363	0	0	0	921	0	0	317	80
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	363	0	0	0	921	0	0	317	80
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	36	1002	4	24	264	39	73	136	26	79	54	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.981			0.985			0.987	
Flt Protected	0.950			0.950				0.985			0.974	
Satd. Flow (prot)	1876	1898	0	1581	3139	0	0	1871	0	0	1726	0
Flt Permitted	0.540			0.085				0.841			0.605	
Satd. Flow (perm)	1067	1898	0	141	3139	0	0	1597	0	0	1072	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					21			6			5	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2935	
Travel Time (s)		23.3			14.7			15.3			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	39	1089	4	26	287	42	79	148	28	86	59	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1093	0	26	329	0	0	255	0	0	160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.05	0.97		0.15	0.18			0.76			0.71	
Control Delay	6.8	42.0		8.7	10.4			45.4			47.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.8	42.0		8.7	10.4			45.4			47.4	
Queue Length 50th (ft)	7	423		4	43			128			78	
Queue Length 95th (ft)	21	#1041		16	81			211			148	
Internal Link Dist (ft)		1460			890			932			2855	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	807	1122		379	1781			505			339	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.05	0.97		0.07	0.18			0.50			0.47	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 81.2
Natural Cycle: 100
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	36	1002	4	24	264	39	73	136	26	79	54	14
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1900	1995	1665	1684	1814	1948	1928	1948	1910	1857	1910
Adj Flow Rate, veh/h	39	1089	-7	26	287	31	79	148	17	86	59	4
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	730	1110	0	135	1687	181	143	191	20	187	107	6
Arrive On Green	0.02	0.58	0.00	0.02	0.58	0.58	0.19	0.17	0.17	0.19	0.17	0.17
Sat Flow, veh/h	1881	1900	0	1585	2916	312	485	1135	121	676	639	36
Grp Volume(v), veh/h	39	1082	0	26	156	162	244	0	0	149	0	0
Grp Sat Flow(s),veh/h/ln	1881	1900	0	1585	1600	1629	1741	0	0	1351	0	0
Q Serve(g_s), s	0.7	42.8	0.0	0.5	3.6	3.6	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	42.8	0.0	0.5	3.6	3.6	10.1	0.0	0.0	7.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.19	0.32		0.07	0.58		0.03
Lane Grp Cap(c), veh/h	730	1110	0	135	926	942	399	0	0	335	0	0
V/C Ratio(X)	0.05	0.98	0.00	0.19	0.17	0.17	0.61	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	979	1110	0	434	926	942	658	0	0	552	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	15.6	0.0	18.7	7.7	7.7	30.7	0.0	0.0	29.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	21.7	0.0	0.3	0.4	0.4	0.6	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	28.6	0.0	0.3	1.7	1.7	4.8	0.0	0.0	2.9	0.0	0.0
LnGrp Delay(d),s/veh	6.4	37.3	0.0	19.0	8.1	8.1	31.3	0.0	0.0	29.7	0.0	0.0
LnGrp LOS	A	D		B	A	A	C			C		
Approach Vol, veh/h		1121			344			244			149	
Approach Delay, s/veh		36.2			8.9			31.3			29.7	
Approach LOS		D			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	51.0		19.1	7.3	51.4		19.1
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.7	5.6		12.1	2.5	44.8		9.9
Green Ext Time (p_c), s	0.0	6.2		1.0	0.0	0.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	11	1099	0	0	326	4	0	0	0	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998						0.910	
Flt Protected		0.999									0.984	
Satd. Flow (prot)	0	1878	0	0	1779	0	0	1928	0	0	1651	0
Flt Permitted		0.999									0.984	
Satd. Flow (perm)	0	1878	0	0	1779	0	0	1928	0	0	1651	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	12	1157	0	0	343	4	0	0	0	1	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1169	0	0	347	0	0	0	0	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	11	1099	0	0	326	4	0	0	0	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	12	1157	0	0	343	4	0	0	0	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	347	0	0	1157	0	0	1526	1527	1157	1525	1525	345
Stage 1	-	-	-	-	-	-	1180	1180	-	345	345	-
Stage 2	-	-	-	-	-	-	346	347	-	1180	1180	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1218	-	-	607	-	-	148	180	282	69	84	674
Stage 1	-	-	-	-	-	-	323	368	-	623	591	-
Stage 2	-	-	-	-	-	-	740	701	-	179	204	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1218	-	-	607	-	-	144	175	282	68	82	674
Mov Cap-2 Maneuver	-	-	-	-	-	-	144	175	-	68	82	-
Stage 1	-	-	-	-	-	-	314	358	-	606	591	-
Stage 2	-	-	-	-	-	-	738	701	-	174	198	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	0	26.6
HCM LOS			A	D

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	1218	-	-	607	-	-	170
HCM Lane V/C Ratio	-	0.01	-	-	-	-	-	0.019
HCM Control Delay (s)	0	8	0	-	0	-	-	26.6
HCM Lane LOS	A	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	1085	16	7	330	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998					
Flt Protected				0.999		
Satd. Flow (prot)	1819	0	0	1739	1188	0
Flt Permitted				0.999		
Satd. Flow (perm)	1819	0	0	1739	1188	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	60%	60%	8%	60%	60%
Adj. Flow (vph)	1192	18	8	363	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1210	0	0	371	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

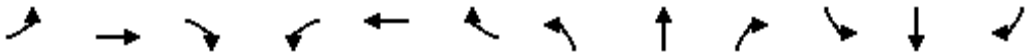
Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	1085	16	7	330	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	5	60	60	8	60	60
Mvmt Flow	1192	18	8	363	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1210	0	1579	1201
Stage 1	-	-	-	-	1201	-
Stage 2	-	-	-	-	378	-
Critical Hdwy	-	-	4.7	-	7	6.8
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.74	-	4.04	3.84
Pot Cap-1 Maneuver	-	-	414	-	88	172
Stage 1	-	-	-	-	219	-
Stage 2	-	-	-	-	582	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	414	-	86	172
Mov Cap-2 Maneuver	-	-	-	-	86	-
Stage 1	-	-	-	-	219	-
Stage 2	-	-	-	-	568	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0.3	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	414	-
HCM Lane V/C Ratio	-	-	-	0.019	-
HCM Control Delay (s)	0	-	-	13.9	0
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

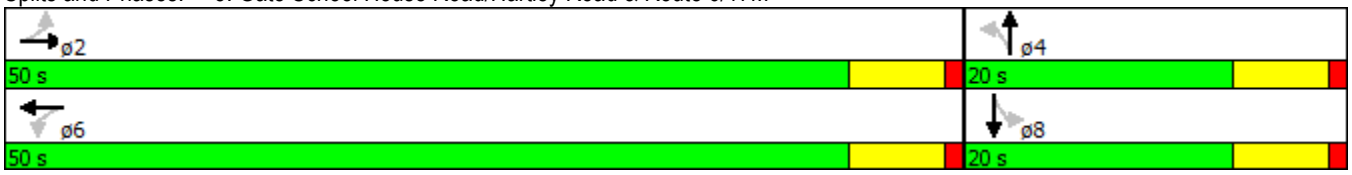


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1005	80	0	292	14	57	7	6	6	2	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.994			0.989			0.948	
Flt Protected		0.999						0.961			0.977	
Satd. Flow (prot)	0	1746	0	0	1764	0	0	1780	0	0	1101	0
Flt Permitted		0.996						0.757			0.816	
Satd. Flow (perm)	0	1741	0	0	1764	0	0	1402	0	0	920	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			7			6			5	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	12	1081	86	0	314	15	61	8	6	6	2	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1179	0	0	329	0	0	75	0	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.88			0.24			0.45			0.12	
Control Delay		20.7			4.2			34.8			23.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.7			4.2			34.8			23.0	
Queue Length 50th (ft)		354			39			31			3	
Queue Length 95th (ft)		#768			81			60			16	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1334			1351			286			188	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.88			0.24			0.26			0.07	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.1	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	1005	80	0	292	14	57	7	6	6	2	5
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1777	1881	1948	1787	1948	1919	1873	1919	1872	1189	1872
Adj Flow Rate, veh/h	12	1081	59	0	314	15	61	8	6	6	2	5
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	78	1139	62	0	1160	55	219	11	8	135	18	28
Arrive On Green	0.73	0.69	0.69	0.00	0.69	0.69	0.11	0.07	0.07	0.11	0.07	0.07
Sat Flow, veh/h	6	1660	90	0	1692	81	1216	159	120	394	247	401
Grp Volume(v), veh/h	1152	0	0	0	0	329	75	0	0	13	0	0
Grp Sat Flow(s),veh/h/ln	1757	0	0	0	0	1772	1495	0	0	1042	0	0
Q Serve(g_s), s	2.9	0.0	0.0	0.0	0.0	3.5	1.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	26.6	0.0	0.0	0.0	0.0	3.5	2.3	0.0	0.0	0.5	0.0	0.0
Prop In Lane	0.01		0.05	0.00		0.05	0.81		0.08	0.46		0.38
Lane Grp Cap(c), veh/h	1350	0	0	0	0	1215	299	0	0	223	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.00	0.00	0.27	0.25	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	1710	0	0	0	0	1581	610	0	0	430	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.6	0.0	0.0	0.0	0.0	3.0	21.5	0.0	0.0	21.1	0.0	0.0
Incr Delay (d2), s/veh	3.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	0.0	0.0	0.0	1.7	0.9	0.0	0.0	0.2	0.0	0.0
LnGrp Delay(d),s/veh	9.6	0.0	0.0	0.0	0.0	3.0	21.7	0.0	0.0	21.1	0.0	0.0
LnGrp LOS	A					A	C			C		
Approach Vol, veh/h		1152			329			75			13	
Approach Delay, s/veh		9.6			3.0			21.7			21.1	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		39.8		9.5		39.8		9.5
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		28.6		4.3		5.5		2.5
Green Ext Time (p_c), s		5.3		0.1		6.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	79	872	55	21	263	31	29	16	19	14	33	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.984			0.960			0.981	
Flt Protected	0.950			0.950				0.978			0.987	
Satd. Flow (prot)	1762	1867	0	1564	1889	0	0	1708	0	0	1766	0
Flt Permitted	0.529			0.122				0.826			0.890	
Satd. Flow (perm)	981	1867	0	201	1889	0	0	1443	0	0	1592	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			9			19			7	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	3%	9%	16%	3%	1%	1%	7%	12%	1%	9%	8%
Adj. Flow (vph)	85	938	59	23	283	33	31	17	20	15	35	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	85	997	0	23	316	0	0	68	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.09	0.74		0.11	0.33			0.40			0.33	
Control Delay	3.4	14.6		11.6	21.2			32.8			35.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.4	14.6		11.6	21.2			32.8			35.0	
Queue Length 50th (ft)	8	191		4	99			17			18	
Queue Length 95th (ft)	21	#741		13	228			66			63	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	992	1511		305	1530			434			469	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.09	0.66		0.08	0.21			0.16			0.12	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 68.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	79	872	55	21	263	31	29	16	19	14	33	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1855	1884	1948	1646	1932	1910	1862	1831	1862	1948	1824	1948
Adj Flow Rate, veh/h	85	938	37	23	283	22	31	17	20	15	35	8
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	3	3	16	3	3	7	7	7	9	9	9
Cap, veh/h	873	1019	40	202	354	28	139	34	35	105	82	17
Arrive On Green	0.42	0.57	0.57	0.05	0.20	0.20	0.11	0.07	0.07	0.11	0.07	0.07
Sat Flow, veh/h	1766	1801	71	1568	1770	138	658	456	464	359	1093	232
Grp Volume(v), veh/h	85	0	975	23	0	305	68	0	0	58	0	0
Grp Sat Flow(s),veh/h/ln	1766	0	1872	1568	0	1908	1577	0	0	1685	0	0
Q Serve(g_s), s	0.0	0.0	27.5	0.0	0.0	8.9	0.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	27.5	0.0	0.0	8.9	2.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.07	0.46		0.29	0.26		0.14
Lane Grp Cap(c), veh/h	873	0	1060	202	0	381	262	0	0	262	0	0
V/C Ratio(X)	0.10	0.00	0.92	0.11	0.00	0.80	0.26	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	873	0	1736	366	0	1769	639	0	0	672	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	11.4	26.3	0.0	22.2	25.5	0.0	0.0	25.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	3.5	0.1	0.0	1.5	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	14.8	0.4	0.0	4.8	1.0	0.0	0.0	0.9	0.0	0.0
LnGrp Delay(d),s/veh	9.9	0.0	14.9	26.4	0.0	23.7	25.7	0.0	0.0	25.7	0.0	0.0
LnGrp LOS	A		B	C		C	C			C		
Approach Vol, veh/h		1060			328			68			58	
Approach Delay, s/veh		14.5			23.9			25.7			25.7	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	30.2	17.6		10.3	8.9	39.0		10.3
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	10.9		4.2	2.0	29.5		3.8
Green Ext Time (p_c), s	0.1	0.8		0.3	0.0	3.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	874	0	0	353	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1867	0	0	1844	0	1595
Flt Permitted						
Satd. Flow (perm)	1867	0	0	1844	0	1595
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	5%	5%	7%	5%	7%
Adj. Flow (vph)	940	0	0	380	0	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	940	0	0	380	0	51
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	874	0	0	353	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	5	5	7	5	7
Mvmt Flow	940	0	0	380	0	51

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	940	0	1320	940
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.15	-	6.25	6.17
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	717	-	183	321
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	717	-	183	321
Mov Cap-2 Maneuver	-	-	-	-	183	-
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	699	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	18.3
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	717	-
HCM Lane V/C Ratio	0.157	-	-	-	-
HCM Control Delay (s)	18.3	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	82	12	12	22	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.946	
Flt Protected				0.983	0.971	
Satd. Flow (prot)	1824	0	0	1838	1744	0
Flt Permitted				0.983	0.971	
Satd. Flow (perm)	1824	0	0	1838	1744	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles (%)	1%	0%	0%	4%	1%	0%
Adj. Flow (vph)	126	18	18	34	3	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	0	52	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	82	12	12	22	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	1	0	0	4	1	0
Mvmt Flow	126	18	18	34	3	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	145	0	206	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	71	-
Critical Hdwy	-	-	4.1	-	6.21	6.1
Critical Hdwy Stg 1	-	-	-	-	5.21	-
Critical Hdwy Stg 2	-	-	-	-	5.21	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1450	-	794	923
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	958	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1450	-	784	923
Mov Cap-2 Maneuver	-	-	-	-	784	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	-	-	1450	-
HCM Lane V/C Ratio	0.006	-	-	0.013	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	7	11	7	1	51	50	50	119	1	8	81	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.934			0.999			0.999	
Flt Protected		0.986						0.986			0.996	
Satd. Flow (prot)	0	1682	0	0	1707	0	0	1782	0	0	1809	0
Flt Permitted		0.986						0.986			0.996	
Satd. Flow (perm)	0	1682	0	0	1707	0	0	1782	0	0	1809	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		398			388			725			564	
Travel Time (s)		7.8			8.8			14.1			12.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	9	14	9	1	64	63	63	149	1	10	101	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	127	0	0	212	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

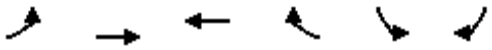
Intersection	
Int Delay, s/veh	5

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	7	11	7	1	51	50	50	119	1	8	81	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	9	14	9	1	64	62	62	149	1	10	101	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	459	397	149	408	397	102	103	0	0	150	0	0
Stage 1	274	274	-	122	122	-	-	-	-	-	-	-
Stage 2	185	123	-	286	275	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	458	491	875	574	560	950	1470	-	-	1413	-	-
Stage 1	683	638	-	887	800	-	-	-	-	-	-	-
Stage 2	777	767	-	738	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	372	464	875	532	529	950	1470	-	-	1413	-	-
Mov Cap-2 Maneuver	372	464	-	532	529	-	-	-	-	-	-	-
Stage 1	651	608	-	845	794	-	-	-	-	-	-	-
Stage 2	662	761	-	681	665	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	12.8	11.6	2.2	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1470	-	-	495	676	1413	-	-
HCM Lane V/C Ratio	0.043	-	-	0.063	0.189	0.007	-	-
HCM Control Delay (s)	7.6	0	-	12.8	11.6	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.7	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	34	0	24	60	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1861	1262	0	1850	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1861	1262	0	1850	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		570	424		398	
Travel Time (s)		11.1	8.3		7.8	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles (%)	0%	3%	0%	27%	0%	2%
Adj. Flow (vph)	2	52	0	37	92	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	37	0	92	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	34	0	24	60	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	0	3	0	27	0	2
Mvmt Flow	2	52	0	37	92	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	73	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.1	-	-	-	5.4	5.72
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1587	-	-	-	955	1063
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	988	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1587	-	-	-	954	1063
Mov Cap-2 Maneuver	-	-	-	-	954	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	987	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1587	-	-	-	954
HCM Lane V/C Ratio	0.001	-	-	-	0.097
HCM Control Delay (s)	7.3	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	53	2	126	0	0	0	0	66	30	74	53	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.906						0.957				
Flt Protected		0.986									0.972	
Satd. Flow (prot)	0	1650	0	0	0	0	0	1782	0	0	1722	0
Flt Permitted		0.986									0.972	
Satd. Flow (perm)	0	1650	0	0	0	0	0	1782	0	0	1722	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		303			283			282			342	
Travel Time (s)		6.9			6.4			6.4			7.8	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	6%	50%	0%	2%	2%	2%	2%	3%	0%	0%	16%	2%
Adj. Flow (vph)	72	3	170	0	0	0	0	89	41	100	72	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	245	0	0	0	0	0	130	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

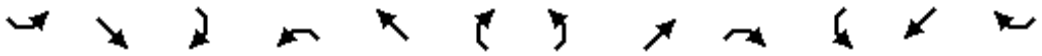
Intersection	
Int Delay, s/veh	6.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	53	2	126	0	0	0	0	66	30	74	53	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	6	50	0	2	2	2	2	3	0	0	16	2
Mvmt Flow	72	3	170	0	0	0	0	89	41	100	72	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	381	402	72	72	0	0	130	0	0
Stage 1	272	272	-	-	-	-	-	-	-
Stage 2	109	130	-	-	-	-	-	-	-
Critical Hdwy	6.66	7.2	6.3	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	5.66	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.66	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.45	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	601	459	994	1528	-	-	1468	-	-
Stage 1	753	596	-	-	-	-	-	-	-
Stage 2	900	700	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	558	0	994	1528	-	-	1468	-	-
Mov Cap-2 Maneuver	558	0	-	-	-	-	-	-	-
Stage 1	700	0	-	-	-	-	-	-	-
Stage 2	900	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	11.4	0	4.4
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1528	-	-	807	1468	-	-
HCM Lane V/C Ratio	-	-	-	0.303	0.068	-	-
HCM Control Delay (s)	0	-	-	11.4	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.2	-	-



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	14	0	24	20	98	0	0	113	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.916						0.952	
Flt Protected					0.982			0.992				
Satd. Flow (prot)	0	0	0	0	1701	0	0	1783	0	0	1717	0
Flt Permitted					0.982			0.992				
Satd. Flow (perm)	0	0	0	0	1701	0	0	1783	0	0	1717	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		342			297			342			452	
Travel Time (s)		7.8			6.8			7.8			10.3	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	11%	4%	2%	2%	8%	2%
Adj. Flow (vph)	0	0	0	21	0	35	29	144	0	0	166	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	56	0	0	173	0	0	259	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	14	0	24	20	98	0	0	113	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	0	2	0	11	4	2	2	8	2
Mvmt Flow	0	0	0	21	0	35	29	144	0	0	166	93

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	416	462	144	259	0	0	144	0	0
Stage 1	203	203	-	-	-	-	-	-	-
Stage 2	213	259	-	-	-	-	-	-	-
Critical Hdwy	6.6	6.72	6.3	4.21	-	-	4.12	-	-
Critical Hdwy Stg 1	5.6	5.72	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.6	5.72	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	2.299	-	-	2.218	-	-
Pot Cap-1 Maneuver	583	484	905	1255	-	-	1438	-	-
Stage 1	827	725	-	-	-	-	-	-	-
Stage 2	818	684	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	568	0	905	1255	-	-	1438	-	-
Mov Cap-2 Maneuver	568	0	-	-	-	-	-	-	-
Stage 1	806	0	-	-	-	-	-	-	-
Stage 2	818	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10.2	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1255	-	-	743	1438	-	-
HCM Lane V/C Ratio	0.023	-	-	0.075	-	-	-
HCM Control Delay (s)	7.9	0	-	10.2	0	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1019	66	35	310	27	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.992				0.906	
Flt Protected				0.995	0.985	
Satd. Flow (prot)	1850	0	0	1779	1136	0
Flt Permitted				0.995	0.985	
Satd. Flow (perm)	1850	0	0	1779	1136	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	828	
Travel Time (s)	15.7			12.5	18.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	7%	72%	63%
Adj. Flow (vph)	1132	73	39	344	30	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1205	0	0	383	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1019	66	35	310	27	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	7	72	63
Mvmt Flow	1132	73	39	344	30	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1206	0	1591	1169
Stage 1	-	-	-	-	1169	-
Stage 2	-	-	-	-	422	-
Critical Hdwy	-	-	4.1	-	6.72	6.63
Critical Hdwy Stg 1	-	-	-	-	5.72	-
Critical Hdwy Stg 2	-	-	-	-	5.72	-
Follow-up Hdwy	-	-	2.2	-	4.148	3.867
Pot Cap-1 Maneuver	-	-	586	-	97	190
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	586	-	89	190
Mov Cap-2 Maneuver	-	-	-	-	89	-
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	515	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	74.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	141	-	-	586	-
HCM Lane V/C Ratio	0.693	-	-	0.066	-
HCM Control Delay (s)	74.4	-	-	11.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	3.9	-	-	0.2	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	482	0	713	0	0	1340	68	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1715	0	3490	0	0	3321	1419	0	0
Flt Permitted										
Satd. Flow (perm)	0	1715	0	3490	0	0	3321	1419	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	5%	6%	11%	5%	5%
Adj. Flow (vph)	0	507	0	751	0	0	1411	72	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	507	0	751	0	0	1411	72	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.8

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	482	0	713	0	0	1340	68	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	7	5	5	5	5	6	11	5	5
Mvmt Flow	0	507	0	751	0	0	1411	72	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1456	375	1411	0	0	751	0	0
Stage 1	751	-	-	-	-	-	-	-
Stage 2	705	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.74	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.37	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	149	628	464	-	-	835	-	0
Stage 1	475	-	-	-	-	-	-	0
Stage 2	498	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	149	628	464	-	-	835	-	-
Mov Cap-2 Maneuver	149	-	-	-	-	-	-	-
Stage 1	475	-	-	-	-	-	-	-
Stage 2	498	-	-	-	-	-	-	-

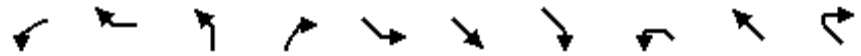
Approach	WB	NB	SB
HCM Control Delay, s	30.4	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	464	-	-	628	835	-
HCM Lane V/C Ratio	-	-	-	0.808	-	-
HCM Control Delay (s)	0	-	-	30.4	0	-
HCM Lane LOS	A	-	-	D	A	-
HCM 95th %tile Q(veh)	0	-	-	8.2	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	118	0	0	0	1340	0	0	713	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3406	0	0	3438	1455
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3406	0	0	3438	1455
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	13%	5%	5%	5%	6%	5%	5%	5%	11%
Adj. Flow (vph)	0	126	0	0	0	1426	0	0	759	112
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	126	0	0	0	1426	0	0	759	112
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	191	0	0	0	877	581	0	626	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1630	0	0	0	3343	1538	0	3406	0
Flt Permitted										
Satd. Flow (perm)	0	1630	0	0	0	3343	1538	0	3406	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	8%	5%	5%	6%	5%
Adj. Flow (vph)	0	201	0	0	0	923	612	0	659	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	201	0	0	0	923	612	0	659	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	362	0	0	0	877	0	0	626	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1624	0	0	0	3292	0	0	3423	1399
Flt Permitted										
Satd. Flow (perm)	0	1624	0	0	0	3292	0	0	3423	1399
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	8%	5%	5%	5%	8%	5%	5%	6%	16%
Adj. Flow (vph)	0	381	0	0	0	923	0	0	659	107
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	381	0	0	0	923	0	0	659	107
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	49	995	28	78	620	52	133	148	29	67	73	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.988			0.987			0.974	
Flt Protected	0.950			0.950				0.979			0.981	
Satd. Flow (prot)	1876	1894	0	1581	3158	0	0	1863	0	0	1719	0
Flt Permitted	0.327			0.088				0.757			0.711	
Satd. Flow (perm)	646	1894	0	146	3158	0	0	1441	0	0	1246	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			11			5			12	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2983	
Travel Time (s)		23.3			14.7			15.3			45.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	53	1082	30	85	674	57	145	161	32	73	79	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	1112	0	85	731	0	0	338	0	0	189	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.13	1.20		0.45	0.46			0.88			0.56	
Control Delay	8.6	125.5		17.7	16.5			57.8			35.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.6	125.5		17.7	16.5			57.8			35.0	
Queue Length 50th (ft)	12	~835		19	145			189			90	
Queue Length 95th (ft)	26	#1123		48	200			#353			164	
Internal Link Dist (ft)		1460			890			932			2903	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	546	927		343	1589			405			355	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	1.20		0.25	0.46			0.83			0.53	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 90.3
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	49	995	28	78	620	52	133	148	29	67	73	34
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1902	1995	1665	1683	1814	1948	1928	1948	1910	1861	1910
Adj Flow Rate, veh/h	53	1082	19	85	674	46	145	161	21	73	79	26
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	441	956	17	154	1609	110	213	189	23	172	168	48
Arrive On Green	0.03	0.51	0.51	0.04	0.53	0.53	0.26	0.23	0.23	0.26	0.23	0.23
Sat Flow, veh/h	1881	1863	33	1585	3037	207	656	815	101	483	728	207
Grp Volume(v), veh/h	53	0	1101	85	354	366	327	0	0	178	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1896	1585	1598	1646	1573	0	0	1418	0	0
Q Serve(g_s), s	1.1	0.0	43.6	2.1	11.4	11.4	8.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	43.6	2.1	11.4	11.4	16.7	0.0	0.0	8.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.13	0.44		0.06	0.41		0.15
Lane Grp Cap(c), veh/h	441	0	973	154	847	872	462	0	0	421	0	0
V/C Ratio(X)	0.12	0.00	1.13	0.55	0.42	0.42	0.71	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	657	0	973	383	847	872	562	0	0	515	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	20.7	20.0	12.1	12.1	31.1	0.0	0.0	27.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	72.2	1.2	1.5	1.5	2.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	42.0	1.1	5.4	5.5	7.3	0.0	0.0	3.5	0.0	0.0
LnGrp Delay(d),s/veh	9.9	0.0	92.9	21.2	13.6	13.5	33.2	0.0	0.0	28.1	0.0	0.0
LnGrp LOS	A		F	C	B	B	C			C		
Approach Vol, veh/h		1154			805			327			178	
Approach Delay, s/veh		89.1			14.4			33.2			28.1	
Approach LOS		F			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	51.0		25.7	9.7	49.6		25.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	3.1	13.4		18.7	4.1	45.6		10.8
Green Ext Time (p_c), s	0.0	8.3		0.9	0.1	0.0		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	52.8
HCM 2010 LOS	D

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	1120	0	0	757	12	0	0	0	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998						0.923	
Flt Protected		0.999									0.979	
Satd. Flow (prot)	0	1879	0	0	1780	0	0	1928	0	0	1666	0
Flt Permitted		0.999									0.979	
Satd. Flow (perm)	0	1879	0	0	1780	0	0	1928	0	0	1666	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	32	1179	0	0	797	13	0	0	0	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1211	0	0	810	0	0	0	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	30	1120	0	0	757	12	0	0	0	3	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	32	1179	0	0	797	13	0	0	0	3	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	809	0	0	1179	0	0	2047	2051	1179	2045	2045	803
Stage 1	-	-	-	-	-	-	1242	1242	-	803	803	-
Stage 2	-	-	-	-	-	-	805	809	-	1242	1242	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	821	-	-	596	-	-	73	99	275	26	36	352
Stage 1	-	-	-	-	-	-	303	350	-	317	333	-
Stage 2	-	-	-	-	-	-	472	494	-	163	188	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	821	-	-	596	-	-	66	88	275	24	32	352
Mov Cap-2 Maneuver	-	-	-	-	-	-	66	88	-	24	32	-
Stage 1	-	-	-	-	-	-	269	310	-	281	333	-
Stage 2	-	-	-	-	-	-	466	494	-	145	167	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.2	0	0	87.2
HCM LOS			A	F

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	821	-	-	596	-	-	51
HCM Lane V/C Ratio	-	0.038	-	-	-	-	-	0.144
HCM Control Delay (s)	0	9.6	0	-	0	-	-	87.2
HCM Lane LOS	A	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.5

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	1074	49	26	755	14	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.905	
Flt Protected				0.998	0.985	
Satd. Flow (prot)	1785	0	0	1728	1059	0
Flt Permitted				0.998	0.985	
Satd. Flow (perm)	1785	0	0	1728	1059	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	60%	60%	8%	60%	60%
Adj. Flow (vph)	1180	54	29	830	15	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1234	0	0	859	50	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

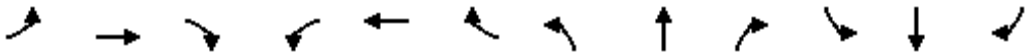
Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	1074	49	26	755	14	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	5	60	60	8	60	60
Mvmt Flow	1180	54	29	830	15	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1234	0	2094	1207
Stage 1	-	-	-	-	1207	-
Stage 2	-	-	-	-	887	-
Critical Hdwy	-	-	4.7	-	7	6.8
Critical Hdwy Stg 1	-	-	-	-	6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.74	-	4.04	3.84
Pot Cap-1 Maneuver	-	-	405	-	39	171
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	321	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	405	-	34	171
Mov Cap-2 Maneuver	-	-	-	-	34	-
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	278	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0.5	115.1
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	77	-	-	405	-
HCM Lane V/C Ratio	0.656	-	-	0.071	-
HCM Control Delay (s)	115.1	-	-	14.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	3	-	-	0.2	-



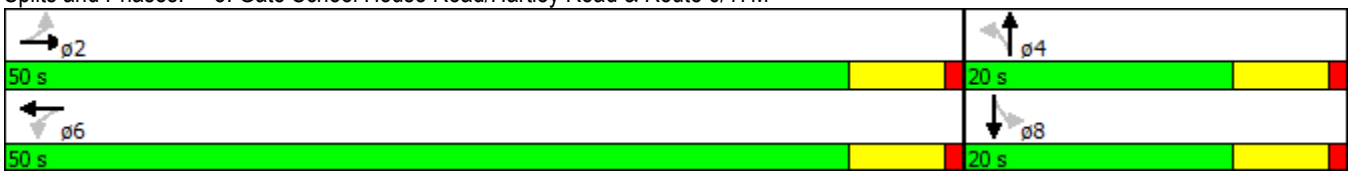
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	959	137	10	650	13	133	10	11	19	11	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.997			0.990			0.963	
Flt Protected					0.999			0.959			0.978	
Satd. Flow (prot)	0	1742	0	0	1780	0	0	1776	0	0	1164	0
Flt Permitted		0.993			0.980			0.724			0.844	
Satd. Flow (perm)	0	1730	0	0	1746	0	0	1341	0	0	1005	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			3			5			12	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	11	1031	147	11	699	14	143	11	12	20	12	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1189	0	0	724	0	0	166	0	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.03			0.62			0.73			0.25	
Control Delay		50.2			10.4			45.9			22.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		50.2			10.4			45.9			22.7	
Queue Length 50th (ft)		~566			160			64			12	
Queue Length 95th (ft)		#821			280			#136			38	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1155			1160			270			209	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.03			0.62			0.61			0.21	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	959	137	10	650	13	133	10	11	19	11	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1784	1881	1948	1799	1948	1919	1871	1919	1872	1236	1872
Adj Flow Rate, veh/h	11	1031	120	11	699	14	143	11	12	20	12	12
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	62	1052	122	64	1170	23	279	13	14	136	57	41
Arrive On Green	0.71	0.68	0.68	0.71	0.68	0.68	0.17	0.13	0.13	0.17	0.13	0.13
Sat Flow, veh/h	6	1558	180	9	1733	34	1291	99	108	395	427	308
Grp Volume(v), veh/h	1162	0	0	724	0	0	166	0	0	44	0	0
Grp Sat Flow(s),veh/h/ln	1744	0	0	1776	0	0	1498	0	0	1131	0	0
Q Serve(g_s), s	7.9	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	37.2	0.0	0.0	13.4	0.0	0.0	6.3	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.01		0.10	0.02		0.02	0.86		0.07	0.45		0.27
Lane Grp Cap(c), veh/h	1290	0	0	1314	0	0	355	0	0	271	0	0
V/C Ratio(X)	0.90	0.00	0.00	0.55	0.00	0.00	0.47	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	1337	0	0	1360	0	0	483	0	0	363	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	0.0	5.5	0.0	0.0	25.3	0.0	0.0	24.0	0.0	0.0
Incr Delay (d2), s/veh	8.1	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	0.0	0.0	5.8	0.0	0.0	2.6	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	17.4	0.0	0.0	5.7	0.0	0.0	25.6	0.0	0.0	24.1	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		1162			724			166			44	
Approach Delay, s/veh		17.4			5.7			25.6			24.1	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.3		14.4		48.3		14.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		39.2		8.3		15.4		4.1
Green Ext Time (p_c), s		3.2		0.3		8.8		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	50	833	106	44	628	36	32	85	38	26	54	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.992			0.967			0.978	
Flt Protected	0.950			0.950				0.990			0.987	
Satd. Flow (prot)	1762	1846	0	1564	1902	0	0	1721	0	0	1763	0
Flt Permitted	0.252			0.081				0.913			0.801	
Satd. Flow (perm)	467	1846	0	133	1902	0	0	1587	0	0	1430	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			5			15			9	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	3%	9%	16%	3%	1%	1%	7%	12%	1%	9%	8%
Adj. Flow (vph)	54	896	114	47	675	39	34	91	41	28	58	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	1010	0	47	714	0	0	166	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.11	0.86		0.27	0.65			0.67			0.47	
Control Delay	5.7	25.0		16.0	19.1			46.1			38.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.7	25.0		16.0	19.1			46.1			38.7	
Queue Length 50th (ft)	7	461		6	349			83			50	
Queue Length 95th (ft)	21	#889		19	459			152			101	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	512	1196		244	1230			371			330	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.11	0.84		0.19	0.58			0.45			0.31	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 85.2
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	50	833	106	44	628	36	32	85	38	26	54	16
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1855	1878	1948	1646	1930	1910	1862	1810	1862	1948	1826	1948
Adj Flow Rate, veh/h	54	896	92	47	675	28	34	91	41	28	58	17
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	3	3	16	3	3	7	7	7	9	9	9
Cap, veh/h	494	956	98	169	744	31	95	129	53	108	141	36
Arrive On Green	0.21	0.57	0.57	0.04	0.40	0.40	0.16	0.13	0.13	0.16	0.13	0.13
Sat Flow, veh/h	1766	1676	172	1568	1840	76	253	992	408	329	1090	280
Grp Volume(v), veh/h	54	0	988	47	0	703	166	0	0	103	0	0
Grp Sat Flow(s),veh/h/ln	1766	0	1848	1568	0	1917	1653	0	0	1699	0	0
Q Serve(g_s), s	0.0	0.0	34.5	0.0	0.0	24.1	2.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	34.5	0.0	0.0	24.1	6.5	0.0	0.0	3.7	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.04	0.20		0.25	0.27		0.17
Lane Grp Cap(c), veh/h	494	0	1054	169	0	775	324	0	0	335	0	0
V/C Ratio(X)	0.11	0.00	0.94	0.28	0.00	0.91	0.51	0.00	0.00	0.31	0.00	0.00
Avail Cap(c_a), veh/h	494	0	1428	305	0	1481	552	0	0	558	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.5	0.0	13.9	32.1	0.0	19.6	29.0	0.0	0.0	27.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	8.5	0.3	0.0	1.8	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	19.8	0.9	0.0	13.1	3.0	0.0	0.0	1.8	0.0	0.0
LnGrp Delay(d),s/veh	21.5	0.0	22.3	32.4	0.0	21.4	29.5	0.0	0.0	28.0	0.0	0.0
LnGrp LOS	C		C	C		C	C			C		
Approach Vol, veh/h		1042			750			166			103	
Approach Delay, s/veh		22.3			22.0			29.5			28.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.6	34.2		15.1	8.9	45.9		15.1
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	26.1		8.5	2.0	36.5		5.7
Green Ext Time (p_c), s	0.1	2.1		0.6	0.0	3.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	871	0	0	698	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1867	0	0	1844	0	1595
Flt Permitted						
Satd. Flow (perm)	1867	0	0	1844	0	1595
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	5%	5%	7%	5%	7%
Adj. Flow (vph)	937	0	0	751	0	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	937	0	0	751	0	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	871	0	0	698	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	5	5	7	5	7
Mvmt Flow	937	0	0	751	0	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	937	0	1688	937
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	751	-
Critical Hdwy	-	-	4.15	-	6.25	6.17
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	719	-	111	322
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	719	-	111	322
Mov Cap-2 Maneuver	-	-	-	-	111	-
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	481	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	322	-	-	719	-
HCM Lane V/C Ratio	0.21	-	-	-	-
HCM Control Delay (s)	19.1	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	167	15	4	112	5	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.924	
Flt Protected				0.998	0.979	
Satd. Flow (prot)	1753	0	0	1793	1691	0
Flt Permitted				0.998	0.979	
Satd. Flow (perm)	1753	0	0	1793	1691	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	6%	1%	1%	7%	1%	3%
Adj. Flow (vph)	223	20	5	149	7	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	243	0	0	154	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	167	15	4	112	5	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	6	1	1	7	1	3
Mvmt Flow	223	20	5	149	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	243	0	393	233
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	-	-	4.11	-	6.21	6.13
Critical Hdwy Stg 1	-	-	-	-	5.21	-
Critical Hdwy Stg 2	-	-	-	-	5.21	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.327
Pot Cap-1 Maneuver	-	-	1329	-	627	809
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	879	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1329	-	624	809
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	875	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	720	-	-	1329	-
HCM Lane V/C Ratio	0.022	-	-	0.004	-
HCM Control Delay (s)	10.1	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	61	27	1	90	59	49	115	2	13	76	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.947			0.999				
Flt Protected		0.987						0.985			0.993	
Satd. Flow (prot)	0	1696	0	0	1731	0	0	1781	0	0	1806	0
Flt Permitted		0.987						0.985			0.993	
Satd. Flow (perm)	0	1696	0	0	1731	0	0	1781	0	0	1806	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		395			329			676			535	
Travel Time (s)		7.7			7.5			13.2			12.2	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	72	32	1	106	69	58	135	2	15	89	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	176	0	0	195	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

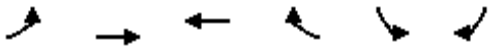
Intersection	
Int Delay, s/veh	8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	31	61	27	1	90	59	49	115	2	13	76	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	36	72	32	1	106	69	58	135	2	15	89	0

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	460	372	136	424	373	89	89	0	0	138	0	0
Stage 1	252	252	-	120	120	-	-	-	-	-	-	-
Stage 2	208	120	-	304	253	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	457	510	891	561	576	966	1488	-	-	1427	-	-
Stage 1	705	655	-	889	801	-	-	-	-	-	-	-
Stage 2	752	770	-	723	712	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	347	483	891	461	546	966	1488	-	-	1427	-	-
Mov Cap-2 Maneuver	347	483	-	461	546	-	-	-	-	-	-	-
Stage 1	675	627	-	852	792	-	-	-	-	-	-	-
Stage 2	598	762	-	591	682	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	15.4	12.5	2.2	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1488	-	-	484	658	1427	-	-
HCM Lane V/C Ratio	0.039	-	-	0.289	0.268	0.011	-	-
HCM Control Delay (s)	7.5	0	-	15.4	12.5	7.5	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	1.1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	78	0	117	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865			
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1899	1512	0	1745	0
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1899	1512	0	1745	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		487	358		395	
Travel Time (s)		9.5	7.0		7.7	
Confl. Peds. (#/hr)				96		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	1%	0%	6%	6%	0%
Adj. Flow (vph)	3	103	0	154	138	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	106	154	0	138	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	78	0	117	105	0
Conflicting Peds, #/hr	0	0	0	96	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	0	1	0	6	6	0
Mvmt Flow	3	103	0	154	138	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	154	0	-	0	185	77
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	4.1	-	-	-	5.46	5.7
Critical Hdwy Stg 1	-	-	-	-	4.46	-
Critical Hdwy Stg 2	-	-	-	-	4.46	-
Follow-up Hdwy	2.2	-	-	-	3.554	3.3
Pot Cap-1 Maneuver	1439	-	-	-	837	1000
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1439	-	-	-	835	1000
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	932	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1439	-	-	-	835
HCM Lane V/C Ratio	0.002	-	-	-	0.165
HCM Control Delay (s)	7.5	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	211	0	167	0	0	0	0	177	46	144	168	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940						0.972				
Flt Protected		0.973									0.977	
Satd. Flow (prot)	0	1638	0	0	0	0	0	1720	0	0	1709	0
Flt Permitted		0.973									0.977	
Satd. Flow (perm)	0	1638	0	0	0	0	0	1720	0	0	1709	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			340			202			336	
Travel Time (s)		7.5			7.7			4.6			7.6	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	6%	0%	5%	2%	2%	2%	2%	8%	5%	7%	9%	2%
Adj. Flow (vph)	293	0	232	0	0	0	0	246	64	200	233	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	525	0	0	0	0	0	310	0	0	433	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	123.8

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	211	0	167	0	0	0	0	177	46	144	168	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	6	0	5	2	2	2	2	8	5	7	9	2
Mvmt Flow	293	0	232	0	0	0	0	246	64	200	233	0

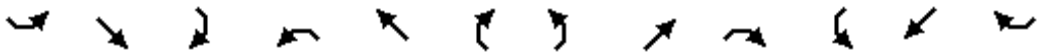
Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	911	943	233	233	0	0	310	0	0
Stage 1	633	633	-	-	-	-	-	-	-
Stage 2	278	310	-	-	-	-	-	-	-
Critical Hdwy	6.66	6.7	6.35	4.12	-	-	4.17	-	-
Critical Hdwy Stg 1	5.66	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.66	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.345	2.218	-	-	2.263	-	-
Pot Cap-1 Maneuver	~ 285	251	794	1335	-	-	1223	-	-
Stage 1	504	460	-	-	-	-	-	-	-
Stage 2	748	651	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 231	0	794	1335	-	-	1223	-	-
Mov Cap-2 Maneuver	~ 231	0	-	-	-	-	-	-	-
Stage 1	409	0	-	-	-	-	-	-	-
Stage 2	748	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	295.7	0	3.9
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1335	-	-	336	1223	-	-
HCM Lane V/C Ratio	-	-	-	1.563	0.164	-	-
HCM Control Delay (s)	0	-	-	295.7	8.5	0	-
HCM Lane LOS	A	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	30.2	0.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	40	2	110	42	347	0	0	272	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.903						0.964	
Flt Protected					0.987			0.995				
Satd. Flow (prot)	0	0	0	0	1581	0	0	1818	0	0	1718	0
Flt Permitted					0.987			0.995				
Satd. Flow (perm)	0	0	0	0	1581	0	0	1818	0	0	1718	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		418			312			336			432	
Travel Time (s)		9.5			7.1			7.6			9.8	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	2%	2%	2%	3%	0%	8%	24%	1%	2%	2%	9%	2%
Adj. Flow (vph)	0	0	0	56	3	153	58	482	0	0	378	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	212	0	0	540	0	0	517	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	40	2	110	42	347	0	0	272	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	3	0	8	24	1	2	2	9	2
Mvmt Flow	0	0	0	56	3	153	58	482	0	0	378	139

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1046	1116	482	517	0	0	482	0	0
Stage 1	599	599	-	-	-	-	-	-	-
Stage 2	447	517	-	-	-	-	-	-	-
Critical Hdwy	6.63	6.7	6.38	4.34	-	-	4.12	-	-
Critical Hdwy Stg 1	5.63	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.63	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.372	2.416	-	-	2.218	-	-
Pot Cap-1 Maneuver	238	197	565	946	-	-	1081	-	-
Stage 1	529	477	-	-	-	-	-	-	-
Stage 2	627	522	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	218	0	565	946	-	-	1081	-	-
Mov Cap-2 Maneuver	218	0	-	-	-	-	-	-	-
Stage 1	485	0	-	-	-	-	-	-	-
Stage 2	627	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	23.9	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SWL	SWT	SWR
Capacity (veh/h)	946	-	- 397	1081	-	-
HCM Lane V/C Ratio	0.062	-	- 0.532	-	-	-
HCM Control Delay (s)	9.1	0	- 23.9	0	-	-
HCM Lane LOS	A	A	- C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	- 3	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1078	27	7	766	15	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.922	
Flt Protected					0.979	
Satd. Flow (prot)	1785	0	0	1857	1383	0
Flt Permitted					0.979	
Satd. Flow (perm)	1785	0	0	1857	1383	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	816	
Travel Time (s)	15.7			12.5	18.5	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	12%	38%	2%	36%	39%
Adj. Flow (vph)	1239	31	8	880	17	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1270	0	0	888	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1078	27	7	766	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	12	38	2	36	39
Mvmt Flow	1239	31	8	880	17	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1270	0	2152	1255
Stage 1	-	-	-	-	1255	-
Stage 2	-	-	-	-	897	-
Critical Hdwy	-	-	4.48	-	6.36	6.39
Critical Hdwy Stg 1	-	-	-	-	5.36	-
Critical Hdwy Stg 2	-	-	-	-	5.36	-
Follow-up Hdwy	-	-	2.542	-	3.824	3.651
Pot Cap-1 Maneuver	-	-	442	-	53	188
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	384	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	442	-	51	188
Mov Cap-2 Maneuver	-	-	-	-	51	-
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	371	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	77.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	87	-	-	442	-
HCM Lane V/C Ratio	0.462	-	-	0.018	-
HCM Control Delay (s)	77.9	-	-	13.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	1.9	-	-	0.1	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	438	0	901	0	0	1035	152	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	461	0	948	0	0	1089	160	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	461	0	948	0	0	1089	160	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6.9

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	438	0	901	0	0	1035	152	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	461	0	948	0	0	1089	160	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1493	474	1089	0	0	948	0	0
Stage 1	948	-	-	-	-	-	-	-
Stage 2	545	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	142	547	619	-	-	702	-	0
Stage 1	387	-	-	-	-	-	-	0
Stage 2	588	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	142	547	619	-	-	702	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-	-	-
Stage 1	387	-	-	-	-	-	-	-
Stage 2	588	-	-	-	-	-	-	-

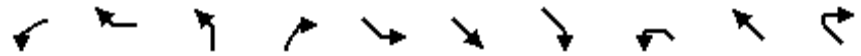
Approach	WB	NB	SB
HCM Control Delay, s	37.4	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	619	-	-	547	702	-
HCM Lane V/C Ratio	-	-	-	0.843	-	-
HCM Control Delay (s)	0	-	-	37.4	0	-
HCM Lane LOS	A	-	-	E	A	-
HCM 95th %tile Q(veh)	0	-	-	8.8	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	84	0	0	0	1035	0	0	901	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	87	0	0	0	1067	0	0	929	247
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	87	0	0	0	1067	0	0	929	247
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	94	0	0	0	660	459	0	1047	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	99	0	0	0	695	483	0	1102	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	99	0	0	0	695	483	0	1102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	176	0	0	0	660	0	0	1047	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	183	0	0	0	688	0	0	1091	154
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	183	0	0	0	688	0	0	1091	154
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	37	604	27	240	930	116	161	136	23	79	178	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.983			0.990			0.975	
Flt Protected	0.950			0.950				0.975			0.988	
Satd. Flow (prot)	1876	1892	0	1690	3269	0	0	1853	0	0	1742	0
Flt Permitted	0.222			0.140				0.555			0.805	
Satd. Flow (perm)	439	1892	0	249	3269	0	0	1055	0	0	1419	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			17			4			11	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2977	
Travel Time (s)		23.3			14.7			15.3			45.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	39	636	28	253	979	122	169	143	24	83	187	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	664	0	253	1101	0	0	336	0	0	330	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.14	0.83		0.73	0.61			1.23			0.88	
Control Delay	9.5	36.1		26.0	17.4			162.9			60.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.5	36.1		26.0	17.4			162.9			60.4	
Queue Length 50th (ft)	9	357		66	251			~259			191	
Queue Length 95th (ft)	21	#583		152	329			#446			#366	
Internal Link Dist (ft)		1460			890			932			2897	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	417	801		391	1798			274			374	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.09	0.83		0.65	0.61			1.23			0.88	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 97.1
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	37	604	27	240	930	116	161	136	23	79	178	57
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1903	1995	1779	1750	1814	1948	1920	1948	1910	1871	1910
Adj Flow Rate, veh/h	39	636	17	253	979	111	169	143	13	83	187	49
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	274	808	22	356	1564	177	215	147	13	138	265	64
Arrive On Green	0.02	0.44	0.44	0.10	0.52	0.52	0.29	0.27	0.27	0.29	0.27	0.27
Sat Flow, veh/h	1881	1845	49	1694	3012	341	584	550	47	334	993	241
Grp Volume(v), veh/h	39	0	653	253	540	550	325	0	0	319	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1894	1694	1663	1690	1182	0	0	1568	0	0
Q Serve(g_s), s	1.1	0.0	27.7	7.2	21.7	21.7	8.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	27.7	7.2	21.7	21.7	25.7	0.0	0.0	16.8	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.20	0.52		0.04	0.26		0.15
Lane Grp Cap(c), veh/h	274	0	830	356	864	878	399	0	0	501	0	0
V/C Ratio(X)	0.14	0.00	0.79	0.71	0.63	0.63	0.81	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	475	0	830	472	864	878	399	0	0	501	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.1	0.0	22.5	17.7	16.0	16.0	34.8	0.0	0.0	30.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	7.4	1.8	3.4	3.4	11.4	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	16.0	3.5	10.7	10.9	9.3	0.0	0.0	7.4	0.0	0.0
LnGrp Delay(d),s/veh	15.2	0.0	30.0	19.4	19.4	19.4	46.2	0.0	0.0	32.8	0.0	0.0
LnGrp LOS	B		C	B	B	B	D			C		
Approach Vol, veh/h		692			1343			325			319	
Approach Delay, s/veh		29.1			19.4			46.2			32.8	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	54.6		31.0	15.6	47.0		31.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	3.1	23.7		27.7	9.2	29.7		18.8
Green Ext Time (p_c), s	0.0	6.1		0.0	0.4	4.8		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	7	786	0	0	1220	7	0	0	0	7	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.879	
Flt Protected											0.995	
Satd. Flow (prot)	0	1880	0	0	1780	0	0	1928	0	0	1612	0
Flt Permitted											0.995	
Satd. Flow (perm)	0	1880	0	0	1780	0	0	1928	0	0	1612	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	7	827	0	0	1284	7	0	0	0	7	0	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	834	0	0	1291	0	0	0	0	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	7	786	0	0	1220	7	0	0	0	7	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	7	827	0	0	1284	7	0	0	0	7	0	61

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1292	0	0	827	0	0	2160	2134	827	2130	2130	1288
Stage 1	-	-	-	-	-	-	842	842	-	1288	1288	-
Stage 2	-	-	-	-	-	-	1318	1292	-	842	842	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	540	-	-	808	-	-	63	90	418	23	31	174
Stage 1	-	-	-	-	-	-	455	482	-	152	177	-
Stage 2	-	-	-	-	-	-	281	336	-	299	316	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	540	-	-	808	-	-	40	88	418	23	30	174
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	88	-	23	30	-
Stage 1	-	-	-	-	-	-	444	470	-	148	177	-
Stage 2	-	-	-	-	-	-	182	336	-	292	308	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	0	93.3
HCM LOS			A	F

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	540	-	-	808	-	-	102
HCM Lane V/C Ratio	-	0.014	-	-	-	-	-	0.671
HCM Control Delay (s)	0	11.8	0	-	0	-	-	93.3
HCM Lane LOS	A	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	3.4

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	786	7	2	1209	18	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.953	
Flt Protected					0.968	
Satd. Flow (prot)	1835	0	0	1827	1735	0
Flt Permitted					0.968	
Satd. Flow (perm)	1835	0	0	1827	1735	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	1%	4%	1%	1%
Adj. Flow (vph)	836	7	2	1286	19	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	843	0	0	1288	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

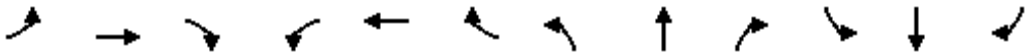
Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	786	7	2	1209	18	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	1	1	4	1	1
Mvmt Flow	836	7	2	1286	19	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	844	0	2130	840
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	1290	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	797	-	55	367
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	259	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	797	-	55	367
Mov Cap-2 Maneuver	-	-	-	-	55	-
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	257	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	77.3
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	77	-	-	797	-
HCM Lane V/C Ratio	0.373	-	-	0.003	-
HCM Control Delay (s)	77.3	-	-	9.5	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0	-

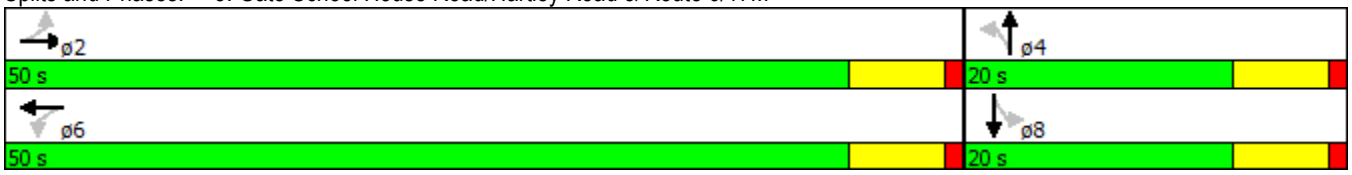


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	680	108	11	1061	12	146	10	10	10	10	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.992			0.945	
Flt Protected		0.999			0.999			0.958			0.985	
Satd. Flow (prot)	0	1806	0	0	1876	0	0	1767	0	0	1553	0
Flt Permitted		0.975			0.990			0.726			0.899	
Satd. Flow (perm)	0	1763	0	0	1859	0	0	1339	0	0	1418	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			2			4			15	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	0%	3%	9%	0%	10%	20%	8%
Adj. Flow (vph)	15	731	116	12	1141	13	157	11	11	11	11	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	862	0	0	1166	0	0	179	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.74			0.95			0.76			0.14	
Control Delay		13.5			31.1			48.7			17.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.5			31.1			48.7			17.8	
Queue Length 50th (ft)		224			431			70			8	
Queue Length 95th (ft)		384			#765			#153			31	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1168			1224			267			291	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.74			0.95			0.67			0.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 71.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	680	108	11	1061	12	146	10	10	10	10	14
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1853	1881	1948	1894	1948	1919	1860	1919	1872	1669	1872
Adj Flow Rate, veh/h	15	731	89	12	1141	13	157	11	11	11	11	15
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	69	1043	125	65	1209	14	300	13	13	119	92	91
Arrive On Green	0.69	0.65	0.65	0.69	0.65	0.65	0.18	0.15	0.15	0.18	0.15	0.15
Sat Flow, veh/h	12	1596	192	7	1850	21	1274	89	89	282	626	620
Grp Volume(v), veh/h	835	0	0	1166	0	0	179	0	0	37	0	0
Grp Sat Flow(s),veh/h/ln	1800	0	0	1878	0	0	1453	0	0	1529	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.6	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.0	0.0	0.0	31.3	0.0	0.0	6.8	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.02		0.11	0.01		0.01	0.88		0.06	0.30		0.41
Lane Grp Cap(c), veh/h	1297	0	0	1350	0	0	374	0	0	353	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.86	0.00	0.00	0.48	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1432	0	0	1495	0	0	495	0	0	475	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	9.0	0.0	0.0	23.8	0.0	0.0	22.1	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	4.7	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	0.0	15.9	0.0	0.0	2.7	0.0	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	7.1	0.0	0.0	13.7	0.0	0.0	24.2	0.0	0.0	22.2	0.0	0.0
LnGrp LOS	A			B			C			C		
Approach Vol, veh/h		835			1166			179			37	
Approach Delay, s/veh		7.1			13.7			24.2			22.2	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		45.3		14.8		45.3		14.8
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		19.0		8.8		33.3		3.2
Green Ext Time (p_c), s		9.2		0.3		6.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	63	551	84	40	901	77	36	67	82	102	78	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.988			0.940			0.989	
Flt Protected	0.950			0.950				0.990			0.975	
Satd. Flow (prot)	1729	1871	0	1711	1879	0	0	1721	0	0	1793	0
Flt Permitted	0.077			0.256				0.887			0.631	
Satd. Flow (perm)	140	1871	0	461	1879	0	0	1542	0	0	1161	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			7			35			4	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	66	580	88	42	948	81	38	71	86	107	82	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	668	0	42	1029	0	0	195	0	0	205	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.36	0.65		0.10	0.95			0.59			0.90	
Control Delay	22.1	20.6		6.6	38.7			37.4			77.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	22.1	20.6		6.6	38.7			37.4			77.2	
Queue Length 50th (ft)	12	350		8	576			90			121	
Queue Length 95th (ft)	25	424		18	#926			168			#263	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	241	1126		463	1087			341			238	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.27	0.59		0.09	0.95			0.57			0.86	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 94.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	63	551	84	40	901	77	36	67	82	102	78	15
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1914	1910	1862	1862	1862	1948	1860	1948
Adj Flow Rate, veh/h	66	580	67	42	948	70	38	71	86	107	82	16
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	153	633	73	497	999	74	94	122	128	183	109	19
Arrive On Green	0.04	0.38	0.38	0.23	0.57	0.57	0.20	0.17	0.17	0.20	0.17	0.17
Sat Flow, veh/h	1733	1681	194	1716	1761	130	235	706	743	668	633	110
Grp Volume(v), veh/h	66	0	647	42	0	1018	195	0	0	205	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1875	1716	0	1891	1684	0	0	1411	0	0
Q Serve(g_s), s	0.0	0.0	26.5	0.0	0.0	40.7	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	26.5	0.0	0.0	40.7	8.4	0.0	0.0	11.2	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.07	0.19		0.44	0.52		0.08
Lane Grp Cap(c), veh/h	153	0	706	497	0	1073	386	0	0	347	0	0
V/C Ratio(X)	0.43	0.00	0.92	0.08	0.00	0.95	0.51	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	283	0	1256	497	0	1267	487	0	0	438	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.4	0.0	23.9	23.7	0.0	16.3	30.9	0.0	0.0	31.6	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	2.8	0.0	0.0	12.8	0.4	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	14.2	0.7	0.0	24.7	3.9	0.0	0.0	4.2	0.0	0.0
LnGrp Delay(d),s/veh	38.1	0.0	26.7	23.7	0.0	29.2	31.2	0.0	0.0	32.2	0.0	0.0
LnGrp LOS	D		C	C		C	C			C		
Approach Vol, veh/h		713			1060			195			205	
Approach Delay, s/veh		27.7			28.9			31.2			32.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	51.7		19.9	24.3	36.4		19.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	42.7		10.4	2.0	28.5		13.2
Green Ext Time (p_c), s	0.1	3.0		0.9	0.1	1.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	608	0	0	1012	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	661	0	0	1100	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	661	0	0	1100	0	26
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	608	0	0	1012	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	661	0	0	1100	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	661	0	1761	661
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	1100	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	913	-	101	466
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	334	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	913	-	101	466
Mov Cap-2 Maneuver	-	-	-	-	101	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	334	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	466	-	-	913	-
HCM Lane V/C Ratio	0.056	-	-	-	-
HCM Control Delay (s)	13.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	105	8	14	314	20	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.956	
Flt Protected				0.998	0.967	
Satd. Flow (prot)	1680	0	0	1760	1760	0
Flt Permitted				0.998	0.967	
Satd. Flow (perm)	1680	0	0	1760	1760	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	11%	2%	5%	9%	0%	1%
Adj. Flow (vph)	119	9	16	357	23	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	0	0	373	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	105	8	14	314	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	2	5	9	0	1
Mvmt Flow	119	9	16	357	23	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	513	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	389	-
Critical Hdwy	-	-	4.15	-	6.2	6.11
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1440	-	540	933
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1440	-	532	933
Mov Cap-2 Maneuver	-	-	-	-	532	-
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	621	-	-	1440	-
HCM Lane V/C Ratio	0.055	-	-	0.011	-
HCM Control Delay (s)	11.1	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	206	95	2	68	76	73	185	3	14	205	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.930			0.998			0.999	
Flt Protected		0.995			0.999			0.986			0.997	
Satd. Flow (prot)	0	1697	0	0	1698	0	0	1781	0	0	1811	0
Flt Permitted		0.995			0.999			0.986			0.997	
Satd. Flow (perm)	0	1697	0	0	1698	0	0	1781	0	0	1811	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			696			542	
Travel Time (s)		7.7			8.6			13.6			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	39	242	112	2	80	89	86	218	4	16	241	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	393	0	0	171	0	0	308	0	0	259	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

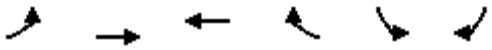
Intersection	
Int Delay, s/veh	50.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	33	206	95	2	68	76	73	185	3	14	205	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	39	242	112	2	80	89	86	218	4	16	241	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	751	667	219	843	668	242	244	0	0	221	0	0
Stage 1	391	391	-	275	275	-	-	-	-	-	-	-
Stage 2	360	276	-	568	393	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	274	324	794	308	404	800	1305	-	-	1331	-	-
Stage 1	575	552	-	747	698	-	-	-	-	-	-	-
Stage 2	602	636	-	535	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	190	296	794	79	368	800	1305	-	-	1331	-	-
Mov Cap-2 Maneuver	190	296	-	79	368	-	-	-	-	-	-	-
Stage 1	532	511	-	691	688	-	-	-	-	-	-	-
Stage 2	466	627	-	224	580	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	135.3	16.7	2.2	0.5
HCM LOS	F	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1305	-	-	338	479	1331	-	-
HCM Lane V/C Ratio	0.066	-	-	1.163	0.359	0.012	-	-
HCM Control Delay (s)	8	0	-	135.3	16.7	7.7	0	-
HCM Lane LOS	A	A	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	16	1.6	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	27	0	334	85	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1488	1556	0	1729	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1488	1556	0	1729	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		528	347		397	
Travel Time (s)		10.3	6.8		7.7	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	29%	0%	3%	7%	2%
Adj. Flow (vph)	0	34	0	418	106	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	34	418	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	27	0	334	85	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	29	0	3	7	2
Mvmt Flow	0	34	0	418	106	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	418	0	-	0	243	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	4.1	-	-	-	5.47	5.72
Critical Hdwy Stg 1	-	-	-	-	4.47	-
Critical Hdwy Stg 2	-	-	-	-	4.47	-
Follow-up Hdwy	2.2	-	-	-	3.563	3.318
Pot Cap-1 Maneuver	1152	-	-	-	786	856
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1152	-	-	-	786	856
Mov Cap-2 Maneuver	-	-	-	-	786	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	985	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1152	-	-	-	786
HCM Lane V/C Ratio	-	-	-	-	0.135
HCM Control Delay (s)	0	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	121	2	54	0	0	0	0	218	68	77	373	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959						0.968				
Flt Protected		0.967									0.991	
Satd. Flow (prot)	0	1643	0	0	0	0	0	1734	0	0	1776	0
Flt Permitted		0.967									0.991	
Satd. Flow (perm)	0	1643	0	0	0	0	0	1734	0	0	1776	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	134	2	60	0	0	0	0	242	76	86	414	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	196	0	0	0	0	0	318	0	0	500	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	121	2	54	0	0	0	0	218	68	77	373	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	8	0	4	2	2	2	2	8	0	3	6	2
Mvmt Flow	134	2	60	0	0	0	0	242	76	86	414	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	866	904	414	414	0	0	318	0	0
Stage 1	586	586	-	-	-	-	-	-	-
Stage 2	280	318	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.34	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.336	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	301	265	627	1145	-	-	1236	-	-
Stage 1	527	484	-	-	-	-	-	-	-
Stage 2	742	646	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	274	0	627	1145	-	-	1236	-	-
Mov Cap-2 Maneuver	274	0	-	-	-	-	-	-	-
Stage 1	480	0	-	-	-	-	-	-	-
Stage 2	742	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	30.4	0	1.4
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1145	-	-	332	1236	-	-
HCM Lane V/C Ratio	-	-	-	0.592	0.069	-	-
HCM Control Delay (s)	0	-	-	30.4	8.1	0	-
HCM Lane LOS	A	-	-	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3.6	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	170	2	178	67	273	0	0	280	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931						0.965	
Flt Protected					0.976			0.990				
Satd. Flow (prot)	0	0	0	0	1644	0	0	1737	0	0	1747	0
Flt Permitted					0.976			0.990				
Satd. Flow (perm)	0	0	0	0	1644	0	0	1737	0	0	1747	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	183	2	191	72	294	0	0	301	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	376	0	0	366	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	15.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	170	2	178	67	273	0	0	280	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	5	0	4	15	6	2	2	7	1
Mvmt Flow	0	0	0	183	2	191	72	294	0	0	301	104

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	791	843	294	405	0	0	294	0	0
Stage 1	438	438	-	-	-	-	-	-	-
Stage 2	353	405	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.7	6.34	4.25	-	-	4.12	-	-
Critical Hdwy Stg 1	5.65	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.336	2.335	-	-	2.218	-	-
Pot Cap-1 Maneuver	339	289	735	1087	-	-	1268	-	-
Stage 1	629	568	-	-	-	-	-	-	-
Stage 2	691	589	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	312	0	735	1087	-	-	1268	-	-
Mov Cap-2 Maneuver	312	0	-	-	-	-	-	-	-
Stage 1	579	0	-	-	-	-	-	-	-
Stage 2	691	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	44.8	1.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1087	-	-	442	1268	-	-
HCM Lane V/C Ratio	0.066	-	-	0.851	-	-	-
HCM Control Delay (s)	8.5	0	-	44.8	0	-	-
HCM Lane LOS	A	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	8.5	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	767	28	48	1151	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.961	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1793	0	0	1830	1960	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1793	0	0	1830	1960	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	793	
Travel Time (s)	15.7			12.5	18.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	46%	18%	3%	0%	0%
Adj. Flow (vph)	807	29	51	1212	63	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	836	0	0	1263	89	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	11.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	767	28	48	1151	60	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	46	18	3	0	0
Mvmt Flow	807	29	51	1212	63	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	837	0	2135	822
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	1313	-
Critical Hdwy	-	-	4.28	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.362	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	732	-	70	395
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	294	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	732	-	~ 55	395
Mov Cap-2 Maneuver	-	-	-	-	~ 55	-
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	231	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	270.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	74	-	-	732	-
HCM Lane V/C Ratio	1.209	-	-	0.069	-
HCM Control Delay (s)	270.1	-	-	10.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	6.8	-	-	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	481	0	900	0	0	1051	159	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	506	0	947	0	0	1106	167	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	506	0	947	0	0	1106	167	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	9.8

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	481	0	900	0	0	1051	159	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	506	0	947	0	0	1106	167	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1500	474	1106	0	0	947	0	0
Stage 1	947	-	-	-	-	-	-	-
Stage 2	553	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	141	547	610	-	-	702	-	0
Stage 1	387	-	-	-	-	-	-	0
Stage 2	583	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	141	547	610	-	-	702	-	-
Mov Cap-2 Maneuver	141	-	-	-	-	-	-	-
Stage 1	387	-	-	-	-	-	-	-
Stage 2	583	-	-	-	-	-	-	-

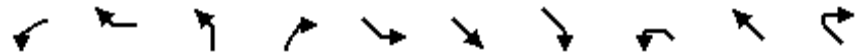
Approach	WB	NB	SB
HCM Control Delay, s	49.8	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	610	-	-	547	702	-
HCM Lane V/C Ratio	-	-	-	0.926	-	-
HCM Control Delay (s)	0	-	-	49.8	0	-
HCM Lane LOS	A	-	-	E	A	-
HCM 95th %tile Q(veh)	0	-	-	11.5	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	122	0	0	0	1051	0	0	900	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	126	0	0	0	1084	0	0	928	320
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	126	0	0	0	1084	0	0	928	320
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	128	0	0	0	685	489	0	1082	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	135	0	0	0	721	515	0	1139	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	135	0	0	0	721	515	0	1139	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	163	0	0	0	685	0	0	1082	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	170	0	0	0	714	0	0	1127	172
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	170	0	0	0	714	0	0	1127	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	17	651	19	231	961	124	139	140	15	67	187	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.983			0.993			0.977	
Flt Protected	0.950			0.950				0.977			0.989	
Satd. Flow (prot)	1876	1894	0	1690	3269	0	0	1862	0	0	1748	0
Flt Permitted	0.220			0.112				0.555			0.826	
Satd. Flow (perm)	435	1894	0	199	3269	0	0	1058	0	0	1460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			18			3			10	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2988	
Travel Time (s)		23.3			14.7			15.3			45.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	18	685	20	243	1012	131	146	147	16	71	197	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	705	0	243	1143	0	0	309	0	0	323	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.07	0.89		0.74	0.61			1.13			0.85	
Control Delay	8.9	41.5		30.2	15.9			130.7			55.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.9	41.5		30.2	15.9			130.7			55.8	
Queue Length 50th (ft)	4	410		78	195			~233			191	
Queue Length 95th (ft)	12	#644		163	343			#404			#349	
Internal Link Dist (ft)		1460			890			932			2908	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	413	796		367	1889			273			381	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.04	0.89		0.66	0.61			1.13			0.85	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 97.7
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	17	651	19	231	961	124	139	140	15	67	187	52
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1902	1995	1779	1750	1814	1948	1919	1948	1910	1871	1910
Adj Flow Rate, veh/h	18	685	9	243	1012	120	146	147	5	71	197	44
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	253	831	11	333	1588	188	204	173	5	124	287	60
Arrive On Green	0.01	0.44	0.44	0.10	0.53	0.53	0.28	0.26	0.26	0.28	0.26	0.26
Sat Flow, veh/h	1881	1873	25	1694	2996	355	556	658	21	288	1093	227
Grp Volume(v), veh/h	18	0	694	243	562	570	298	0	0	312	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1898	1694	1663	1688	1235	0	0	1607	0	0
Q Serve(g_s), s	0.5	0.0	29.7	6.8	22.1	22.2	6.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	29.7	6.8	22.1	22.2	22.1	0.0	0.0	15.8	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.21	0.49		0.02	0.23		0.14
Lane Grp Cap(c), veh/h	253	0	842	333	882	895	410	0	0	505	0	0
V/C Ratio(X)	0.07	0.00	0.82	0.73	0.64	0.64	0.73	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	475	0	842	459	882	895	420	0	0	517	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.0	0.0	22.6	18.2	15.4	15.4	33.1	0.0	0.0	30.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	9.0	2.0	3.5	3.5	5.2	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	17.5	3.2	11.0	11.2	7.7	0.0	0.0	7.1	0.0	0.0
LnGrp Delay(d),s/veh	15.0	0.0	31.6	20.2	18.9	18.9	38.3	0.0	0.0	32.0	0.0	0.0
LnGrp LOS	B		C	C	B	B	D			C		
Approach Vol, veh/h		712			1375			298			312	
Approach Delay, s/veh		31.2			19.1			38.3			32.0	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	55.0		30.3	15.1	47.0		30.3
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.5	24.2		24.1	8.8	31.7		17.8
Green Ext Time (p_c), s	0.0	6.5		0.2	0.4	4.5		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	7	772	0	0	1221	4	0	0	0	13	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt											0.892	
Flt Protected											0.990	
Satd. Flow (prot)	0	1880	0	0	1782	0	0	1928	0	0	1628	0
Flt Permitted											0.990	
Satd. Flow (perm)	0	1880	0	0	1782	0	0	1928	0	0	1628	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	7	813	0	0	1285	4	0	0	0	14	0	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	820	0	0	1289	0	0	0	0	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	7	772	0	0	1221	4	0	0	0	13	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	7	813	0	0	1285	4	0	0	0	14	0	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1289	0	0	813	0	0	2142	2116	813	2114	2114	1287
Stage 1	-	-	-	-	-	-	827	827	-	1287	1287	-
Stage 2	-	-	-	-	-	-	1315	1289	-	827	827	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	541	-	-	818	-	-	64	92	425	23	32	175
Stage 1	-	-	-	-	-	-	462	488	-	152	177	-
Stage 2	-	-	-	-	-	-	281	337	-	306	322	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	541	-	-	818	-	-	43	90	425	23	31	175
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	90	-	23	31	-
Stage 1	-	-	-	-	-	-	451	476	-	148	177	-
Stage 2	-	-	-	-	-	-	191	337	-	299	314	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	0	174
HCM LOS			A	F

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	541	-	-	818	-	-	76
HCM Lane V/C Ratio	-	0.014	-	-	-	-	-	0.914
HCM Control Delay (s)	0	11.7	0	-	0	-	-	174
HCM Lane LOS	A	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	4.7

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	780	5	5	1220	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.932	
Flt Protected					0.976	
Satd. Flow (prot)	1835	0	0	1827	1711	0
Flt Permitted					0.976	
Satd. Flow (perm)	1835	0	0	1827	1711	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	1%	4%	1%	1%
Adj. Flow (vph)	830	5	5	1298	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	835	0	0	1303	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

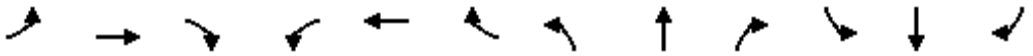
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	780	5	5	1220	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	1	1	4	1	1
Mvmt Flow	830	5	5	1298	5	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	835	0	2141	832
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	1309	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	803	-	54	371
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	254	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	803	-	53	371
Mov Cap-2 Maneuver	-	-	-	-	53	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	248	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	48.6
HCM LOS			E

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	93	-	-	803	-
HCM Lane V/C Ratio	0.114	-	-	0.007	-
HCM Control Delay (s)	48.6	-	-	9.5	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

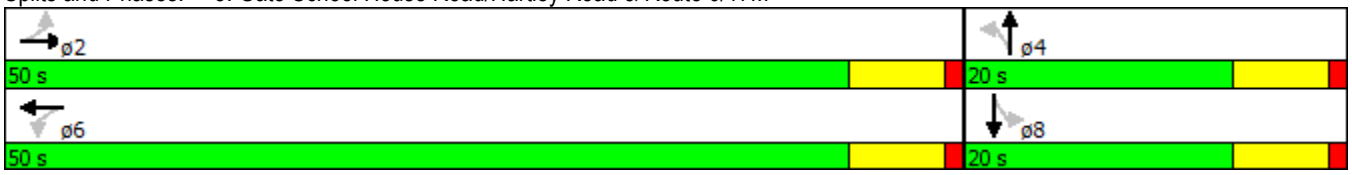


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	695	108	18	1067	20	124	12	17	11	11	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.997			0.985			0.948	
Flt Protected		0.999			0.999			0.961			0.985	
Satd. Flow (prot)	0	1806	0	0	1875	0	0	1761	0	0	1556	0
Flt Permitted		0.970			0.982			0.740			0.895	
Satd. Flow (perm)	0	1753	0	0	1843	0	0	1356	0	0	1414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			3			8			15	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	0%	3%	9%	0%	10%	20%	8%
Adj. Flow (vph)	17	747	116	19	1147	22	133	13	18	12	12	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	880	0	0	1188	0	0	164	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.75			0.97			0.73			0.16	
Control Delay		13.8			33.3			44.4			18.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.8			33.3			44.4			18.3	
Queue Length 50th (ft)		218			425			61			9	
Queue Length 95th (ft)		408			#793			#125			32	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1176			1230			275			292	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.75			0.97			0.60			0.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	16	695	108	18	1067	20	124	12	17	11	11	14
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1852	1881	1948	1894	1948	1919	1860	1919	1872	1666	1872
Adj Flow Rate, veh/h	17	747	89	19	1147	22	133	13	18	12	12	15
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	70	1060	125	69	1210	23	270	16	22	117	88	79
Arrive On Green	0.70	0.67	0.67	0.70	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	14	1594	187	12	1819	35	1194	117	162	288	648	585
Grp Volume(v), veh/h	853	0	0	1188	0	0	164	0	0	39	0	0
Grp Sat Flow(s),veh/h/ln	1796	0	0	1865	0	0	1473	0	0	1522	0	0
Q Serve(g_s), s	0.0	0.0	0.0	7.8	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.1	0.0	0.0	32.2	0.0	0.0	6.1	0.0	0.0	1.3	0.0	0.0
Prop In Lane	0.02		0.10	0.02		0.02	0.81		0.11	0.31		0.38
Lane Grp Cap(c), veh/h	1315	0	0	1364	0	0	357	0	0	335	0	0
V/C Ratio(X)	0.65	0.00	0.00	0.87	0.00	0.00	0.46	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	1429	0	0	1485	0	0	495	0	0	473	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.2	0.0	0.0	8.7	0.0	0.0	24.2	0.0	0.0	22.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	5.2	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	0.0	16.4	0.0	0.0	2.5	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	6.9	0.0	0.0	13.9	0.0	0.0	24.6	0.0	0.0	22.8	0.0	0.0
LnGrp LOS	A			B			C			C		
Approach Vol, veh/h		853			1188			164			39	
Approach Delay, s/veh		6.9			13.9			24.6			22.8	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		46.0		14.1		46.0		14.1
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		19.1		8.1		34.2		3.3
Green Ext Time (p_c), s		9.6		0.3		5.8		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	73	598	86	42	867	65	38	55	90	112	65	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.990			0.934			0.992	
Flt Protected	0.950			0.950				0.990			0.971	
Satd. Flow (prot)	1729	1873	0	1711	1882	0	0	1707	0	0	1798	0
Flt Permitted	0.081			0.212				0.893			0.622	
Satd. Flow (perm)	147	1873	0	382	1882	0	0	1539	0	0	1151	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6			43			3	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	77	629	91	44	913	68	40	58	95	118	68	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	720	0	44	981	0	0	193	0	0	197	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.39	0.70		0.12	0.94			0.56			0.83	
Control Delay	23.3	21.4		7.1	37.0			34.3			66.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	23.3	21.4		7.1	37.0			34.3			66.6	
Queue Length 50th (ft)	14	378		8	524			84			117	
Queue Length 95th (ft)	36	464		18	#866			161			#254	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	257	1205		405	1168			369			253	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.30	0.60		0.11	0.84			0.52			0.78	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 90.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	73	598	86	42	867	65	38	55	90	112	65	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1913	1910	1862	1857	1862	1948	1866	1948
Adj Flow Rate, veh/h	77	629	70	44	913	57	40	58	95	118	68	11
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	166	688	77	424	974	61	102	103	142	210	93	13
Arrive On Green	0.04	0.41	0.41	0.18	0.55	0.55	0.20	0.17	0.17	0.20	0.17	0.17
Sat Flow, veh/h	1733	1688	188	1716	1782	111	254	601	829	772	543	78
Grp Volume(v), veh/h	77	0	699	44	0	970	193	0	0	197	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1876	1716	0	1894	1683	0	0	1392	0	0
Q Serve(g_s), s	0.0	0.0	26.2	0.0	0.0	35.4	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	26.2	0.0	0.0	35.4	7.6	0.0	0.0	10.0	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	0.21		0.49	0.60		0.06
Lane Grp Cap(c), veh/h	166	0	764	424	0	1035	393	0	0	354	0	0
V/C Ratio(X)	0.46	0.00	0.91	0.10	0.00	0.94	0.49	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	307	0	1362	424	0	1375	525	0	0	472	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.3	0.0	20.8	24.6	0.0	15.7	28.5	0.0	0.0	29.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	2.5	0.0	0.0	9.0	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	13.9	0.8	0.0	20.9	3.5	0.0	0.0	3.7	0.0	0.0
LnGrp Delay(d),s/veh	35.0	0.0	23.3	24.6	0.0	24.7	28.8	0.0	0.0	29.5	0.0	0.0
LnGrp LOS	D		C	C		C	C			C		
Approach Vol, veh/h		776			1014			193			197	
Approach Delay, s/veh		24.5			24.7			28.8			29.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	46.6		18.8	19.3	36.3		18.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	37.4		9.6	2.0	28.2		12.0
Green Ext Time (p_c), s	0.1	3.2		1.0	0.1	2.1		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	622	0	0	1007	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	676	0	0	1095	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	676	0	0	1095	0	26
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	622	0	0	1007	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	676	0	0	1095	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	676	0	1771	676
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	1095	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	902	-	99	457
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	336	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	902	-	99	457
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	336	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	457	-	-	902	-
HCM Lane V/C Ratio	0.057	-	-	-	-
HCM Control Delay (s)	13.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	77	4	8	200	23	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.959	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1843	0	0	1897	1769	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1843	0	0	1897	1769	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Adj. Flow (vph)	84	4	9	217	25	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	0	226	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	77	4	8	200	23	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	84	4	9	217	25	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	88	0	321	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	235	-
Critical Hdwy	-	-	4.1	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1520	-	689	981
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	819	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1520	-	684	981
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	813	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	753	-	-	1520	-
HCM Lane V/C Ratio	0.048	-	-	0.006	-
HCM Control Delay (s)	10	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	144	48	5	50	60	87	173	3	10	206	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.930			0.999			0.996	
Flt Protected		0.993			0.998			0.984			0.998	
Satd. Flow (prot)	0	1710	0	0	1696	0	0	1779	0	0	1808	0
Flt Permitted		0.993			0.998			0.984			0.998	
Satd. Flow (perm)	0	1710	0	0	1696	0	0	1779	0	0	1808	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		393			417			691			665	
Travel Time (s)		7.7			9.5			13.5			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	160	53	6	56	67	97	192	3	11	229	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	249	0	0	129	0	0	292	0	0	248	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

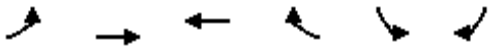
Intersection	
Int Delay, s/veh	14.3

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	32	144	48	5	50	60	87	173	3	10	206	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	36	160	53	6	56	67	97	192	3	11	229	8

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	703	646	194	749	644	233	237	0	0	196	0	0
Stage 1	387	387	-	255	255	-	-	-	-	-	-	-
Stage 2	316	259	-	494	389	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	298	335	822	352	416	809	1313	-	-	1359	-	-
Stage 1	579	555	-	764	711	-	-	-	-	-	-	-
Stage 2	642	650	-	583	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	226	304	822	180	378	809	1313	-	-	1359	-	-
Mov Cap-2 Maneuver	226	304	-	180	378	-	-	-	-	-	-	-
Stage 1	531	509	-	701	705	-	-	-	-	-	-	-
Stage 2	538	644	-	343	578	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	41.8	14.9	2.6	0.3
HCM LOS	E	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1313	-	-	333	491	1359	-	-
HCM Lane V/C Ratio	0.074	-	-	0.747	0.26	0.008	-	-
HCM Control Delay (s)	8	0	-	41.8	14.9	7.7	0	-
HCM Lane LOS	A	A	-	E	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	5.7	1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	18	0	223	63	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1718	1571	0	1814	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1718	1571	0	1814	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		541	487		393	
Travel Time (s)		10.5	9.5		7.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	12%	0%	2%	2%	0%
Adj. Flow (vph)	1	21	0	256	72	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	256	0	72	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	18	0	223	63	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	12	0	2	2	0
Mvmt Flow	1	21	0	256	72	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	256	0	-	0	151	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	4.1	-	-	-	5.42	5.7
Critical Hdwy Stg 1	-	-	-	-	4.42	-
Critical Hdwy Stg 2	-	-	-	-	4.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1321	-	-	-	877	944
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	1006	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1321	-	-	-	876	944
Mov Cap-2 Maneuver	-	-	-	-	876	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	1005	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1321	-	-	-	876
HCM Lane V/C Ratio	0.001	-	-	-	0.083
HCM Control Delay (s)	7.7	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	139	3	38	0	0	0	0	229	45	54	237	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972						0.978				
Flt Protected		0.963									0.991	
Satd. Flow (prot)	0	1666	0	0	0	0	0	1858	0	0	1837	0
Flt Permitted		0.963									0.991	
Satd. Flow (perm)	0	1666	0	0	0	0	0	1858	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		348			379			150			322	
Travel Time (s)		7.9			8.6			3.4			7.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	0%	0%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Adj. Flow (vph)	148	3	40	0	0	0	0	244	48	57	252	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	191	0	0	0	0	0	292	0	0	309	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	139	3	38	0	0	0	0	229	45	54	237	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	8	0	0	2	2	2	2	0	0	2	2	2
Mvmt Flow	148	3	40	0	0	0	0	244	48	57	252	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	635	658	252	252	0	0	291	0	0
Stage 1	367	367	-	-	-	-	-	-	-
Stage 2	268	291	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.3	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	418	373	786	1313	-	-	1271	-	-
Stage 1	674	613	-	-	-	-	-	-	-
Stage 2	752	664	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	396	0	786	1313	-	-	1271	-	-
Mov Cap-2 Maneuver	396	0	-	-	-	-	-	-	-
Stage 1	639	0	-	-	-	-	-	-	-
Stage 2	752	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	19.2	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1313	-	-	443	1271	-	-
HCM Lane V/C Ratio	-	-	-	0.432	0.045	-	-
HCM Control Delay (s)	0	-	-	19.2	8	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.1	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	96	0	85	118	251	0	0	195	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.937						0.946	
Flt Protected					0.974			0.984				
Satd. Flow (prot)	0	0	0	0	1677	0	0	1860	0	0	1778	0
Flt Permitted					0.974			0.984				
Satd. Flow (perm)	0	0	0	0	1677	0	0	1860	0	0	1778	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		353			325			322			478	
Travel Time (s)		8.0			7.4			7.3			10.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	1%	0%	5%	0%	0%	2%	2%	2%	1%
Adj. Flow (vph)	0	0	0	105	0	93	130	276	0	0	214	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	198	0	0	406	0	0	356	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	96	0	85	118	251	0	0	195	129
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	1	0	5	0	0	2	2	2	1
Mvmt Flow	0	0	0	105	0	93	130	276	0	0	214	142

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	820	891	276	356	0	0	276	0	0
Stage 1	535	535	-	-	-	-	-	-	-
Stage 2	285	356	-	-	-	-	-	-	-
Critical Hdwy	6.61	6.7	6.35	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	5.61	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.61	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4	3.345	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	331	270	750	1214	-	-	1287	-	-
Stage 1	572	512	-	-	-	-	-	-	-
Stage 2	754	620	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	289	0	750	1214	-	-	1287	-	-
Mov Cap-2 Maneuver	289	0	-	-	-	-	-	-	-
Stage 1	500	0	-	-	-	-	-	-	-
Stage 2	754	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	22.1	2.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1214	-	-	406	1287	-	-
HCM Lane V/C Ratio	0.107	-	-	0.49	-	-	-
HCM Control Delay (s)	8.3	0	-	22.1	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.6	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	774	11	27	1158	67	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.958	
Flt Protected				0.999	0.967	
Satd. Flow (prot)	1837	0	0	1860	1956	0
Flt Permitted				0.999	0.967	
Satd. Flow (perm)	1837	0	0	1860	1956	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	774	
Travel Time (s)	15.7			12.5	17.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	20%	48%	1%	0%	0%
Adj. Flow (vph)	860	12	30	1287	74	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	872	0	0	1317	107	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	18.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	774	11	27	1158	67	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	20	48	1	0	0
Mvmt Flow	860	12	30	1287	74	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	872	0	2213	866
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	1347	-
Critical Hdwy	-	-	4.58	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.632	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	610	-	~ 63	373
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	284	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	610	-	~ 52	373
Mov Cap-2 Maneuver	-	-	-	-	~ 52	-
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	235	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 391.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	71	-	-	610	-
HCM Lane V/C Ratio	1.518	-	-	0.049	-
HCM Control Delay (s)	$ 391.8	-	-	11.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	9.1	-	-	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	325	0	680	0	0	867	104	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1817	0	3592	0	0	3485	1559	0	0
Flt Permitted										
Satd. Flow (perm)	0	1817	0	3592	0	0	3485	1559	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	1%	5%	2%	5%	5%	1%	1%	5%	5%
Adj. Flow (vph)	0	353	0	739	0	0	942	113	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	353	0	739	0	0	942	113	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	325	0	680	0	0	867	104	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	1	5	2	5	5	1	1	5	5
Mvmt Flow	0	353	0	739	0	0	942	113	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1210	370	942	0	0	739	0	0
Stage 1	739	-	-	-	-	-	-	-
Stage 2	471	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.62	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.31	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	209	650	705	-	-	844	-	0
Stage 1	481	-	-	-	-	-	-	0
Stage 2	634	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	209	650	705	-	-	844	-	-
Mov Cap-2 Maneuver	209	-	-	-	-	-	-	-
Stage 1	481	-	-	-	-	-	-	-
Stage 2	634	-	-	-	-	-	-	-

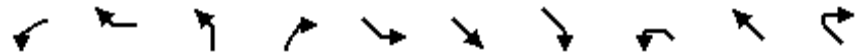
Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	705	-	-	650	844	-
HCM Lane V/C Ratio	-	-	-	0.543	-	-
HCM Control Delay (s)	0	-	-	16.9	0	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	3.3	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	76	0	0	0	867	0	0	680	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1755	0	0	0	3574	0	0	3539	1583
Flt Permitted										
Satd. Flow (perm)	0	1755	0	0	0	3574	0	0	3539	1583
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	3%	5%	5%	5%	1%	5%	5%	2%	2%
Adj. Flow (vph)	0	79	0	0	0	903	0	0	708	199
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	79	0	0	0	903	0	0	708	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	94	0	0	0	610	334	0	777	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1710	0	0	0	3505	1553	0	3505	0
Flt Permitted										
Satd. Flow (perm)	0	1710	0	0	0	3505	1553	0	3505	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	2%	5%	5%	5%	3%	4%	5%	3%	5%
Adj. Flow (vph)	0	97	0	0	0	629	344	0	801	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	97	0	0	0	629	344	0	801	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	206	0	0	0	610	0	0	777	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1686	0	0	0	3452	0	0	3522	1576
Flt Permitted										
Satd. Flow (perm)	0	1686	0	0	0	3452	0	0	3522	1576
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	4%	5%	5%	5%	3%	5%	5%	3%	3%
Adj. Flow (vph)	0	222	0	0	0	656	0	0	835	138
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	222	0	0	0	656	0	0	835	138
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	538	16	126	671	105	138	139	30	64	134	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.980			0.987			0.971	
Flt Protected	0.950			0.950				0.978			0.987	
Satd. Flow (prot)	1876	1909	0	1690	3345	0	0	1834	0	0	1735	0
Flt Permitted	0.288			0.201				0.636			0.794	
Satd. Flow (perm)	569	1909	0	358	3345	0	0	1193	0	0	1396	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			23			5			13	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			3007	
Travel Time (s)		23.3			14.7			15.3			45.6	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	7%	2%	1%	1%	3%	1%	7%	4%	1%	2%
Adj. Flow (vph)	34	604	18	142	754	118	155	156	34	72	151	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	622	0	142	872	0	0	345	0	0	283	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.09	0.73		0.44	0.49			1.06			0.73	
Control Delay	8.6	27.2		12.5	15.7			101.0			42.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.6	27.2		12.5	15.7			101.0			42.4	
Queue Length 50th (ft)	7	286		33	176			~225			146	
Queue Length 95th (ft)	19	432		59	232			#398			#264	
Internal Link Dist (ft)		1460			890			932			2927	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	497	855		445	1769			326			387	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.73		0.32	0.49			1.06			0.73	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 92.5
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	538	16	126	671	105	138	139	30	64	134	53
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1917	1995	1779	1797	1814	1948	1900	1948	1910	1873	1910
Adj Flow Rate, veh/h	34	604	7	142	754	107	155	156	23	72	151	49
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	2	1	1	1	1	1	1	1	1
Cap, veh/h	351	875	10	356	1530	217	216	180	25	137	256	75
Arrive On Green	0.02	0.46	0.46	0.07	0.51	0.51	0.29	0.27	0.27	0.29	0.27	0.27
Sat Flow, veh/h	1881	1891	22	1694	3002	426	585	672	93	320	957	281
Grp Volume(v), veh/h	34	0	611	142	429	432	334	0	0	272	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1913	1694	1707	1721	1350	0	0	1558	0	0
Q Serve(g_s), s	0.8	0.0	22.3	3.8	14.6	14.6	8.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	22.3	3.8	14.6	14.6	21.3	0.0	0.0	13.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.25	0.46		0.07	0.26		0.18
Lane Grp Cap(c), veh/h	351	0	885	356	870	878	452	0	0	504	0	0
V/C Ratio(X)	0.10	0.00	0.69	0.40	0.49	0.49	0.74	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	570	0	885	550	870	878	473	0	0	527	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	0.0	18.8	14.1	14.2	14.2	31.4	0.0	0.0	28.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	4.4	0.3	2.0	2.0	5.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	12.8	1.8	7.3	7.3	8.2	0.0	0.0	5.6	0.0	0.0
LnGrp Delay(d),s/veh	12.8	0.0	23.2	14.4	16.2	16.2	36.4	0.0	0.0	28.4	0.0	0.0
LnGrp LOS	B		C	B	B	B	D			C		
Approach Vol, veh/h		645			1003			334			272	
Approach Delay, s/veh		22.6			15.9			36.4			28.4	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	51.1		29.7	11.8	47.0		29.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.8	16.6		23.3	5.8	24.3		15.0
Green Ext Time (p_c), s	0.0	5.0		0.4	0.2	4.5		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	10	829	0	0	877	8	1	0	0	5	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.887	
Flt Protected		0.999						0.950			0.992	
Satd. Flow (prot)	0	1878	0	0	1781	0	0	1832	0	0	1622	0
Flt Permitted		0.999						0.950			0.992	
Satd. Flow (perm)	0	1878	0	0	1781	0	0	1832	0	0	1622	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	11	873	0	0	923	8	1	0	0	5	0	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	884	0	0	931	0	0	1	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

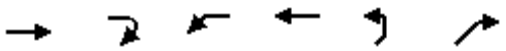
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	10	829	0	0	877	8	1	0	0	5	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	11	873	0	0	923	8	1	0	0	5	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	932	0	0	873	0	0	1834	1826	873	1821	1821	927
Stage 1	-	-	-	-	-	-	894	894	-	927	927	-
Stage 2	-	-	-	-	-	-	940	932	-	894	894	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	738	-	-	777	-	-	98	128	396	40	52	295
Stage 1	-	-	-	-	-	-	432	463	-	263	284	-
Stage 2	-	-	-	-	-	-	413	449	-	276	296	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	738	-	-	777	-	-	88	124	396	39	50	295
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	124	-	39	50	-
Stage 1	-	-	-	-	-	-	419	450	-	255	284	-
Stage 2	-	-	-	-	-	-	378	449	-	268	287	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	46.4	38.3
HCM LOS			E	E

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	88	738	-	-	777	-	-	138
HCM Lane V/C Ratio	0.012	0.014	-	-	-	-	-	0.221
HCM Control Delay (s)	46.4	9.9	0	-	0	-	-	38.3
HCM Lane LOS	E	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.8



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	722	113	42	784	101	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982				0.948	
Flt Protected				0.997	0.970	
Satd. Flow (prot)	1854	0	0	1852	1671	0
Flt Permitted				0.997	0.970	
Satd. Flow (perm)	1854	0	0	1852	1671	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	8%	2%	3%	7%
Adj. Flow (vph)	768	120	45	834	107	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	888	0	0	879	174	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	29.1

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	722	113	42	784	101	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	3	8	2	3	7
Mvmt Flow	768	120	45	834	107	67

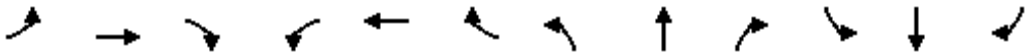
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	888	0	1751	828
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	923	-
Critical Hdwy	-	-	4.18	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.272	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	738	-	~ 94	363
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	385	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	738	-	~ 83	363
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	341	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0.5	$ 321.8
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	118	-	-	738	-
HCM Lane V/C Ratio	1.479	-	-	0.061	-
HCM Control Delay (s)	$ 321.8	-	-	10.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	12.4	-	-	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

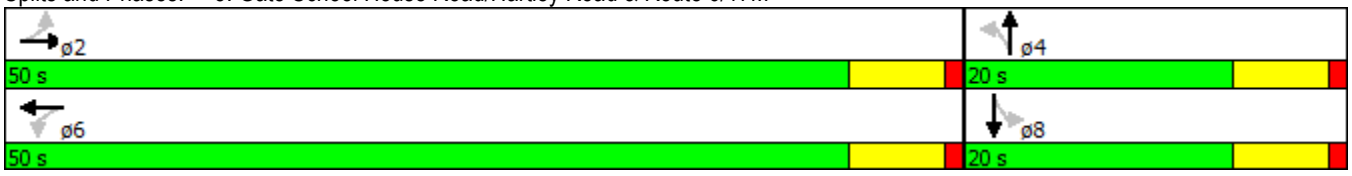


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	662	100	12	721	10	106	7	15	12	7	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.998			0.984			0.952	
Flt Protected		0.999			0.999			0.960			0.979	
Satd. Flow (prot)	0	1854	0	0	1941	0	0	1798	0	0	1463	0
Flt Permitted		0.985			0.985			0.741			0.845	
Satd. Flow (perm)	0	1828	0	0	1914	0	0	1388	0	0	1262	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			2			9			11	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	33%
Adj. Flow (vph)	14	704	106	13	767	11	113	7	16	13	7	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	824	0	0	791	0	0	136	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.67			0.62			0.52			0.13	
Control Delay		11.2			10.1			27.7			17.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		11.2			10.1			27.7			17.4	
Queue Length 50th (ft)		150			139			31			5	
Queue Length 95th (ft)		332			298			100			28	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1586			1658			425			389	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.52			0.48			0.32			0.08	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 49.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	662	100	12	721	10	106	7	15	12	7	10
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1900	1881	1948	1959	1948	1919	1903	1919	1872	1569	1872
Adj Flow Rate, veh/h	14	704	79	13	767	11	113	7	16	13	7	11
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	110	897	99	110	1029	15	332	9	21	198	52	58
Arrive On Green	0.60	0.54	0.54	0.60	0.54	0.54	0.17	0.12	0.12	0.17	0.12	0.12
Sat Flow, veh/h	12	1651	183	12	1896	27	1245	77	176	458	443	496
Grp Volume(v), veh/h	797	0	0	791	0	0	136	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1846	0	0	1934	0	0	1498	0	0	1397	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.2	0.0	0.0	10.3	0.0	0.0	2.8	0.0	0.0	0.6	0.0	0.0
Prop In Lane	0.02		0.10	0.02		0.01	0.83		0.12	0.42		0.35
Lane Grp Cap(c), veh/h	1211	0	0	1264	0	0	447	0	0	387	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.63	0.00	0.00	0.30	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	2487	0	0	2602	0	0	855	0	0	751	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.2	0.0	0.0	6.0	0.0	0.0	14.2	0.0	0.0	13.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.0	4.7	0.0	0.0	1.1	0.0	0.0	0.2	0.0	0.0
LnGrp Delay(d),s/veh	6.5	0.0	0.0	6.2	0.0	0.0	14.3	0.0	0.0	13.7	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		797			791			136			31	
Approach Delay, s/veh		6.5			6.2			14.3			13.7	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.2		10.1		25.2		10.1
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		13.2		4.8		12.3		2.6
Green Ext Time (p_c), s		6.0		0.3		6.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

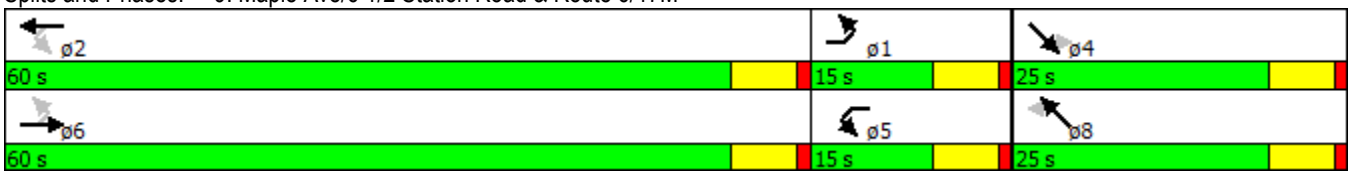
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	82	559	48	50	633	27	17	21	58	63	34	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.994			0.919			0.983	
Flt Protected	0.950			0.950				0.991			0.972	
Satd. Flow (prot)	1832	1888	0	1796	1924	0	0	1735	0	0	1842	0
Flt Permitted	0.213			0.263				0.931			0.837	
Satd. Flow (perm)	411	1888	0	497	1924	0	0	1630	0	0	1586	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			3			65			7	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	92	628	54	56	711	30	19	24	65	71	38	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	682	0	56	741	0	0	108	0	0	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.24	0.58		0.13	0.66			0.33			0.45	
Control Delay	8.4	14.4		6.3	16.9			16.4			31.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.4	14.4		6.3	16.9			16.4			31.3	
Queue Length 50th (ft)	11	199		6	222			14			39	
Queue Length 95th (ft)	31	370		21	416			63			109	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	510	1613		542	1644			605			551	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.18	0.42		0.10	0.45			0.18			0.23	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 61.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	82	559	48	50	633	27	17	21	58	63	34	14
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1928	1911	1948	1891	1948	1910	1862	1917	1862	1948	1928	1948
Adj Flow Rate, veh/h	92	628	32	56	711	19	19	24	65	71	38	16
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	2	2	1	1	1	1	1	1
Cap, veh/h	321	729	37	392	819	22	117	51	116	222	62	24
Arrive On Green	0.06	0.40	0.40	0.09	0.43	0.43	0.16	0.11	0.11	0.16	0.11	0.11
Sat Flow, veh/h	1836	1803	92	1801	1888	50	229	448	1024	889	548	211
Grp Volume(v), veh/h	92	0	660	56	0	730	108	0	0	125	0	0
Grp Sat Flow(s),veh/h/ln	1836	0	1895	1801	0	1939	1702	0	0	1648	0	0
Q Serve(g_s), s	0.0	0.0	14.8	0.0	0.0	15.8	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	14.8	0.0	0.0	15.8	2.6	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.03	0.18		0.60	0.57		0.13
Lane Grp Cap(c), veh/h	321	0	766	392	0	841	357	0	0	379	0	0
V/C Ratio(X)	0.29	0.00	0.86	0.14	0.00	0.87	0.30	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	559	0	2209	572	0	2260	843	0	0	832	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.5	0.0	12.6	16.8	0.0	11.9	19.2	0.0	0.0	18.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.2	0.1	0.0	1.1	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	7.8	0.6	0.0	8.6	1.2	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	19.7	0.0	13.8	16.8	0.0	13.0	19.4	0.0	0.0	19.1	0.0	0.0
LnGrp LOS	B		B	B		B	B			B		
Approach Vol, veh/h		752			786			108			125	
Approach Delay, s/veh		14.5			13.3			19.4			19.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	26.1		11.2	10.4	24.7		11.2
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	17.8		4.6	2.0	16.8		4.9
Green Ext Time (p_c), s	0.2	2.3		0.6	0.2	2.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	589	0	0	709	0	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1939	0	0	1934	0	1690
Flt Permitted						
Satd. Flow (perm)	1939	0	0	1934	0	1690
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	5%	5%	2%	5%	1%
Adj. Flow (vph)	654	0	0	788	0	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	654	0	0	788	0	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	589	0	0	709	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	5	5	2	5	1
Mvmt Flow	654	0	0	788	0	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	654	0	1442	654
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	788	-
Critical Hdwy	-	-	4.15	-	6.25	6.11
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.309
Pot Cap-1 Maneuver	-	-	919	-	156	477
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	463	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	919	-	156	477
Mov Cap-2 Maneuver	-	-	-	-	156	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	463	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	477	-	-	919	-
HCM Lane V/C Ratio	0.075	-	-	-	-
HCM Control Delay (s)	13.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	48	7	5	109	8	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982				0.929	
Flt Protected				0.998	0.977	
Satd. Flow (prot)	1838	0	0	1915	1733	0
Flt Permitted				0.998	0.977	
Satd. Flow (perm)	1838	0	0	1915	1733	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	53	8	6	121	9	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	127	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	48	7	5	109	8	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	53	8	6	121	9	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	61	0	189	57
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	132	-
Critical Hdwy	-	-	4.1	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1555	-	813	1017
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1555	-	810	1017
Mov Cap-2 Maneuver	-	-	-	-	810	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	908	-	-	1555	-
HCM Lane V/C Ratio	0.021	-	-	0.004	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	61	26	1	28	64	72	180	1	4	158	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.907						0.999	
Flt Protected		0.987						0.986			0.999	
Satd. Flow (prot)	0	1748	0	0	1706	0	0	1837	0	0	1868	0
Flt Permitted		0.987						0.986			0.999	
Satd. Flow (perm)	0	1748	0	0	1706	0	0	1837	0	0	1868	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	66	28	1	30	69	77	194	1	4	170	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	100	0	0	272	0	0	175	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

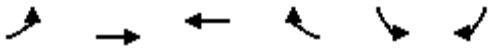
Intersection	
Int Delay, s/veh	5.9

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	30	61	26	1	28	64	72	180	1	4	158	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	66	28	1	30	69	77	194	1	4	170	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	577	529	194	575	528	170	171	0	0	195	0	0
Stage 1	349	349	-	179	179	-	-	-	-	-	-	-
Stage 2	228	180	-	396	349	-	-	-	-	-	-	-
Critical Hdwy	7.92	7.32	6.62	6.72	6.12	6.02	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	376	405	829	457	483	882	1406	-	-	1378	-	-
Stage 1	617	586	-	839	766	-	-	-	-	-	-	-
Stage 2	736	721	-	658	659	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	313	379	829	365	452	882	1406	-	-	1378	-	-
Mov Cap-2 Maneuver	313	379	-	365	452	-	-	-	-	-	-	-
Stage 1	579	550	-	788	764	-	-	-	-	-	-	-
Stage 2	650	719	-	526	619	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	17.8	11.2	2.2	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1406	-	-	406	678	1378	-	-
HCM Lane V/C Ratio	0.055	-	-	0.31	0.147	0.003	-	-
HCM Control Delay (s)	7.7	0	-	17.8	11.2	7.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.5	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	21	0	117	34	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1915	1587	0	1850	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1915	1587	0	1850	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		515	501		397	
Travel Time (s)		10.0	9.8		7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1	23	0	126	37	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	24	126	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

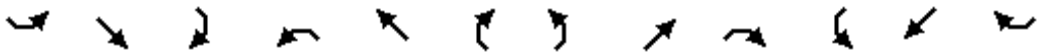
Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	21	0	117	34	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	1	23	0	126	37	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	126	0	-	0	88	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	4.1	-	-	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1473	-	-	-	940	1016
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	1010	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1473	-	-	-	939	1016
Mov Cap-2 Maneuver	-	-	-	-	939	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1473	-	-	-	939
HCM Lane V/C Ratio	0.001	-	-	-	0.039
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	92	0	58	0	0	0	0	98	18	57	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948						0.979				
Flt Protected		0.970									0.983	
Satd. Flow (prot)	0	1717	0	0	0	0	0	1854	0	0	1845	0
Flt Permitted		0.970									0.983	
Satd. Flow (perm)	0	1717	0	0	0	0	0	1854	0	0	1845	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	2%	2%	0%	2%
Adj. Flow (vph)	107	0	67	0	0	0	0	114	21	66	122	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	174	0	0	0	0	0	135	0	0	188	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	92	0	58	0	0	0	0	98	18	57	105	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	0	0	2	2	2	2	0	2	2	0	2
Mvmt Flow	107	0	67	0	0	0	0	114	21	66	122	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	379	390	122	122	0	0	135	0	0
Stage 1	255	255	-	-	-	-	-	-	-
Stage 2	124	135	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	610	537	931	1465	-	-	1449	-	-
Stage 1	776	690	-	-	-	-	-	-	-
Stage 2	895	783	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	580	0	931	1465	-	-	1449	-	-
Mov Cap-2 Maneuver	580	0	-	-	-	-	-	-	-
Stage 1	738	0	-	-	-	-	-	-	-
Stage 2	895	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.1	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1465	-	-	679	1449	-	-
HCM Lane V/C Ratio	-	-	-	0.257	0.046	-	-
HCM Control Delay (s)	0	-	-	12.1	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	36	0	62	35	155	0	0	126	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.915						0.947	
Flt Protected					0.982			0.991				
Satd. Flow (prot)	0	0	0	0	1686	0	0	1873	0	0	1794	0
Flt Permitted					0.982			0.991				
Satd. Flow (perm)	0	0	0	0	1686	0	0	1873	0	0	1794	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	40	0	69	39	172	0	0	140	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	109	0	0	211	0	0	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	36	0	62	35	155	0	0	126	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	0	0	0	0	2	2	0	2
Mvmt Flow	0	0	0	40	0	69	39	172	0	0	140	90

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	435	480	172	230	0	0	172	0	0
Stage 1	250	250	-	-	-	-	-	-	-
Stage 2	185	230	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	564	475	873	1350	-	-	1405	-	-
Stage 1	781	694	-	-	-	-	-	-	-
Stage 2	838	709	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	546	0	873	1350	-	-	1405	-	-
Mov Cap-2 Maneuver	546	0	-	-	-	-	-	-	-
Stage 1	756	0	-	-	-	-	-	-	-
Stage 2	838	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10.9	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1350	-	-	716	1405	-	-
HCM Lane V/C Ratio	0.029	-	-	0.152	-	-	-
HCM Control Delay (s)	7.7	0	-	10.9	0	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	777	11	5	819	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.959	
Flt Protected					0.966	
Satd. Flow (prot)	1860	0	0	1881	1956	0
Flt Permitted					0.966	
Satd. Flow (perm)	1860	0	0	1881	1956	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	798	
Travel Time (s)	15.7			12.5	18.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	801	11	5	844	7	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	812	0	0	849	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	777	11	5	819	7	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	801	11	5	844	7	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	812	0	1662	807
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	855	-
Critical Hdwy	-	-	4.1	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	823	-	130	402
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	462	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	823	-	129	402
Mov Cap-2 Maneuver	-	-	-	-	129	-
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	457	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	28.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	-	-	823	-
HCM Lane V/C Ratio	0.064	-	-	0.006	-
HCM Control Delay (s)	28.7	-	-	9.4	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	7	11	7	1	51	50	50	119	1	8	81	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.934			0.999			0.999	
Flt Protected		0.986						0.986			0.996	
Satd. Flow (prot)	0	1682	0	0	1707	0	0	1782	0	0	1809	0
Flt Permitted		0.986						0.986			0.996	
Satd. Flow (perm)	0	1682	0	0	1707	0	0	1782	0	0	1809	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		398			388			725			564	
Travel Time (s)		7.8			8.8			14.1			12.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	9	14	9	1	64	63	63	149	1	10	101	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	127	0	0	212	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	7	11	7	0	1	51	50	0	50	119	1
Peak Hour Factor	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	9	14	9	0	1	64	62	0	62	149	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8	8.4	9.2
HCM LOS	A	A	A

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	29%	28%	1%	9%
Vol Thru, %	70%	44%	50%	90%
Vol Right, %	1%	28%	49%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	25	102	90
LT Vol	50	7	1	8
Through Vol	119	11	51	81
RT Vol	1	7	50	1
Lane Flow Rate	212	31	128	112
Geometry Grp	1	1	1	1
Degree of Util (X)	0.268	0.042	0.159	0.144
Departure Headway (Hd)	4.537	4.787	4.489	4.604
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	793	748	799	779
Service Time	2.564	2.82	2.516	2.634
HCM Lane V/C Ratio	0.267	0.041	0.16	0.144
HCM Control Delay	9.2	8	8.4	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.1	0.6	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	8	81	1
Peak Hour Factor	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	10	101	1
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	8.4
HCM LOS	A

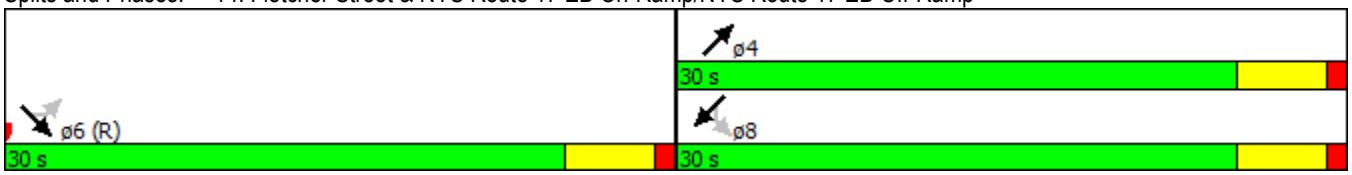
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	53	2	126	0	0	0	0	66	30	74	53	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.906						0.957				
Flt Protected		0.986									0.972	
Satd. Flow (prot)	0	1650	0	0	0	0	0	1782	0	0	1722	0
Flt Permitted		0.986									0.775	
Satd. Flow (perm)	0	1650	0	0	0	0	0	1782	0	0	1373	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		170						41				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		303			283			282			342	
Travel Time (s)		6.9			6.4			6.4			7.8	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	6%	50%	0%	2%	2%	2%	2%	3%	0%	0%	16%	2%
Adj. Flow (vph)	72	3	170	0	0	0	0	89	41	100	72	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	245	0	0	0	0	0	130	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	22.0	22.0						22.0		22.0	22.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.31						0.17			0.30	
Control Delay		5.3						8.5			8.0	
Queue Delay		0.0						0.0			0.0	
Total Delay		5.3						8.5			8.0	
Queue Length 50th (ft)		16						19			19	
Queue Length 95th (ft)		36						36			27	
Internal Link Dist (ft)		223			203			202			262	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		786						766			572	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.31						0.17			0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	53	2	126	0	0	0	0	66	30	74	53	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1847	1890				0	1862	1900	1890	1772	0
Adj Flow Rate, veh/h	72	3	170				0	89	41	100	72	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.74	0.74	0.74				0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	0	50	0				0	3	3	16	16	0
Cap, veh/h	199	8	470				0	503	232	392	257	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.42	0.42	0.00
Sat Flow, veh/h	477	20	1127				0	1207	556	714	616	0
Grp Volume(v), veh/h	245	0	0				0	0	130	172	0	0
Grp Sat Flow(s),veh/h/ln	1624	0	0				0	0	1764	1331	0	0
Q Serve(g_s), s	6.2	0.0	0.0				0.0	0.0	2.8	3.3	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	0.0				0.0	0.0	2.8	6.0	0.0	0.0
Prop In Lane	0.29		0.69				0.00		0.32	0.58		0.00
Lane Grp Cap(c), veh/h	677	0	0				0	0	735	649	0	0
V/C Ratio(X)	0.36	0.00	0.00				0.00	0.00	0.18	0.26	0.00	0.00
Avail Cap(c_a), veh/h	677	0	0				0	0	735	649	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.0	0.0	0.0				0.0	0.0	11.0	12.0	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0				0.0	0.0	0.5	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0				0.0	0.0	1.4	2.1	0.0	0.0
LnGrp Delay(d),s/veh	13.5	0.0	0.0				0.0	0.0	11.5	13.0	0.0	0.0
LnGrp LOS	B								B	B		
Approach Vol, veh/h		245						130			172	
Approach Delay, s/veh		13.5						11.5			13.0	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				4.8		8.2		8.0
Green Ext Time (p_c), s				1.5		1.3		1.4

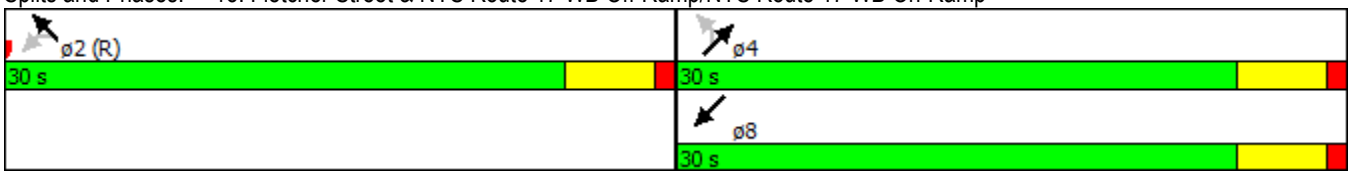
Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	14	0	24	20	98	0	0	113	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.916						0.952	
Flt Protected					0.982			0.992				
Satd. Flow (prot)	0	0	0	0	1701	0	0	1783	0	0	1717	0
Flt Permitted					0.982			0.926				
Satd. Flow (perm)	0	0	0	0	1701	0	0	1664	0	0	1717	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					36						58	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		342			297			342			452	
Travel Time (s)		7.8			6.8			7.8			10.3	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	11%	4%	2%	2%	8%	2%
Adj. Flow (vph)	0	0	0	21	0	35	29	144	0	0	166	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	56	0	0	173	0	0	259	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				22.0	22.0		22.0	22.0			22.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.08			0.25			0.35	
Control Delay					6.1			10.7			10.7	
Queue Delay					0.0			0.0			0.0	
Total Delay					6.1			10.7			10.7	
Queue Length 50th (ft)					4			32			46	
Queue Length 95th (ft)					14			44			61	
Internal Link Dist (ft)		262			217			262			372	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					729			693			749	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.08			0.25			0.35	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	14	0	24	20	98	0	0	113	63
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1890	1890	1890	1798	0	0	1804	1910
Adj Flow Rate, veh/h				21	0	35	29	144	0	0	166	93
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %				0	2	0	4	4	0	0	8	8
Cap, veh/h				262	0	436	143	628	0	0	453	254
Arrive On Green				0.42	0.00	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				628	0	1047	174	1507	0	0	1087	609
Grp Volume(v), veh/h				56	0	0	173	0	0	0	0	259
Grp Sat Flow(s),veh/h/ln				1674	0	0	1681	0	0	0	0	1697
Q Serve(g_s), s				1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3
Cycle Q Clear(g_c), s				1.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	6.3
Prop In Lane				0.37		0.62	0.17		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				698	0	0	770	0	0	0	0	707
V/C Ratio(X)				0.08	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.37
Avail Cap(c_a), veh/h				698	0	0	770	0	0	0	0	707
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				10.6	0.0	0.0	3.0	0.0	0.0	0.0	0.0	12.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	0.7	0.0	0.0	0.0	0.0	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.0	0.0	0.6	0.0	0.0	0.0	0.0	3.2
LnGrp Delay(d),s/veh				10.8	0.0	0.0	3.7	0.0	0.0	0.0	0.0	13.5
LnGrp LOS				B			A					B
Approach Vol, veh/h					56			173			259	
Approach Delay, s/veh					10.8			3.7			13.5	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		3.2		3.2				8.3
Green Ext Time (p_c), s		0.2		2.3				2.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	61	27	1	90	59	49	115	2	13	76	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.947			0.999				
Flt Protected		0.987						0.985			0.993	
Satd. Flow (prot)	0	1696	0	0	1731	0	0	1781	0	0	1806	0
Flt Permitted		0.987						0.985			0.993	
Satd. Flow (perm)	0	1696	0	0	1731	0	0	1781	0	0	1806	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		395			329			676			535	
Travel Time (s)		7.7			7.5			13.2			12.2	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	72	32	1	106	69	58	135	2	15	89	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	176	0	0	195	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	31	61	27	0	1	90	59	0	49	115	2
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	36	72	32	0	1	106	69	0	58	135	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.1	9.8
HCM LOS	A	A	A

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	30%	26%	1%	15%
Vol Thru, %	69%	51%	60%	85%
Vol Right, %	1%	23%	39%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	166	119	150	89
LT Vol	49	31	1	13
Through Vol	115	61	90	76
RT Vol	2	27	59	0
Lane Flow Rate	195	140	176	105
Geometry Grp	1	1	1	1
Degree of Util (X)	0.267	0.189	0.229	0.146
Departure Headway (Hd)	4.924	4.864	4.674	5.022
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	726	734	764	709
Service Time	2.982	2.924	2.73	3.087
HCM Lane V/C Ratio	0.269	0.191	0.23	0.148
HCM Control Delay	9.8	9.1	9.1	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.7	0.9	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	13	76	0
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	15	89	0
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	9
HCM LOS	A

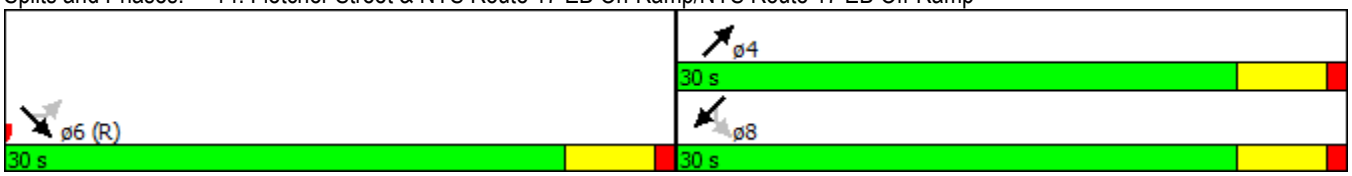
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	211	0	167	0	0	0	0	177	46	144	168	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940						0.972				
Flt Protected		0.973									0.977	
Satd. Flow (prot)	0	1638	0	0	0	0	0	1720	0	0	1709	0
Flt Permitted		0.973									0.642	
Satd. Flow (perm)	0	1638	0	0	0	0	0	1720	0	0	1123	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		81						27				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			340			202			336	
Travel Time (s)		7.5			7.7			4.6			7.6	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	6%	0%	5%	2%	2%	2%	2%	8%	5%	7%	9%	2%
Adj. Flow (vph)	293	0	232	0	0	0	0	246	64	200	233	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	525	0	0	0	0	0	310	0	0	433	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	10.0	10.0						10.0		10.0	10.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.72						0.42			0.93	
Control Delay		19.3						13.5			36.0	
Queue Delay		0.1						0.4			0.0	
Total Delay		19.3						13.8			36.0	
Queue Length 50th (ft)		127						68			41	
Queue Length 95th (ft)		155						91			#196	
Internal Link Dist (ft)		252			260			122			256	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		729						732			467	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		5						124			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.73						0.51			0.93	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	211	0	167	0	0	0	0	177	46	144	168	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1791	1890				0	1769	1900	1890	1749	0
Adj Flow Rate, veh/h	293	0	232				0	246	64	200	233	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.72	0.72	0.72				0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0				0	8	8	9	9	0
Cap, veh/h	377	0	298				0	564	147	260	259	0
Arrive On Green	0.42	0.00	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	904	0	716				0	1355	352	414	622	0
Grp Volume(v), veh/h	525	0	0				0	0	310	433	0	0
Grp Sat Flow(s),veh/h/ln	1619	0	0				0	0	1707	1036	0	0
Q Serve(g_s), s	16.8	0.0	0.0				0.0	0.0	7.8	17.2	0.0	0.0
Cycle Q Clear(g_c), s	16.8	0.0	0.0				0.0	0.0	7.8	25.0	0.0	0.0
Prop In Lane	0.56		0.44				0.00		0.21	0.46		0.00
Lane Grp Cap(c), veh/h	675	0	0				0	0	711	519	0	0
V/C Ratio(X)	0.78	0.00	0.00				0.00	0.00	0.44	0.83	0.00	0.00
Avail Cap(c_a), veh/h	675	0	0				0	0	711	519	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.1	0.0	0.0				0.0	0.0	12.5	6.8	0.0	0.0
Incr Delay (d2), s/veh	8.6	0.0	0.0				0.0	0.0	1.9	14.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.0	0.0				0.0	0.0	4.0	8.8	0.0	0.0
LnGrp Delay(d),s/veh	23.7	0.0	0.0				0.0	0.0	14.4	21.4	0.0	0.0
LnGrp LOS	C								B	C		
Approach Vol, veh/h		525						310			433	
Approach Delay, s/veh		23.7						14.4			21.4	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				9.8		18.8		27.0
Green Ext Time (p_c), s				2.7		1.2		0.0

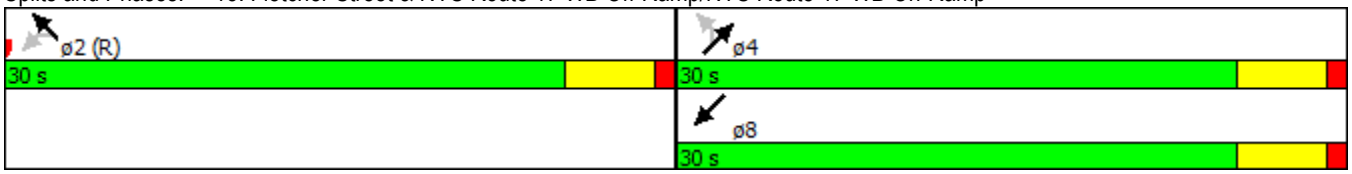
Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	40	2	110	42	347	0	0	272	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.903						0.964	
Flt Protected					0.987			0.995				
Satd. Flow (prot)	0	0	0	0	1581	0	0	1818	0	0	1718	0
Flt Permitted					0.987			0.787				
Satd. Flow (perm)	0	0	0	0	1581	0	0	1438	0	0	1718	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					153						38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		418			312			336			432	
Travel Time (s)		9.5			7.1			7.6			9.8	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	2%	2%	2%	3%	0%	8%	24%	1%	2%	2%	9%	2%
Adj. Flow (vph)	0	0	0	56	3	153	58	482	0	0	378	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	212	0	0	540	0	0	517	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				10.0	10.0		10.0	10.0			10.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.28			0.90			0.70	
Control Delay					5.1			34.2			19.6	
Queue Delay					0.0			0.0			0.0	
Total Delay					5.1			34.2			19.6	
Queue Length 50th (ft)					12			150			136	
Queue Length 95th (ft)					30			#191			163	
Internal Link Dist (ft)		338			232			256			352	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					748			599			738	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.28			0.90			0.70	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 40	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	40	2	110	42	347	0	0	272	100
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1774	1890	1890	1827	0	0	1783	1910
Adj Flow Rate, veh/h				56	3	153	58	482	0	0	378	139
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %				0	0	0	1	1	0	0	9	9
Cap, veh/h				171	9	468	95	503	0	0	518	191
Arrive On Green				0.42	0.42	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				411	22	1123	68	1208	0	0	1244	458
Grp Volume(v), veh/h				212	0	0	540	0	0	0	0	517
Grp Sat Flow(s),veh/h/ln				1555	0	0	1276	0	0	0	0	1702
Q Serve(g_s), s				5.5	0.0	0.0	9.7	0.0	0.0	0.0	0.0	15.3
Cycle Q Clear(g_c), s				5.5	0.0	0.0	25.0	0.0	0.0	0.0	0.0	15.3
Prop In Lane				0.26		0.72	0.11		0.00	0.00		0.27
Lane Grp Cap(c), veh/h				648	0	0	598	0	0	0	0	709
V/C Ratio(X)				0.33	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.73
Avail Cap(c_a), veh/h				648	0	0	598	0	0	0	0	709
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				11.8	0.0	0.0	5.5	0.0	0.0	0.0	0.0	14.7
Incr Delay (d2), s/veh				1.3	0.0	0.0	19.4	0.0	0.0	0.0	0.0	6.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	0.0	0.0	7.7	0.0	0.0	0.0	0.0	8.3
LnGrp Delay(d),s/veh				13.2	0.0	0.0	24.9	0.0	0.0	0.0	0.0	21.1
LnGrp LOS				B			C					C
Approach Vol, veh/h					212			540			517	
Approach Delay, s/veh					13.2			24.9			21.1	
Approach LOS					B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		7.5		27.0				17.3
Green Ext Time (p_c), s		0.7		0.0				2.8

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	206	95	2	68	76	73	185	3	14	205	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.930			0.998			0.999	
Flt Protected		0.995			0.999			0.986			0.997	
Satd. Flow (prot)	0	1697	0	0	1698	0	0	1781	0	0	1811	0
Flt Permitted		0.995			0.999			0.986			0.997	
Satd. Flow (perm)	0	1697	0	0	1698	0	0	1781	0	0	1811	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			696			542	
Travel Time (s)		7.7			8.6			13.6			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	39	242	112	2	80	89	86	218	4	16	241	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	393	0	0	171	0	0	308	0	0	259	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	33	206	95	0	2	68	76	0	73	185	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	39	242	112	0	2	80	89	0	86	218	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	20.3	12.3	17
HCM LOS	C	B	C

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	28%	10%	1%	6%
Vol Thru, %	71%	62%	47%	93%
Vol Right, %	1%	28%	52%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	261	334	146	221
LT Vol	73	33	2	14
Through Vol	185	206	68	205
RT Vol	3	95	76	2
Lane Flow Rate	307	393	172	260
Geometry Grp	1	1	1	1
Degree of Util (X)	0.547	0.662	0.306	0.468
Departure Headway (Hd)	6.415	6.061	6.422	6.484
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	562	593	557	554
Service Time	4.473	4.111	4.489	4.545
HCM Lane V/C Ratio	0.546	0.663	0.309	0.469
HCM Control Delay	17	20.3	12.3	15.2
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	3.3	4.9	1.3	2.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	14	205	2
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	16	241	2
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	15.2
HCM LOS	C

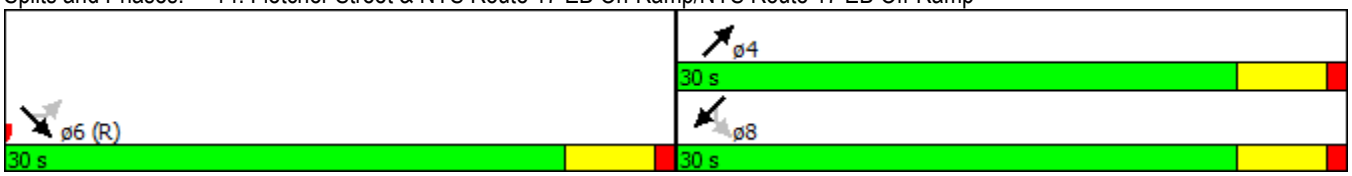
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	121	2	54	0	0	0	0	218	68	77	373	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959						0.968				
Flt Protected		0.967									0.991	
Satd. Flow (prot)	0	1643	0	0	0	0	0	1734	0	0	1776	0
Flt Permitted		0.967									0.883	
Satd. Flow (perm)	0	1643	0	0	0	0	0	1734	0	0	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45						32				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	134	2	60	0	0	0	0	242	76	86	414	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	196	0	0	0	0	0	318	0	0	500	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.28						0.43			0.76	
Control Delay		10.0						13.3			18.8	
Queue Delay		0.0						0.0			0.2	
Total Delay		10.0						13.3			19.0	
Queue Length 50th (ft)		34						69			94	
Queue Length 95th (ft)		72						127			#280	
Internal Link Dist (ft)		358			420			77			262	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		710						741			659	
Starvation Cap Reductn		0						0			8	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.28						0.43			0.77	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	121	2	54	0	0	0	0	218	68	77	373	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1772	1890				0	1791	1900	1890	1792	0
Adj Flow Rate, veh/h	134	2	60				0	242	76	86	414	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0				0	8	8	6	6	0
Cap, veh/h	464	7	208				0	545	171	148	567	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1113	17	498				0	1308	411	186	1361	0
Grp Volume(v), veh/h	196	0	0				0	0	318	500	0	0
Grp Sat Flow(s),veh/h/ln	1628	0	0				0	0	1718	1547	0	0
Q Serve(g_s), s	4.8	0.0	0.0				0.0	0.0	7.9	2.5	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0				0.0	0.0	7.9	10.4	0.0	0.0
Prop In Lane	0.68		0.31				0.00		0.24	0.17		0.00
Lane Grp Cap(c), veh/h	678	0	0				0	0	716	715	0	0
V/C Ratio(X)	0.29	0.00	0.00				0.00	0.00	0.44	0.70	0.00	0.00
Avail Cap(c_a), veh/h	678	0	0				0	0	716	715	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	0.0				0.0	0.0	12.5	3.5	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0				0.0	0.0	2.0	5.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0				0.0	0.0	4.1	3.9	0.0	0.0
LnGrp Delay(d),s/veh	12.7	0.0	0.0				0.0	0.0	14.5	9.2	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		196						318			500	
Approach Delay, s/veh		12.7						14.5			9.2	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				9.9		6.8		12.4
Green Ext Time (p_c), s				4.3		0.9		4.0

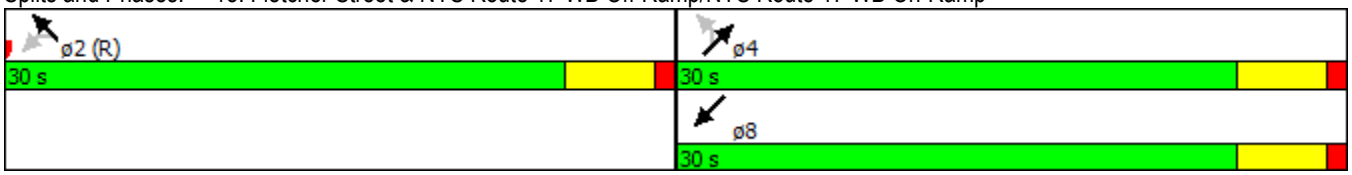
Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	170	2	178	67	273	0	0	280	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931						0.965	
Flt Protected					0.976			0.990				
Satd. Flow (prot)	0	0	0	0	1644	0	0	1737	0	0	1747	0
Flt Permitted					0.976			0.834				
Satd. Flow (perm)	0	0	0	0	1644	0	0	1463	0	0	1747	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					106						36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	183	2	191	72	294	0	0	301	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	376	0	0	366	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.50			0.60			0.54	
Control Delay					11.9			14.1			15.2	
Queue Delay					0.0			0.0			0.1	
Total Delay					11.9			14.1			15.4	
Queue Length 50th (ft)					65			65			95	
Queue Length 95th (ft)					133			102			168	
Internal Link Dist (ft)		266			284			262			375	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					746			609			748	
Starvation Cap Reductn					0			2			0	
Spillback Cap Reductn					1			0			31	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.50			0.60			0.56	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	170	2	178	67	273	0	0	280	97
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1810	1890	1890	1754	0	0	1811	1910
Adj Flow Rate, veh/h				183	2	191	72	294	0	0	301	104
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	6	6	0	0	7	7
Cap, veh/h				329	4	344	142	505	0	0	536	185
Arrive On Green				0.42	0.42	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				791	9	825	168	1213	0	0	1287	445
Grp Volume(v), veh/h				376	0	0	366	0	0	0	0	405
Grp Sat Flow(s),veh/h/ln				1625	0	0	1381	0	0	0	0	1732
Q Serve(g_s), s				10.5	0.0	0.0	3.1	0.0	0.0	0.0	0.0	10.7
Cycle Q Clear(g_c), s				10.5	0.0	0.0	13.7	0.0	0.0	0.0	0.0	10.7
Prop In Lane				0.49		0.51	0.20		0.00	0.00		0.26
Lane Grp Cap(c), veh/h				677	0	0	647	0	0	0	0	722
V/C Ratio(X)				0.56	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.56
Avail Cap(c_a), veh/h				677	0	0	647	0	0	0	0	722
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				13.3	0.0	0.0	3.5	0.0	0.0	0.0	0.0	13.3
Incr Delay (d2), s/veh				3.3	0.0	0.0	3.6	0.0	0.0	0.0	0.0	3.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.3	0.0	0.0	2.1	0.0	0.0	0.0	0.0	5.7
LnGrp Delay(d),s/veh				16.6	0.0	0.0	7.1	0.0	0.0	0.0	0.0	16.5
LnGrp LOS				B			A					B
Approach Vol, veh/h					376			366			405	
Approach Delay, s/veh					16.6			7.1			16.5	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		12.5		15.7				12.7
Green Ext Time (p_c), s		1.7		3.1				3.7

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	144	48	5	50	60	87	173	3	10	206	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.930			0.999			0.996	
Flt Protected		0.993			0.998			0.984			0.998	
Satd. Flow (prot)	0	1710	0	0	1696	0	0	1779	0	0	1808	0
Flt Permitted		0.993			0.998			0.984			0.998	
Satd. Flow (perm)	0	1710	0	0	1696	0	0	1779	0	0	1808	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		393			417			691			665	
Travel Time (s)		7.7			9.5			13.5			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	160	53	6	56	67	97	192	3	11	229	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	249	0	0	129	0	0	292	0	0	248	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	32	144	48	0	5	50	60	0	87	173	3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	36	160	53	0	6	56	67	0	97	192	3
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	12.2	10.1	13.1
HCM LOS	B	B	B

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	33%	14%	4%	4%
Vol Thru, %	66%	64%	43%	92%
Vol Right, %	1%	21%	52%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	263	224	115	223
LT Vol	87	32	5	10
Through Vol	173	144	50	206
RT Vol	3	48	60	7
Lane Flow Rate	292	249	128	248
Geometry Grp	1	1	1	1
Degree of Util (X)	0.45	0.388	0.201	0.382
Departure Headway (Hd)	5.541	5.615	5.652	5.548
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	649	640	631	647
Service Time	3.592	3.67	3.716	3.601
HCM Lane V/C Ratio	0.45	0.389	0.203	0.383
HCM Control Delay	13.1	12.2	10.1	12
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.3	1.8	0.7	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	10	206	7
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	11	229	8
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	12
HCM LOS	B

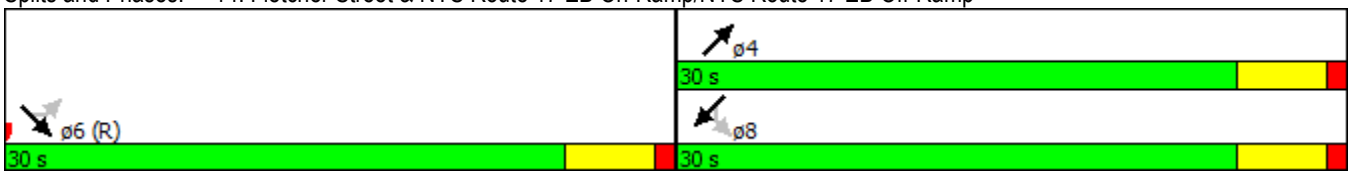
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	139	3	38	0	0	0	0	229	45	54	237	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972						0.978				
Flt Protected		0.963									0.991	
Satd. Flow (prot)	0	1666	0	0	0	0	0	1858	0	0	1837	0
Flt Permitted		0.963									0.895	
Satd. Flow (perm)	0	1666	0	0	0	0	0	1858	0	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27						20				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		348			379			150			322	
Travel Time (s)		7.9			8.6			3.4			7.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	0%	0%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Adj. Flow (vph)	148	3	40	0	0	0	0	244	48	57	252	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	191	0	0	0	0	0	292	0	0	309	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.27						0.37			0.45	
Control Delay		11.1						12.9			10.9	
Queue Delay		0.0						0.1			0.2	
Total Delay		11.1						13.0			11.1	
Queue Length 50th (ft)		37						64			50	
Queue Length 95th (ft)		75						116			83	
Internal Link Dist (ft)		268			299			70			242	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		709						785			691	
Starvation Cap Reductn		0						0			63	
Spillback Cap Reductn		1						73			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.27						0.41			0.49	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

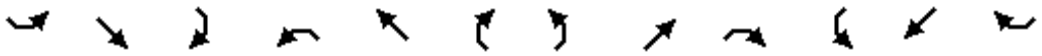
Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	139	3	38	0	0	0	0	229	45	54	237	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1780	1890				0	1900	1900	1890	1853	0
Adj Flow Rate, veh/h	148	3	40				0	244	48	57	252	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	2	2	0
Cap, veh/h	534	11	144				0	643	126	156	626	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1282	26	347				0	1543	304	203	1504	0
Grp Volume(v), veh/h	191	0	0				0	0	292	309	0	0
Grp Sat Flow(s),veh/h/ln	1655	0	0				0	0	1846	1707	0	0
Q Serve(g_s), s	4.6	0.0	0.0				0.0	0.0	6.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.6	0.0	0.0				0.0	0.0	6.6	2.5	0.0	0.0
Prop In Lane	0.77		0.21				0.00		0.16	0.18		0.00
Lane Grp Cap(c), veh/h	690	0	0				0	0	769	782	0	0
V/C Ratio(X)	0.28	0.00	0.00				0.00	0.00	0.38	0.39	0.00	0.00
Avail Cap(c_a), veh/h	690	0	0				0	0	769	782	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	0.0				0.0	0.0	12.1	3.1	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0				0.0	0.0	1.4	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0				0.0	0.0	3.6	1.5	0.0	0.0
LnGrp Delay(d),s/veh	12.5	0.0	0.0				0.0	0.0	13.5	4.6	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		191						292			309	
Approach Delay, s/veh		12.5						13.5			4.6	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				8.6		6.6		4.5
Green Ext Time (p_c), s				3.1		0.9		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

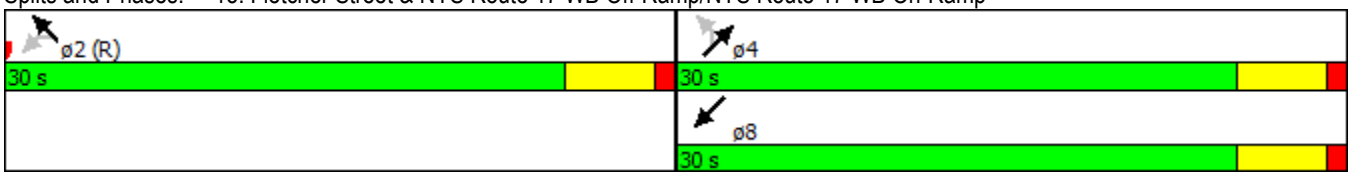


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	96	0	85	118	251	0	0	195	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.937						0.946	
Flt Protected					0.974			0.984				
Satd. Flow (prot)	0	0	0	0	1677	0	0	1860	0	0	1778	0
Flt Permitted					0.974			0.696				
Satd. Flow (perm)	0	0	0	0	1677	0	0	1316	0	0	1778	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					91						68	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		353			325			322			478	
Travel Time (s)		8.0			7.4			7.3			10.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	1%	0%	5%	0%	0%	2%	2%	2%	1%
Adj. Flow (vph)	0	0	0	105	0	93	130	276	0	0	214	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	198	0	0	406	0	0	356	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.26			0.74			0.46	
Control Delay					7.5			21.7			12.3	
Queue Delay					0.0			0.0			0.0	
Total Delay					7.5			21.7			12.3	
Queue Length 50th (ft)					23			78			69	
Queue Length 95th (ft)					59			#260			131	
Internal Link Dist (ft)		273			245			242			398	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					751			548			780	
Starvation Cap Reductn					0			1			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.26			0.74			0.46	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	96	0	85	118	251	0	0	195	129
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1838	1890	1890	1890	0	0	1879	1910
Adj Flow Rate, veh/h				105	0	93	130	276	0	0	214	142
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				0	0	0	0	0	0	0	2	2
Cap, veh/h				366	0	324	208	404	0	0	440	292
Arrive On Green				0.42	0.00	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				878	0	778	308	970	0	0	1055	700
Grp Volume(v), veh/h				198	0	0	406	0	0	0	0	356
Grp Sat Flow(s),veh/h/ln				1656	0	0	1279	0	0	0	0	1756
Q Serve(g_s), s				4.8	0.0	0.0	5.6	0.0	0.0	0.0	0.0	8.9
Cycle Q Clear(g_c), s				4.8	0.0	0.0	14.5	0.0	0.0	0.0	0.0	8.9
Prop In Lane				0.53		0.47	0.32		0.00	0.00		0.40
Lane Grp Cap(c), veh/h				690	0	0	612	0	0	0	0	732
V/C Ratio(X)				0.29	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.49
Avail Cap(c_a), veh/h				690	0	0	612	0	0	0	0	732
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				11.6	0.0	0.0	4.0	0.0	0.0	0.0	0.0	12.8
Incr Delay (d2), s/veh				1.0	0.0	0.0	5.6	0.0	0.0	0.0	0.0	2.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.3	0.0	0.0	2.8	0.0	0.0	0.0	0.0	4.7
LnGrp Delay(d),s/veh				12.6	0.0	0.0	9.6	0.0	0.0	0.0	0.0	15.1
LnGrp LOS				B			A					B
Approach Vol, veh/h					198			406			356	
Approach Delay, s/veh					12.6			9.6			15.1	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		6.8		16.5				10.9
Green Ext Time (p_c), s		0.9		3.0				4.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	61	26	1	28	64	72	180	1	4	158	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.907						0.999	
Flt Protected		0.987						0.986			0.999	
Satd. Flow (prot)	0	1748	0	0	1706	0	0	1837	0	0	1868	0
Flt Permitted		0.987						0.986			0.999	
Satd. Flow (perm)	0	1748	0	0	1706	0	0	1837	0	0	1868	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	66	28	1	30	69	77	194	1	4	170	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	100	0	0	272	0	0	175	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	30	61	26	0	1	28	64	0	72	180	1
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	32	66	28	0	1	30	69	0	77	194	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.2	8.6	10.5
HCM LOS	A	A	B

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	28%	26%	1%	2%
Vol Thru, %	71%	52%	30%	97%
Vol Right, %	0%	22%	69%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	117	93	163
LT Vol	72	30	1	4
Through Vol	180	61	28	158
RT Vol	1	26	64	1
Lane Flow Rate	272	126	100	175
Geometry Grp	1	1	1	1
Degree of Util (X)	0.359	0.176	0.132	0.234
Departure Headway (Hd)	4.752	5.043	4.759	4.816
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	754	706	747	741
Service Time	2.808	3.11	2.829	2.878
HCM Lane V/C Ratio	0.361	0.178	0.134	0.236
HCM Control Delay	10.5	9.2	8.6	9.4
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.6	0.5	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	4	158	1
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	170	1
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	9.4
HCM LOS	A

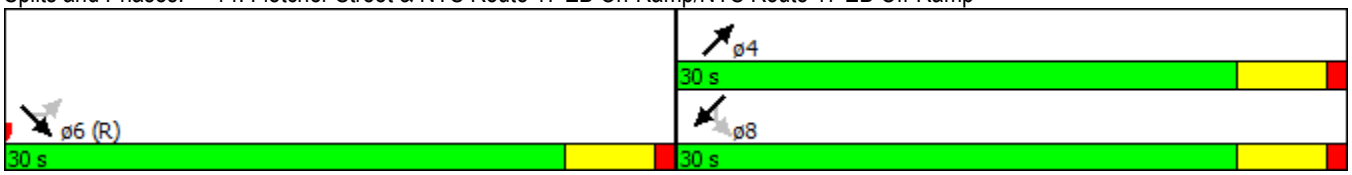
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	92	0	58	0	0	0	0	98	18	57	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948						0.979				
Flt Protected		0.970									0.983	
Satd. Flow (prot)	0	1717	0	0	0	0	0	1854	0	0	1845	0
Flt Permitted		0.970									0.863	
Satd. Flow (perm)	0	1717	0	0	0	0	0	1854	0	0	1620	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64						19				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	2%	2%	0%	2%
Adj. Flow (vph)	107	0	67	0	0	0	0	114	21	66	122	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	174	0	0	0	0	0	135	0	0	188	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.23						0.17			0.28	
Control Delay		8.2						10.1			9.1	
Queue Delay		0.0						0.0			0.0	
Total Delay		8.2						10.1			9.1	
Queue Length 50th (ft)		24						25			27	
Queue Length 95th (ft)		53						51			44	
Internal Link Dist (ft)		317			314			84			247	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		752						783			675	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.23						0.17			0.28	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	92	0	58	0	0	0	0	98	18	57	105	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1868	1890				0	1894	1900	1890	1877	0
Adj Flow Rate, veh/h	107	0	67				0	114	21	66	122	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	436	0	273				0	649	119	281	484	0
Arrive On Green	0.42	0.00	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1045	0	655				0	1557	287	479	1163	0
Grp Volume(v), veh/h	174	0	0				0	0	135	188	0	0
Grp Sat Flow(s),veh/h/ln	1700	0	0				0	0	1844	1642	0	0
Q Serve(g_s), s	4.0	0.0	0.0				0.0	0.0	2.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0				0.0	0.0	2.8	1.3	0.0	0.0
Prop In Lane	0.61		0.39				0.00		0.16	0.35		0.00
Lane Grp Cap(c), veh/h	708	0	0				0	0	768	765	0	0
V/C Ratio(X)	0.25	0.00	0.00				0.00	0.00	0.18	0.25	0.00	0.00
Avail Cap(c_a), veh/h	708	0	0				0	0	768	765	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.4	0.0	0.0				0.0	0.0	11.0	3.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0				0.0	0.0	0.5	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0				0.0	0.0	1.5	0.8	0.0	0.0
LnGrp Delay(d),s/veh	12.2	0.0	0.0				0.0	0.0	11.5	3.8	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		174						135			188	
Approach Delay, s/veh		12.2						11.5			3.8	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				4.8		6.0		3.3
Green Ext Time (p_c), s				1.6		0.8		1.6

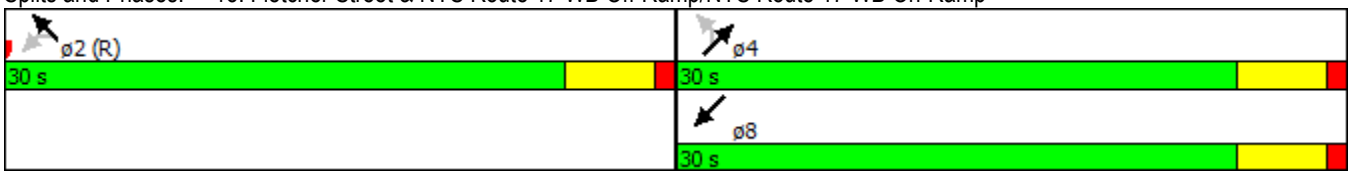
Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	36	0	62	35	155	0	0	126	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.915						0.947	
Flt Protected					0.982			0.991				
Satd. Flow (prot)	0	0	0	0	1686	0	0	1873	0	0	1794	0
Flt Permitted					0.982			0.917				
Satd. Flow (perm)	0	0	0	0	1686	0	0	1734	0	0	1794	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					69						66	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	40	0	69	39	172	0	0	140	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	109	0	0	211	0	0	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.15			0.29			0.29	
Control Delay					5.8			11.6			9.3	
Queue Delay					0.0			0.0			0.0	
Total Delay					5.8			11.6			9.3	
Queue Length 50th (ft)					8			42			36	
Queue Length 95th (ft)					33			76			77	
Internal Link Dist (ft)		277			305			247			398	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					742			722			786	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.15			0.29			0.29	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	36	0	62	35	155	0	0	126	81
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1877	1890	1890	1890	0	0	1895	1910
Adj Flow Rate, veh/h				40	0	69	39	172	0	0	140	90
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				254	0	438	159	645	0	0	449	289
Arrive On Green				0.42	0.00	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				609	0	1051	211	1547	0	0	1079	694
Grp Volume(v), veh/h				109	0	0	211	0	0	0	0	230
Grp Sat Flow(s),veh/h/ln				1661	0	0	1758	0	0	0	0	1772
Q Serve(g_s), s				2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
Cycle Q Clear(g_c), s				2.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	5.2
Prop In Lane				0.37		0.63	0.18		0.00	0.00		0.39
Lane Grp Cap(c), veh/h				692	0	0	804	0	0	0	0	738
V/C Ratio(X)				0.16	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.31
Avail Cap(c_a), veh/h				692	0	0	804	0	0	0	0	738
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				10.9	0.0	0.0	3.0	0.0	0.0	0.0	0.0	11.7
Incr Delay (d2), s/veh				0.5	0.0	0.0	0.8	0.0	0.0	0.0	0.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.0	0.9	0.0	0.0	0.0	0.0	2.8
LnGrp Delay(d),s/veh				11.4	0.0	0.0	3.8	0.0	0.0	0.0	0.0	12.8
LnGrp LOS				B			A					B
Approach Vol, veh/h					109			211			230	
Approach Delay, s/veh					11.4			3.8			12.8	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		4.5		3.4				7.2
Green Ext Time (p_c), s		0.5		2.4				2.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

AMY'S KITCHEN & SCIENCE OF THE SOUL

2033 FULL BUILDOUT CONDITIONS

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	194	0	333	0	0	1255	46	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1715	0	3490	0	0	3321	1419	0	0
Flt Permitted										
Satd. Flow (perm)	0	1715	0	3490	0	0	3321	1419	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	5%	6%	11%	5%	5%
Adj. Flow (vph)	0	204	0	351	0	0	1321	48	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	204	0	351	0	0	1321	48	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	194	0	333	0	0	1255	46	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	7	5	5	5	5	6	11	5	5
Mvmt Flow	0	204	0	351	0	0	1321	48	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1012	175	1321	0	0	351	0	0
Stage 1	351	-	-	-	-	-	-	-
Stage 2	661	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.74	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.37	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	273	835	503	-	-	1183	-	0
Stage 1	716	-	-	-	-	-	-	0
Stage 2	522	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	273	835	503	-	-	1183	-	-
Mov Cap-2 Maneuver	273	-	-	-	-	-	-	-
Stage 1	716	-	-	-	-	-	-	-
Stage 2	522	-	-	-	-	-	-	-

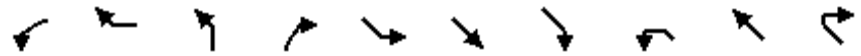
Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	503	-	-	835	1183	-
HCM Lane V/C Ratio	-	-	-	0.245	-	-
HCM Control Delay (s)	0	-	-	10.7	0	-
HCM Lane LOS	A	-	-	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	145	0	0	0	1255	0	0	333	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3406	0	0	3438	1455
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3406	0	0	3438	1455
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	13%	5%	5%	5%	6%	5%	5%	5%	11%
Adj. Flow (vph)	0	154	0	0	0	1335	0	0	354	90
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	154	0	0	0	1335	0	0	354	90
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	97	0	0	0	962	438	0	321	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1630	0	0	0	3343	1538	0	3406	0
Flt Permitted										
Satd. Flow (perm)	0	1630	0	0	0	3343	1538	0	3406	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	8%	5%	5%	6%	5%
Adj. Flow (vph)	0	102	0	0	0	1013	461	0	338	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	102	0	0	0	1013	461	0	338	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	378	0	0	0	962	0	0	321	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1624	0	0	0	3292	0	0	3423	1399
Flt Permitted										
Satd. Flow (perm)	0	1624	0	0	0	3292	0	0	3423	1399
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	8%	5%	5%	5%	8%	5%	5%	6%	16%
Adj. Flow (vph)	0	398	0	0	0	1013	0	0	338	91
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	398	0	0	0	1013	0	0	338	91
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	36	1123	4	27	294	42	73	136	37	90	54	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.981			0.980			0.988	
Flt Protected	0.950			0.950				0.985			0.972	
Satd. Flow (prot)	1876	1900	0	1581	3139	0	0	1861	0	0	1724	0
Flt Permitted	0.523			0.085				0.844			0.577	
Satd. Flow (perm)	1033	1900	0	141	3139	0	0	1595	0	0	1023	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					20			8			5	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2935	
Travel Time (s)		23.3			14.7			23.0			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	39	1221	4	29	320	46	79	148	40	98	59	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1225	0	29	366	0	0	267	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	48.0		21.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	48.0%		21.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	42.0		15.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.06	1.10		0.17	0.21			0.78			0.78	
Control Delay	7.0	79.3		9.1	10.8			45.8			54.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	7.0	79.3		9.1	10.8			45.8			54.3	
Queue Length 50th (ft)	7	583		5	50			134			86	
Queue Length 95th (ft)	21	#1215		17	91			222			162	
Internal Link Dist (ft)		1460			890			932			2855	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	784	1114		359	1769			502			322	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.05	1.10		0.08	0.21			0.53			0.53	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 81.8
Natural Cycle: 150
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	36	1123	4	27	294	42	73	136	37	90	54	14
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1900	1995	1665	1684	1814	1948	1928	1948	1910	1857	1910
Adj Flow Rate, veh/h	39	1221	-7	29	320	35	79	148	29	98	59	4
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	695	1095	0	120	1666	181	141	191	35	196	99	6
Arrive On Green	0.02	0.58	0.00	0.02	0.57	0.57	0.20	0.18	0.18	0.20	0.18	0.18
Sat Flow, veh/h	1881	1900	0	1585	2912	316	455	1078	196	688	559	32
Grp Volume(v), veh/h	39	1214	0	29	175	180	256	0	0	161	0	0
Grp Sat Flow(s),veh/h/ln	1881	1900	0	1585	1600	1628	1729	0	0	1279	0	0
Q Serve(g_s), s	0.7	45.3	0.0	0.6	4.1	4.2	1.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	45.3	0.0	0.6	4.1	4.2	10.8	0.0	0.0	9.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.19	0.31		0.11	0.61		0.02
Lane Grp Cap(c), veh/h	695	1095	0	120	915	931	410	0	0	333	0	0
V/C Ratio(X)	0.06	1.11	0.00	0.24	0.19	0.19	0.62	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	941	1095	0	394	915	931	648	0	0	528	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	16.7	0.0	19.6	8.1	8.1	30.7	0.0	0.0	29.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	62.3	0.0	0.4	0.5	0.5	0.6	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	42.3	0.0	0.4	1.9	2.0	5.2	0.0	0.0	3.1	0.0	0.0
LnGrp Delay(d),s/veh	6.8	78.9	0.0	20.0	8.5	8.6	31.3	0.0	0.0	30.0	0.0	0.0
LnGrp LOS	A	F		B	A	A	C			C		
Approach Vol, veh/h		1253			384			256			161	
Approach Delay, s/veh		76.7			9.4			31.3			30.0	
Approach LOS		E			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	51.0		19.9	7.4	51.3		19.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	15.0	42.0		25.0
Max Q Clear Time (g_c+I1), s	2.7	6.2		12.8	2.6	47.3		11.4
Green Ext Time (p_c), s	0.0	8.0		1.1	0.0	0.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	54.8
HCM 2010 LOS	D

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	1253	0	0	363	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1879	0	0	1782	1928	0
Flt Permitted						
Satd. Flow (perm)	1879	0	0	1782	1928	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			519	353	
Travel Time (s)	5.7			7.9	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	1319	0	0	382	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1319	0	0	382	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

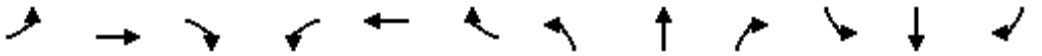
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	1253	0	0	363	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	1319	0	0	382	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1319	0	1701	1319
Stage 1	-	-	-	-	1319	-
Stage 2	-	-	-	-	382	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	527	-	163	232
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	527	-	163	232
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	770	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	527	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

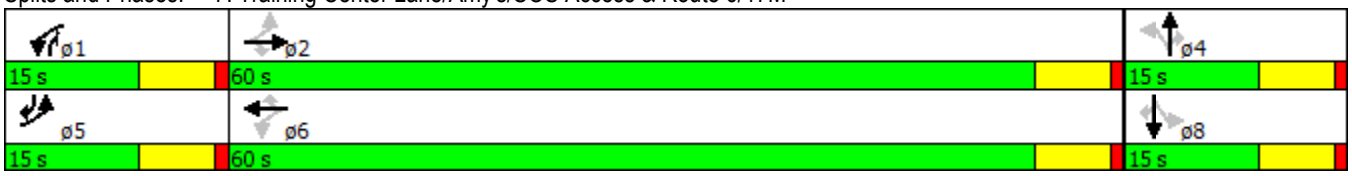


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	1085	16	7	330	101	0	0	0	25	0	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850						0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1796	1837	1025	1077	1680	1512	0	1863	1188	0	1770	1583
Flt Permitted	0.486			0.123								
Satd. Flow (perm)	919	1837	1025	139	1680	1512	0	1863	1188	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			110						36
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		519			1426			735			542	
Travel Time (s)		7.9			17.7			20.0			12.3	
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	60%	60%	8%	2%	60%	2%	60%	2%	2%	2%
Adj. Flow (vph)	167	1192	18	8	363	110	0	0	0	27	0	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1192	18	8	363	110	0	0	0	0	27	35
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm			pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	60.0	60.0	15.0	60.0	60.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	66.7%	66.7%	16.7%	66.7%	66.7%	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	54.0	54.0	9.0	54.0	54.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.19	0.73	0.02	0.05	0.31	0.10					0.18	0.13
Control Delay	2.2	10.7	0.1	3.3	7.1	1.8					39.0	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					0.0	0.0
Total Delay	2.2	10.7	0.1	3.3	7.1	1.8					39.0	9.9
Queue Length 50th (ft)	0	0	0	0	40	0					12	0
Queue Length 95th (ft)	33	#959	0	4	149	19					40	22
Internal Link Dist (ft)		439			1346			655			462	
Turn Bay Length (ft)	200		100	200		135						
Base Capacity (vph)	887	1625	919	221	1165	1082					215	312
Starvation Cap Reductn	0	0	0	0	0	0					0	0
Spillback Cap Reductn	0	0	0	0	0	0					0	0
Storage Cap Reductn	0	0	0	0	0	0					0	0
Reduced v/c Ratio	0.19	0.73	0.02	0.04	0.31	0.10					0.13	0.11

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 78.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

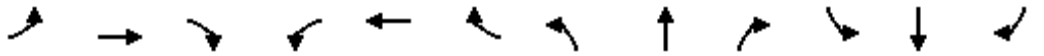


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	154	1085	16	7	330	101	0	0	0	25	0	32
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1891	1837	1205	1134	1680	1779	1900	1863	1188	1900	1863	1863
Adj Flow Rate, veh/h	167	1192	18	8	363	110	0	0	0	27	0	35
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	60	60	8	2	2	2	60	2	2	2
Cap, veh/h	731	1326	740	155	1134	1020	0	87	101	156	0	84
Arrive On Green	0.05	0.72	0.72	0.01	0.67	0.67	0.00	0.00	0.00	0.05	0.00	0.05
Sat Flow, veh/h	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Grp Volume(v), veh/h	167	1192	18	8	363	110	0	0	0	27	0	35
Grp Sat Flow(s),veh/h/ln	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Q Serve(g_s), s	2.2	41.1	0.4	0.2	7.2	2.0	0.0	0.0	0.0	1.5	0.0	1.7
Cycle Q Clear(g_c), s	2.2	41.1	0.4	0.2	7.2	2.0	0.0	0.0	0.0	1.5	0.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	731	1326	740	155	1134	1020	0	87	101	156	0	84
V/C Ratio(X)	0.23	0.90	0.02	0.05	0.32	0.11	0.00	0.00	0.00	0.17	0.00	0.42
Avail Cap(c_a), veh/h	837	1326	740	270	1134	1020	0	209	168	249	0	188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.6	8.8	3.1	13.1	5.4	4.6	0.0	0.0	0.0	37.1	0.0	36.7
Incr Delay (d2), s/veh	0.1	9.9	0.1	0.1	0.7	0.2	0.0	0.0	0.0	0.2	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	23.8	0.1	0.1	3.6	0.9	0.0	0.0	0.0	0.6	0.0	0.8
LnGrp Delay(d),s/veh	3.7	18.7	3.2	13.1	6.1	4.8	0.0	0.0	0.0	37.3	0.0	37.9
LnGrp LOS	A	B	A	B	A	A				D		D
Approach Vol, veh/h		1377			481			0			62	
Approach Delay, s/veh		16.7			5.9			0.0			37.6	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	63.8		9.7	10.3	60.0		9.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		9.0	9.0	54.0		9.0
Max Q Clear Time (g_c+I1), s	2.2	43.1		0.0	4.2	9.2		3.7
Green Ext Time (p_c), s	0.0	5.3		0.0	0.2	8.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

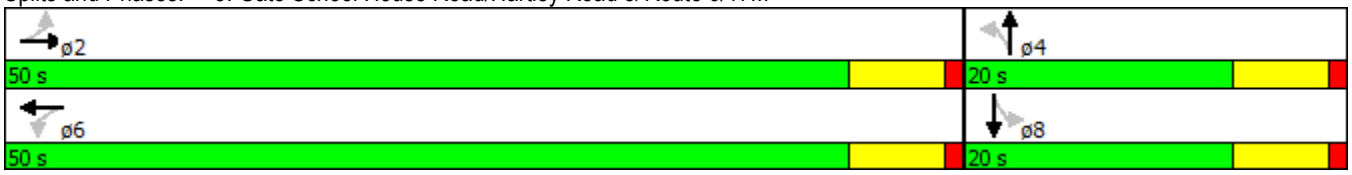


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	1024	84	0	360	14	57	28	6	6	2	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.995			0.992			0.916	
Flt Protected		0.999						0.970			0.986	
Satd. Flow (prot)	0	1746	0	0	1770	0	0	1812	0	0	1067	0
Flt Permitted		0.995						0.796			0.904	
Satd. Flow (perm)	0	1739	0	0	1770	0	0	1487	0	0	978	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			5			4			13	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	13	1101	90	0	387	15	61	30	6	6	2	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1204	0	0	402	0	0	97	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.92			0.30			0.50			0.15	
Control Delay		25.4			5.0			35.2			18.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.4			5.0			35.2			18.4	
Queue Length 50th (ft)		396			53			37			3	
Queue Length 95th (ft)		#815			111			75			20	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1308			1329			304			208	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.92			0.30			0.32			0.10	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 69.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	1024	84	0	360	14	57	28	6	6	2	12
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1777	1881	1948	1790	1948	1919	1883	1919	1872	1182	1872
Adj Flow Rate, veh/h	13	1101	63	0	387	15	61	30	6	6	2	13
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	73	1148	65	0	1189	46	190	39	8	105	14	52
Arrive On Green	0.73	0.69	0.69	0.00	0.69	0.69	0.12	0.08	0.08	0.12	0.08	0.08
Sat Flow, veh/h	7	1654	94	0	1712	66	996	490	98	223	174	644
Grp Volume(v), veh/h	1177	0	0	0	0	402	97	0	0	21	0	0
Grp Sat Flow(s),veh/h/ln	1754	0	0	0	0	1779	1584	0	0	1041	0	0
Q Serve(g_s), s	4.6	0.0	0.0	0.0	0.0	4.7	2.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	29.8	0.0	0.0	0.0	0.0	4.7	3.0	0.0	0.0	1.0	0.0	0.0
Prop In Lane	0.01		0.05	0.00		0.04	0.63		0.06	0.29		0.62
Lane Grp Cap(c), veh/h	1352	0	0	0	0	1235	297	0	0	210	0	0
V/C Ratio(X)	0.87	0.00	0.00	0.00	0.00	0.33	0.33	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1584	0	0	0	0	1471	579	0	0	388	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	0.0	0.0	3.2	23.2	0.0	0.0	22.7	0.0	0.0
Incr Delay (d2), s/veh	4.4	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	0.0	0.0	0.0	0.0	2.3	1.3	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	11.4	0.0	0.0	0.0	0.0	3.3	23.4	0.0	0.0	22.8	0.0	0.0
LnGrp LOS	B					A	C			C		
Approach Vol, veh/h		1177			402			97			21	
Approach Delay, s/veh		11.4			3.3			23.4			22.8	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		42.9		10.3		42.9		10.3
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		31.8		5.0		6.7		3.0
Green Ext Time (p_c), s		5.1		0.2		7.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	79	891	55	21	332	31	29	16	19	16	33	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.987			0.960			0.982	
Flt Protected	0.950			0.950				0.978			0.986	
Satd. Flow (prot)	1762	1867	0	1564	1894	0	0	1708	0	0	1769	0
Flt Permitted	0.468			0.109				0.825			0.882	
Satd. Flow (perm)	868	1867	0	179	1894	0	0	1441	0	0	1582	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			7			19			7	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	3%	9%	16%	3%	1%	1%	7%	12%	1%	9%	8%
Adj. Flow (vph)	85	958	59	23	357	33	31	17	20	17	35	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	85	1017	0	23	390	0	0	68	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.10	0.74		0.11	0.38			0.41			0.36	
Control Delay	3.4	14.8		10.4	19.7			33.9			36.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.4	14.8		10.4	19.7			33.9			36.4	
Queue Length 50th (ft)	8	200		4	130			18			20	
Queue Length 95th (ft)	21	#764		11	266			65			65	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	917	1450		288	1471			407			437	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.09	0.70		0.08	0.27			0.17			0.14	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 71.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	79	891	55	21	332	31	29	16	19	16	33	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1855	1884	1948	1646	1931	1910	1862	1831	1862	1948	1827	1948
Adj Flow Rate, veh/h	85	958	37	23	357	22	31	17	20	17	35	8
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	3	3	16	3	3	7	7	7	9	9	9
Cap, veh/h	819	1037	40	197	429	26	137	34	34	107	78	17
Arrive On Green	0.39	0.58	0.58	0.05	0.24	0.24	0.11	0.07	0.07	0.11	0.07	0.07
Sat Flow, veh/h	1766	1803	70	1568	1801	111	659	457	465	398	1058	224
Grp Volume(v), veh/h	85	0	995	23	0	379	68	0	0	60	0	0
Grp Sat Flow(s),veh/h/ln	1766	0	1872	1568	0	1912	1581	0	0	1681	0	0
Q Serve(g_s), s	0.0	0.0	28.7	0.0	0.0	11.2	0.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	28.7	0.0	0.0	11.2	2.2	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.06	0.46		0.29	0.28		0.13
Lane Grp Cap(c), veh/h	819	0	1077	197	0	456	258	0	0	258	0	0
V/C Ratio(X)	0.10	0.00	0.92	0.12	0.00	0.83	0.26	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	819	0	1695	357	0	1731	625	0	0	655	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.1	0.0	11.5	27.0	0.0	21.6	26.1	0.0	0.0	26.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	4.3	0.1	0.0	1.5	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	15.9	0.4	0.0	6.1	1.0	0.0	0.0	0.9	0.0	0.0
LnGrp Delay(d),s/veh	11.2	0.0	15.8	27.1	0.0	23.1	26.3	0.0	0.0	26.3	0.0	0.0
LnGrp LOS	B		B	C		C	C			C		
Approach Vol, veh/h		1080			402			68			60	
Approach Delay, s/veh		15.4			23.3			26.3			26.3	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	29.0	20.2		10.4	8.9	40.3		10.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	13.2		4.2	2.0	30.7		3.9
Green Ext Time (p_c), s	0.1	1.0		0.3	0.0	3.6		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	892	0	0	422	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1867	0	0	1844	0	1595
Flt Permitted						
Satd. Flow (perm)	1867	0	0	1844	0	1595
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	5%	5%	7%	5%	7%
Adj. Flow (vph)	959	0	0	454	0	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	959	0	0	454	0	51
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	892	0	0	422	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	5	5	7	5	7
Mvmt Flow	959	0	0	454	0	51

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	959	0	1413	959
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	454	-
Critical Hdwy	-	-	4.15	-	6.25	6.17
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	705	-	162	313
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	705	-	162	313
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	313	-	-	705	-
HCM Lane V/C Ratio	0.161	-	-	-	-
HCM Control Delay (s)	18.7	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	82	12	19	22	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.932	
Flt Protected				0.978	0.976	
Satd. Flow (prot)	1824	0	0	1837	1728	0
Flt Permitted				0.978	0.976	
Satd. Flow (perm)	1824	0	0	1837	1728	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles (%)	1%	0%	0%	4%	1%	0%
Adj. Flow (vph)	126	18	29	34	3	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	0	63	6	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	82	12	19	22	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	1	0	0	4	1	0
Mvmt Flow	126	18	29	34	3	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	145	0	227	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.1	-	6.21	6.1
Critical Hdwy Stg 1	-	-	-	-	5.21	-
Critical Hdwy Stg 2	-	-	-	-	5.21	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1450	-	773	923
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1450	-	758	923
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	920	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	832	-	-	1450	-
HCM Lane V/C Ratio	0.007	-	-	0.02	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	7	11	7	1	51	54	51	121	1	8	88	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.931			0.999			0.999	
Flt Protected		0.986						0.985			0.996	
Satd. Flow (prot)	0	1682	0	0	1702	0	0	1781	0	0	1809	0
Flt Permitted		0.986						0.985			0.996	
Satd. Flow (perm)	0	1682	0	0	1702	0	0	1781	0	0	1809	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		398			388			725			564	
Travel Time (s)		7.8			8.8			14.1			12.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	9	14	9	1	64	68	64	151	1	10	110	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	133	0	0	216	0	0	121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

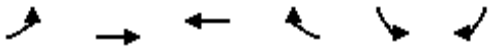
Intersection	
Int Delay, s/veh	5

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	7	11	7	1	51	54	51	121	1	8	88	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	9	14	9	1	64	68	64	151	1	10	110	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	475	410	152	422	411	111	111	0	0	153	0	0
Stage 1	279	279	-	131	131	-	-	-	-	-	-	-
Stage 2	196	131	-	291	280	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	445	481	872	563	551	940	1460	-	-	1409	-	-
Stage 1	678	634	-	878	794	-	-	-	-	-	-	-
Stage 2	765	760	-	734	695	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	359	454	872	521	520	940	1460	-	-	1409	-	-
Mov Cap-2 Maneuver	359	454	-	521	520	-	-	-	-	-	-	-
Stage 1	645	604	-	836	788	-	-	-	-	-	-	-
Stage 2	647	754	-	676	662	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	13	11.7	2.2	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1460	-	-	483	673	1409	-	-
HCM Lane V/C Ratio	0.044	-	-	0.065	0.197	0.007	-	-
HCM Control Delay (s)	7.6	0	-	13	11.7	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.7	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	34	0	24	60	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1861	1262	0	1850	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1861	1262	0	1850	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		570	424		398	
Travel Time (s)		11.1	8.3		7.8	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles (%)	0%	3%	0%	27%	0%	2%
Adj. Flow (vph)	2	52	0	37	92	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	37	0	92	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	34	0	24	60	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	0	3	0	27	0	2
Mvmt Flow	2	52	0	37	92	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	73	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.1	-	-	-	5.4	5.72
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1587	-	-	-	955	1063
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	988	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1587	-	-	-	954	1063
Mov Cap-2 Maneuver	-	-	-	-	954	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	987	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1587	-	-	-	954
HCM Lane V/C Ratio	0.001	-	-	-	0.097
HCM Control Delay (s)	7.3	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	53	2	133	0	0	0	0	67	30	74	53	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.905						0.958				
Flt Protected		0.986									0.972	
Satd. Flow (prot)	0	1649	0	0	0	0	0	1783	0	0	1722	0
Flt Permitted		0.986									0.972	
Satd. Flow (perm)	0	1649	0	0	0	0	0	1783	0	0	1722	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		303			283			282			342	
Travel Time (s)		6.9			6.4			6.4			7.8	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	6%	50%	0%	2%	2%	2%	2%	3%	0%	0%	16%	2%
Adj. Flow (vph)	72	3	180	0	0	0	0	91	41	100	72	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	255	0	0	0	0	0	132	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	53	2	133	0	0	0	0	67	30	74	53	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	6	50	0	2	2	2	2	3	0	0	16	2
Mvmt Flow	72	3	180	0	0	0	0	91	41	100	72	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	383	403	72	72	0	0	131	0	0
Stage 1	272	272	-	-	-	-	-	-	-
Stage 2	111	131	-	-	-	-	-	-	-
Critical Hdwy	6.66	7.2	6.3	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	5.66	6.2	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.66	6.2	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.45	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	599	459	994	1528	-	-	1467	-	-
Stage 1	753	596	-	-	-	-	-	-	-
Stage 2	898	699	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	556	0	994	1528	-	-	1467	-	-
Mov Cap-2 Maneuver	556	0	-	-	-	-	-	-	-
Stage 1	700	0	-	-	-	-	-	-	-
Stage 2	898	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	11.4	0	4.4
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1528	-	-	812	1467	-	-
HCM Lane V/C Ratio	-	-	-	0.313	0.068	-	-
HCM Control Delay (s)	0	-	-	11.4	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	14	0	24	22	98	0	0	113	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.916						0.952	
Flt Protected					0.982			0.991				
Satd. Flow (prot)	0	0	0	0	1701	0	0	1780	0	0	1717	0
Flt Permitted					0.982			0.991				
Satd. Flow (perm)	0	0	0	0	1701	0	0	1780	0	0	1717	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		342			297			342			452	
Travel Time (s)		7.8			6.8			7.8			10.3	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	11%	4%	2%	2%	8%	2%
Adj. Flow (vph)	0	0	0	21	0	35	32	144	0	0	166	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	56	0	0	176	0	0	259	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	14	0	24	22	98	0	0	113	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	0	2	0	11	4	2	2	8	2
Mvmt Flow	0	0	0	21	0	35	32	144	0	0	166	93

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	422	468	144	259	0	0	144	0	0
Stage 1	209	209	-	-	-	-	-	-	-
Stage 2	213	259	-	-	-	-	-	-	-
Critical Hdwy	6.6	6.72	6.3	4.21	-	-	4.12	-	-
Critical Hdwy Stg 1	5.6	5.72	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.6	5.72	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	2.299	-	-	2.218	-	-
Pot Cap-1 Maneuver	578	480	905	1255	-	-	1438	-	-
Stage 1	821	721	-	-	-	-	-	-	-
Stage 2	818	684	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	562	0	905	1255	-	-	1438	-	-
Mov Cap-2 Maneuver	562	0	-	-	-	-	-	-	-
Stage 1	798	0	-	-	-	-	-	-	-
Stage 2	818	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10.3	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SWL	SWT	SWR
Capacity (veh/h)	1255	-	- 739	1438	-	-
HCM Lane V/C Ratio	0.026	-	- 0.076	-	-	-
HCM Control Delay (s)	7.9	0	- 10.3	0	-	-
HCM Lane LOS	A	A	- B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	- 0.2	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1043	66	35	406	27	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.992				0.906	
Flt Protected				0.996	0.985	
Satd. Flow (prot)	1850	0	0	1778	1136	0
Flt Permitted				0.996	0.985	
Satd. Flow (perm)	1850	0	0	1778	1136	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1426			1007	783	
Travel Time (s)	17.7			12.5	17.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	7%	72%	63%
Adj. Flow (vph)	1159	73	39	451	30	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1232	0	0	490	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1043	66	35	406	27	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	7	72	63
Mvmt Flow	1159	73	39	451	30	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1232	0	1725	1196
Stage 1	-	-	-	-	1196	-
Stage 2	-	-	-	-	529	-
Critical Hdwy	-	-	4.1	-	6.72	6.63
Critical Hdwy Stg 1	-	-	-	-	5.72	-
Critical Hdwy Stg 2	-	-	-	-	5.72	-
Follow-up Hdwy	-	-	2.2	-	4.148	3.867
Pot Cap-1 Maneuver	-	-	573	-	80	183
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	500	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	573	-	73	183
Mov Cap-2 Maneuver	-	-	-	-	73	-
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	455	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	96.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	125	-	-	573	-
HCM Lane V/C Ratio	0.782	-	-	0.068	-
HCM Control Delay (s)	96.8	-	-	11.7	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	4.6	-	-	0.2	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	482	0	724	0	0	1358	68	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1715	0	3490	0	0	3321	1419	0	0
Flt Permitted										
Satd. Flow (perm)	0	1715	0	3490	0	0	3321	1419	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	5%	6%	11%	5%	5%
Adj. Flow (vph)	0	507	0	762	0	0	1429	72	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	507	0	762	0	0	1429	72	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.9

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	482	0	724	0	0	1358	68	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	7	5	5	5	5	6	11	5	5
Mvmt Flow	0	507	0	762	0	0	1429	72	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1477	381	1429	0	0	762	0	0
Stage 1	762	-	-	-	-	-	-	-
Stage 2	715	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.74	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.37	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	145	622	457	-	-	827	-	0
Stage 1	470	-	-	-	-	-	-	0
Stage 2	493	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	145	622	457	-	-	827	-	-
Mov Cap-2 Maneuver	145	-	-	-	-	-	-	-
Stage 1	470	-	-	-	-	-	-	-
Stage 2	493	-	-	-	-	-	-	-

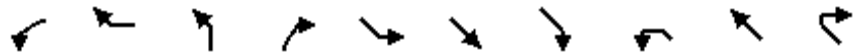
Approach	WB	NB	SB
HCM Control Delay, s	31.3	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	457	-	-	622	827	-
HCM Lane V/C Ratio	-	-	-	0.816	-	-
HCM Control Delay (s)	0	-	-	31.3	0	-
HCM Lane LOS	A	-	-	D	A	-
HCM 95th %tile Q(veh)	0	-	-	8.4	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	136	0	0	0	1358	0	0	724	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3406	0	0	3438	1455
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3406	0	0	3438	1455
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	13%	5%	5%	5%	6%	5%	5%	5%	11%
Adj. Flow (vph)	0	145	0	0	0	1445	0	0	770	121
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	145	0	0	0	1445	0	0	770	121
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	191	0	0	0	913	581	0	647	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1630	0	0	0	3343	1538	0	3406	0
Flt Permitted										
Satd. Flow (perm)	0	1630	0	0	0	3343	1538	0	3406	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	8%	5%	5%	6%	5%
Adj. Flow (vph)	0	201	0	0	0	961	612	0	681	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	201	0	0	0	961	612	0	681	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	376	0	0	0	913	0	0	647	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1624	0	0	0	3292	0	0	3423	1399
Flt Permitted										
Satd. Flow (perm)	0	1624	0	0	0	3292	0	0	3423	1399
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	8%	5%	5%	5%	8%	5%	5%	6%	16%
Adj. Flow (vph)	0	396	0	0	0	961	0	0	681	119
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	396	0	0	0	961	0	0	681	119
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	49	1046	28	81	652	55	133	148	33	71	73	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.988			0.986			0.974	
Flt Protected	0.950			0.950				0.979			0.980	
Satd. Flow (prot)	1876	1894	0	1581	3158	0	0	1861	0	0	1717	0
Flt Permitted	0.309			0.088				0.758			0.696	
Satd. Flow (perm)	610	1894	0	146	3158	0	0	1441	0	0	1219	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			11			6			11	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2983	
Travel Time (s)		23.3			14.7			23.0			45.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	53	1137	30	88	709	60	145	161	36	77	79	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	1167	0	88	769	0	0	342	0	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	48.0		21.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	48.0%		21.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	42.0		15.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.13	1.26		0.46	0.48			0.89			0.58	
Control Delay	8.7	151.9		18.3	16.9			58.5			36.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.7	151.9		18.3	16.9			58.5			36.2	
Queue Length 50th (ft)	12	~905		20	155			191			93	
Queue Length 95th (ft)	26	#1199		50	212			#358			170	
Internal Link Dist (ft)		1460			890			932			2903	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	528	924		327	1587			405			347	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	1.26		0.27	0.48			0.84			0.56	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 90.4
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	49	1046	28	81	652	55	133	148	33	71	73	34
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1902	1995	1665	1683	1814	1948	1928	1948	1910	1861	1910
Adj Flow Rate, veh/h	53	1137	19	88	709	49	145	161	25	77	79	26
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	421	950	16	155	1600	110	212	189	28	176	165	47
Arrive On Green	0.03	0.51	0.51	0.04	0.53	0.53	0.26	0.24	0.24	0.26	0.24	0.24
Sat Flow, veh/h	1881	1865	31	1585	3034	210	646	804	118	495	700	199
Grp Volume(v), veh/h	53	0	1156	88	373	385	331	0	0	182	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1896	1585	1598	1646	1568	0	0	1394	0	0
Q Serve(g_s), s	1.1	0.0	43.5	2.2	12.3	12.3	7.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	43.5	2.2	12.3	12.3	17.1	0.0	0.0	9.2	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.13	0.44		0.08	0.42		0.14
Lane Grp Cap(c), veh/h	421	0	966	155	843	867	466	0	0	421	0	0
V/C Ratio(X)	0.13	0.00	1.20	0.57	0.44	0.44	0.71	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	635	0	966	363	843	867	558	0	0	505	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	20.9	20.1	12.5	12.5	31.1	0.0	0.0	27.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	98.9	1.2	1.7	1.6	2.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	49.1	1.1	5.8	6.0	7.4	0.0	0.0	3.6	0.0	0.0
LnGrp Delay(d),s/veh	10.2	0.0	119.8	21.3	14.1	14.1	33.4	0.0	0.0	28.1	0.0	0.0
LnGrp LOS	B		F	C	B	B	C			C		
Approach Vol, veh/h		1209			846			331			182	
Approach Delay, s/veh		115.0			14.9			33.4			28.1	
Approach LOS		F			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	51.0		26.1	9.8	49.5		26.1
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	15.0	42.0		25.0
Max Q Clear Time (g_c+I1), s	3.1	14.3		19.1	4.2	45.5		11.2
Green Ext Time (p_c), s	0.0	9.1		1.0	0.1	0.0		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	65.4
HCM 2010 LOS	E

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	1209	0	0	798	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1879	0	0	1782	1928	0
Flt Permitted						
Satd. Flow (perm)	1879	0	0	1782	1928	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			537	353	
Travel Time (s)	5.7			8.1	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	1273	0	0	840	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1273	0	0	840	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

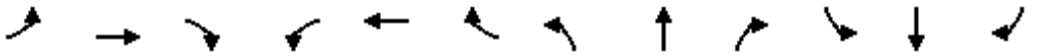
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	1209	0	0	798	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	1273	0	0	840	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1273	0	2113	1273
Stage 1	-	-	-	-	1273	-
Stage 2	-	-	-	-	840	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	549	-	101	245
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	537	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	549	-	101	245
Mov Cap-2 Maneuver	-	-	-	-	101	-
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	537	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	549	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

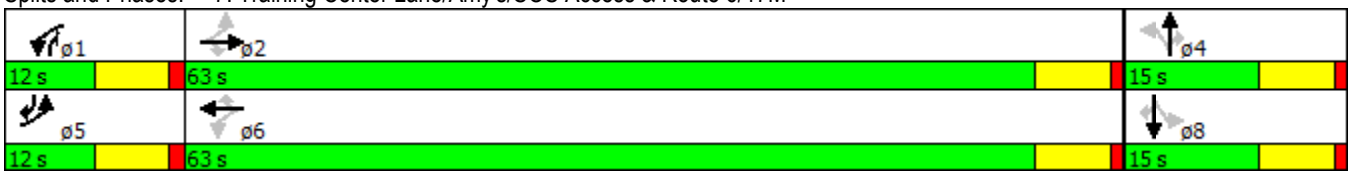


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1071	49	26	743	53	14	0	32	29	0	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.257			0.086				0.889			0.889	
Satd. Flow (perm)	491	1837	1025	98	1680	1512	0	1056	1009	0	1495	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109			36			40
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		537			1408			764			522	
Travel Time (s)		8.1			17.5			20.8			11.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	98	1177	54	29	816	58	15	0	35	32	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1177	54	29	816	58	0	15	35	0	32	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	12.0	63.0	63.0	12.0	63.0	63.0	15.0	15.0	12.0	15.0	15.0	12.0
Total Split (%)	13.3%	70.0%	70.0%	13.3%	70.0%	70.0%	16.7%	16.7%	13.3%	16.7%	16.7%	13.3%
Maximum Green (s)	6.0	57.0	57.0	6.0	57.0	57.0	9.0	9.0	6.0	9.0	9.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.21	0.81	0.07	0.21	0.66	0.05		0.18	0.19		0.27	0.16
Control Delay	3.3	18.5	0.3	6.5	12.4	0.3		42.5	12.0		43.2	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	3.3	18.5	0.3	6.5	12.4	0.3		42.5	12.0		43.2	10.7
Queue Length 50th (ft)	9	542	0	3	269	0		8	0		17	0
Queue Length 95th (ft)	21	#955	2	9	467	3		27	24		45	25
Internal Link Dist (ft)		457			1328			684			442	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	486	1446	830	146	1241	1145		114	197		161	264
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.20	0.81	0.07	0.20	0.66	0.05		0.13	0.18		0.20	0.15

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

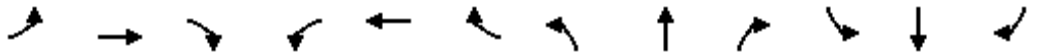


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	1071	49	26	743	53	14	0	32	29	0	36
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1909	1837	1205	1134	1680	1779	1900	1188	1188	1900	1681	1638
Adj Flow Rate, veh/h	98	1177	54	29	816	58	15	0	35	32	0	40
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	5	60	60	8	2	2	2	60	2	2	16
Cap, veh/h	361	1236	690	126	1098	988	83	0	142	83	0	168
Arrive On Green	0.04	0.67	0.67	0.02	0.65	0.65	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1818	1837	1025	1080	1680	1512	0	0	1009	0	0	1392
Grp Volume(v), veh/h	98	1177	54	29	816	58	15	0	35	32	0	40
Grp Sat Flow(s),veh/h/ln	1818	1837	1025	1080	1680	1512	0	0	1009	0	0	1392
Q Serve(g_s), s	1.5	50.9	1.6	0.8	28.6	1.2	0.0	0.0	2.7	0.0	0.0	2.3
Cycle Q Clear(g_c), s	1.5	50.9	1.6	0.8	28.6	1.2	9.0	0.0	2.7	9.0	0.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	1236	690	126	1098	988	83	0	142	83	0	168
V/C Ratio(X)	0.27	0.95	0.08	0.23	0.74	0.06	0.18	0.00	0.25	0.39	0.00	0.24
Avail Cap(c_a), veh/h	419	1236	690	182	1098	988	83	0	142	83	0	168
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.9	13.0	4.9	20.3	10.2	5.5	43.6	0.0	33.4	43.6	0.0	34.7
Incr Delay (d2), s/veh	0.1	16.4	0.2	0.3	4.6	0.1	0.4	0.0	0.3	1.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	30.8	0.5	0.4	14.3	0.5	0.4	0.0	0.8	0.8	0.0	0.9
LnGrp Delay(d),s/veh	10.1	29.4	5.1	20.7	14.8	5.6	44.0	0.0	33.7	44.7	0.0	35.0
LnGrp LOS	B	C	A	C	B	A	D		C	D		D
Approach Vol, veh/h		1329			903			50			72	
Approach Delay, s/veh		27.0			14.4			36.8			39.3	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	64.7		15.0	9.2	63.0		15.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	6.0	57.0		9.0	6.0	57.0		9.0
Max Q Clear Time (g_c+I1), s	2.8	52.9		11.0	3.5	30.6		11.0
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	10.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.7
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.



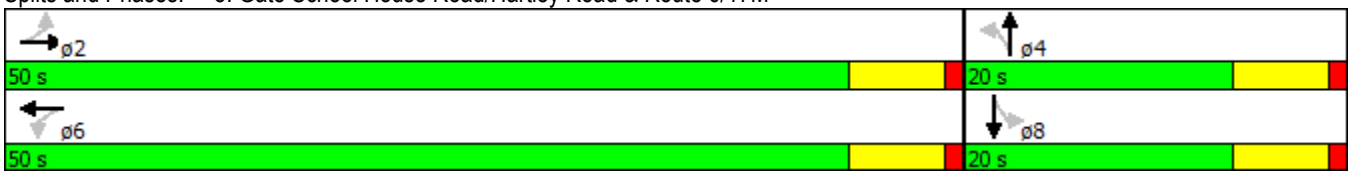
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	978	142	10	680	13	133	18	11	19	11	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.997			0.991			0.959	
Flt Protected					0.999			0.961			0.979	
Satd. Flow (prot)	0	1747	0	0	1785	0	0	1784	0	0	1271	0
Flt Permitted		0.992			0.980			0.732			0.847	
Satd. Flow (perm)	0	1733	0	0	1751	0	0	1359	0	0	1100	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			3			5			14	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	12	1052	153	11	731	14	143	19	12	20	12	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1217	0	0	756	0	0	174	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.06			0.65			0.75			0.23	
Control Delay		59.3			11.1			46.6			21.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		59.3			11.1			46.6			21.3	
Queue Length 50th (ft)		~601			178			67			11	
Queue Length 95th (ft)		#848			303			#145			38	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1151			1158			273			229	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.06			0.65			0.64			0.20	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	978	142	10	680	13	133	18	11	19	11	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1789	1881	1948	1803	1948	1919	1873	1919	1872	1354	1872
Adj Flow Rate, veh/h	12	1052	126	11	731	14	143	19	12	20	12	14
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	60	1052	125	62	1175	22	273	23	14	137	62	52
Arrive On Green	0.71	0.68	0.68	0.71	0.68	0.68	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	6	1555	185	9	1738	33	1238	165	104	410	449	376
Grp Volume(v), veh/h	1190	0	0	756	0	0	174	0	0	46	0	0
Grp Sat Flow(s),veh/h/ln	1746	0	0	1779	0	0	1507	0	0	1236	0	0
Q Serve(g_s), s	11.3	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	40.8	0.0	0.0	14.7	0.0	0.0	6.8	0.0	0.0	2.0	0.0	0.0
Prop In Lane	0.01		0.11	0.01		0.02	0.82		0.07	0.43		0.30
Lane Grp Cap(c), veh/h	1291	0	0	1315	0	0	356	0	0	289	0	0
V/C Ratio(X)	0.92	0.00	0.00	0.58	0.00	0.00	0.49	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	1299	0	0	1322	0	0	469	0	0	377	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	0.0	5.8	0.0	0.0	26.0	0.0	0.0	24.5	0.0	0.0
Incr Delay (d2), s/veh	10.7	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	0.0	0.0	6.5	0.0	0.0	2.9	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	20.6	0.0	0.0	6.2	0.0	0.0	26.4	0.0	0.0	24.6	0.0	0.0
LnGrp LOS	C			A			C			C		
Approach Vol, veh/h		1190			756			174			46	
Approach Delay, s/veh		20.6			6.2			26.4			24.6	
Approach LOS		C			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		49.7		14.9		49.7		14.9
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		42.8		8.8		16.7		4.0
Green Ext Time (p_c), s		0.9		0.3		9.2		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

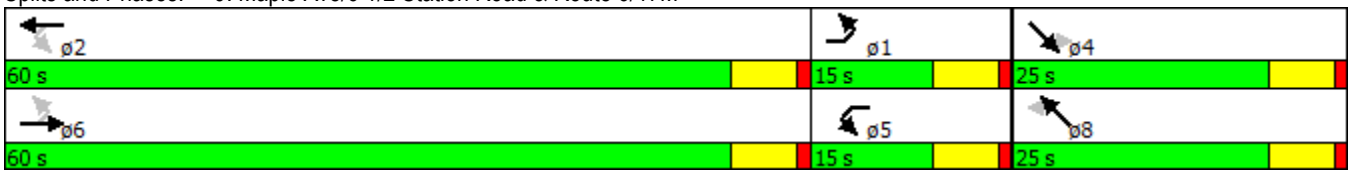
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	51	852	106	44	661	36	32	85	39	27	54	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94										
Frt		0.983			0.992			0.966			0.978	
Flt Protected	0.950			0.950				0.990			0.986	
Satd. Flow (prot)	1762	1732	0	1564	1902	0	0	1719	0	0	1762	0
Flt Permitted	0.237			0.077				0.911			0.782	
Satd. Flow (perm)	440	1732	0	127	1902	0	0	1582	0	0	1397	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			4			15			9	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Confl. Peds. (#/hr)			832									
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	3%	9%	16%	3%	1%	1%	7%	12%	1%	9%	8%
Adj. Flow (vph)	55	916	114	47	711	39	34	91	42	29	58	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	1030	0	47	750	0	0	167	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.12	0.92		0.28	0.66			0.69			0.50	
Control Delay	5.9	32.1		16.8	18.9			47.9			40.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.9	32.1		16.8	18.9			47.9			40.1	
Queue Length 50th (ft)	8	526		6	367			83			50	
Queue Length 95th (ft)	22	#959		19	488			151			102	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	487	1116		237	1223			357			312	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.11	0.92		0.20	0.61			0.47			0.33	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 87.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	51	852	106	44	661	36	32	85	39	27	54	16
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.47	0.93		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1855	1879	1948	1646	1930	1910	1862	1809	1862	1948	1827	1948
Adj Flow Rate, veh/h	55	916	92	47	711	28	34	91	42	29	58	17
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	3	3	16	3	3	7	7	7	9	9	9
Cap, veh/h	537	938	94	141	768	30	83	123	52	97	133	34
Arrive On Green	0.24	0.63	0.63	0.04	0.42	0.42	0.15	0.12	0.12	0.15	0.12	0.12
Sat Flow, veh/h	1766	1499	151	1568	1845	73	253	988	417	335	1069	274
Grp Volume(v), veh/h	55	0	1008	47	0	739	167	0	0	104	0	0
Grp Sat Flow(s),veh/h/ln	1766	0	1650	1568	0	1917	1658	0	0	1678	0	0
Q Serve(g_s), s	0.0	0.0	49.3	0.0	0.0	30.8	3.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	49.3	0.0	0.0	30.8	7.9	0.0	0.0	4.5	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.04	0.20		0.25	0.28		0.16
Lane Grp Cap(c), veh/h	537	0	1033	141	0	798	298	0	0	304	0	0
V/C Ratio(X)	0.10	0.00	0.98	0.33	0.00	0.93	0.56	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	537	0	1061	254	0	1233	461	0	0	463	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.6	0.0	15.1	39.1	0.0	23.3	35.4	0.0	0.0	33.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	21.5	0.5	0.0	6.3	0.6	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	28.3	1.1	0.0	17.6	3.7	0.0	0.0	2.2	0.0	0.0
LnGrp Delay(d),s/veh	23.6	0.0	36.6	39.6	0.0	29.5	36.0	0.0	0.0	34.1	0.0	0.0
LnGrp LOS	C		D	D		C	D			C		
Approach Vol, veh/h		1063			786			167			104	
Approach Delay, s/veh		36.0			30.1			36.0			34.1	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.6	41.0		16.5	8.9	58.6		16.5
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	32.8		9.9	2.0	51.3		6.5
Green Ext Time (p_c), s	0.1	2.2		0.6	0.0	1.2		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	33.7
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	890	0	0	731	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1867	0	0	1844	0	1595
Flt Permitted						
Satd. Flow (perm)	1867	0	0	1844	0	1595
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	5%	5%	7%	5%	7%
Adj. Flow (vph)	957	0	0	786	0	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	957	0	0	786	0	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	890	0	0	731	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	5	5	7	5	7
Mvmt Flow	957	0	0	786	0	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	957	0	1743	957
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	786	-
Critical Hdwy	-	-	4.15	-	6.25	6.17
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	707	-	103	314
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	464	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	707	-	103	314
Mov Cap-2 Maneuver	-	-	-	-	103	-
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	464	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	19.6
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	314	-	-	707	-
HCM Lane V/C Ratio	0.216	-	-	-	-
HCM Control Delay (s)	19.6	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	167	15	7	112	5	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.917	
Flt Protected				0.997	0.981	
Satd. Flow (prot)	1753	0	0	1794	1680	0
Flt Permitted				0.997	0.981	
Satd. Flow (perm)	1753	0	0	1794	1680	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	6%	1%	1%	7%	1%	3%
Adj. Flow (vph)	223	20	9	149	7	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	243	0	0	158	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	167	15	7	112	5	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	6	1	1	7	1	3
Mvmt Flow	223	20	9	149	7	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	243	0	401	233
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.11	-	6.21	6.13
Critical Hdwy Stg 1	-	-	-	-	5.21	-
Critical Hdwy Stg 2	-	-	-	-	5.21	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.327
Pot Cap-1 Maneuver	-	-	1329	-	621	809
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1329	-	617	809
Mov Cap-2 Maneuver	-	-	-	-	617	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	866	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	723	-	-	1329	-
HCM Lane V/C Ratio	0.024	-	-	0.007	-
HCM Control Delay (s)	10.1	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	61	27	1	90	60	50	117	2	13	78	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.946			0.999				
Flt Protected		0.987						0.985			0.993	
Satd. Flow (prot)	0	1696	0	0	1729	0	0	1781	0	0	1806	0
Flt Permitted		0.987						0.985			0.993	
Satd. Flow (perm)	0	1696	0	0	1729	0	0	1781	0	0	1806	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		395			329			676			535	
Travel Time (s)		7.7			7.5			13.2			12.2	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	72	32	1	106	71	59	138	2	15	92	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	178	0	0	199	0	0	107	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

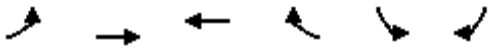
Intersection	
Int Delay, s/veh	8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	31	61	27	1	90	60	50	117	2	13	78	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	36	72	32	1	106	71	59	138	2	15	92	0

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	467	378	139	430	380	92	92	0	0	140	0	0
Stage 1	256	256	-	122	122	-	-	-	-	-	-	-
Stage 2	211	122	-	308	258	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	452	505	887	556	571	962	1484	-	-	1425	-	-
Stage 1	701	652	-	887	800	-	-	-	-	-	-	-
Stage 2	748	768	-	720	709	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	342	478	887	455	540	962	1484	-	-	1425	-	-
Mov Cap-2 Maneuver	342	478	-	455	540	-	-	-	-	-	-	-
Stage 1	671	624	-	849	791	-	-	-	-	-	-	-
Stage 2	594	760	-	588	679	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	15.6	12.6	2.2	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1484	-	-	478	653	1425	-	-
HCM Lane V/C Ratio	0.04	-	-	0.293	0.272	0.011	-	-
HCM Control Delay (s)	7.5	0	-	15.6	12.6	7.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	1.1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	78	0	117	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865			
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1899	1512	0	1745	0
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1899	1512	0	1745	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		487	358		395	
Travel Time (s)		9.5	7.0		7.7	
Confl. Peds. (#/hr)				96		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	1%	0%	6%	6%	0%
Adj. Flow (vph)	3	103	0	154	138	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	106	154	0	138	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	78	0	117	105	0
Conflicting Peds, #/hr	0	0	0	96	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	0	1	0	6	6	0
Mvmt Flow	3	103	0	154	138	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	154	0	-	0	185	77
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	4.1	-	-	-	5.46	5.7
Critical Hdwy Stg 1	-	-	-	-	4.46	-
Critical Hdwy Stg 2	-	-	-	-	4.46	-
Follow-up Hdwy	2.2	-	-	-	3.554	3.3
Pot Cap-1 Maneuver	1439	-	-	-	837	1000
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1439	-	-	-	835	1000
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	932	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1439	-	-	-	835
HCM Lane V/C Ratio	0.002	-	-	-	0.165
HCM Control Delay (s)	7.5	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	211	0	170	0	0	0	0	179	46	144	168	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940						0.972				
Flt Protected		0.973									0.977	
Satd. Flow (prot)	0	1638	0	0	0	0	0	1720	0	0	1709	0
Flt Permitted		0.973									0.977	
Satd. Flow (perm)	0	1638	0	0	0	0	0	1720	0	0	1709	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			340			202			336	
Travel Time (s)		7.5			7.7			4.6			7.6	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	6%	0%	5%	2%	2%	2%	2%	8%	5%	7%	9%	2%
Adj. Flow (vph)	293	0	236	0	0	0	0	249	64	200	233	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	529	0	0	0	0	0	313	0	0	433	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	125.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	211	0	170	0	0	0	0	179	46	144	168	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	6	0	5	2	2	2	2	8	5	7	9	2
Mvmt Flow	293	0	236	0	0	0	0	249	64	200	233	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	914	946	233	233	0	0	313	0	0
Stage 1	633	633	-	-	-	-	-	-	-
Stage 2	281	313	-	-	-	-	-	-	-
Critical Hdwy	6.66	6.7	6.35	4.12	-	-	4.17	-	-
Critical Hdwy Stg 1	5.66	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.66	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.345	2.218	-	-	2.263	-	-
Pot Cap-1 Maneuver	~ 283	250	794	1335	-	-	1220	-	-
Stage 1	504	460	-	-	-	-	-	-	-
Stage 2	746	649	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 230	0	794	1335	-	-	1220	-	-
Mov Cap-2 Maneuver	~ 230	0	-	-	-	-	-	-	-
Stage 1	409	0	-	-	-	-	-	-	-
Stage 2	746	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	298.9	0	3.9
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1335	-	-	337	1220	-	-
HCM Lane V/C Ratio	-	-	-	1.57	0.164	-	-
HCM Control Delay (s)	0	-	-	298.9	8.5	0	-
HCM Lane LOS	A	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	30.5	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	40	2	110	44	347	0	0	272	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.903						0.964	
Flt Protected					0.987			0.994				
Satd. Flow (prot)	0	0	0	0	1581	0	0	1814	0	0	1718	0
Flt Permitted					0.987			0.994				
Satd. Flow (perm)	0	0	0	0	1581	0	0	1814	0	0	1718	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		418			312			336			432	
Travel Time (s)		9.5			7.1			7.6			9.8	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	2%	2%	2%	3%	0%	8%	24%	1%	2%	2%	9%	2%
Adj. Flow (vph)	0	0	0	56	3	153	61	482	0	0	378	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	212	0	0	543	0	0	517	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	40	2	110	44	347	0	0	272	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	3	0	8	24	1	2	2	9	2
Mvmt Flow	0	0	0	56	3	153	61	482	0	0	378	139

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1051	1121	482	517	0	0	482	0	0
Stage 1	604	604	-	-	-	-	-	-	-
Stage 2	447	517	-	-	-	-	-	-	-
Critical Hdwy	6.63	6.7	6.38	4.34	-	-	4.12	-	-
Critical Hdwy Stg 1	5.63	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.63	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.372	2.416	-	-	2.218	-	-
Pot Cap-1 Maneuver	236	195	565	946	-	-	1081	-	-
Stage 1	526	475	-	-	-	-	-	-	-
Stage 2	627	522	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	215	0	565	946	-	-	1081	-	-
Mov Cap-2 Maneuver	215	0	-	-	-	-	-	-	-
Stage 1	480	0	-	-	-	-	-	-	-
Stage 2	627	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	24.2	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	946	-	-	394	1081	-	-
HCM Lane V/C Ratio	0.065	-	-	0.536	-	-	-
HCM Control Delay (s)	9.1	0	-	24.2	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.1	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1104	27	7	807	15	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.922	
Flt Protected					0.979	
Satd. Flow (prot)	1785	0	0	1857	1383	0
Flt Permitted					0.979	
Satd. Flow (perm)	1785	0	0	1857	1383	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1408			1007	777	
Travel Time (s)	17.5			12.5	17.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	12%	38%	2%	36%	39%
Adj. Flow (vph)	1269	31	8	928	17	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1300	0	0	936	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1104	27	7	807	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	12	38	2	36	39
Mvmt Flow	1269	31	8	928	17	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1300	0	2228	1284
Stage 1	-	-	-	-	1284	-
Stage 2	-	-	-	-	944	-
Critical Hdwy	-	-	4.48	-	6.36	6.39
Critical Hdwy Stg 1	-	-	-	-	5.36	-
Critical Hdwy Stg 2	-	-	-	-	5.36	-
Follow-up Hdwy	-	-	2.542	-	3.824	3.651
Pot Cap-1 Maneuver	-	-	429	-	48	181
Stage 1	-	-	-	-	255	-
Stage 2	-	-	-	-	366	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	429	-	46	181
Mov Cap-2 Maneuver	-	-	-	-	46	-
Stage 1	-	-	-	-	255	-
Stage 2	-	-	-	-	352	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	88.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	80	-	-	429	-
HCM Lane V/C Ratio	0.503	-	-	0.019	-
HCM Control Delay (s)	88.8	-	-	13.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	2.1	-	-	0.1	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	438	0	937	0	0	1073	152	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	461	0	986	0	0	1129	160	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	461	0	986	0	0	1129	160	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.3

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	438	0	937	0	0	1073	152	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	461	0	986	0	0	1129	160	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1551	493	1129	0	0	986	0	0
Stage 1	986	-	-	-	-	-	-	-
Stage 2	565	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	131	533	597	-	-	678	-	0
Stage 1	371	-	-	-	-	-	-	0
Stage 2	576	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	131	533	597	-	-	678	-	-
Mov Cap-2 Maneuver	131	-	-	-	-	-	-	-
Stage 1	371	-	-	-	-	-	-	-
Stage 2	576	-	-	-	-	-	-	-

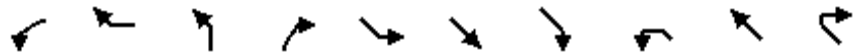
Approach	WB	NB	SB
HCM Control Delay, s	41	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	597	-	-	533	678	-
HCM Lane V/C Ratio	-	-	-	0.865	-	-
HCM Control Delay (s)	0	-	-	41	0	-
HCM Lane LOS	A	-	-	E	A	-
HCM 95th %tile Q(veh)	0	-	-	9.4	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	119	0	0	0	1073	0	0	937	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	123	0	0	0	1106	0	0	966	274
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	123	0	0	0	1106	0	0	966	274
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	94	0	0	0	733	459	0	1109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	99	0	0	0	772	483	0	1167	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	99	0	0	0	772	483	0	1167	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	203	0	0	0	733	0	0	1109	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	211	0	0	0	764	0	0	1155	189
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	211	0	0	0	764	0	0	1155	189
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	37	704	27	248	1026	125	161	136	32	88	178	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.984			0.987			0.976	
Flt Protected	0.950			0.950				0.976			0.987	
Satd. Flow (prot)	1876	1893	0	1690	3272	0	0	1850	0	0	1742	0
Flt Permitted	0.186			0.081				0.562			0.784	
Satd. Flow (perm)	367	1893	0	144	3272	0	0	1065	0	0	1383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			17			5			10	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2977	
Travel Time (s)		23.3			14.7			23.0			45.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	39	741	28	261	1080	132	169	143	34	93	187	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	769	0	261	1212	0	0	346	0	0	340	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.15	0.97		0.84	0.67			1.26			0.95	
Control Delay	9.9	55.5		46.7	18.6			175.8			72.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.9	55.5		46.7	18.6			175.8			72.8	
Queue Length 50th (ft)	9	475		112	292			~281			209	
Queue Length 95th (ft)	21	#738		#233	381			#459			#389	
Internal Link Dist (ft)		1460			890			932			2897	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	382	791		342	1816			275			359	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	0.97		0.76	0.67			1.26			0.95	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 98.2
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	37	704	27	248	1026	125	161	136	32	88	178	57
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1903	1995	1779	1750	1814	1948	1920	1948	1910	1870	1910
Adj Flow Rate, veh/h	39	741	17	261	1080	121	169	143	23	93	187	49
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	241	808	19	297	1572	176	207	140	21	145	247	60
Arrive On Green	0.02	0.44	0.44	0.11	0.52	0.52	0.29	0.27	0.27	0.29	0.27	0.27
Sat Flow, veh/h	1881	1853	43	1694	3016	338	560	526	80	361	930	226
Grp Volume(v), veh/h	39	0	758	261	595	606	335	0	0	329	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1895	1694	1663	1691	1166	0	0	1517	0	0
Q Serve(g_s), s	1.1	0.0	35.3	7.6	25.1	25.1	8.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	35.3	7.6	25.1	25.1	27.0	0.0	0.0	18.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.20	0.50		0.07	0.28		0.15
Lane Grp Cap(c), veh/h	241	0	827	297	867	881	393	0	0	485	0	0
V/C Ratio(X)	0.16	0.00	0.92	0.88	0.69	0.69	0.85	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	442	0	827	406	867	881	393	0	0	485	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.8	0.0	24.9	20.4	16.8	16.8	35.5	0.0	0.0	31.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	16.6	12.2	4.4	4.4	15.7	0.0	0.0	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	22.1	7.6	12.5	12.7	10.2	0.0	0.0	8.0	0.0	0.0
LnGrp Delay(d),s/veh	15.9	0.0	41.5	32.6	21.2	21.1	51.3	0.0	0.0	34.6	0.0	0.0
LnGrp LOS	B		D	C	C	C	D			C		
Approach Vol, veh/h		797			1462			335			329	
Approach Delay, s/veh		40.3			23.2			51.3			34.6	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	55.0		31.0	16.0	47.0		31.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	3.1	27.1		29.0	9.6	37.3		20.3
Green Ext Time (p_c), s	0.0	6.8		0.0	0.4	2.4		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	32.4
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	912	0	0	1390	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1879	0	0	1782	1928	0
Flt Permitted						
Satd. Flow (perm)	1879	0	0	1782	1928	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			535	353	
Travel Time (s)	5.7			8.1	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	960	0	0	1463	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	960	0	0	1463	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

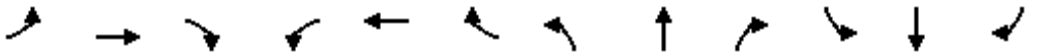
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	912	0	0	1390	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	960	0	0	1463	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	960	0	2423	960
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	1463	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	721	-	70	357
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	321	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	721	-	70	357
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	321	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	721	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



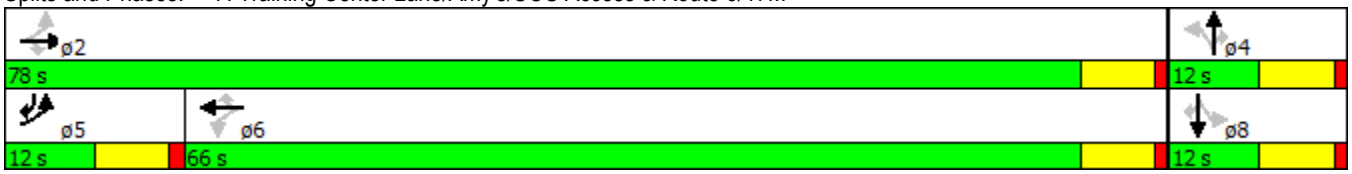
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	780	7	2	1202	87	18	0	9	83	0	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.061			0.353				0.700			0.745	
Satd. Flow (perm)	112	1837	1623	664	1888	1538	0	1317	1599	0	1287	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			109			109			85
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		535			1410			798			469	
Travel Time (s)		8.1			17.5			21.8			10.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	134	830	7	2	1279	93	19	0	10	88	0	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	830	7	2	1279	93	0	19	10	0	88	164
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	78.0	78.0	66.0	66.0	66.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (%)	13.3%	86.7%	86.7%	73.3%	73.3%	73.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%
Maximum Green (s)	6.0	72.0	72.0	60.0	60.0	60.0	6.0	6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.68	0.57	0.01	0.00	1.01	0.09		0.22	0.05		1.04	0.45
Control Delay	32.3	5.0	0.0	5.0	46.0	1.0		46.1	0.4		152.5	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	32.3	5.0	0.0	5.0	46.0	1.0		46.1	0.4		152.5	20.3
Queue Length 50th (ft)	23	127	0	0	~695	0		10	0		~53	38
Queue Length 95th (ft)	#105	191	0	3	#1024	11		33	0		#148	97
Internal Link Dist (ft)		455			1330			718			389	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	198	1469	1305	443	1261	1063		87	208		85	367
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.68	0.57	0.01	0.00	1.01	0.09		0.22	0.05		1.04	0.45

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

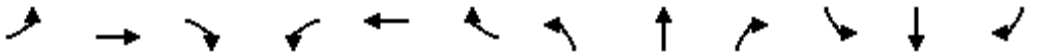


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	126	780	7	2	1202	87	18	0	9	83	0	154
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	134	830	7	2	1279	93	19	0	10	88	0	164
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	175	1469	1298	499	1314	1064	80	0	107	80	0	1134
Arrive On Green	0.04	0.80	0.80	0.69	0.69	0.69	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1749	1837	1623	660	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	134	830	7	2	1279	93	19	0	10	88	0	164
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	660	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	1.8	14.8	0.1	0.1	57.2	1.8	0.0	0.0	0.5	0.0	0.0	2.7
Cycle Q Clear(g_c), s	1.8	14.8	0.1	5.2	57.2	1.8	6.0	0.0	0.5	6.0	0.0	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	1469	1298	499	1314	1064	80	0	107	80	0	1134
V/C Ratio(X)	0.77	0.56	0.01	0.00	0.97	0.09	0.24	0.00	0.09	1.10	0.00	0.14
Avail Cap(c_a), veh/h	219	1469	1298	499	1314	1064	80	0	107	80	0	1134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.4	3.3	1.8	6.0	13.1	4.6	45.0	0.0	39.4	45.0	0.0	3.0
Incr Delay (d2), s/veh	9.0	1.6	0.0	0.0	19.2	0.2	0.6	0.0	0.1	130.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	8.0	0.0	0.0	36.1	0.8	0.5	0.0	0.2	4.9	0.0	4.1
LnGrp Delay(d),s/veh	34.4	4.9	1.8	6.0	32.3	4.7	45.6	0.0	39.6	175.7	0.0	3.0
LnGrp LOS	C	A	A	A	C	A	D		D	F		A
Approach Vol, veh/h		971			1374			29			252	
Approach Delay, s/veh		8.9			30.4			43.5			63.3	
Approach LOS		A			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		78.0		12.0	9.8	68.2		12.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		72.0		6.0	6.0	60.0		6.0
Max Q Clear Time (g_c+I1), s		16.8		8.0	3.8	59.2		8.0
Green Ext Time (p_c), s		13.2		0.0	0.1	0.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	734	125	11	1118	12	146	28	10	10	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.999			0.992			0.932	
Flt Protected		0.999						0.962			0.988	
Satd. Flow (prot)	0	1804	0	0	1879	0	0	1765	0	0	1482	0
Flt Permitted		0.964			0.990			0.741			0.913	
Satd. Flow (perm)	0	1741	0	0	1860	0	0	1360	0	0	1370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			1			4			22	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	20	789	134	12	1202	13	157	30	11	11	11	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	943	0	0	1227	0	0	198	0	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

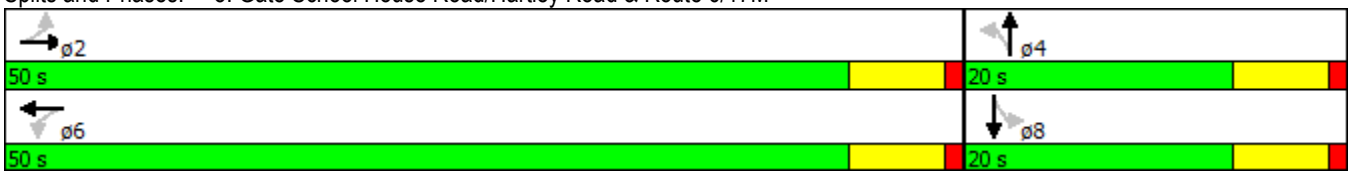
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.82			1.01			0.80			0.17	
Control Delay		18.0			44.4			52.2			16.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.0			44.4			52.2			16.4	
Queue Length 50th (ft)		277			~591			79			8	
Queue Length 95th (ft)		#570			#826			#175			33	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1144			1215			269			285	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.82			1.01			0.74			0.15	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 71.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	734	125	11	1118	12	146	28	10	10	10	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1853	1881	1948	1893	1948	1919	1850	1919	1872	1610	1872
Adj Flow Rate, veh/h	20	789	107	12	1202	13	157	30	11	11	11	22
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	67	1027	137	60	1221	13	282	35	13	103	81	115
Arrive On Green	0.69	0.66	0.66	0.69	0.66	0.66	0.19	0.16	0.16	0.19	0.16	0.16
Sat Flow, veh/h	17	1556	208	6	1850	20	1171	224	82	217	517	734
Grp Volume(v), veh/h	916	0	0	1227	0	0	198	0	0	44	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	0	1876	0	0	1476	0	0	1469	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.5	0.0	0.0	6.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.7	0.0	0.0	38.6	0.0	0.0	8.1	0.0	0.0	1.7	0.0	0.0
Prop In Lane	0.02		0.12	0.01		0.01	0.79		0.06	0.25		0.50
Lane Grp Cap(c), veh/h	1286	0	0	1351	0	0	375	0	0	344	0	0
V/C Ratio(X)	0.71	0.00	0.00	0.91	0.00	0.00	0.53	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	1307	0	0	1375	0	0	457	0	0	422	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	10.3	0.0	0.0	25.8	0.0	0.0	23.8	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	8.7	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	0.0	0.0	20.8	0.0	0.0	3.2	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	9.0	0.0	0.0	19.0	0.0	0.0	26.2	0.0	0.0	23.8	0.0	0.0
LnGrp LOS	A			B			C			C		
Approach Vol, veh/h		916			1227			198			44	
Approach Delay, s/veh		9.0			19.0			26.2			23.8	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		49.2		16.2		49.2		16.2
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		23.7		10.1		40.6		3.7
Green Ext Time (p_c), s		9.6		0.3		2.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

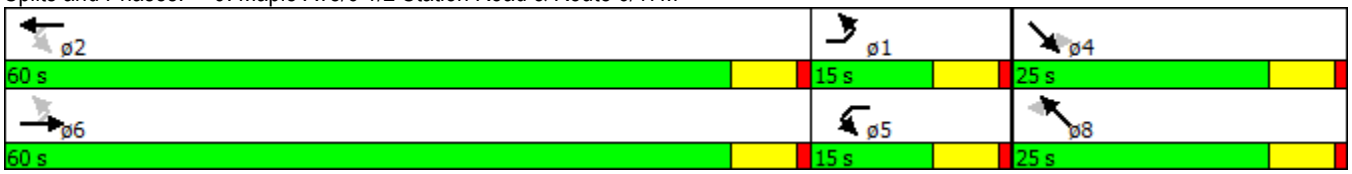
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	64	605	86	40	957	77	36	67	83	103	78	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.989			0.940			0.990	
Flt Protected	0.950			0.950				0.990			0.974	
Satd. Flow (prot)	1729	1873	0	1711	1880	0	0	1721	0	0	1793	0
Flt Permitted	0.075			0.221				0.888			0.629	
Satd. Flow (perm)	137	1873	0	398	1880	0	0	1544	0	0	1158	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6			35			4	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	67	637	91	42	1007	81	38	71	87	108	82	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	728	0	42	1088	0	0	196	0	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.37	0.69		0.11	1.00			0.60			0.90	
Control Delay	22.7	20.6		7.0	50.2			37.3			77.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	22.7	20.6		7.0	50.2			37.3			77.2	
Queue Length 50th (ft)	12	376		8	~721			90			122	
Queue Length 95th (ft)	25	471		18	#1001			168			#264	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	242	1126		407	1087			341			238	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.28	0.65		0.10	1.00			0.57			0.87	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 94
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	64	605	86	40	957	77	36	67	83	103	78	15
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1914	1910	1862	1862	1862	1948	1860	1948
Adj Flow Rate, veh/h	67	637	70	42	1007	70	38	71	87	108	82	16
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	140	686	75	468	1039	72	89	122	130	177	107	19
Arrive On Green	0.03	0.41	0.41	0.22	0.59	0.59	0.20	0.18	0.18	0.20	0.18	0.18
Sat Flow, veh/h	1733	1691	186	1716	1769	123	232	698	743	653	609	106
Grp Volume(v), veh/h	67	0	707	42	0	1077	196	0	0	206	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1877	1716	0	1892	1673	0	0	1369	0	0
Q Serve(g_s), s	0.0	0.0	31.7	0.0	0.0	48.1	0.0	0.0	0.0	3.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	31.7	0.0	0.0	48.1	9.3	0.0	0.0	12.9	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	0.19		0.44	0.52		0.08
Lane Grp Cap(c), veh/h	140	0	761	468	0	1111	380	0	0	333	0	0
V/C Ratio(X)	0.48	0.00	0.93	0.09	0.00	0.97	0.52	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	258	0	1149	468	0	1158	444	0	0	391	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.2	0.0	25.0	26.8	0.0	17.4	33.6	0.0	0.0	34.8	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	7.3	0.0	0.0	18.9	0.4	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	17.9	0.8	0.0	30.7	4.3	0.0	0.0	4.8	0.0	0.0
LnGrp Delay(d),s/veh	42.1	0.0	32.3	26.8	0.0	36.3	34.0	0.0	0.0	35.9	0.0	0.0
LnGrp LOS	D		C	C		D	C			D		
Approach Vol, veh/h		774			1119			196			206	
Approach Delay, s/veh		33.2			36.0			34.0			35.9	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	57.8		21.5	25.0	41.8		21.5
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	50.1		11.3	2.0	33.7		14.9
Green Ext Time (p_c), s	0.1	1.7		0.9	0.1	2.1		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	663	0	0	1068	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	721	0	0	1161	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	721	0	0	1161	0	26
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	663	0	0	1068	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	721	0	0	1161	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	721	0	1882	721
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	1161	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	867	-	85	431
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	313	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	867	-	85	431
Mov Cap-2 Maneuver	-	-	-	-	85	-
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	313	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	431	-	-	867	-
HCM Lane V/C Ratio	0.061	-	-	-	-
HCM Control Delay (s)	13.9	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	105	8	20	314	20	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.943	
Flt Protected				0.997	0.972	
Satd. Flow (prot)	1680	0	0	1759	1743	0
Flt Permitted				0.997	0.972	
Satd. Flow (perm)	1680	0	0	1759	1743	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	11%	2%	5%	9%	0%	1%
Adj. Flow (vph)	119	9	23	357	23	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	0	0	380	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	105	8	20	314	20	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	2	5	9	0	1
Mvmt Flow	119	9	23	357	23	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	526	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	-	-	4.15	-	6.2	6.11
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1440	-	531	933
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1440	-	520	933
Mov Cap-2 Maneuver	-	-	-	-	520	-
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	681	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1440	-
HCM Lane V/C Ratio	0.062	-	-	0.016	-
HCM Control Delay (s)	11	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	206	95	2	68	80	76	190	3	14	211	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.928			0.998			0.999	
Flt Protected		0.995			0.999			0.986			0.997	
Satd. Flow (prot)	0	1697	0	0	1694	0	0	1781	0	0	1811	0
Flt Permitted		0.995			0.999			0.986			0.997	
Satd. Flow (perm)	0	1697	0	0	1694	0	0	1781	0	0	1811	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			696			542	
Travel Time (s)		7.7			8.6			13.6			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	39	242	112	2	80	94	89	224	4	16	248	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	393	0	0	176	0	0	317	0	0	266	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

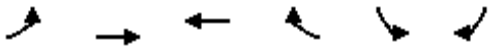
Intersection	
Int Delay, s/veh	55.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	33	206	95	2	68	80	76	190	3	14	211	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	39	242	112	2	80	94	89	224	4	16	248	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	773	688	225	863	688	249	251	0	0	227	0	0
Stage 1	404	404	-	282	282	-	-	-	-	-	-	-
Stage 2	369	284	-	581	406	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	263	314	787	299	395	793	1297	-	-	1324	-	-
Stage 1	564	543	-	741	694	-	-	-	-	-	-	-
Stage 2	594	630	-	527	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	179	285	787	68	359	793	1297	-	-	1324	-	-
Mov Cap-2 Maneuver	179	285	-	68	359	-	-	-	-	-	-	-
Stage 1	519	500	-	682	684	-	-	-	-	-	-	-
Stage 2	456	621	-	215	571	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	153.9	17.2	2.3	0.5
HCM LOS	F	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1297	-	-	325	469	1324	-	-
HCM Lane V/C Ratio	0.069	-	-	1.209	0.376	0.012	-	-
HCM Control Delay (s)	8	0	-	153.9	17.2	7.8	0	-
HCM Lane LOS	A	A	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	17.1	1.7	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	27	0	334	85	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1488	1556	0	1729	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1488	1556	0	1729	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		528	347		397	
Travel Time (s)		10.3	6.8		7.7	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	29%	0%	3%	7%	2%
Adj. Flow (vph)	0	34	0	418	106	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	34	418	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	27	0	334	85	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	29	0	3	7	2
Mvmt Flow	0	34	0	418	106	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	418	0	-	0	243	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	4.1	-	-	-	5.47	5.72
Critical Hdwy Stg 1	-	-	-	-	4.47	-
Critical Hdwy Stg 2	-	-	-	-	4.47	-
Follow-up Hdwy	2.2	-	-	-	3.563	3.318
Pot Cap-1 Maneuver	1152	-	-	-	786	856
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1152	-	-	-	786	856
Mov Cap-2 Maneuver	-	-	-	-	786	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	985	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1152	-	-	-	786
HCM Lane V/C Ratio	-	-	-	-	0.135
HCM Control Delay (s)	0	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	121	2	60	0	0	0	0	223	68	77	373	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955						0.968				
Flt Protected		0.968									0.991	
Satd. Flow (prot)	0	1639	0	0	0	0	0	1733	0	0	1776	0
Flt Permitted		0.968									0.991	
Satd. Flow (perm)	0	1639	0	0	0	0	0	1733	0	0	1776	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	134	2	67	0	0	0	0	248	76	86	414	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	0	0	0	324	0	0	500	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.8

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	121	2	60	0	0	0	0	223	68	77	373	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	8	0	4	2	2	2	2	8	0	3	6	2
Mvmt Flow	134	2	67	0	0	0	0	248	76	86	414	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	872	909	414	414	0	0	323	0	0
Stage 1	586	586	-	-	-	-	-	-	-
Stage 2	286	323	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.34	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.336	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	299	263	627	1145	-	-	1231	-	-
Stage 1	527	484	-	-	-	-	-	-	-
Stage 2	737	642	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	272	0	627	1145	-	-	1231	-	-
Mov Cap-2 Maneuver	272	0	-	-	-	-	-	-	-
Stage 1	479	0	-	-	-	-	-	-	-
Stage 2	737	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	31	0	1.4
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1145	-	-	335	1231	-	-
HCM Lane V/C Ratio	-	-	-	0.607	0.07	-	-
HCM Control Delay (s)	0	-	-	31	8.1	0	-
HCM Lane LOS	A	-	-	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3.8	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	170	2	178	72	273	0	0	280	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931						0.965	
Flt Protected					0.976			0.990				
Satd. Flow (prot)	0	0	0	0	1644	0	0	1735	0	0	1747	0
Flt Permitted					0.976			0.990				
Satd. Flow (perm)	0	0	0	0	1644	0	0	1735	0	0	1747	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	183	2	191	77	294	0	0	301	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	376	0	0	371	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	15.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	170	2	178	72	273	0	0	280	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	5	0	4	15	6	2	2	7	1
Mvmt Flow	0	0	0	183	2	191	77	294	0	0	301	104

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	801	853	294	405	0	0	294	0	0
Stage 1	448	448	-	-	-	-	-	-	-
Stage 2	353	405	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.7	6.34	4.25	-	-	4.12	-	-
Critical Hdwy Stg 1	5.65	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.336	2.335	-	-	2.218	-	-
Pot Cap-1 Maneuver	334	285	735	1087	-	-	1268	-	-
Stage 1	622	562	-	-	-	-	-	-	-
Stage 2	691	589	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	306	0	735	1087	-	-	1268	-	-
Mov Cap-2 Maneuver	306	0	-	-	-	-	-	-	-
Stage 1	569	0	-	-	-	-	-	-	-
Stage 2	691	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	46.9	1.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SWL	SWT	SWR
Capacity (veh/h)	1087	-	- 436	1268	-	-
HCM Lane V/C Ratio	0.071	-	- 0.863	-	-	-
HCM Control Delay (s)	8.6	0	- 46.9	0	-	-
HCM Lane LOS	A	A	- E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	- 8.7	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	843	28	48	1231	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.961	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1797	0	0	1831	1960	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1797	0	0	1831	1960	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1410			1007	757	
Travel Time (s)	17.5			12.5	17.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	46%	18%	3%	0%	0%
Adj. Flow (vph)	887	29	51	1296	63	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	916	0	0	1347	89	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	18.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	843	28	48	1231	60	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	46	18	3	0	0
Mvmt Flow	887	29	51	1296	63	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	917	0	2299	902
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	1397	-
Critical Hdwy	-	-	4.28	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.362	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	682	-	~ 56	357
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	270	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	682	-	~ 41	357
Mov Cap-2 Maneuver	-	-	-	-	~ 41	-
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	198	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	$ 471.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	55	-	-	682	-
HCM Lane V/C Ratio	1.627	-	-	0.074	-
HCM Control Delay (s)	$ 471.9	-	-	10.7	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	8.3	-	-	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	481	0	910	0	0	1065	159	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	506	0	958	0	0	1121	167	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	506	0	958	0	0	1121	167	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	10

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	481	0	910	0	0	1065	159	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	506	0	958	0	0	1121	167	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1519	479	1121	0	0	958	0	0
Stage 1	958	-	-	-	-	-	-	-
Stage 2	561	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	137	543	602	-	-	695	-	0
Stage 1	383	-	-	-	-	-	-	0
Stage 2	578	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	137	543	602	-	-	695	-	-
Mov Cap-2 Maneuver	137	-	-	-	-	-	-	-
Stage 1	383	-	-	-	-	-	-	-
Stage 2	578	-	-	-	-	-	-	-

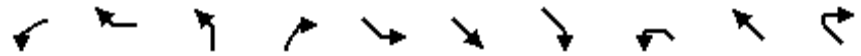
Approach	WB	NB	SB
HCM Control Delay, s	51.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	602	-	-	543	695	-
HCM Lane V/C Ratio	-	-	-	0.932	-	-
HCM Control Delay (s)	0	-	-	51.3	0	-
HCM Lane LOS	A	-	-	F	A	-
HCM 95th %tile Q(veh)	0	-	-	11.7	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	136	0	0	0	1065	0	0	910	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	140	0	0	0	1098	0	0	938	329
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	140	0	0	0	1098	0	0	938	329
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	128	0	0	0	712	489	0	1101	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	135	0	0	0	749	515	0	1159	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	135	0	0	0	749	515	0	1159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	174	0	0	0	712	0	0	1101	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	181	0	0	0	742	0	0	1147	182
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	181	0	0	0	742	0	0	1147	182
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	17	689	19	233	991	126	139	140	18	70	187	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.983			0.992			0.977	
Flt Protected	0.950			0.950				0.977			0.989	
Satd. Flow (prot)	1876	1894	0	1690	3269	0	0	1860	0	0	1748	0
Flt Permitted	0.208			0.080				0.557			0.817	
Satd. Flow (perm)	411	1894	0	142	3269	0	0	1060	0	0	1444	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			18			3			10	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2988	
Travel Time (s)		23.3			14.7			23.0			45.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	18	725	20	245	1043	133	146	147	19	74	197	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	745	0	245	1176	0	0	312	0	0	326	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.07	0.94		0.80	0.62			1.14			0.87	
Control Delay	9.0	48.6		42.9	16.2			133.8			58.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.0	48.6		42.9	16.2			133.8			58.3	
Queue Length 50th (ft)	4	450		101	204			~237			195	
Queue Length 95th (ft)	12	#702		#208	358			#408			#357	
Internal Link Dist (ft)		1460			890			932			2908	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	403	795		341	1890			273			376	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.04	0.94		0.72	0.62			1.14			0.87	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 97.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	17	689	19	233	991	126	139	140	18	70	187	52
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1902	1995	1779	1750	1814	1948	1919	1948	1910	1871	1910
Adj Flow Rate, veh/h	18	725	9	245	1043	122	146	147	8	74	197	44
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	242	828	10	308	1588	186	203	172	9	127	284	59
Arrive On Green	0.01	0.44	0.44	0.10	0.53	0.53	0.29	0.27	0.27	0.29	0.27	0.27
Sat Flow, veh/h	1881	1875	23	1694	3001	351	549	651	33	297	1073	222
Grp Volume(v), veh/h	18	0	734	245	578	587	301	0	0	315	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1898	1694	1663	1689	1233	0	0	1592	0	0
Q Serve(g_s), s	0.5	0.0	32.7	6.9	23.3	23.3	6.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	32.7	6.9	23.3	23.3	22.5	0.0	0.0	16.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.21	0.49		0.03	0.23		0.14
Lane Grp Cap(c), veh/h	242	0	838	308	880	893	411	0	0	504	0	0
V/C Ratio(X)	0.07	0.00	0.88	0.80	0.66	0.66	0.73	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	462	0	838	431	880	893	417	0	0	511	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.3	0.0	23.6	19.3	15.8	15.8	33.2	0.0	0.0	30.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	12.4	4.5	3.8	3.8	5.6	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	20.0	3.5	11.5	11.7	7.8	0.0	0.0	7.2	0.0	0.0
LnGrp Delay(d),s/veh	15.3	0.0	36.0	23.8	19.6	19.6	38.8	0.0	0.0	32.3	0.0	0.0
LnGrp LOS	B		D	C	B	B	D			C		
Approach Vol, veh/h		752			1410			301			315	
Approach Delay, s/veh		35.5			20.3			38.8			32.3	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	55.1		30.6	15.2	47.0		30.6
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.5	25.3		24.5	8.9	34.7		18.3
Green Ext Time (p_c), s	0.0	6.8		0.2	0.4	3.6		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	823	0	0	1307	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1879	0	0	1782	1928	0
Flt Permitted						
Satd. Flow (perm)	1879	0	0	1782	1928	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			507	353	
Travel Time (s)	5.7			7.7	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	866	0	0	1376	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	866	0	0	1376	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

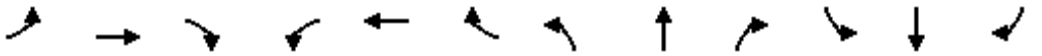
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	823	0	0	1307	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	866	0	0	1376	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	866	0	2242	866
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	1376	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	782	-	87	399
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	345	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	782	-	87	399
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	345	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	782	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



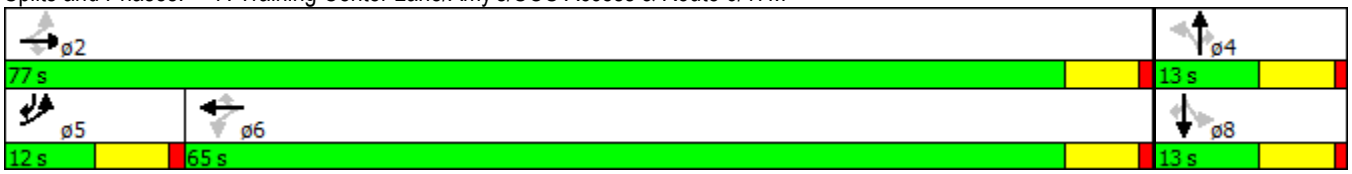
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	767	5	5	1215	36	5	0	5	37	0	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.056			0.358				0.976			0.976	
Satd. Flow (perm)	103	1837	1623	673	1888	1538	0	1836	1599	0	1686	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			109			109			79
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		507			1447			776			433	
Travel Time (s)		7.7			17.9			21.2			9.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	54	816	5	5	1293	38	5	0	5	39	0	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	816	5	5	1293	38	0	5	5	0	39	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	77.0	77.0	65.0	65.0	65.0	13.0	13.0	13.0	13.0	13.0	12.0
Total Split (%)	13.3%	85.6%	85.6%	72.2%	72.2%	72.2%	14.4%	14.4%	14.4%	14.4%	14.4%	13.3%
Maximum Green (s)	6.0	71.0	71.0	59.0	59.0	59.0	7.0	7.0	7.0	7.0	7.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.30	0.51	0.00	0.01	0.91	0.03		0.04	0.02		0.33	0.31
Control Delay	7.5	4.0	0.0	5.4	24.9	0.1		39.2	0.2		46.5	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	7.5	4.0	0.0	5.4	24.9	0.1		39.2	0.2		46.5	11.9
Queue Length 50th (ft)	5	133	0	1	~796	0		3	0		21	4
Queue Length 95th (ft)	18	200	0	5	#1052	0		14	0		53	42
Internal Link Dist (ft)		427			1367			696			353	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	199	1604	1421	507	1422	1185		146	228		135	298
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.27	0.51	0.00	0.01	0.91	0.03		0.03	0.02		0.29	0.30

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 87.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

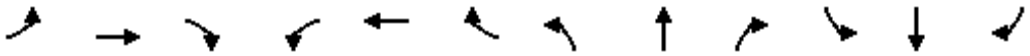


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	767	5	5	1215	36	5	0	5	37	0	83
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	54	816	5	5	1293	38	5	0	5	39	0	88
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	145	1449	1280	496	1325	1073	80	0	124	80	0	1159
Arrive On Green	0.02	0.79	0.79	0.70	0.70	0.70	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1749	1837	1623	670	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	54	816	5	5	1293	38	5	0	5	39	0	88
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	670	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	0.7	15.2	0.1	0.3	58.0	0.7	0.0	0.0	0.3	0.0	0.0	1.3
Cycle Q Clear(g_c), s	0.7	15.2	0.1	7.2	58.0	0.7	7.0	0.0	0.3	7.0	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	1449	1280	496	1325	1073	80	0	124	80	0	1159
V/C Ratio(X)	0.37	0.56	0.00	0.01	0.98	0.04	0.06	0.00	0.04	0.49	0.00	0.08
Avail Cap(c_a), veh/h	218	1449	1280	496	1325	1073	80	0	124	80	0	1159
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.4	3.6	2.0	6.5	12.9	4.2	45.0	0.0	38.4	45.0	0.0	2.4
Incr Delay (d2), s/veh	0.6	1.6	0.0	0.0	19.5	0.1	0.1	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	8.1	0.0	0.1	37.0	0.3	0.1	0.0	0.1	1.0	0.0	2.2
LnGrp Delay(d),s/veh	26.0	5.2	2.0	6.6	32.4	4.3	45.1	0.0	38.4	46.7	0.0	2.4
LnGrp LOS	C	A	A	A	C	A	D		D	D		A
Approach Vol, veh/h		875			1336			10			127	
Approach Delay, s/veh		6.5			31.5			41.8			16.0	
Approach LOS		A			C			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		77.0		13.0	8.2	68.8		13.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		71.0		7.0	6.0	59.0		7.0
Max Q Clear Time (g_c+I1), s		17.2		9.0	2.7	60.0		9.0
Green Ext Time (p_c), s		12.9		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

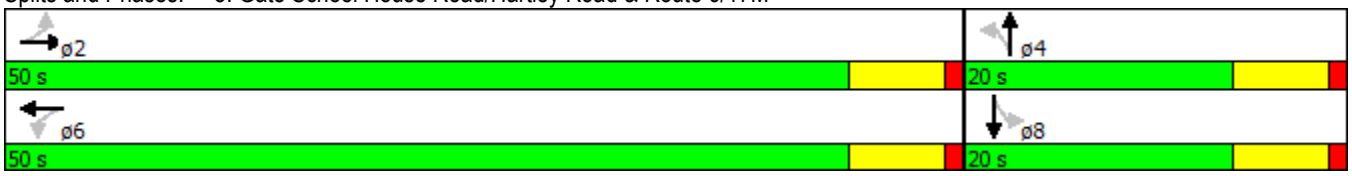


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	713	112	18	1090	20	124	18	17	11	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.986			0.944	
Flt Protected		0.999			0.999			0.962			0.986	
Satd. Flow (prot)	0	1805	0	0	1875	0	0	1761	0	0	1494	0
Flt Permitted		0.965			0.982			0.745			0.899	
Satd. Flow (perm)	0	1744	0	0	1843	0	0	1364	0	0	1362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			3			8			17	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	19	767	120	19	1172	22	133	19	18	12	12	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	906	0	0	1213	0	0	170	0	0	41	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.78			0.99			0.73			0.17	
Control Delay		15.3			39.3			44.4			18.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.3			39.3			44.4			18.0	
Queue Length 50th (ft)		240			~563			64			9	
Queue Length 95th (ft)		#485			#817			#137			33	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1164			1223			277			284	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.78			0.99			0.61			0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	713	112	18	1090	20	124	18	17	11	11	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1852	1881	1948	1893	1948	1919	1857	1919	1872	1605	1872
Adj Flow Rate, veh/h	19	767	93	19	1172	22	133	19	18	12	12	17
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	70	1060	127	67	1216	23	263	23	22	111	82	84
Arrive On Green	0.70	0.67	0.67	0.70	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	16	1584	189	12	1818	34	1158	168	157	261	596	607
Grp Volume(v), veh/h	879	0	0	1213	0	0	170	0	0	41	0	0
Grp Sat Flow(s),veh/h/ln	1790	0	0	1864	0	0	1482	0	0	1464	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.8	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.5	0.0	0.0	35.0	0.0	0.0	6.6	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.02		0.11	0.02		0.02	0.78		0.11	0.29		0.41
Lane Grp Cap(c), veh/h	1314	0	0	1366	0	0	356	0	0	324	0	0
V/C Ratio(X)	0.67	0.00	0.00	0.89	0.00	0.00	0.48	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	1377	0	0	1433	0	0	479	0	0	442	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	9.1	0.0	0.0	25.1	0.0	0.0	23.5	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	6.6	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	18.2	0.0	0.0	2.6	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	7.4	0.0	0.0	15.7	0.0	0.0	25.4	0.0	0.0	23.6	0.0	0.0
LnGrp LOS	A			B			C			C		
Approach Vol, veh/h		879			1213			170			41	
Approach Delay, s/veh		7.4			15.7			25.4			23.6	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		47.7		14.6		47.7		14.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		20.5		8.6		37.0		3.5
Green Ext Time (p_c), s		9.9		0.3		4.7		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	74	618	87	42	890	65	38	55	90	113	65	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.990			0.934			0.992	
Flt Protected	0.950			0.950				0.990			0.971	
Satd. Flow (prot)	1729	1873	0	1711	1882	0	0	1707	0	0	1798	0
Flt Permitted	0.078			0.204				0.892			0.615	
Satd. Flow (perm)	142	1873	0	367	1882	0	0	1538	0	0	1139	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6			43			3	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	78	651	92	44	937	68	40	58	95	119	68	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	743	0	44	1005	0	0	193	0	0	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.40	0.71		0.12	0.94			0.56			0.86	
Control Delay	24.5	21.1		7.3	38.3			34.6			71.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	24.5	21.1		7.3	38.3			34.6			71.2	
Queue Length 50th (ft)	14	388		8	551			84			118	
Queue Length 95th (ft)	38	482		18	#900			161			#257	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	250	1164		388	1126			357			241	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.31	0.64		0.11	0.89			0.54			0.82	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 92.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	74	618	87	42	890	65	38	55	90	113	65	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1913	1910	1862	1857	1862	1948	1866	1948
Adj Flow Rate, veh/h	78	651	71	44	937	57	40	58	95	119	68	11
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	159	707	77	416	994	60	100	104	143	207	92	13
Arrive On Green	0.04	0.42	0.42	0.18	0.56	0.56	0.20	0.17	0.17	0.20	0.17	0.17
Sat Flow, veh/h	1733	1692	185	1716	1785	109	253	600	827	765	532	76
Grp Volume(v), veh/h	78	0	722	44	0	994	193	0	0	198	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1877	1716	0	1894	1680	0	0	1373	0	0
Q Serve(g_s), s	0.0	0.0	28.2	0.0	0.0	38.0	0.0	0.0	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	28.2	0.0	0.0	38.0	7.9	0.0	0.0	10.7	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	0.21		0.49	0.60		0.06
Lane Grp Cap(c), veh/h	159	0	784	416	0	1054	390	0	0	348	0	0
V/C Ratio(X)	0.49	0.00	0.92	0.11	0.00	0.94	0.49	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	294	0	1307	416	0	1319	504	0	0	449	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.9	0.0	21.3	25.8	0.0	16.0	29.6	0.0	0.0	30.3	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	4.2	0.0	0.0	10.9	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	15.4	0.8	0.0	22.8	3.7	0.0	0.0	3.9	0.0	0.0
LnGrp Delay(d),s/veh	36.8	0.0	25.6	25.8	0.0	26.9	30.0	0.0	0.0	30.8	0.0	0.0
LnGrp LOS	D		C	C		C	C			C		
Approach Vol, veh/h		800			1038			193			198	
Approach Delay, s/veh		26.6			26.9			30.0			30.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	49.2		19.4	19.7	38.4		19.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	40.0		9.9	2.0	30.2		12.7
Green Ext Time (p_c), s	0.1	3.2		1.0	0.1	2.2		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	643	0	0	1030	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	699	0	0	1120	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	699	0	0	1120	0	26
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	643	0	0	1030	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	699	0	0	1120	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	699	0	1819	699
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	1120	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	884	-	93	443
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	327	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	884	-	93	443
Mov Cap-2 Maneuver	-	-	-	-	93	-
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	327	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	443	-	-	884	-
HCM Lane V/C Ratio	0.059	-	-	-	-
HCM Control Delay (s)	13.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	77	4	9	200	23	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.957	
Flt Protected				0.998	0.967	
Satd. Flow (prot)	1682	0	0	1760	1762	0
Flt Permitted				0.998	0.967	
Satd. Flow (perm)	1682	0	0	1760	1762	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	11%	2%	5%	9%	0%	1%
Adj. Flow (vph)	88	5	10	227	26	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	0	237	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	77	4	9	200	23	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	2	5	9	0	1
Mvmt Flow	88	5	10	227	26	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	92	0	338	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	248	-
Critical Hdwy	-	-	4.15	-	6.2	6.11
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1484	-	674	973
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1484	-	669	973
Mov Cap-2 Maneuver	-	-	-	-	669	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	803	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	744	-	-	1484	-
HCM Lane V/C Ratio	0.052	-	-	0.007	-
HCM Control Delay (s)	10.1	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	144	48	5	50	61	88	174	3	10	208	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.929			0.999			0.996	
Flt Protected		0.993			0.998			0.984			0.998	
Satd. Flow (prot)	0	1710	0	0	1694	0	0	1779	0	0	1808	0
Flt Permitted		0.993			0.998			0.984			0.998	
Satd. Flow (perm)	0	1710	0	0	1694	0	0	1779	0	0	1808	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		393			417			691			665	
Travel Time (s)		7.7			9.5			13.5			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	160	53	6	56	68	98	193	3	11	231	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	249	0	0	130	0	0	294	0	0	250	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

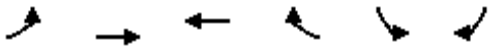
Intersection	
Int Delay, s/veh	14.7

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	32	144	48	5	50	61	88	174	3	10	208	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	36	160	53	6	56	68	98	193	3	11	231	8

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	710	652	195	754	649	235	239	0	0	197	0	0
Stage 1	391	391	-	257	257	-	-	-	-	-	-	-
Stage 2	319	261	-	497	392	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	294	332	821	350	414	807	1310	-	-	1358	-	-
Stage 1	575	552	-	762	709	-	-	-	-	-	-	-
Stage 2	639	648	-	581	628	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	222	301	821	178	376	807	1310	-	-	1358	-	-
Mov Cap-2 Maneuver	222	301	-	178	376	-	-	-	-	-	-	-
Stage 1	527	506	-	698	703	-	-	-	-	-	-	-
Stage 2	534	642	-	340	575	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	43.2	14.9	2.6	0.3
HCM LOS	E	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1310	-	-	329	490	1358	-	-
HCM Lane V/C Ratio	0.075	-	-	0.757	0.263	0.008	-	-
HCM Control Delay (s)	8	0	-	43.2	14.9	7.7	0	-
HCM Lane LOS	A	A	-	E	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	5.9	1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	18	0	223	63	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1718	1571	0	1814	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1718	1571	0	1814	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		541	487		393	
Travel Time (s)		10.5	9.5		7.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	12%	0%	2%	2%	0%
Adj. Flow (vph)	1	21	0	256	72	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	256	0	72	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	18	0	223	63	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	12	0	2	2	0
Mvmt Flow	1	21	0	256	72	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	256	0	-	0	151	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	4.1	-	-	-	5.42	5.7
Critical Hdwy Stg 1	-	-	-	-	4.42	-
Critical Hdwy Stg 2	-	-	-	-	4.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1321	-	-	-	877	944
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	1006	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1321	-	-	-	876	944
Mov Cap-2 Maneuver	-	-	-	-	876	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	1005	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1321	-	-	-	876
HCM Lane V/C Ratio	0.001	-	-	-	0.083
HCM Control Delay (s)	7.7	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	139	3	41	0	0	0	0	230	45	54	237	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970						0.978				
Flt Protected		0.963									0.991	
Satd. Flow (prot)	0	1665	0	0	0	0	0	1858	0	0	1837	0
Flt Permitted		0.963									0.991	
Satd. Flow (perm)	0	1665	0	0	0	0	0	1858	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		348			379			150			322	
Travel Time (s)		7.9			8.6			3.4			7.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	0%	0%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Adj. Flow (vph)	148	3	44	0	0	0	0	245	48	57	252	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	0	0	0	0	0	293	0	0	309	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

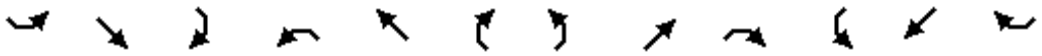
Intersection	
Int Delay, s/veh	5.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	139	3	41	0	0	0	0	230	45	54	237	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	8	0	0	2	2	2	2	0	0	2	2	2
Mvmt Flow	148	3	44	0	0	0	0	245	48	57	252	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	636	660	252	252	0	0	293	0	0
Stage 1	367	367	-	-	-	-	-	-	-
Stage 2	269	293	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.3	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	418	372	786	1313	-	-	1269	-	-
Stage 1	674	613	-	-	-	-	-	-	-
Stage 2	751	663	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	396	0	786	1313	-	-	1269	-	-
Mov Cap-2 Maneuver	396	0	-	-	-	-	-	-	-
Stage 1	639	0	-	-	-	-	-	-	-
Stage 2	751	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	19.2	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1313	-	-	446	1269	-	-
HCM Lane V/C Ratio	-	-	-	0.437	0.045	-	-
HCM Control Delay (s)	0	-	-	19.2	8	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.2	0.1	-	-



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	96	0	85	120	251	0	0	195	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.937						0.946	
Flt Protected					0.974			0.984				
Satd. Flow (prot)	0	0	0	0	1677	0	0	1860	0	0	1778	0
Flt Permitted					0.974			0.984				
Satd. Flow (perm)	0	0	0	0	1677	0	0	1860	0	0	1778	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		353			325			322			478	
Travel Time (s)		8.0			7.4			7.3			10.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	1%	0%	5%	0%	0%	2%	2%	2%	1%
Adj. Flow (vph)	0	0	0	105	0	93	132	276	0	0	214	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	198	0	0	408	0	0	356	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.8

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	96	0	85	120	251	0	0	195	129
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	1	0	5	0	0	2	2	2	1
Mvmt Flow	0	0	0	105	0	93	132	276	0	0	214	142

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	825	896	276	356	0	0	276	0	0
Stage 1	540	540	-	-	-	-	-	-	-
Stage 2	285	356	-	-	-	-	-	-	-
Critical Hdwy	6.61	6.7	6.35	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	5.61	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.61	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4	3.345	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	328	268	750	1214	-	-	1287	-	-
Stage 1	569	509	-	-	-	-	-	-	-
Stage 2	754	620	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	286	0	750	1214	-	-	1287	-	-
Mov Cap-2 Maneuver	286	0	-	-	-	-	-	-	-
Stage 1	496	0	-	-	-	-	-	-	-
Stage 2	754	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	22.3	2.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1214	-	-	403	1287	-	-
HCM Lane V/C Ratio	0.109	-	-	0.494	-	-	-
HCM Control Delay (s)	8.3	0	-	22.3	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.6	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	798	11	27	1189	67	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.958	
Flt Protected				0.999	0.967	
Satd. Flow (prot)	1837	0	0	1860	1956	0
Flt Permitted				0.999	0.967	
Satd. Flow (perm)	1837	0	0	1860	1956	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1447			997	825	
Travel Time (s)	17.9			12.4	18.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	20%	48%	1%	0%	0%
Adj. Flow (vph)	887	12	30	1321	74	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	899	0	0	1351	107	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	21.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	798	11	27	1189	67	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	20	48	1	0	0
Mvmt Flow	887	12	30	1321	74	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	899	0	2274	893
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	1381	-
Critical Hdwy	-	-	4.58	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.632	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	595	-	~ 58	361
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	275	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	595	-	~ 47	361
Mov Cap-2 Maneuver	-	-	-	-	~ 47	-
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	223	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 472.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	64	-	-	595	-
HCM Lane V/C Ratio	1.684	-	-	0.05	-
HCM Control Delay (s)	$ 472.7	-	-	11.4	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	9.7	-	-	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	325	0	694	0	0	875	104	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1817	0	3592	0	0	3485	1559	0	0
Flt Permitted										
Satd. Flow (perm)	0	1817	0	3592	0	0	3485	1559	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	1%	5%	2%	5%	5%	1%	1%	5%	5%
Adj. Flow (vph)	0	353	0	754	0	0	951	113	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	353	0	754	0	0	951	113	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	325	0	694	0	0	875	104	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	1	5	2	5	5	1	1	5	5
Mvmt Flow	0	353	0	754	0	0	951	113	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1230	377	951	0	0	754	0	0
Stage 1	754	-	-	-	-	-	-	-
Stage 2	476	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.62	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.31	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	203	643	700	-	-	833	-	0
Stage 1	474	-	-	-	-	-	-	0
Stage 2	630	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	203	643	700	-	-	833	-	-
Mov Cap-2 Maneuver	203	-	-	-	-	-	-	-
Stage 1	474	-	-	-	-	-	-	-
Stage 2	630	-	-	-	-	-	-	-

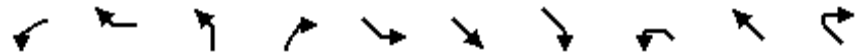
Approach	WB	NB	SB
HCM Control Delay, s	17.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	700	-	-	643	833	-
HCM Lane V/C Ratio	-	-	-	0.549	-	-
HCM Control Delay (s)	0	-	-	17.2	0	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	3.3	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	84	0	0	0	875	0	0	694	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1755	0	0	0	3574	0	0	3539	1583
Flt Permitted										
Satd. Flow (perm)	0	1755	0	0	0	3574	0	0	3539	1583
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	3%	5%	5%	5%	1%	5%	5%	2%	2%
Adj. Flow (vph)	0	88	0	0	0	911	0	0	723	211
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	88	0	0	0	911	0	0	723	211
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	94	0	0	0	625	334	0	803	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1710	0	0	0	3505	1553	0	3505	0
Flt Permitted										
Satd. Flow (perm)	0	1710	0	0	0	3505	1553	0	3505	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	2%	5%	5%	5%	3%	4%	5%	3%	5%
Adj. Flow (vph)	0	97	0	0	0	644	344	0	828	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	97	0	0	0	644	344	0	828	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	213	0	0	0	625	0	0	803	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1686	0	0	0	3452	0	0	3522	1576
Flt Permitted										
Satd. Flow (perm)	0	1686	0	0	0	3452	0	0	3522	1576
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	4%	5%	5%	5%	3%	5%	5%	3%	3%
Adj. Flow (vph)	0	229	0	0	0	672	0	0	863	153
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	229	0	0	0	672	0	0	863	153
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	560	16	130	711	108	138	139	32	65	134	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.980			0.986			0.971	
Flt Protected	0.950			0.950				0.978			0.987	
Satd. Flow (prot)	1876	1909	0	1690	3345	0	0	1832	0	0	1735	0
Flt Permitted	0.268			0.180				0.636			0.790	
Satd. Flow (perm)	529	1909	0	320	3345	0	0	1191	0	0	1388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			22			6			13	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			3007	
Travel Time (s)		23.3			14.7			23.0			45.6	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	7%	2%	1%	1%	3%	1%	7%	4%	1%	2%
Adj. Flow (vph)	34	629	18	146	799	121	155	156	36	73	151	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	647	0	146	920	0	0	347	0	0	284	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.10	0.76		0.47	0.52			1.07			0.74	
Control Delay	8.7	29.0		13.2	16.1			103.6			43.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.7	29.0		13.2	16.1			103.6			43.3	
Queue Length 50th (ft)	7	305		34	190			~227			146	
Queue Length 95th (ft)	19	469		60	248			#406			#272	
Internal Link Dist (ft)		1460			890			932			2927	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	478	852		428	1773			325			383	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.76		0.34	0.52			1.07			0.74	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 92.7
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	560	16	130	711	108	138	139	32	65	134	53
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1917	1995	1779	1797	1814	1948	1900	1948	1910	1872	1910
Adj Flow Rate, veh/h	34	629	7	146	799	110	155	156	25	73	151	49
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	2	1	1	1	1	1	1	1	1
Cap, veh/h	332	872	10	340	1536	211	216	180	27	138	255	75
Arrive On Green	0.02	0.46	0.46	0.07	0.51	0.51	0.29	0.27	0.27	0.29	0.27	0.27
Sat Flow, veh/h	1881	1892	21	1694	3015	415	581	668	100	323	949	278
Grp Volume(v), veh/h	34	0	636	146	452	457	336	0	0	273	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1913	1694	1707	1723	1349	0	0	1551	0	0
Q Serve(g_s), s	0.9	0.0	23.9	3.9	15.7	15.7	8.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.9	0.0	23.9	3.9	15.7	15.7	21.5	0.0	0.0	13.2	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.24	0.46		0.07	0.27		0.18
Lane Grp Cap(c), veh/h	332	0	882	340	869	878	453	0	0	503	0	0
V/C Ratio(X)	0.10	0.00	0.72	0.43	0.52	0.52	0.74	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	550	0	882	531	869	878	470	0	0	523	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.0	0.0	19.3	14.7	14.6	14.6	31.5	0.0	0.0	28.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	5.1	0.3	2.2	2.2	5.2	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	13.8	1.8	7.9	8.0	8.2	0.0	0.0	5.7	0.0	0.0
LnGrp Delay(d),s/veh	13.1	0.0	24.4	15.1	16.8	16.8	36.7	0.0	0.0	28.6	0.0	0.0
LnGrp LOS	B		C	B	B	B	D			C		
Approach Vol, veh/h		670			1055			336			273	
Approach Delay, s/veh		23.8			16.5			36.7			28.6	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	51.3		29.9	12.0	47.0		29.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.9	17.7		23.5	5.9	25.9		15.2
Green Ext Time (p_c), s	0.0	5.4		0.4	0.2	4.7		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.9
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	864	0	0	948	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1879	0	0	1782	1832	0
Flt Permitted					0.950	
Satd. Flow (perm)	1879	0	0	1782	1832	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			521	353	
Travel Time (s)	5.7			7.9	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	909	0	0	998	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	909	0	0	998	1	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	864	0	0	948	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	909	0	0	998	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	909	0	1907	909
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	998	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	753	-	129	380
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	473	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	753	-	129	380
Mov Cap-2 Maneuver	-	-	-	-	129	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	473	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	33.1
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	129	-	-	753	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s)	33.1	-	-	0	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

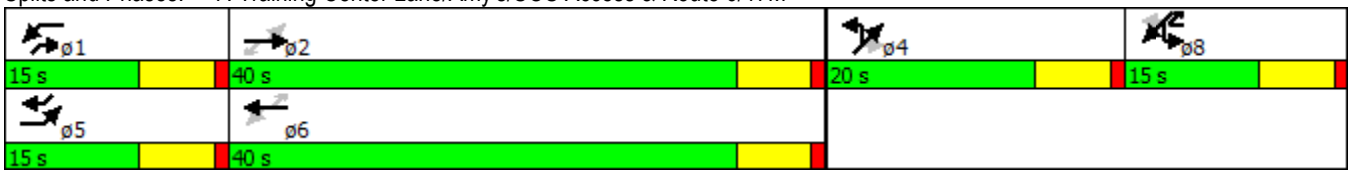
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	35	722	113	42	784	26	101	0	63	38	0	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.102			0.145				0.950			0.950	
Satd. Flow (perm)	179	1891	1591	255	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182			109			109			109
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1429			802			646	
Travel Time (s)		7.9			17.7			21.9			14.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	37	768	120	45	834	28	107	0	67	40	0	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	768	120	45	834	28	0	107	67	0	40	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	5	2		1	6	8	4	4	1	8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	1	6	8	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	11.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	40.0	40.0	15.0	40.0	15.0	20.0	20.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	44.4%	44.4%	16.7%	44.4%	16.7%	22.2%	22.2%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	34.0	34.0	9.0	34.0	9.0	14.0	14.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None	None	None
v/c Ratio	0.17	0.74	0.13	0.17	0.78	0.03		0.50	0.17		0.30	0.21
Control Delay	10.7	26.9	1.1	10.3	28.8	0.0		41.2	2.1		41.2	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	10.7	26.9	1.1	10.3	28.8	0.0		41.2	2.1		41.2	3.6
Queue Length 50th (ft)	7	354	0	9	~405	0		51	0		19	0
Queue Length 95th (ft)	23	#687	10	27	#757	0		103	8		52	13
Internal Link Dist (ft)		441			1349			722			566	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	298	1042	958	337	1064	1004		342	456		187	387
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.12	0.74	0.13	0.13	0.78	0.03		0.31	0.15		0.21	0.18

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 73.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

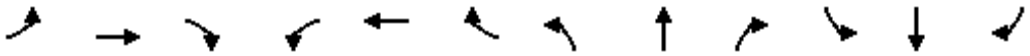


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	35	722	113	42	784	26	101	0	63	38	0	65
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	37	768	120	45	834	28	107	0	67	40	0	69
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	182	881	741	206	908	835	157	0	169	104	0	127
Arrive On Green	0.02	0.47	0.47	0.03	0.47	0.47	0.09	0.00	0.09	0.07	0.00	0.07
Sat Flow, veh/h	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	37	768	120	45	834	28	107	0	67	40	0	69
Grp Sat Flow(s),veh/h/ln	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	0.8	25.1	3.0	1.0	27.5	0.6	4.0	0.0	2.8	1.8	0.0	3.4
Cycle Q Clear(g_c), s	0.8	25.1	3.0	1.0	27.5	0.6	4.0	0.0	2.8	1.8	0.0	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	881	741	206	908	835	157	0	169	104	0	127
V/C Ratio(X)	0.20	0.87	0.16	0.22	0.92	0.03	0.68	0.00	0.40	0.39	0.00	0.54
Avail Cap(c_a), veh/h	365	938	789	384	961	876	359	0	342	196	0	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.0	16.5	10.6	14.1	17.0	6.8	30.3	0.0	28.3	30.5	0.0	29.6
Incr Delay (d2), s/veh	0.2	8.2	0.0	0.2	12.6	0.0	1.9	0.0	0.6	0.9	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	15.0	1.3	0.4	17.8	0.3	2.0	0.0	1.2	0.7	0.0	1.3
LnGrp Delay(d),s/veh	15.2	24.6	10.6	14.3	29.6	6.8	32.2	0.0	28.9	31.4	0.0	31.0
LnGrp LOS	B	C	B	B	C	A	C		C	C		C
Approach Vol, veh/h		925			907			174			109	
Approach Delay, s/veh		22.4			28.1			30.9			31.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	37.9		12.1	7.5	38.1		10.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	34.0		14.0	9.0	34.0		9.0
Max Q Clear Time (g_c+I1), s	3.0	27.1		6.0	2.8	29.5		5.4
Green Ext Time (p_c), s	0.0	3.6		0.3	0.0	2.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

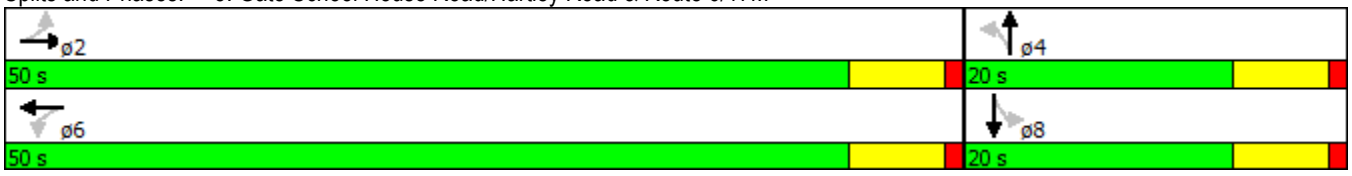


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	686	107	12	735	10	106	10	15	12	7	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.985			0.949	
Flt Protected		0.999			0.999			0.961			0.980	
Satd. Flow (prot)	0	1851	0	0	1941	0	0	1802	0	0	1414	0
Flt Permitted		0.982			0.984			0.745			0.851	
Satd. Flow (perm)	0	1820	0	0	1912	0	0	1397	0	0	1228	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			2			8			12	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	16	730	114	13	782	11	113	11	16	13	7	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	860	0	0	806	0	0	140	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.70			0.63			0.53			0.14	
Control Delay		11.9			10.2			28.8			17.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		11.9			10.2			28.8			17.6	
Queue Length 50th (ft)		168			148			34			5	
Queue Length 95th (ft)		364			308			103			29	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1539			1614			418			371	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.56			0.50			0.33			0.09	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 51.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	686	107	12	735	10	106	10	15	12	7	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1899	1881	1948	1960	1948	1919	1904	1919	1872	1521	1872
Adj Flow Rate, veh/h	16	730	87	13	782	11	113	11	16	13	7	12
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	107	911	107	105	1056	15	321	14	21	186	51	61
Arrive On Green	0.61	0.56	0.56	0.61	0.56	0.56	0.17	0.12	0.12	0.17	0.12	0.12
Sat Flow, veh/h	14	1635	192	11	1897	26	1218	119	172	416	430	507
Grp Volume(v), veh/h	833	0	0	806	0	0	140	0	0	32	0	0
Grp Sat Flow(s),veh/h/ln	1842	0	0	1934	0	0	1509	0	0	1353	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.4	0.0	0.0	10.9	0.0	0.0	3.1	0.0	0.0	0.7	0.0	0.0
Prop In Lane	0.02		0.10	0.02		0.01	0.81		0.11	0.41		0.37
Lane Grp Cap(c), veh/h	1224	0	0	1280	0	0	437	0	0	371	0	0
V/C Ratio(X)	0.68	0.00	0.00	0.63	0.00	0.00	0.32	0.00	0.00	0.09	0.00	0.00
Avail Cap(c_a), veh/h	2359	0	0	2475	0	0	815	0	0	695	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	0.0	0.0	6.0	0.0	0.0	14.9	0.0	0.0	14.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.0	5.0	0.0	0.0	1.2	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	6.6	0.0	0.0	6.2	0.0	0.0	15.0	0.0	0.0	14.4	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		833			806			140			32	
Approach Delay, s/veh		6.6			6.2			15.0			14.4	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.7		10.4		26.7		10.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		14.4		5.1		12.9		2.7
Green Ext Time (p_c), s		6.3		0.3		6.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.2
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

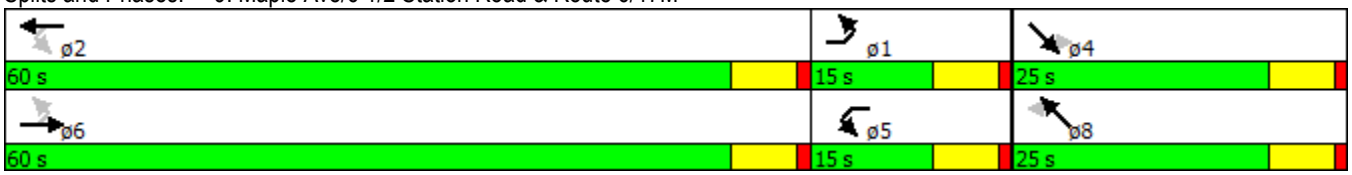
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	83	582	79	50	647	27	17	21	58	63	34	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.994			0.919			0.983	
Flt Protected	0.950			0.950				0.991			0.972	
Satd. Flow (prot)	1832	1877	0	1796	1924	0	0	1735	0	0	1842	0
Flt Permitted	0.206			0.223				0.930			0.836	
Satd. Flow (perm)	397	1877	0	422	1924	0	0	1628	0	0	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			3			65			7	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	93	654	89	56	727	30	19	24	65	71	38	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	743	0	56	757	0	0	108	0	0	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.25	0.63		0.15	0.67			0.33			0.46	
Control Delay	8.4	14.9		6.7	17.0			16.8			32.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.4	14.9		6.7	17.0			16.8			32.1	
Queue Length 50th (ft)	11	224		6	231			14			40	
Queue Length 95th (ft)	31	421		21	433			64			112	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	503	1589		501	1627			596			543	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.18	0.47		0.11	0.47			0.18			0.23	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 62.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	83	582	79	50	647	27	17	21	58	63	34	14
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1928	1912	1948	1891	1948	1910	1862	1917	1862	1948	1928	1948
Adj Flow Rate, veh/h	93	654	67	56	727	19	19	24	65	71	38	16
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	2	2	1	1	1	1	1	1
Cap, veh/h	336	749	77	339	834	22	116	50	115	220	62	24
Arrive On Green	0.06	0.44	0.44	0.07	0.44	0.44	0.15	0.11	0.11	0.15	0.11	0.11
Sat Flow, veh/h	1836	1706	175	1801	1890	49	229	449	1024	889	549	211
Grp Volume(v), veh/h	93	0	721	56	0	746	108	0	0	125	0	0
Grp Sat Flow(s),veh/h/ln	1836	0	1881	1801	0	1939	1702	0	0	1649	0	0
Q Serve(g_s), s	0.0	0.0	16.4	0.0	0.0	16.4	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	16.4	0.0	0.0	16.4	2.6	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.03	0.18		0.60	0.57		0.13
Lane Grp Cap(c), veh/h	336	0	826	339	0	856	354	0	0	375	0	0
V/C Ratio(X)	0.28	0.00	0.87	0.17	0.00	0.87	0.31	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	570	0	2159	564	0	2226	830	0	0	819	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.1	0.0	12.0	18.1	0.0	11.9	19.6	0.0	0.0	19.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.2	0.1	0.0	1.1	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	8.7	0.7	0.0	9.0	1.3	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	19.3	0.0	13.2	18.2	0.0	13.1	19.7	0.0	0.0	19.5	0.0	0.0
LnGrp LOS	B		B	B		B	B			B		
Approach Vol, veh/h		814			802			108			125	
Approach Delay, s/veh		13.9			13.4			19.7			19.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	26.8		11.3	9.1	26.7		11.3
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	18.4		4.6	2.0	18.4		4.9
Green Ext Time (p_c), s	0.2	2.3		0.6	0.2	2.2		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	612	0	0	723	0	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1939	0	0	1934	0	1690
Flt Permitted						
Satd. Flow (perm)	1939	0	0	1934	0	1690
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	5%	5%	2%	5%	1%
Adj. Flow (vph)	680	0	0	803	0	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	680	0	0	803	0	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	612	0	0	723	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	5	5	2	5	1
Mvmt Flow	680	0	0	803	0	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	680	0	1483	680
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	803	-
Critical Hdwy	-	-	4.15	-	6.25	6.11
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.309
Pot Cap-1 Maneuver	-	-	898	-	147	461
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	456	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	898	-	147	461
Mov Cap-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	456	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	461	-	-	898	-
HCM Lane V/C Ratio	0.077	-	-	-	-
HCM Control Delay (s)	13.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	48	7	6	109	8	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982				0.923	
Flt Protected				0.997	0.979	
Satd. Flow (prot)	1838	0	0	1913	1725	0
Flt Permitted				0.997	0.979	
Satd. Flow (perm)	1838	0	0	1913	1725	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	53	8	7	121	9	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	128	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	48	7	6	109	8	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	53	8	7	121	9	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	61	0	191	57
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	134	-
Critical Hdwy	-	-	4.1	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1555	-	811	1017
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	904	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1555	-	807	1017
Mov Cap-2 Maneuver	-	-	-	-	807	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	899	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	917	-	-	1555	-
HCM Lane V/C Ratio	0.023	-	-	0.004	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	61	26	1	28	64	74	181	1	4	159	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.907						0.999	
Flt Protected		0.987						0.986			0.999	
Satd. Flow (prot)	0	1748	0	0	1706	0	0	1837	0	0	1868	0
Flt Permitted		0.987						0.986			0.999	
Satd. Flow (perm)	0	1748	0	0	1706	0	0	1837	0	0	1868	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	66	28	1	30	69	80	195	1	4	171	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	100	0	0	276	0	0	176	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

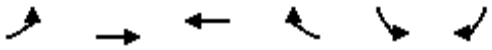
Intersection	
Int Delay, s/veh	6

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	30	61	26	1	28	64	74	181	1	4	159	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	66	28	1	30	69	80	195	1	4	171	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	584	535	195	581	535	172	172	0	0	196	0	0
Stage 1	354	354	-	180	180	-	-	-	-	-	-	-
Stage 2	230	181	-	401	355	-	-	-	-	-	-	-
Critical Hdwy	7.92	7.32	6.62	6.72	6.12	6.02	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	372	401	828	453	479	880	1405	-	-	1377	-	-
Stage 1	613	583	-	838	766	-	-	-	-	-	-	-
Stage 2	734	720	-	654	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	309	374	828	360	447	880	1405	-	-	1377	-	-
Mov Cap-2 Maneuver	309	374	-	360	447	-	-	-	-	-	-	-
Stage 1	574	546	-	784	764	-	-	-	-	-	-	-
Stage 2	648	718	-	520	613	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	18	11.3	2.2	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1405	-	-	401	673	1377	-	-
HCM Lane V/C Ratio	0.057	-	-	0.314	0.149	0.003	-	-
HCM Control Delay (s)	7.7	0	-	18	11.3	7.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.5	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	21	0	117	34	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1915	1587	0	1850	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1915	1587	0	1850	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		515	501		397	
Travel Time (s)		10.0	9.8		7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1	23	0	126	37	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	24	126	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	21	0	117	34	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	1	23	0	126	37	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	126	0	-	0	88	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	4.1	-	-	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1473	-	-	-	940	1016
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	1010	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1473	-	-	-	939	1016
Mov Cap-2 Maneuver	-	-	-	-	939	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1473	-	-	-	939
HCM Lane V/C Ratio	0.001	-	-	-	0.039
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	92	0	59	0	0	0	0	101	18	57	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.947						0.979				
Flt Protected		0.970									0.983	
Satd. Flow (prot)	0	1716	0	0	0	0	0	1854	0	0	1845	0
Flt Permitted		0.970									0.983	
Satd. Flow (perm)	0	1716	0	0	0	0	0	1854	0	0	1845	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	2%	2%	0%	2%
Adj. Flow (vph)	107	0	69	0	0	0	0	117	21	66	122	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	176	0	0	0	0	0	138	0	0	188	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	92	0	59	0	0	0	0	101	18	57	105	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	0	0	2	2	2	2	0	2	2	0	2
Mvmt Flow	107	0	69	0	0	0	0	117	21	66	122	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	383	393	122	122	0	0	138	0	0
Stage 1	255	255	-	-	-	-	-	-	-
Stage 2	128	138	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	607	535	931	1465	-	-	1446	-	-
Stage 1	776	690	-	-	-	-	-	-	-
Stage 2	891	780	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	577	0	931	1465	-	-	1446	-	-
Mov Cap-2 Maneuver	577	0	-	-	-	-	-	-	-
Stage 1	738	0	-	-	-	-	-	-	-
Stage 2	891	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.2	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1465	-	-	678	1446	-	-
HCM Lane V/C Ratio	-	-	-	0.259	0.046	-	-
HCM Control Delay (s)	0	-	-	12.2	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	36	0	62	37	155	0	0	126	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.915						0.947	
Flt Protected					0.982			0.990				
Satd. Flow (prot)	0	0	0	0	1686	0	0	1872	0	0	1794	0
Flt Permitted					0.982			0.990				
Satd. Flow (perm)	0	0	0	0	1686	0	0	1872	0	0	1794	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	40	0	69	41	172	0	0	140	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	109	0	0	213	0	0	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	36	0	62	37	155	0	0	126	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	0	0	0	0	2	2	0	2
Mvmt Flow	0	0	0	40	0	69	41	172	0	0	140	90

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	439	484	172	230	0	0	172	0	0
Stage 1	254	254	-	-	-	-	-	-	-
Stage 2	185	230	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	561	473	873	1350	-	-	1405	-	-
Stage 1	777	691	-	-	-	-	-	-	-
Stage 2	838	709	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	542	0	873	1350	-	-	1405	-	-
Mov Cap-2 Maneuver	542	0	-	-	-	-	-	-	-
Stage 1	751	0	-	-	-	-	-	-	-
Stage 2	838	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	11	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1350	-	-	713	1405	-	-
HCM Lane V/C Ratio	0.03	-	-	0.153	-	-	-
HCM Control Delay (s)	7.8	0	-	11	0	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	809	11	5	837	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.959	
Flt Protected					0.966	
Satd. Flow (prot)	1859	0	0	1881	1956	0
Flt Permitted					0.966	
Satd. Flow (perm)	1859	0	0	1881	1956	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1429			1001	763	
Travel Time (s)	17.7			12.4	17.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	834	11	5	863	7	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	845	0	0	868	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	809	11	5	837	7	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	834	11	5	863	7	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	845	0	1713	840
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	873	-
Critical Hdwy	-	-	4.1	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	800	-	122	386
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	454	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	800	-	121	386
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	449	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	30.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	152	-	-	800	-
HCM Lane V/C Ratio	0.068	-	-	0.006	-
HCM Control Delay (s)	30.4	-	-	9.5	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	36	1123	4	27	294	42	73	136	37	90	54	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.981			0.980			0.988	
Flt Protected	0.950			0.950				0.985			0.972	
Satd. Flow (prot)	1876	1900	0	1581	3139	0	0	1861	0	0	1724	0
Flt Permitted	0.533			0.064				0.835			0.481	
Satd. Flow (perm)	1053	1900	0	107	3139	0	0	1578	0	0	853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					30			7			4	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2935	
Travel Time (s)		23.3			14.7			23.0			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	39	1221	4	29	320	46	79	148	40	98	59	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1225	0	29	366	0	0	267	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	12.0	68.0		12.0	68.0		20.0	20.0		20.0	20.0	
Total Split (%)	12.0%	68.0%		12.0%	68.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	6.0	62.0		6.0	62.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.05	0.98		0.19	0.18			1.12			1.32	
Control Delay	3.9	40.1		6.7	6.6			131.9			225.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.9	40.1		6.7	6.6			131.9			225.3	
Queue Length 50th (ft)	6	~831		4	42			~198			~144	
Queue Length 95th (ft)	13	#1095		11	64			#362			#282	
Internal Link Dist (ft)		1460			890			932			2855	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	782	1247		167	2070			239			130	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.05	0.98		0.17	0.18			1.12			1.32	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 94.8
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	36	1123	4	27	294	42	73	136	37	90	54	14
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1900	1995	1665	1684	1814	1948	1928	1948	1910	1857	1910
Adj Flow Rate, veh/h	39	1221	-7	29	320	35	79	148	29	98	59	4
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	766	1234	0	114	1882	204	116	148	27	146	67	4
Arrive On Green	0.02	0.65	0.00	0.02	0.65	0.65	0.17	0.15	0.15	0.17	0.15	0.15
Sat Flow, veh/h	1881	1900	0	1585	2912	316	456	1017	188	589	456	27
Grp Volume(v), veh/h	39	1214	0	29	175	180	256	0	0	161	0	0
Grp Sat Flow(s),veh/h/ln	1881	1900	0	1585	1600	1628	1662	0	0	1071	0	0
Q Serve(g_s), s	0.7	59.5	0.0	0.6	4.2	4.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	59.5	0.0	0.6	4.2	4.2	14.6	0.0	0.0	14.6	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.19	0.31		0.11	0.61		0.02
Lane Grp Cap(c), veh/h	766	1234	0	114	1034	1052	326	0	0	239	0	0
V/C Ratio(X)	0.05	0.98	0.00	0.25	0.17	0.17	0.78	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	845	1234	0	186	1034	1052	326	0	0	239	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.5	16.3	0.0	25.0	6.7	6.8	40.8	0.0	0.0	40.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	21.9	0.0	0.4	0.4	0.4	10.9	0.0	0.0	6.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	38.2	0.0	0.5	1.9	2.0	7.5	0.0	0.0	4.5	0.0	0.0
LnGrp Delay(d),s/veh	5.6	38.3	0.0	25.4	7.1	7.1	51.7	0.0	0.0	46.2	0.0	0.0
LnGrp LOS	A	D		C	A	A	D			D		
Approach Vol, veh/h		1253			384			256			161	
Approach Delay, s/veh		37.2			8.5			51.7			46.2	
Approach LOS		D			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	68.0		20.0	7.6	68.3		20.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	6.0	62.0		14.0	6.0	62.0		14.0
Max Q Clear Time (g_c+I1), s	2.7	6.2		16.6	2.6	61.5		16.6
Green Ext Time (p_c), s	0.0	8.2		0.0	0.0	0.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	7	11	7	1	51	54	51	121	1	8	88	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.931			0.999			0.999	
Flt Protected		0.986						0.985			0.996	
Satd. Flow (prot)	0	1682	0	0	1702	0	0	1781	0	0	1809	0
Flt Permitted		0.986						0.985			0.996	
Satd. Flow (perm)	0	1682	0	0	1702	0	0	1781	0	0	1809	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		398			388			725			564	
Travel Time (s)		7.8			8.8			14.1			12.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	9	14	9	1	64	68	64	151	1	10	110	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	133	0	0	216	0	0	121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	7	11	7	0	1	51	54	0	51	121	1
Peak Hour Factor	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	9	14	9	0	1	64	67	0	64	151	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.1	8.4	9.3
HCM LOS	A	A	A

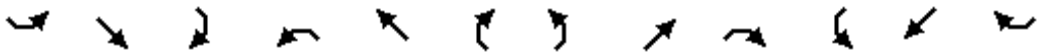
Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	29%	28%	1%	8%
Vol Thru, %	70%	44%	48%	91%
Vol Right, %	1%	28%	51%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	173	25	106	97
LT Vol	51	7	1	8
Through Vol	121	11	51	88
RT Vol	1	7	54	1
Lane Flow Rate	216	31	132	121
Geometry Grp	1	1	1	1
Degree of Util (X)	0.274	0.042	0.166	0.156
Departure Headway (Hd)	4.564	4.827	4.509	4.626
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	787	741	795	775
Service Time	2.589	2.862	2.537	2.654
HCM Lane V/C Ratio	0.274	0.042	0.166	0.156
HCM Control Delay	9.3	8.1	8.4	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.1	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	8	88	1
Peak Hour Factor	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	10	110	1
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	8.5
HCM LOS	A

Lane

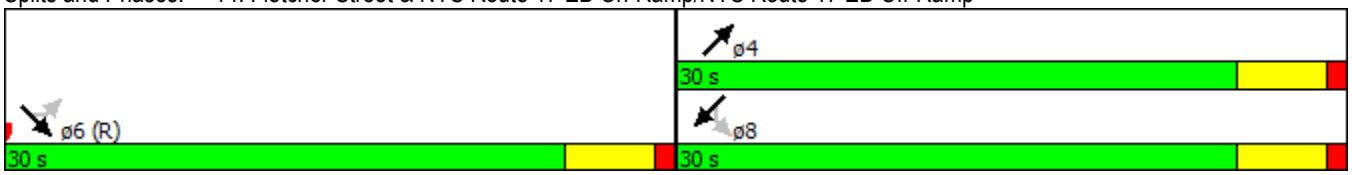


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	53	2	133	0	0	0	0	67	30	74	53	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.905						0.958				
Flt Protected		0.986									0.972	
Satd. Flow (prot)	0	1649	0	0	0	0	0	1783	0	0	1722	0
Flt Permitted		0.986									0.774	
Satd. Flow (perm)	0	1649	0	0	0	0	0	1783	0	0	1371	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		180						41				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		303			283			282			342	
Travel Time (s)		6.9			6.4			6.4			7.8	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	6%	50%	0%	2%	2%	2%	2%	3%	0%	0%	16%	2%
Adj. Flow (vph)	72	3	180	0	0	0	0	91	41	100	72	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	255	0	0	0	0	0	132	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	22.0	22.0						22.0		22.0	22.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.32						0.17			0.30	
Control Delay		5.2						8.6			8.0	
Queue Delay		0.0						0.0			0.0	
Total Delay		5.2						8.6			8.0	
Queue Length 50th (ft)		16						19			19	
Queue Length 95th (ft)		36						37			27	
Internal Link Dist (ft)		223			203			202			262	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		792						766			571	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.32						0.17			0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	53	2	133	0	0	0	0	67	30	74	53	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1848	1890				0	1862	1900	1890	1772	0
Adj Flow Rate, veh/h	72	3	180				0	91	41	100	72	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.74	0.74	0.74				0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	0	50	0				0	3	3	16	16	0
Cap, veh/h	191	8	477				0	507	228	392	256	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.42	0.42	0.00
Sat Flow, veh/h	458	19	1146				0	1217	548	712	615	0
Grp Volume(v), veh/h	255	0	0				0	0	132	172	0	0
Grp Sat Flow(s),veh/h/ln	1623	0	0				0	0	1765	1327	0	0
Q Serve(g_s), s	6.5	0.0	0.0				0.0	0.0	2.8	3.3	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	0.0				0.0	0.0	2.8	6.1	0.0	0.0
Prop In Lane	0.28		0.71				0.00		0.31	0.58		0.00
Lane Grp Cap(c), veh/h	676	0	0				0	0	735	648	0	0
V/C Ratio(X)	0.38	0.00	0.00				0.00	0.00	0.18	0.27	0.00	0.00
Avail Cap(c_a), veh/h	676	0	0				0	0	735	648	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.1	0.0	0.0				0.0	0.0	11.0	12.0	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0				0.0	0.0	0.5	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0				0.0	0.0	1.5	2.1	0.0	0.0
LnGrp Delay(d),s/veh	13.7	0.0	0.0				0.0	0.0	11.6	13.0	0.0	0.0
LnGrp LOS	B								B	B		
Approach Vol, veh/h		255						132			172	
Approach Delay, s/veh		13.7						11.6			13.0	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				4.8		8.5		8.1
Green Ext Time (p_c), s				1.5		1.3		1.5

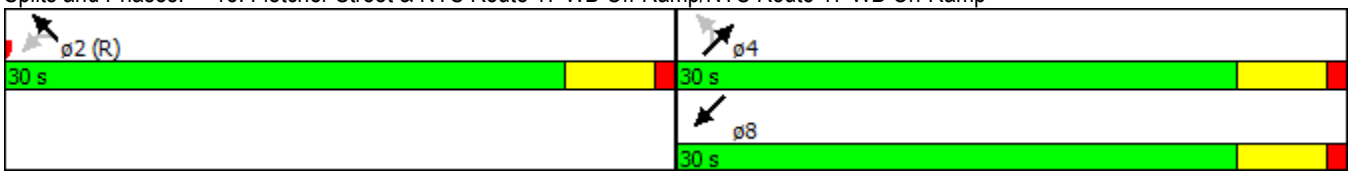
Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	14	0	24	22	98	0	0	113	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.916						0.952	
Flt Protected					0.982			0.991				
Satd. Flow (prot)	0	0	0	0	1701	0	0	1780	0	0	1717	0
Flt Permitted					0.982			0.918				
Satd. Flow (perm)	0	0	0	0	1701	0	0	1649	0	0	1717	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					36						58	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		342			297			342			452	
Travel Time (s)		7.8			6.8			7.8			10.3	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	11%	4%	2%	2%	8%	2%
Adj. Flow (vph)	0	0	0	21	0	35	32	144	0	0	166	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	56	0	0	176	0	0	259	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				22.0	22.0		22.0	22.0			22.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.08			0.26			0.35	
Control Delay					6.1			10.7			10.7	
Queue Delay					0.0			0.0			0.0	
Total Delay					6.1			10.7			10.7	
Queue Length 50th (ft)					4			32			46	
Queue Length 95th (ft)					14			44			61	
Internal Link Dist (ft)		262			217			262			372	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					729			687			749	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.08			0.26			0.35	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	14	0	24	22	98	0	0	113	63
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1890	1890	1890	1796	0	0	1804	1910
Adj Flow Rate, veh/h				21	0	35	32	144	0	0	166	93
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %				0	2	0	4	4	0	0	8	8
Cap, veh/h				262	0	436	152	613	0	0	453	254
Arrive On Green				0.42	0.00	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				628	0	1047	195	1471	0	0	1087	609
Grp Volume(v), veh/h				56	0	0	176	0	0	0	0	259
Grp Sat Flow(s),veh/h/ln				1674	0	0	1665	0	0	0	0	1697
Q Serve(g_s), s				1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3
Cycle Q Clear(g_c), s				1.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	6.3
Prop In Lane				0.37		0.62	0.18		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				698	0	0	765	0	0	0	0	707
V/C Ratio(X)				0.08	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.37
Avail Cap(c_a), veh/h				698	0	0	765	0	0	0	0	707
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				10.6	0.0	0.0	3.0	0.0	0.0	0.0	0.0	12.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	0.7	0.0	0.0	0.0	0.0	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.0	0.0	0.6	0.0	0.0	0.0	0.0	3.2
LnGrp Delay(d),s/veh				10.8	0.0	0.0	3.7	0.0	0.0	0.0	0.0	13.5
LnGrp LOS				B			A					B
Approach Vol, veh/h					56			176			259	
Approach Delay, s/veh					10.8			3.7			13.5	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		3.2		3.2				8.3
Green Ext Time (p_c), s		0.2		2.4				2.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	49	1046	28	81	652	55	133	148	33	71	73	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.988			0.986			0.974	
Flt Protected	0.950			0.950				0.979			0.980	
Satd. Flow (prot)	1876	1894	0	1581	3158	0	0	1861	0	0	1717	0
Flt Permitted	0.319			0.072				0.738			0.674	
Satd. Flow (perm)	630	1894	0	120	3158	0	0	1403	0	0	1181	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			14			5			11	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2983	
Travel Time (s)		23.3			14.7			23.0			45.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	53	1137	30	88	709	60	145	161	36	77	79	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	1167	0	88	769	0	0	342	0	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	12.0	61.0		12.0	61.0		27.0	27.0		27.0	27.0	
Total Split (%)	12.0%	61.0%		12.0%	61.0%		27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	6.0	55.0		6.0	55.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.12	1.09		0.55	0.43			1.12			0.73	
Control Delay	6.4	78.8		26.0	13.2			124.0			52.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.4	78.8		26.0	13.2			124.0			52.6	
Queue Length 50th (ft)	10	~864		18	140			~256			110	
Queue Length 95th (ft)	23	#1119		#62	187			#434			#220	
Internal Link Dist (ft)		1460			890			932			2903	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	463	1071		164	1801			306			263	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.11	1.09		0.54	0.43			1.12			0.73	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 97.5
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	49	1046	28	81	652	55	133	148	33	71	73	34
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1902	1995	1665	1683	1814	1948	1928	1948	1910	1861	1910
Adj Flow Rate, veh/h	53	1137	19	88	709	49	145	161	25	77	79	26
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	455	1048	18	137	1750	121	188	163	24	154	143	41
Arrive On Green	0.02	0.56	0.56	0.04	0.58	0.58	0.23	0.21	0.21	0.23	0.21	0.21
Sat Flow, veh/h	1881	1865	31	1585	3034	210	632	758	114	472	668	190
Grp Volume(v), veh/h	53	0	1156	88	373	385	331	0	0	182	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1896	1585	1598	1646	1504	0	0	1330	0	0
Q Serve(g_s), s	1.2	0.0	55.0	2.3	12.6	12.6	9.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	55.0	2.3	12.6	12.6	21.3	0.0	0.0	11.5	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.13	0.44		0.08	0.42		0.14
Lane Grp Cap(c), veh/h	455	0	1065	137	922	949	406	0	0	365	0	0
V/C Ratio(X)	0.12	0.00	1.09	0.64	0.40	0.41	0.82	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	523	0	1065	171	922	949	406	0	0	365	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	21.5	23.7	11.4	11.4	38.4	0.0	0.0	34.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	53.8	2.5	1.3	1.3	11.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	44.3	1.4	5.8	6.0	9.8	0.0	0.0	4.3	0.0	0.0
LnGrp Delay(d),s/veh	9.3	0.0	75.2	26.2	12.8	12.7	49.7	0.0	0.0	34.3	0.0	0.0
LnGrp LOS	A		F	C	B	B	D			C		
Approach Vol, veh/h		1209			846			331			182	
Approach Delay, s/veh		72.3			14.1			49.7			34.3	
Approach LOS		E			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	62.5		27.0	9.9	61.0		27.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	6.0	55.0		21.0	6.0	55.0		21.0
Max Q Clear Time (g_c+I1), s	3.2	14.6		23.3	4.3	57.0		13.5
Green Ext Time (p_c), s	0.0	9.5		0.0	0.0	0.0		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	47.6
HCM 2010 LOS	D

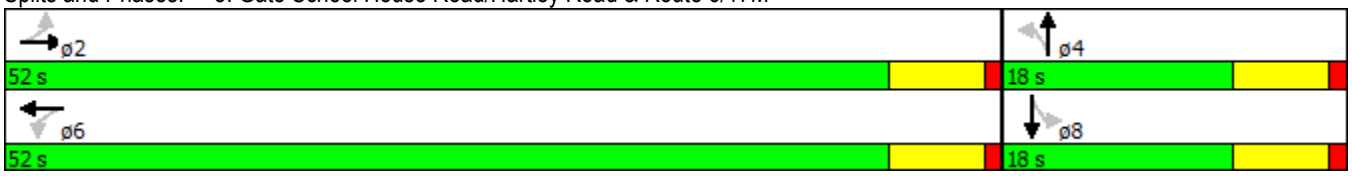
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	978	142	10	680	13	133	18	11	19	11	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.997			0.991			0.959	
Flt Protected					0.999			0.961			0.979	
Satd. Flow (prot)	0	1747	0	0	1785	0	0	1784	0	0	1271	0
Flt Permitted		0.992			0.980			0.732			0.848	
Satd. Flow (perm)	0	1733	0	0	1751	0	0	1359	0	0	1101	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			3			5			14	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	12	1052	153	11	731	14	143	19	12	20	12	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1217	0	0	756	0	0	174	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	52.0	52.0		52.0	52.0		18.0	18.0		18.0	18.0	
Total Split (%)	74.3%	74.3%		74.3%	74.3%		25.7%	25.7%		25.7%	25.7%	
Maximum Green (s)	46.0	46.0		46.0	46.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.03			0.64			0.81			0.25	
Control Delay		49.6			10.0			56.8			23.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		49.6			10.0			56.8			23.1	
Queue Length 50th (ft)		~589			166			70			12	
Queue Length 95th (ft)		#824			273			#163			39	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1181			1187			231			195	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.03			0.64			0.75			0.24	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 72.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	11	978	142	10	680	13	133	18	11	19	11	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1789	1881	1948	1803	1948	1919	1873	1919	1872	1354	1872
Adj Flow Rate, veh/h	12	1052	126	11	731	14	143	19	12	20	12	14
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	59	1061	126	61	1186	22	268	22	14	134	61	51
Arrive On Green	0.71	0.68	0.68	0.71	0.68	0.68	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	6	1555	185	9	1738	33	1239	165	104	411	448	376
Grp Volume(v), veh/h	1190	0	0	756	0	0	174	0	0	46	0	0
Grp Sat Flow(s),veh/h/ln	1746	0	0	1780	0	0	1508	0	0	1235	0	0
Q Serve(g_s), s	10.7	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	41.1	0.0	0.0	14.8	0.0	0.0	7.0	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.01		0.11	0.01		0.02	0.82		0.07	0.43		0.30
Lane Grp Cap(c), veh/h	1299	0	0	1323	0	0	350	0	0	284	0	0
V/C Ratio(X)	0.92	0.00	0.00	0.57	0.00	0.00	0.50	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	1321	0	0	1344	0	0	415	0	0	334	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.8	0.0	0.0	5.7	0.0	0.0	26.8	0.0	0.0	25.2	0.0	0.0
Incr Delay (d2), s/veh	9.8	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.9	0.0	0.0	6.5	0.0	0.0	2.9	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	19.6	0.0	0.0	6.0	0.0	0.0	27.2	0.0	0.0	25.3	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		1190			756			174			46	
Approach Delay, s/veh		19.6			6.0			27.2			25.3	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.2		15.0		51.2		15.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		46.0		12.0		46.0		12.0
Max Q Clear Time (g_c+I1), s		43.1		9.0		16.8		4.1
Green Ext Time (p_c), s		2.1		0.2		9.4		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	61	27	1	90	60	50	117	2	13	78	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.946			0.999				
Flt Protected		0.987						0.985			0.993	
Satd. Flow (prot)	0	1696	0	0	1729	0	0	1781	0	0	1806	0
Flt Permitted		0.987						0.985			0.993	
Satd. Flow (perm)	0	1696	0	0	1729	0	0	1781	0	0	1806	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		395			329			676			535	
Travel Time (s)		7.7			7.5			13.2			12.2	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	72	32	1	106	71	59	138	2	15	92	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	178	0	0	199	0	0	107	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	31	61	27	0	1	90	60	0	50	117	2
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	36	72	32	0	1	106	71	0	59	138	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.2	9.8
HCM LOS	A	A	A

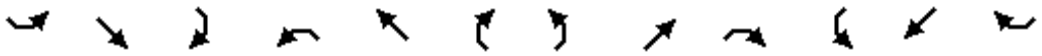
Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	30%	26%	1%	14%
Vol Thru, %	69%	51%	60%	86%
Vol Right, %	1%	23%	40%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	119	151	91
LT Vol	50	31	1	13
Through Vol	117	61	90	78
RT Vol	2	27	60	0
Lane Flow Rate	199	140	178	107
Geometry Grp	1	1	1	1
Degree of Util (X)	0.272	0.19	0.231	0.15
Departure Headway (Hd)	4.933	4.884	4.689	5.031
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	724	731	760	708
Service Time	2.992	2.944	2.746	3.097
HCM Lane V/C Ratio	0.275	0.192	0.234	0.151
HCM Control Delay	9.8	9.1	9.2	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.7	0.9	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	13	78	0
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	15	92	0
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	9
HCM LOS	A

Lane

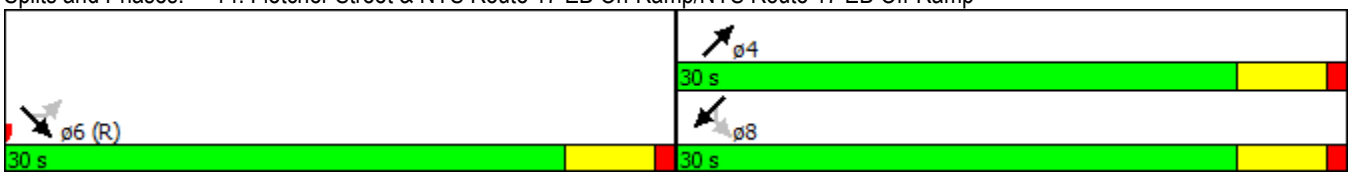


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	211	0	170	0	0	0	0	179	46	144	168	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940						0.972				
Flt Protected		0.973									0.977	
Satd. Flow (prot)	0	1638	0	0	0	0	0	1720	0	0	1709	0
Flt Permitted		0.973									0.638	
Satd. Flow (perm)	0	1638	0	0	0	0	0	1720	0	0	1116	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83						26				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			340			202			336	
Travel Time (s)		7.5			7.7			4.6			7.6	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	6%	0%	5%	2%	2%	2%	2%	8%	5%	7%	9%	2%
Adj. Flow (vph)	293	0	236	0	0	0	0	249	64	200	233	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	529	0	0	0	0	0	313	0	0	433	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	22.0	22.0						22.0		22.0	22.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.72						0.43			0.93	
Control Delay		19.4						13.6			36.8	
Queue Delay		0.1						0.4			0.0	
Total Delay		19.5						14.0			36.8	
Queue Length 50th (ft)		128						69			42	
Queue Length 95th (ft)		155						93			#197	
Internal Link Dist (ft)		252			260			122			256	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		730						731			465	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		5						124			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.73						0.52			0.93	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

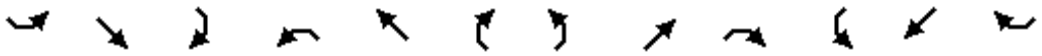
Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	211	0	170	0	0	0	0	179	46	144	168	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1791	1890				0	1769	1900	1890	1749	0
Adj Flow Rate, veh/h	293	0	236				0	249	64	200	233	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.72	0.72	0.72				0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0				0	8	8	9	9	0
Cap, veh/h	374	0	301				0	566	145	259	258	0
Arrive On Green	0.42	0.00	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	897	0	722				0	1359	349	411	618	0
Grp Volume(v), veh/h	529	0	0				0	0	313	433	0	0
Grp Sat Flow(s),veh/h/ln	1619	0	0				0	0	1708	1029	0	0
Q Serve(g_s), s	17.0	0.0	0.0				0.0	0.0	7.9	17.1	0.0	0.0
Cycle Q Clear(g_c), s	17.0	0.0	0.0				0.0	0.0	7.9	25.0	0.0	0.0
Prop In Lane	0.55		0.45				0.00		0.20	0.46		0.00
Lane Grp Cap(c), veh/h	674	0	0				0	0	712	517	0	0
V/C Ratio(X)	0.78	0.00	0.00				0.00	0.00	0.44	0.84	0.00	0.00
Avail Cap(c_a), veh/h	674	0	0				0	0	712	517	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.2	0.0	0.0				0.0	0.0	12.5	6.9	0.0	0.0
Incr Delay (d2), s/veh	8.9	0.0	0.0				0.0	0.0	2.0	15.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	0.0	0.0				0.0	0.0	4.0	8.9	0.0	0.0
LnGrp Delay(d),s/veh	24.1	0.0	0.0				0.0	0.0	14.5	21.9	0.0	0.0
LnGrp LOS	C								B	C		
Approach Vol, veh/h		529						313			433	
Approach Delay, s/veh		24.1						14.5			21.9	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				9.9		19.0		27.0
Green Ext Time (p_c), s				4.1		1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

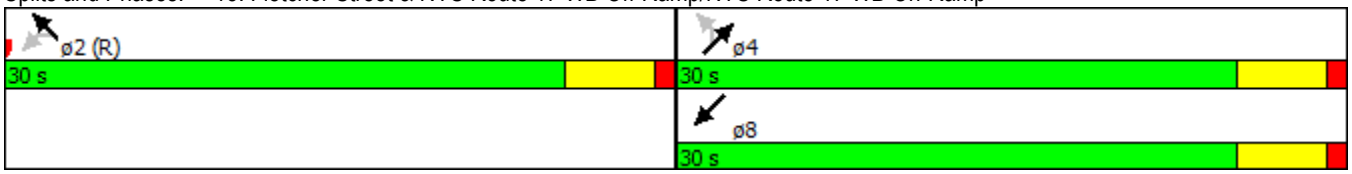


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	40	2	110	44	347	0	0	272	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.903						0.964	
Flt Protected					0.987			0.994				
Satd. Flow (prot)	0	0	0	0	1581	0	0	1814	0	0	1718	0
Flt Permitted					0.987			0.772				
Satd. Flow (perm)	0	0	0	0	1581	0	0	1409	0	0	1718	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					153						38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		418			312			336			432	
Travel Time (s)		9.5			7.1			7.6			9.8	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	2%	2%	2%	3%	0%	8%	24%	1%	2%	2%	9%	2%
Adj. Flow (vph)	0	0	0	56	3	153	61	482	0	0	378	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	212	0	0	543	0	0	517	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.28			0.93			0.70	
Control Delay					5.1			37.8			19.6	
Queue Delay					0.0			0.0			0.0	
Total Delay					5.1			37.8			19.6	
Queue Length 50th (ft)					12			206			136	
Queue Length 95th (ft)					30			#251			163	
Internal Link Dist (ft)		338			232			256			352	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					748			587			738	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.28			0.93			0.70	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	40	2	110	44	347	0	0	272	100
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1774	1890	1890	1825	0	0	1783	1910
Adj Flow Rate, veh/h				56	3	153	61	482	0	0	378	139
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %				0	0	0	1	1	0	0	9	9
Cap, veh/h				171	9	468	96	492	0	0	518	191
Arrive On Green				0.42	0.42	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				411	22	1123	71	1180	0	0	1244	458
Grp Volume(v), veh/h				212	0	0	543	0	0	0	0	517
Grp Sat Flow(s),veh/h/ln				1555	0	0	1251	0	0	0	0	1702
Q Serve(g_s), s				5.5	0.0	0.0	9.7	0.0	0.0	0.0	0.0	15.3
Cycle Q Clear(g_c), s				5.5	0.0	0.0	25.0	0.0	0.0	0.0	0.0	15.3
Prop In Lane				0.26		0.72	0.11		0.00	0.00		0.27
Lane Grp Cap(c), veh/h				648	0	0	588	0	0	0	0	709
V/C Ratio(X)				0.33	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.73
Avail Cap(c_a), veh/h				648	0	0	588	0	0	0	0	709
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				11.8	0.0	0.0	5.7	0.0	0.0	0.0	0.0	14.7
Incr Delay (d2), s/veh				1.3	0.0	0.0	22.4	0.0	0.0	0.0	0.0	6.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	0.0	0.0	8.2	0.0	0.0	0.0	0.0	8.3
LnGrp Delay(d),s/veh				13.2	0.0	0.0	28.2	0.0	0.0	0.0	0.0	21.1
LnGrp LOS				B			C					C
Approach Vol, veh/h					212			543			517	
Approach Delay, s/veh					13.2			28.2			21.1	
Approach LOS					B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		7.5		27.0				17.3
Green Ext Time (p_c), s		1.0		0.0				3.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.8
HCM 2010 LOS	C

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	206	95	2	68	80	76	190	3	14	211	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.928			0.998			0.999	
Flt Protected		0.995			0.999			0.986			0.997	
Satd. Flow (prot)	0	1697	0	0	1694	0	0	1781	0	0	1811	0
Flt Permitted		0.995			0.999			0.986			0.997	
Satd. Flow (perm)	0	1697	0	0	1694	0	0	1781	0	0	1811	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			696			542	
Travel Time (s)		7.7			8.6			13.6			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	39	242	112	2	80	94	89	224	4	16	248	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	393	0	0	176	0	0	317	0	0	266	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	17.6
Intersection LOS	C

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	33	206	95	0	2	68	80	0	76	190	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	39	242	112	0	2	80	94	0	89	224	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	20.9	12.6	17.9
HCM LOS	C	B	C

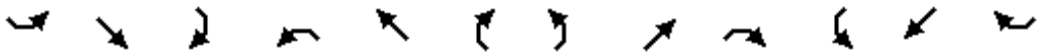
Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	28%	10%	1%	6%
Vol Thru, %	71%	62%	45%	93%
Vol Right, %	1%	28%	53%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	269	334	150	227
LT Vol	76	33	2	14
Through Vol	190	206	68	211
RT Vol	3	95	80	2
Lane Flow Rate	316	393	176	267
Geometry Grp	1	1	1	1
Degree of Util (X)	0.57	0.671	0.319	0.487
Departure Headway (Hd)	6.483	6.151	6.511	6.559
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	554	585	549	547
Service Time	4.546	4.21	4.588	4.625
HCM Lane V/C Ratio	0.57	0.672	0.321	0.488
HCM Control Delay	17.9	20.9	12.6	15.8
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	3.6	5	1.4	2.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	14	211	2
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	16	248	2
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	15.8
HCM LOS	C

Lane

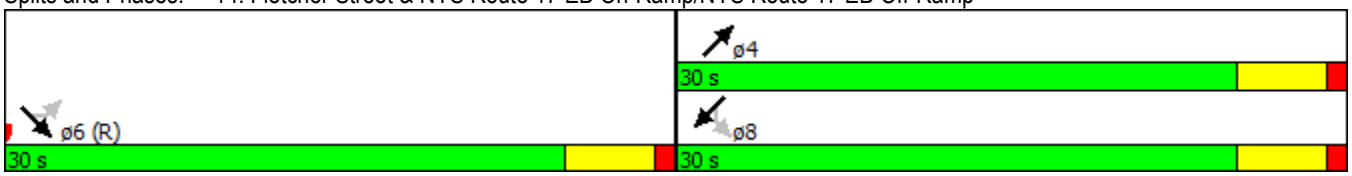


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	121	2	60	0	0	0	0	223	68	77	373	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955						0.968				
Flt Protected		0.968									0.991	
Satd. Flow (prot)	0	1639	0	0	0	0	0	1733	0	0	1776	0
Flt Permitted		0.968									0.882	
Satd. Flow (perm)	0	1639	0	0	0	0	0	1733	0	0	1581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51						32				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	134	2	67	0	0	0	0	248	76	86	414	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	0	0	0	324	0	0	500	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.29						0.44			0.76	
Control Delay		9.9						13.5			18.9	
Queue Delay		0.0						0.0			0.1	
Total Delay		9.9						13.5			19.0	
Queue Length 50th (ft)		34						71			94	
Queue Length 95th (ft)		73						130			#280	
Internal Link Dist (ft)		358			420			77			262	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		712						740			658	
Starvation Cap Reductn		0						0			7	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.29						0.44			0.77	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	121	2	60	0	0	0	0	223	68	77	373	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1773	1890				0	1790	1900	1890	1792	0
Adj Flow Rate, veh/h	134	2	67				0	248	76	86	414	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0				0	8	8	6	6	0
Cap, veh/h	447	7	223				0	548	168	147	563	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1073	16	536				0	1316	403	184	1350	0
Grp Volume(v), veh/h	203	0	0				0	0	324	500	0	0
Grp Sat Flow(s),veh/h/ln	1625	0	0				0	0	1719	1534	0	0
Q Serve(g_s), s	5.0	0.0	0.0				0.0	0.0	8.1	2.8	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.0	0.0				0.0	0.0	8.1	10.9	0.0	0.0
Prop In Lane	0.66		0.33				0.00		0.23	0.17		0.00
Lane Grp Cap(c), veh/h	677	0	0				0	0	716	709	0	0
V/C Ratio(X)	0.30	0.00	0.00				0.00	0.00	0.45	0.70	0.00	0.00
Avail Cap(c_a), veh/h	677	0	0				0	0	716	709	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	0.0	0.0				0.0	0.0	12.6	3.6	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0				0.0	0.0	2.1	5.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0				0.0	0.0	4.2	3.9	0.0	0.0
LnGrp Delay(d),s/veh	12.8	0.0	0.0				0.0	0.0	14.6	9.4	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		203						324			500	
Approach Delay, s/veh		12.8						14.6			9.4	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				10.1		7.0		12.9
Green Ext Time (p_c), s				4.4		0.9		3.9

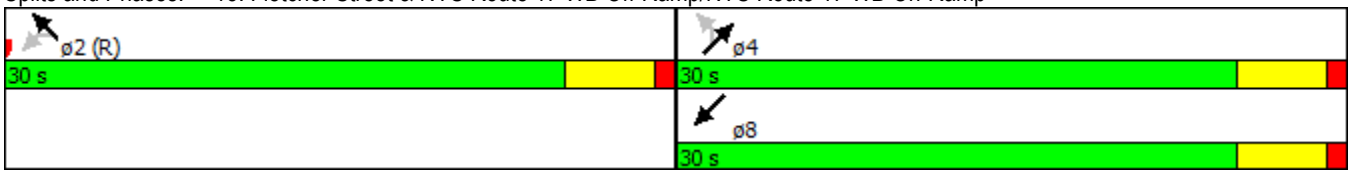
Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	170	2	178	72	273	0	0	280	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931						0.965	
Flt Protected					0.976			0.990				
Satd. Flow (prot)	0	0	0	0	1644	0	0	1735	0	0	1747	0
Flt Permitted					0.976			0.813				
Satd. Flow (perm)	0	0	0	0	1644	0	0	1425	0	0	1747	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					106						36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	183	2	191	77	294	0	0	301	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	376	0	0	371	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
v/c Ratio					0.50			0.63			0.54	
Control Delay					11.9			14.6			15.2	
Queue Delay					0.0			0.0			0.1	
Total Delay					11.9			14.6			15.4	
Queue Length 50th (ft)					65			65			95	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Queue Length 95th (ft)					133			102			168	
Internal Link Dist (ft)		266			284			262			375	
Turn Bay Length (ft)												
Base Capacity (vph)					746			593			748	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					1			0			32	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.50			0.63			0.57	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	170	2	178	72	273	0	0	280	97
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1810	1890	1890	1753	0	0	1811	1910
Adj Flow Rate, veh/h				183	2	191	77	294	0	0	301	104
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	6	6	0	0	7	7
Cap, veh/h				329	4	344	145	487	0	0	536	185
Arrive On Green				0.42	0.42	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				791	9	825	175	1170	0	0	1287	445
Grp Volume(v), veh/h				376	0	0	371	0	0	0	0	405
Grp Sat Flow(s),veh/h/ln				1625	0	0	1345	0	0	0	0	1732
Q Serve(g_s), s				10.5	0.0	0.0	3.6	0.0	0.0	0.0	0.0	10.7
Cycle Q Clear(g_c), s				10.5	0.0	0.0	14.3	0.0	0.0	0.0	0.0	10.7
Prop In Lane				0.49		0.51	0.21		0.00	0.00		0.26
Lane Grp Cap(c), veh/h				677	0	0	633	0	0	0	0	722
V/C Ratio(X)				0.56	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.56
Avail Cap(c_a), veh/h				677	0	0	633	0	0	0	0	722
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				13.3	0.0	0.0	3.6	0.0	0.0	0.0	0.0	13.3
Incr Delay (d2), s/veh				3.3	0.0	0.0	3.9	0.0	0.0	0.0	0.0	3.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.3	0.0	0.0	2.1	0.0	0.0	0.0	0.0	5.7
LnGrp Delay(d),s/veh				16.6	0.0	0.0	7.6	0.0	0.0	0.0	0.0	16.5
LnGrp LOS				B			A					B
Approach Vol, veh/h					376			371			405	
Approach Delay, s/veh					16.6			7.6			16.5	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		12.5		16.3				12.7
Green Ext Time (p_c), s		1.7		3.0				3.7

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	144	48	5	50	61	88	174	3	10	208	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.929			0.999			0.996	
Flt Protected		0.993			0.998			0.984			0.998	
Satd. Flow (prot)	0	1710	0	0	1694	0	0	1779	0	0	1808	0
Flt Permitted		0.993			0.998			0.984			0.998	
Satd. Flow (perm)	0	1710	0	0	1694	0	0	1779	0	0	1808	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		393			417			691			665	
Travel Time (s)		7.7			9.5			13.5			15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	160	53	6	56	68	98	193	3	11	231	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	249	0	0	130	0	0	294	0	0	250	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	32	144	48	0	5	50	61	0	88	174	3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	36	160	53	0	6	56	68	0	98	193	3
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	12.3	10.2	13.2
HCM LOS	B	B	B

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	33%	14%	4%	4%
Vol Thru, %	66%	64%	43%	92%
Vol Right, %	1%	21%	53%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	224	116	225
LT Vol	88	32	5	10
Through Vol	174	144	50	208
RT Vol	3	48	61	7
Lane Flow Rate	294	249	129	250
Geometry Grp	1	1	1	1
Degree of Util (X)	0.454	0.389	0.203	0.386
Departure Headway (Hd)	5.552	5.632	5.666	5.559
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	648	637	630	645
Service Time	3.603	3.688	3.731	3.612
HCM Lane V/C Ratio	0.454	0.391	0.205	0.388
HCM Control Delay	13.2	12.3	10.2	12.1
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.4	1.8	0.8	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	10	208	7
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	11	231	8
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	12.1
HCM LOS	B

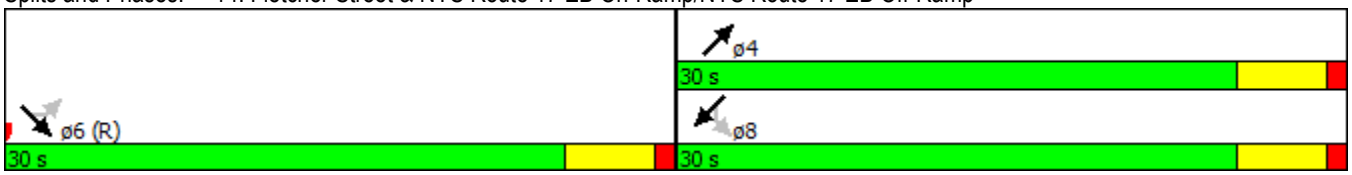
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	139	3	41	0	0	0	0	230	45	54	237	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970						0.978				
Flt Protected		0.963									0.991	
Satd. Flow (prot)	0	1665	0	0	0	0	0	1858	0	0	1837	0
Flt Permitted		0.963									0.894	
Satd. Flow (perm)	0	1665	0	0	0	0	0	1858	0	0	1657	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30						20				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		348			379			150			322	
Travel Time (s)		7.9			8.6			3.4			7.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	0%	0%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Adj. Flow (vph)	148	3	44	0	0	0	0	245	48	57	252	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	0	0	0	0	0	293	0	0	309	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.27						0.37			0.45	
Control Delay		10.9						12.9			10.9	
Queue Delay		0.0						0.1			0.2	
Total Delay		10.9						13.1			11.1	
Queue Length 50th (ft)		37						65			50	
Queue Length 95th (ft)		76						117			83	
Internal Link Dist (ft)		268			299			70			242	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		711						785			690	
Starvation Cap Reductn		0						0			61	
Spillback Cap Reductn		1						76			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.27						0.41			0.49	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	139	3	41	0	0	0	0	230	45	54	237	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1782	1890				0	1900	1900	1890	1853	0
Adj Flow Rate, veh/h	148	3	44				0	245	48	57	252	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0				0	0	0	2	2	0
Cap, veh/h	523	11	155				0	643	126	156	626	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1255	25	373				0	1544	303	203	1503	0
Grp Volume(v), veh/h	195	0	0				0	0	293	309	0	0
Grp Sat Flow(s),veh/h/ln	1654	0	0				0	0	1847	1707	0	0
Q Serve(g_s), s	4.7	0.0	0.0				0.0	0.0	6.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.7	0.0	0.0				0.0	0.0	6.6	2.5	0.0	0.0
Prop In Lane	0.76		0.23				0.00		0.16	0.18		0.00
Lane Grp Cap(c), veh/h	689	0	0				0	0	769	782	0	0
V/C Ratio(X)	0.28	0.00	0.00				0.00	0.00	0.38	0.40	0.00	0.00
Avail Cap(c_a), veh/h	689	0	0				0	0	769	782	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	0.0				0.0	0.0	12.1	3.1	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0				0.0	0.0	1.4	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0				0.0	0.0	3.6	1.5	0.0	0.0
LnGrp Delay(d),s/veh	12.6	0.0	0.0				0.0	0.0	13.6	4.6	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		195						293			309	
Approach Delay, s/veh		12.6						13.6			4.6	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				8.6		6.7		4.5
Green Ext Time (p_c), s				3.1		0.9		3.3

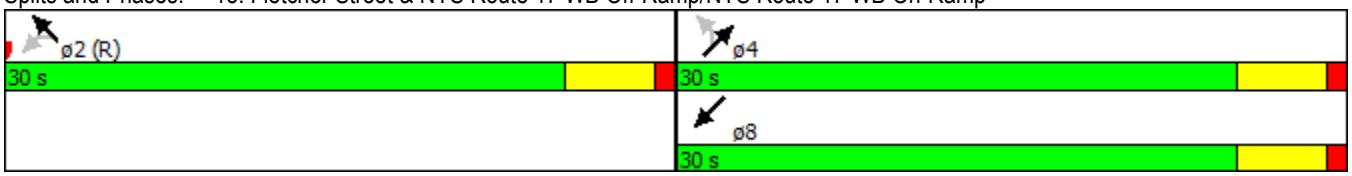
Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	96	0	85	120	251	0	0	195	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.937						0.946	
Flt Protected					0.974			0.984				
Satd. Flow (prot)	0	0	0	0	1677	0	0	1860	0	0	1778	0
Flt Permitted					0.974			0.691				
Satd. Flow (perm)	0	0	0	0	1677	0	0	1306	0	0	1778	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					91						68	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		353			325			322			478	
Travel Time (s)		8.0			7.4			7.3			10.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	1%	0%	5%	0%	0%	2%	2%	2%	1%
Adj. Flow (vph)	0	0	0	105	0	93	132	276	0	0	214	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	198	0	0	408	0	0	356	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.26			0.75			0.46	
Control Delay					7.5			22.2			12.3	
Queue Delay					0.0			0.0			0.0	
Total Delay					7.5			22.2			12.3	
Queue Length 50th (ft)					23			78			69	
Queue Length 95th (ft)					59			#263			131	
Internal Link Dist (ft)		273			245			242			398	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					751			544			780	
Starvation Cap Reductn					0			1			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.26			0.75			0.46	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	96	0	85	120	251	0	0	195	129
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1838	1890	1890	1890	0	0	1879	1910
Adj Flow Rate, veh/h				105	0	93	132	276	0	0	214	142
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				0	0	0	0	0	0	0	2	2
Cap, veh/h				366	0	324	209	400	0	0	440	292
Arrive On Green				0.42	0.00	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				878	0	778	311	959	0	0	1055	700
Grp Volume(v), veh/h				198	0	0	408	0	0	0	0	356
Grp Sat Flow(s),veh/h/ln				1656	0	0	1270	0	0	0	0	1756
Q Serve(g_s), s				4.8	0.0	0.0	5.8	0.0	0.0	0.0	0.0	8.9
Cycle Q Clear(g_c), s				4.8	0.0	0.0	14.7	0.0	0.0	0.0	0.0	8.9
Prop In Lane				0.53		0.47	0.32		0.00	0.00		0.40
Lane Grp Cap(c), veh/h				690	0	0	609	0	0	0	0	732
V/C Ratio(X)				0.29	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.49
Avail Cap(c_a), veh/h				690	0	0	609	0	0	0	0	732
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				11.6	0.0	0.0	4.1	0.0	0.0	0.0	0.0	12.8
Incr Delay (d2), s/veh				1.0	0.0	0.0	5.8	0.0	0.0	0.0	0.0	2.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.3	0.0	0.0	2.8	0.0	0.0	0.0	0.0	4.7
LnGrp Delay(d),s/veh				12.6	0.0	0.0	9.9	0.0	0.0	0.0	0.0	15.1
LnGrp LOS				B			A					B
Approach Vol, veh/h					198			408			356	
Approach Delay, s/veh					12.6			9.9			15.1	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		6.8		16.7				10.9
Green Ext Time (p_c), s		0.9		2.9				4.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	61	26	1	28	64	74	181	1	4	159	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.907						0.999	
Flt Protected		0.987						0.986			0.999	
Satd. Flow (prot)	0	1748	0	0	1706	0	0	1837	0	0	1868	0
Flt Permitted		0.987						0.986			0.999	
Satd. Flow (perm)	0	1748	0	0	1706	0	0	1837	0	0	1868	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	66	28	1	30	69	80	195	1	4	171	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	100	0	0	276	0	0	176	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	30	61	26	0	1	28	64	0	74	181	1
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	32	66	28	0	1	30	69	0	80	195	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.2	8.6	10.5
HCM LOS	A	A	B

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	29%	26%	1%	2%
Vol Thru, %	71%	52%	30%	97%
Vol Right, %	0%	22%	69%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	117	93	164
LT Vol	74	30	1	4
Through Vol	181	61	28	159
RT Vol	1	26	64	1
Lane Flow Rate	275	126	100	176
Geometry Grp	1	1	1	1
Degree of Util (X)	0.364	0.177	0.133	0.236
Departure Headway (Hd)	4.755	5.054	4.77	4.82
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	751	705	745	739
Service Time	2.815	3.125	2.844	2.887
HCM Lane V/C Ratio	0.366	0.179	0.134	0.238
HCM Control Delay	10.5	9.2	8.6	9.4
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.7	0.6	0.5	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	4	159	1
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	171	1
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	9.4
HCM LOS	A

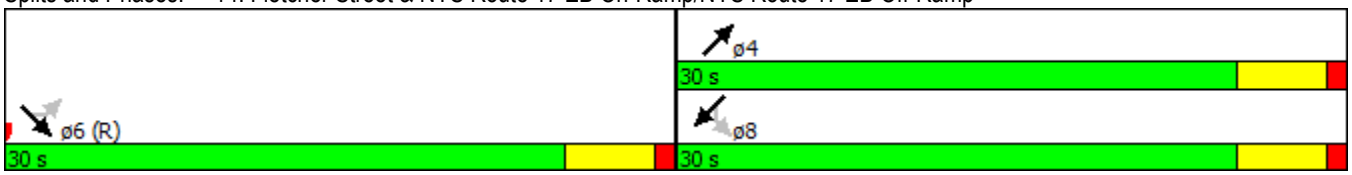
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	92	0	59	0	0	0	0	101	18	57	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.947						0.979				
Flt Protected		0.970									0.983	
Satd. Flow (prot)	0	1716	0	0	0	0	0	1854	0	0	1845	0
Flt Permitted		0.970									0.863	
Satd. Flow (perm)	0	1716	0	0	0	0	0	1854	0	0	1620	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		66						18				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	2%	2%	0%	2%
Adj. Flow (vph)	107	0	69	0	0	0	0	117	21	66	122	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	176	0	0	0	0	0	138	0	0	188	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.23						0.18			0.28	
Control Delay		8.2						10.3			9.1	
Queue Delay		0.0						0.0			0.0	
Total Delay		8.2						10.3			9.1	
Queue Length 50th (ft)		24						26			27	
Queue Length 95th (ft)		54						53			44	
Internal Link Dist (ft)		317			314			84			247	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		753						783			675	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.23						0.18			0.28	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	92	0	59	0	0	0	0	101	18	57	105	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1868	1890				0	1894	1900	1890	1877	0
Adj Flow Rate, veh/h	107	0	69				0	117	21	66	122	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	430	0	277				0	652	117	281	484	0
Arrive On Green	0.42	0.00	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1033	0	666				0	1564	281	479	1161	0
Grp Volume(v), veh/h	176	0	0				0	0	138	188	0	0
Grp Sat Flow(s),veh/h/ln	1699	0	0				0	0	1845	1640	0	0
Q Serve(g_s), s	4.0	0.0	0.0				0.0	0.0	2.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0				0.0	0.0	2.8	1.3	0.0	0.0
Prop In Lane	0.61		0.39				0.00		0.15	0.35		0.00
Lane Grp Cap(c), veh/h	708	0	0				0	0	769	765	0	0
V/C Ratio(X)	0.25	0.00	0.00				0.00	0.00	0.18	0.25	0.00	0.00
Avail Cap(c_a), veh/h	708	0	0				0	0	769	765	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.4	0.0	0.0				0.0	0.0	11.0	3.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0				0.0	0.0	0.5	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0				0.0	0.0	1.5	0.8	0.0	0.0
LnGrp Delay(d),s/veh	12.2	0.0	0.0				0.0	0.0	11.5	3.8	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		176						138			188	
Approach Delay, s/veh		12.2						11.5			3.8	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				4.8		6.0		3.3
Green Ext Time (p_c), s				1.6		0.8		1.6

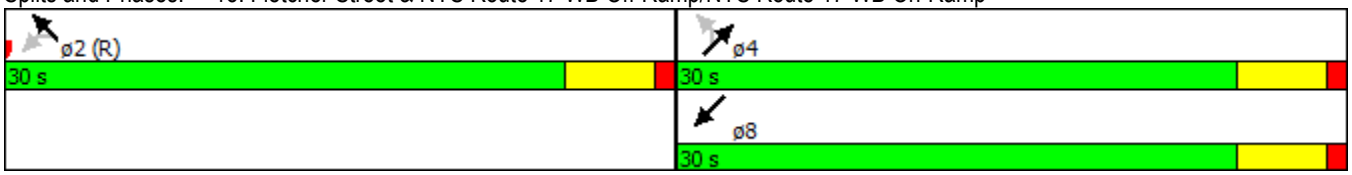
Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	36	0	62	37	155	0	0	126	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.915						0.947	
Flt Protected					0.982			0.990				
Satd. Flow (prot)	0	0	0	0	1686	0	0	1872	0	0	1794	0
Flt Permitted					0.982			0.913				
Satd. Flow (perm)	0	0	0	0	1686	0	0	1726	0	0	1794	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					69						66	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	40	0	69	41	172	0	0	140	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	109	0	0	213	0	0	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.15			0.30			0.29	
Control Delay					5.8			11.5			9.3	
Queue Delay					0.0			0.0			0.0	
Total Delay					5.8			11.5			9.3	
Queue Length 50th (ft)					8			41			36	
Queue Length 95th (ft)					33			76			77	
Internal Link Dist (ft)		277			305			247			398	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					742			719			786	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.15			0.30			0.29	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	36	0	62	37	155	0	0	126	81
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1877	1890	1890	1890	0	0	1895	1910
Adj Flow Rate, veh/h				40	0	69	41	172	0	0	140	90
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				254	0	438	165	636	0	0	449	289
Arrive On Green				0.42	0.00	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				609	0	1051	223	1527	0	0	1079	694
Grp Volume(v), veh/h				109	0	0	213	0	0	0	0	230
Grp Sat Flow(s),veh/h/ln				1661	0	0	1751	0	0	0	0	1772
Q Serve(g_s), s				2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
Cycle Q Clear(g_c), s				2.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	5.2
Prop In Lane				0.37		0.63	0.19		0.00	0.00		0.39
Lane Grp Cap(c), veh/h				692	0	0	801	0	0	0	0	738
V/C Ratio(X)				0.16	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.31
Avail Cap(c_a), veh/h				692	0	0	801	0	0	0	0	738
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				10.9	0.0	0.0	3.0	0.0	0.0	0.0	0.0	11.7
Incr Delay (d2), s/veh				0.5	0.0	0.0	0.8	0.0	0.0	0.0	0.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.0	0.9	0.0	0.0	0.0	0.0	2.8
LnGrp Delay(d),s/veh				11.4	0.0	0.0	3.8	0.0	0.0	0.0	0.0	12.8
LnGrp LOS				B			A					B
Approach Vol, veh/h					109			213			230	
Approach Delay, s/veh					11.4			3.8			12.8	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		4.5		3.5				7.2
Green Ext Time (p_c), s		0.5		2.4				2.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

AMY'S KITCHEN & SCIENCE OF THE SOUL

HCS 2010 RAMP AND WEAVING ANALYSIS

AMY'S KITCHEN & SCIENCE OF THE SOUL

2015 EXISTING CONDITIONS

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	6/11/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes

Description: I-84 Westbound On-Ramp from NYS Route 17M Eastbound - AMEX1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1103	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	42	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	91	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1103	42	91	vph
Peak-hour factor, PHF	0.95	0.95	0.94	
Peak 15-min volume, v15	290	11	24	v
Trucks and buses	6	11	13	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.901	0.885	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1231	49	109	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1231 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1231	4500	No
$v_{FO} = v_F - v_R$	1182	4500	No
v_R	49	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1231 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1231	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 10.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.432

Space mean speed in ramp influence area, S_R = 49.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.4 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	6/11/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes

Description: I-84 Westbound On-Ramp from NYS Route 17M Eastbound - AMEX1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1223	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	62	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	104	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1223	62	104	vph
Peak-hour factor, PHF	0.95	0.95	0.94	
Peak 15-min volume, v15	322	16	28	v
Trucks and buses	6	11	13	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.901	0.885	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1365	72	125	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1365 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1365	4500	No
$v_{FO} = v_F - v_R$	1293	4500	No
v_R	72	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1365 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1365	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_{12}$ = 11.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.434

Space mean speed in ramp influence area, S_R = 49.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.4 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	6/11/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes

Description: I-84 Westbound On-Ramp from NYS Route 17M Eastbound - PMEX1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	945	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	139	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	75	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	945	139	75	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	249	37	19	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1035	151	84	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1035 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1035	4500	No
$v_{FO} = v_F - v_R$	884	4500	No
v_R	151	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1035 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1035	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 L_{12}$ = 8.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.442

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	6/11/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - PMEX1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	960	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	145	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	110	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	960	145	110	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	253	38	28	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1051	157	124	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1051 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1051	4500	No
$v_{FO} = v_F - v_R$	894	4500	No
v_R	157	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1051 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1051	4400	No

Level of Service Determination (if not F)

Density, $D_D = 4.252 + 0.0086 v_R - 0.009 L_{12}$ = 8.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.442

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	6/11/2015
Analysis time period:	SAT Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes

Description: I-84 Westbound On-Ramp from NYS Route 17M Eastbound - SATEX1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	792	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	95	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	68	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	792	95	68	vph
Peak-hour factor, PHF	0.92	0.92	0.96	
Peak 15-min volume, v15	215	26	18	v
Trucks and buses	1	1	3	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.990	0.990	0.971	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	869	104	73	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 869 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	869	4500	No
$v_{FO} = v_F - v_R$	765	4500	No
v_R	104	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 869 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	869	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 7.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.437

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - AMEX2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	703	91	400	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	185	24	105	0	
Trucks and buses	8	13	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.926	0.885	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	799	108	442	0	pc/h

Volume ratio, VR 0.408

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	550	lc/h
Weaving lane changes, LCW	625	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	625	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.194

Average weaving speed, SW	48.5	mi/h
Average non-weaving speed, SNW	48.9	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	48.7	mi/h
Weaving segment density, D	9.2	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.253	
Weaving segment flow rate, v	1257	veh/h
Weaving segment capacity, cW	4972	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6768	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1790	c
		Maximum	Analyzed	
v/c ratio		1.00	0.253	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - AMEX2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	692	104	531	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	182	27	140	0	
Trucks and buses	8	13	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.926	0.885	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	787	124	587	0	pc/h
Volume ratio, VR		0.475			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	711	lc/h
Weaving lane changes, LCW	786	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	786	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.232

Average weaving speed, SW	47.5	mi/h
Average non-weaving speed, SNW	47.5	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	47.5	mi/h
Weaving segment density, D	10.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.298	
Weaving segment flow rate, v	1397	veh/h
Weaving segment capacity, cW	4682	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7531	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1732	c
		Maximum	Analyzed	
v/c ratio		1.00	0.298	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - PMEX2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	525	75	420	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	137	20	109	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	569	85	459	0	pc/h
Volume ratio, VR		0.489			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	544	lc/h
Weaving lane changes, LCW	619	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	619	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.192

Average weaving speed, SW	48.6	mi/h
Average non-weaving speed, SNW	49.3	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	48.9	mi/h
Weaving segment density, D	7.6	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.225	
Weaving segment flow rate, v	1063	veh/h
Weaving segment capacity, cW	4721	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7695	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1719	c
		Maximum	Analyzed	
v/c ratio		1.00	0.225	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - PMEX2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	513	110	447	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	134	29	116	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	556	125	489	0	pc/h

Volume ratio, VR 0.525

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	614	lc/h
Weaving lane changes, LCW	689	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	689	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.209

Average weaving speed, SW	48.1	mi/h
Average non-weaving speed, SNW	48.7	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	48.4	mi/h
Weaving segment density, D	8.1	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.253	
Weaving segment flow rate, v	1115	veh/h
Weaving segment capacity, cW	4397	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8118	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1687	c
		Maximum	Analyzed	
v/c ratio		1.00	0.253	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - SATEX2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	487	68	305	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	127	18	79	0	
Trucks and buses	3	3	4	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.971	0.971	0.962	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	523	73	330	0	pc/h

Volume ratio, VR	0.435	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	403	lc/h
Weaving lane changes, LCW	478	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	478	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.157

Average weaving speed, SW	49.6	mi/h
Average non-weaving speed, SNW	50.6	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	50.2	mi/h
Weaving segment density, D	6.2	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.174	
Weaving segment flow rate, v	896	veh/h
Weaving segment capacity, cW	5147	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7079	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1767	c
		Maximum	Analyzed	
v/c ratio		1.00	0.174	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Exisitng Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - AMEX3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	794	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	311	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	400	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	794	311	400	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	209	82	105	v
Trucks and buses	8	8	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.926	0.926	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	903	354	442	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 903 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1257	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 903 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1257	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 13.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.312	
Space mean speed in ramp influence area,	S_R = 50.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 50.9	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Exisitng Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - AMEX3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	796	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	326	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	531	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	796	326	531	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	209	86	140	v
Trucks and buses	8	8	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.926	0.926	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	905	371	587	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 905 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1276	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 905 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1276	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 13.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.312	
Space mean speed in ramp influence area,	S_R = 50.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 50.9	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Exisitng Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - PMEX3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	600	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	420	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	600	157	420	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	156	41	111	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	650	183	464	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 650 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	833	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 650 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	833	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 9.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Exisitng Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - PMEX3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	623	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	145	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	447	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	623	145	447	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	162	38	118	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	675	169	494	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 675 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	844	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 675 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	844	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 9.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Exisitng Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - SATEX3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	555	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	186	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	305	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	555	186	305	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	149	50	79	v
Trucks and buses	3	4	4	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.962	0.962	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	615	208	327	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 615 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	823	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 615 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	823	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 9.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, M_S = 0.307

Space mean speed in ramp influence area, S_R = 51.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 51.0 mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - AMEX4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	205	89	68	0	veh/h
Peak hour factor, PHF	0.94	0.94	0.94	0.94	
Peak 15-min volume, v15	55	24	18	0	
Trucks and buses	5	7	11	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.952	0.935	0.901	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	229	101	80	0	pc/h

Volume ratio, VR	0.441	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	181	lc/h
Weaving lane changes, LCW	260	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	260	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.093

Average weaving speed, SW	51.6	mi/h
Average non-weaving speed, SNW	53.0	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	52.4	mi/h
Weaving segment density, D	2.6+	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.076	
Weaving segment flow rate, v	386	veh/h
Weaving segment capacity, cW	5043	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7150	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1765	c
		Maximum	Analyzed	
v/c ratio		1.00	0.076	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - AMEX4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	476	175	94	0	veh/h
Peak hour factor, PHF	0.94	0.94	0.94	0.94	
Peak 15-min volume, v15	127	47	25	0	
Trucks and buses	5	7	11	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.952	0.935	0.901	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	532	199	111	0	pc/h
Volume ratio, VR		0.368			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	310	lc/h
Weaving lane changes, LCW	389	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	389	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.127

Average weaving speed, SW	50.5	mi/h
Average non-weaving speed, SNW	51.4	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	51.1	mi/h
Weaving segment density, D	5.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.152	
Weaving segment flow rate, v	793	veh/h
Weaving segment capacity, cW	5223	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6327	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1828	c
		Maximum	Analyzed	
v/c ratio		1.00	0.152	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - PMEX4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	736	86	215	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	192	22	56	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	782	98	231	0	pc/h
Volume ratio, VR		0.296			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	329	lc/h
Weaving lane changes, LCW	408	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	20	lc/h
Total lane changes, LCALL	428	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.137

Average weaving speed, SW	50.2	mi/h
Average non-weaving speed, SNW	50.9	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	50.6	mi/h
Weaving segment density, D	7.3	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.195	
Weaving segment flow rate, v	1081	veh/h
Weaving segment capacity, cW	5553	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5542	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1888	c
		Maximum	Analyzed	
v/c ratio		1.00	0.195	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
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Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - PMEX4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	704	117	279	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	183	30	73	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	748	133	299	0	pc/h
Volume ratio, VR		0.366			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	432	lc/h
Weaving lane changes, LCW	511	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	13	lc/h
Total lane changes, LCALL	524	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.161

Average weaving speed, SW	49.5	mi/h
Average non-weaving speed, SNW	50.0	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.8	mi/h
Weaving segment density, D	7.9	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.213	
Weaving segment flow rate, v	1146	veh/h
Weaving segment capacity, cW	5379	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6304	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1829	c
		Maximum	Analyzed	
v/c ratio		1.00	0.213	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB-SATEX4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	535	86	172	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	139	22	45	0	
Trucks and buses	2	2	2	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.980	0.980	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	568	91	183	0	pc/h
Volume ratio, VR		0.325			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	274	lc/h
Weaving lane changes, LCW	353	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	353	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.118

Average weaving speed, SW	50.8	mi/h
Average non-weaving speed, SNW	51.7	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	51.4	mi/h
Weaving segment density, D	5.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.151	
Weaving segment flow rate, v	827	veh/h
Weaving segment capacity, cW	5479	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5858	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1863	c
		Maximum	Analyzed	
v/c ratio		1.00	0.151	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - AMEX5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	273	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	68	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	89	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	273	68	89	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	72	18	23	v
Trucks and buses	6	16	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.862	0.935	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	305	83	100	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 305 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	305	4500	No
$v_{FO} = v_F - v_R$	222	4500	No
v_R	83	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 305 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	305	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 L_{12}$ = 5.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.435

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - AMEX5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	570	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	92	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	175	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	570	92	175	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	150	24	46	v
Trucks and buses	6	16	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.862	0.935	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	636	112	197	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 636 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	636	4500	No
$v_{FO} = v_F - v_R$	524	4500	No
v_R	112	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 636 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	636	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 8.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.438	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - PMEX5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	951	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	132	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	86	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	951	132	86	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	248	34	23	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1010	144	99	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1010 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1010	4500	No
$v_{FO} = v_F - v_R$	866	4500	No
v_R	144	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 1010 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1010	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 L_{12}$ = 11.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.441

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - PMEX5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	983	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	147	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	117	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	983	147	117	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	256	38	31	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1044	161	134	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1044 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1044	4500	No
$v_{FO} = v_F - v_R$	883	4500	No
v_R	161	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 1044 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1044	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 11.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.442

Space mean speed in ramp influence area, S_R = 49.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	6/11/2015
Analysis time period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - SATEX5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	707	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	115	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	86	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	707	115	86	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	190	31	22	v
Trucks and buses	3	3	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.971	0.980	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	783	127	90	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 783 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	783	4500	No
$v_{FO} = v_F - v_R$	656	4500	No
v_R	127	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 783 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	783	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 9.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

AMY'S KITCHEN & SCIENCE OF THE SOUL

2033 NO-BUILD CONDITIONS

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - AMNB1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1209	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	46	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	103	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1209	46	103	vph
Peak-hour factor, PHF	0.95	0.95	0.94	
Peak 15-min volume, v15	318	12	27	v
Trucks and buses	6	11	13	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.901	0.885	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1349	54	124	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1349 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1349	4500	No
$v_{FO} = v_F - v_R$	1295	4500	No
v_R	54	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1349 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1349	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 11.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.433	
Space mean speed in ramp influence area,	S_R = 49.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.4	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - AMNB1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1340	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	68	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	118	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1340	68	118	vph
Peak-hour factor, PHF	0.95	0.95	0.94	
Peak 15-min volume, v15	353	18	31	v
Trucks and buses	6	11	13	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.901	0.885	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1495	79	142	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1495 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1495	4500	No
$v_{FO} = v_F - v_R$	1416	4500	No
v_R	79	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1495 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1495	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 12.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.435	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - PMNB1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1035	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	152	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	84	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1035	152	84	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	272	40	22	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1133	165	94	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1133 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1133	4500	No
$v_{FO} = v_F - v_R$	968	4500	No
v_R	165	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1133 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1133	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 9.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 49.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - PMNB1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1051	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	159	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	122	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1051	159	122	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	277	42	31	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1151	172	137	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1151 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1151	4500	No
$v_{FO} = v_F - v_R$	979	4500	No
v_R	172	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1151 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1151	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 L_D$ = 9.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.443

Space mean speed in ramp influence area, S_R = 49.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	SAT Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes

Description: I-84 Westbound On-Ramp from NYS Route 17M Eastbound - SATNB1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	867	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	104	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	76	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	867	104	76	vph
Peak-hour factor, PHF	0.92	0.92	0.96	
Peak 15-min volume, v15	236	28	20	v
Trucks and buses	1	1	3	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.990	0.990	0.971	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	952	114	82	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 952 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	952	4500	No
$v_{FO} = v_F - v_R$	838	4500	No
v_R	114	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 952 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	952	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 8.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.438	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - AMNB2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	771	103	438	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	203	27	115	0	
Trucks and buses	8	13	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.926	0.885	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	877	123	484	0	pc/h
Volume ratio, VR		0.409			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	607	lc/h
Weaving lane changes, LCW	682	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	15	lc/h
Total lane changes, LCALL	697	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.211

Average weaving speed, SW	48.0	mi/h
Average non-weaving speed, SNW	48.3	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	48.2	mi/h
Weaving segment density, D	10.3	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.278	
Weaving segment flow rate, v	1382	veh/h
Weaving segment capacity, cW	4969	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6783	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1789	c
		Maximum	Analyzed	
v/c ratio		1.00	0.278	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - AMNB2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	759	118	581	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	200	31	153	0	
Trucks and buses	8	13	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.926	0.885	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	863	140	642	0	pc/h

Volume ratio, VR	0.475	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	782	lc/h
Weaving lane changes, LCW	857	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	12	lc/h
Total lane changes, LCALL	869	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.251

Average weaving speed, SW	47.0	mi/h
Average non-weaving speed, SNW	46.7	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	46.8	mi/h
Weaving segment density, D	11.7	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.328	
Weaving segment flow rate, v	1535	veh/h
Weaving segment capacity, cW	4675	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7540	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1731	c
		Maximum	Analyzed	
v/c ratio		1.00	0.328	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - PMNB2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	576	84	459	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	150	22	120	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	624	95	502	0	pc/h
Volume ratio, VR		0.489			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	597	lc/h
Weaving lane changes, LCW	672	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	672	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.205

Average weaving speed, SW	48.2	mi/h
Average non-weaving speed, SNW	48.7	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	48.5	mi/h
Weaving segment density, D	8.4	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.247	
Weaving segment flow rate, v	1166	veh/h
Weaving segment capacity, cW	4720	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7697	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1719	c
		Maximum	Analyzed	
v/c ratio		1.00	0.247	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - PMNB2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	562	122	489	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	146	32	127	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	609	139	535	0	pc/h
Volume ratio, VR		0.525			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	674	lc/h
Weaving lane changes, LCW	749	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	749	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.223

Average weaving speed, SW	47.7	mi/h
Average non-weaving speed, SNW	48.1	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	47.9	mi/h
Weaving segment density, D	8.9	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.278	
Weaving segment flow rate, v	1222	veh/h
Weaving segment capacity, cW	4393	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8124	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1687	c
		Maximum	Analyzed	
v/c ratio		1.00	0.278	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - SATNB2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	533	76	334	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	139	20	87	0	
Trucks and buses	3	3	4	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.971	0.971	0.962	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	572	82	362	0	pc/h

Volume ratio, VR	0.437	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	444	lc/h
Weaving lane changes, LCW	519	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	519	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.167	

Average weaving speed, SW	49.3	mi/h
Average non-weaving speed, SNW	50.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.8	mi/h
Weaving segment density, D	6.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.191	
Weaving segment flow rate, v	983	veh/h
Weaving segment capacity, cW	5141	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7099	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1765	c
		Maximum	Analyzed	
v/c ratio		1.00	0.191	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - AMNB3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	875	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	345	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	438	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	875	345	438	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	230	91	115	v
Trucks and buses	8	8	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.926	0.926	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	995	392	484	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 995 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1387	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 995 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1387	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 14.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.314

Space mean speed in ramp influence area, S_R = 50.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 50.9 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - AMNB3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	877	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	362	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	581	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	877	362	581	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	231	95	153	v
Trucks and buses	8	8	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.926	0.926	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	997	412	642	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 997 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1409	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 997 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1409	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 14.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.314

Space mean speed in ramp influence area, S_R = 50.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 50.9 mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - PMNB3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	660	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	176	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	459	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	660	176	459	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	172	46	121	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	715	205	507	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 715 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	920	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 715 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	920	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 10.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.308	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - PMNB3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	685	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	489	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	685	163	489	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	178	42	129	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	742	190	540	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 742 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	932	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 742 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	932	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 10.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.308	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - SATNB3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	610	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	206	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	334	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	610	206	334	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	164	55	86	v
Trucks and buses	3	4	4	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.962	0.962	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	676	230	358	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 676 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	906	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 676 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	906	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 10.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.308

Space mean speed in ramp influence area, S_R = 51.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 51.0 mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - AMNB4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	224	97	77	0	veh/h
Peak hour factor, PHF	0.94	0.94	0.94	0.94	
Peak 15-min volume, v15	60	26	20	0	
Trucks and buses	5	7	11	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.952	0.935	0.901	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	250	110	91	0	pc/h
Volume ratio, VR		0.446			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	201	lc/h
Weaving lane changes, LCW	280	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	280	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.098

Average weaving speed, SW	51.4	mi/h
Average non-weaving speed, SNW	52.8	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	52.2	mi/h
Weaving segment density, D	2.9+	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.084	
Weaving segment flow rate, v	424	veh/h
Weaving segment capacity, cW	5031	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7198	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1761	c
		Maximum	Analyzed	
v/c ratio		1.00	0.084	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

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Phone: Fax:
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Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - AMNB4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	521	191	105	0	veh/h
Peak hour factor, PHF	0.94	0.94	0.94	0.94	
Peak 15-min volume, v15	139	51	28	0	
Trucks and buses	5	7	11	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.952	0.935	0.901	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	582	217	124	0	pc/h

Volume ratio, VR 0.369

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	341	lc/h
Weaving lane changes, LCW	420	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	420	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.135

Average weaving speed, SW	50.2	mi/h
Average non-weaving speed, SNW	51.1	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	50.8	mi/h
Weaving segment density, D	6.1	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.167	
Weaving segment flow rate, v	870	veh/h
Weaving segment capacity, cW	5220	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6341	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1827	c
		Maximum	Analyzed	
v/c ratio		1.00	0.167	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
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Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - PMNB4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	807	94	240	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	210	24	63	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	857	107	258	0	pc/h

Volume ratio, VR	0.299	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	365	lc/h
Weaving lane changes, LCW	444	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	35	lc/h
Total lane changes, LCALL	479	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.150

Average weaving speed, SW	49.8	mi/h
Average non-weaving speed, SNW	50.4	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	50.2	mi/h
Weaving segment density, D	8.1	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.214	
Weaving segment flow rate, v	1189	veh/h
Weaving segment capacity, cW	5544	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5570	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1885	c
		Maximum	Analyzed	
v/c ratio		1.00	0.214	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - PMNB4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	772	128	310	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	201	33	81	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	820	145	333	0	pc/h

Volume ratio, VR 0.368

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	478	lc/h
Weaving lane changes, LCW	557	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	27	lc/h
Total lane changes, LCALL	584	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.175

Average weaving speed, SW	49.0	mi/h
Average non-weaving speed, SNW	49.5	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.3	mi/h
Weaving segment density, D	8.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.234	
Weaving segment flow rate, v	1261	veh/h
Weaving segment capacity, cW	5376	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6328	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1828	c
		Maximum	Analyzed	
v/c ratio		1.00	0.234	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB-SATNB4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	586	94	191	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	153	24	50	0	
Trucks and buses	2	2	2	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.980	0.980	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	623	100	203	0	pc/h

Volume ratio, VR 0.327

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	303	lc/h
Weaving lane changes, LCW	382	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	382	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.126

Average weaving speed, SW	50.5	mi/h
Average non-weaving speed, SNW	51.3	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	51.1	mi/h
Weaving segment density, D	6.0	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.166	
Weaving segment flow rate, v	908	veh/h
Weaving segment capacity, cW	5476	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5878	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1862	c
		Maximum	Analyzed	
v/c ratio		1.00	0.166	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - AMNB5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	301	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	76	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	97	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	301	76	97	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	79	20	26	v
Trucks and buses	6	16	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.862	0.935	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	336	93	109	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 336 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	336	4500	No
$v_{FO} = v_F - v_R$	243	4500	No
v_R	93	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 336 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	336	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 5.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.436	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - AMNB5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	626	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	191	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	626	102	191	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	165	27	50	v
Trucks and buses	6	16	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, f_{HV}	0.943	0.862	0.935	
Driver population factor, f_P	1.00	1.00	1.00	
Flow rate, v_p	698	125	215	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 698 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	698	4500	No
$v_{FO} = v_F - v_R$	573	4500	No
v_R	125	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 698 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	698	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 8.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.439	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - PMNB5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1047	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	148	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	94	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1047	148	94	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	273	39	25	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1112	162	108	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1112 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1112	4500	No
$v_{FO} = v_F - v_R$	950	4500	No
v_R	162	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1112 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1112	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 12.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 49.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - PMNB5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1082	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	165	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	128	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1082	165	128	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	282	43	34	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1150	180	147	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1150 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1150	4500	No
$v_{FO} = v_F - v_R$	970	4500	No
v_R	180	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1150 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1150	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 12.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.444

Space mean speed in ramp influence area, S_R = 49.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - SATNB5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	777	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	128	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	94	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	777	128	94	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	209	34	24	v
Trucks and buses	3	3	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.971	0.980	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	861	142	99	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 861 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	861	4500	No
$v_{FO} = v_F - v_R$	719	4500	No
v_R	142	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 861 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	861	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 10.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.441	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

AMY'S KITCHEN & SCIENCE OF THE SOUL

2033 FULL BUILDOUT CONDITIONS

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - AMBD1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1255	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	46	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	145	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1255	46	145	vph
Peak-hour factor, PHF	0.95	0.95	0.94	
Peak 15-min volume, v15	330	12	39	v
Trucks and buses	6	11	13	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, f_{HV}	0.943	0.901	0.885	
Driver population factor, f_P	1.00	1.00	1.00	
Flow rate, v_p	1400	54	174	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1400 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1400	4500	No
$v_{FO} = v_F - v_R$	1346	4500	No
v_R	54	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1400 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1400	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 L_D$ = 11.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.433

Space mean speed in ramp influence area, S_R = 49.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.4 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - AMBD1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1358	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	68	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	136	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1358	68	136	vph
Peak-hour factor, PHF	0.95	0.95	0.94	
Peak 15-min volume, v15	357	18	36	v
Trucks and buses	6	11	13	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.901	0.885	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1515	79	163	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1515 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1515	4500	No
$v_{FO} = v_F - v_R$	1436	4500	No
v_R	79	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1515 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1515	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 12.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.435

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes

Description: I-84 Westbound On-Ramp from NYS Route 17M Eastbound - PMBD1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1073	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	152	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	119	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1073	152	119	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	282	40	31	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1175	165	134	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1175 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1175	4500	No
$v_{FO} = v_F - v_R$	1010	4500	No
v_R	165	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1175 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1175	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 9.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 49.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - PMBD1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1065	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	159	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	136	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1065	159	136	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	280	42	35	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1166	172	153	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1166 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1166	4500	No
$v_{FO} = v_F - v_R$	994	4500	No
v_R	172	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1166 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1166	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 9.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.443	
Space mean speed in ramp influence area,	S_R = 49.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	9/23/2015
Analysis time period:	SAT Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound - SATBD1

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	875	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	104	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	84	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	875	104	84	vph
Peak-hour factor, PHF	0.92	0.92	0.96	
Peak 15-min volume, v15	238	28	22	v
Trucks and buses	1	1	3	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.990	0.990	0.971	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	961	114	90	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 961 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	961	4500	No
$v_{FO} = v_F - v_R$	847	4500	No
v_R	114	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 961 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	961	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 8.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.438	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - AMBD2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	817	145	438	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	215	38	115	0	
Trucks and buses	8	13	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.926	0.885	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	929	172	484	0	pc/h

Volume ratio, VR	0.414	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	656	lc/h
Weaving lane changes, LCW	731	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	25	lc/h
Total lane changes, LCALL	756	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.225	

Average weaving speed, SW	47.7	mi/h
Average non-weaving speed, SNW	47.7	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	47.7	mi/h
Weaving segment density, D	11.1	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.297	
Weaving segment flow rate, v	1474	veh/h
Weaving segment capacity, cW	4958	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6837	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1785	c
		Maximum	Analyzed	
v/c ratio		1.00	0.297	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - AMBD2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	777	136	581	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	204	36	153	0	
Trucks and buses	8	13	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.926	0.885	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	883	162	642	0	pc/h

Volume ratio, VR 0.477

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	804	lc/h
Weaving lane changes, LCW	879	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	16	lc/h
Total lane changes, LCALL	895	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.257

Average weaving speed, SW	46.8	mi/h
Average non-weaving speed, SNW	46.5	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	46.7	mi/h
Weaving segment density, D	12.1+	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.337	
Weaving segment flow rate, v	1573	veh/h
Weaving segment capacity, cW	4663	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7554	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1730	c
		Maximum	Analyzed	
v/c ratio		1.00	0.337	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - PMBD2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	614	119	459	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	160	31	120	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	665	135	502	0	pc/h
Volume ratio, VR		0.489			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	637	lc/h
Weaving lane changes, LCW	712	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	712	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.215

Average weaving speed, SW	47.9	mi/h
Average non-weaving speed, SNW	48.3	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	48.1	mi/h
Weaving segment density, D	9.0	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.263	
Weaving segment flow rate, v	1242	veh/h
Weaving segment capacity, cW	4717	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7701	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1719	c
		Maximum	Analyzed	
v/c ratio		1.00	0.263	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - PMBD2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	576	136	489	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	150	35	127	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	624	154	535	0	pc/h
Volume ratio, VR		0.525			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	689	lc/h
Weaving lane changes, LCW	764	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	764	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.227

Average weaving speed, SW	47.6	mi/h
Average non-weaving speed, SNW	47.9	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	47.8	mi/h
Weaving segment density, D	9.2	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.284	
Weaving segment flow rate, v	1252	veh/h
Weaving segment capacity, cW	4398	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8117	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1687	c
		Maximum	Analyzed	
v/c ratio		1.00	0.284	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps - SATBD2

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	541	84	334	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	141	22	87	0	
Trucks and buses	3	3	4	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.971	0.971	0.962	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	580	90	362	0	pc/h

Volume ratio, VR	0.438

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	452	lc/h
Weaving lane changes, LCW	527	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	527	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.169

Average weaving speed, SW	49.2	mi/h
Average non-weaving speed, SNW	50.1	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.7	mi/h
Weaving segment density, D	6.9	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.194	
Weaving segment flow rate, v	999	veh/h
Weaving segment capacity, cW	5138	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7111	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1764	c
		Maximum	Analyzed	
v/c ratio		1.00	0.194	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - AMBD3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	962	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	378	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	438	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	962	378	438	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	253	99	115	v
Trucks and buses	8	8	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.926	0.926	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1094	430	484	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1094 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1524	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 1094 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1524	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 15.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.316

Space mean speed in ramp influence area, S_R = 50.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 50.9 mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - AMBD3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	913	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	376	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	581	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	913	376	581	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	240	99	153	v
Trucks and buses	8	8	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.926	0.926	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1038	427	642	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1038 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1465	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 1038 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1465	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 14.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.315	
Space mean speed in ramp influence area,	S_R = 50.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 50.9	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - PMBD3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	733	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	203	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	459	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	733	203	459	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	191	53	121	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	794	237	507	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 794 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1031	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 794 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1031	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.309	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - PMBD3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	712	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	174	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	489	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	712	174	489	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	185	45	129	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	771	203	540	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 771 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	974	4500	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12} /2		No	

If yes, v_{12A} = 771 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	974	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 10.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.309	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound - SATBD3

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	213	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	334	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	625	213	334	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	168	57	86	v
Trucks and buses	3	4	4	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.962	0.962	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	692	238	358	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 692 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	930	4500	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12} /2		No	

If yes, v_{12A} = 692 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	930	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 10.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.308	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - AMBD4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	236	97	85	0	veh/h
Peak hour factor, PHF	0.94	0.94	0.94	0.94	
Peak 15-min volume, v15	63	26	23	0	
Trucks and buses	5	7	11	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.952	0.935	0.901	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	264	110	100	0	pc/h

Volume ratio, VR 0.443

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	210	lc/h
Weaving lane changes, LCW	289	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	289	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.101

Average weaving speed, SW	51.3	mi/h
Average non-weaving speed, SNW	52.7	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	52.1	mi/h
Weaving segment density, D	3.0+	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.088	
Weaving segment flow rate, v	445	veh/h
Weaving segment capacity, cW	5037	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7168	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1763	c
		Maximum	Analyzed	
v/c ratio		1.00	0.088	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - AMBD4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	533	191	114	0	veh/h
Peak hour factor, PHF	0.94	0.94	0.94	0.94	
Peak 15-min volume, v15	142	51	30	0	
Trucks and buses	5	7	11	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.952	0.935	0.901	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	595	217	135	0	pc/h

Volume ratio, VR	0.372	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	352	lc/h
Weaving lane changes, LCW	431	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	431	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.138	

Average weaving speed, SW	50.1	mi/h
Average non-weaving speed, SNW	51.0	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	50.6	mi/h
Weaving segment density, D	6.2	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.171	
Weaving segment flow rate, v	892	veh/h
Weaving segment capacity, cW	5214	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6366	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1825	c
		Maximum	Analyzed	
v/c ratio		1.00	0.171	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - PMBD4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	843	94	266	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	220	24	69	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	896	107	285	0	pc/h

Volume ratio, VR	0.304	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	392	lc/h
Weaving lane changes, LCW	471	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	43	lc/h
Total lane changes, LCALL	514	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.159

Average weaving speed, SW	49.5	mi/h
Average non-weaving speed, SNW	50.1	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.9	mi/h
Weaving segment density, D	8.6	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.227	
Weaving segment flow rate, v	1254	veh/h
Weaving segment capacity, cW	5532	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5631	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1881	c
		Maximum	Analyzed	
v/c ratio		1.00	0.227	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB - PMBD4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	788	128	319	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	205	33	83	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	837	145	342	0	pc/h

Volume ratio, VR 0.368

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	487	lc/h
Weaving lane changes, LCW	566	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	31	lc/h
Total lane changes, LCALL	597	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.179

Average weaving speed, SW	48.9	mi/h
Average non-weaving speed, SNW	49.4	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.2	mi/h
Weaving segment density, D	9.0	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.239	
Weaving segment flow rate, v	1287	veh/h
Weaving segment capacity, cW	5376	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6323	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1828	c
		Maximum	Analyzed	
v/c ratio		1.00	0.239	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	9/23/2015
Analysis Time Period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB-SATBD4

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	600	94	203	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	156	24	53	0	
Trucks and buses	2	2	2	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.980	0.980	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	638	100	216	0	pc/h
Volume ratio, VR		0.331			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	316	lc/h
Weaving lane changes, LCW	395	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	395	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.129

Average weaving speed, SW	50.4	mi/h
Average non-weaving speed, SNW	51.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	50.9	mi/h
Weaving segment density, D	6.2	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.171	
Weaving segment flow rate, v	935	veh/h
Weaving segment capacity, cW	5468	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5921	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1859	c
		Maximum	Analyzed	
v/c ratio		1.00	0.171	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 6:00-7:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - AMBD5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	321	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	86	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	97	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	321	86	97	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	84	23	26	v
Trucks and buses	6	16	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.862	0.935	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	358	105	109	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 358 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	358	4500	No
$v_{FO} = v_F - v_R$	253	4500	No
v_R	105	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 358 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	358	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 5.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.437

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	AM Peak Hour 7:30-8:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - AMBD5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	647	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	113	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	191	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	647	113	191	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	170	30	50	v
Trucks and buses	6	16	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.862	0.935	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	722	138	215	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 722 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	722	4500	No
$v_{FO} = v_F - v_R$	584	4500	No
v_R	138	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 722 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	722	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 8.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.440	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 3:00-4:00
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - PMBD5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1109	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	94	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1109	181	94	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	289	47	25	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1178	198	108	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1178 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1178	4500	No
$v_{FO} = v_F - v_R$	980	4500	No
v_R	198	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1178 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1178	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 12.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.446	
Space mean speed in ramp influence area,	S_R = 49.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.2	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	PM Peak Hour 4:30-5:30
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - PMBD5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1101	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	175	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	128	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1101	175	128	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	287	46	34	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1170	191	147	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1170 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1170	4500	No
$v_{FO} = v_F - v_R$	979	4500	No
v_R	191	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1170 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1170	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 12.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.445

Space mean speed in ramp influence area, S_R = 49.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.2 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	9/23/2015
Analysis time period:	Saturday Peak Hour
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB - SATBD5

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	803	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	142	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	94	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	803	142	94	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	216	38	24	v
Trucks and buses	3	3	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.971	0.980	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	889	157	99	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 889 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	889	4500	No
$v_{FO} = v_F - v_R$	732	4500	No
v_R	157	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 889 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	889	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 10.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.442	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

AMY'S KITCHEN & SCIENCE OF THE SOUL

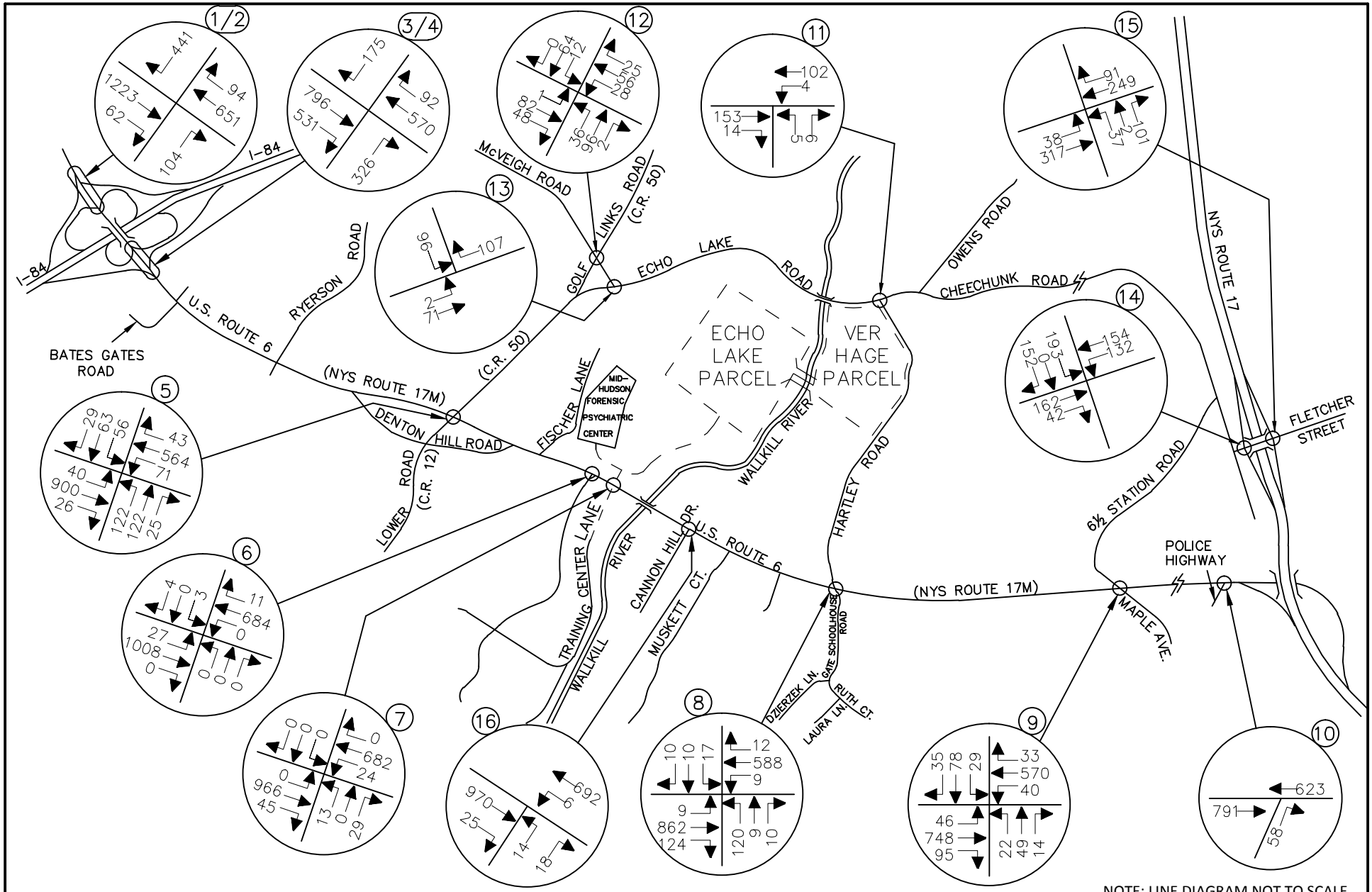
APPENDIX E

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS ANALYSIS

AMY'S KITCHEN & SCIENCE OF THE SOUL

FIGURES

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS ANALYSIS



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Customer Loyalty *through* Client Satisfaction

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11 Bradhurst Avenue
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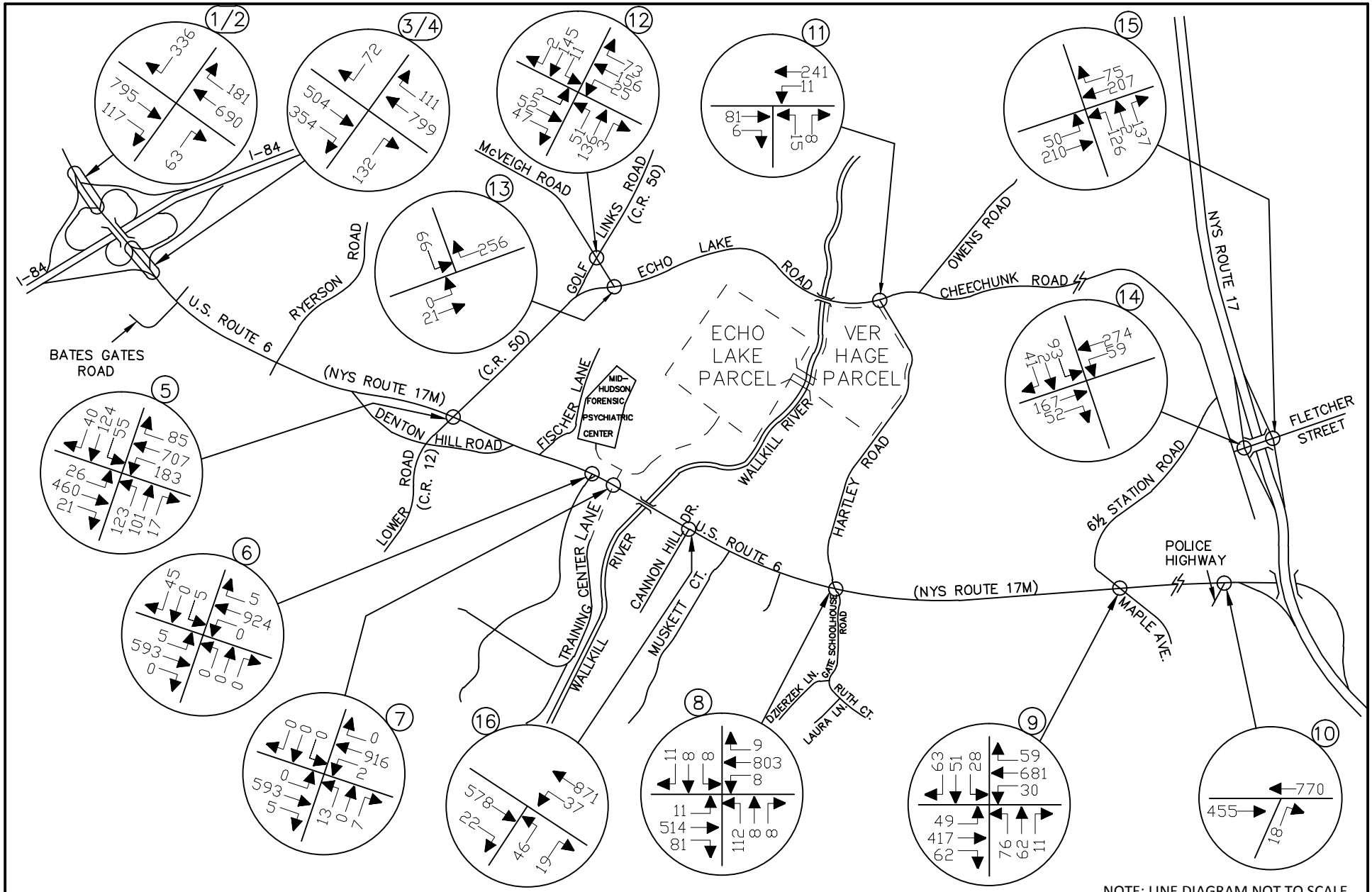
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
(8:30 AM - 9:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
2–E	



NOTE: LINE DIAGRAM NOT TO SCALE

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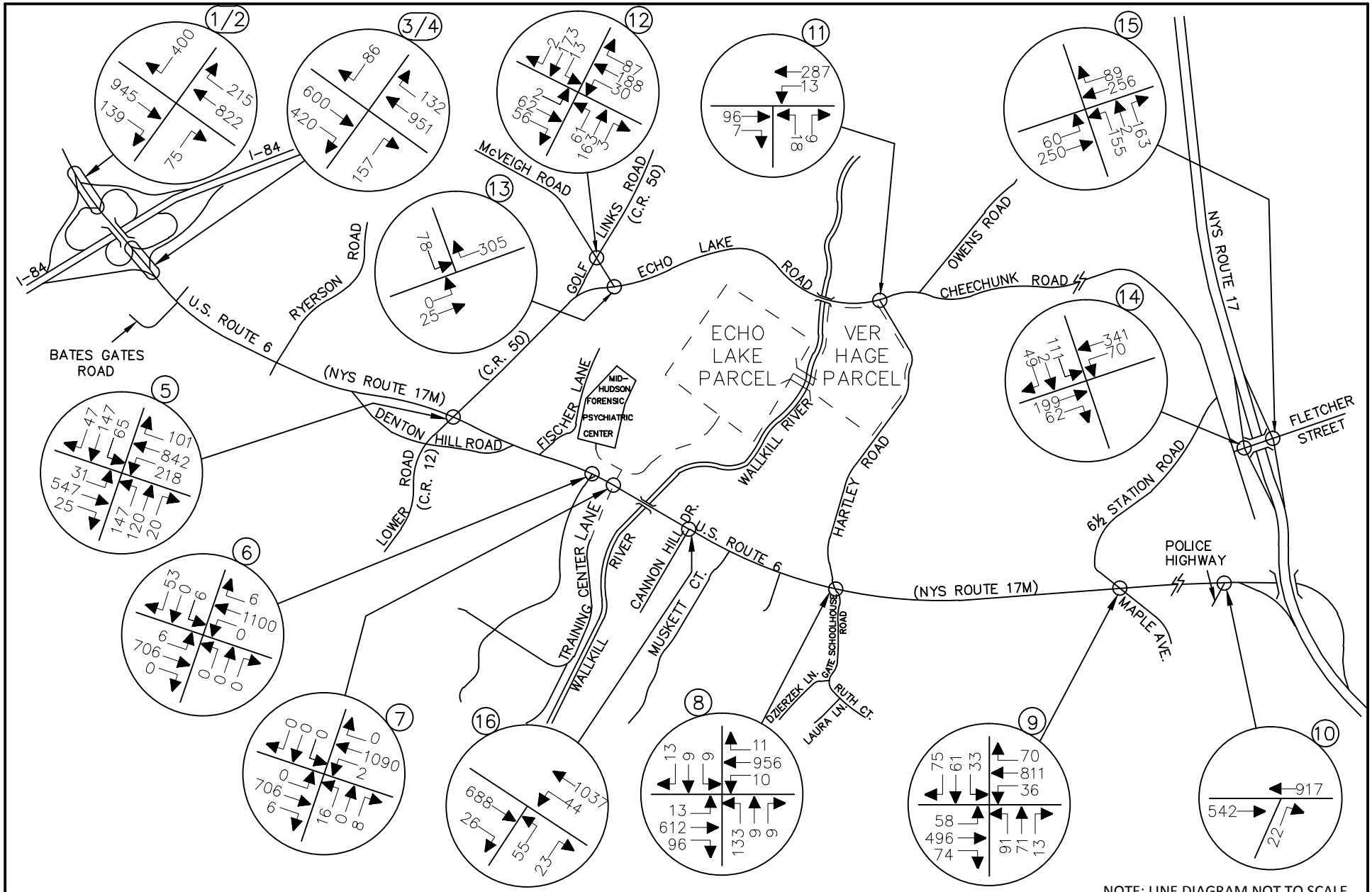
email: solutions @ maserconsulting.com

AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
3–E	



NOTE: LINE DIAGRAM NOT TO SCALE

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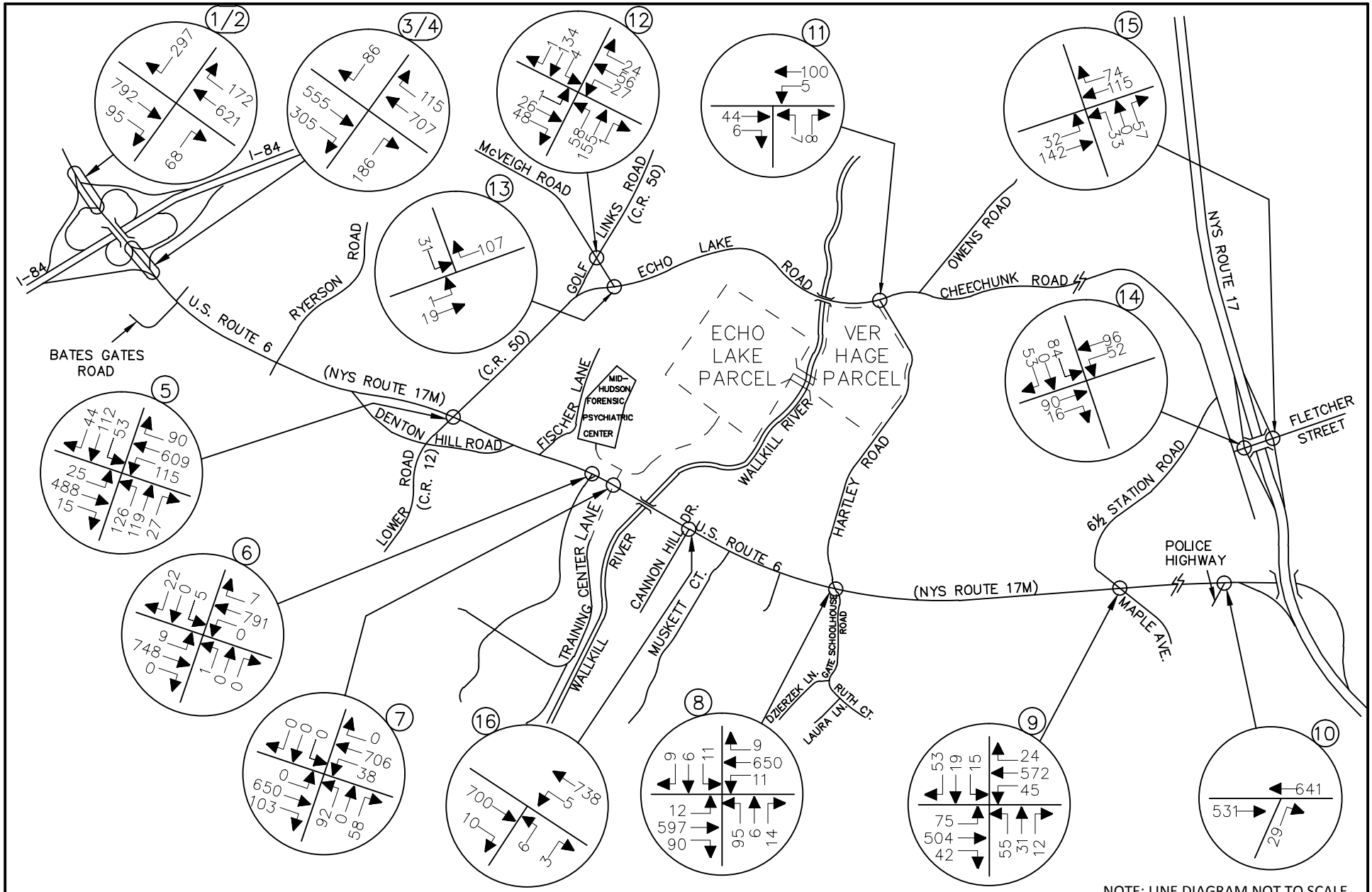
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
4–E	



NOTE: LINE DIAGRAM NOT TO SCALE

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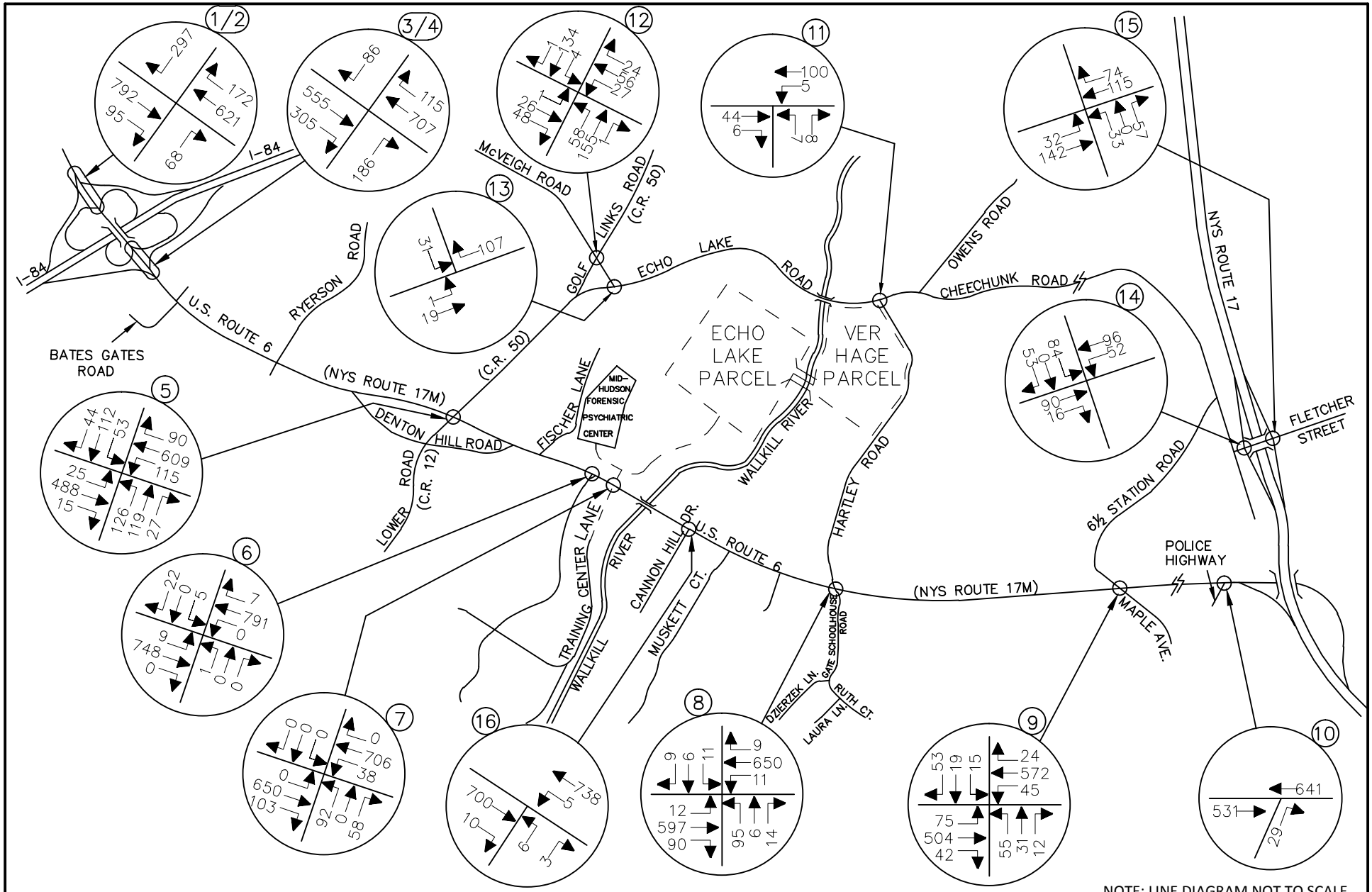
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
5–E	



NOTE: LINE DIAGRAM NOT TO SCALE

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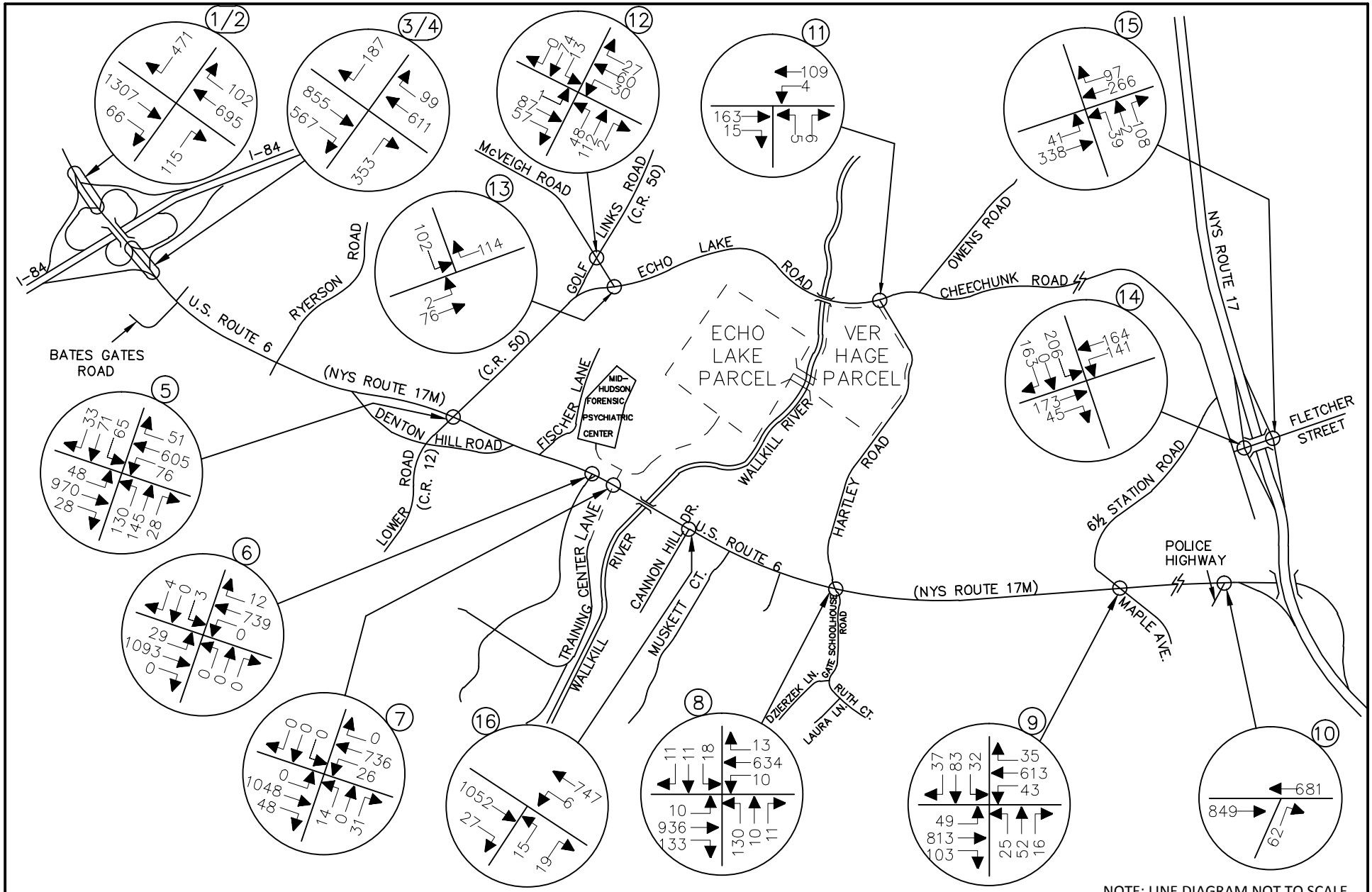
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
6–E	



NOTE: LINE DIAGRAM NOT TO SCALE

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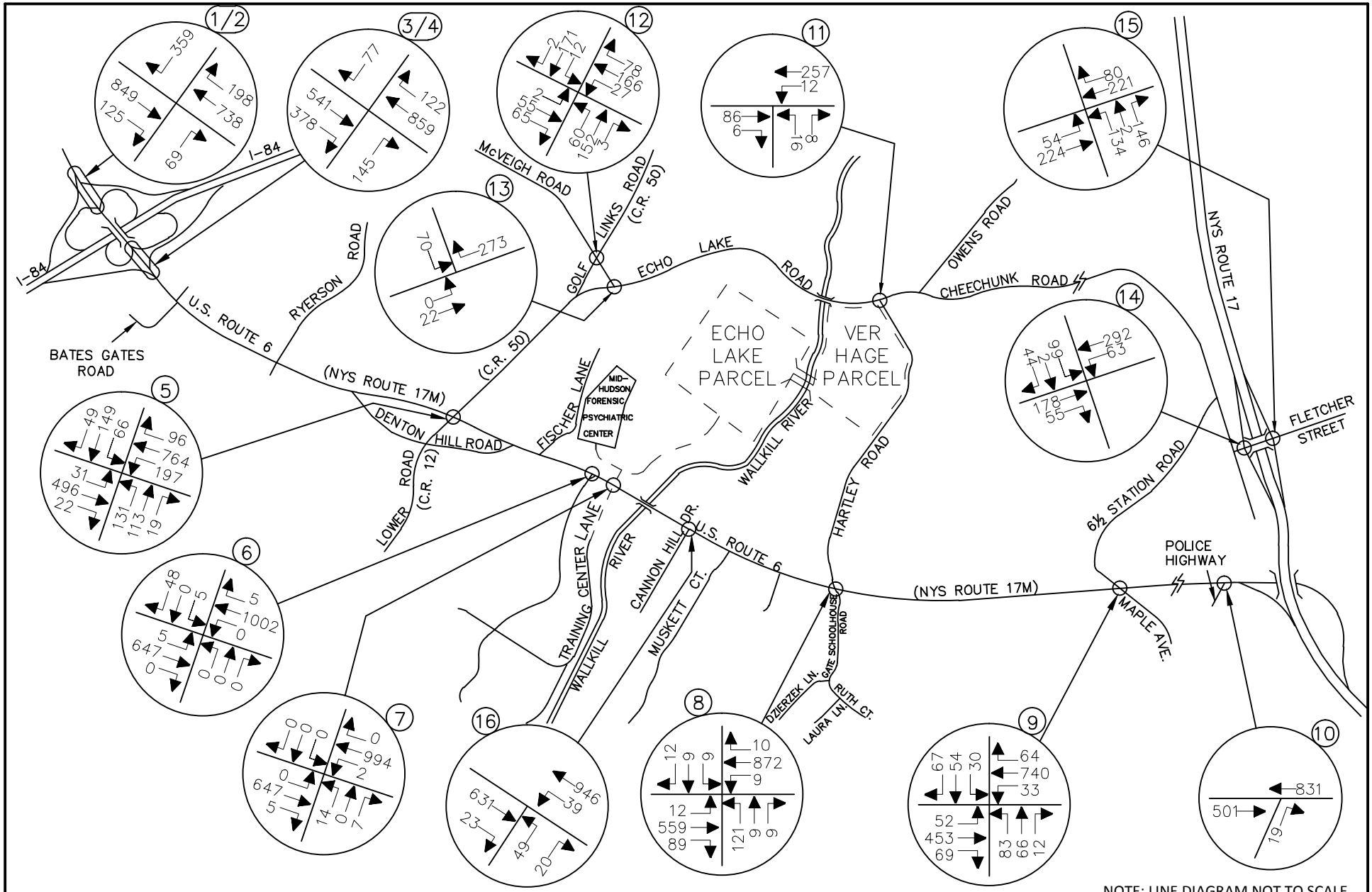
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
(8:30 AM - 9:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
17–E	



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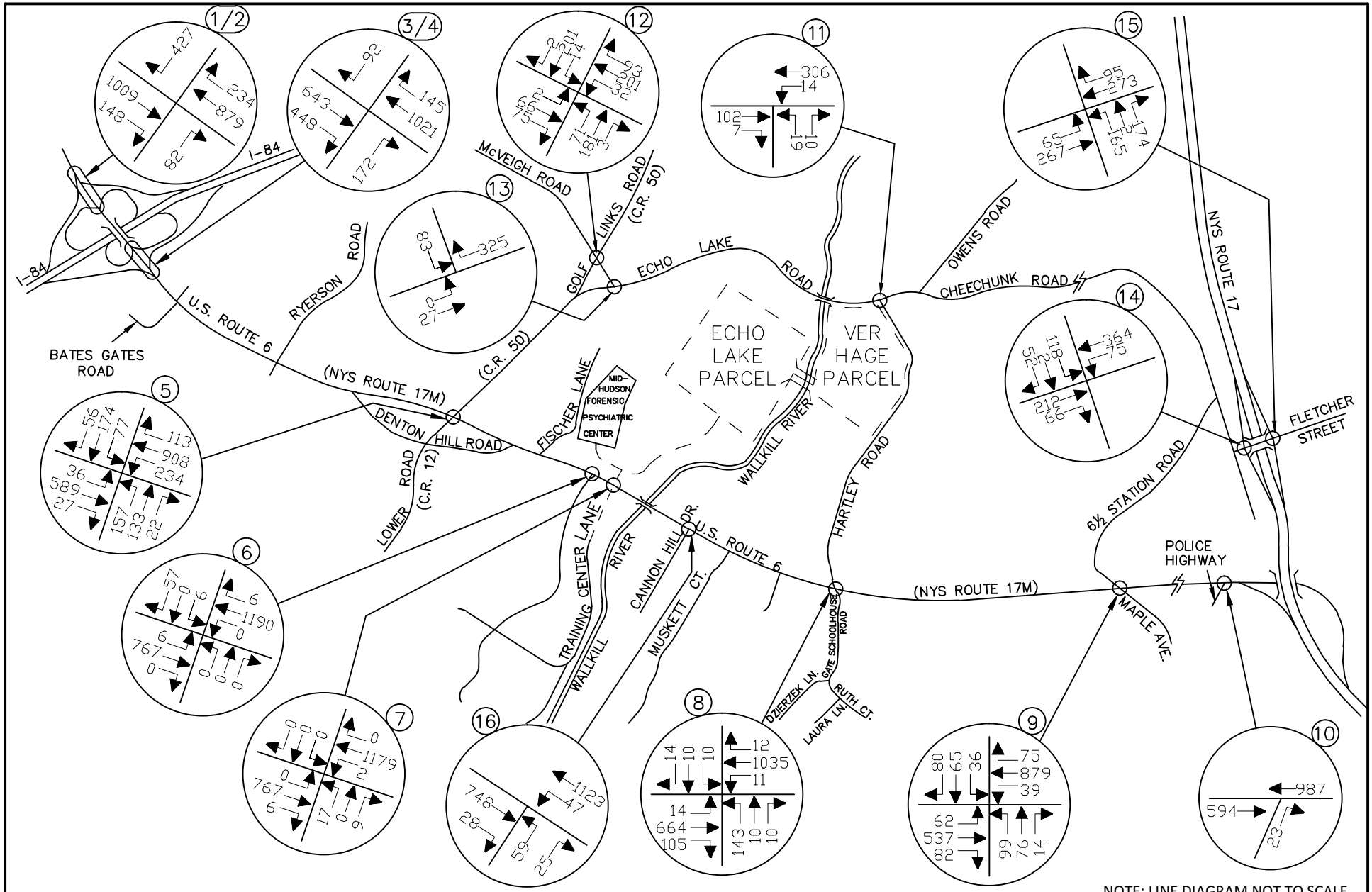
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
18–E	



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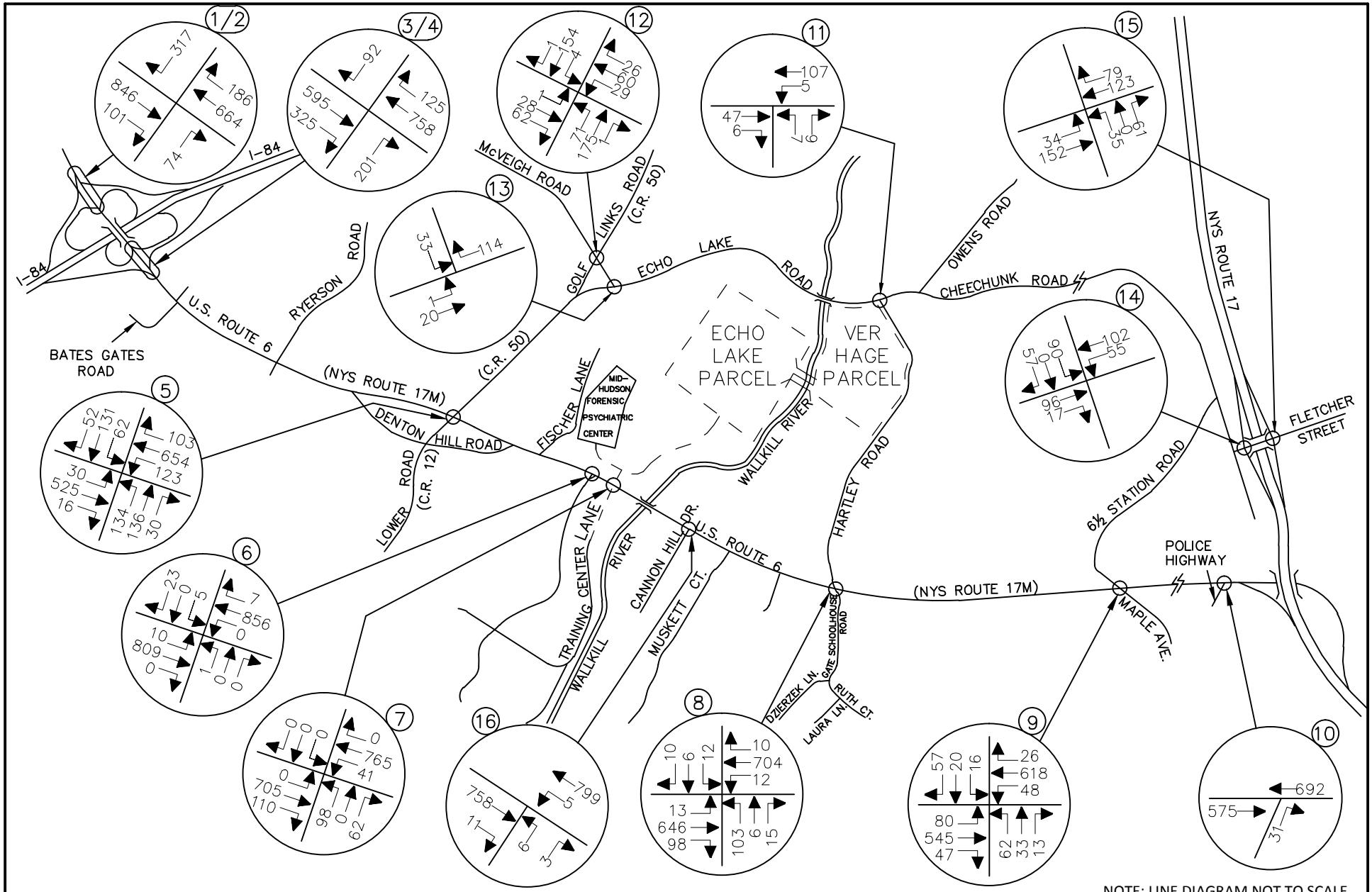
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
19–E	



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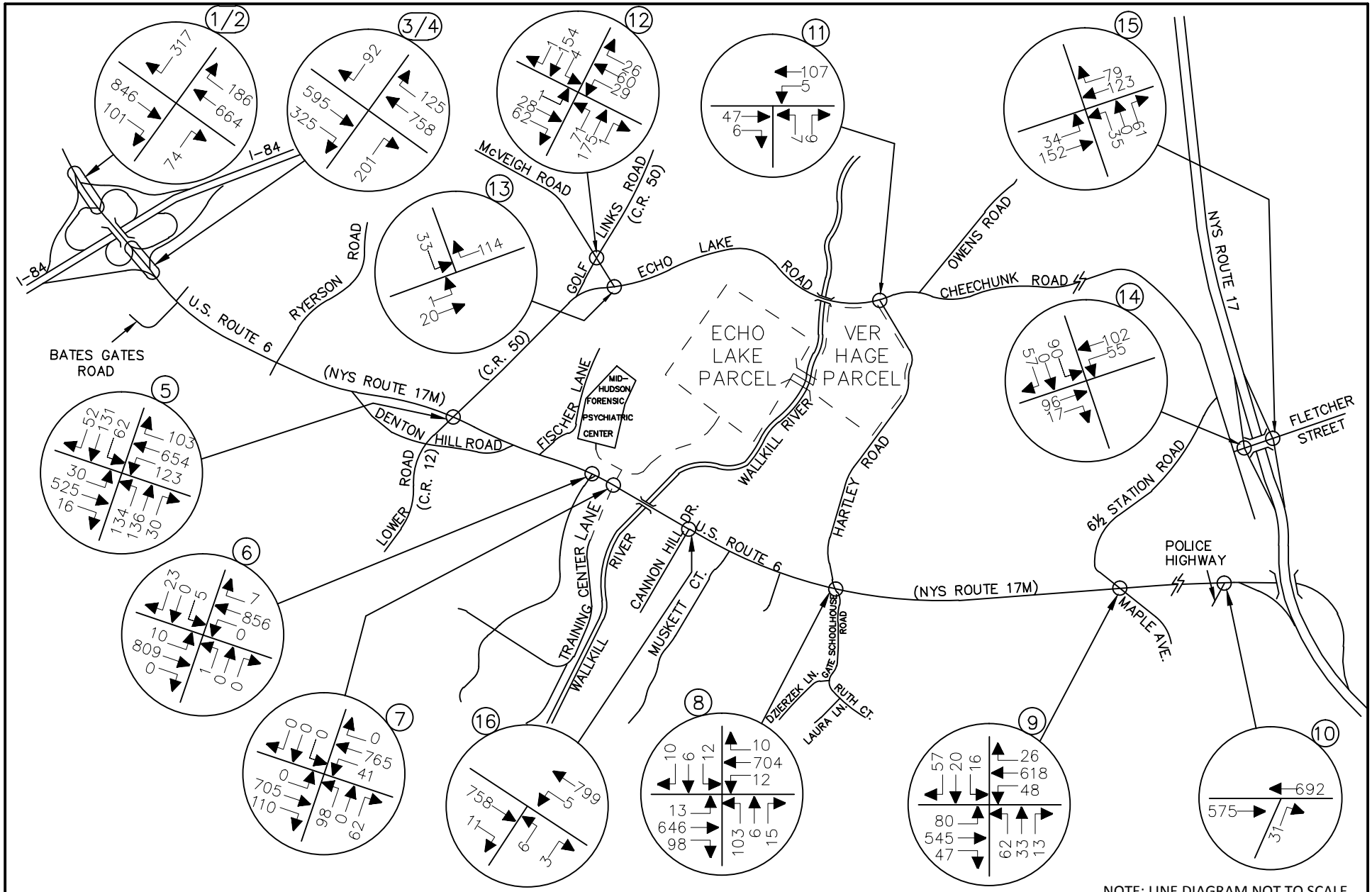
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
20–E	



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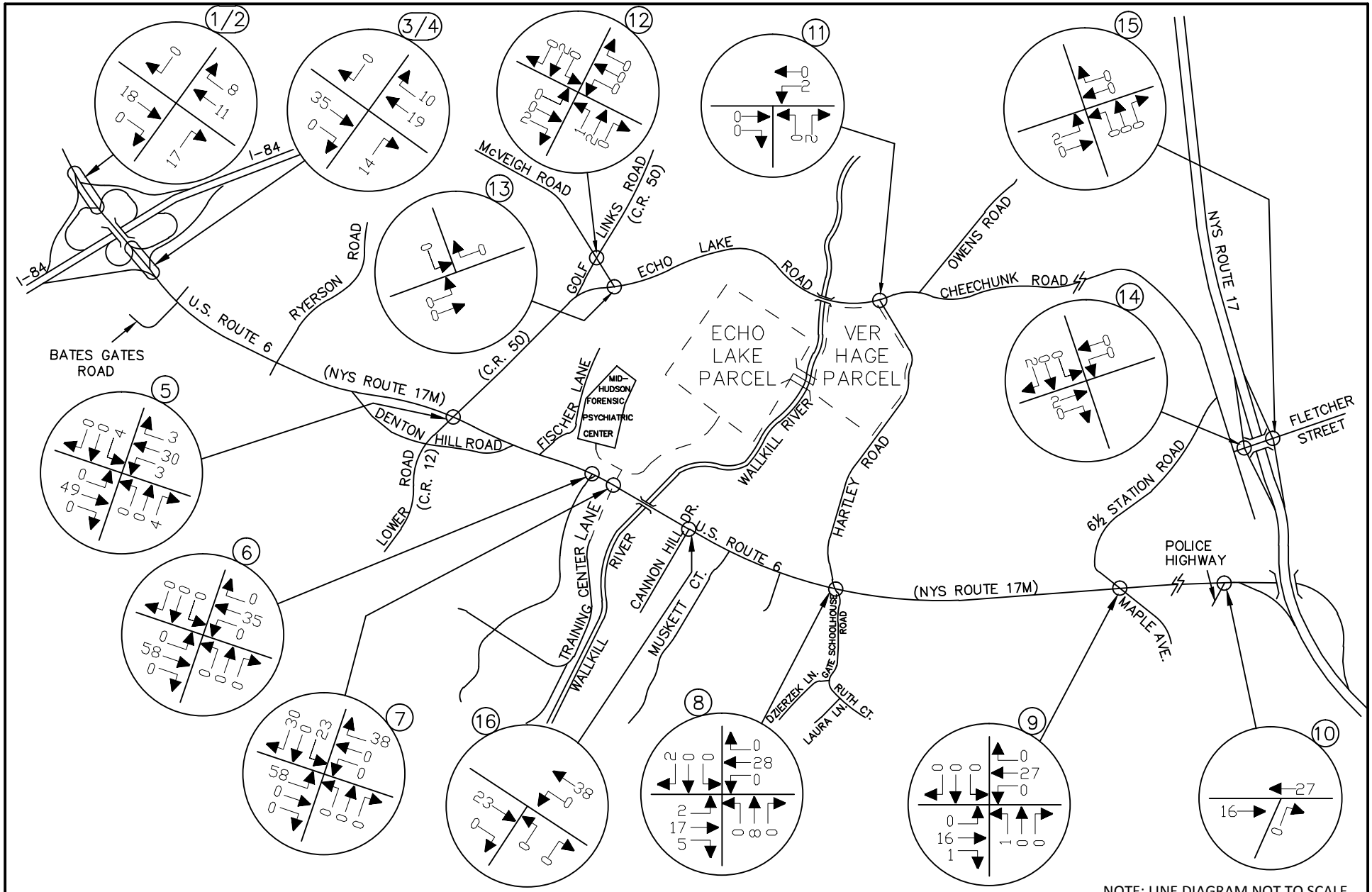
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
21–E	



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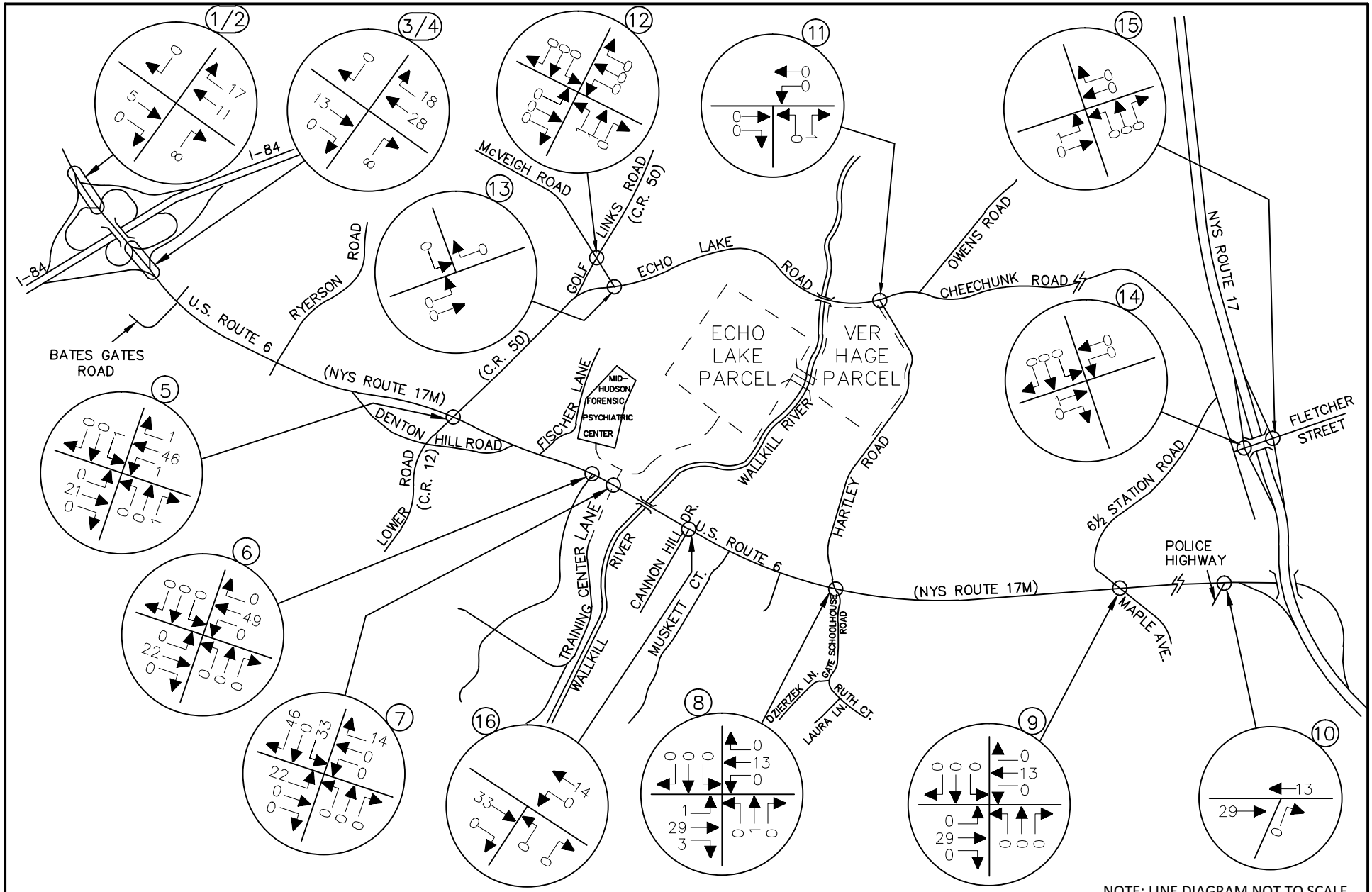
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
(8:30 AM - 9:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
22–E	



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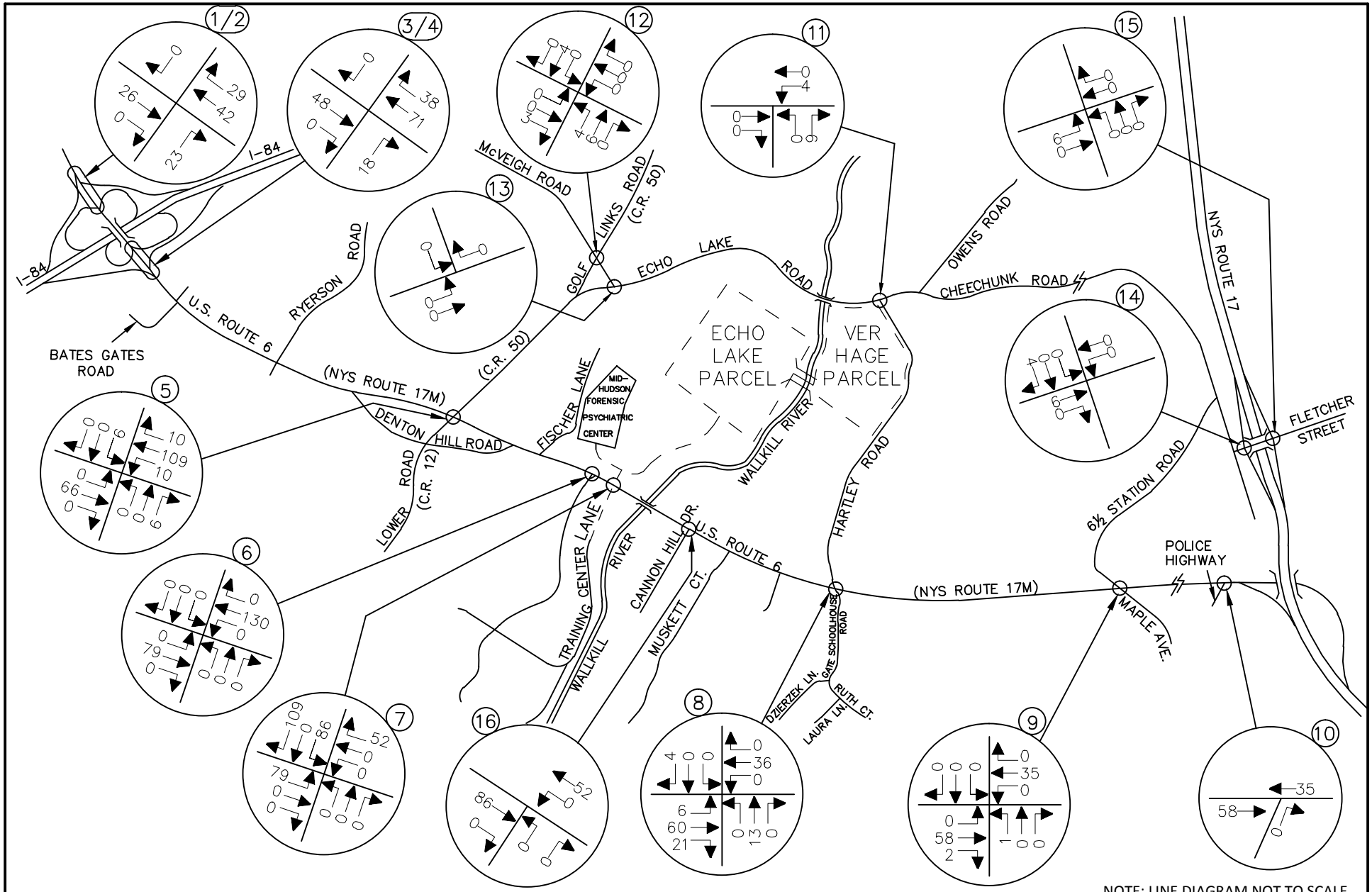
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
23–E	



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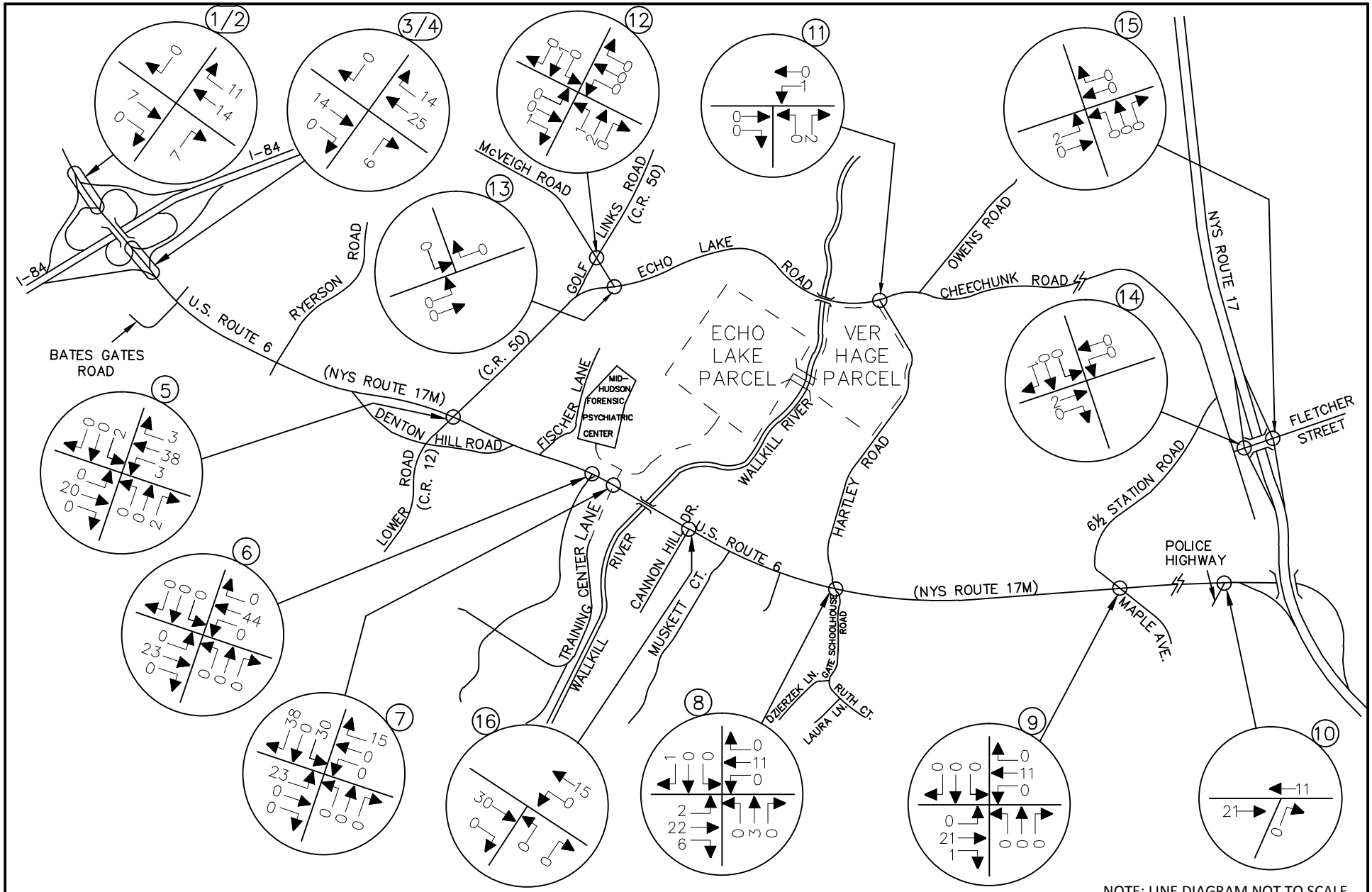
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
24–E	



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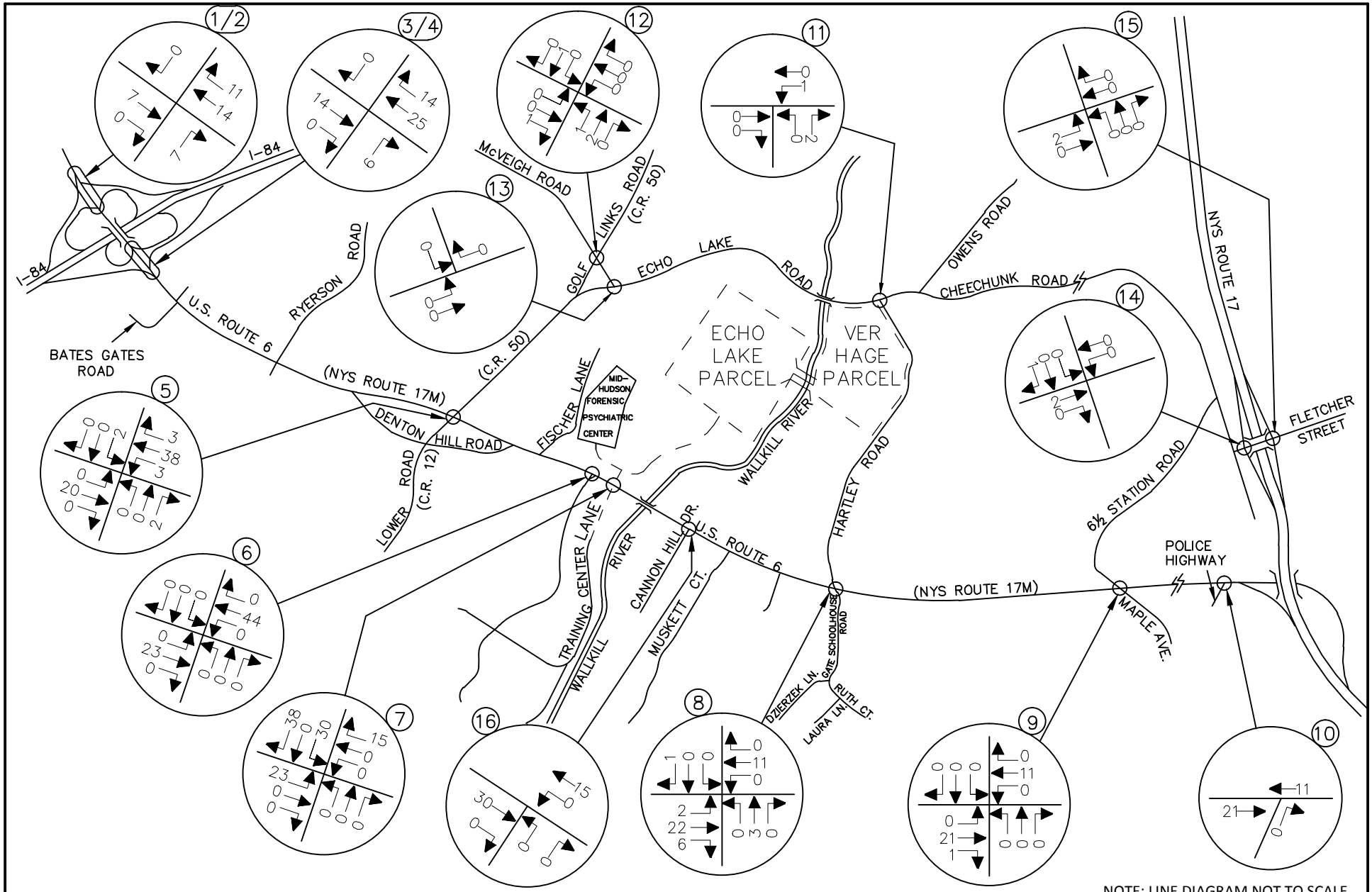
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKEND MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
25–E	



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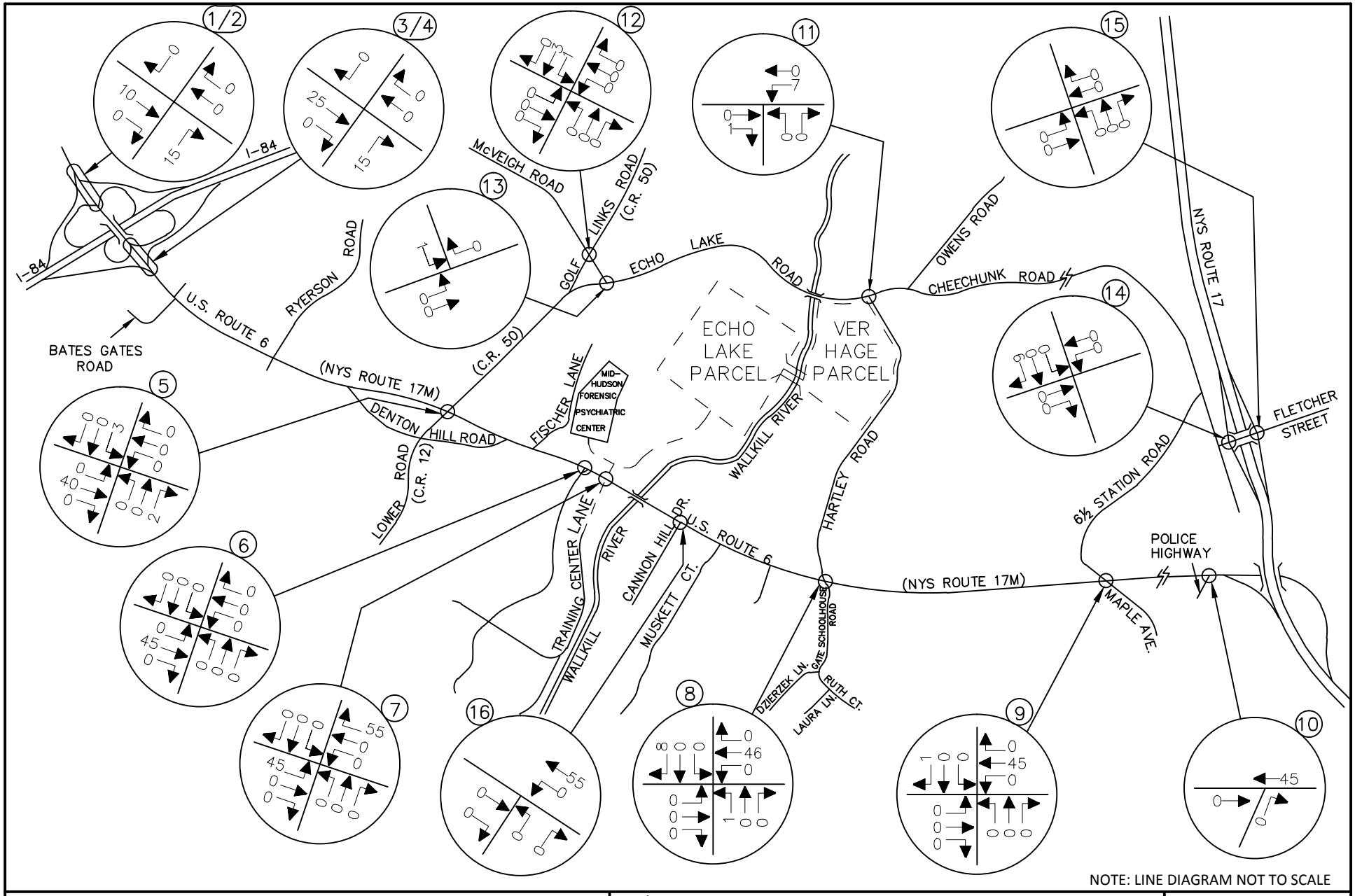
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN (PHASE II) & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
26–E	



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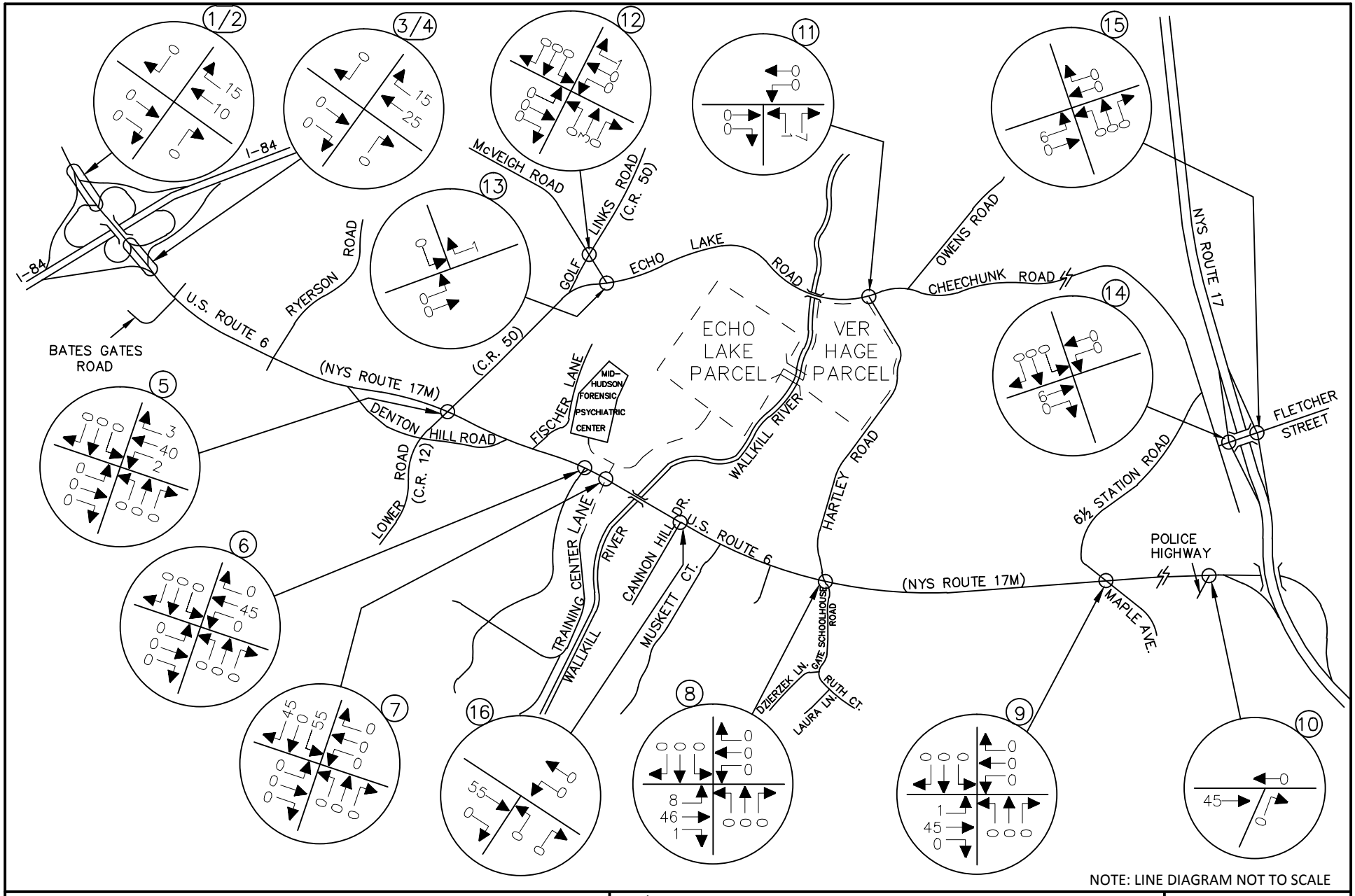
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
ARRIVAL DISTRIBUTION
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
27-E	



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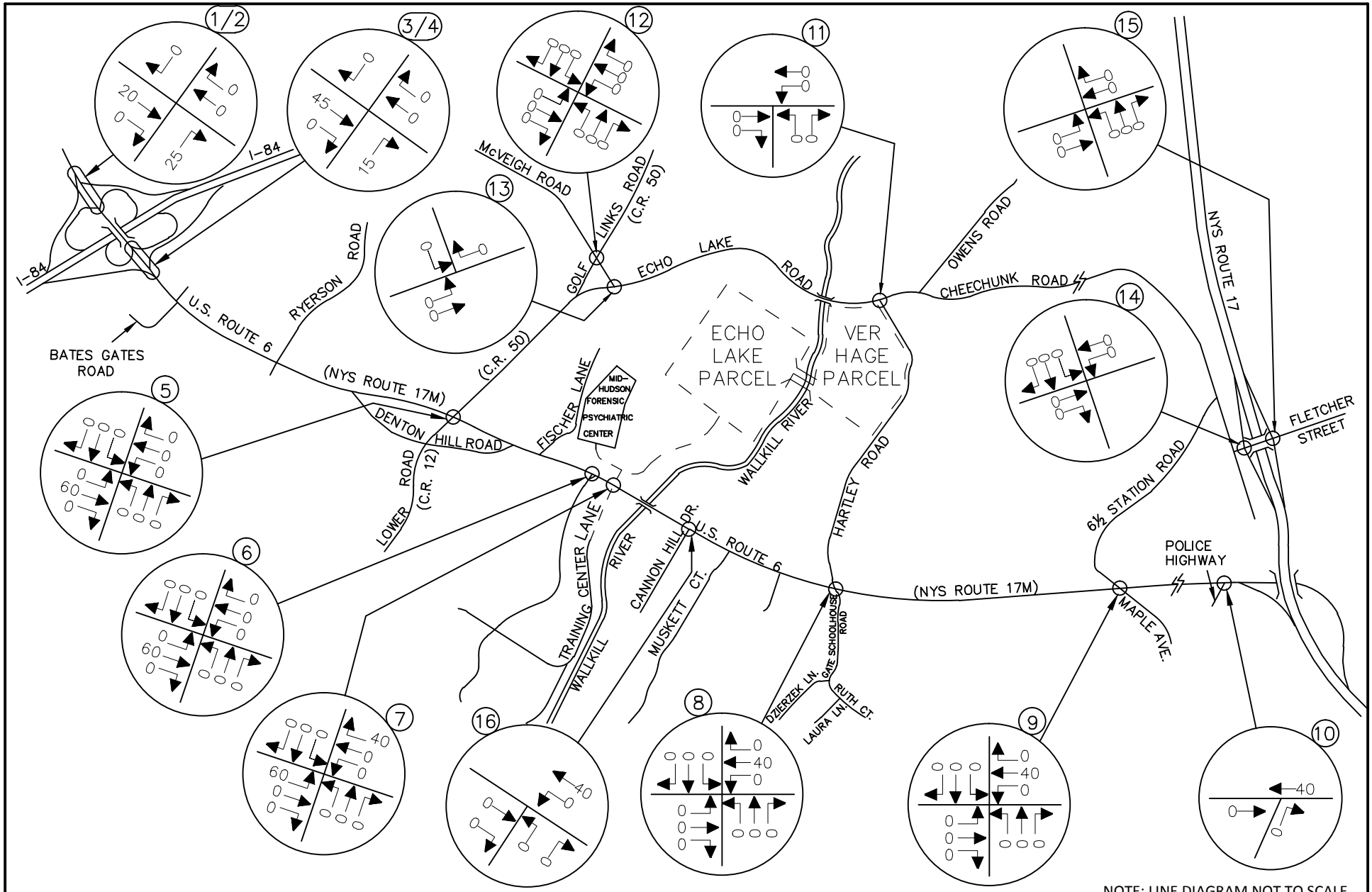
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
DEPARTURE DISTRIBUTION
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
28–E	



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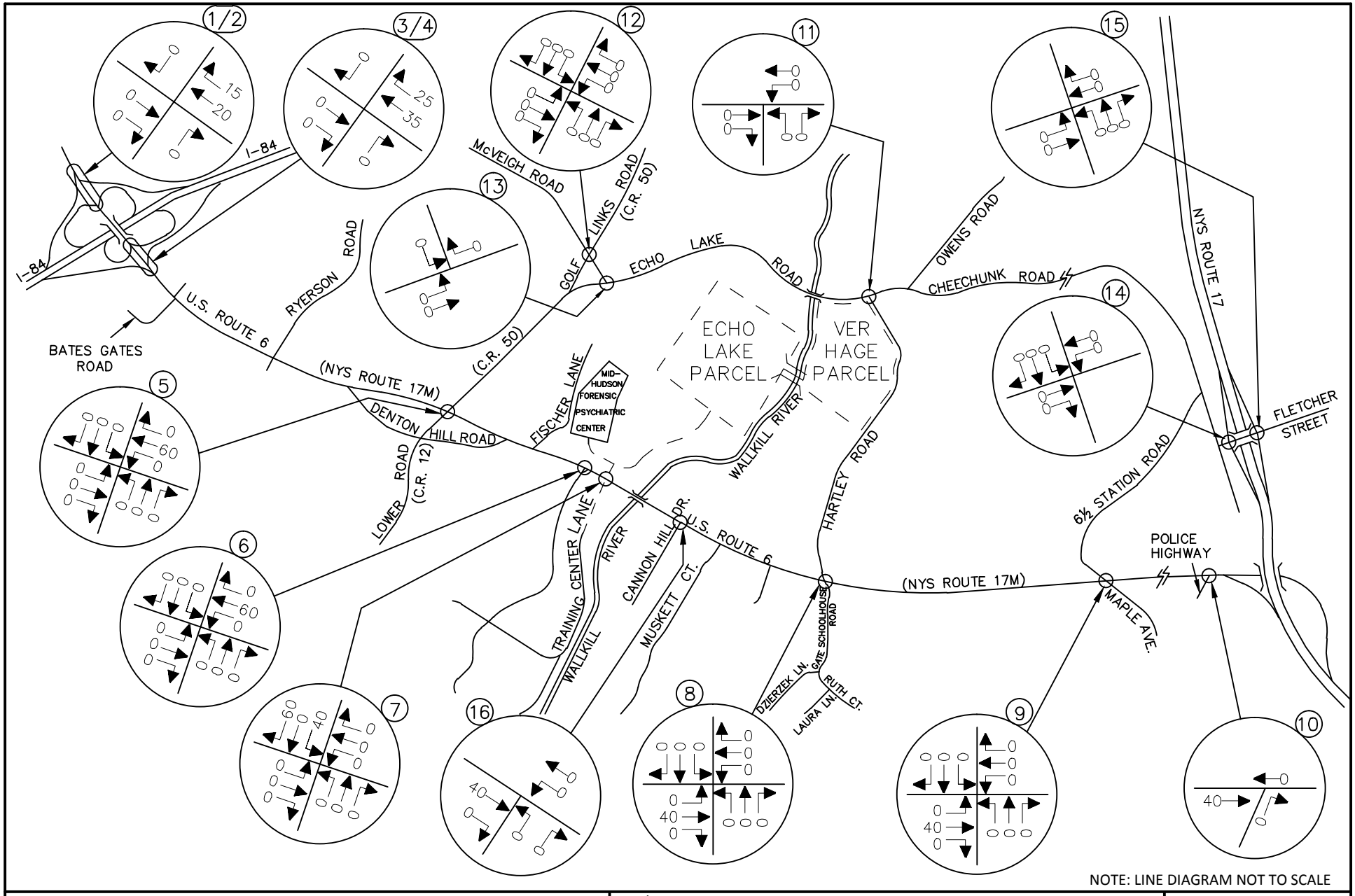
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE/HOTEL SHUTTLE BUSES
ARRIVAL DISTRIBUTION
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
29–E	



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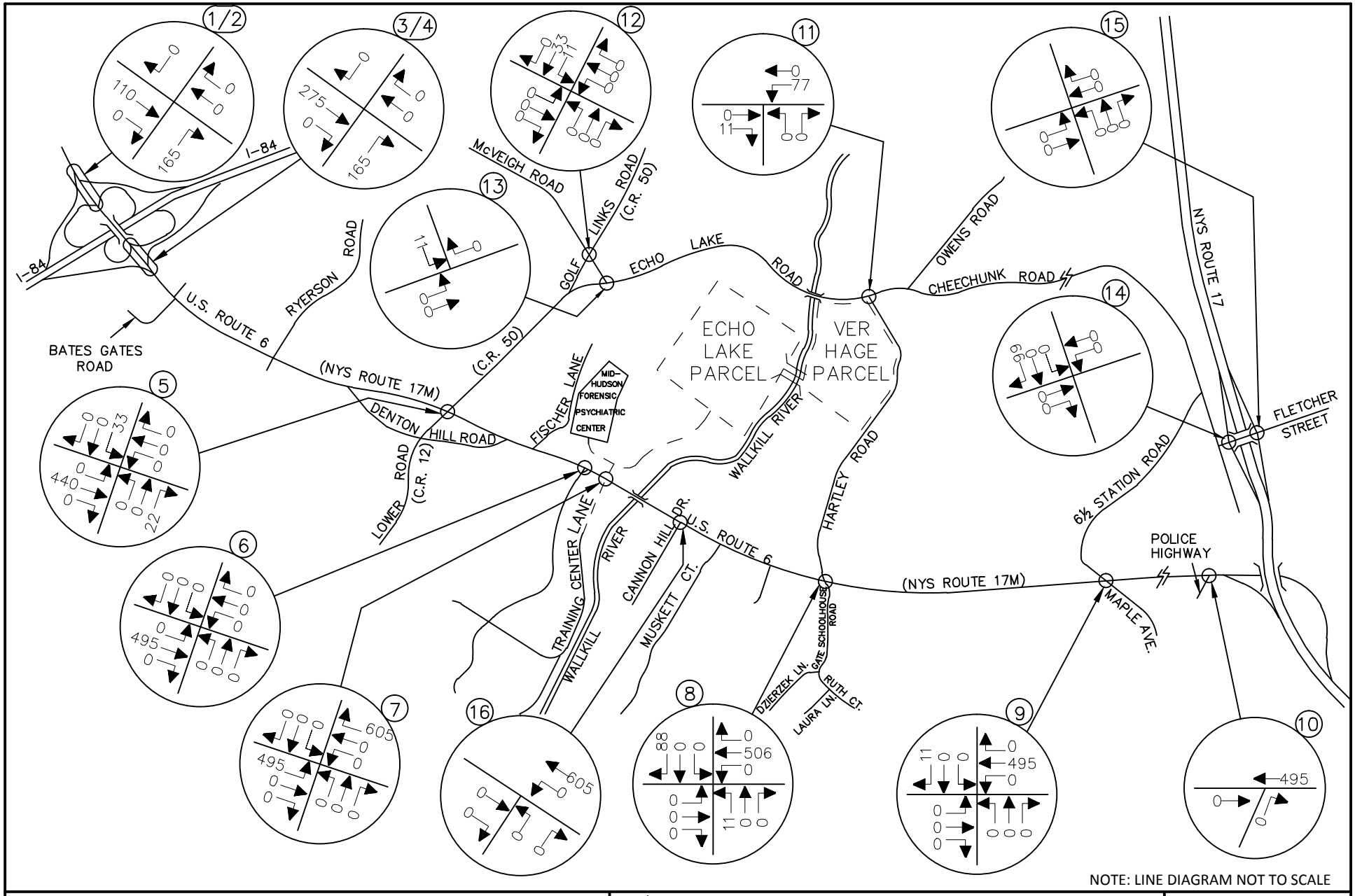
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE/HOTEL SHUTTLE BUSES
DEPARTURE DISTRIBUTION
(ALL VALUES EXPRESSED AS A %)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
30–E	



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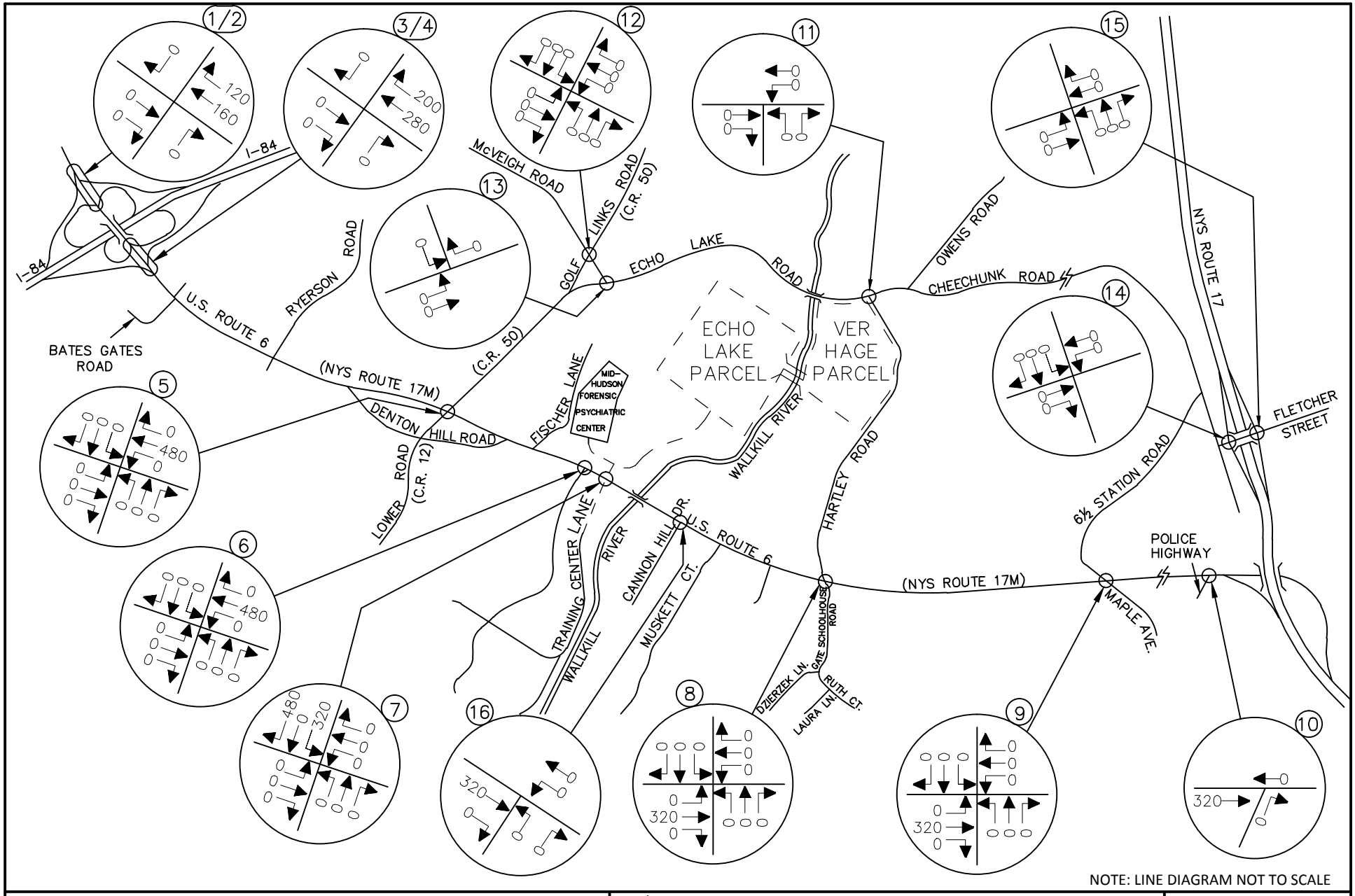
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
(8:30 AM - 9:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
31–E	



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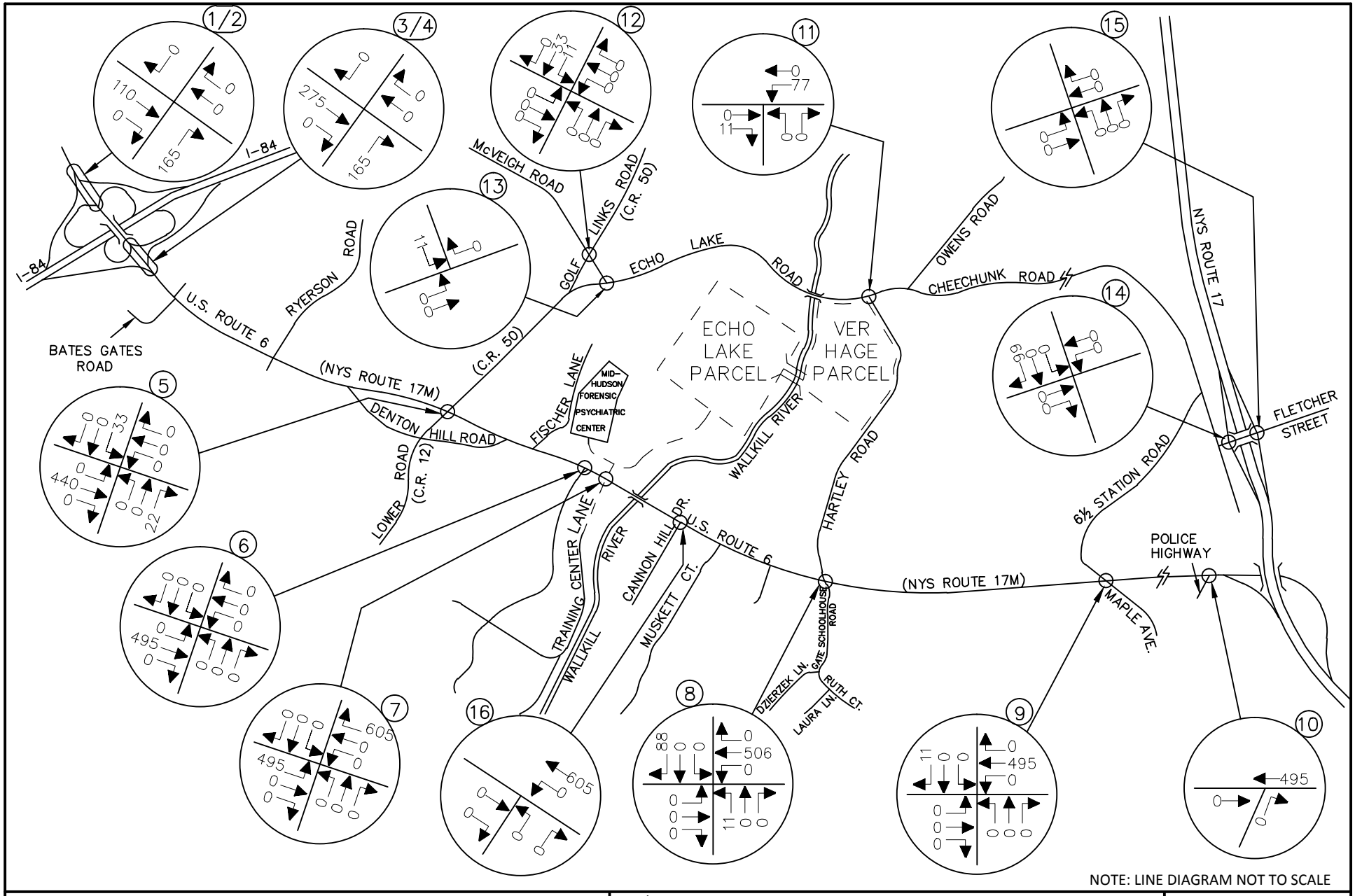
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
32–E	



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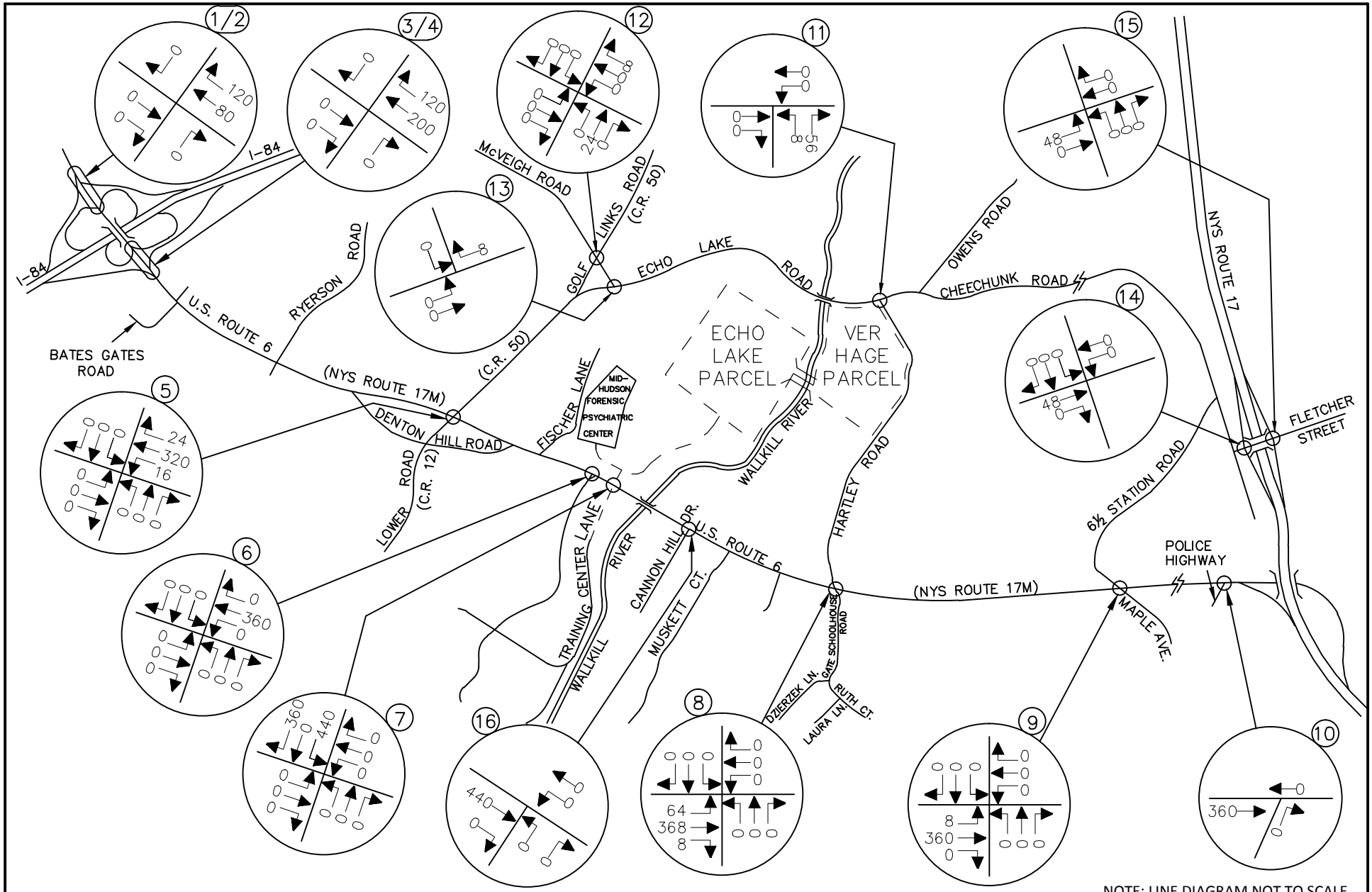
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
33–E	



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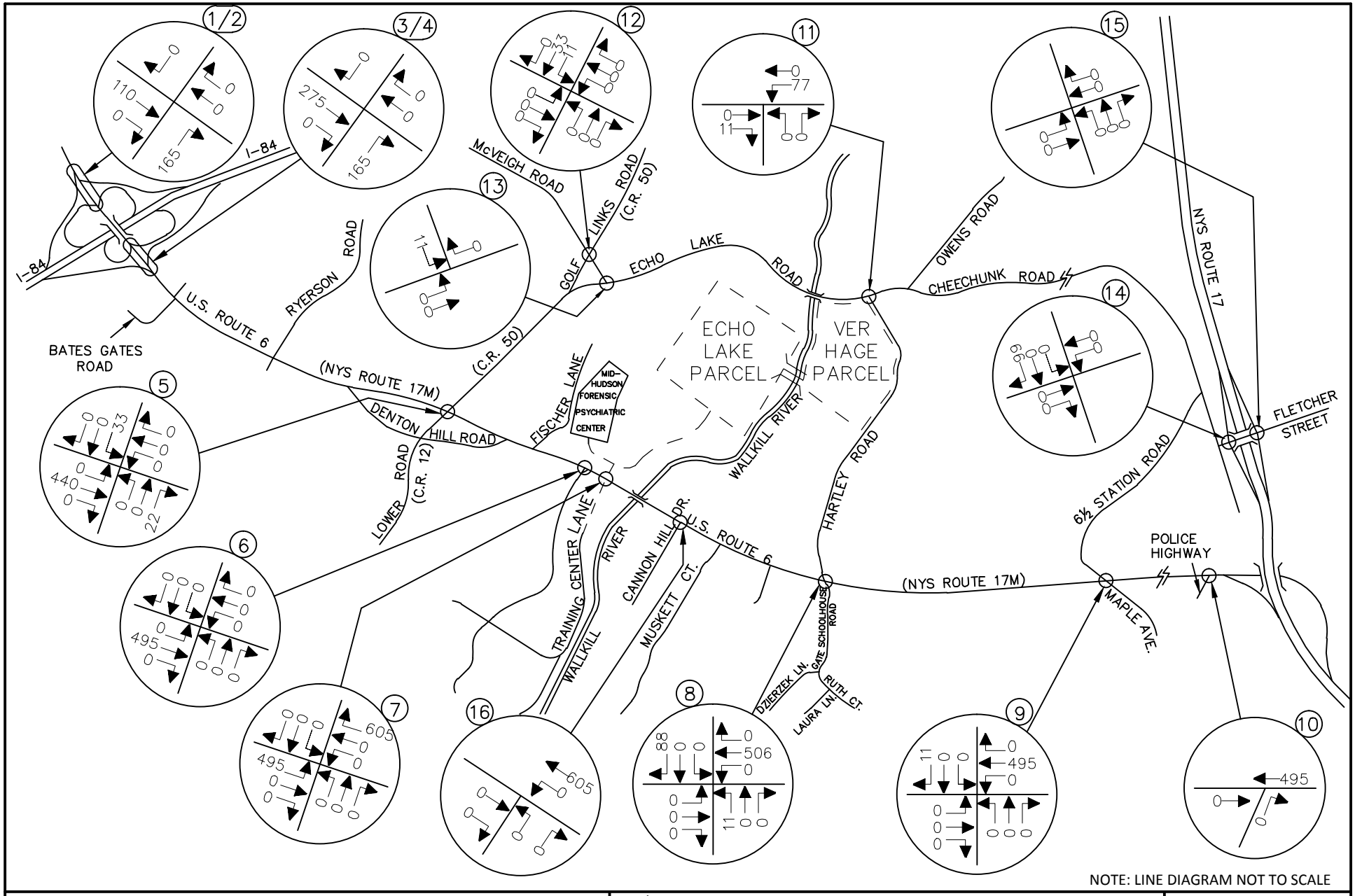
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16

FIGURE NUMBER:
34–E



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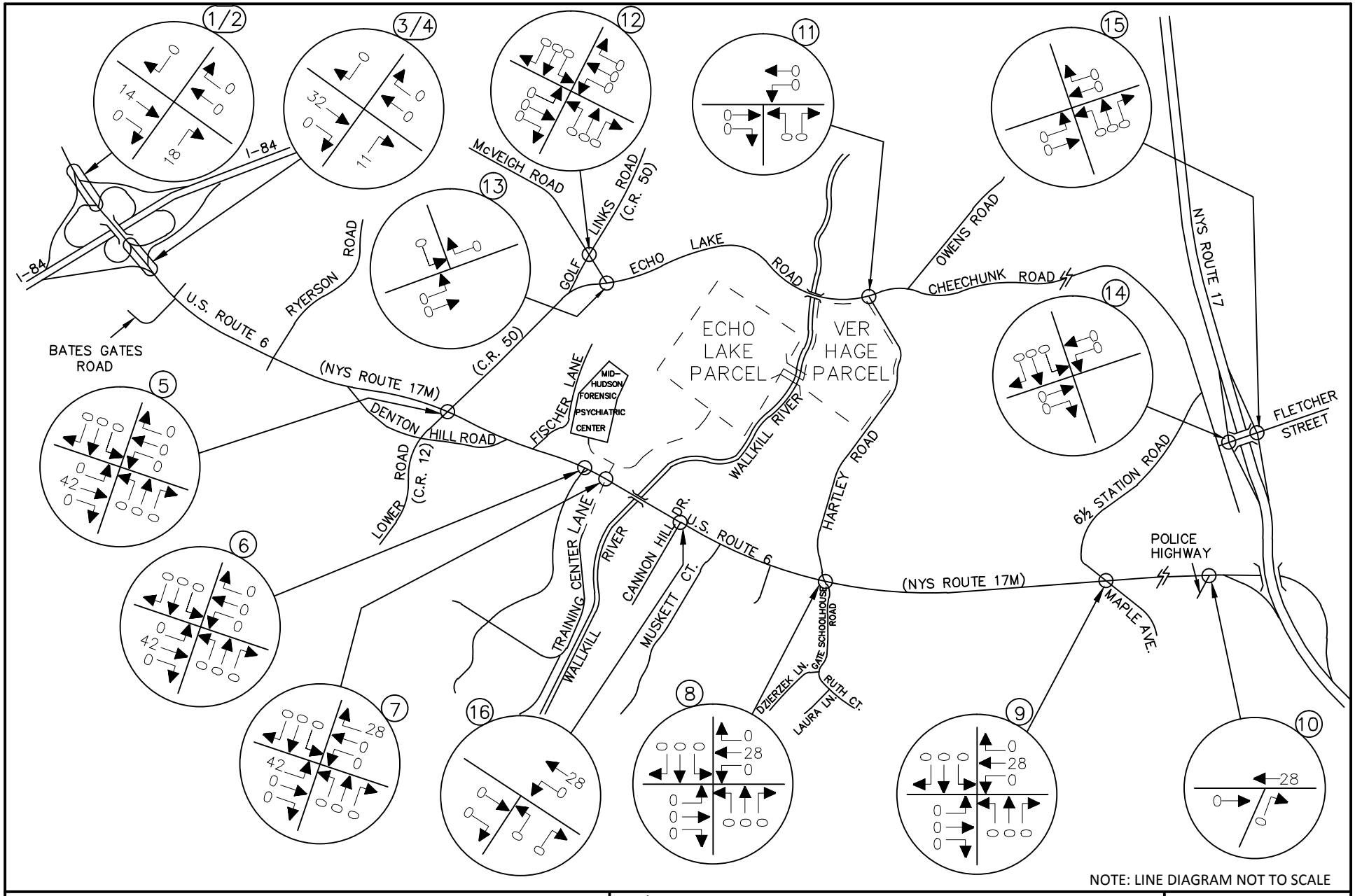
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
35–E	



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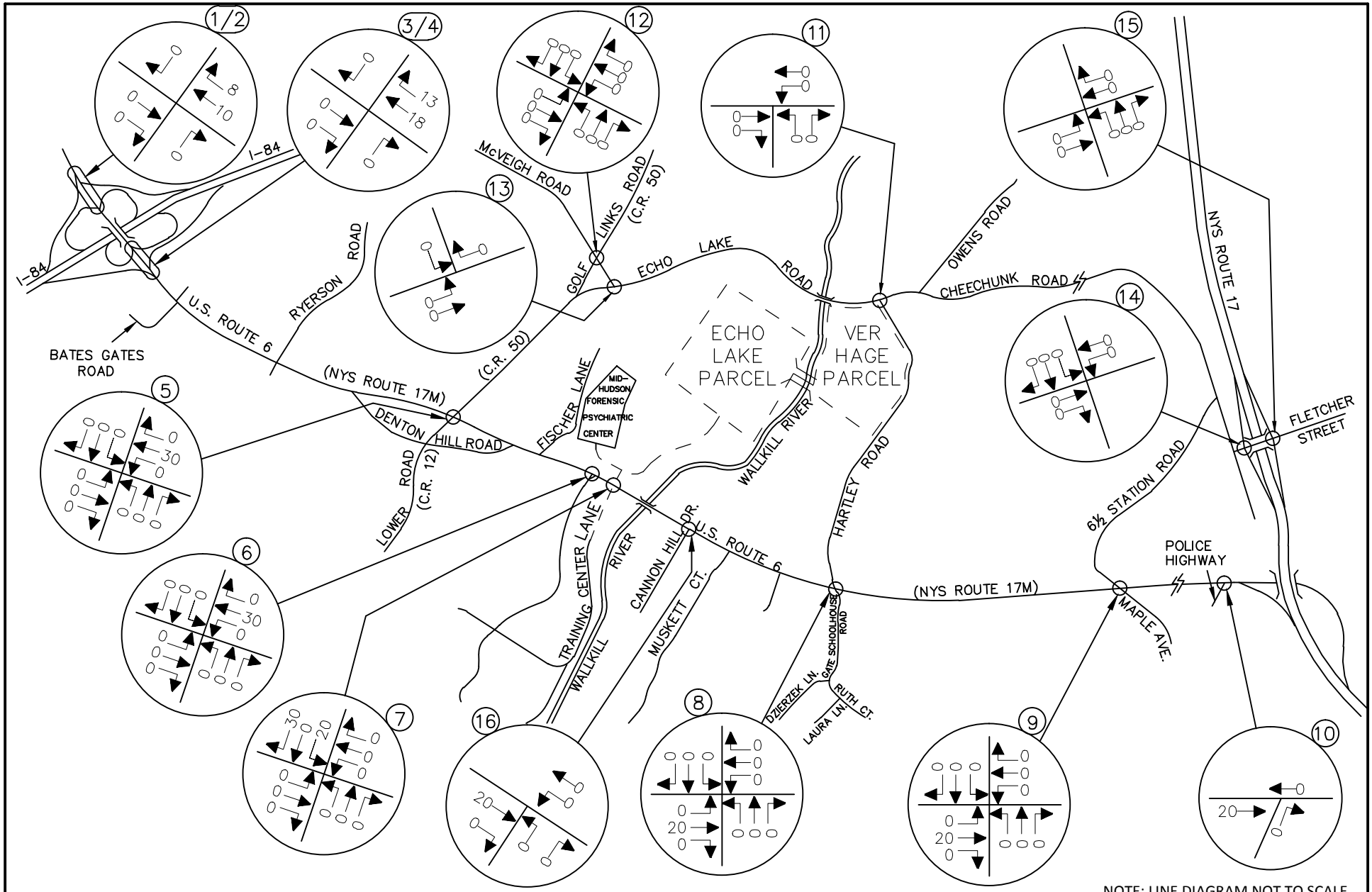
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE/HOTEL SHUTTLE BUSES
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
(8:30 AM - 9:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
36–E	



NOTE: LINE DIAGRAM NOT TO SCALE

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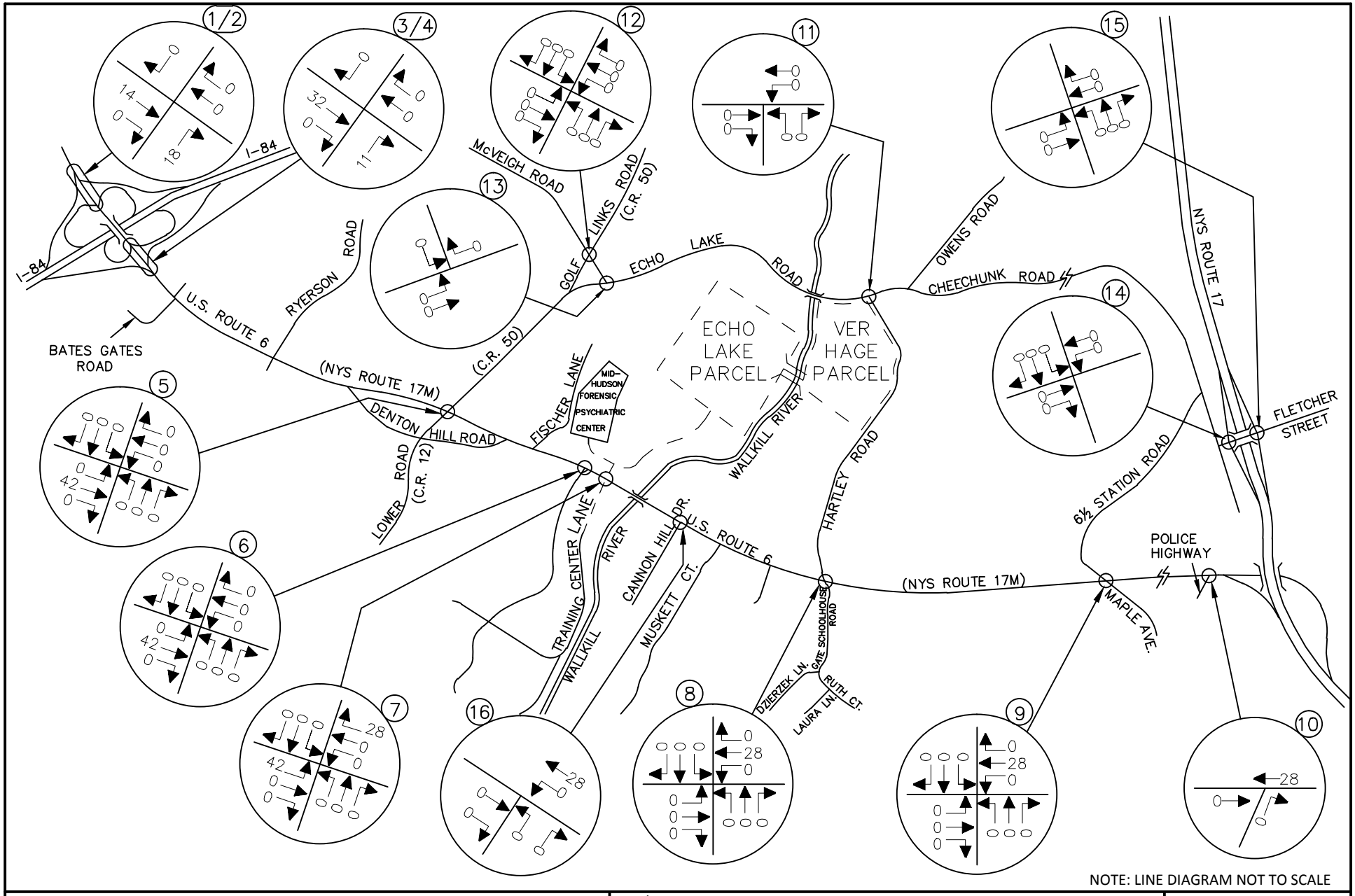
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE HOTEL/SHUTTLE BUSES
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
37–E	



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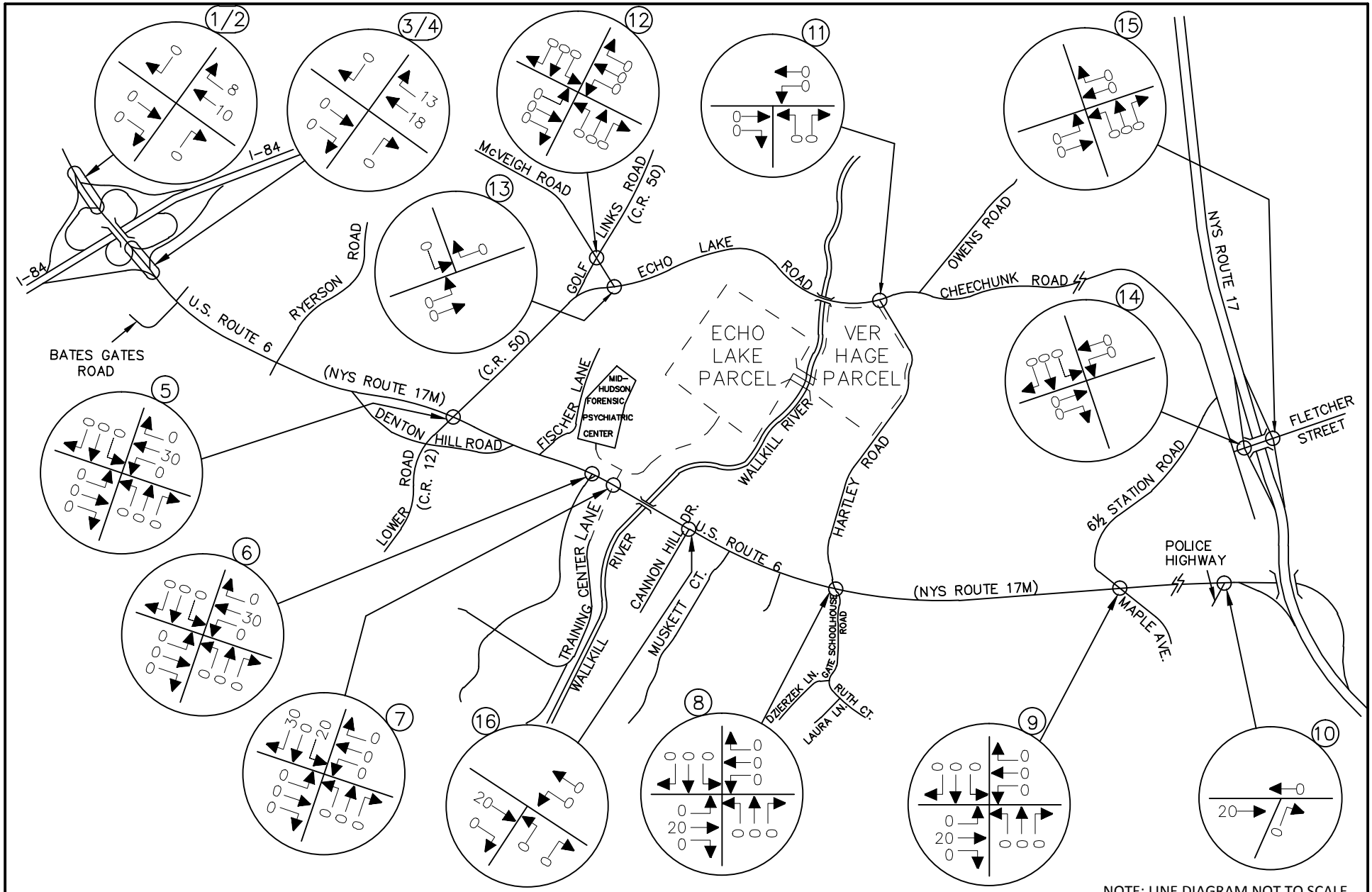
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
38–E	



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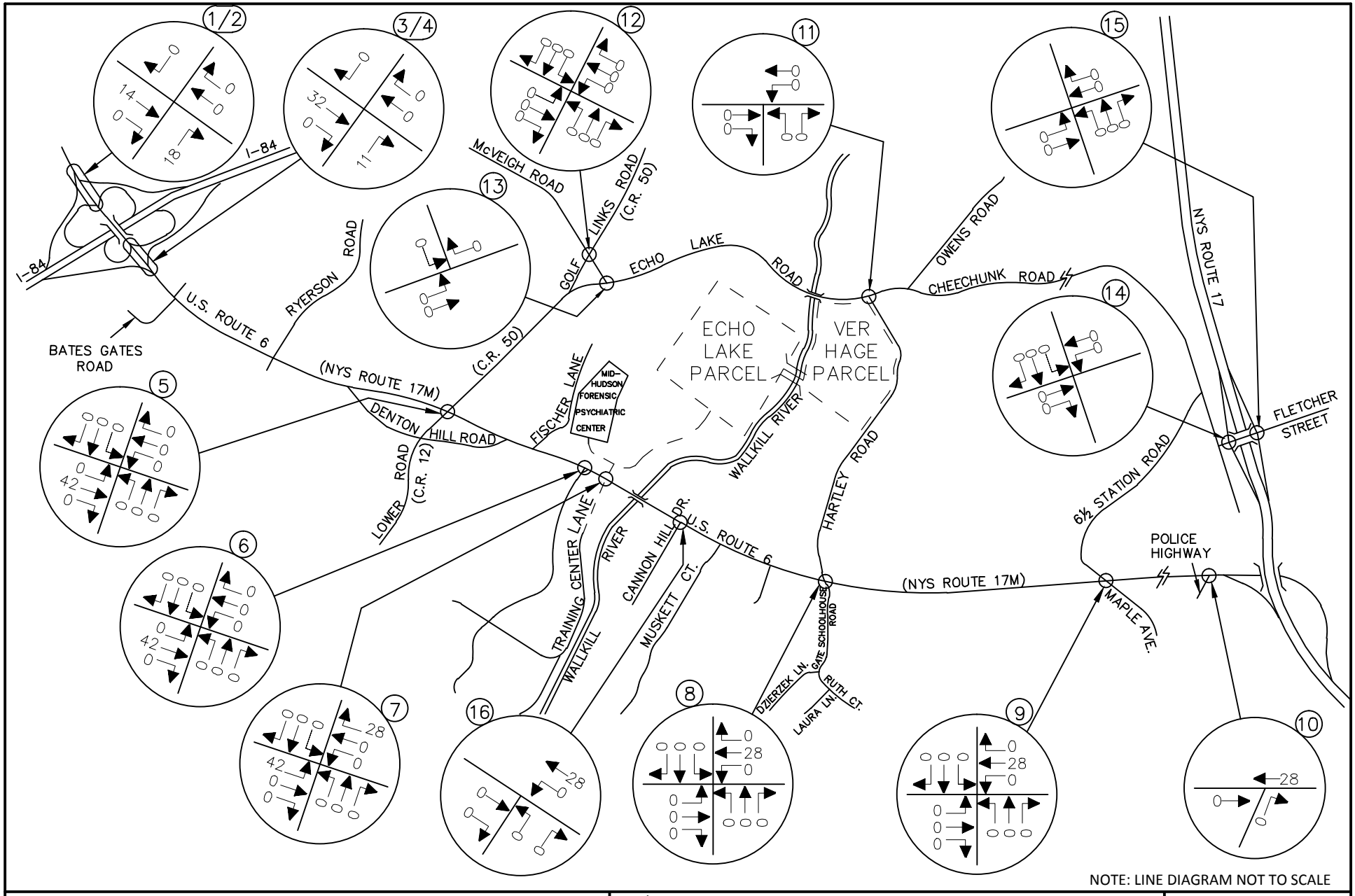
SITE GENERATED TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
39–E	



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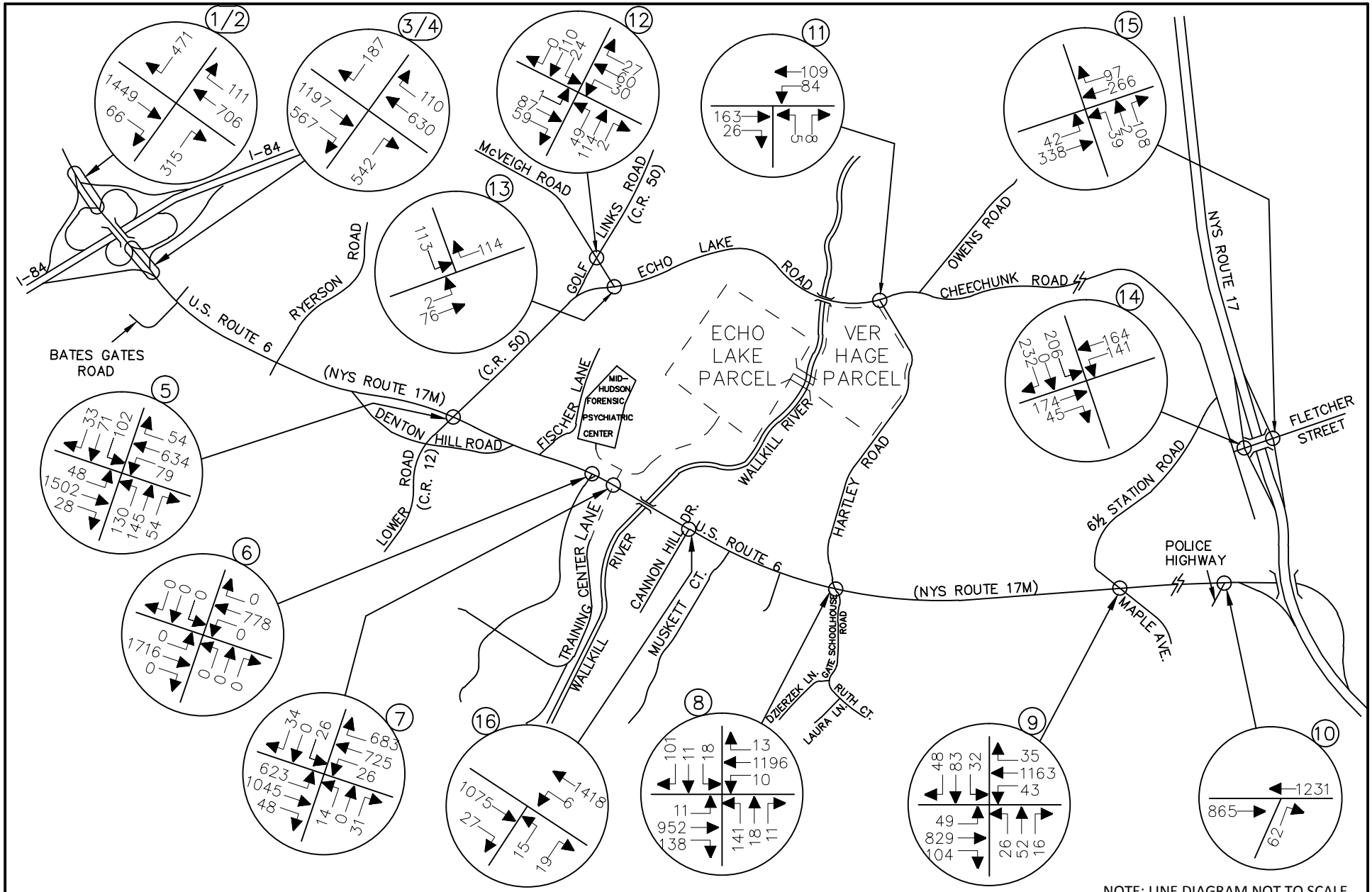
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE HOTEL/SHUTTLE BUSES
SITE GENERATED TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
40–E	



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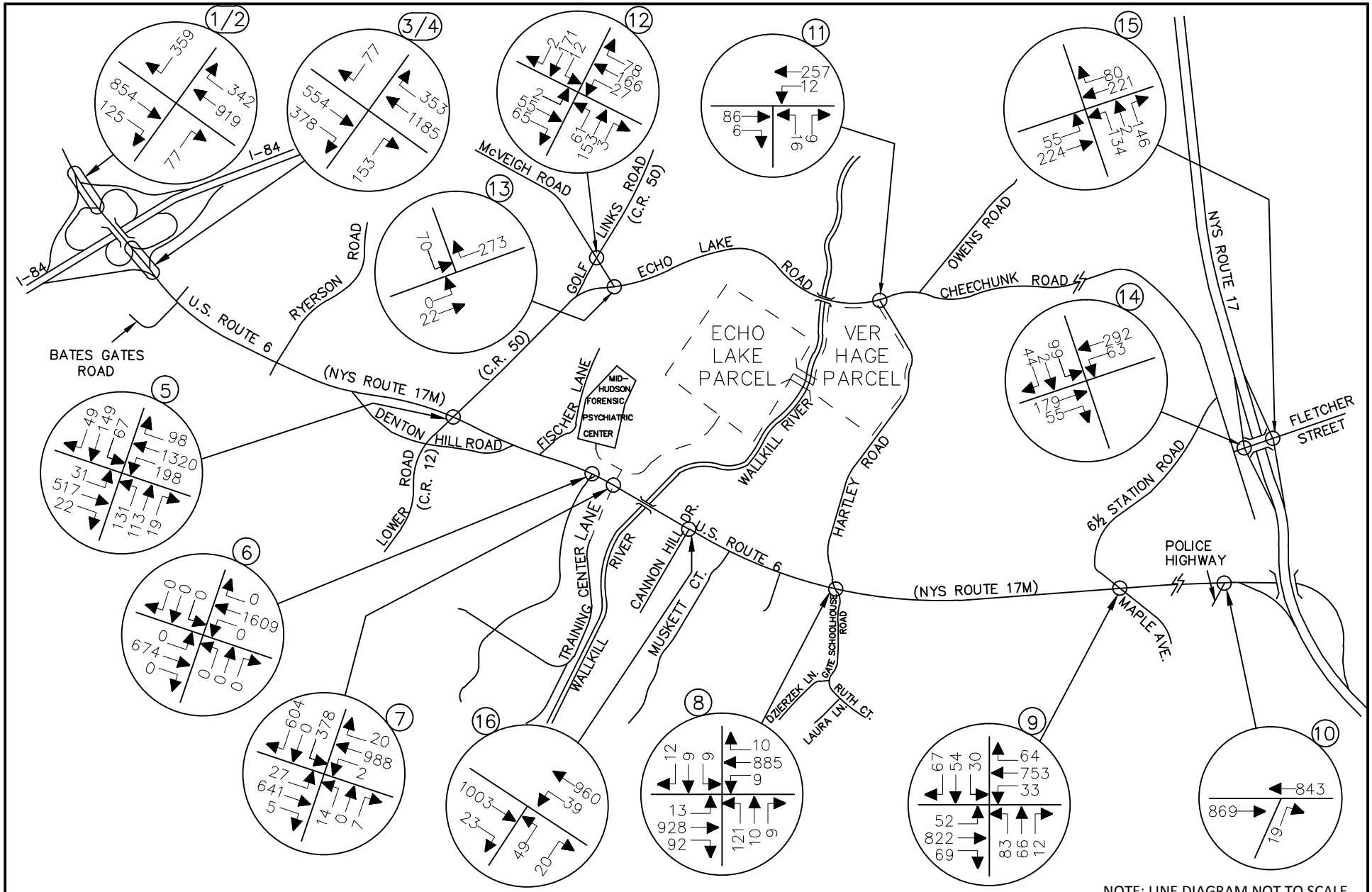
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
(8:30 AM - 9:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
41–E	



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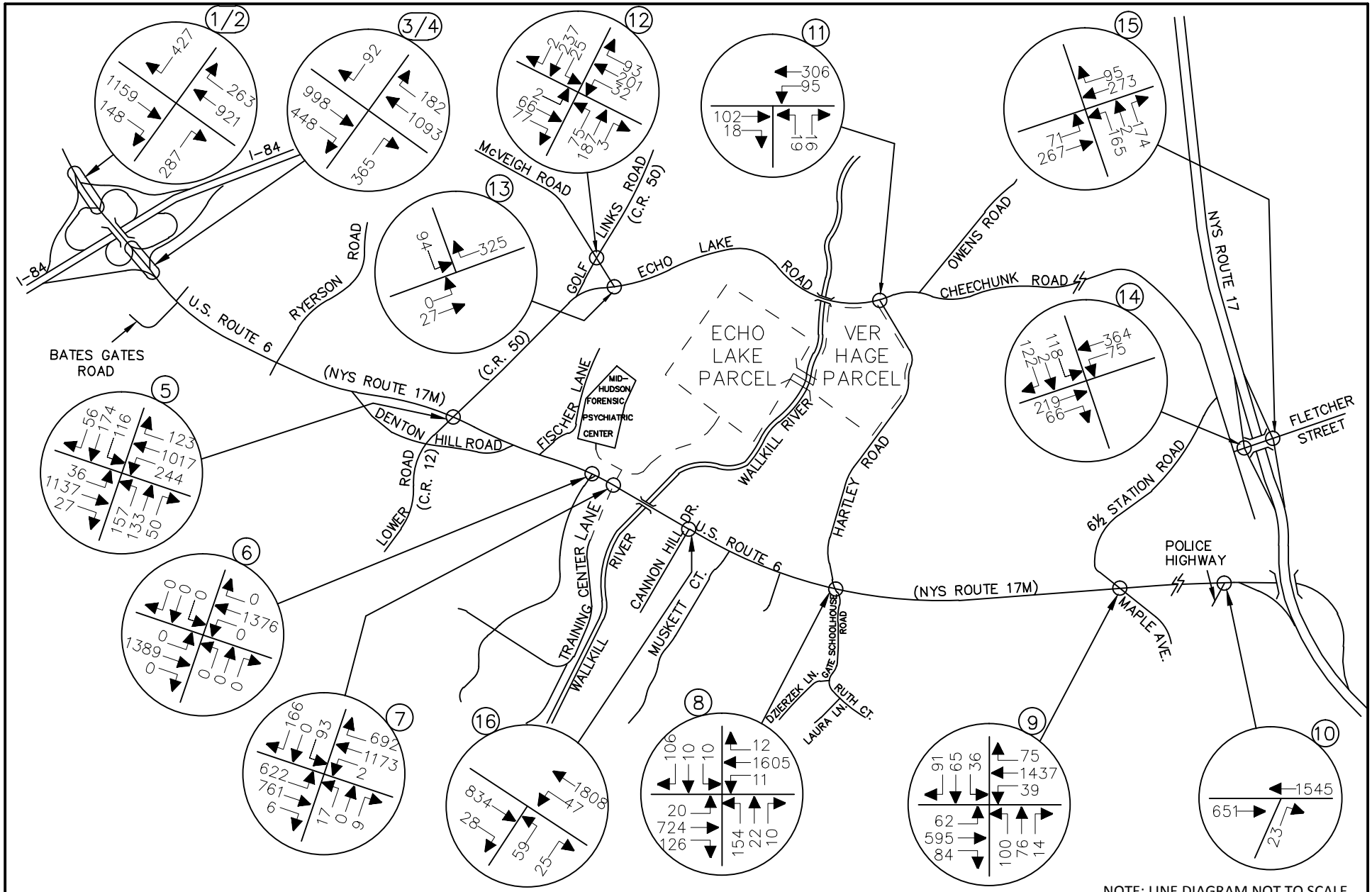
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
42–E	



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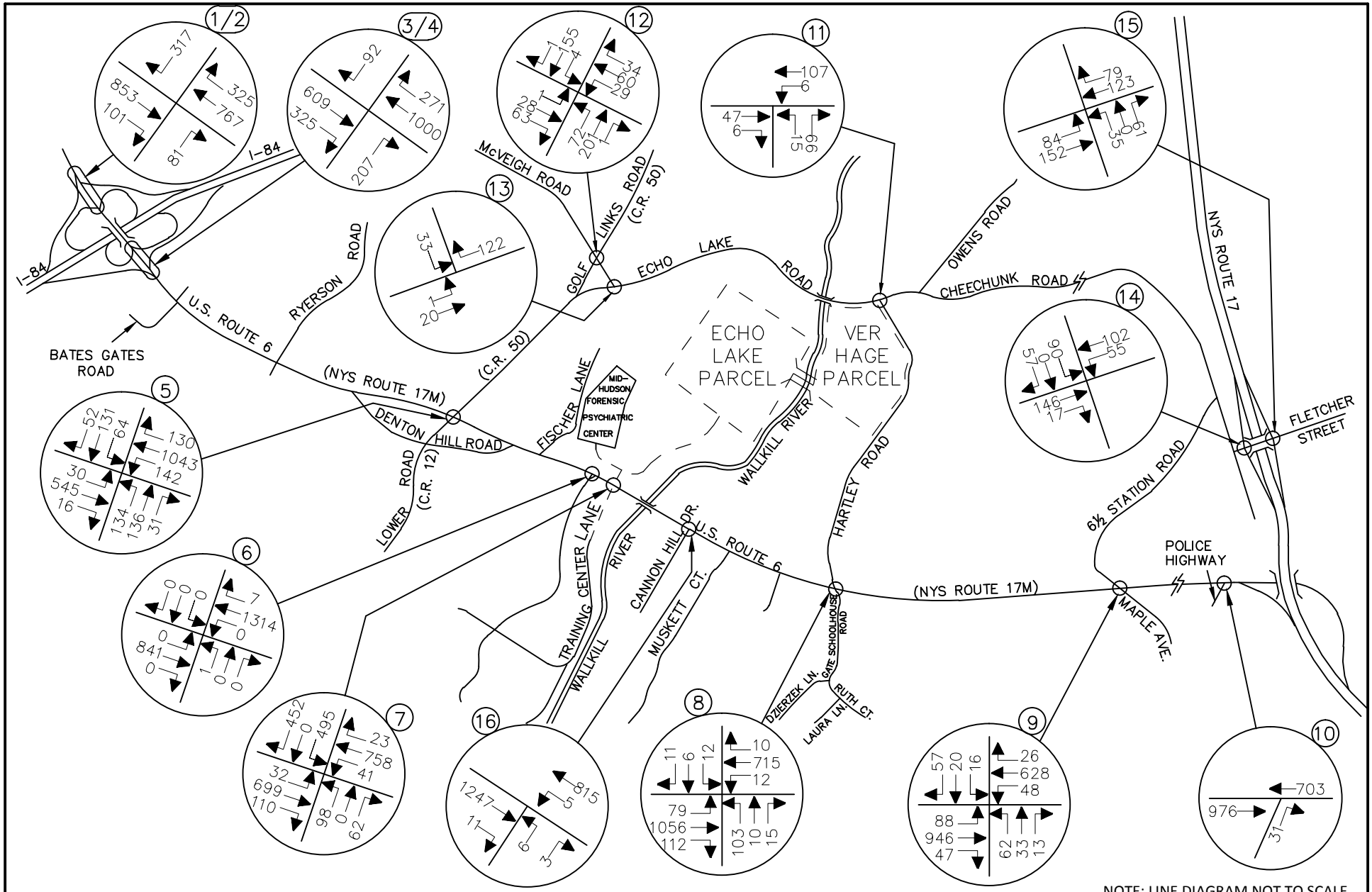
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
43–E	



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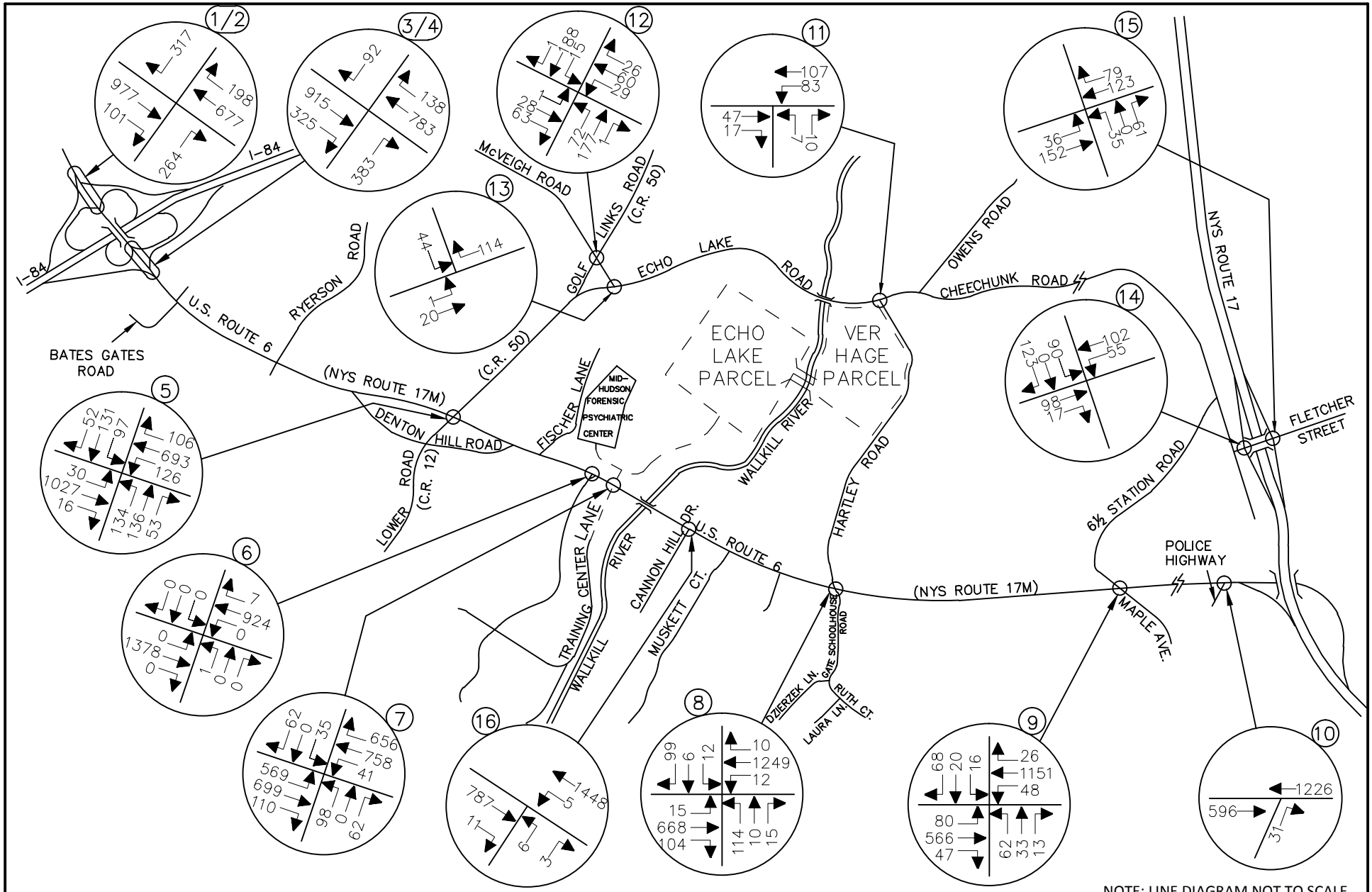
WEEKEND MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
44–E	



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SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 FULL BUILD TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
45–E	

AMY'S KITCHEN & SCIENCE OF THE SOUL

TABLES

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS ANALYSIS

TABLE NO. 1-E

Science of the Soul Special Event Summary

Total Attendees:	12,000	Persons
Total Volunteer Staff:	600	Persons

Proposed On-Site Parking to be Provided		
Passenger Cars:	2,036	Spaces
Buses:	130	Spaces

Assumed Vehicle Occupancies[1]	
Attendee Passenger Cars:	3.50 Persons/Vehicle
Attendee Buses:	40 Persons/Bus
Staff Passenger Cars:	2 Persons/Vehicle

Parking Assumptions[2]		
Passenger Cars:	2,000	Vehicles
Long Distance/Hotel Shuttle Buses:	125	Buses

Calculations	
7,000	Attendees Accomodated by On-Site Parking
5,000	Attendees Accomodated by Long Distance/Hotel Shuttle Buses
12,000	Attendees Accomodated by On-Site Parking & Long Distance/Hotel Shuttle Buses
600	Staff to be Accomodated by Strong Farm Property Parking[3]
300	Parking Spaces Required on Strong Farm Parcel

Anticipated Special Event Arrival and Departure Schedule[4]		
Time Interval	**Arrivals**	**Departures**
0:30	5%	20%
1:00	15%	20%
1:30	20%	15%
2:00	30%	20%
2:30	25%	15%
3:00	5%	10%

NOTES:

1) Assumed Vehicle Occupancies for Attendee Passenger Cars, Attendee Buses & Staff Passenger Cars are based on Science of the Soul experience for Annual Events held at their Petaluma, California and Fayetteville, North Carolina facilities.

2) Parking Assumptions assumes that there will not be 100% usage of passenger car parking spaces and bus parking spaces on the site.

3) Volunteer Staff will arrive at and depart the site outside of the 3-hour Arrival & Departure window for attendees and therefore are not included in the peak hour trip generation identified in Table 1D.

4) The Anticipated Arrival and Departure Schedule is based on information provided by Science of the Soul for their Petaluma, California facility.

TABLE NO. 1-E (CONTINUED)

SITE GENERATED TRAFFIC VOLUMES
SCIENCE OF THE SOUL EVENT CONDITIONS

		Passenger Car Trips to Echo Lake Site		Long Distance/ Hotel Shuttle Buses		Total Trips	
Morning Event	Afternoon Event	Entry	Exit	Entry	Exit	Entry	Exit
Entry Period							
7:00 AM	1:00 PM	100	0	7	0	107	0
7:30 AM	1:30 PM	300	0	19	0	319	0
8:00 AM	2:00 PM	400	0	25	0	425	0
8:30 AM	2:30 PM	600	0	38	0	638	0
9:00 AM	3:00 PM	500	0	32	0	532	0
9:30 AM	3:30 PM	100	0	7	0	107	0
Exit Period							
12:00 PM	6:00 PM	0	400	0	25	0	425
12:30 PM	6:30 PM	0	400	0	25	0	425
1:00 PM	7:00 PM	0	300	0	19	0	319
1:30 PM	7:30 PM	0	400	0	25	0	425
2:00 PM	8:00 PM	0	300	0	19	0	319
2:30 PM	8:30 PM	0	200	0	13	0	213

NOTES:

1) TRIP GENERATION ESTIMATES ARE BASED ON INFORMATION PROVIDED BY SCIENCE OF THE SOUL AND OTHER ASSUMPTIONS AS INDICATED ON TABLE NO. 1C. SCIENCE OF THE SOUL SPECIAL EVENTS TYPICALLY OCCUR ON A WEEKEND OF HOLIDAY WEEKEND AND CAN BE EITHER MORNING OR AFTERNOON EVENTS AND ARE HELD OVER THREE DAYS. THE TRIP GENERATION ESTIMATES PROVIDED ARE BASED ON ANTICIPATED ATTENDANCE FOR THE ANNUAL CONFERENCE, THE LARGEST POTENTIAL EVENT.

2) PEAK HOUR TRAFFIC VOLUMES FOR MORNING AND EVENING EVENT ENTRY AND EXIT PERIODS ARE SHOWIN IN HIGHLIGHTED ROWS.

3) TRIP GENERATION FOR SCIENCE OF THE SOUL EVENT CONDITIONS IS ASSUMED TO BE SAME FRO WEEKDAY AND WEEKEND EVENTS.

TABLE NO. 2-E

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD (8:30 AM - 9:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.71	C	22.6	0.78	D	27.7	0.79	D	28.5	0.8
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M	EB		-	B	11.6	-	B	12.4	-	B	13.7	1.3
	NYS ROUTE 17M EB	WEAVE		0.30	A	10.5	0.32	A	11.4	0.42	B	12.8	1.4
	I-84 EB OFF RAMP TO NYS ROUTE 17M	EB		-	B	13.2	-	B	14.0	-	B	18.6	4.6
	NYS ROUTE 17M WB	WEAVE		0.15	A	5.5	0.16	A	5.9	0.17	A	5.8	-0.1
	I-84 EB ON RAMP FROM NYS ROUTE 17M	WB		-	A	8.1	-	A	8.5	-	A	8.7	0.2
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.09	A	8.4	0.11	A	9.6	0.12	B	10.7	1.1
			TR	0.97	D	40.8	1.09	F	77.4	1.74	F	357.6	280.2
	ROUTE 6/17M	WB	L	0.47	B	19.9	0.54	C	21.0	0.56	C	21.6	0.6
			T	0.36	B	11.2	0.40	B	13.1	0.44	B	14.7	1.6
			TR	0.36	B	11.2	0.41	B	13.0	0.44	B	14.6	1.6
	LOWER ROAD (C.R. 12)	NB	LTR	0.66	C	31.3	0.70	C	32.6	0.73	C	34.4	1.8
	C.R. 50	SB	LTR	0.37	C	28.3	0.41	C	28.1	0.53	C	29.2	1.1
		OVERALL		**-**	**C**	**28.6**	**-**	**D**	**45.7**	**-**	**F**	**201.5**	155.8
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.11	A	9.7	0.1
			TR	-	-	-	-	-	-	1.58	F	286.9	209.5
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.63	C	25.5	4.5
			T	-	-	-	-	-	-	0.40	B	13.2	0.1
			TR	-	-	-	-	-	-	0.40	B	13.2	0.2
	LOWER ROAD (C.R. 12)	NB	LTR	-	-	-	-	-	-	0.82	D	49.5	16.9
	C.R. 50	SB	LTR	-	-	-	-	-	-	0.62	D	37.3	9.2
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**F**	**165.7**	120.0

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

TABLE NO. 2-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD (8:30 AM - 9:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER	**UNSIGNALIZED**											
	ROUTE 6/17M	EB	L	0.03	A	9.2	0.04	A	9.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.10	F	58.2	0.13	F	77.3	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.06	B	13.4	0.07	B	14.3	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.44	F	64.7	0.60	F	98.5	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	1.21	F	139.8	-
			T	-	-	-	-	-	-	0.75	A	7.3	-
			R	-	-	-	-	-	-	0.06	A	1.7	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.13	B	14.7	-
			T	-	-	-	-	-	-	0.93	D	40.7	-
			R	-	-	-	-	-	-	0.97	D	50.5	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.21	D	50.5	-
			R	-	-	-	-	-	-	0.67	E	71.8	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.40	D	51.3	-
			R	-	-	-	-	-	-	0.05	A	10	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**50.3**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 2-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD (8:30 AM - 9:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.83	B	10.1	0.88	B	15.1	0.97	C	24.7	9.6
	ROUTE 6/17M	WB	LTR	0.51	A	5.3	0.54	A	5.5	1.04	F	48.1	42.6
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.40	C	21.1	0.45	C	24.7	0.52	C	26.8	2.1
	HARTLEY ROAD	SB	LTR	0.14	C	20.1	0.16	C	23.3	0.45	C	26.3	3.0
		OVERALL		**-**	**A**	**9.5**	**-**	**B**	**12.7**	**-**	**D**	**35.9**	23.2
	WITH TRAFFIC SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	LTR	-	-	-	-	-	-	0.89	B	17.6	2.5
	ROUTE 6/17M	WB	LTR	-	-	-	-	-	-	0.98	C	32.6	27.1
	GATE SCHOOLHOUSE ROAD	NB	LTR	-	-	-	-	-	-	0.62	C	32.8	8.1
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.51	C	29.5	6.2
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**26.2**	13.5
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.10	B	18.8	0.11	C	20.8	0.37	D	40.7	19.9
			TR	0.92	B	15.6	0.93	C	20.5	0.98	D	38.0	17.5
	ROUTE 6/17M	WB	L	0.22	C	27.1	0.26	C	31.0	0.25	D	38.5	7.5
			TR	0.88	B	18.9	0.90	C	20.7	1.06	F	60.7	40.0
	6 1/2 STATION ROAD	NB	LTR	0.27	C	23.9	0.30	C	26.9	0.33	C	34.6	7.7
	MAPLE AVENUE	SB	LTR	0.45	C	25.1	0.50	C	28.3	0.58	D	36.8	8.5
		OVERALL		**-**	**B**	**18.3**	**-**	**C**	**21.8**	**-**	**D**	**48.9**	27.1
	WITH SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.41	D	45.9	25.1
			TR	-	-	-	-	-	-	0.97	D	35.1	14.6
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.20	D	39.3	8.3
			TR	-	-	-	-	-	-	0.98	D	35.7	15.0
	6 1/2 STATION ROAD	NB	LTR	-	-	-	-	-	-	0.41	D	41.1	14.2
	MAPLE AVENUE	SB	LTR	-	-	-	-	-	-	0.69	D	49.0	20.7
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**36.8**	15.0
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED**											
		NB	R	0.17	C	17.0	0.20	C	18.5	0.21	C	18.9	0.4
11	HARTLEY ROAD &	**UNSIGNALIZED**											
	ECHO LAKE ROAD & CHEECHUNK ROAD	WB	LT	0.00	A	7.7	0.00	A	7.7	0.09	A	8.0	0.3
		NB	LR	0.02	B	10.1	0.02	B	10.1	0.03	A	11.1	1.0
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.22	B	11.6	0.26	B	12.3	0.28	B	13.2	0.9
	McVEIGH ROAD	WB	LTR	0.23	B	13.4	0.28	C	15.1	0.32	C	17.0	1.9
	GOLF LINKS ROAD	NB	LTR	0.03	A	7.5	0.04	A	7.5	0.04	A	7.6	0.1
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.5	0.01	A	7.5	0.02	A	7.6	0.1
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.19	A	9.1	0.19	A	9.3	0.2
	McVEIGH ROAD	WB	LTR	-	-	-	0.23	A	9.1	0.23	A	9.3	0.2
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.27	A	9.8	0.27	A	9.9	0.1
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.15	A	9.0	0.22	A	9.5	0.5

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 2-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD (8:30 AM - 9:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	7.5	0.00	A	7.5	0.00	A	7.5	0.0
	McVEIGH ROAD	SB	L	0.15	B	10.0	0.16	B	10.1	0.18	B	10.2	0.1
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.15	A	8.4	0.16	A	8.5	0.16	A	8.5	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	1.27	F	172.8	1.48	F	258.4	1.60	F	308.1	49.7
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.44	B	14.4	0.43	B	14.3	-0.1
	FLETCHER STREET	WB	LT	-	-	-	0.83	C	21.4	0.80	B	18.6	-2.8
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.78	C	23.7	0.91	C	35.0	11.3
		OVERALL		**-**	**-**	**-**	**-**	**C**	**20.7**	**-**	**C**	**25.1**	4.4
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.05	A	8.9	0.06	A	9.0	0.06	A	9.0	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.45	C	19.7	0.51	C	22.5	0.51	C	22.6	0.1
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.90	C	24.9	0.86	B	19.8	-5.1
	FLETCHER STREET	WB	TR	-	-	-	0.73	C	21.1	0.71	C	20.5	-0.6
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.33	B	13.2	0.32	B	13.1	-0.1
		OVERALL		**-**	**-**	**-**	**-**	**C**	**21.4**	**-**	**B**	**18.9**	-2.5
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.04	B	12.5	0.02	B	13.1	0.02	B	13.4	0.3
	CANNON HILL DRIVE	NB	LR	0.34	F	54.7	0.42	F	69.3	1.26	F	[-]	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE NO. 3-E

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.55	C	17.3	0.61	C	19.4	0.70	D	25.7	6.3
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	7.3	-	A	7.8	-	A	7.8	0.0
	NYS ROUTE 17M EB WEAVE			0.19	A	6.3	0.20	A	6.7	0.20	A	6.8	0.1
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	8.8	-	A	9.2	-	A	9.4	0.2
	NYS ROUTE 17M WB WEAVE			0.16	A	6.1	0.18	A	6.2	0.24	A	8.5	2.3
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	10.0	-	B	10.5	-	B	13.5	3.0
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.07	B	10.0	0.08	B	11.0	0.18	B	15.7	4.7
			TR	0.52	B	16.0	0.58	B	18.2	0.62	C	20.2	2.0
	ROUTE 6/17M	WB	L	0.39	A	9.8	0.44	B	11.1	0.48	B	12.4	1.3
			T	0.44	B	11.9	0.47	B	13.3	0.81	C	24.2	10.9
			TR	0.44	B	11.9	0.48	B	13.3	0.82	C	24.2	10.9
	LOWER ROAD (C.R. 12)	NB	LTR	0.63	C	31.7	0.65	C	32.2	0.67	C	33.2	1.0
	C.R. 50	SB	LTR	0.51	C	30.0	0.52	C	29.9	0.58	C	30.3	0.4
		OVERALL		**-**	**B**	**17.1**	**-**	**B**	**18.4**	**-**	**C**	**23.9**	**5.5**

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

TABLE NO. 3-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER	**UNSIGNALIZED**											
	ROUTE 6/17M	EB	L	0.01	B	10.1	0.01	B	10.4	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.26	D	29.1	0.31	D	33.7	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.00	A	8.8	0.00	A	8.9	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.14	D	31.7	0.17	E	37.2	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.21	C	22.5	-
			TR	-	-	-	-	-	-	0.56	B	10.9	-
				-	-	-	-	-	-	0.00	A	5.7	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.00	B	14.4	-
			T	-	-	-	-	-	-	0.95	D	36.3	-
			R	-	-	-	-	-	-	0.02	A	8.7	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.61	E	56.9	-
			R	-	-	-	-	-	-	0.32	D	51.1	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	1.72	F	382.2	-
			R	-	-	-	-	-	-	0.59	A	6.2	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**E**	**71.9**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 3-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.50	A	5.6	0.55	A	5.8	0.83	B	10.3	4.5
	ROUTE 6/17M	WB	LTR	0.39	A	6.8	0.73	A	7.2	0.72	A	7.4	0.2
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.31	B	14.8	0.35	B	16.2	0.42	C	22.3	6.1
	HARTLEY ROAD	SB	LTR	0.08	B	14.2	0.09	B	15.4	0.1	C	20.9	5.5
		OVERALL		**-**	**A**	**7.1**	**-**	**A**	**7.6**	**-**	**B**	**10.0**	2.4
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.22	C	22.9	0.25	C	24.8	0.18	C	24.3	-0.5
			TR	0.84	B	18.0	0.86	B	19.0	0.92	B	17.4	-1.6
	ROUTE 6/17M	WB	L	0.06	B	15.5	0.06	B	16.5	0.16	C	24.6	8.1
			TR	0.89	B	14.4	0.9	B	14.4	0.91	B	17.2	2.8
	6 1/2 STATION ROAD	NB	LTR	0.41	C	20.8	0.44	C	22.3	0.47	C	25.7	3.4
	MAPLE AVENUE	SB	LTR	0.40	C	21.1	0.43	C	22.6	0.45	C	25.8	3.2
		OVERALL		**-**	**B**	**16.8**	**-**	**B**	**17.6**	**-**	**B**	**18.9**	1.3
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED** NB	R	0.03	B	11.5	0.04	B	11.8	0.06	C	17	5.2
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	**UNSIGNALIZED** WB	LT	0.01	A	7.5	0.01	A	7.5	0.01	A	7.5	0.0
		NB	LR	0.04	B	10.3	0.04	B	10.5	0.04	B	10.4	-0.1
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.20	B	12.6	0.22	B	13.1	0.25	B	13.5	0.4
	McVEIGH ROAD	WB	LTR	0.64	D	25.7	0.72	D	31.7	0.78	E	38.7	7.0
	GOLF LINKS ROAD	NB	LTR	0.04	A	7.7	0.05	A	7.8	0.05	A	7.8	0.0
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.6	0.01	A	7.6	0.01	A	7.6	0.0
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.47	B	12.9	0.48	B	13.5	0.6
	McVEIGH ROAD	WB	LTR	-	-	-	0.19	A	9.8	0.22	B	10.3	0.5
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.37	B	11.9	0.41	B	12.6	0.7
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.31	B	11.2	0.35	B	11.9	0.7

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 3-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	McVEIGH ROAD	SB	L	0.10	A	9.8	0.11	A	9.9	0.11	A	9.9	0.0
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.05	A	7.9	0.05	A	7.9	0.05	A	7.9	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.34	C	17.0	0.38	C	18.6	0.38	C	18.6	0.0
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.36	B	13.4	0.36	B	13.5	0.1
	FLETCHER STREET	WB	LT	-	-	-	0.52	A	5.7	0.52	A	5.7	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.24	B	12.2	0.24	B	12.2	0.0
		OVERALL		**-**	**-**	**-**	**-**	**A**	**9.5**	**-**	**A**	**9.5**	0.0
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.05	A	8.2	0.05	A	8.2	0.05	A	8.3	0.1
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.51	C	17.9	0.57	C	20.1	0.57	C	20.2	0.1
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.41	A	4.8	0.41	A	4.9	0.1
	FLETCHER STREET	WB	TR	-	-	-	0.45	B	14.6	0.45	B	14.6	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.45	B	14.7	0.45	B	14.7	0.0
		OVERALL		**-**	**-**	**-**	**-**	**B**	**11.5**	**-**	**B**	**11.5**	0.0
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.04	A	9.3	0.05	A	9.5	0.07	B	11.6	2.1
	CANNON HILL DRIVE	NB	LR	0.43	E	43.3	0.55	F	61.4	0.99	F	201.8	140.4

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE NO. 4-E

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.73	D	25.9	0.81	D	33.3	0.83	E	36.8	3.5
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	8.7	-	A	9.3	-	B	10.8	1.5
	NYS ROUTE 17M EB WEAVE			0.23	A	7.6	0.24	A	8.2	0.34	A	11.3	3.1
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.9	-	B	10.3	-	B	15.0	4.7
	NYS ROUTE 17M WB WEAVE			0.20	A	7.3	0.21	A	7.9	0.22	A	8.5	0.6
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	B	11.4	-	B	12.0	-	B	12.7	0.7
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.10	B	13.1	0.14	B	15.0	0.15	B	16.3	1.3
			TR	0.68	C	23.3	0.77	C	28.8	1.50	F	260.3	231.5
	ROUTE 6/17M	WB	L	0.56	B	14.4	0.68	B	18.0	0.88	D	44.9	26.9
			T	0.55	B	16.2	0.61	B	19.1	0.67	C	20.2	1.1
			TR	0.55	B	16.2	0.61	B	19.0	0.67	C	20.2	1.2
	LOWER ROAD (C.R. 12)	NB	LTR	0.70	D	35.5	0.78	D	42.5	0.92	E	64.9	22.4
	C.R. 50	SB	LTR	0.54	C	29.9	0.62	C	32.1	0.80	D	43.6	11.5
		OVERALL		**-**	**C**	**21.6**	**-**	**C**	**25.7**	**-**	**F**	**114.8**	**89.1**

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

TABLE NO. 4-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER	**UNSIGNALIZED**											
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.00	0.00	A	0.00	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.00	A	0.00	0.00	A	0.00	0.00	A	0.0	0.0
	PSYCH. CENTER S.	SB	LTR	0.45	F	50.9	0.58	F	73.3	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.00	A	9.2	0.00	A	9.4	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.25	F	51.7	0.33	F	66.6	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	1.64	F	333.2	-
			TR	-	-	-	-	-	-	0.52	A	3.2	-
				-	-	-	-	-	-	0.00	A	1.1	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.00	A	8.0	-
			T	-	-	-	-	-	-	1.09	F	76.4	-
			R	-	-	-	-	-	-	0.80	C	22.5	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.25	D	50.7	-
			R	-	-	-	-	-	-	0.21	D	48.1	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	1.37	F	284.7	-
			R	-	-	-	-	-	-	0.19	A	7.4	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**F**	**97.1**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 4-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.59	A	6.2	0.63	A	6.8	0.74	B	10.5	3.7
	ROUTE 6/17M	WB	LTR	0.78	A	8.4	0.85	B	12.3	1.32	F	164.6	152.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.41	B	19.3	0.46	C	23.2	0.55	C	26.8	3.6
	HARTLEY ROAD	SB	LTR	0.09	B	18.1	0.10	C	21.4	0.38	C	25.6	4.2
		OVERALL		**-**	**A**	**8.6**	**-**	**B**	**11.3**	**-**	**F**	**102.3**	91.0
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.32	C	30	0.40	D	35.7	0.48	D	43.4	7.7
			TR	0.89	C	21.8	0.91	C	24.8	0.93	C	33.9	9.1
	ROUTE 6/17M	WB	L	0.07	B	19.2	0.08	C	22.3	0.08	C	26.6	4.3
			TR	0.92	B	18.7	0.94	C	25.9	1.40	F	204.3	178.4
	6 1/2 STATION ROAD	NB	LTR	0.47	C	26.1	0.57	C	30.5	0.54	D	35.3	4.8
	MAPLE AVENUE	SB	LTR	0.51	C	26.2	0.50	C	29.8	0.62	D	37.2	7.4
		OVERALL		**-**	**C**	**21.4**	**-**	**C**	**26.6**	**-**	**F**	**131.1**	104.5
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED** NB	R	0.05	B	12.4	0.05	B	13.0	0.06	B	13.7	0.7
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	**UNSIGNALIZED** WB	LT	0.01	A	7.5	0.01	A	7.5	0.08	A	7.7	0.2
		NB	LR	0.05	B	10.8	0.05	B	11.0	0.08	B	12.3	1.3
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.27	B	14.3	0.34	C	16.1	0.40	C	19.1	3.0
	McVEIGH ROAD	WB	LTR	0.90	F	56.4	1.11	F	115.9	1.28	F	183.7	67.8
	GOLF LINKS ROAD	NB	LTR	0.05	A	7.8	0.06	A	7.9	0.07	A	8.1	0.2
	GOLF LINKS ROAD	SB	LTR	0.01	A	7.7	0.01	A	7.7	0.02	A	7.8	0.1
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.66	C	20.3	0.67	C	21.2	0.9
	McVEIGH ROAD	WB	LTR	-	-	-	0.31	B	12.3	0.32	B	12.9	0.6
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.55	C	17.0	0.57	C	18.1	1.1
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.47	C	15.2	0.57	C	17.9	2.7

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 4-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	McVEIGH ROAD	SB	L	0.12	B	10.1	0.13	B	10.2	0.15	B	10.3	0.1
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.06	A	8.0	0.07	A	8.1	0.07	A	8.1	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.41	C	24.3	0.48	D	28.7	0.69	D	32.6	3.9
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.44	B	14.5	0.44	B	14.5	0.0
	FLETCHER STREET	WB	LT	-	-	-	0.70	A	9.2	0.67	A	8.4	-0.8
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.29	B	12.7	0.41	B	14.1	1.4
		OVERALL		**-**	**-**	**-**	**-**	**B**	**11.5**	**-**	**B**	**11.6**	0.1
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.06	A	0.06	0.06	A	8.5	0.07	A	8.5	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.00	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.71	D	0.71	0.81	E	38.6	0.82	E	40.8	2.2
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.57	A	7.1	0.57	A	7.2	0.1
	FLETCHER STREET	WB	TR	-	-	-	0.56	B	16.5	0.55	B	16.2	-0.3
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.56	B	16.6	0.54	B	16.3	-0.3
		OVERALL		**-**	**-**	**-**	**-**	**B**	**13.5**	**-**	**B**	**13.3**	-0.2
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.06	A	9.8	0.07	B	10.2	0.07	B	10.6	0.4
	CANNON HILL DRIVE	NB	LR	0.80	F	115.2	1.08	F	213.5	2.53	F	[-]	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE NO. 5-E

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.48	C	15.0	0.52	C	16.3	0.57	C	18.4	2.1
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	7.3	-	A	7.8	-	A	7.9	0.1
	NYS ROUTE 17M EB WEAVE			0.17	A	6.2	0.19	A	6.6	0.19	A	6.7	0.1
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.8	-	B	10.2	-	B	10.4	0.2
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.16	A	5.9	0.21	A	7.8	1.9
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	9.4	-	A	9.9	-	B	12.2	2.3
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.07	B	10.6	0.09	B	12.3	0.16	B	15.1	2.8
			TR	0.59	B	17.9	0.67	C	21.9	0.70	C	23.5	1.6
	ROUTE 6/17M	WB	L	0.31	B	11.4	0.37	B	13.7	0.44	B	14.5	0.8
			T	0.42	B	13.1	0.48	B	15.6	0.74	C	22.2	6.6
			TR	0.42	B	13.1	0.48	B	15.6	0.74	C	22.3	6.7
	LOWER ROAD (C.R. 12)	NB	LTR	0.68	C	32.3	0.73	D	35.3	0.73	D	36.1	0.8
	C.R. 50	SB	LTR	0.48	C	28.4	0.53	C	28.3	0.54	C	28.7	0.4
		OVERALL		**-**	**B**	**18.8**	**-**	**C**	**21.6**	**-**	**C**	**24.3**	**2.7**

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

TABLE NO. 5-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER **UNSIGNALIZED**												
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.01	E	36.6	0.01	E	43.7	0.01	E	48.4	4.7
	PSYCH. CENTER S.	SB	LTR	0.16	D	29.9	0.21	E	36.3	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE **UNSIGNALIZED**												
	ROUTE 6/17M	WB	L	0.05	A	9.8	0.06	B	10.1	-	-	-	-
	TRAINING CENTER LANE	NB	LR	1.04	F	143.7	1.35	F	266.2	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.35	D	45.1	-
			T	-	-	-	-	-	-	0.91	D	37.4	-
			R	-	-	-	-	-	-	0.17	B	15.6	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.37	D	43.0	-
			T	-	-	-	-	-	-	0.96	D	46.4	-
			R	-	-	-	-	-	-	0.03	B	12.0	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	1.07	F	153.0	-
			R	-	-	-	-	-	-	0.79	E	77.3	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	1.13	F	114.4	-
			R	-	-	-	-	-	-	1.15	F	122.3	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**E**	**71.6**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 5-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.61	A	6.3	0.65	A	6.4	0.98	C	30.1	23.7
	ROUTE 6/17M	WB	LTR	0.59	A	6.1	0.62	A	6.1	0.54	A	5.0	-1.1
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.26	B	12.7	0.29	B	13.9	0.43	C	26.6	12.7
	HARTLEY ROAD	SB	LTR	0.07	B	12.3	0.08	B	13.3	0.11	C	25.1	11.8
		OVERALL		**-**	**A**	**6.8**	**-**	**A**	**7.0**	**-**	**C**	**21.1**	14.1
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.24	B	17.8	0.27	B	19.2	0.18	C	20.5	1.3
			TR	0.84	B	13.3	0.86	B	13.6	0.94	C	23.2	9.6
	ROUTE 6/17M	WB	L	0.12	B	15.1	0.14	B	16.4	0.31	C	33.3	16.9
			TR	0.85	B	12.6	0.86	B	12.9	0.91	C	21.6	8.7
	6 1/2 STATION ROAD	NB	LTR	0.29	B	18.0	0.32	B	18.7	0.42	C	30.9	12.2
	MAPLE AVENUE	SB	LTR	0.27	B	17.6	0.29	B	19.0	0.38	C	31.0	12.0
		OVERALL		**-**	**B**	**18.8**	**-**	**B**	**14.4**	**-**	**C**	**23.6**	9.2
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED** NB	R	0.06	B	12.4	0.07	B	13.0	0.13	C	20.1	7.1
11	HARTLEY ROAD & ECHO LAKE ROAD/CHEECHUNK ROAD	**UNSIGNALIZED** WB	LT	0.00	A	7.3	0.00	A	7.3	0.00	A	7.3	0.0
		NB	LR	0.02	A	9.0	0.02	A	9.0	0.09	A	9.1	0.1
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.11	B	10.8	0.14	B	11.2	0.15	B	11.3	0.1
	McVEIGH ROAD	WB	LTR	0.24	C	15.1	0.30	C	17.3	0.32	C	18.0	0.7
	GOLF LINKS ROAD	NB	LTR	0.04	A	7.6	0.05	A	7.7	0.06	A	7.7	0.0
	GOLF LINKS ROAD	NB	LTR	0.00	A	7.6	0.00	A	7.6	0.00	A	7.7	0.1
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.18	A	9.2	0.19	A	9.3	0.1
	McVEIGH ROAD	WB	LTR	-	-	-	0.13	A	8.6	0.13	A	8.6	0.0
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.39	B	10.5	0.39	B	10.9	0.4
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.23	A	9.4	0.23	A	9.4	0.0

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 5-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	7.4	0.00	A	7.4	0.00	A	7.5	0.1
	McVEIGH ROAD	SB	L	0.04	A	8.9	0.04	A	9.0	0.04	A	9.0	0.0
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.04	A	7.6	0.04	A	7.6	0.05	A	7.7	0.1
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.23	B	11.6	0.25	B	12.0	0.26	B	12.6	0.6
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.18	B	11.5	0.24	B	12.1	0.6
	FLETCHER STREET	WB	LT	-	-	-	0.25	A	3.8	0.25	A	3.8	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.25	B	12.2	0.24	B	12.2	0.0
		OVERALL		**-**	**-**	**-**	**-**	**A**	**8.8**	**-**	**A**	**9.3**	0.5
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.03	A	7.7	0.03	A	7.7	0.07	A	7.8	0.1
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.14	B	10.6	0.15	B	10.8	0.16	B	11.6	0.8
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.26	A	3.8	0.37	A	4.6	0.8
	FLETCHER STREET	WB	TR	-	-	-	0.31	B	12.8	0.30	B	12.8	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.16	B	11.4	0.15	B	11.4	0.0
		OVERALL		**-**	**-**	**-**	**-**	**A**	**9.1**	**-**	**A**	**8.9**	-0.2
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.01	A	9.1	0.01	A	9.3	0.01	B	12.8	3.5
	CANNON HILL DRIVE	NB	LR	0.05	C	23.7	0.05	D	26.9	0.16	F	72.9	46.0

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE NO. 6-E

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
1	U.S. ROUTE 6/NYS ROUTE 17M & I-84 WB OFF RAMP	**UNSIGNALIZED** WB	R	0.48	C	15.0	0.52	C	16.3	0.53	C	16.5	0.2
2, 3, 4	U.S. ROUTE 6/NYS ROUTE 17M & I-84 INTERCHANGE RAMPS[2]	**RAMPS**											
	I-84 WB ON RAMP FROM NYS ROUTE 17M EB			-	A	7.3	-	A	7.8	-	A	9.1	1.3
	NYS ROUTE 17M EB WEAVE			0.17	A	6.2	0.19	A	6.6	0.27	A	9.2	2.6
	I-84 EB OFF RAMP TO NYS ROUTE 17M EB			-	A	9.8	-	B	10.2	-	B	14.5	4.3
	NYS ROUTE 17M WB WEAVE			0.15	A	5.5	0.16	A	5.9	0.17	A	6.1	0.2
	I-84 EB ON RAMP FROM NYS ROUTE 17M WB			-	A	9.4	-	A	9.9	-	B	10.1	0.2
5	U.S. ROUTE 6/NYS ROUTE 17M & C.R. 12/C.R. 50	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.07	B	10.6	0.09	B	12.3	0.10	B	13.4	1.1
			TR	0.59	B	17.9	0.67	C	21.9	1.33	F	180.9	159.0
	ROUTE 6/17M	WB	L	0.31	B	11.4	0.37	B	13.7	0.74	C	22.6	8.9
			T	0.42	B	13.1	0.48	B	15.6	0.51	B	17.2	1.6
			TR	0.42	B	13.1	0.48	B	15.6	0.51	B	17.2	1.6
	LOWER ROAD (C.R. 12)	NB	LTR	0.68	C	32.3	0.73	D	35.3	0.78	D	39.4	4.1
	C.R. 50	SB	LTR	0.48	C	28.4	0.53	C	28.3	0.65	C	31.6	3.3
		OVERALL		**-**	**B**	**18.8**	**-**	**C**	**21.6**	**-**	**F**	**87.6**	**66.0**

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) INTERSECTION 2 - 4 ARE MERGE/DIVERGE RAMPS AND WEAVING SEGMENT TYPE INTERSECTIONS. ANALYSIS FOR THESE INTERSECTIONS WAS CONDUCTED UTILIZING THE HIGHWAY CAPACITY MANUAL (HCM 2010) METHODOLOGY WITH THE HCS 2010 ANALYSIS SOFTWARE. LEVEL OF SERVICE FOR RAMP AND WEAVING SEGMENT TYPE INTERSECTION IS DETERMINED BY THE DENSITY MEASURED IN UNITS OF PASSENGER CARS PER MILE PER LANE, WHICH ARE THE VALUES SUMMARIZED ABOVE. APPENDIX "C" CONTAINS A DESCRIPTION OF THE LEVELS OF SERVICE FOR RAMP AND WEAVING SEGEMENTS.

TABLE NO. 6-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
6	U.S. ROUTE 6/NYS ROUTE 17M & MID-HUDSON PSYCHIATRIC CENTER	**UNSIGNALIZED**											
	ROUTE 6/17M	EB	L	0.01	B	11.0	0.01	B	11.5	-	-	-	-
	ROUTE 6/17M	WB	L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	PSYCH. CENTER N.	NB	LTR	0.01	E	36.6	0.01	E	43.7	0.02	F	57.2	13.5
	PSYCH. CENTER S.	SB	LTR	0.16	D	29.9	0.21	E	36.3	-	-	-	-
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.05	A	9.8	0.06	B	10.1	-	-	-	-
	TRAINING CENTER LANE	NB	LR	1.04	F	143.7	1.35	F	266.2	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	1.17	F	136.4	-
			T	-	-	-	-	-	-	0.52	A	6.9	-
			R	-	-	-	-	-	-	0.10	A	4.4	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.14	C	22.5	-
			T	-	-	-	-	-	-	0.96	E	57.6	-
			R	-	-	-	-	-	-	0.93	D	47.6	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.85	F	98.2	-
			R	-	-	-	-	-	-	0.63	E	67.3	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.59	E	66.8	-
			R	-	-	-	-	-	-	0.10	B	18.8	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**E**	**56.9**	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 6-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.61	A	6.3	0.65	A	6.4	0.60	A	6.5	0.1
	ROUTE 6/17M	WB	LTR	0.59	A	6.1	0.62	A	6.1	0.95	C	23.4	17.3
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.26	B	12.7	0.29	B	13.9	0.45	C	26.5	12.6
	HARTLEY ROAD	SB	LTR	0.07	B	12.3	0.08	B	13.3	0.46	C	27.1	13.8
		OVERALL		**-**	**A**	**6.8**	**-**	**A**	**7.0**	**-**	**B**	**18.2**	11.2
9	U.S. ROUTE 6/NYS ROUTE 17M & 6 1/2 STATION ROAD/ MAPLE AVENUE	**SIGNALIZED**											
	ROUTE 6/17M	EB	L	0.24	B	17.8	0.27	B	19.2	0.59	D	40.1	20.9
			TR	0.84	B	13.3	0.86	B	13.6	0.92	C	28.5	14.9
	ROUTE 6/17M	WB	L	0.12	B	15.1	0.14	B	16.4	0.08	B	19.9	3.5
			TR	0.85	B	12.6	0.86	B	12.9	1.04	F	50.9	38.0
	6 1/2 STATION ROAD	NB	LTR	0.29	B	18.0	0.32	B	18.7	0.44	D	36.4	17.7
	MAPLE AVENUE	SB	LTR	0.27	B	17.6	0.29	B	19.0	0.46	D	36.2	17.2
		OVERALL		**-**	**B**	**18.8**	**-**	**B**	**14.4**	**-**	**D**	**42.0**	27.6
	WITH SIGNAL TIMING IMPROVEMENTS												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.66	D	49.1	29.9
			TR	-	-	-	-	-	-	0.93	C	31.0	17.4
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.08	C	20.7	4.3
			TR	-	-	-	-	-	-	0.99	D	39.4	26.5
	6 1/2 STATION ROAD	NB	LTR	-	-	-	-	-	-	0.46	D	40.9	22.2
	MAPLE AVENUE	SB	LTR	-	-	-	-	-	-	0.49	D	40.9	21.9
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**37.1**	22.7
10	U.S. ROUTE 6/NYS ROUTE 17M & POLICE HIGHWAY	**UNSIGNALIZED**											
		NB	R	0.06	B	12.4	0.07	B	13.0	0.07	B	13.2	0.2
11	HARTLEY ROAD &	**UNSIGNALIZED**											
	ECHO LAKE ROAD/CHEECHUNK ROAD	WB	LT	0.00	A	7.3	0.00	A	7.3	0.06	A	7.5	0.2
		NB	LR	0.02	A	9.0	0.02	A	9.0	0.02	A	9.6	0.6
12	GOLF LINKS ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	McVEIGH ROAD	EB	LTR	0.11	B	10.8	0.14	B	11.2	0.16	B	11.7	0.5
	McVEIGH ROAD	WB	LTR	0.24	C	15.1	0.30	C	17.3	0.33	C	19.3	2.0
	GOLF LINKS ROAD	NB	LTR	0.04	A	7.6	0.05	A	7.7	0.06	A	7.8	0.1
	GOLF LINKS ROAD	NB	LTR	0.00	A	7.6	0.00	A	7.6	0.01	A	7.6	0.0
	WITH ALL-WAY STOP CONTROL												
	McVEIGH ROAD	EB	LTR	-	-	-	0.18	A	9.2	0.18	A	9.3	0.1
	McVEIGH ROAD	WB	LTR	-	-	-	0.13	A	8.6	0.13	A	8.7	0.1
	GOLF LINKS ROAD	NB	LTR	-	-	-	0.39	B	10.5	0.36	B	10.5	0.0
	GOLF LINKS ROAD	SB	LTR	-	-	-	0.23	A	9.4	0.29	A	9.9	0.5

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 6-E (CONTINUED)

LEVEL OF SERVICE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
13	ECHO LAKE ROAD & McVEIGH ROAD	**UNSIGNALIZED**											
	ECHO LAKE ROAD	EB	LT	0.00	A	7.4	0.00	A	7.4	0.00	A	7.4	0.0
	McVEIGH ROAD	SB	L	0.04	A	8.9	0.04	A	9.0	0.05	A	9.0	0.0
14	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	FLETCHER STREET	WB	LT	0.04	A	7.6	0.04	A	7.6	0.04	A	7.6	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	0.23	B	11.6	0.25	B	12.0	0.33	B	12.2	0.2
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	TR	-	-	-	0.18	B	11.5	0.17	B	11.5	0.0
	FLETCHER STREET	WB	LT	-	-	-	0.25	A	3.8	0.24	A	3.8	0.0
	NYS ROUTE 17 EB OFF-RAMP	SB	LR	-	-	-	0.25	B	12.2	0.36	B	13.4	1.2
		OVERALL		**-**	**-**	**-**	**-**	**A**	**8.8**	**-**	**A**	**9.8**	1.0
15	FLETCHER STREET & NYS ROUTE 17 EB OFF-RAMP	**UNSIGNALIZED**											
	FLETCHER STREET	EB	LT	0.03	A	7.7	0.03	A	7.7	0.03	A	7.7	0.0
	FLETCHER STREET	WB	TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	0.14	B	10.6	0.15	B	10.8	0.15	B	10.9	0.1
	WITH SIGNALIZATION												
	FLETCHER STREET	EB	LT	-	-	-	0.26	A	3.8	0.26	A	3.8	0.0
	FLETCHER STREET	WB	TR	-	-	-	0.31	B	12.8	0.30	B	12.8	0.0
	NYS ROUTE 17 WB OFF-RAMP	NB	LR	-	-	-	0.16	B	11.4	0.15	B	11.4	0.0
		OVERALL		**-**	**-**	**-**	**-**	**A**	**9.1**	**-**	**A**	**9.0**	-0.1
16	NYS ROUTE 17M & CANNON HILL DRIVE[2]	**UNSIGNALIZED**											
	NYS ROUTE 17M	WB	LT	0.01	A	9.1	0.01	A	9.3	0.01	A	9.9	0.6
	CANNON HILL DRIVE	NB	LR	0.05	C	23.7	0.05	D	26.9	0.21	F	96.9	70.0

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

2) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE 7-E

QUEUE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD (8:30 AM - 9:30 AM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	9'	23'	12'	26'	12'	26'
			TR	1500'+	674'	971'	798'	1083'	1535'	1851'
		WB	L	485'	17'	42'	19'	46'	20'	48'
			TR	950'+	122'	175'	140'	194'	150'	205'
		NB	LTR	500'+	155'	280'	182'	339'	201'	378'
		SB	LTR	640'	73'	137'	87'	160'	117'	237'
	WITH TIMING IMPROVEMENTS	EB	L	675'	-	-	-	-	10'	23'
			TR	1500'+	-	-	-	-	1553'	1819'
		WB	L	485'	-	-	-	-	18'	58'
			TR	950'+	-	-	-	-	138'	185'
		NB	LTR	500'+	-	-	-	-	260'	441'
		SB	LTR	640'	-	-	-	-	136'	284'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	414'	638'
			T	1500'+	-	-	-	-	236'	373'
			R	100'	-	-	-	-	0'	5'
		WB	L	200'	-	-	-	-	10'	29'
			T	1500'+	-	-	-	-	453'	720'
			R	135'	-	-	-	-	287'	555'
		NB	LT	250'	-	-	-	-	9'	31'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	18'	48'
			R	600'+	-	-	-	-	0'	21'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	334'	701'	537'	793'	587'	820'
	HARTLEY ROAD	WB	LTR	1500'+	128'	235'	152'	269'	697'	936'
		NB	LTR	300'+	56'	112'	62'	133'	72'	162'
		SB	LTR	300'+	10'	36'	11'	37'	26'	77'
	WITH TIMING IMPROVEMENTS	EB	LTR	1500'+	-	-	-	-	413'	772'
		WB	LTR	1500'+	-	-	-	-	647'	886'
		NB	LTR	300'+	-	-	-	-	79'	202'
		SB	LTR	300'+	-	-	-	-	20'	83'
9	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	6 1/2 STATION ROAD/	EB	L	200'	6'	19'	7'	21'	7'	21'
	MAPLE AVENUE		TR	1500'+	355'	728'	435'	854'	491'	919'
		WB	L	200'	6'	18'	6'	19'	6'	19'
			TR	1500'+	264'	407'	341'	445'	862'	1253'
		NB	LTR	250'+	39'	89'	81'	149'	85'	155'
		SB	LTR	250'+	66'	138'	98'	98'	48'	100'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS FOR THE EVENT CONDITIONS CONTAINED IN APPENDIX "E".

TABLE 8-E

QUEUE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	6'	16'	6'	17'	7'	18'
			TR	1500'+	227'	349'	243'	385'	261'	413'
		WB	L	485'	47'	78'	50'	83'	51'	84'
			TR	950'+	123'	224'	183'	244'	417'	593'
		NB	LTR	500'+	139'	275'	150'	308'	156'	326'
		SB	LTR	640'	115'	199'	122'	216'	145'	272'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	4'	16'
			T	1500'+	-	-	-	-	151'	316'
			R	100'	-	-	-	-	0'	0'
		WB	L	200'	-	-	-	-	0'	4'
			T	1500'+	-	-	-	-	495'	954'
			R	135'	-	-	-	-	0'	0'
		NB	LT	250'	-	-	-	-	9'	31'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	333'	567'
			R	600'+	-	-	-	-	443'	728'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	105'	222'	124'	247'	356'	727'
	HARTLEY ROAD	WB	LTR	1500'+	175'	366'	210'	423'	253'	573'
		NB	LTR	300'+	34'	104'	42'	112'	57'	113'
		SB	LTR	300'+	4'	27'	5'	29'	7'	29'
9	U.S. ROUTE 6/NYS ROUTE 17M &									
	6 1/2 STATION ROAD/	NB	L	90'+	7'	21'	8'	22'	9'	22'
	MAPLE AVENUE		TR	300'+	88'	341'	108'	357'	436'	757'
		WB	L	200'	6'	15'	8'	15'	6'	16'
			TR	1500'+	276'	497'	334'	560'	431'	580'
		NB	LTR	250'+	60'	152'	73'	163'	92'	164'
		SB	LTR	250'+	43'	122'	54'	132'	67'	130'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS FOR THE EVENT CONDITIONS CONTAINED IN APPENDIX "E".

TABLE 9-E

QUEUE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	7'	18'	8'	20'	8'	20'
			TR	1500'+	289'	466'	334'	560'	1125'	1383'
		WB	L	485'	57'	92'	62'	134'	109'	227'
			TR	950'+	214'	282'	242'	318'	287'	375'
		NB	LTR	500'+	177'	377'	239'	431'	284'	466'
		SB	LTR	640'	141'	270'	182'	354'	261'	422'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	568'	789'
			T	1500'+	-	-	-	-	91'	132'
			R	100'	-	-	-	-	0'	0'
		WB	L	200'	-	-	-	-	0'	3'
			T	1500'+	-	-	-	-	909'	1161'
			R	135'	-	-	-	-	244'	406'
		NB	LT	250'	-	-	-	-	12'	35'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	98'	202'
			R	600'+	-	-	-	-	54'	114'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	171'	304'	213'	365'	285'	581'
	HARTLEY ROAD	WB	LTR	1500'+	300'	634'	399'	737'	1084'	1339'
		NB	LTR	300'+	60'	134'	69'	150'	81'	183'
		SB	LTR	300'+	7'	29'	8'	31'	41'	92'
9	U.S. ROUTE 6/NYS ROUTE 17M &									
	6 1/2 STATION ROAD/	NB	L	90'+	11'	23'	12'	25'	12'	25'
	MAPLE AVENUE		TR	300'+	150'	390'	343'	414'	372'	461'
		WB	L	200'	10'	16'	7'	17'	7'	18'
			TR	1500'+	465'	787'	547'	893'	1384'	1693'
		NB	LTR	250'+	105'	219'	117'	251'	118'	170'
		SB	LTR	250'+	79'	151'	87'	163'	91'	285'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS FOR THE EVENT CONDITIONS CONTAINED IN APPENDIX "E".

TABLE 10-E

QUEUE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND MORNING EVENT PEAK EXIT PERIOD (12:00 PM - 1:00 PM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	6'	16'	7'	19'	7'	19'
			TR	1500'+	247'	374'	276'	417'	295'	453'
		WB	L	485'	30'	54'	32'	57'	38'	65'
			TR	950'+	152'	203'	170'	226'	329'	422'
		NB	LTR	500'+	171'	325'	213'	384'	214'	394'
		SB	LTR	640'	114'	192'	140'	250'	142'	262'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	13'	56'
			T	1500'+	-	-	-	-	383'	616'
			R	100'	-	-	-	-	3'	33'
		WB	L	200'	-	-	-	-	18'	75'
			T	1500'+	-	-	-	-	434'	686'
			R	135'	-	-	-	-	0'	3'
		NB	LT	250'	-	-	-	-	66'	168'
			R	150'	-	-	-	-	0'	15'
		SB	LT	600'+	-	-	-	-	353'	546'
			R	600'+	-	-	-	-	218'	424'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	116'	279'	142'	317'	671'	974'
	HARTLEY ROAD	WB	LTR	1500'+	109'	253'	132'	285'	154'	297'
		NB	LTR	300'+	23'	82'	29'	97'	49'	100'
		SB	LTR	300'+	3'	25'	4'	28'	7'	28'
9	U.S. ROUTE 6/NYS ROUTE 17M &									
	6 1/2 STATION ROAD/	NB	L	90'+	9'	26'	10'	30'	13'	32'
	MAPLE AVENUE		TR	300'+	162'	302'	190'	352'	539'	975'
		WB	L	200'	5'	18'	6'	20'	7'	20'
			TR	1500'+	180'	337'	210'	395'	356'	463'
		NB	LTR	250'+	31'	89'	38'	105'	20'	65'
		SB	LTR	250'+	11'	54'	12'	60'	62'	117'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS FOR THE EVENT CONDITIONS CONTAINED IN APPENDIX "E".

TABLE 11-E

QUEUE SUMMARY TABLE - SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM - 3:30 PM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					50%	95%	50%	95%	50%	95%
5	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	C.R. 12/C.R. 50	EB	L	675'	6'	16'	7'	19'	7'	18'
			TR	1500'+	247'	374'	276'	417'	922'	1241'
		WB	L	485'	30'	54'	32'	57'	36'	91'
			TR	950'+	152'	203'	170'	226'	183'	240'
		NB	LTR	500'+	171'	325'	213'	384'	239'	434'
		SB	LTR	640'	114'	192'	140'	250'	174'	353'
	WITH TIMING IMPROVEMENTS	EB	L	675'	-	-	-	-	12'	25'
			TR	1500'+	-	-	-	-	1372'	1612'
		WB	L	485'	-	-	-	-	89'	198'
			TR	950'+	-	-	-	-	260'	315'
		NB	LTR	500'+	-	-	-	-	384'	583'
		SB	LTR	640'	-	-	-	-	287'	455'
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	571'	804'
			T	1500'+	-	-	-	-	230'	310'
			R	100'	-	-	-	-	6'	21'
		WB	L	200'	-	-	-	-	22'	50'
			T	1500'+	-	-	-	-	655'	932'
			R	135'	-	-	-	-	251'	448'
		NB	LT	250'	-	-	-	-	88'	197'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	31'	82'
			R	600'+	-	-	-	-	0'	26'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	116'	279'	142'	317'	182'	353'
	HARTLEY ROAD	WB	LTR	1500'+	109'	253'	132'	285'	636'	929'
		NB	LTR	300'+	23'	82'	29'	97'	54'	109'
		SB	LTR	300'+	3'	25'	4'	28'	22'	68'
9	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	6 1/2 STATION ROAD/	EB	L	200'	9'	26'	10'	30'	12'	47'
	MAPLE AVENUE		TR	1500'+	162'	302'	190'	352'	341'	428'
		WB	L	200'	5'	18'	6'	20'	7'	20'
			TR	1500'+	180'	337'	210'	395'	893'	1302'
		NB	LTR	250'+	31'	89'	38'	105'	64'	122'
		SB	LTR	250'+	11'	54'	12'	60'	21'	69'
	WITH TIMING IMPROVEMENTS	EB	L	200'	-	-	-	-	14'	67'
			TR	1500'+	-	-	-	-	339'	352'
		WB	L	200'	-	-	-	-	7'	18'
			TR	1500'+	-	-	-	-	912'	1193'
		NB	LTR	250'+	-	-	-	-	23'	73'
		SB	LTR	250'+	-	-	-	-	70'	129'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS FOR THE EVENT CONDITIONS CONTAINED IN APPENDIX "E".

AMY'S KITCHEN & SCIENCE OF THE SOUL

CAPACITY ANALYSIS

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS ANALYSIS

AMY'S KITCHEN & SCIENCE OF THE SOUL

WEEKDAY MORNING EVENT
PEAK ENTRY PERIOD (8:30 AM – 9:30 AM)

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	471	0	706	0	0	1449	66	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1715	0	3490	0	0	3321	1419	0	0
Flt Permitted										
Satd. Flow (perm)	0	1715	0	3490	0	0	3321	1419	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	5%	6%	11%	5%	5%
Adj. Flow (vph)	0	496	0	743	0	0	1525	69	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	496	0	743	0	0	1525	69	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	471	0	706	0	0	1449	66	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	7	5	5	5	5	6	11	5	5
Mvmt Flow	0	496	0	743	0	0	1525	69	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1506	372	1525	0	0	743	0	0
Stage 1	743	-	-	-	-	-	-	-
Stage 2	763	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.74	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.37	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	140	630	419	-	-	841	-	0
Stage 1	479	-	-	-	-	-	-	0
Stage 2	469	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	140	630	419	-	-	841	-	-
Mov Cap-2 Maneuver	140	-	-	-	-	-	-	-
Stage 1	479	-	-	-	-	-	-	-
Stage 2	469	-	-	-	-	-	-	-

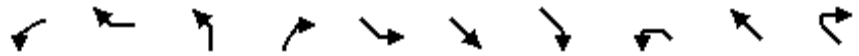
Approach	WB	NB	SB
HCM Control Delay, s	28.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	419	-	-	630	841	-
HCM Lane V/C Ratio	-	-	-	0.787	-	-
HCM Control Delay (s)	0	-	-	28.5	0	-
HCM Lane LOS	A	-	-	D	A	-
HCM 95th %tile Q(veh)	0	-	-	7.6	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	315	0	0	0	1449	0	0	706	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3406	0	0	3438	1455
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3406	0	0	3438	1455
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	13%	5%	5%	5%	6%	5%	5%	5%	11%
Adj. Flow (vph)	0	335	0	0	0	1541	0	0	751	118
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	335	0	0	0	1541	0	0	751	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	187	0	0	0	1197	567	0	630	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1630	0	0	0	3343	1538	0	3406	0
Flt Permitted										
Satd. Flow (perm)	0	1630	0	0	0	3343	1538	0	3406	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	7%	5%	5%	5%	8%	5%	5%	6%	5%
Adj. Flow (vph)	0	197	0	0	0	1260	597	0	663	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	197	0	0	0	1260	597	0	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	542	0	0	0	1197	0	0	630	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1624	0	0	0	3292	0	0	3423	1399
Flt Permitted										
Satd. Flow (perm)	0	1624	0	0	0	3292	0	0	3423	1399
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	8%	5%	5%	5%	8%	5%	5%	6%	16%
Adj. Flow (vph)	0	571	0	0	0	1260	0	0	663	116
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	571	0	0	0	1260	0	0	663	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	48	1502	28	79	634	54	130	145	54	102	71	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.988			0.978			0.978	
Flt Protected	0.950			0.950				0.981			0.976	
Satd. Flow (prot)	1876	1896	0	1581	3158	0	0	1850	0	0	1716	0
Flt Permitted	0.317			0.088				0.766			0.623	
Satd. Flow (perm)	626	1896	0	146	3158	0	0	1445	0	0	1095	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			12			9			9	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2983	
Travel Time (s)		23.3			14.7			23.0			45.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	52	1633	30	86	689	59	141	158	59	111	77	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	1663	0	86	748	0	0	358	0	0	224	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	48.0		21.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	48.0%		21.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	42.0		15.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.13	1.82		0.46	0.48			0.90			0.74	
Control Delay	8.6	395.5		18.1	16.9			58.8			46.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.6	395.5		18.1	16.9			58.8			46.3	
Queue Length 50th (ft)	12	~1535		20	150			201			117	
Queue Length 95th (ft)	26	#1851		48	205			#378			#237	
Internal Link Dist (ft)		1460			890			932			2903	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	530	913		323	1568			403			307	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	1.82		0.27	0.48			0.89			0.73	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 91.3
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	48	1502	28	79	634	54	130	145	54	102	71	33
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1901	1995	1665	1683	1814	1948	1928	1948	1910	1860	1910
Adj Flow Rate, veh/h	52	1633	19	86	689	48	141	158	48	111	77	25
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	420	940	11	153	1574	110	203	185	53	204	129	36
Arrive On Green	0.03	0.50	0.50	0.04	0.52	0.52	0.27	0.25	0.25	0.27	0.25	0.25
Sat Flow, veh/h	1881	1876	22	1585	3033	211	586	750	215	572	523	146
Grp Volume(v), veh/h	52	0	1652	86	363	374	347	0	0	213	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1897	1585	1598	1645	1551	0	0	1240	0	0
Q Serve(g_s), s	1.2	0.0	43.5	2.3	12.3	12.3	5.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	43.5	2.3	12.3	12.3	18.5	0.0	0.0	13.4	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.13	0.41		0.14	0.52		0.12
Lane Grp Cap(c), veh/h	420	0	951	153	830	854	477	0	0	398	0	0
V/C Ratio(X)	0.12	0.00	1.74	0.56	0.44	0.44	0.73	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	631	0	951	357	830	854	543	0	0	456	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.7	0.0	21.6	20.4	13.0	13.0	31.1	0.0	0.0	28.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	336.0	1.2	1.7	1.6	3.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	111.2	1.1	5.7	5.9	8.0	0.0	0.0	4.4	0.0	0.0
LnGrp Delay(d),s/veh	10.7	0.0	357.6	21.6	14.7	14.6	34.4	0.0	0.0	29.2	0.0	0.0
LnGrp LOS	B		F	C	B	B	C			C		
Approach Vol, veh/h		1704			823			347			213	
Approach Delay, s/veh		347.0			15.4			34.4			29.2	
Approach LOS		F			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	51.0		27.4	9.8	49.5		27.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	15.0	42.0		25.0
Max Q Clear Time (g_c+I1), s	3.2	14.3		20.5	4.3	45.5		15.4
Green Ext Time (p_c), s	0.0	19.1		0.9	0.1	0.0		1.5

Intersection Summary		
HCM 2010 Ctrl Delay		201.5
HCM 2010 LOS		F

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	1716	0	0	778	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1879	0	0	1782	1928	0
Flt Permitted						
Satd. Flow (perm)	1879	0	0	1782	1928	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			537	353	
Travel Time (s)	5.7			8.1	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	1806	0	0	819	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1806	0	0	819	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

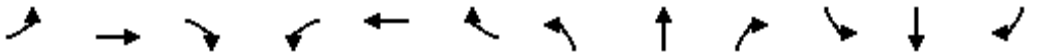
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	1716	0	0	778	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	1806	0	0	819	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1806	0	2625	1806
Stage 1	-	-	-	-	1806	-
Stage 2	-	-	-	-	819	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	343	-	55	127
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	546	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	343	-	55	127
Mov Cap-2 Maneuver	-	-	-	-	55	-
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	343	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

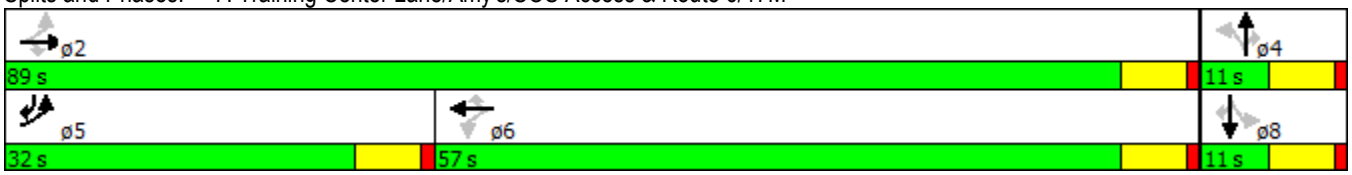


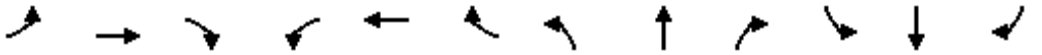
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	623	1045	48	26	725	683	14	0	31	26	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.126			0.262								
Satd. Flow (perm)	241	1837	1025	297	1680	1512	0	1188	1009	0	1681	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			49			236			98			37
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		537			1414			764			522	
Travel Time (s)		8.1			17.5			20.8			11.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	685	1148	53	29	797	751	15	0	34	29	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	685	1148	53	29	797	751	0	15	34	0	29	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6			4			8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	32.0	89.0	89.0	57.0	57.0	57.0	11.0	11.0	11.0	11.0	11.0	32.0
Total Split (%)	32.0%	89.0%	89.0%	57.0%	57.0%	57.0%	11.0%	11.0%	11.0%	11.0%	11.0%	32.0%
Maximum Green (s)	26.0	83.0	83.0	51.0	51.0	51.0	5.0	5.0	5.0	5.0	5.0	26.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	1.07	0.70	0.06	0.18	0.89	0.82		0.25	0.24		0.34	0.07
Control Delay	81.4	5.8	0.6	16.8	34.8	22.1		55.9	3.8		56.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	81.4	5.8	0.6	16.8	34.8	22.1		55.9	3.8		56.3	7.2
Queue Length 50th (ft)	~414	236	0	10	453	287		9	0		18	0
Queue Length 95th (ft)	#638	373	5	29	#720	#555		31	0		48	21
Internal Link Dist (ft)		457			1334			684			442	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	639	1649	925	159	898	918		62	145		88	496
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	1.07	0.70	0.06	0.18	0.89	0.82		0.24	0.23		0.33	0.07

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 95.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



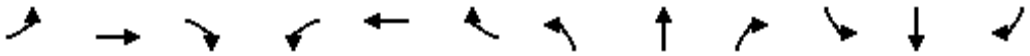


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	623	1045	48	26	725	683	14	0	31	26	0	34
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1909	1837	1205	1134	1680	1779	1900	1188	1188	1900	1681	1638
Adj Flow Rate, veh/h	685	1148	53	29	797	751	15	0	34	29	0	37
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	5	60	60	8	2	2	2	60	2	2	16
Cap, veh/h	568	1524	850	216	857	771	72	0	50	72	0	780
Arrive On Green	0.26	0.83	0.83	0.51	0.51	0.51	0.05	0.00	0.05	0.05	0.00	0.05
Sat Flow, veh/h	1818	1837	1025	282	1680	1512	0	0	1009	0	0	1392
Grp Volume(v), veh/h	685	1148	53	29	797	751	15	0	34	29	0	37
Grp Sat Flow(s),veh/h/ln	1818	1837	1025	282	1680	1512	0	0	1009	0	0	1392
Q Serve(g_s), s	26.0	28.3	0.9	5.6	44.2	48.4	0.0	0.0	3.3	0.0	0.0	1.2
Cycle Q Clear(g_c), s	26.0	28.3	0.9	5.6	44.2	48.4	5.0	0.0	3.3	5.0	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	568	1524	850	216	857	771	72	0	50	72	0	780
V/C Ratio(X)	1.21	0.75	0.06	0.13	0.93	0.97	0.21	0.00	0.67	0.40	0.00	0.05
Avail Cap(c_a), veh/h	568	1524	850	216	857	771	72	0	50	72	0	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	3.9	1.5	13.4	22.8	23.9	50.0	0.0	46.7	50.0	0.0	9.9
Incr Delay (d2), s/veh	108.6	3.5	0.1	1.3	17.8	26.6	0.5	0.0	25.1	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.8	15.2	0.3	0.5	24.6	25.7	0.4	0.0	1.3	0.8	0.0	1.0
LnGrp Delay(d),s/veh	139.8	7.3	1.7	14.7	40.7	50.5	50.5	0.0	71.8	51.3	0.0	10.0
LnGrp LOS	F	A	A	B	D	D	D		E	D		A
Approach Vol, veh/h		1886			1577			49			66	
Approach Delay, s/veh		55.3			44.9			65.3			28.1	
Approach LOS		E			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		89.0		11.0	32.0	57.0		11.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		83.0		5.0	26.0	51.0		5.0
Max Q Clear Time (g_c+I1), s		30.3		7.0	28.0	50.4		7.0
Green Ext Time (p_c), s		19.5		0.0	0.0	0.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.3
HCM 2010 LOS	D

Two Way Analysis cannot be performed on Signalized Intersection.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	952	138	10	1196	13	141	18	11	18	11	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.999			0.991			0.895	
Flt Protected		0.999						0.960			0.993	
Satd. Flow (prot)	0	1745	0	0	1792	0	0	1781	0	0	1212	0
Flt Permitted		0.983			0.988			0.697			0.945	
Satd. Flow (perm)	0	1717	0	0	1771	0	0	1293	0	0	1153	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			1			5			71	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	12	1024	148	11	1286	14	152	19	12	19	12	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1184	0	0	1311	0	0	183	0	0	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

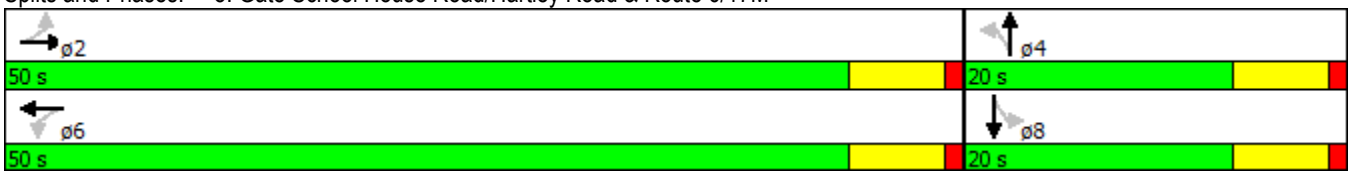
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.05			1.13			0.79			0.54	
Control Delay		57.1			88.4			51.8			21.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		57.1			88.4			51.8			21.7	
Queue Length 50th (ft)		~587			~697			72			26	
Queue Length 95th (ft)		#820			#936			#162			77	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1128			1157			261			286	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.05			1.13			0.70			0.49	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.3	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	952	138	10	1196	13	141	18	11	18	11	101
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1789	1881	1948	1806	1948	1919	1872	1919	1872	1363	1872
Adj Flow Rate, veh/h	12	1024	121	11	1286	14	152	19	12	19	12	109
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	58	1009	118	57	1144	12	274	27	14	78	30	168
Arrive On Green	0.68	0.65	0.65	0.68	0.65	0.65	0.20	0.18	0.18	0.20	0.18	0.18
Sat Flow, veh/h	6	1556	183	5	1765	19	1010	156	82	102	171	957
Grp Volume(v), veh/h	1157	0	0	1311	0	0	183	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1745	0	0	1789	0	0	1248	0	0	1229	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.8	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	43.2	0.0	0.0	46.0	0.0	0.0	9.6	0.0	0.0	7.0	0.0	0.0
Prop In Lane	0.01		0.10	0.01		0.01	0.83		0.07	0.14		0.78
Lane Grp Cap(c), veh/h	1236	0	0	1266	0	0	352	0	0	312	0	0
V/C Ratio(X)	0.94	0.00	0.00	1.04	0.00	0.00	0.52	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	1236	0	0	1266	0	0	394	0	0	347	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	0.0	0.0	13.2	0.0	0.0	26.3	0.0	0.0	25.9	0.0	0.0
Incr Delay (d2), s/veh	13.0	0.0	0.0	35.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.9	0.0	0.0	35.2	0.0	0.0	3.2	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	24.7	0.0	0.0	48.1	0.0	0.0	26.8	0.0	0.0	26.3	0.0	0.0
LnGrp LOS	C			F			C			C		
Approach Vol, veh/h		1157			1311			183			140	
Approach Delay, s/veh		24.7			48.1			26.8			26.3	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		17.9		50.0		17.9
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		45.2		11.6		48.0		9.0
Green Ext Time (p_c), s		0.0		0.3		0.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Two Way Analysis cannot be performed on Signalized Intersection.

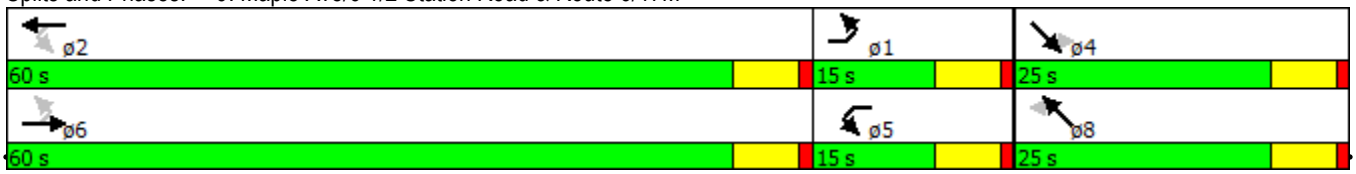
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	49	830	104	43	1167	35	26	52	16	32	83	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94										
Frt		0.983			0.996			0.977			0.960	
Flt Protected	0.950			0.950				0.986			0.990	
Satd. Flow (prot)	1762	1731	0	1564	1909	0	0	1746	0	0	1727	0
Flt Permitted	0.069			0.102				0.769			0.915	
Satd. Flow (perm)	128	1731	0	168	1909	0	0	1361	0	0	1597	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			2			9			19	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Confl. Peds. (#/hr)			832									
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	3%	9%	16%	3%	1%	1%	7%	12%	1%	9%	8%
Adj. Flow (vph)	53	892	112	46	1255	38	28	56	17	34	89	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	1004	0	46	1293	0	0	101	0	0	175	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.30	0.89		0.24	1.08			0.50			0.71	
Control Delay	17.7	28.4		11.5	73.2			40.5			48.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	17.7	28.4		11.5	73.2			40.5			48.4	
Queue Length 50th (ft)	7	491		6	~862			48			85	
Queue Length 95th (ft)	21	#919		19	#1253			100			155	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	259	1125		262	1192			296			354	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.20	0.89		0.18	1.08			0.34			0.49	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 89.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	49	830	104	43	1167	35	26	52	16	32	83	48
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.46	0.93		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1855	1879	1948	1646	1929	1910	1862	1824	1862	1948	1818	1948
Adj Flow Rate, veh/h	53	892	90	46	1255	27	28	56	17	34	89	52
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	3	3	16	3	3	7	7	7	9	9	9
Cap, veh/h	145	914	92	181	1180	25	95	137	36	81	119	63
Arrive On Green	0.03	0.61	0.61	0.05	0.63	0.63	0.15	0.13	0.13	0.15	0.13	0.13
Sat Flow, veh/h	1766	1496	151	1568	1882	40	323	1062	280	239	924	492
Grp Volume(v), veh/h	53	0	982	46	0	1282	101	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1766	0	1647	1568	0	1922	1666	0	0	1655	0	0
Q Serve(g_s), s	0.0	0.0	49.5	0.0	0.0	54.0	0.0	0.0	0.0	4.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	49.5	0.0	0.0	54.0	4.5	0.0	0.0	8.5	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.02	0.28		0.17	0.19		0.30
Lane Grp Cap(c), veh/h	145	0	1006	181	0	1205	307	0	0	302	0	0
V/C Ratio(X)	0.37	0.00	0.98	0.25	0.00	1.06	0.33	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	268	0	1033	265	0	1205	450	0	0	449	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.1	0.0	16.1	38.2	0.0	16.1	34.4	0.0	0.0	36.1	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	21.8	0.3	0.0	44.6	0.2	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	28.2	1.0	0.0	43.1	2.2	0.0	0.0	3.9	0.0	0.0
LnGrp Delay(d),s/veh	40.7	0.0	38.0	38.5	0.0	60.7	34.6	0.0	0.0	36.8	0.0	0.0
LnGrp LOS	D		D	D		F	C			D		
Approach Vol, veh/h		1035			1328			101			175	
Approach Delay, s/veh		38.1			59.9			34.6			36.8	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	60.0		17.1	10.4	58.6		17.1
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	56.0		6.5	2.0	51.5		10.5
Green Ext Time (p_c), s	0.1	0.0		0.7	0.1	1.1		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.9
HCM 2010 LOS	D

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	866	0	0	1235	0	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1867	0	0	1844	0	1595
Flt Permitted						
Satd. Flow (perm)	1867	0	0	1844	0	1595
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	5%	5%	7%	5%	7%
Adj. Flow (vph)	931	0	0	1328	0	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	931	0	0	1328	0	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	866	0	0	1235	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	8	5	5	7	5	7
Mvmt Flow	931	0	0	1328	0	67

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	931	0	2259	931
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	1328	-
Critical Hdwy	-	-	4.15	-	6.25	6.17
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	723	-	50	325
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	262	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	723	-	50	325
Mov Cap-2 Maneuver	-	-	-	-	50	-
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	262	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	325	-	-	723	-
HCM Lane V/C Ratio	0.205	-	-	-	-
HCM Control Delay (s)	18.9	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	163	26	84	109	5	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981				0.917	
Flt Protected				0.979	0.981	
Satd. Flow (prot)	1743	0	0	1800	1680	0
Flt Permitted				0.979	0.981	
Satd. Flow (perm)	1743	0	0	1800	1680	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	6%	1%	1%	7%	1%	3%
Adj. Flow (vph)	217	35	112	145	7	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	252	0	0	257	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	163	26	84	109	5	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	6	1	1	7	1	3
Mvmt Flow	217	35	112	145	7	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	252	0	604	235
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	-	-	4.11	-	6.21	6.13
Critical Hdwy Stg 1	-	-	-	-	5.21	-
Critical Hdwy Stg 2	-	-	-	-	5.21	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.327
Pot Cap-1 Maneuver	-	-	1319	-	479	807
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1319	-	435	807
Mov Cap-2 Maneuver	-	-	-	-	435	-
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	607	-	-	1319	-
HCM Lane V/C Ratio	0.029	-	-	0.085	-
HCM Control Delay (s)	11.1	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	60	27	1	87	59	49	114	2	24	110	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.946			0.999				
Flt Protected		0.987						0.985			0.991	
Satd. Flow (prot)	0	1696	0	0	1729	0	0	1781	0	0	1802	0
Flt Permitted		0.987						0.985			0.991	
Satd. Flow (perm)	0	1696	0	0	1729	0	0	1781	0	0	1802	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		395			329			676			535	
Travel Time (s)		7.7			7.5			13.2			12.2	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	35	71	32	1	102	69	58	134	2	28	129	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	138	0	0	172	0	0	194	0	0	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

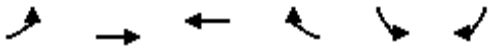
Intersection	
Int Delay, s/veh	8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	30	60	27	1	87	59	49	114	2	24	110	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	35	71	32	1	102	69	58	134	2	28	129	0

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	523	437	135	488	438	129	129	0	0	136	0	0
Stage 1	251	251	-	186	186	-	-	-	-	-	-	-
Stage 2	272	186	-	302	252	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	409	462	892	512	533	919	1438	-	-	1430	-	-
Stage 1	706	656	-	826	756	-	-	-	-	-	-	-
Stage 2	685	710	-	725	713	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	303	432	892	411	499	919	1438	-	-	1430	-	-
Mov Cap-2 Maneuver	303	432	-	411	499	-	-	-	-	-	-	-
Stage 1	675	627	-	790	740	-	-	-	-	-	-	-
Stage 2	534	695	-	593	682	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	17	13.2	2.3	1.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1438	-	-	436	610	1430	-	-
HCM Lane V/C Ratio	0.04	-	-	0.316	0.284	0.02	-	-
HCM Control Delay (s)	7.6	0	-	17	13.2	7.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	1.2	0.1	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	2	76	0	114	113	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1899	1512	0	1745	0
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1899	1512	0	1745	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		487	358		395	
Travel Time (s)		9.5	7.0		7.7	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	0%	1%	0%	6%	6%	0%
Adj. Flow (vph)	3	100	0	150	149	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	103	150	0	149	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	76	0	114	113	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	0	1	0	6	6	0
Mvmt Flow	3	100	0	150	149	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	150	0	-	0	180	75
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	105	-
Critical Hdwy	4.1	-	-	-	5.46	5.7
Critical Hdwy Stg 1	-	-	-	-	4.46	-
Critical Hdwy Stg 2	-	-	-	-	4.46	-
Follow-up Hdwy	2.2	-	-	-	3.554	3.3
Pot Cap-1 Maneuver	1444	-	-	-	841	1002
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1444	-	-	-	839	1002
Mov Cap-2 Maneuver	-	-	-	-	839	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	934	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1444	-	-	-	839
HCM Lane V/C Ratio	0.002	-	-	-	0.177
HCM Control Delay (s)	7.5	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	206	0	232	0	0	0	0	174	45	141	164	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.929						0.972				
Flt Protected		0.977									0.977	
Satd. Flow (prot)	0	1627	0	0	0	0	0	1720	0	0	1709	0
Flt Permitted		0.977									0.977	
Satd. Flow (perm)	0	1627	0	0	0	0	0	1720	0	0	1709	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			340			202			336	
Travel Time (s)		7.5			7.7			4.6			7.6	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	6%	0%	5%	2%	2%	2%	2%	8%	5%	7%	9%	2%
Adj. Flow (vph)	286	0	322	0	0	0	0	242	63	196	228	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	608	0	0	0	0	0	304	0	0	424	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	141.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	206	0	232	0	0	0	0	174	45	141	164	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	6	0	5	2	2	2	2	8	5	7	9	2
Mvmt Flow	286	0	322	0	0	0	0	242	62	196	228	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	892	923	228	228	0	0	304	0	0
Stage 1	619	619	-	-	-	-	-	-	-
Stage 2	273	304	-	-	-	-	-	-	-
Critical Hdwy	6.66	6.7	6.35	4.12	-	-	4.17	-	-
Critical Hdwy Stg 1	5.66	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.66	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.345	2.218	-	-	2.263	-	-
Pot Cap-1 Maneuver	293	258	799	1340	-	-	1229	-	-
Stage 1	512	467	-	-	-	-	-	-	-
Stage 2	752	655	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 239	0	799	1340	-	-	1229	-	-
Mov Cap-2 Maneuver	~ 239	0	-	-	-	-	-	-	-
Stage 1	418	0	-	-	-	-	-	-	-
Stage 2	752	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	$ 308.1	0	3.9
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1340	-	-	380	1229	-	-
HCM Lane V/C Ratio	-	-	-	1.601	0.159	-	-
HCM Control Delay (s)	0	-	-	$ 308.1	8.5	0	-
HCM Lane LOS	A	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	35.1	0.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	39	2	108	42	338	0	0	266	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.902						0.964	
Flt Protected					0.987			0.995				
Satd. Flow (prot)	0	0	0	0	1579	0	0	1817	0	0	1718	0
Flt Permitted					0.987			0.995				
Satd. Flow (perm)	0	0	0	0	1579	0	0	1817	0	0	1718	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		418			312			336			432	
Travel Time (s)		9.5			7.1			7.6			9.8	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	2%	2%	2%	3%	0%	8%	24%	1%	2%	2%	9%	2%
Adj. Flow (vph)	0	0	0	54	3	150	58	469	0	0	369	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	207	0	0	527	0	0	504	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	39	2	108	42	338	0	0	266	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	3	0	8	24	1	2	2	9	2
Mvmt Flow	0	0	0	54	3	150	58	469	0	0	369	135

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1023	1090	469	504	0	0	469	0	0
Stage 1	586	586	-	-	-	-	-	-	-
Stage 2	437	504	-	-	-	-	-	-	-
Critical Hdwy	6.63	6.7	6.38	4.34	-	-	4.12	-	-
Critical Hdwy Stg 1	5.63	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.63	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.372	2.416	-	-	2.218	-	-
Pot Cap-1 Maneuver	246	204	575	957	-	-	1093	-	-
Stage 1	537	484	-	-	-	-	-	-	-
Stage 2	634	529	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	226	0	575	957	-	-	1093	-	-
Mov Cap-2 Maneuver	226	0	-	-	-	-	-	-	-
Stage 1	493	0	-	-	-	-	-	-	-
Stage 2	634	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	22.6	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	957	-	-	408	1093	-	-
HCM Lane V/C Ratio	0.061	-	-	0.507	-	-	-
HCM Control Delay (s)	9	0	-	22.6	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.8	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1075	27	6	1418	15	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.924	
Flt Protected					0.979	
Satd. Flow (prot)	1785	0	0	1860	1387	0
Flt Permitted					0.979	
Satd. Flow (perm)	1785	0	0	1860	1387	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1414			1001	779	
Travel Time (s)	17.5			12.4	17.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	12%	38%	2%	36%	39%
Adj. Flow (vph)	1236	31	7	1630	17	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1267	0	0	1637	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1075	27	6	1418	15	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	12	38	2	36	39
Mvmt Flow	1236	31	7	1630	17	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1267	0	2895	1251
Stage 1	-	-	-	-	1251	-
Stage 2	-	-	-	-	1644	-
Critical Hdwy	-	-	4.48	-	6.36	6.39
Critical Hdwy Stg 1	-	-	-	-	5.36	-
Critical Hdwy Stg 2	-	-	-	-	5.36	-
Follow-up Hdwy	-	-	2.542	-	3.824	3.651
Pot Cap-1 Maneuver	-	-	443	-	18	189
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	172	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	443	-	~ 15	189
Mov Cap-2 Maneuver	-	-	-	-	~ 15	-
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	143	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	$ 443.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	31	-	-	443	-
HCM Lane V/C Ratio	1.261	-	-	0.016	-
HCM Control Delay (s)	$ 443.1	-	-	13.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	4.4	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	48	1502	28	79	634	54	130	145	54	102	71	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.988			0.978			0.978	
Flt Protected	0.950			0.950				0.981			0.976	
Satd. Flow (prot)	1876	1896	0	1581	3158	0	0	1850	0	0	1716	0
Flt Permitted	0.325			0.074				0.757			0.603	
Satd. Flow (perm)	642	1896	0	123	3158	0	0	1428	0	0	1060	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			14			9			9	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2983	
Travel Time (s)		23.3			14.7			23.0			45.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	1%	9%	8%	6%	1%	1%	1%	3%	3%	1%
Adj. Flow (vph)	52	1633	30	86	689	59	141	158	59	111	77	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	1663	0	86	748	0	0	358	0	0	224	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	12.0	60.0		12.0	60.0		28.0	28.0		28.0	28.0	
Total Split (%)	12.0%	60.0%		12.0%	60.0%		28.0%	28.0%		28.0%	28.0%	
Maximum Green (s)	6.0	54.0		6.0	54.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.12	1.58		0.54	0.42			1.08			0.91	
Control Delay	6.8	288.2		24.7	13.6			111.8			76.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.8	288.2		24.7	13.6			111.8			76.3	
Queue Length 50th (ft)	10	~1553		18	138			~260			136	
Queue Length 95th (ft)	23	#1819		58	185			#441			#284	
Internal Link Dist (ft)		1460			890			932			2903	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	463	1052		164	1767			330			246	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.11	1.58		0.52	0.42			1.08			0.91	

Intersection Summary

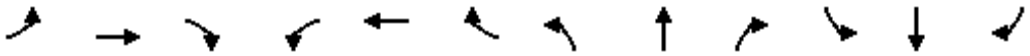
Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 97.5
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	48	1502	28	79	634	54	130	145	54	102	71	33
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1901	1995	1665	1683	1814	1948	1928	1948	1910	1860	1910
Adj Flow Rate, veh/h	52	1633	19	86	689	48	141	158	48	111	77	25
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	5	5	9	8	8	1	1	1	3	3	3
Cap, veh/h	454	1035	12	137	1719	120	182	161	47	177	112	31
Arrive On Green	0.02	0.55	0.55	0.04	0.57	0.57	0.25	0.22	0.22	0.25	0.22	0.22
Sat Flow, veh/h	1881	1876	22	1585	3033	211	582	717	209	540	497	138
Grp Volume(v), veh/h	52	0	1652	86	363	374	347	0	0	213	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1897	1585	1598	1645	1508	0	0	1175	0	0
Q Serve(g_s), s	1.2	0.0	54.0	2.3	12.5	12.5	5.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	54.0	2.3	12.5	12.5	22.3	0.0	0.0	16.4	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.13	0.41		0.14	0.52		0.12
Lane Grp Cap(c), veh/h	454	0	1047	137	906	932	421	0	0	344	0	0
V/C Ratio(X)	0.11	0.00	1.58	0.63	0.40	0.40	0.82	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	523	0	1047	171	906	932	421	0	0	344	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	22.0	23.5	11.9	11.9	37.7	0.0	0.0	34.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	264.9	1.9	1.3	1.3	11.7	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	104.9	1.4	5.8	5.9	10.4	0.0	0.0	5.4	0.0	0.0
LnGrp Delay(d),s/veh	9.7	0.0	286.9	25.5	13.2	13.2	49.5	0.0	0.0	37.3	0.0	0.0
LnGrp LOS	A		F	C	B	B	D			D		
Approach Vol, veh/h		1704			823			347			213	
Approach Delay, s/veh		278.4			14.5			49.5			37.3	
Approach LOS		F			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	61.5		28.0	9.9	60.0		28.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	6.0	54.0		22.0	6.0	54.0		22.0
Max Q Clear Time (g_c+I1), s	3.2	14.5		24.3	4.3	56.0		18.4
Green Ext Time (p_c), s	0.0	22.1		0.0	0.0	0.0		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		165.7
HCM 2010 LOS		F



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	952	138	10	1196	13	141	18	11	18	11	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.999			0.991			0.895	
Flt Protected		0.999						0.960			0.993	
Satd. Flow (prot)	0	1745	0	0	1792	0	0	1781	0	0	1212	0
Flt Permitted		0.984			0.989			0.675			0.948	
Satd. Flow (perm)	0	1719	0	0	1772	0	0	1252	0	0	1157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			2			4			90	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	12	1024	148	11	1286	14	152	19	12	19	12	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1184	0	0	1311	0	0	183	0	0	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

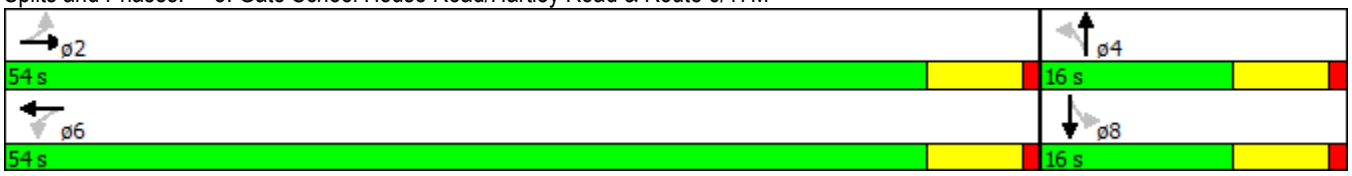
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	54.0	54.0		54.0	54.0		16.0	16.0		16.0	16.0	
Total Split (%)	77.1%	77.1%		77.1%	77.1%		22.9%	22.9%		22.9%	22.9%	
Maximum Green (s)	48.0	48.0		48.0	48.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.99			1.07			1.03			0.59	
Control Delay		36.6			60.4			109.8			23.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		36.6			60.4			109.8			23.1	
Queue Length 50th (ft)		413			~647			~79			20	
Queue Length 95th (ft)		#772			#886			#202			#83	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1198			1229			178			238	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.99			1.07			1.03			0.59	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 72	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	952	138	10	1196	13	141	18	11	18	11	101
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1789	1881	1948	1806	1948	1919	1872	1919	1872	1363	1872
Adj Flow Rate, veh/h	12	1024	121	11	1286	14	152	19	12	19	12	109
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	56	1066	125	55	1212	13	233	17	11	75	24	141
Arrive On Green	0.71	0.69	0.69	0.71	0.69	0.69	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	6	1554	182	5	1768	19	974	122	77	114	167	988
Grp Volume(v), veh/h	1157	0	0	1311	0	0	183	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1743	0	0	1792	0	0	1172	0	0	1269	0	0
Q Serve(g_s), s	0.0	0.0	0.0	10.1	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	39.9	0.0	0.0	50.0	0.0	0.0	10.9	0.0	0.0	7.4	0.0	0.0
Prop In Lane	0.01		0.10	0.01		0.01	0.83		0.07	0.14		0.78
Lane Grp Cap(c), veh/h	1297	0	0	1332	0	0	295	0	0	276	0	0
V/C Ratio(X)	0.89	0.00	0.00	0.98	0.00	0.00	0.62	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	1297	0	0	1332	0	0	295	0	0	276	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	11.8	0.0	0.0	29.8	0.0	0.0	28.8	0.0	0.0
Incr Delay (d2), s/veh	7.9	0.0	0.0	20.8	0.0	0.0	2.9	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.8	0.0	0.0	31.1	0.0	0.0	3.6	0.0	0.0	2.5	0.0	0.0
LnGrp Delay(d),s/veh	17.6	0.0	0.0	32.6	0.0	0.0	32.8	0.0	0.0	29.5	0.0	0.0
LnGrp LOS	B			C			C			C		
Approach Vol, veh/h		1157			1311			183			140	
Approach Delay, s/veh		17.6			32.6			32.8			29.5	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.0		16.0		54.0		16.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		48.0		10.0		48.0		10.0
Max Q Clear Time (g_c+I1), s		41.9		12.9		52.0		9.4
Green Ext Time (p_c), s		4.9		0.0		0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	60	27	1	87	59	49	114	2	24	110	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.946			0.999				
Flt Protected		0.987						0.985			0.991	
Satd. Flow (prot)	0	1696	0	0	1729	0	0	1781	0	0	1802	0
Flt Permitted		0.987						0.985			0.991	
Satd. Flow (perm)	0	1696	0	0	1729	0	0	1781	0	0	1802	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		395			329			676			535	
Travel Time (s)		7.7			7.5			13.2			12.2	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	35	71	32	1	102	69	58	134	2	28	129	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	138	0	0	172	0	0	194	0	0	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	30	60	27	0	1	87	59	0	49	114	2
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	35	71	32	0	1	102	69	0	58	134	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.3	9.3	9.9
HCM LOS	A	A	A

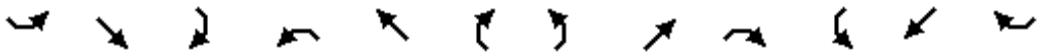
Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	30%	26%	1%	18%
Vol Thru, %	69%	51%	59%	82%
Vol Right, %	1%	23%	40%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	165	117	147	134
LT Vol	49	30	1	24
Through Vol	114	60	87	110
RT Vol	2	27	59	0
Lane Flow Rate	194	138	173	158
Geometry Grp	1	1	1	1
Degree of Util (X)	0.269	0.191	0.231	0.22
Departure Headway (Hd)	4.996	4.997	4.804	5.028
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	712	712	742	708
Service Time	3.068	3.07	2.872	3.104
HCM Lane V/C Ratio	0.272	0.194	0.233	0.223
HCM Control Delay	9.9	9.3	9.3	9.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.7	0.9	0.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	24	110	0
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	28	129	0
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	9.5
HCM LOS	A

Lane

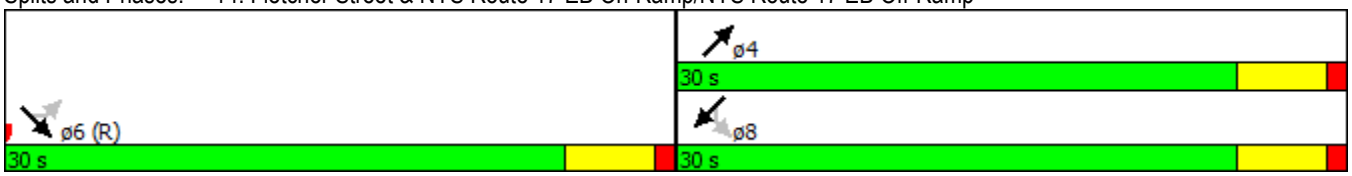


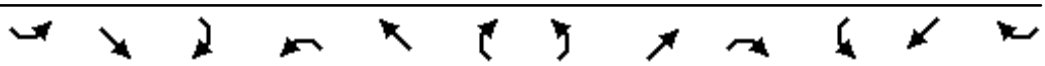
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	206	0	232	0	0	0	0	174	45	141	164	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.929						0.972				
Flt Protected		0.977									0.977	
Satd. Flow (prot)	0	1627	0	0	0	0	0	1720	0	0	1709	0
Flt Permitted		0.977									0.649	
Satd. Flow (perm)	0	1627	0	0	0	0	0	1720	0	0	1135	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		116						26				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			340			202			336	
Travel Time (s)		7.5			7.7			4.6			7.6	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	6%	0%	5%	2%	2%	2%	2%	8%	5%	7%	9%	2%
Adj. Flow (vph)	286	0	322	0	0	0	0	242	62	196	228	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	608	0	0	0	0	0	304	0	0	424	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.82						0.42			0.90	
Control Delay		23.8						13.4			31.7	
Queue Delay		0.2						0.2			0.0	
Total Delay		24.0						13.6			31.7	
Queue Length 50th (ft)		150						67			40	
Queue Length 95th (ft)		179						90			#88	
Internal Link Dist (ft)		252			260			122			256	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		745						731			472	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		6						94			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.82						0.48			0.90	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp





Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	206	0	232	0	0	0	0	174	45	141	164	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1792	1890				0	1769	1900	1890	1749	0
Adj Flow Rate, veh/h	286	0	322				0	242	62	196	228	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.72	0.72	0.72				0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0				0	8	8	9	9	0
Cap, veh/h	315	0	354				0	566	145	263	264	0
Arrive On Green	0.42	0.00	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	755	0	850				0	1360	348	420	635	0
Grp Volume(v), veh/h	608	0	0				0	0	304	424	0	0
Grp Sat Flow(s),veh/h/ln	1605	0	0				0	0	1708	1055	0	0
Q Serve(g_s), s	21.3	0.0	0.0				0.0	0.0	7.6	15.4	0.0	0.0
Cycle Q Clear(g_c), s	21.3	0.0	0.0				0.0	0.0	7.6	23.0	0.0	0.0
Prop In Lane	0.47		0.53				0.00		0.20	0.46		0.00
Lane Grp Cap(c), veh/h	669	0	0				0	0	712	527	0	0
V/C Ratio(X)	0.91	0.00	0.00				0.00	0.00	0.43	0.80	0.00	0.00
Avail Cap(c_a), veh/h	669	0	0				0	0	712	527	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	0.0				0.0	0.0	12.4	6.3	0.0	0.0
Incr Delay (d2), s/veh	18.6	0.0	0.0				0.0	0.0	1.9	12.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	0.0	0.0				0.0	0.0	3.9	7.9	0.0	0.0
LnGrp Delay(d),s/veh	35.0	0.0	0.0				0.0	0.0	14.3	18.6	0.0	0.0
LnGrp LOS	C								B	B		
Approach Vol, veh/h		608						304			424	
Approach Delay, s/veh		35.0						14.3			18.6	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				9.6		23.3		25.0
Green Ext Time (p_c), s				4.0		0.7		0.0

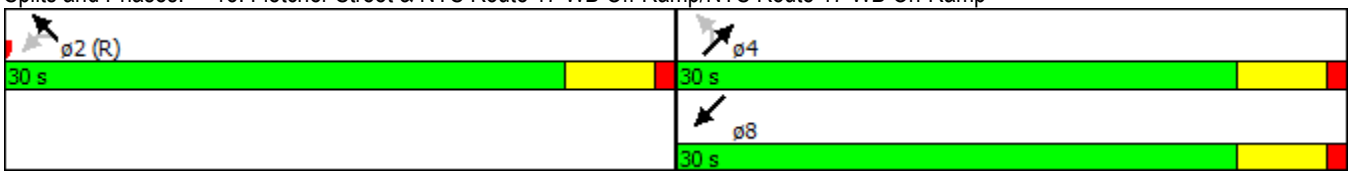
Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	39	2	108	42	338	0	0	266	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.902						0.964	
Flt Protected					0.987			0.995				
Satd. Flow (prot)	0	0	0	0	1579	0	0	1817	0	0	1718	0
Flt Permitted					0.987			0.804				
Satd. Flow (perm)	0	0	0	0	1579	0	0	1468	0	0	1718	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					150						38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		418			312			336			432	
Travel Time (s)		9.5			7.1			7.6			9.8	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Heavy Vehicles (%)	2%	2%	2%	3%	0%	8%	24%	1%	2%	2%	9%	2%
Adj. Flow (vph)	0	0	0	54	3	150	58	469	0	0	369	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	207	0	0	527	0	0	504	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.28			0.86			0.68	
Control Delay					5.0			28.3			18.9	
Queue Delay					0.0			0.2			0.0	
Total Delay					5.0			28.5			18.9	
Queue Length 50th (ft)					12			130			131	
Queue Length 95th (ft)					29			162			158	
Internal Link Dist (ft)		338			232			256			352	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					745			611			738	
Starvation Cap Reductn					0			3			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.28			0.87			0.68	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	39	2	108	42	338	0	0	266	97
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1774	1890	1890	1826	0	0	1782	1910
Adj Flow Rate, veh/h				54	3	150	58	469	0	0	369	135
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %				0	0	0	1	1	0	0	9	9
Cap, veh/h				169	9	469	97	515	0	0	519	190
Arrive On Green				0.42	0.42	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				406	23	1127	74	1237	0	0	1246	456
Grp Volume(v), veh/h				207	0	0	527	0	0	0	0	504
Grp Sat Flow(s),veh/h/ln				1555	0	0	1311	0	0	0	0	1702
Q Serve(g_s), s				5.4	0.0	0.0	10.3	0.0	0.0	0.0	0.0	14.7
Cycle Q Clear(g_c), s				5.4	0.0	0.0	25.0	0.0	0.0	0.0	0.0	14.7
Prop In Lane				0.26		0.72	0.11		0.00	0.00		0.27
Lane Grp Cap(c), veh/h				648	0	0	613	0	0	0	0	709
V/C Ratio(X)				0.32	0.00	0.00	0.86	0.00	0.00	0.00	0.00	0.71
Avail Cap(c_a), veh/h				648	0	0	613	0	0	0	0	709
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				11.8	0.0	0.0	5.2	0.0	0.0	0.0	0.0	14.5
Incr Delay (d2), s/veh				1.3	0.0	0.0	14.6	0.0	0.0	0.0	0.0	6.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	0.0	6.6	0.0	0.0	0.0	0.0	8.0
LnGrp Delay(d),s/veh				13.1	0.0	0.0	19.8	0.0	0.0	0.0	0.0	20.5
LnGrp LOS				B			B					C
Approach Vol, veh/h					207			527			504	
Approach Delay, s/veh					13.1			19.8			20.5	
Approach LOS					B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		7.4		27.0				16.7
Green Ext Time (p_c), s		1.0		0.0				3.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. Morn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1449	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	66	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	315	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1449	66	315	vph
Peak-hour factor, PHF	0.95	0.95	0.94	
Peak 15-min volume, v15	381	17	84	v
Trucks and buses	6	11	13	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.901	0.885	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1617	77	379	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1617 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1617	4500	No
$v_{FO} = v_F - v_R$	1540	4500	No
v_R	77	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1617 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1617	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_{12}$ = 13.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.435

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	6/11/2015
Analysis Time Period:	Wkdy. Morn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	882	315	567	0	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	232	83	149	0	
Trucks and buses	8	13	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.926	0.885	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1003	375	627	0	pc/h

Volume ratio, VR 0.500

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	0	lc/pc
Minimum FR lane changes, LCFR	0	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	0	lc/h
Weaving lane changes, LCW	75	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	41	lc/h
Total lane changes, LCALL	116	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.051

Average weaving speed, SW	53.0	mi/h
Average non-weaving speed, SNW	51.8	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	52.4	mi/h
Weaving segment density, D	12.8	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.418	
Weaving segment flow rate, v	1857	veh/h
Weaving segment capacity, cW	4447	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7824	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1710	c
		Maximum	Analyzed	
v/c ratio		1.00	0.418	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. Morn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1197	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	542	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	567	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1197	542	567	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	315	143	149	v
Trucks and buses	8	8	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.926	0.926	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1361	616	627	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1361 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1977	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 1361 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1977	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 18.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.326	
Space mean speed in ramp influence area,	S_R = 50.8	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 50.8	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy. Morn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	519	187	112	0	veh/h
Peak hour factor, PHF	0.94	0.94	0.94	0.94	
Peak 15-min volume, v15	138	50	30	0	
Trucks and buses	5	7	11	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.952	0.935	0.901	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	580	213	132	0	pc/h
Volume ratio, VR		0.373			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	0	lc/pc
Minimum FR lane changes, LCFR	0	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	0	lc/h
Weaving lane changes, LCW	79	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	79	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.036

Average weaving speed, SW	53.6	mi/h
Average non-weaving speed, SNW	53.5	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	53.6	mi/h
Weaving segment density, D	5.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.167	
Weaving segment flow rate, v	871	veh/h
Weaving segment capacity, cW	5211	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6380	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1824	c
		Maximum	Analyzed	
v/c ratio		1.00	0.167	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. Morn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	110	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	187	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	630	110	187	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	166	29	49	v
Trucks and buses	6	16	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.943	0.862	0.935	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	703	134	211	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 703 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	703	4500	No
$v_{FO} = v_F - v_R$	569	4500	No
v_R	134	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 703 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	703	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 L_{12}$ = 8.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

AMY'S KITCHEN & SCIENCE OF THE SOUL

WEEKDAY MORNING EVENT
PEAK EXIT PERIOD (12:00 PM – 1:00 PM)

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	336	0	690	0	0	795	117	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	354	0	726	0	0	837	123	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	354	0	726	0	0	837	123	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	336	0	690	0	0	795	117	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	354	0	726	0	0	837	123	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1144	363	837	0	0	726	0	0
Stage 1	726	-	-	-	-	-	-	-
Stage 2	418	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	228	641	774	-	-	853	-	0
Stage 1	488	-	-	-	-	-	-	0
Stage 2	669	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	228	641	774	-	-	853	-	-
Mov Cap-2 Maneuver	228	-	-	-	-	-	-	-
Stage 1	488	-	-	-	-	-	-	-
Stage 2	669	-	-	-	-	-	-	-

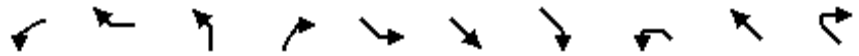
Approach	WB	NB	SB
HCM Control Delay, s	17.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	774	-	-	641	853	-
HCM Lane V/C Ratio	-	-	-	0.552	-	-
HCM Control Delay (s)	0	-	-	17.3	0	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	3.4	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	63	0	0	0	795	0	0	690	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	65	0	0	0	820	0	0	711	187
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	65	0	0	0	820	0	0	711	187
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	72	0	0	0	504	354	0	799	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	76	0	0	0	531	373	0	841	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	76	0	0	0	531	373	0	841	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	132	0	0	0	504	0	0	799	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	138	0	0	0	525	0	0	832	116
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	138	0	0	0	525	0	0	832	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	26	460	21	183	707	85	123	101	17	55	124	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.984			0.990			0.975	
Flt Protected	0.950			0.950				0.975			0.988	
Satd. Flow (prot)	1876	1890	0	1690	3272	0	0	1854	0	0	1742	0
Flt Permitted	0.338			0.297				0.636			0.836	
Satd. Flow (perm)	668	1890	0	528	3272	0	0	1209	0	0	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			17			4			11	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2972	
Travel Time (s)		23.3			14.7			15.3			45.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	27	484	22	193	744	89	129	106	18	58	131	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	506	0	193	833	0	0	253	0	0	231	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.07	0.59		0.42	0.44			0.87			0.65	
Control Delay	8.4	23.0		10.6	12.9			62.6			38.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.4	23.0		10.6	12.9			62.6			38.8	
Queue Length 50th (ft)	6	225		46	122			139			115	
Queue Length 95th (ft)	16	349		78	224			#276			199	
Internal Link Dist (ft)		1460			890			932			2892	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	553	860		538	1908			338			416	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.05	0.59		0.36	0.44			0.75			0.56	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 90.6
Natural Cycle: 75
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	26	460	21	183	707	85	123	101	17	55	124	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1903	1995	1779	1750	1814	1948	1920	1948	1910	1871	1910
Adj Flow Rate, veh/h	27	484	11	193	744	78	129	106	7	58	131	31
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	415	926	21	500	1709	179	208	136	8	123	220	47
Arrive On Green	0.02	0.50	0.50	0.08	0.56	0.56	0.23	0.20	0.20	0.23	0.20	0.20
Sat Flow, veh/h	1881	1854	42	1694	3038	318	697	676	41	335	1090	234
Grp Volume(v), veh/h	27	0	495	193	407	415	242	0	0	220	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1896	1694	1663	1694	1414	0	0	1659	0	0
Q Serve(g_s), s	0.6	0.0	14.5	4.3	11.6	11.7	3.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	14.5	4.3	11.6	11.7	13.5	0.0	0.0	9.6	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.19	0.53		0.03	0.26		0.14
Lane Grp Cap(c), veh/h	415	0	947	500	935	953	387	0	0	430	0	0
V/C Ratio(X)	0.07	0.00	0.52	0.39	0.44	0.44	0.63	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	658	0	947	695	935	953	540	0	0	598	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	0.0	13.9	9.6	10.4	10.4	31.1	0.0	0.0	29.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.1	0.2	1.5	1.5	0.6	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	8.1	2.0	5.7	5.8	5.1	0.0	0.0	4.4	0.0	0.0
LnGrp Delay(d),s/veh	10.0	0.0	16.0	9.8	11.9	11.9	31.7	0.0	0.0	30.0	0.0	0.0
LnGrp LOS	B		B	A	B	B	C			C		
Approach Vol, veh/h		522			1015			242			220	
Approach Delay, s/veh		15.7			11.5			31.7			30.0	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	52.2		22.5	12.5	47.0		22.5
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.6	13.7		15.5	6.3	16.5		11.6
Green Ext Time (p_c), s	0.0	4.3		1.0	0.3	4.2		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	17.1
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	593	0	0	924	5	0	0	0	5	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.878	
Flt Protected											0.995	
Satd. Flow (prot)	0	1880	0	0	1780	0	0	1928	0	0	1611	0
Flt Permitted											0.995	
Satd. Flow (perm)	0	1880	0	0	1780	0	0	1928	0	0	1611	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	5	624	0	0	973	5	0	0	0	5	0	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	629	0	0	978	0	0	0	0	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	593	0	0	924	5	0	0	0	5	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	5	624	0	0	973	5	0	0	0	5	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	978	0	0	624	0	0	1634	1613	624	1610	1610	975
Stage 1	-	-	-	-	-	-	635	635	-	975	975	-
Stage 2	-	-	-	-	-	-	999	978	-	635	635	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	710	-	-	962	-	-	128	164	531	59	73	275
Stage 1	-	-	-	-	-	-	559	565	-	245	267	-
Stage 2	-	-	-	-	-	-	389	433	-	407	412	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	710	-	-	962	-	-	105	162	531	59	72	275
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	162	-	59	72	-
Stage 1	-	-	-	-	-	-	553	559	-	242	267	-
Stage 2	-	-	-	-	-	-	322	433	-	403	407	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	0	29.1
HCM LOS			A	D

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	710	-	-	962	-	-	201
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.262
HCM Control Delay (s)	0	10.1	0	-	0	-	-	29.1
HCM Lane LOS	A	B	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	593	5	2	916	13	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1835	0	0	1827	1739	0
Flt Permitted					0.968	
Satd. Flow (perm)	1835	0	0	1827	1739	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	1%	4%	1%	1%
Adj. Flow (vph)	631	5	2	974	14	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	636	0	0	976	21	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

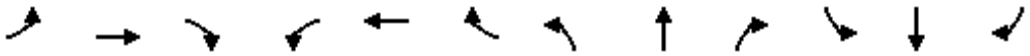
Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	593	5	2	916	13	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	1	1	4	1	1
Mvmt Flow	631	5	2	974	14	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	1613	634
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	979	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	952	-	115	481
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	366	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	952	-	114	481
Mov Cap-2 Maneuver	-	-	-	-	114	-
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	364	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	31.7
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	156	-	-	952	-
HCM Lane V/C Ratio	0.136	-	-	0.002	-
HCM Control Delay (s)	31.7	-	-	8.8	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

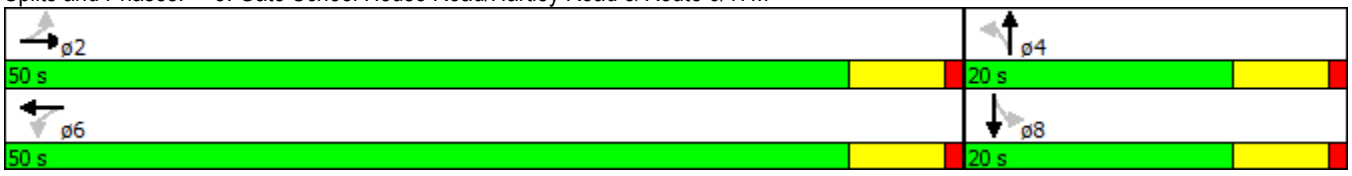


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	514	81	8	803	9	112	8	8	8	8	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.991			0.946	
Flt Protected		0.999			0.999			0.958			0.985	
Satd. Flow (prot)	0	1820	0	0	1929	0	0	1765	0	0	1554	0
Flt Permitted		0.982			0.993			0.732			0.881	
Satd. Flow (perm)	0	1789	0	0	1917	0	0	1349	0	0	1390	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			2			4			12	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	5%	2%	10%	4%	0%	3%	9%	0%	10%	20%	8%
Adj. Flow (vph)	12	553	87	9	863	10	120	9	9	9	9	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	652	0	0	882	0	0	138	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.54			0.69			0.54			0.11	
Control Delay		8.7			11.6			29.8			16.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.7			11.6			29.8			16.8	
Queue Length 50th (ft)		105			175			34			4	
Queue Length 95th (ft)		222			366			104			27	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1512			1617			401			418	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.43			0.55			0.34			0.07	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 51.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	514	81	8	803	9	112	8	8	8	8	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1868	1881	1948	1947	1948	1919	1860	1919	1872	1668	1872
Adj Flow Rate, veh/h	12	553	60	9	863	10	120	9	9	9	9	12
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	5	5	4	4	4	9	9	9	20	20	20
Cap, veh/h	107	896	96	103	1051	12	336	11	11	168	69	73
Arrive On Green	0.61	0.55	0.55	0.61	0.55	0.55	0.18	0.12	0.12	0.18	0.12	0.12
Sat Flow, veh/h	12	1626	174	7	1906	22	1264	95	95	332	572	603
Grp Volume(v), veh/h	625	0	0	882	0	0	138	0	0	30	0	0
Grp Sat Flow(s),veh/h/ln	1813	0	0	1935	0	0	1453	0	0	1507	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	0.0	12.7	0.0	0.0	3.1	0.0	0.0	0.6	0.0	0.0
Prop In Lane	0.02		0.10	0.01		0.01	0.87		0.07	0.30		0.40
Lane Grp Cap(c), veh/h	1199	0	0	1272	0	0	439	0	0	392	0	0
V/C Ratio(X)	0.52	0.00	0.00	0.69	0.00	0.00	0.31	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	2355	0	0	2523	0	0	811	0	0	765	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.5	0.0	0.0	6.5	0.0	0.0	14.6	0.0	0.0	14.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	0.0	5.8	0.0	0.0	1.2	0.0	0.0	0.2	0.0	0.0
LnGrp Delay(d),s/veh	5.6	0.0	0.0	6.8	0.0	0.0	14.8	0.0	0.0	14.2	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		625			882			138			30	
Approach Delay, s/veh		5.6			6.8			14.8			14.2	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.1		10.4		26.1		10.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		10.1		5.1		14.7		2.6
Green Ext Time (p_c), s		5.6		0.3		5.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

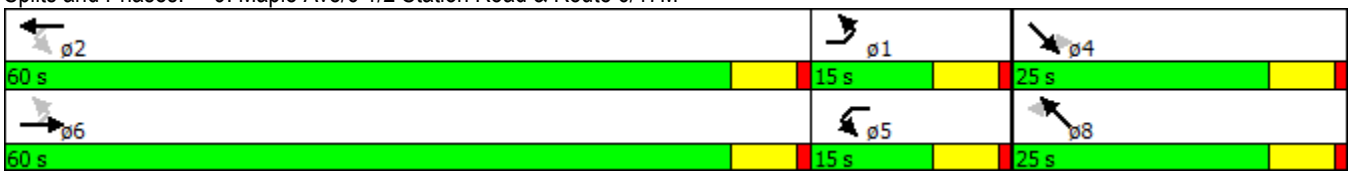
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	49	417	62	30	681	59	28	51	63	76	62	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.988			0.940			0.990	
Flt Protected	0.950			0.950				0.990			0.975	
Satd. Flow (prot)	1729	1873	0	1711	1879	0	0	1721	0	0	1793	0
Flt Permitted	0.142			0.367				0.918			0.780	
Satd. Flow (perm)	258	1873	0	661	1879	0	0	1596	0	0	1435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			7			35			4	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	52	439	65	32	717	62	29	54	66	80	65	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	504	0	32	779	0	0	149	0	0	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.19	0.54		0.06	0.80			0.44			0.56	
Control Delay	9.8	17.1		6.3	21.9			27.6			37.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.8	17.1		6.3	21.9			27.6			37.1	
Queue Length 50th (ft)	7	88		6	276			43			60	
Queue Length 95th (ft)	21	341		15	497			122			152	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	389	1493		623	1497			538			465	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.13	0.34		0.05	0.52			0.28			0.34	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 67
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	49	417	62	30	681	59	28	51	63	76	62	11
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1914	1910	1862	1862	1862	1948	1858	1948
Adj Flow Rate, veh/h	52	439	44	32	717	51	29	54	66	80	65	12
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	241	521	52	524	808	57	117	92	100	207	100	17
Arrive On Green	0.06	0.31	0.31	0.21	0.46	0.46	0.17	0.13	0.13	0.17	0.13	0.13
Sat Flow, veh/h	1733	1708	171	1716	1766	126	246	694	748	759	748	125
Grp Volume(v), veh/h	52	0	483	32	0	768	149	0	0	157	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1879	1716	0	1892	1688	0	0	1632	0	0
Q Serve(g_s), s	0.0	0.0	12.3	0.0	0.0	19.0	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	12.3	0.0	0.0	19.0	4.0	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.07	0.19		0.44	0.51		0.08
Lane Grp Cap(c), veh/h	241	0	574	524	0	866	375	0	0	387	0	0
V/C Ratio(X)	0.22	0.00	0.84	0.06	0.00	0.89	0.40	0.00	0.00	0.41	0.00	0.00
Avail Cap(c_a), veh/h	445	0	1980	524	0	1993	756	0	0	739	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.7	0.0	16.6	15.5	0.0	12.7	20.8	0.0	0.0	20.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.3	0.0	0.0	1.3	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	6.5	0.4	0.0	10.1	1.9	0.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	22.9	0.0	18.0	15.5	0.0	14.0	21.1	0.0	0.0	20.8	0.0	0.0
LnGrp LOS	C		B	B		B	C			C		
Approach Vol, veh/h		535			800			149			157	
Approach Delay, s/veh		18.4			14.0			21.1			20.8	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	29.5		12.8	16.8	21.6		12.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	21.0		6.0	2.0	14.3		6.1
Green Ext Time (p_c), s	0.0	2.5		0.8	0.1	1.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	455	0	0	770	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	495	0	0	837	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	495	0	0	837	0	20
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	455	0	0	770	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	495	0	0	837	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	495	0	1332	495
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	837	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1053	-	181	576
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1053	-	181	576
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	576	-	-	1053	-
HCM Lane V/C Ratio	0.034	-	-	-	-
HCM Control Delay (s)	11.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	81	6	11	241	15	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.953	
Flt Protected				0.998	0.968	
Satd. Flow (prot)	1679	0	0	1760	1755	0
Flt Permitted				0.998	0.968	
Satd. Flow (perm)	1679	0	0	1760	1755	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	11%	2%	5%	9%	0%	1%
Adj. Flow (vph)	92	7	13	274	17	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	0	286	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	81	6	11	241	15	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	2	5	9	0	1
Mvmt Flow	92	7	12	274	17	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	99	0	394	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	-	-	4.15	-	6.2	6.11
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1475	-	628	967
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1475	-	622	967
Mov Cap-2 Maneuver	-	-	-	-	622	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	762	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	710	-	-	1475	-
HCM Lane V/C Ratio	0.037	-	-	0.008	-
HCM Control Delay (s)	10.3	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	25	156	73	2	52	47	51	136	3	11	145	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.937			0.998			0.999	
Flt Protected		0.995			0.999			0.987			0.997	
Satd. Flow (prot)	0	1696	0	0	1711	0	0	1782	0	0	1811	0
Flt Permitted		0.995			0.999			0.987			0.997	
Satd. Flow (perm)	0	1696	0	0	1711	0	0	1782	0	0	1811	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			701			542	
Travel Time (s)		7.7			8.6			13.7			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	29	184	86	2	61	55	60	160	4	13	171	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	299	0	0	118	0	0	224	0	0	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

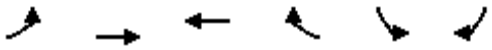
Intersection	
Int Delay, s/veh	11.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	25	156	73	2	52	47	51	136	3	11	145	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	29	184	86	2	61	55	60	160	4	13	171	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	538	481	162	614	482	172	173	0	0	164	0	0
Stage 1	282	282	-	198	198	-	-	-	-	-	-	-
Stage 2	256	199	-	416	284	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	399	431	859	428	506	872	1386	-	-	1396	-	-
Stage 1	675	631	-	815	748	-	-	-	-	-	-	-
Stage 2	701	699	-	637	692	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	322	406	859	239	477	872	1386	-	-	1396	-	-
Mov Cap-2 Maneuver	322	406	-	239	477	-	-	-	-	-	-	-
Stage 1	643	601	-	776	741	-	-	-	-	-	-	-
Stage 2	596	692	-	379	659	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	25.7	12.6	2.1	0.5
HCM LOS	D	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1386	-	-	464	590	1396	-	-
HCM Lane V/C Ratio	0.043	-	-	0.644	0.201	0.009	-	-
HCM Control Delay (s)	7.7	0	-	25.7	12.6	7.6	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	4.5	0.7	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	21	0	256	66	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1488	1556	0	1729	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1488	1556	0	1729	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		589	347		397	
Travel Time (s)		11.5	6.8		7.7	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	29%	0%	3%	7%	2%
Adj. Flow (vph)	0	26	0	320	83	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	26	320	0	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	21	0	256	66	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	29	0	3	7	2
Mvmt Flow	0	26	0	320	82	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	320	0	-	0	186	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.1	-	-	-	5.47	5.72
Critical Hdwy Stg 1	-	-	-	-	4.47	-
Critical Hdwy Stg 2	-	-	-	-	4.47	-
Follow-up Hdwy	2.2	-	-	-	3.563	3.318
Pot Cap-1 Maneuver	1251	-	-	-	834	905
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	991	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1251	-	-	-	834	905
Mov Cap-2 Maneuver	-	-	-	-	834	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	991	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1251	-	-	-	834
HCM Lane V/C Ratio	-	-	-	-	0.099
HCM Control Delay (s)	0	-	-	-	9.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	93	2	41	0	0	0	0	167	52	59	274	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959						0.968				
Flt Protected		0.967									0.991	
Satd. Flow (prot)	0	1643	0	0	0	0	0	1733	0	0	1776	0
Flt Permitted		0.967									0.991	
Satd. Flow (perm)	0	1643	0	0	0	0	0	1733	0	0	1776	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	103	2	46	0	0	0	0	186	58	66	304	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	151	0	0	0	0	0	244	0	0	370	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	93	2	41	0	0	0	0	167	52	59	274	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	8	0	4	2	2	2	2	8	0	3	6	2
Mvmt Flow	103	2	46	0	0	0	0	186	58	66	304	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	650	679	304	304	0	0	243	0	0
Stage 1	436	436	-	-	-	-	-	-	-
Stage 2	214	243	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.34	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.336	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	409	362	725	1257	-	-	1317	-	-
Stage 1	624	569	-	-	-	-	-	-	-
Stage 2	798	699	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	384	0	725	1257	-	-	1317	-	-
Mov Cap-2 Maneuver	384	0	-	-	-	-	-	-	-
Stage 1	587	0	-	-	-	-	-	-	-
Stage 2	798	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	17	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1257	-	-	449	1317	-	-
HCM Lane V/C Ratio	-	-	-	0.337	0.05	-	-
HCM Control Delay (s)	0	-	-	17	7.9	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.5	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	126	2	137	50	210	0	0	207	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.930						0.964	
Flt Protected					0.977			0.990				
Satd. Flow (prot)	0	0	0	0	1645	0	0	1737	0	0	1746	0
Flt Permitted					0.977			0.990				
Satd. Flow (perm)	0	0	0	0	1645	0	0	1737	0	0	1746	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	135	2	147	54	226	0	0	223	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	284	0	0	280	0	0	304	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	126	2	137	50	210	0	0	207	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	5	0	4	15	6	2	2	7	1
Mvmt Flow	0	0	0	135	2	147	54	226	0	0	223	81

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	596	636	226	303	0	0	226	0	0
Stage 1	333	333	-	-	-	-	-	-	-
Stage 2	263	303	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.7	6.34	4.25	-	-	4.12	-	-
Critical Hdwy Stg 1	5.65	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.336	2.335	-	-	2.218	-	-
Pot Cap-1 Maneuver	446	384	803	1188	-	-	1342	-	-
Stage 1	706	636	-	-	-	-	-	-	-
Stage 2	763	656	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	423	0	803	1188	-	-	1342	-	-
Mov Cap-2 Maneuver	423	0	-	-	-	-	-	-	-
Stage 1	669	0	-	-	-	-	-	-	-
Stage 2	763	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	17.9	1.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1188	-	-	561	1342	-	-
HCM Lane V/C Ratio	0.045	-	-	0.508	-	-	-
HCM Control Delay (s)	8.2	0	-	17.9	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.9	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	578	22	37	871	46	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.960	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1791	0	0	1830	1958	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1791	0	0	1830	1958	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	770	
Travel Time (s)	15.7			12.5	17.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	46%	18%	3%	0%	0%
Adj. Flow (vph)	608	23	39	917	48	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	631	0	0	956	68	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	578	22	37	871	46	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	46	18	3	0	0
Mvmt Flow	608	23	39	917	48	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	632	0	1615	620
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	995	-
Critical Hdwy	-	-	4.28	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.362	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	878	-	138	509
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	403	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	878	-	125	509
Mov Cap-2 Maneuver	-	-	-	-	125	-
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	366	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	43.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	160	-	-	878	-
HCM Lane V/C Ratio	0.428	-	-	0.044	-
HCM Control Delay (s)	43.3	-	-	9.3	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0.1	-

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	359	0	736	0	0	849	125	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	378	0	775	0	0	894	132	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	378	0	775	0	0	894	132	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	359	0	736	0	0	849	125	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	378	0	775	0	0	894	132	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1222	387	894	0	0	775	0	0
Stage 1	775	-	-	-	-	-	-	-
Stage 2	447	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	206	620	736	-	-	817	-	0
Stage 1	463	-	-	-	-	-	-	0
Stage 2	649	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	206	620	736	-	-	817	-	-
Mov Cap-2 Maneuver	206	-	-	-	-	-	-	-
Stage 1	463	-	-	-	-	-	-	-
Stage 2	649	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	736	-	-	620	817	-
HCM Lane V/C Ratio	-	-	-	0.61	-	-
HCM Control Delay (s)	0	-	-	19.4	0	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	4.1	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	67	0	0	0	849	0	0	736	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	69	0	0	0	875	0	0	759	200
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	69	0	0	0	875	0	0	759	200
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	77	0	0	0	538	378	0	853	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	81	0	0	0	566	398	0	898	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	81	0	0	0	566	398	0	898	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	141	0	0	0	538	0	0	853	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	147	0	0	0	560	0	0	889	123
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	147	0	0	0	560	0	0	889	123
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	28	491	22	195	754	91	131	108	18	59	132	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.984			0.991			0.975	
Flt Protected	0.950			0.950				0.975			0.988	
Satd. Flow (prot)	1876	1892	0	1690	3272	0	0	1855	0	0	1742	0
Flt Permitted	0.299			0.258				0.632			0.832	
Satd. Flow (perm)	591	1892	0	459	3272	0	0	1203	0	0	1467	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			17			4			11	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1540			970			1012			2972	
Travel Time (s)		23.3			14.7			15.3			45.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	29	517	23	205	794	96	138	114	19	62	139	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	540	0	205	890	0	0	271	0	0	246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.08	0.64		0.49	0.50			0.89			0.65	
Control Delay	8.6	25.1		12.3	15.3			64.0			39.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.6	25.1		12.3	15.3			64.0			39.0	
Queue Length 50th (ft)	6	243		50	183			150			122	
Queue Length 95th (ft)	17	385		83	244			#308			216	
Internal Link Dist (ft)		1460			890			932			2892	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	506	843		497	1795			329			405	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.06	0.64		0.41	0.50			0.82			0.61	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 92.5
Natural Cycle: 75
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Route 6/17M & C.R. 50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	28	491	22	195	754	91	131	108	18	59	132	43
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1903	1995	1779	1750	1814	1948	1920	1948	1910	1871	1910
Adj Flow Rate, veh/h	29	517	12	205	794	85	138	114	8	62	139	34
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	380	899	21	465	1671	179	213	143	9	127	233	52
Arrive On Green	0.02	0.49	0.49	0.08	0.55	0.55	0.24	0.22	0.22	0.24	0.22	0.22
Sat Flow, veh/h	1881	1853	43	1694	3031	324	680	656	42	334	1069	237
Grp Volume(v), veh/h	29	0	529	205	435	444	260	0	0	235	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1896	1694	1663	1693	1378	0	0	1640	0	0
Q Serve(g_s), s	0.7	0.0	16.9	4.8	13.5	13.5	4.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	16.9	4.8	13.5	13.5	15.4	0.0	0.0	10.6	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.19	0.53		0.03	0.26		0.14
Lane Grp Cap(c), veh/h	380	0	919	465	917	934	398	0	0	450	0	0
V/C Ratio(X)	0.08	0.00	0.58	0.44	0.47	0.48	0.65	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	614	0	919	643	917	934	514	0	0	577	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.0	0.0	15.5	10.8	11.5	11.5	31.4	0.0	0.0	29.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.6	0.2	1.8	1.7	0.8	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	9.5	2.3	6.6	6.7	5.6	0.0	0.0	4.8	0.0	0.0
LnGrp Delay(d),s/veh	11.0	0.0	18.2	11.1	13.3	13.3	32.2	0.0	0.0	29.9	0.0	0.0
LnGrp LOS	B		B	B	B	B	C			C		
Approach Vol, veh/h		558			1084			260			235	
Approach Delay, s/veh		17.8			12.9			32.2			29.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	52.6		24.4	13.1	47.0		24.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.7	15.5		17.4	6.8	18.9		12.6
Green Ext Time (p_c), s	0.0	4.7		1.0	0.4	4.6		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.4
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	633	0	0	986	5	0	0	0	5	0	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.877	
Flt Protected											0.996	
Satd. Flow (prot)	0	1880	0	0	1780	0	0	1928	0	0	1610	0
Flt Permitted											0.996	
Satd. Flow (perm)	0	1880	0	0	1780	0	0	1928	0	0	1610	0
Link Speed (mph)		45			45			30			20	
Link Distance (ft)		378			681			353			469	
Travel Time (s)		5.7			10.3			8.0			16.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	1%	8%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	5	666	0	0	1038	5	0	0	0	5	0	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	671	0	0	1043	0	0	0	0	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	633	0	0	986	5	0	0	0	5	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	4	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	5	1	1	8	1	1	1	1	1	1	1
Mvmt Flow	5	666	0	0	1038	5	0	0	0	5	0	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1043	0	0	666	0	0	1743	1720	666	1718	1718	1041
Stage 1	-	-	-	-	-	-	677	677	-	1041	1041	-
Stage 2	-	-	-	-	-	-	1066	1043	-	677	677	-
Critical Hdwy	4.11	-	-	4.11	-	-	6.11	5.51	5.71	7.91	7.31	6.61
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.51	-	6.91	6.31	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	671	-	-	928	-	-	111	145	506	49	62	250
Stage 1	-	-	-	-	-	-	536	548	-	221	245	-
Stage 2	-	-	-	-	-	-	363	411	-	382	390	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	671	-	-	928	-	-	88	143	506	49	61	250
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	143	-	49	61	-
Stage 1	-	-	-	-	-	-	530	541	-	218	245	-
Stage 2	-	-	-	-	-	-	290	411	-	377	385	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0.1	0	0	33.7
HCM LOS			A	D

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	671	-	-	928	-	-	180
HCM Lane V/C Ratio	-	0.008	-	-	-	-	-	0.31
HCM Control Delay (s)	0	10.4	0	-	0	-	-	33.7
HCM Lane LOS	A	B	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.2

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	633	5	2	977	14	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.957	
Flt Protected					0.967	
Satd. Flow (prot)	1835	0	0	1827	1741	0
Flt Permitted					0.967	
Satd. Flow (perm)	1835	0	0	1827	1741	0
Link Speed (mph)	45			55	20	
Link Distance (ft)	681			1264	806	
Travel Time (s)	10.3			15.7	27.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	1%	4%	1%	1%
Adj. Flow (vph)	673	5	2	1039	15	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	678	0	0	1041	22	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	0.98	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

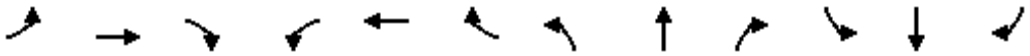
Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	633	5	2	977	14	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	1	1	4	1	1
Mvmt Flow	673	5	2	1039	15	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	679	0	1720	676
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	1044	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	918	-	99	455
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	341	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	918	-	99	455
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	339	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	37.2
HCM LOS			E

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	134	-	-	918	-
HCM Lane V/C Ratio	0.167	-	-	0.002	-
HCM Control Delay (s)	37.2	-	-	8.9	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

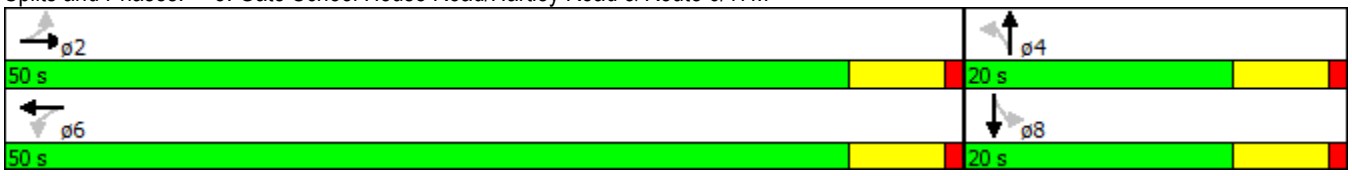


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	548	86	9	857	10	120	9	9	9	9	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.991			0.947	
Flt Protected		0.999			0.999			0.959			0.985	
Satd. Flow (prot)	0	1820	0	0	1929	0	0	1767	0	0	1555	0
Flt Permitted		0.980			0.992			0.731			0.884	
Satd. Flow (perm)	0	1786	0	0	1915	0	0	1347	0	0	1396	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			2			5			13	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	5%	2%	10%	4%	0%	3%	9%	0%	10%	20%	8%
Adj. Flow (vph)	13	589	92	10	922	11	129	10	10	10	10	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	694	0	0	943	0	0	149	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.57			0.72			0.58			0.12	
Control Delay		9.2			12.8			32.1			17.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		9.2			12.8			32.1			17.5	
Queue Length 50th (ft)		124			210			42			5	
Queue Length 95th (ft)		247			423			112			29	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1442			1542			384			404	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.48			0.61			0.39			0.08	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 53.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	548	86	9	857	10	120	9	9	9	9	12
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1867	1881	1948	1947	1948	1919	1859	1919	1872	1667	1872
Adj Flow Rate, veh/h	13	589	65	10	922	11	129	10	10	10	10	13
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	5	5	4	4	4	9	9	9	20	20	20
Cap, veh/h	98	930	101	94	1093	13	329	13	13	156	78	77
Arrive On Green	0.62	0.57	0.57	0.62	0.57	0.57	0.18	0.13	0.13	0.18	0.13	0.13
Sat Flow, veh/h	13	1621	176	7	1904	23	1259	98	98	313	602	594
Grp Volume(v), veh/h	667	0	0	943	0	0	149	0	0	33	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	0	1934	0	0	1454	0	0	1509	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.4	0.0	0.0	15.1	0.0	0.0	3.7	0.0	0.0	0.7	0.0	0.0
Prop In Lane	0.02		0.10	0.01		0.01	0.87		0.07	0.30		0.39
Lane Grp Cap(c), veh/h	1219	0	0	1295	0	0	426	0	0	386	0	0
V/C Ratio(X)	0.55	0.00	0.00	0.73	0.00	0.00	0.35	0.00	0.00	0.09	0.00	0.00
Avail Cap(c_a), veh/h	2126	0	0	2280	0	0	733	0	0	694	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.7	0.0	0.0	6.9	0.0	0.0	16.0	0.0	0.0	15.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.0	6.9	0.0	0.0	1.4	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	5.8	0.0	0.0	7.2	0.0	0.0	16.2	0.0	0.0	15.4	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		667			943			149			33	
Approach Delay, s/veh		5.8			7.2			16.2			15.4	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.2		11.2		29.2		11.2
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		11.4		5.7		17.1		2.7
Green Ext Time (p_c), s		6.3		0.3		6.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

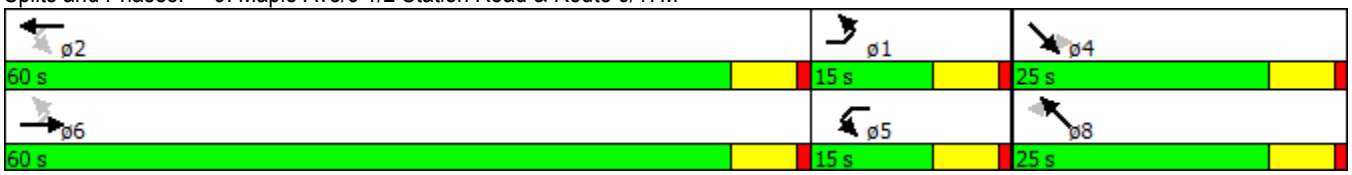
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	52	445	66	32	727	63	30	54	67	81	66	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.988			0.940			0.989	
Flt Protected	0.950			0.950				0.990			0.975	
Satd. Flow (prot)	1729	1873	0	1711	1879	0	0	1721	0	0	1792	0
Flt Permitted	0.110			0.341				0.912			0.752	
Satd. Flow (perm)	200	1873	0	614	1879	0	0	1586	0	0	1382	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			7			35			4	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	55	468	69	34	765	66	32	57	71	85	69	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	537	0	34	831	0	0	160	0	0	167	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.23	0.56		0.07	0.84			0.46			0.59	
Control Delay	12.1	17.4		6.8	24.3			29.3			40.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	12.1	17.4		6.8	24.3			29.3			40.1	
Queue Length 50th (ft)	8	108		8	334			54			73	
Queue Length 95th (ft)	22	357		15	560			132			163	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	346	1439		583	1442			503			419	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.16	0.37		0.06	0.58			0.32			0.40	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 71.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	52	445	66	32	727	63	30	54	67	81	66	12
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1914	1910	1862	1862	1862	1948	1858	1948
Adj Flow Rate, veh/h	55	468	48	34	765	55	32	57	71	85	69	13
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	224	545	56	524	850	61	113	94	103	203	102	17
Arrive On Green	0.05	0.32	0.32	0.22	0.48	0.48	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	1733	1704	175	1716	1765	127	253	688	751	761	747	127
Grp Volume(v), veh/h	55	0	516	34	0	820	160	0	0	167	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1878	1716	0	1891	1692	0	0	1636	0	0
Q Serve(g_s), s	0.0	0.0	14.2	0.0	0.0	21.8	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	14.2	0.0	0.0	21.8	4.6	0.0	0.0	4.7	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.07	0.20		0.44	0.51		0.08
Lane Grp Cap(c), veh/h	224	0	601	524	0	912	372	0	0	382	0	0
V/C Ratio(X)	0.25	0.00	0.86	0.06	0.00	0.90	0.43	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	415	0	1844	524	0	1857	706	0	0	690	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.6	0.0	17.5	16.4	0.0	13.0	22.3	0.0	0.0	22.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.4	0.0	0.0	1.4	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.5	0.4	0.0	11.5	2.2	0.0	0.0	2.2	0.0	0.0
LnGrp Delay(d),s/veh	24.8	0.0	19.0	16.5	0.0	14.4	22.6	0.0	0.0	22.3	0.0	0.0
LnGrp LOS	C		B	B		B	C			C		
Approach Vol, veh/h		571			854			160			167	
Approach Delay, s/veh		19.5			14.5			22.6			22.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	32.5		13.5	17.9	23.6		13.5
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	23.8		6.6	2.0	16.2		6.7
Green Ext Time (p_c), s	0.1	2.7		0.9	0.1	1.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	485	0	0	822	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	527	0	0	893	0	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	527	0	0	893	0	21
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	485	0	0	822	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	527	0	0	893	0	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	527	0	1420	527
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	893	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1025	-	160	553
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	415	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1025	-	160	553
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	415	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	553	-	-	1025	-
HCM Lane V/C Ratio	0.037	-	-	-	-
HCM Control Delay (s)	11.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	86	6	12	257	16	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.955	
Flt Protected				0.998	0.968	
Satd. Flow (prot)	1680	0	0	1760	1759	0
Flt Permitted				0.998	0.968	
Satd. Flow (perm)	1680	0	0	1760	1759	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	11%	2%	5%	9%	0%	1%
Adj. Flow (vph)	98	7	14	292	18	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	0	306	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	86	6	12	257	16	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	2	5	9	0	1
Mvmt Flow	98	7	14	292	18	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	105	0	420	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	-	-	4.15	-	6.2	6.11
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1468	-	608	960
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1468	-	601	960
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	747	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	687	-	-	1468	-
HCM Lane V/C Ratio	0.04	-	-	0.009	-
HCM Control Delay (s)	10.5	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	166	78	2	55	50	54	145	3	12	155	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.937			0.998			0.999	
Flt Protected		0.995			0.999			0.987			0.996	
Satd. Flow (prot)	0	1696	0	0	1711	0	0	1782	0	0	1809	0
Flt Permitted		0.995			0.999			0.987			0.996	
Satd. Flow (perm)	0	1696	0	0	1711	0	0	1782	0	0	1809	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			701			542	
Travel Time (s)		7.7			8.6			13.7			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	32	195	92	2	65	59	64	171	4	14	182	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	319	0	0	126	0	0	239	0	0	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

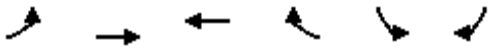
Intersection	
Int Delay, s/veh	14

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	27	166	78	2	55	50	54	145	3	12	155	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	32	195	92	2	65	59	64	171	4	14	182	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	573	512	172	655	513	184	185	0	0	174	0	0
Stage 1	299	299	-	212	212	-	-	-	-	-	-	-
Stage 2	274	213	-	443	301	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	375	411	848	404	487	859	1372	-	-	1385	-	-
Stage 1	658	618	-	802	739	-	-	-	-	-	-	-
Stage 2	683	687	-	618	682	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	297	385	848	207	457	859	1372	-	-	1385	-	-
Mov Cap-2 Maneuver	297	385	-	207	457	-	-	-	-	-	-	-
Stage 1	624	586	-	760	731	-	-	-	-	-	-	-
Stage 2	574	679	-	348	647	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	31.7	13.1	2.1	0.5
HCM LOS	D	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1372	-	-	441	568	1385	-	-
HCM Lane V/C Ratio	0.046	-	-	0.723	0.222	0.01	-	-
HCM Control Delay (s)	7.8	0	-	31.7	13.1	7.6	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	5.7	0.8	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	22	0	273	70	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1488	1556	0	1729	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1488	1556	0	1729	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		589	347		397	
Travel Time (s)		11.5	6.8		7.7	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	29%	0%	3%	7%	2%
Adj. Flow (vph)	0	28	0	341	88	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	28	341	0	88	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	22	0	273	70	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	29	0	3	7	2
Mvmt Flow	0	28	0	341	88	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	341	0	-	0	199	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	4.1	-	-	-	5.47	5.72
Critical Hdwy Stg 1	-	-	-	-	4.47	-
Critical Hdwy Stg 2	-	-	-	-	4.47	-
Follow-up Hdwy	2.2	-	-	-	3.563	3.318
Pot Cap-1 Maneuver	1229	-	-	-	823	894
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	989	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1229	-	-	-	823	894
Mov Cap-2 Maneuver	-	-	-	-	823	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	989	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1229	-	-	-	823
HCM Lane V/C Ratio	-	-	-	-	0.106
HCM Control Delay (s)	0	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	99	2	44	0	0	0	0	178	55	63	292	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959						0.968				
Flt Protected		0.967									0.991	
Satd. Flow (prot)	0	1643	0	0	0	0	0	1733	0	0	1776	0
Flt Permitted		0.967									0.991	
Satd. Flow (perm)	0	1643	0	0	0	0	0	1733	0	0	1776	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	110	2	49	0	0	0	0	198	61	70	324	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	0	0	0	259	0	0	394	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	99	2	44	0	0	0	0	178	55	63	292	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	8	0	4	2	2	2	2	8	0	3	6	2
Mvmt Flow	110	2	49	0	0	0	0	198	61	70	324	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	692	723	324	324	0	0	259	0	0
Stage 1	464	464	-	-	-	-	-	-	-
Stage 2	228	259	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.34	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.336	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	386	341	706	1236	-	-	1300	-	-
Stage 1	605	553	-	-	-	-	-	-	-
Stage 2	786	687	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	361	0	706	1236	-	-	1300	-	-
Mov Cap-2 Maneuver	361	0	-	-	-	-	-	-	-
Stage 1	565	0	-	-	-	-	-	-	-
Stage 2	786	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	18.6	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1236	-	-	425	1300	-	-
HCM Lane V/C Ratio	-	-	-	0.379	0.054	-	-
HCM Control Delay (s)	0	-	-	18.6	7.9	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	134	2	146	53	224	0	0	221	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.930						0.964	
Flt Protected					0.977			0.991				
Satd. Flow (prot)	0	0	0	0	1645	0	0	1739	0	0	1746	0
Flt Permitted					0.977			0.991				
Satd. Flow (perm)	0	0	0	0	1645	0	0	1739	0	0	1746	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	144	2	157	57	241	0	0	238	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	303	0	0	298	0	0	324	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	7.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	134	2	146	53	224	0	0	221	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	5	0	4	15	6	2	2	7	1
Mvmt Flow	0	0	0	144	2	157	57	241	0	0	238	86

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	636	679	241	324	0	0	241	0	0
Stage 1	355	355	-	-	-	-	-	-	-
Stage 2	281	324	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.7	6.34	4.25	-	-	4.12	-	-
Critical Hdwy Stg 1	5.65	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.336	2.335	-	-	2.218	-	-
Pot Cap-1 Maneuver	422	362	788	1166	-	-	1326	-	-
Stage 1	689	621	-	-	-	-	-	-	-
Stage 2	748	642	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	398	0	788	1166	-	-	1326	-	-
Mov Cap-2 Maneuver	398	0	-	-	-	-	-	-	-
Stage 1	650	0	-	-	-	-	-	-	-
Stage 2	748	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	20.1	1.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1166	-	-	536	1326	-	-
HCM Lane V/C Ratio	0.049	-	-	0.566	-	-	-
HCM Control Delay (s)	8.2	0	-	20.1	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.5	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	631	23	39	946	49	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.961	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1793	0	0	1830	1960	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1793	0	0	1830	1960	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1264			1007	775	
Travel Time (s)	15.7			12.5	17.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	46%	18%	3%	0%	0%
Adj. Flow (vph)	664	24	41	996	52	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	688	0	0	1037	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	631	23	39	946	49	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	46	18	3	0	0
Mvmt Flow	664	24	41	996	52	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	688	0	1754	676
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	1078	-
Critical Hdwy	-	-	4.28	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.362	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	836	-	115	474
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	371	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	836	-	102	474
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	330	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	61.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	132	-	-	836	-
HCM Lane V/C Ratio	0.55	-	-	0.049	-
HCM Control Delay (s)	61.4	-	-	9.5	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	2.7	-	-	0.2	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	166	78	2	55	50	54	145	3	12	155	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.937			0.998			0.999	
Flt Protected		0.995			0.999			0.987			0.996	
Satd. Flow (prot)	0	1696	0	0	1711	0	0	1782	0	0	1809	0
Flt Permitted		0.995			0.999			0.987			0.996	
Satd. Flow (perm)	0	1696	0	0	1711	0	0	1782	0	0	1809	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			701			542	
Travel Time (s)		7.7			8.6			13.7			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	32	195	92	2	65	59	64	171	4	14	182	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	319	0	0	126	0	0	239	0	0	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	27	166	78	0	2	55	50	0	54	145	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	32	195	92	0	2	65	59	0	64	171	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	12.9	9.8	11.9
HCM LOS	B	A	B

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	27%	10%	2%	7%
Vol Thru, %	72%	61%	51%	92%
Vol Right, %	1%	29%	47%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	202	271	107	169
LT Vol	54	27	2	12
Through Vol	145	166	55	155
RT Vol	3	78	50	2
Lane Flow Rate	238	319	126	199
Geometry Grp	1	1	1	1
Degree of Util (X)	0.369	0.468	0.192	0.31
Departure Headway (Hd)	5.592	5.28	5.484	5.622
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	642	682	652	638
Service Time	3.637	3.321	3.537	3.67
HCM Lane V/C Ratio	0.371	0.468	0.193	0.312
HCM Control Delay	11.9	12.9	9.8	11.2
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	1.7	2.5	0.7	1.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	12	155	2
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	14	182	2
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	11.2
HCM LOS	B

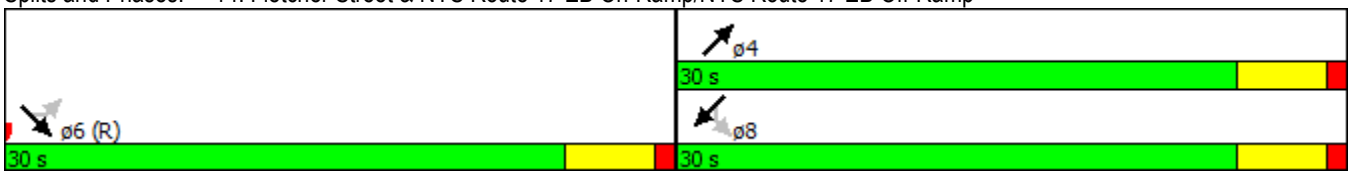
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	99	2	44	0	0	0	0	178	55	63	292	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959						0.968				
Flt Protected		0.967									0.991	
Satd. Flow (prot)	0	1643	0	0	0	0	0	1733	0	0	1776	0
Flt Permitted		0.967									0.898	
Satd. Flow (perm)	0	1643	0	0	0	0	0	1733	0	0	1610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45						32				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	110	2	49	0	0	0	0	198	61	70	324	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	0	0	0	259	0	0	394	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.23						0.35			0.59	
Control Delay		9.2						12.0			13.4	
Queue Delay		0.0						0.0			0.1	
Total Delay		9.2						12.0			13.5	
Queue Length 50th (ft)		25						53			71	
Queue Length 95th (ft)		58						101			111	
Internal Link Dist (ft)		358			420			77			262	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		710						740			670	
Starvation Cap Reductn		0						0			19	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.23						0.35			0.61	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	99	2	44	0	0	0	0	178	55	63	292	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1772	1890				0	1790	1900	1890	1793	0
Adj Flow Rate, veh/h	110	2	49				0	198	61	70	324	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0				0	8	8	6	6	0
Cap, veh/h	464	8	207				0	548	169	153	610	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1113	20	496				0	1314	405	197	1464	0
Grp Volume(v), veh/h	161	0	0				0	0	259	394	0	0
Grp Sat Flow(s),veh/h/ln	1629	0	0				0	0	1719	1661	0	0
Q Serve(g_s), s	3.8	0.0	0.0				0.0	0.0	6.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0				0.0	0.0	6.2	3.9	0.0	0.0
Prop In Lane	0.68		0.30				0.00		0.24	0.18		0.00
Lane Grp Cap(c), veh/h	679	0	0				0	0	716	763	0	0
V/C Ratio(X)	0.24	0.00	0.00				0.00	0.00	0.36	0.52	0.00	0.00
Avail Cap(c_a), veh/h	679	0	0				0	0	716	763	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.3	0.0	0.0				0.0	0.0	12.0	3.2	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0				0.0	0.0	1.4	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0				0.0	0.0	3.2	2.3	0.0	0.0
LnGrp Delay(d),s/veh	12.2	0.0	0.0				0.0	0.0	13.4	5.7	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		161						259			394	
Approach Delay, s/veh		12.2						13.4			5.7	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				8.2		5.8		5.9
Green Ext Time (p_c), s				3.5		0.7		3.6

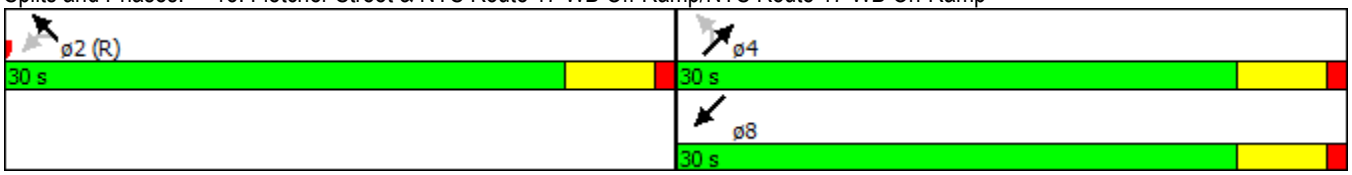
Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	134	2	146	53	224	0	0	221	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.930						0.964	
Flt Protected					0.977			0.991				
Satd. Flow (prot)	0	0	0	0	1645	0	0	1739	0	0	1746	0
Flt Permitted					0.977			0.885				
Satd. Flow (perm)	0	0	0	0	1645	0	0	1553	0	0	1746	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					111						37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	144	2	157	57	241	0	0	238	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	303	0	0	298	0	0	324	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.40			0.46			0.43	
Control Delay					9.5			11.7			13.2	
Queue Delay					0.0			0.0			0.0	
Total Delay					9.5			11.7			13.2	
Queue Length 50th (ft)					44			52			69	
Queue Length 95th (ft)					96			85			128	
Internal Link Dist (ft)		266			284			262			375	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					750			647			749	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.40			0.46			0.43	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	134	2	146	53	224	0	0	221	80
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1810	1890	1890	1755	0	0	1812	1910
Adj Flow Rate, veh/h				144	2	157	57	241	0	0	238	86
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	6	6	0	0	7	7
Cap, veh/h				321	4	350	154	579	0	0	530	191
Arrive On Green				0.42	0.42	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				771	11	841	198	1390	0	0	1271	459
Grp Volume(v), veh/h				303	0	0	298	0	0	0	0	324
Grp Sat Flow(s),veh/h/ln				1623	0	0	1588	0	0	0	0	1730
Q Serve(g_s), s				8.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	8.1
Cycle Q Clear(g_c), s				8.0	0.0	0.0	8.2	0.0	0.0	0.0	0.0	8.1
Prop In Lane				0.48		0.52	0.19		0.00	0.00		0.27
Lane Grp Cap(c), veh/h				676	0	0	733	0	0	0	0	721
V/C Ratio(X)				0.45	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.45
Avail Cap(c_a), veh/h				676	0	0	733	0	0	0	0	721
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				12.6	0.0	0.0	3.1	0.0	0.0	0.0	0.0	12.6
Incr Delay (d2), s/veh				2.1	0.0	0.0	1.7	0.0	0.0	0.0	0.0	2.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.9	0.0	0.0	1.5	0.0	0.0	0.0	0.0	4.2
LnGrp Delay(d),s/veh				14.7	0.0	0.0	4.8	0.0	0.0	0.0	0.0	14.6
LnGrp LOS				B			A					B
Approach Vol, veh/h					303			298			324	
Approach Delay, s/veh					14.7			4.8			14.6	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		10.0		10.2				10.1
Green Ext Time (p_c), s		1.4		3.1				3.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	359	0	919	0	0	845	125	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	378	0	967	0	0	889	132	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	378	0	967	0	0	889	132	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	359	0	919	0	0	845	125	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	378	0	967	0	0	889	132	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1412	484	889	0	0	967	0	0
Stage 1	967	-	-	-	-	-	-	-
Stage 2	445	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	159	540	739	-	-	690	-	0
Stage 1	379	-	-	-	-	-	-	0
Stage 2	651	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	159	540	739	-	-	690	-	-
Mov Cap-2 Maneuver	159	-	-	-	-	-	-	-
Stage 1	379	-	-	-	-	-	-	-
Stage 2	651	-	-	-	-	-	-	-

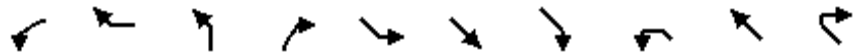
Approach	WB	NB	SB
HCM Control Delay, s	25.7	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	739	-	-	540	690	-
HCM Lane V/C Ratio	-	-	-	0.7	-	-
HCM Control Delay (s)	0	-	-	25.7	0	-
HCM Lane LOS	A	-	-	D	A	-
HCM 95th %tile Q(veh)	0	-	-	5.5	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	77	0	0	0	845	0	0	919	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	79	0	0	0	871	0	0	947	354
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	79	0	0	0	871	0	0	947	354
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	77	0	0	0	554	368	0	1185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	81	0	0	0	583	387	0	1247	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	81	0	0	0	583	387	0	1247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	153	0	0	0	554	0	0	1185	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	159	0	0	0	577	0	0	1234	368
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	159	0	0	0	577	0	0	1234	368
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	517	22	198	1320	98	131	113	19	67	149	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.990			0.990			0.975	
Flt Protected	0.950			0.950				0.976			0.987	
Satd. Flow (prot)	1876	1892	0	1690	3288	0	0	1855	0	0	1740	0
Flt Permitted	0.092			0.230				0.608			0.823	
Satd. Flow (perm)	182	1892	0	409	3288	0	0	1156	0	0	1451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			10			4			11	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2977	
Travel Time (s)		23.3			14.7			23.0			45.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	33	544	23	208	1389	103	138	119	20	71	157	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	567	0	208	1492	0	0	277	0	0	280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.18	0.68		0.54	0.84			0.91			0.72	
Control Delay	10.8	26.9		13.6	25.3			67.7			42.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.8	26.9		13.6	25.3			67.7			42.8	
Queue Length 50th (ft)	7	261		51	417			156			145	
Queue Length 95th (ft)	18	413		84	#593			#326			#272	
Internal Link Dist (ft)		1460			890			932			2897	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	319	828		468	1772			311			395	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	0.68		0.44	0.84			0.89			0.71	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 93.9
Natural Cycle: 90
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	31	517	22	198	1320	98	131	113	19	67	149	49
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1903	1995	1779	1748	1814	1948	1920	1948	1910	1871	1910
Adj Flow Rate, veh/h	33	544	12	208	1389	92	138	119	9	71	157	41
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	186	878	19	435	1708	113	209	150	10	131	240	57
Arrive On Green	0.02	0.47	0.47	0.09	0.54	0.54	0.26	0.23	0.23	0.26	0.23	0.23
Sat Flow, veh/h	1881	1855	41	1694	3163	209	625	643	44	338	1030	246
Grp Volume(v), veh/h	33	0	556	208	727	754	266	0	0	269	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1896	1694	1661	1711	1312	0	0	1614	0	0
Q Serve(g_s), s	0.8	0.0	18.9	5.1	31.0	31.4	4.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	18.9	5.1	31.0	31.4	17.2	0.0	0.0	12.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.12	0.52		0.03	0.26		0.15
Lane Grp Cap(c), veh/h	186	0	898	435	897	924	399	0	0	466	0	0
V/C Ratio(X)	0.18	0.00	0.62	0.48	0.81	0.82	0.67	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	411	0	898	603	897	924	481	0	0	556	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.5	0.0	17.0	12.1	16.3	16.4	31.6	0.0	0.0	29.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	3.2	0.3	7.9	7.9	1.6	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	10.7	2.4	16.1	16.7	6.0	0.0	0.0	5.6	0.0	0.0
LnGrp Delay(d),s/veh	15.7	0.0	20.2	12.4	24.2	24.2	33.2	0.0	0.0	30.3	0.0	0.0
LnGrp LOS	B		C	B	C	C	C			C		
Approach Vol, veh/h		589			1689			266			269	
Approach Delay, s/veh		19.9			22.8			33.2			30.3	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	52.8		26.2	13.4	47.0		26.2
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.8	33.4		19.2	7.1	20.9		14.8
Green Ext Time (p_c), s	0.0	5.8		1.0	0.4	7.5		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	674	0	0	1609	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1879	0	0	1782	1928	0
Flt Permitted						
Satd. Flow (perm)	1879	0	0	1782	1928	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			535	353	
Travel Time (s)	5.7			8.1	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	709	0	0	1694	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	709	0	0	1694	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

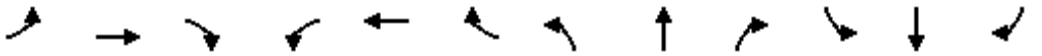
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	674	0	0	1609	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	709	0	0	1694	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	709	0	2403	709
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	1694	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	895	-	72	481
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	263	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	895	-	72	481
Mov Cap-2 Maneuver	-	-	-	-	72	-
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	263	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	895	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



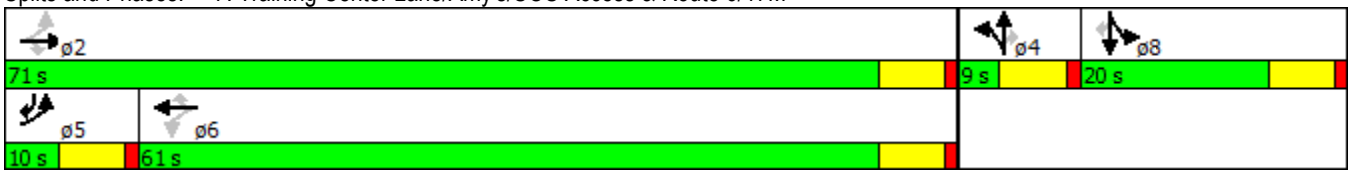
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	641	5	2	988	20	14	0	7	378	0	604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.065			0.375				0.950			0.950	
Satd. Flow (perm)	119	1837	1623	705	1888	1538	0	1787	1599	0	1641	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			164			164			111
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		535			1410			798			469	
Travel Time (s)		8.1			17.5			21.8			10.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	29	682	5	2	1051	21	15	0	7	402	0	643
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	682	5	2	1051	21	0	15	7	0	402	643
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Split	NA	Perm	Split	NA	pm+ov

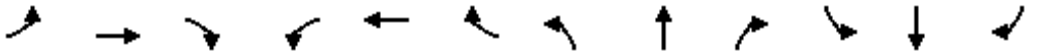
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		4	4		8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	10.0	71.0	71.0	61.0	61.0	61.0	9.0	9.0	9.0	20.0	20.0	10.0
Total Split (%)	10.0%	71.0%	71.0%	61.0%	61.0%	61.0%	9.0%	9.0%	9.0%	20.0%	20.0%	10.0%
Maximum Green (s)	4.0	65.0	65.0	55.0	55.0	55.0	3.0	3.0	3.0	14.0	14.0	4.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.19	0.54	0.00	0.00	0.96	0.02		0.27	0.03		1.65	1.39
Control Delay	8.5	9.9	0.0	10.0	39.2	0.1		58.4	0.3		341.7	214.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	8.5	9.9	0.0	10.0	39.2	0.1		58.4	0.3		341.7	214.2
Queue Length 50th (ft)	4	151	0	0	495	0		9	0		~333	~443
Queue Length 95th (ft)	16	316	0	4	#954	0		31	0		#567	#728
Internal Link Dist (ft)		455			1330			718			389	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	150	1265	1148	410	1100	964		56	209		243	463
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.19	0.54	0.00	0.00	0.96	0.02		0.27	0.03		1.65	1.39

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 94.6
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



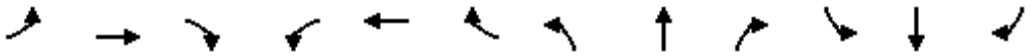


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	27	641	5	2	988	20	14	0	7	378	0	604
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	29	682	5	2	1051	21	15	0	7	402	0	643
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	137	1214	1073	423	1108	897	25	0	22	234	0	1085
Arrive On Green	0.02	0.66	0.66	0.58	0.58	0.58	0.01	0.00	0.01	0.14	0.00	0.14
Sat Flow, veh/h	1749	1837	1623	760	1900	1538	1792	0	1599	1645	0	1495
Grp Volume(v), veh/h	29	682	5	2	1051	21	15	0	7	402	0	643
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	760	1900	1538	1792	0	1599	1645	0	1495
Q Serve(g_s), s	0.6	19.7	0.1	0.1	50.8	0.6	0.8	0.0	0.4	14.0	0.0	14.0
Cycle Q Clear(g_c), s	0.6	19.7	0.1	12.2	50.8	0.6	0.8	0.0	0.4	14.0	0.0	14.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	137	1214	1073	423	1108	897	25	0	22	234	0	1085
V/C Ratio(X)	0.21	0.56	0.00	0.00	0.95	0.02	0.61	0.00	0.32	1.72	0.00	0.59
Avail Cap(c_a), veh/h	179	1214	1073	423	1108	897	55	0	49	234	0	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.2	9.0	5.7	14.3	19.1	8.7	48.2	0.0	48.0	42.2	0.0	5.6
Incr Delay (d2), s/veh	0.3	1.9	0.0	0.0	17.2	0.0	8.6	0.0	3.0	340.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.5	0.0	0.0	31.6	0.3	0.5	0.0	0.2	28.4	0.0	17.5
LnGrp Delay(d),s/veh	22.5	10.9	5.7	14.4	36.3	8.7	56.9	0.0	51.1	382.2	0.0	6.2
LnGrp LOS	C	B	A	B	D	A	E		D	F		A
Approach Vol, veh/h		716			1074			22			1045	
Approach Delay, s/veh		11.3			35.7			55.0			150.9	
Approach LOS		B			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		71.0		7.4	7.6	63.4		20.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		65.0		3.0	4.0	55.0		14.0
Max Q Clear Time (g_c+I1), s		21.7		2.8	2.6	52.8		16.0
Green Ext Time (p_c), s		7.7		0.0	0.0	1.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.9
HCM 2010 LOS	E

Two Way Analysis cannot be performed on Signalized Intersection.

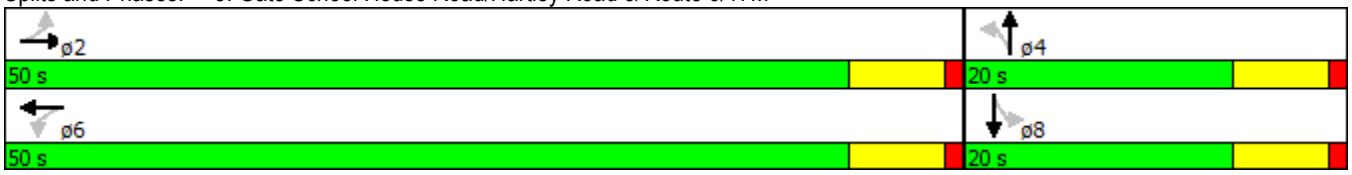


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	928	92	9	885	10	121	10	9	9	9	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.998			0.991			0.947	
Flt Protected		0.999			0.999			0.959			0.985	
Satd. Flow (prot)	0	1814	0	0	1875	0	0	1767	0	0	1496	0
Flt Permitted		0.986			0.988			0.732			0.895	
Satd. Flow (perm)	0	1791	0	0	1855	0	0	1348	0	0	1359	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			2			5			13	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	14	998	99	10	952	11	130	11	10	10	10	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1111	0	0	973	0	0	151	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.86			0.73			0.66			0.14	
Control Delay		20.7			13.4			40.0			18.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.7			13.4			40.0			18.4	
Queue Length 50th (ft)		356			253			57			7	
Queue Length 95th (ft)		#727			#573			113			29	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1291			1333			296			304	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			0.73			0.51			0.11	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 65.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	928	92	9	885	10	121	10	9	9	9	12
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1850	1881	1948	1893	1948	1919	1859	1919	1872	1603	1872
Adj Flow Rate, veh/h	14	998	72	10	952	11	130	11	10	10	10	13
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	73	1096	78	71	1204	14	284	14	12	121	78	73
Arrive On Green	0.69	0.65	0.65	0.69	0.65	0.65	0.16	0.13	0.13	0.16	0.13	0.13
Sat Flow, veh/h	8	1682	120	6	1847	21	1258	106	97	272	612	574
Grp Volume(v), veh/h	1084	0	0	973	0	0	151	0	0	33	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	0	1874	0	0	1461	0	0	1458	0	0
Q Serve(g_s), s	2.1	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.7	0.0	0.0	19.0	0.0	0.0	5.1	0.0	0.0	1.1	0.0	0.0
Prop In Lane	0.01		0.07	0.01		0.01	0.86		0.07	0.30		0.39
Lane Grp Cap(c), veh/h	1313	0	0	1357	0	0	363	0	0	326	0	0
V/C Ratio(X)	0.83	0.00	0.00	0.72	0.00	0.00	0.42	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1592	0	0	1646	0	0	547	0	0	503	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.7	0.0	0.0	6.6	0.0	0.0	22.0	0.0	0.0	20.9	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.0	0.0	0.8	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	0.0	0.0	9.0	0.0	0.0	2.1	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	10.3	0.0	0.0	7.4	0.0	0.0	22.3	0.0	0.0	20.9	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		1084			973			151			33	
Approach Delay, s/veh		10.3			7.4			22.3			20.9	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		41.5		13.0		41.5		13.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		27.7		7.1		21.0		3.1
Green Ext Time (p_c), s		7.8		0.3		9.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	52	824	69	33	754	64	30	54	67	83	66	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.988			0.940			0.990	
Flt Protected	0.950			0.950				0.990			0.975	
Satd. Flow (prot)	1729	1886	0	1711	1879	0	0	1721	0	0	1794	0
Flt Permitted	0.129			0.093				0.908			0.733	
Satd. Flow (perm)	235	1886	0	168	1879	0	0	1579	0	0	1349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			7			35			4	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	55	867	73	35	794	67	32	57	71	87	69	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	940	0	35	861	0	0	160	0	0	169	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.20	0.88		0.17	0.83			0.48			0.64	
Control Delay	9.4	26.8		9.8	24.1			31.1			44.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.4	26.8		9.8	24.1			31.1			44.7	
Queue Length 50th (ft)	9	436		6	431			67			92	
Queue Length 95th (ft)	22	#757		16	580			130			164	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	360	1372		312	1367			452			367	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.15	0.69		0.11	0.63			0.35			0.46	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 77.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	52	824	69	33	754	64	30	54	67	83	66	12
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1914	1910	1862	1862	1862	1948	1859	1948
Adj Flow Rate, veh/h	55	867	52	35	794	56	32	57	71	87	69	13
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	309	942	57	223	869	61	103	96	104	189	100	17
Arrive On Green	0.08	0.53	0.53	0.05	0.49	0.49	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	1733	1783	107	1716	1767	125	251	697	756	745	723	122
Grp Volume(v), veh/h	55	0	919	35	0	850	160	0	0	169	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1890	1716	0	1892	1704	0	0	1591	0	0
Q Serve(g_s), s	0.0	0.0	28.1	0.0	0.0	26.1	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	28.1	0.0	0.0	26.1	5.2	0.0	0.0	5.9	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.07	0.20		0.44	0.51		0.08
Lane Grp Cap(c), veh/h	309	0	999	223	0	930	358	0	0	357	0	0
V/C Ratio(X)	0.18	0.00	0.92	0.16	0.00	0.91	0.45	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	411	0	1623	386	0	1624	621	0	0	598	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	13.6	27.4	0.0	14.8	25.5	0.0	0.0	25.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	3.8	0.1	0.0	2.4	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	15.4	0.6	0.0	14.1	2.5	0.0	0.0	2.6	0.0	0.0
LnGrp Delay(d),s/veh	24.3	0.0	17.4	27.6	0.0	17.2	25.8	0.0	0.0	25.7	0.0	0.0
LnGrp LOS	C		B	C		B	C			C		
Approach Vol, veh/h		974			885			160			169	
Approach Delay, s/veh		17.8			17.6			25.8			25.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	36.9		14.7	9.0	39.2		14.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	28.1		7.2	2.0	30.1		7.9
Green Ext Time (p_c), s	0.1	2.8		0.9	0.1	3.2		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	872	0	0	844	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	948	0	0	917	0	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	948	0	0	917	0	21
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	872	0	0	844	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	948	0	0	917	0	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	948	0	1865	948
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	917	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	712	-	87	321
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	405	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	712	-	87	321
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	405	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	17
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	712	-
HCM Lane V/C Ratio	0.064	-	-	-	-
HCM Control Delay (s)	17	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	86	6	12	257	16	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.952	
Flt Protected				0.998	0.969	
Satd. Flow (prot)	1680	0	0	1760	1755	0
Flt Permitted				0.998	0.969	
Satd. Flow (perm)	1680	0	0	1760	1755	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	11%	2%	5%	9%	0%	1%
Adj. Flow (vph)	98	7	14	292	18	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	0	306	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	86	6	12	257	16	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	2	5	9	0	1
Mvmt Flow	98	7	14	292	18	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	105	0	420	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	-	-	4.15	-	6.2	6.11
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1468	-	608	960
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1468	-	601	960
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	747	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	694	-	-	1468	-
HCM Lane V/C Ratio	0.041	-	-	0.009	-
HCM Control Delay (s)	10.4	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	166	78	2	55	65	61	153	3	12	171	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.928			0.998			0.999	
Flt Protected		0.995			0.999			0.986			0.997	
Satd. Flow (prot)	0	1696	0	0	1694	0	0	1781	0	0	1811	0
Flt Permitted		0.995			0.999			0.986			0.997	
Satd. Flow (perm)	0	1696	0	0	1694	0	0	1781	0	0	1811	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			696			542	
Travel Time (s)		7.7			8.6			13.6			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	32	195	92	2	65	76	72	180	4	14	201	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	319	0	0	143	0	0	256	0	0	217	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

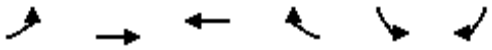
Intersection	
Int Delay, s/veh	16

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	27	166	78	2	55	65	61	153	3	12	171	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	32	195	92	2	65	76	72	180	4	14	201	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	626	557	182	700	558	202	204	0	0	184	0	0
Stage 1	325	325	-	231	231	-	-	-	-	-	-	-
Stage 2	301	232	-	469	327	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	341	384	836	378	462	841	1350	-	-	1373	-	-
Stage 1	634	599	-	785	726	-	-	-	-	-	-	-
Stage 2	656	671	-	600	666	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	260	357	836	182	430	841	1350	-	-	1373	-	-
Mov Cap-2 Maneuver	260	357	-	182	430	-	-	-	-	-	-	-
Stage 1	597	564	-	739	718	-	-	-	-	-	-	-
Stage 2	537	664	-	329	627	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	38.7	13.5	2.2	0.5
HCM LOS	E	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1350	-	-	409	564	1373	-	-
HCM Lane V/C Ratio	0.053	-	-	0.78	0.254	0.01	-	-
HCM Control Delay (s)	7.8	0	-	38.7	13.5	7.6	0	-
HCM Lane LOS	A	A	-	E	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	6.7	1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	22	0	273	70	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1488	1556	0	1729	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1488	1556	0	1729	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		528	347		397	
Travel Time (s)		10.3	6.8		7.7	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	29%	0%	3%	7%	2%
Adj. Flow (vph)	0	28	0	341	88	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	28	341	0	88	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	22	0	273	70	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	29	0	3	7	2
Mvmt Flow	0	28	0	341	88	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	341	0	-	0	199	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	4.1	-	-	-	5.47	5.72
Critical Hdwy Stg 1	-	-	-	-	4.47	-
Critical Hdwy Stg 2	-	-	-	-	4.47	-
Follow-up Hdwy	2.2	-	-	-	3.563	3.318
Pot Cap-1 Maneuver	1229	-	-	-	823	894
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	989	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1229	-	-	-	823	894
Mov Cap-2 Maneuver	-	-	-	-	823	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	989	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1229	-	-	-	823
HCM Lane V/C Ratio	-	-	-	-	0.106
HCM Control Delay (s)	0	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	99	2	44	0	0	0	0	179	55	63	292	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959						0.968				
Flt Protected		0.967									0.991	
Satd. Flow (prot)	0	1643	0	0	0	0	0	1733	0	0	1776	0
Flt Permitted		0.967									0.991	
Satd. Flow (perm)	0	1643	0	0	0	0	0	1733	0	0	1776	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	110	2	49	0	0	0	0	199	61	70	324	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	0	0	0	260	0	0	394	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	99	2	44	0	0	0	0	179	55	63	292	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	8	0	4	2	2	2	2	8	0	3	6	2
Mvmt Flow	110	2	49	0	0	0	0	199	61	70	324	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	693	724	324	324	0	0	260	0	0
Stage 1	464	464	-	-	-	-	-	-	-
Stage 2	229	260	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.34	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.336	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	385	340	706	1236	-	-	1299	-	-
Stage 1	605	553	-	-	-	-	-	-	-
Stage 2	785	687	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	360	0	706	1236	-	-	1299	-	-
Mov Cap-2 Maneuver	360	0	-	-	-	-	-	-	-
Stage 1	565	0	-	-	-	-	-	-	-
Stage 2	785	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	18.6	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1236	-	-	424	1299	-	-
HCM Lane V/C Ratio	-	-	-	0.38	0.054	-	-
HCM Control Delay (s)	0	-	-	18.6	7.9	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	134	2	146	55	224	0	0	221	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.930						0.964	
Flt Protected					0.977			0.990				
Satd. Flow (prot)	0	0	0	0	1645	0	0	1737	0	0	1746	0
Flt Permitted					0.977			0.990				
Satd. Flow (perm)	0	0	0	0	1645	0	0	1737	0	0	1746	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	144	2	157	59	241	0	0	238	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	303	0	0	300	0	0	324	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	7.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	134	2	146	55	224	0	0	221	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	5	0	4	15	6	2	2	7	1
Mvmt Flow	0	0	0	144	2	157	59	241	0	0	238	86

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	640	683	241	324	0	0	241	0	0
Stage 1	359	359	-	-	-	-	-	-	-
Stage 2	281	324	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.7	6.34	4.25	-	-	4.12	-	-
Critical Hdwy Stg 1	5.65	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.336	2.335	-	-	2.218	-	-
Pot Cap-1 Maneuver	420	360	788	1166	-	-	1326	-	-
Stage 1	686	618	-	-	-	-	-	-	-
Stage 2	748	642	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	396	0	788	1166	-	-	1326	-	-
Mov Cap-2 Maneuver	396	0	-	-	-	-	-	-	-
Stage 1	646	0	-	-	-	-	-	-	-
Stage 2	748	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	20.2	1.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1166	-	-	535	1326	-	-
HCM Lane V/C Ratio	0.051	-	-	0.567	-	-	-
HCM Control Delay (s)	8.3	0	-	20.2	0	-	-
HCM Lane LOS	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.5	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1003	23	39	960	49	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.961	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1805	0	0	1831	1960	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1805	0	0	1831	1960	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1410			1007	771	
Travel Time (s)	17.5			12.5	17.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	46%	18%	3%	0%	0%
Adj. Flow (vph)	1056	24	41	1011	52	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1080	0	0	1052	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1003	23	39	960	49	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	46	18	3	0	0
Mvmt Flow	1056	24	41	1011	52	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1080	0	2161	1068
Stage 1	-	-	-	-	1068	-
Stage 2	-	-	-	-	1093	-
Critical Hdwy	-	-	4.28	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.362	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	589	-	67	288
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	366	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	589	-	56	288
Mov Cap-2 Maneuver	-	-	-	-	56	-
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	308	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	201.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	73	-	-	589	-
HCM Lane V/C Ratio	0.995	-	-	0.07	-
HCM Control Delay (s)	201.8	-	-	11.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	5.2	-	-	0.2	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	166	78	2	55	65	61	153	3	12	171	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.928			0.998			0.999	
Flt Protected		0.995			0.999			0.986			0.997	
Satd. Flow (prot)	0	1696	0	0	1694	0	0	1781	0	0	1811	0
Flt Permitted		0.995			0.999			0.986			0.997	
Satd. Flow (perm)	0	1696	0	0	1694	0	0	1781	0	0	1811	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			696			542	
Travel Time (s)		7.7			8.6			13.6			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	32	195	92	2	65	76	72	180	4	14	201	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	319	0	0	143	0	0	256	0	0	217	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	27	166	78	0	2	55	65	0	61	153	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	32	195	92	0	2	65	76	0	72	180	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	13.5	10.3	12.6
HCM LOS	B	B	B

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	28%	10%	2%	6%
Vol Thru, %	71%	61%	45%	92%
Vol Right, %	1%	29%	53%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	271	122	185
LT Vol	61	27	2	12
Through Vol	153	166	55	171
RT Vol	3	78	65	2
Lane Flow Rate	255	319	144	218
Geometry Grp	1	1	1	1
Degree of Util (X)	0.405	0.482	0.223	0.347
Departure Headway (Hd)	5.717	5.444	5.6	5.745
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	628	660	637	622
Service Time	3.774	3.497	3.666	3.804
HCM Lane V/C Ratio	0.406	0.483	0.226	0.35
HCM Control Delay	12.6	13.5	10.3	11.9
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2	2.6	0.8	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	12	171	2
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	14	201	2
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	11.9
HCM LOS	B

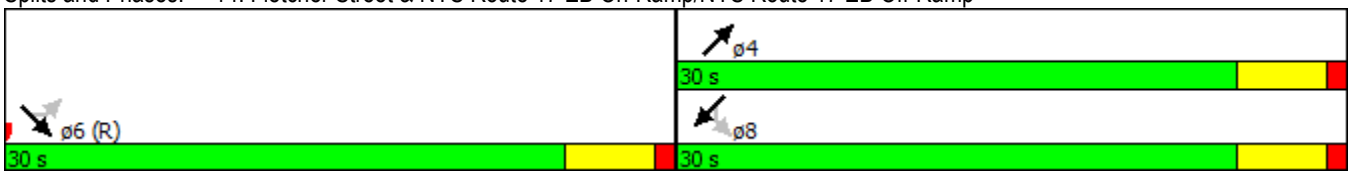
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	99	2	44	0	0	0	0	179	55	63	292	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959						0.968				
Flt Protected		0.967									0.991	
Satd. Flow (prot)	0	1643	0	0	0	0	0	1733	0	0	1776	0
Flt Permitted		0.967									0.898	
Satd. Flow (perm)	0	1643	0	0	0	0	0	1733	0	0	1610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45						32				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	110	2	49	0	0	0	0	199	61	70	324	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	0	0	0	260	0	0	394	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.23						0.35			0.59	
Control Delay		9.2						12.1			13.4	
Queue Delay		0.0						0.0			0.1	
Total Delay		9.2						12.1			13.5	
Queue Length 50th (ft)		25						53			71	
Queue Length 95th (ft)		58						101			111	
Internal Link Dist (ft)		358			420			77			262	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		710						740			670	
Starvation Cap Reductn		0						0			19	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.23						0.35			0.61	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	99	2	44	0	0	0	0	179	55	63	292	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1772	1890				0	1790	1900	1890	1793	0
Adj Flow Rate, veh/h	110	2	49				0	199	61	70	324	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0				0	8	8	6	6	0
Cap, veh/h	464	8	207				0	548	168	153	610	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1113	20	496				0	1316	403	197	1463	0
Grp Volume(v), veh/h	161	0	0				0	0	260	394	0	0
Grp Sat Flow(s),veh/h/ln	1629	0	0				0	0	1719	1660	0	0
Q Serve(g_s), s	3.8	0.0	0.0				0.0	0.0	6.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0				0.0	0.0	6.2	3.9	0.0	0.0
Prop In Lane	0.68		0.30				0.00		0.23	0.18		0.00
Lane Grp Cap(c), veh/h	679	0	0				0	0	716	762	0	0
V/C Ratio(X)	0.24	0.00	0.00				0.00	0.00	0.36	0.52	0.00	0.00
Avail Cap(c_a), veh/h	679	0	0				0	0	716	762	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.3	0.0	0.0				0.0	0.0	12.0	3.2	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0				0.0	0.0	1.4	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0				0.0	0.0	3.2	2.3	0.0	0.0
LnGrp Delay(d),s/veh	12.2	0.0	0.0				0.0	0.0	13.5	5.7	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		161						260			394	
Approach Delay, s/veh		12.2						13.5			5.7	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				8.2		5.8		5.9
Green Ext Time (p_c), s				3.5		0.7		3.6

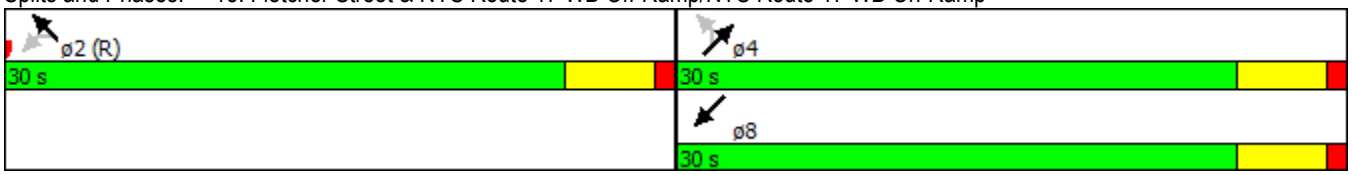
Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	134	2	146	55	224	0	0	221	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.930						0.964	
Flt Protected					0.977			0.990				
Satd. Flow (prot)	0	0	0	0	1645	0	0	1737	0	0	1746	0
Flt Permitted					0.977			0.881				
Satd. Flow (perm)	0	0	0	0	1645	0	0	1545	0	0	1746	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					111						37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	144	2	157	59	241	0	0	238	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	303	0	0	300	0	0	324	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.40			0.47			0.43	
Control Delay					9.5			11.8			13.2	
Queue Delay					0.0			0.0			0.0	
Total Delay					9.5			11.8			13.2	
Queue Length 50th (ft)					44			52			69	
Queue Length 95th (ft)					96			86			128	
Internal Link Dist (ft)		266			284			262			375	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					750			643			749	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.40			0.47			0.43	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	134	2	146	55	224	0	0	221	80
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1810	1890	1890	1754	0	0	1812	1910
Adj Flow Rate, veh/h				144	2	157	59	241	0	0	238	86
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	6	6	0	0	7	7
Cap, veh/h				321	4	350	156	569	0	0	530	191
Arrive On Green				0.42	0.42	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				771	11	841	203	1365	0	0	1271	459
Grp Volume(v), veh/h				303	0	0	300	0	0	0	0	324
Grp Sat Flow(s),veh/h/ln				1623	0	0	1568	0	0	0	0	1730
Q Serve(g_s), s				8.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	8.1
Cycle Q Clear(g_c), s				8.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	8.1
Prop In Lane				0.48		0.52	0.20		0.00	0.00		0.27
Lane Grp Cap(c), veh/h				676	0	0	725	0	0	0	0	721
V/C Ratio(X)				0.45	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.45
Avail Cap(c_a), veh/h				676	0	0	725	0	0	0	0	721
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				12.6	0.0	0.0	3.1	0.0	0.0	0.0	0.0	12.6
Incr Delay (d2), s/veh				2.1	0.0	0.0	1.7	0.0	0.0	0.0	0.0	2.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.9	0.0	0.0	1.5	0.0	0.0	0.0	0.0	4.2
LnGrp Delay(d),s/veh				14.7	0.0	0.0	4.9	0.0	0.0	0.0	0.0	14.6
LnGrp LOS				B			A					B
Approach Vol, veh/h					303			300			324	
Approach Delay, s/veh					14.7			4.9			14.6	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		10.0		10.3				10.1
Green Ext Time (p_c), s		1.4		3.1				3.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	795	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	117	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	63	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	795	117	63	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	209	31	16	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	870	127	71	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 870 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	870	4500	No
$v_{FO} = v_F - v_R$	743	4500	No
v_R	127	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 870 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	870	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_{12}$ = 7.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy.(1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	441	63	354	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	115	16	92	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	478	72	387	0	pc/h

Volume ratio, VR 0.490

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	459	lc/h
Weaving lane changes, LCW	534	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	534	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.171

Average weaving speed, SW	49.2	mi/h
Average non-weaving speed, SNW	50.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.7	mi/h
Weaving segment density, D	6.3	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.190	
Weaving segment flow rate, v	894	veh/h
Weaving segment capacity, cW	4711	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7708	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1718	c
		Maximum	Analyzed	
v/c ratio		1.00	0.190	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Exisitng Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	504	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	132	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	354	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	504	132	354	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	131	34	93	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	546	154	391	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 546 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	700	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 546 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	700	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 8.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.306	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	618	72	181	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	161	19	47	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	657	82	194	0	pc/h

Volume ratio, VR 0.296

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	276	lc/h
Weaving lane changes, LCW	355	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	355	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.118

Average weaving speed, SW	50.8	mi/h
Average non-weaving speed, SNW	51.5	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	51.3	mi/h
Weaving segment density, D	6.1	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.163	
Weaving segment flow rate, v	908	veh/h
Weaving segment capacity, cW	5553	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5539	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1888	c
		Maximum	Analyzed	
v/c ratio		1.00	0.163	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2015 Existing Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	799	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	111	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	72	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	799	111	72	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	208	29	19	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	849	121	83	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 849 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	849	4500	No
$v_{FO} = v_F - v_R$	728	4500	No
v_R	121	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 849 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	849	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 10.0- pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	849	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	125	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	67	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	849	125	67	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	223	33	17	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	929	136	75	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 929 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	929	4500	No
$v_{FO} = v_F - v_R$	793	4500	No
v_R	136	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 929 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	929	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 7.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	471	67	378	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	123	17	98	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	510	76	413	0	pc/h

Volume ratio, VR 0.489

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	489	lc/h
Weaving lane changes, LCW	564	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	564	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.179

Average weaving speed, SW	48.9	mi/h
Average non-weaving speed, SNW	49.9	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.4	mi/h
Weaving segment density, D	6.7	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.202	
Weaving segment flow rate, v	955	veh/h
Weaving segment capacity, cW	4714	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7704	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1719	c
		Maximum	Analyzed	
v/c ratio		1.00	0.202	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	538	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	141	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	378	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	538	141	378	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	140	37	99	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	583	165	418	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 583 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	748	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 583 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	748	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 9.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.306	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	659	77	194	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	172	20	51	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	700	87	208	0	pc/h
Volume ratio, VR		0.296			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	0	lc/pc
Minimum FR lane changes, LCFR	0	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	0	lc/h
Weaving lane changes, LCW	79	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	3	lc/h
Total lane changes, LCALL	82	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.037

Average weaving speed, SW	53.6	mi/h
Average non-weaving speed, SNW	53.4	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	53.5	mi/h
Weaving segment density, D	6.2	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.175	
Weaving segment flow rate, v	969	veh/h
Weaving segment capacity, cW	5550	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5546	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1887	c
		Maximum	Analyzed	
v/c ratio		1.00	0.175	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. (1200-100 PM)
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 No-Build Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	853	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	118	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	77	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	853	118	77	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	222	31	20	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	906	129	88	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 906 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	906	4500	No
$v_{FO} = v_F - v_R$	777	4500	No
v_R	129	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 906 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	906	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 10.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.440	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. Morn. Evnt. Exit
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	845	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	125	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	77	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	845	125	77	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	222	33	20	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	925	136	87	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 925 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	925	4500	No
$v_{FO} = v_F - v_R$	789	4500	No
v_R	136	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 925 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	925	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 7.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy. Morn. Evnt. Exit
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	477	77	368	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	124	20	96	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	517	87	403	0	pc/h

Volume ratio, VR 0.487

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	490	lc/h
Weaving lane changes, LCW	565	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	565	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.179

Average weaving speed, SW	48.9	mi/h
Average non-weaving speed, SNW	49.9	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.4	mi/h
Weaving segment density, D	6.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.202	
Weaving segment flow rate, v	961	veh/h
Weaving segment capacity, cW	4743	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7670	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1721	c
		Maximum	Analyzed	
v/c ratio		1.00	0.202	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. Morn. Evnt. Exit
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	554	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	153	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	368	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	554	153	368	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	144	40	97	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	600	179	407	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 600 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	779	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 600 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	779	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 9.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy. Morn. Evnt. Exit
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	842	77	343	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	219	20	89	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	895	87	368	0	pc/h
Volume ratio, VR		0.337			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	0	lc/pc
Minimum FR lane changes, LCFR	0	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	0	lc/h
Weaving lane changes, LCW	79	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	43	lc/h
Total lane changes, LCALL	122	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.051

Average weaving speed, SW	53.1	mi/h
Average non-weaving speed, SNW	52.8	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	52.9	mi/h
Weaving segment density, D	8.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.241	
Weaving segment flow rate, v	1315	veh/h
Weaving segment capacity, cW	5453	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5985	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1854	c
		Maximum	Analyzed	
v/c ratio		1.00	0.241	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy. Morn. Evnt. Exit
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1185	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	353	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	77	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1185	353	77	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	309	92	20	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1259	386	88	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1259 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1259	4500	No
$v_{FO} = v_F - v_R$	873	4500	No
v_R	386	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1259 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1259	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 L_D$ = 13.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.463

Space mean speed in ramp influence area, S_R = 49.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.0 mph

AMY'S KITCHEN & SCIENCE OF THE SOUL

WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD (2:30 PM – 3:30 PM)

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	427	0	921	0	0	1159	148	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1731	0	3592	0	0	3384	1529	0	0
Flt Permitted										
Satd. Flow (perm)	0	1731	0	3592	0	0	3384	1529	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	5%	2%	5%	5%	4%	3%	5%	5%
Adj. Flow (vph)	0	449	0	969	0	0	1220	156	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	449	0	969	0	0	1220	156	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	427	0	921	0	0	1159	148	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	6	5	2	5	5	4	3	5	5
Mvmt Flow	0	449	0	969	0	0	1220	156	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1579	485	1220	0	0	969	0	0
Stage 1	969	-	-	-	-	-	-	-
Stage 2	610	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.72	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.36	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	126	539	551	-	-	689	-	0
Stage 1	378	-	-	-	-	-	-	0
Stage 2	550	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	126	539	551	-	-	689	-	-
Mov Cap-2 Maneuver	126	-	-	-	-	-	-	-
Stage 1	378	-	-	-	-	-	-	-
Stage 2	550	-	-	-	-	-	-	-

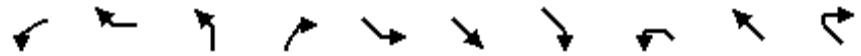
Approach	WB	NB	SB
HCM Control Delay, s	36.8	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	551	-	-	539	689	-
HCM Lane V/C Ratio	-	-	-	0.834	-	-
HCM Control Delay (s)	0	-	-	36.8	0	-
HCM Lane LOS	A	-	-	E	A	-
HCM 95th %tile Q(veh)	0	-	-	8.5	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	287	0	0	0	1159	0	0	921	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1659	0	0	0	3471	0	0	3539	1568
Flt Permitted										
Satd. Flow (perm)	0	1659	0	0	0	3471	0	0	3539	1568
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	3%
Adj. Flow (vph)	0	296	0	0	0	1195	0	0	949	272
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	296	0	0	0	1195	0	0	949	272
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.



Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	92	0	0	0	998	448	0	1093	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1600	0	0	0	3471	1538	0	3539	0
Flt Permitted										
Satd. Flow (perm)	0	1600	0	0	0	3471	1538	0	3539	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	9%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	97	0	0	0	1051	472	0	1151	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	97	0	0	0	1051	472	0	1151	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	365	0	0	0	998	0	0	1093	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1566	0	0	0	3419	0	0	3557	1546
Flt Permitted										
Satd. Flow (perm)	0	1566	0	0	0	3419	0	0	3557	1546
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	12%	5%	5%	5%	4%	5%	5%	2%	5%
Adj. Flow (vph)	0	380	0	0	0	1040	0	0	1139	190
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	380	0	0	0	1040	0	0	1139	190
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	36	1137	27	244	1017	113	157	133	50	110	174	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.985			0.980			0.978	
Flt Protected	0.950			0.950				0.977			0.984	
Satd. Flow (prot)	1876	1896	0	1690	3275	0	0	1839	0	0	1739	0
Flt Permitted	0.193			0.081				0.592			0.740	
Satd. Flow (perm)	381	1896	0	144	3275	0	0	1114	0	0	1308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			15			8			9	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			2977	
Travel Time (s)		23.3			14.7			23.0			45.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	5%	1%	2%	4%	1%	1%	2%	1%	3%	2%	1%
Adj. Flow (vph)	38	1197	28	257	1071	119	165	140	53	116	183	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	1225	0	257	1190	0	0	358	0	0	358	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.15	1.54		0.83	0.66			1.24			1.05	
Control Delay	9.8	277.2		45.6	18.3			166.0			100.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.8	277.2		45.6	18.3			166.0			100.3	
Queue Length 50th (ft)	8	~1125		109	284			~285			~250	
Queue Length 95th (ft)	20	#1383		#227	371			#467			#432	
Internal Link Dist (ft)		1460			890			932			2897	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	389	793		342	1816			289			340	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	1.54		0.75	0.66			1.24			1.05	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 98.1
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	36	1137	27	244	1017	113	157	133	50	110	174	56
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1902	1995	1779	1750	1814	1948	1921	1948	1910	1869	1910
Adj Flow Rate, veh/h	38	1197	17	257	1071	108	165	140	42	116	183	48
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5	5	2	4	4	2	2	2	2	2	2
Cap, veh/h	254	797	11	291	1625	164	190	127	36	159	207	51
Arrive On Green	0.02	0.43	0.43	0.13	0.53	0.53	0.28	0.26	0.26	0.28	0.26	0.26
Sat Flow, veh/h	1881	1870	27	1694	3050	307	518	489	139	420	798	195
Grp Volume(v), veh/h	38	0	1214	257	583	596	347	0	0	347	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1897	1694	1662	1696	1146	0	0	1413	0	0
Q Serve(g_s), s	1.1	0.0	41.0	10.0	24.3	24.4	4.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	41.0	10.0	24.3	24.4	27.0	0.0	0.0	22.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.18	0.48		0.12	0.33		0.14
Lane Grp Cap(c), veh/h	254	0	808	291	885	903	376	0	0	446	0	0
V/C Ratio(X)	0.15	0.00	1.50	0.88	0.66	0.66	0.92	0.00	0.00	0.78	0.00	0.00
Avail Cap(c_a), veh/h	450	0	808	356	885	903	376	0	0	446	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	0.0	27.6	27.6	16.2	16.2	37.2	0.0	0.0	34.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	232.7	17.3	3.8	3.8	27.2	0.0	0.0	7.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	73.5	8.0	12.0	12.2	11.8	0.0	0.0	9.5	0.0	0.0
LnGrp Delay(d),s/veh	16.3	0.0	260.3	44.9	20.0	20.0	64.4	0.0	0.0	41.8	0.0	0.0
LnGrp LOS	B		F	D	C	B	E			D		
Approach Vol, veh/h		1252			1436			347			347	
Approach Delay, s/veh		252.9			24.5			64.4			41.8	
Approach LOS		F			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	57.3		31.0	18.3	47.0		31.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	3.1	26.4		29.0	12.0	43.0		24.5
Green Ext Time (p_c), s	0.0	10.0		0.0	0.3	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	114.9
HCM 2010 LOS	F

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	1383	0	0	1366	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1879	0	0	1782	1928	0
Flt Permitted						
Satd. Flow (perm)	1879	0	0	1782	1928	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			535	353	
Travel Time (s)	5.7			8.1	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	1456	0	0	1438	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1456	0	0	1438	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

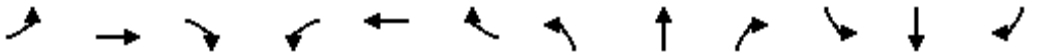
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	1383	0	0	1366	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	1456	0	0	1438	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1456	0	2894	1456
Stage 1	-	-	-	-	1456	-
Stage 2	-	-	-	-	1438	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	468	-	40	196
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	328	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	468	-	40	196
Mov Cap-2 Maneuver	-	-	-	-	40	-
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	328	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	468	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



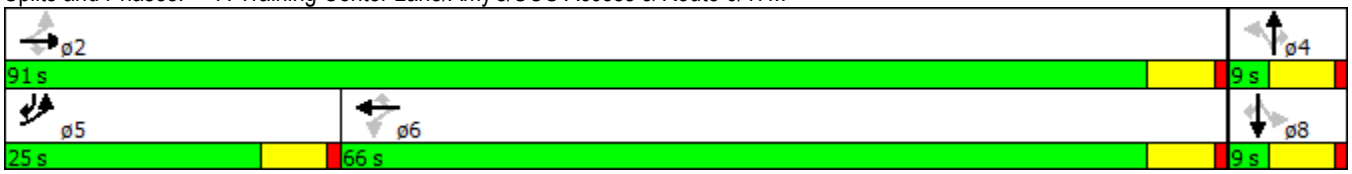
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	603	773	6	2	1202	646	17	0	9	16	0	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.060			0.356								
Satd. Flow (perm)	110	1837	1623	670	1888	1538	0	1881	1599	0	1727	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			171			98			63
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		535			1419			798			469	
Travel Time (s)		8.1			17.6			21.8			10.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	641	822	6	2	1279	687	18	0	10	17	0	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	641	822	6	2	1279	687	0	18	10	0	17	156
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

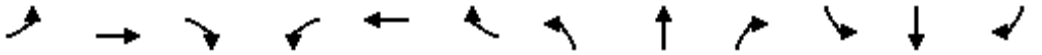
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	25.0	91.0	91.0	66.0	66.0	66.0	9.0	9.0	9.0	9.0	9.0	25.0
Total Split (%)	25.0%	91.0%	91.0%	66.0%	66.0%	66.0%	9.0%	9.0%	9.0%	9.0%	9.0%	25.0%
Maximum Green (s)	19.0	85.0	85.0	60.0	60.0	60.0	3.0	3.0	3.0	3.0	3.0	19.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	1.53	0.49	0.00	0.00	1.09	0.67		0.31	0.07		0.32	0.37
Control Delay	274.6	2.6	0.0	8.0	74.0	13.0		61.0	0.9		63.2	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	274.6	2.6	0.0	8.0	74.0	13.0		61.0	0.9		63.2	20.0
Queue Length 50th (ft)	~542	93	0	0	~951	208		12	0		11	46
Queue Length 95th (ft)	#761	136	0	3	#1204	344		35	0		#34	100
Internal Link Dist (ft)		455			1339			718			389	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	420	1671	1480	418	1177	1023		58	145		53	422
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	1.53	0.49	0.00	0.00	1.09	0.67		0.31	0.07		0.32	0.37

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 96.4
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



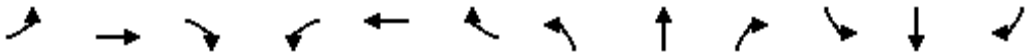


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	603	773	6	2	1202	646	17	0	9	16	0	147
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	641	822	6	2	1279	687	18	0	10	17	0	156
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	404	1561	1380	472	1140	923	72	0	48	72	0	942
Arrive On Green	0.19	0.85	0.85	0.60	0.60	0.60	0.03	0.00	0.03	0.03	0.00	0.03
Sat Flow, veh/h	1749	1837	1623	666	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	641	822	6	2	1279	687	18	0	10	17	0	156
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	666	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	19.0	12.2	0.1	0.1	60.0	32.3	0.0	0.0	0.6	0.0	0.0	3.0
Cycle Q Clear(g_c), s	19.0	12.2	0.1	0.1	60.0	32.3	3.0	0.0	0.6	3.0	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	404	1561	1380	472	1140	923	72	0	48	72	0	942
V/C Ratio(X)	1.59	0.53	0.00	0.00	1.12	0.74	0.25	0.00	0.21	0.24	0.00	0.17
Avail Cap(c_a), veh/h	404	1561	1380	472	1140	923	72	0	48	72	0	942
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.4	2.0	1.1	8.0	20.0	14.5	50.0	0.0	47.3	50.0	0.0	7.4
Incr Delay (d2), s/veh	274.9	1.3	0.0	0.0	66.8	5.4	0.7	0.0	0.8	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	42.0	6.5	0.0	0.0	52.2	14.9	0.5	0.0	0.3	0.5	0.0	4.3
LnGrp Delay(d),s/veh	310.3	3.3	1.1	8.0	86.8	19.9	50.7	0.0	48.1	50.6	0.0	7.4
LnGrp LOS	F	A	A	A	F	B	D		D	D		A
Approach Vol, veh/h		1469			1968			28			173	
Approach Delay, s/veh		137.3			63.4			49.8			11.7	
Approach LOS		F			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		91.0		9.0	25.0	66.0		9.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		85.0		3.0	19.0	60.0		3.0
Max Q Clear Time (g_c+I1), s		14.2		5.0	21.0	62.0		5.0
Green Ext Time (p_c), s		20.5		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	90.6
HCM 2010 LOS	F

Two Way Analysis cannot be performed on Signalized Intersection.



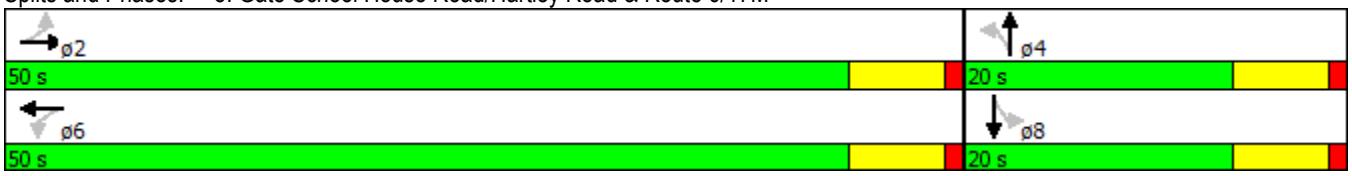
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	665	105	11	1576	42	154	21	10	62	28	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.997			0.993			0.920	
Flt Protected		0.998						0.960			0.986	
Satd. Flow (prot)	0	1802	0	0	1876	0	0	1767	0	0	1469	0
Flt Permitted		0.901			0.994			0.546			0.876	
Satd. Flow (perm)	0	1627	0	0	1865	0	0	1005	0	0	1305	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			4			4			28	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	28	715	113	12	1695	45	166	23	11	67	30	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	856	0	0	1752	0	0	200	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.83			1.49			0.98			0.84	
Control Delay		19.2			245.7			90.6			51.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		19.2			245.7			90.6			51.8	
Queue Length 50th (ft)		243			~1084			85			88	
Queue Length 95th (ft)		#517			#1338			#211			#208	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1030			1173			204			283	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.83			1.49			0.98			0.84	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	665	105	11	1576	42	154	21	10	62	28	131
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1851	1881	1948	1894	1948	1919	1854	1919	1872	1619	1872
Adj Flow Rate, veh/h	28	715	86	12	1695	45	166	23	11	67	30	141
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	70	934	110	55	1147	30	269	31	12	134	53	176
Arrive On Green	0.66	0.63	0.63	0.66	0.63	0.63	0.23	0.20	0.20	0.23	0.20	0.20
Sat Flow, veh/h	27	1486	175	5	1824	48	876	156	60	338	266	878
Grp Volume(v), veh/h	829	0	0	1752	0	0	200	0	0	238	0	0
Grp Sat Flow(s),veh/h/ln	1688	0	0	1877	0	0	1093	0	0	1483	0	0
Q Serve(g_s), s	0.0	0.0	0.0	16.8	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.0	0.0	0.0	46.0	0.0	0.0	12.8	0.0	0.0	10.2	0.0	0.0
Prop In Lane	0.03		0.10	0.01		0.03	0.83		0.05	0.28		0.59
Lane Grp Cap(c), veh/h	1163	0	0	1285	0	0	344	0	0	405	0	0
V/C Ratio(X)	0.71	0.00	0.00	1.36	0.00	0.00	0.58	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	1163	0	0	1285	0	0	344	0	0	405	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.7	0.0	0.0	14.2	0.0	0.0	26.9	0.0	0.0	26.2	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	168.5	0.0	0.0	1.7	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.0	0.0	84.1	0.0	0.0	3.7	0.0	0.0	4.2	0.0	0.0
LnGrp Delay(d),s/veh	10.5	0.0	0.0	182.7	0.0	0.0	28.5	0.0	0.0	27.8	0.0	0.0
LnGrp LOS	B			F			C			C		
Approach Vol, veh/h		829			1752			200			238	
Approach Delay, s/veh		10.5			182.7			28.5			27.8	
Approach LOS		B			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		20.0		50.0		20.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		23.0		14.8		48.0		12.2
Green Ext Time (p_c), s		16.7		0.0		0.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	113.0
HCM 2010 LOS	F

Two Way Analysis cannot be performed on Signalized Intersection.

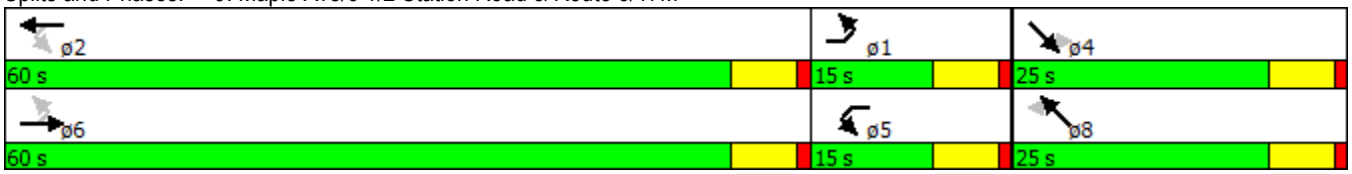
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	62	598	84	39	1438	75	36	65	91	100	76	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.993			0.936			0.990	
Flt Protected	0.950			0.950				0.991			0.974	
Satd. Flow (prot)	1729	1875	0	1711	1887	0	0	1713	0	0	1793	0
Flt Permitted	0.076			0.227				0.892			0.616	
Satd. Flow (perm)	138	1875	0	409	1887	0	0	1542	0	0	1134	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			4			40			4	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	65	629	88	41	1514	79	38	68	96	105	80	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	717	0	41	1593	0	0	202	0	0	200	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.36	0.68		0.10	1.46			0.61			0.90	
Control Delay	22.0	20.6		6.9	234.1			37.0			77.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	22.0	20.6		6.9	234.1			37.0			77.2	
Queue Length 50th (ft)	12	372		7	~1384			91			118	
Queue Length 95th (ft)	25	461		18	#1693			170			#258	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	242	1129		418	1091			345			233	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.27	0.64		0.10	1.46			0.59			0.86	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 93.9
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	62	598	84	39	1438	75	36	65	91	100	76	14
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1912	1910	1862	1859	1862	1948	1860	1948
Adj Flow Rate, veh/h	65	629	67	41	1514	68	38	68	96	105	80	15
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	136	676	72	488	1080	49	86	113	138	171	105	17
Arrive On Green	0.03	0.40	0.40	0.23	0.59	0.59	0.20	0.17	0.17	0.20	0.17	0.17
Sat Flow, veh/h	1733	1697	181	1716	1816	82	226	649	792	635	602	100
Grp Volume(v), veh/h	65	0	696	41	0	1582	202	0	0	200	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1877	1716	0	1898	1667	0	0	1338	0	0
Q Serve(g_s), s	0.0	0.0	32.2	0.0	0.0	54.0	0.0	0.0	0.0	3.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	32.2	0.0	0.0	54.0	10.0	0.0	0.0	13.3	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.04	0.19		0.48	0.52		0.07
Lane Grp Cap(c), veh/h	136	0	748	488	0	1129	374	0	0	323	0	0
V/C Ratio(X)	0.48	0.00	0.93	0.08	0.00	1.40	0.54	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	251	0	1117	488	0	1129	430	0	0	374	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.5	0.0	26.1	26.6	0.0	18.4	34.9	0.0	0.0	35.9	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	7.8	0.0	0.0	185.9	0.5	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	18.3	0.8	0.0	86.2	4.6	0.0	0.0	4.7	0.0	0.0
LnGrp Delay(d),s/veh	43.4	0.0	33.9	26.6	0.0	204.3	35.3	0.0	0.0	37.2	0.0	0.0
LnGrp LOS	D		C	C		F	D			D		
Approach Vol, veh/h		761			1623			202			200	
Approach Delay, s/veh		34.7			199.8			35.3			37.2	
Approach LOS		C			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	60.0		21.8	26.8	42.2		21.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	56.0		12.0	2.0	34.2		15.3
Green Ext Time (p_c), s	0.1	0.0		0.8	0.1	2.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	131.1
HCM 2010 LOS	F

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	654	0	0	1546	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1921	0	0	1897	0	1625
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1897	0	1625
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	4%	5%	5%
Adj. Flow (vph)	711	0	0	1680	0	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	711	0	0	1680	0	25
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	654	0	0	1546	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	5	5
Mvmt Flow	711	0	0	1680	0	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	711	0	2391	711
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	1680	-
Critical Hdwy	-	-	4.15	-	6.25	6.15
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	875	-	42	437
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	179	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	875	-	42	437
Mov Cap-2 Maneuver	-	-	-	-	42	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	179	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	437	-	-	875	-
HCM Lane V/C Ratio	0.057	-	-	-	-
HCM Control Delay (s)	13.7	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	102	25	95	306	30	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.974				0.953	
Flt Protected				0.988	0.968	
Satd. Flow (prot)	1669	0	0	1755	1755	0
Flt Permitted				0.988	0.968	
Satd. Flow (perm)	1669	0	0	1755	1755	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	11%	2%	5%	9%	0%	1%
Adj. Flow (vph)	116	28	108	348	34	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	0	456	52	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	102	25	95	306	30	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	2	5	9	0	1
Mvmt Flow	116	28	108	348	34	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	144	0	694	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	564	-
Critical Hdwy	-	-	4.15	-	6.2	6.11
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1420	-	428	926
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1420	-	388	926
Mov Cap-2 Maneuver	-	-	-	-	388	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	536	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	486	-	-	1420	-
HCM Lane V/C Ratio	0.108	-	-	0.076	-
HCM Control Delay (s)	13.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	16	99	54	29	109	10
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Grade (%)	0%			0%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883				0.988	
Flt Protected	0.993			0.969		
Satd. Flow (prot)	1481	0	0	1735	1908	0
Flt Permitted	0.993			0.969		
Satd. Flow (perm)	1481	0	0	1735	1908	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	401			616	832	
Travel Time (s)	9.1			12.0	16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	17%	2%	2%	2%
Adj. Flow (vph)	17	108	59	32	118	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	125	0	0	91	129	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.94	0.94	0.94	0.94	0.95	0.95
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.9

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	16	99	54	29	109	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	21	17	2	2	2
Mvmt Flow	17	108	59	32	118	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	273	124	129	0	-	0
Stage 1	124	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.42	6.41	4.27	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.489	2.353	-	-	-
Pot Cap-1 Maneuver	716	878	1369	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	684	878	1369	-	-	-
Mov Cap-2 Maneuver	684	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	10	5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1369	-	845	-	-
HCM Lane V/C Ratio	0.043	-	0.148	-	-
HCM Control Delay (s)	7.7	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	205	99	2	69	75	71	181	3	29	234	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.931			0.998			0.999	
Flt Protected		0.995			0.999			0.986			0.995	
Satd. Flow (prot)	0	1694	0	0	1700	0	0	1781	0	0	1808	0
Flt Permitted		0.995			0.999			0.986			0.995	
Satd. Flow (perm)	0	1694	0	0	1700	0	0	1781	0	0	1808	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			696			542	
Travel Time (s)		7.7			8.6			13.6			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	38	241	116	2	81	88	84	213	4	34	275	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	395	0	0	171	0	0	301	0	0	311	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

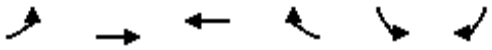
Intersection	
Int Delay, s/veh	66

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	32	205	99	2	69	75	71	181	3	29	234	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	38	241	116	2	81	88	84	213	4	34	275	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	811	728	215	906	729	276	278	0	0	216	0	0
Stage 1	382	382	-	345	345	-	-	-	-	-	-	-
Stage 2	429	346	-	561	384	-	-	-	-	-	-	-
Critical Hdwy	7.95	7.35	6.65	6.75	6.15	6.05	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.95	6.35	-	5.75	5.15	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	246	295	798	281	375	767	1268	-	-	1336	-	-
Stage 1	583	558	-	690	655	-	-	-	-	-	-	-
Stage 2	544	583	-	539	633	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	164	265	798	47	336	767	1268	-	-	1336	-	-
Mov Cap-2 Maneuver	164	265	-	47	336	-	-	-	-	-	-	-
Stage 1	539	516	-	638	635	-	-	-	-	-	-	-
Stage 2	407	566	-	227	586	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	186.2	19.3	2.2	0.8
HCM LOS	F	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1268	-	-	307	422	1336	-	-
HCM Lane V/C Ratio	0.066	-	-	1.288	0.407	0.026	-	-
HCM Control Delay (s)	8	0	-	186.2	19.3	7.8	0	-
HCM Lane LOS	A	A	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	18.9	1.9	0.1	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	27	0	336	101	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected					0.950	
Satd. Flow (prot)	0	1488	1556	0	1729	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1488	1556	0	1729	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		528	347		397	
Travel Time (s)		10.3	6.8		7.7	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	29%	0%	3%	7%	2%
Adj. Flow (vph)	0	34	0	420	126	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	34	420	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	27	0	336	101	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	29	0	3	7	2
Mvmt Flow	0	34	0	420	126	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	420	0	-	0	244	210
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	4.1	-	-	-	5.47	5.72
Critical Hdwy Stg 1	-	-	-	-	4.47	-
Critical Hdwy Stg 2	-	-	-	-	4.47	-
Follow-up Hdwy	2.2	-	-	-	3.563	3.318
Pot Cap-1 Maneuver	1150	-	-	-	785	855
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1150	-	-	-	785	855
Mov Cap-2 Maneuver	-	-	-	-	785	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	985	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1150	-	-	-	785
HCM Lane V/C Ratio	-	-	-	-	0.161
HCM Control Delay (s)	0	-	-	-	10.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	120	2	122	0	0	0	0	219	66	75	364	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.932						0.969				
Flt Protected		0.976									0.992	
Satd. Flow (prot)	0	1623	0	0	0	0	0	1734	0	0	1778	0
Flt Permitted		0.976									0.992	
Satd. Flow (perm)	0	1623	0	0	0	0	0	1734	0	0	1778	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	133	2	136	0	0	0	0	243	73	83	404	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	0	0	0	316	0	0	487	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	8.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	120	2	122	0	0	0	0	219	66	75	364	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	8	0	4	2	2	2	2	8	0	3	6	2
Mvmt Flow	133	2	136	0	0	0	0	243	73	83	404	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	851	888	404	404	0	0	317	0	0
Stage 1	571	571	-	-	-	-	-	-	-
Stage 2	280	317	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.7	6.34	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	5.68	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.336	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	308	271	635	1155	-	-	1237	-	-
Stage 1	536	492	-	-	-	-	-	-	-
Stage 2	742	646	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	281	0	635	1155	-	-	1237	-	-
Mov Cap-2 Maneuver	281	0	-	-	-	-	-	-	-
Stage 1	489	0	-	-	-	-	-	-	-
Stage 2	742	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	32.6	0	1.4
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1155	-	-	391	1237	-	-
HCM Lane V/C Ratio	-	-	-	0.693	0.067	-	-
HCM Control Delay (s)	0	-	-	32.6	8.1	0	-
HCM Lane LOS	A	-	-	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	5.1	0.2	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	165	2	174	71	267	0	0	274	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931						0.965	
Flt Protected					0.976			0.990				
Satd. Flow (prot)	0	0	0	0	1644	0	0	1735	0	0	1747	0
Flt Permitted					0.976			0.990				
Satd. Flow (perm)	0	0	0	0	1644	0	0	1735	0	0	1747	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	177	2	187	76	287	0	0	295	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	366	0	0	363	0	0	397	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	13.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	165	2	174	71	267	0	0	274	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	5	0	4	15	6	2	2	7	1
Mvmt Flow	0	0	0	177	2	187	76	287	0	0	295	102

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	786	837	287	397	0	0	287	0	0
Stage 1	440	440	-	-	-	-	-	-	-
Stage 2	346	397	-	-	-	-	-	-	-
Critical Hdwy	6.65	6.7	6.34	4.25	-	-	4.12	-	-
Critical Hdwy Stg 1	5.65	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.65	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.336	2.335	-	-	2.218	-	-
Pot Cap-1 Maneuver	342	291	741	1094	-	-	1275	-	-
Stage 1	627	567	-	-	-	-	-	-	-
Stage 2	696	594	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	314	0	741	1094	-	-	1275	-	-
Mov Cap-2 Maneuver	314	0	-	-	-	-	-	-	-
Stage 1	575	0	-	-	-	-	-	-	-
Stage 2	696	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	40.8	1.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1094	-	-	446	1275	-	-
HCM Lane V/C Ratio	0.07	-	-	0.822	-	-	-
HCM Control Delay (s)	8.5	0	-	40.8	0	-	-
HCM Lane LOS	A	A	-	E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	7.8	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	762	28	47	1786	59	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.960	
Flt Protected				0.999	0.966	
Satd. Flow (prot)	1793	0	0	1836	1958	0
Flt Permitted				0.999	0.966	
Satd. Flow (perm)	1793	0	0	1836	1958	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1419			998	773	
Travel Time (s)	17.6			12.4	17.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	46%	18%	3%	0%	0%
Adj. Flow (vph)	802	29	49	1880	62	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	831	0	0	1929	88	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	25.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	762	28	47	1786	59	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	46	18	3	0	0
Mvmt Flow	802	29	49	1880	62	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	832	0	2796	817
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	1979	-
Critical Hdwy	-	-	4.28	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.362	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	736	-	~ 28	397
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	148	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	736	-	~ 28	397
Mov Cap-2 Maneuver	-	-	-	-	~ 28	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	148	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 801.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	39	-	-	736	-
HCM Lane V/C Ratio	2.267	-	-	0.067	-
HCM Control Delay (s)	$ 801.3	-	-	10.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	9.6	-	-	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	201	93	2	66	77	75	187	3	25	237	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.928			0.998			0.999	
Flt Protected		0.995			0.999			0.986			0.995	
Satd. Flow (prot)	0	1697	0	0	1694	0	0	1781	0	0	1808	0
Flt Permitted		0.995			0.999			0.986			0.995	
Satd. Flow (perm)	0	1697	0	0	1694	0	0	1781	0	0	1808	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			378			696			542	
Travel Time (s)		7.7			8.6			13.6			12.3	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	38	236	109	2	78	91	88	220	4	29	279	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	383	0	0	171	0	0	312	0	0	310	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	32	201	93	0	2	66	77	0	75	187	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5	2	5	5	5	2	5	5	5
Mvmt Flow	0	38	236	109	0	2	78	91	0	88	220	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	21.2	12.9	18.1
HCM LOS	C	B	C

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	28%	10%	1%	9%
Vol Thru, %	71%	62%	46%	90%
Vol Right, %	1%	29%	53%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	326	145	264
LT Vol	75	32	2	25
Through Vol	187	201	66	237
RT Vol	3	93	77	2
Lane Flow Rate	312	384	171	311
Geometry Grp	1	1	1	1
Degree of Util (X)	0.57	0.669	0.316	0.565
Departure Headway (Hd)	6.579	6.284	6.673	6.55
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	546	571	536	550
Service Time	4.651	4.351	4.76	4.622
HCM Lane V/C Ratio	0.571	0.673	0.319	0.565
HCM Control Delay	18.1	21.2	12.9	17.9
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	3.5	5	1.3	3.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	25	237	2
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	5	5	5
Mvmt Flow	0	29	279	2
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	17.9
HCM LOS	C

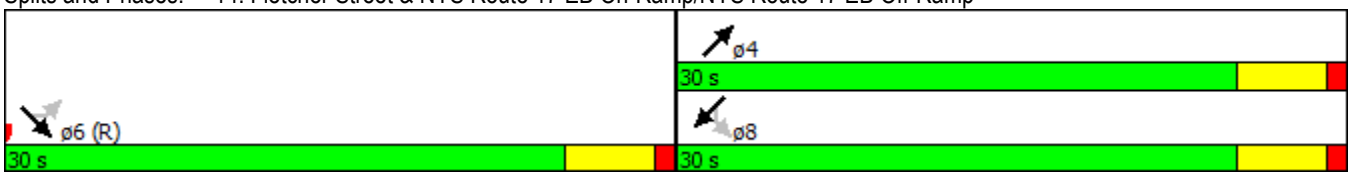
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	120	2	122	0	0	0	0	219	66	75	364	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.932						0.969				
Flt Protected		0.976									0.992	
Satd. Flow (prot)	0	1623	0	0	0	0	0	1734	0	0	1778	0
Flt Permitted		0.976									0.885	
Satd. Flow (perm)	0	1623	0	0	0	0	0	1734	0	0	1586	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		104						31				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		438			500			157			342	
Travel Time (s)		10.0			11.4			3.6			7.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	4%	2%	2%	2%	2%	8%	0%	3%	6%	2%
Adj. Flow (vph)	133	2	136	0	0	0	0	243	73	83	404	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	0	0	0	316	0	0	487	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.37						0.43			0.74	
Control Delay		8.9						13.3			17.7	
Queue Delay		0.0						0.0			0.1	
Total Delay		8.9						13.3			17.8	
Queue Length 50th (ft)		38						69			91	
Queue Length 95th (ft)		85						127			#146	
Internal Link Dist (ft)		358			420			77			262	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		736						740			660	
Starvation Cap Reductn		0						0			8	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.37						0.43			0.75	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	120	2	122	0	0	0	0	219	66	75	364	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1785	1890				0	1790	1900	1890	1792	0
Adj Flow Rate, veh/h	133	2	136				0	243	73	83	404	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0				0	8	8	6	6	0
Cap, veh/h	328	5	335				0	551	166	147	576	0
Arrive On Green	0.42	0.42	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	787	12	805				0	1322	397	185	1382	0
Grp Volume(v), veh/h	271	0	0				0	0	316	487	0	0
Grp Sat Flow(s),veh/h/ln	1603	0	0				0	0	1720	1568	0	0
Q Serve(g_s), s	7.1	0.0	0.0				0.0	0.0	7.9	1.9	0.0	0.0
Cycle Q Clear(g_c), s	7.1	0.0	0.0				0.0	0.0	7.9	9.7	0.0	0.0
Prop In Lane	0.49		0.50				0.00		0.23	0.17		0.00
Lane Grp Cap(c), veh/h	668	0	0				0	0	717	723	0	0
V/C Ratio(X)	0.41	0.00	0.00				0.00	0.00	0.44	0.67	0.00	0.00
Avail Cap(c_a), veh/h	668	0	0				0	0	717	723	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	0.0				0.0	0.0	12.5	3.5	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0				0.0	0.0	2.0	5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.0				0.0	0.0	4.1	3.4	0.0	0.0
LnGrp Delay(d),s/veh	14.1	0.0	0.0				0.0	0.0	14.5	8.4	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		271						316			487	
Approach Delay, s/veh		14.1						14.5			8.4	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				9.9		9.1		11.7
Green Ext Time (p_c), s				4.2		1.3		4.0

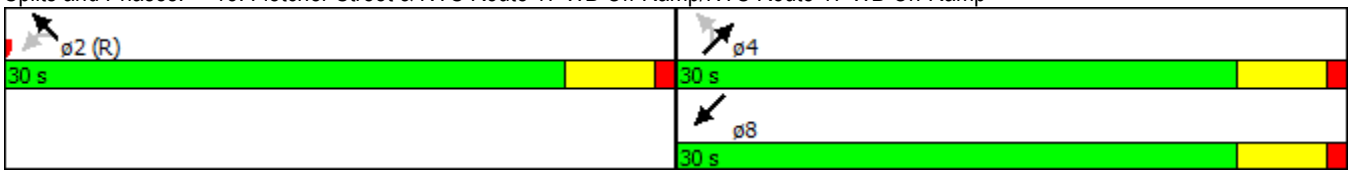
Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	165	2	174	71	267	0	0	274	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931						0.965	
Flt Protected					0.976			0.990				
Satd. Flow (prot)	0	0	0	0	1644	0	0	1735	0	0	1747	0
Flt Permitted					0.976			0.825				
Satd. Flow (perm)	0	0	0	0	1644	0	0	1446	0	0	1747	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					107						36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			364			342			455	
Travel Time (s)		7.9			8.3			7.8			10.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	0%	4%	15%	6%	2%	2%	7%	1%
Adj. Flow (vph)	0	0	0	177	2	187	76	287	0	0	295	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	366	0	0	363	0	0	397	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
v/c Ratio					0.49			0.60			0.53	
Control Delay					11.5			13.6			15.0	
Queue Delay					0.0			0.0			0.1	
Total Delay					11.5			13.6			15.1	
Queue Length 50th (ft)					62			61			92	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Queue Length 95th (ft)					127			97			164	
Internal Link Dist (ft)		266			284			262			375	
Turn Bay Length (ft)												
Base Capacity (vph)					747			602			748	
Starvation Cap Reductn					0			1			0	
Spillback Cap Reductn					1			0			26	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.49			0.60			0.55	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	165	2	174	71	267	0	0	274	95
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1810	1890	1890	1752	0	0	1811	1910
Adj Flow Rate, veh/h				177	2	187	76	287	0	0	295	102
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	6	6	0	0	7	7
Cap, veh/h				327	4	346	148	493	0	0	536	185
Arrive On Green				0.42	0.42	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				785	9	830	180	1182	0	0	1287	445
Grp Volume(v), veh/h				366	0	0	363	0	0	0	0	397
Grp Sat Flow(s),veh/h/ln				1624	0	0	1363	0	0	0	0	1732
Q Serve(g_s), s				10.2	0.0	0.0	3.2	0.0	0.0	0.0	0.0	10.4
Cycle Q Clear(g_c), s				10.2	0.0	0.0	13.6	0.0	0.0	0.0	0.0	10.4
Prop In Lane				0.48		0.51	0.21		0.00	0.00		0.26
Lane Grp Cap(c), veh/h				677	0	0	640	0	0	0	0	722
V/C Ratio(X)				0.54	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.55
Avail Cap(c_a), veh/h				677	0	0	640	0	0	0	0	722
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				13.2	0.0	0.0	3.6	0.0	0.0	0.0	0.0	13.2
Incr Delay (d2), s/veh				3.1	0.0	0.0	3.6	0.0	0.0	0.0	0.0	3.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	5.6
LnGrp Delay(d),s/veh				16.3	0.0	0.0	7.2	0.0	0.0	0.0	0.0	16.2
LnGrp LOS				B			A					B
Approach Vol, veh/h					366			363			397	
Approach Delay, s/veh					16.3			7.2			16.2	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		12.2		15.6				12.4
Green Ext Time (p_c), s		1.7		3.1				3.7

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1159	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	148	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	287	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1159	148	287	vph
Peak-hour factor, PHF	0.95	0.95	0.97	
Peak 15-min volume, v15	305	39	74	v
Trucks and buses	4	3	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.971	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1269	160	323	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1269 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1269	4500	No
$v_{FO} = v_F - v_R$	1109	4500	No
v_R	160	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1269 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1269	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 10.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.442

Space mean speed in ramp influence area, S_R = 49.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.2 mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	711	287	448	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	185	75	117	0	
Trucks and buses	4	9	5	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.962	0.917	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	770	326	490	0	pc/h
Volume ratio, VR		0.515			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	816	lc/h
Weaving lane changes, LCW	891	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	891	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.256

Average weaving speed, SW	46.8	mi/h
Average non-weaving speed, SNW	46.6	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	46.7	mi/h
Weaving segment density, D	11.3	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.336	
Weaving segment flow rate, v	1507	veh/h
Weaving segment capacity, cW	4485	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7996	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1696	c
		Maximum	Analyzed	
v/c ratio		1.00	0.336	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy Aftn. Evnt. Entry (230-33
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	998	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	365	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	448	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	998	365	448	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	260	95	118	v
Trucks and buses	4	12	5	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.962	0.893	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1081	426	495	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1081 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1507	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 1081 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1507	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 15.0 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.316	
Space mean speed in ramp influence area,	S_R = 50.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 50.9	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wkdy Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	829	92	264	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	216	24	69	0	
Trucks and buses	2	9	3	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.917	0.971	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	881	104	283	0	pc/h

Volume ratio, VR 0.305

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	387	lc/h
Weaving lane changes, LCW	466	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	40	lc/h
Total lane changes, LCALL	506	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.157

Average weaving speed, SW	49.6	mi/h
Average non-weaving speed, SNW	50.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	50.0	mi/h
Weaving segment density, D	8.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.223	
Weaving segment flow rate, v	1235	veh/h
Weaving segment capacity, cW	5529	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5640	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1880	c
		Maximum	Analyzed	
v/c ratio		1.00	0.223	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wkdy Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1093	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	182	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	92	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1093	182	92	vph
Peak-hour factor, PHF	0.96	0.96	0.95	
Peak 15-min volume, v15	285	47	24	v
Trucks and buses	2	5	9	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.980	0.952	0.917	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1161	199	106	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1161 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1161	4500	No
$v_{FO} = v_F - v_R$	962	4500	No
v_R	199	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1161 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1161	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_{12}$ = 12.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 49.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.2 mph

AMY'S KITCHEN & SCIENCE OF THE SOUL

WEEKEND MORNING EVENT
PEAK EXIT PERIOD (12:00 PM – 1:00 PM)

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	317	0	767	0	0	853	101	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1817	0	3592	0	0	3485	1559	0	0
Flt Permitted										
Satd. Flow (perm)	0	1817	0	3592	0	0	3485	1559	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	1%	5%	2%	5%	5%	1%	1%	5%	5%
Adj. Flow (vph)	0	345	0	834	0	0	927	110	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	345	0	834	0	0	927	110	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	317	0	767	0	0	853	101	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	1	5	2	5	5	1	1	5	5
Mvmt Flow	0	345	0	834	0	0	927	110	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1298	417	927	0	0	834	0	0
Stage 1	834	-	-	-	-	-	-	-
Stage 2	464	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.62	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.31	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	185	608	715	-	-	776	-	0
Stage 1	436	-	-	-	-	-	-	0
Stage 2	638	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	185	608	715	-	-	776	-	-
Mov Cap-2 Maneuver	185	-	-	-	-	-	-	-
Stage 1	436	-	-	-	-	-	-	-
Stage 2	638	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	715	-	-	608	776	-
HCM Lane V/C Ratio	-	-	-	0.567	-	-
HCM Control Delay (s)	0	-	-	18.4	0	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	3.5	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	81	0	0	0	853	0	0	767	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1755	0	0	0	3574	0	0	3539	1583
Flt Permitted										
Satd. Flow (perm)	0	1755	0	0	0	3574	0	0	3539	1583
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	3%	5%	5%	5%	1%	5%	5%	2%	2%
Adj. Flow (vph)	0	84	0	0	0	889	0	0	799	339
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	84	0	0	0	889	0	0	799	339
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	92	0	0	0	609	325	0	1000	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1710	0	0	0	3505	1553	0	3505	0
Flt Permitted										
Satd. Flow (perm)	0	1710	0	0	0	3505	1553	0	3505	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	2%	5%	5%	5%	3%	4%	5%	3%	5%
Adj. Flow (vph)	0	95	0	0	0	628	335	0	1031	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	95	0	0	0	628	335	0	1031	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	207	0	0	0	609	0	0	1000	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1686	0	0	0	3452	0	0	3522	1576
Flt Permitted										
Satd. Flow (perm)	0	1686	0	0	0	3452	0	0	3522	1576
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	4%	5%	5%	5%	3%	5%	5%	3%	3%
Adj. Flow (vph)	0	223	0	0	0	655	0	0	1075	291
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	223	0	0	0	655	0	0	1075	291
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	545	16	142	1043	130	134	136	31	64	131	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.983			0.986			0.972	
Flt Protected	0.950			0.950				0.978			0.987	
Satd. Flow (prot)	1876	1909	0	1690	3355	0	0	1832	0	0	1736	0
Flt Permitted	0.124			0.190				0.644			0.790	
Satd. Flow (perm)	245	1909	0	338	3355	0	0	1206	0	0	1390	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			17			6			13	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			3007	
Travel Time (s)		23.3			14.7			23.0			45.6	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	7%	2%	1%	1%	3%	1%	7%	4%	1%	2%
Adj. Flow (vph)	34	612	18	160	1172	146	151	153	35	72	147	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	630	0	160	1318	0	0	339	0	0	277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.16	0.74		0.49	0.74			1.03			0.72	
Control Delay	9.9	28.4		13.4	21.1			93.6			42.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.9	28.4		13.4	21.1			93.6			42.2	
Queue Length 50th (ft)	7	295		38	329			~214			142	
Queue Length 95th (ft)	19	453		65	422			#394			#262	
Internal Link Dist (ft)		1460			890			932			2927	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	350	847		436	1779			328			383	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	0.74		0.37	0.74			1.03			0.72	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 92.9
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	545	16	142	1043	130	134	136	31	64	131	52
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1917	1995	1779	1797	1814	1948	1900	1948	1910	1872	1910
Adj Flow Rate, veh/h	34	612	7	160	1172	135	151	153	24	72	147	47
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	2	1	1	1	1	1	1	1	1
Cap, veh/h	214	875	10	360	1590	183	213	178	26	138	250	72
Arrive On Green	0.02	0.46	0.46	0.07	0.52	0.52	0.29	0.26	0.26	0.29	0.26	0.26
Sat Flow, veh/h	1881	1891	22	1694	3086	355	584	679	100	327	951	274
Grp Volume(v), veh/h	34	0	619	160	647	660	328	0	0	266	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1913	1694	1707	1734	1362	0	0	1553	0	0
Q Serve(g_s), s	0.8	0.0	22.8	4.2	26.2	26.4	7.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	22.8	4.2	26.2	26.4	20.7	0.0	0.0	12.8	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.20	0.46		0.07	0.27		0.18
Lane Grp Cap(c), veh/h	214	0	885	360	879	893	448	0	0	494	0	0
V/C Ratio(X)	0.16	0.00	0.70	0.44	0.74	0.74	0.73	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	432	0	885	544	879	893	477	0	0	525	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.0	0.0	18.9	14.2	16.8	16.8	31.5	0.0	0.0	28.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	4.6	0.3	5.5	5.4	4.5	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	13.2	2.0	13.6	13.8	8.0	0.0	0.0	5.5	0.0	0.0
LnGrp Delay(d),s/veh	15.1	0.0	23.5	14.5	22.2	22.3	36.1	0.0	0.0	28.7	0.0	0.0
LnGrp LOS	B		C	B	C	C	D			C		
Approach Vol, veh/h		653			1467			328			266	
Approach Delay, s/veh		23.1			21.4			36.1			28.7	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	51.7		29.3	12.4	47.0		29.3
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.8	28.4		22.7	6.2	24.8		14.8
Green Ext Time (p_c), s	0.0	6.4		0.6	0.3	6.4		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	841	0	0	1314	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1879	0	0	1782	1832	0
Flt Permitted					0.950	
Satd. Flow (perm)	1879	0	0	1782	1832	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			521	353	
Travel Time (s)	5.7			7.9	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	885	0	0	1383	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	885	0	0	1383	1	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	841	0	0	1314	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	885	0	0	1383	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	885	0	2268	885
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	1383	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	769	-	84	391
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	343	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	769	-	84	391
Mov Cap-2 Maneuver	-	-	-	-	84	-
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	343	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	48.4
HCM LOS			E

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	84	-	-	769	-
HCM Lane V/C Ratio	0.013	-	-	-	-
HCM Control Delay (s)	48.4	-	-	0	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

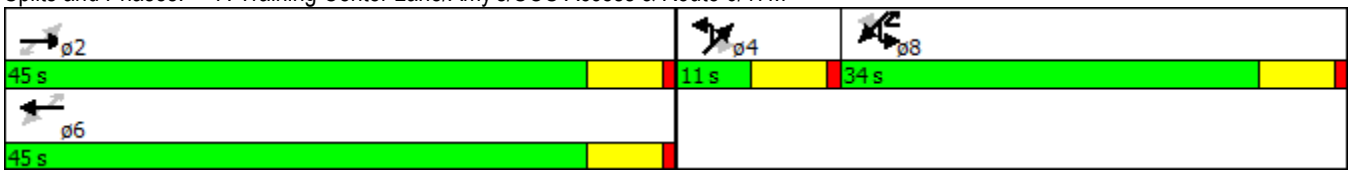
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	699	110	41	758	23	98	0	62	495	0	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.104			0.104				0.950			0.950	
Satd. Flow (perm)	182	1891	1591	183	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			36			109			109
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1428			802			646	
Travel Time (s)		7.9			17.7			21.9			14.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	34	744	117	44	806	24	104	0	66	527	0	481
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	744	117	44	806	24	0	104	66	0	527	481
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA	pm+ov	Split	NA	Perm	Split	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		2			6	8	4	4		8	8	
Permitted Phases	2		2	6		6			4			8
Detector Phase	2	2	2	6	6	8	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	34.0	11.0	11.0	11.0	34.0	34.0	34.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	37.8%	12.2%	12.2%	12.2%	37.8%	37.8%	37.8%
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	28.0	5.0	5.0	5.0	28.0	28.0	28.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Min	Min	Min	Min	Min	None	None	None	None	None	None	None
v/c Ratio	0.44	0.92	0.16	0.56	0.98	0.02		1.06	0.35		1.13	0.97
Control Delay	39.4	42.5	4.3	51.7	52.9	0.4		153.3	8.0		112.2	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	39.4	42.5	4.3	51.7	52.9	0.4		153.3	8.0		112.2	59.1
Queue Length 50th (ft)	13	383	3	18	434	0		~66	0		~353	218
Queue Length 95th (ft)	#56	#616	33	#75	#686	3		#168	15		#546	#424
Internal Link Dist (ft)		441			1348			722			566	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	79	826	756	80	841	1217		98	187		468	496
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.43	0.90	0.15	0.55	0.96	0.02		1.06	0.35		1.13	0.97

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 89.3
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

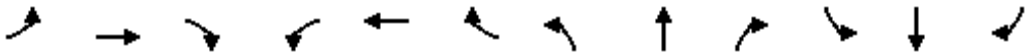


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	32	699	110	41	758	23	98	0	62	495	0	452
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	34	744	117	44	806	24	104	0	66	527	0	481
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	98	819	690	120	839	731	98	0	84	465	0	419
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.06	0.00	0.06	0.31	0.00	0.31
Sat Flow, veh/h	619	1891	1591	604	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	34	744	117	44	806	24	104	0	66	527	0	481
Grp Sat Flow(s),veh/h/ln	619	1891	1591	604	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	2.7	33.1	4.0	5.9	36.3	0.8	5.0	0.0	3.9	28.0	0.0	28.0
Cycle Q Clear(g_c), s	39.0	33.1	4.0	39.0	36.3	0.8	5.0	0.0	3.9	28.0	0.0	28.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	819	690	120	839	731	98	0	84	465	0	419
V/C Ratio(X)	0.35	0.91	0.17	0.37	0.96	0.03	1.07	0.00	0.79	1.13	0.00	1.15
Avail Cap(c_a), veh/h	98	819	690	120	839	731	98	0	84	465	0	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.3	23.8	15.6	42.3	24.7	11.9	42.5	0.0	42.0	31.0	0.0	31.0
Incr Delay (d2), s/veh	0.8	13.6	0.0	0.7	21.7	0.0	109.9	0.0	35.3	83.4	0.0	91.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	20.2	1.8	1.1	24.3	0.3	5.4	0.0	2.4	22.3	0.0	21.0
LnGrp Delay(d),s/veh	45.1	37.4	15.6	43.0	46.4	12.0	153.0	0.0	77.3	114.4	0.0	122.3
LnGrp LOS	D	D	B	D	D	B	F		E	F		F
Approach Vol, veh/h		895			874			170			1008	
Approach Delay, s/veh		34.9			45.3			123.6			118.2	
Approach LOS		C			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		45.0		11.0		45.0		34.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		39.0		5.0		39.0		28.0
Max Q Clear Time (g_c+I1), s		41.0		7.0		41.0		30.0
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.6
HCM 2010 LOS	E

Two Way Analysis cannot be performed on Signalized Intersection.

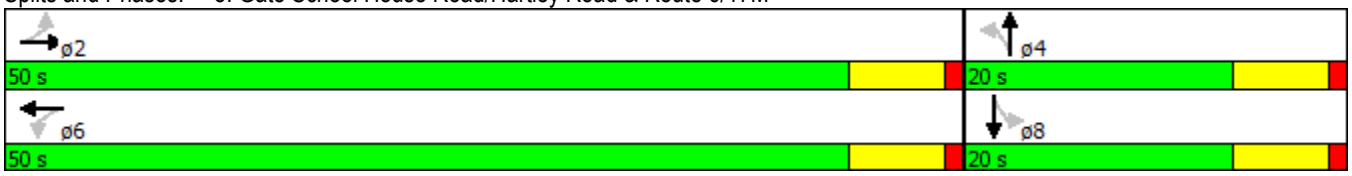


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	1056	112	12	715	10	103	10	15	12	6	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.998			0.984			0.948	
Flt Protected		0.997			0.999			0.961			0.979	
Satd. Flow (prot)	0	1846	0	0	1941	0	0	1800	0	0	1403	0
Flt Permitted		0.907			0.973			0.747			0.855	
Satd. Flow (perm)	0	1680	0	0	1890	0	0	1399	0	0	1225	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			2			9			12	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	84	1123	119	13	761	11	110	11	16	13	6	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1326	0	0	785	0	0	137	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.08			0.57			0.63			0.16	
Control Delay		67.9			8.6			38.2			19.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		67.9			8.6			38.2			19.3	
Queue Length 50th (ft)		~671			154			49			7	
Queue Length 95th (ft)		#974			297			100			28	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1226			1376			294			260	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.08			0.57			0.47			0.12	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 68.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	79	1056	112	12	715	10	103	10	15	12	6	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1886	1881	1948	1959	1948	1919	1904	1919	1872	1512	1872
Adj Flow Rate, veh/h	84	1123	92	13	761	11	110	11	16	13	6	12
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	116	1068	86	66	1314	19	240	14	20	126	48	59
Arrive On Green	0.73	0.70	0.70	0.73	0.70	0.70	0.14	0.11	0.11	0.14	0.11	0.11
Sat Flow, veh/h	79	1531	123	11	1883	27	1220	122	177	405	429	527
Grp Volume(v), veh/h	1299	0	0	785	0	0	137	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1732	0	0	1921	0	0	1519	0	0	1362	0	0
Q Serve(g_s), s	33.3	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	0.0	12.4	0.0	0.0	5.2	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.06		0.07	0.02		0.01	0.80		0.12	0.42		0.39
Lane Grp Cap(c), veh/h	1324	0	0	1459	0	0	322	0	0	277	0	0
V/C Ratio(X)	0.98	0.00	0.00	0.54	0.00	0.00	0.43	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	1324	0	0	1459	0	0	483	0	0	413	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	0.0	4.8	0.0	0.0	26.3	0.0	0.0	25.0	0.0	0.0
Incr Delay (d2), s/veh	20.2	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.1	0.0	0.0	5.9	0.0	0.0	2.2	0.0	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	30.1	0.0	0.0	5.0	0.0	0.0	26.6	0.0	0.0	25.1	0.0	0.0
LnGrp LOS	C			A			C			C		
Approach Vol, veh/h		1299			785			137			31	
Approach Delay, s/veh		30.1			5.0			26.6			25.1	
Approach LOS		C			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		13.1		50.0		13.1
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		48.0		7.2		14.4		3.2
Green Ext Time (p_c), s		0.0		0.2		11.7		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	88	946	47	48	629	26	62	33	13	16	20	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.994			0.983			0.917	
Flt Protected	0.950			0.950				0.972			0.991	
Satd. Flow (prot)	1832	1897	0	1796	1924	0	0	1820	0	0	1752	0
Flt Permitted	0.208			0.088				0.785			0.929	
Satd. Flow (perm)	401	1897	0	166	1924	0	0	1470	0	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3			6			64	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	99	1063	53	54	707	29	70	37	15	18	22	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	1116	0	54	736	0	0	122	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.19	0.94		0.28	0.73			0.62			0.38	
Control Delay	6.6	33.2		14.0	23.9			48.3			20.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.6	33.2		14.0	23.9			48.3			20.4	
Queue Length 50th (ft)	13	539		7	356			62			20	
Queue Length 95th (ft)	32	#975		20	463			117			65	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	547	1192		274	1208			329			412	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.18	0.94		0.20	0.61			0.37			0.25	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 86.9
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	88	946	47	48	629	26	62	33	13	16	20	57
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1928	1910	1948	1891	1948	1910	1862	1917	1862	1948	1928	1948
Adj Flow Rate, veh/h	99	1063	31	54	707	18	70	37	15	18	22	64
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	2	2	1	1	1	1	1	1
Cap, veh/h	563	1126	33	173	777	20	168	55	20	80	44	104
Arrive On Green	0.24	0.61	0.61	0.04	0.41	0.41	0.13	0.10	0.10	0.13	0.10	0.10
Sat Flow, veh/h	1836	1847	54	1801	1891	48	904	557	205	217	448	1065
Grp Volume(v), veh/h	99	0	1094	54	0	725	122	0	0	104	0	0
Grp Sat Flow(s),veh/h/ln	1836	0	1901	1801	0	1939	1665	0	0	1730	0	0
Q Serve(g_s), s	0.0	0.0	37.8	0.0	0.0	25.1	0.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	37.8	0.0	0.0	25.1	4.5	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.02	0.57		0.12	0.17		0.62
Lane Grp Cap(c), veh/h	563	0	1159	173	0	796	289	0	0	277	0	0
V/C Ratio(X)	0.18	0.00	0.94	0.31	0.00	0.91	0.42	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	563	0	1437	328	0	1466	543	0	0	553	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.4	0.0	12.8	32.9	0.0	19.8	30.5	0.0	0.0	30.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	10.4	0.4	0.0	1.8	0.4	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	22.8	1.0	0.0	13.7	2.2	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	20.5	0.0	23.2	33.3	0.0	21.6	30.9	0.0	0.0	31.0	0.0	0.0
LnGrp LOS	C		C	C		C	C			C		
Approach Vol, veh/h		1193			779			122			104	
Approach Delay, s/veh		23.0			22.4			30.9			31.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.1	35.3		13.0	8.9	49.6		13.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	27.1		6.5	2.0	39.8		5.9
Green Ext Time (p_c), s	0.2	2.2		0.6	0.1	3.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	976	0	0	703	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1939	0	0	1934	0	1690
Flt Permitted						
Satd. Flow (perm)	1939	0	0	1934	0	1690
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	5%	5%	2%	5%	1%
Adj. Flow (vph)	1084	0	0	781	0	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1084	0	0	781	0	34
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	976	0	0	703	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	5	5	2	5	1
Mvmt Flow	1084	0	0	781	0	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1084	0	1865	1084
Stage 1	-	-	-	-	1084	-
Stage 2	-	-	-	-	781	-
Critical Hdwy	-	-	4.15	-	6.25	6.11
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.309
Pot Cap-1 Maneuver	-	-	632	-	87	273
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	466	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	632	-	87	273
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	466	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	20.1
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	273	-	-	632	-
HCM Lane V/C Ratio	0.126	-	-	-	-
HCM Control Delay (s)	20.1	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	47	6	6	107	15	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.890	
Flt Protected				0.997	0.991	
Satd. Flow (prot)	1842	0	0	1913	1684	0
Flt Permitted				0.997	0.991	
Satd. Flow (perm)	1842	0	0	1913	1684	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	52	7	7	119	17	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	0	126	90	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	47	6	6	107	15	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	52	7	7	119	17	73

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	59	0	188	56
Stage 1	-	-	-	-	56	-
Stage 2	-	-	-	-	132	-
Critical Hdwy	-	-	4.1	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1558	-	814	1018
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1558	-	810	1018
Mov Cap-2 Maneuver	-	-	-	-	810	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	901	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	972	-	-	1558	-
HCM Lane V/C Ratio	0.093	-	-	0.004	-
HCM Control Delay (s)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	29	60	34	1	28	63	72	201	1	4	155	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.907						0.999	
Flt Protected		0.988			0.999			0.987			0.999	
Satd. Flow (prot)	0	1735	0	0	1705	0	0	1839	0	0	1868	0
Flt Permitted		0.988			0.999			0.987			0.999	
Satd. Flow (perm)	0	1735	0	0	1705	0	0	1839	0	0	1868	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	65	37	1	30	68	77	216	1	4	167	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	99	0	0	294	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

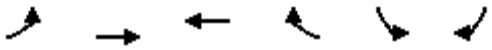
Intersection	
Int Delay, s/veh	5.9

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	29	60	34	1	28	63	72	201	1	4	155	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	65	37	1	30	68	77	216	1	4	167	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	597	548	217	598	548	167	168	0	0	217	0	0
Stage 1	372	372	-	176	176	-	-	-	-	-	-	-
Stage 2	225	176	-	422	372	-	-	-	-	-	-	-
Critical Hdwy	7.92	7.32	6.62	6.72	6.12	6.02	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	363	393	803	443	472	885	1410	-	-	1353	-	-
Stage 1	597	570	-	842	768	-	-	-	-	-	-	-
Stage 2	740	725	-	639	645	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	302	368	803	348	441	885	1410	-	-	1353	-	-
Mov Cap-2 Maneuver	302	368	-	348	441	-	-	-	-	-	-	-
Stage 1	560	535	-	790	766	-	-	-	-	-	-	-
Stage 2	655	723	-	503	605	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	18	11.3	2	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1410	-	-	408	669	1353	-	-
HCM Lane V/C Ratio	0.055	-	-	0.324	0.148	0.003	-	-
HCM Control Delay (s)	7.7	0	-	18	11.3	7.7	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	0.5	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	20	0	122	33	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1915	1587	0	1850	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1915	1587	0	1850	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		515	501		397	
Travel Time (s)		10.0	9.8		7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1	22	0	131	35	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	23	131	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	20	0	122	33	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	1	22	0	131	35	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	131	0	-	0	90	66
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	4.1	-	-	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1467	-	-	-	939	1013
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1467	-	-	-	938	1013
Mov Cap-2 Maneuver	-	-	-	-	938	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1467	-	-	-	938
HCM Lane V/C Ratio	0.001	-	-	-	0.038
HCM Control Delay (s)	7.5	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	90	0	57	0	0	0	0	146	17	55	103	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948						0.986				
Flt Protected		0.970									0.983	
Satd. Flow (prot)	0	1717	0	0	0	0	0	1869	0	0	1846	0
Flt Permitted		0.970									0.983	
Satd. Flow (perm)	0	1717	0	0	0	0	0	1869	0	0	1846	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	2%	2%	0%	2%
Adj. Flow (vph)	105	0	66	0	0	0	0	170	20	64	120	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	0	0	0	0	190	0	0	184	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	90	0	57	0	0	0	0	146	17	55	103	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	0	0	2	2	2	2	0	2	2	0	2
Mvmt Flow	105	0	66	0	0	0	0	170	20	64	120	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	428	438	120	120	0	0	190	0	0
Stage 1	248	248	-	-	-	-	-	-	-
Stage 2	180	190	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	570	503	934	1468	-	-	1384	-	-
Stage 1	782	695	-	-	-	-	-	-	-
Stage 2	843	739	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	542	0	934	1468	-	-	1384	-	-
Mov Cap-2 Maneuver	542	0	-	-	-	-	-	-	-
Stage 1	743	0	-	-	-	-	-	-	-
Stage 2	843	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.6	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1468	-	-	647	1384	-	-
HCM Lane V/C Ratio	-	-	-	0.264	0.046	-	-
HCM Control Delay (s)	0	-	-	12.6	7.7	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	35	0	61	84	152	0	0	123	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.914						0.947	
Flt Protected					0.982			0.983				
Satd. Flow (prot)	0	0	0	0	1685	0	0	1858	0	0	1794	0
Flt Permitted					0.982			0.983				
Satd. Flow (perm)	0	0	0	0	1685	0	0	1858	0	0	1794	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	39	0	68	93	169	0	0	137	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	107	0	0	262	0	0	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	35	0	61	84	152	0	0	123	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	0	0	0	0	2	2	0	2
Mvmt Flow	0	0	0	39	0	68	93	169	0	0	137	88

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	537	580	169	224	0	0	169	0	0
Stage 1	356	356	-	-	-	-	-	-	-
Stage 2	181	224	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	490	415	876	1357	-	-	1409	-	-
Stage 1	695	620	-	-	-	-	-	-	-
Stage 2	842	713	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	453	0	876	1357	-	-	1409	-	-
Mov Cap-2 Maneuver	453	0	-	-	-	-	-	-	-
Stage 1	642	0	-	-	-	-	-	-	-
Stage 2	842	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	11.6	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1357	-	-	654	1409	-	-
HCM Lane V/C Ratio	0.069	-	-	0.163	-	-	-
HCM Control Delay (s)	7.8	0	-	11.6	0	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1247	11	5	815	6	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.959	
Flt Protected					0.966	
Satd. Flow (prot)	1861	0	0	1862	1840	0
Flt Permitted					0.966	
Satd. Flow (perm)	1861	0	0	1862	1840	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1428			1003	760	
Travel Time (s)	17.7			12.4	17.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	3%	5%	2%	6%	7%
Adj. Flow (vph)	1417	13	6	926	7	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1429	0	0	932	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1247	11	5	815	6	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	3	5	2	6	7
Mvmt Flow	1417	12	6	926	7	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1430	0	2361	1423
Stage 1	-	-	-	-	1423	-
Stage 2	-	-	-	-	938	-
Critical Hdwy	-	-	4.15	-	6.06	6.07
Critical Hdwy Stg 1	-	-	-	-	5.06	-
Critical Hdwy Stg 2	-	-	-	-	5.06	-
Follow-up Hdwy	-	-	2.245	-	3.554	3.363
Pot Cap-1 Maneuver	-	-	466	-	49	176
Stage 1	-	-	-	-	255	-
Stage 2	-	-	-	-	416	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	466	-	48	176
Mov Cap-2 Maneuver	-	-	-	-	48	-
Stage 1	-	-	-	-	255	-
Stage 2	-	-	-	-	405	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	72.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	63	-	-	466	-
HCM Lane V/C Ratio	0.162	-	-	0.012	-
HCM Control Delay (s)	72.9	-	-	12.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	29	60	34	1	28	63	72	201	1	4	155	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.907						0.999	
Flt Protected		0.988			0.999			0.987			0.999	
Satd. Flow (prot)	0	1735	0	0	1705	0	0	1839	0	0	1868	0
Flt Permitted		0.988			0.999			0.987			0.999	
Satd. Flow (perm)	0	1735	0	0	1705	0	0	1839	0	0	1868	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	65	37	1	30	68	77	216	1	4	167	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	99	0	0	294	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	29	60	34	0	1	28	63	0	72	201	1
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	31	65	37	0	1	30	68	0	77	216	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.3	8.6	10.9
HCM LOS	A	A	B

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	26%	24%	1%	3%
Vol Thru, %	73%	49%	30%	97%
Vol Right, %	0%	28%	68%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	274	123	92	160
LT Vol	72	29	1	4
Through Vol	201	60	28	155
RT Vol	1	34	63	1
Lane Flow Rate	295	132	99	172
Geometry Grp	1	1	1	1
Degree of Util (X)	0.39	0.186	0.132	0.232
Departure Headway (Hd)	4.762	5.055	4.82	4.86
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	751	704	736	733
Service Time	2.822	3.128	2.899	2.93
HCM Lane V/C Ratio	0.393	0.188	0.135	0.235
HCM Control Delay	10.9	9.3	8.6	9.4
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.9	0.7	0.5	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	4	155	1
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	167	1
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	9.4
HCM LOS	A

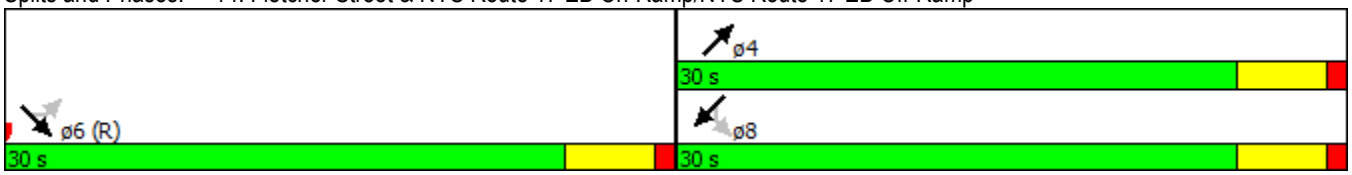
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	90	0	57	0	0	0	0	146	17	55	103	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948						0.986				
Flt Protected		0.970									0.983	
Satd. Flow (prot)	0	1717	0	0	0	0	0	1869	0	0	1846	0
Flt Permitted		0.970									0.848	
Satd. Flow (perm)	0	1717	0	0	0	0	0	1869	0	0	1592	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65						12				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	2%	2%	0%	2%
Adj. Flow (vph)	105	0	66	0	0	0	0	170	20	64	120	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	0	0	0	0	190	0	0	184	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.23						0.24			0.28	
Control Delay		8.1						11.6			9.1	
Queue Delay		0.0						0.0			0.0	
Total Delay		8.1						11.6			9.1	
Queue Length 50th (ft)		23						40			26	
Queue Length 95th (ft)		52						73			44	
Internal Link Dist (ft)		317			314			84			247	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		753						785			663	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.23						0.24			0.28	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	90	0	57	0	0	0	0	146	17	55	103	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1868	1890				0	1896	1900	1890	1877	0
Adj Flow Rate, veh/h	105	0	66				0	170	20	64	120	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	435	0	273				0	694	82	272	475	0
Arrive On Green	0.42	0.00	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	1044	0	656				0	1665	196	459	1140	0
Grp Volume(v), veh/h	171	0	0				0	0	190	184	0	0
Grp Sat Flow(s),veh/h/ln	1700	0	0				0	0	1861	1599	0	0
Q Serve(g_s), s	3.9	0.0	0.0				0.0	0.0	4.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0				0.0	0.0	4.0	4.1	0.0	0.0
Prop In Lane	0.61		0.39				0.00		0.11	0.35		0.00
Lane Grp Cap(c), veh/h	708	0	0				0	0	776	747	0	0
V/C Ratio(X)	0.24	0.00	0.00				0.00	0.00	0.24	0.25	0.00	0.00
Avail Cap(c_a), veh/h	708	0	0				0	0	776	747	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.4	0.0	0.0				0.0	0.0	11.4	3.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0				0.0	0.0	0.8	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0				0.0	0.0	2.2	0.7	0.0	0.0
LnGrp Delay(d),s/veh	12.2	0.0	0.0				0.0	0.0	12.1	3.8	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		171						190			184	
Approach Delay, s/veh		12.2						12.1			3.8	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				6.0		5.9		6.1
Green Ext Time (p_c), s				1.9		0.8		1.9

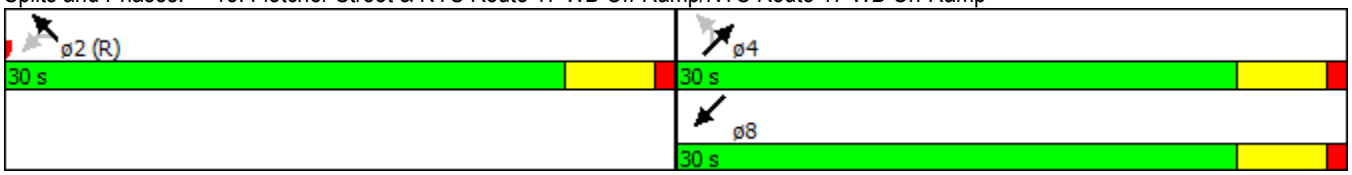
Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	35	0	61	84	152	0	0	123	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.914						0.947	
Flt Protected					0.982			0.983				
Satd. Flow (prot)	0	0	0	0	1685	0	0	1858	0	0	1794	0
Flt Permitted					0.982			0.817				
Satd. Flow (perm)	0	0	0	0	1685	0	0	1545	0	0	1794	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					68						66	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	39	0	68	93	169	0	0	137	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	107	0	0	262	0	0	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.14			0.41			0.29	
Control Delay					5.8			11.0			9.2	
Queue Delay					0.0			0.0			0.0	
Total Delay					5.8			11.0			9.2	
Queue Length 50th (ft)					8			43			35	
Queue Length 95th (ft)					33			75			75	
Internal Link Dist (ft)		277			305			247			398	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					741			643			786	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.14			0.41			0.29	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	35	0	61	84	152	0	0	123	79
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1877	1890	1890	1890	0	0	1895	1910
Adj Flow Rate, veh/h				39	0	68	93	169	0	0	137	88
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				252	0	440	264	446	0	0	450	289
Arrive On Green				0.42	0.00	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				605	0	1055	438	1070	0	0	1079	693
Grp Volume(v), veh/h				107	0	0	262	0	0	0	0	225
Grp Sat Flow(s),veh/h/ln				1660	0	0	1508	0	0	0	0	1772
Q Serve(g_s), s				2.4	0.0	0.0	0.8	0.0	0.0	0.0	0.0	5.1
Cycle Q Clear(g_c), s				2.4	0.0	0.0	5.8	0.0	0.0	0.0	0.0	5.1
Prop In Lane				0.36		0.64	0.35		0.00	0.00		0.39
Lane Grp Cap(c), veh/h				692	0	0	710	0	0	0	0	738
V/C Ratio(X)				0.15	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.30
Avail Cap(c_a), veh/h				692	0	0	710	0	0	0	0	738
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				10.9	0.0	0.0	3.1	0.0	0.0	0.0	0.0	11.7
Incr Delay (d2), s/veh				0.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	2.7
LnGrp Delay(d),s/veh				11.4	0.0	0.0	4.6	0.0	0.0	0.0	0.0	12.8
LnGrp LOS				B			A					B
Approach Vol, veh/h					107			262			225	
Approach Delay, s/veh					11.4			4.6			12.8	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		4.4		7.8				7.1
Green Ext Time (p_c), s		0.5		2.5				2.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	8/18/2015
Analysis time period:	Wknd. Morn. Evnt. Exit
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	853	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	101	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	81	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	853	101	81	vph
Peak-hour factor, PHF	0.92	0.92	0.96	
Peak 15-min volume, v15	232	27	21	v
Trucks and buses	1	1	3	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.990	0.990	0.971	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	936	111	87	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 936 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	936	4500	No
$v_{FO} = v_F - v_R$	825	4500	No
v_R	111	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 936 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	936	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 7.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	D_S = 0.438	
Space mean speed in ramp influence area,	S_R = 49.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 49.3	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wknd. Morn. Evnt. Exit
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	528	81	325	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	138	21	85	0	
Trucks and buses	3	3	4	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.971	0.971	0.962	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	567	87	352	0	pc/h

Volume ratio, VR 0.436

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	439	lc/h
Weaving lane changes, LCW	514	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	514	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.166

Average weaving speed, SW	49.3	mi/h
Average non-weaving speed, SNW	50.2	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.8	mi/h
Weaving segment density, D	6.7	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.189	
Weaving segment flow rate, v	973	veh/h
Weaving segment capacity, cW	5144	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7092	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1766	c
		Maximum	Analyzed	
v/c ratio		1.00	0.189	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wknd. Morn. Evnt. Exit.
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	609	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	207	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	325	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	609	207	325	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	164	56	84	v
Trucks and buses	3	4	4	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.962	0.962	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	674	231	348	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 674 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	905	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 674 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	905	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 10.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.308	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 51.0	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wknd. Morn. Evnt. Exit.
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	675	92	325	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	176	24	85	0	
Trucks and buses	2	2	2	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.980	0.980	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	717	98	345	0	pc/h
Volume ratio, VR		0.382			

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	443	lc/h
Weaving lane changes, LCW	522	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	6	lc/h
Total lane changes, LCALL	528	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.162

Average weaving speed, SW	49.4	mi/h
Average non-weaving speed, SNW	50.0	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	49.7	mi/h
Weaving segment density, D	7.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.213	
Weaving segment flow rate, v	1138	veh/h
Weaving segment capacity, cW	5341	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6479	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1816	c
		Maximum	Analyzed	
v/c ratio		1.00	0.213	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wknd. Morn. Evnt. Exit.
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	1000	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	271	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	92	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1000	271	92	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	269	73	24	v
Trucks and buses	3	3	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.971	0.980	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1108	300	97	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1108 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1108	4500	No
$v_{FO} = v_F - v_R$	808	4500	No
v_R	300	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1108 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1108	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086 v_R - 0.009 L_{12}$ = 12.2 pc/mi/ln D

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.455

Space mean speed in ramp influence area, S_R = 49.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.1 mph

AMY'S KITCHEN & SCIENCE OF THE SOUL

WEEKEND AFTERNOON EVENT
PEAK ENTRY PERIOD (2:30 PM – 3:30 PM)

Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Volume (vph)	0	317	0	678	0	0	977	101	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	-3%			-3%			5%		0%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Frt		0.865						0.850		
Flt Protected										
Satd. Flow (prot)	0	1817	0	3592	0	0	3485	1559	0	0
Flt Permitted										
Satd. Flow (perm)	0	1817	0	3592	0	0	3485	1559	0	0
Link Speed (mph)	30			45			45		30	
Link Distance (ft)	682			564			444		596	
Travel Time (s)	15.5			8.5			6.7		13.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	1%	5%	2%	5%	5%	1%	1%	5%	5%
Adj. Flow (vph)	0	345	0	737	0	0	1062	110	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	345	0	737	0	0	1062	110	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	0.98	0.86	0.98	0.98	0.98	1.03	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Vol, veh/h	0	317	0	678	0	0	977	101	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	Free	-	-
Storage Length	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	-3	-	-	-3	-	-	5	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	1	5	2	5	5	1	1	5	5
Mvmt Flow	0	345	0	737	0	0	1062	110	0	0

Major/Minor	Minor1		Major1			Major2		
Conflicting Flow All	1268	368	1062	0	0	737	0	0
Stage 1	737	-	-	-	-	-	-	-
Stage 2	531	-	-	-	-	-	-	-
Critical Hdwy	6.3	6.62	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	3.31	2.25	-	-	2.25	-	-
Pot Cap-1 Maneuver	193	652	634	-	-	845	-	0
Stage 1	482	-	-	-	-	-	-	0
Stage 2	596	-	-	-	-	-	-	0
Platoon blocked, %				-	-		-	
Mov Cap-1 Maneuver	193	652	634	-	-	845	-	-
Mov Cap-2 Maneuver	193	-	-	-	-	-	-	-
Stage 1	482	-	-	-	-	-	-	-
Stage 2	596	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	634	-	-	652	845	-
HCM Lane V/C Ratio	-	-	-	0.528	-	-
HCM Control Delay (s)	0	-	-	16.5	0	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	3.1	0	-

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	264	0	0	0	977	0	0	678	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1755	0	0	0	3574	0	0	3539	1583
Flt Permitted										
Satd. Flow (perm)	0	1755	0	0	0	3574	0	0	3539	1583
Link Speed (mph)	25		20			45			45	
Link Distance (ft)	379		341			564			794	
Travel Time (s)	10.3		11.6			8.5			12.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	3%	5%	5%	5%	1%	5%	5%	2%	2%
Adj. Flow (vph)	0	275	0	0	0	1018	0	0	706	206
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	275	0	0	0	1018	0	0	706	206
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	92	0	0	0	915	326	0	784	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	12	12	12	12	12	12
Grade (%)	1%		0%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865					0.850			
Flt Protected										
Satd. Flow (prot)	0	1710	0	0	0	3505	1553	0	3505	0
Flt Permitted										
Satd. Flow (perm)	0	1710	0	0	0	3505	1553	0	3505	0
Link Speed (mph)	30		25			45			45	
Link Distance (ft)	416		375			794			727	
Travel Time (s)	9.5		10.2			12.0			11.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	2%	5%	5%	5%	3%	4%	5%	3%	5%
Adj. Flow (vph)	0	95	0	0	0	943	336	0	808	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	95	0	0	0	943	336	0	808	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.01	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBR	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations										
Volume (vph)	0	383	0	0	0	915	0	0	784	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	12	12	12	12	12	12	12
Grade (%)	6%		0%			3%			-1%	
Storage Length (ft)	0	0	0	0	0		0	0		185
Storage Lanes	0	1	0	0	0		0	0		1
Taper Length (ft)	25		25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.865								0.850
Flt Protected										
Satd. Flow (prot)	0	1686	0	0	0	3452	0	0	3522	1576
Flt Permitted										
Satd. Flow (perm)	0	1686	0	0	0	3452	0	0	3522	1576
Link Speed (mph)	50		25			45			45	
Link Distance (ft)	644		444			727			335	
Travel Time (s)	8.8		12.1			11.0			5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	4%	5%	5%	5%	3%	5%	5%	3%	3%
Adj. Flow (vph)	0	412	0	0	0	984	0	0	843	149
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	412	0	0	0	984	0	0	843	149
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0			0			0	
Link Offset(ft)	0		0			0			0	
Crosswalk Width(ft)	16		16			16			16	
Two way Left Turn Lane										
Headway Factor	1.04	0.92	1.00	1.00	1.02	1.02	1.02	0.99	0.99	0.99
Turning Speed (mph)	15	9	15	9	15		9	15		9
Sign Control	Free		Free			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

HCM research does not support more than two 'Free' approaches at the intersection.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	1027	16	126	693	106	134	136	53	97	131	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.980			0.978			0.975	
Flt Protected	0.950			0.950				0.980			0.983	
Satd. Flow (prot)	1876	1914	0	1690	3345	0	0	1815	0	0	1731	0
Flt Permitted	0.282			0.081				0.662			0.706	
Satd. Flow (perm)	557	1914	0	144	3345	0	0	1226	0	0	1243	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			22			9			11	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			3007	
Travel Time (s)		23.3			14.7			23.0			45.6	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	7%	2%	1%	1%	3%	1%	7%	4%	1%	2%
Adj. Flow (vph)	34	1154	18	142	779	119	151	153	60	109	147	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	1172	0	142	898	0	0	364	0	0	314	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	47.0		22.0	51.0		31.0	31.0		31.0	31.0	
Total Split (%)	18.0%	47.0%		22.0%	51.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	12.0	41.0		16.0	45.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.10	1.38		0.61	0.50			1.09			0.92	
Control Delay	8.7	205.0		26.2	15.8			108.3			66.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.7	205.0		26.2	15.8			108.3			66.7	
Queue Length 50th (ft)	7	~922		36	183			~239			174	
Queue Length 95th (ft)	18	#1241		91	240			#434			#353	
Internal Link Dist (ft)		1460			890			932			2927	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	488	848		352	1781			335			341	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	1.38		0.40	0.50			1.09			0.92	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 93.2
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	1027	16	126	693	106	134	136	53	97	131	52
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1917	1995	1779	1797	1814	1948	1894	1948	1910	1868	1910
Adj Flow Rate, veh/h	34	1154	7	142	779	108	151	153	49	109	147	47
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	2	1	1	1	1	1	1	1	1
Cap, veh/h	334	868	5	192	1515	210	202	171	51	172	206	59
Arrive On Green	0.02	0.46	0.46	0.07	0.50	0.50	0.30	0.28	0.28	0.30	0.28	0.28
Sat Flow, veh/h	1881	1904	12	1694	3012	418	523	615	183	423	740	213
Grp Volume(v), veh/h	34	0	1161	142	441	446	353	0	0	303	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1915	1694	1707	1723	1321	0	0	1376	0	0
Q Serve(g_s), s	0.9	0.0	41.0	3.9	15.6	15.6	5.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.9	0.0	41.0	3.9	15.6	15.6	23.6	0.0	0.0	17.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.24	0.43		0.14	0.36		0.16
Lane Grp Cap(c), veh/h	334	0	873	192	858	866	454	0	0	467	0	0
V/C Ratio(X)	0.10	0.00	1.33	0.74	0.51	0.51	0.78	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	549	0	873	381	858	866	454	0	0	467	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.4	0.0	24.5	20.5	15.0	15.0	31.7	0.0	0.0	29.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	156.4	2.1	2.2	2.2	7.7	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	59.5	1.9	7.9	8.0	9.1	0.0	0.0	6.8	0.0	0.0
LnGrp Delay(d),s/veh	13.4	0.0	180.9	22.6	17.2	17.2	39.4	0.0	0.0	31.6	0.0	0.0
LnGrp LOS	B		F	C	B	B	D			C		
Approach Vol, veh/h		1195			1029			353			303	
Approach Delay, s/veh		176.1			17.9			39.4			31.6	
Approach LOS		F			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	51.2		31.0	12.0	47.0		31.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	45.0		25.0	16.0	41.0		25.0
Max Q Clear Time (g_c+I1), s	2.9	17.6		25.6	5.9	43.0		19.9
Green Ext Time (p_c), s	0.0	9.6		0.0	0.2	0.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	87.6
HCM 2010 LOS	F

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	1378	0	0	924	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	13	12	12
Grade (%)	-1%			4%	-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	1879	0	0	1782	1832	0
Flt Permitted					0.950	
Satd. Flow (perm)	1879	0	0	1782	1832	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	378			521	353	
Travel Time (s)	5.7			7.9	8.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	1%	8%	1%	1%
Adj. Flow (vph)	1451	0	0	973	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1451	0	0	973	1	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.95	0.99	1.03	0.98	0.97	0.97
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	1378	0	0	924	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	4	-5	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	1	1	8	1	1
Mvmt Flow	1451	0	0	973	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1451	0	2424	1451
Stage 1	-	-	-	-	1451	-
Stage 2	-	-	-	-	973	-
Critical Hdwy	-	-	4.11	-	5.41	5.71
Critical Hdwy Stg 1	-	-	-	-	4.41	-
Critical Hdwy Stg 2	-	-	-	-	4.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	470	-	70	197
Stage 1	-	-	-	-	324	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	470	-	70	197
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	324	-
Stage 2	-	-	-	-	482	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	57.2
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	70	-	-	470	-
HCM Lane V/C Ratio	0.015	-	-	-	-
HCM Control Delay (s)	57.2	-	-	0	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

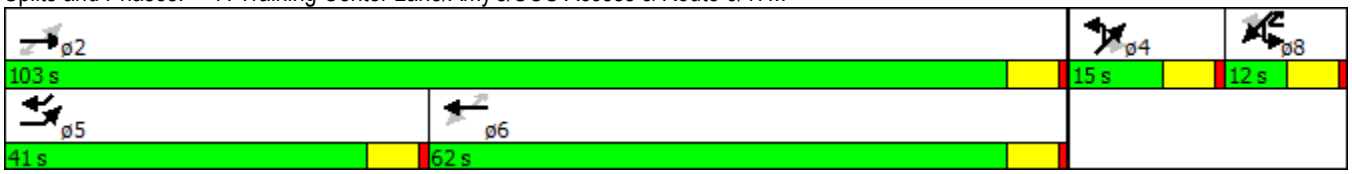
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	569	699	110	41	758	656	98	0	62	35	0	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.066			0.383				0.950			0.950	
Satd. Flow (perm)	116	1891	1591	674	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			86			283			126			76
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1424			802			646	
Travel Time (s)		7.9			17.7			21.9			14.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	605	744	117	44	806	698	104	0	66	37	0	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	605	744	117	44	806	698	0	104	66	0	37	66
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+ov	Split	NA	Perm	Split	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	5	2			6	8	4	4		8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	6	6	8	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	11.0	11.0	11.0	11.0	11.0	11.0	9.0
Total Split (s)	41.0	103.0	103.0	62.0	62.0	12.0	15.0	15.0	15.0	12.0	12.0	41.0
Total Split (%)	31.5%	79.2%	79.2%	47.7%	47.7%	9.2%	11.5%	11.5%	11.5%	9.2%	9.2%	31.5%
Maximum Green (s)	35.0	97.0	97.0	56.0	56.0	6.0	9.0	9.0	9.0	6.0	6.0	35.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	Min	Min	None	None	None	None	None	None	None
v/c Ratio	1.19	0.53	0.10	0.15	0.98	0.82		0.86	0.30		0.54	0.12
Control Delay	140.2	8.6	1.7	24.5	64.6	22.0		109.9	3.4		88.1	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	140.2	8.6	1.7	24.5	64.6	22.0		109.9	3.4		88.1	5.2
Queue Length 50th (ft)	~571	230	6	22	655	251		88	0		31	0
Queue Length 95th (ft)	#804	310	21	50	#932	448		#197	0		#82	26
Internal Link Dist (ft)		441			1344			722			566	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	507	1424	1219	293	837	855		122	222		69	539
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	1.19	0.52	0.10	0.15	0.96	0.82		0.85	0.30		0.54	0.12

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 128.8
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

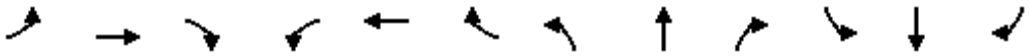


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	569	699	110	41	758	656	98	0	62	35	0	62
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	605	744	117	44	806	698	104	0	66	37	0	66
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	517	1417	1193	317	838	751	122	0	105	62	0	638
Arrive On Green	0.27	0.75	0.75	0.43	0.43	0.43	0.07	0.00	0.07	0.04	0.00	0.04
Sat Flow, veh/h	1670	1891	1591	604	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	605	744	117	44	806	698	104	0	66	37	0	66
Grp Sat Flow(s),veh/h/ln	1670	1891	1591	604	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	35.0	21.0	2.6	5.8	52.3	56.0	7.6	0.0	5.5	3.1	0.0	3.5
Cycle Q Clear(g_c), s	35.0	21.0	2.6	5.8	52.3	56.0	7.6	0.0	5.5	3.1	0.0	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	517	1417	1193	317	838	751	122	0	105	62	0	639
V/C Ratio(X)	1.17	0.52	0.10	0.14	0.96	0.93	0.85	0.00	0.63	0.59	0.00	0.10
Avail Cap(c_a), veh/h	517	1417	1193	317	838	751	122	0	105	69	0	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.4	6.7	4.4	22.4	35.6	30.0	59.5	0.0	58.6	60.9	0.0	18.8
Incr Delay (d2), s/veh	96.0	0.2	0.0	0.1	21.9	17.6	38.7	0.0	8.7	5.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.2	10.8	1.1	1.0	32.9	28.5	5.0	0.0	2.6	1.4	0.0	2.4
LnGrp Delay(d),s/veh	136.4	6.9	4.4	22.5	57.6	47.6	98.2	0.0	67.3	66.8	0.0	18.8
LnGrp LOS	F	A	A	C	E	D	F		E	E		B
Approach Vol, veh/h		1466			1548			170			103	
Approach Delay, s/veh		60.1			52.0			86.2			36.0	
Approach LOS		E			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		103.0		15.0	41.0	62.0		11.4
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		97.0		9.0	35.0	56.0		6.0
Max Q Clear Time (g_c+I1), s		23.0		9.6	37.0	58.0		5.5
Green Ext Time (p_c), s		12.9		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	56.9
HCM 2010 LOS	E

Two Way Analysis cannot be performed on Signalized Intersection.

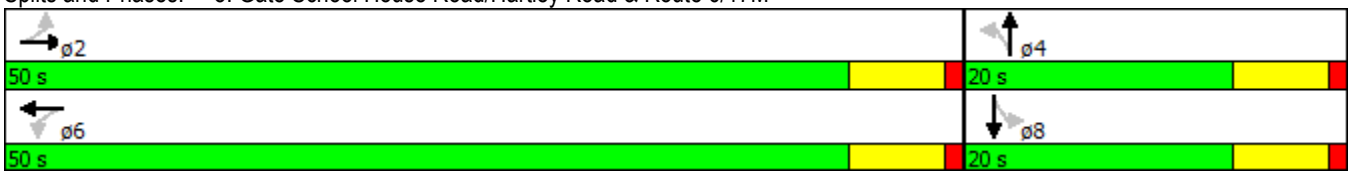


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	668	104	12	1249	10	114	10	15	12	6	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.999			0.985			0.886	
Flt Protected		0.999						0.961			0.995	
Satd. Flow (prot)	0	1851	0	0	1948	0	0	1802	0	0	1200	0
Flt Permitted		0.966			0.991			0.743			0.958	
Satd. Flow (perm)	0	1790	0	0	1930	0	0	1393	0	0	1156	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			1			8			65	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	16	711	111	13	1329	11	121	11	16	13	6	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	838	0	0	1353	0	0	148	0	0	124	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.65			0.98			0.65			0.53	
Control Delay		10.4			34.9			38.9			22.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.4			34.9			38.9			22.3	
Queue Length 50th (ft)		182			~636			54			22	
Queue Length 95th (ft)		353			#929			109			68	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1292			1387			296			292	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.65			0.98			0.50			0.42	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 67.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	668	104	12	1249	10	114	10	15	12	6	99
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1899	1881	1948	1962	1948	1919	1903	1919	1872	1362	1872
Adj Flow Rate, veh/h	16	711	84	13	1329	11	121	11	16	13	6	105
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	66	1097	128	60	1299	11	250	19	20	72	15	144
Arrive On Green	0.71	0.67	0.67	0.71	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	14	1626	189	7	1925	16	1059	133	144	76	108	1021
Grp Volume(v), veh/h	811	0	0	1353	0	0	148	0	0	124	0	0
Grp Sat Flow(s),veh/h/ln	1829	0	0	1948	0	0	1336	0	0	1206	0	0
Q Serve(g_s), s	0.0	0.0	0.0	14.7	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.8	0.0	0.0	43.8	0.0	0.0	6.8	0.0	0.0	6.1	0.0	0.0
Prop In Lane	0.02		0.10	0.01		0.01	0.82		0.11	0.10		0.85
Lane Grp Cap(c), veh/h	1347	0	0	1430	0	0	330	0	0	268	0	0
V/C Ratio(X)	0.60	0.00	0.00	0.95	0.00	0.00	0.45	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	1347	0	0	1430	0	0	430	0	0	353	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.0	0.0	0.0	10.5	0.0	0.0	26.2	0.0	0.0	26.7	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	13.0	0.0	0.0	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	0.0	25.6	0.0	0.0	2.4	0.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	6.5	0.0	0.0	23.4	0.0	0.0	26.5	0.0	0.0	27.1	0.0	0.0
LnGrp LOS	A			C			C			C		
Approach Vol, veh/h		811			1353			148			124	
Approach Delay, s/veh		6.5			23.4			26.5			27.1	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		15.2		50.0		15.2
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		17.8		8.8		45.8		8.1
Green Ext Time (p_c), s		11.5		0.4		0.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

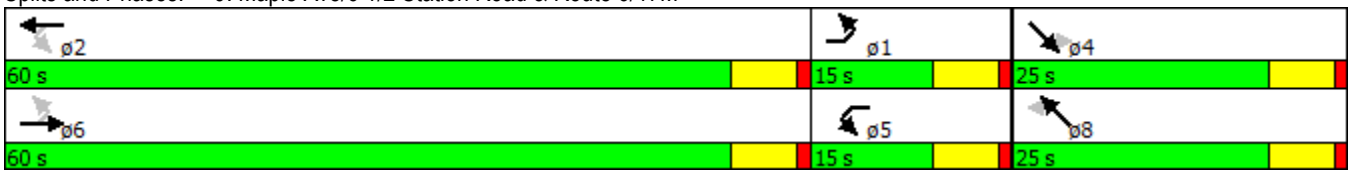
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	80	566	47	48	1152	26	16	20	68	62	33	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.997			0.912			0.983	
Flt Protected	0.950			0.950				0.992			0.972	
Satd. Flow (prot)	1832	1888	0	1796	1929	0	0	1723	0	0	1842	0
Flt Permitted	0.075			0.271				0.935			0.735	
Satd. Flow (perm)	145	1888	0	512	1929	0	0	1624	0	0	1393	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			2			76			6	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	90	636	53	54	1294	29	18	22	76	70	37	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	689	0	54	1323	0	0	116	0	0	122	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.41	0.62		0.10	1.10			0.42			0.66	
Control Delay	23.4	18.5		5.5	79.3			19.7			52.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	23.4	18.5		5.5	79.3			19.7			52.6	
Queue Length 50th (ft)	12	341		7	~893			21			64	
Queue Length 95th (ft)	47	428		20	#1302			69			122	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	266	1229		550	1202			402			298	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.34	0.56		0.10	1.10			0.29			0.41	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 90.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	80	566	47	48	1152	26	16	20	68	62	33	13
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1928	1911	1948	1891	1947	1910	1862	1917	1862	1948	1928	1948
Adj Flow Rate, veh/h	90	636	31	54	1294	18	18	22	76	70	37	15
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	2	2	1	1	1	1	1	1
Cap, veh/h	152	692	34	649	1244	17	69	40	112	154	54	20
Arrive On Green	0.04	0.38	0.38	0.30	0.65	0.65	0.12	0.10	0.10	0.12	0.10	0.10
Sat Flow, veh/h	1836	1807	88	1801	1916	27	190	406	1132	868	550	199
Grp Volume(v), veh/h	90	0	667	54	0	1312	116	0	0	122	0	0
Grp Sat Flow(s),veh/h/ln	1836	0	1895	1801	0	1943	1728	0	0	1616	0	0
Q Serve(g_s), s	0.0	0.0	27.9	0.0	0.0	54.0	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	27.9	0.0	0.0	54.0	5.1	0.0	0.0	5.7	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.01	0.16		0.66	0.57		0.12
Lane Grp Cap(c), veh/h	152	0	725	649	0	1262	262	0	0	267	0	0
V/C Ratio(X)	0.59	0.00	0.92	0.08	0.00	1.04	0.44	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	285	0	1231	649	0	1262	474	0	0	463	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.7	0.0	24.4	19.9	0.0	14.6	36.0	0.0	0.0	35.7	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	4.0	0.0	0.0	36.3	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	15.3	0.9	0.0	41.1	2.5	0.0	0.0	2.6	0.0	0.0
LnGrp Delay(d),s/veh	40.1	0.0	28.5	19.9	0.0	50.9	36.4	0.0	0.0	36.2	0.0	0.0
LnGrp LOS	D		C	B		F	D			D		
Approach Vol, veh/h		757			1366			116			122	
Approach Delay, s/veh		29.8			49.7			36.4			36.2	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	60.0		14.2	31.1	37.8		14.2
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	56.0		7.1	2.0	29.9		7.7
Green Ext Time (p_c), s	0.1	0.0		0.6	0.2	1.9		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	42.0
HCM 2010 LOS	D

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	596	0	0	1226	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	13	12	13
Grade (%)	1%			-1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	1939	0	0	1934	0	1690
Flt Permitted						
Satd. Flow (perm)	1939	0	0	1934	0	1690
Link Speed (mph)	55			55	30	
Link Distance (ft)	4159			510	522	
Travel Time (s)	51.6			6.3	11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	5%	5%	2%	5%	1%
Adj. Flow (vph)	662	0	0	1362	0	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	662	0	0	1362	0	34
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.92	1.01	0.99	0.95	0.99	0.95
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	596	0	0	1226	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	5	5	2	5	1
Mvmt Flow	662	0	0	1362	0	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	662	0	2024	662
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	1362	-
Critical Hdwy	-	-	4.15	-	6.25	6.11
Critical Hdwy Stg 1	-	-	-	-	5.25	-
Critical Hdwy Stg 2	-	-	-	-	5.25	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.309
Pot Cap-1 Maneuver	-	-	912	-	70	472
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	253	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	912	-	70	472
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	253	-

Approach	EB	WB	NE
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	472	-	-	912	-
HCM Lane V/C Ratio	0.073	-	-	-	-
HCM Control Delay (s)	13.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	47	17	83	107	7	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%			-2%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964				0.922	
Flt Protected				0.979	0.979	
Satd. Flow (prot)	1804	0	0	1879	1724	0
Flt Permitted				0.979	0.979	
Satd. Flow (perm)	1804	0	0	1879	1724	0
Link Speed (mph)	30			30	35	
Link Distance (ft)	532			399	1042	
Travel Time (s)	12.1			9.1	20.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	52	19	92	119	8	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	0	211	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.99	0.99	0.99	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	47	17	83	107	7	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	-2	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	52	19	92	119	8	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	71	0	365	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	303	-
Critical Hdwy	-	-	4.1	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1542	-	652	1010
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	767	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1542	-	610	1010
Mov Cap-2 Maneuver	-	-	-	-	610	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	718	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.3	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	795	-	-	1542	-
HCM Lane V/C Ratio	0.024	-	-	0.06	-
HCM Control Delay (s)	9.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	29	60	26	1	28	63	72	177	1	15	188	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.907			0.999			0.999	
Flt Protected		0.988			0.999			0.986			0.996	
Satd. Flow (prot)	0	1749	0	0	1705	0	0	1835	0	0	1863	0
Flt Permitted		0.988			0.999			0.986			0.996	
Satd. Flow (perm)	0	1749	0	0	1705	0	0	1835	0	0	1863	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	65	28	1	30	68	77	190	1	16	202	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	99	0	0	268	0	0	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

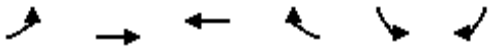
Intersection	
Int Delay, s/veh	6

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	29	60	26	1	28	63	72	177	1	15	188	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	4	-	-	-2	-	-	0	-	-	-1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	65	28	1	30	68	77	190	1	16	202	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	630	581	191	627	581	203	203	0	0	191	0	0
Stage 1	346	346	-	235	235	-	-	-	-	-	-	-
Stage 2	284	235	-	392	346	-	-	-	-	-	-	-
Critical Hdwy	7.92	7.32	6.62	6.72	6.12	6.02	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.92	6.32	-	5.72	5.12	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	343	374	833	425	453	847	1369	-	-	1383	-	-
Stage 1	620	588	-	788	729	-	-	-	-	-	-	-
Stage 2	679	674	-	661	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	281	346	833	332	419	847	1369	-	-	1383	-	-
Mov Cap-2 Maneuver	281	346	-	332	419	-	-	-	-	-	-	-
Stage 1	581	551	-	738	720	-	-	-	-	-	-	-
Stage 2	591	665	-	528	618	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	19.3	11.7	2.2	0.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1369	-	-	374	638	1383	-	-
HCM Lane V/C Ratio	0.057	-	-	0.331	0.155	0.012	-	-
HCM Control Delay (s)	7.8	0	-	19.3	11.7	7.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	0.5	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	20	0	114	44	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	5%		-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1915	1587	0	1850	0
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1915	1587	0	1850	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		515	501		397	
Travel Time (s)		10.0	9.8		7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1	22	0	123	47	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	23	123	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.03	1.03	0.97	0.97
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	20	0	114	44	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	5	-	-5	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	1	22	0	123	47	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	123	0	-	0	85	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	4.1	-	-	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1477	-	-	-	943	1018
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1477	-	-	-	942	1018
Mov Cap-2 Maneuver	-	-	-	-	942	-
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1477	-	-	-	942
HCM Lane V/C Ratio	0.001	-	-	-	0.05
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	90	0	123	0	0	0	0	98	17	55	102	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.922						0.980				
Flt Protected		0.979									0.983	
Satd. Flow (prot)	0	1692	0	0	0	0	0	1856	0	0	1845	0
Flt Permitted		0.979									0.983	
Satd. Flow (perm)	0	1692	0	0	0	0	0	1856	0	0	1845	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	2%	2%	0%	2%
Adj. Flow (vph)	105	0	143	0	0	0	0	114	20	64	119	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	248	0	0	0	0	0	134	0	0	183	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	90	0	123	0	0	0	0	98	17	55	102	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	0	0	2	2	2	2	0	2	2	0	2
Mvmt Flow	105	0	143	0	0	0	0	114	20	64	119	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	371	381	119	119	0	0	134	0	0
Stage 1	247	247	-	-	-	-	-	-	-
Stage 2	124	134	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	617	543	935	1469	-	-	1451	-	-
Stage 1	783	696	-	-	-	-	-	-	-
Stage 2	895	783	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	588	0	935	1469	-	-	1451	-	-
Mov Cap-2 Maneuver	588	0	-	-	-	-	-	-	-
Stage 1	746	0	-	-	-	-	-	-	-
Stage 2	895	0	-	-	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.2	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1469	-	-	748	1451	-	-
HCM Lane V/C Ratio	-	-	-	0.331	0.044	-	-
HCM Control Delay (s)	0	-	-	12.2	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.5	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	35	0	61	36	152	0	0	123	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.914						0.947	
Flt Protected					0.982			0.991				
Satd. Flow (prot)	0	0	0	0	1685	0	0	1873	0	0	1794	0
Flt Permitted					0.982			0.991				
Satd. Flow (perm)	0	0	0	0	1685	0	0	1873	0	0	1794	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	39	0	68	40	169	0	0	137	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	107	0	0	209	0	0	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	0	35	0	61	36	152	0	0	123	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	1	-	-	-1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	0	0	0	0	2	2	0	2
Mvmt Flow	0	0	0	39	0	68	40	169	0	0	137	88

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	430	473	169	224	0	0	169	0	0
Stage 1	249	249	-	-	-	-	-	-	-
Stage 2	181	224	-	-	-	-	-	-	-
Critical Hdwy	6.62	6.7	6.3	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	5.62	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.62	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	568	480	876	1357	-	-	1409	-	-
Stage 1	782	695	-	-	-	-	-	-	-
Stage 2	842	713	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	549	0	876	1357	-	-	1409	-	-
Mov Cap-2 Maneuver	549	0	-	-	-	-	-	-	-
Stage 1	756	0	-	-	-	-	-	-	-
Stage 2	842	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10.9	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SWL	SWT	SWR
Capacity (veh/h)	1357	-	-	720	1409	-	-
HCM Lane V/C Ratio	0.029	-	-	0.148	-	-	-
HCM Control Delay (s)	7.7	0	-	10.9	0	-	-
HCM Lane LOS	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	787	11	5	1448	6	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.959	
Flt Protected					0.966	
Satd. Flow (prot)	1859	0	0	1863	1840	0
Flt Permitted					0.966	
Satd. Flow (perm)	1859	0	0	1863	1840	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1424			1007	780	
Travel Time (s)	17.7			12.5	17.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	3%	5%	2%	6%	7%
Adj. Flow (vph)	894	13	6	1645	7	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	906	0	0	1651	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	787	11	5	1448	6	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	3	5	2	6	7
Mvmt Flow	894	12	6	1645	7	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	907	0	2558	901
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	1657	-
Critical Hdwy	-	-	4.15	-	6.06	6.07
Critical Hdwy Stg 1	-	-	-	-	5.06	-
Critical Hdwy Stg 2	-	-	-	-	5.06	-
Follow-up Hdwy	-	-	2.245	-	3.554	3.363
Pot Cap-1 Maneuver	-	-	738	-	38	347
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	200	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	738	-	34	347
Mov Cap-2 Maneuver	-	-	-	-	34	-
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	181	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	96.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	49	-	-	738	-
HCM Lane V/C Ratio	0.209	-	-	0.008	-
HCM Control Delay (s)	96.9	-	-	9.9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	1027	16	126	693	103	134	136	53	95	131	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	12
Grade (%)		-10%			9%			-5%			-1%	
Storage Length (ft)	675		0	485		255	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.981			0.978			0.975	
Flt Protected	0.950			0.950				0.980			0.983	
Satd. Flow (prot)	1876	1914	0	1690	3349	0	0	1815	0	0	1731	0
Flt Permitted	0.276			0.047				0.655			0.708	
Satd. Flow (perm)	545	1914	0	84	3349	0	0	1213	0	0	1247	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			16			7			8	
Link Speed (mph)		45			45			30			45	
Link Distance (ft)		1540			970			1012			3007	
Travel Time (s)		23.3			14.7			23.0			45.6	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	4%	7%	2%	1%	1%	3%	1%	7%	4%	1%	2%
Adj. Flow (vph)	34	1154	18	142	779	116	151	153	60	107	147	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	1172	0	142	895	0	0	364	0	0	312	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	1.06	1.06	1.06	0.97	0.97	0.97	0.99	1.04	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		16.0	37.0		18.0	18.0		18.0	18.0	
Total Split (s)	18.0	84.0		18.0	84.0		48.0	48.0		48.0	48.0	
Total Split (%)	12.0%	56.0%		12.0%	56.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	12.0	78.0		12.0	78.0		42.0	42.0		42.0	42.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
v/c Ratio	0.10	1.17		0.83	0.46			1.05			0.87	
Control Delay	11.1	120.2		71.2	19.4			112.0			74.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	11.1	120.2		71.2	19.4			112.0			74.8	
Queue Length 50th (ft)	12	~1372		89	260			~384			287	
Queue Length 95th (ft)	25	#1612		#198	315			#583			#455	
Internal Link Dist (ft)		1460			890			932			2927	
Turn Bay Length (ft)	675			485								
Base Capacity (vph)	436	1002		182	1931			346			357	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.08	1.17		0.78	0.46			1.05			0.87	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 148.9
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: C.R. 12/C.R. 50 & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	1027	16	126	693	103	134	136	53	95	131	52
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1975	1917	1995	1779	1797	1814	1948	1894	1948	1910	1868	1910
Adj Flow Rate, veh/h	34	1154	7	142	779	105	151	153	49	107	147	47
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	4	4	2	1	1	1	1	1	1	1	1
Cap, veh/h	366	1003	6	163	1748	236	179	154	48	154	193	58
Arrive On Green	0.02	0.53	0.53	0.07	0.58	0.58	0.30	0.28	0.28	0.30	0.28	0.28
Sat Flow, veh/h	1881	1904	12	1694	3024	408	507	543	169	425	679	204
Grp Volume(v), veh/h	34	0	1161	142	440	444	353	0	0	301	0	0
Grp Sat Flow(s),veh/h/ln	1881	0	1915	1694	1707	1725	1219	0	0	1308	0	0
Q Serve(g_s), s	1.2	0.0	78.0	8.0	21.7	21.7	11.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	78.0	8.0	21.7	21.7	42.8	0.0	0.0	31.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.24	0.43		0.14	0.36		0.16
Lane Grp Cap(c), veh/h	366	0	1009	163	987	997	397	0	0	422	0	0
V/C Ratio(X)	0.09	0.00	1.15	0.87	0.45	0.45	0.89	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	487	0	1009	186	987	997	397	0	0	422	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	35.0	46.8	17.8	17.8	54.0	0.0	0.0	48.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	79.3	28.1	1.5	1.4	20.4	0.0	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	63.4	7.0	10.5	10.6	16.3	0.0	0.0	11.6	0.0	0.0
LnGrp Delay(d),s/veh	16.5	0.0	114.3	74.9	19.2	19.2	74.5	0.0	0.0	53.1	0.0	0.0
LnGrp LOS	B		F	E	B	B	E			D		
Approach Vol, veh/h		1195			1026			353			301	
Approach Delay, s/veh		111.5			26.9			74.5			53.1	
Approach LOS		F			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	91.6		48.0	16.0	84.0		48.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	12.0	78.0		42.0	12.0	78.0		42.0
Max Q Clear Time (g_c+I1), s	3.2	23.7		44.8	10.0	80.0		33.0
Green Ext Time (p_c), s	0.0	10.8		0.0	0.1	0.0		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	70.6
HCM 2010 LOS	E

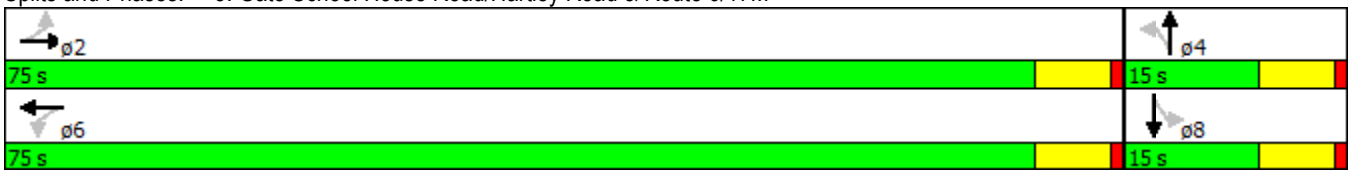
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	651	98	12	1241	18	114	9	15	26	12	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.998			0.908			0.902	
Flt Protected	0.950			0.950			0.950				0.991	
Satd. Flow (prot)	1527	1794	0	1850	1879	0	1685	1626	0	0	1250	0
Flt Permitted	0.061			0.305			0.545				0.928	
Satd. Flow (perm)	98	1794	0	594	1879	0	966	1626	0	0	1170	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			2			16			109	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	18	693	104	13	1320	19	121	10	16	28	13	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	797	0	13	1339	0	121	26	0	0	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		83	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43		43	43			43	
Detector 2 Size(ft)	40	40		40	40		40	40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	75.0	75.0		75.0	75.0		15.0	15.0		15.0	15.0	
Total Split (%)	83.3%	83.3%		83.3%	83.3%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	69.0	69.0		69.0	69.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	0.0		-2.0	0.0		-2.0	0.0			0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio	0.24	0.59		0.03	0.95		0.97	0.14			0.68	
Control Delay	10.8	6.5		2.2	24.8		114.6	24.4			30.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	10.8	6.5		2.2	24.8		114.6	24.4			30.5	
Queue Length 50th (ft)	2	143		1	486		~72	5			22	
Queue Length 95th (ft)	12	218		5	#992		#183	30			#109	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	82	1464		497	1529		125	187			221	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.22	0.54		0.03	0.88		0.97	0.14			0.68	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 85.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	651	98	12	1241	18	114	9	15	26	12	102
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1608	1831	1881	1948	1883	1948	1900	1919	1919	1872	1398	1872
Adj Flow Rate, veh/h	18	693	77	13	1320	19	121	10	16	28	13	109
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	17	3	3	0	3	3	1	0	0	0	0	0
Cap, veh/h	144	1223	136	517	1399	20	183	70	112	67	17	90
Arrive On Green	0.78	0.76	0.76	0.78	0.76	0.76	0.13	0.10	0.10	0.13	0.10	0.10
Sat Flow, veh/h	351	1619	180	728	1852	27	1289	666	1065	167	158	863
Grp Volume(v), veh/h	18	0	770	13	0	1339	121	0	26	150	0	0
Grp Sat Flow(s),veh/h/ln	351	0	1799	728	0	1878	1289	0	1731	1187	0	0
Q Serve(g_s), s	3.8	0.0	15.7	0.6	0.0	52.1	0.2	0.0	1.2	8.2	0.0	0.0
Cycle Q Clear(g_c), s	56.0	0.0	15.7	16.3	0.0	52.1	11.0	0.0	1.2	10.8	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.01	1.00		0.62	0.19		0.73
Lane Grp Cap(c), veh/h	144	0	1359	517	0	1419	183	0	182	202	0	0
V/C Ratio(X)	0.13	0.00	0.57	0.03	0.00	0.94	0.66	0.00	0.14	0.74	0.00	0.00
Avail Cap(c_a), veh/h	161	0	1446	553	0	1510	183	0	182	202	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.1	0.0	4.5	7.1	0.0	8.9	38.4	0.0	34.9	39.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.0	0.0	11.6	6.9	0.0	0.1	12.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	7.6	0.1	0.0	30.6	3.2	0.0	0.6	4.1	0.0	0.0
LnGrp Delay(d),s/veh	31.2	0.0	4.7	7.2	0.0	20.5	45.3	0.0	35.0	51.3	0.0	0.0
LnGrp LOS	C		A	A		C	D		D	D		
Approach Vol, veh/h		788			1352			147			150	
Approach Delay, s/veh		5.3			20.4			43.5			51.3	
Approach LOS		A			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		70.8		15.0		70.8		15.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		69.0		9.0		69.0		9.0
Max Q Clear Time (g_c+I1), s		58.0		13.0		54.1		12.8
Green Ext Time (p_c), s		6.8		0.0		8.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

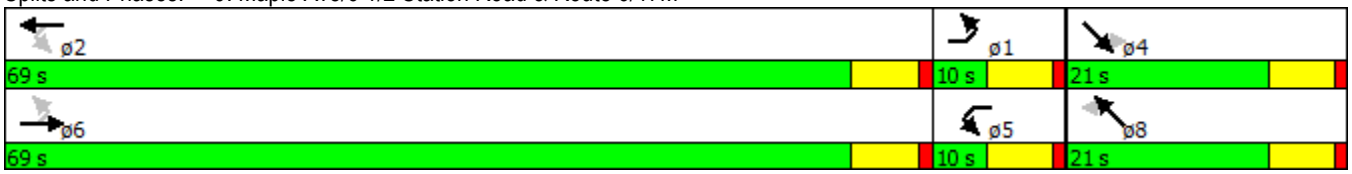
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	80	566	47	48	1152	26	16	20	68	62	33	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.997			0.912			0.983	
Flt Protected	0.950			0.950				0.992			0.972	
Satd. Flow (prot)	1832	1888	0	1796	1929	0	0	1723	0	0	1842	0
Flt Permitted	0.065			0.295				0.930			0.708	
Satd. Flow (perm)	125	1888	0	558	1929	0	0	1616	0	0	1342	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			2			76			6	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	90	636	53	54	1294	29	18	22	76	70	37	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	689	0	54	1323	0	0	116	0	0	122	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43			43			43	
Detector 2 Size(ft)	40	40		40	40			40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	10.0	69.0		10.0	69.0		21.0	21.0		21.0	21.0	
Total Split (%)	10.0%	69.0%		10.0%	69.0%		21.0%	21.0%		21.0%	21.0%	
Maximum Green (s)	4.0	63.0		4.0	63.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.59	0.57		0.10	1.02			0.44			0.73	
Control Delay	36.3	15.1		4.8	49.1			21.6			63.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	36.3	15.1		4.8	49.1			21.6			63.2	
Queue Length 50th (ft)	14	339		7	~912			23			70	
Queue Length 95th (ft)	#67	352		18	#1193			73			129	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	153	1312		530	1298			315			213	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.59	0.53		0.10	1.02			0.37			0.57	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 96.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	80	566	47	48	1152	26	16	20	68	62	33	13
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1928	1911	1948	1891	1947	1910	1862	1917	1862	1948	1928	1948
Adj Flow Rate, veh/h	90	636	31	54	1294	18	18	22	76	70	37	15
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	2	2	1	1	1	1	1	1
Cap, veh/h	136	686	33	686	1296	18	63	40	112	143	53	19
Arrive On Green	0.03	0.38	0.38	0.33	0.68	0.68	0.12	0.10	0.10	0.12	0.10	0.10
Sat Flow, veh/h	1836	1807	88	1801	1916	27	189	411	1140	840	536	193
Grp Volume(v), veh/h	90	0	667	54	0	1312	116	0	0	122	0	0
Grp Sat Flow(s),veh/h/ln	1836	0	1895	1801	0	1943	1741	0	0	1569	0	0
Q Serve(g_s), s	0.5	0.0	31.4	0.0	0.0	62.7	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	31.4	0.0	0.0	62.7	5.7	0.0	0.0	6.8	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.01	0.16		0.66	0.57		0.12
Lane Grp Cap(c), veh/h	136	0	719	686	0	1314	253	0	0	249	0	0
V/C Ratio(X)	0.66	0.00	0.93	0.08	0.00	1.00	0.46	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	156	0	1282	686	0	1314	356	0	0	344	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.7	0.0	27.7	20.7	0.0	15.0	40.4	0.0	0.0	40.3	0.0	0.0
Incr Delay (d2), s/veh	5.5	0.0	3.4	0.0	0.0	24.4	0.5	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	17.0	0.9	0.0	41.7	2.8	0.0	0.0	3.0	0.0	0.0
LnGrp Delay(d),s/veh	49.1	0.0	31.0	20.7	0.0	39.4	40.9	0.0	0.0	40.9	0.0	0.0
LnGrp LOS	D		C	C		D	D			D		
Approach Vol, veh/h		757			1366			116			122	
Approach Delay, s/veh		33.2			38.7			40.9			40.9	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	69.0		15.1	36.6	41.4		15.1
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	4.0	63.0		15.0	4.0	63.0		15.0
Max Q Clear Time (g_c+I1), s	2.5	64.7		7.7	2.0	33.4		8.8
Green Ext Time (p_c), s	0.0	0.0		0.4	0.1	2.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	29	61	27	1	28	62	71	175	1	16	187	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-2%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.908			0.999			0.999	
Flt Protected		0.988			0.999			0.986			0.996	
Satd. Flow (prot)	0	1748	0	0	1707	0	0	1835	0	0	1863	0
Flt Permitted		0.988			0.999			0.986			0.996	
Satd. Flow (perm)	0	1748	0	0	1707	0	0	1835	0	0	1863	0
Link Speed (mph)		35			30			35			30	
Link Distance (ft)		397			358			660			550	
Travel Time (s)		7.7			8.1			12.9			12.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	66	29	1	30	67	76	188	1	17	201	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	98	0	0	265	0	0	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEU	NEL	NET	NER
Vol, veh/h	0	29	61	27	0	1	28	62	0	71	175	1
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	31	66	29	0	1	30	67	0	76	188	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	NB	SB	NE
Opposing Approach	SB	NB	SW
Opposing Lanes	1	1	1
Conflicting Approach Left	NE	SW	SB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	SW	NE	NB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.3	8.7	10.5
HCM LOS	A	A	B

Lane	NELn1	NBLn1	SBLn1	SWLn1
Vol Left, %	29%	25%	1%	8%
Vol Thru, %	71%	52%	31%	92%
Vol Right, %	0%	23%	68%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	247	117	91	204
LT Vol	71	29	1	16
Through Vol	175	61	28	187
RT Vol	1	27	62	1
Lane Flow Rate	266	126	98	219
Geometry Grp	1	1	1	1
Degree of Util (X)	0.355	0.179	0.132	0.294
Departure Headway (Hd)	4.809	5.126	4.857	4.824
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	744	693	730	739
Service Time	2.874	3.205	2.94	2.892
HCM Lane V/C Ratio	0.358	0.182	0.134	0.296
HCM Control Delay	10.5	9.3	8.7	9.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.6	0.5	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Vol, veh/h	0	16	187	1
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	201	1
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	1
Conflicting Approach Left	NB
Conflicting Lanes Left	1
Conflicting Approach Right	SB
Conflicting Lanes Right	1
HCM Control Delay	9.9
HCM LOS	A

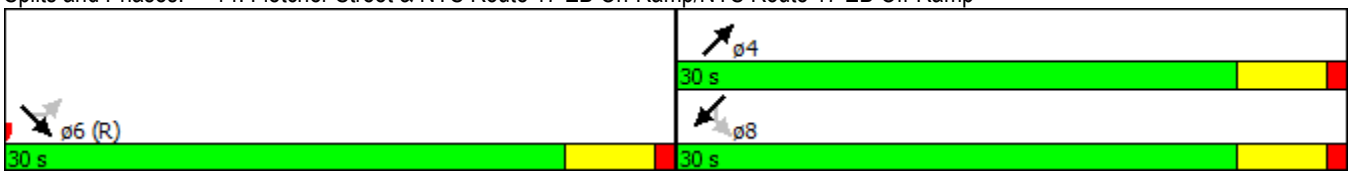
Lane

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	90	0	123	0	0	0	0	98	17	55	102	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.922						0.980				
Flt Protected		0.979									0.983	
Satd. Flow (prot)	0	1692	0	0	0	0	0	1856	0	0	1845	0
Flt Permitted		0.979									0.865	
Satd. Flow (perm)	0	1692	0	0	0	0	0	1856	0	0	1624	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		140						18				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			394			164			327	
Travel Time (s)		9.0			9.0			3.7			7.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	0%	2%	2%	0%	2%
Adj. Flow (vph)	105	0	143	0	0	0	0	114	20	64	119	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	248	0	0	0	0	0	134	0	0	183	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		6						4			8	
Permitted Phases	6									8		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	30.0	30.0						30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	25.0	25.0						25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0						4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.32						0.17			0.27	
Control Delay		6.6						10.2			9.0	
Queue Delay		0.0						0.0			0.0	
Total Delay		6.6						10.2			9.0	
Queue Length 50th (ft)		23						25			26	
Queue Length 95th (ft)		58						52			44	
Internal Link Dist (ft)		317			314			84			247	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)		786						783			676	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.32						0.17			0.27	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2: and 6:SETL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 14: Fletcher Street & NYS Route 17 EB On-Ramp/NYS Route 17 EB Off-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	90	0	123	0	0	0	0	98	17	55	102	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1890	1875	1890				0	1894	1900	1890	1877	0
Adj Flow Rate, veh/h	105	0	143				0	114	20	64	119	0
Adj No. of Lanes	0	1	0				0	1	0	0	1	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	295	0	401				0	654	115	280	486	0
Arrive On Green	0.42	0.00	0.42				0.00	0.42	0.42	0.83	0.83	0.00
Sat Flow, veh/h	707	0	963				0	1570	275	478	1166	0
Grp Volume(v), veh/h	248	0	0				0	0	134	183	0	0
Grp Sat Flow(s),veh/h/ln	1669	0	0				0	0	1846	1644	0	0
Q Serve(g_s), s	6.1	0.0	0.0				0.0	0.0	2.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	0.0				0.0	0.0	2.7	1.2	0.0	0.0
Prop In Lane	0.42		0.58				0.00		0.15	0.35		0.00
Lane Grp Cap(c), veh/h	696	0	0				0	0	769	766	0	0
V/C Ratio(X)	0.36	0.00	0.00				0.00	0.00	0.17	0.24	0.00	0.00
Avail Cap(c_a), veh/h	696	0	0				0	0	769	766	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.0	0.0	0.0				0.0	0.0	11.0	3.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0				0.0	0.0	0.5	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0				0.0	0.0	1.5	0.7	0.0	0.0
LnGrp Delay(d),s/veh	13.4	0.0	0.0				0.0	0.0	11.5	3.8	0.0	0.0
LnGrp LOS	B								B	A		
Approach Vol, veh/h		248						134			183	
Approach Delay, s/veh		13.4						11.5			3.8	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		30.0		30.0
Change Period (Y+Rc), s				5.0		5.0		5.0
Max Green Setting (Gmax), s				25.0		25.0		25.0
Max Q Clear Time (g_c+I1), s				4.7		8.1		3.2
Green Ext Time (p_c), s				1.6		1.2		1.6

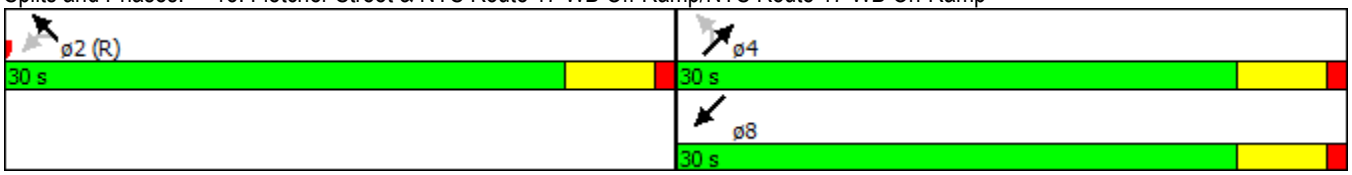
Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	35	0	61	36	152	0	0	123	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			1%			1%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.914						0.947	
Flt Protected					0.982			0.991				
Satd. Flow (prot)	0	0	0	0	1685	0	0	1873	0	0	1794	0
Flt Permitted					0.982			0.915				
Satd. Flow (perm)	0	0	0	0	1685	0	0	1730	0	0	1794	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					68						66	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			385			327			478	
Travel Time (s)		8.1			8.8			7.4			10.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	2%	2%	0%	2%
Adj. Flow (vph)	0	0	0	39	0	68	40	169	0	0	137	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	107	0	0	209	0	0	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					2			4			8	
Permitted Phases				2			4					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				30.0	30.0		30.0	30.0			30.0	
Total Split (%)				50.0%	50.0%		50.0%	50.0%			50.0%	
Maximum Green (s)				25.0	25.0		25.0	25.0			25.0	
Yellow Time (s)				4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.14			0.29			0.29	
Control Delay					5.8			10.9			9.2	
Queue Delay					0.0			0.0			0.0	
Total Delay					5.8			10.9			9.2	
Queue Length 50th (ft)					8			38			35	
Queue Length 95th (ft)					33			71			75	
Internal Link Dist (ft)		277			305			247			398	
Turn Bay Length (ft)												

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Base Capacity (vph)					741			720			786	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.14			0.29			0.29	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	

Splits and Phases: 15: Fletcher Street & NYS Route 17 WB Off-Ramp/NYS Route 17 WB On-Ramp



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	35	0	61	36	152	0	0	123	79
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1890	1877	1890	1890	1890	0	0	1895	1910
Adj Flow Rate, veh/h				39	0	68	40	169	0	0	137	88
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				252	0	440	164	638	0	0	450	289
Arrive On Green				0.42	0.00	0.42	0.83	0.83	0.00	0.00	0.42	0.42
Sat Flow, veh/h				605	0	1055	222	1531	0	0	1079	693
Grp Volume(v), veh/h				107	0	0	209	0	0	0	0	225
Grp Sat Flow(s),veh/h/ln				1660	0	0	1753	0	0	0	0	1772
Q Serve(g_s), s				2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1
Cycle Q Clear(g_c), s				2.4	0.0	0.0	1.4	0.0	0.0	0.0	0.0	5.1
Prop In Lane				0.36		0.64	0.19		0.00	0.00		0.39
Lane Grp Cap(c), veh/h				692	0	0	802	0	0	0	0	738
V/C Ratio(X)				0.15	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.30
Avail Cap(c_a), veh/h				692	0	0	802	0	0	0	0	738
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				10.9	0.0	0.0	3.0	0.0	0.0	0.0	0.0	11.7
Incr Delay (d2), s/veh				0.5	0.0	0.0	0.8	0.0	0.0	0.0	0.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.0	0.9	0.0	0.0	0.0	0.0	2.7
LnGrp Delay(d),s/veh				11.4	0.0	0.0	3.8	0.0	0.0	0.0	0.0	12.8
LnGrp LOS				B			A					B
Approach Vol, veh/h					107			209			225	
Approach Delay, s/veh					11.4			3.8			12.8	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		30.0				30.0
Change Period (Y+Rc), s		5.0		5.0				5.0
Max Green Setting (Gmax), s		25.0		25.0				25.0
Max Q Clear Time (g_c+I1), s		4.4		3.4				7.1
Green Ext Time (p_c), s		0.5		2.3				2.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consutling P.A.
Date performed:	8/18/2015
Analysis time period:	Wknd. Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	Interstate 84 Westbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Westbound On-Ramp from NYS Route 17M Eastbound

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	977	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	101	vph
Length of first accel/decel lane	490	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	264	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	820	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	977	101	264	vph
Peak-hour factor, PHF	0.92	0.92	0.96	
Peak 15-min volume, v15	265	27	69	v
Trucks and buses	1	1	3	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.990	0.990	0.971	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1073	111	283	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1073 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1073	4500	No
$v_{FO} = v_F - v_R$	962	4500	No
v_R	111	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1073 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1073	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 9.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.438

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wknd. Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Weaving Location:	I-84 Eastbound/Westbound
Analysis Year:	2033 Build Traffic Volumes
Description:	Rt 17M Weave w/ I-84 WB Off & EB On Ramps

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	760	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	651	264	326	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.96	
Peak 15-min volume, v15	170	69	85	0	
Trucks and buses	3	3	4	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.971	0.971	0.962	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	698	283	353	0	pc/h

Volume ratio, VR 0.477

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	636	lc/h
Weaving lane changes, LCW	711	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	711	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.214

Average weaving speed, SW	47.9	mi/h
Average non-weaving speed, SNW	48.3	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	48.1	mi/h
Weaving segment density, D	9.2	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.265	
Weaving segment flow rate, v	1293	veh/h
Weaving segment capacity, cW	4887	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7556	760	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1730	c
		Maximum	Analyzed	
v/c ratio		1.00	0.265	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wknd. Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Eastbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 Eastbound Off Ramp to Route 17M Eastbound

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	915	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	383	vph
Length of first accel/decel lane	325	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	326	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	790	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	915	383	326	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	246	103	84	v
Trucks and buses	3	4	4	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.962	0.962	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1013	428	350	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1013 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1441	4500	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 1013 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1441	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 14.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.315	
Space mean speed in ramp influence area,	S_R = 50.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 50.9	mph

HCS 2010: Freeway Weaving Release 6.65

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date Performed:	8/18/2015
Analysis Time Period:	Wknd. Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Westbound
Weaving Location:	I-84 Eastbound & Westbound
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB Off Ramp & WB On Ramp to RT 17M WB

Inputs

Segment Type	C-D Roadway/ Multilane Highways	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	805	ft
Freeway free-flow speed, FFS	55	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2250	pc/h/ln
Terrain type	Rolling	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	586	92	198	0	veh/h
Peak hour factor, PHF	0.96	0.96	0.96	0.94	
Peak 15-min volume, v15	153	24	52	0	
Trucks and buses	2	2	2	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.980	0.980	0.980	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	623	98	210	0	pc/h

Volume ratio, VR 0.331

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	308	lc/h
Weaving lane changes, LCW	387	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	387	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W 0.127

Average weaving speed, SW	50.5	mi/h
Average non-weaving speed, SNW	51.3	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	51.0	mi/h
Weaving segment density, D	6.1	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.167	
Weaving segment flow rate, v	913	veh/h
Weaving segment capacity, cW	5468	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5917	805	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2250	1859	c
		Maximum	Analyzed	
v/c ratio		1.00	0.167	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RGD
Agency/Co.:	Maser Consulting, P.A.
Date performed:	8/18/2015
Analysis time period:	Wknd. Aftn. Evnt. Entry
Freeway/Dir of Travel:	NYS Route 17M Westbound
Junction:	I-84 Eastbound
Jurisdiction:	
Analysis Year:	2033 FullBuild Traffic Volumes
Description:	I-84 EB On Ramp from NYS Route 17M WB

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	55.0	mph
Volume on freeway	784	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	139	vph
Length of first accel/decel lane	175	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	92	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	550	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	784	139	92	vph
Peak-hour factor, PHF	0.93	0.93	0.97	
Peak 15-min volume, v15	211	37	24	v
Trucks and buses	3	3	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Rolling	Rolling	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.0*	2.0*	2.0*	
Recreational vehicle PCE, ER	2.0*	2.0	2.0	

Heavy vehicle adjustment, fHV	0.971	0.971	0.980	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	868	154	97	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 868 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	868	4500	No
$v_{FO} = v_F - v_R$	714	4500	No
v_R	154	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 868 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	868	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 10.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.442

Space mean speed in ramp influence area, S_R = 49.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 49.3 mph

AMY'S KITCHEN & SCIENCE OF THE SOUL

APPENDIX F

ACCIDENT DATA

AMY'S KITCHEN & SCIENCE OF THE SOUL

STATE ACCIDENT DATA
DECEMBER 1, 2010 TO NOVEMBER 30, 2013

TABLE NO. A

ACCIDENT SUMMARY
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
6 8301 2156		07/03/12	5:00 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Left Turn	N/A
6 8301 2156		11/01/12	2:30 PM	None	PDO & I	2-1	Daylight	Dry	Cloudy	Left Turn	Turning Improper
6 8301 2157		04/08/13	10:25 PM	None	N/R	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2157		04/08/13	10:25 PM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2157		09/06/13	7:30 AM	None	PDO	2-0	Daylight	Dry	Clear	Overtaking	Unsafe Lane Change
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	12/13/10	12:55 PM	Stop Sign	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	03/11/11	8:53 PM	Stop Sign	N/R	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	03/20/11	12:35 PM	Stop Sign	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	04/21/11	11:00 AM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	06/03/11	6:45 PM	Stop Sign	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	08/29/11	5:45 PM	Stop Sign	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	01/13/12	5:45 PM	Stop Sign	PDO	2-0	Dark-Road Unlighted	Dry	Cloudy	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	01/19/12	7:52 AM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention, Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	02/09/12	1:25 PM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Right Turn	Failure To Yield Right of Way, Turning Improper
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	07/02/12	12:15 PM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	07/20/12	6:15 PM	Stop Sign	N/R	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	01/17/13	6:38 PM	Stop Sign	PDO	2-0	Dark-Road Unlighted	Dry	Cloudy	Rear End	Driver Inattention, Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	02/13/13	6:00 PM	Stop Sign	N/R	2-0	Dark-Road Unlighted	Dry	Cloudy	Rear End	Driver Inattention
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	05/03/13	8:45 AM	Stop Sign	I	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	06/28/13	3:11 PM	Stop Sign	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	09/17/13	8:10 AM	Stop Sign	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	10/15/13	10:45 AM	Stop Sign	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	10/29/13	9:25 AM	Stop Sign	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	11/02/13	2:40 PM	Stop Sign	N/R	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention, Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	11/07/13	12:00 PM	Stop Sign	N/R	2-0	Daylight	Wet	Cloudy	Rear End	Pavement Slippery, Unsafe Speed
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	11/07/13	2:28 PM	Stop Sign	N/R	2-0	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	11/19/13	6:15 PM	Stop Sign	N/R	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	11/23/13	2:30 PM	Stop Sign	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	11/25/13	5:15 PM	Stop Sign	N/R	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Following Too Closely
6 8301 2157	at Int. with I-84 WB Off-Ramp to Rt. 6 WB	11/27/13	5:45 PM	Stop Sign	PDO	2-0	Dark-Road Unlighted	Wet	Rain	Rear End	Following Too Closely
6 8301 2158		10/31/11	4:02 PM	Stop Sign	I	2-1	Unknown	Unknown	Uknown	Rear End	N/A
6 8301 2158		10/11/13	5:04 AM	No Passing Zone	PDO & I	2-3	Dark-Road Unlighted	Dry	Clear	Left Turn	Turning Improper, Traffic Control Devices Disregarded
6 8301 2159		08/11/11	7:30 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2159		10/05/12	1:30 PM	None	PDO	2-0	Daylight	Dry	Clear	Right Angle	Unsafe Lane Change
6 8301 2160		03/10/11	3:50 PM	None	PDO	2-0	Daylight	Wet	Rain	Overtaking	Unsafe Lane Change
6 8301 2160		01/18/13	11:00 PM	None	PDO & I	2-2	Dark-Road Unlighted	Dry	Clear	Head On	N/A
6 8301 2161		07/11/11	4:29 PM	None	N/R	1-0	Daylight	Dry	Clear	Other	Alcohol Involvement, Unsafe Lane Change
6 8301 2161	at Int. With Bates Gates Rd.	06/28/11	3:55 PM	None	PDO	1-0	Daylight	Dry	Cloudy	Other	Steering Failure
6 8301 2161	at Int. With Bates Gates Rd.	07/06/13	9:00 PM	None	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Left Turn	N/A
6 8301 2162		02/06/11	6:15 AM	None	N/R	2-0	Daylight	Snow/Ice	Clear	Right Angle	Pavement Slippery, Unsafe Speed
6 8301 2162		05/02/11	4:45 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Right Angle	Failure To Yield Right of Way
6 8301 2162		10/28/12	5:00 PM	None	N/R	2-0	Daylight	Dry	Cloudy	Overtaking	Failure To Yield Right of Way

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

TABLE NO. A

ACCIDENT SUMMARY
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
6 8301 2162	At Intersection With Mohin Park	06/21/12	11:25 AM	No Passing Zone	N/R	2-0	Daylight	Dry	Clear	Overtaking	Passing or Lane Usage Improperly
6 8301 2162	At Intersection With Dassori Rd	06/14/11	11:29 AM	None	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention
6 8301 2165		03/22/11	4:00 PM	None	PDO	2-0	Daylight	Dry	Cloudy	Head On	Driver Inexperience
6 8301 2165		10/27/11	1:50 PM	None	PDO & I	2-3	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2165		02/09/12	10:05 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Left Turn	Failure To Yield Right of Way
6 8301 2165		02/10/12	12;33 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2165		06/11/13	3:30 PM	None	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
6 8301 2165		09/30/13	9:51 AM	Unknown	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2165	At Intersection With Ryerson Rd	07/14/11	12:05 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Passing or Lane Usage Improperly
6 8301 2165	At Intersection With Ryerson Rd	08/21/12	2:03 PM	None	PDO	1-0	Daylight	Dry	Clear	Other	Reaction To Other Involved Vehicle
6 8301 2166		07/01/11	4:40 PM	None	PDO	3-0	Daylight	Dry	Clear	Other	Brakes Defective
6 8301 2166		10/19/12	6:19 AM	None	PDO & I	3-3	Dark-Road Lighted	Wet	Rain	Other	Brakes Defective, Passing or Lane Usage Improperly
6 8301 2166		07/11/13	5:26 PM	Unknown	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inexperience, Following Too Closely
6 8301 2166		11/30/13	4:20 PM	None	PDO	2-0	Dusk	Dry	Clear	Right Angle	View Obstructed/Limited, Failure To Yield Right of Way
6 8301 2167		01/27/11	11:50 AM	None	N/R	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention, Following Too Closely
6 8301 2167		10/14/11	3:35 PM	No Passing Zone	PDO & I	2-1	Daylight	Wet	Rain	Rear End	Driver Inexperience, Driver Inattention
6 8301 2167		07/24/12	9:40 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Cloudy	Overtaking	Driver Inattention, Passing or Lane Usage Improperly
6 8301 2167		09/25/12	12:00 AM	Unknown	N/R	1-0	Dark-Road Unlighted	Dry	Clear	Other	N/A
6 8301 2167		10/02/12	11:15 AM	None	N/R	2-0	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2169		12/17/12	7:25 PM	None	PDO	1-0	Dark-Road Unlighted	Wet	Rain	Other	Animal's Action
6 8301 2169		06/27/13	3:30 AM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Fog/Smog	Other	Animal's Action
6 8301 2170		08/10/10	2:18 AM	None	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Overtaking	Driver Inattention
6 8301 2170		09/09/11	5:28 PM	No Passing Zone	PDO & I	3-1	Daylight	Dry	Clear	Other	Following Too Closely
6 8301 2170		11/01/13	9:20 AM	None	PDO & I	1-1	Daylight	Wet	Clear	Other	Unsafe Speed
6 8301 2171		09/02/10	7:58 AM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2171		02/27/11	9:45 AM	Traffic Signal	PDO & I	2-1	Daylight	Wet	Clear	Rear End	Driver Inattention
6 8301 2171		04/20/11	6:20 PM	Traffic Signal	PDO & I	2-2	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2171		07/14/11	2:30 PM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2171		08/01/11	7:00 AM	No Passing Zone	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
6 8301 2171		01/15/13	5:20 PM	Traffic Signal	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Following Too Closely
6 8301 2171		04/03/13	3:45 PM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2171		05/07/13	7:30 AM	None	PDO & I	1-1	Daylight	Dry	Clear	Other	Fell Asleep
6 8301 2171		09/04/13	2:30 PM	None	I	5-2	Daylight	Dry	Clear	Other	Following Too Closely
6 8301 2171		10/18/13	8:50 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2171		11/19/13	6:40 PM	Traffic Signal	PDO & I	3-3	Dawn	Dry	Clear	Other	Fell Asleep
6 8301 2171		03/21/14	8:30 AM	None	PDO	3-0	Daylight	Dry	Clear	Other	Following Too Closely

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

TABLE NO. A

ACCIDENT SUMMARY
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
6 8301 2171	at Int. C.R. 50/C.R. 12	10/04/10	10:55 PM	None	N/R	2-0	Dark-Road Unlighted	Unknown	Uknown	Overtaking	Unsafe Lane Change
6 8301 2171	at Int. C.R. 50/C.R. 12	08/07/11	3:15 PM	Traffic Signal	PDO & I	2-1	Daylight	Wet	Rain	Left Turn	Other (Vehicle)
6 8301 2171	at Int. C.R. 50/C.R. 12	10/13/11	12:00 PM	Traffic Signal	PDO	2-0	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2171	at Int. C.R. 50/C.R. 12	10/17/11	6:05 AM	Traffic Signal	PDO & I	1-1	Dark-Road Unlighted	Dry	Clear	Other	Turning Improper
6 8301 2171	at Int. C.R. 50/C.R. 12	10/21/11	12:03 PM	Traffic Signal	N/R	2-0	Daylight	Dry	Cloudy	Right Angle	N/A
6 8301 2171	at Int. C.R. 50/C.R. 12	12/15/11	11:10 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2171	at Int. C.R. 50/C.R. 12	01/27/12	3:00 PM	Traffic Signal	PDO & I	2-1	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2171	at Int. C.R. 50/C.R. 12	05/30/12	8:45 AM	None	I	3-1	Unknown	Unknown	Uknown	Other	N/A
6 8301 2171	at Int. C.R. 50/C.R. 12	08/01/12	9:30 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Left Turn	Failure to Yield Right of Way
6 8301 2171	at Int. C.R. 50/C.R. 12	09/10/12	5:26 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Right Angle	Turning Improper
6 8301 2171	at Int. C.R. 50/C.R. 12	12/30/12	3:50 PM	None	PDO & I	2-1	Daylight	Dry	Cloudy	Rear End	Alcohol Involvement
6 8301 2171	at Int. C.R. 50/C.R. 12	04/05/13	6:00 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2171	at Int. C.R. 50/C.R. 12	05/15/13	2:30 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Left Turn	Failure to Yield Right of Way
6 8301 2171	at Int. C.R. 50/C.R. 12	10/28/13	9:30 PM	Traffic Signal	PDO	2-0	Dark-Road Unlighted	Dry	Cloudy	Left Turn	Failure to Yield Right of Way
6 8301 2171	at Int. C.R. 50/C.R. 12	10/31/13	8:54 PM	Traffic Signal	PDO & I	2-1	Dark-Road Unlighted	Wet	Rain	Left Turn	Failure to Yield Right of Way
6 8301 2171	at Int. C.R. 50/C.R. 12	01/27/14	10:20 AM	Traffic Signal	PDO	2-0	Daylight	Wet	Cloudy	Rear End	Following Too Closely
6 8301 2172		02/06/11	11:15 AM	Traffic Signal	PDO & I	2-1	Daylight	Wet	Cloudy	Right Angle	Failure to Yield Right of Way
6 8301 2172		02/19/11	1:16 PM	Traffic Signal	PDO & I	2-2	Daylight	Dry	Cloudy	Right Angle	Traf Cntrl Dev Improper/Non-Wrking
6 8301 2172		02/24/11	7:30 PM	Traffic Signal	N/R	1-0	Dark-Road Lighted	Wet	Rain	Other	Obstruction (Debris)
6 8301 2172		06/10/11	1:15 PM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2172		06/14/11	11:29 AM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Cloudy	Rear End	Fell Asleep
6 8301 2172		08/19/11	11:00 PM	Traffic Signal	N/R	2-0	Dark-Road Lighted	Dry	Cloudy	Left Turn	Alcohol Involvement
6 8301 2172		09/27/11	7:15 PM	Traffic Signal	PDO	2-0	Dusk	Wet	Cloudy	Rear End	Unsafe Speed
6 8301 2172		12/05/11	10:45 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2172		12/27/11	5:55 PM	Traffic Signal	N/R	2-0	Dark-Road Unlighted	Wet	Rain	Rear End	Backing Unsafely
6 8301 2172		02/23/12	1:08 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Right Angle	Traffic Control Devices Disregarded Other (Vehicle)
6 8301 2172		10/01/12	6:15 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Fell Asleep
6 8301 2172		03/12/13	11:00 AM	Traffic Signal	PDO & I	2-1	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2172		04/20/13	3:45 PM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2172		06/09/13	9:40 PM	Traffic Signal	PDO & I	2-2	Dark-Road Unlighted	Dry	Cloudy	Head On	Failure to Yield Right of Way
6 8301 2172		02/06/11	11:15 AM	Traffic Signal	I	2-1	Daylight	Wet	Cloudy	Right Angle	Failure to Yield Right of Way
6 8301 2172		04/03/14	7:45 PM	None	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
6 8301 2174		04/01/11	2:47 PM	None	PDO & I	3-2	Daylight	Wet	Snow	Other	Following Too Closely
6 8301 2174		07/12/12	6:10 PM	No Passing Zone	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2175		10/20/10	4:43 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2175		11/17/10	10:50 PM	No Passing Zone	N/R	1-0	Dark-Road Lighted	Dry	Clear	Other	Animal's Action
6 8301 2175		12/03/11	5:35 AM	None	N/R	2-0	Dark-Road Unlighted	Dry	Clear	Overtaking	Driver Inattention
6 8301 2175		12/13/13	6:50 AM	None	PDO & I	2-1	Dawn	Dry	Clear	Rear End	Driver Inattention
6 8301 2176		09/24/10	8:05 AM	No Passing Zone	PDO & I	2-2	Daylight	Dry	Cloudy	Head On	Fell Asleep
6 8301 2176		10/21/11	9:00 PM	None	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
6 8301 2176		03/15/14	7:00 AM	None	PDO	1-0	Dawn	Dry	Cloudy	Other	Animal's Action
6 8301 2176		11/21/10	2:25 PM	No Passing Zone	N/R	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
6 8301 2176		01/15/11	2:33 PM	No Passing Zone	PDO & I	3-1	Daylight	Dry	Cloudy	Other	Obstruction (Debris), Driver Inattention
6 8301 2176		02/26/11	5:15 AM	No Passing Zone	PDO & I	1-1	Dark-Road Unlighted	Dry	Clear	Other	Fell Asleep
6 8301 2176		08/02/11	2:39 PM	None	PDO & I	1-1	Daylight	Dry	Cloudy	Other	Reaction to Other Uninvolved Vehicl Not Applicable
6 8301 2176		01/19/13	2:20 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

TABLE NO. A

ACCIDENT SUMMARY
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
6 8301 2177	at Int. with Psychiatric Center Drive	11/15/10	5:15 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2177	at Int. with Psychiatric Center Drive	11/19/10	11:10 AM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2177	at Int. with Psychiatric Center Drive	01/07/11	11:00 AM	None	PDO	1-0	Daylight	Snow/Ice	Snow	Other	Unknown
6 8301 2177	at Int. with Psychiatric Center Drive	02/27/11	8:55 PM	Traffic Signal	N/R	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2177	at Int. with Psychiatric Center Drive	07/22/11	8:00 PM	Traffic Signal	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
6 8301 2177	at Int. with Psychiatric Center Drive	10/24/11	3:34 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Rear End	N/A
6 8301 2177	at Int. with Psychiatric Center Drive	01/03/12	1:35 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2177	at Int. with Psychiatric Center Drive	05/04/12	4:40 PM	Traffic Signal	N/R	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
6 8301 2177	at Int. with Psychiatric Center Drive	07/14/12	11:40 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Texting
6 8301 2177	at Int. with Psychiatric Center Drive	10/24/12	4:06 AM	Traffic Signal	F	2-1	Dark-Road Unlighted	Wet	Rain	Right Angle	Driver Inattention
6 8301 2177	at Int. with Psychiatric Center Drive	10/27/12	12:20 PM	None	N/R	2-0	Daylight	Dry	Cloudy	Overtaking	Failure to Yield Right of Way
6 8301 2177	at Int. with Psychiatric Center Drive	11/22/12	7:00 AM	None	PDO	1-0	Daylight	Wet	Cloudy	Other	Animal's Action
6 8301 2177	at Int. with Psychiatric Center Drive	06/06/13	3:37 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2177	at Int. with Psychiatric Center Drive	06/20/13	9:27 PM	None	PDO & I	1-1	Dark-Road Unlighted	Dry	Clear	Other	Passing or Lane Usage Improperly
6 8301 2177	at Int. with Psychiatric Center Drive	07/18/13	9:45 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Overtaking	Driver Inattention
6 8301 2177	at Int. with Psychiatric Center Drive	09/17/13	12:48 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2177	at Int. with Psychiatric Center Drive	01/05/14	8:00 PM	Traffic Signal	PDO & I	2-1	Dark-Road Lighted	Snow/Ice	Sleet	Left Turn	Pavement Slippery
6 8301 2178		12/09/10	12:30 PM	No Passing Zone	PDO & I	2-2	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2178		07/11/11	2:45 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Reaction to Other Uninvolved Vehicle, Following Too Closely
6 8301 2178		02/04/12	7:22 PM	No Passing Zone	PDO & I	1-2	Dark-Road Lighted	Dry	Clear	Other	Fatigued/Drowsy
6 8301 2178		01/03/12	5:55 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2178		03/05/12	8:00 AM	None	PDO	3-0	Daylight	Dry	Clear	Other	Driver Inattention
6 8301 2178		04/01/13	12:30 PM	None	N/R	1-0	Daylight	Dry	Cloudy	Other	Animal's Action
6 8301 2178		07/14/13	11:01 AM	No Passing Zone	PDO & I	3-3	Daylight	Dry	Clear	Other	Following Too Closely
6 8301 2178		08/26/13	10:44 AM	Stop Sign	PDO	2-0	Daylight	Dry	Cloudy	Overtaking	Other (Vehicle)
6 8301 2178		09/20/13	11:40 PM	None	PDO	2-0	Dark-Road Lighted	Dry	Clear	Left Turn	Failure to Yield Right of Way
6 8301 2178		09/25/13	5:15 PM	No Passing Zone	N/R	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention
6 8301 2178		12/12/13	10:45 AM	None	PDO & I	3-7	Daylight	Dry	Clear	Other	Following Too Closely
6 8301 2179		08/21/10	9:00 AM	None	N/R	3-0	Daylight	Dry	Clear	Other	Passing or Lane Usage Improperly
6 8301 2179		12/21/10	2:00 PM	None	N/R	2-0	Daylight	Dry	Clear	Overtaking	Passing or Lane Usage Improperly
6 8301 2179		06/21/12	8:42 AM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2179		12/07/12	9:16 AM	None	F	2-2	Daylight	Snow/Ice	Snow	Rear End	Failure to Keep Right
6 8301 2179		01/13/13	4:00 AM	None	PDO & I	1-1	Dark-Road Unlighted	Dry	Fog/Smog	Other	Animal's Action
6 8301 2179		11/29/13	1:40 PM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Right Angle	Driver Inattention
6 8301 2180		09/01/10	3:35 PM	None	N/R	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2180		07/17/12	8:00 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Other	Turning Improper
6 8301 2180		09/06/13	6:45 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2180		11/15/13	6:33 PM	No Passing Zone	PDO	3-0	Dark-Road Unlighted	Dry	Clear	Other	Obstruction/Debris, Animal's Action
6 8301 2181		11/02/10	11:45 PM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2181		05/01/12	1:45 PM	None	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Slowed or Stopping, Driver Inattention
6 8301 2181		10/07/12	2:40 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2181		10/25/12	10:30 AM	None	N/R	2-0	Daylight	Wet	Cloudy	Rear End	Backing Unsafely
6 8301 2181		12/06/12	5:30 AM	None	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Driver Inattention
6 8301 2182		11/13/13	8:10 PM	No Passing Zone	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2183		01/23/14	5:15 PM	No Passing Zone	N/R	2-0	Dark-Road Unlighted	Dry	Cloudy	Rear End	Driver Inattention

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

TABLE NO. A

ACCIDENT SUMMARY
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
6 8301 2184		11/21/13	7:50 AM	Traffic Signal	N/R	2-0	Daylight	Dry	Clear	Rear End	Illness
6 8301 2185		02/18/11	6:19 AM	No Passing Zone	PDO	1-0	Dusk	Dry	Clear	Other	Animal's Action
6 8301 2185		07/15/11	9:25 AM	None	PDO	3-0	Daylight	Wet	Clear	Other	Driver Inattention
6 8301 2185		09/08/11	4:20 AM	None	PDO	1-0	Dark-Road Unlighted	Flooded Water	Rain	Other	Obstruction/Debris
6 8301 2185		05/09/12	1:10 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2185		06/24/12	1:40 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2185		10/19/12	5:40 PM	None	PDO	4-0	Daylight	Wet	Rain	Other	Pavement Slippery
6 8301 2185		03/25/13	5:40 PM	No Passing Zone	I	2-4	Daylight	Dry	Cloudy	Head On	Driver Inattention
6 8301 2185		04/06/13	3:00 PM	None	N/R	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2186		06/02/11	10:30 AM	Traffic Signal	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
6 8301 2186		01/04/12	3:55 PM	No Passing Zone	N/R	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention
6 8301 2186		11/06/12	12:40 AM	Traffic Signal	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2186		05/23/13	7:00 AM	None	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2186	at Int. with Hartley Rd.	02/09/11	2:43 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention
6 8301 2186	at Int. with Hartley Rd.	02/26/11	9:50 AM	Utility Work Area	PDO	2-0	Daylight	Dry	Clear	Overtaking	N/A
6 8301 2186	at Int. with Hartley Rd.	04/13/11	11:10 AM	Traffic Signal	PDO	2-0	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2186	at Int. with Hartley Rd.	02/10/12	12:45 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2186	at Int. with Hartley Rd.	05/15/12	3:10 PM	Traffic Signal	PDO	2-0	Daylight	Wet	Cloudy	Rear End	Following Too Closely
6 8301 2186	at Int. with Hartley Rd.	05/25/12	7:30 PM	None	PDO & I	3-3	Daylight	Dry	Clear	Other	Following Too Closely
6 8301 2186	at Int. with Hartley Rd.	06/07/12	2:40 PM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2186	at Int. with Hartley Rd.	08/23/13	12:40 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Overtaking	Passing or Lane Usage Improperly, Unsafe Lan Change
6 8301 2186	at Int. with Hartley Rd.	12/31/13	5:05 PM	Traffic Signal	PDO	4-0	Dark-Road Unlighted	Snow/Ice	Snow	Other	Pavement Slippery
6 8301 2187		02/03/11	11:04 AM	None	PDO & I	3-3	Daylight	Wet	Clear	Other	Following Too Closely
6 8301 2187		07/01/11	12:05 PM	Traffic Signal	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2187		07/01/11	11:50 AM	Traffic Signal	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2187		07/11/11	10:25 AM	None	PDO	2-0	Daylight	Dry	Clear	Left Turn	N/A
6 8301 2187		07/18/11	7:45 AM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2187		08/25/11	9:50 AM	Traffic Signal	PDO	3-0	Daylight	Wet	Rain	Other	Pavement Slippery
6 8301 2187		10/14/11	1:15 PM	No Passing Zone	PDO & I	2-2	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2187		10/09/13	7:35 AM	Traffic Signal	N/R	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2188		12/11/10	7:30 AM	None	N/R	1-0	Dawn	Dry	Clear	Other	Animal's Action
6 8301 2188		07/29/11	1:45 PM	Traffic Signal	I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2188		08/12/11	2:55 PM	Traffic Signal	PDO & I	3-1	Daylight	Dry	Clear	Other	Following Too Closely
6 8301 2188		10/03/11	10:45 PM	Traffic Signal	PDO	1-0	Dark-Road Lighted	Dry	Cloudy	Other	Animal's Action
6 8301 2189		08/06/12	3:45 PM	None	PDO	2-0	Daylight	Dry	Clear	Other	Backing Unsafely
6 8301 2189		10/31/12	10:00 PM	No Passing Zone	PDO	1-0	Dark-Road Lighted	Dry	Clear	Other	Animal's Action
6 8301 2189		04/11/14	8:15 AM	None	PDO	3-0	Daylight	Dry	Cloudy	Other	Driver Inattention
6 8301 2190		07/07/11	9:40 PM	None	N/R	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
6 8301 2190		11/28/12	7:50 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
6 8301 2190		01/16/13	4:30 AM	None	PDO	1-0	Dark-Road Unlighted	Snow/Ice	Snow	Other	Pavement Slippery

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

TABLE NO. A

ACCIDENT SUMMARY
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
6 8301 2191		12/04/10	7:30 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2191		12/14/11	2:32 PM	None	PDO	2-0	Daylight	Dry	Clear	Other	Tire Failure/Inadequate
6 8301 2191		07/30/12	12:40 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2191		05/30/13	11:20 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2191		01/23/14	5:00 PM	No Passing Zone	PDO	3-0	Dusk	Dry	Cloudy	Other	Passing or Lane Usage Improperly
6 8301 2192		11/04/10	11:35 AM	None	PDO	2-0	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2192		09/23/11	4:05 PM	No Passing Zone	N/R	2-0	Daylight	Unknown	Uknown	Rear End	Pavement Slippery
6 8301 2192		10/15/11	1:10 PM	None	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention
6 8301 2193		10/24/11	8:40 AM	No Passing Zone	PDO & I	3-1	Daylight	Dry	Cloudy	Other	Following Too Closely
6 8301 2193		11/14/11	4:50 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
6 8301 2193		02/08/12	2:29 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
6 8301 2193		03/23/12	9:10 AM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2193		04/17/12	8:25 AM	No Passing Zone	PDO & I	2-11	Daylight	Dry	Clear	Rear End	N/A
6 8301 2193		10/11/12	4:45 PM	No Passing Zone	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2193		12/21/13	3:50 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Alcohol Involvement
6 8301 2194		12/22/10	3:02 PM	None	I	5-1	Daylight	Dry	Cloudy	Other	Other (Vehicle)
6 8301 2194		01/06/12	5:40 PM	None	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Driver Inattention
6 8301 2195		04/13/11	5:00 PM	No Passing Zone	PDO	2-0	Daylight	Wet	Rain	Overtaking	Following Too Closely
6 8301 2195		02/04/13	11:40 PM	No Passing Zone	PDO & I	1-1	Dark-Road Unlighted	Dry	Cloudy	Other	Fell Asleep
6 8301 2195		02/25/13	8:30 AM	Traffic Signal	PDO	3-0	Daylight	Dry	Cloudy	Other	Driver Inattention
6 8301 2195		08/23/13	3:50 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Other (Vehicle)
6 8301 2195		09/29/13	3:10 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Driver Inattention
6 8301 2196	at Int. with 6 1/2 Station Rd.	09/15/10	11:55 AM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2196	at Int. with 6 1/2 Station Rd.	11/17/10	6:40 PM	Traffic Signal	PDO & I	2-1	Dark-Road Unlighted	Dry	Clear	Rear End	Driver Inattention
6 8301 2196	at Int. with 6 1/2 Station Rd.	12/20/10	1:40 PM	No Passing Zone	PDO & I	2-4	Daylight	Dry	Clear	Left Turn	Failure to Yield Right of Way
6 8301 2196	at Int. with 6 1/2 Station Rd.	04/14/11	6:48 PM	None	PDO	3-0	Daylight	Dry	Clear	Other	Driver Inattention
6 8301 2196	at Int. with 6 1/2 Station Rd.	09/30/11	2:35 PM	Traffic Signal	I	2-1	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2196	at Int. with 6 1/2 Station Rd.	11/13/11	4:50 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2196	at Int. with 6 1/2 Station Rd.	02/02/12	8:02 PM	Stop Sign	PDO & I	2-1	Dark-Road Unlighted	Dry	Clear	Rear End	Following Too Closely
6 8301 2196	at Int. with 6 1/2 Station Rd.	02/07/12	5:05 PM	Traffic Signal	PDO	2-0	Dusk	Dry	Clear	Rear End	Driver Inattention
6 8301 2196	at Int. with 6 1/2 Station Rd.	08/04/12	7:00 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2196	at Int. with 6 1/2 Station Rd.	08/29/12	7:45 AM	None	PDO & I	3-1	Daylight	Dry	Clear	Other	Glare, Other (Vehicle)
6 8301 2196	at Int. with 6 1/2 Station Rd.	02/26/13	9:40 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
6 8301 2196	at Int. with 6 1/2 Station Rd.	02/27/13	2:40 PM	No Passing Zone	PDO	2-0	Daylight	Wet	Rain	Rear End	Following Too Closely
6 8301 2196	at Int. with 6 1/2 Station Rd.	07/08/13	7:50 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2196	at Int. with 6 1/2 Station Rd.	07/30/13	8:55 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2197		05/24/11	8:35 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention
6 8301 2197		09/04/12	5:12 PM	No Passing Zone	PDO	2-0	Daylight	Wet	Rain	Right Angle	Obstruction/Debris
6 8301 2197		09/05/12	4:45 PM	Traffic Signal	PDO	4-0	Daylight	Dry	Clear	Other	Driver Inattention
6 8301 2197		06/12/13	4:45 PM	No Passing Zone	I	3-1	Daylight	Dry	Cloudy	Other	Driver Inattention
6 8301 2197		01/09/14	3:40 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2197		03/12/14	10:05 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Overtaking	Passing or Lane Usage Improperly

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TABLE NO. A

ACCIDENT SUMMARY
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
6 8301 2198		02/27/12	5:25 PM	Traffic Signal	PDO	3-0	Dusk	Dry	Clear	Other	Driver Inattention
6 8301 2198		11/09/12	8:40 AM	Traffic Signal	PDO	3-0	Daylight	Dry	Clear	Other	Driver Inattention
6 8301 2198		04/22/13	3:50 PM	None	N/R	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2198		06/18/13	3:15 PM	Traffic Signal	PDO	2-0	Daylight	Wet	Rain	Other	View Obstructed/Limited
6 8301 2198		11/04/13	7:48 AM	None	N/R	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2198		12/21/13	6:50 PM	None	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
6 8301 2199		05/24/11	12:01 AM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Wet	Rain	Other	N/A
6 8301 2199		11/10/11	6:00 PM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2199		11/19/12	9:20 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2199		01/27/13	6:50 AM	None	PDO	2-0	Dawn	Dry	Clear	Rear End	Following Too Closely
6 8301 2200		06/05/12	12:40 PM	None	PDO	1-0	Daylight	Dry	Cloudy	Other	Animal's Action
6 8301 2201		03/08/11	9:15 PM	None	N/R	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2201		12/10/11	12:08 AM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2201		06/06/12	6:24 PM	No Passing Zone	PDO	2-0	Daylight	Wet	Rain	Rear End	Pavement Slipper, Following Too Closely
6 8301 2201		04/18/13	11:00 AM	Highway Work Area	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2202		02/10/12	2:50 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2203		07/15/11	5:15 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention
6 8301 2203		11/01/11	3:41 PM	Unknown	N/R	2-0	Dark-Road Unlighted	Unknown	Uknown	Sideswipe	Pavement Slippery
6 8301 2203		11/04/11	11:15 PM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2204		12/05/12	6:20 PM	No Passing Zone	PDO	2-0	Dark-Road Unlighted	Dry	Cloudy	Rear End	Reaction to Other Uninvolved Vehicle, Following Too Closely
6 8301 2204		01/20/13	2:30 AM	Unknown	PDO	1-0	Unknown	Unknown	Uknown	Other	N/A
6 8301 2204		02/08/13	1:37 PM	No Passing Zone	N/R	1-0	Daylight	Snow/Ice	Snow	Other	Pavement Slippery
6 8301 2204		06/25/13	1:20 AM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
6 8301 2204	at Int. with Police Hwy.	04/04/11	9:00 AM	No Passing Zone	N/R	2-0	Daylight	Wet	Cloudy	Overtaking	Other (Vehicle)

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TABLE A-2

SUMMARY OF ACCIDENT RATES AND COMPARISON TO STATE WIDE AVERAGE

U.S. ROUTE 6/NYS ROUTE 17M AND I-84 WESTBOUND OFF RAMP					
YEARS	3				
AADT	34,979 VPD				
ACCIDENT TYPE	**NUMBER OF ACCIDENTS**	**RATE**		**STATEWIDE AVERAGE**	
Wet Road	3	0.08	ACC/MEV	0.02	ACC/MEV
Left Turn	0	0.00	ACC/MEV	0.01	ACC/MEV
Rear End	24	0.63	ACC/MEV	0.03	ACC/MEV
Overtaking	0	0.00	ACC/MEV	0.01	ACC/MEV
Right Angle	0	0.00	ACC/MEV	0.00	ACC/MEV
Right Turn	1	0.03	ACC/MEV	0.00	ACC/MEV
Head-On	0	0.00	ACC/MEV	0.00	ACC/MEV
Sideswipe	0	0.00	ACC/MEV	0.00	ACC/MEV
All Types	**25**	**0.65**	**ACC/MEV**	**0.10**	**ACC/MEV**
U.S. ROUTE 6/NYS ROUTE 17M AND C.R. 50/C.R. 12					
YEARS	3				
AADT	24,630 VPD				
ACCIDENT TYPE	**NUMBER OF ACCIDENTS**	**RATE**		**STATE WIDE AVERAGE**	
Wet Road	4	0.15	ACC/MEV	0.09	ACC/MEV
Left Turn	4	0.15	ACC/MEV	0.05	ACC/MEV
Rear End	6	0.22	ACC/MEV	0.17	ACC/MEV
Overtaking	2	0.07	ACC/MEV	0.04	ACC/MEV
Right Angle	2	0.07	ACC/MEV	0.06	ACC/MEV
Right Turn	0	0.00	ACC/MEV	0.01	ACC/MEV
Head-On	0	0.00	ACC/MEV	0.01	ACC/MEV
Sideswipe	0	0.00	ACC/MEV	0.00	ACC/MEV
All Types	**16**	**0.59**	**ACC/MEV**	**0.45**	**ACC/MEV**
U.S. ROUTE 6/NYS ROUTE 17M AND PHSYCHIATRIC CENTER DRIVE					
YEARS	3				
AADT	19,790 VPD				
ACCIDENT TYPE	**NUMBER OF ACCIDENTS**	**RATE**		**STATE WIDE AVERAGE**	
Wet Road	2	0.09	ACC/MEV	0.03	ACC/MEV
Left Turn	1	0.05	ACC/MEV	0.01	ACC/MEV
Rear End	6	0.28	ACC/MEV	0.05	ACC/MEV
Overtaking	2	0.09	ACC/MEV	0.01	ACC/MEV
Right Angle	1	0.05	ACC/MEV	0.02	ACC/MEV
Right Turn	0	0.00	ACC/MEV	0.00	ACC/MEV
Head-On	0	0.00	ACC/MEV	0.00	ACC/MEV
Sideswipe	0	0.00	ACC/MEV	0.00	ACC/MEV
All Types	**17**	**0.78**	**ACC/MEV**	**0.15**	**ACC/MEV**

TABLE A-2 (CONTINUED)

SUMMARY OF ACCIDENT RATES AND COMPARISON TO STATE WIDE AVERAGE

U.S. ROUTE 6/NYS ROUTE 17M AND HARTLEY ROAD					
YEARS	3				
AADT	22,505 VPD				
ACCIDENT TYPE	**NUMBER OF ACCIDENTS**	**RATE**		**STATE WIDE AVERAGE**	
Wet Road	2	0.08	ACC/MEV	0.09	ACC/MEV
Left Turn	0	0.00	ACC/MEV	0.05	ACC/MEV
Rear End	5	0.20	ACC/MEV	0.17	ACC/MEV
Overtaking	2	0.08	ACC/MEV	0.04	ACC/MEV
Right Angle	0	0.00	ACC/MEV	0.06	ACC/MEV
Right Turn	0	0.00	ACC/MEV	0.01	ACC/MEV
Head-On	0	0.00	ACC/MEV	0.01	ACC/MEV
Sideswipe	0	0.00	ACC/MEV	0.00	ACC/MEV
All Types	**9**	**0.37**	**ACC/MEV**	**0.45**	**ACC/MEV**
U.S. ROUTE 6/NYS ROUTE 17M AND 6 1/2 STATION ROAD					
YEARS	3				
AADT	21,685 VPD				
ACCIDENT TYPE	**NUMBER OF ACCIDENTS**	**RATE**		**STATE WIDE AVERAGE**	
Wet Road	0	0.00	ACC/MEV	0.09	ACC/MEV
Left Turn	1	0.04	ACC/MEV	0.05	ACC/MEV
Rear End	10	0.42	ACC/MEV	0.17	ACC/MEV
Overtaking	0	0.00	ACC/MEV	0.04	ACC/MEV
Right Angle	0	0.00	ACC/MEV	0.06	ACC/MEV
Right Turn	0	0.00	ACC/MEV	0.01	ACC/MEV
Head-On	0	0.00	ACC/MEV	0.01	ACC/MEV
Sideswipe	0	0.00	ACC/MEV	0.00	ACC/MEV
All Types	**14**	**0.59**	**ACC/MEV**	**0.45**	**ACC/MEV**

NOTES:

1) STATE WIDE AVERAGE ACCIDENT RATES BASED ON AVERAGE ACCIDENT RATES FOR STATE HIGHWAYS BY FACILITY TYPE PUBLISHED BY NEW YORK STATE DEPARTMENT OF TRANSPORTATION FOR THE PERIOD BETWEEN AUGUST 1, 2011 AND JULY 31, 2013. ACCIDENT RATES ARE EXPRESED IN UNITS OF ACCIDENTS PER MILLIONS OF ENTERING VEHICLES (ACC/MEV).

2) AVERAGE ANNUAL DAILY TRAFFIC (AADT) VOLUMES FOR EACH INTERSECTIONS ARE BASED ON A COMBINATION OF DATA AVAILABLE FROM THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION AS WELL AS TRAFFIC VOLUME DATA COLLECTED BY MASER CONSULTING, P.A. AT THE STUDY AREA INTERSECTIONS.

NYSDOT Safety Information Management System
Summary Report By Segment And/Or Intersection
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

ROUTE: 6 HIGHWAY LOCATION: 6 83012156 - 6 83012171 DATES: 01-DEC-2010 - 30-NOV-2013

REFERENCE	INT.	DESCRIPTION	NUMBER OF ACCIDENTS - TOTAL	FTL	INJ	PDO	N/R	WET ROAD **	FIXED OBJ **	PED& BIKE **	TRUCK *** **	LIGHT CONDITION DWN/DSK **	DAY **	NIGHT **
6 8301 2156			2	0	1	1	0	0	0	0	0	0	2	0
6 8301 2157			3	0	0	2	1	0	0	0	0	0	1	2
6 8301 2157	90	RP 6 W TO 84I W	25	0	1	9	15	3	0	0	1	0	18	7
6 8301 2158			2	0	2	0	0	0	0	0	0	0	0	1
6 8301 2159			2	0	0	2	0	0	0	0	1	0	2	0
6 8301 2160			2	0	1	1	0	1	0	0	1	0	1	1
6 8301 2161			1	0	0	0	1	0	1	0	0	0	1	0
6 8301 2161	95	BATES GATES RD	2	0	0	2	0	0	1	0	0	0	1	1
6 8301 2162			3	0	0	1	2	0	0	0	0	0	3	0
6 8301 2162	96	MOHIN PARK	1	0	0	0	1	0	0	0	0	0	1	0
6 8301 2162	97	DASSORI RD	1	0	0	1	0	0	0	0	0	0	1	0
6 8301 2165			6	0	2	4	0	1	0	0	0	0	6	0
6 8301 2165	50	RYERSON RD	2	0	1	1	0	0	1	0	0	0	2	0
6 8301 2166			4	0	1	3	0	1	0	0	0	1	2	1
6 8301 2167			5	0	1	2	2	2	0	0	0	0	4	1
6 8301 2169			2	0	0	2	0	1	0	0	0	0	0	2
6 8301 2170			2	0	2	0	0	1	1	0	0	0	2	0
6 8301 2171			10	0	7	3	0	1	1	0	0	1	8	1
6 8301 2171	03	JCT CO 50	14	0	6	7	1	4	1	0	1	0	10	3
		ROUTE TOTAL EXCLUDES 999 RMS	89	0	25	41	23	15	6	0	4	2	65	20

** EXCLUDES PARTIALLY CODED NON-REPORTABLES *** EXCLUDES PICKUPS & VANS

NYSDOT Safety Information Management System
Summary Report By Segment And/Or Intersection
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Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

ROUTE: 6 HIGHWAY LOCATION: 6 83012170 - 6 83012199 DATES: 01-AUG-2010 - 27-APR-2014

REFERENCE	INT.	DESCRIPTION	NUMBER OF ACCIDENTS TOTAL	FTL	INJ	PDO	N/R	WET ROAD **	FIXED OBJ **	PED& BIKE **	TRUCK *** **	LIGHT CONDITION DWN/DSK **	DAY **	NIGHT **
6 8301 2170			3	0	2	1	0	1	1	0	1	0	2	1
6 8301 2171			12	0	8	4	0	1	1	0	1	1	10	1
6 8301 2171	03	JCT CO 50	15	0	6	7	2	4	1	0	1	0	10	4
6 8301 2171	00	INVALID INTERSECTION NUMBER	1	0	0	1	0	1	0	0	0	0	1	0
6 8301 2172		WAWAYANDA/GOSHEN TN LN	14	0	7	4	3	5	0	0	0	1	9	4
6 8301 2172	00	INVALID INTERSECTION NUMBER	2	0	1	1	0	1	0	0	0	0	1	1
6 8301 2174			2	0	2	0	0	1	0	0	0	0	2	0
6 8301 2175			4	0	2	0	2	0	0	0	0	1	1	2
6 8301 2176			3	0	1	2	0	0	0	0	0	1	1	1
6 8301 2177			5	0	3	1	1	0	2	0	0	0	3	2
6 8301 2177	08	MAPLE AVE	17	1	2	11	3	2	1	1	1	0	11	6
6 8301 2178			11	0	4	5	2	0	1	0	1	0	8	3
6 8301 2179			6	1	2	1	2	0	1	0	2	0	5	1
6 8301 2180			4	0	1	2	1	0	0	0	0	0	3	1
6 8301 2181			5	0	0	4	1	1	0	0	0	0	2	3
6 8301 2182			1	0	0	1	0	0	0	0	0	0	0	1
6 8301 2183			1	0	0	0	1	0	0	0	0	0	0	1
6 8301 2184			1	0	0	0	1	0	0	0	0	0	1	0
6 8301 2185			8	0	2	5	1	2	1	0	0	1	6	1
6 8301 2186			4	0	0	2	2	0	0	0	0	0	3	1
6 8301 2186	14	HARTLEY-GATE SCHOOLHOUSE RD	9	0	2	7	0	2	0	0	0	0	8	1
6 8301 2187			8	0	2	3	3	3	0	0	2	0	8	0
6 8301 2188			4	0	2	1	1	0	0	0	0	1	2	1
6 8301 2189			3	0	0	3	0	0	0	0	0	0	2	1
6 8301 2190			3	0	0	2	1	0	1	0	0	0	0	3
6 8301 2191			5	0	0	5	0	0	0	0	0	1	3	1
6 8301 2192			3	0	0	2	1	1	0	0	0	0	3	0

** EXCLUDES PARTIALLY CODED NON-REPORTABLES *** EXCLUDES PICKUPS & VANS

NYSDOT Safety Information Management System
Summary Report By Segment And/Or Intersection
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ROUTE: 6 HIGHWAY LOCATION: 6 83012170 - 6 83012199 DATES: 01-AUG-2010 - 27-APR-2014

REFERENCE	INT.	DESCRIPTION	NUMBER OF ACCIDENTS											
			TOTAL	FTL	INJ	PDO	N/R	WET ROAD **	FIXED OBJ **	PED& BIKE **	TRUCK *** **	LIGHT CONDITION DWN/DSK **	DAY **	NIGHT **
6 8301 2193			7	0	4	3	0	0	1	0	0	0	4	3
6 8301 2194			2	0	1	1	0	0	0	0	0	0	1	1
6 8301 2195			5	0	2	3	0	1	2	0	1	0	3	2
6 8301 2196			14	0	5	9	0	1	0	0	0	1	10	3
6 8301 2197		GOSHEN TOEN/VILLAGE LINE	6	0	1	5	0	1	0	0	0	0	6	0
6 8301 2198			6	0	0	4	2	1	0	0	0	1	4	1
6 8301 2199			4	0	0	4	0	1	0	0	1	1	0	3
		ROUTE TOTAL EXCLUDES 999 RMS	198	2	62	104	30	30	13	1	11	10	133	54

** EXCLUDES PARTIALLY CODED NON-REPORTABLES *** EXCLUDES PICKUPS & VANS

NYSDOT Safety Information Management System
Summary Report By Segment And/Or Intersection
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

ROUTE: 6 HIGHWAY LOCATION: 6 83012198 - 6 83012204 DATES: 01-DEC-2010 - 30-NOV-2013

REFERENCE	INT.	DESCRIPTION	NUMBER OF ACCIDENTS - TOTAL	FTL	INJ	PDO	N/R	WET ROAD **	FIXED OBJ **	PED& BIKE **	TRUCK *** **	LIGHT CONDITION DWN/DSK **	DAY **	NIGHT **
6 8301 2198			5	0	0	3	2	1	0	0	0	1	4	0
6 8301 2199			4	0	0	4	0	1	0	0	1	1	0	3
6 8301 2200			1	0	0	1	0	0	0	0	0	0	1	0
6 8301 2201			4	0	0	3	1	1	0	0	0	0	2	2
6 8301 2202			1	0	0	1	0	0	0	0	0	0	0	1
6 8301 2203			3	0	0	2	1	0	0	0	0	0	1	2
6 8301 2204			4	0	0	3	1	0	1	0	1	0	1	2
6 8301 2204	33	MAPLE AVE EXTENTION	1	0	0	0	1	1	0	0	0	0	1	0
		ROUTE TOTAL EXCLUDES 999 RMS	23	0	0	17	6	4	1	0	2	2	10	10

** EXCLUDES PARTIALLY CODED NON-REPORTABLES *** EXCLUDES PICKUPS & VANS

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2156 NON-INTERSECTION ACCIDENTS ***

JUL-03-2012 TUE 05:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34355681
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2877 State of Registration: NY
Num of Occupants: 1 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: UNKNOWN NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3288 State of Registration: NY
Num of Occupants: 3 Drivers Age: 52 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNKNOWN NOT APPLICABLE

NOV-01-2012 THU 02:30 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34514711
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 20 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING U TURN
Apparent Factors: TURNING IMPROPER NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 63 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2157 NON-INTERSECTION ACCIDENTS ***

APR-08-2013 MON 10:25 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34726394
Accident Class: NON-REPORTABLE Police Agency:GREENVILLE SP Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 NON-INTERSECTION ACCIDENTS *** (Continued)

Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3284 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

APR-08-2013 MON 10:25 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34727925
Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3240 State of Registration: NY
Num of Occupants: 1 Drivers Age: 40 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

SEP-06-2013 FRI 07:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34913282
Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3351 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: CHANGING LANES
Apparent Factors: UNSAFE LANE CHANGE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3534 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W ***

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

DEC-13-2010 MON 12:55 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33693474
Accident Class: PROPERTY DAMAGE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2568 State of Registration: NY
Num of Occupants: 1 Drivers Age: 70 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4410 State of Registration: NY
Num of Occupants: 1 Drivers Age: 43 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

MAR-11-2011 FRI 08:53 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33803834
Accident Class: NON-REPORTABLE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: MA
Num of Occupants: 2 Drivers Age: 69 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

MAR-20-2011 SUN 12:35 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33819832
Accident Class: NON-REPORTABLE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 20 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 24 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

APR-21-2011 THU 11:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33854077
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3395 State of Registration: NY
Num of Occupants: 2 Drivers Age: 37 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3928 State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUN-03-2011 FRI 06:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33899530
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 3 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-29-2011 MON 05:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34004844
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 24 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 64 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

JAN-13-2012 FRI 05:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34174126
Accident Class: PROPERTY DAMAGE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3935 State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4680 State of Registration: NY
Num of Occupants: 1 Drivers Age: 33 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JAN-19-2012 THU 07:52 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34186556
Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2895 State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3931 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: FEMALE Citation Issued: YES
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

FEB-09-2012 THU 01:25 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34210564
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: RIGHT TURN (WITH OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: CURVE AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 2 Drivers Age: 40 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 39 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY TURNING IMPROPER

JUL-02-2012 MON 12:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34368028
Accident Class: PROPERTY DAMAGE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3864 State of Registration: NY
Num of Occupants: 1 Drivers Age: 24 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4250 State of Registration: NY
Num of Occupants: 4 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

JUL-20-2012 FRI 06:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34371972
Accident Class: NON-REPORTABLE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 56 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 3 Drivers Age: 46 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

JAN-17-2013 THU 06:38 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34618095
Accident Class: PROPERTY DAMAGE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3274 State of Registration: NY
Num of Occupants: 1 Drivers Age: 33 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3232 State of Registration: NY
Num of Occupants: 1 Drivers Age: 39 Sex: FEMALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

FEB-13-2013 WED 06:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34688685
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAY-03-2013 FRI 08:45 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34764436
Accident Class: INJURY Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4495 State of Registration: NY
Num of Occupants: 1 Drivers Age: 46 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

NYSDOT Safety Information Management System
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2641 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUN-28-2013 FRI 03:11 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34829112
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5221 State of Registration: NY
Num of Occupants: 2 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: VA
Num of Occupants: 2 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

SEP-17-2013 TUE 08:10 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34927017
Accident Class: NON-REPORTABLE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 37 Sex: MALE Citation Issued: YES
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 22 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-15-2013 TUE 10:45 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34962020
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 40 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-29-2013 TUE 09:25 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34981595
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 46 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

NOV-02-2013 SAT 02:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34988849
Accident Class: NON-REPORTABLE Police Agency:NEWBURGH SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 70 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-07-2013 THU 12:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34998386
Accident Class: NON-REPORTABLE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 45 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: UNSAFE SPEED PAVEMENT SLIPPERY

NOV-07-2013 THU 02:38 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35004338
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-19-2013 TUE 06:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35012189
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 4 Drivers Age: 47 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-23-2013 SAT 02:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35018088
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: CT
Num of Occupants: 2 Drivers Age: 66 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

NOV-25-2013 MON 05:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35019850
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 23 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-27-2013 WED 05:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35021897
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5248 State of Registration: NY
Num of Occupants: 1 Drivers Age: 23 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4808 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2157 INTERSECTION ACCIDENTS - RP 6 W TO 84I W *** (Continued)

Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2158 NON-INTERSECTION ACCIDENTS ***

OCT-31-2011 MON 04:02 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-34098554
Accident Class: INJURY Police Agency:NOT ENTERED Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: UNKNOWN
Road Surface Collision: UNKNOWN Road Char: UNKNOWN Light Condition: UNKNOWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3574 State of Registration: NY
Num of Occupants: 1 Drivers Age: 53 Sex: FEMALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: UNKNOWN UNKNOWN

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4556 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: FEMALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: UNKNOWN UNKNOWN

OCT-11-2013 FRI 05:04 AM Persons Killed: 0 Persons Injured: 3 Extent of Injuries: CCC Case: 2013-34958544
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:LIBERTY SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 6500 State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING U TURN
Apparent Factors: TURNING IMPROPER TRAFFIC CONTROL DEVICES DISREGARDED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3065 State of Registration: NY
Num of Occupants: 3 Drivers Age: 58 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2159 NON-INTERSECTION ACCIDENTS ***

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

AUG-11-2011 THU 07:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33984103
Accident Class: PROPERTY DAMAGE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: CURVE AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3992 State of Registration: NY
Num of Occupants: 2 Drivers Age: 57 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MERGING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2830 State of Registration: NY
Num of Occupants: 1 Drivers Age: 24 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

OCT-05-2012 FRI 01:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34460829
Accident Class: PROPERTY DAMAGE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: RIGHT ANGLE Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 64 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 32 Sex: FEMALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: CHANGING LANES
Apparent Factors: UNSAFE LANE CHANGE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2160 NON-INTERSECTION ACCIDENTS ***

MAR-10-2011 THU 03:50 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33811438
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2160 NON-INTERSECTION ACCIDENTS *** (Continued)

Manner of Collision: OVERTAKING Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2837 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3033 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: CHANGING LANES
Apparent Factors: UNSAFE LANE CHANGE NOT APPLICABLE

JAN-18-2013 FRI 11:00 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: BC Case: 2013-34618089
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: OVERTURNED Traffic Control: NONE
Manner of Collision: HEAD ON Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: UNKNOWN State of Registration: MI
Num of Occupants: 1 Drivers Age: 45 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNSAFE SPEED NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4716 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2161 NON-INTERSECTION ACCIDENTS ***

JUL-11-2011 MON 04:29 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33953084
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLLISION WITH SIGN POST Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: CURVE AND GRADE Light Condition: DAYLIGHT

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2161 NON-INTERSECTION ACCIDENTS *** (Continued)

Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ALCOHOL INVOLVEMENT UNSAFE LANE CHANGE

*** Ref Mrkr: 6 8301 2161 INTERSECTION ACCIDENTS - BATES GATES RD ***

JUN-28-2011 TUE 03:55 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33927156
Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 1
Type of Accident: COLLISION WITH CURBING Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3040 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: STEERING FAILURE NOT APPLICABLE

JUL-06-2013 SAT 09:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34858316
Accident Class: PROPERTY DAMAGE Police Agency: Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3208 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: -3
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT ENTERED NOT ENTERED

*** Ref Mrkr: 6 8301 2162 NON-INTERSECTION ACCIDENTS ***

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

FEB-06-2011 SUN 06:15 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33772041
Accident Class: NON-REPORTABLE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: RIGHT ANGLE Weather: CLEAR
Road Surface Collision: SNOW/ICE Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: PAVEMENT SLIPPERY UNSAFE SPEED

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: PARKED
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAY-02-2011 MON 04:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33872570
Accident Class: PROPERTY DAMAGE Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3868 State of Registration: NY
Num of Occupants: 1 Drivers Age: 76 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3047 State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-28-2012 SUN 05:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34511960
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OVERTAKING Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2162 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 70 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 35 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MERGING
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2162 INTERSECTION ACCIDENTS - MOHIN PARK ***

JUN-21-2012 THU 11:25 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34339970
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 22 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2162 INTERSECTION ACCIDENTS - DASSORI RD ***

JUN-14-2011 TUE 11:29 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33911181
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2162 INTERSECTION ACCIDENTS - DASSORI RD *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3395 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2392 State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2165 NON-INTERSECTION ACCIDENTS ***

MAR-22-2011 TUE 04:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33821544
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: HEAD ON Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: PARKED
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 MOTORCYCLE Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: DRIVER INEXPERIENCE NOT APPLICABLE

OCT-27-2011 THU 01:50 PM Persons Killed: 0 Persons Injured: 3 Extent of Injuries: CCC Case: 2011-34066628
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2898 State of Registration: NY
Num of Occupants: 2 Drivers Age: 33 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2165 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 53 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

FEB-09-2012 THU 10:05 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34199175
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3173 State of Registration: NY
Num of Occupants: 1 Drivers Age: 47 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4432 State of Registration: NY
Num of Occupants: 1 Drivers Age: 33 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

FEB-10-2012 FRI 12:33 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34201515
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2440 State of Registration: NY
Num of Occupants: 1 Drivers Age: 22 Sex: FEMALE Citation Issued: YES
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2895 State of Registration: NY
Num of Occupants: 2 Drivers Age: 82 Sex: MALE Citation Issued: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2165 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUN-11-2013 TUE 03:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34807410
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2764 State of Registration: NY
Num of Occupants: 2 Drivers Age: 20 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

SEP-30-2013 MON 09:51 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34960924
Accident Class: PROPERTY DAMAGE Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: UNKNOWN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4377 State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT ENTERED

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 32 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT ENTERED NOT ENTERED

*** Ref Mrkr: 6 8301 2165 INTERSECTION ACCIDENTS - RYERSON RD ***

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

JUL-14-2011 THU 12:05 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33951513
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2862 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4022 State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-21-2012 TUE 02:03 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34409037
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLL. W/LIGHT SUPPORT/UTILITY POLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3844 State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: REACTION TO OTHER UNINVOLVED VEHICL NOT APPLICABLE

*** Ref Mrkr: 6 8301 2166 NON-INTERSECTION ACCIDENTS ***

JUL-01-2011 FRI 04:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33931594
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 59 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2166 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 10000 State of Registration: NY
Num of Occupants: 4 Drivers Age: 33 Sex: MALE Citation Issued: YES
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: BRAKES DEFECTIVE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3527 State of Registration: NY
Num of Occupants: 1 Drivers Age: 58 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-19-2012 FRI 06:19 AM Persons Killed: 0 Persons Injured: 3 Extent of Injuries: BCC Case: 2012-34477276
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY UNSAFE SPEED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2547 State of Registration: NY
Num of Occupants: 2 Drivers Age: 34 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 17950 State of Registration: NY
Num of Occupants: 2 Drivers Age: 24 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUL-11-2013 THU 05:26 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34869491
Accident Class: PROPERTY DAMAGE Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: UNKNOWN

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2166 NON-INTERSECTION ACCIDENTS *** (Continued)

Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3142 State of Registration: NY
Num of Occupants: 4 Drivers Age: 36 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY DRIVER INEXPERIENCE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2822 State of Registration: NY
Num of Occupants: 2 Drivers Age: 44 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT ENTERED NOT ENTERED

NOV-30-2013 SAT 04:20 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35023390
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: RIGHT ANGLE Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DUSK
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2668 State of Registration: NY
Num of Occupants: 1 Drivers Age: 82 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY VIEW OBSTRUCTED/LIMITED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3794 State of Registration: NY
Num of Occupants: 6 Drivers Age: 43 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2167 NON-INTERSECTION ACCIDENTS ***

JAN-27-2011 THU 11:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-NR3001391
Accident Class: NON-REPORTABLE Police Agency: Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: INVALID CODE Action of Ped/Bicycle:

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2167 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: UNKNOWN UNKNOWN

OCT-14-2011 FRI 03:35 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-34072986
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:NEWBURGH TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2761 State of Registration: NY
Num of Occupants: 2 Drivers Age: 17 Sex: MALE Citation Issued: YES
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INEXPERIENCE DRIVER INATTENTION

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3888 State of Registration: NY
Num of Occupants: 1 Drivers Age: 22 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: UNKNOWN UNKNOWN

JUL-24-2012 TUE 09:40 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34379653
Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OVERTAKING Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4145 State of Registration: NY
Num of Occupants: 1 Drivers Age: 60 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2167 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3444 State of Registration: NY
Num of Occupants: 1 Drivers Age: 25 Sex: MALE Citation Issued: YES
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: DRIVER INATTENTION PASSING OR LANE USAGE IMPROPERLY

SEP-25-2012 TUE 12:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34529212
Accident Class: PROPERTY DAMAGE Police Agency: Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: UNKNOWN
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3241 State of Registration: NY
Num of Occupants: 2 Drivers Age: 63 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT ENTERED NOT ENTERED

OCT-02-2012 TUE 11:15 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34452777
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 30 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2169 NON-INTERSECTION ACCIDENTS ***

DEC-17-2012 MON 07:25 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34579983

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2169 NON-INTERSECTION ACCIDENTS *** (Continued)

Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4098 State of Registration: NY
Num of Occupants: 1 Drivers Age: 58 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JUN-27-2013 THU 03:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34827914
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: FOG/SMOG/SMOKE
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3076 State of Registration: NY
Num of Occupants: 2 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2170 NON-INTERSECTION ACCIDENTS ***

SEP-09-2011 FRI 05:28 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-34025165
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2895 State of Registration: NY
Num of Occupants: 1 Drivers Age: 51 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3413 State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2170 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3826 State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-01-2013 FRI 09:20 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: B Case: 2013-34986194
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:NEWBURGH SP Num of Veh: 1
Type of Accident: COLL. W/EARTH ELE./ROCK CUT/DITCH Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5486 State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNSAFE SPEED NOT APPLICABLE

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS ***

FEB-27-2011 SUN 09:45 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33788546
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3208 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 30 Sex: MALE Citation Issued: YES
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

APR-20-2011 WED 06:20 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: CC Case: 2011-33849149
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3311 State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: FEMALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3345 State of Registration: NY
Num of Occupants: 2 Drivers Age: 25 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUL-14-2011 THU 02:30 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33951909
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 37 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4450 State of Registration: NY
Num of Occupants: 4 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-01-2011 MON 07:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33973855
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3426 State of Registration: NY
Num of Occupants: 1 Drivers Age: 58 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JAN-15-2013 TUE 05:20 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34616392
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 4 Drivers Age: 60 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2745 State of Registration: NY
Num of Occupants: 2 Drivers Age: 53 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

APR-03-2013 WED 03:45 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34736165
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3512 State of Registration: NY
Num of Occupants: 2 Drivers Age: 64 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2668 State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAY-07-2013 TUE 07:30 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34770403
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 1
Type of Accident: COLL. W/EARTH ELE./ROCK CUT/DITCH Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3101 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FELL ASLEEP NOT APPLICABLE

SEP-04-2013 WED 02:30 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: BC Case: 2013-34958861
Accident Class: INJURY Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 5
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: UNKNOWN
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: CURVE AND GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 OTHER Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY DRIVER INATTENTION

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3766 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 3 CAR/VAN/PICKUP Registered Weight: 4221 State of Registration: NY
Num of Occupants: 1 Drivers Age: 22 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 4 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 40 Sex: MALE Citation Issued: NO

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 5 CAR/VAN/PICKUP Registered Weight: 2432 State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: FEMALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED

OCT-18-2013 FRI 08:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34968820
Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2970 State of Registration: NY
Num of Occupants: 1 Drivers Age: 22 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3458 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-19-2013 TUE 06:40 AM Persons Killed: 0 Persons Injured: 3 Extent of Injuries: CCC Case: 2013-35015347
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2774 State of Registration: NY
Num of Occupants: 3 Drivers Age: 26 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FELL ASLEEP NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4031 State of Registration: NY

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 46 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3027 State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 ***

AUG-07-2011 SUN 03:15 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33981732
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4438 State of Registration: NY
Num of Occupants: 2 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3267 State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

OCT-13-2011 THU 12:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34054993
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2830 State of Registration: NY
Num of Occupants: 1 Drivers Age: 62 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3460 State of Registration: NY
Num of Occupants: 1 Drivers Age: 64 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-17-2011 MON 06:05 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-34055715
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLLISION WITH GUIDE RAIL Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3914 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: TURNING IMPROPER UNSAFE SPEED

OCT-21-2011 FRI 12:03 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34074045
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 53 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 BUS Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 37 Sex: FEMALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: TRAFFIC CONTROL DEVICES DISREGARDED NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

DEC-15-2011 THU 11:10 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34139982
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2

NYSDOT Safety Information Management System
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Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3382 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4390 State of Registration: NY
Num of Occupants: 1 Drivers Age: 65 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JAN-27-2012 FRI 03:00 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: B Case: 2012-34188395
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 31 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2542 State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAY-30-2012 WED 08:45 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34739531
Accident Class: INJURY Police Agency: Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: UNKNOWN
Manner of Collision: OTHER Weather: UNKNOWN
Road Surface Collision: UNKNOWN Road Char: UNKNOWN Light Condition: UNKNOWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2519 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: FEMALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3444 State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 3 OTHER Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 59 Sex: MALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED

AUG-01-2012 WED 09:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34396563
Accident Class: PROPERTY DAMAGE Police Agency:MONROE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (WITH OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: 64740 State of Registration: NY
Num of Occupants: 1 Drivers Age: 71 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY TURNING IMPROPER
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 6010 State of Registration: NY
Num of Occupants: 1 Drivers Age: 69 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

SEP-10-2012 MON 05:26 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34441355
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3184 State of Registration: NY
Num of Occupants: 1 Drivers Age: 17 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: TURNING IMPROPER NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4741 State of Registration: NY
Num of Occupants: 1 Drivers Age: 40 Sex: MALE Citation Issued: YES
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

DEC-30-2012 SUN 03:50 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: A Case: 2012-34630095
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3159 State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ALCOHOL INVOLVEMENT FOLLOWING TOO CLOSELY

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4544 State of Registration: NY
Num of Occupants: 4 Drivers Age: 49 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT ENTERED NOT ENTERED

APR-05-2013 FRI 06:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34748157
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3131 State of Registration: NY
Num of Occupants: 1 Drivers Age: 76 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: -3
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNKNOWN UNKNOWN

MAY-15-2013 WED 02:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34815167
Accident Class: PROPERTY DAMAGE Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: UNKNOWN Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3591 State of Registration: NY
Num of Occupants: 1 Drivers Age: 69 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3040 State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT ENTERED NOT ENTERED

OCT-28-2013 MON 09:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34983443
Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4222 State of Registration: NY
Num of Occupants: 2 Drivers Age: 85 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2982 State of Registration: NY
Num of Occupants: 1 Drivers Age: 60 Sex: MALE Citation Issued: NO

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012156 - 6 83012171 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-31-2013 THU 08:54 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34993113
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5177 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4445 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

TOTAL NUMBER OF ACCIDENTS PRINTED: 89

ABSENCE OF REFERENCE MARKERS OR INTERSECTION WITHIN A SPECIFIED ROADWAY SECTION & TIME PERIOD INDICATES NO ACCIDENTS FOUND

*** END OF REPORT ***

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2170 NON-INTERSECTION ACCIDENTS ***

AUG-15-2010 SUN 02:18 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33556343
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3879 State of Registration: NY
Num of Occupants: 3 Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: PARKED
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 TRUCK Registered Weight: UNKNOWN State of Registration: CT
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

SEP-09-2011 FRI 05:28 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-34025165
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2895 State of Registration: NY
Num of Occupants: 1 Drivers Age: 51 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3413 State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3826 State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2170 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-01-2013 FRI 09:20 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: B Case: 2013-34986194
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:NEWBURGH SP Num of Veh: 1
Type of Accident: COLL. W/EARTH ELE./ROCK CUT/DITCH Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5486 State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNSAFE SPEED NOT APPLICABLE

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS ***

SEP-02-2010 THU 07:58 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2010-33565647
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 58 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4255 State of Registration: NY
Num of Occupants: 1 Drivers Age: 37 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY GLARE

FEB-27-2011 SUN 09:45 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33788546
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3208 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 30 Sex: MALE Citation Issued: YES
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

APR-20-2011 WED 06:20 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: CC Case: 2011-33849149
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3311 State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: FEMALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3345 State of Registration: NY
Num of Occupants: 2 Drivers Age: 25 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUL-14-2011 THU 02:30 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33951909
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 37 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4450 State of Registration: NY
Num of Occupants: 4 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-01-2011 MON 07:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33973855
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3426 State of Registration: NY
Num of Occupants: 1 Drivers Age: 58 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JAN-15-2013 TUE 05:20 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34616392
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 4 Drivers Age: 60 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2745 State of Registration: NY
Num of Occupants: 2 Drivers Age: 53 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

APR-03-2013 WED 03:45 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34736165
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3512 State of Registration: NY
Num of Occupants: 2 Drivers Age: 64 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2668 State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAY-07-2013 TUE 07:30 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34770403
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 1
Type of Accident: COLL. W/EARTH ELE./ROCK CUT/DITCH Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3101 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FELL ASLEEP NOT APPLICABLE

SEP-04-2013 WED 02:30 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: BC Case: 2013-34958861
Accident Class: INJURY Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 5
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: UNKNOWN
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: CURVE AND GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 OTHER Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY DRIVER INATTENTION

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3766 State of Registration: NY

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 3 CAR/VAN/PICKUP Registered Weight: 4221 State of Registration: NY
Num of Occupants: 1 Drivers Age: 22 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 4 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 40 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 5 CAR/VAN/PICKUP Registered Weight: 2432 State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: FEMALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED

OCT-18-2013 FRI 08:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34968820
Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2970 State of Registration: NY
Num of Occupants: 1 Drivers Age: 22 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3458 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-19-2013 TUE 06:40 AM Persons Killed: 0 Persons Injured: 3 Extent of Injuries: CCC Case: 2013-35015347

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2774 State of Registration: NY
Num of Occupants: 3 Drivers Age: 26 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FELL ASLEEP NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4031 State of Registration: NY
Num of Occupants: 1 Drivers Age: 46 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3027 State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAR-21-2014 FRI 08:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-SP1762131
Accident Class: PROPERTY DAMAGE Police Agency: Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY GLARE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 3 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 ***

OCT-04-2010 MON 10:55 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-NR2979468
Accident Class: NON-REPORTABLE Police Agency: Num of Veh: 2
Type of Accident: UNKNOWN Traffic Control: UNKNOWN
Manner of Collision: OVERTAKING Weather: UNKNOWN
Road Surface Collision: UNKNOWN Road Char: Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: INVALID CODE Action of Ped/Bicycle:

Veh: 1 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: CHANGING LANES
Apparent Factors: UNSAFE LANE CHANGE FAILURE TO YIELD RIGHT OF WAY

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: UNKNOWN UNKNOWN

AUG-07-2011 SUN 03:15 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33981732
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4438 State of Registration: NY
Num of Occupants: 2 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3267 State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

OCT-13-2011 THU 12:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34054993
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2830 State of Registration: NY
Num of Occupants: 1 Drivers Age: 62 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3460 State of Registration: NY
Num of Occupants: 1 Drivers Age: 64 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-17-2011 MON 06:05 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-34055715
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLLISION WITH GUIDE RAIL Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3914 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: TURNING IMPROPER UNSAFE SPEED

OCT-21-2011 FRI 12:03 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34074045
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Num of Occupants: 1 Drivers Age: 53 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 BUS Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 37 Sex: FEMALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: TRAFFIC CONTROL DEVICES DISREGARDED NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

DEC-15-2011 THU 11:10 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34139982
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3382 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4390 State of Registration: NY
Num of Occupants: 1 Drivers Age: 65 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JAN-27-2012 FRI 03:00 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: B Case: 2012-34188395
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 31 Sex: FEMALE Citation Issued: YES
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2542 State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAY-30-2012 WED 08:45 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34739531
Accident Class: INJURY Police Agency: Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: UNKNOWN
Manner of Collision: OTHER Weather: UNKNOWN
Road Surface Collision: UNKNOWN Road Char: UNKNOWN Light Condition: UNKNOWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2519 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: FEMALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3444 State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 3 OTHER Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 59 Sex: MALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED

AUG-01-2012 WED 09:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34396563
Accident Class: PROPERTY DAMAGE Police Agency:MONROE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (WITH OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: 64740 State of Registration: NY
Num of Occupants: 1 Drivers Age: 71 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Apparent Factors: FAILURE TO YIELD RIGHT OF WAY TURNING IMPROPER
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 6010 State of Registration: NY
Num of Occupants: 1 Drivers Age: 69 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

SEP-10-2012 MON 05:26 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34441355
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3184 State of Registration: NY
Num of Occupants: 1 Drivers Age: 17 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: TURNING IMPROPER NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4741 State of Registration: NY
Num of Occupants: 1 Drivers Age: 40 Sex: MALE Citation Issued: YES
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

DEC-30-2012 SUN 03:50 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: A Case: 2012-34630095
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3159 State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ALCOHOL INVOLVEMENT FOLLOWING TOO CLOSELY

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4544 State of Registration: NY
Num of Occupants: 4 Drivers Age: 49 Sex: MALE Citation Issued: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT ENTERED NOT ENTERED

APR-05-2013 FRI 06:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34748157
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3131 State of Registration: NY
Num of Occupants: 1 Drivers Age: 76 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: -3
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNKNOWN UNKNOWN

MAY-15-2013 WED 02:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34815167
Accident Class: PROPERTY DAMAGE Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: UNKNOWN Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3591 State of Registration: NY
Num of Occupants: 1 Drivers Age: 69 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3040 State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT ENTERED NOT ENTERED

OCT-28-2013 MON 09:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34983443

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - JCT CO 50 *** (Continued)

Accident Class: PROPERTY DAMAGE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4222 State of Registration: NY
Num of Occupants: 2 Drivers Age: 85 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2982 State of Registration: NY
Num of Occupants: 1 Drivers Age: 60 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-31-2013 THU 08:54 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34993113
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5177 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4445 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - INVALID INTERSECTION NUMBER 00 ***

JAN-27-2014 MON 10:20 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-SP1717052
Accident Class: PROPERTY DAMAGE Police Agency: Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLOUDY

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2171 INTERSECTION ACCIDENTS - INVALID INTERSECTION NUMBER 00 *** (Continued)

Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 56 Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 74 Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2172 NON-INTERSECTION ACCIDENTS ***

FEB-06-2011 SUN 11:15 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33767681
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLOUDY
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3205 State of Registration: NY
Num of Occupants: 2 Drivers Age: 83 Sex: MALE Citation Issued: YES
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 2 Drivers Age: 66 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

FEB-19-2011 SAT 01:16 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: CC Case: 2011-33782950
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
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Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2172 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 52 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: TRAF CNTRL DEV IMPROPER/NON-WRKING NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3889 State of Registration: NY
Num of Occupants: 1 Drivers Age: 56 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: TRAF CNTRL DEV IMPROPER/NON-WRKING NOT APPLICABLE

FEB-24-2011 THU 07:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33783837
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 1
Type of Accident: COLLISION WITH OTHER Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 30 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OBSTRUCTION/DEBRIS NOT APPLICABLE

JUN-10-2011 FRI 01:15 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33922369
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 2 Drivers Age: 36 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3217 State of Registration: NY
Num of Occupants: 3 Drivers Age: 41 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY BRAKES DEFECTIVE

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

JUN-14-2011 TUE 11:29 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33911538
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 9200 State of Registration: NY
Num of Occupants: 2 Drivers Age: 18 Sex: MALE Citation Issued: YES
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FELL ASLEEP NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3995 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-19-2011 FRI 11:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33995117
Accident Class: NON-REPORTABLE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 45 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 49 Sex: FEMALE Citation Issued: YES
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: ALCOHOL INVOLVEMENT FAILURE TO YIELD RIGHT OF WAY

SEP-27-2011 TUE 07:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34037533
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DUSK
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2172 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3373 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNSAFE SPEED NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4379 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

DEC-05-2011 MON 10:45 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34119577
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 8600 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2418 State of Registration: NY
Num of Occupants: 1 Drivers Age: 32 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

DEC-27-2011 TUE 05:55 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34153185
Accident Class: NON-REPORTABLE Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 49 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: BACKING

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2172 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: BACKING UNSAFELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: YES
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

FEB-23-2012 THU 01:08 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34223694
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3761 State of Registration: NY
Num of Occupants: 2 Drivers Age: 75 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: TRAFFIC CONTROL DEVICES DISREGARDED OTHER (VEHICLE)

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3217 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-01-2012 MON 06:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34452790
Accident Class: PROPERTY DAMAGE Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3525 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FELL ASLEEP NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 43 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2172 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAR-12-2013 TUE 11:00 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34701375
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GREENVILLE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2748 State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 9000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAY-20-2013 MON 03:45 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34782719
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:SP THRUWAY NEW HAMPTON Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3658 State of Registration: NY
Num of Occupants: 1 Drivers Age: 74 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3020 State of Registration: NY
Num of Occupants: 1 Drivers Age: 28 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OTHER
Apparent Factors: DRIVER INATTENTION OUTSIDE CAR DISTRACTION

JUN-09-2013 SUN 09:40 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: CC Case: 2013-34810422
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:TROOP F NARCO ENFORCEMENT SP Num of Veh: 2

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2172 NON-INTERSECTION ACCIDENTS *** (Continued)

Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: HEAD ON Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2822 State of Registration: NY
Num of Occupants: 1 Drivers Age: 17 Sex: FEMALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3206 State of Registration: NY
Num of Occupants: 1 Drivers Age: 32 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2172 INTERSECTION ACCIDENTS - INVALID INTERSECTION NUMBER 00 ***

FEB-06-2011 SUN 11:15 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: Case: 2011-SP0942807
Accident Class: INJURY Police Agency: Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: CLOUDY
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 83 Sex: MALE Citation Issued: YES
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 2 Drivers Age: 66 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

APR-03-2014 THU 07:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-SP1770274
Accident Class: PROPERTY DAMAGE Police Agency: Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DARK-ROAD UNLIGHTED

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2172 INTERSECTION ACCIDENTS - INVALID INTERSECTION NUMBER 00 *** (Continued)

Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 74 Sex: UNKNOWN Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2174 NON-INTERSECTION ACCIDENTS ***

APR-01-2011 FRI 02:47 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: CC Case: 2011-33828841
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:PALISADES SP Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: SNOW
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3162 State of Registration: NY
Num of Occupants: 1 Drivers Age: 60 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2344 State of Registration: NY
Num of Occupants: 3 Drivers Age: 34 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3011 State of Registration: NY
Num of Occupants: 1 Drivers Age: 24 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY UNSAFE SPEED

JUL-12-2012 THU 06:10 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: A Case: 2012-34367293
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4267 State of Registration: NY

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2174 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 49 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 MOTORCYCLE Registered Weight: 654 State of Registration: NY
Num of Occupants: 1 Drivers Age: 56 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2175 NON-INTERSECTION ACCIDENTS ***

OCT-20-2010 WED 04:23 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2010-33612700
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2854 State of Registration: NY
Num of Occupants: 1 Drivers Age: 34 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY REACTION TO OTHER UNINVOLVED VEHICL

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2886 State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-17-2010 WED 10:50 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33654753
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH ANIMAL Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2175 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

DEC-03-2011 SAT 05:35 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34122572
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

DEC-13-2013 FRI 06:50 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: B Case: 2013-35048290
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4090 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: YES
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 BUS Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

*** Ref Mrkr: 6 8301 2176 NON-INTERSECTION ACCIDENTS ***

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2176 NON-INTERSECTION ACCIDENTS *** (Continued)

SEP-24-2010 FRI 08:05 AM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: BC Case: 2010-33587545
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: HEAD ON Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4431 State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3209 State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FELL ASLEEP FAILURE TO KEEP RIGHT

OCT-21-2011 FRI 09:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34060515
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2958 State of Registration: NY
Num of Occupants: 1 Drivers Age: 32 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

MAR-15-2014 SAT 07:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-35183311
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2559 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2176 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2177 NON-INTERSECTION ACCIDENTS ***

NOV-21-2010 SUN 02:25 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33660492
Accident Class: NON-REPORTABLE Police Agency:MONROE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 6 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 50 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JAN-15-2011 SAT 02:33 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33732149
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4967 State of Registration: NY
Num of Occupants: 3 Drivers Age: 53 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3726 State of Registration: NY
Num of Occupants: 1 Drivers Age: 61 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3340 State of Registration: NY

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2177 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 53 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OBSTRUCTION/DEBRIS NOT APPLICABLE

FEB-26-2011 SAT 05:15 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33792578
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLL. W/LIGHT SUPPORT/UTILITY POLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 22 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FELL ASLEEP NOT APPLICABLE

AUG-02-2011 TUE 02:39 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33985377
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLL. W/EARTH ELE./ROCK CUT/DITCH Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4022 State of Registration: NY
Num of Occupants: 1 Drivers Age: 68 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: REACTION TO OTHER UNINVOLVED VEHICL NOT APPLICABLE

JAN-19-2013 SAT 02:20 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34878135
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2990 State of Registration: NY
Num of Occupants: 2 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2177 INTERSECTION ACCIDENTS - MAPLE AVE ***

NOV-15-2010 MON 05:15 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33651868
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3886 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

NOV-19-2010 FRI 11:10 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33658048
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 8000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: BACKING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4000 State of Registration: NY
Num of Occupants: 2 Drivers Age: 73 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JAN-07-2011 FRI 11:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33832070
Accident Class: PROPERTY DAMAGE Police Agency:NOT ENTERED Num of Veh: 1
Type of Accident: COLLISION WITH SNOW EMBANKMENT Traffic Control: NONE
Manner of Collision: OTHER Weather: SNOW
Road Surface Collision: SNOW/ICE Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3049 State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2177 INTERSECTION ACCIDENTS - MAPLE AVE *** (Continued)

Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: UNKNOWN UNKNOWN

FEB-27-2011 SUN 08:55 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33792848
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 51 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JUL-22-2011 FRI 08:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33966570
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: RAN OFF ROAD ONLY Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: CURVE AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3150 State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

OCT-24-2011 MON 03:34 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34067201
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3151 State of Registration: NY
Num of Occupants: 1 Drivers Age: 61 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 TRUCK Registered Weight: 80000 State of Registration: NY

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2177 INTERSECTION ACCIDENTS - MAPLE AVE *** (Continued)

Num of Occupants: 1 Drivers Age: 64 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

JAN-03-2012 TUE 01:35 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34163718
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 66 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: IL
Num of Occupants: 7 Drivers Age: 49 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

MAY-04-2012 FRI 04:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34300837
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 51 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

JUL-14-2012 SAT 11:40 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34367294
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3351 State of Registration: NY
Num of Occupants: 1 Drivers Age: 30 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2639 State of Registration: NY
Num of Occupants: 1 Drivers Age: 25 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: TEXTING NOT APPLICABLE

OCT-24-2012 WED 04:06 AM Persons Killed: 1 Persons Injured: 0 Extent of Injuries: K Case: 2012-34955965
Accident Class: FATAL Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT ANGLE Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2006 State of Registration: NY
Num of Occupants: 1 Drivers Age: 51 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION UNKNOWN

Veh: 2 CAR/VAN/PICKUP Registered Weight: 5123 State of Registration: NY
Num of Occupants: 1 Drivers Age: 37 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNKNOWN UNKNOWN

OCT-27-2012 SAT 12:20 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34497236
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OVERTAKING Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2177 INTERSECTION ACCIDENTS - MAPLE AVE *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 26 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 38 Sex: FEMALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY PASSING OR LANE USAGE IMPROPERLY

NOV-22-2012 THU 07:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34565160
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2519 State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JUN-06-2013 THU 03:37 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34814300
Accident Class: PROPERTY DAMAGE Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: UNKNOWN
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3040 State of Registration: NY
Num of Occupants: 1 Drivers Age: 45 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION ANIMAL'S ACTION

JUN-20-2013 THU 09:27 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: A Case: 2013-34821432
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH BICYCLIST Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR

NYSDOT Safety Information Management System
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Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2177 INTERSECTION ACCIDENTS - MAPLE AVE *** (Continued)

Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: PED/BICYCLIST AT INTERSECTION Action of Ped/Bicycle: ALONG HIGHWAY AGAINST TRAFFIC

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2544 State of Registration: NY
Num of Occupants: 1 Drivers Age: 34 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 BICYCLE Registered Weight: UNKNOWN State of Registration: -3
Num of Occupants: N/A Bicyclist Age: 56 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

JUL-18-2013 THU 09:45 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34878163
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 8800 State of Registration: NY
Num of Occupants: 1 Drivers Age: 64 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 5116 State of Registration: NY
Num of Occupants: 1 Drivers Age: 82 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

SEP-17-2013 TUE 12:48 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34926001
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3158 State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: FEMALE Citation Issued: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2177 INTERSECTION ACCIDENTS - MAPLE AVE *** (Continued)

Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 30 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JAN-05-2014 SUN 08:00 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2014-35077015
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: SLEET/HAIL/FREEZING RAIN
Road Surface Collision: SNOW/ICE Road Char: STRAIGHT AT HILLCREST Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2698 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 9200 State of Registration: NY
Num of Occupants: 3 Drivers Age: 34 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: PAVEMENT SLIPPERY FAILURE TO YIELD RIGHT OF WAY

*** Ref Mrkr: 6 8301 2178 NON-INTERSECTION ACCIDENTS ***

DEC-09-2010 THU 12:30 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: CC Case: 2010-33688334
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3500 State of Registration: NY
Num of Occupants: 2 Drivers Age: 67 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2178 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2641 State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

JUL-11-2011 MON 02:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33940816
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3892 State of Registration: NY
Num of Occupants: 1 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2535 State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: REACTION TO OTHER UNINVOLVED VEHICL NOT APPLICABLE

FEB-04-2012 SAT 07:22 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: BC Case: 2012-34215871
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 1
Type of Accident: COLL. W/EARTH ELE./ROCK CUT/DITCH Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2557 State of Registration: NY
Num of Occupants: 2 Drivers Age: 40 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FATIGUED/DROWSY UNKNOWN

JAN-03-2013 THU 05:55 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34878116
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2178 NON-INTERSECTION ACCIDENTS *** (Continued)

Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3049 State of Registration: NY
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

MAR-05-2013 TUE 08:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34720418
Accident Class: PROPERTY DAMAGE Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2696 State of Registration: NY
Num of Occupants: 1 Drivers Age: 58 Sex: MALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2723 State of Registration: NY
Num of Occupants: 2 Drivers Age: 20 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3120 State of Registration: NY
Num of Occupants: 1 Drivers Age: 70 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT ENTERED NOT ENTERED

APR-01-2013 MON 12:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34746984
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: FEMALE Citation Issued: NO

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2178 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JUL-14-2013 SUN 11:01 AM Persons Killed: 0 Persons Injured: 3 Extent of Injuries: CCC Case: 2013-34878164
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 63 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3455 State of Registration: NY
Num of Occupants: 1 Drivers Age: 34 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3683 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-26-2013 MON 10:44 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34902711
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: OVERTAKING Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3742 State of Registration: NY
Num of Occupants: 2 Drivers Age: 72 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 2 TRUCK Registered Weight: UNKNOWN State of Registration: NJ

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2178 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 56 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

SEP-20-2013 FRI 11:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34937077
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3611 State of Registration: NY
Num of Occupants: 2 Drivers Age: 26 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4050 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE

SEP-25-2013 WED 05:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34939861
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 65 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

DEC-12-2013 THU 10:45 AM Persons Killed: 0 Persons Injured: 7 Extent of Injuries: CCCCC Case: 2013-35046750
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2254 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2501 State of Registration: NY
Num of Occupants: 3 Drivers Age: 17 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3882 State of Registration: NY
Num of Occupants: 3 Drivers Age: 17 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2179 NON-INTERSECTION ACCIDENTS ***

AUG-21-2010 SAT 09:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33565573
Accident Class: NON-REPORTABLE Police Agency:SP FLORIDA SATELLITE Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 47 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: FEMALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2179 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 43 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

DEC-21-2010 TUE 02:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33702302
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: OTHER (VEHICLE) DRIVER INATTENTION

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

JUN-21-2012 THU 08:42 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34349290
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3358 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 36 Sex: FEMALE Citation Issued: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2179 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

DEC-07-2012 FRI 09:16 AM Persons Killed: 1 Persons Injured: 1 Extent of Injuries: KA Case: 2012-34607391
Accident Class: FATAL Police Agency:MONROE SP Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: SNOW
Road Surface Collision: SNOW/ICE Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3895 State of Registration: NY
Num of Occupants: 2 Drivers Age: 56 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FAILURE TO KEEP RIGHT PAVEMENT SLIPPERY

Veh: 2 TRUCK Registered Weight: UNKNOWN State of Registration: GA
Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

JAN-13-2013 SUN 04:00 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34878130
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLL. W/LIGHT SUPPORT/UTILITY POLE Traffic Control: NONE
Manner of Collision: OTHER Weather: FOG/SMOG/SMOKE
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4070 State of Registration: NY
Num of Occupants: 1 Drivers Age: 51 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

NOV-29-2013 FRI 01:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35028258
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: RIGHT ANGLE Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2179 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 2 Drivers Age: 20 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4634 State of Registration: NY
Num of Occupants: 1 Drivers Age: 67 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2180 NON-INTERSECTION ACCIDENTS ***

SEP-01-2010 WED 03:35 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33562128
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 3 Drivers Age: 43 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUL-17-2012 TUE 08:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34372610
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5236 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: MALE Citation Issued: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2180 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING U TURN
Apparent Factors: TURNING IMPROPER NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4160 State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

SEP-06-2013 FRI 06:45 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34916694
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2399 State of Registration: NY
Num of Occupants: 2 Drivers Age: 21 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2405 State of Registration: NY
Num of Occupants: 1 Drivers Age: 25 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

NOV-15-2013 FRI 06:33 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35014078
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH ANIMAL Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3552 State of Registration: NY
Num of Occupants: 2 Drivers Age: 38 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3202 State of Registration: NY

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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2180 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 2 Drivers Age: 37 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: OBSTRUCTION/DEBRIS NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 43 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: OBSTRUCTION/DEBRIS NOT APPLICABLE

*** Ref Mrkr: 6 8301 2181 NON-INTERSECTION ACCIDENTS ***

NOV-02-2010 TUE 11:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33635131
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3208 State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

MAY-01-2012 TUE 01:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34292336
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3185 State of Registration: NY
Num of Occupants: 1 Drivers Age: 60 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3049 State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2181 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

OCT-07-2012 SUN 02:40 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34457511
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2605 State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

OCT-25-2012 THU 10:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34497242
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 39 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: BACKING
Apparent Factors: BACKING UNSAFELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: PARKED
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

DEC-06-2012 THU 05:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34557916
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2923 State of Registration: NY
Num of Occupants: 1 Drivers Age: 58 Sex: FEMALE Citation Issued: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2181 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2519 State of Registration: NY
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2182 NON-INTERSECTION ACCIDENTS ***

NOV-13-2013 WED 08:10 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35003156
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3052 State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3254 State of Registration: NY
Num of Occupants: 1 Drivers Age: 33 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2183 NON-INTERSECTION ACCIDENTS ***

JAN-23-2014 THU 05:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-35101240
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 45 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2183 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 30 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2184 NON-INTERSECTION ACCIDENTS ***

NOV-21-2013 THU 07:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35020487
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 56 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: ILLNESS NOT APPLICABLE

*** Ref Mrkr: 6 8301 2185 NON-INTERSECTION ACCIDENTS ***

FEB-18-2011 FRI 06:19 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33777519
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DUSK
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3049 State of Registration: NY
Num of Occupants: 1 Drivers Age: 30 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2185 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JUL-15-2011 FRI 09:25 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33947544
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3126 State of Registration: NY
Num of Occupants: 1 Drivers Age: 58 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3325 State of Registration: NY
Num of Occupants: 2 Drivers Age: 72 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 2610 State of Registration: NY
Num of Occupants: 1 Drivers Age: 46 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

SEP-08-2011 THU 04:20 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34015851
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLL. W/LIGHT SUPPORT/UTILITY POLE Traffic Control: NONE
Manner of Collision: OTHER Weather: RAIN
Road Surface Collision: FLOODED WATER Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2939 State of Registration: NY
Num of Occupants: 1 Drivers Age: 49 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OBSTRUCTION/DEBRIS PAVEMENT SLIPPERY

MAY-19-2012 SAT 01:10 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: B Case: 2012-34307799
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2185 NON-INTERSECTION ACCIDENTS *** (Continued)

Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2286 State of Registration: NY
Num of Occupants: 2 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2578 State of Registration: NY
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUN-24-2012 SUN 01:40 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34344694
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3568 State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4468 State of Registration: NY
Num of Occupants: 2 Drivers Age: 31 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

OCT-19-2012 FRI 05:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34485444
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 4
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4180 State of Registration: NY

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2185 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: PAVEMENT SLIPPERY FOLLOWING TOO CLOSELY

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4330 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3395 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 4 CAR/VAN/PICKUP Registered Weight: 4290 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

MAR-25-2013 MON 05:40 PM Persons Killed: 0 Persons Injured: 4 Extent of Injuries: CCCC Case: 2013-34748156
Accident Class: INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: HEAD ON Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 3 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT ENTERED NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3093 State of Registration: NY
Num of Occupants: 2 Drivers Age: 29 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FAILURE TO KEEP RIGHT

APR-06-2013 SAT 03:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34746987

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2185 NON-INTERSECTION ACCIDENTS *** (Continued)

Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 53 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 57 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2186 NON-INTERSECTION ACCIDENTS ***

JUN-02-2011 THU 10:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33897364
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2838 State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JAN-04-2012 WED 03:55 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34163716
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 25 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2186 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 3 Drivers Age: 39 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

NOV-06-2012 TUE 12:40 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34514443
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2729 State of Registration: NY
Num of Occupants: 1 Drivers Age: 45 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

MAY-23-2013 THU 07:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34783196
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 46 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 40 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2186 INTERSECTION ACCIDENTS - HARTLEY-GATE SCHOOLHOUSE RD ***

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2186 INTERSECTION ACCIDENTS - HARTLEY-GATE SCHOOLHOUSE RD *** (Continued)

FEB-09-2011 WED 02:43 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33767117
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 46 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3452 State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

FEB-26-2011 SAT 09:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33838803
Accident Class: PROPERTY DAMAGE Police Agency:NOT ENTERED Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: UTILITY WORK AREA
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4614 State of Registration: NY
Num of Occupants: 2 Drivers Age: 82 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNKNOWN UNKNOWN

Veh: 2 CAR/VAN/PICKUP Registered Weight: 9500 State of Registration: NY
Num of Occupants: 1 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: UNKNOWN UNKNOWN

APR-13-2011 WED 11:10 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33845077
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2186 INTERSECTION ACCIDENTS - HARTLEY-GATE SCHOOLHOUSE RD *** (Continued)

Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3022 State of Registration: NY
Num of Occupants: 1 Drivers Age: 17 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY PAVEMENT SLIPPERY

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3163 State of Registration: NY
Num of Occupants: 2 Drivers Age: 19 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH-WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

FEB-10-2012 FRI 12:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34200121
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4113 State of Registration: NY
Num of Occupants: 1 Drivers Age: 39 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 5400 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

MAY-15-2012 TUE 03:10 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34373352
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: WET Road Char: CURVE AND GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3871 State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2186 INTERSECTION ACCIDENTS - HARTLEY-GATE SCHOOLHOUSE RD *** (Continued)

Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3573 State of Registration: NY
Num of Occupants: 1 Drivers Age: 29 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY PAVEMENT SLIPPERY

MAY-25-2012 FRI 07:30 PM Persons Killed: 0 Persons Injured: 3 Extent of Injuries: CCC Case: 2012-34313937
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2962 State of Registration: NY
Num of Occupants: 1 Drivers Age: 20 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2690 State of Registration: NY
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 4 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

JUN-07-2012 THU 02:40 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34328963
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3049 State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: MALE Citation Issued: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2186 INTERSECTION ACCIDENTS - HARTLEY-GATE SCHOOLHOUSE RD *** (Continued)

Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 60 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-23-2013 FRI 12:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34904165
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 66 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3063 State of Registration: NY
Num of Occupants: 3 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: UNSAFE LANE CHANGE NOT APPLICABLE

DEC-31-2013 TUE 05:05 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35064045
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 4
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: SNOW
Road Surface Collision: SNOW/ICE Road Char: CURVE AND GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3090 State of Registration: NY
Num of Occupants: 5 Drivers Age: 39 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3163 State of Registration: NY

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2186 INTERSECTION ACCIDENTS - HARTLEY-GATE SCHOOLHOUSE RD *** (Continued)

Num of Occupants: 1 Drivers Age: 20 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: PAVEMENT SLIPPERY NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: DE
Num of Occupants: 1 Drivers Age: 26 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: PAVEMENT SLIPPERY NOT APPLICABLE

Veh: 4 CAR/VAN/PICKUP Registered Weight: 3977 State of Registration: NY
Num of Occupants: 2 Drivers Age: 65 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: PAVEMENT SLIPPERY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2187 NON-INTERSECTION ACCIDENTS ***

FEB-03-2011 THU 11:04 AM Persons Killed: 0 Persons Injured: 3 Extent of Injuries: CCC Case: 2011-33996929
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: UNKNOWN
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: WET Road Char: STRAIGHT AT HILLCREST Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2698 State of Registration: NY
Num of Occupants: 2 Drivers Age: 29 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: UNKNOWN UNKNOWN

Veh: 2 CAR/VAN/PICKUP Registered Weight: 5127 State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: UNKNOWN UNKNOWN

Veh: 3 TRUCK Registered Weight: 25500 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY UNSAFE SPEED

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2187 NON-INTERSECTION ACCIDENTS *** (Continued)

Truck/Bus Clsf: NOT ENTERED

JUL-01-2011 FRI 12:05 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33936695
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 3 Drivers Age: 54 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY DRIVER INATTENTION

JUL-01-2011 FRI 11:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33936693
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 2 Drivers Age: 20 Sex: FEMALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY DRIVER INATTENTION

JUL-11-2011 MON 10:25 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33947358
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE

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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2187 NON-INTERSECTION ACCIDENTS *** (Continued)

Manner of Collision: LEFT TURN (AGAINST OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: 11895 State of Registration: NY
Num of Occupants: 2 Drivers Age: 37 Sex: MALE Citation Issued: YES
Direction of Travel: NORTH-EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MERGING
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4356 State of Registration: NY
Num of Occupants: 1 Drivers Age: 71 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUL-18-2011 MON 07:45 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33949995
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3884 State of Registration: NY
Num of Occupants: 1 Drivers Age: 46 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3360 State of Registration: NY
Num of Occupants: 1 Drivers Age: 25 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-25-2011 THU 09:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34006704
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2187 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3184 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: PAVEMENT SLIPPERY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3700 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3340 State of Registration: NY
Num of Occupants: 1 Drivers Age: 49 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

OCT-14-2011 FRI 01:15 PM Persons Killed: 0 Persons Injured: 2 Extent of Injuries: CC Case: 2011-34052850
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3112 State of Registration: NY
Num of Occupants: 2 Drivers Age: 76 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 50 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

OCT-09-2013 WED 07:35 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34993550
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2187 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2188 NON-INTERSECTION ACCIDENTS ***

DEC-11-2010 SAT 07:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33691029
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JUL-29-2011 FRI 01:45 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33966571
Accident Class: INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3355 State of Registration: NY
Num of Occupants: 2 Drivers Age: 20 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 3 Drivers Age: 48 Sex: MALE Citation Issued: NO

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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2188 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STARTING IN TRAFFIC
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

AUG-12-2011 FRI 02:55 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-33991751
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: CA
Num of Occupants: 2 Drivers Age: 28 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2652 State of Registration: NY
Num of Occupants: 1 Drivers Age: 23 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 2822 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: FEMALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY BRAKES DEFECTIVE

OCT-03-2011 MON 10:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34038581
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3750 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2189 NON-INTERSECTION ACCIDENTS ***

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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

AUG-06-2012 MON 03:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34390042
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2595 State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4210 State of Registration: NY
Num of Occupants: 1 Drivers Age: 76 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: BACKING
Apparent Factors: BACKING UNSAFELY NOT APPLICABLE

OCT-31-2012 WED 10:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34878177
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH ANIMAL Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4365 State of Registration: NY
Num of Occupants: 1 Drivers Age: 53 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

APR-11-2014 FRI 08:15 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-35231102
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3391 State of Registration: NY
Num of Occupants: 1 Drivers Age: 65 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

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Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2189 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3805 State of Registration: NY
Num of Occupants: 1 Drivers Age: 20 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3613 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2190 NON-INTERSECTION ACCIDENTS ***

JUL-07-2011 THU 09:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33940788
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

NOV-28-2012 WED 07:50 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34585102
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3426 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT ENTERED

JAN-16-2013 WED 04:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34878132
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2190 NON-INTERSECTION ACCIDENTS *** (Continued)

Type of Accident: COLLISION WITH SNOW EMBANKMENT Traffic Control: NONE
Manner of Collision: OTHER Weather: SNOW
Road Surface Collision: SNOW/ICE Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3516 State of Registration: NY
Num of Occupants: 1 Drivers Age: 28 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: PAVEMENT SLIPPERY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2191 NON-INTERSECTION ACCIDENTS ***

DEC-04-2010 SAT 07:30 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33677089
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4237 State of Registration: NY
Num of Occupants: 5 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

DEC-14-2011 WED 02:32 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34139991
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2581 State of Registration: NY
Num of Occupants: 3 Drivers Age: 21 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4667 State of Registration: NY
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2191 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: TIRE FAILURE/INADEQUATE NOT APPLICABLE

JUL-30-2012 MON 12:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34383671
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2380 State of Registration: NY
Num of Occupants: 1 Drivers Age: 20 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3885 State of Registration: NY
Num of Occupants: 1 Drivers Age: 24 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

MAY-30-2013 THU 11:20 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34796784
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3555 State of Registration: NY
Num of Occupants: 2 Drivers Age: 28 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 5415 State of Registration: NY
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JAN-23-2014 THU 05:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-35101241
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2191 NON-INTERSECTION ACCIDENTS *** (Continued)

Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DUSK
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3535 State of Registration: NY
Num of Occupants: 2 Drivers Age: 32 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3408 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 4561 State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2192 NON-INTERSECTION ACCIDENTS ***

NOV-04-2010 THU 11:35 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33635986
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3206 State of Registration: NY
Num of Occupants: 2 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3089 State of Registration: NY
Num of Occupants: 1 Drivers Age: 56 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2192 NON-INTERSECTION ACCIDENTS *** (Continued)

SEP-23-2011 FRI 04:05 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-NR3224719
Accident Class: NON-REPORTABLE Police Agency: Num of Veh: 2
Type of Accident: UNKNOWN Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: UNKNOWN
Road Surface Collision: UNKNOWN Road Char: Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: INVALID CODE Action of Ped/Bicycle:

Veh: 1 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: UNKNOWN UNKNOWN

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: PAVEMENT SLIPPERY UNKNOWN

OCT-15-2011 SAT 01:10 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34052852
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4085 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2193 NON-INTERSECTION ACCIDENTS ***

OCT-24-2011 MON 08:40 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-34060512
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2193 NON-INTERSECTION ACCIDENTS *** (Continued)

Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2317 State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4845 State of Registration: NY
Num of Occupants: 1 Drivers Age: 37 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3452 State of Registration: NY
Num of Occupants: 1 Drivers Age: 32 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NOV-14-2011 MON 04:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34095235
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 53 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

FEB-08-2012 WED 02:29 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34208079
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3016 State of Registration: NY

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2193 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 23 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

MAR-23-2012 FRI 09:10 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34239936
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 7300 State of Registration: NY
Num of Occupants: 1 Drivers Age: 40 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4675 State of Registration: NY
Num of Occupants: 1 Drivers Age: 49 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

APR-17-2012 TUE 08:25 AM Persons Killed: 0 Persons Injured: 11 Extent of Injuries: CCCCC Case: 2012-34271030
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 BUS Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 55 Drivers Age: 69 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3062 State of Registration: NY
Num of Occupants: 1 Drivers Age: 39 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

OCT-11-2012 THU 04:45 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34472115
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3067 State of Registration: NY
Num of Occupants: 1 Drivers Age: 23 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2959 State of Registration: NY
Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

DEC-21-2013 SAT 03:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35064051
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH GUIDE RAIL Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3098 State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ALCOHOL INVOLVEMENT FATIGUED/DROWSY

*** Ref Mrkr: 6 8301 2194 NON-INTERSECTION ACCIDENTS ***

DEC-22-2010 WED 03:02 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2010-33751743
Accident Class: INJURY Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 5
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2501 State of Registration: NY
Num of Occupants: 1 Drivers Age: 51 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2194 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) UNKNOWN

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: FL
Num of Occupants: 2 Drivers Age: 46 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) UNKNOWN

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3100 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) UNKNOWN

Veh: 4 CAR/VAN/PICKUP Registered Weight: 2497 State of Registration: NY
Num of Occupants: 1 Drivers Age: 23 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) UNKNOWN

Veh: 5 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: UNKNOWN UNKNOWN

JAN-06-2012 FRI 05:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34169540
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2997 State of Registration: NY
Num of Occupants: 1 Drivers Age: 39 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3405 State of Registration: NY
Num of Occupants: 1 Drivers Age: 45 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2194 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2195 NON-INTERSECTION ACCIDENTS ***

APR-13-2011 WED 05:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33845059
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OVERTAKING Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3338 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2388 State of Registration: NY
Num of Occupants: 3 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY DRIVER INATTENTION

FEB-04-2013 MON 11:40 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34646298
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLL. W/LIGHT SUPPORT/UTILITY POLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4093 State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FELL ASLEEP NOT APPLICABLE

FEB-25-2013 MON 08:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34678270
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2195 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 43 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2272 State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3283 State of Registration: NY
Num of Occupants: 1 Drivers Age: 43 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

AUG-23-2013 FRI 03:50 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34904167
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 33 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 2 TRUCK Registered Weight: 54000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 42 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

SEP-29-2013 SUN 03:10 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34993557
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLL. W/EARTH ELE./ROCK CUT/DITCH Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2195 NON-INTERSECTION ACCIDENTS *** (Continued)

Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2690 State of Registration: NY
Num of Occupants: 1 Drivers Age: 27 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2196 NON-INTERSECTION ACCIDENTS ***

SEP-15-2010 WED 11:55 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2010-33576820
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2467 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3001 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

NOV-17-2010 WED 06:40 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2010-33655116
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5301 State of Registration: NY
Num of Occupants: 1 Drivers Age: 32 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2196 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2642 State of Registration: NY
Num of Occupants: 1 Drivers Age: 24 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION UNSAFE SPEED

DEC-20-2010 MON 01:40 PM Persons Killed: 0 Persons Injured: 4 Extent of Injuries: CCCC Case: 2010-33700236
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: LEFT TURN (WITH OTHER CAR) Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5000 State of Registration: NY
Num of Occupants: 2 Drivers Age: 22 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3072 State of Registration: NY
Num of Occupants: 3 Drivers Age: 19 Sex: FEMALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY TURNING IMPROPER

APR-14-2011 THU 06:48 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33850418
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 55 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4165 State of Registration: NY
Num of Occupants: 4 Drivers Age: 46 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2196 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3060 State of Registration: NY
Num of Occupants: 2 Drivers Age: 39 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

SEP-30-2011 FRI 02:35 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2011-34081136
Accident Class: INJURY Police Agency:ORANGE CO SHERIFF DEPT Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 54 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: UNKNOWN UNKNOWN

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3115 State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

NOV-13-2011 SUN 04:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34094949
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3090 State of Registration: NY
Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

FEB-02-2012 THU 08:02 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2012-34196679
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: STOP SIGN
Manner of Collision: REAR END Weather: CLEAR

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2196 NON-INTERSECTION ACCIDENTS *** (Continued)

Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5690 State of Registration: NY
Num of Occupants: 2 Drivers Age: 43 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3098 State of Registration: NY
Num of Occupants: 1 Drivers Age: 77 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY DRIVER INATTENTION

FEB-07-2012 TUE 05:05 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34200181
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DUSK
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3135 State of Registration: NY
Num of Occupants: 1 Drivers Age: 61 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2403 State of Registration: NY
Num of Occupants: 1 Drivers Age: 61 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

AUG-04-2012 SAT 07:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34399082
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4234 State of Registration: NY
Num of Occupants: 2 Drivers Age: 69 Sex: MALE Citation Issued: NO

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2196 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3228 State of Registration: NY
Num of Occupants: 1 Drivers Age: 49 Sex: FEMALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY ALCOHOL INVOLVEMENT

AUG-29-2012 WED 07:45 AM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: Case: 2012-34418296
Accident Class: PROPERTY DAMAGE AND INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3208 State of Registration: NY
Num of Occupants: 1 Drivers Age: 60 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: GLARE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2544 State of Registration: NY
Num of Occupants: 1 Drivers Age: 28 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3662 State of Registration: NY
Num of Occupants: 1 Drivers Age: 38 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

FEB-26-2013 TUE 09:40 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34678269
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2985 State of Registration: NY

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2196 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 54 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 81 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

FEB-27-2013 WED 02:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34684417
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3285 State of Registration: NY
Num of Occupants: 2 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: -3
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

JUL-08-2013 MON 07:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34878158
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2829 State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2196 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 2 CAR/VAN/PICKUP Registered Weight: 9900 State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

JUL-30-2013 TUE 08:55 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34904164
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3331 State of Registration: NY
Num of Occupants: 1 Drivers Age: 84 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2197 NON-INTERSECTION ACCIDENTS ***

MAY-24-2011 TUE 08:35 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33884950
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2708 State of Registration: NY
Num of Occupants: 1 Drivers Age: 59 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2698 State of Registration: NY
Num of Occupants: 1 Drivers Age: 23 Sex: MALE Citation Issued: YES
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2197 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

SEP-04-2012 TUE 05:12 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34429995
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: RIGHT ANGLE Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3690 State of Registration: NY
Num of Occupants: 1 Drivers Age: 28 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3009 State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: OBSTRUCTION/DEBRIS NOT APPLICABLE

SEP-05-2012 WED 04:45 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34433441
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 4
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 OTHER Registered Weight: UNKNOWN State of Registration: -3
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2482 State of Registration: NY
Num of Occupants: 1 Drivers Age: 43 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 4453 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: FEMALE Citation Issued: NO

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2197 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 4 CAR/VAN/PICKUP Registered Weight: 2623 State of Registration: NY
Num of Occupants: 1 Drivers Age: 25 Sex: MALE Citation Issued: YES
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

JUN-12-2013 WED 04:45 PM Persons Killed: 0 Persons Injured: 1 Extent of Injuries: C Case: 2013-34813577
Accident Class: INJURY Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: PA
Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2544 State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3340 State of Registration: NY
Num of Occupants: 1 Drivers Age: 26 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION FOLLOWING TOO CLOSELY

JAN-09-2014 THU 03:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-35077014
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3871 State of Registration: NY

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2197 NON-INTERSECTION ACCIDENTS *** (Continued)

Num of Occupants: 1 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

MAR-12-2014 WED 10:05 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2014-35183313
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OVERTAKING Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AT HILLCREST Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4365 State of Registration: NY
Num of Occupants: 1 Drivers Age: 61 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3548 State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: OVERTAKING
Apparent Factors: PASSING OR LANE USAGE IMPROPERLY NOT APPLICABLE

*** Ref Mrkr: 6 8301 2198 NON-INTERSECTION ACCIDENTS ***

FEB-27-2012 MON 05:25 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34239868
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DUSK
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3696 State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2198 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3863 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3521 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

NOV-09-2012 FRI 08:40 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34519550
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2696 State of Registration: NY
Num of Occupants: 1 Drivers Age: 20 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3300 State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

APR-22-2013 MON 03:50 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34746995
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2198 NON-INTERSECTION ACCIDENTS *** (Continued)

Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 32 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

JUN-18-2013 TUE 03:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34821425
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT TURN (WITH OTHER CAR) Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 12000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 56 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4613 State of Registration: NY
Num of Occupants: 3 Drivers Age: 31 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: VIEW OBSTRUCTED/LIMITED NOT APPLICABLE

NOV-04-2013 MON 07:48 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35003151
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: MALE Citation Issued: NO

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2198 NON-INTERSECTION ACCIDENTS *** (Continued)

Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

DEC-21-2013 SAT 06:50 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35052242
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3700 State of Registration: NY
Num of Occupants: 1 Drivers Age: 73 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2199 NON-INTERSECTION ACCIDENTS ***

MAY-24-2011 TUE 12:01 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33885287
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: 80000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

NOV-10-2011 THU 06:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34122571
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

*** Ref Mrkr: 6 8301 2199 NON-INTERSECTION ACCIDENTS *** (Continued)

Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5005 State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

NOV-19-2012 MON 09:20 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34534079
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3367 State of Registration: NY
Num of Occupants: 1 Drivers Age: 69 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JAN-27-2013 SUN 06:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34878140
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2869 State of Registration: NY
Num of Occupants: 1 Drivers Age: 29 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3289 State of Registration: NY
Num of Occupants: 1 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

TOTAL NUMBER OF ACCIDENTS PRINTED: 198

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Complete Accident Data From NYSDMV Is Only Available thru 31-JUL-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012170 - 6 83012199 Dates: 01-AUG-2010 - 27-APR-2014

ABSENCE OF REFERENCE MARKERS OR INTERSECTION WITHIN A SPECIFIED ROADWAY SECTION & TIME PERIOD INDICATES NO ACCIDENTS FOUND

*** END OF REPORT ***

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2198 NON-INTERSECTION ACCIDENTS ***

FEB-27-2012 MON 05:25 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34239868
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DUSK
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3696 State of Registration: NY
Num of Occupants: 1 Drivers Age: 50 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3863 State of Registration: NY
Num of Occupants: 1 Drivers Age: 21 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 3 CAR/VAN/PICKUP Registered Weight: 3521 State of Registration: NY
Num of Occupants: 1 Drivers Age: 52 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

NOV-09-2012 FRI 08:40 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34519550
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 3
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2696 State of Registration: NY
Num of Occupants: 1 Drivers Age: 20 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3300 State of Registration: NY
Num of Occupants: 1 Drivers Age: 35 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2198 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 3 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NJ
Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

APR-22-2013 MON 03:50 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34746995
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 31 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 32 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

JUN-18-2013 TUE 03:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34821425
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: RIGHT TURN (WITH OTHER CAR) Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 12000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 56 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 4613 State of Registration: NY
Num of Occupants: 3 Drivers Age: 31 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: MAKING RIGHT TURN

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2198 NON-INTERSECTION ACCIDENTS *** (Continued)

Apparent Factors: VIEW OBSTRUCTED/LIMITED NOT APPLICABLE

NOV-04-2013 MON 07:48 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-35003151
Accident Class: NON-REPORTABLE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 18 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2199 NON-INTERSECTION ACCIDENTS ***

MAY-24-2011 TUE 12:01 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33885287
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: RAIN
Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 TRUCK Registered Weight: 80000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 48 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE
Truck/Bus Clsf: NOT ENTERED

NOV-10-2011 THU 06:00 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34122571
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2199 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: 5005 State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

NOV-19-2012 MON 09:20 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34534079
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3367 State of Registration: NY
Num of Occupants: 1 Drivers Age: 69 Sex: FEMALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JAN-27-2013 SUN 06:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34878140
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2869 State of Registration: NY
Num of Occupants: 1 Drivers Age: 29 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3289 State of Registration: NY
Num of Occupants: 1 Drivers Age: 47 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

*** Ref Mrkr: 6 8301 2200 NON-INTERSECTION ACCIDENTS ***

JUN-05-2012 TUE 12:40 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34325347
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1

Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2200 NON-INTERSECTION ACCIDENTS *** (Continued)

Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3690 State of Registration: NY
Num of Occupants: 1 Drivers Age: 28 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2201 NON-INTERSECTION ACCIDENTS ***

MAR-08-2011 TUE 09:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33799146
Accident Class: NON-REPORTABLE Police Agency:MONROE SP Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 19 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

DEC-10-2011 SAT 12:08 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34139585
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2497 State of Registration: NY
Num of Occupants: 1 Drivers Age: 51 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

JUN-06-2012 WED 06:24 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34325342
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: RAIN

NYSDOT Safety Information Management System
Accident Verbal Description Report
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Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2201 NON-INTERSECTION ACCIDENTS *** (Continued)

Road Surface Collision: WET Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 6528 State of Registration: NY
Num of Occupants: 1 Drivers Age: 25 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 5304 State of Registration: NY
Num of Occupants: 1 Drivers Age: 22 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY PAVEMENT SLIPPERY

APR-18-2013 THU 11:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34747001
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: HIGHWAY WORK AREA
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4600 State of Registration: NY
Num of Occupants: 1 Drivers Age: 68 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 2911 State of Registration: NY
Num of Occupants: 1 Drivers Age: 23 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2202 NON-INTERSECTION ACCIDENTS ***

FEB-10-2012 FRI 02:50 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34200106
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2202 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: 4760 State of Registration: NY
Num of Occupants: 1 Drivers Age: 40 Sex: FEMALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2203 NON-INTERSECTION ACCIDENTS ***

JUL-15-2011 FRI 05:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33947070
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: REAR END Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2398 State of Registration: NY
Num of Occupants: 1 Drivers Age: 57 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3217 State of Registration: NY
Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION NOT APPLICABLE

NOV-01-2011 TUE 03:41 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-NR3187461
Accident Class: NON-REPORTABLE Police Agency: Num of Veh: 2
Type of Accident: UNKNOWN Traffic Control: UNKNOWN
Manner of Collision: SIDESWIPE Weather: UNKNOWN
Road Surface Collision: UNKNOWN Road Char: Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: INVALID CODE Action of Ped/Bicycle:

Veh: 1 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: PAVEMENT SLIPPERY UNKNOWN

Veh: 2 OTHER Registered Weight: UNKNOWN State of Registration: UNKNOWN
Num of Occupants: UNKNOWN Drivers Age: UNKNOWN Sex: UNKNOWN Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO

Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2203 NON-INTERSECTION ACCIDENTS *** (Continued)

Pre-Accd Action: UNKNOWN
Apparent Factors: PAVEMENT SLIPPERY UNKNOWN

NOV-04-2011 FRI 11:15 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-34082272
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH ANIMAL Traffic Control: NONE
Manner of Collision: OTHER Weather: CLEAR
Road Surface Collision: DRY Road Char: STRAIGHT/ GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: MI
Num of Occupants: 1 Drivers Age: 64 Sex: MALE Citation Issued: NO
Direction of Travel: EAST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2204 NON-INTERSECTION ACCIDENTS ***

DEC-05-2012 WED 06:20 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2012-34572782
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN VILLAGE PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: REAR END Weather: CLOUDY
Road Surface Collision: DRY Road Char: CURVE AND GRADE Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 2687 State of Registration: NY
Num of Occupants: 1 Drivers Age: 53 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: REACTION TO OTHER UNINVOLVED VEHICL NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: 3189 State of Registration: NY
Num of Occupants: 1 Drivers Age: 44 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY NOT APPLICABLE

JAN-20-2013 SUN 02:30 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34688170
Accident Class: PROPERTY DAMAGE Police Agency: Num of Veh: 1
Type of Accident: COLLISION WITH OTHER Traffic Control: UNKNOWN
Manner of Collision: OTHER Weather: UNKNOWN
Road Surface Collision: UNKNOWN Road Char: UNKNOWN Light Condition: UNKNOWN
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
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Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2204 NON-INTERSECTION ACCIDENTS *** (Continued)

Veh: 1 TRUCK Registered Weight: 66000 State of Registration: NY
Num of Occupants: 1 Drivers Age: 36 Sex: MALE Citation Issued: NO
Direction of Travel: UNKNOWN Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: UNKNOWN
Apparent Factors: NOT ENTERED NOT ENTERED
Truck/Bus Clsf: NOT ENTERED

FEB-08-2013 FRI 01:37 PM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34680798
Accident Class: NON-REPORTABLE Police Agency:GOSHEN VILLAGE PD Num of Veh: 1
Type of Accident: COLL. W/LIGHT SUPPORT/UTILITY POLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: SNOW
Road Surface Collision: SNOW/ICE Road Char: STRAIGHT/ GRADE Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 30 Sex: MALE Citation Issued: NO
Direction of Travel: SOUTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: PAVEMENT SLIPPERY NOT APPLICABLE

JUN-25-2013 TUE 01:20 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2013-34824526
Accident Class: PROPERTY DAMAGE Police Agency:GOSHEN TOWN PD Num of Veh: 1
Type of Accident: COLLISION WITH DEER Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLOUDY
Road Surface Collision: DRY Road Char: STRAIGHT AND LEVEL Light Condition: DARK-ROAD UNLIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh: 1 CAR/VAN/PICKUP Registered Weight: 3548 State of Registration: NY
Num of Occupants: 1 Drivers Age: 49 Sex: MALE Citation Issued: NO
Direction of Travel: WEST Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: ANIMAL'S ACTION NOT APPLICABLE

*** Ref Mrkr: 6 8301 2204 INTERSECTION ACCIDENTS - MAPLE AVE EXTENTION ***

APR-04-2011 MON 09:00 AM Persons Killed: 0 Persons Injured: 0 Extent of Injuries: Case: 2011-33845116
Accident Class: NON-REPORTABLE Police Agency:GOSHEN VILLAGE PD Num of Veh: 2
Type of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OVERTAKING Weather: CLOUDY
Road Surface Collision: WET Road Char: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

NYSDOT Safety Information Management System
Accident Verbal Description Report
Intersection & Non-Intersection Accidents
Complete Accident Data From NYSDMV Is Only Available thru 30-NOV-2013

Route: 6 Highway Location Ref Mrkr Range: 6 83012198 - 6 83012204 Dates: 01-DEC-2010 - 30-NOV-2013

*** Ref Mrkr: 6 8301 2204 INTERSECTION ACCIDENTS - MAPLE AVE EXTENTION *** (Continued)

Veh: 1 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 62 Sex: MALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: OTHER (VEHICLE) NOT APPLICABLE

Veh: 2 CAR/VAN/PICKUP Registered Weight: UNKNOWN State of Registration: NY
Num of Occupants: 1 Drivers Age: 41 Sex: FEMALE Citation Issued: NO
Direction of Travel: NORTH Public Property Damage: NO School Bus Involved: NO
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE OTHER (VEHICLE)

TOTAL NUMBER OF ACCIDENTS PRINTED: 23

ABSENCE OF REFERENCE MARKERS OR INTERSECTION WITHIN A SPECIFIED ROADWAY SECTION & TIME PERIOD INDICATES NO ACCIDENTS FOUND

*** END OF REPORT ***

AMY'S KITCHEN & SCIENCE OF THE SOUL

TOWN ACCIDENT DATA
JANUARY 1, 2012 TO JULY 6, 2015

TABLE NO. A-2

ACCIDENT SUMMARY - TOWN ACCIDENT DATA
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
6 8301 2196	at Int. with Maple Avenue	01/03/12	1:35 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
6 8301 2156	35 feet West of Gate Schoolhouse Road	01/04/12	3:55 PM	No Passing Zone	Unknown	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention/Distraction, Following Too Closely
6 8301 2194	500 feet West of Maple Avenue	01/06/12	5:40 PM	None	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Driver Inattention/Distraction
6 8301 2196	25 feet East of 6 1/2 Station Road	02/02/12	8:02 PM	Stop Sign	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Driver Inattention/Distraction, Following Too Closely
6 8301 2196	at Int. with 6 1/2 Station Rd.	02/07/12	5:05 PM	Traffic Signal	PDO	2-0	Dusk	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 3013	1500 feet North of Maple Avenue	02/08/12	2:29 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
6 8301 2202	0.5 miles East of 6 1/2 Station Road	02/10/12	2:50 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 2185	at Int. with Gate Schoolhouse Road	02/10/12	12:45 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2198	at Entrance to the County Deli	02/27/12	5:25 PM	Traffic Signal	PDO	3-0	Dusk	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 3196	at Int. with 6 1/2 Station Rd.	03/17/12	5:55 AM	Traffic Signal	PDO	2-0	Dark-Road Unlighted	Dry	Fog/Smog	Right Turn	Passing or Lane Usage Improper, Driver Inattention/Distraction
17M	0.25 miles West of Maple Avenue	03/23/12	9:10 AM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 2196	at Int. with Maple Avenue Ext.	04/02/12	9:40 PM	Traffic Signal	PDO	2-0	Dark-Road Lighted	Dry	Clear	Right Angle	Traffic Control Devices Disregarded
6 1/2 Station Road	1000 feet South of Rt 17M	04/10/12	3:20 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
17M 8301 2196	0.3 miles West of 6 1/2 Station Road	04/17/12	8:25 AM	No Passing Zone	PDO & I	2-12	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 2179	at Int. with Training Center Lane	04/30/12	10:25 AM	None	Unknown	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, Following Too Closely
6 8301 2181	at Int. with Cannon Hill Drive	05/01/15	1:45 PM	None	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention/Distraction
17M 8301 2196	at Int. with 6 1/2 Station Rd.	05/04/12	4:40 PM	Traffic Signal	Unknown	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
17M 8301 1185	500 feet West of Hartley Road	05/19/12	1:10 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 1188	30 feet West of Hartley Road	05/25/12	7:30 PM	None	PDO & I	3-3	Daylight	Dry	Clear	Rear End	Following Too Closely
6 8301 2201	75 feet West of Police Drive	06/06/12	6:24 PM	No Passing Zone	PDO	2-0	Daylight	Wet	Rain	Rear End	Pavement Slippery, Following Too Closely
17M 8301 1188	15 feet East of Hartley Road	06/07/12	2:40 PM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 2204	0.2 miles West of Police Drive	06/08/12	5:45 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 1196	at Int. with Maple Avenue	06/07/12	7:00 AM	Traffic Signal	N/R	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, Following Too Closely
17M 8301 2185	300 feet East of Musket Ct	06/24/12	1:40 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 2177	300 feet East of Fischer Lane	07/12/12	6:10 PM	No Passing Zone	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 1196	at Int. with Maple Avenue	07/14/12	11:40 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Other
17M 8301 2177	300 feet West of Cannon Hill Road	07/17/12	8:00 AM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Right Angle	Turning Improperly
6 8301 2192	0.5 miles East of Gate Schoolhouse Road	07/30/12	12:40 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 2188	at Int. with Hartley Road	08/10/12	1:15 PM	Traffic Signal	PDO	2-0	Daylight	Wet	Rain	Rear End	Pavement Slippery
6 8301 2196	100 feet West of Maple Avenue	08/29/12	7:45 AM	None	Unknown	3-0	Daylight	Dry	Clear	Rear End	Glare, Other (Vehicle)
	0.1 miles East of Maple Avenue	09/04/12	5:12 PM	No Passing Zone	PDO	2-0	Daylight	Wet	Rain	Right Angle	Obstruction/Debris
17M 8301 2196	1000 feet East of Maple Avenue	09/05/12	4:45 PM	Traffic Signal	PDO	4-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, Following Too Closely
17M 8301 1196	at Int. with Maple Avenue	10/24/12	4:06 AM	Traffic Signal	F	2-0	Dark-Road Unlighted	Wet	Rain	Right Angle	Driver Inattention/Distraction
17M 8301 2196	0.25 miles West of Maple Avenue XT	10/11/12	4:45 PM	No Passing Zone	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 1188	300 feet West of Hartley Road	10/19/12	5:40 PM	None	PDO	4-0	Daylight	Wet	Rain	Other	Pavement Slippery, Following Too Closely
17M 8301 2196	0.1 feet East of Maple Avenue	10/27/12	12:20 PM	None	Unknown	2-0	Daylight	Dry	Cloudy	Sideswipe	Failure To Yield Right of Way, Passing or Lane Usage Improper
17M 8301 1196	300 feet East of Maple Avenue XT.	11/01/12	3:10 PM	No Passing Zone	PDO	2-0	Daylight	Wet	Rain	Right Angle	Turning Improperly
17 M 8301 2186	at Int. with Hartley Road	11/06/12	12:40 AM	Traffic Signal	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 2204	at Int. with Police Drive	11/07/12	10:30 PM	None	Unknown	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 2198	500 feet East of 6 1/2 Station Road	11/09/12	8:40 AM	Traffic Signal	PDO	3-0	Daylight	Dry	Clear	Other	Driver Inattention/Distraction, Other Vehicular
17M 8301 2199	0.1 miles East of 6 1/2 Station Road	11/19/12	9:20 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 2190	.25 miles East of Gate School House Rd	11/28/12	7:50 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
17M 8301 2179	at Int. with Cannon Hill Drive	12/06/12	5:30 AM	None	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 2204	0.3 miles West of Police Drive	12/15/12	5:50 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 1196	75 feet West of Cr Maple Ave	12/29/12	2:15 PM	None	PDO & I	3-1	Daylight	Snow/Ice	Snow	Other	Pavement Slippery, Unsafe Speed
17A 8301 1009	at Int. with Gibson Road	02/20/13	3:00 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention/Distraction
17M 8301 2195	at Int. with Maple Avenue	02/25/13	8:30 AM	Traffic Signal	PDO	3-0	Daylight	Dry	Cloudy	Other	Driver Inattention/Distraction
17M 8301 2196	at Int. with Maple Avenue Ext.	04/02/12	9:40 PM	Traffic Signal	PDO	2-0	Dark-Road Lighted	Dry	Clear	Right Angle	N/A
17M 8301 2198	at Int. with Maple Avenue	06/18/13	3:15 PM	Traffic Signal	PDO	2-0	Daylight	Wet	Rain	Right Turn	View Obstructed/Limited
17M 8301 2196	at Int. with Maple Avenue	07/08/13	7:50 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 2196	at Int. with Maple Avenue	07/30/13	8:55 AM	Traffic Signal	PDO & I	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 1185	30 feet West of TR - Hartley Road	08/12/13	11:35 AM	None	Unknown	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, Following Too Closely
17M	at Int. with Gate Schoolhouse Road	08/23/13	12:40 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Sideswipe	Passing or Lane Usage Improper, Unsafe Lane Changing
17M 8301 1196	300 feet West of 6/12 Station Road	08/23/13	3:50 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Other Vehicular, Following Too Closely
17M 8301 2180	200 feet West of Training Center Lane	09/06/13	6:45 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 2175	at Int. with Fischer Lane	09/15/13	11:00 AM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

TABLE NO. A-2

ACCIDENT SUMMARY - TOWN ACCIDENT DATA
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
17M 8301 3196	500 feet East of CR Maple Avenue	09/17/13	6:20 AM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M	at Int. with 6 1/2 Station Rd.	09/17/13	12:48 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 1177	200 feet West of Training Center Drive	09/20/13	11:40 PM	None	PDO	2-0	Dark-Road Lighted	Dry	Clear	Left Turn	Other Vehicular, Failure to Yield Right-of-Way
17M 8301 2178	1000 feet West of Training Center Lane	09/25/13	5:15 PM	No Passing Zone	Unknown	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention/Distraction
17M 8301 2195	200 feet West of 6 1/2 Station Road	09/29/13	3:10 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Driver Inattention/Distraction
17M 8301 1185	at Int. with Fire Training Center Lane	10/04/13	3:38 PM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely, Unsafe Speed
17M 8301 2187	at Int. with Hartley Road	10/09/13	7:35 AM	Traffic Signal	Unknown	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 2190	175 feet East of Hartley Road	10/10/13	7:00 PM	None	PDO	2-0	Dark-Road Unlighted	Dry	Cloudy	Sideswipe	Aggressive Driving/Road Rage, Unsafe Lane Changing
17M 8301 2198	250 feet East of Maple Avenue	11/04/13	7:48 AM	None	Unknown	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 2182	at Int. with Cannon Hill Drive	11/13/13	8:10 PM	No Passing Zone	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 2180	150 feet East of Fischer Lane	11/15/13	6:33 PM	No Passing Zone	PDO	3-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action, Obstruction/Debris
ST-17M 8301 2197	at Int. with 6 1/2 Station Rd./Maple Ave	01/05/14	8:00 PM	Traffic Signal	PDO & I	2-1	Dark-Road Lighted	Snow/Ice	Sleet/Hail	Left Turn	Pavement Slipper, Failure to Yield Right-of-Way
SR 17M 8301 2197	at Int. with 6 1/2 Station Road	01/09/14	3:40 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 1196	200 feet West of 6 1/2 Station Road	01/19/14	6:10 PM	None	PDO	2-0	Dark-Road Lighted	Dry	Clear	Sideswipe	Other Vehicular, Alcohol Involvement
17M 8301 2183	20 feet East of Musket Court	01/23/14	5:15 PM	No Passing Zone	Unknown	2-0	Dark-Road Unlighted	Dry	Cloudy	Rear End	Driver Inattention/Distraction
17M E/B 8301 1191	0.5 miles West of Maple Ave XT	01/23/13	5:00 PM	No Passing Zone	PDO	3-0	Dusk	Dry	Cloudy	Other	Passing or Lane Usage Improper
17M 8301 2188	at Int. with Hartley Road	01/24/14	2:50 PM	Traffic Signal	Unknown	2-0	Daylight	Dry	Clear	Sideswipe	Driver Inattention/Distraction
17M W/B	0.25 miles East of Harley Road	01/31/14	8:55 AM	No Passing Zone	PDO & I	2-1	Daylight	Dry	Cloudy	Rear End	Following Too Closely
17M 8301 1202	100 feet West of Police Drive	02/01/14	6:15 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 2186	at Int. with Musket CT	02/03/14	1:20 PM	None	PDO	2-0	Daylight	Snow/Ice	Snow	Sideswipe	Pavement Slippery
17M 8301 1191	at Int. with (PVT Cravings PK LT)	02/25/14	6:05 PM	None	PDO	2-0	Dusk	Dry	Clear	Left Turn	Unsafe Lane Change, Driver Inattention/Distraction
17M 8301 2182	500 feet East of Cannon Hill	03/04/14	12:50 PM	None	PDO	1-0	Daylight	Dry	Clear	Other	Driver Inattention/Distraction
17M 8301 2197	at Int. with 6 1/2 Station Road	03/12/14	10:05 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Sideswipe	Passing or Lane Usage Improper
17M 8301 2176	100 feet West of Denton Hill	03/15/14	7:00 AM	None	PDO	1-0	Dawn	Dry	Cloudy	Other	Animal's Action
17M	20 feet North of 6 1/2 Station Road	04/01/14	4:46 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 2177	100 feet East of Fisher Lane	04/01/14	9:29 AM	None	PDO & I	1-2	Daylight	Dry	Clear	Other	Following Too Closely, Driver Inattention/Distraction
17M 8301 2189	).25 miles East of Gates School House Roac	04/11/14	8:15 AM	None	PDO	3-0	Daylight	Dry	Cloudy	Other	N/A
17M 8301 1196	1/4 mile West of 6 1/2 Station Road	05/03/14	7:40 PM	None	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
17M 8301 1641	700 feet East of Maple Avenue	05/10/14	5:00 AM	None	PDO & I	2-2	Dark-Road Unlighted	Wet	Rain	Sideswipe	Fell Asleep
17M 8301 2199	0.01 East of 6 1/2 Station Road	05/14/14	9:51 PM	None	PDO & I	1-1	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 2188	at Int. with Gate Schoolhouse Road	05/14/14	7:05 AM	Traffic Signal	Unknown	3-0	Dawn	Dry	Cloudy	Other	N/A
17M 8301 1196	1/8 miles West of 6 1/2 Station Road	05/17/14	11:25 AM	None	PDO & I	2-0	Daylight	Dry	Clear	Rear End	Other Vehicular, Following Too Closely
17M 8301 2188	0.2 miles East of Gates School House Rd	05/21/14	5:00 PM	None	N/R	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention/Distraction
17M 8301 3196	20 feet West of (CR) Maple Avenue	05/31/14	9:00 AM	Traffic Signal	Unknown	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 1204	25 feet East of County DPW Entrance	06/02/14	1:45 AM	Other	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Alcohol Involvement, Driver Inattention/Distraction
17M	150 feet West of Maple Avenue	06/03/14	3:40 PM	None	PDO	1-0	Daylight	Dry	Cloudy	Other	Driver Inexperience, Reaction to Other Uninvolved Vehicle
17M 8301 3196	1200 feet North of Maple Ave	06/09/14	3:55 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 1191	1200 feet West of Maple Avenue	06/09/14	4:20 PM	None	PDO	1-0	Daylight	Dry	Cloudy	Other	Lost Conciousness
17M 8301 2192	at Int. with Cano Hill Rd	06/10/14	4:15 PM	None	PDO	2-0	Daylight	Wet	Rain	Rear End	Driver Inattention/Distraction
17M 8301 2196	0.1 miles East of 6 1/2 Station Road	06/10/14	3:35 PM	No Passing Zone	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention/Distraction
17M 8301 2179	at Int. with Training Center Lane	06/17/14	11:00 AM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, Driver Inexperience
17M 8301 2196	at Int. with 6 1/2 Station Road	06/18/14	3:25 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, Following Too Closely
17M 8301 2187	100 feet East of Hartley Road	06/24/14	6:30 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 2187	150 feet West of Gate School House Rd	07/01/11	7:31 AM	Traffic Signal	Unknown	3-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 2186	at Int. with Gate Schoolhouse Road	07/25/14	12:35 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Sideswipe	Passing or Lane Use Improper
17M 8301 2178	0.25 miles East of Fischer Lane	08/01/14	4:00 PM	No Passing Zone	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 2196	250 feet West of Maple Avenue	08/04/14	8:50 PM	None	Unknown	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 2179	at Int. with Cannon Hill Drive	08/14/14	9:10 AM	None	PDO & I	2-3	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, Following Too Closely
17M 8301 2196	0.3 miles East of Maple Avenue	08/28/14	5:36 PM	None	PDO & I	2-2	Daylight	Dry	Clear	Head On	Fell Asleep
17M 8301 2185	0.1 miles West of Gate School House Rd	09/03/14	5:25 PM	None	Unknown	2-1	Daylight	Dry	Clear	Sideswipe	Driver Inattention/Distraction, Failure to Yield Right-of-Way
17M 8301 2201	0.2 miles West of State Route 17	09/27/14	9:20 AM	None	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
17M 8301 2196	at Int. with 6 1/2 Station Road	09/29/14	2:45 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Right Turn	Driver Inattention/Distraction, Failure to Yield Right-of-Way
17M 8301 2195	0.25 miles West of Maple Ave	10/03/14	6:30 AM	None	PDO	1-0	Dawn	Dry	Clear	Other	Animal's Action
17M 8301 1199	3/10 mile West of Maple Avenue	10/23/14	5:20 PM	None	PDO	2-0	Daylight	Wet	Cloudy	Rear End	Following Too Closely
17M 8301 2192	0.5 mile West of Maple Avenue	10/31/14	11:50 AM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, Driver Inexperience
17M 8301 1188	1/8 mile East of Gates Schoolhouse Road	11/04/14	6:40 PM	No Passing Zone	F	1-0	Dark-Road Unlighted	Dry	Clear	Other	Alcohol Involvement, Outside Car Distraction
17M 8301 2204	1/4 mile East of Maple Avenue	11/04/14	3:20 AM	None	PDO	1-0	Dark-Road Lighted	Dry	Clear	Other	Animal's Action
17M	at Int. with Training Center Lane	11/06/14	9:52 AM	None	PDO	2-0	Daylight	Wet	Rain	Sideswipe	Tire Failure/Inadequate, Pavement Slippery
17M 8301 2187	100 feet East of Gate Schoolhouse Road	11/07/14	3:45 PM	Traffic Signal	PDO	2-0	Daylight	Wet	Cloudy	Rear End	Following Too Closely

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

TABLE NO. A-2

ACCIDENT SUMMARY - TOWN ACCIDENT DATA
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
17M 8301 2196	at Int. with Maple Avenue	12/10/14	3:55 PM	Traffic Signal	Unknown	2-0	Daylight	Wet	Cloudy	Rear End	Pavement Slippery
17M 8301 2196	at Int. with Maple Avenue	12/30/14	9:20 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Sideswipe	Turning Improperly
17M 8301 2187	at Int. with Hartley Road	12/31/14	12:03 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 3204	0.3 miles East of Maple Avenue	01/18/15	1:40 PM	None	PDO	1-0	Daylight	Snow/Ice	Sleet/Hail	Other	Pavement Slippery
17M 8301 1128	0.25 miles East of Gates Schoolhouse Road	01/27/15	4:30 AM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Snow/Ice	Snow	Other	Unsafe Speed, Pavement Slippery
17M 8301 1186	0.2 miles West of Gates Schoolhouse Road	02/03/15	11:13 PM	None	PDO	1-0	Dark-Road Unlighted	Snow/Ice	Clear	Other	Animal's Action
17M 8301 2203	0.5 miles East of Maple Avenue	02/08/15	5:26 PM	None	Unknown	1-0	Dusk	Wet	Cloudy	Other	Animal's Action
17M 8301 2185	at Int. with Cannon Hill Drive	02/12/15	4:15 PM	None	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Driver Inattention/Distraction
17M 8301 2196	75 feet West of Maple Ave	02/18/15	8:15 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Cloudy	Rear End	Following Too Closely
17A 8301 1145	at Int. with Durland Road	02/17/15	3:30 PM	No Passing Zone	PDO & I	3-2	Daylight	Dry	Clear	Other	N/A
17M	at Int. with Denton Hill Road	03/07/15	12:50 AM	None	PDO	1-0	Dark-Road Lighted	Dry	Cloudy	Other	Animal's Action
17M 8301 2187	500 feet West of Gate Schoolhouse Road	03/10/15	5:00 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
ST 17M	1200 feet East of 6 1/2 Station	03/13/15	8:15 AM	None	Unknown	2-0	Daylight	Snow/Ice	Clear	Sideswipe	Pavement Slippery, Unsafe Speed
17M 8301 2182	5 feet East of Musket Court	03/14/15	8:00 AM	None	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
17M 8301 1177	at Int. with Cannon Hill Drive	03/16/15	8:15 AM	None	PDO & I	3-2	Daylight	Dry	Clear	Other	Driver Inattention/Distraction
17M	0.1 miles East of 6 1/2 Station Road	03/17/15	12:03 AM	No Passing Zone	Unknown	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action
17M 8301 1197	at Int. with 6 1/2 Station Road	03/27/15	5:15 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Sideswipe	N/A
17M 8301 1198	100 feet West of Orange County DPW	04/01/15	3:20 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Glare
17M 8301 2182	1000 feet East of Cannon Hill	04/13/15	3:50 PM	None	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M	300 feet West of Hartley Road	04/13/15	3:00 PM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M	100 feet West of Maple Avenue	04/14/15	12:36 PM	Traffic Signal	PDO & I	2-1	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction, View Obstructed/Limited
17M 8301 2194	0.5 miles West of Maple Ave	04/20/15	3:05 PM	None	N/R	2-0	Daylight	Wet	Rain	Rear End	Pavement Slippery, Driver Inattention/Distraction
17M 8301 2195	0.1 miles West of Maple Ave	04/24/15	1:20 PM	Traffic Signal	PDO	3-0	Daylight	Dry	Clear	Rear End	N/A
17M 8301 2196	at Int. with Maple Ave	04/27/15	8:50 AM	Traffic Signal	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
17M 8301 2182	at Int. with Cannon Hill Drive	04/28/15	11:40 AM	None	PDO	1-0	Daylight	Dry	Clear	Other	N/A
17M 8301 1902	800 feet North of Gates Schoolhouse Rd	05/01/15	4:50 AM	None	PDO	2-0	Dark-Road Unlighted	Dry	Clear	Head On	Failure to Keep Right, Driver Inattention/Distraction
17M 8301 1179	at Int. with Fire Training Center Lane	05/04/15	7:51 AM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
17M 8301 3201	500 feet North of Hartley Road	05/06/15	5:34 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Glare
17M 8301 2185	250 feet West of Gate Schoolhouse Road	06/16/15	4:15 AM	None	Unknown	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Animal's Action
17M 8301 2189	500 feet East of Gate Schoolhouse Road	06/22/15	5:15 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely, Glare
17M 8301 2178	at Int. with Training Center Lane	06/23/15	3:45 PM	No Passing Zone	PDO	2-0	Daylight	Wet	Cloudy	Rear End	Following Too Closely, Pavement Slippery
17M 8301 2177	at Int. with Mid Hudson Psychiatric CTR	06/30/15	1:00 AM	None	PDO	1-0	Dark-Road Unlighted	Dry	Cloudy	Other	Fell Asleep
17M 8301 2178	500 feet West of Training Center Lane	07/02/15	4:50 PM	None	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
17M 8301 2202	300 feet West of Police Drive	07/03/15	3:45 PM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely
Cheechunk Rd	220 feet West of Caralex Lane	01/08/12	8:20 AM	None	PDO	1-0	Daylight	Dry	Cloudy	Other	Animal's Action
Cheechunk Rd	1500 feet West of 6 1/2 Station Road	04/23/12	5:20 PM	None	PDO	1-0	Daylight	Wet	Rain	Other	Pavement Slippery
Cheechunk Rd	0.5 miles East of Hartley Road	05/30/12	12:50 PM	None	PDO	1-0	Daylight	Dry	Cloudy	Other	Animal's Action
Cheechunk Rd	0.5 miles West of 6 1/2 Station Road	07/19/12	6:50 AM	No Passing Zone	PDO & I	1-1	Daylight	Wet	Cloudy	Other	Driver Inexperience, Driver Inattention/Distraction
Cheechunk Rd	0.25 miles West of Hartley Road	07/28/12	3:55 AM	No Passing Zone	PDO & I	1-4	Dark-Road Unlighted	Dry	Clear	Other	Unsafe Speed
Cheechunk Rd	500 feet West of Fletcher Street Over Pass	07/31/12	11:40 AM	None	Unknown	2-0	Daylight	Dry	Clear	Sideswipe	Driver Inattention/Distraction
Cheechunk Rd	75 feet East of Hartley Road	08/09/12	5:15 PM	None	PDO	1-0	Daylight	Wet	Rain	Other	Pavement Slippery, Driver Inexperience
Cheechunk Rd	500 feet West of Owen Road	08/10/12	2:15 PM	None	PDO & I	1-1	Daylight	Wet	Rain	Other	Pavement Slippery
Cheechunk Rd	75 feet East of Hartley Road	08/11/12	2:20 PM	No Passing Zone	PDO	1-0	Daylight	Wet	Rain	Other	Unsafe Speed
Cheechunk Rd	200 feet East of Hartley Road	09/18/12	2:27 PM	None	PDO	1-0	Daylight	Wet	Rain	Other	Unsafe Speed, Pavement Slippery
Cheechunk Rd	0.5 miles West of 6 1/2 Station Road	09/19/12	9:10 PM	None	PDO	1-0	Dark-Road Unlighted	Dry	Clear	Other	Animal's Action, Driver Inexperience
Cheechunk Rd	300 feet West of Owens Road	10/15/12	3:10 PM	No Passing Zone	PDO	1-0	Daylight	Wet	Rain	Other	Unsafe Speed
Cheechunk Rd	60 feet East of Hartley Road	10/19/12	5:50 PM	No Passing Zone	N/R	1-0	Daylight	Wet	Cloudy	Other	Unsafe Speed, Pavement Slippery
Cheechunk Rd	1/8 feet West of 6/12 Station Road	10/30/12	4:30 PM	None	PDO	1-0	Daylight	Wet	Rain	Other	Tire Failure/Inadequate
Cheechunk Rd	1 mile East of 6 1/2 Station Road	05/03/13	8:12 AM	No Passing Zone	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
Cheechunk Rd	at Int. with 6 1/2 Station Rd.	08/05/13	8:15 AM	No Passing Zone	Unknown	1-1	Daylight	Dry	Clear	Other	Reaction to Other Uninvolved Vehicle
Cheechunk Rd	0.75 miles West of 6 1/2 Station Road	09/13/13	7:11 AM	No Passing Zone	N/R	1-0	Daylight	Wet	Cloudy	Other	Pavement Slippery
Cheechunk Rd	2500 feet West of 6 1/2 Station Road	11/07/13	12:05 PM	None	PDO	1-0	Daylight	Wet	Rain	Other	Unsafe Speed, Pavement Slippery
Cheechunk Rd	50 feet East of Echo Lake Road	04/26/14	4:30 AM	None	PDO & I	1-1	Dark-Road Unlighted	Wet	Rain	Other	Reaction to Other Uninvolved Vehicle
Cheechunk Rd	at Int. with Owens Road	05/03/14	6:45 PM	Stop Sign	PDO	2-0	Daylight	Wet	Cloudy	Rear End	Glare, Pavement Slippery
Cheechunk Rd	at Int. with Hartley Road	07/04/14	10:40 AM	No Passing Zone	PDO	1-0	Daylight	Wet	Rain	Other	Pavement Slippery
Cheechunk Rd	0.4 miles West of 6 1/2 Station Road	09/16/14	9:05 AM	None	PDO	1-0	Daylight	Wet	Cloudy	Other	Driver Inattention/Distraction
Cheechunk Rd	0.25 miles West of 6 1/2 Station Road	01/23/15	1:28 PM	No Passing Zone	PDO	1-0	Daylight	Dry	Clear	Other	Animal's Action
Cheechunk Rd	0.25 miles West of 6 1/2 Station Road	07/06/15	4:50 PM	None	PDO	1-0	Daylight	Dry	Cloudy	Other	Animal's Action

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

TABLE NO. A-2

ACCIDENT SUMMARY - TOWN ACCIDENT DATA
NYS ROUTE 17M/U.S. ROUTE 6, TOWN OF GOSEHN, ORANGE COUNTY, NEW YORK

NODE/LINK	LOCATION	DATE	TIME	TRAFFIC CONTROL	ACCIDENT CLASS *	# OF VEHICLES - INJURIES	LIGHT CONDITION	ROAD CONDITION	WEATHER	MANNER OF COLLISION	APPARENT CONTRIBUTING FACTORS
Maple Avenue	0.1 miles South of SR 17M	02/16/12	2:55 PM	None	N/R	3-0	Daylight	Wet	Snow	Rear End	Pavement Slippery, Driver Inattention/Distraction
Owens Road	0.3 miles North of Cheechunk Road	11/26/13	9:20 AM	No Passing Zone	PDO	1-0	Daylight	Wet	Snow	Other	Unsafe Speed
Gate Schlhouse Rd	at Int. with State Route 17M	05/15/12	3:10 PM	Traffic Signal	PDO	2-0	Daylight	Wet	Cloudy	Rear End	Pavement Slippery, Following Too Closely
Gate Schlhouse Rd	at Int. with State Route 17M	08/07/14	1:45 PM	Traffic Signal	PDO	1-0	Daylight	Dry	Clear	Other	Pavement Defective
Gate Schlhouse Rd	at Int. with State Route 17M	09/16/14	9:35 AM	Traffic Signal	N/R	2-0	Daylight	Wet	Rain		Driver Inattention/Distraction, Pavement Slippery
Cannon Hill Drive	500 feet South of State Route 17M	10/08/13	11:01 AM	None	PDO	2-0	Daylight	Dry	Clear	Rear End	Following Too Closely, Unsafe Speed
6 1/2 Station Road	at Int. with SR 17M	07/10/12	3:20 PM	Traffic Signal	Unknown	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
6 1/2 Station Road	at Int. with (CR) Cheechunk Road	02/27/14	3:30 PM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
6 1/2 Station Road	at Int. with Cheechunk Road	04/04/14	2:35 PM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
6 1/2 Station Road	0.1 miles Southeast of SR 17M	06/11/14	11:00 AM	No Passing Zone	PDO & I	2-1	Daylight	Wet	Rain	Sideswipe	Pavement Slippery
6 1/2 Station Road	at Int. with Cheechunk Road	06/01/15	1:29 AM	Stop Sign	PDO	1-0	Dark-Road Unlighted	Wet	Rain	Other	Unsafe Speed, Pavement Slippery
Fletcher Street	at Int. with SR 17 West on Ramp	11/01/13	7:10 AM	Stop Sign	PDO	2-0	Dawn	Wet	Rain	Left Turn	Driver Inattention/Distraction, Failure to Yield Right-of-Way
Fletcher Street	at Int. with 122A West Off Ramp	09/22/14	3:00 PM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Right Turn	Traffic Control Disregarded
Hartley Road	500 feet Southeast of Cheechunk Road	12/07/12	10:00 AM	None	PDO	2-0	Daylight	Wet	Rain	Rear End	Driver Inattention/Distraction
Hartley Road	0.2 miles South of Cheechunk Road	02/06/13	3:23 PM	None	N/R	2-0	Daylight	Dry	Clear	Other	Backing Unsafely
Hartley Road	0.25 miles North of State Route 17M	02/07/14	11:47 AM	None	PDO	2-0	Daylight	Snow/Ice	Clear	Rear End	Pavement Slippery
Echo Lake Road	0.2 miles West of Hartley Road	02/09/14	7:26 PM	No Passing Zone	PDO	1-0	Dark-Road Unlighted	Snow/Ice	Snow	Other	Pavement Slippery
Echo Lake Road	at Int. with Hartley Road	07/14/14	7:30 PM	None	PDO	1-0	Daylight	Wet	Rain	Other	Pavement Slippery
Echo Lake Road	0.25 miles West of Hartley Road	10/16/14	12:35 PM	None	PDO	1-0	Daylight	Wet	Rain	Other	Unsafe Speed
Echo Lake Road	0.25 miles East of Hartley Road	01/12/15	7:55 AM	No Passing Zone	PDO & I	1-1	Daylight	Snow/Ice	Hail/Freezing	Other	Unsafe Speed, Pavement Slippery
Echo Lake Road	0.1 miles West of Hartley Road	04/25/15	12:00 PM	None	Unknown	1-0	Daylight	Dry	Clear	Other	Animal's Action
Denton Hill Road	at Int. with Route 17M	11/03/14	6:55 AM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Rear End	Driver Inattention/Distraction
Denton Hill Road	at Int. with State Route 17M	01/23/15	9:07 AM	Stop Sign	PDO	2-0	Daylight	Dry	Clear	Rear End	Brakes Defective

* PDO = PROPERTY DAMAGE ONLY I = INJURY F = FATALITY N/R = NON-REPORTABLE

AMY'S KITCHEN & SCIENCE OF THE SOUL

APPENDIX G

TRAFFIC VOLUME DATA

Maser Consulting
11 Bradhurst Avenue
Hawthorne, NY 10532
Customer Loyalty through Client Satisfaction

Project: AMY'S KITCHEN
Location: GOSHEN, NY
MC Job No. 13001659A

Site Code: 130016590222
Station ID:
NYS ROUTE 17M/6 (EAST OF TRAINING CENTER
LANE & WEST OF CANNON HILL DRIVE)
Latitude: 0' 0.0000 Undefined

Start	23-Jun-14		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	*	*	32	166	46	206	39	186	101	210	116	192
01:00	*	*	*	*	*	*	32	57	49	92	40	74	40	104	47	95
02:00	*	*	*	*	*	*	50	45	43	44	46	44	31	62	36	65
03:00	*	*	*	*	*	*	83	35	93	41	88	38	51	40	43	37
04:00	*	*	*	*	*	*	284	54	264	40	274	47	129	32	72	37
05:00	*	*	*	*	*	*	745	95	680	84	712	90	274	76	150	61
06:00	*	*	*	*	*	*	1025	237	859	218	942	228	354	145	215	101
07:00	*	*	*	*	*	*	**1046**	481	**879**	479	**962**	480	450	332	268	169
08:00	*	*	*	*	*	*	957	630	863	589	910	610	567	493	348	265
09:00	*	*	*	*	*	*	729	575	742	567	736	571	630	573	477	355
10:00	*	*	*	*	*	*	653	577	675	643	664	610	591	632	550	476
11:00	*	*	*	*	*	*	676	**646**	686	**731**	681	**688**	**661**	**698**	**597**	**530**
12:00 PM	*	*	*	*	*	*	678	719	684	802	681	760	**666**	**705**	607	**569**
01:00	*	*	*	*	701	747	677	664	685	872	688	761	631	655	**674**	550
02:00	*	*	*	*	685	892	719	888	**736**	891	713	890	544	665	644	566
03:00	*	*	*	*	**716**	984	**733**	998	714	1022	**721**	1001	582	682	631	494
04:00	*	*	*	*	670	1080	649	1092	585	**1138**	635	1103	584	584	571	448
05:00	*	*	*	*	582	**1148**	586	**1182**	560	986	576	**1105**	473	592	497	424
06:00	*	*	*	*	418	800	422	873	399	972	413	882	410	494	501	419
07:00	*	*	*	*	307	584	343	646	327	587	326	606	356	431	418	387
08:00	*	*	*	*	277	426	291	489	326	504	298	473	315	356	422	354
09:00	*	*	*	*	219	364	262	461	328	466	270	430	316	362	362	259
10:00	*	*	*	*	167	262	176	319	223	436	189	339	251	323	226	234
11:00	*	*	*	*	96	227	96	214	159	279	117	240	150	297	117	188
Total	0	0	0	0	4838	7514	11944	12143	11605	12689	11721	12256	9157	9543	8589	7275
Day	0		0		12352		24087		24294		23977		18700		15864	
AM Peak	-	-	-	-	-	-	07:00	11:00	07:00	11:00	07:00	11:00	11:00	11:00	11:00	11:00
Vol.	-	-	-	-	-	-	1046	646	879	731	962	688	661	698	597	530
PM Peak	-	-	-	-	15:00	17:00	15:00	17:00	14:00	16:00	15:00	17:00	12:00	12:00	13:00	12:00
Vol.	-	-	-	-	716	1148	733	1182	736	1138	721	1105	666	705	674	569

Project: AMY'S KITCHEN
Location: GOSHEN, NY
MC Job No. 13001659A

Maser Consulting
11 Bradhurst Avenue
Hawthorne, NY 10532
Customer Loyalty through Client Satisfaction

Site Code: 130016590222
Station ID:
NYS ROUTE 17M/6 (EAST OF TRAINING CENTER LANE & WEST OF CANNON HILL DRIVE)
Latitude: 0' 0.0000 Undefined

Start	30-Jun-14		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	56	103	*	*	*	*	*	*	*	*	56	103	*	*	*	*
01:00	33	58	*	*	*	*	*	*	*	*	33	58	*	*	*	*
02:00	44	44	*	*	*	*	*	*	*	*	44	44	*	*	*	*
03:00	99	32	*	*	*	*	*	*	*	*	99	32	*	*	*	*
04:00	324	54	*	*	*	*	*	*	*	*	324	54	*	*	*	*
05:00	765	79	*	*	*	*	*	*	*	*	765	79	*	*	*	*
06:00	908	215	*	*	*	*	*	*	*	*	908	215	*	*	*	*
07:00	**980**	493	*	*	*	*	*	*	*	*	**980**	493	*	*	*	*
08:00	915	589	*	*	*	*	*	*	*	*	915	589	*	*	*	*
09:00	749	**688**	*	*	*	*	*	*	*	*	749	**688**	*	*	*	*
10:00	387	278	*	*	*	*	*	*	*	*	387	278	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	5260	2633	0	0	0	0	0	0	0	0	5260	2633	0	0	0	0
Day	7893		0		0		0		0		7893		0		0	
AM Peak	07:00	09:00	-	-	-	-	-	-	-	-	07:00	09:00	-	-	-	-
Vol.	980	688	-	-	-	-	-	-	-	-	980	688	-	-	-	-
PM Peak	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Comb. Total	7893	0	12352	24087	24294	31870	18700	15864
ADT	ADT 21,171	AADT 21,171						

Project: AMY'S KITCHEN
Location: GOSHEN, NY
MC Job No. 13001659A

Maser Consulting
11 Bradhurst Avenue
Hawthorne, NY 10532
Customer Loyalty through Client Satisfaction

Site Code: 130016590222
Station ID:
NYS ROUTE 17M/6 (EAST OF TRAINING CENTER LANE & WEST OF CANNON HILL DRIVE)
Latitude: 0' 0.0000 Undefined

Start Time	25-Jun-14 Wed	EB A.M.	EB P.M.	WB A.M.	WB P.M.	Combined A.M.	Combined P.M.	26-Jun Thu	EB A.M.	EB P.M.	WB A.M.	WB P.M.	Combined A.M.	Combined P.M.
12:00		*	*	*	*	*	*		6	178	33	180	39	358
12:15		*	*	*	*	*	*		7	188	52	171	59	359
12:30		*	*	*	*	*	*		11	145	55	190	66	335
12:45		*	*	*	*	*	*		8	167	26	178	34	345
01:00		*	173	*	170	*	343		10	182	17	143	27	325
01:15		*	180	*	198	*	378		8	154	21	161	29	315
01:30		*	166	*	203	*	369		5	180	9	163	14	343
01:45		*	182	*	176	*	358		9	161	10	197	19	358
02:00		*	170	*	202	*	372		13	180	12	188	25	368
02:15		*	165	*	216	*	381		15	166	11	206	26	372
02:30		*	189	*	237	*	426		12	***184***	14	265	26	449
02:45		*	161	*	237	*	398		10	***189***	8	229	18	418
03:00		*	173	*	235	*	408		16	***171***	8	265	24	436
03:15		*	***172***	*	221	*	393		13	***222***	10	238	23	460
03:30		*	***191***	*	244	*	435		28	168	7	227	35	395
03:45		*	***180***	*	284	*	464		26	172	10	268	36	440
04:00		*	***197***	*	271	*	468		41	182	11	260	52	442
04:15		*	159	*	249	*	408		70	124	8	286	78	410
04:30		*	139	*	274	*	413		72	174	16	267	88	***441***
04:45		*	175	*	***286***	*	***461***		101	169	19	***279***	120	***448***
05:00		*	154	*	***309***	*	***463***		125	162	13	***311***	138	***473***
05:15		*	157	*	***298***	*	***455***		171	171	19	***305***	190	***476***
05:30		*	141	*	***290***	*	***431***		211	127	26	***291***	237	418
05:45		*	130	*	251	*	381		238	126	37	275	275	401
06:00		*	119	*	235	*	354		248	121	42	237	290	358
06:15		*	109	*	203	*	312		255	103	47	194	302	297
06:30		*	87	*	202	*	289		251	115	69	234	320	349
06:45		*	103	*	160	*	263		271	83	79	208	350	291
07:00		*	82	*	161	*	243		247	98	90	170	337	268
07:15		*	69	*	159	*	228		258	88	128	177	386	265
07:30		*	78	*	140	*	218		***259***	93	133	157	***392***	250
07:45		*	78	*	124	*	202		***282***	64	130	142	***412***	206
08:00		*	61	*	113	*	174		***243***	83	136	143	***379***	226
08:15		*	72	*	111	*	183		***277***	87	149	142	***426***	229
08:30		*	69	*	116	*	185		218	57	173	94	391	151
08:45		*	75	*	86	*	161		219	64	172	110	391	174
09:00		*	65	*	83	*	148		182	65	139	121	321	186
09:15		*	53	*	115	*	168		186	69	143	122	329	191
09:30		*	51	*	86	*	137		183	70	159	124	342	194
09:45		*	50	*	80	*	130		178	58	134	94	312	152
10:00		*	46	*	67	*	113		140	48	159	94	299	142
10:15		*	50	*	77	*	127		166	47	142	84	308	131
10:30		*	37	*	71	*	108		144	46	115	84	259	130
10:45		*	34	*	47	*	81		203	35	161	57	364	92
11:00		*	24	*	66	*	90		161	29	***156***	72	317	101
11:15		*	28	*	74	*	102		169	32	***153***	46	322	78
11:30		*	28	*	52	*	80		181	16	***167***	49	348	65
11:45		*	16	*	35	*	51		165	19	***170***	47	335	66
Total		0	4838	0	7514	0	12352		6312	5632	3598	8545	9910	14177
Day Total			4838		7514		12352			11944		12143		24087
% Total		0.0%	39.2%	0.0%	60.8%				26.2%	23.4%	14.9%	35.5%		
Peak	-	-	03:15	-	04:45	-	04:45	-	07:30	02:30	11:00	04:45	07:30	04:30
Vol.	-	-	740	-	1183	-	1810	-	1061	766	646	1186	1609	1838
P.H.F.			0.939		0.957		0.977		0.941	0.863	0.950	0.953	0.944	0.965

Project: AMY'S KITCHEN
Location: GOSHEN, NY
MC Job No. 13001659A

Maser Consulting
11 Bradhurst Avenue
Hawthorne, NY 10532
Customer Loyalty through Client Satisfaction

Site Code: 130016590222
Station ID:
NYS ROUTE 17M/6 (EAST OF TRAINING CENTER LANE & WEST OF CANNON HILL DRIVE)
Latitude: 0' 0.0000 Undefined

Start Time	27-Jun-14 Fri	EB A.M.	EB P.M.	WB A.M.	WB P.M.	Combined A.M.	Combined P.M.	28-Jun Sat	EB A.M.	EB P.M.	WB A.M.	WB P.M.	Combined A.M.	Combined P.M.
12:00		17	175	52	193	69	368		27	***188***	59	***179***	86	***367***
12:15		14	157	59	211	73	368		31	***169***	67	***175***	98	***344***
12:30		2	189	51	193	53	382		25	***154***	46	***191***	71	***345***
12:45		13	163	44	205	57	368		18	***155***	38	***160***	56	***315***
01:00		14	163	28	205	42	368		12	145	36	153	48	298
01:15		13	156	23	215	36	371		14	164	20	164	34	328
01:30		9	197	25	205	34	402		7	176	28	165	35	341
01:45		13	169	16	247	29	416		7	146	20	173	27	319
02:00		12	163	15	224	27	387		10	129	14	164	24	293
02:15		12	***198***	5	210	17	408		6	133	19	175	25	308
02:30		10	***182***	17	233	27	415		9	141	16	163	25	304
02:45		9	***193***	7	224	16	417		6	141	13	163	19	304
03:00		14	***186***	12	227	26	413		10	144	10	181	20	325
03:15		23	186	7	254	30	***440***		12	140	8	169	20	309
03:30		35	191	9	261	44	***452***		14	138	9	178	23	316
03:45		21	151	13	***280***	34	***431***		15	160	13	154	28	314
04:00		39	161	10	***282***	49	***443***		17	184	2	146	19	330
04:15		59	139	14	***297***	73	436		31	141	8	141	39	282
04:30		83	162	8	***284***	91	446		36	130	11	153	47	283
04:45		83	123	8	275	91	398		45	129	11	144	56	273
05:00		122	169	19	250	141	419		46	125	12	155	58	280
05:15		149	123	21	212	170	335		64	128	21	142	85	270
05:30		183	150	19	265	202	415		86	122	25	156	111	278
05:45		226	118	25	259	251	377		78	98	18	139	96	237
06:00		209	122	37	289	246	411		75	120	23	132	98	252
06:15		221	90	45	278	266	368		85	103	35	118	120	221
06:30		223	99	62	206	285	305		106	99	48	133	154	232
06:45		206	88	74	199	280	287		88	88	39	111	127	199
07:00		206	88	102	173	308	261		98	95	51	118	149	213
07:15		205	102	121	141	326	243		101	95	79	127	180	222
07:30		***238***	55	126	154	364	209		120	83	81	100	201	183
07:45		***230***	82	130	119	360	201		131	83	121	86	252	169
08:00		***208***	84	141	118	***349***	202		129	89	101	92	230	181
08:15		***219***	75	127	145	***346***	220		132	79	106	90	238	169
08:30		207	84	163	128	***370***	212		158	88	145	95	303	183
08:45		229	83	158	113	***387***	196		148	59	141	79	289	138
09:00		207	77	126	110	333	187		143	72	145	88	288	160
09:15		174	86	159	127	333	213		144	83	137	86	281	169
09:30		173	87	135	122	308	209		154	78	139	94	293	172
09:45		188	78	147	107	335	185		189	83	152	94	341	177
10:00		160	69	168	119	328	188		138	65	165	96	303	161
10:15		176	66	156	121	332	187		155	61	145	89	300	150
10:30		173	46	136	110	309	156		156	75	175	72	331	147
10:45		166	42	***183***	86	349	128		142	50	147	66	289	116
11:00		162	70	***178***	79	340	149		***141***	40	***178***	91	***319***	131
11:15		180	41	***198***	82	378	123		***172***	43	***162***	87	***334***	130
11:30		175	31	***179***	64	354	95		***167***	42	***184***	61	***351***	103
11:45		169	17	176	54	345	71		***181***	25	***174***	58	***355***	83
Total		5879	5726	3734	8955	9613	14681		3879	5278	3397	6146	7276	11424
Day Total		11605		12689		24294			9157		9543		18700	
% Total		24.2%	23.6%	15.4%	36.9%				20.7%	28.2%	18.2%	32.9%		
Peak	-	07:30	02:15	10:45	03:45	08:00	03:15	-	11:00	12:00	11:00	12:00	11:00	12:00
Vol.	-	895	759	738	1143	1452	1766	-	661	666	698	705	1359	1371
P.H.F.		0.940	0.958	0.932	0.962	0.938	0.977		0.913	0.886	0.948	0.923	0.957	0.934

Project: AMY'S KITCHEN
Location: GOSHEN, NY
MC Job No. 13001659A

Maser Consulting
11 Bradhurst Avenue
Hawthorne, NY 10532
Customer Loyalty through Client Satisfaction

Site Code: 130016590222
Station ID:
NYS ROUTE 17M/6 (EAST OF TRAINING CENTER LANE & WEST OF CANNON HILL DRIVE)
Latitude: 0' 0.0000 Undefined

Start Time	29-Jun-14 Sun	EB A.M.	EB P.M.	WB A.M.	WB P.M.	Combined A.M.	Combined P.M.	30-Jun Mon	EB A.M.	EB P.M.	WB A.M.	WB P.M.	Combined A.M.	Combined P.M.
12:00		33	147	63	149	96	296		22	*	32	*	54	*
12:15		22	153	43	130	65	283		13	*	29	*	42	*
12:30		34	161	44	149	78	310		14	*	22	*	36	*
12:45		27	146	42	141	69	287		7	*	20	*	27	*
01:00		18	***176***	26	120	44	296		14	*	17	*	31	*
01:15		11	***159***	26	146	37	305		9	*	18	*	27	*
01:30		13	***165***	23	154	36	319		5	*	16	*	21	*
01:45		5	***174***	20	130	25	***304***		5	*	7	*	12	*
02:00		8	169	24	126	32	***295***		8	*	15	*	23	*
02:15		10	161	13	***140***	23	***301***		7	*	10	*	17	*
02:30		6	164	16	***163***	22	***327***		11	*	10	*	21	*
02:45		12	150	12	***137***	24	287		18	*	9	*	27	*
03:00		8	151	14	***145***	22	296		20	*	6	*	26	*
03:15		8	183	9	124	17	307		18	*	10	*	28	*
03:30		18	151	3	115	21	266		34	*	10	*	44	*
03:45		9	146	11	110	20	256		27	*	6	*	33	*
04:00		10	148	9	96	19	244		40	*	17	*	57	*
04:15		17	153	4	118	21	271		69	*	11	*	80	*
04:30		21	138	13	108	34	246		88	*	13	*	101	*
04:45		24	132	11	126	35	258		127	*	13	*	140	*
05:00		28	127	16	104	44	231		140	*	13	*	153	*
05:15		34	117	16	113	50	230		171	*	15	*	186	*
05:30		47	125	18	103	65	228		222	*	20	*	242	*
05:45		41	128	11	104	52	232		232	*	31	*	263	*
06:00		50	138	20	113	70	251		220	*	35	*	255	*
06:15		66	122	20	108	86	230		228	*	38	*	266	*
06:30		50	138	29	104	79	242		241	*	55	*	296	*
06:45		49	103	32	94	81	197		219	*	87	*	306	*
07:00		65	112	37	99	102	211		***232***	*	92	*	324	*
07:15		79	100	49	107	128	207		***230***	*	138	*	368	*
07:30		60	95	45	94	105	189		***259***	*	136	*	395	*
07:45		64	111	38	87	102	198		***259***	*	127	*	386	*
08:00		72	136	53	87	125	223		222	*	127	*	349	*
08:15		77	101	55	102	132	203		213	*	125	*	338	*
08:30		90	110	64	84	154	194		251	*	175	*	***426***	*
08:45		109	75	93	81	202	156		229	*	162	*	***391***	*
09:00		118	94	75	70	193	164		163	*	***155***	*	***318***	*
09:15		116	85	99	65	215	150		198	*	***185***	*	***383***	*
09:30		125	100	81	68	206	168		182	*	***163***	*	345	*
09:45		118	83	100	56	218	139		206	*	***185***	*	391	*
10:00		123	68	106	60	229	128		197	*	152	*	349	*
10:15		133	60	105	62	238	122		190	*	126	*	316	*
10:30		***155***	58	113	61	268	119		*	*	*	*	*	*
10:45		***139***	40	***152***	51	***291***	91		*	*	*	*	*	*
11:00		***160***	36	***123***	62	***283***	98		*	*	*	*	*	*
11:15		***164***	36	***127***	53	***291***	89		*	*	*	*	*	*
11:30		143	28	***152***	41	***295***	69		*	*	*	*	*	*
11:45		130	17	128	32	258	49		*	*	*	*	*	*
Total		2919	5670	2383	4892	5302	10562		5260	0	2633	0	7893	0
Day Total		8589		7275		15864			5260		2633		7893	
% Total		18.4%	35.7%	15.0%	30.8%				66.6%	0.0%	33.4%	0.0%		
Peak	-	10:30	01:00	10:45	02:15	10:45	01:45	-	07:00	-	09:00	-	08:30	-
Vol.	-	618	674	554	585	1160	1227	-	980	-	688	-	1518	-
P.H.F.		0.942	0.957	0.911	0.897	0.983	0.938		0.946		0.930		0.891	

ADT	ADT 21,293	AADT 21,293

STATION: **830019**

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **US 6** ROAD NAME:
DIRECTION: Eastbound FACTOR GROUP: 30
STATE DIR CODE: 1 WK OF YR: 29
DATE OF COUNT: 07/14/2010
NOTES LANE 1: WK 29 EB

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **CR 12 LOWER RD**
REC. SERIAL #: 0059
PLACEMENT: 1.5 MI W OF RT 17 OLAP
@ REF MARKER: 6 83012173
ADDL DATA:
COUNT TYPE: AXLE PAIRS
PROCESSED BY: ORG CODE: DOT INITIALS: jh

TO: **START RT 17 OLAP GOSHEN**
FUNC. CLASS: 16
NHS: no
JURIS: NYS Parks, Rec, & Hist. Pres
CC Stn:
BATCH ID: R08-R08CWW29bVol

COUNTY: **Orange**
TOWN: **GOSHEN**
LION#:
SIN: 1003130
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T																											
7	W																											
8	T																											
9	F																											
10	S																											
11	S																											
12	M																											
13	T																											
14	W													**632**	**626**	**659**	**559**	**512**	**552**	**430**	**317**	**256**	**273**	**199**	**82**			
15	T	**44**	**36**	**32**	**71**	**192**	**547**	**828**	**909**	**919**	**734**	**621**	**601**	**605**	**589**	**625**	**610**	**578**	**549**	**492**	**350**	**301**	**295**	**223**	**77**	10828	919	8
16	F	**46**	**36**	**43**	**79**	**191**	**476**	**785**	**859**	**834**	**722**	**620**	**607**	**589**	**616**	**647**	**636**	**536**	**519**	**433**	**345**	**291**	**268**	**203**	**122**	10503	859	7
17	S	**65**	**43**	**34**	**39**	**76**	**162**	**291**	**324**	**425**	**486**	**505**	**624**	**596**	**573**	**560**	**515**	**464**	**482**	**412**	**325**	**345**	**321**	**268**	**171**	8106	624	11
18	S	**87**	**86**	**36**	**36**	**62**	**123**	**179**	**180**	**283**	**391**	**421**	**518**	**601**	**649**	**609**	**607**	**652**	**625**	**614**	**577**	**495**	**432**	**302**	**151**	8716	652	16
19	M	**62**	**30**	**42**	**78**	**210**	**574**	**883**	**960**	**928**	**726**	**581**	**600**	**616**	**586**	**621**	**642**	**569**	**506**	**410**	**298**	**245**						
20	T																											
21	W																											
22	T																											
23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
44	**35**	**37**	**74**	**189**	**504**	**820**	**895**	**881**	**716**	**598**	**594**	**609**	**591**	**625**	**595**	**545**	**528**	**437**	**317**	**263**	**280**	**208**	**79**	**10464**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
6	129	3	63	895	9%	0.985	1.093

ESTIMATED (one way)

AADT
9574

STATION: **830019**

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **US 6** ROAD NAME:
DIRECTION: Westbound FACTOR GROUP: 30
STATE DIR CODE: 2 WK OF YR: 29
DATE OF COUNT: 07/14/2010
NOTES LANE 1: WK 29 WB

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **CR 12 LOWER RD**
REC. SERIAL #: 0059
PLACEMENT: 1.5 MI W OF RT 17 OLAP
@ REF MARKER: 6 83012173
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: jh

TO: **START RT 17 OLAP GOSHEN**
FUNC. CLASS: 16
NHS: no
JURIS: NYS Parks, Rec, & Hist. Pres.
CC Stn:
BATCH ID: R08-R08CWW29bVol

COUNTY: **Orange**
TOWN: **GOSHEN**
LION#:
SIN: 1003130
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T																											
7	W																											
8	T																											
9	F																											
10	S																											
11	S																											
12	M																											
13	T																											
14	W													**596**	**594**	**683**	**832**	**912**	**967**	**844**	**586**	**440**	**395**	**270**	**208**			
15	T	**131**	**98**	**43**	**35**	**33**	**50**	**162**	**375**	**494**	**540**	**506**	**536**	**584**	**572**	**750**	**872**	**927**	**944**	**850**	**640**	**522**	**483**	**352**	**278**	10777	944	17
16	F	**198**	**92**	**36**	**37**	**27**	**63**	**168**	**342**	**441**	**496**	**584**	**660**	**641**	**711**	**782**	**939**	**996**	**978**	**706**	**645**	**494**	**449**	**358**	**324**	11167	996	16
17	S	**249**	**126**	**75**	**59**	**28**	**51**	**84**	**250**	**363**	**458**	**611**	**620**	**579**	**608**	**669**	**627**	**564**	**514**	**428**	**363**	**371**	**337**	**334**	**290**	8658	669	14
18	S	**139**	**135**	**65**	**41**	**29**	**33**	**72**	**152**	**164**	**324**	**351**	**444**	**460**	**472**	**468**	**429**	**410**	**377**	**346**	**366**	**337**	**292**	**235**	**194**	6335	472	13
19	M	**95**	**66**	**40**	**30**	**32**	**48**	**160**	**350**	**468**	**475**	**444**	**594**	**553**	**535**	**730**	**807**	**942**	**943**	**840**	**538**	**384**						
20	T																											
21	W																											
22	T																											
23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
162	**94**	**39**	**35**	**30**	**55**	**161**	**351**	**461**	**496**	**503**	**588**	**569**	**558**	**710**	**824**	**913**	**937**	**832**	**579**	**442**	**432**	**306**	**239**	**10316**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
6	129	3	63	937	9%	0.985	1.093

ESTIMATED (one way)

AADT
9438

STATION: **830054**

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **US 6** ROAD NAME:
DIRECTION: Eastbound FACTOR GROUP: 30
STATE DIR CODE: 1 WK OF YR: 41
DATE OF COUNT: 10/08/2009
NOTES LANE 1: WK 40 EB

FROM: **ACC RT 84I**
REC. SERIAL #: 0414
PLACEMENT: 0.5 MI E OF RT 84I
@ REF MARKER: 6 83012164
ADDL DATA:
COUNT TYPE: VEHICLES

TO: **CR 12 LOWER RD**
FUNC. CLASS: 16
NHS: no
JURIS: NYS Parks, Rec, & Hist. Pres
CC Stn:
BATCH ID: DOT-r8contractor9-40b

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
SIN: 1052480
RR CROSSING:
HPMS SAMPLE: 20003290

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---
PROCESSED BY: ORG CODE: DOT INITIALS: TGB

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T																											
7	W																											
8	T														**795**	**863**	**378**	**725**	**692**	**585**	**397**	**274**	**271**	**230**	**83**			
9	F	**57**	**38**	**36**	**60**	**203**	**520**	**926**	**971**	**818**	**716**	**699**	**727**	**813**	**814**	**968**	**793**	**757**	**674**	**460**	**361**	**246**	**259**	**219**	**132**	12267	971	7
10	S	**91**	**54**	**37**	**37**	**91**	**177**	**328**	**418**	**527**	**637**	**641**	**688**	**706**	**685**	**758**	**647**	**558**	**471**	**451**	**380**	**298**	**265**	**274**	**153**	9372	758	14
11	S	**94**	**66**	**52**	**50**	**67**	**141**	**241**	**227**	**279**	**413**	**513**	**623**	**711**	**695**	**788**	**702**	**707**	**629**	**556**	**451**	**352**	**231**	**243**	**113**	8944	788	14
12	M	**51**	**38**	**32**	**55**	**140**	**400**	**728**	**754**	**707**	**596**	**664**	**713**	**742**	**825**	**857**	**807**	**685**	**708**	**456**	**341**	**259**	**195**	**193**	**111**	11057	857	14
13	T	**48**	**29**	**33**	**64**	**200**	**583**	**970**	**1091**	**986**	**785**	**711**	**707**	**734**	**825**	**879**	**820**	**703**	**668**	**496**	**335**	**296**	**284**	**216**	**95**	12558	1091	7
14	W	**32**	**30**	**31**	**59**	**191**	**528**	**953**	**1039**	**997**	**745**	**666**	**644**	**753**														
15	T																											
16	F																											
17	S																											
18	S																											
19	M																											
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21	W																											
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23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

46	**32**	**33**	**61**	**198**	**544**	**894**	**964**	**877**	**710**	**685**	**698**	**743**	**815**	**866**	**668**	**704**	**689**	**512**	**358**	**276**	**250**	**213**	**96**	**ADT 11932**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	144	4	78	964	8%	1.000	1.076

ESTIMATED (one way)

AADT
11089

STATION: **830054**

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **US 6** ROAD NAME:
DIRECTION: Westbound FACTOR GROUP: 30
STATE DIR CODE: 2 WK OF YR: 41
DATE OF COUNT: 10/08/2009
NOTES LANE 1: WK 40 WB

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **ACC RT 84I**
REC. SERIAL #: 0460
PLACEMENT: 0.5 MI E OF RT 84I
@ REF MARKER: 6 83012164
ADDL DATA:
COUNT TYPE: VEHICLES

PROCESSED BY: ORG CODE: DOT INITIALS: TGB

TO: **CR 12 LOWER RD**
FUNC. CLASS: 16
NHS: no
JURIS: NYS Parks, Rec, & Hist. Pres
CC Stn:

BATCH ID: DOT-r8contractor9-40b

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
SIN: 1052480
RR CROSSING:
HPMS SAMPLE: 20003290

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T																											
7	W																											
8	T													**700**	**849**	**822**	**1172**	**1099**	**824**	**557**	**415**	**310**	**259**	**230**				
9	F	**139**	**50**	**38**	**31**	**36**	**57**	**220**	**732**	**786**	**611**	**699**	**780**	**846**	**795**	**969**	**1124**	**1083**	**1026**	**789**	**588**	**453**	**428**	**336**	**318**	12934	1124	15
10	S	**197**	**112**	**63**	**56**	**33**	**59**	**112**	**357**	**440**	**600**	**700**	**747**	**791**	**772**	**731**	**785**	**719**	**645**	**550**	**445**	**313**	**279**	**271**	**292**	10069	791	12
11	S	**156**	**121**	**75**	**38**	**32**	**48**	**86**	**226**	**239**	**319**	**417**	**557**	**534**	**605**	**629**	**633**	**587**	**506**	**409**	**381**	**277**	**210**	**208**	**191**	7484	633	15
12	M	**84**	**67**	**47**	**27**	**23**	**56**	**179**	**369**	**440**	**445**	**482**	**540**	**642**	**603**	**655**	**878**	**881**	**885**	**652**	**455**	**333**	**238**	**194**	**183**	9358	885	17
13	T	**110**	**45**	**30**	**22**	**71**	**76**	**203**	**757**	**777**	**632**	**665**	**729**	**715**	**642**	**821**	**1083**	**1111**	**1100**	**832**	**586**	**367**	**297**	**201**	**203**	12075	1111	16
14	W	**132**	**52**	**36**	**22**	**39**	**76**	**207**	**731**	**865**	**602**	**656**	**667**	**723**														
15	T																											
16	F																											
17	S																											
18	S																											
19	M																											
20	T																											
21	W																											
22	T																											
23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
127	**49**	**35**	**25**	**49**	**70**	**202**	**647**	**717**	**572**	**626**	**679**	**693**	**648**	**775**	**928**	**1055**	**1028**	**769**	**533**	**372**	**282**	**218**	**205**	**11304**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	144	4	78	1055	9%	1.000	1.076

ESTIMATED (one way)

AADT
10506

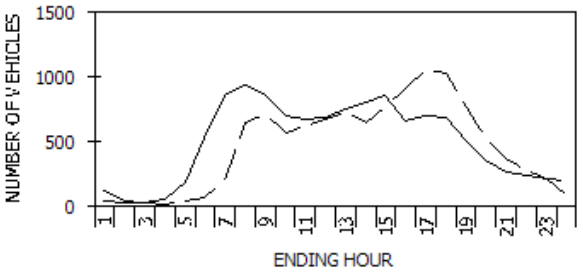
New York State Department of Transportation
Classification Count Average Weekday Data Report

ROUTE #: US 6 ROAD NAME: YEAR: 2009 STATION: 830054
COUNTY NAME: Orange MONTH: October
REGION CODE: 8
FROM: ACC RT 84I
TO: CR 12 LOWER RD
REF-MARKER: 6 83012164
END MILEPOINT: 0111945 NO. OF LANES: 2
FUNC-CLASS: 16 HPMS NO: 20003290
STATION NO: 0054 LION#:
COUNT TAKEN BY: ORG CODE: TST INITIALS: ---
PROCESSED BY: ORG CODE: DOT INITIALS: TGB BATCH ID: DOT-r8contractor9-40b

DIRECTION	East	West	TOTAL
NUMBER OF VEHICLES	**11814**	**11295**	**23109**
NUMBER OF AXLES	**24424**	**23211**	**47634**
% HEAVY VEHICLES (F4-F13)	**7.14%**	**6.44%**	**6.80%**
% TRUCKS AND BUSES (F3-F13)	**22.63%**	**19.78%**	**21.23%**
AXLE CORRECTION FACTOR	**0.97**	**0.97**	**0.97**

VEHICLE CLASS		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	TOTAL
NO. OF AXLES		2	2	2	2.5	2	3	4	3.5	5	6	5	6	8.75	
ENDING HOUR	1:00	0	36	5	0	2	0	0	0	2	0	0	0	0	**45**
	2:00	0	21	3	2	2	0	0	1	1	0	0	0	0	**30**
	3:00	0	25	5	0	1	0	0	0	2	0	0	0	0	**33**
	4:00	0	41	8	2	3	0	0	1	4	0	0	0	0	**59**
	5:00	0	141	34	5	4	1	0	3	5	0	0	0	0	**193**
	6:00	0	412	90	7	13	1	0	2	6	0	0	0	0	**531**
	7:00	0	650	174	5	23	2	0	4	8	0	0	0	0	**866**
	8:00	0	736	143	8	30	5	0	5	8	1	0	0	0	**936**
	9:00	1	652	130	9	33	7	6	9	9	3	0	0	0	**859**
	10:00	0	522	120	6	32	9	4	6	7	2	0	0	0	**708**
DIRECTION	11:00	0	483	126	7	34	10	4	5	11	2	0	0	0	**682**
East	12:00	1	514	112	8	27	10	5	6	10	2	0	0	0	**695**
	13:00	0	588	108	6	26	8	5	8	8	2	0	0	0	**759**
	14:00	1	605	135	9	31	7	4	11	9	1	0	0	0	**813**
	15:00	1	670	120	8	33	9	6	8	8	1	1	0	0	**865**
	16:00	2	510	101	4	23	6	2	4	5	1	0	0	0	**658**
	17:00	1	550	109	4	20	4	0	6	7	1	0	0	0	**702**
	18:00	3	562	89	6	18	3	0	4	3	0	0	0	0	**688**
	19:00	0	419	75	0	12	1	0	1	2	0	0	0	0	**510**
	20:00	0	292	48	1	9	0	0	1	5	0	0	0	0	**356**
	21:00	0	230	30	1	9	0	0	1	3	0	0	0	0	**274**
	22:00	0	210	30	0	3	0	0	0	3	0	0	0	0	**246**
	23:00	0	182	23	1	2	0	0	1	2	0	0	0	0	**211**
	24:00	0	80	11	0	1	0	0	0	3	0	0	0	0	**95**
TOTAL VEHICLES		**10**	**9131**	**1829**	**99**	**391**	**83**	**36**	**87**	**131**	**16**	**1**	**0**	**0**	**11814**
TOTAL AXLES		20	18262	3658	248	782	249	144	304	655	96	5	0	0	24424
	1:00	1	112	11	1	1	0	0	1	0	0	0	0	0	**127**
ENDING HOUR	2:00	0	43	3	1	0	0	0	1	0	0	0	0	0	**48**
	3:00	0	28	4	0	1	0	0	0	2	0	0	0	0	**35**
	4:00	0	17	3	0	2	1	0	0	1	0	0	0	0	**24**
	5:00	0	24	6	2	2	1	0	2	3	0	0	0	0	**40**
	6:00	0	48	13	1	4	0	0	0	3	0	0	0	0	**69**
	7:00	0	138	37	4	13	4	0	1	5	0	0	0	0	**202**
	8:00	1	520	83	3	16	10	3	4	6	0	0	0	0	**646**
	9:00	2	565	87	7	28	9	2	4	10	0	0	0	0	**714**
	10:00	0	432	88	7	22	8	1	2	11	0	0	0	0	**571**
	11:00	2	462	100	8	28	8	1	4	10	1	0	0	0	**624**
DIRECTION	12:00	0	516	94	6	34	10	2	5	10	1	0	0	0	**678**
West	13:00	1	557	108	6	30	8	2	6	11	1	0	0	0	**730**
	14:00	1	490	100	4	24	9	3	5	8	1	0	0	0	**645**
	15:00	2	583	123	7	36	4	2	5	7	1	0	0	0	**770**
	16:00	2	736	131	6	27	3	3	4	6	1	0	0	0	**919**
	17:00	2	856	148	4	26	2	0	8	6	0	0	0	0	**1052**
	18:00	2	863	126	5	23	1	0	4	3	0	0	0	0	**1027**
	19:00	2	655	87	4	15	0	0	1	3	0	0	0	0	**767**
	20:00	1	454	57	4	10	1	0	1	3	0	0	0	0	**531**
	21:00	1	325	35	2	6	0	0	1	1	0	0	0	0	**371**
	22:00	1	246	24	1	6	0	0	2	1	0	0	0	0	**281**
	23:00	1	189	19	1	4	1	0	2	1	0	0	0	0	**218**
	24:00	0	180	20	1	1	0	0	2	2	0	0	0	0	**206**
TOTAL VEHICLES		**22**	**9039**	**1507**	**85**	**359**	**80**	**19**	**65**	**113**	**6**	**0**	**0**	**0**	**11295**
TOTAL AXLES		44	18078	3014	212	718	240	76	228	565	36	0	0	0	23211
GRAND TOTAL VEHICLES		**32**	**18170**	**3336**	**184**	**750**	**163**	**55**	**152**	**244**	**22**	**1**	**0**	**0**	**23109**
GRAND TOTAL AXLES		64	36340	6672	460	1500	489	220	532	1220	132	5	0	0	47635

TRAFFIC FLOW BY DIRECTION



--- East - -West

PEAK HOUR DATA

DIRECTION	HOUR	COUNT	2-WAY	HOUR	COUNT
East	**8**	**936**	**A.M.**	**8**	**1582**
West	**17**	**1052**	**P.M.**	**17**	**1754**

VEHICLE CLASSIFICATION CODES:

F1. Motorcycles
F2. Autos*
F3. 2 Axle, 4-Tire Pickups, Vans, Motorhomes*
F4. Buses
F5. 2 Axle, 6-Tire Single Unit Trucks
F6. 3 Axle Single Unit Trucks
F7. 4 or More Axle Single Unit Trucks
F8. 4 or Less Axle Vehicles, One Unit is a Truck
F9. 5 Axle Double Unit Vehicles, One Unit is a Truck
F10. 6 or More Double Unit Vehicles, One Unit is a Truck
F11. 5 or Less Axle Multi-Unit Trucks
F12. 6 Axle Multi-Unit Trucks
F13. 7 or More Axle Multi-Unit Trucks

* INCLUDING THOSE HAULING TRAILERS

FUNCTIONAL CLASS CODES:

RURAL	URBAN	SYSTEM
01	11	PRINCIPAL ARTERIAL-INTERSTATE
02	12	PRINCIPAL ARTERIAL-EXPRESSWAY
02	14	PRINCIPAL ARTERIAL-OTHER
06	16	MINOR ARTERIAL
07	17	MAJOR COLLECTOR
08	17	MINOR COLLECTOR
09	19	LOCAL SYSTEM

SOURCE: NYSDOT DATA SERVICES BUREAU

New York State Department of Transportation
Speed Count Average Weekday Report

Station: 830054
Route #: US 6 Road name:
From: ACC RT 84I
To: CR 12 LOWER RD
Direction: East

Start date: Thu 10/08/2009 13:00
End date: Wed 10/14/2009 12:00
County: Orange
Town: WAWAYANDA
Speed limit: 45
LION#:

Count duration: 144 hours
Functional class: 16
Factor group: 30
Batch ID: DOT-r8contractor9-40b
Count taken by: Org: TST Init: ---
Processed by: Org: DOT Init: TGB

Speeds, mph

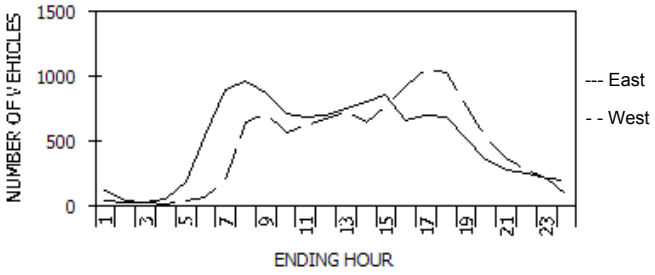
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	1	2	9	13	15	4	0	1	0	0	0	44%	11%	2%	2%	0%	42.8	44.1	49.5	45
2:00	2	0	0	2	2	12	10	3	0	0	0	0	0	42%	10%	0%	0%	0%	38.0	44.0	49.2	31
3:00	0	1	2	0	8	10	11	2	0	0	0	0	0	38%	6%	0%	0%	0%	40.7	43.0	48.6	34
4:00	2	0	1	2	6	21	20	6	1	1	0	0	0	47%	13%	3%	2%	0%	40.8	44.6	49.8	60
5:00	5	2	4	5	16	59	67	30	6	2	0	0	0	54%	19%	4%	1%	0%	41.7	45.6	51.5	196
6:00	12	0	2	15	73	189	171	62	15	3	0	0	0	46%	15%	3%	1%	0%	42.0	44.5	50.0	542
7:00	28	7	42	122	242	290	132	28	4	0	0	0	0	18%	4%	0%	0%	0%	36.8	40.2	46.2	895
8:00	31	20	103	194	275	236	84	18	2	0	0	0	0	11%	2%	0%	0%	0%	34.4	37.5	44.2	963
9:00	29	36	107	200	249	186	58	10	1	0	0	0	0	8%	1%	0%	0%	0%	33.4	36.4	43.4	876
10:00	4	16	61	145	230	185	59	8	1	1	0	0	0	10%	1%	0%	0%	0%	36.2	37.9	44.0	710
11:00	8	11	51	157	224	166	57	9	1	0	0	0	0	10%	1%	0%	0%	0%	35.9	37.6	44.0	684
12:00	12	16	64	160	218	160	58	8	1	0	0	0	0	10%	1%	0%	0%	0%	35.1	37.3	43.9	697
13:00	3	17	96	205	216	167	46	9	0	0	0	0	0	7%	1%	0%	0%	0%	35.1	36.4	43.3	759
14:00	5	25	104	216	240	163	51	8	2	0	0	0	0	7%	1%	0%	0%	0%	34.8	36.2	43.2	814
15:00	3	14	122	229	267	163	55	13	0	0	0	0	0	8%	2%	0%	0%	0%	35.1	36.3	43.2	866
16:00	40	28	54	156	198	134	50	8	1	0	0	0	0	9%	1%	0%	0%	0%	32.4	36.5	43.5	669
17:00	20	8	50	153	220	189	52	10	2	0	0	0	0	9%	2%	0%	0%	0%	35.2	37.8	43.9	704
18:00	1	7	62	139	218	176	70	15	2	0	0	0	0	13%	2%	0%	0%	0%	37.0	38.2	44.6	690
19:00	1	3	18	68	165	174	64	17	2	0	0	0	0	16%	4%	0%	0%	0%	38.9	40.1	45.5	512
20:00	1	4	8	39	117	117	55	17	1	0	0	0	0	20%	5%	0%	0%	0%	39.4	40.5	46.8	359
21:00	1	3	19	41	66	86	48	11	0	1	0	0	0	22%	4%	0%	0%	0%	38.4	40.5	47.0	276
22:00	3	0	2	12	67	98	49	16	1	1	1	0	0	27%	8%	1%	1%	0%	40.7	42.1	48.2	250
23:00	1	0	3	10	44	88	47	16	3	1	0	0	0	31%	9%	2%	0%	0%	41.8	42.8	48.8	213
24:00	1	0	0	6	19	38	23	7	2	0	0	0	0	33%	9%	2%	0%	0%	41.5	42.9	48.9	96
Avg. Daily Total	213	218	976	2278	3389	3120	1352	335	48	11	1	0	0	14.6	3.3	0.5	0.1	0.0	36.1	38.4	45.0	11941
Percent	1.8%	1.8%	8.2%	19.1%	28.4%	26.1%	11.3%	2.8%	0.4%	0.1%	0.0%	0.0%	0.0%									
Cum. Percent	1.8%	3.6%	11.8%	30.9%	59.2%	85.4%	96.7%	99.5%	99.9%	100.0%	100.0%	100.0%	100.0%									
Average hour	9	9	41	95	141	130	56	14	2	0	0	0	0									498

	Avg. Speed	50th% Speed	85th% Speed
East	36.1	38.4	45.0
West	37.9	39.4	44.5

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	8	963	A.M.	8	1609
West	17	1055	P.M.	17	1759

TRAFFIC FLOW BY DIRECTION



New York State Department of Transportation
Speed Count Average Weekday Report

Date: 11/24/2009

Station: 830054
Route #: US 6 Road name:
From: ACC RT 84I
To: CR 12 LOWER RD
Direction: West

Start date: Thu 10/08/2009 13:00
End date: Wed 10/14/2009 12:00
County: Orange
Town: WAWAYANDA
Speed limit: 45
LION#:

Count duration: 144 hours
Functional class: 16
Factor group: 30
Batch ID: DOT-r8contractor9-40b
Count taken by: Org: TST Init: ---
Processed by: Org: DOT Init: TGB

Speeds, mph

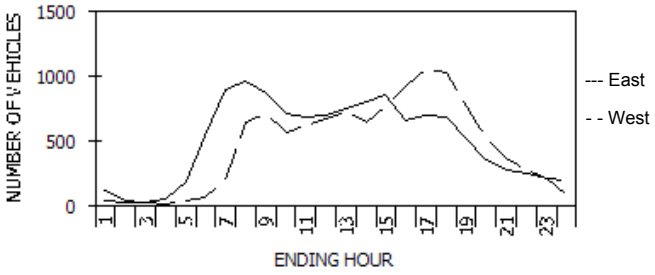
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	0	2	12	55	42	15	1	0	0	0	0	46%	13%	1%	0%	0%	44.4	44.6	49.7	127
2:00	0	0	0	1	4	20	16	7	0	0	0	0	0	48%	15%	0%	0%	0%	44.5	44.8	50.0	48
3:00	0	0	0	1	3	11	14	5	1	0	0	0	0	57%	17%	3%	0%	0%	45.0	45.9	50.8	35
4:00	0	1	0	1	3	10	7	3	0	0	0	0	0	40%	12%	0%	0%	0%	42.0	43.8	49.5	25
5:00	9	0	0	3	10	15	9	2	0	0	0	0	0	23%	4%	0%	0%	0%	29.7	40.7	47.2	48
6:00	1	0	1	2	10	31	18	6	1	0	0	0	0	36%	10%	1%	0%	0%	41.7	43.4	49.1	70
7:00	2	0	2	13	47	84	44	9	2	0	0	0	0	27%	5%	1%	0%	0%	40.7	42.3	47.8	203
8:00	2	1	6	44	196	286	98	12	1	0	0	0	0	17%	2%	0%	0%	0%	40.3	41.3	45.8	646
9:00	7	10	18	118	246	234	70	12	1	0	0	0	0	12%	2%	0%	0%	0%	37.6	39.2	44.5	716
10:00	0	2	13	66	211	215	58	6	1	0	0	0	0	11%	1%	0%	0%	0%	39.1	39.9	44.6	572
11:00	2	3	16	90	262	204	44	6	0	0	0	0	0	8%	1%	0%	0%	0%	38.1	38.9	44.0	627
12:00	1	2	17	108	294	208	47	3	0	0	0	0	0	7%	0%	0%	0%	0%	38.0	38.7	43.8	680
13:00	2	5	26	138	307	211	40	3	0	0	0	0	0	6%	0%	0%	0%	0%	37.3	38.2	43.5	732
14:00	3	2	23	104	272	197	45	3	0	0	0	0	0	7%	0%	0%	0%	0%	37.6	38.6	43.8	649
15:00	2	13	23	143	345	208	38	2	0	0	0	0	0	5%	0%	0%	0%	0%	37.0	38.0	43.2	774
16:00	38	104	65	152	342	194	31	2	0	0	0	0	0	4%	0%	0%	0%	0%	32.1	36.6	42.3	928
17:00	5	11	54	187	452	279	64	3	0	0	0	0	0	6%	0%	0%	0%	0%	36.9	38.0	43.4	1055
18:00	1	7	33	165	416	339	62	6	0	0	0	0	0	7%	1%	0%	0%	0%	37.9	38.8	43.8	1029
19:00	2	7	16	88	282	295	75	5	0	0	0	0	0	10%	1%	0%	0%	0%	38.7	39.9	44.4	770
20:00	1	0	7	55	193	205	64	7	0	0	0	0	0	13%	1%	0%	0%	0%	39.5	40.3	44.8	532
21:00	0	0	5	31	93	164	69	8	1	0	0	0	0	21%	2%	0%	0%	0%	40.8	41.8	46.7	371
22:00	0	1	3	18	56	133	61	9	1	0	0	0	0	25%	4%	0%	0%	0%	41.5	42.4	47.4	282
23:00	0	0	0	3	31	101	69	12	1	1	0	0	0	38%	6%	1%	0%	0%	43.5	43.8	48.7	218
24:00	0	0	0	3	34	94	59	12	1	1	0	0	0	36%	7%	1%	0%	0%	43.3	43.5	48.6	204
Avg. Daily Total	78	169	328	1536	4121	3793	1144	158	12	2	0	0	0	11.6	1.5	0.1	0.0	0.0	37.9	39.4	44.5	11341
Percent	0.7%	1.5%	2.9%	13.5%	36.3%	33.4%	10.1%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	0.7%	2.2%	5.1%	18.6%	55.0%	88.4%	98.5%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	3	7	14	64	172	158	48	7	0	0	0	0	0									473

	Avg. Speed	50th% Speed	85th% Speed
East	36.1	38.4	45.0
West	37.9	39.4	44.5

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	8	963	A.M.	8	1609
West	17	1055	P.M.	17	1759

TRAFFIC FLOW BY DIRECTION



STATION: **831214**

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **0880** ROAD NAME: **6 1/2 STATION**
DIRECTION: Northbound FACTOR GROUP: 30
STATE DIR CODE: 1 WK OF YR: 29
DATE OF COUNT: 07/14/2010
NOTES LANE 1: WK 29 NB

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **RT17M**
REC. SERIAL #: 0089
PLACEMENT: 0.5 MI S OF CHEECHUNK RD.
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: jh

TO: **CHEECHUNK RD**
FUNC. CLASS: 17
NHS: no
JURIS: Town
CC Stn:
BATCH ID: R08-R08CWW29bVol

COUNTY: **Orange**
TOWN: **GOSHEN**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
		AM												PM														
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T																											
7	W																											
8	T																											
9	F																											
10	S																											
11	S																											
12	M																											
13	T																											
14	W													**106**	**107**	**166**	**123**	**91**	**113**	**68**	**50**	**46**	**28**	**34**	**10**			
15	T	**6**	**3**	**7**	**5**	**4**	**17**	**60**	**74**	**152**	**110**	**91**	**113**	**116**	**116**	**63**	**16**	**13**	**10**	**21**	**10**	**6**	**11**	**15**	**19**	1058	152	8
16	F	**5**	**5**	**1**	**5**	**3**	**6**	**11**	**46**	**68**	**61**	**54**	**57**	**74**	**38**	**48**	**75**	**89**	**82**	**66**	**36**	**26**	**22**	**20**	**18**	916	89	16
17	S																											
18	S																											
19	M																											
20	T																											
21	W																											
22	T																											
23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
6	**4**	**4**	**5**	**4**	**12**	**36**	**59**	**109**	**85**	**71**	**84**	**110**	**111**	**113**	**69**	**51**	**61**	**43**	**30**	**26**	**20**	**24**	**14**	**1151**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	60	3	48	113	10%	0.988	1.093

ESTIMATED (one way)

AADT
1053

STATION: **831214**

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **0880** ROAD NAME: **6 1/2 STATION**
DIRECTION: Southbound FACTOR GROUP: 30
STATE DIR CODE: 2 WK OF YR: 29
DATE OF COUNT: 07/14/2010
NOTES LANE 1: WK 29 SB

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **RT17M**
REC. SERIAL #: 0089
PLACEMENT: 0.5 MI S OF CHEECHUNK RD.
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: jh

TO: **CHEECHUNK RD**
FUNC. CLASS: 17
NHS: no
JURIS: Town
CC Stn:
BATCH ID: R08-R08CWW29bVol

COUNTY: **Orange**
TOWN: **GOSHEN**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T																											
7	W																											
8	T																											
9	F																											
10	S																											
11	S																											
12	M																											
13	T																											
14	W													**76**	**74**	**103**	**123**	**95**	**88**	**60**	**57**	**40**	**30**	**9**	**30**				
15	T	**6**	**3**	**2**	**6**	**13**	**14**	**56**	**100**	**107**	**83**	**82**	**94**	**82**	**115**	**172**	**118**	**110**	**85**	**99**	**53**	**50**	**74**	**36**	**48**	1608	172	14
16	F	**9**	**6**	**3**	**10**	**11**	**12**	**56**	**109**	**109**	**79**	**89**	**66**	**86**	**56**	**70**	**117**	**114**	**73**	**52**	**19**	**8**	**7**	**3**	**5**	1169	117	15
17	S																											
18	S																											
19	M																											
20	T																											
21	W																											
22	T																											
23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

8	4	2	8	12	13	55	103	107	80	85	79	78	93	136	119	101	85	79	54	44	51	22	39	**ADT** 1457

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	60	3	48	136	9%	0.988	1.093

ESTIMATED (one way)

AADT
1333

ROAD #: **0880** ROAD NAME: **6 1/2 STATION** FROM: **RT17M** TO: **CHEECHUNK RD** COUNTY: **Orange**
STATION: **831214** STATE DIR CODE: **2** PLACEMENT: **0.5 MI S OF CHEECHUNK RD.** **DATE OF COUNT: 07/14/2010**

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **RAMP** ROAD NAME: **I84 EXIT 3**
DIRECTION: Eastbound FACTOR GROUP: 30
STATE DIR CODE: 3 WK OF YR: 36
DATE OF COUNT: 08/30/2010
NOTES LANE 1: EAST

COUNT TAKEN BY: ORG CODE: DOT INITIALS: DKS

FROM: **US6 NB (OFF)**
REC. SERIAL #: 0305
PLACEMENT: .1 MILE E OF NY 17M
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: MLA

TO: **I84 EB (ON)**
FUNC. CLASS: 01
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-WW36

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

		AM												PM													
		12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
DATE	DAY																										
30	M		**2**	**5**	**3**	**9**	**33**	**49**	**85**	**82**	**95**	**73**	**84**	**67**	**95**	**81**	**99**	**101**	**75**	**75**	**44**	**33**	**22**	**16**	**23**			
31	T	**5**	**4**	**4**	**4**	**10**	**32**	**51**	**95**	**95**	**53**	**76**	**82**	**87**	**74**	**87**	**125**	**105**	**92**	**59**	**52**	**26**	**14**	**18**	**19**	1269	125	15
1	W	**5**	**2**	**4**	**3**	**8**	**34**	**68**	**98**	**101**	**72**	**82**	**72**	**84**	**57**	**71**	**93**	**110**	**98**	**56**	**49**	**40**	**32**	**14**	**21**	1274	110	16
2	T	**4**	**0**	**4**	**7**	**9**	**30**	**64**	**83**	**100**	**69**	**71**	**101**	**70**													

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
4	**2**	**3**	**4**	**7**	**25**	**46**	**71**	**74**	**57**	**60**	**67**	**61**	**59**	**63**	**83**	**83**	**69**	**50**	**38**	**26**	**18**	**13**	**17**	**1000**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	84	3	79	83	8%	0.786	1.099

ESTIMATED

AADT
910

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **RAMP** ROAD NAME: **I84 EXIT 3**
DIRECTION: Westbound FACTOR GROUP: 30
STATE DIR CODE: 3 WK OF YR: 36
DATE OF COUNT: 08/30/2010
NOTES LANE 1: WEST

COUNT TAKEN BY: ORG CODE: DOT INITIALS: DKS

FROM: **I84 WB (OFF)**
REC. SERIAL #: 0304
PLACEMENT: .1 MILE E OF NY 17M
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: MLA

TO: **US6 NB (ON)**
FUNC. CLASS: 01
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-WW36

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

		AM												PM													
DATE	DAY	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
30	M		**45**	**17**	**13**	**22**	**51**	**180**	**498**	**509**	**380**	**349**	**405**	**382**	**344**	**375**	**487**	**521**	**568**	**405**	**286**	**190**	**179**	**104**	**81**			
31	T	**55**	**38**	**19**	**15**	**20**	**58**	**186**	**523**	**500**	**401**	**312**	**407**	**388**	**362**	**380**	**521**	**591**	**585**	**353**	**251**	**232**	**180**	**119**	**95**	6591	591	16
1	W	**89**	**37**	**16**	**33**	**16**	**56**	**184**	**542**	**557**	**374**	**335**	**356**	**346**	**352**	**363**	**495**	**555**	**612**	**456**	**297**	**271**	**181**	**98**	**103**	6724	612	17
2	T	**66**	**38**	**20**	**12**	**47**	**54**	**196**	**617**	**457**	**373**	**315**	**366**															

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

ADT

55	**30**	**14**	**16**	**22**	**44**	**146**	**428**	**398**	**300**	**258**	**302**	**292**	**277**	**293**	**394**	**437**	**462**	**318**	**219**	**182**	**141**	**84**	**73**	**5185**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	83	3	78	462	9%	0.786	1.099

ESTIMATED

AADT

4718

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **RAMP** ROAD NAME: **I84 EXIT 3**
DIRECTION: Westbound FACTOR GROUP: 30
STATE DIR CODE: 2 WK OF YR: 36
DATE OF COUNT: 08/30/2010
NOTES LANE 1: WEST

COUNT TAKEN BY: ORG CODE: DOT INITIALS: DKS

FROM: **US6 SB (OFF)**
REC. SERIAL #: 1080
PLACEMENT: .10 MILE WEST OF NY 17M
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: MLA

TO: **I84 WB (ON)**
FUNC. CLASS: 01
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-WW36

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

		AM												PM													
		12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
DATE	DAY																										
30	M		**7**	**8**	**4**	**4**	**6**	**29**	**49**	**54**	**68**	**71**	**91**	**106**	**115**	**136**	**144**	**193**	**181**	**116**	**87**	**61**	**73**	**40**	**23**			
31	T	**21**	**6**	**4**	**2**	**3**	**6**	**30**	**43**	**60**	**60**	**82**	**113**	**118**	**109**	**132**	**165**	**196**	**170**	**122**	**100**	**77**	**83**	**38**	**21**	1761	196	16
1	W	**18**	**11**	**4**	**9**	**2**	**10**	**21**	**63**	**62**	**59**	**77**	**91**	**110**	**92**	**128**	**168**	**160**	**193**	**144**	**105**	**79**	**57**	**29**	**35**	1727	193	17
2	T	**19**	**10**	**4**	**4**	**2**	**7**	**35**	**61**	**56**	**60**	**76**	**99**														

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
15	**7**	**3**	**4**	**2**	**6**	**23**	**42**	**46**	**49**	**60**	**77**	**87**	**83**	**104**	**125**	**144**	**142**	**100**	**76**	**57**	**56**	**28**	**20**	**1356**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	83	3	78	144	11%	0.786	1.099

ESTIMATED (one way)

AADT

1234

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **RAMP** ROAD NAME: **I84 EXIT 3**
DIRECTION: Eastbound FACTOR GROUP: 30
STATE DIR CODE: 3 WK OF YR: 36
DATE OF COUNT: 08/30/2010
NOTES LANE 1: EAST

COUNT TAKEN BY: ORG CODE: DOT INITIALS: DKS

FROM: **US6 SB (OFF)**
REC. SERIAL #: 1525
PLACEMENT: .10 MILE W OF NY 17M
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: MLA

TO: **I84 EB (ON)**
FUNC. CLASS: 01
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-WW36

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

		AM												PM													
		12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
DATE	DAY																										
30	M		**27**	**26**	**24**	**63**	**142**	**312**	**526**	**461**	**386**	**346**	**365**	**384**	**371**	**459**	**478**	**442**	**428**	**307**	**223**	**183**	**187**	**88**	**39**			
31	T	**38**	**20**	**23**	**19**	**46**	**154**	**320**	**526**	**499**	**372**	**340**	**354**	**356**	**356**	**434**	**533**	**486**	**439**	**385**	**257**	**169**	**168**	**88**	**44**	6426	533	15
1	W	**28**	**19**	**25**	**19**	**53**	**136**	**330**	**565**	**508**	**345**	**318**	**350**	**361**	**410**	**447**	**560**	**488**	**440**	**321**	**259**	**181**	**192**	**78**	**69**	6502	565	7
2	T	**42**	**24**	**24**	**17**	**49**	**146**	**331**	**545**	**471**	**360**	**318**	**363**	**307**													

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
28	**17**	**19**	**14**	**39**	**114**	**254**	**424**	**381**	**288**	**259**	**281**	**277**	**298**	**351**	**412**	**371**	**343**	**266**	**193**	**140**	**143**	**67**	**40**	**5019**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	84	3	79	424	8%	0.786	1.099

ESTIMATED

AADT
4567

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **RAMP** ROAD NAME: **I84 EXIT 3**
DIRECTION: Westbound FACTOR GROUP: 30
STATE DIR CODE: 3 WK OF YR: 36
DATE OF COUNT: 08/30/2010
NOTES LANE 1: WEST

COUNT TAKEN BY: ORG CODE: DOT INITIALS: DKS

FROM: **I84 WB (OFF)**
REC. SERIAL #: 1122
PLACEMENT: .1 MILE W OF NY 17M
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: MLA

TO: **US6 SB (ON)**
FUNC. CLASS: 01
NHS: no
JURIS: NYSDOT
CC Stn:
BATCH ID: DOT-WW36

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
30	M		**10**	**4**	**1**	**9**	**13**	**79**	**82**	**85**	**70**	**60**	**74**	**80**	**64**	**78**	**83**	**95**	**81**	**48**	**29**	**28**	**21**	**19**	**7**			
31	T	**7**	**2**	**2**	**3**	**7**	**14**	**82**	**92**	**106**	**59**	**72**	**70**	**69**	**83**	**84**	**87**	**89**	**65**	**61**	**38**	**33**	**43**	**29**	**13**	1210	106	8
1	W	**6**	**1**	**2**	**8**	**3**	**15**	**77**	**84**	**92**	**62**	**69**	**63**	**70**	**79**	**68**	**85**	**84**	**84**	**60**	**36**	**32**	**29**	**22**	**5**	1136	92	8
2	T	**14**	**1**	**7**	**5**	**13**	**17**	**58**	**110**	**80**	**70**	**69**	**78**															

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

7	1	3	4	6	12	58	72	72	51	53	56	57	59	61	67	70	61	44	27	24	24	18	6	**ADT** 913

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	83	3	78	72	8%	0.786	1.099

ESTIMATED

AADT
831

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **CR 0120** ROAD NAME: **LOWER RD**
DIRECTION: Northbound FACTOR GROUP: 30
STATE DIR CODE: 1 WK OF YR: 14
DATE OF COUNT: 04/05/2011
NOTES LANE 1: WK 15 NB

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **WAWAYANDA TL**
REC. SERIAL #: 2550
PLACEMENT: 100 FT S OF RIDGEBURN RD
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

PROCESSED BY: ORG CODE: DOT INITIALS: jh

TO: **CR 56**
FUNC. CLASS: 17
NHS: no
JURIS: County
CC Stn:
BATCH ID: DOT-temp

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
BIN: 3344770
RR CROSSING:
HPMS SAMPLE:

		AM												PM													
		12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
DATE	DAY																										
1	F																										
2	S																										
3	S																										
4	M																										
5	T											**112**	**113**	**121**	**128**	**152**	**159**	**151**	**181**	**113**	**65**	**39**	**48**	**31**	**18**			
6	W	**7**	**2**	**6**	**14**	**15**	**77**	**124**	**199**	**185**	**149**	**165**	**105**	**140**	**140**	**135**	**163**	**166**	**202**	**144**	**71**	**51**	**33**	**23**	**24**	2340	202	17
7	T	**7**	**4**	**2**	**9**	**23**	**60**	**106**	**168**	**179**	**151**	**112**	**120**	**141**	**109**	**142**	**176**	**139**	**150**	**140**	**92**	**65**	**36**	**35**	**17**	2183	179	8
8	F	**12**	**10**	**3**	**17**	**21**	**60**	**102**	**177**	**181**	**139**																
9	S																										
10	S																										
11	M																										
12	T																										
13	W																										
14	T																										
15	F																										
16	S																										
17	S																										
18	M																										
19	T																										
20	W																										
21	T																										
22	F																										
23	S																										
24	S																										
25	M																										
26	T																										
27	W																										
28	T																										
29	F																										
30	S																										

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
9	**5**	**4**	**13**	**20**	**65**	**110**	**179**	**180**	**144**	**128**	**112**	**132**	**124**	**141**	**164**	**150**	**176**	**130**	**75**	**51**	**39**	**30**	**20**	**2201**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
4	72	4	72	180	8%	0.988	1.056

ESTIMATED (one way)

AADT
2084

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **CR 0120** ROAD NAME: **LOWER RD**
DIRECTION: Southbound FACTOR GROUP: 30
STATE DIR CODE: 2 WK OF YR: 14
DATE OF COUNT: 04/05/2011
NOTES LANE 1: WK 15 SB

COUNT TAKEN BY: ORG CODE: TST INITIALS: ---

FROM: **WAWAYANDA TL** TO: **CR 56**
REC. SERIAL #: 2550 FUNC. CLASS: 17
PLACEMENT: 100 FT S OF RIDGEBURN RD NHS: no
@ REF MARKER: JURIS: County
ADDL DATA: CC Stn:
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-temp
PROCESSED BY: ORG CODE: DOT INITIALS: jh

COUNTY: **Orange**
TOWN: **WAWAYANDA**
LION#:
BIN: 3344770
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T											**108**	**132**	**114**	**119**	**146**	**158**	**191**	**206**	**150**	**126**	**96**	**67**	**38**	**17**			
6	W	**16**	**11**	**5**	**7**	**7**	**33**	**120**	**168**	**127**	**89**	**107**	**145**	**123**	**135**	**184**	**184**	**208**	**201**	**140**	**128**	**103**	**62**	**42**	**15**	2360	208	16
7	T	**11**	**4**	**4**	**6**	**13**	**36**	**115**	**131**	**112**	**83**	**108**	**111**	**111**	**152**	**161**	**183**	**197**	**175**	**148**	**127**	**112**	**78**	**57**	**22**	2257	197	16
8	F	**8**	**8**	**3**	**7**	**12**	**51**	**117**	**157**	**116**	**115**																	
9	S																											
10	S																											
11	M																											
12	T																											
13	W																											
14	T																											
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																											
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12	8	4	7	11	40	116	150	117	95	107	127	115	133	162	173	197	192	144	125	103	68	45	18	ADT 2269

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
4	72	4	72	197	9%	0.988	1.056

ESTIMATED (one way)

AADT
2149

STATION: **838067**

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **CR 0310** ROAD NAME: **MAPLE AVE** FROM: **SR17M** TO: **CR43** COUNTY: **Orange**
DIRECTION: Northbound FACTOR GROUP: 30 REC. SERIAL #: 1913 FUNC. CLASS: 08 TOWN: **GOSHEN**
STATE DIR CODE: 1 WK OF YR: 23 PLACEMENT: CR 31 - 50' N. OF CR 100 NHS: no LION#:
DATE OF COUNT: 06/01/2010 @ REF MARKER: JURIS: County BIN:
NOTES LANE 1: ADDL DATA: CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: R08-R08OCCWW23(7) HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: ORG INITIALS: KPK PROCESSED BY: ORG CODE: DOT INITIALS: FG

DATE	DAY	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
		AM												PM														
1	T																											
2	W													**62**	**130**	**144**	**102**	**78**	**72**	**29**	**43**	**28**	**15**	**8**				
3	T	**6**	**5**	**2**	**2**	**5**	**29**	**94**	**163**	**161**	**90**	**89**	**84**	**95**	**70**	**135**	**118**	**93**	**75**	**58**	**45**	**32**	**16**	**18**	**12**	1497	163	7
4	F	**4**	**2**	**1**	**1**	**8**	**27**	**82**	**164**	**169**	**92**	**97**	**83**	**102**	**76**	**147**	**109**	**104**	**73**	**60**	**50**	**30**	**26**	**20**	**15**	1542	169	8
5	S	**6**	**5**	**4**	**3**	**6**	**11**	**16**	**63**	**60**	**62**	**74**	**67**	**80**	**77**	**58**	**59**	**63**	**49**	**33**	**48**	**50**	**30**	**13**	**12**	949	80	12
6	S	**9**	**4**	**3**	**1**	**6**	**7**	**11**	**30**	**27**	**35**	**60**	**63**	**64**	**50**	**41**	**53**	**47**	**44**	**29**	**39**	**20**	**15**	**11**	**10**	679	64	12
7	M	**2**	**0**	**0**	**1**	**6**	**24**	**85**	**152**	**167**	**106**	**69**	**83**	**58**	**75**	**130**	**142**	**91**	**74**	**52**	**41**	**31**	**24**	**12**	**9**	1434	167	8
8	T	**2**	**5**	**0**	**2**	**11**	**35**	**82**	**173**	**158**	**83**	**81**	**93**	**71**	**76**	**137**	**130**	**66**	**97**	**57**	**46**	**28**	**28**	**13**	**8**	1482	173	7
9	W	**3**	**3**	**1**	**2**	**8**	**25**	**94**	**162**	**172**	**86**																	
10	T																											
11	F																											
12	S																											
13	S																											
14	M																											
15	T																											
16	W																											
17	T																											
18	F																											
19	S																											
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21	M																											
22	T																											
23	W																											
24	T																											
25	F																											
26	S																											
27	S																											
28	M																											
29	T																											
30	W																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	ADT
4	**4**	**1**	**2**	**8**	**29**	**87**	**163**	**165**	**91**	**84**	**86**	**75**	**71**	**133**	**134**	**88**	**81**	**60**	**40**	**34**	**24**	**14**	**9**	**1487**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor	ESTIMATED (one way)
7	165	4	99	165	11%	1.000	1.110	**AADT 1340**

STATION: **838067**

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **CR 0310** ROAD NAME: **MAPLE AVE** FROM: **SR17M** TO: **CR43** COUNTY: **Orange**
DIRECTION: Southbound FACTOR GROUP: 30 REC. SERIAL #: 1913 FUNC. CLASS: 08 TOWN: **GOSHEN**
STATE DIR CODE: 2 WK OF YR: 23 PLACEMENT: CR 31 - 50' N. OF CR 100 NHS: no LION#:
DATE OF COUNT: 06/01/2010 @ REF MARKER: JURIS: County BIN:
NOTES LANE 1: ADDL DATA: CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: R08-R08OCCWW23(7) HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: ORG INITIALS: KPK PROCESSED BY: ORG CODE: DOT INITIALS: FG

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	W														**74**	**126**	**149**	**104**	**142**	**82**	**75**	**64**	**41**	**27**	**11**			
3	T	**8**	**5**	**2**	**2**	**2**	**3**	**35**	**117**	**117**	**51**	**70**	**54**	**106**	**81**	**129**	**134**	**126**	**145**	**74**	**60**	**68**	**44**	**28**	**15**	1476	145	17
4	F	**3**	**4**	**6**	**2**	**6**	**5**	**42**	**88**	**132**	**67**	**72**	**85**	**112**	**100**	**136**	**130**	**132**	**148**	**76**	**70**	**49**	**31**	**23**	**24**	1543	148	17
5	S	**16**	**6**	**5**	**4**	**3**	**6**	**10**	**33**	**38**	**59**	**57**	**72**	**81**	**68**	**70**	**54**	**63**	**67**	**52**	**44**	**34**	**47**	**23**	**17**	929	81	12
6	S	**16**	**12**	**3**	**5**	**2**	**0**	**6**	**16**	**20**	**31**	**30**	**36**	**43**	**58**	**58**	**64**	**38**	**44**	**55**	**45**	**33**	**23**	**18**	**14**	670	64	15
7	M	**3**	**4**	**1**	**0**	**3**	**8**	**37**	**92**	**124**	**56**	**69**	**73**	**84**	**77**	**122**	**117**	**128**	**130**	**87**	**70**	**56**	**36**	**23**	**14**	1414	130	17
8	T	**2**	**2**	**2**	**3**	**4**	**9**	**28**	**105**	**150**	**57**	**54**	**83**	**85**	**84**	**129**	**118**	**128**	**132**	**66**	**65**	**47**	**59**	**22**	**14**	1448	150	8
9	W	**9**	**6**	**3**	**3**	**4**	**6**	**40**	**102**	**124**	**56**																	
10	T																											
11	F																											
12	S																											
13	S																											
14	M																											
15	T																											
16	W																											
17	T																											
18	F																											
19	S																											
20	S																											
21	M																											
22	T																											
23	W																											
24	T																											
25	F																											
26	S																											
27	S																											
28	M																											
29	T																											
30	W																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

6	4	3	2	4	6	36	101	129	57	66	74	92	79	126	130	122	137	77	68	59	45	25	14

ADT 1462

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	165	4	99	137	9%	1.000	1.110

ESTIMATED (one way)

AADT
1317

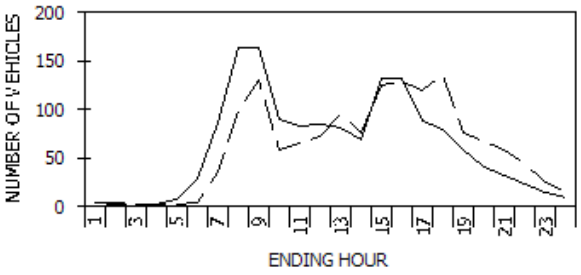
New York State Department of Transportation
Classification Count Average Weekday Data Report

ROAD #: CR 0310 ROAD NAME: MAPLE AVE YEAR: 2010 STATION: 838067
COUNTY NAME: Orange MONTH: June
REGION CODE: 8
FROM: SR17M
TO: CR43
REF-MARKER:
END MILEPOINT: 0110288 NO. OF LANES: 2
FUNC-CLASS: 08 HPMS NO:
STATION NO: 8067 LION#:
COUNT TAKEN BY: ORG CODE: ORG INITIALS: KPK
PROCESSED BY: ORG CODE: DOT INITIALS: FG BATCH ID: R08-R08OCCWW23(7)

DIRECTION	North	South	TOTAL
NUMBER OF VEHICLES	**1479**	**1448**	**2927**
NUMBER OF AXLES	**3016**	**2958**	**5975**
% HEAVY VEHICLES (F4-F13)	**5.21%**	**29.83%**	**17.39%**
% TRUCKS AND BUSES (F3-F13)	**15.15%**	**94.20%**	**54.25%**
AXLE CORRECTION FACTOR	**0.98**	**0.98**	**0.98**

VEHICLE CLASS		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	TOTAL
NO. OF AXLES		2	2	2	2.5	2	3	4	3.5	5	6	5	6	8.75	
ENDING HOUR	1:00	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
	2:00	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
	3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
	4:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
	5:00	0	5	1	0	0	1	0	0	0	0	0	0	0	**7**
	6:00	0	25	2	0	1	0	0	0	0	0	0	0	0	**28**
	7:00	0	74	7	0	3	2	0	0	1	0	0	0	0	**87**
	8:00	0	140	13	0	4	4	1	0	1	0	0	0	0	**163**
	9:00	1	125	27	0	8	3	0	0	0	0	0	0	0	**164**
	10:00	0	76	10	0	2	2	0	0	1	0	0	0	0	**91**
DIRECTION	11:00	1	69	6	1	2	4	0	0	1	0	0	0	0	**84**
North	12:00	1	71	8	0	1	3	0	0	1	0	0	0	0	**85**
	13:00	1	63	9	1	4	3	0	0	0	0	0	0	0	**81**
	14:00	1	56	9	0	1	2	0	0	0	0	0	0	0	**69**
	15:00	1	105	18	0	6	1	0	0	1	0	0	0	0	**132**
	16:00	0	113	15	0	3	0	0	0	1	0	0	0	0	**132**
	17:00	0	74	8	0	4	0	0	0	2	0	0	0	0	**88**
	18:00	0	74	5	0	0	0	0	0	0	0	0	0	0	**79**
	19:00	1	56	2	0	0	0	0	0	0	0	0	0	0	**59**
	20:00	1	37	2	0	0	0	0	0	1	0	0	0	0	**41**
	21:00	1	28	3	0	0	0	0	0	0	0	0	0	0	**32**
	22:00	0	23	0	0	0	0	0	0	0	0	0	0	0	**23**
	23:00	0	14	1	0	0	0	0	0	0	0	0	0	0	**15**
	24:00	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
TOTAL VEHICLES		**9**	**1246**	**147**	**2**	**39**	**25**	**1**	**0**	**10**	**0**	**0**	**0**	**0**	**1479**
TOTAL AXLES		18	2492	294	5	78	75	4	0	50	0	0	0	0	3016
	1:00	0	0	5	0	0	0	0	0	0	0	0	0	0	**5**
ENDING HOUR	2:00	0	0	3	0	1	0	0	0	0	0	0	0	0	**4**
	3:00	0	0	3	0	0	0	0	0	0	0	0	0	0	**3**
	4:00	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
	5:00	0	0	2	0	0	1	0	0	0	0	0	0	0	**3**
	6:00	0	0	0	0	4	0	0	0	0	0	0	0	0	**4**
	7:00	0	2	13	4	16	0	0	0	0	0	0	0	0	**35**
	8:00	0	11	58	2	25	2	0	1	0	0	0	0	0	**99**
	9:00	1	14	71	8	34	1	0	1	0	0	0	0	0	**130**
	10:00	1	4	31	2	17	1	0	2	0	0	0	0	0	**58**
	11:00	0	6	35	6	16	1	0	2	0	0	0	0	0	**66**
DIRECTION	12:00	1	3	40	4	23	1	0	1	0	0	0	0	0	**73**
South	13:00	0	7	58	6	22	0	0	2	1	0	0	0	0	**96**
	14:00	0	3	50	2	19	1	0	1	0	0	0	0	0	**76**
	15:00	0	8	68	9	39	0	0	1	0	0	0	0	0	**125**
	16:00	0	5	88	3	30	1	0	1	0	0	0	0	0	**128**
	17:00	0	4	84	2	28	0	0	2	0	0	0	0	0	**120**
	18:00	0	5	105	1	23	0	0	1	0	0	0	0	0	**135**
	19:00	0	2	60	0	13	1	0	0	0	0	0	0	0	**76**
	20:00	0	2	52	0	13	0	0	0	0	0	0	0	0	**67**
	21:00	0	1	42	0	14	0	0	1	0	0	0	0	0	**58**
	22:00	0	2	35	0	8	0	0	0	0	0	0	0	0	**45**
	23:00	0	1	19	0	5	0	0	0	0	0	0	0	0	**25**
	24:00	1	0	8	0	4	1	0	0	0	0	0	0	0	**14**
TOTAL VEHICLES		**4**	**80**	**932**	**49**	**355**	**11**	**0**	**16**	**1**	**0**	**0**	**0**	**0**	**1448**
TOTAL AXLES		8	160	1864	122	710	33	0	56	5	0	0	0	0	2958
GRAND TOTAL VEHICLES		**13**	**1326**	**1079**	**51**	**394**	**36**	**1**	**16**	**11**	**0**	**0**	**0**	**0**	**2927**
GRAND TOTAL AXLES		26	2652	2158	128	788	108	4	56	55	0	0	0	0	5974

TRAFFIC FLOW BY DIRECTION



--- North - -South

PEAK HOUR DATA

DIRECTION	HOUR	COUNT	2-WAY	HOUR	COUNT
North	**9**	**164**	**A.M.**	**9**	**294**
South	**18**	**135**	**P.M.**	**16**	**260**

VEHICLE CLASSIFICATION CODES:

F1. Motorcycles
F2. Autos*
F3. 2 Axle, 4-Tire Pickups, Vans, Motorhomes*
F4. Buses
F5. 2 Axle, 6-Tire Single Unit Trucks
F6. 3 Axle Single Unit Trucks
F7. 4 or More Axle Single Unit Trucks
F8. 4 or Less Axle Vehicles, One Unit is a Truck
F9. 5 Axle Double Unit Vehicles, One Unit is a Truck
F10. 6 or More Double Unit Vehicles, One Unit is a Truck
F11. 5 or Less Axle Multi-Unit Trucks
F12. 6 Axle Multi-Unit Trucks
F13. 7 or More Axle Multi-Unit Trucks

* INCLUDING THOSE HAULING TRAILERS

FUNCTIONAL CLASS CODES:

RURAL	URBAN	SYSTEM
01	11	PRINCIPAL ARTERIAL-INTERSTATE
02	12	PRINCIPAL ARTERIAL-EXPRESSWAY
02	14	PRINCIPAL ARTERIAL-OTHER
06	16	MINOR ARTERIAL
07	17	MAJOR COLLECTOR
08	17	MINOR COLLECTOR
09	19	LOCAL SYSTEM

SOURCE: NYSDOT DATA SERVICES BUREAU

New York State Department of Transportation
Speed Count Average Weekday Report

Station: 838067
Road #: CR 0310 Road name: MAPLE AVE
From: SR17M
To: CR43
Direction: North

Start date: Tue 06/01/2010 15:00
End date: Wed 06/09/2010 09:00
County: Orange
Town: GOSHEN
Speed limit: 35
LION#:

Count duration: 187 hours
Functional class: 8
Factor group: 30
Batch ID: R08-R08OCCWW23(7)
Count taken by: Org: ORG Init: KPK
Processed by: Org: DOT Init: FG

Speeds, mph

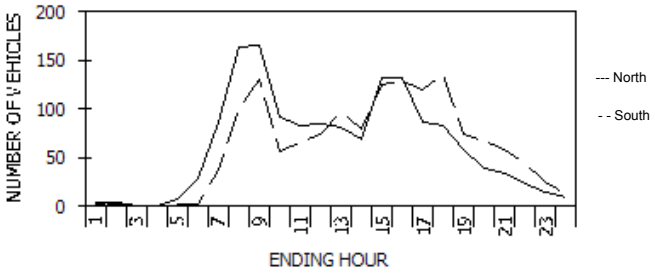
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	0	2	1	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	34.0	33.8	37.8	3
2:00	0	1	1	1	1	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	28.9	30.0	37.0	4
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0.0	0.0	0.0	0
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	37.5	37.6	39.3	1
5:00	0	1	1	1	3	1	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	32.5	35.9	40.0	7
6:00	0	2	2	5	12	6	2	0	0	0	0	0	0	7%	0%	0%	0%	0%	35.4	37.3	43.1	29
7:00	1	14	4	19	36	12	1	0	0	0	0	0	0	1%	0%	0%	0%	0%	32.3	35.8	40.0	87
8:00	3	15	15	56	61	12	1	0	0	0	0	0	0	1%	0%	0%	0%	0%	32.0	34.4	39.1	163
9:00	5	36	26	46	43	9	1	0	0	0	0	0	0	1%	0%	0%	0%	0%	29.0	31.8	38.3	166
10:00	3	15	8	23	32	10	1	0	0	0	0	0	0	1%	0%	0%	0%	0%	30.7	34.4	39.6	92
11:00	4	18	14	15	25	7	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	28.6	31.9	39.0	83
12:00	5	18	11	17	26	8	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	28.5	32.6	39.1	85
13:00	2	20	9	20	22	8	1	0	0	0	0	0	0	1%	0%	0%	0%	0%	29.5	32.6	39.3	82
14:00	2	15	8	16	23	6	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	29.7	33.2	39.1	70
15:00	4	48	22	25	29	5	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	27.2	28.3	37.5	133
16:00	2	44	32	21	28	6	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	27.7	28.3	37.6	133
17:00	2	17	14	20	26	8	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	29.9	32.7	39.1	87
18:00	2	14	10	18	29	8	2	0	0	0	0	0	0	2%	0%	0%	0%	0%	30.8	34.4	39.6	83
19:00	0	9	4	12	26	7	1	0	0	0	0	0	0	2%	0%	0%	0%	0%	32.9	35.9	39.9	59
20:00	1	5	6	10	14	3	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	30.8	33.8	39.0	39
21:00	2	8	5	8	9	2	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	27.9	31.3	38.3	34
22:00	0	5	4	6	8	1	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	30.4	32.6	38.4	24
23:00	0	3	1	4	4	2	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	31.4	33.8	39.9	14
24:00	0	3	2	1	3	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	28.4	28.8	37.8	9
Avg. Daily Total	38	311	199	346	462	121	10	0	0	0	0	0	0	0.7	0.0	0.0	0.0	0.0	29.8	32.9	39.1	1487
Percent	2.6%	20.9%	13.4%	23.3%	31.1%	8.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	2.6%	23.5%	36.9%	60.1%	91.2%	99.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	2	13	8	14	19	5	0	0	0	0	0	0	0									62

	Avg. Speed	50th% Speed	85th% Speed
North	29.8	32.9	39.1
South	42.8	46.5	58.7

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
North	9	166	A.M.	9	296
South	18	135	P.M.	16	262

TRAFFIC FLOW BY DIRECTION



New York State Department of Transportation
Speed Count Average Weekday Report

Date: 06/01/2011

Station: 838067
Road #: CR 0310 Road name: MAPLE AVE
From: SR17M
To: CR43
Direction: South

Start date: Tue 06/01/2010 15:00
End date: Wed 06/09/2010 09:00
County: Orange
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Count duration: 187 hours
Functional class: 8
Factor group: 30
Batch ID: R08-R08OCCWW23(7)
Count taken by: Org: ORG Init: KPK
Processed by: Org: DOT Init: FG

Speeds, mph

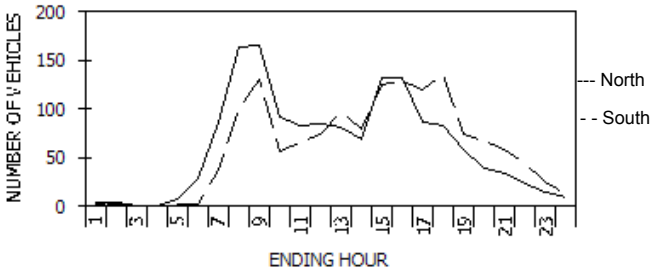
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	0	0	0	1	1	1	1	1	0	0	0	80%	60%	40%	20%	0%	51.5	52.6	61.3	5
2:00	0	0	0	0	0	0	2	0	1	0	0	0	0	100%	33%	33%	0%	0%	50.4	48.8	57.8	3
3:00	0	0	0	0	0	0	1	0	0	0	0	0	0	100%	0%	0%	0%	0%	47.5	47.6	49.3	1
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0.0	0.0	0.0	0
5:00	0	0	0	0	1	0	0	0	1	0	0	0	0	50%	50%	50%	0%	0%	45.4	40.0	58.6	2
6:00	0	0	0	1	1	0	0	0	1	0	0	0	0	33%	33%	33%	0%	0%	40.1	37.6	57.8	3
7:00	0	0	1	7	4	5	5	6	6	1	1	1	0	54%	41%	24%	8%	5%	43.8	46.6	57.9	37
8:00	4	2	7	20	22	15	11	7	5	4	2	2	0	31%	20%	13%	8%	4%	36.4	39.0	53.5	101
9:00	2	6	21	33	27	14	9	8	5	3	1	1	0	21%	14%	8%	4%	2%	34.7	35.6	49.2	130
10:00	0	0	1	7	10	6	10	11	8	2	1	1	0	58%	40%	21%	7%	4%	44.6	47.3	57.2	57
11:00	0	1	3	6	15	8	9	8	8	4	2	1	0	49%	35%	23%	11%	5%	42.9	44.7	58.3	65
12:00	0	0	2	10	16	10	8	10	10	5	2	1	0	49%	38%	24%	11%	4%	43.6	44.6	58.5	74
13:00	1	1	4	16	24	8	12	13	7	6	4	1	0	44%	32%	19%	11%	5%	40.8	41.6	57.5	97
14:00	2	2	3	9	12	12	10	11	9	6	3	1	0	50%	38%	24%	13%	5%	40.9	45.0	58.9	80
15:00	1	4	13	23	25	12	15	15	12	4	2	0	0	38%	26%	14%	5%	2%	38.3	39.4	54.8	126
16:00	0	0	4	12	21	15	23	26	16	9	2	1	0	60%	42%	22%	9%	2%	44.9	47.8	57.8	129
17:00	0	0	4	8	14	10	17	24	22	11	8	2	0	70%	56%	36%	18%	8%	47.6	51.5	61.4	120
18:00	0	0	3	8	15	14	20	28	24	12	7	4	0	70%	56%	35%	17%	8%	48.1	51.4	61.2	135
19:00	0	0	1	5	8	6	10	18	14	7	4	2	0	73%	60%	36%	17%	8%	48.7	52.1	61.3	75
20:00	0	0	0	4	5	6	9	14	17	8	3	2	0	78%	65%	44%	19%	7%	50.4	53.6	61.8	68
21:00	0	0	1	4	4	7	10	14	8	5	4	1	0	72%	55%	31%	17%	9%	48.3	51.1	61.4	58
22:00	0	0	1	4	4	6	6	7	9	5	2	0	0	66%	52%	36%	16%	5%	47.2	50.8	60.4	44
23:00	0	0	1	2	4	2	4	5	5	1	1	0	0	64%	48%	28%	8%	4%	45.5	49.4	58.3	25
24:00	0	0	0	0	2	1	3	3	3	1	0	0	0	77%	54%	31%	8%	0%	49.0	50.9	58.5	13
Avg. Daily Total	10	16	70	179	234	158	195	229	192	95	49	21	0	53.9	40.5	24.7	11.4	4.8	42.8	46.5	58.7	1448
Percent	0.7%	1.1%	4.8%	12.4%	16.2%	10.9%	13.5%	15.8%	13.3%	6.6%	3.4%	1.5%	0.0%									
Cum. Percent	0.7%	1.8%	6.6%	19.0%	35.2%	46.1%	59.5%	75.3%	88.6%	95.2%	98.5%	100.0%	100.0%									
Average hour	0	1	3	7	10	7	8	10	8	4	2	1	0									60

	Avg. Speed	50th% Speed	85th% Speed
North	29.8	32.9	39.1
South	42.8	46.5	58.7

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
North	9	166	A.M.	9	296
South	18	135	P.M.	16	262

TRAFFIC FLOW BY DIRECTION



New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **CR 0500** ROAD NAME: **GOLF LINKS RD** FROM: **CR 12** TO: **MCVEIGH RD** COUNTY: **Orange**
DIRECTION: Northbound FACTOR GROUP: 30 REC. SERIAL #: 1697 FUNC. CLASS: 17 TOWN: **WAWAYANDA**
STATE DIR CODE: 1 WK OF YR: 42 PLACEMENT: CR 50 - MASONIC CREEK BRIDGE NHS: no LION#:
DATE OF COUNT: 10/12/2010 @ REF MARKER: JURIS: County BIN:
NOTES LANE 1: ADDL DATA: Class Speed CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: DOT-WW(25)41 HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: ORG INITIALS: KPK PROCESSED BY: ORG CODE: DOT INITIALS: FG

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T																											
8	F																											
9	S																											
10	S																											
11	M																											
12	T																											
13	W															**197**	**189**	**170**	**173**	**115**	**61**	**35**	**23**	**11**	**12**			
14	T	**2**	**2**	**2**	**1**	**7**	**29**	**85**	**158**	**182**	**183**	**204**	**189**	**169**	**175**	**184**	**185**	**180**	**145**	**95**	**44**	**34**	**28**	**12**	**14**	2309	204	10
15	F	**3**	**2**	**3**	**3**	**4**	**27**	**75**	**146**	**163**	**167**	**176**	**203**	**168**	**175**	**216**	**228**	**197**	**193**	**151**	**72**	**55**	**55**	**25**	**19**	2526	228	15
16	S	**3**	**3**	**2**	**3**	**4**	**10**	**24**	**60**	**100**	**157**	**229**	**291**	**349**	**344**	**232**	**225**	**178**	**160**	**111**	**86**	**45**	**30**	**30**	**12**	2688	349	12
17	S	**4**	**1**	**3**	**3**	**4**	**4**	**15**	**32**	**42**	**96**	**144**	**181**	**180**	**183**	**157**	**145**	**143**	**94**	**73**	**34**	**37**	**10**	**8**	**14**	1607	183	13
18	M	**1**	**1**	**4**	**6**	**8**	**27**	**82**	**152**	**174**	**175**	**171**	**184**	**174**	**161**	**180**	**160**	**202**	**156**	**105**	**68**	**33**	**23**	**15**	**21**	2283	202	16
19	T	**3**	**3**	**0**	**4**	**7**	**24**	**89**	**148**	**178**	**201**	**209**	**188**	**183**	**187**	**203**	**208**	**194**	**172**	**138**	**49**	**39**	**23**	**13**	**13**	2476	209	10
20	W	**1**	**2**	**2**	**4**	**6**	**29**	**87**	**168**	**201**																		
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
2	**2**	**2**	**3**	**6**	**27**	**84**	**154**	**180**	**182**	**190**	**191**	**175**	**174**	**191**	**186**	**186**	**162**	**113**	**56**	**35**	**24**	**13**	**15**	**2353**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	163	4	97	191	8%	1.000	1.076

ESTIMATED (one way)

AADT
2187

New York State Department of Transportation

Traffic Count Hourly Report

ROAD #: **CR 0500** ROAD NAME: **GOLF LINKS RD** FROM: **CR 12** TO: **MCVEIGH RD** COUNTY: **Orange**
DIRECTION: Southbound FACTOR GROUP: 30 REC. SERIAL #: 1697 FUNC. CLASS: 17 TOWN: **WAWAYANDA**
STATE DIR CODE: 2 WK OF YR: 42 PLACEMENT: CR 50 - MASONIC CREEK BRIDGE NHS: no LION#:
DATE OF COUNT: 10/12/2010 @ REF MARKER: JURIS: County BIN:
NOTES LANE 1: ADDL DATA: Class Speed CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: DOT-WW(25)41 HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: ORG INITIALS: KPK PROCESSED BY: ORG CODE: DOT INITIALS: FG

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T																											
8	F																											
9	S																											
10	S																											
11	M																											
12	T																											
13	W															174	197	212	202	152	80	94	57	31	18			
14	T	10	2	1	3	2	10	52	63	72	101	139	150	160	175	190	195	205	190	129	95	75	47	38	14	2118	205	16
15	F	6	2	5	3	5	10	48	63	63	72	120	139	161	158	189	255	209	199	150	131	91	79	53	23	2234	255	15
16	S	26	17	6	8	3	14	17	48	80	83	156	178	204	182	216	182	202	155	131	122	97	83	53	32	2295	216	14
17	S	18	7	10	7	2	12	17	22	39	50	82	127	140	155	150	166	139	120	108	72	54	26	17	16	1556	166	15
18	M	11	4	1	2	3	12	44	50	73	99	95	157	161	159	181	203	212	216	165	111	71	41	32	18	2121	216	17
19	T	9	3	5	2	1	15	54	47	83	103	137	167	178	203	219	193	212	228	166	129	69	48	39	13	2323	228	17
20	W	6	4	3	4	5	17	41	67	93																		
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

8	3	4	3	3	13	48	58	77	94	123	153	166	179	191	197	210	209	153	104	77	48	35	16	ADT 2172

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	163	4	97	210	10%	1.000	1.076

ESTIMATED (one way)

AADT

2019

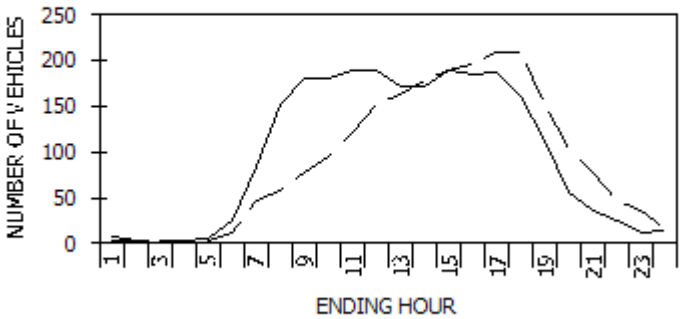
New York State Department of Transportation
Classification Count Average Weekday Data Report

ROAD #: CR 0500 ROAD NAME: GOLF LINKS RD YEAR: 2010 STATION: 838098
COUNTY NAME: Orange MONTH: October
REGION CODE: 8
FROM: CR 12
TO: MCVEIGH RD
REF-MARKER:
END MILEPOINT: 0110067 NO. OF LANES: 2
FUNC-CLASS: 17 HPMS NO:
STATION NO: 8098 LION#:
COUNT TAKEN BY: ORG CODE: ORG INITIALS: KPK
PROCESSED BY: ORG CODE: DOT INITIALS: FG BATCH ID: DOT-WW(25)41

DIRECTION	North	South	TOTAL
NUMBER OF VEHICLES	**2336**	**2160**	**4496**
NUMBER OF AXLES	**4946**	**4466**	**9413**
% HEAVY VEHICLES (F4-F13)	**8.39%**	**7.18%**	**7.81%**
% TRUCKS AND BUSES (F3-F13)	**20.59%**	**19.26%**	**19.95%**
AXLE CORRECTION FACTOR	**0.94**	**0.97**	**0.96**

VEHICLE CLASS		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	TOTAL
NO. OF AXLES		2	2	2	2.5	2	3	4	3.5	5	6	5	6	8.75	
ENDING HOUR	1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
	2:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
	3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
	4:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
	5:00	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
	6:00	0	22	4	0	0	0	0	0	0	0	0	0	0	**26**
	7:00	0	67	14	1	1	1	0	0	0	0	0	0	0	**84**
	8:00	0	124	15	1	1	3	5	1	1	2	0	0	0	**153**
	9:00	0	142	21	2	4	3	4	2	1	1	0	0	0	**180**
	10:00	0	144	20	1	5	2	5	1	0	2	0	0	0	**180**
DIRECTION	11:00	0	149	26	1	5	3	3	0	1	1	0	0	0	**189**
North	12:00	1	138	31	1	7	3	7	1	1	0	0	0	0	**190**
	13:00	0	136	21	0	5	3	4	1	2	1	0	0	0	**173**
	14:00	0	136	18	2	4	3	9	0	1	0	0	0	0	**173**
	15:00	0	147	26	3	3	2	6	1	1	1	0	0	0	**190**
	16:00	1	143	24	2	3	1	10	1	0	1	0	0	0	**186**
	17:00	0	143	24	0	4	2	11	1	1	1	0	0	0	**187**
	18:00	0	131	16	0	3	0	8	0	1	1	0	0	0	**160**
	19:00	0	94	13	0	2	0	3	0	0	0	0	0	0	**112**
	20:00	0	49	4	0	2	0	1	0	0	0	0	0	0	**56**
	21:00	0	31	3	0	0	0	1	0	0	0	0	0	0	**35**
	22:00	0	22	2	0	0	0	0	0	0	0	0	0	0	**24**
	23:00	0	10	2	0	0	0	0	0	0	0	0	0	0	**12**
	24:00	0	14	0	0	0	0	0	0	0	0	0	0	0	**14**
TOTAL VEHICLES		**2**	**1853**	**285**	**14**	**49**	**26**	**77**	**9**	**10**	**11**	**0**	**0**	**0**	**2336**
TOTAL AXLES		4	3706	570	35	98	78	308	32	50	66	0	0	0	4946
ENDING HOUR	1:00	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
	2:00	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
	3:00	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
	4:00	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
	5:00	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
	6:00	0	9	1	0	0	2	0	0	0	0	0	0	0	**12**
	7:00	0	33	8	1	2	2	0	0	0	0	0	0	0	**46**
	8:00	0	42	6	1	1	6	0	0	2	0	0	0	0	**58**
	9:00	0	51	16	1	2	5	0	1	1	0	0	0	0	**77**
	10:00	0	67	14	2	4	6	0	1	1	0	0	0	0	**95**
	11:00	0	91	19	0	4	5	0	1	1	0	0	0	0	**121**
DIRECTION	12:00	0	120	20	1	4	6	0	1	1	0	0	0	0	**153**
South	13:00	1	130	22	0	3	6	0	1	1	0	0	0	0	**164**
	14:00	0	135	25	2	4	10	1	1	1	0	0	0	0	**179**
	15:00	1	157	18	1	2	8	0	1	2	0	0	0	0	**190**
	16:00	0	155	22	2	4	10	1	0	1	0	0	0	0	**195**
	17:00	0	172	24	1	4	7	0	1	1	0	0	0	0	**210**
	18:00	0	179	23	0	2	3	0	0	2	0	0	0	0	**209**
	19:00	0	136	12	0	2	2	0	0	1	0	0	0	0	**153**
	20:00	0	90	12	0	1	0	0	0	0	0	0	0	0	**103**
	21:00	0	68	8	0	0	1	0	0	0	0	0	0	0	**77**
	22:00	0	43	5	0	0	0	0	0	0	0	0	0	0	**48**
	23:00	0	32	3	0	0	0	0	0	0	0	0	0	0	**35**
	24:00	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
TOTAL VEHICLES		**2**	**1742**	**261**	**12**	**39**	**79**	**2**	**8**	**15**	**0**	**0**	**0**	**0**	**2160**
TOTAL AXLES		4	3484	522	30	78	237	8	28	75	0	0	0	0	4466
GRAND TOTAL VEHICLES		**4**	**3595**	**546**	**26**	**88**	**105**	**79**	**17**	**25**	**11**	**0**	**0**	**0**	**4496**
GRAND TOTAL AXLES		8	7190	1092	65	176	315	316	60	125	66	0	0	0	9412

TRAFFIC FLOW BY DIRECTION



--- North - -South

PEAK HOUR DATA

DIRECTION	HOUR	COUNT	2-WAY	HOUR	COUNT
North	**12**	**190**	**A.M.**	**12**	**343**
South	**17**	**210**	**P.M.**	**17**	**397**

VEHICLE CLASSIFICATION CODES:

F1. Motorcycles
F2. Autos*
F3. 2 Axle, 4-Tire Pickups, Vans, Motorhomes*
F4. Buses
F5. 2 Axle, 6-Tire Single Unit Trucks
F6. 3 Axle Single Unit Trucks
F7. 4 or More Axle Single Unit Trucks
F8. 4 or Less Axle Vehicles, One Unit is a Truck
F9. 5 Axle Double Unit Vehicles, One Unit is a Truck
F10. 6 or More Double Unit Vehicles, One Unit is a Truck
F11. 5 or Less Axle Multi-Unit Trucks
F12. 6 Axle Multi-Unit Trucks
F13. 7 or More Axle Multi-Unit Trucks

* INCLUDING THOSE HAULING TRAILERS

FUNCTIONAL CLASS CODES:

RURAL	URBAN	SYSTEM
01	11	PRINCIPAL ARTERIAL-INTERSTATE
02	12	PRINCIPAL ARTERIAL-EXPRESSWAY
02	14	PRINCIPAL ARTERIAL-OTHER
06	16	MINOR ARTERIAL
07	17	MAJOR COLLECTOR
08	17	MINOR COLLECTOR
09	19	LOCAL SYSTEM

SOURCE: NYSDOT DATA SERVICES BUREAU

New York State Department of Transportation
Speed Count Average Weekday Report

Station: 838098
Road #: CR 0500 Road name: GOLF LINKS RD
From: CR 12
To: MCVEIGH RD
Direction: North

Start date: Tue 10/12/2010 10:00
End date: Wed 10/20/2010 08:00
County: Orange
Town: WAWAYANDA
Speed limit: 35
LION#:

Count duration: 191 hours
Functional class: 17
Factor group: 30
Batch ID: DOT-WW(25)41
Count taken by: Org: ORG Init: KPK
Processed by: Org: DOT Init: FG

Speeds, mph

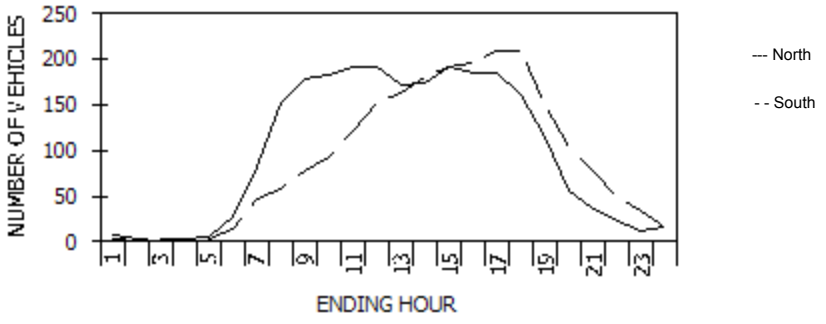
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	39.8	40.0	43.6	2
2:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	42.5	42.6	44.3	1
3:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	42.5	42.6	44.3	1
4:00	0	0	0	1	0	0	1	0	0	0	0	0	0	50.0	0.0	0.0	0.0	0.0	38.6	35.0	48.6	2
5:00	0	0	0	0	2	2	1	1	0	0	0	0	0	33.3	16.7	0.0	0.0	0.0	42.7	42.6	50.6	6
6:00	0	0	0	2	9	10	5	1	0	0	0	0	0	22.2	3.7	0.0	0.0	0.0	40.8	41.3	47.0	27
7:00	2	3	2	7	25	27	15	2	0	0	0	0	0	20.5	2.4	0.0	0.0	0.0	37.3	40.5	46.6	83
8:00	1	0	3	9	49	59	25	5	1	0	0	0	0	20.4	3.9	0.7	0.0	0.0	40.1	41.2	46.7	152
9:00	1	0	2	13	66	65	25	6	0	0	0	0	0	17.4	3.4	0.0	0.0	0.0	39.8	40.6	45.9	178
10:00	1	0	2	20	76	63	18	2	0	0	0	0	0	11.0	1.1	0.0	0.0	0.0	38.8	39.5	44.5	182
11:00	1	1	3	14	83	65	20	4	0	0	0	0	0	12.6	2.1	0.0	0.0	0.0	39.0	39.7	44.7	191
12:00	2	2	6	24	80	57	19	1	0	0	0	0	0	10.5	0.5	0.0	0.0	0.0	37.5	38.9	44.3	191
13:00	0	0	1	16	66	66	20	3	1	0	0	0	0	13.9	2.3	0.6	0.0	0.0	39.9	40.3	44.9	173
14:00	1	3	2	15	69	64	16	3	1	0	0	0	0	11.5	2.3	0.6	0.0	0.0	38.7	39.8	44.6	174
15:00	2	3	5	20	82	56	21	3	0	0	0	0	0	12.5	1.6	0.0	0.0	0.0	37.8	39.1	44.6	192
16:00	0	1	2	22	76	61	17	4	1	0	0	0	0	12.0	2.7	0.5	0.0	0.0	39.1	39.5	44.6	184
17:00	1	0	2	18	77	66	18	3	0	0	0	0	0	11.4	1.6	0.0	0.0	0.0	39.0	39.7	44.5	185
18:00	0	0	1	12	58	66	21	2	0	0	0	0	0	14.4	1.3	0.0	0.0	0.0	40.1	40.7	45.0	160
19:00	0	0	1	9	38	45	19	2	0	0	0	0	0	18.4	1.8	0.0	0.0	0.0	40.4	41.0	46.1	114
20:00	0	0	0	3	20	22	8	2	0	0	0	0	0	18.2	3.6	0.0	0.0	0.0	40.7	41.1	46.1	55
21:00	0	0	0	4	11	12	8	0	0	0	0	0	0	22.9	0.0	0.0	0.0	0.0	40.4	41.1	46.8	35
22:00	0	0	0	4	7	8	4	0	0	0	0	0	0	17.4	0.0	0.0	0.0	0.0	39.5	40.4	45.7	23
23:00	0	0	0	2	3	5	2	0	0	0	0	0	0	16.7	0.0	0.0	0.0	0.0	39.8	41.0	45.6	12
24:00	0	0	0	2	4	6	3	1	0	0	0	0	0	25.0	6.3	0.0	0.0	0.0	40.9	41.7	47.7	16
Avg. Daily Total	12	13	32	217	902	828	286	45	4	0	0	0	0	14.3	2.1	0.2	0.0	0.0	39.1	40.0	45.0	2339
Percent	0.5%	0.6%	1.4%	9.3%	38.6%	35.4%	12.2%	1.9%	0.2%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	0.5%	1.1%	2.4%	11.7%	50.3%	85.7%	97.9%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	0	1	1	9	38	34	12	2	0	0	0	0	0									97

	Avg. Speed	50th% Speed	85th% Speed
North	39.1	40.0	45.0
South	40.1	41.1	45.9

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
North	15	192	A.M.	12	344
South	17	209	P.M.	17	394

TRAFFIC FLOW BY DIRECTION



New York State Department of Transportation
Speed Count Average Weekday Report

Station: 838098
Road #: CR 0500 Road name: GOLF LINKS RD
From: CR 12
To: MCVEIGH RD
Direction: South

Start date: Tue 10/12/2010 10:00
End date: Wed 10/20/2010 08:00
County: Orange
Town: WAWAYANDA
Speed limit: 35
LION#:

Count duration: 191 hours
Functional class: 17
Factor group: 30
Batch ID: DOT-WW(25)41
Count taken by: Org: ORG Init: KPK
Processed by: Org: DOT Init: FG

Speeds, mph

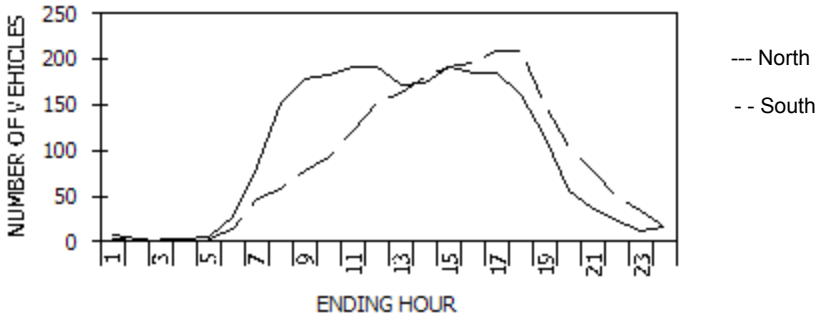
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	0	1	2	4	1	0	0	0	0	0	0	12.5	0.0	0.0	0.0	0.0	40.1	41.3	44.8	8
2:00	0	0	0	0	0	0	2	0	0	0	0	0	0	100.0	0.0	0.0	0.0	0.0	47.5	47.6	49.3	2
3:00	0	0	0	0	0	2	1	0	0	0	0	0	0	33.3	0.0	0.0	0.0	0.0	44.0	43.8	47.8	3
4:00	0	0	0	0	1	1	1	0	0	0	0	0	0	33.3	0.0	0.0	0.0	0.0	42.1	42.6	47.8	3
5:00	0	0	0	0	0	1	1	0	0	0	0	0	0	50.0	0.0	0.0	0.0	0.0	44.9	45.0	48.6	2
6:00	0	0	0	1	4	5	3	0	0	0	0	0	0	23.1	0.0	0.0	0.0	0.0	40.8	41.6	46.8	13
7:00	0	0	1	6	14	17	8	1	0	0	0	0	0	19.1	2.1	0.0	0.0	0.0	39.8	40.8	46.3	47
8:00	1	0	1	4	19	22	8	2	0	0	0	0	0	17.5	3.5	0.0	0.0	0.0	38.9	40.8	46.0	57
9:00	1	1	1	7	25	29	11	2	0	0	0	0	0	16.9	2.6	0.0	0.0	0.0	38.7	40.7	45.7	77
10:00	1	0	2	8	31	39	11	1	0	0	0	0	0	12.9	1.1	0.0	0.0	0.0	38.9	40.6	44.8	93
11:00	0	1	2	10	36	52	19	2	0	0	0	0	0	17.2	1.6	0.0	0.0	0.0	40.0	41.2	45.8	122
12:00	1	0	1	8	48	67	25	3	0	0	0	0	0	18.3	2.0	0.0	0.0	0.0	40.3	41.4	46.1	153
13:00	0	1	2	8	52	75	22	4	0	0	0	0	0	15.9	2.4	0.0	0.0	0.0	40.5	41.3	45.4	164
14:00	0	1	3	14	64	67	28	3	0	0	0	0	0	17.2	1.7	0.0	0.0	0.0	39.9	40.6	45.8	180
15:00	0	1	3	12	61	80	28	5	1	0	0	0	0	17.8	3.1	0.5	0.0	0.0	40.3	41.2	46.0	191
16:00	3	0	2	9	69	78	29	6	0	0	0	0	0	17.9	3.1	0.0	0.0	0.0	39.4	41.0	46.0	196
17:00	1	2	1	12	73	81	34	5	0	0	0	0	0	18.7	2.4	0.0	0.0	0.0	39.9	41.0	46.2	209
18:00	0	1	1	8	63	96	34	6	0	0	0	0	0	19.1	2.9	0.0	0.0	0.0	41.0	41.7	46.3	209
19:00	0	0	0	8	50	66	24	3	0	0	0	0	0	17.9	2.0	0.0	0.0	0.0	40.9	41.4	46.0	151
20:00	0	0	0	7	38	43	14	2	0	0	0	0	0	15.4	1.9	0.0	0.0	0.0	40.4	40.9	45.2	104
21:00	0	0	0	7	32	26	10	2	0	0	0	0	0	15.6	2.6	0.0	0.0	0.0	39.9	40.0	45.3	77
22:00	0	0	0	2	20	18	8	1	0	0	0	0	0	18.4	2.0	0.0	0.0	0.0	40.6	40.7	46.1	49
23:00	0	0	1	2	10	13	6	2	0	0	0	0	0	23.5	5.9	0.0	0.0	0.0	40.7	41.6	47.5	34
24:00	0	0	0	2	5	6	2	1	0	0	0	0	0	18.8	6.3	0.0	0.0	0.0	40.3	40.9	46.6	16
Avg. Daily Total	8	8	21	136	717	888	330	51	1	0	0	0	0	17.7	2.4	0.0	0.0	0.0	40.1	41.1	45.9	2160
Percent	0.4%	0.4%	1.0%	6.3%	33.2%	41.1%	15.3%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	0.4%	0.7%	1.7%	8.0%	41.2%	82.3%	97.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	0	0	1	6	30	37	14	2	0	0	0	0	0									90

	Avg. Speed	50th% Speed	85th% Speed
North	39.1	40.0	45.0
South	40.1	41.1	45.9

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
North	15	192	A.M.	12	344
South	17	209	P.M.	17	394

TRAFFIC FLOW BY DIRECTION



2011 TRAFFIC DATA REPORT FOR NEW YORK STATE

New York State
Department of Transportation

County Order	End Mile Point	Count LOC Reference Marker	Section Length	Section End Description	LATEST COUNT EST AADT	YR	PREVIOUS COUNTS EST AADT	YR	EST AADT	YR	EST AADT	YR	Count Station Number	YR
		Route	**NY17C**	**County 007 BROOME**	**Region**	**09**								
2	06.13	17C91021058	00.36	BRIDGE OVER RT 17	24750	11	29220	08	25730	02	27710	99	0350	
2	06.50	17C91021062	00.37	ACC RT 17	28720	11	31570	08	30830	06	29530	02	0123	
2	08.32	17C91021065	01.82	RT 201 OVER	12590	11	10550	08	9720	07	13420	02	0314	
2	09.53	17C91021084	01.21	BINGHAMTON W CITY LN JOHNSON CITY WORKER'S ARCH	11210	**	11220	10	10790	07	11110	02	0349	
2	10.03	17C91021095	00.50	HELLEN ST	11200	**	11210	10	12100	07	13240	05	0125	
2	10.91	17C91022005	00.88	WALNUT ST	17830	**	17920	05	15380	02	16770	99	0126	
2	11.23	17C91022013	00.32	RT 11 END RT 17C	12070	**	12090	09	16250	01	16050	98	0001	
		Route	**NY17K**	**County 071 ORANGE**	**Region**	**08**								
1	00.00		00.00	OLD RT 17										
1	00.36	17K83011000	00.36	RT 17	4290	**	4310	09	4990	06	4930	03	0163	
1	03.72	17K83011004	03.36	RT 302 BULLVILLE	4100	**	4130	09	5160	06	5280	04	0674	
1	10.36	17K83011037	06.64	CR 14 ALBANY POST RD	5910	**	5940	09	5710	06	6210	03	0133	
1	10.66	17K83011104	00.30	RT 211 MONTGOMERY	13990	**	13990	10	13900	06	15750	04	0676	
1	12.59	17K83011107	01.93	RT 208	12150	**	12150	10	12350	07	14780	04	0677	
1	15.16	17K83011126	02.57	CR 75 COLDENHAM RD	9200	11	9750	08	10550	05	10310	02	0678	
1	16.81	17K83011151	01.65	CR 23 ROCKCUT RD	13050	**	13050	10	13590	07	16760	04	0155	
1	17.39	17K83011168	00.58	ENTER NEWBURGH AREA-ACC RT 84I	17380	**	17380	10	22500	07	23910	04	0055	
1	19.91	17K83011174	02.52	RT 300 UNION AVE	16650	**	16650	09	17510	03	17560	00	0070	
1	20.09	17K83011199	00.18	ACC RT 87I	22490	**	22500	06	23380	03	21960	00	0047	
1	20.99	17K83011201	00.90	NEWBURGH WEST CITY LINE	21140	11	26090	07	19870	04	16100	01	0154	
1	21.39	17K83012000	00.40	RT 207	13120	**	13120	10	15250	07	18230	04	0679	
1	22.14	17K83012004	00.75	START RT 32 OLAP	16660	**	16660	09	15820	03	17660	00	0303	
1	22.37	17K83012011	00.23	RT 9W END RT 32 OLAP END RT 17K	20080	11	19910	10	18270	07	20180	04	0238	
		Route	**NY17M**	**County 071 ORANGE**	**Region**	**08**								
1	00.00		00.00	RT 17 EB OFF RAMP CR 76										
1	01.12	17M83011000	01.12	RT 302 ROCKVILLE	6630	**	6630	10	4790	07	5720	04	0680	
1	03.10	17M83011010	01.98	MIDDLETOWN NORTH CITY LINE	8430	11	8700	08	9390	05	8280	02	0681	
1	03.96	17M83011030	00.86	START RT 211 OLAP	4990	11	5650	08	5790	05	5260	99	0024	
1	04.74	17M83012008	00.78	END RT 211 OLAP	8220	11	10790	08	10110	05	9480	02	0065	
1	05.40	17M83012016	00.66	WAWAYANDA AVE	6500	**	6500	10	7350	07	7390	04	0520	
1	05.56	17M83012023	00.16	ACADEMY ST	6860	**	6860	10	4960	07	6330	04	0085	
1	06.75	17M83012024	01.19	MIDDLETOWN SOUTH CITY LINE	12630	11	12800	10	13990	07	14100	01	0084	
1	07.04	17M83012036	00.29	START RT 6 OLAP	41600	**	41600	09	38830	06	31130	05	0069	
1	07.42	17M83013003	00.38	ACC RT 84I	30260	11	32970	08	27150	99			0018	
1	08.73	6 83012159	01.31	CR 12 CR 50 LOWER RD	21600	**	21600	09	21070	00	23310	98	0054	
1	12.20	6 83012173	03.47	START RT 17 OLAP GOSHEN	18960	**	18960	10	22760	07	17820	03	0019	
1	12.59	6 83012206	00.39	RTS 207 & 17A GOSHEN	64540	**	53780	97					0009	
1	13.17	17 83101127	00.58	END RTS 6 & 17 OLAPS GOSHEN	55250	**	47750	00	45800	97			0010	

AMY'S KITCHEN & SCIENCE OF THE SOUL

APPENDIX H

PUBLIC TRANSPORTATION SCHEDULES

TABLE 1: NEW YORK TO ORANGE COUNTY & ROC

	Run Number	521	501	729	731	373	401	733	389	773	385	801	735
	Route Number	17c	17M	x87N	x32N	xPA84	x17MD	x32N	L17MD	x32N		xPA84	x32N
Code	Day of Week	M-F	M-F	M-F	DAILY	M-F	DAILY	DAILY	DAILY	M-F	SSH	DAILY	DAILY
1	New York, NY *41st St. & 8th Ave., NYC* ♥ *(PABT)*	600a	640a	655a	715a	750a	830a	830a	910a	930a	930a	1000a	1000a
2	Ridgewood ♥ *(Rt. 17N, Park & Ride Shelter)*	625a	D		747a	822a	902a	902a	942a	1005a	1005a	1032a	1032a
3	Suffern, NY *(Terminal – 94 Orange Ave.)*					840a			1000a				
4	Sloatsburg, NY *(Route 17)*		717a			847a			1007a				
5	Tuxedo, NY *(Rt. 17 – Bus Shelter)*		732a		Express	852a	*D	Express	1012a			Thruway Express	Thruway Express
6	Tuxedo, NY *(Rt. 17 & 17A, Park & Ride)*		734a			854a	*D		1014a				
7	Southfields, NY *(Rt. 17 & Old Orange Tpk.)*		736a			856a	*D		1016a				
8	Rt. 17 Ent. Metro North Station		743a			903a			1023a				
9	Harriman, NY *(Rt. 17M Mobil Station)*		744a			904a			1024a				
10	Harriman, NY *(Harriman Woods / St. Anastasia)*		745a			905a			1025a				
11	Central Valley, NY *(Park & Ride, Jct. Rt. 6&17)*				817a			D		1030a	1030a	1105a	1105a
12	Woodbury Common, NY *(Bus Shelter)*				822a			935a					
13	Woodbury Common, NY *(Highway Stop)*												
14	Monroe, NY ♥ *(Terminal – Millpond Parkway)*		753a			913a			1033a				
15	Monroe Village *(Park & Ride – Millpond Parkway)*		754a			914a			1034a				
16	Monroe, NY *(Rt. 17 Park & Ride)*		756a			916a	930a		1036a				
17	Chester, NY *(Rt. 17M, Cumberland Farms)*					927a			1047a				
18	Chester, NY *(Rt. 17M Park & Ride)*	720a				D930a			D1050a				
19	Whispering Hills, NY												
20	Goshen, NY *(Main St. Bus Stop)*					937a			1058a				
21	Goshen, NY *(Mathew St. Park & Ride)*					938a			1059a				
22	Goshen, NY *(Main Street)*												
23	Mid-Hudson Hospital, NY *(Route 17M)*					951a	D943a						
24	New Hampton, NY *(Junction of Rt. 17M & 84 – Route 84 Citgo)*					D956a	948a					1125a	
25	Galleria Mall, NY *(Note G)*												
26	Orange Plaza, NY *(Route 211)*												
27	Middletown, NY ♥ *(14 Railroad Ave.)*					1003a	955a		1125a		1105a	1135a	
28	Orange Plaza, NY *(Route 211)*												
29	Galleria Mall, NY *(Note G)*												
30	Circleville *(Exit 119 Park & Ride, Baker Rd.)*												
31	Central Valley, NY *(Rt. 32 & Smith Clove Rd.)*				829a			942a					1112a
32	Highland Mills, NY *(Rt. 32 – Upper Crust Deli)*				832a			945a					1115a
33	Mountainville, NY *(Rt. 32 & Angola Rd.)*				839a			952a					1122a
34	Vails Gate, NY *(Jct. Rt. 32, 300 & 94)*				846a			959a					1129a
35	Newburgh, NY *(Bwy & Lake St. – Citgo)*				854a			1007a					1137a
36	Newburgh *(Terminal – Park & Ride, Rt. 17K & NYS Thruway)*			815a	859a			1012a					1142a
37	Stewart International Airport												
38	Port Jervis, NY *(Rt. 6 Park & Ride, First Assembly)*											1200p	

Wall Street Express Return			
Trinty & Exchange	lv	415p	510p
Church &Liberty		417p	512p
Church& Chambers		421p	516p
Church & Leonard		423p	518p
6th & Spring St		428p	523p
6th & 3rd St		430p	525p
6th & 17rd St		432p	527p
6th & 23rd St		434p	529p
Central Valley Park & Ride	ar	552p	648p
Monroe Park & Ride	ar	602p	658p
Chester Park & Ride	ar	612p	708p
Middletown Park & Ride	ar	627p	723p
Circleville Park & Ride	ar	642p	738p

New!! Wall Street Express Evening Retu

SCHEDULE LEGEND:

◗ = Except Saturday, Sunday and holidays
SSH = Saturdays, Sundays and holidays
✪ = Sunday only
D = Drop-off only
✱ = Weekends only
Daily = EVERY DAY
P = Pick up only

♥ = A
p
M
b
HS = H
PS = P
c

CKLAND COUNTY SERVICE — New York • Suffern • Harriman •

153	723	405	581	737	791	387	583	161	803	509	739	725	505	155	515	507	813	503	301	775	721	303	527	541	383	595	741	549
L17MD	x30N	x17MD	x94	x32N		L17MD	x94	17c	xPA84	17c	x32N	x87n	17c	x87m		17c	xPA84		x87m	x32N		x87m	17M	17c	x87m		x32N	17c
DAILY	M-F	DAILY	M-F	DAILY	M-F	DAILY	M-F	M-F	DAILY	M-F	DAILY	M-F	M-F	DAILY	SAT	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	SSH	SSH	Daily	M-F
1045a	1115a	1130a	1210p	1245p	1245p	115p	200p	230p	230p	242p	245p	245p	300p	310p	310p	325p	330p	335p	345p	345p	345p	400p	409p	415p	415p	415p	415p	415p
1117a		1155a	1242p	115p		147p	232p	300p	300p		313p				340p					415p						447p	445p	
1135a			100p			205p	253p							P 355p												508p		
1142a			107p			212p	257p							401p									459p			517p		
1147a			112p			217p	302p							406p									503p			522p		
1149a		Thruway Express	114p	Thruway Express		219p	304p		Thruway Express	Monroe PR Express	Thruway Express		Thruway Express	408p		Thruway Express		Monroe PR Express	Thruway Express			Thruway Express	504p			524p	Thruway Express	
1151a			116p			221p	306p							410p									507p			527p		
1158a			123p			228p	313p							417p									513p			534p		
1159a			124p			229p	314p							418p									514p			535p		
1200p			125p	D		230p	315p							419p									515p			536p		
	1215p	1230p		150p	155p			335p			348p	350p	408p			427p				448p	500p	502p		517p				
1208p			133p			238p	323p							421p									523p			545p		
			134p			239p	324p							422p									524p			546p		
1212p			136p			241p	326p	342p		350p			415p		420p	434p		440p	456p			509p	526p	525p	525p	548p		525p
1222p						252p								432p														
01225p			146p			D	336p	352p					420p	D				450p			512p	519p		535p		556p		535p
1233p						303p		403p						443p					510p						535p			
1234p						304p		405p						444p					512p					545p	539p			
01244p		1245p				314p								*D454p*			445p		528p			D			548p			D
1252p		100p				322p		D	355p					502p			455p		536p			D			556p			
100p						*358p*																						
112p						*405p*																						
								D														549p						
	1222p			157p							400p									455p							525p	
	1225p			200p				Continues to Monticello			403p									458p							528p	
	1232p			207p							410p									505p							535p	
	1239p			214p							417p									512p							550p	
	1247p			222p							425p									520p							557p	
	1252p			227p							430p	415p								525p							600p	
					225p				419p								519p											

urn Service to: Central Valley Park & Ride • Monroe Park & Ride • Chester Park & Ride • Circleville Park & Ride

Agency station to which collect or prepaid express may be consigned.
No C.O.D. express or checked baggage.
Highway stop only
Pick up at Ridgewood Park & Ride only if seats are available

Times shown in *ITALICS* indicate service via connecting trip.

Shaded areas represent Park & Rides.

THE FARE POLICY AND TICKET REFUNDS

Except in the case of job loss, cash refunds will no longer be allowed on commutation tickets. In the event of illness, business travel or vacation, unused tickets may be returned for credit toward the purchase of additional commuter tickets by using the commutation credit voucher. A letter stating the reason for returning tickets with the actual tickets must be mailed within fifteen (15) days after the last date of possible use to ShortLine, 66 Tetz Road, Chester, NY 10918, to Attention: REFUND DEPT. A personal voucher will be issued and mailed. Only one credit voucher may be redeemed at one time against the purchase of another commuter book of tickets.

COMMUTER TICKET POLICY

10 Trips	Good for 20 days	No credit; no refu
40 Trips	Good for 40 days	Up to 10 tickets m turned in 15 days
50 Trips	Good for 90 days	May be shared by NOT FOR RESALE.
One Way	Good for 30 days	Refundable up to 5
Round Trip	Good for 120 days	Refundable up to 5

A 10% Service Charge will be deducted on all ref

Middletown • Newburgh • Monroe

309	165	513	805	511	517	755	393	743	531	753	163	523	159	321	525	711	547	411	533	745	807	529	545	553	323	407	715	809	
x87m		17M	xPA84		17G			x32N	17G		x87m	17G	17M		17c	x87N	17M	x87m	17c	x32N	xPA84	17M	17c			17G	x87N	xPA84	
M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	SSH	M-F	M-F	M-F	M-F	DAILY	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	SSH	
430p	430p	440p	435p	435p	445p	450p	450p	458p P523p	500p	505p	510p 535p	510p 546p	515p 548p	515p	520p	525p	525p D558p 618p	530p P558p	530p	535p P603p	535p	535p	540p	555p	555p	600p	600p	600p P632p	
		530p										559p	608p				625p					625p							
		535p										604p	613p				630p					628p							
ruway xpress	Thruway Express	537p	Thruway Express		Thruway Express	Thruway Nonstop Express		Thruway Express	Thruway Express	Thruway Nonstop Express	Thruway Express	606p	615p		Thruway Express	Thruway Nonstop Express	632p	Thruway Express	Thruway Express	Thruway Express	Thruway Express	D634p				Thruway Express	Thruway Nonstop Express		
		540p										609p	618p				633p					641p							
		549p										616p	625p				641p					642p							
		550p										617p	626p				642p					643p							
		551p										618p	627p				643p					644p							
531p					547p			600p							622p					637p					657p			702p	
								HS																					
		555p										626p	635p				651p					652p							
		556p															652p					653p							
539p		558p		545p	555p		600p		610p				637p	625p	630p				640p		D645p		653p	705p		709p		709p	
					604p				620p			638p		635p	640p			648p						703p	715p		D714p			
					610p							644p												708p						
																		s659p											
					619p				630p						650p			s700p	701p										
									632p										702p										
											S							s = SSH											
0604p											D650p							708p											
610p							620p				657p							715p										740p	
	D													655p											730p				
								608p												644p									
								611p												647p									
								618p												654p									
								625p												701p									
								633p												709p									
						615p		638p		630p						650p				714p							720p		
			615p																		710p							804p	

We Care For Your Health

SENIOR CITIZEN FARES

Senior Citizens at least 62 years old with I.D. may receive 10% off of the regular one way excursion fare between all points of ShortLine or Chenango Valley Bus Lines. There is no further discount on the purchase of a round trip. Senior Citizen discounts may not be applied to any promotional or other discounted fares.

The New Jersey Senior Citizen Program is valid ONLY between Orange, Rockland or Bergen Counties and New York City.

Senior Citizens, 62 years of age and over, and customers with disabilities, may ride at all times of the day with a valid New Jersey Senior Citizen Coupon in Bergen County, NJ and Orange and Rockland County, NY. Senior Citizens need to remit one coupon for a one-way ticket and two coupons for a round trip ticket.

Senior Citizens may travel at half fare locally within Orange, Sullivan and Rockland Counties. I.D. and a Medicare card is required.

Coach

No reservations
Center in the No
North Wing

377	305	563	537	747	535	539	543	311	325	811	397	749	557	307	157	587	413	415	751	551	589	771	591	815	125	381	391	593	Ru
178	x17MD	NEW!	17M	x32N	17M	17M	17c	x87m		17M	L17MD	x32N		L17MD	178	17M	x17MD	x17MD	x32N	17M	17M	x32N	xPA84	xPA84	x17MD	L17MD	17M	17c	Rou
M-F	M-F	M-F	SSH	DAILY	M-F	M-F	M-F	M-F	M-F	M-F	SSH	M-F	M-F	M-F	DAILY	M-F	M-F	S&S	DAILY	M-F	DAILY	DAILY	Sun-F	M-F	M-F	DAILY	S&S	M-F	Da
600p	600p	615p	615p	615p	622p	630p	630p	637p	700p	700p	715p	715p	730p	730p	800p	815p	830p	830p	845p	945p	1015p	1045p	1100p	1100p	1100p	1230a	140a	140a	Nev
632p			645p	D643p						740p			755p		830p	844p			D912p	1016p	1046p	1116p	1125p			101a	211a	211a	Rid
															852p	902p				1033p	1102p	1132p				117a	227a	227a	Suf
	643p		708p		714p	730p			752p		807p		822p	P 822p		909p		915p		1039p	1109p	1139p				123a	233a	233a	Slo
	653p		712p		717p	735p	Express	Express	754p		809p		824p	P 824p		913p		919p		1043p	1113p	1143p				127a	237a	237a	Tux
	655p		714p	Thruway Express	D719p	738p			D	Thruway Express	D810p	Thruway Express	826p	P 826p		915p		921p	Thruway Express	1045p	D1115p	D1145p	Thruway Express			D129a	D239a	D239a	Tux
	657p		716p		721p	740p			804p		813p		828p	P 828p		917p		923p		1047p	1117p	1147p				131a	241a	241a	Sou
	659p		722p		727p	747p			D		819p		834p	P 834p		922p		930p		1052p	1122p	1152p				136a	246a	246a	Rt.
	701p		723p		728p	748p			810p		820p		835p	P 835p		923p		931p		1053p	1123p	1153p				137a	247a	247a	Har
	702p		724p		729p	749p			811p		821p		836p	P 836p		924p		932p			1124p					138a	248a	248a	Har
		720p					732p			802p		817p			910p				947p	1055p		1155p							Cer
				722p								822p																	Wo
																													Wo
	710p		732p		737p	754p			814p		828p		844p			930p		940p			1130p					145a	255a	255a	Mo
	711p		733p		738p	755p			815p				845p			931p		941p			1131p					146a	256a	256a	Mo
709p		730p	735p		740p	757p	745p			815p	831p		847p		920p		940p	942p		1101p	1133p		1210a		*1210a	147a	258a	258a	Mo
											838p														*Sat. only	157a			Che
			745p		750p	805p		743p			D841p			D847p		D940p	D948p	D954p		D	1143p			D		D157a	D	D307a	Che
																													Wh
	720p							753p			848p			857p			959p	1005p		D						207a			Gos
	723p							754p			849p			858p			1000p	1006p		D				D		208a	D		Gos
																	D												Gos
																													Mid
730p	D729p							D802p			D857p			D906p			1012p	1012p						D		D215a	D		Nev
																													Gal
																													Ora
740p	736p							807p	D		902p			911p	942p		1024p	1024p		D				1225a	D1225a	221a	325a		Mid
															Continues to Monticello	Continues to Monticello													Ora
																													Gal
									845p																				Cir
				729p								829p							954p			1202a							Cer
				732p								832p							957p			1205a							Hig
				739p								839p							1004p			1212a							Mo
				746p								846p							1011p			1219a							Vail
				754p								854p							1018p			1227a							Nev
				759p								859p							1022p			1231a							Nev
																													Por
										852p														1250a					Por

h USA Airport Connections

Available on ALL schedules

JFK • LaGuardia • Newark

Ask about our special fares

s are required. Buses leave every 20 minutes from the ground level AirTrans
orth Wing, 42nd St. entrance. From the ShortLine gates on the 3rd floor of the
there is a convenient elevator or escalators down to the AirTrans Center.

TO PURCHASE TICKETS FROM THE NEW JERSEY TRANSIT MACHINES IN THE PORT A

Note: These tickets are for travel on the 11:30 pm,12:30 am and 1:40 am schedules to points in New Jersey and Orange County only. Co
Ticket Office is open from 6:00 am to 11:00 pm daily.

You will need to enter the company code – **958. You will then enter the zone code of your destination as follows:**

Allendale, NJ 6
Chester, NY 20
Goshen, NY 19
Harriman,NY 17
Hohokus, NJ 4
Mahwah, NJ 8
Middletown, NY 21
Monroe, NY 18
Paramus, NJ 2
Ramsey, NJ 7
Ridgewood, NJ 3
Sloatsburg, NY 12
Southfields, NY 15
Suffern, NY 9
Tuxedo, NY 13
Waldwick, NJ 5

n Number	
ute Number	
y of Week	
w York, NY *41st St. & 8th Ave., NYC ♥ (PABT)*	1
gewood ♥ *(Rt. 17N, Park & Ride Shelter)*	2
fern, NY *(Terminal – 94 Orange Ave.)*	3
atsburg, NY *(Route 17)*	4
edo, NY *(Rt. 17 – Bus Shelter)*	5
edo, NY *(Rt. 17 & 17A, Park & Ride)*	6
uthfields, NY *(Rt. 17 & Old Orange Tpk.)*	7
17 Ent. Metro North Station	8
rriman, NY *(Rt. 17M Mobil Station)*	9
rriman, NY *(Harriman Woods / St. Anastasia)*	10
ntral Valley, NY *(Park & Ride, Jct. Rt. 6&17)*	11
odbury Common, NY *(Bus Shelter)*	12
odbury Common, NY *(Highway Stop)*	13
nroe, NY ♥ *(Terminal – Millpond Parkway)*	14
nroe Village *(Park & Ride – Millpond Parkway)*	15
nroe, NY *(Rt. 17 Park & Ride)*	16
ester, NY *(Rt. 17M, Cumberland Farms)*	17
ester, NY *(Rt. 17M Park & Ride)*	18
ispering Hills, NJ	19
shen, NY *(Main St. Bus Stop)*	20
shen, NY *(Mathew St. Park & Ride)*	21
shen, NY *(Main Street)*	22
l-Hudson Hospital, NY *(Route 17M)*	23
w Hampton, NY *(Junction of Rt. 17M & 84 – Route 84 Citgo)*	24
leria Mall, NY *(Note G)*	25
nge Plaza, NY *(Route 211)*	26
ddletown, NY ♥ *(14 Railroad Ave.)*	27
nge Plaza, NY *(Route 211)*	28
leria Mall, NY *(Note G)*	29
cleville *(Exit 119 Park & Ride, Baker Rd.)*	30
ntral Valley, NY *(Rt. 32 & Smith Clove Rd.)*	31
hland Mills, NY *(Rt. 32 – Upper Crust Deli)*	32
untainville, NY *(Rt. 32 & Angola Rd.)*	33
s Gate, NY *(Jct. Rt. 32, 300 & 94)*	34
wburgh, NY *(Bwy & Lake St. – Citgo)*	35
wburgh *(Terminal – Park & Ride, Rt. 17K & NYS Thruway)*	36
t Jervis, NY *(Rt. 6 Park & Ride, First Assembly)*	37
t Jervis, NY *(JC Gas, 12 Route 6)*	38

AUTHORITY

oach USA/Shortline

1:40 am leaves from Gate 80 Lower Level North Wing

NEW YORK TERMINALS

Port Authority Bus Term., 41st & 8th Ave., 212-736-4700
ShortLine Ticket Plaza located on the second floor of the North Wing.
ShortLine coaches depart from the 3rd floor Level, Gates 307–314.

TERMINALS & TICKET AGENTS

CENTRAL VALLEY, NY: Danny's Market & Deli, 4 Smith Clove, 845-928-9614
MIDDLETOWN, NY: Shortline Terminal, 14 Railroad Avenue, 845-343-3903
MONROE, NY: The Depot, 70 Millpond Parkway, 845-782-3528
NEWBURGH, NY: ShortLine Transp. Center, Rt. 17K at Thruway Entrance, 845-561-0734
PORT JERVIS, NY: JC Gas, 12 Rt. 6, 800-631-8405
RIDGEWOOD, NJ: Ridgewood Park & Ride, 201-444-7005
Southbound – Shortline Term., 575 Rt. 17 South
Northbound – Bus Shelter/Pedestrian Overpass, Rt. 17 N
SLOATSBURG, NY: Haas Pharmacy, 62 Orange Turnpike, 845-753-9671
SUFFERN, NY: Multiservices Shop & Travel, 94 Orange Avenue, 845-369-7003
TUXEDO, NY: Tickets: Bentlys Deli, Bus stops at shelter across from Railroad Station

NOTES AND REFERENCE MARKS

- No service is rendered to or from New York City and places designated R.
- Holiday Service – Holiday schedule will be operated on New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving, and Christmas.
- At the discretion of the carrier additional stops may be made for pick up in New Jersey during morning rush hour. This company is not responsible for errors in the timetable or inconvenience or damage resulting from delayed buses. Schedules are subject to change.

PARK AND RIDE LOCATIONS

FREE PARKING
Tuxedo • Newburgh • Middletown • Monroe & Monroe Village
Central Valley • Goshen • Chester
New Hampton – Route 84 Citgo • Circleville (Exit 119)
Port Jervis – First Assembly of God
Harriman – St. Anastasia Church

BAGGAGE

Two pieces of luggage will be accepted for transportation in the luggage compartment and one piece may be carried on the bus free of charge. ShortLine/Coach USA reserves the right to limit and charge customers for additional pieces of luggage in peak periods. At this time at ticket will be issued and required on all additional baggage and a fee of $5.00 per piece on a space available basis will be in effect.

Baggage is transported at the customer's risk; the company is not responsible for lost or damaged luggage, or its contents.

CUSTOMERS WITH DISABILITIES

ShortLine/Coach USA is committed to providing accessible transportation service to customers with special requirements and does not discriminate on the basis of disability. We welcome all customers on ShortLine/Coach USA and can provide assistance to those with walking difficulties, those who normally use wheelchairs or scooters, and customers with service animals and breathing aids, among others.

Additional Information

Whenever one of our buses makes an intermediate or rest stop, a customer with a disability is permitted to leave and return to the bus in the same manner as any other customer. If you are a disabled customer traveling on a bus without a handicap accessible restroom making an express run of three hours or more without a rest stop, and you are unable to use the inaccessible restroom, you may request an unscheduled rest stop.

TABLE 2: ORANGE COUNTY & ROCKLAND COUNT

	Run Number	562	514	726	500	160	300	772	316	504	532	312	550
	Route Number	NEW!	x87m		17M	17c	x87m	x32N	17M	17c		x87m	x32N
Code	Day of Week	M-F	M-F	M-F	M-F	M-F	M-F	M-F	SSH	M-F	M-F	M-F	M-F
37	Port Jervis, NY *(Rt. 6 Park & Ride, First Assembly)*												
36	Stewart International Airport												
35	Newburgh *(Terminal – Park & Ride, Rt. 17K)*			420a				440a					
34	Newburgh, NY *(Bwy & Lake St. – Citgo)*							444a					
33	Vails Gate, NY *(Jct. Rt. 32, 300 & 94)*							450a					
32	Mountainville, NY *(Rt. 32 & Angola Rd.)*							456a					
31	Highland Mills, NY *(Rt. 32 – Upper Crust Deli)*							501a					
30	Central Valley, NY *(Rt. 32 & Smith Clove Rd.)*							504a					
29	Circleville *(Exit 119 Park & Ride, Baker Rd.)*											435a	
28	Galleria Mall, NY *(Note G)*												
27	Orange Plaza, NY *(Route 211)*												
26	Middletown, NY *(14 Railroad Ave.)*						424a		432a			445a	
25	Orange Plaza, NY *(Route 211)*												
24	Galleria Mall, NY *(Note G)*												
23	New Hampton, NY *(Jct. of Rt. 17M & 84 – Rt. 84 Citgo)*						431a		439a			451a	
22	Mid-Hudson Hospital, NY *(Route 17M)*						S						
21	Goshen, NY *(Main St. Bus Stop)*						440a						
20	Goshen, NY *(Park & Ride / Matthews St.)*					430a	443a		446a			456a	
19	Whispering Hills, NY												
18	Chester, NY *(Rt. 17M Park & Ride)*		420a			438a	451a			453a			
17	Chester, NY *(Rt. 17M, Cumberland Farms)*												
16	Monroe, NY *(Park & Ride, Route 17)*	425a	430a			448a	458a		502a	503a	510a	515a	
15	Monroe Village *(Park & Ride – Millpond Parkway)*				449a				504a				
14	Monroe, NY *(Terminal – Millpond Parkway)*				450a				505a				
12	Woodbury Common, NY *(Bus Shelter)*												
11	Central Valley, NY *(Park & Ride, Jct. Rt. 6&17)*		436a	438a		456a		511a		512a			520a
10	Harriman, NY *(Harriman Woods / St. Anastasia)*				457a				512a				
9	Harriman, NY *(Rt. 17M Mobil Station)*				458a				513a				
8	Route 17 Ent. Metro North Station				500a		Park Ride Express			Park Ride Express			
7	Southfields, NY *(Rt. 17 & Old Orange Tpk.)*				502a				517a				
6	Tuxedo, NY *(Rt. 17 & 17A, Park & Ride)*				504a				519a				
5	Tuxedo, NY *(Rt. 17 Bus Shelter)*				507a				522a				
4	Sloatsburg, NY *(Route 17)*				511a				526a				
3	Suffern, NY *(Terminal – 94 Orange Ave.)*								530a				
2	Ridgewood *(Rt. 17N, Park & Ride Shelter)*		PS		532a	PS	PS		547a	PS		PS	PS
1	New York, NY (PABT) *41st St. & 8th Ave., NYC*	535a	540a	550a	600a	558a	605a	611a	618a	621a	620a	626a	620a

CONTINUED FROM ABOVE:	726
New York Port Authority Bus Terminal (PABT)	550a
30th Street & 9th Avenue	555a
26th Street & 9th Avenue	557a
26th Street & 7th Avenue	559a
26th Street & 5th Avenue	601a
Broadway & 3rd Avenue	605a
Broadway & Spring Street	607a
Broadway & Leonard Street	609a
Broadway & Chambers Street	612a
Broadway & Liberty Street	614a
Broadway & Wall Street	615a

NOTE: Service does NOT serve Port Authority Bus Terminal

	G	H	I
40th & 8th	730a	750a	810a
40th & 6th	733a	753a	813a
58th & 5th	738a	758a	818a
34th & 5th	744a	804a	824a
23rd & 5th	750a	810a	830a

TY TO NEW YORK SERVICE

Monroe • Newburgh • Middletow

564	502	800	508	510	728	512	302	154	326	556	542	802	516 554	518	730	310	560	324	520	732	528	524	548	544	530	304	526	714
NEW!	17c	xPA84	17G	17c	x32N	17M	x87m		NEW!	NEW!	17c	xPA84	17M	17c	x32N	x87m			17M	x32N	17c	17G	17c	17M	17c	L17MD	17M	x87N
M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	Daily	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	SSH	M-F	SSH	M-F	M-F
		446a										517a																
					505a										545a					605a								610a
					514a										554a					610a								
					520a										600a					616a								
					526a										606a					622a								
					531a										611a					626a								
					534a										614a					629a								
								530a										545a										
							520a		530a							543a		555a								557a		
							527a									550a										603a		
																										S		
			515a	530a			539a							550a								601a						
			523a																			604a			625a	613a		
	508a		528a	536a							550a		*545a	559a							612a	612a	620a	622a	632a	620a		
																										623a		
515a	518a	526a	538a	546a			553a	555a	555a		600a		*555a	609a		611a	612a	620a			622a	627a	630a	632a	642a			
						544a				610a			559a						617a							635a	629a	
						545a							600a						618a							636a	630a	
													*Sat. & Sun. Only															
				555a	540a				604a		608a			618a	623a		621a			640a	630a				640a	657a			
						551a				617a			607a						625a							643a	638a	
						552a							608a						627a							644a	639a	
Park Ride Express	Park Ride Express	Park Ride Express	Park Ride Express	Park Ride Express	Thruway Express	553a	Park Ride Express			Express to NYC!			609a	Park Ride Express	Park Ride Express	Park Ride Express			628a	Park Ride Express	Park Ride Express	Park Ride Express	Park Ride Express		Park Ride Express	645a	640a	Park Ride Express
						557a							615a						632a							648a	644a	
						559a							616a						634a							651a	647a	
						602a							618a						637a							653a	649a	
						607a							623a						642a							658a	654a	
																								700a				
	PS			PS	PS	PS	PS					D	642a	PS	PS				PS	PS		PS	PS	717a	PS	PS	PS	
625a	631a	638a	641a	649a	641a	655a	704a	700a	703a	715a	708a	718a	726a	722a	723a	725a	721a	730a	736a	745a	740a	736a	737a	739a	747a	747a	746a	See Note G

800	326	542	802
638a	703a	708a	718a
650a	708a	713a	730a
652a	710a	715a	732a
654a	712a	717a	734a
656a	714a	719a	736a
700a	718a	723a	740a
702a	720a	725a	742a
704a	722a	727a	744a
707a	725a	730a	747a
709a	727a	732a	749a
710a	728a	733a	750a

Times shown in *ITALICS* indicate service via connecting trip. Shaded areas represent Park & Rides.

THE FARE POLICY AND TICKET REFUNDS

Except in the case of job loss, cash refunds will no longer be allowed on commutation tickets. In the event of illness, business travel or vacation, unused tickets may be returned for credit toward the purchase of additional commuter tickets by using the commutation credit voucher. A letter stating the reason for returning tickets with the actual tickets must be mailed within fifteen (15) days after the last date of possible use to ShortLine, 66 Tetz Road, Chester, NY 10918, to Attention: REFUND DEPT. A personal voucher will be issued and mailed. Only one credit voucher may be redeemed at one time against the purchase of another commuter book of tickets.

CONTINUED FROM ABOVE:

New York PABT
30th & 9th
26th & 9th
26th & 7th
26th & 5th
Broadway & 14th
Broadway & 3rd
Broadway & Spring Street
Broadway & Leonard
Broadway & Chambers
Broadway & Liberty
Broadway & Wall Street

vn • Harriman • Suffern • New York

320	378	552	804	406	506	536	710	724	734	306	156	534	712	736	314	386 580	322	806	308	540	738	400	380	318	820	700	382	740
	x87m		xPA84	17G	x87n	17M	x87N	NEW!	x32N	x17MD	x17MD	17c	x87N	x32N	L17MD	L17MD		xPA84	L17MD	17M	x32N	x17MD	L17MD	17c	xPA84	x87N	L17MD	x32N
M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-S	M-F	Daily	M-F	M-F	M-S	M-F	SSH	M-F	M-F	M-Sat	M-F	Daily	Daily	Daily	M-F	SSH	Daily	Daily	Daily
			602a															722a										
							630a	640a	640a				650a	700a							830a					1000a		1130a
									647a					707a							837a							1137a
									654a					715a							845a							1145a
									701a					722a							852a							1152a
									708a					729a							859a							1159a
									713a					732a							902a							1202p
600a																	700a											
	628a									620a	645a				648a	✪ 656a		751a	730a			850a	855a	1015a	1015a		1115a	
										627a					655a	✪ 702a		759a	738a				904a		1023a		1124a	
															704a	✪ 710a			S 753a				S 917a				1137a	
				636a						639a	700a				705a	✪ 713a			756a				920a				1140a	
					643a																							
		640a		645a	654a							720a				722a			806a				927a				1147a	
										646a						724a							930a				1150a	
620a	648a	650a		655a	701a						710a	729a			732a	734a	720a		813a				937a	1040a	1038a		1157a	
						641a				657a					725a	735a				814a			942a				1202p	
						642a				658a					726a					815a			943a				1203p	
		659a		710a	715a				718a					738a				828a	822a		906a				D	1020a		1213p
						650a				704a					735a	741a				824a			951a				1210p	
						651a				705a					736a	742a				825a			952a				1211p	
				Park Ride Express	Local NJ Stops	652a	Park Ride Express	Park Ride Express	Park Ride Express	706a		Park Ride Express	Nonstop Express	Park Ride Express	737a	743a			Park Ride Express	826a		Express	953a	Express	Express	Park Ride Express	1213p	Thruway Express
						656a				712a					741a	747a				830a			958a				1218p	
						659a				713a					743a	749a				832a			959a				1219p	
						701a				717a					746a	752a				835a			1003a				1223p	
						706a				722a					750a	756a				844a			1007a				1227p	
																800a							D1011a				D	
PS	PS	PS					See Note H			756a			See Note I		758a	817a	PS			903a	930a	938a	1030a	1105a		1038a	D1254p	D1240p	
740a	755a	806a	815a	819a	830a	801a		800a	829a	824a	820a	855a		853a	831a	855a	825a	936a	936a	943a	1007a	1015a	1106a	1140a	1143a	1120a	130p	115p

320	552	804	724
740a	806a	815a	800a
742a	811a	827a	805a
744a	813a	829a	807a
746a	815a	831a	809a
748a	817a	833a	811a
750a	819a	835a	813a
752a	821a	837a	815a
754a	823a	839a	817a
756a	825a	841a	819a
758a	827a	844a	822a
759a	829a	846a	824a
800a	830a	847a	829a

CONTINUED FROM ABOVE:	322
New York PABT	825a
30th & 9th	830a
26th & 9th	832a
26th & 7th	834a
26th & 5th	836a
Broadway & 14th	838a
Broadway & 3rd	840a
Broadway & Spring Street	842a
Broadway & Leonard	844a
Broadway & Chambers	847a
Broadway & Liberty	849a
Broadway & Wall Street	850a

SCHEDULE LEGEND:

- ◗ = Except Saturday, Sunday and holidays
- **SSH** = Saturdays, Sundays and holidays
- ✪ = Sunday only
- **D** = Discharge only
- ✱ = Weekends only
- **Daily** = EVERY DAY
- **P** = Pick up only
- **S** = Stops on signal on Rt 17M
- ♥ = Agency station to which collect or prepaid express may be consigned. No C.O.D. express or checked baggage.
- **HS** = Highway stop
- **PS** = Pick up at Ridgewood Par & Ride only if seats ar available

538	376	702	708	384	404	584	776	742	420	792	**798	808	720	750 ***778 *716	586	164	746	458	546 **706	748	388 168	752	720	812	590	770	360	522	Run
17c	xL7MD	x87	x32N	L17MD	17c	x17MD	x32N	x32N	x17MD		17c	xPA84		x87N	x17M	x17MD	x32N	L17MD	17c	x32N	L17MD	x87	**NEW!**	xPA84	17M	x32N	L17MD	17c	Rout
M-F	SSH	M-F	Daily	Daily	Daily	M-F	Daily	Daily	Daily	M-F	Daily	Daily	M-F	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	M-F	M-F	Daily	SUN	Daily	SUN	Daily	Day
												316p												730p					Port
										345p																			Stew
			130p					300p									445p			622p		750p				850p			Newl
			137p					307p									452p			629p						857p			Newl
			145p					315p									500p			637p						905p			Vails
			151p					322p									507p			644p						912p			Mour
			154p					329p									514p			651p						919p			Highl
			158p					332p									517p			654p						922p			Centi
																													Circle
																500p													Galle
																508p													Oran
	1200p			120p	145p				230p			345p				520p		515p			652p			755p			950p		Midd
																													Oran
																													Galle
				129p					237p			353p				530p					659p			803p			957p		New
									242p			358p																	Mid-
				142p												540p					708p						1006p		Gosh
				145p												541p					709p						1007p		Gosh
																													Whis
						213p									411p										813p			*1210a	Ches
				155p												551p					719p						1017p		Ches
230p	1230p			202p	210p	221p			300p			420p			421p	556p			◗ 605p		724p			818p	823p		1022p	1220a	Monr
				207p		222p									423p	558p					726p			*Sat. & Sun only	825p		1023p	*Sat. & Sun. only	Monr
				208p		223p									424p	559p					727p				826p		1025p		Monr
245p	1245p	130p	202p				325p	336p		415p	410p		425p	445p			521p	545p	615p	658p		816p	800p	*826p		926p			Wood
							330p													705p								1226a	Centr
				216p		232p									432p	607p					737p				835p		1034p		Harri
				217p		233p									433p	608p					738p				836p		1035p		Harri
			Thruway Express	218p		234p		Thruway Express		Thruway Express	Thruway Express	Park Ride Express			434p	609p	Thruway Express		Thruway Express	Thruway Express	739p	Express	Express	Express	837p	937p	1036p		Route
				223p		241p									441p	616p					743p				842p	943p	1043p		South
				224p		243p									443p	618p					745p				844p	945p	1045p		Tuxe
				228p		246p									446p	618p					748p				847p	948p	1048p		Tuxe
				232p		251p									451p	626p					753p				852p	954p	1053p		Sloat
				238p		300p									500p	633p					800p				900p	1001p			Suffe
	D			257p	233p	321p	408p	D408p				D			521p	D655p	549p	609p		729p	818p			D	917p	1018p	1118p	100a	Ridge
145p	145p	245p	300p	333p	315p	355p	445p	445p	405p	545p	600p	625p	610p	615p	602p	730p	640p	646p	730p	803p	856p	911p	910p	930p	950p	1050p	1148p	130a	New

*** Run 716 runs as additional Buses from Woodbury Common to NYC Mon–Fri.**
**** Runs 798 and 706 run as additional Buses from Woodbury Common to NYC Sat. & Sun.**
***** Run 778 runs as an additional Bus from Woodbury Common on Sunday.**

COMMUTER TICKET POLICY

10 Trips	Good for 20 days	No credit; no refund
40 Trips	Good for 40 days	Up to 10 tickets may be returned for credit or refund (if turned in 15 days after last date valid)
50 Trips	Good for 90 days	May be shared by family members; no credit; no refund. NOT FOR RESALE.
One Way	Good for 30 days	Refundable up to 90 days after last date of possible use
Round Trip	Good for 120 days	Refundable up to 90 days after last date of possible use

A 10% Service Charge will be deducted on all refunds.

NON-DISCRIMINATION POLICY

Hudson Transit Lines, Inc. is committed to ensuring that no person is excluded from, or denied the benefits of our services on the basis of race, color, or national origin as protected by Title VI of the Civil Rights Act of 1964, as amended. Any person who believes that they have, individually, or as a member of any specific class of persons, been subjected to discrimination on the basis of race, color or national origin, may file a complaint in writing to Hudson Transit Lines, Inc. To file a complaint, or for more information on Hudson Transit Lines, Inc.'s obligations under Title VI write to: 66 Tetz Road, Chester, NY 10918 or visit www.shortlinebus.com.

E-m

Sign up
email alerts

Number
e Number
of Week
Jervis, NY *(Rt. 6 Park & Ride, First Assembly)*	37
art International Airport	36
burgh *(Terminal – Park & Ride, Rt. 17K)*	35
burgh, NY *(Bwy & Lake St. – Citgo)*	34
Gate, NY *(Jct. Rt. 32, 300 & 94)*	33
ntainville, NY *(Rt. 32 & Angola Rd.)*	32
land Mills, NY *(Rt. 32 – Upper Crust Deli)*	31
ral Valley, NY *(Rt. 32 & Smith Clove Rd.)*	30
eville *(Exit 119 Park & Ride, Baker Rd.)*	29
ria Mall, NY *(Note G)*	28
ge Plaza, NY *(Route 211)*	27
lletown, NY *(14 Railroad Ave.)*	26
ge Plaza, NY *(Route 211)*	25
ria Mall, NY *(Note G)*	24
Hampton, NY *(Junction of Rt. 17M & 84 – Rt. 84 Citgo)*	23
Hudson Hospital, NY *(Route 17M)*	22
en, NY *(Main St. Bus Stop)*	21
en, NY *(Park & Ride / Matthews St.)*	20
pering Hills, NY	19
ter, NY *(Rt. 17M Park & Ride)*	18
ter, NY *(Rt. 17M, Cumberland Farms)*	17
roe, NY *(Park & Ride, Route 17)*	16
roe Village *(Park & Ride – Millpond Parkway)*	15
roe, NY *(Terminal – Millpond Parkway)*	14
dbury Common, NY *(Bus Shelter)*	12
ral Valley, NY *(Park & Ride, Jct. Rt. 6&17)*	11
man, NY *(Harriman Woods / St. Anastasia)*	10
man, NY *(Rt. 17M Mobil Station)*	9
e 17 Ent. Metro North Station	8
hfields, NY *(Rt. 17 & Old Orange Tpk.)*	7
do, NY *(Rt. 17 & 17A, Park & Ride)*	6
do, NY *(Rt. 17 Bus Shelter)*	5
tsburg, NY *(Route 17)*	4
ern, NY *(Terminal – 94 Orange Ave.)*	3
ewood *(Rt. 17N, Park & Ride Shelter)*	2
York, NY (PABT) *41st St. & 8th Ave., NYC*	1

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EFFECTIVE SEPTEMBER 2014

PORT JERVIS–HOBOKEN & PENN STATION, NY — MONDAY–FRIDAY

TO HOBOKEN & PENN STATION, NY

	OFF-PEAK		AM PEAK					OFF-PEAK					
	42 Q	44 Q	46 Q	48 Q	50 Q	52 Q	54 Q	56 Q	58 Q	62 Q	64 Q	66 Q	68
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM
Port Jervis	3 50	4 32	5 04	5 34	5 52	6 08	6 55	7 44	9 26	11 30	1 39		9 27
Otisville	4 09	4 50	5 22	5 52	6 10	6 26	7 13	8 02	9 44	11 48	1 57		9 45
Middletown/Town of Wallkill ♿	4 20	5 01	5 33	6 03	6 21	6 38	7 24	8 13	9 55	11 59	2 09	3 17	9 59
Campbell Hall ♿	4 27	5 08	5 41	6 11	6 29	6 45	7 31	8 21	10 02	12 06	2 16	3 24	10 06
Salisbury Mills ♿	4 39	5 20	5 53	6 23	6 41	6 58	7 43	8 33	10 15	12 19	2 28	3 36	10 17
Harriman ♿	4 53	5 34	6 07	6 37	6 55	7 12	7 57	8 47	10 29	12 33	2 42	3 53	10 31
Tuxedo	5 03	5 44	6 17	6 47		7 22	8 07	8 57	10 39	12 43	2 52	4 03	10 41
Sloatsburg	5 08	5 49	6 22	6 52		7 27	8 12	9 02	10 44	12 48	2 58	4 09	10 46
Suffern, NY	T 5 15	T 5 56	T 6 29	T 6 59		T 7 34	T 8 19	T 9 09	T 10 50	12 54	T 3 05	T 4 17	10 53
Mahwah, NJ						7 37				12 57			10 56
Ramsey Route 17		6 01	6 33	7 04		7 41	8 23	9 13	10 54	1 00	3 09	4 21	10 59
Ramsey						7 45				1 03			11 02
Allendale										1 06			11 05
Waldwick										1 10			
Ho-Ho-Kus										1 13			
Ridgewood	5 27									1 16	T 3 19	4 32	T11 12
Glen Rock - Boro Hall	5 31									Via Main Line			
Radburn	5 35											4 38	11 17
Broadway	5 38												
Plauderville	5 43												
Garfield	5 46												
Rutherford	5 52											4 50	11 29
Glen Rock - Main Line	Via Bergen Co. Line									1 19		Via Bergen Co. Line	Via Bergen Co. Line
Hawthorne										1 23			
Paterson										1 27			
Clifton										1 34			
Passaic										1 37			
Delawanna										1 40			
Lyndhurst										1 42			
Kingsland										1 45			
Secaucus Junction ♿	6 00	L 6 32	L 7 02	L 7 33	L 7 46	L 8 15	L 8 52	L 9 41	L 11 23	1 52	L 3 41	4 58	11 37
Secaucus Junction (Via NJ Transit) Lv. ♿	S 6 05	S 6 43	S 7 08	S 7 41	S 7 55	S 8 23	S 9 00	S 9 55	S 11 31	S 1 58	S 3 53	S 5 16	S 11 48
Penn Station, NY (Via NJ Transit) Ar. ♿	S 6 18	S 6 56	S 7 24	S 7 54	S 8 10	S 8 36	S 9 14	S10 09	S 11 44	S 2 13	S 4 06	S 5 28	S 12 06
Hoboken, NJ ♿	6 12	6 43	7 14	7 45	7 58	8 26	9 03	9 53	11 35	2 05	3 54	5 11	11 49
Hoboken (via PATH)	*6 24*	*6 54*	*7 28*	*7 57*	*8 09*	*8 33*	*9 15*	*10 10*	*11 45*	*2 21*	*4 09*	*5 22*	*G12 26*
World Trade Center (via PATH)	*6 34*	*7 04*	*7 38*	*8 08*	*8 20*	*8 44*	*9 26*	*10 20*	*11 55*	*2 31*	*4 19*	*5 33*	*12 55*
Hoboken (via Ferry)	*6 20*	*6 50*	*7 30*	*8 00*	*8 10*	*8 40*	*9 10*	*10 00*	*12 00*	*2 22*	*4 10*	*5 20*	
World Financial Center (via Ferry)	*6 28*	*6 58*	*7 38*	*8 08*	*8 18*	*8 48*	*9 18*	*10 08*	*12 08*	*2 30*	*4 18*	*5 28*	
	AM	AM	A M	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM

Additional service is available between Suffern and Hoboken via the NJ Transit Main/Bergen Line. For specific train times, call NJ Transit at 973-275-5555.

TO PORT JERVIS

	OFF-PEAK					PM PEAK						OFF-PEAK		
	43 Q	45 Q	47 Q	49 Q	51 Q	53 Q	55 Q	57 Q	59 Q	61 Q	63 Q	65 Q	67	41
	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	AM
World Trade Center (Via PATH)	*8 06*	*9 30*	*12 15*	*2 15*	*3 51*	*4 25*	*4 55*	*5 19*	*5 55*	*6 07*	*6 39*	*7 39*	*9 41*	*G 11 55*
Hoboken (Via PATH)	*8 17*	*9 40*	*12 25*	*2 25*	*4 01*	*4 35*	*5 06*	*5 30*	*6 06*	*6 18*	*6 49*	*7 49*	*9 51*	*12 20*
World Financial Center (Via Ferry)	*8 10*	*9 30*	*12 22*	*2 15*	*3 50*	*4 30*	*5 00*	*5 20*	*5 50*	*6 10*	*6 40*	*7 15*	*9 30*	
Hoboken (Via Ferry)	*8 18*	*9 38*	*12 30*	*2 23*	*3 58*	*4 38*	*5 08*	*5 28*	*5 58*	*6 18*	*6 48*	*7 23*	*9 38*	
Hoboken, NJ ♿	8 28	9 47	12 42	2 41	4 08	4 47	5 15	5 41	6 13	6 27	7 02	7 57	9 58	12 40
Penn Station, NY (Via NJ Transit) Lv. ♿	S 8 20	S 9 37	S 12 37	S 2 29	S 3 47	S 4 36	S 5 03	S 5 32	S 6 03	S 6 20	S 6 51	S 7 43	S 9 51	S 12 34
Secaucus Junction (via NJ Transit) Ar. ♿	S 8 29	S 9 46	S 12 46	S 2 38	S 3 57	S 4 45	S 5 12	S 5 41	S 6 12	S 6 30	S 7 00	S 7 52	S 10 01	S 12 43
Secaucus Junction ♿	8 38	9 57	12 53	2 52	4 18	4 57	5 25	5 51	6 23	6 37	7 12	8 07	10 08	12 50
Kingsland													10 14	
Lyndhurst													10 17	
Delawanna													10 20	
Passaic													10 23	
Clifton		Via Bergen Co. Line											10 26	Via Bergen Co. Line
Paterson													10 31	
Hawthorne													10 35	
Glen Rock - Main Line													10 39	
Rutherford		10 05												12 58
Garfield														1 03
Plauderville														1 06
Broadway		10 15												1 11
Radburn		10 18												1 14
Glen Rock - Boro Hall		10 22												1 17
Ridgewood		T 10 25	1 14										10 44	1 20
Ho-Ho-Kus		10 29											10 47	1 24
Waldwick		10 32											10 50	1 27
Allendale		10 36											10 54	1 31
Ramsey		10 41	1 23										10 58	1 35
Ramsey Route 17	9 07	10 44	1 26	R 3 20				L 6 21		L 7 05	7 40		11 01	1 38
Mahwah, NJ		10 47						L 6 25					11 04	1 41
Suffern, NY	T 9 11	10 50	1 31	L 3 25	TL 4 48	TL 5 29	TL 5 57	L 6 28		TL 7 10	TL 7 45	T 8 37	11 07	1 44
Sloatsburg	9 19	10 57	1 39	L 3 32	L 4 56	L 5 36	L 6 04	L 6 35		L 7 17	L 7 53	8 45	11 15	1 52
Tuxedo	9 24	11 02	1 44	L 3 38	L 5 01	L 5 41	L 6 09	L 6 40		L 7 22	L 7 58	8 50	11 20	1 57
Harriman ♿	9 35	11 13	1 54	L 3 48	L 5 11	L 5 52	L 6 20	L 6 51	L 7 14	L 7 33	L 8 08	9 00	11 30	2 07
Salisbury Mills ♿	9 47	11 25	2 07	L 4 01	L 5 24	L 6 05	L 6 33	L 7 04	L 7 27	L 7 46	L 8 21	9 12	11 42	2 19
Campbell Hall ♿	10 09	11 37	2 23	L 4 13	L 5 36	L 6 17	L 6 45	L 7 15	L 7 39	L 7 57	L 8 33	9 24	11 54	2 31
Middletown/Town of Wallkill ♿	10 16	11 44	2 30	4 20	L 5 43	L 6 24	L 6 52	L 7 23	L 7 46	L 8 04	L 8 40	9 31	12 01	2 38
Otisville	10 27	11 56			L 5 54	L 6 35	L 7 03	L 7 34	L 7 57	L 8 15	L 8 51	L 9 48	12 12	2 49
Port Jervis	10 46	12 16			6 14	6 55	7 23	7 54	8 17	8 35	9 11	10 07	12 31	3 08
	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	AM	AM

PORT JERVIS–HOBOKEN & PENN STATION, NY
SATURDAY, SUNDAY & HOLIDAYS

TO HOBOKEN & PENN STATION, NY

	70	94	72	74	76	78	88	80	82
	AM	AM	AM	AM	AM	PM	PM	PM	PM
Port Jervis	4 45	6 22	7 24	8 44	10 44	3 05	4 09	5 27	8 46
Otisville	5 03	6 40	7 42	9 02	11 02	3 23	4 28	5 45	9 04
Middletown/Town of Wallkill ♿	5 14	6 51	7 53	9 13	11 13	3 37	4 39	5 57	9 15
Campbell Hall ♿	5 21	6 58	8.00	9 20	11 20	3 44	4 47	6 04	9 22
Salisbury Mills ♿	5 32	7 10	8 11	9 32	11 32	3 56	4 59	6 16	9 33
Harriman ♿	5 46	7 24	8 25	9 46	11 46	4 10	5 15	6 30	9 47
Tuxedo	5 56	7 34	8 35	9 56	11 56	4 20	5 26	6 40	9 57
Sloatsburg	6 01	7 39	8 40	10 02	12 02	4 25	5 31	6 45	10 02
Suffern, NY	6 08	7 46	T 8 47	10 08	12 08	4 32	5 38	T 6 52	10 08
Mahwah, NJ	6 11			10 11	12 11	4 34			10 11
Ramsey Route 17	6 14		8 51	10 14	12 14				10 14
Ramsey	6 17			10 17	12 17	4 39			10 17
Allendale	6 20	WILL OPERATE 1/18 & 2/15 ONLY		10 20	12 20	4 42	WILL OPERATE 1/3, 1/18 & 2/15 ONLY		10 20
Waldwick	6 23			10 23	12 23				10 23
Ho-Ho-Kus	6 27			10 27	12 27				10 27
Ridgewood	T 6 30			10 30	12 30	4 49		7 04	10 30
Glen Rock - Boro Hall						4 53			
Radburn						4 57			
Broadway						5 00			
Plauderville						5 05			
Garfield									
Rutherford						5 12			
Glen Rock - Main Line	6 33			10 33	12 33				10 33
Hawthorne	6 37			10 37	12 37				10 37
Paterson	6 42			10 42	12 42				10 42
Clifton	6 48			10 48	12 48				10 48
Passaic	6 51			10 51	12 51				10 51
Delawanna	6 54			10 54	12 54				10 54
Lyndhurst	6 57			10 57	12 57				10 57
Kingsland	6 59			10 59	12 59				10 59
Secaucus Junction ♿	7 07	8 18	9 21	11 07	1 07	5 20	6 15	7 26	11 07
Secaucus Junction (Via NJ Transit) Lv. ♿	S 7 18	S 8 25	S 9 30	S 11 15	S 1 17	S 5 29	S 6 22	S 7 36	S 11 17
Penn Station, NY (Via NJ Transit) Ar. ♿	S 7 32	S 8 39	S 9 46	S11 31	S 1 33	S 5 43	S 6 36	S 7 48	S 11 32
Hoboken, NJ ♿	7 19	8 30	9 33	11 19	1 19	5 33	6 27	7 38	11 19
Hoboken (via PATH) / *World Trade Center (via PATH)*	For Weekend & Holiday PATH service information visit www.pathrail.com								
	AM	AM	AM	AM	PM	PM	PM	PM	PM

For Weekend PATH Service to World Trade Center and Exchange Place please visit the PATH website at www.pathrail.com.

TO PORT JERVIS

	71	73	75	77	93	79	81	69
	AM	AM	PM	PM	PM	PM	PM	AM
World Trade Center (via PATH) / *Hoboken (via PATH)*	For Weekend & Holiday PATH service information visit www.pathrail.com							
Hoboken, NJ ♿	9 21	11 21	1 19	4 04	5 19	6 13	9 28	12 40
Penn Station, NY (Via NJ Transit) Lv. ♿	S 9 14	S 11 14	S 1 11	S 3 56	S 5 11	S 6 07	S 9 14	S 12 34
Secaucus Junction (Via NJ Transit) Ar. ♿	S 9 23	S 11 23	S 1 20	S 4 06	S 5 20	S 6 16	S 9 23	S 12 43
Secaucus Junction ♿	9 31	11 31	1 29	4 14	5 29	6 23	9 38	12 50
Kingsland								
Lyndhurst								
Delawanna								
Passaic								
Clifton					WILL OPERATE 1/18 & 2/15 ONLY			
Paterson								
Hawthorne								
Glen Rock - Main Line								
Rutherford			1 37				9 46	12 58
Garfield								1 03
Plauderville			1 44				9 53	1 06
Broadway			1 49				9 58	1 11
Radburn			1 53				10 01	1 14
Glen Rock - Boro Hall			1 56				10 05	1 17
Ridgewood	9 52		2 00			6 43	10 08	1 20
Ho-Ho-Kus			2 03				10 11	1 24
Waldwick			2 06				10 14	1 27
Allendale			2 09				10 18	1 31
Ramsey			2 14	4 41			10 22	1 35
Ramsey Route 17		12 00		4 44		6 52	10 25	1 38
Mahwah, NJ			2 18				10 29	1 41
Suffern, NY	10 04	12 04	2 21	T 4 48	6 00	T 6 57	T 10 32	1 44
Sloatsburg	10 12	12 12	2 28	4 56	6 07	7 04	10 39	1 52
Tuxedo	10 17	12 17	2 33	5 01	6 12	7 09	10 44	1 57
Harriman ♿	10 28	12 28	2 44	5 11	6 23	7 20	10 55	2 07
Salisbury Mills ♿	10 40	12 40	2 57	5 24	6 35	7 32	11 08	2 19
Campbell Hall ♿	10 52	12 52	3 09	5 36	6 47	7 44	11 19	2 31
Middletown/Town of Wallkill ♿	10 59	12 59	3 16	5 43	6 54	7 51	11 26	2 38
Otisville	11 11	1 11	3 29	5 56	7 06	8 02	11 37	2 49
Port Jervis	11 31	1 31	3 49	6 16	7 26	8 22	11 57	3 08
	AM	PM	PM	PM	PM	PM	PM	AM

TELEPHONE INFORMATION

NEW JERSEY TRANSIT
Schedules, fares, refunds, Senior Citizen/Disabled accessibility, Lost & Found
Available Daily 7AM-7PM
Automated Schedules and Fares 24/7.....973-275-5555
Website.....www.njtransit.com
Hearing Impaired (Teleprinter only).....800-772-2287

MTA METRO-NORTH RAILROAD
Schedules, Lost & Found, Mail&Ride, Group Sales, Parking, Fares, Bicycle Permits, Comments, Concerns, Commendations, and Senior Citizen/ Disabled accesibility
Available Daily 6AM-10PM (Automated info 24/7.....511
Outside New York State customers should call.....877-690-5114
Website.....www.mta.info
Deaf/Hard of Hearing - Use your preferred relay service provider or the free 711 relay to reach 511.

MTA Police.....212-878-1001
Emergency Use Only.....888-MTA-911PD

MTA Inspector General Hot Line.....800-MTA-IG4U (800-682-4448)

Other Transit Information
New York City Subway & Bus Information 511
PATH (Port Authority Trans Hudson).....800-234-PATH
NY WATERWAY 800-53-FERRY (800-533-3779)
LAZ Parking.....888-682-PARK (888-682-7275)
Amtrak.....800-872-7245

REFERENCE MARKS

L – Train may leave ahead of schedule.

T – Connect here for trains to/from New Jersey Transit Main-Bergen Line stations not served by this train.

S – Transfer to/from this NJ Transit train at Secaucus Junction for service to Penn Station, NY.

Q – This train is part of the **Quiet Commute** program. Customers are asked to silence all audio devices, refrain from cell phone use, conduct conversations in subdued voices, and maintain low headphone volumes to avoid disturbing other customers. Quiet cars are available:

- On the first and last cars of trains operating to/from New York.
- On the first car of inbound trains operating to Hoboken.
- On the last car of outbound trains operating from Hoboken.

R – Stops only to receive customers.

P – PATH schedules vary on Saturday and Sunday. For complete times, check online at www.pathrail.com, or call 1-800-234-7284

G – World Trade Center and Hoboken requires transfer at Grove Street. Departure time may differ slightly between Saturday and Sunday. If so, the earlier time is shown.

– Bicycles not allowed on the connection between New York and Secaucus only

– Bicycles not allowed

– Stations with this symbol are accessible to customers using mobility devices

PEAK - Gray shaded areas indicate trains requiring peak fares. Peak fares only apply for travel to/from Hoboken, Secaucus, Newark and/or Penn Station, New York. Note: off-peak round-trip tickets are valid for travel on PM peak trains to stations west of Suffern and Montvale.

Port Jervis Line and Pascack Valley Line service is operated by NJ Transit Rail Operations under contract with MTA Metro-North Railroad.

Por favor vaya a nuestro web site www.mta.info/mnr para la información en español.

SAMPLE FARES* TO HOBOKEN

Port Jervis Line

Effective Oct. 1, 2015

MILES	Between Hoboken and	Monthly	Weekly	Ten Trip	One Way	Off-Peak Round Trip	Senior Citizen & Disabled One-Way
30.5	Suffern	294.00	91.25	102.00	10.75	16.25	4.90
34.5	Sloatsburg	294.00	91.25	102.00	10.75	16.25	5.25
37.1	Tuxedo						
44.9	Harriman	298.00	92.50	116.50	12.25	18.50	6.00
55.4	Salisbury Mills/ Cornwall	309.00	95.75	130.50	13.75	20.75	6.75
65.7	Campbell Hall	326.00	101.00	145.00	15.25	23.00	7.50
71.9	Middletown/ Town of Wallkill	340.00	105.50	154.50	16.25	24.50	8.00
81.7	Otisville	364.00	112.75	168.50	17.75	26.75	8.75
95.1	Port Jervis	397.00	123.00	187.50	19.75	29.75	9.75

Pascack Valley Line

MILES	Between Hoboken and	Monthly	Weekly	Ten Trip	One Way	Off-Peak Round Trip	Senior Citizen & Disabled One-Way
25.6	Pearl River						
27.9	Nanuet	262.00	81.25	90.50	9.50	14.25	4.75
30.3	Spring Valley						

*Fares subject to change

SAMPLE FARES* TO PENN STATION, NY

Port Jervis Line

Effective Oct. 1, 2015

MILES	Between Penn Station, NY and	Monthly	Weekly	Ten Trip	One Way	Off-Peak Round Trip	Senior Citizen & Disabled One-Way
30.5	Suffern	370.00	114.25	132.00	13.75	22.25	6.25
34.5	Sloatsburg	370.00	114.25	132.00	13.75	22.25	6.60
37.1	Tuxedo						
44.9	Harriman	374.00	115.50	146.50	15.25	24.50	7.35
55.4	Salisbury Mills/ Cornwall	385.00	118.75	160.50	16.75	26.75	8.10
65.7	Campbell Hall	402.00	124.00	175.00	18.25	29.00	8.85
71.9	Middletown/ Town of Wallkill	416.00	128.50	184.50	19.25	30.50	9.35
81.7	Otisville	440.00	135.75	198.50	20.75	32.75	10.10
95.1	Port Jervis	473.00	146.00	217.50	22.75	35.75	11.10

Pascack Valley Line

MILES	Between Penn Station, NY and	Monthly	Weekly	Ten Trip	One Way	Off-Peak Round Trip	Senior Citizen & Disabled One-Way
25.6	Pearl River						
27.9	Nanuet	302.00	91.75	100.50	10.50	16.25	5.30
30.3	Spring Valley						

*Fares subject to change

WEEKDAY & WEEKEND SERVICE
Connecting service to/from Penn Station, NY available via Secaucus Junction!

Please Note: Connecting trains shown at Secaucus are the recommended connections; other connections are available. See an NJ Transit timetable, call NJ Transit at 973-275-5555, or visit www.njtransit.com for train times.

TICKET VENDING MACHINES

Now available at MTA Metro-North Port Jervis and Pascack Valley Line stations! NJ Transit's ticket vending machines are fast and easy. TVMs accept VISA, MasterCard, American Express or Discover credit cards, MAC, NYCE, INTERLINK, and MAESTRO debit cards, as well as cash. **Use the ticket machines to buy tickets ahead of time to avoid the $5.00 on board service charge.**

OPTIONAL ACCEPTANCE

Port Jervis and Pascack Valley Lines – Monthly and weekly commutation tickets sold to or from Metro-North stations on the Port Jervis Line will be honored to Pearl River, Nanuet and Spring Valley on the Pascack Valley Line.

Port Jervis, Pascack Valley, and Hudson Lines – Monthly and weekly commutation tickets valid between Hoboken or Penn Station-NY and Metro-North stations on the Port Jervis and Pascack Valley Lines will be honored on Metro-North's Hudson Line between Grand Central Terminal and Hudson Line stations, when the value of the Port Jervis Line or Pascack Valley Line ticket is equal to or greater than the value of the Hudson Line commutation ticket. For further details, contact Metro-North (call 511), or 877-690-5114 from outside New York State.

ON BOARD SERVICE CHARGE

Tickets purchased on board trains are subject to a $5.00 surcharge if a ticket vending machine is available (or ticket office is open) at boarding station. (Surcharge does not apply to senior citizens or passengers with disabilities.)

JAN 2016 REVISED EDITION

TICKET TYPES

DAILY TICKETS

One-Way – Single ride. Valid until used; refundable for 30 days from date of purchase.

Off-Peak Round-Trip (ORT) - 25% discount off the cost of two regular one-way tickets. Valid only in the direction indicated on the ticket. Not valid on weekday AM Peak trains, as indicated by shaded areas of timetable panels. Available only for travel between certain stations, including all stations in New York. Check Ticket Vending Machine for availability. These tickets are not sold aboard trains or at stations where they cannot be used. Valid until used; refundable for 60 days from date of purchase.

Senior Citizens (65 and over)/Disabled – 50% off the full one-way fare. Purchase tickets on board train at no extra charge with proper identification: MTA or NJT Reduced Fare Card, Driver's License (Seniors), Medicare Card, Birth Certificate (Seniors), Special MTA ID Card (Disabled), or Access-A-Ride Card (Disabled). To receive an application for the MTA Reduced Fare Card, call 718-243-4999 or 718-596-8273 TTY (for hearing impaired). Valid until used; refundable for 60 days from date of purchase.

Child Fares – Children ages 5-11 receive a 50% discount off the one-way or round-trip adult fare. Weekends/Holidays (Family Supersaver Fare): Up to two children ages 5-11 ride free with a passenger paying any valid fare. Additional children ages 5-11 pay the Child Fare. Children Under 5 years: Up to three children under age 5 travel free with a passenger paying a valid fare at any time. Valid until used; refundable for 60 days from date of purchase.

MULTIPLE-RIDE TICKETS

Monthly Commutation – Unlimited rides for a calendar month to noon on the first commuting weekday of the following month. Monthly tickets available for sale on the 20th day of the preceding month. Non-transferable.

Weekly Commutation – Unlimited rides for a calendar week (Saturday 12:01AM to 6:00AM on the following Saturday). Weekly tickets are available two days in advance (Thursday). Non-transferable.

10-Trip – 5% discount off the one-way fare. Valid until used; refundable for 6 months from date of purchase. Available only at ticket offices.

REFUNDS

A $10 refund processing fee is charged for each refund transaction. For ticket refund, communicate with NJ Transit Rail Refunds, One Penn Plaza East, Newark, New Jersey 07105-2246, or call 973-275-5555. Should any questions arise on board train as to proper fare, please pay fare requested and obtain receipt.

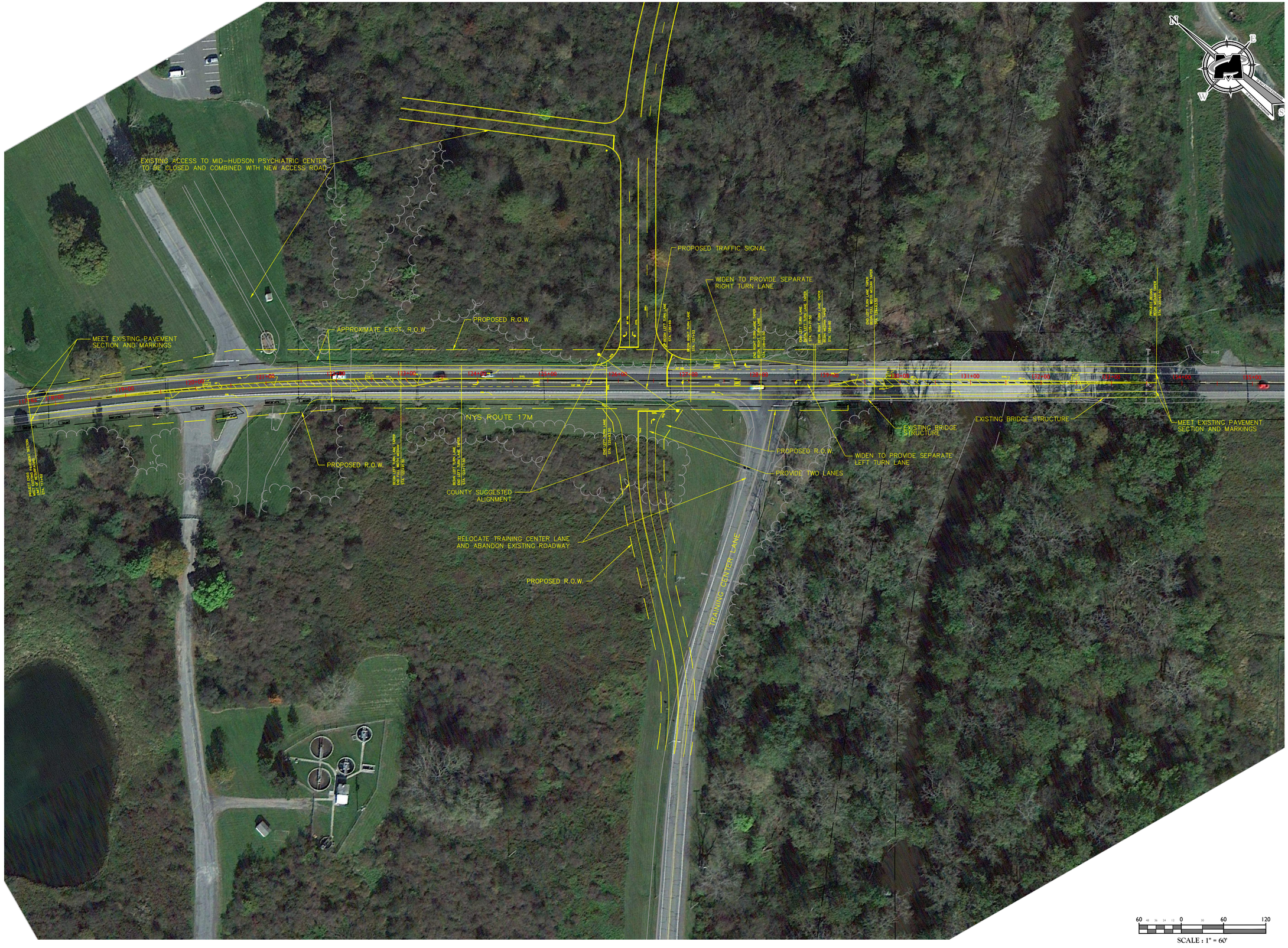
CHANGING TERMINALS

Traveling to/from Metro-North stations, a flat fee of $3.00 will be charged on-board trains when you present a ticket/pass printed with Hoboken Terminal for travel to/from New York.

AMY'S KITCHEN & SCIENCE OF THE SOUL

APPENDIX I

CONCEPTUAL INTERSECTION IMPROVEMENT PLAN NYS ROUTE 17M AT TRAINING CENTER LANE/PROPOSED SITE ACCESS ROADWAY



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REV	DATE	DRAWN BY	DESCRIPTION

PRELIMINARY PLAN

FOR

AMY'S KITCHEN

NYS ROUTE 17M
(S.H. 95)
TOWN OF GOSHEN

ORANGE COUNTY
NEW YORK

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	08/21/2014	A.L.N.	A.P.R.

PROJECT NUMBER:	DRAWING NAME:
13001659A	C-CNPT

SHEET TITLE:
CONCEPT PLAN

SHEET NUMBER:
1 of -

AMY'S KITCHEN & SCIENCE OF THE SOUL

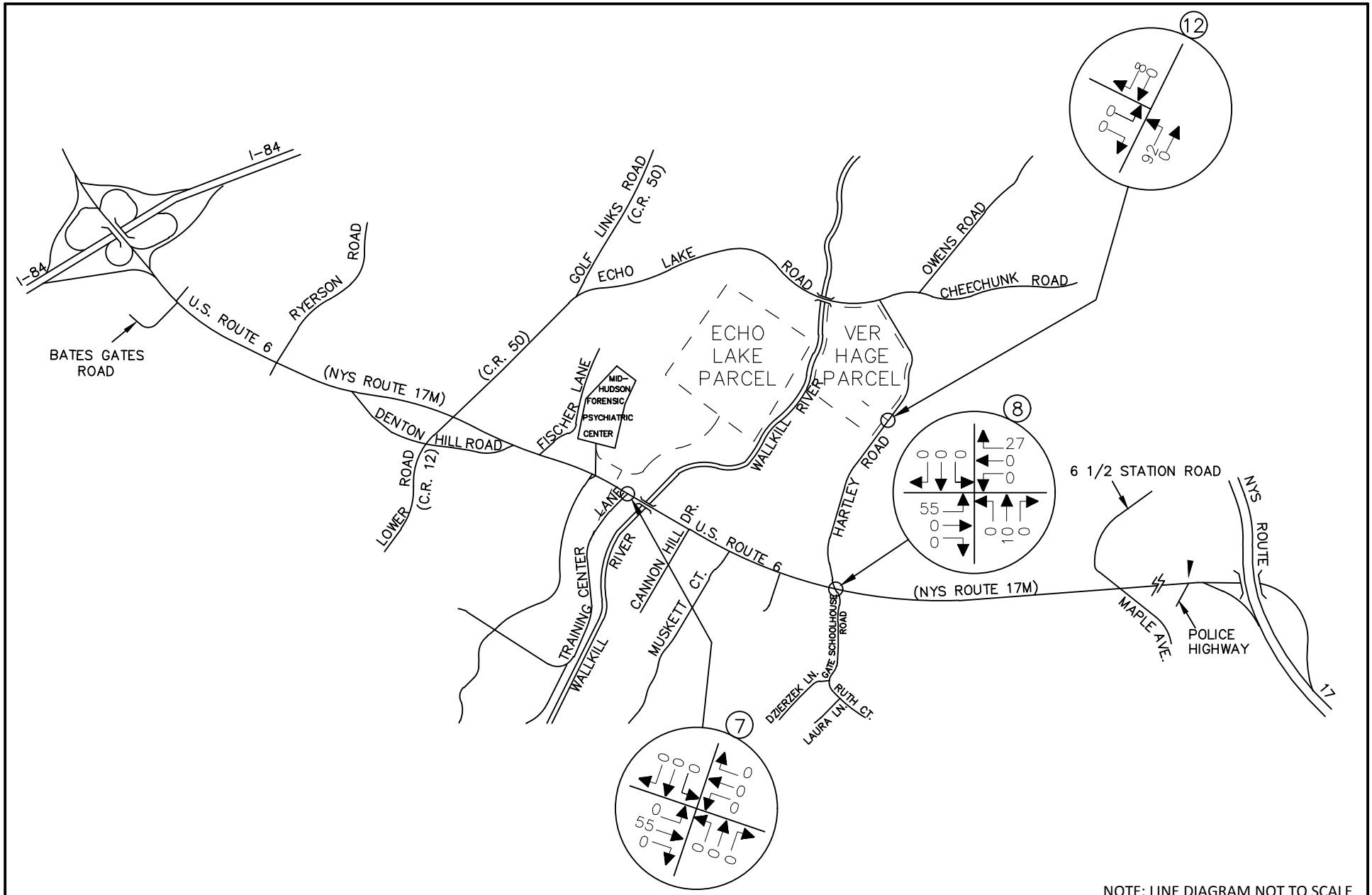
APPENDIX J

AMY'S KITCHEN FULL BUILD OUT ANALYSIS WITH NO WALLKILL RIVER BRIDGE

AMY'S KITCHEN & SCIENCE OF THE SOUL

FIGURES

AMY'S KITCHEN FULL BUILD OUT WITH NO WALLKILL RIVER BRIDGE



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

VER HAGE WAREHOUSE USES
ARRIVAL DISTRIBUTION - CARS

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
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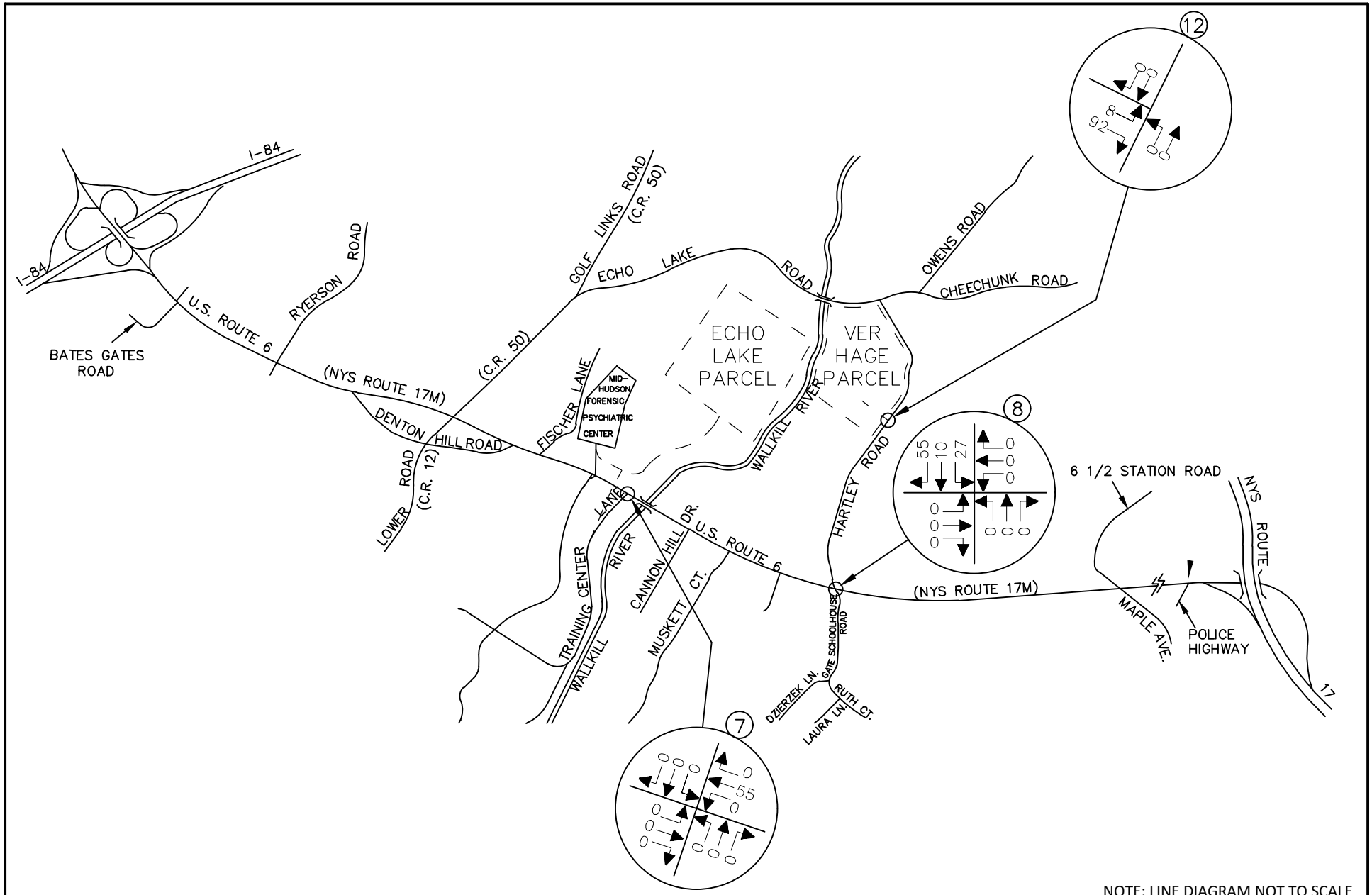

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DEPARTURE DISTRIBUTION - CARS

JOB NUMBER:	DATE:
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FIGURE NUMBER:	
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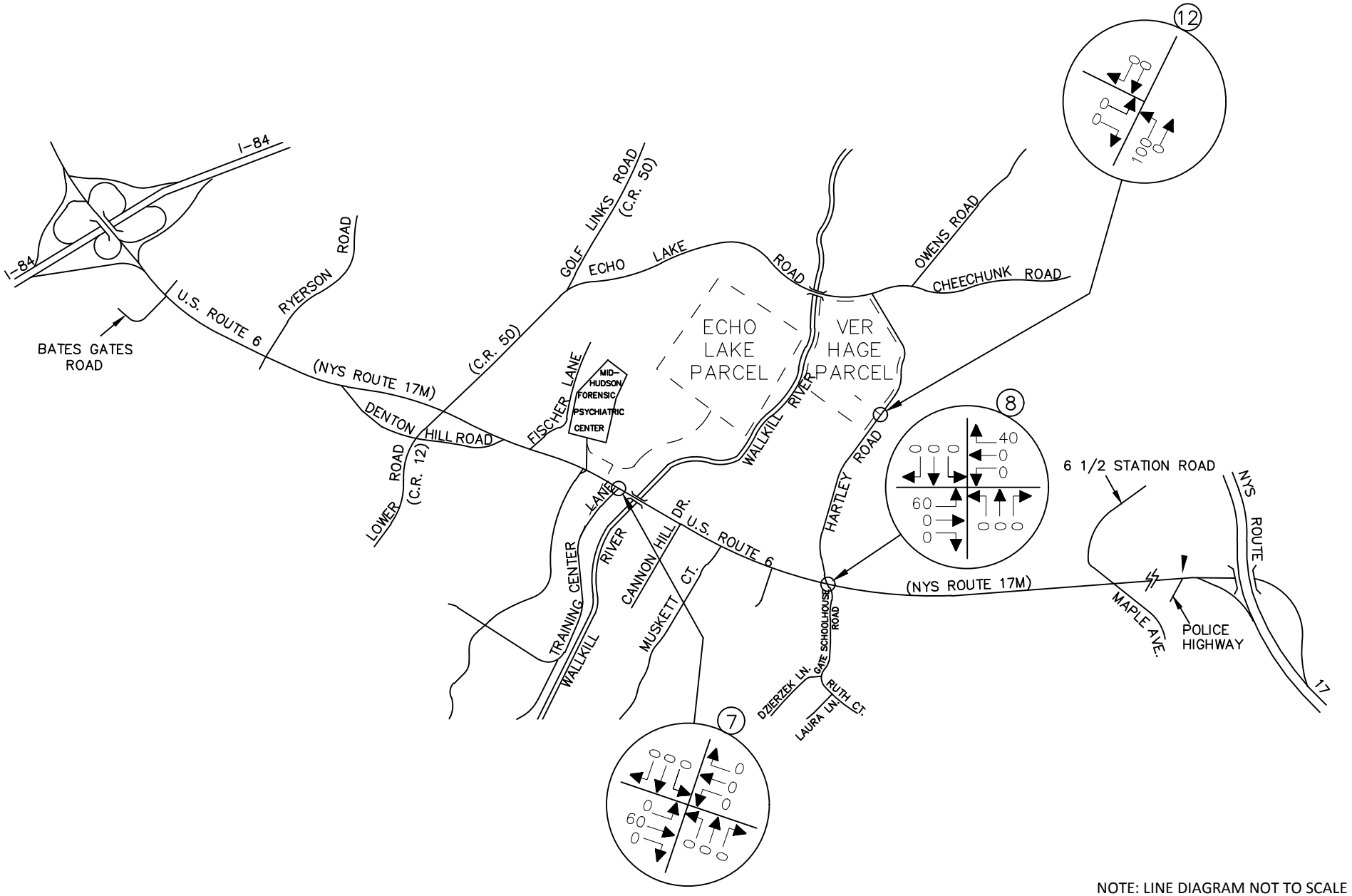

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VER HAGE WAREHOUSE USES
ARRIVAL DISTRIBUTION - TRUCKS

JOB NUMBER:	DATE:
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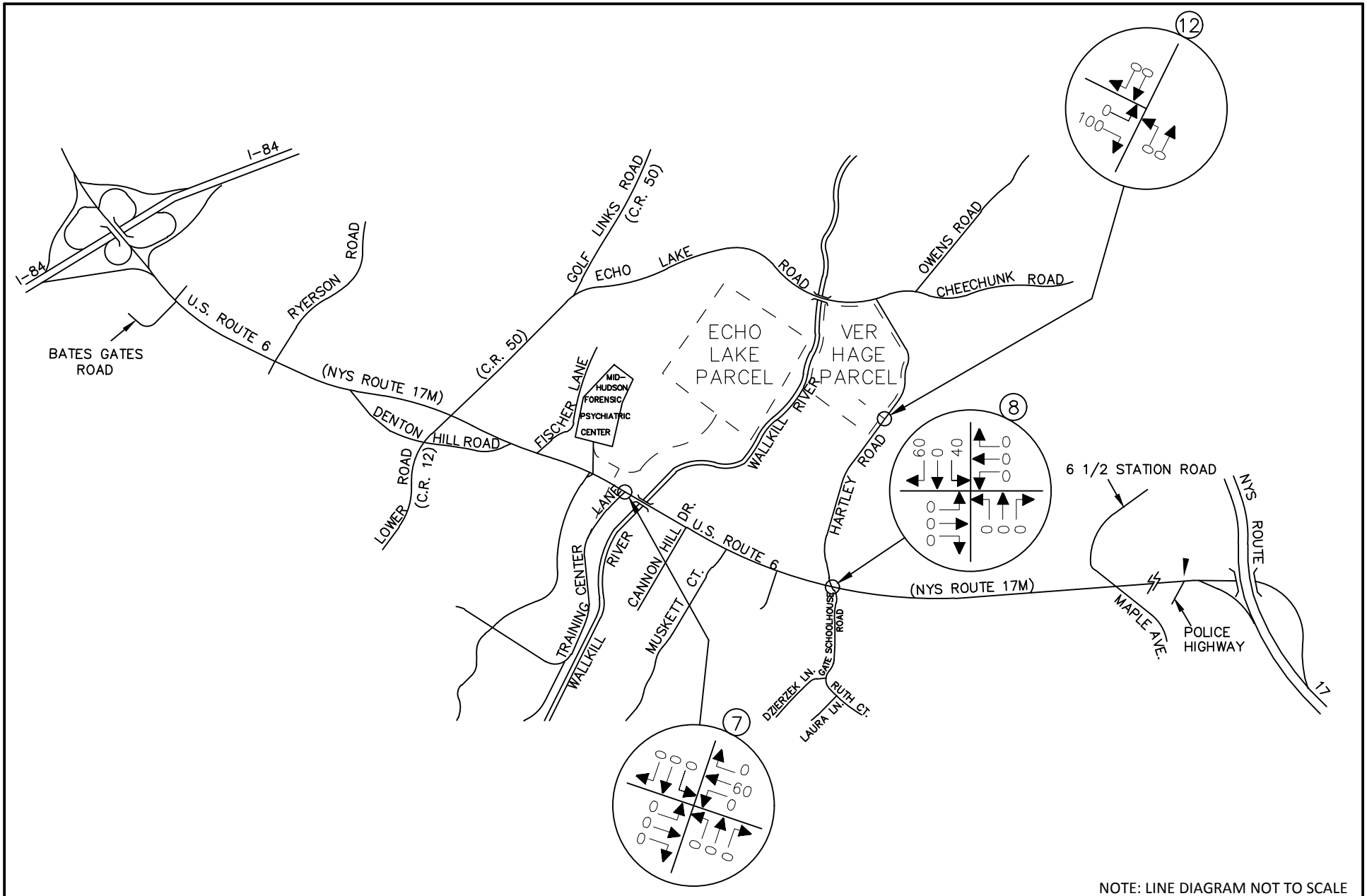

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VER HAGE WAREHOUSE USES
DEPARTURE DISTRIBUTION - TRUCKS

JOB NUMBER:	DATE:
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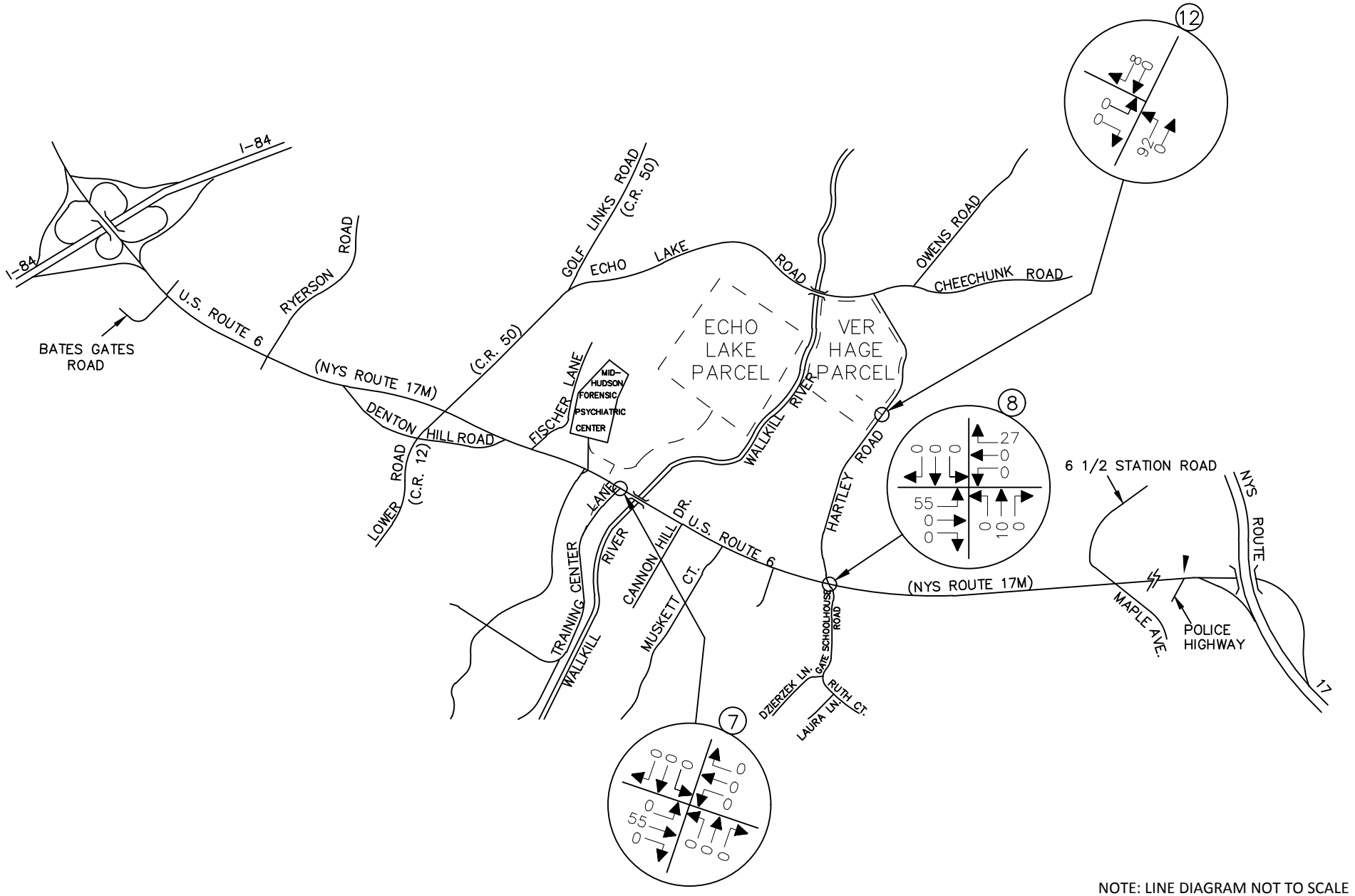

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AMY'S KITCHEN
ARRIVAL DISTRIBUTION - CARS

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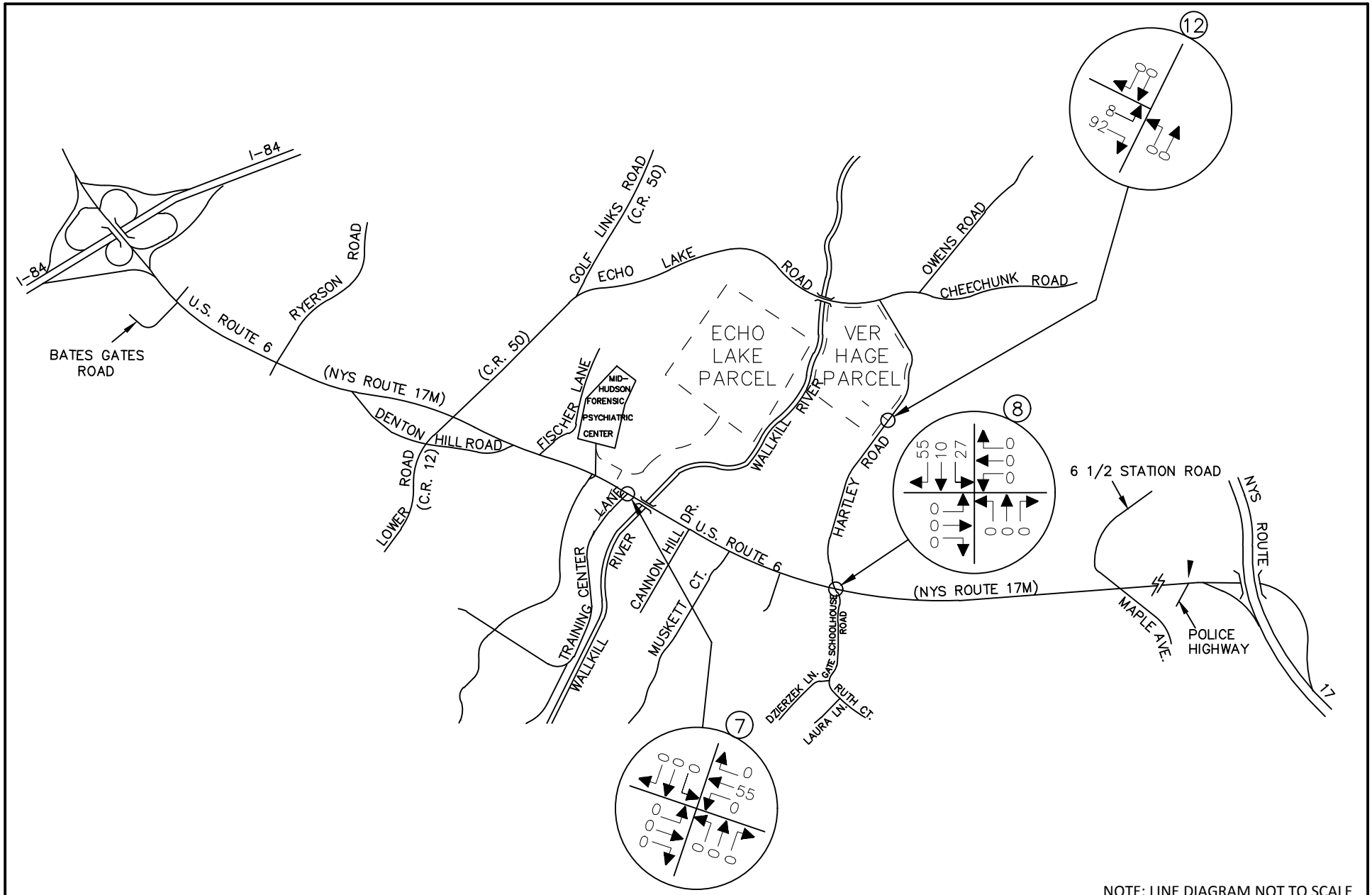
FIGURE NUMBER:	
26–NB	



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ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN
DEPARTURE DISTRIBUTION - CARS

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
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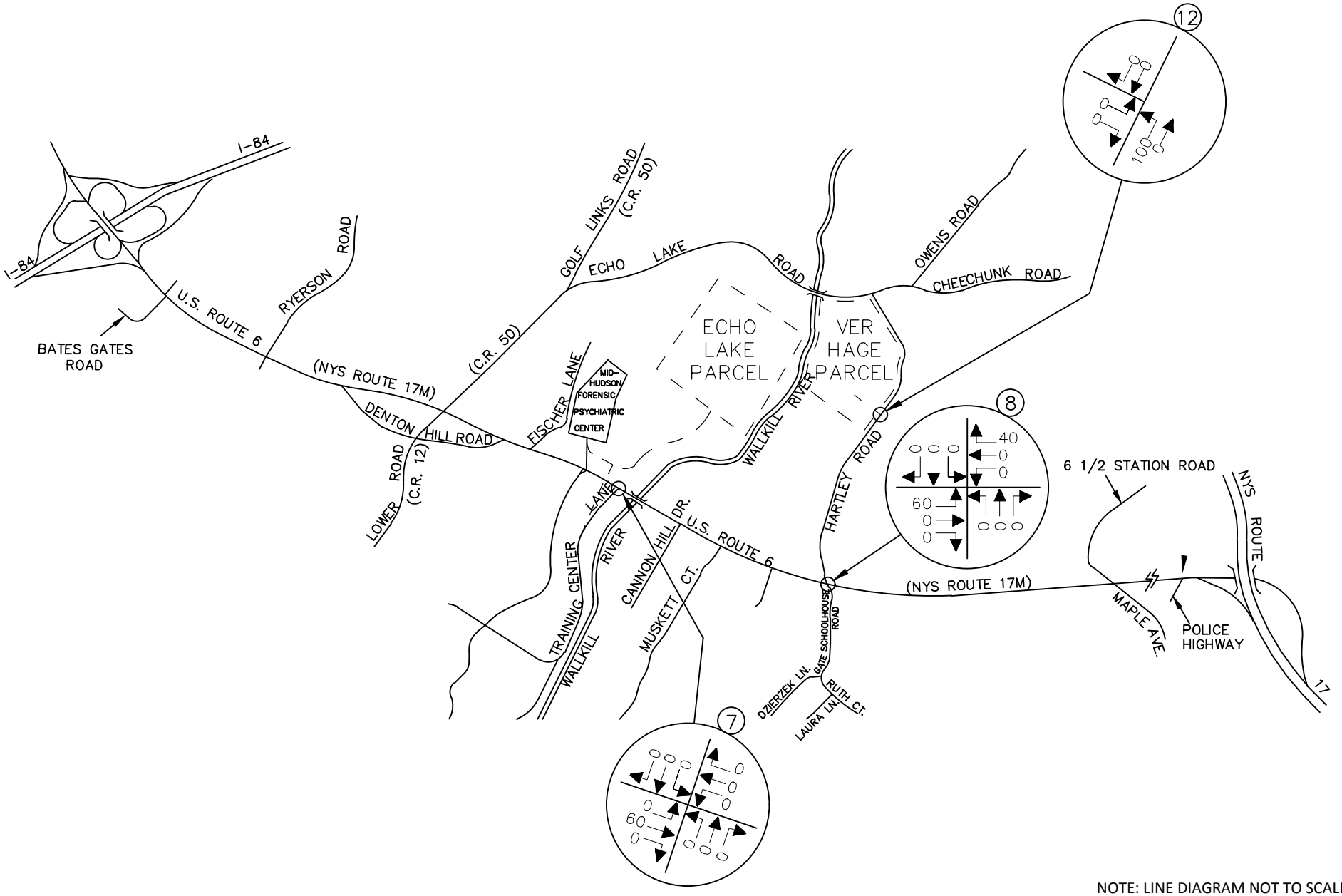

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ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN
ARRIVAL DISTRIBUTION - TRUCKS

JOB NUMBER:	DATE:
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FIGURE NUMBER:	
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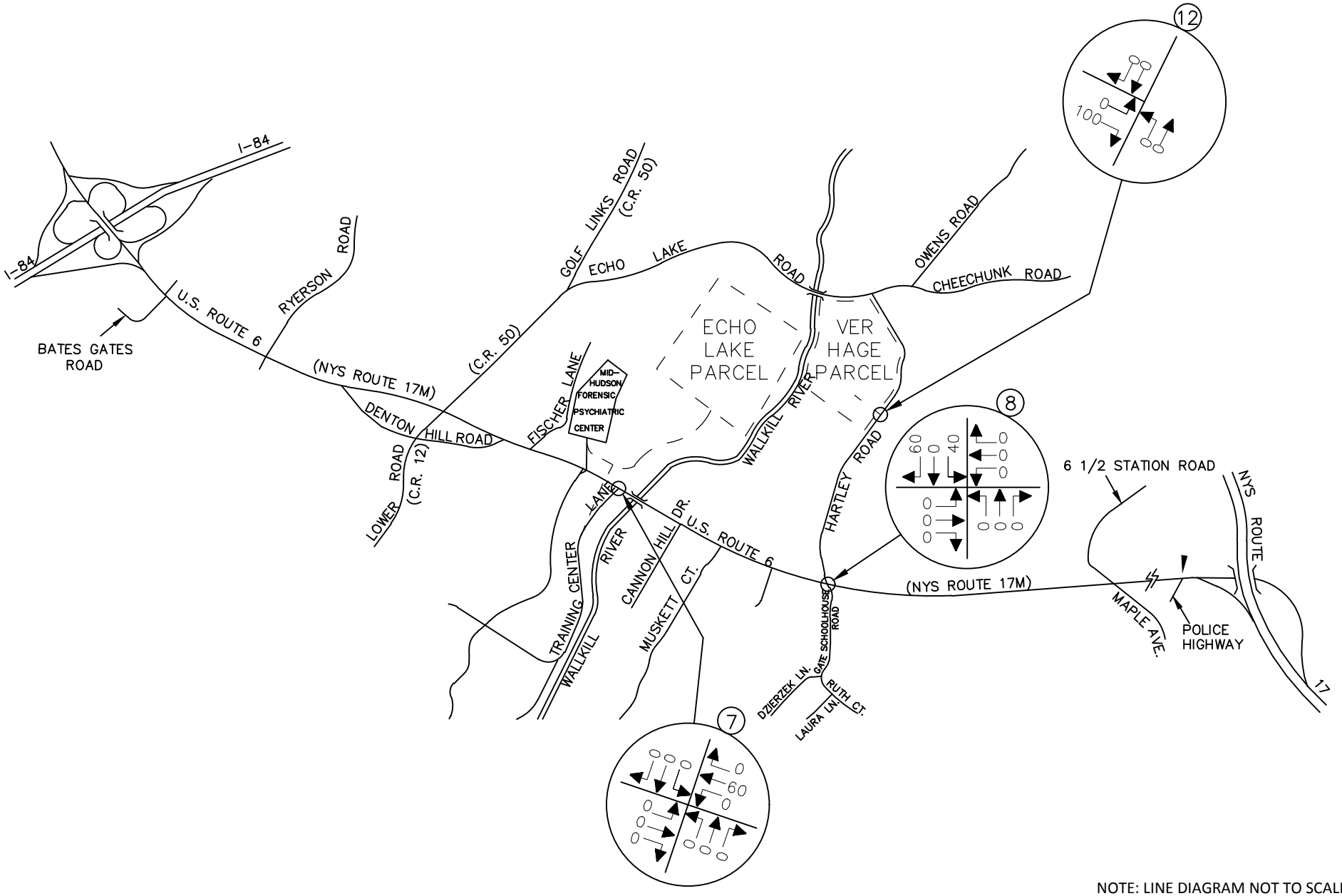

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ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN
DEPARTURE DISTRIBUTION - TRUCKS

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
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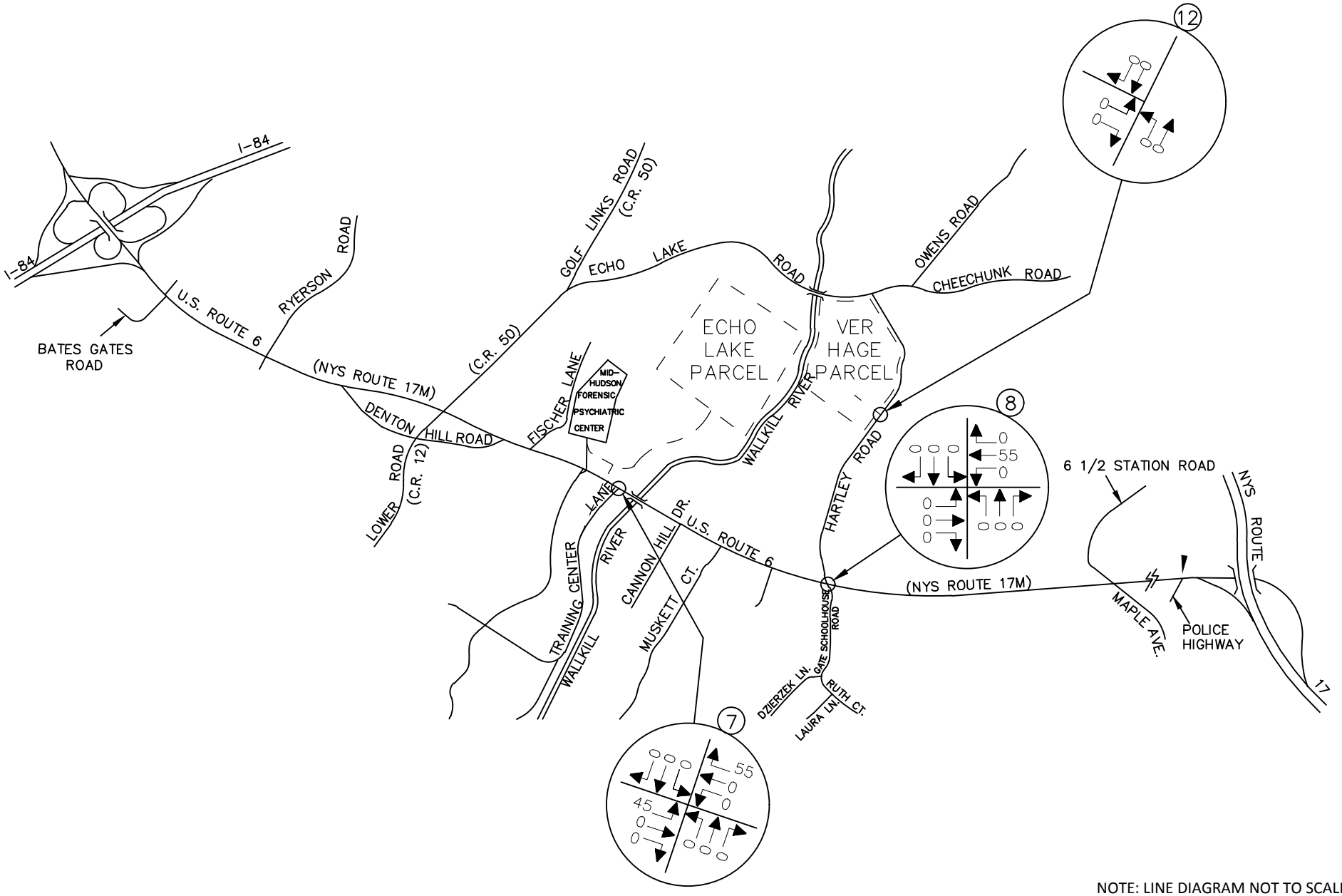

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SCIENCE OF THE SOUL
ARRIVAL DISTRIBUTION
(TYPICAL CONDITIONS)

JOB NUMBER:	DATE:
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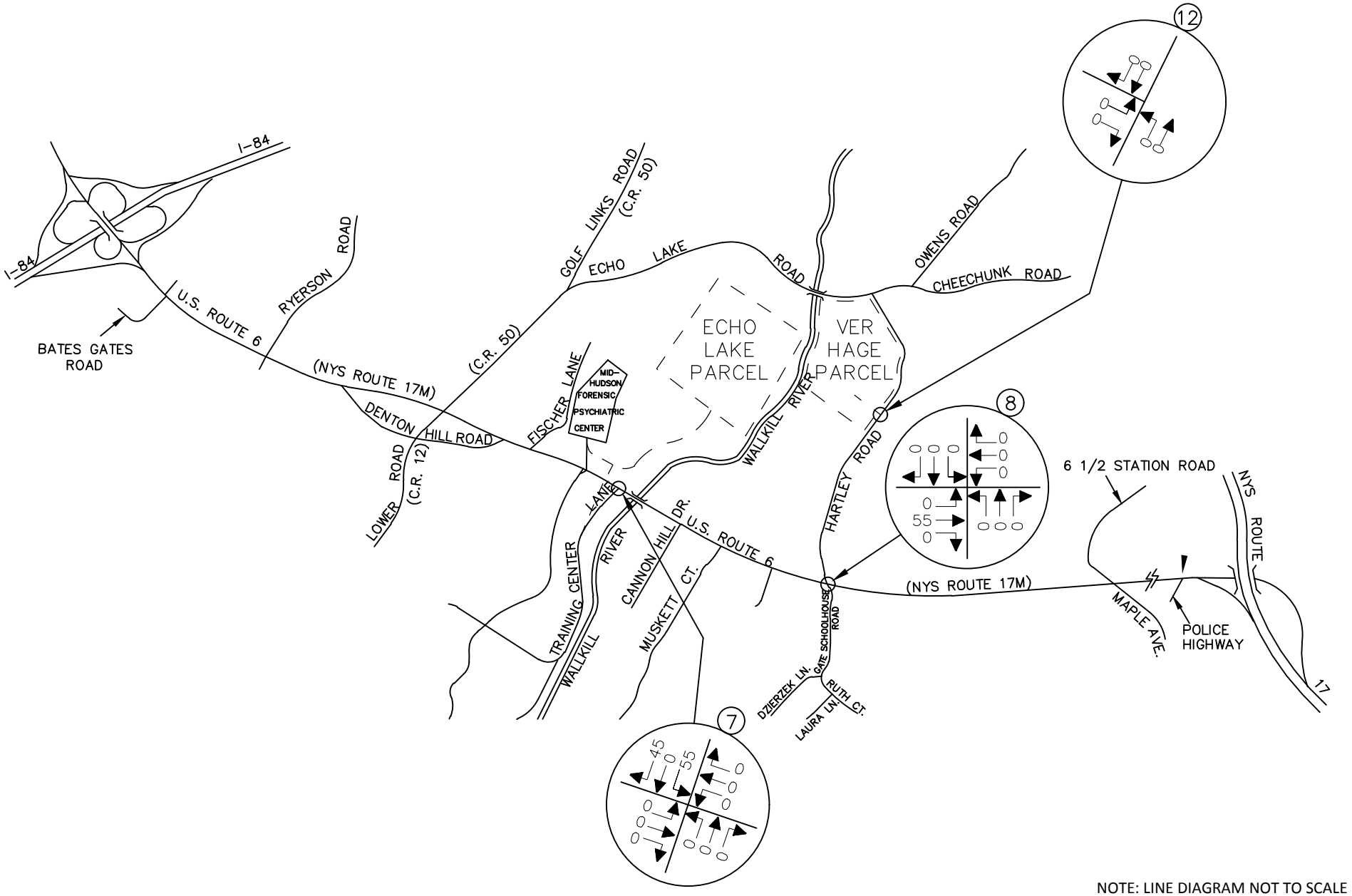
FIGURE NUMBER:	
30–NB	



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ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL
DEPARTURE DISTRIBUTION
(TYPICAL CONDITIONS)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
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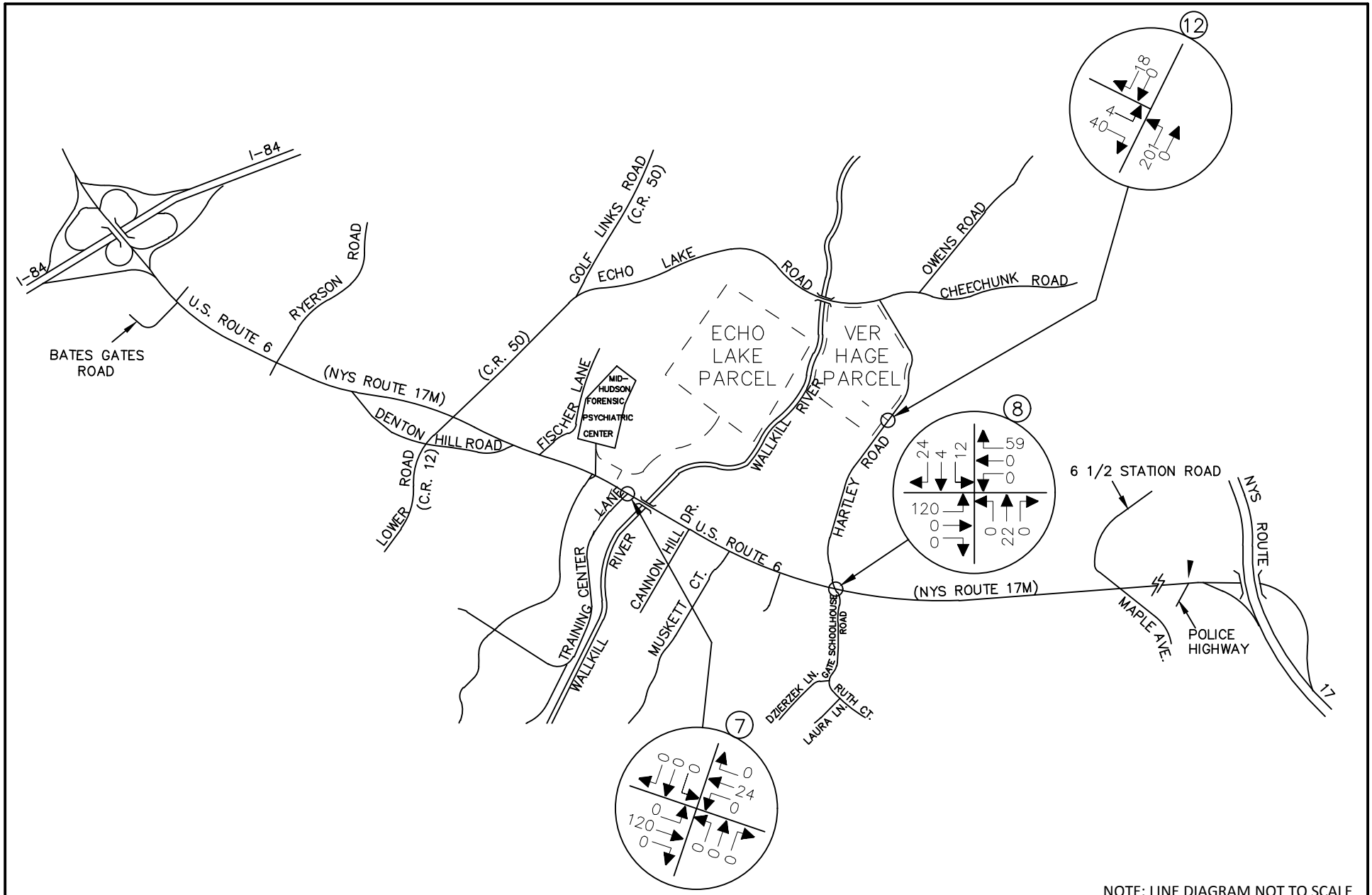

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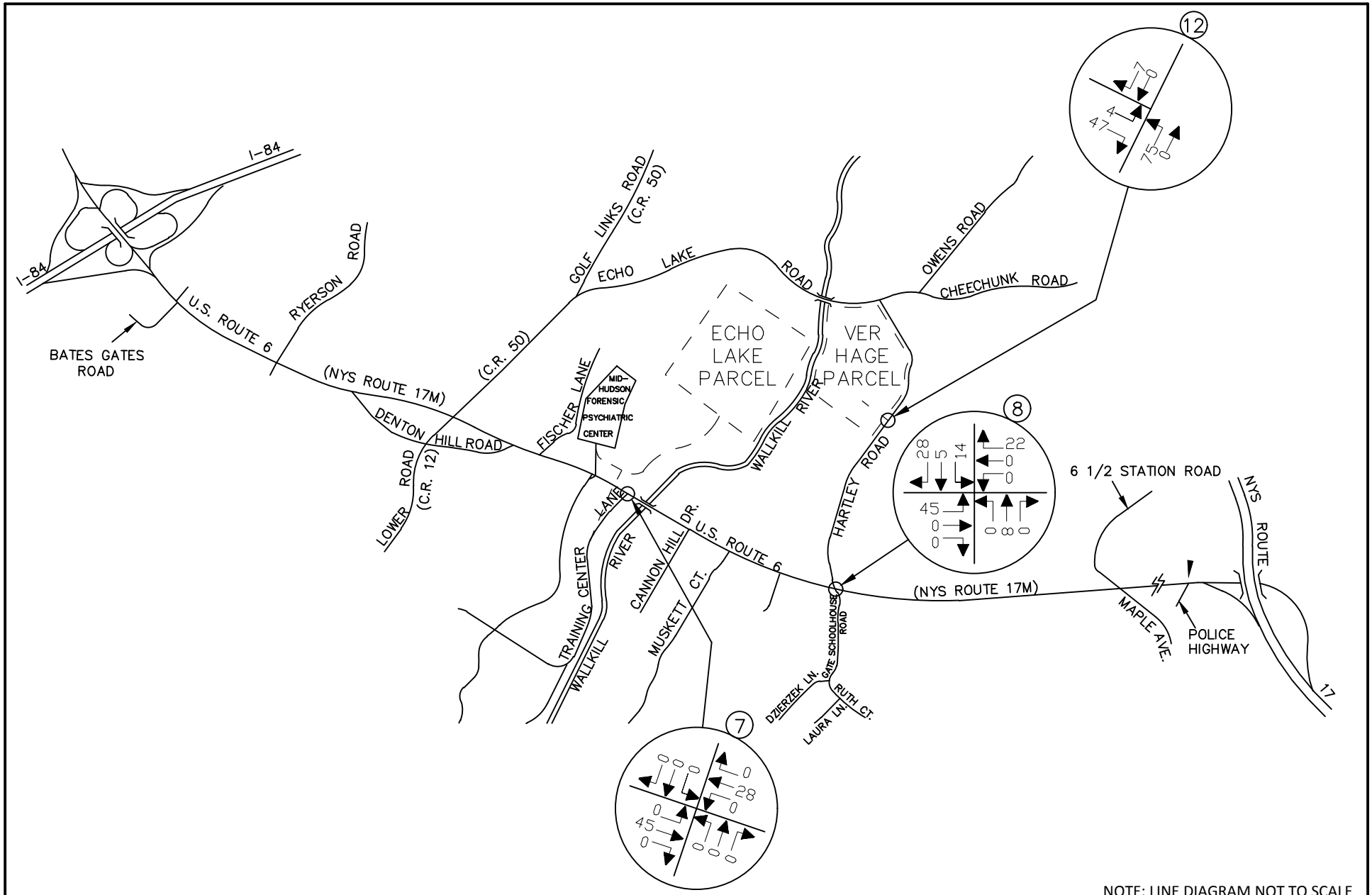
GOSHEN, NEW YORK

ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
32–NB	



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GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
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FIGURE NUMBER:	
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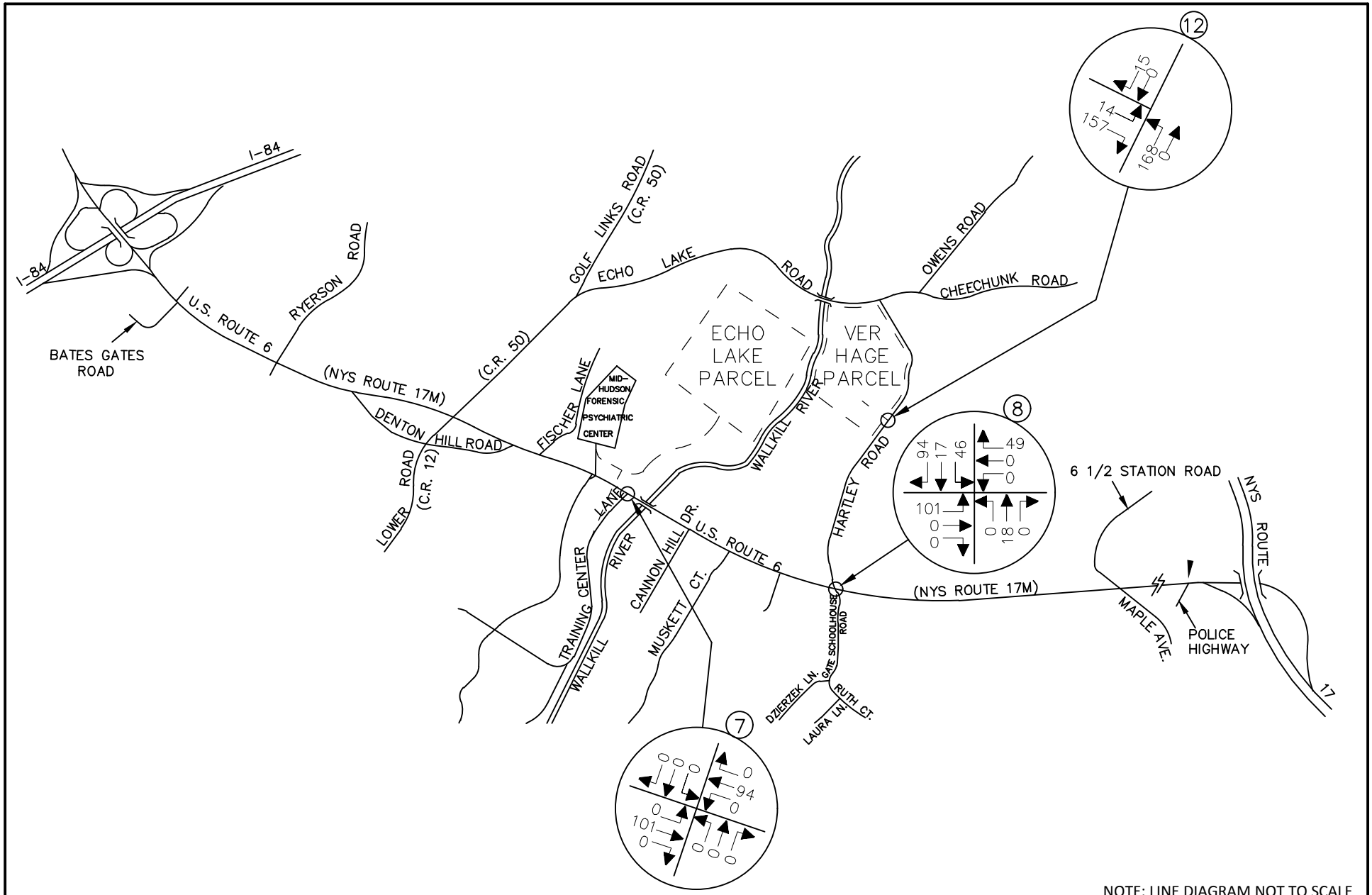

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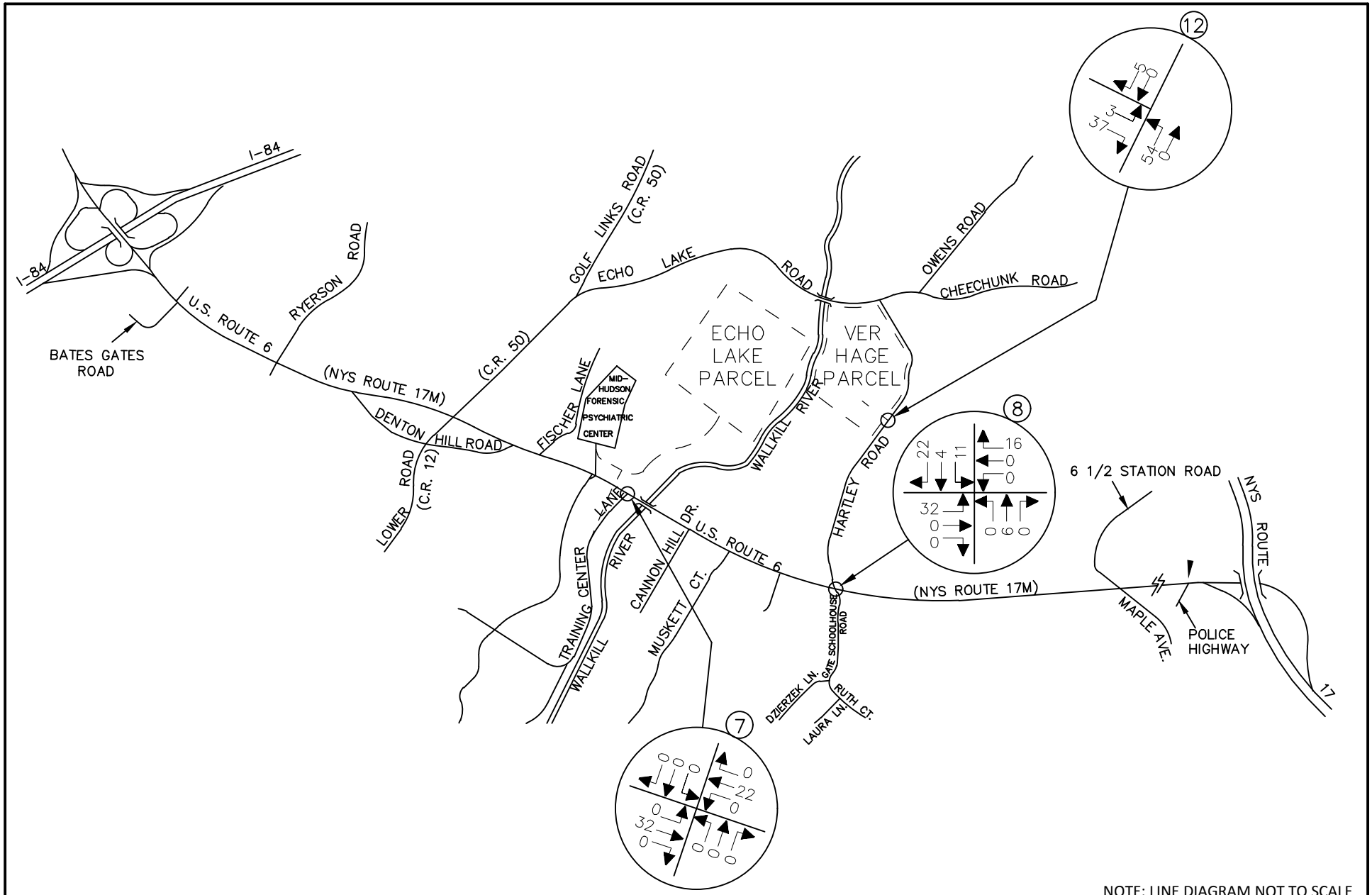
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES -CARS
WEEKDAY PM PEAK OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
34–NB	



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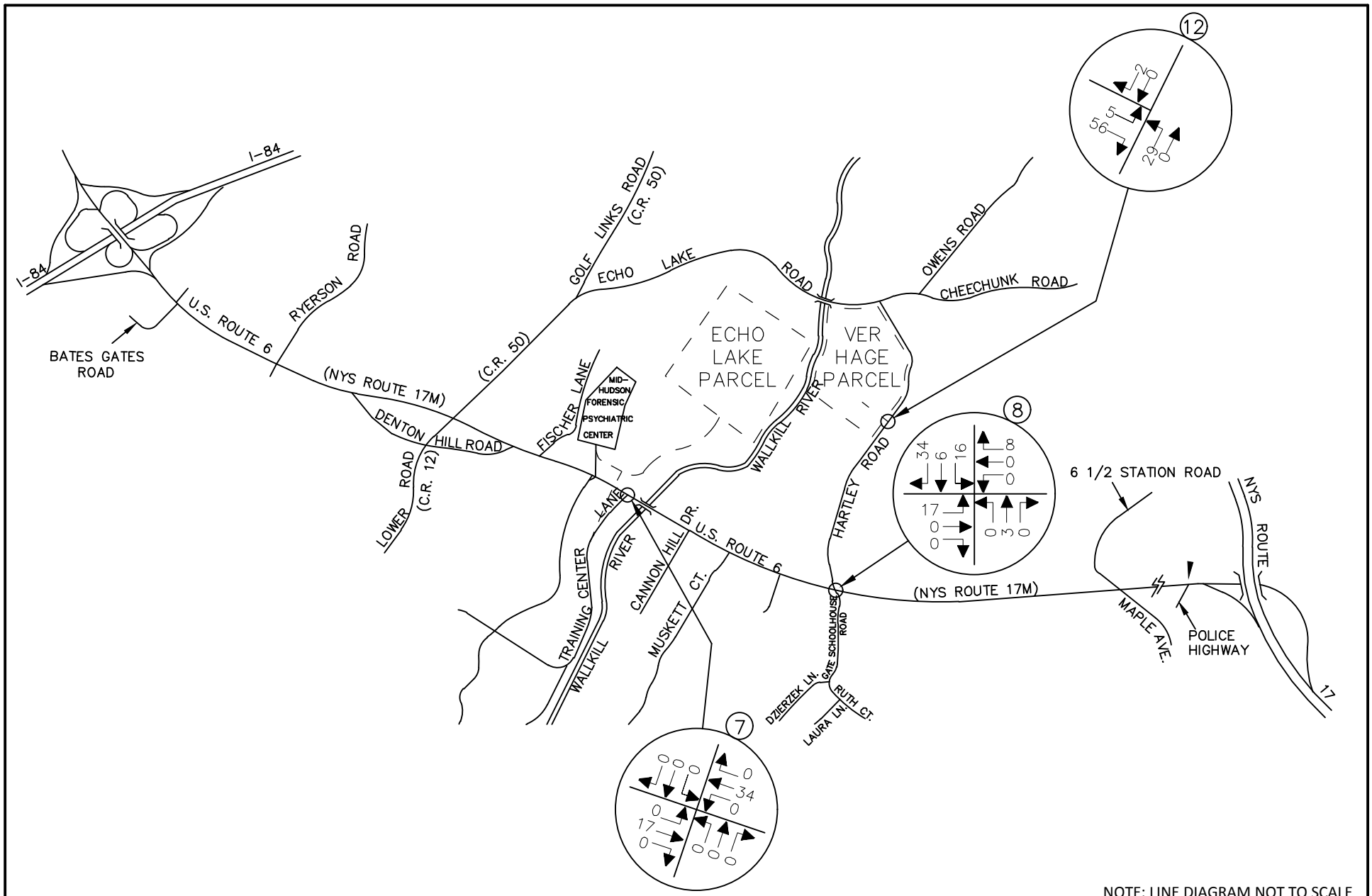
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
35–NB	



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ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CAR
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
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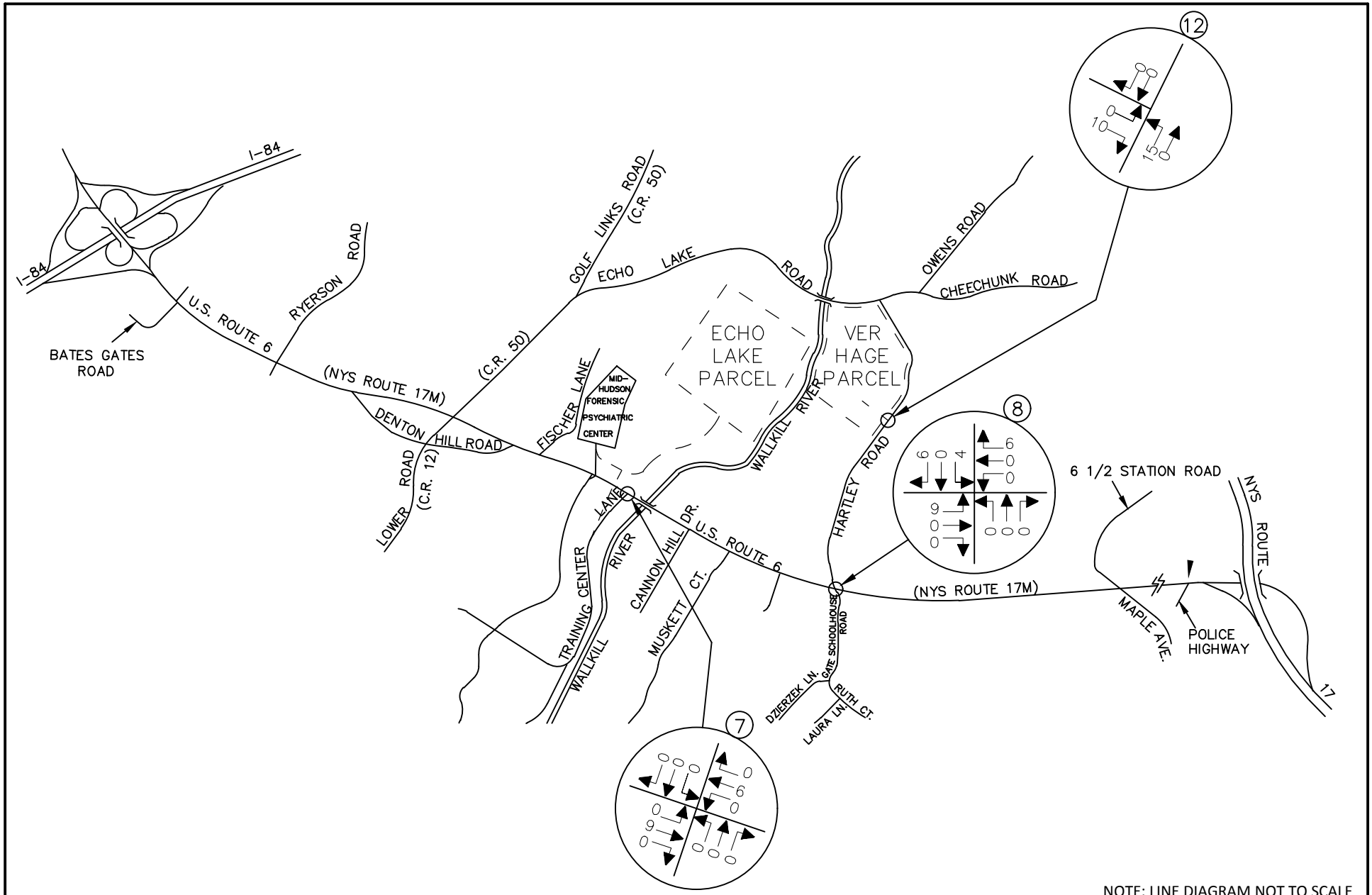

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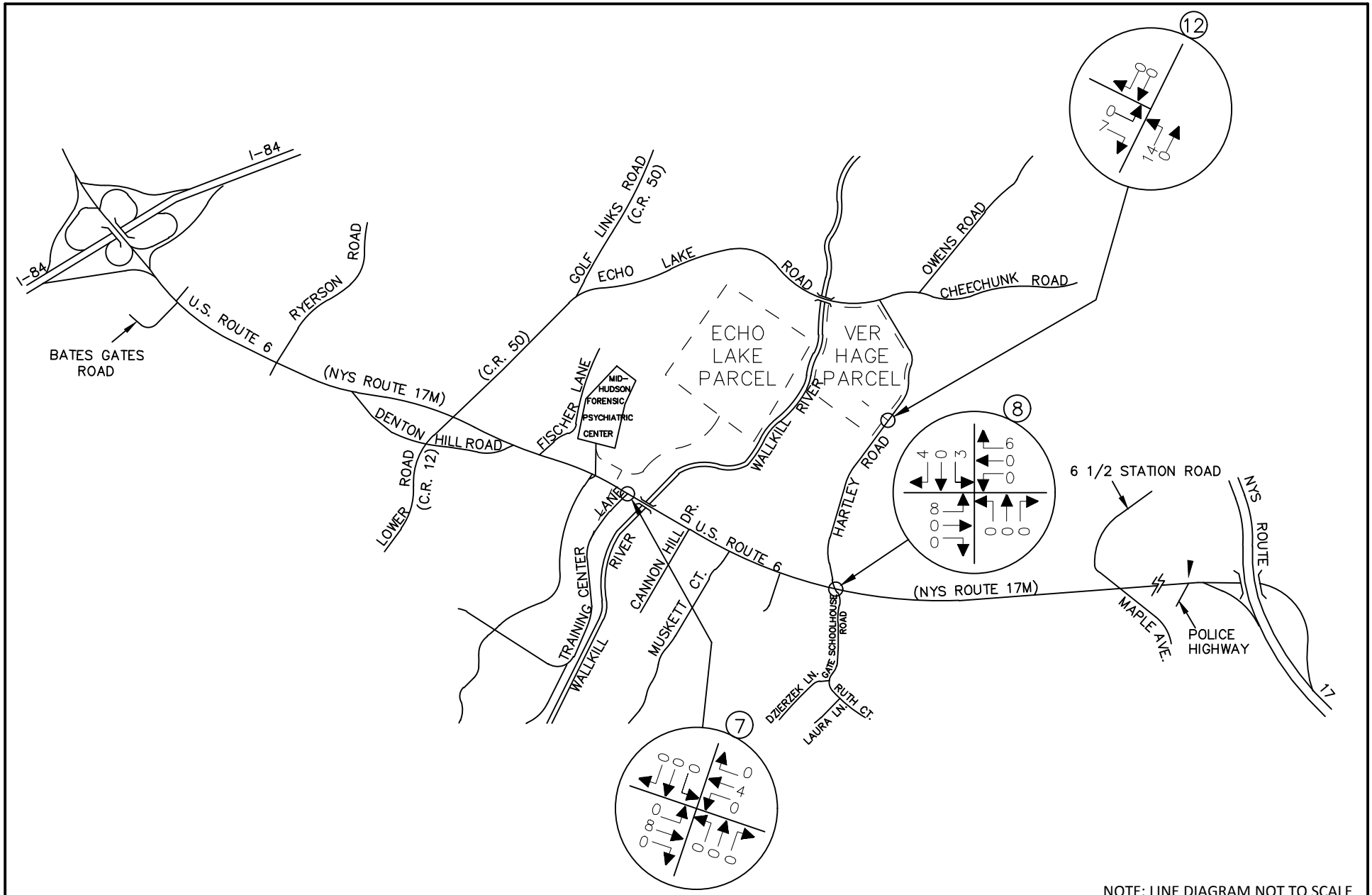
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
37–NB	



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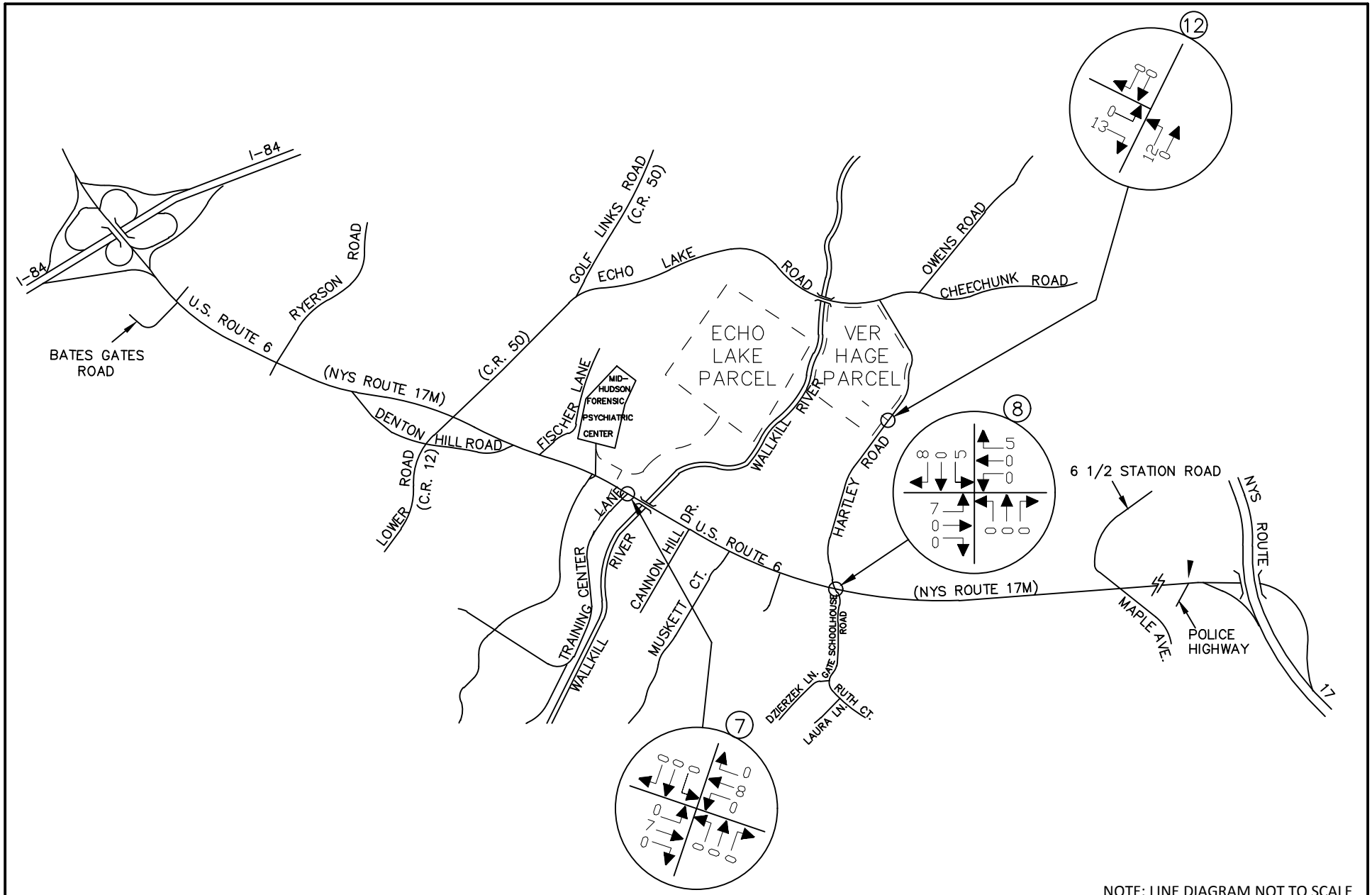
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
38–NB	



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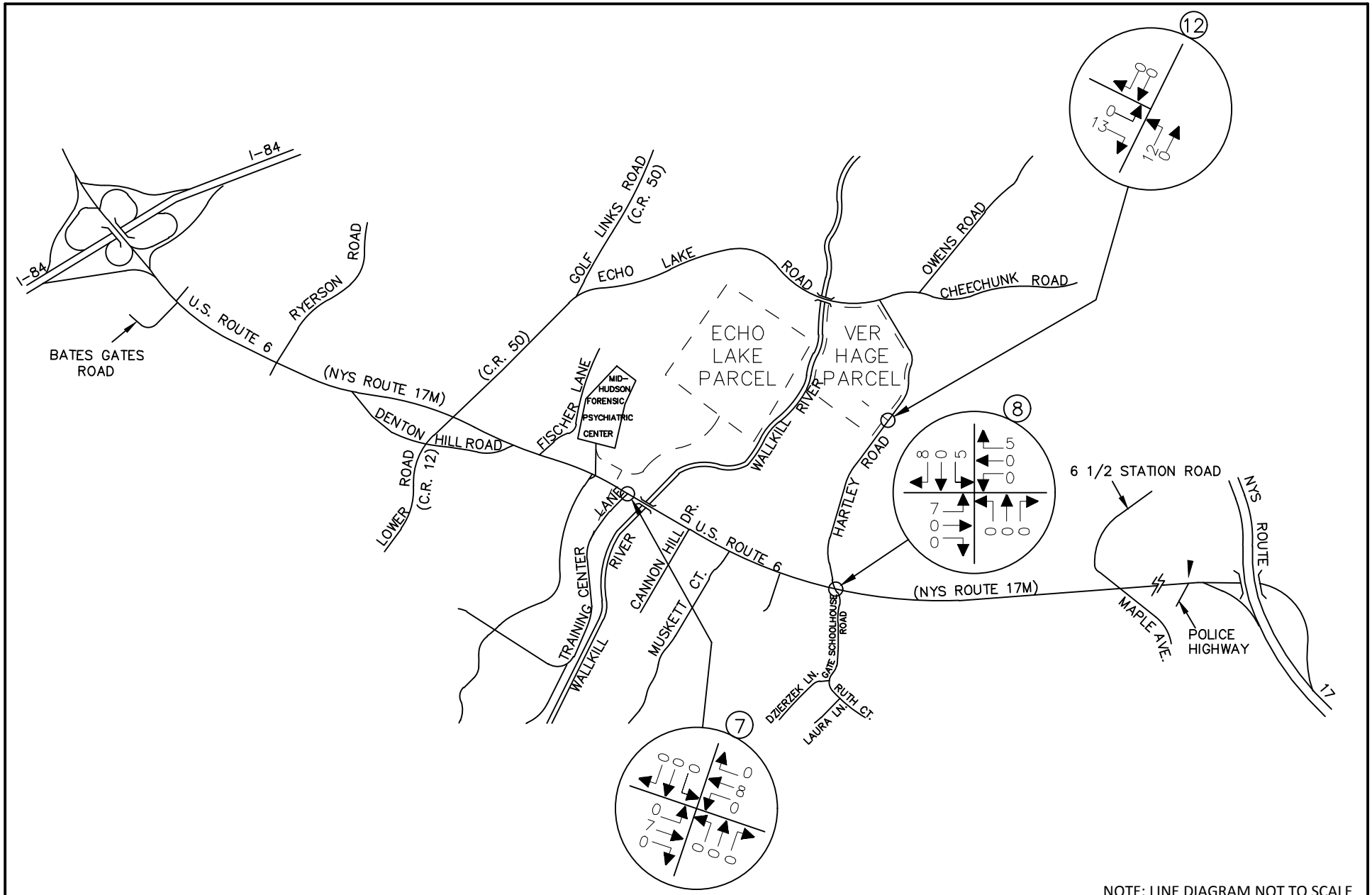
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
39–NB	



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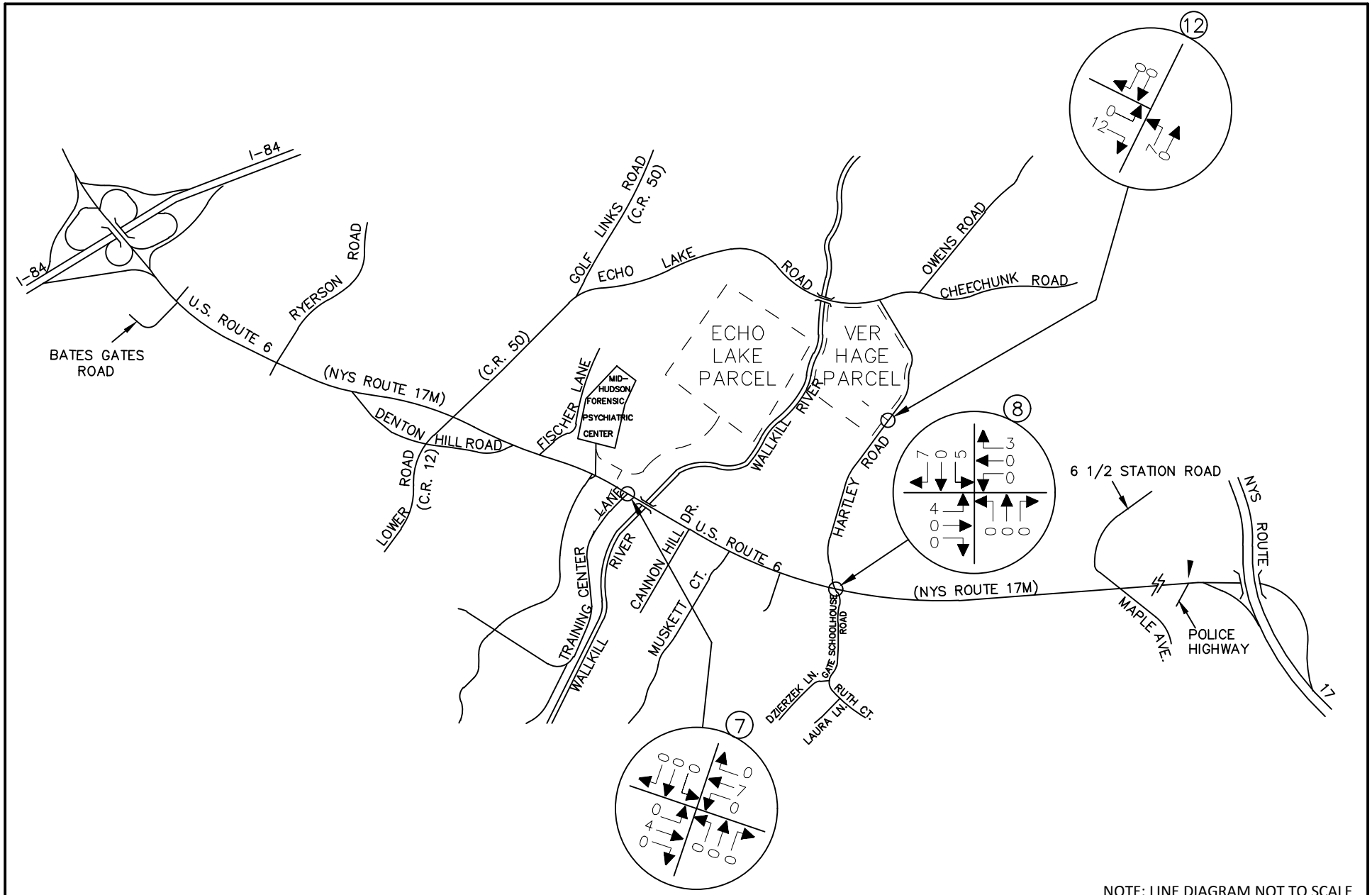
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
40–NB	



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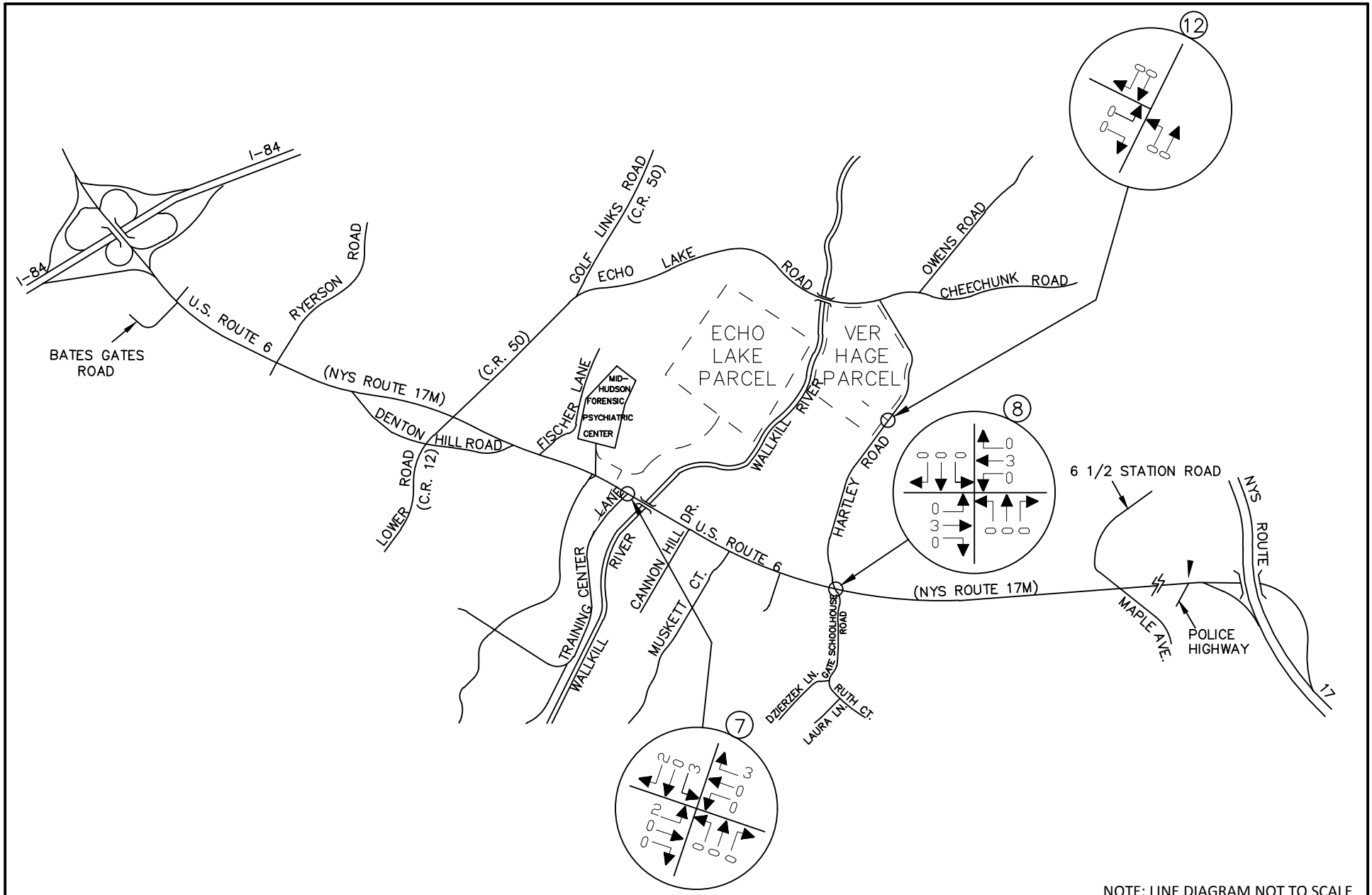
AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
41–NB	



NOTE: LINE DIAGRAM NOT TO SCALE

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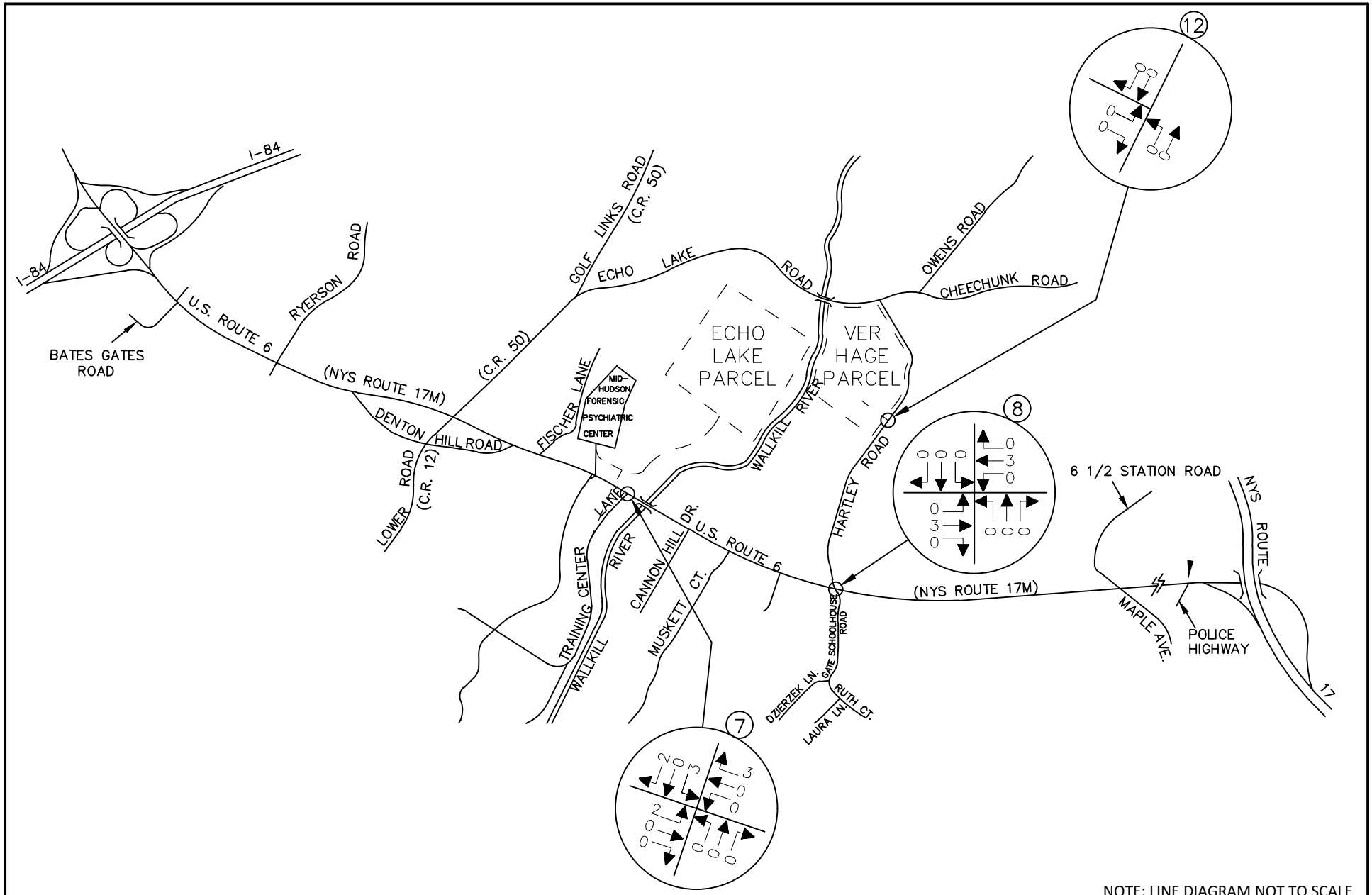
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
42–NB	



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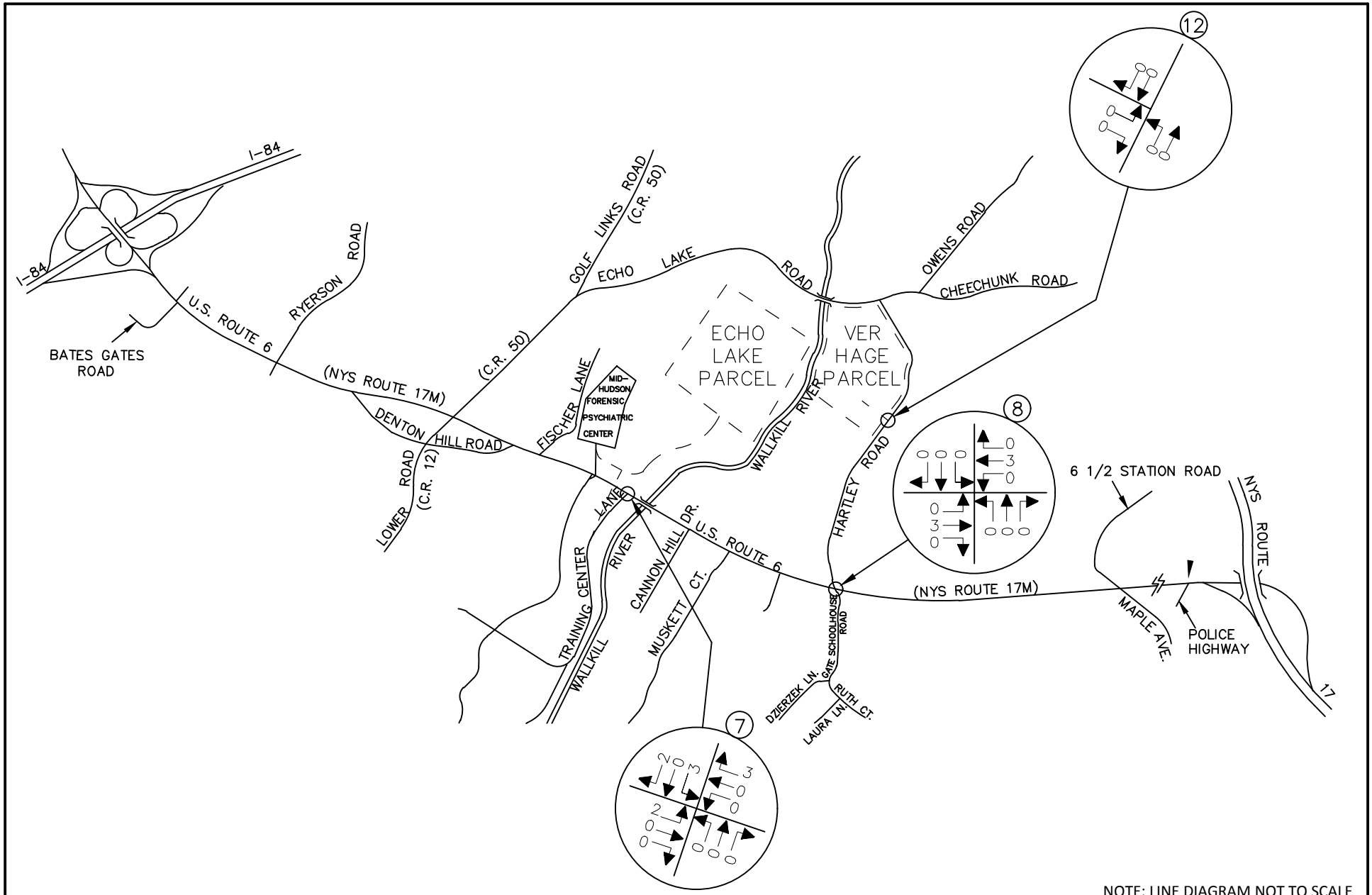
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
43–NB	



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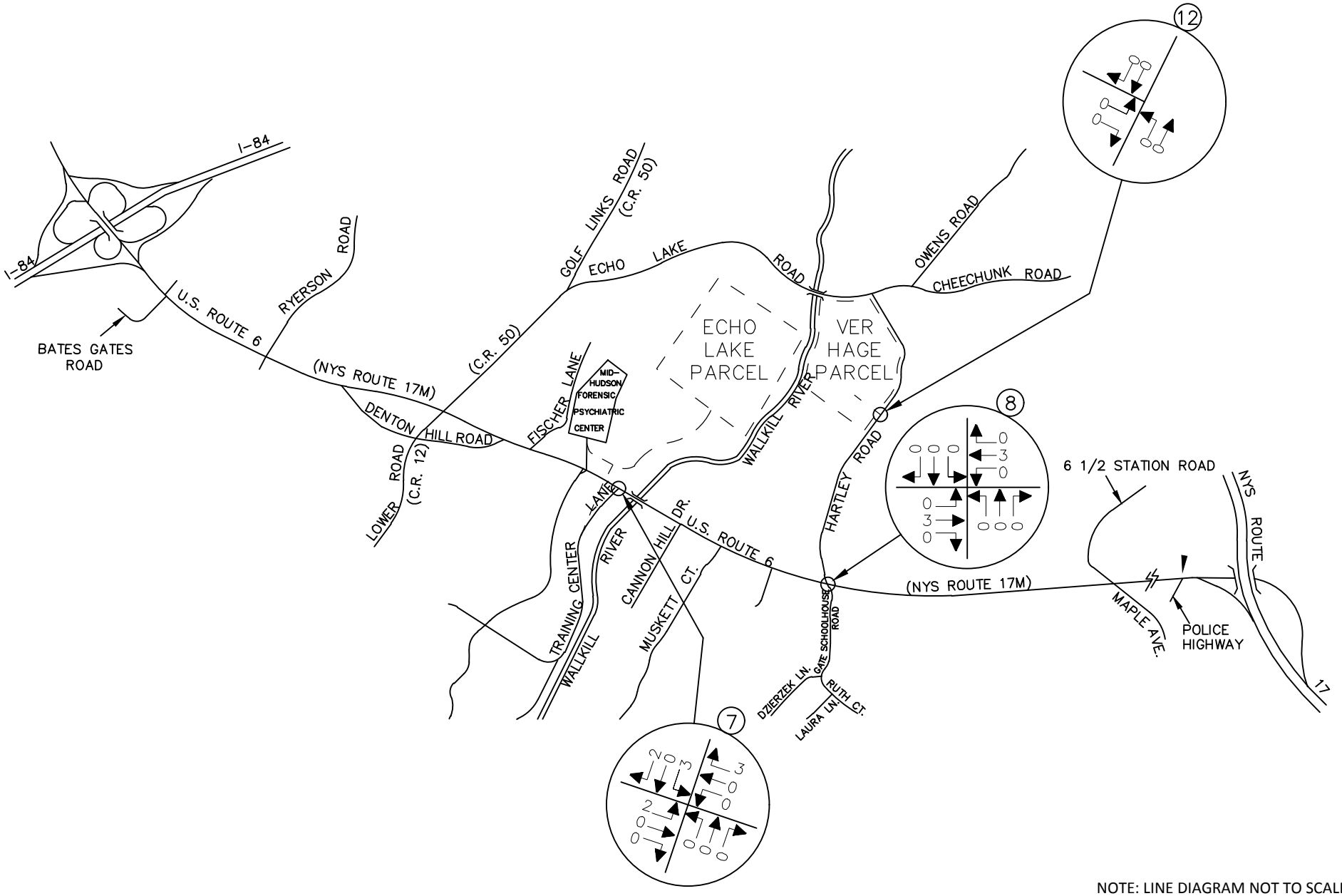
SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
44–NB	



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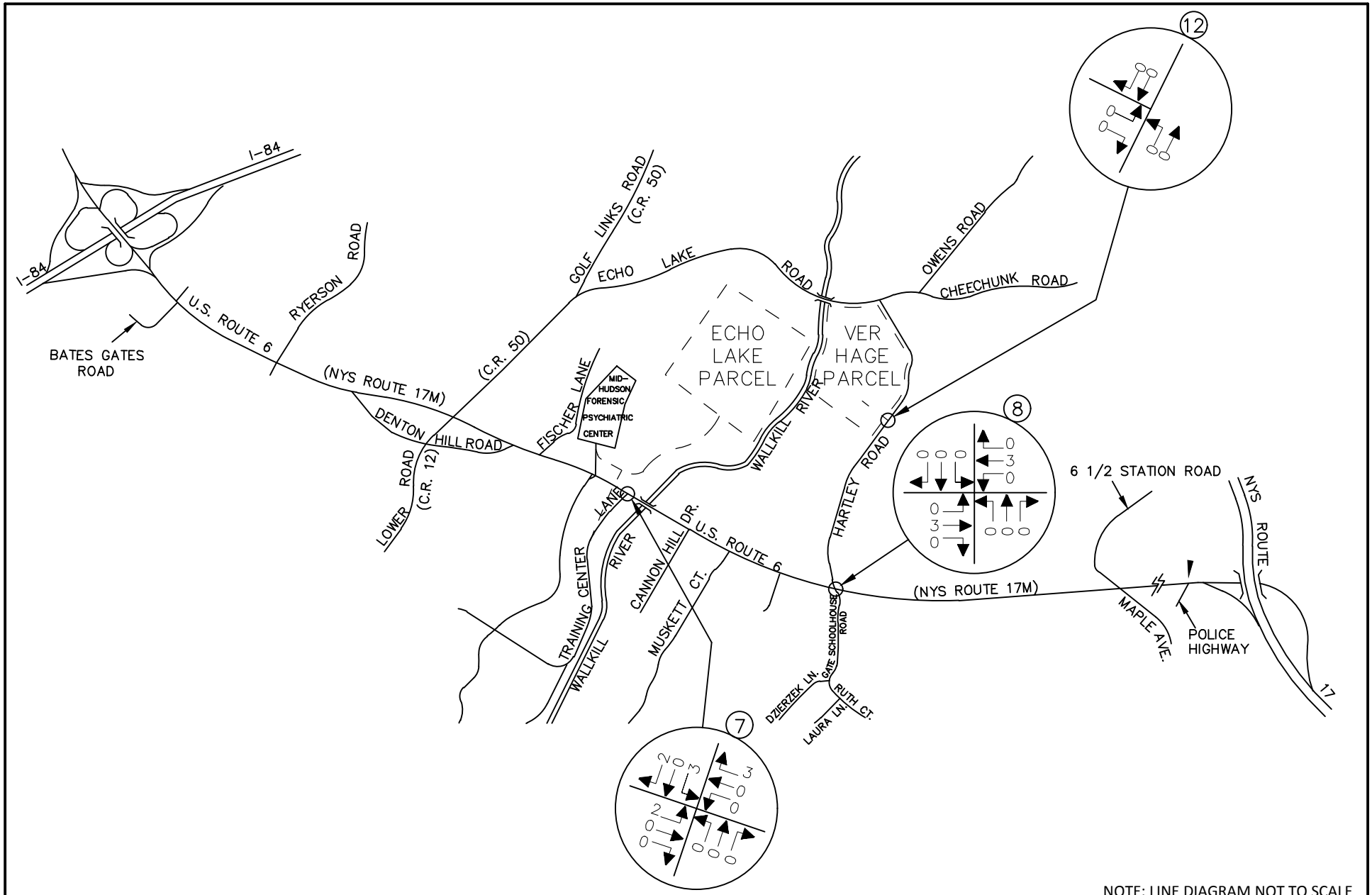
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENC OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
45–NB	



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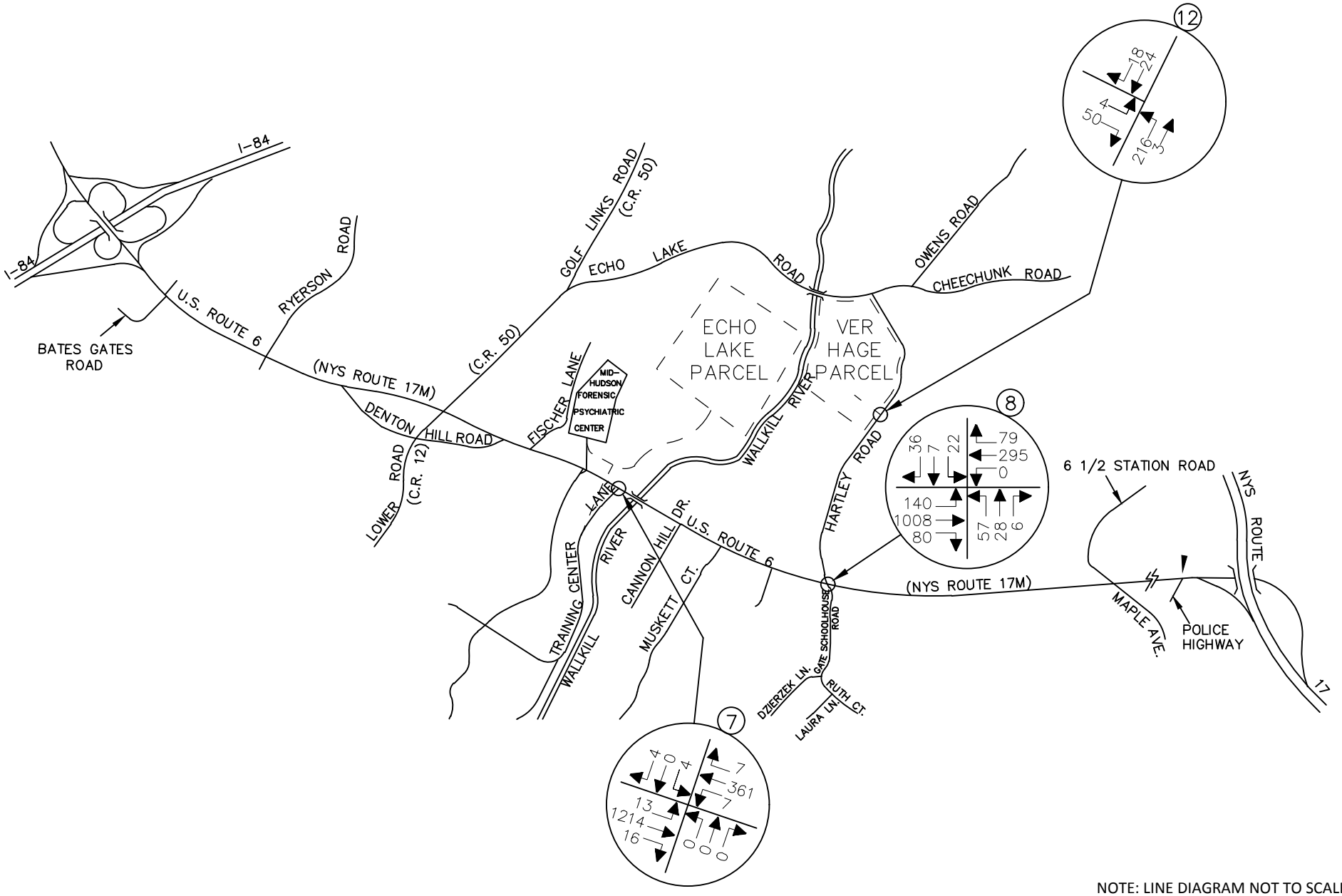
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
46–NB	



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
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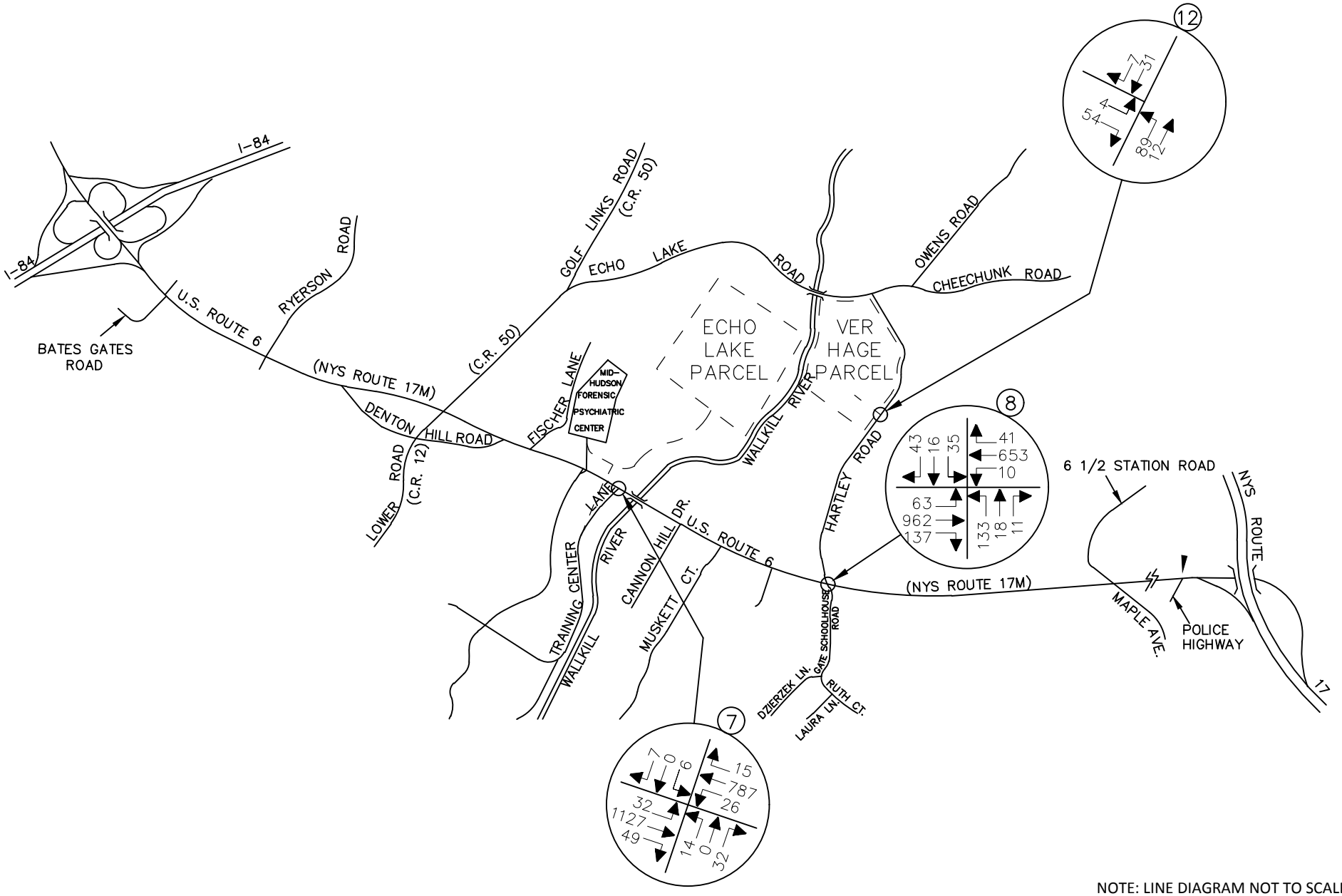
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
47–NB	



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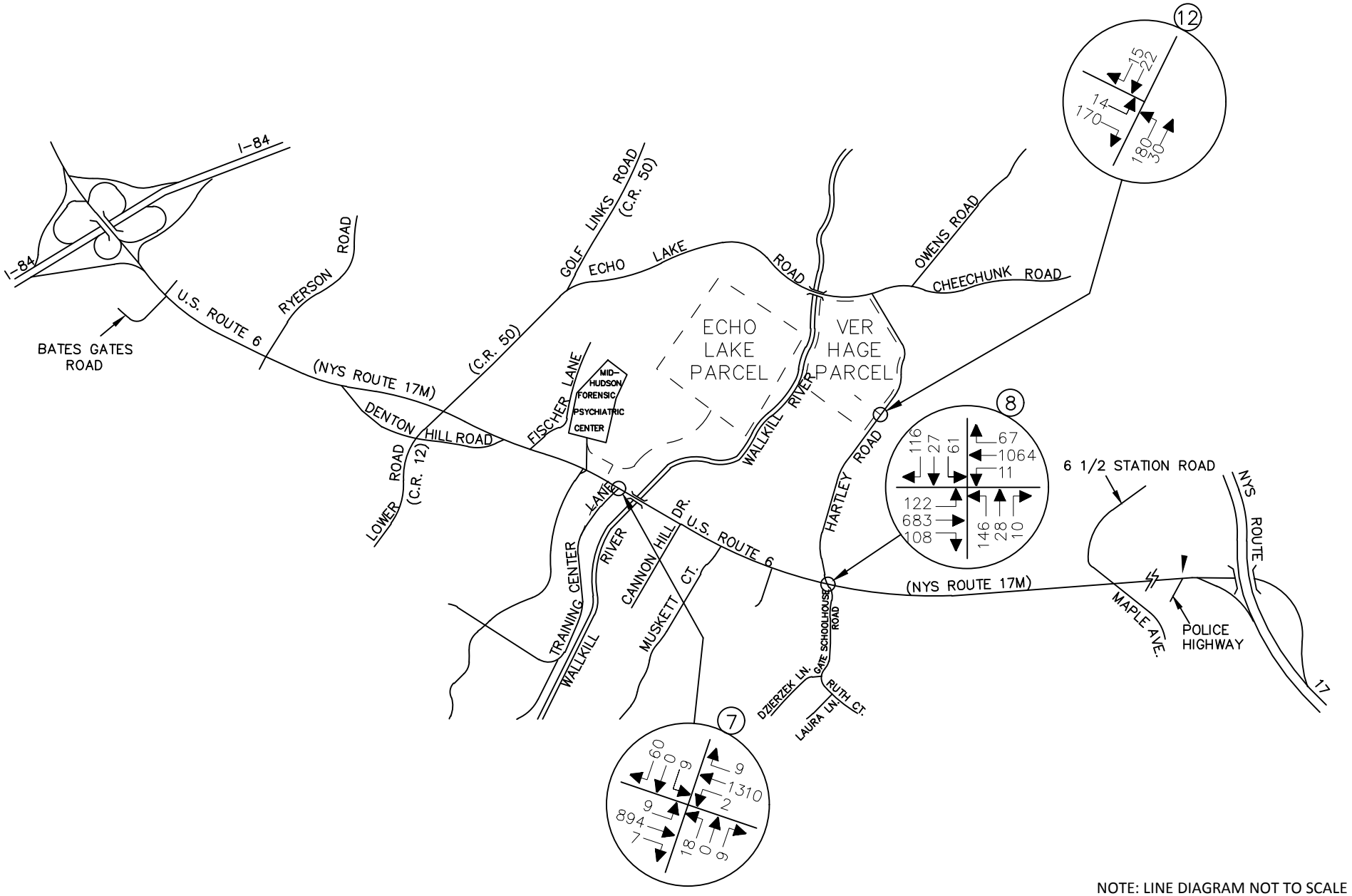
2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
(7:30 AM - 8:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
48–NB	



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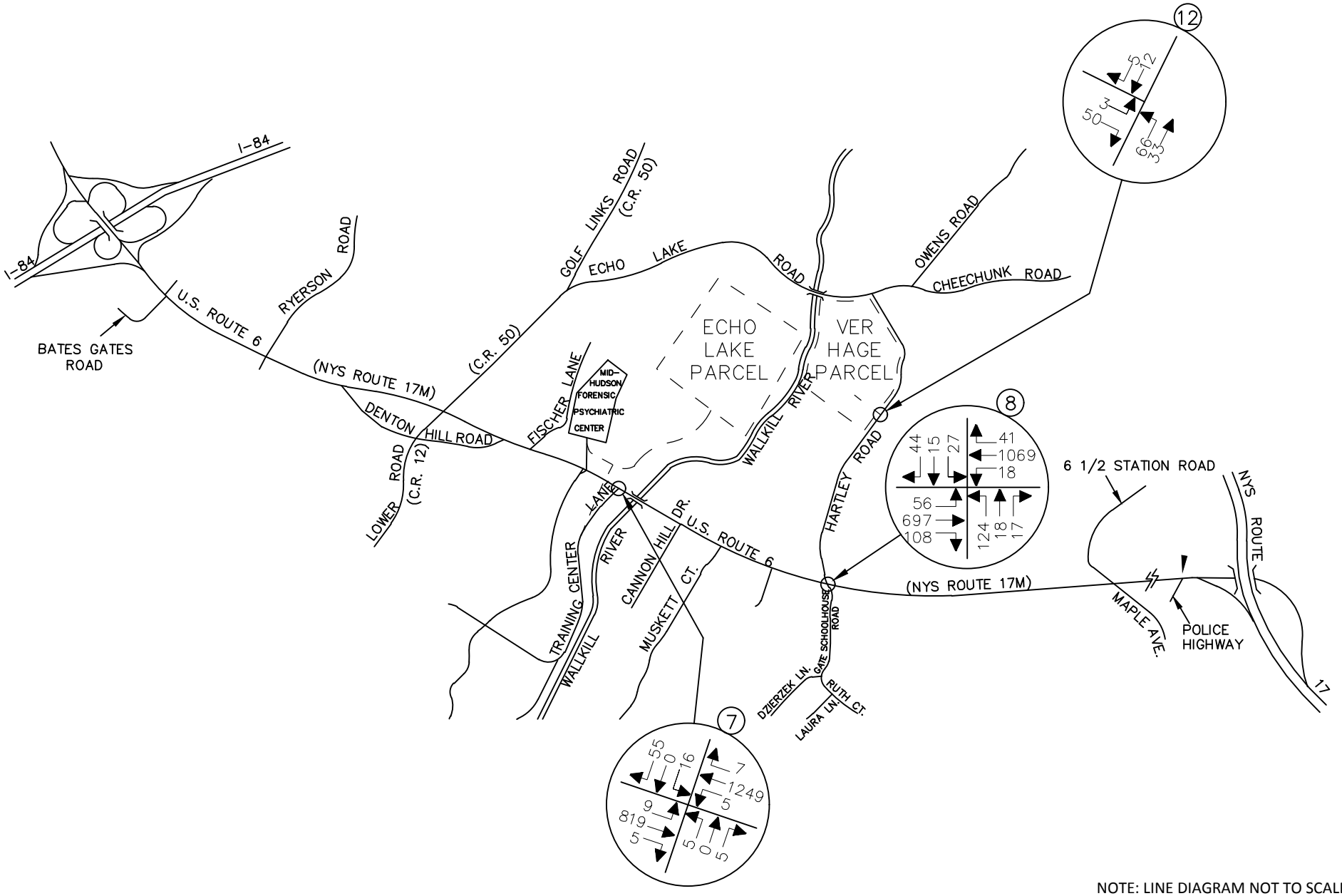
2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
(3:00 PM - 4:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
49–NB	



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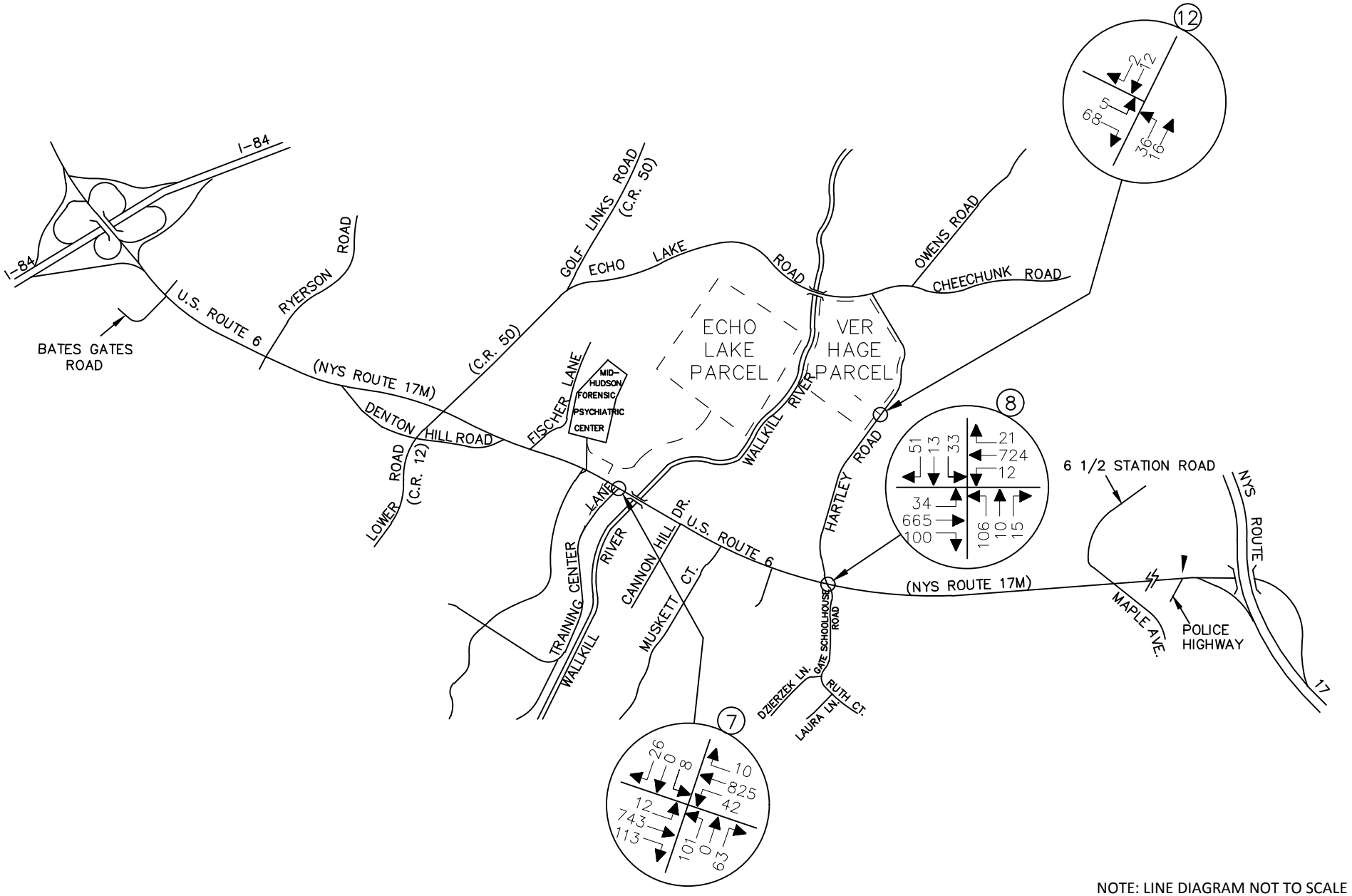
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
(4:30 PM - 5:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
50–NB	



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
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ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

2033 FULL BUILD TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
51–NB	

AMY'S KITCHEN & SCIENCE OF THE SOUL

TABLES

AMY'S KITCHEN FULL BUILD OUT WITH NO WALLKILL RIVER BRIDGE

TABLE NO. 2-NB

LEVEL OF SERVICE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
WEEKDAY AM PEAK HOUR OF AMY'S GENERATION (6:00 AM - 7:00 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.01	B	12.8	0.02	B	13.9	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0	A	0	0.00	A	0.0	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.02	A	2.7	-
			T	-	-	-	-	-	-	0.98	C	29.9	-
			R	-	-	-	-	-	-	0.02	A	2.6	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.07	C	20.6	-
			T	-	-	-	-	-	-	0.32	A	4.1	-
			R	-	-	-	-	-	-	0.01	A	2.6	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.00	A	0.0	-
			R	-	-	-	-	-	-	0.00	A	0.0	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.04	D	36.1	-
			R	-	-	-	-	-	-	0.15	D	36.7	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**23.6**	-
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.80	A[2]	6.7	0.85	A[2]	9.6	1.07	F[2]	56.1	46.5
	ROUTE 6/17M	WB	LTR	0.26	A[2]	3.3	0.27	A[2]	3.0	0.34	A[2]	3.4	0.4
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.19	B	17.7	0.25	C	21.7	0.32	C	26.4	4.7
	HARTLEY ROAD	SB	LTR	0.05	B	17.5	0.06	C	21.1	0.34	C	27.1	6.0
		OVERALL		**-**	**A**	**6.6**	**-**	**A**	**8.9**	**-**	**D**	**42.1**	33.2
	WITH IMPROVEMENTS												-
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.30	A	6.6	-
			TR	-	-	-	-	-	-	0.92	C	20.2	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.00	A	0.0	-
			TR	-	-	-	-	-	-	0.35	A	4.2	-
	GATE SCHOOLHOUSE ROAD	NB	L	-	-	-	-	-	-	0.21	C	27.0	-
			TR	-	-	-	-	-	-	0.21	C	28.4	-
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.37	C	29.7	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**16.4**	-
16	U.S. ROUTE 6/NYS ROUTE 17M & CANNON HILL DRIVE[3]	**UNSIGNALIZED**											
		WB	LT	0.06	B	10.8	0.07	B	11.6	0.08	B	12.5	0.9
		NB	LR	0.35	F	37.3	0.69	F	74.4	0.89	F	129.8	SEE NOTE 3
17	HARTLEY ROAD & AMY'S/WAREHOUSE SITE ACCESS	**UNSIGNALIZED**											
		EB	LR	-	-	-	-	-	-	0.06	A	9.1	-
		NB	LT	-	-	-	-	-	-	0.15	A	7.7	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A

2) LACK OF SEPARATE LEFT TURN LANE ON NYS ROUTE 17M RESULTS IN OPERATIONAL DIFFICULTIES NOT REFLECTED IN THE LEVEL OF SERVICE INCLUDING ACCIDENT HISTORY WHICH INDICATES A HISTORY OF REAR END ACCIDENTS DUE TO A LACK OF LEFT TURN LANES.

3) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE NO. 3-NB

LEVEL OF SERVICE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
WEEKDAY AM PEAK HIGHWAY HOUR (7:30 AM - 8:30 AM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.06	B	13.4	0.07	B	14.6	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.44	F	64.7	0.66	F	115.1	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.08	A	9.8	-
			T	-	-	-	-	-	-	0.9	B	16.3	-
			R	-	-	-	-	-	-	0.07	A	2.4	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.17	C	24.4	-
			T	-	-	-	-	-	-	0.69	A	7.4	-
			R	-	-	-	-	-	-	0.01	A	2.1	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.14	C	33.0	-
			R	-	-	-	-	-	-	0.50	C	31.4	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.06	C	32.9	-
			R	-	-	-	-	-	-	0.08	C	28.7	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**13.0**	-
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.83	B[2]	10.1	0.9	B[2]	17.4	1.00	F[2]	38.1	20.7
	ROUTE 6/17M	WB	LTR	0.51	A[2]	5.3	0.55	A[2]	5.7	0.59	A[2]	6.4	0.7
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.40	C	21.1	0.47	C	25.6	0.49	C	26.5	0.9
	HARTLEY ROAD	SB	LTR	0.14	C	20.1	0.16	C	24.1	0.35	C	26.0	1.9
		OVERALL		**-**	**A**	**9.5**	**-**	**B**	**14.2**	**-**	**C**	**26.0**	11.8
	WITH IMPROVEMENTS												-
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.17	A	9.9	-
			TR	-	-	-	-	-	-	0.92	C	21.5	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.06	C	26.9	-
			TR	-	-	-	-	-	-	0.59	A	6.9	-
	GATE SCHOOLHOUSE ROAD	NB	L	-	-	-	-	-	-	0.55	D	35.1	-
			TR	-	-	-	-	-	-	0.15	C	32.2	-
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.46	C	34.6	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**17.9**	-
16	U.S. ROUTE 6/NYS ROUTE 17M & CANNON HILL DRIVE[3]	**UNSIGNALIZED**											
		WB	LT	0.04	B	12.5	0.02	B	13.3	0.02	B	13.8	0.5
		NB	LR	0.34	F	54.7	0.46	F	77.9	0.52	F	94.4	SEE NOTE 3
17	HARTLEY ROAD & AMY'S/WAREHOUSE SITE ACCESS	**UNSIGNALIZED**											
		EB	LR	-	-	-	-	-	-	0.07	A	9.0	-
		NB	LT	-	-	-	-	-	-	0.07	A	7.7	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A

2) LACK OF SEPARATE LEFT TURN LANE ON NYS ROUTE 17M RESULTS IN OPERATIONAL DIFFICULTIES NOT REFLECTED IN THE LEVEL OF SERVICE INCLUDING ACCIDENT HISTORY WHICH INDICATES A HISTORY OF REAR END ACCIDENTS DUE TO A LACK OF LEFT TURN LANES.

TABLE NO. 4-NB

LEVEL OF SERVICE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
WEEKDAY PM PEAK HOUR OF AMY'S GENERATION (3:00 PM - 4:00 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.00	A	9.2	0.01	A	9.5	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.25	F	51.7	0.37	F	77.3	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.09	C	35	-
			TR	-	-	-	-	-	-	0.7	A	7.8	-
				-	-	-	-	-	-	0.01	A	2.3	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.01	B	10.0	-
			T	-	-	-	-	-	-	0.99	C	29.9	-
			R	-	-	-	-	-	-	0.01	A	2.3	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.18	D	35.3	-
			R	-	-	-	-	-	-	0.07	C	29.5	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.10	D	35.2	-
			R	-	-	-	-	-	-	0.50	C	31.7	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**21.3**	-
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.59	A[2]	6.2	0.64	A[2]	7.1	1.35	F[2]	179.0	171.9
	ROUTE 6/17M	WB	LTR	0.78	A[2]	8.4	0.86	B[2]	13.7	0.96	C[2]	28.6	14.9
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.41	B	19.3	0.48	C	24.2	0.56	C	27.5	3.3
	HARTLEY ROAD	SB	LTR	0.09	B	18.1	0.10	C	22.2	0.56	C	27.0	4.8
		OVERALL		**-**	**A**	**8.6**	**-**	**B**	**12.2**	**-**	**F**	**83.6**	71.4
	WITH IMPROVEMENTS												-
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.87	E	63.7	-
			TR	-	-	-	-	-	-	0.63	A	6.3	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.03	B	10.7	-
			TR	-	-	-	-	-	-	1.02	F	46.9	-
	GATE SCHOOLHOUSE ROAD	NB	L	-	-	-	-	-	-	0.86	E	71.4	-
			TR	-	-	-	-	-	-	0.20	D	35.7	-
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.92	E	78.0	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**D**	**38.5**	-
16	U.S. ROUTE 6/NYS ROUTE 17M & CANNON HILL DRIVE[3]	**UNSIGNALIZED**											
		WB	LT	0.06	A	9.8	0.07	B	10.3	0.08	B	10.9	0.6
		NB	LR	0.80	F	115.2	1.21	F	270.1	1.83	F	[-]	SEE NOTE 3
17	HARTLEY ROAD & AMY'S/WAREHOUSE SITE ACCESS	**UNSIGNALIZED**											
		EB	LR	-	-	-	-	-	-	0.22	B	10.0	-
		NB	LT	-	-	-	-	-	-	0.13	A	7.8	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A

2) LACK OF SEPARATE LEFT TURN LANE ON NYS ROUTE 17M RESULTS IN OPERATIONAL DIFFICULTIES NOT REFLECTED IN THE LEVEL OF SERVICE INCLUDING ACCIDENT HISTORY WHICH INDICATES A HISTORY OF REAR END ACCIDENTS DUE TO A LACK OF LEFT TURN LANES.

3) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE NO. 5-NB

LEVEL OF SERVICE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
WEEKDAY PM PEAK HIGHWAY HOUR (4:30 PM - 5:30 PM)

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.01	A	9.2	0.01	A	9.5	-	-	-	-
	TRAINING CENTER LANE	NB	LR	0.09	E	37.0	0.11	E	48.6	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.08	C	32.4	-
			T	-	-	-	-	-	-	0.66	A	7.9	-
			R	-	-	-	-	-	-	0.00	A	2.8	
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.01	B	10.1	-
			T	-	-	-	-	-	-	0.98	C	29.0	-
			R	-	-	-	-	-	-	0.01	A	2.8	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.05	C	343.3	-
			R	-	-	-	-	-	-	0.03	C	27.3	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.16	C	34.5	-
			R	-	-	-	-	-	-	0.36	C	28.8	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**20.9**	-
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.6	A^2	5.9	0.65	A^2	6.9	0.76	A^2	8.9	2.0
	ROUTE 6/17M	WB	LTR	0.79	A^2	8.2	0.87	B^2	13.9	0.89	B^2	15.5	1.6
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.39	B	19.6	0.46	C	24.6	0.47	C	25.3	0.7
	HARTLEY ROAD	SB	LTR	0.10	B	18.5	0.12	C	22.8	0.29	C	24.6	1.8
		OVERALL		**-**	**A**	**8.4**	**-**	**B**	**12.1**	**-**	**B**	**14.1**	2.0
	WITH IMPROVEMENTS												-
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.35	C	29.5	-
			TR	-	-	-	-	-	-	0.66	A	6.6	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.05	B	11.0	-
			TR	-	-	-	-	-	-	0.91	B	18.2	-
	GATE SCHOOLHOUSE ROAD	NB	L	-	-	-	-	-	-	0.5	C	3.2	-
			TR	-	-	-	-	-	-	0.19	C	29.8	-
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.35	C	30.9	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**15.8**	-
17	U.S. ROUTE 6/NYS ROUTE 17M & CANNON HILL DRIVE[3]	**UNSIGNALIZED**											
		WB	LT	0.04	B	10.7	0.05	B	11.2	0.05	B	11.5	0.3
		NB	LR	0.99	F	165.7	1.52	F	391.8	1.74	F	499.4	SEE NOTE 3
16	HARTLEY ROAD & AMY'S/WAREHOUSE SITE ACCESS	**UNSIGNALIZED**											
		EB	LR	-	-	-	-	-	-	0.06	A	8.9	-
		NB	LT	-	-	-	-	-	-	0.05	A	7.5	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A

2) LACK OF SEPARATE LEFT TURN LANE ON NYS ROUTE 17M RESULTS IN OPERATIONAL DIFFICULTIES NOT REFLECTED IN THE LEVEL OF SERVICE INCLUDING ACCIDENT HISTORY WHICH INDICATES A HISTORY OF REAR END ACCIDENTS DUE TO A LACK OF LEFT TURN LANES.

3) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE NO. 6-NB

LEVEL OF SERVICE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
SATURDAY PEAK HOUR

				2015 EXISTING			2033 NO-BUILD			2033 BUILD			CHANGE IN DELAY NO-BUILD TO BUILD
				V/C	LOS	DELAY	V/C	LOS	DELAY	V/C	LOS	DELAY	
7	U.S. ROUTE 6/NYS ROUTE 17M & TRAINING CENTER LANE	**UNSIGNALIZED**											
	ROUTE 6/17M	WB	L	0.05	A	9.8	0.06	B	10.2	-	-	-	-
	TRAINING CENTER LANE	NB	LR	1.04	F	143.7	1.48	F	321.8	-	-	-	-
	WITH TURNING LANES AND SIGNALIZATION												
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.08	B	14.1	-
			T	-	-	-	-	-	-	0.88	C	23	-
			R	-	-	-	-	-	-	0.16	A	9.6	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.21	B	13.4	-
			T	-	-	-	-	-	-	0.92	C	27.4	-
			R	-	-	-	-	-	-	0.01	A	5.7	-
	TRAINING CENTER LANE	NB	LT	-	-	-	-	-	-	0.67	C	3.05	-
			R	-	-	-	-	-	-	0.44	C	28.3	-
	SITE ACCESS	SB	LT	-	-	-	-	-	-	0.16	C	30.8	-
			R	-	-	-	-	-	-	0.33	C	30.0	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**24.4**	-
8	U.S. ROUTE 6/NYS ROUTE 17M & GATE SCHOOLHOUSE ROAD/ HARTLEY ROAD	**SIGNALIZED**											
	ROUTE 6/17M	EB	LTR	0.61	A^2	6.3	0.66	A^2	6.5	0.69	A^2	6.7	0.2
	ROUTE 6/17M	WB	LTR	0.59	A^2	6.1	0.63	A^2	6.2	0.64	A^2	6.4	0.2
	GATE SCHOOLHOUSE ROAD	NB	LTR	0.26	B	12.7	0.3	B	14.3	0.31	B	14.9	0.6
	HARTLEY ROAD	SB	LTR	0.07	B	12.3	0.08	B	13.7	0.29	B	15.3	1.6
		OVERALL		**-**	**A**	**6.8**	**-**	**A**	**7.1**	**-**	**A**	**7.6**	0.5
	WITH IMPROVEMENTS												-
	ROUTE 6/17M	EB	L	-	-	-	-	-	-	0.11	A	7.7	-
			TR	-	-	-	-	-	-	0.84	B	11.6	-
	ROUTE 6/17M	WB	L	-	-	-	-	-	-	0.04	A	7.7	-
			TR	-	-	-	-	-	-	0.84	B	11.7	-
	GATE SCHOOLHOUSE ROAD	NB	L	-	-	-	-	-	-	0.29	B	19.7	-
			TR	-	-	-	-	-	-	0.13	C	20.4	-
	HARTLEY ROAD	SB	LTR	-	-	-	-	-	-	0.36	C	21.6	-
		OVERALL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**B**	**12.7**	-
16	U.S. ROUTE 6/NYS ROUTE 17M & CANNON HILL DRIVE[3]	**UNSIGNALIZED**											
		WB	LT	0.01	A	9.1	0.01	A	9.4	0.01	A	9.5	0.1
		NB	LR	0.05	C	23.7	0.06	D	28.7	0.07	D	30.9	SEE NOTE 3
17	HARTLEY ROAD & AMY'S/WAREHOUSE SITE ACCESS	**UNSIGNALIZED**											
		EB	LR	-	-	-	-	-	-	0.08	A	8.7	-
		NB	LT	-	-	-	-	-	-	0.02	A	7.3	-

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A

2) LACK OF SEPARATE LEFT TURN LANE ON NYS ROUTE 17M RESULTS IN OPERATIONAL DIFFICULTIES NOT REFLECTED IN THE LEVEL OF SERVICE INCLUDING ACCIDENT HISTORY WHICH INDICATES A HISTORY OF REAR END ACCIDENTS DUE TO A LACK OF LEFT TURN LANES.

3) THE PROPOSED TRAFFIC SIGNAL AT THE INTERSECTION OF NYS ROUTE 17M/TRAINING CENTER LANE WILL PROVIDE INCREASED GAPS IN THE TRAFFIC FLOW ALONG NYS ROUTE 17M IN THE VICINITY OF CANNON HILL DRIVE AND THEREFORE WOULD HELP THE OPERATION OF THIS INTERSECTION.

TABLE 8-NB

QUEUE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
WEEKDAY AM PEAK HIGHWAY HOUR (7:30 AM - 8:30 AM)

				STORAGE LENGTH (FT.)	2015 EXISTING AM		2033 NO-BUILD AM		2033 BUILD AM	
					50%	95%	50%	95%	50%	95%
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	3'	12'
			T	1500'+	-	-	-	-	307'	765'
			R	100'	-	-	-	-	1'	9'
		WB	L	200'	-	-	-	-	3'	26'
			T	1500'+	-	-	-	-	144'	314'
			R	135'	-	-	-	-	0'	1'
		NB	LT	250'	-	-	-	-	6'	22'
			R	150'	-	-	-	-	0'	19'
		SB	LT	600'+	-	-	-	-	3'	13'
			R	600'+	-	-	-	-	0'	0'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	334'	701'	537'	793'	684'	920'
	HARTLEY ROAD	WB	LTR	1500'+	128'	235'	152'	269'	184'	307'
		NB	LTR	300'+	56'	112'	62'	133'	67'	138'
		SB	LTR	300'+	10'	36'	11'	37'	20'	63'
	WITH PHASING AND	EB	L	150'	-	-	-	-	7'	19'
	TIMING IMPROVEMENTS		TR	1500'+	-	-	-	-	398'	822'
		WB	L	100'	-	-	-	-	1'	5'
			TR	1500'+	-	-	-	-	135'	216'
		NB	L	90'+	-	-	-	-	70'	168'
			TR	300'+	-	-	-	-	9'	33'
		SB	LTR	300'+	-	-	-	-	28'	98'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

TABLE 9-NB

QUEUE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
WEEKDAY PM PEAK HOUR OF AMY'S GENERATION (3:00 PM - 4:00 PM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					AM		AM		AM	
					50%	95%	50%	95%	50%	95%
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	1'	5'
			T	1500'+	-	-	-	-	158'	278'
			R	100'	-	-	-	-	0'	0'
		WB	L	200'	-	-	-	-	0'	2'
			T	1500'+	-	-	-	-	427'	871'
			R	135'	-	-	-	-	0'	0'
		NB	LT	250'	-	-	-	-	8'	26'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	4'	17'
			R	600'+	-	-	-	-	0'	33'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	171'	304'	213'	365'	538'	759'
	HARTLEY ROAD	WB	LTR	1500'+	300'	634'	399'	737'	592'	828'
		NB	LTR	300'+	60'	134'	69'	150'	82'	202'
		SB	LTR	300'+	7'	29'	8'	31'	52'	145'
	WITH PHASING AND	EB	L	150'	-	-	-	-	29'	95'
	TIMING IMPROVEMENTS		TR	1500'+	-	-	-	-	188'	293'
		WB	L	100'	-	-	-	-	2'	9'
			TR	1500'+	-	-	-	-	768'	1019'
		NB	L	90'+	-	-	-	-	138'	259'
			TR	300'+	-	-	-	-	16'	46'
		SB	LTR	300'+	-	-	-	-	102'	245'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

TABLE 10-NB

QUEUE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
WEEKDAY PM PEAK HIGHWAY HOUR (4:30 PM - 5:30 PM)

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					AM		AM		AM	
					50%	95%	50%	95%	50%	95%
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	1'	6'
			T	1500'+	-	-	-	-	132'	266'
			R	100'	-	-	-	-	0'	0'
		WB	L	200'	-	-	-	-	0'	3'
			T	1500'+	-	-	-	-	357'	825'
			R	135'	-	-	-	-	0'	0'
		NB	LT	250'	-	-	-	-	2'	11'
			R	150'	-	-	-	-	0'	0'
		SB	LT	600'+	-	-	-	-	7'	23'
			R	600'+	-	-	-	-	0'	31'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	166'	318'	204'	387'	290'	610'
	HARTLEY ROAD	WB	LTR	1500'+	293'	655'	387'	760'	562'	817'
		NB	LTR	300'+	53'	110'	60'	118'	64'	126'
		SB	LTR	300'+	8'	30'	9'	32'	16'	54'
	WITH PHASING AND	EB	L	150'	-	-	-	-	14'	90'
	TIMING IMPROVEMENTS		TR	1500'+	-	-	-	-	209'	375'
		WB	L	100'	-	-	-	-	3'	10'
			TR	1500'+	-	-	-	-	438'	855'
		NB	L	90'+	-	-	-	-	61'	117'
			TR	300'+	-	-	-	-	8'	33'
		SB	LTR	300'+	-	-	-	-	19'	61'

NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

TABLE 11-NB

QUEUE SUMMARY TABLE
2033 FULL BUILD CONDITIONS WITH NO WALLKILL RIVER BRIDGE
SATURDAY PEAK HOUR

				STORAGE LENGTH (FT.)	2015 EXISTING		2033 NO-BUILD		2033 BUILD	
					AM		AM		AM	
					50%	95%	50%	95%	50%	95%
7	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	TRAINING CENTER LANE/SITE ACCESS	EB	L	200'	-	-	-	-	1'	11'
			T	1500'+	-	-	-	-	242'	680'
			R	100'	-	-	-	-	0'	10'
		WB	L	200'	-	-	-	-	5'	25'
			T	1500'+	-	-	-	-	283'	759'
			R	135'	-	-	-	-	0'	0'
		NB	LT	250'	-	-	-	-	41'	100'
			R	150'	-	-	-	-	0'	9'
		SB	LT	600'+	-	-	-	-	3'	19'
			R	600'+	-	-	-	-	0'	0'
8	U.S. ROUTE 6/NYS ROUTE 17M &	**SIGNALIZED**								
	GATE SCHOOLHOUSE ROAD/	EB	LTR	1500'+	116'	279'	142'	317'	170'	376'
	HARTLEY ROAD	WB	LTR	1500'+	109'	253'	132'	285'	148'	309'
		NB	LTR	300'+	23'	82'	29'	97'	35'	105'
		SB	LTR	300'+	3'	25'	4'	28'	12'	59'
	WITH PHASING AND	EB	L	150'	-	-	-	-	4'	14'
	TIMING IMPROVEMENTS		TR	1500'+	-	-	-	-	174'	601'
		WB	L	100'	-	-	-	-	1'	7'
			TR	1500'+	-	-	-	-	273'	573'
		NB	L	90'+	-	-	-	-	43'	99'
			TR	300'+	-	-	-	-	4'	26'
		SB	LTR	300'+	-	-	-	-	18'	67'

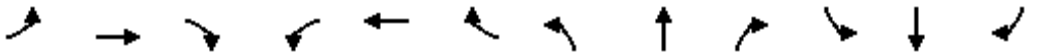
NOTES:

1) ALL QUEUE LENGTHS ARE EXPRESSED IN UNITS OF FEET AS PROVIDED IN THE SYNCHRO ANALYSIS REPORTS CONTAINED IN APPENDIX "D".

AMY'S KITCHEN & SCIENCE OF THE SOUL

CAPACITY ANALYSIS

AMY'S KITCHEN FULL BUILD OUT WITH NO WALLKILL RIVER BRIDGE

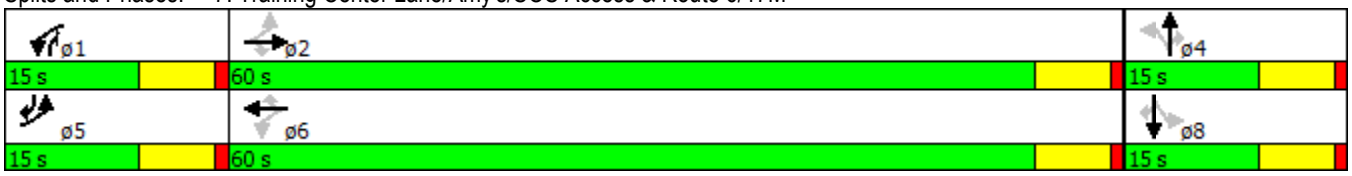


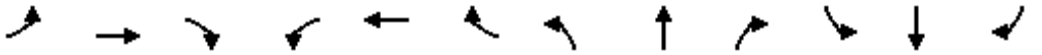
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1214	16	7	361	7	0	0	0	4	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850						0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1796	1837	1025	1077	1680	1512	0	1863	1188	0	1770	1583
Flt Permitted	0.520			0.062								
Satd. Flow (perm)	983	1837	1025	70	1680	1512	0	1863	1188	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109						36
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		484			1461			782			458	
Travel Time (s)		7.3			18.1			21.3			10.4	
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	60%	60%	8%	2%	60%	2%	60%	2%	2%	2%
Adj. Flow (vph)	14	1334	18	8	397	8	0	0	0	4	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	1334	18	8	397	8	0	0	0	0	4	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm			pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	60.0	60.0	15.0	60.0	60.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	66.7%	66.7%	16.7%	66.7%	66.7%	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	54.0	54.0	9.0	54.0	54.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.02	0.78	0.02	0.07	0.27	0.01					0.03	0.02
Control Delay	1.3	10.2	0.1	2.6	3.2	0.0					34.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					0.0	0.0
Total Delay	1.3	10.2	0.1	2.6	3.2	0.0					34.8	0.2
Queue Length 50th (ft)	1	0	0	0	0	0					2	0
Queue Length 95th (ft)	4	#1049	0	3	130	0					12	0
Internal Link Dist (ft)		404			1381			702			378	
Turn Bay Length (ft)	200		100	200		135						
Base Capacity (vph)	968	1709	961	181	1484	1348					221	263
Starvation Cap Reductn	0	0	0	0	0	0					0	0
Spillback Cap Reductn	0	0	0	0	0	0					0	0
Storage Cap Reductn	0	0	0	0	0	0					0	0
Reduced v/c Ratio	0.01	0.78	0.02	0.04	0.27	0.01					0.02	0.02

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 75.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



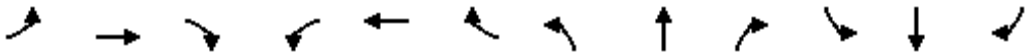


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1214	16	7	361	7	0	0	0	4	0	4
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1891	1837	1205	1134	1680	1779	1900	1863	1188	1900	1863	1863
Adj Flow Rate, veh/h	14	1334	18	8	397	8	0	0	0	4	0	4
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	60	60	8	2	2	2	60	2	2	2
Cap, veh/h	763	1357	757	116	1234	1111	0	19	21	112	0	26
Arrive On Green	0.01	0.74	0.74	0.01	0.73	0.73	0.00	0.00	0.00	0.01	0.00	0.01
Sat Flow, veh/h	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Grp Volume(v), veh/h	14	1334	18	8	397	8	0	0	0	4	0	4
Grp Sat Flow(s),veh/h/ln	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Q Serve(g_s), s	0.1	51.0	0.3	0.1	6.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
Cycle Q Clear(g_c), s	0.1	51.0	0.3	0.1	6.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	763	1357	757	116	1234	1111	0	19	21	112	0	26
V/C Ratio(X)	0.02	0.98	0.02	0.07	0.32	0.01	0.00	0.00	0.00	0.04	0.00	0.15
Avail Cap(c_a), veh/h	965	1357	757	241	1234	1111	0	228	134	271	0	204
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	2.7	9.2	2.6	20.5	3.4	2.6	0.0	0.0	0.0	36.1	0.0	35.6
Incr Delay (d2), s/veh	0.0	20.7	0.1	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	32.6	0.1	0.1	3.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
LnGrp Delay(d),s/veh	2.7	29.9	2.6	20.6	4.1	2.6	0.0	0.0	0.0	36.1	0.0	36.7
LnGrp LOS	A	C	A	C	A	A				D		D
Approach Vol, veh/h		1366			413			0			8	
Approach Delay, s/veh		29.3			4.4			0.0			36.4	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	60.3		6.8	6.7	60.0		6.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		9.0	9.0	54.0		9.0
Max Q Clear Time (g_c+I1), s	2.1	53.0		0.0	2.1	8.0		2.2
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	10.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1008	80	0	295	79	57	28	6	22	7	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.971			0.992			0.926	
Flt Protected		0.994						0.970			0.983	
Satd. Flow (prot)	0	1650	0	0	1651	0	0	1812	0	0	1078	0
Flt Permitted		0.897						0.767			0.887	
Satd. Flow (perm)	0	1489	0	0	1651	0	0	1433	0	0	972	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			37			4			39	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	151	1084	86	0	317	85	61	30	6	24	8	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1321	0	0	402	0	0	97	0	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

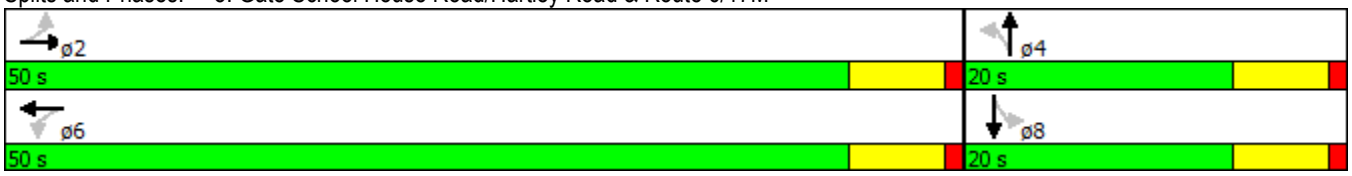
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.19			0.33			0.51			0.44	
Control Delay		113.9			5.0			34.6			23.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		113.9			5.0			34.6			23.0	
Queue Length 50th (ft)		~691			48			35			12	
Queue Length 95th (ft)		#1014			108			76			46	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1106			1234			302			233	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.19			0.33			0.32			0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 67.2	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	1008	80	0	295	79	57	28	6	22	7	36
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1686	1881	1948	1711	1948	1919	1883	1919	1872	1184	1872
Adj Flow Rate, veh/h	151	1084	59	0	317	85	61	30	6	24	8	39
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	171	940	50	0	927	249	187	53	10	104	17	53
Arrive On Green	0.75	0.71	0.71	0.00	0.71	0.71	0.13	0.09	0.09	0.13	0.09	0.09
Sat Flow, veh/h	149	1319	70	0	1301	349	992	571	103	277	187	566
Grp Volume(v), veh/h	1294	0	0	0	0	402	97	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	1539	0	0	0	0	1650	1667	0	0	1030	0	0
Q Serve(g_s), s	38.8	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	0.0	0.0	0.0	5.7	3.0	0.0	0.0	3.8	0.0	0.0
Prop In Lane	0.12		0.05	0.00		0.21	0.63		0.06	0.34		0.55
Lane Grp Cap(c), veh/h	1211	0	0	0	0	1176	304	0	0	207	0	0
V/C Ratio(X)	1.07	0.00	0.00	0.00	0.00	0.34	0.32	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	1211	0	0	0	0	1176	506	0	0	337	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	0.0	0.0	0.0	0.0	3.4	26.2	0.0	0.0	26.8	0.0	0.0
Incr Delay (d2), s/veh	46.1	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	35.1	0.0	0.0	0.0	0.0	2.6	1.5	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	56.1	0.0	0.0	0.0	0.0	3.4	26.4	0.0	0.0	27.1	0.0	0.0
LnGrp LOS	F					A	C			C		
Approach Vol, veh/h		1294			402			97			71	
Approach Delay, s/veh		56.1			3.4			26.4			27.1	
Approach LOS		E			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		11.7		50.0		11.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		48.0		5.0		7.7		5.8
Green Ext Time (p_c), s		0.0		0.3		9.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	42.1
HCM 2010 LOS	D

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1151	66	35	342	27	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.906	
Flt Protected				0.995	0.985	
Satd. Flow (prot)	1852	0	0	1778	1136	0
Flt Permitted				0.995	0.985	
Satd. Flow (perm)	1852	0	0	1778	1136	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1461			1007	772	
Travel Time (s)	18.1			12.5	17.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	7%	72%	63%
Adj. Flow (vph)	1279	73	39	380	30	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1352	0	0	419	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1151	66	35	342	27	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	7	72	63
Mvmt Flow	1279	73	39	380	30	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1352	0	1774	1316
Stage 1	-	-	-	-	1316	-
Stage 2	-	-	-	-	458	-
Critical Hdwy	-	-	4.1	-	6.72	6.63
Critical Hdwy Stg 1	-	-	-	-	5.72	-
Critical Hdwy Stg 2	-	-	-	-	5.72	-
Follow-up Hdwy	-	-	2.2	-	4.148	3.867
Pot Cap-1 Maneuver	-	-	516	-	74	154
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	539	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	516	-	67	154
Mov Cap-2 Maneuver	-	-	-	-	67	-
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	487	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	129.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	110	-	-	516	-
HCM Lane V/C Ratio	0.889	-	-	0.075	-
HCM Control Delay (s)	129.8	-	-	12.5	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	5.3	-	-	0.2	-

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	4	50	216	4	24	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874				0.941	
Flt Protected	0.997			0.953		
Satd. Flow (prot)	1623	0	0	1775	1727	0
Flt Permitted	0.997			0.953		
Satd. Flow (perm)	1623	0	0	1775	1727	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	377			616	832	
Travel Time (s)	8.6			12.0	16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	54	235	4	26	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	0	239	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

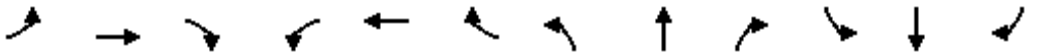
Intersection	
Int Delay, s/veh	6.8

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	4	50	216	4	24	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	54	235	4	26	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	510	36	46	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	523	1037	1562	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	444	1037	1562	-	-	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9.1	7.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1562	-	944	-	-
HCM Lane V/C Ratio	0.15	-	0.062	-	-
HCM Control Delay (s)	7.7	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	0.2	-	-



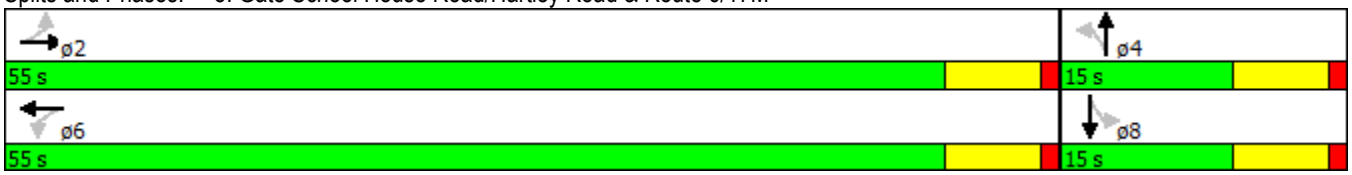
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1008	80	0	295	79	57	28	6	22	7	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	86			86			86			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.968			0.975			0.926	
Flt Protected	0.950						0.950				0.983	
Satd. Flow (prot)	1070	1699	0	1708	1593	0	1652	1746	0	0	1078	0
Flt Permitted	0.526						0.711				0.873	
Satd. Flow (perm)	592	1699	0	1708	1593	0	1236	1746	0	0	957	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			46			6			39	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	151	1084	86	0	317	85	61	30	6	24	8	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	1170	0	0	402	0	61	36	0	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		1	2		2	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		50	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		0	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		0	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		50	40		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43			43		43	43			43	
Detector 2 Size(ft)	40	40			40		40	40			40	
Detector 2 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

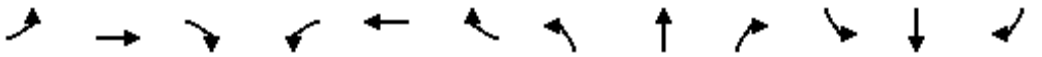
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	55.0	55.0		55.0	55.0		15.0	15.0		15.0	15.0	
Total Split (%)	78.6%	78.6%		78.6%	78.6%		21.4%	21.4%		21.4%	21.4%	
Maximum Green (s)	49.0	49.0		49.0	49.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	0.0		-2.0	0.0		-2.0	0.0			0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
v/c Ratio	0.32	0.89			0.33		0.37	0.19			0.52	
Control Delay	5.4	20.9			4.0		33.2	26.5			30.0	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay	5.4	20.9			4.0		33.2	26.5			30.0	
Queue Length 50th (ft)	17	354			44		24	12			13	
Queue Length 95th (ft)	44	#757			83		57	36			50	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150						90					
Base Capacity (vph)	468	1308			1234		196	232			158	
Starvation Cap Reductn	0	0			0		0	0			0	
Spillback Cap Reductn	0	0			0		0	0			0	
Storage Cap Reductn	0	0			0		0	0			0	
Reduced v/c Ratio	0.32	0.89			0.33		0.31	0.16			0.45	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 69.2
Natural Cycle: 70
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M

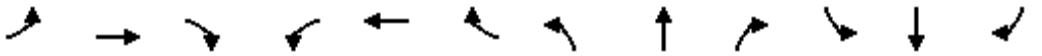




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	1008	80	0	295	79	57	28	6	22	7	36
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1126	1718	1881	1708	1646	1948	1863	1919	1919	1872	1184	1872
Adj Flow Rate, veh/h	151	1084	59	0	317	85	61	30	6	24	8	39
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	67	10	10	14	12	12	3	0	0	10	10	10
Cap, veh/h	501	1175	64	107	911	244	288	146	29	96	18	51
Arrive On Green	0.76	0.73	0.73	0.00	0.73	0.73	0.12	0.09	0.09	0.12	0.09	0.09
Sat Flow, veh/h	592	1615	88	449	1251	335	1353	1553	311	259	189	546
Grp Volume(v), veh/h	151	0	1143	0	0	402	61	0	36	71	0	0
Grp Sat Flow(s),veh/h/ln	592	0	1703	449	0	1586	1353	0	1864	994	0	0
Q Serve(g_s), s	7.7	0.0	37.4	0.0	0.0	6.2	0.0	0.0	1.2	2.7	0.0	0.0
Cycle Q Clear(g_c), s	13.9	0.0	37.4	0.0	0.0	6.2	2.4	0.0	1.2	4.5	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.21	1.00		0.17	0.34		0.55
Lane Grp Cap(c), veh/h	501	0	1239	107	0	1155	288	0	175	194	0	0
V/C Ratio(X)	0.30	0.00	0.92	0.00	0.00	0.35	0.21	0.00	0.21	0.37	0.00	0.00
Avail Cap(c_a), veh/h	501	0	1239	107	0	1155	342	0	249	233	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.1	0.0	7.6	0.0	0.0	3.3	26.9	0.0	28.2	29.3	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	12.7	0.0	0.0	0.8	0.1	0.0	0.2	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	21.2	0.0	0.0	2.9	1.0	0.0	0.6	1.2	0.0	0.0
LnGrp Delay(d),s/veh	6.6	0.0	20.2	0.0	0.0	4.2	27.0	0.0	28.4	29.7	0.0	0.0
LnGrp LOS	A		C			A	C		C	C		
Approach Vol, veh/h		1294			402			97			71	
Approach Delay, s/veh		18.6			4.2			27.5			29.7	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		12.3		55.0		12.3
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		49.0		9.0		49.0		9.0
Max Q Clear Time (g_c+I1), s		39.4		4.4		8.2		6.5
Green Ext Time (p_c), s		5.1		0.2		9.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

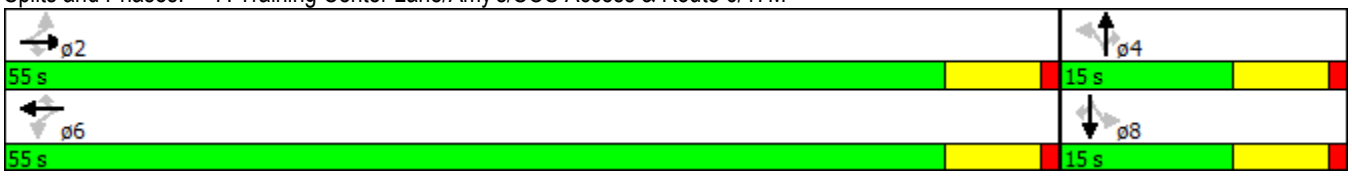


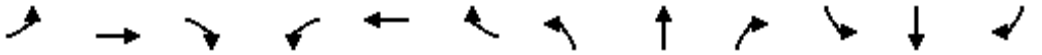
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1127	49	26	787	15	14	0	32	6	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.286			0.110				0.952			0.952	
Satd. Flow (perm)	546	1837	1025	125	1680	1512	0	1130	1009	0	1601	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			47			47			47
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1424			760			456	
Travel Time (s)		7.9			17.7			20.7			10.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	35	1238	54	29	865	16	15	0	35	7	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	1238	54	29	865	16	0	15	35	0	7	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	78.6%	78.6%	78.6%	78.6%	78.6%	78.6%	21.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Maximum Green (s)	49.0	49.0	49.0	49.0	49.0	49.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Max	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.08	0.81	0.06	0.28	0.62	0.01		0.15	0.26		0.05	0.05
Control Delay	3.3	13.3	1.4	12.3	6.9	0.2		31.2	12.5		28.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	3.3	13.3	1.4	12.3	6.9	0.2		31.2	12.5		28.2	0.6
Queue Length 50th (ft)	3	307	1	3	144	0		6	0		3	0
Queue Length 95th (ft)	12	#765	9	26	314	1		22	19		13	0
Internal Link Dist (ft)		441			1344			680			376	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	454	1530	861	104	1399	1267		148	172		209	222
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.08	0.81	0.06	0.28	0.62	0.01		0.10	0.20		0.03	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 68.8	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



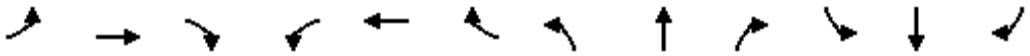


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	1127	49	26	787	15	14	0	32	6	0	7
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1909	1837	1205	1134	1680	1779	1900	1188	1188	1900	1681	1638
Adj Flow Rate, veh/h	35	1238	54	29	865	16	15	0	35	7	0	8
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	5	60	60	8	2	2	2	60	2	2	16
Cap, veh/h	418	1373	766	168	1256	1130	110	0	70	110	0	97
Arrive On Green	0.75	0.75	0.75	0.75	0.75	0.75	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	643	1837	1025	259	1680	1512	1	0	1009	2	0	1392
Grp Volume(v), veh/h	35	1238	54	29	865	16	15	0	35	7	0	8
Grp Sat Flow(s),veh/h/ln	643	1837	1025	259	1680	1512	1	0	1009	2	0	1392
Q Serve(g_s), s	2.0	34.3	0.9	6.4	17.6	0.2	0.0	0.0	2.2	0.0	0.0	0.4
Cycle Q Clear(g_c), s	19.5	34.3	0.9	40.6	17.6	0.2	4.6	0.0	2.2	4.6	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	1373	766	168	1256	1130	110	0	70	110	0	97
V/C Ratio(X)	0.08	0.90	0.07	0.17	0.69	0.01	0.14	0.00	0.50	0.06	0.00	0.08
Avail Cap(c_a), veh/h	418	1373	766	168	1256	1130	170	0	139	193	0	191
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.4	6.4	2.2	22.2	4.3	2.1	32.8	0.0	29.4	32.8	0.0	28.5
Incr Delay (d2), s/veh	0.4	9.9	0.2	2.2	3.1	0.0	0.2	0.0	2.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	20.3	0.3	0.6	9.0	0.1	0.3	0.0	0.7	0.1	0.0	0.1
LnGrp Delay(d),s/veh	9.8	16.3	2.4	24.4	7.4	2.1	33.0	0.0	31.4	32.9	0.0	28.7
LnGrp LOS	A	B	A	C	A	A	C		C	C		C
Approach Vol, veh/h		1327			910			50			15	
Approach Delay, s/veh		15.5			7.9			31.9			30.6	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		10.6		55.0		10.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		49.0		9.0		49.0		9.0
Max Q Clear Time (g_c+I1), s		36.3		6.6		42.6		6.6
Green Ext Time (p_c), s		8.1		0.0		4.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.



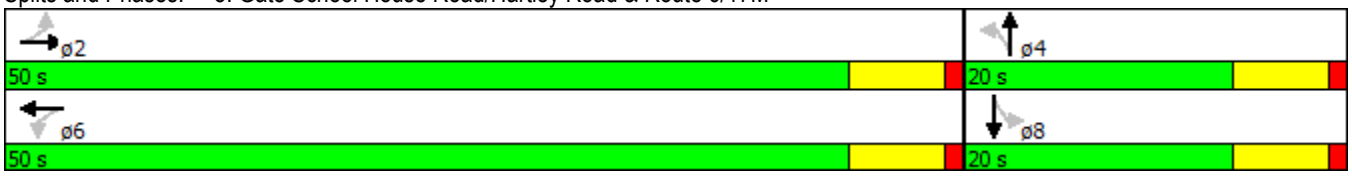
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	962	137	10	653	41	133	18	11	35	16	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.992			0.991			0.939	
Flt Protected		0.997			0.999			0.961			0.982	
Satd. Flow (prot)	0	1727	0	0	1766	0	0	1784	0	0	1236	0
Flt Permitted		0.925			0.979			0.766			0.849	
Satd. Flow (perm)	0	1602	0	0	1731	0	0	1422	0	0	1069	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			9			5			46	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	68	1034	147	11	702	44	143	19	12	38	17	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1249	0	0	757	0	0	174	0	0	101	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.19			0.67			0.68			0.44	
Control Delay		110.8			11.6			40.1			21.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		110.8			11.6			40.1			21.6	
Queue Length 50th (ft)		~684			184			67			20	
Queue Length 95th (ft)		#920			307			#138			63	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1054			1135			283			246	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.19			0.67			0.61			0.41	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 71.6
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	962	137	10	653	41	133	18	11	35	16	43
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1772	1881	1948	1794	1948	1919	1873	1919	1872	1341	1872
Adj Flow Rate, veh/h	68	1034	120	11	702	44	143	19	12	38	17	46
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	99	960	109	62	1108	69	273	23	15	125	45	79
Arrive On Green	0.70	0.67	0.67	0.70	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	61	1425	162	9	1646	102	1211	161	102	345	317	553
Grp Volume(v), veh/h	1222	0	0	757	0	0	174	0	0	101	0	0
Grp Sat Flow(s),veh/h/ln	1647	0	0	1756	0	0	1474	0	0	1215	0	0
Q Serve(g_s), s	30.7	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	0.0	15.3	0.0	0.0	7.0	0.0	0.0	4.7	0.0	0.0
Prop In Lane	0.06		0.10	0.01		0.06	0.82		0.07	0.38		0.46
Lane Grp Cap(c), veh/h	1218	0	0	1293	0	0	356	0	0	286	0	0
V/C Ratio(X)	1.00	0.00	0.00	0.59	0.00	0.00	0.49	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	1218	0	0	1293	0	0	456	0	0	365	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	0.0	6.0	0.0	0.0	26.1	0.0	0.0	25.7	0.0	0.0
Incr Delay (d2), s/veh	26.5	0.0	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.0	0.0	0.0	6.8	0.0	0.0	2.9	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	38.1	0.0	0.0	6.4	0.0	0.0	26.5	0.0	0.0	26.0	0.0	0.0
LnGrp LOS	F			A			C			C		
Approach Vol, veh/h		1222			757			174			101	
Approach Delay, s/veh		38.1			6.4			26.5			26.0	
Approach LOS		D			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		15.3		50.0		15.3
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		48.0		9.0		17.3		6.7
Green Ext Time (p_c), s		0.0		0.4		10.1		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1134	27	7	801	15	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.922	
Flt Protected					0.979	
Satd. Flow (prot)	1785	0	0	1857	1383	0
Flt Permitted					0.979	
Satd. Flow (perm)	1785	0	0	1857	1383	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1424			1007	821	
Travel Time (s)	17.7			12.5	18.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	12%	38%	2%	36%	39%
Adj. Flow (vph)	1303	31	8	921	17	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1334	0	0	929	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1134	27	7	801	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	12	38	2	36	39
Mvmt Flow	1303	31	8	921	17	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1334	0	2256	1319
Stage 1	-	-	-	-	1319	-
Stage 2	-	-	-	-	937	-
Critical Hdwy	-	-	4.48	-	6.36	6.39
Critical Hdwy Stg 1	-	-	-	-	5.36	-
Critical Hdwy Stg 2	-	-	-	-	5.36	-
Follow-up Hdwy	-	-	2.542	-	3.824	3.651
Pot Cap-1 Maneuver	-	-	416	-	46	172
Stage 1	-	-	-	-	246	-
Stage 2	-	-	-	-	368	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	416	-	44	172
Mov Cap-2 Maneuver	-	-	-	-	44	-
Stage 1	-	-	-	-	246	-
Stage 2	-	-	-	-	354	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	94.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	77	-	-	416	-
HCM Lane V/C Ratio	0.522	-	-	0.019	-
HCM Control Delay (s)	94.4	-	-	13.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	2.2	-	-	0.1	-

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	4	54	89	12	31	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874				0.974	
Flt Protected	0.997			0.958		
Satd. Flow (prot)	1415	0	0	1521	1787	0
Flt Permitted	0.997			0.958		
Satd. Flow (perm)	1415	0	0	1521	1787	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	550			616	832	
Travel Time (s)	12.5			12.0	16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	18%	22%	2%	2%	2%
Adj. Flow (vph)	4	59	97	13	34	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	0	110	42	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

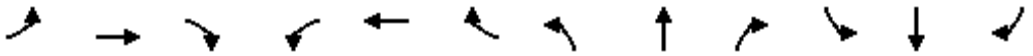
Intersection	
Int Delay, s/veh	6.1

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	4	54	89	12	31	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	18	22	2	2	2
Mvmt Flow	4	59	97	13	34	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	245	38	41	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.42	6.38	4.32	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.462	2.398	-	-	-
Pot Cap-1 Maneuver	743	990	1449	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	693	990	1449	-	-	-
Mov Cap-2 Maneuver	693	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	773	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9	6.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1449	-	962	-	-
HCM Lane V/C Ratio	0.067	-	0.066	-	-
HCM Control Delay (s)	7.7	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-



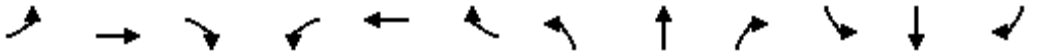
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	962	137	10	653	41	133	18	11	35	16	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	86			86			86			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.991			0.942			0.939	
Flt Protected	0.950			0.950			0.950				0.982	
Satd. Flow (prot)	1344	1691	0	1623	1710	0	1652	1687	0	0	1236	0
Flt Permitted	0.327			0.113			0.745				0.863	
Satd. Flow (perm)	462	1691	0	193	1710	0	1295	1687	0	0	1086	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			11			12			42	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	68	1034	147	11	702	44	143	19	12	38	17	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1181	0	11	746	0	143	31	0	0	101	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		83	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43		43	43			43	
Detector 2 Size(ft)	40	40		40	40		40	40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	65.0	65.0		65.0	65.0		15.0	15.0		15.0	15.0	
Total Split (%)	81.3%	81.3%		81.3%	81.3%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	59.0	59.0		59.0	59.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	0.0		-2.0	0.0		-2.0	0.0			0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
v/c Ratio	0.19	0.94		0.07	0.59		0.81	0.16			0.64	
Control Delay	4.1	25.8		3.7	7.1		67.8	25.2			41.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	4.1	25.8		3.7	7.1		67.8	25.2			41.5	
Queue Length 50th (ft)	7	398		1	135		70	9			28	
Queue Length 95th (ft)	19	#822		5	216		#168	33			#98	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	352	1254		147	1265		178	200			159	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.19	0.94		0.07	0.59		0.80	0.15			0.64	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 79.9
Natural Cycle: 80
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

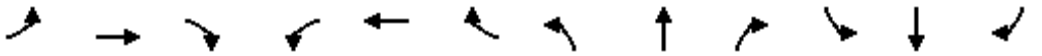
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	962	137	10	653	41	133	18	11	35	16	43
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1414	1724	1881	1708	1725	1948	1863	1919	1919	1872	1341	1872
Adj Flow Rate, veh/h	68	1034	120	11	702	44	143	19	12	38	17	46
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	33	10	10	14	12	12	3	0	0	10	10	10
Cap, veh/h	392	1118	130	179	1185	74	262	124	78	99	32	58
Arrive On Green	0.76	0.74	0.74	0.76	0.74	0.74	0.14	0.11	0.11	0.14	0.11	0.11
Sat Flow, veh/h	541	1517	176	445	1607	101	1334	1101	695	334	282	515
Grp Volume(v), veh/h	68	0	1154	11	0	746	143	0	31	101	0	0
Grp Sat Flow(s),veh/h/ln	541	0	1693	445	0	1707	1334	0	1796	1131	0	0
Q Serve(g_s), s	5.1	0.0	45.0	1.6	0.0	16.3	2.3	0.0	1.2	4.6	0.0	0.0
Cycle Q Clear(g_c), s	21.4	0.0	45.0	46.6	0.0	16.3	9.0	0.0	1.2	6.7	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	1.00		0.39	0.38		0.46
Lane Grp Cap(c), veh/h	392	0	1248	179	0	1259	262	0	202	217	0	0
V/C Ratio(X)	0.17	0.00	0.92	0.06	0.00	0.59	0.55	0.00	0.15	0.46	0.00	0.00
Avail Cap(c_a), veh/h	392	0	1248	179	0	1259	262	0	202	217	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	8.7	26.2	0.0	4.9	33.8	0.0	32.1	34.0	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	12.8	0.7	0.0	2.1	1.3	0.0	0.1	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	24.6	0.2	0.0	8.2	3.2	0.0	0.6	2.1	0.0	0.0
LnGrp Delay(d),s/veh	9.9	0.0	21.5	26.9	0.0	6.9	35.1	0.0	32.2	34.6	0.0	0.0
LnGrp LOS	A		C	C		A	D		C	C		
Approach Vol, veh/h		1222			757			174			101	
Approach Delay, s/veh		20.8			7.2			34.6			34.6	
Approach LOS		C			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		65.0		15.0		65.0		15.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		59.0		9.0		59.0		9.0
Max Q Clear Time (g_c+I1), s		47.0		11.0		48.6		8.7
Green Ext Time (p_c), s		6.6		0.0		6.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B



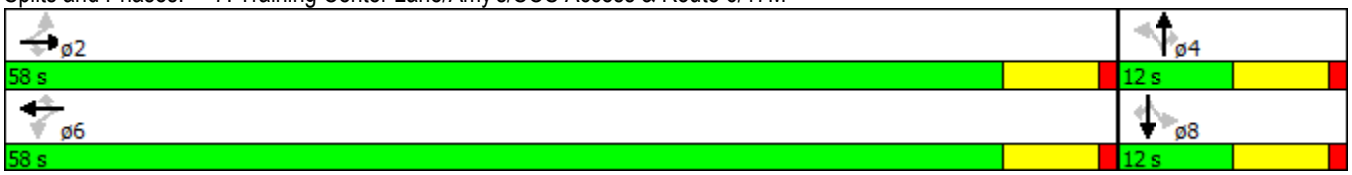
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	894	7	2	1310	9	18	0	9	9	0	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.070			0.253								
Satd. Flow (perm)	129	1837	1623	476	1888	1538	0	1881	1599	0	1727	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			47			47			64
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		507			1438			741			445	
Travel Time (s)		7.7			17.8			20.2			10.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	10	951	7	2	1394	10	19	0	10	10	0	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	951	7	2	1394	10	0	19	10	0	10	64
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm

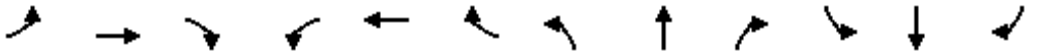
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	58.0	58.0	58.0	58.0	58.0	58.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (%)	82.9%	82.9%	82.9%	82.9%	82.9%	82.9%	17.1%	17.1%	17.1%	17.1%	17.1%	17.1%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	52.0	6.0	6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Max	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.09	0.61	0.01	0.00	0.87	0.01		0.13	0.06		0.08	0.37
Control Delay	4.7	5.8	0.0	2.5	16.2	0.0		31.9	0.7		30.9	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	4.7	5.8	0.0	2.5	16.2	0.0		31.9	0.7		30.9	15.7
Queue Length 50th (ft)	1	158	0	0	427	0		8	0		4	0
Queue Length 95th (ft)	5	278	0	2	#871	0		26	0		17	33
Internal Link Dist (ft)		427			1358			661			365	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	109	1555	1381	403	1598	1309		159	178		146	185
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.09	0.61	0.01	0.00	0.87	0.01		0.12	0.06		0.07	0.35

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70.7
Natural Cycle: 75
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	894	7	2	1310	9	18	0	9	9	0	60
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	10	951	7	2	1394	10	19	0	10	10	0	64
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	116	1364	1206	378	1411	1143	103	0	137	103	0	128
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	377	1837	1623	589	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	10	951	7	2	1394	10	19	0	10	10	0	64
Grp Sat Flow(s),veh/h/ln	377	1837	1623	589	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	1.8	19.3	0.1	0.1	49.6	0.1	0.0	0.0	0.4	0.0	0.0	2.9
Cycle Q Clear(g_c), s	51.4	19.3	0.1	19.5	49.6	0.1	6.0	0.0	0.4	6.0	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	1364	1206	378	1411	1143	103	0	137	103	0	128
V/C Ratio(X)	0.09	0.70	0.01	0.01	0.99	0.01	0.18	0.00	0.07	0.10	0.00	0.50
Avail Cap(c_a), veh/h	116	1364	1206	378	1411	1143	103	0	137	103	0	128
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	4.8	2.3	10.0	8.7	2.3	35.0	0.0	29.4	35.0	0.0	30.6
Incr Delay (d2), s/veh	1.5	3.0	0.0	0.0	21.2	0.0	0.3	0.0	0.1	0.2	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	10.6	0.0	0.0	33.1	0.1	0.4	0.0	0.2	0.2	0.0	1.2
LnGrp Delay(d),s/veh	35.0	7.8	2.3	10.0	29.9	2.3	35.3	0.0	29.5	35.2	0.0	31.7
LnGrp LOS	C	A	A	B	C	A	D		C	D		C
Approach Vol, veh/h		968			1406			29			74	
Approach Delay, s/veh		8.0			29.7			33.3			32.2	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		58.0		12.0		58.0		12.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		52.0		6.0		52.0		6.0
Max Q Clear Time (g_c+I1), s		53.4		8.0		51.6		8.0
Green Ext Time (p_c), s		0.0		0.0		0.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.3
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

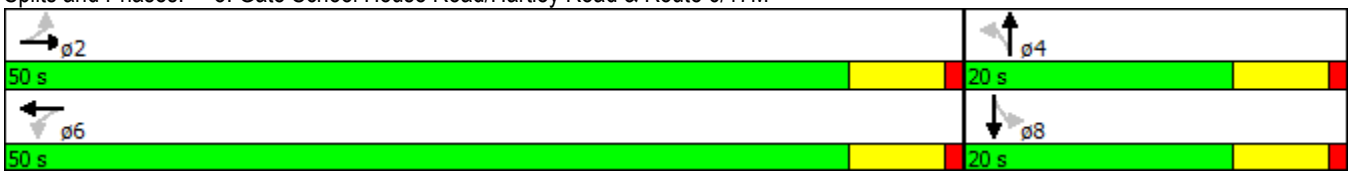
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	683	108	11	1064	67	146	28	10	61	27	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.992			0.992			0.923	
Flt Protected		0.993						0.962			0.985	
Satd. Flow (prot)	0	1784	0	0	1868	0	0	1765	0	0	1471	0
Flt Permitted		0.696			0.989			0.586			0.866	
Satd. Flow (perm)	0	1250	0	0	1848	0	0	1075	0	0	1293	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			9			4			85	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	131	734	116	12	1144	72	157	30	11	66	29	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	981	0	0	1228	0	0	198	0	0	220	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.23			1.05			0.93			0.68	
Control Delay		134.0			56.9			75.6			28.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		134.0			56.9			75.6			28.4	
Queue Length 50th (ft)		~538			~592			82			52	
Queue Length 95th (ft)		#759			#828			#202			#145	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		795			1169			219			327	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.23			1.05			0.90			0.67	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 69.7
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	122	683	108	11	1064	67	146	28	10	61	27	116
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1838	1881	1948	1895	1948	1919	1850	1919	1872	1618	1872
Adj Flow Rate, veh/h	131	734	89	12	1144	72	157	30	11	66	29	125
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	119	502	58	56	1106	69	267	42	13	136	54	162
Arrive On Green	0.66	0.63	0.63	0.66	0.63	0.63	0.22	0.20	0.20	0.22	0.20	0.20
Sat Flow, veh/h	95	794	91	7	1750	109	890	216	65	353	277	829
Grp Volume(v), veh/h	954	0	0	1228	0	0	198	0	0	220	0	0
Grp Sat Flow(s),veh/h/ln	981	0	0	1866	0	0	1172	0	0	1458	0	0
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	0.0	45.5	0.0	0.0	11.6	0.0	0.0	9.4	0.0	0.0
Prop In Lane	0.14		0.09	0.01		0.06	0.79		0.06	0.30		0.57
Lane Grp Cap(c), veh/h	707	0	0	1285	0	0	356	0	0	395	0	0
V/C Ratio(X)	1.35	0.00	0.00	0.96	0.00	0.00	0.56	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	707	0	0	1285	0	0	363	0	0	402	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.2	0.0	0.0	13.0	0.0	0.0	26.5	0.0	0.0	26.0	0.0	0.0
Incr Delay (d2), s/veh	166.8	0.0	0.0	15.6	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	45.7	0.0	0.0	26.5	0.0	0.0	3.6	0.0	0.0	3.9	0.0	0.0
LnGrp Delay(d),s/veh	179.0	0.0	0.0	28.6	0.0	0.0	27.5	0.0	0.0	27.0	0.0	0.0
LnGrp LOS	F			C			C			C		
Approach Vol, veh/h		954			1228			198			220	
Approach Delay, s/veh		179.0			28.6			27.5			27.0	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		19.6		50.0		19.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		48.0		13.6		47.5		11.4
Green Ext Time (p_c), s		0.0		0.1		0.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	83.6
HCM 2010 LOS	F

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	877	28	48	1255	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.961	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1798	0	0	1831	1960	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1798	0	0	1831	1960	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1438			1007	791	
Travel Time (s)	17.8			12.5	18.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	46%	18%	3%	0%	0%
Adj. Flow (vph)	923	29	51	1321	63	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	952	0	0	1372	89	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	21.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	877	28	48	1255	60	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	46	18	3	0	0
Mvmt Flow	923	29	51	1321	63	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	953	0	2360	938
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	1422	-
Critical Hdwy	-	-	4.28	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.362	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	660	-	~ 51	341
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	263	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	660	-	~ 36	341
Mov Cap-2 Maneuver	-	-	-	-	~ 36	-
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	187	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	$ 572.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	49	-	-	660	-
HCM Lane V/C Ratio	1.826	-	-	0.077	-
HCM Control Delay (s)	$ 572.4	-	-	10.9	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	8.8	-	-	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	14	170	180	30	22	15
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Grade (%)	0%			0%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875				0.946	
Flt Protected	0.996			0.959		
Satd. Flow (prot)	1458	0	0	1670	1827	0
Flt Permitted	0.996			0.959		
Satd. Flow (perm)	1458	0	0	1670	1827	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	411			616	832	
Travel Time (s)	9.3			12.0	16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	17%	2%	2%	2%
Adj. Flow (vph)	15	185	196	33	24	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	200	0	0	229	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.94	0.94	0.94	0.94	0.95	0.95
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

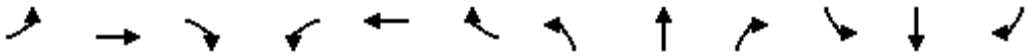
Intersection	
Int Delay, s/veh	7.5

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	14	170	180	30	22	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	21	17	2	2	2
Mvmt Flow	15	185	196	33	24	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	456	32	40	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Critical Hdwy	6.42	6.41	4.27	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.489	2.353	-	-	-
Pot Cap-1 Maneuver	562	990	1478	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	486	990	1478	-	-	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	571	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	10	6.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1478	-	918	-	-
HCM Lane V/C Ratio	0.132	-	0.218	-	-
HCM Control Delay (s)	7.8	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.8	-	-



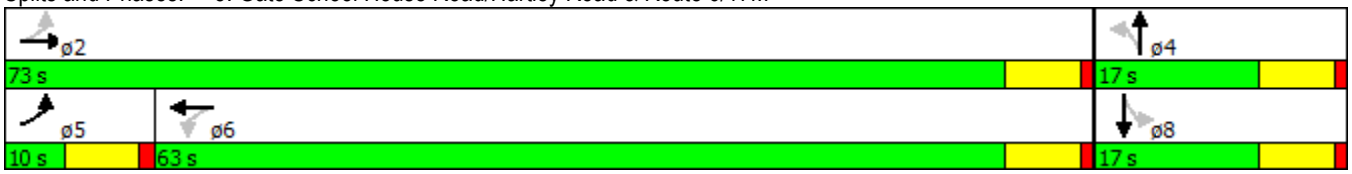
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	683	108	11	1064	67	146	28	10	61	27	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	86			86			86			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.991			0.960			0.923	
Flt Protected	0.950			0.950			0.950				0.985	
Satd. Flow (prot)	1581	1748	0	1682	1807	0	1652	1613	0	0	1471	0
Flt Permitted	0.063			0.319			0.392				0.884	
Satd. Flow (perm)	105	1748	0	565	1807	0	682	1613	0	0	1320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			7			11			60	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	131	734	116	12	1144	72	157	30	11	66	29	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	850	0	12	1216	0	157	41	0	0	220	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		83	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43		43	43			43	
Detector 2 Size(ft)	40	40		40	40		40	40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	

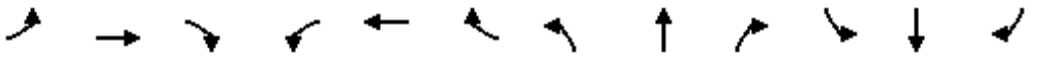
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	10.0	73.0		63.0	63.0		17.0	17.0		17.0	17.0	
Total Split (%)	11.1%	81.1%		70.0%	70.0%		18.9%	18.9%		18.9%	18.9%	
Maximum Green (s)	4.0	67.0		57.0	57.0		11.0	11.0		11.0	11.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
v/c Ratio	0.92	0.65		0.03	1.06		1.89	0.20			1.03	
Control Delay	74.3	8.4		6.5	62.9		469.2	30.8			100.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	74.3	8.4		6.5	62.9		469.2	30.8			100.1	
Queue Length 50th (ft)	29	188		2	~768		~138	16			~102	
Queue Length 95th (ft)	#95	293		9	#1019		#259	46			#245	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	143	1307		357	1147		83	206			214	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.92	0.65		0.03	1.06		1.89	0.20			1.03	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 140
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M

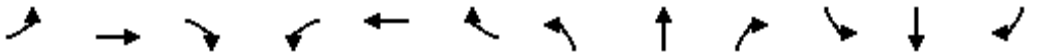




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	122	683	108	11	1064	67	146	28	10	61	27	116
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1665	1784	1881	1770	1823	1948	1863	1800	1919	1872	1618	1872
Adj Flow Rate, veh/h	131	734	89	12	1144	24	157	30	11	66	29	125
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	13	6	6	10	7	7	3	9	9	20	20	20
Cap, veh/h	150	1162	141	406	1127	24	183	154	56	94	27	90
Arrive On Green	0.04	0.74	0.74	0.63	0.63	0.63	0.12	0.12	0.12	0.14	0.12	0.12
Sat Flow, veh/h	1585	1561	189	630	1779	37	1228	1258	461	341	218	735
Grp Volume(v), veh/h	131	0	823	12	0	1168	157	0	41	220	0	0
Grp Sat Flow(s),veh/h/ln	1585	0	1750	630	0	1817	1228	0	1719	1294	0	0
Q Serve(g_s), s	2.8	0.0	20.4	0.8	0.0	57.0	0.0	0.0	1.9	11.1	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	20.4	11.3	0.0	57.0	11.0	0.0	1.9	13.0	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.02	1.00		0.27	0.30		0.57
Lane Grp Cap(c), veh/h	150	0	1303	406	0	1150	183	0	210	239	0	0
V/C Ratio(X)	0.87	0.00	0.63	0.03	0.00	1.02	0.86	0.00	0.20	0.92	0.00	0.00
Avail Cap(c_a), veh/h	150	0	1303	406	0	1150	183	0	210	239	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.1	0.0	5.5	10.7	0.0	16.5	41.4	0.0	35.5	41.2	0.0	0.0
Incr Delay (d2), s/veh	38.6	0.0	0.8	0.0	0.0	30.4	30.0	0.0	0.2	36.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	9.9	0.1	0.0	37.8	5.4	0.0	0.9	7.8	0.0	0.0
LnGrp Delay(d),s/veh	63.7	0.0	6.3	10.7	0.0	46.9	71.4	0.0	35.7	78.0	0.0	0.0
LnGrp LOS	E		A	B		F	E		D	E		
Approach Vol, veh/h		954			1180			198			220	
Approach Delay, s/veh		14.2			46.5			64.0			78.0	
Approach LOS		B			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		73.0		17.0	10.0	63.0		17.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		67.0		11.0	4.0	57.0		11.0
Max Q Clear Time (g_c+I1), s		22.4		13.0	4.8	59.0		15.0
Green Ext Time (p_c), s		10.1		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.5
HCM 2010 LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	819	5	5	1249	7	5	0	5	16	0	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	86			86			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.073			0.285								
Satd. Flow (perm)	134	1837	1623	536	1888	1538	0	1881	1599	0	1727	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			47			47			59
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		507			1428			741			445	
Travel Time (s)		7.7			17.7			20.2			10.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	10	871	5	5	1329	7	5	0	5	17	0	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	871	5	5	1329	7	0	5	5	0	17	59
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	78.6%	78.6%	78.6%	78.6%	78.6%	78.6%	21.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Maximum Green (s)	49.0	49.0	49.0	49.0	49.0	49.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Max	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.09	0.57	0.00	0.01	0.84	0.01		0.03	0.03		0.12	0.33
Control Delay	5.1	5.6	0.0	2.8	14.8	0.0		28.0	0.2		29.8	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	5.1	5.6	0.0	2.8	14.8	0.0		28.0	0.2		29.8	14.2
Queue Length 50th (ft)	1	132	0	0	357	0		2	0		7	0
Queue Length 95th (ft)	6	266	0	3	#825	0		11	0		23	31
Internal Link Dist (ft)		427			1348			661			365	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	112	1535	1364	448	1577	1293		246	250		227	247
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.09	0.57	0.00	0.01	0.84	0.01		0.02	0.02		0.07	0.24

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 68.5
Natural Cycle: 65
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

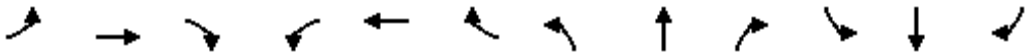
Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	819	5	5	1249	7	5	0	5	16	0	55
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	10	871	5	5	1329	7	5	0	5	17	0	59
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	128	1313	1161	398	1359	1100	107	0	176	107	0	164
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.72	0.11	0.00	0.11	0.11	0.00	0.11
Sat Flow, veh/h	402	1837	1623	637	1900	1538	16	0	1599	15	0	1495
Grp Volume(v), veh/h	10	871	5	5	1329	7	5	0	5	17	0	59
Grp Sat Flow(s),veh/h/ln	402	1837	1623	637	1900	1538	16	0	1599	15	0	1495
Q Serve(g_s), s	1.6	17.6	0.1	0.3	45.4	0.1	0.1	0.0	0.2	0.1	0.0	2.5
Cycle Q Clear(g_c), s	46.7	17.6	0.1	17.7	45.4	0.1	7.5	0.0	0.2	7.5	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	1313	1161	398	1359	1100	107	0	176	107	0	164
V/C Ratio(X)	0.08	0.66	0.00	0.01	0.98	0.01	0.05	0.00	0.03	0.16	0.00	0.36
Avail Cap(c_a), veh/h	128	1313	1161	398	1359	1100	136	0	210	135	0	196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	5.3	2.8	10.1	9.3	2.8	34.2	0.0	27.2	34.3	0.0	28.3
Incr Delay (d2), s/veh	1.2	2.7	0.0	0.1	19.7	0.0	0.1	0.0	0.0	0.3	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	9.7	0.0	0.1	30.3	0.0	0.1	0.0	0.1	0.3	0.0	1.1
LnGrp Delay(d),s/veh	32.4	7.9	2.8	10.1	29.0	2.8	34.3	0.0	27.3	34.5	0.0	28.8
LnGrp LOS	C	A	A	B	C	A	C		C	C		C
Approach Vol, veh/h		886			1341			10			76	
Approach Delay, s/veh		8.2			28.8			30.8			30.0	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		13.6		55.0		13.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		49.0		9.0		49.0		9.0
Max Q Clear Time (g_c+I1), s		48.7		9.5		47.4		9.5
Green Ext Time (p_c), s		0.3		0.0		1.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	697	108	18	1069	41	124	18	17	27	15	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.995			0.986			0.931	
Flt Protected		0.997			0.999			0.962			0.984	
Satd. Flow (prot)	0	1798	0	0	1871	0	0	1761	0	0	1478	0
Flt Permitted		0.861			0.981			0.773			0.872	
Satd. Flow (perm)	0	1553	0	0	1837	0	0	1415	0	0	1310	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			5			8			47	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	60	749	116	19	1149	44	133	19	18	29	16	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	925	0	0	1212	0	0	170	0	0	92	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

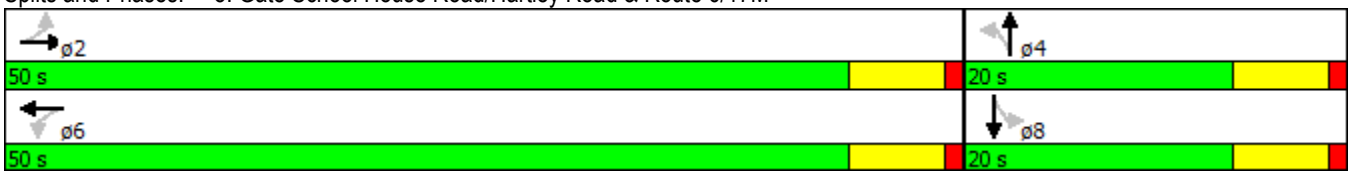
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.89			0.99			0.71			0.36	
Control Delay		24.6			39.7			41.9			17.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		24.6			39.7			41.9			17.9	
Queue Length 50th (ft)		290			~562			64			16	
Queue Length 95th (ft)		#610			#817			#126			54	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1037			1220			288			298	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.89			0.99			0.59			0.31	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	56	697	108	18	1069	41	124	18	17	27	15	44
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1846	1881	1948	1894	1948	1919	1857	1919	1872	1614	1872
Adj Flow Rate, veh/h	60	749	89	19	1149	44	133	19	18	29	16	47
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	104	917	106	67	1195	45	265	23	22	121	51	101
Arrive On Green	0.70	0.67	0.67	0.70	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	64	1366	157	12	1780	68	1194	171	162	332	380	744
Grp Volume(v), veh/h	898	0	0	1212	0	0	170	0	0	92	0	0
Grp Sat Flow(s),veh/h/ln	1587	0	0	1860	0	0	1526	0	0	1456	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.6	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.5	0.0	0.0	34.8	0.0	0.0	6.1	0.0	0.0	3.4	0.0	0.0
Prop In Lane	0.07		0.10	0.02		0.04	0.78		0.11	0.32		0.51
Lane Grp Cap(c), veh/h	1178	0	0	1367	0	0	359	0	0	320	0	0
V/C Ratio(X)	0.76	0.00	0.00	0.89	0.00	0.00	0.47	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	1232	0	0	1433	0	0	484	0	0	440	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	9.0	0.0	0.0	25.0	0.0	0.0	24.5	0.0	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	6.5	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	0.0	0.0	18.2	0.0	0.0	2.6	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	8.9	0.0	0.0	15.5	0.0	0.0	25.3	0.0	0.0	24.6	0.0	0.0
LnGrp LOS	A			B			C			C		
Approach Vol, veh/h		898			1212			170			92	
Approach Delay, s/veh		8.9			15.5			25.3			24.6	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		47.8		14.4		47.8		14.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		23.5		8.1		36.8		5.4
Green Ext Time (p_c), s		10.0		0.4		5.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	817	11	27	1191	67	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.958	
Flt Protected				0.999	0.967	
Satd. Flow (prot)	1837	0	0	1860	1956	0
Flt Permitted				0.999	0.967	
Satd. Flow (perm)	1837	0	0	1860	1956	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1428			1016	815	
Travel Time (s)	17.7			12.6	18.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	20%	48%	1%	0%	0%
Adj. Flow (vph)	908	12	30	1323	74	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	920	0	0	1353	107	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	22.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	817	11	27	1191	67	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	20	48	1	0	0
Mvmt Flow	908	12	30	1323	74	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	920	0	2297	914
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	1383	-
Critical Hdwy	-	-	4.58	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.632	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	583	-	~ 56	351
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	274	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	583	-	~ 45	351
Mov Cap-2 Maneuver	-	-	-	-	~ 45	-
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	221	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 499.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	62	-	-	583	-
HCM Lane V/C Ratio	1.738	-	-	0.051	-
HCM Control Delay (s)	$ 499.4	-	-	11.5	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	9.8	-	-	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	3	50	66	33	12	5
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Grade (%)	0%			0%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.872				0.962	
Flt Protected	0.997			0.968		
Satd. Flow (prot)	1449	0	0	1729	1858	0
Flt Permitted	0.997			0.968		
Satd. Flow (perm)	1449	0	0	1729	1858	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	411			616	832	
Travel Time (s)	9.3			12.0	16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	21%	17%	2%	2%	2%
Adj. Flow (vph)	3	54	72	36	13	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	0	108	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.94	0.94	0.94	0.94	0.95	0.95
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

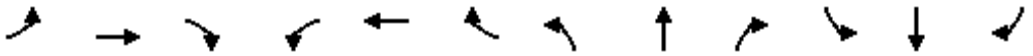
Intersection	
Int Delay, s/veh	5.7

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	3	50	66	33	12	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	21	17	2	2	2
Mvmt Flow	3	54	72	36	13	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	195	16	18	0	-	0
Stage 1	16	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.41	4.27	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.489	2.353	-	-	-
Pot Cap-1 Maneuver	794	1011	1506	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	755	1011	1506	-	-	-
Mov Cap-2 Maneuver	755	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.9	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1506	-	992	-	-
HCM Lane V/C Ratio	0.048	-	0.058	-	-
HCM Control Delay (s)	7.5	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-



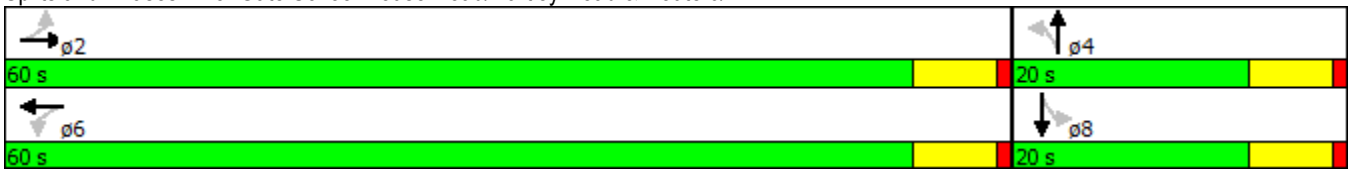
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	697	108	18	1069	41	124	18	17	27	15	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	86			86			86			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.994			0.927			0.931	
Flt Protected	0.950			0.950			0.950				0.984	
Satd. Flow (prot)	1581	1748	0	1682	1811	0	1652	1587	0	0	1478	0
Flt Permitted	0.082			0.254			0.820				0.880	
Satd. Flow (perm)	136	1748	0	450	1811	0	1426	1587	0	0	1322	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			5			18			47	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	60	749	116	19	1149	44	133	19	18	29	16	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	865	0	19	1193	0	133	37	0	0	92	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		83	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		40	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	43	43		43	43		43	43			43	
Detector 2 Size(ft)	40	40		40	40		40	40			40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Total Split (%)	75.0%	75.0%		75.0%	75.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	54.0	54.0		54.0	54.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio	0.59	0.66		0.06	0.88		0.62	0.15			0.39	
Control Delay	38.5	10.0		4.8	20.7		43.9	19.7			22.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	38.5	10.0		4.8	20.7		43.9	19.7			22.2	
Queue Length 50th (ft)	14	209		3	438		61	8			19	
Queue Length 95th (ft)	#90	375		10	#855		117	33			61	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	102	1318		338	1361		282	328			299	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.59	0.66		0.06	0.88		0.47	0.11			0.31	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 72.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	56	697	108	18	1069	41	124	18	17	27	15	44
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1665	1784	1881	1770	1822	1948	1863	1834	1919	1872	1614	1872
Adj Flow Rate, veh/h	60	749	89	19	1149	44	133	19	18	29	16	47
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	13	6	6	10	7	7	3	9	9	20	20	20
Cap, veh/h	173	1128	134	385	1257	48	268	102	97	101	42	83
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.72	0.12	0.12	0.12	0.14	0.12	0.12
Sat Flow, veh/h	418	1565	186	621	1743	67	1334	867	822	316	356	702
Grp Volume(v), veh/h	60	0	838	19	0	1193	133	0	37	92	0	0
Grp Sat Flow(s),veh/h/ln	418	0	1751	621	0	1810	1334	0	1689	1374	0	0
Q Serve(g_s), s	10.2	0.0	19.1	1.3	0.0	40.1	1.9	0.0	1.5	1.8	0.0	0.0
Cycle Q Clear(g_c), s	50.3	0.0	19.1	20.3	0.0	40.1	6.4	0.0	1.5	4.5	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.04	1.00		0.49	0.32		0.51
Lane Grp Cap(c), veh/h	173	0	1262	385	0	1305	268	0	199	262	0	0
V/C Ratio(X)	0.35	0.00	0.66	0.05	0.00	0.91	0.50	0.00	0.19	0.35	0.00	0.00
Avail Cap(c_a), veh/h	175	0	1270	388	0	1313	362	0	318	357	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.1	0.0	5.6	11.0	0.0	8.5	31.7	0.0	29.6	30.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.0	0.0	0.0	9.7	0.5	0.0	0.2	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	9.2	0.2	0.0	23.1	2.7	0.0	0.7	1.7	0.0	0.0
LnGrp Delay(d),s/veh	29.5	0.0	6.6	11.0	0.0	18.2	32.2	0.0	29.8	30.9	0.0	0.0
LnGrp LOS	C		A	B		B	C		C	C		
Approach Vol, veh/h		898			1212			170			92	
Approach Delay, s/veh		8.1			18.1			31.7			30.9	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		59.7		14.8		59.7		14.8
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		54.0		14.0		54.0		14.0
Max Q Clear Time (g_c+I1), s		52.3		8.4		42.1		6.5
Green Ext Time (p_c), s		1.3		0.4		7.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

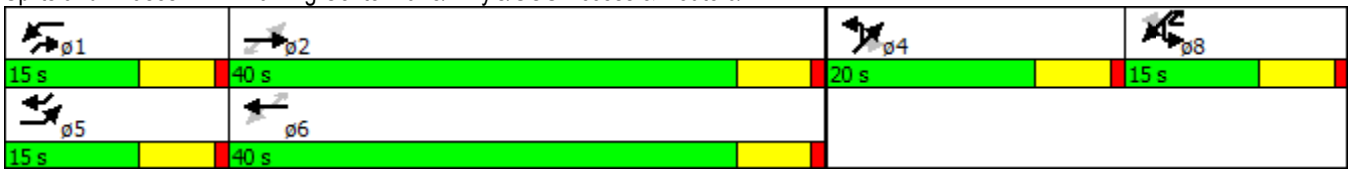
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	12	743	113	42	825	10	101	0	63	8	0	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.110			0.144				0.950			0.950	
Satd. Flow (perm)	193	1891	1591	253	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182			109			109			109
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		545			1400			738			450	
Travel Time (s)		8.3			17.4			20.1			10.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	13	790	120	45	878	11	107	0	67	9	0	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	790	120	45	878	11	0	107	67	0	9	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	40	40	40		40	40	40	40	40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	5	2		1	6	8	4	4	1	8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	1	6	8	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	11.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	40.0	40.0	15.0	40.0	15.0	20.0	20.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	44.4%	44.4%	16.7%	44.4%	16.7%	22.2%	22.2%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	34.0	34.0	9.0	34.0	9.0	14.0	14.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None	None	None
v/c Ratio	0.06	0.73	0.12	0.16	0.74	0.01		0.49	0.16		0.08	0.10
Control Delay	8.3	24.2	1.0	8.5	23.3	0.0		38.4	2.0		36.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	8.3	24.2	1.0	8.5	23.3	0.0		38.4	2.0		36.6	0.8
Queue Length 50th (ft)	1	242	0	5	283	0		41	0		3	0
Queue Length 95th (ft)	11	#680	10	25	#759	0		100	9		19	0
Internal Link Dist (ft)		465			1320			658			370	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	319	1086	991	355	1184	1060		359	495		196	343
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.04	0.73	0.12	0.13	0.74	0.01		0.30	0.14		0.05	0.08

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 70
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

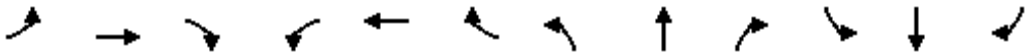


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	12	743	113	42	825	10	101	0	63	8	0	26
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	13	790	120	45	878	11	107	0	67	9	0	28
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	170	903	760	213	956	874	159	0	152	56	0	85
Arrive On Green	0.01	0.48	0.48	0.03	0.49	0.49	0.09	0.00	0.09	0.04	0.00	0.04
Sat Flow, veh/h	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	13	790	120	45	878	11	107	0	67	9	0	28
Grp Sat Flow(s),veh/h/ln	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	0.3	24.4	2.8	0.9	27.3	0.2	3.8	0.0	2.7	0.4	0.0	1.3
Cycle Q Clear(g_c), s	0.3	24.4	2.8	0.9	27.3	0.2	3.8	0.0	2.7	0.4	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	903	760	213	956	874	159	0	152	56	0	85
V/C Ratio(X)	0.08	0.88	0.16	0.21	0.92	0.01	0.67	0.00	0.44	0.16	0.00	0.33
Avail Cap(c_a), veh/h	385	988	831	401	1012	917	378	0	339	207	0	221
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	15.3	9.6	13.2	15.3	5.7	28.7	0.0	27.6	30.3	0.0	29.2
Incr Delay (d2), s/veh	0.1	7.8	0.0	0.2	12.1	0.0	1.8	0.0	0.8	0.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	14.5	1.2	0.4	17.6	0.1	1.9	0.0	1.2	0.2	0.0	0.5
LnGrp Delay(d),s/veh	14.1	23.0	9.6	13.4	27.4	5.7	30.5	0.0	28.3	30.8	0.0	30.0
LnGrp LOS	B	C	A	B	C	A	C		C	C		C
Approach Vol, veh/h		923			934			174			37	
Approach Delay, s/veh		21.2			26.4			29.6			30.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	37.1		11.9	6.6	38.1		8.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	34.0		14.0	9.0	34.0		9.0
Max Q Clear Time (g_c+I1), s	2.9	26.4		5.8	2.3	29.3		3.3
Green Ext Time (p_c), s	0.0	4.0		0.3	0.0	2.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Two Way Analysis cannot be performed on Signalized Intersection.

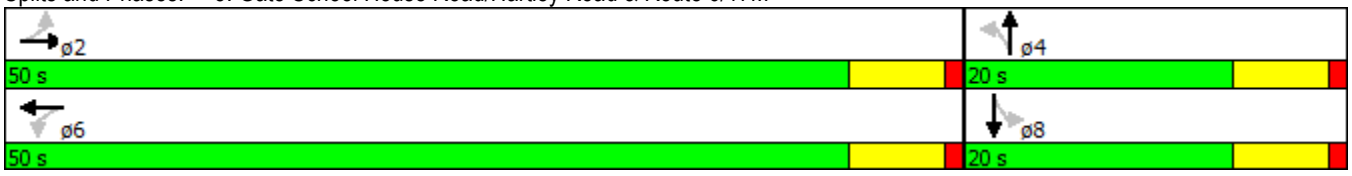


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	665	100	12	724	21	106	10	15	33	13	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.996			0.985			0.929	
Flt Protected		0.998			0.999			0.961			0.983	
Satd. Flow (prot)	0	1845	0	0	1930	0	0	1802	0	0	1334	0
Flt Permitted		0.949			0.984			0.699			0.869	
Satd. Flow (perm)	0	1755	0	0	1901	0	0	1311	0	0	1179	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			4			8			54	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	36	707	106	13	770	22	113	11	16	35	14	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	849	0	0	805	0	0	140	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.72			0.63			0.56			0.39	
Control Delay		12.7			10.3			30.5			17.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.7			10.3			30.5			17.4	
Queue Length 50th (ft)		170			148			35			12	
Queue Length 95th (ft)		376			309			105			59	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1479			1599			399			391	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.57			0.50			0.35			0.26	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 50.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	665	100	12	724	21	106	10	15	33	13	51
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1893	1881	1948	1952	1948	1919	1904	1919	1872	1461	1872
Adj Flow Rate, veh/h	36	707	79	13	770	22	113	11	16	35	14	54
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	122	879	96	104	1032	29	332	15	22	175	30	84
Arrive On Green	0.61	0.56	0.56	0.61	0.56	0.56	0.18	0.13	0.13	0.18	0.13	0.13
Sat Flow, veh/h	39	1584	173	11	1859	53	1268	123	180	369	240	671
Grp Volume(v), veh/h	822	0	0	805	0	0	140	0	0	103	0	0
Grp Sat Flow(s),veh/h/ln	1795	0	0	1923	0	0	1571	0	0	1280	0	0
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.5	0.0	0.0	11.1	0.0	0.0	2.6	0.0	0.0	2.5	0.0	0.0
Prop In Lane	0.04		0.10	0.02		0.03	0.81		0.11	0.34		0.52
Lane Grp Cap(c), veh/h	1192	0	0	1268	0	0	454	0	0	357	0	0
V/C Ratio(X)	0.69	0.00	0.00	0.64	0.00	0.00	0.31	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	2261	0	0	2434	0	0	804	0	0	656	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	0.0	0.0	6.2	0.0	0.0	14.7	0.0	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.0	5.0	0.0	0.0	1.2	0.0	0.0	0.9	0.0	0.0
LnGrp Delay(d),s/veh	6.7	0.0	0.0	6.4	0.0	0.0	14.9	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		822			805			140			103	
Approach Delay, s/veh		6.7			6.4			14.9			15.3	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.8		10.7		26.8		10.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		14.5		4.6		13.1		4.5
Green Ext Time (p_c), s		6.4		0.5		6.4		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	801	11	5	863	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Grade (%)	0%			0%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.959	
Flt Protected					0.966	
Satd. Flow (prot)	1859	0	0	1881	1956	0
Flt Permitted					0.966	
Satd. Flow (perm)	1859	0	0	1881	1956	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1400			1007	810	
Travel Time (s)	17.4			12.5	18.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	826	11	5	890	7	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	837	0	0	895	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	15	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	0.87	0.99
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	801	11	5	863	7	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-2	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	826	11	5	890	7	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	837	0	1731	831
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	900	-
Critical Hdwy	-	-	4.1	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	806	-	119	390
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	442	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	806	-	118	390
Mov Cap-2 Maneuver	-	-	-	-	118	-
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	437	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	30.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	149	-	-	806	-
HCM Lane V/C Ratio	0.069	-	-	0.006	-
HCM Control Delay (s)	30.9	-	-	9.5	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	5	68	36	16	12	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874				0.982	
Flt Protected	0.997			0.966		
Satd. Flow (prot)	1623	0	0	1799	1802	0
Flt Permitted	0.997			0.966		
Satd. Flow (perm)	1623	0	0	1799	1802	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	396			616	832	
Travel Time (s)	9.0			12.0	16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	74	39	17	13	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	0	56	15	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

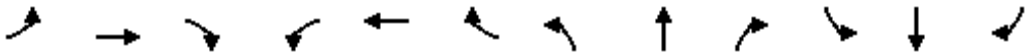
Intersection	
Int Delay, s/veh	6.5

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	5	68	36	16	12	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	74	39	17	13	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	110	14	15	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	887	1066	1603	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	865	1066	1603	-	-	-
Mov Cap-2 Maneuver	865	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.7	5.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1603	-	1049	-	-
HCM Lane V/C Ratio	0.024	-	0.076	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-



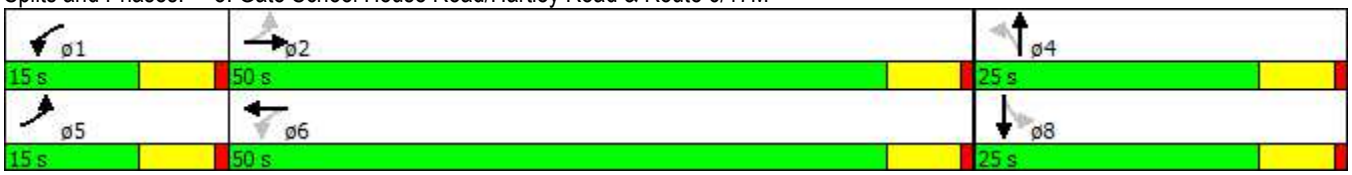
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	665	100	12	724	21	106	10	15	33	13	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.996			0.911			0.929	
Flt Protected	0.950			0.950			0.950				0.983	
Satd. Flow (prot)	1527	1794	0	1850	1868	0	1685	1632	0	0	1334	0
Flt Permitted	0.200			0.229			0.784				0.876	
Satd. Flow (perm)	322	1794	0	446	1868	0	1390	1632	0	0	1189	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			2			16			54	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	36	707	106	13	770	22	113	11	16	35	14	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	813	0	13	792	0	113	27	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

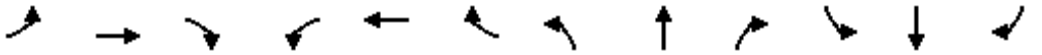
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	50.0		15.0	50.0		25.0	25.0		25.0	25.0	
Total Split (%)	16.7%	55.6%		16.7%	55.6%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	9.0	44.0		9.0	44.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	0.0		-2.0	0.0		-2.0	0.0			0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.09	0.66		0.03	0.68		0.39	0.09			0.41	
Control Delay	4.6	13.7		4.2	17.7		30.6	18.6			21.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	4.6	13.7		4.2	17.7		30.6	18.6			21.4	
Queue Length 50th (ft)	4	174		1	273		43	4			18	
Queue Length 95th (ft)	14	#601		7	#573		99	26			67	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	466	1380		590	1365		521	563			438	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.08	0.59		0.02	0.58		0.22	0.05			0.24	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 63.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	665	100	12	724	21	106	10	15	33	13	51
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1608	1831	1881	1948	1876	1948	1900	1919	1919	1872	1461	1872
Adj Flow Rate, veh/h	36	707	79	13	770	22	113	11	16	35	14	54
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	17	3	3	0	3	3	1	0	0	0	0	0
Cap, veh/h	342	843	94	364	921	26	387	86	125	133	31	78
Arrive On Green	0.06	0.52	0.52	0.05	0.51	0.51	0.16	0.12	0.12	0.16	0.12	0.12
Sat Flow, veh/h	1531	1618	181	1855	1815	52	1354	708	1030	331	254	645
Grp Volume(v), veh/h	36	0	786	13	0	792	113	0	27	103	0	0
Grp Sat Flow(s),veh/h/ln	1531	0	1799	1855	0	1866	1354	0	1737	1230	0	0
Q Serve(g_s), s	0.5	0.0	19.2	0.1	0.0	18.8	0.0	0.0	0.7	2.4	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	19.2	0.1	0.0	18.8	3.0	0.0	0.7	3.9	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.03	1.00		0.59	0.34		0.52
Lane Grp Cap(c), veh/h	342	0	937	364	0	947	387	0	210	290	0	0
V/C Ratio(X)	0.11	0.00	0.84	0.04	0.00	0.84	0.29	0.00	0.13	0.36	0.00	0.00
Avail Cap(c_a), veh/h	573	0	1531	669	0	1589	721	0	639	587	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.7	0.0	10.5	7.7	0.0	10.9	19.5	0.0	20.3	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.0	0.0	0.8	0.2	0.0	0.1	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	9.7	0.1	0.0	9.7	1.5	0.0	0.4	1.3	0.0	0.0
LnGrp Delay(d),s/veh	7.7	0.0	11.6	7.7	0.0	11.7	19.7	0.0	20.4	21.6	0.0	0.0
LnGrp LOS	A		B	A		B	B		C	C		
Approach Vol, veh/h		822			805			140			103	
Approach Delay, s/veh		11.4			11.6			19.8			21.6	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	32.9		12.3	7.2	32.2		12.3
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	44.0		19.0	9.0	44.0		19.0
Max Q Clear Time (g_c+I1), s	2.1	21.2		5.0	2.5	20.8		5.9
Green Ext Time (p_c), s	0.0	5.4		0.5	0.0	5.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Noise Analysis Results

Site	Location	Time	Noise Analysis Results																				
			Existing Noise		NB Noise Levels				Build Noise Levels (Phase 1)					Build Noise Levels (Phase 2)					Build Noise Levels (SOS)					
			Measured Leq	TNM	TNM	Traffic Increas	Leq	Change	TNM	Traffic Increas	Loading & HVAC	Total	Change	TNM	Traffic Increas	Loading & HVAC	Total	Change	TNM	Traffic Increas	Loading & HVAC	Parking Lot	Total	Change
1	Mid-Hudson Forensic Psychiatric Center	6-7 AM	50.8	40.9	41.3	30.7	50.8	0.0	42.2	36.3	43.4	51.7	0.9	43.9	40.9	43.4	51.9	1.1						
		4:30-5:30 PM	44.8	40.1	40.5	29.9	44.9	0.1																
		SMD	50.3	39.5	39.9	29.3	50.3	0.0											45.5	44.2	43.4	41.1	52.3	2.0
2	Musket Ct. and Route 17M	6-7 AM	75.9	73.3	73.6	61.8	76.1	0.2	74.1	66.4	43.1	76.4	0.5	74.1	66.4	43.1	76.4	0.5						
		4:30-5:30 PM	73.9	71.4	71.8	61.2	74.1	0.2																
		SMD	74.2	71.0	71.3	59.5	74.4	0.1											73.0	68.7	43.1	32.4	75.3	1.1
3	C.R. 50 between Route 17M and Echo Lake Road	6-7 AM	71.6	68.2	68.9	60.6	71.9	0.3	68.9	60.6	34.7	71.9	0.3	68.9	60.6	34.7	71.9	0.3						
		4:30-5:30 PM	69.2	68.0	68.5	58.9	69.6	0.4																
		SMD	68.5	67.7	68.4	60.1	69.1	0.6											68.4	60.1	34.7	32.7	69.1	0.6
4	Echo Lake Rd between McVeigh Road and Wallkill River	6-7 AM	64.1	58.5	58.7	45.2	64.2	0.1	59.2	50.9	37.1	64.3	0.2	59.0	49.4	37.1	64.3	0.2						
		4:30-5:30 PM	66.4	65.4	65.6	52.1	66.6	0.2																
		SMD	60.3	59.7	60.0	48.2	60.5	0.3											60.3	51.4	37.1	37.8	60.8	0.6
5	Cheechunk Road between Hartley Road and Owens Road	6-7 AM	65.8	62.5	62.7	49.2	65.9	0.1	62.7	49.2	42.8	65.9	0.1	62.8	51.0	42.8	66.0	0.2						
		4:30-5:30 PM	65.9	63.0	63.3	51.5	66.1	0.2																
		SMD	63.7	61.1	61.4	49.6	63.8	0.2											63.6	60.0	42.8	33.6	65.3	1.6
6	Hartley Road/Heritage Trail	6-7 AM	60.4	59.3	59.4	43.0	60.5	0.1	59.6	47.8	45.8	60.8	0.4	59.7	49.1	45.8	60.9	0.5						
		4:30-5:30 PM	58.4	61.4	61.5	45.1	58.6	0.2																
		SMD	47.7	49.6	49.9	38.1	48.2	0.5											55.2	53.8	45.8	33.0	55.3	7.6
7	112 Hartley Road	6-7 AM	52.5	47.5	47.7	34.2	52.6	0.1	49.9	46.2	47.7	54.4	1.9	50.3	47.1	47.7	54.6	2.1						
		4:30-5:30 PM	54.2	51.7	52.0	40.2	54.4	0.2																
		SMD	52.7	49.2	49.5	37.7	52.8	0.1											55.8	54.7	47.7	33.0	57.4	4.7
8	Heritage Trail near Echo Lake Road	6-7 AM	59.9	56.2	57.1	49.8	60.3	0.4	57.4	51.2	43.3	60.5	0.6	57.5	51.6	43.3	60.6	0.7						
		4:30-5:30 PM	59.0	59.7	59.8	43.4	59.1	0.1																
		SMD	56.7	57.9	58.1	44.6	56.9	0.3											58.3	47.7	43.3	38.1	57.4	0.7
A	Adjoining property line to loading dock	6-7 AM		39.8					57.0	56.9	66.1	66.6		57.0	56.9	66.1	66.6							
		SDM		38.7															42.9	40.8	66.1	37.4	66.2	

Noise Monitoring Results

Amy's Kitchen
40525-2002A3
6/6/2015 and 6/10/2015 & 7/25/15 & 8/13/15

Site	Location	Period	L1	L10	L50	L90	Lmin	Lmax	Leq
1	Mid-Hudson Forensic Psychiatric Center	AM	56.9	53.1	49.9	47.8	44.3	65.0	50.8
		PM	53.8	47.1	42.7	40.3	36.1	61.6	44.8
		WE	56.0	53.2	49.7	43.8	40.6	58.6	50.3
2	Musket Ct. and Route 17M	AM	84.6	78.8	74.2	67.8	56.8	87.9	75.9
		PM	82.1	76.4	72.0	66.0	55.2	88.5	73.9
		WE	84.1	76.9	71.8	62.6	48.4	93.9	74.2
3	C.R. 50 between Route 17M and Echo Lake Road	AM	82.2	75.5	63.3	50.3	43.7	89.1	71.6
		PM	78.3	73.7	63.4	49.4	42.3	84.4	69.2
		WE	77.9	71.2	59.3	47.3	38.8	92.6	68.5
4	Echo Lake Rd between McVeigh Road and Wallkill River	AM	75.5	68.7	50.7	42.2	37.9	75.5	64.1
		PM	77.9	69.3	60.4	56.2	50.3	81.9	66.4
		WE	71.8	64.6	47.9	42.1	39.0	80.0	60.3
5	Cheechunk Road between Hartley Road and Owens Road	AM	76.2	71.0	52.4	43.3	37.2	82.3	65.8
		PM	76.4	70.6	52.7	45.2	41.3	85.9	65.9
		WE	75.9	66.8	47.1	41.2	36.3	85.6	63.7
6	Hartley Road // Heritage Trail	AM	71.6	60.1	52.0	50.5	45.9	84.3	60.4
		PM	70.1	54.7	45.5	43.8	42.2	80.9	58.4
		SATMD	60.4	48.3	40.1	36.1	33.0	68.0	47.7
7	112 Hartley Road	AM	64.7	50.6	48.0	46.5	45.2	73.7	52.5
		PM	68.3	47.7	44.1	42.9	41.5	76.3	54.2
		SATMD	65.5	51.5	40.0	35.3	32.0	75.1	52.7
8	Behind Gate Perimiter near Echo Lake Road	AM	70.2	64.3	52.2	48.9	47.4	76.9	59.9
		PM	69.5	63.1	52.5	49.5	48.5	74.4	59.0
		SATMD	67.6	58.7	45.2	38.8	37.2	78.8	56.7

Loading Dock & HVAC Noise Results

Receptor	Equipment	Shielded by Structure	Measured Lp1		Receptor		Shielding	Lp dBA
			dBA	Distance	Distance (feet)	Attenuation dB		
1	Loading Dock	No	85.0	20	2973	43	0	41.6
	HVAC	No	68.2	100	2941	29	0	38.8
	Sum							**43.4**
2	Loading Dock	No	85.0	20	3082	44	0	41.2
	HVAC	No	68.2	100	3015	30	0	38.6
	Sum							**43.1**
3	Loading Dock	Y	85.0	20	5759	49	3	32.8
	HVAC	Y	68.2	100	5703	35	3	30.1
	Sum							**34.7**
4	Loading Dock	Y	85.0	20	4378	47	3	35.2
	HVAC	Y	68.2	100	4309	33	3	32.5
	Sum							**37.1**
5	Loading Dock	Y	85.0	20	2643	42	3	39.6
	HVAC	No	68.2	100	2566	28	0	40.0
	Sum							**42.8**
6	Loading Dock	Y	85.0	20	1862	39	3	42.6
	HVAC	No	68.2	100	1836	25	0	42.9
	Sum							**45.8**
7	Loading Dock	Y	85.0	20	1496	37	3	44.5
	HVAC	No	68.2	100	1478	23	0	44.8
	Sum							**47.7**
8	Loading Dock	Y	85.0	20	2509	42	3	40.0
	HVAC	No	68.2	100	2435	28	0	40.5
	Sum							**43.3**
A	Loading Dock	No	85.0	20	190	20	0	65.4
	HVAC	No	68.2	100	330	10	0	57.8
	Sum							**66**

Note:

Sound Pressure Level Lp = Lp1 - Adiv - Shielding

Lp1 = Reference sound pressure level

Adiv = 20log(Distance/reference distance).

Shielding = 3 dBA attenuation was assumed by structures

Computation of Noise Level for Parking Lot

Peak Hourly Leq	$L_{eq\ (h)}$	=	***SEL ref***	+	C_N	-	***35.6***
		=	101.00	+	4.04	-	35.60
		=	69.44				

where: SELref = 101.0

C_N= 10log (Na/2000+Nb/24) = 4.0

Na = 910.0 (Maser's figure 44c)

Nb = 50.0 (Maser's figure 39c)

Note: Na = Number of cars per hour Nb = Number of buses per hour

SOS Annual Event - Weekend 12:00 PM -1:00 PM

Receptor Site	Shielded by Structure	FTA Method		Receptor		Shielding	Lp dBA
		dBA	Distance	Distance (feet)	Attenuation dB		
1	No	69.4	50	1302	28	0	41.1
2	No	69.4	50	3560	37	0	32.4
3	No	69.4	50	3422	37	0	32.7
4	No	69.4	50	1915	32	0	37.8
5	No	69.4	50	3085	36	0	33.6
6	No	69.4	50	3312	36	0	33.0
7	No	69.4	50	3324	36	0	33.0
8	No	69.4	50	1844	31	0	38.1
A	No	69.4	50	2000	32	0	37.4

Noise Analysis Results with Potential Warehouse

Site	Location	Time	Noise Analysis Results																					
			Existing Noise		NB Noise Levels				Build Noise Levels (Phase 1)					Build Noise Levels (Phase 2)					Build Noise Levels (SOS)					
			Measured Leq	TNM	TNM	Traffic Increas	Leq	Change	TNM	Traffic Increas	Loading & HVAC	Total	Change	TNM	Traffic Increas	Loading & HVAC	Total	Change	TNM	Traffic Increas	Loading & HVAC	Parking Lot	Total	Change
1	Mid-Hudson Forensic Psychiatric Center	6-7 AM	50.8	40.9	41.3	30.7	50.8	0.0	42.2	36.3	44.8	51.9	1.1	43.9	40.9	44.8	52.1	1.3						
		4:30-5:30 PM	44.8	40.1	40.5	29.9	44.9	0.1																
		SMD	50.3	39.5	39.9	29.3	50.3	0.0											45.5	44.2	44.8	41.1	52.5	2.2
2	Musket Ct. and Route 17M	6-7 AM	75.9	73.3	73.6	61.8	76.1	0.2	74.1	66.4	44.4	76.4	0.5	74.1	66.4	44.4	76.4	0.5						
		4:30-5:30 PM	73.9	71.4	71.8	61.2	74.1	0.2																
		SMD	74.2	71.0	71.3	59.5	74.4	0.1											73.0	68.7	44.4	32.4	75.3	1.1
3	C.R. 50 between Route 17M and Echo Lake Road	6-7 AM	71.6	68.2	68.9	60.6	71.9	0.3	68.9	60.6	38.9	71.9	0.3	68.9	60.6	38.9	71.9	0.3						
		4:30-5:30 PM	69.2	68.0	68.5	58.9	69.6	0.4																
		SMD	68.5	67.7	68.4	60.1	69.1	0.6											68.4	60.1	38.9	32.7	69.1	0.6
4	Echo Lake Rd between McVeigh Road and Wallkill River	6-7 AM	64.1	58.5	58.7	45.2	64.2	0.1	59.2	50.9	41.5	64.3	0.2	59.0	49.4	41.5	64.3	0.2						
		4:30-5:30 PM	66.4	65.4	65.6	52.1	66.6	0.2																
		SMD	60.3	59.7	60.0	48.2	60.5	0.3											60.3	51.4	41.5	37.8	60.9	0.6
5	Cheechunk Road between Hartley Road and Owens Road	6-7 AM	65.8	62.5	62.7	49.2	65.9	0.1	62.7	49.2	48.7	66.0	0.2	62.8	51.0	48.7	66.0	0.2						
		4:30-5:30 PM	65.9	63.0	63.3	51.5	66.1	0.2																
		SMD	63.7	61.1	61.4	49.6	63.8	0.2											63.6	60.0	48.7	33.6	65.3	1.7
6	Hartley Road/Heritage Trail	6-7 AM	60.4	59.3	59.4	43.0	60.5	0.1	59.6	47.8	54.9	61.7	1.3	59.7	49.1	54.9	61.7	1.3						
		4:30-5:30 PM	58.4	61.4	61.5	45.1	58.6	0.2																
		SMD	47.7	49.6	49.9	38.1	48.2	0.5											55.2	53.8	54.9	33.0	57.8	10.1
7	112 Hartley Road	6-7 AM	52.5	47.5	47.7	34.2	52.6	0.1	49.9	46.2	62.3	62.8	10.3	50.3	47.1	62.3	62.8	10.3						
		4:30-5:30 PM	54.2	51.7	52.0	40.2	54.4	0.2																
		SMD	52.7	49.2	49.5	37.7	52.8	0.1											55.8	54.7	62.3	33.0	63.4	10.7
8	Heritage Trail near Echo Lake Road	6-7 AM	59.9	56.2	57.1	49.8	60.3	0.4	57.4	51.2	47.5	60.7	0.8	57.5	51.6	47.5	60.7	0.8						
		4:30-5:30 PM	59.0	59.7	59.8	43.4	59.1	0.1																
		SMD	56.7	57.9	58.1	44.6	56.9	0.3											58.3	47.7	47.5	38.1	57.7	1.0
A	Adjoining property line to loading dock	6-7 AM		39.8					57.0	56.9	66.2	66.7		57.0	56.9	66.2	66.7							
		SDM		38.7															42.9	40.8	66.2	37.4	66.2	

Loading Dock & HVAC Noise Results with Potential Warehouse

Receptor	Equipment	Shielded by Structure	Measured Lp1		Receptor		Shielding	Lp dBA
			dBA	Distance	Distance (feet)	Attenuation dB		
1	Loading Dock	No	85.0	20	2973	43	0	41.6
	WarehouseLoading Dock	No	85.0	20	3916	46	0	39.2
	HVAC	No	68.2	100	2941	29	0	38.8
	Sum							**44.8**
2	Loading Dock	No	85.0	20	3082	44	0	41.2
	WarehouseLoading Dock	No	85.0	20	4293	47	0	38.4
	HVAC	No	68.2	100	3015	30	0	38.6
	Sum							**44.4**
3	Loading Dock	No	85.0	20	5759	49	0	35.8
	WarehouseLoading Dock	No	85.0	20	6506	50	0	34.8
	HVAC	Y	68.2	100	5703	35	3	30.1
	Sum							**38.9**
4	Loading Dock	No	85.0	20	4378	47	0	38.2
	WarehouseLoading Dock	No	85.0	20	4735	47	0	37.5
	HVAC	Y	68.2	100	4309	33	3	32.5
	Sum							**41.5**
5	Loading Dock	No	85.0	20	2643	42	0	42.6
	WarehouseLoading Dock	No	85.0	20	1672	38	0	46.6
	HVAC	No	68.2	100	2566	28	0	40.0
	Sum							**48.7**
6	Loading Dock	No	85.0	20	1862	39	0	45.6
	WarehouseLoading Dock	No	85.0	20	712	31	0	54.0
	HVAC	No	68.2	100	1836	25	0	42.9
	Sum							**54.9**
7	Loading Dock	No	85.0	20	1496	37	0	47.5
	WarehouseLoading Dock	No	85.0	20	281	23	0	62.0
	HVAC	No	68.2	100	1478	23	0	44.8
	Sum							**62.3**
8	Loading Dock	No	85.0	20	2509	42	0	43.0
	WarehouseLoading Dock	No	85.0	20	2269	41	0	43.9
	HVAC	No	68.2	100	2435	28	0	40.5
	Sum							**47.5**
A	Loading Dock	No	85.0	20	190	20	0	65.4
	WarehouseLoading Dock	No	85.0	20	1404	37	0	48.1
	HVAC	No	68.2	100	330	10	0	57.8
	Sum							**66.2**

Note:

Sound Pressure Level Lp = Lp1 - Adiv - Shielding

Lp1 = Reference sound pressure level

Adiv = 20log(Distance/reference distance).

Shielding = 3 dBA attenuation was assumed by structures

TOWN OF GOSHEN
OFFICE OF THE
BUILDING AND ZONING INSPECTOR
TOWN HALL
P.O. Box 217
GOSHEN, NEW YORK 10924
TELEPHONE: 845 294-6430x 226

October 20, 2015

Sharanjit Singh, Chairperson
Science of the Soul
6419 Lebarrett Cove
Memphis, Tn. 38120

In re Science of the Soul's proposed use of the Echo Lake site

Dear Mr. Singh,

Thank you for your letter dated October 18, 2015. It is the most comprehensive review of the proposed use of the property and explanation of the intended use of the property in terms of actual intensity of use. My review will include some questions as to what was expressed or intend by the letter but I believe that in all cases the explanation has or would have no impact as to my response to your request for a zoning determination.

There appears to be no doubt that the primary use of the property will be by your religious non-profit organization for the purpose of advancing your beliefs or philosophy. The proposal is for approximately 355,300 square feet of buildings, the overall project being called a conference center. Three of the buildings (approximately 318,000 square feet) will be used regularly and periodically for the use of discussion and learning of the teachings of the organization. The remaining 8 buildings are proposed to serve in support of these buildings and the grounds.

The review of the zoning in your letter is exceptional and I believe accurate. The CO zone provides for the religious use. The I zone does not list religious use as permitted but does speak of "related uses that are not compatible with commercial, office, or residential uses, in isolated and well buffered locations. 97-14 provides that the CO and I Districts "locations where larger scale commercial and other non- residential uses are permitted…

In spite of the apparent fit of the SoS Convention Center on this site, and the likelihood that it would not "fit" or be nearly so compatible on other parcels where the zoning may be correct (almost the entire rest of the town) I can find no section of the code which specifically lets me make the determination that any religious use complies in the I zone.

However there are few if any parcels in the Town of Goshen of sufficient size, topography, geography, and structural capacity to accommodate this religious use. This use is located on a site that approximately half of the site is zoned for this use, and some of the associated uses are in that zone. Based on a discussion with the Town's attorney and his review of state and federal laws, it is my determination that this religious use is permissible on the proposed site, with all of its affiliated and accessory uses.

Respectfully submitted,

Neal Halloran.

Neal Halloran

AKRF, Inc.
Environmental Planning Consultants
34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

July 2, 2015

NYS Police Troop F
Troop Headquarters
55 Crystal Run Road
Middletown, NY 10941-9755

Re: Request for Information Regarding the Amy's Kitchen and Science of the Soul Project

Dear Sir/ Madame,

AKRF, Inc. has been retained by Amy's Kitchen, Inc. to assess the potential environmental effects of the construction of an approximately 369,000 square-foot food manufacturing facility on a +/- 60-acre property located on Hartley Road in the Town of Goshen, New York. In addition, Science of the Soul ("SoS") proposes to construct an approximately 200,000 square-foot conference center on an approximately 195-acre property located on NYS Route 17M and Echo Lake Road in the Town of Goshen, New York. SoS is a registered 501(c)(3) religious non-profit organization. The two entities, Amy's Kitchen and SoS, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents and to share certain access, water supply, and wastewater treatment infrastructure. AKRF is currently preparing the Environmental Impact Statement (EIS) under SEQRA for this project.

The Amy's Kitchen facility would be constructed in two (2) phases: an initial approximately 226,000 square-foot plant, including an 11,000 square-foot office area, to be opened in the First Quarter of 2018 with an approximately 140,000 square-foot expansion (134,000 square feet of production space plus 6,000 square feet of office area) to be opened in approximately 2023. An ancillary building of approximately 3,000 square feet would be constructed for on-site medical treatment of Amy's Kitchen staff as part of Phase 1. The manufacturing site includes approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces. Approximately 20 to 30 loading bays would be provided. The Amy's Kitchen manufacturing facility would employ approximately 459 full-time people on the Project Site upon completion of Phase 1, and approximately 681 full-time people upon completion of Phase 2 of the Project. In Phase 1, access to the Amy's Kitchen facility is proposed from Hartley Road.

The SoS conference center would comprise an approximately 200,000 square-foot open-air pavilion; ancillary buildings for administration and support; parking areas (both paved and gravel) to accommodate approximately 2,043 cars and an additional 130 buses; two (2) approximately 2,600 square-foot caretaker residences; and one (1) five-bedroom guest-house. The conference center would be used to host one (1) annual three-day national conference ("National Conference"), with attendance of up to 12,000 people. The National Conference would typically be held over a weekend. In addition, SoS would hold one (1) regional conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees over one to two days, as well as regular weekly meetings on Sunday mornings for local congregants ("Weekly Meeting"), estimated between 200 and 400 people. Each day's program for a National or Regional

Conference would run from 9:00 AM until 1:00 PM. During the week, a small staff (5 to 10 people) and a small number of volunteers would attend to normal administrative and property management tasks. The conference center would not be used for weddings or other cultural events, nor would it be rented to the general public for any use.

Access to SoS would be from a new entrance roadway off NYS Route 17M, which would also eventually serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface.

For our analysis, we need to obtain information relevant to the current services provided by Police Troop F to the Project Site, which is shown in the attached map. Specifically, we need to obtain the following information:

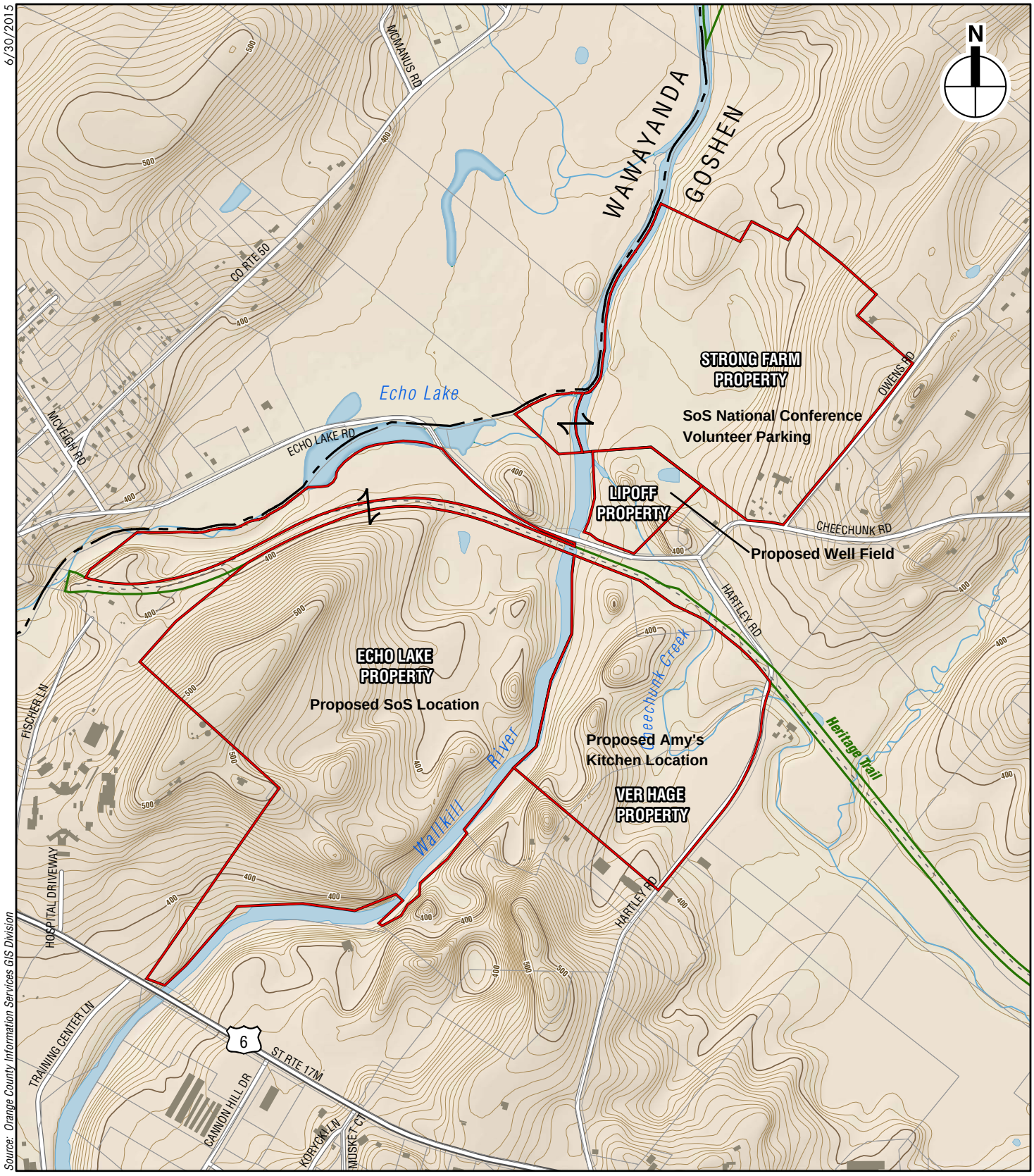
- Level of Staffing
- Anticipated response times to the Project Site
- Number and types of all service calls by Troop F within Goshen from 2013-2015

In addition to the above information, please provide any relevant information on anticipated changes to Police Troop F that may affect its future capacities to respond to emergencies, such as new equipment, anticipated changes in personnel or budget, or other factors that are expected to increase or decrease capacity.

I would greatly appreciate a response as soon as possible. You can respond via mail or telephone to the address/telephone number above, or via e-mail to aley@akrf.com. Thank you in advance for your attention to this matter.

Sincerely,

Ashley Ley, AICP
Technical Director



Amy's Kitchen
Science of the Soul

Properties comprising the Project Site

AKRF, Inc.
Environmental Planning Consultants
34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

July 2, 2015

Carl E. DuBois, Sherrif
110 Wells Farm Road
Goshen, NY 10924

Re: Request for Information Regarding the Amy's Kitchen and Science of the Soul Project

Dear Sheriff DuBois:

AKRF, Inc. has been retained by Amy's Kitchen, Inc. to assess the potential environmental effects of the construction of an approximately 369,000 square-foot food manufacturing facility on a +/- 60-acre property located on Hartley Road in the Town of Goshen, New York. In addition, Science of the Soul ("SoS") proposes to construct an approximately 200,000 square-foot conference center on an approximately 195-acre property located on NYS Route 17M and Echo Lake Road in the Town of Goshen, New York. SoS is a registered 501(c)(3) religious non-profit organization. The two entities, Amy's Kitchen and SoS, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents and to share certain access, water supply, and wastewater treatment infrastructure. AKRF is currently preparing the Environmental Impact Statement (EIS) under SEQRA for this project.

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The SoS conference center would comprise an approximately 200,000 square-foot open-air pavilion; ancillary buildings for administration and support; parking areas (both paved and gravel) to accommodate approximately 2,043 cars and an additional 130 buses; two (2) approximately 2,600 square-foot caretaker residences; and one (1) five-bedroom guest-house. The conference center would be used to host one (1) annual three-day national conference ("National Conference"), with attendance of up to 12,000 people. The National Conference would typically be held over a weekend. In addition, SoS would hold one (1) regional conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees over one to two days, as well as regular weekly meetings on Sunday mornings for local congregants ("Weekly Meeting"), estimated between 200 and 400 people. Each day's program for a National or Regional

Conference would run from 9:00 AM until 1:00 PM. During the week, a small staff (5 to 10 people) and a small number of volunteers would attend to normal administrative and property management tasks. The conference center would not be used for weddings or other cultural events, nor would it be rented to the general public for any use.

Access to SoS would be from a new entrance roadway off NYS Route 17M, which would also eventually serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface.

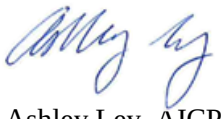
For our analysis, we need to obtain information relevant to the current services provided by the Sherriff's Department to the Project Site in Goshen, NY, which is shown in the attached map. Specifically, we need to obtain the following information:

- Level of Staffing
- Anticipated response times to the Project Site
- Number and types of all service calls by the Department within Goshen from 2013-2015

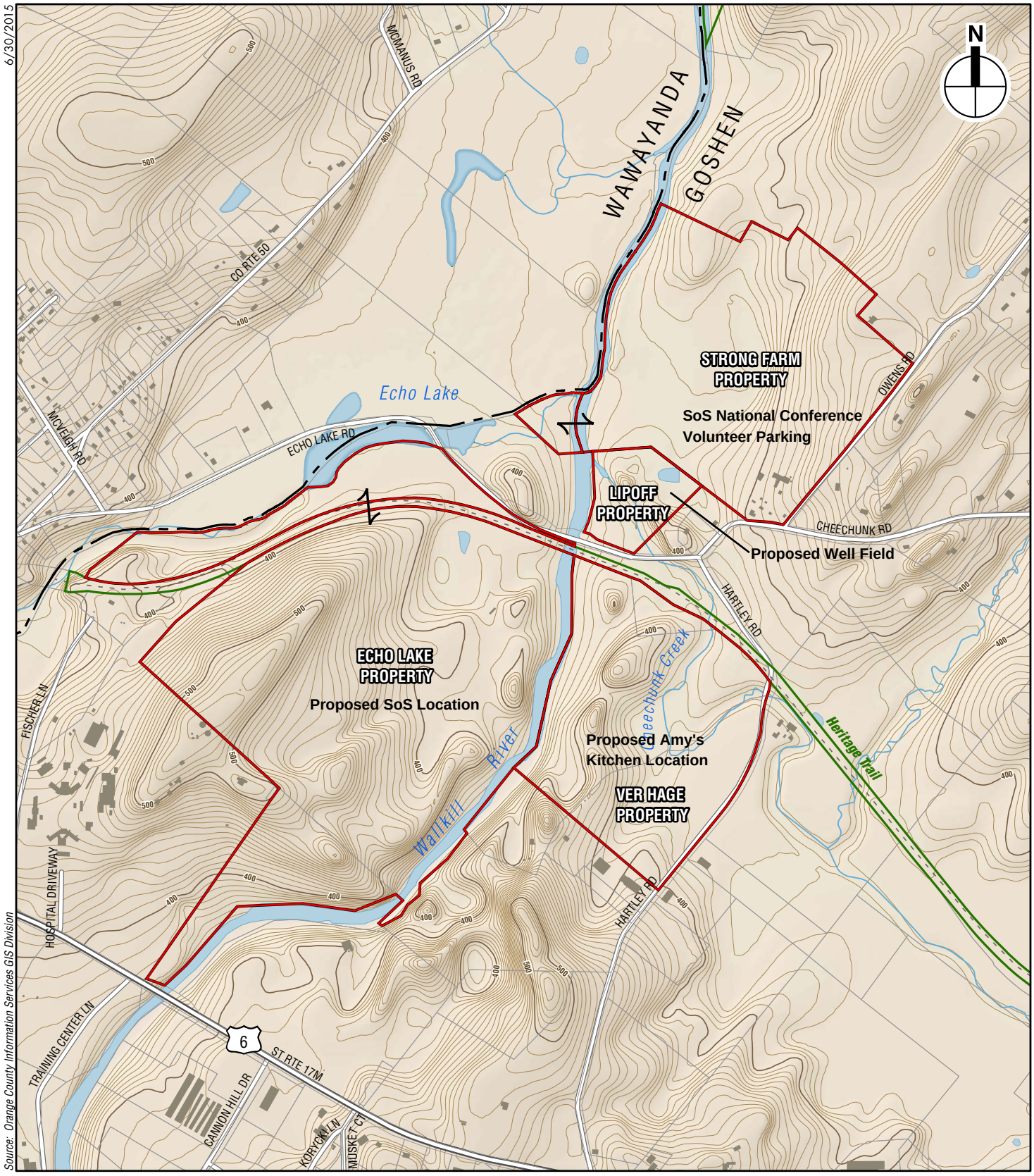
In addition to the above information, please provide any relevant information on anticipated changes to your department that may affect its future capacities to respond to emergencies, such as new equipment, anticipated changes in personnel or budget, or other factors that are expected to increase or decrease capacity.

I would greatly appreciate a response as soon as possible. You can respond via mail or telephone to the address/telephone number above, or via e-mail to aley@akrf.com. Thank you in advance for your attention to this matter.

Sincerely,



Ashley Ley, AICP
Technical Director



Amy's Kitchen
Science of the Soul

Properties comprising the Project Site

Phone Conversation Summary

Date: July 14, 2015

AKRF Staff: Ashley Ley

Contact: Captain Scott Hamill, Orange County Sherriff's Department Public Information Officer (PIO)

Contact Phone: 845-291-2995

NOTES:

Number of uniformed sworn personnel: 107 (excludes corrections)

Response time to Project Site: less than 5 minutes

Comments:

- The Orange County Sherriff's Department will fill in as needed to support local police department.
- Most service calls would be addressed by the Town of Goshen Police Department.
- Calls are routed by 911 to the nearest patrol – could be Orange County Sherriff, Town of Goshen Police, or NYS Police.
- Orange County would require an event specific large event management plan.
- Orange County has experience addressing large events (e.g. West Point football games) and would coordinate with the local Police Department and NYS Police to manage traffic and safety.

AKRF, Inc.
Environmental Planning Consultants
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White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

July 2, 2015

Town of Goshen Police Chief
44 Police Drive
P.O. Box 217
Goshen, NY 10924

Re: Request for Information Regarding the Amy's Kitchen and Science of the Soul Project

Dear Chief McDowell:

AKRF, Inc. has been retained by Amy's Kitchen, Inc. to assess the potential environmental effects of the construction of an approximately 369,000 square-foot food manufacturing facility on a +/- 60-acre property located on Hartley Road in the Town of Goshen, New York. In addition, Science of the Soul ("SoS") proposes to construct an approximately 200,000 square-foot conference center on an approximately 195-acre property located on NYS Route 17M and Echo Lake Road in the Town of Goshen, New York. SoS is a registered 501(c)(3) religious non-profit organization. The two entities, Amy's Kitchen and SoS, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents and to share certain access, water supply, and wastewater treatment infrastructure. AKRF is currently preparing the Environmental Impact Statement (EIS) under SEQRA for this project.

We understand that you met with the Amy's Kitchen project engineer John O'Rourke, Lanc & Tully, P.C., in October, 2014. Since that time, there have been some changes to the project which are summarized below. As such, we would like to set up a meeting with you on July 16, 2015, when representatives from Amy's Kitchen and SoS will be in Town, to discuss the proposed changes and how the larger SoS events would be handled.

As currently proposed, the Amy's Kitchen facility would be constructed in two (2) phases: an initial approximately 226,000 square-foot plant, including an 11,000 square-foot office area, to be opened in the First Quarter of 2018 with an approximately 140,000 square-foot expansion (134,000 square feet of production space plus 6,000 square feet of office area) to be opened in approximately 2023. An ancillary building of approximately 3,000 square feet would be constructed for on-site medical treatment of Amy's Kitchen staff as part of Phase 1. The manufacturing site includes approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces. Approximately 20 to 30 loading bays would be provided. The Amy's Kitchen manufacturing facility would employ approximately 459 full-time people on the Project Site upon completion of Phase 1, and approximately 681 full-time people upon completion of Phase 2 of the Project. In Phase 1, access to the Amy's Kitchen facility is proposed from Hartley Road.

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Access to SoS would be from a new entrance roadway off NYS Route 17M, which would also eventually serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface.

For our analysis, we need to obtain information relevant to the current services provided by the Goshen Police Department to the Project Site, which is shown in the attached map. Specifically, we need to obtain the following information:

- Level of Staffing
- Anticipated response times to the Project Site
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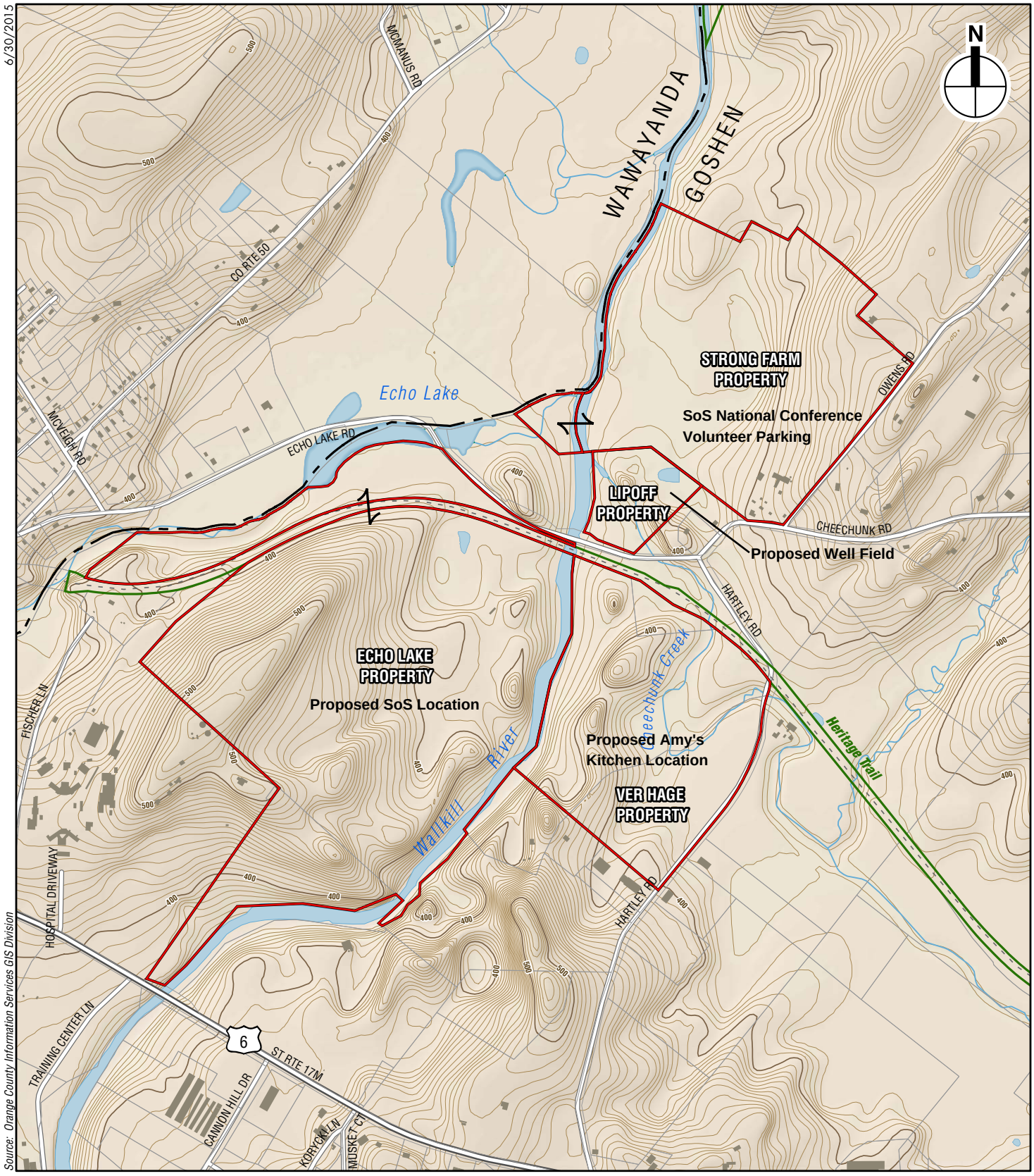
I would greatly appreciate a response as soon as possible. You can respond via mail or telephone to the address/telephone number above, or via e-mail to aley@akrf.com. Thank you in advance for your attention to this matter.

Sincerely,

Ashley Ley, AICP
Technical Director



Amy's Kitchen
Science of the Soul

Properties comprising the Project Site

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Environmental Planning Consultants
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fax: 914 949-7559
www.akrf.com

July 2, 2015

Chief Elmer Budd
Goshen Fire District
P.O. Box 278
Goshen, NY 10924

Re: Request for Information Regarding the Amy's Kitchen and Science of the Soul Project

Dear Chief Budd:

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For our analysis, we need to obtain information relevant to the current services provided by the Goshen Fire District to the Project Site, which is shown in the attached map. Specifically, we need to obtain the following information:

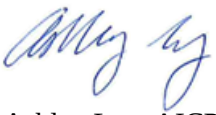
Level of Staffing

- Level of Staffing
- Number and types of apparatus
- Anticipated response times to the Project Site
- Number and types of all service calls by the district within Goshen from 2013-2015

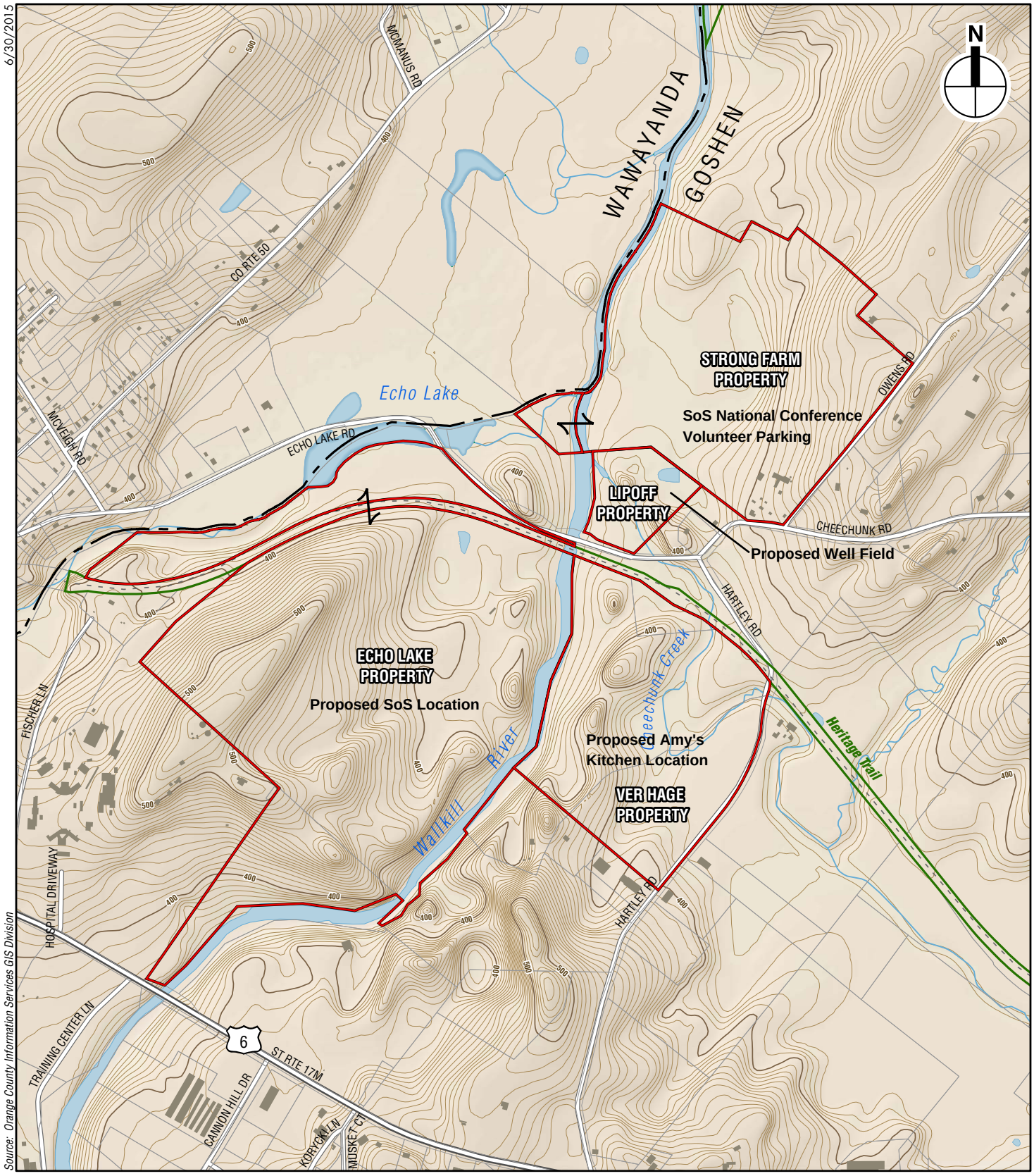
In addition to the above information, please provide any relevant information on anticipated changes to your district that may affect its future capacities to respond to emergencies, such as new equipment, anticipated changes in personnel or budget, or other factors that are expected to increase or decrease capacity.

I would greatly appreciate a response as soon as possible. You can respond via mail or telephone to the address/telephone number above, or via e-mail to aley@akrf.com. Thank you in advance for your attention to this matter.

Sincerely,



Ashley Ley, AICP
Technical Director



Amy's Kitchen
Science of the Soul

Properties comprising the Project Site

GOSHEN FIRE DEPARTMENT

P.O. Box 946
Goshen, New York 10924
OFFICE: (845) 294-3448 FAX: (845) 294-7132

CHIEF
Elmer Budd

1st ASSISTANT CHIEF
Richard Pearson

2nd ASSISTANT CHIEF
Alex Streichenwein

July 20, 2015

AKRF, Inc
34 South Broadway
Suite 401
White Plains, N.Y. 10601
ATTN: Ashley Ley AICP

Dear Ms Ley,

Thank you for your visit last Thursday and for going over the Amy's Kitchen and SoS projects with us. We have a better understanding of the entire concept at this time.

The following is in answer to the questions raised in your letter of July 2, 2015.

Level of Staffing: The Goshen Fire Department of the Goshen Fire District is 100% volunteer with no full time staffing. Most of the members have full time jobs (on various shifts) and there are times when they cannot respond. The fact that we do have some personnel who are retired, some who can leave their employment to respond, some who work nights and are available during usual work hours, allows us to have a credible response 24/7.

Numbers and types of apparatus: At the present time we field two (2) class A pumpers; one (1) Aerial Tower truck (with pump); one (1) Heavy Rescue Unit; two (2) tankers (each with 3,000 gallons of water); one (1) Brush Unit with trailer and ATV; one (1) Technical Rescue Unit and trailer; three (3) Command Vehicles ; one (1) Fire Police vehicle; one (1) van to transport additional personnel, and one (1) SUV.

Anticipated Response Time: Time from existing firehouses to a point in Hartley Road halfway between route 17M and Echo Lake Road is approximately 5 ½ minutes. NOTE: Test responses were made on a clear weekday at approximately 10:00 AM using various routes – 17M has very heavy traffic (sometimes near gridlock conditions) between 7:30 and 9:00 AM and from 4:30 to 6:00 PM on normal workdays, and adverse weather conditions could also negatively affect our response time. We must also factor in response time for drivers to reach the firehouses and initiate the apparatus response. This varies greatly, depending on such things as ambient traffic conditions, time of day, location of drivers, weather, and many other variables. I would estimate that this would average out to somewhere around 4 ½ minutes which would give us an average of a ten (10) minute response time to the location in question.

Lists of service calls by the Goshen Fire District for 2013, 2014, and 2015 (through June) are attached hereto.

Other relevant information: The Goshen Fire District replaces all apparatus on an on-going basis. Every effort is made to update equipment to keep abreast of new techniques, tools, apparatus,

GOSHEN FIRE DEPARTMENT

P.O. Box 946
Goshen, New York 10924
OFFICE: (845) 294-3448 FAX: (845) 294-7132

CHIEF
Elmer Budd

1st ASSISTANT CHIEF
Richard Pearson

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etc. New members are added to our companies throughout the year and we have an on-going policy of training not only our new members but also veteran personnel. Budgeting is accomplished by the Board of Fire Commissioners balancing our needs with the tax base of the area we protect.

Very truly yours,

ELMER BUDD, Chief
Goshen Fire Department

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use	
111 Building fire					
15-0000174-000	05/08/2015	20:30:00	11 Extinguishment by	808	Outbuilding or shed
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
113 Cooking fire, confined to container					
15-0000173-000	05/08/2015	13:50:00	11 Extinguishment by	429	Multifamily dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
116 Fuel burner/boiler malfunction, fire confined					
15-0000141-000	04/14/2015	18:42:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
131 Passenger vehicle fire					
15-0000054-000	02/06/2015	15:21:00	11 Extinguishment by	931	Open land or field
15-0000074-000	02/20/2015	19:56:00	11 Extinguishment by	962	Residential street, road
15-0000146-000	04/16/2015	20:16:00	11 Extinguishment by	961	Highway or divided
15-0000154-000	04/24/2015	13:12:00	11 Extinguishment by	961	Highway or divided
Incident Type Count:	**4**			**Percent of All:**	**1.7%**
143 Grass fire					
15-0000145-000	04/16/2015	13:29:00	11 Extinguishment by	900	Outside or special
15-0000204-000	05/28/2015	16:03:00	11 Extinguishment by	700	Manufacturing, processing
15-0000224-000	06/19/2015	16:30:00	11 Extinguishment by	961	Highway or divided
Incident Type Count:	**3**			**Percent of All:**	**1.2%**
212 Overpressure rupture of steam boiler					
15-0000081-000	02/24/2015	07:02:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
300 Rescue, EMS incident, other					
15-0000216-000	06/12/2015	21:45:00	70 Assistance, Other	962	Residential street, road
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
322 Motor vehicle accident with injuries					
15-0000011-000	01/08/2015	13:44:00	70 Assistance, Other	961	Highway or divided
15-0000016-000	01/12/2015	10:30:00	70 Assistance, Other	961	Highway or divided
15-0000021-000	01/15/2015	07:25:00	70 Assistance, Other	961	Highway or divided

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use
322 Motor vehicle accident with injuries				
15-0000023-000	01/15/2015	19:21:00	70 Assistance, Other	961 Highway or divided
15-0000073-000	02/20/2015	18:27:00	70 Assistance, Other	961 Highway or divided
15-0000106-000	03/23/2015	16:21:00	70 Assistance, Other	961 Highway or divided
15-0000109-000	03/27/2015	05:52:00	23 Extricate,	961 Highway or divided
15-0000132-000	04/10/2015	10:30:00	70 Assistance, Other	961 Highway or divided
15-0000138-000	04/13/2015	15:51:00	70 Assistance, Other	961 Highway or divided
15-0000140-000	04/14/2015	12:21:00	70 Assistance, Other	961 Highway or divided
15-0000152-000	04/22/2015	20:24:00	70 Assistance, Other	419 1 or 2 family dwelling
15-0000164-000	05/01/2015	04:31:00	70 Assistance, Other	961 Highway or divided
15-0000175-000	05/09/2015	13:43:00	70 Assistance, Other	961 Highway or divided
15-0000196-000	05/22/2015	14:24:00	70 Assistance, Other	961 Highway or divided
15-0000197-000	05/24/2015	12:14:00	70 Assistance, Other	961 Highway or divided
Incident Type Count:	**15**			**Percent of All:** **6.4%**
324 Motor Vehicle Accident with no injuries				
15-0000014-000	01/10/2015	01:08:00	86 Investigate	961 Highway or divided
15-0000018-000	01/13/2015	08:31:00	86 Investigate	961 Highway or divided
15-0000025-000	01/18/2015	14:28:00	86 Investigate	961 Highway or divided
15-0000035-000	01/28/2015	08:40:00	70 Assistance, Other	962 Residential street, road
15-0000041-000	02/01/2015	02:40:00	70 Assistance, Other	961 Highway or divided
15-0000049-000	02/05/2015	15:01:00	86 Investigate	962 Residential street, road
15-0000071-000	02/20/2015	14:17:00	86 Investigate	961 Highway or divided
15-0000077-000	02/22/2015	07:40:00	86 Investigate	961 Highway or divided
15-0000086-000	03/01/2015	14:23:00	70 Assistance, Other	961 Highway or divided
15-0000090-000	03/09/2015	05:29:00	70 Assistance, Other	961 Highway or divided
15-0000093-000	03/12/2015	07:47:00	70 Assistance, Other	962 Residential street, road
15-0000097-000	03/16/2015	08:13:00	70 Assistance, Other	961 Highway or divided
15-0000103-000	03/18/2015	16:35:00	70 Assistance, Other	961 Highway or divided
15-0000124-000	04/03/2015	14:54:00	86 Investigate	961 Highway or divided
15-0000142-000	04/14/2015	18:43:00	70 Assistance, Other	961 Highway or divided
15-0000158-000	04/27/2015	17:53:00	70 Assistance, Other	961 Highway or divided
15-0000181-000	05/13/2015	07:36:00	70 Assistance, Other	961 Highway or divided
15-0000190-000	05/19/2015	09:29:00	86 Investigate	961 Highway or divided
15-0000208-000	06/01/2015	09:00:00	86 Investigate	962 Residential street, road
15-0000209-000	06/01/2015	20:49:00	86 Investigate	961 Highway or divided
15-0000214-000	06/11/2015	15:13:00	70 Assistance, Other	961 Highway or divided
15-0000227-000	06/21/2015	09:48:00	70 Assistance, Other	962 Residential street, road
15-0000228-000	06/25/2015	17:45:00	70 Assistance, Other	962 Residential street, road
Incident Type Count:	**23**			**Percent of All:** **9.8%**
400 Hazardous condition, Other				

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use	
400 Hazardous condition, Other					
15-0000221-000	06/19/2015	07:11:00	86 Investigate	961	Highway or divided
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
411 Gasoline or other flammable liquid spill					
15-0000024-000	01/17/2015	11:54:00	86 Investigate	571	Service station, gas
15-0000066-000	02/16/2015	21:41:00	70 Assistance, Other	571	Service station, gas
15-0000087-000	03/05/2015	16:49:00	86 Investigate	962	Residential street, road
15-0000089-000	03/09/2015	00:42:00	86 Investigate	419	1 or 2 family dwelling
15-0000162-000	04/30/2015	19:52:00	86 Investigate	962	Residential street, road
Incident Type Count:	**5**			**Percent of All:**	**2.1%**
412 Gas leak (natural gas or LPG)					
15-0000026-000	01/18/2015	16:22:00	86 Investigate	899	Residential or
15-0000029-000	01/20/2015	09:21:00	86 Investigate	429	Multifamily dwelling
15-0000034-000	01/27/2015	18:07:00	86 Investigate	429	Multifamily dwelling
15-0000042-000	02/01/2015	11:00:00	86 Investigate	210	Schools, non-adult, other
15-0000047-000	02/04/2015	09:12:00	40 Hazardous condition,	599	Business office
15-0000050-000	02/05/2015	18:16:00	86 Investigate	000	Property Use, Other
15-0000055-000	02/06/2015	20:17:00	86 Investigate	961	Highway or divided
15-0000056-000	02/08/2015	14:41:00	86 Investigate	210	Schools, non-adult, other
15-0000064-000	02/16/2015	20:14:00	86 Investigate	419	1 or 2 family dwelling
15-0000069-000	02/19/2015	09:37:00	86 Investigate	599	Business office
15-0000099-000	03/16/2015	09:27:00	70 Assistance, Other	599	Business office
15-0000111-000	03/28/2015	16:17:00	82 Notify other	549	Specialty shop
15-0000161-000	04/30/2015	15:10:00	86 Investigate	429	Multifamily dwelling
15-0000178-000	05/11/2015	09:17:00	86 Investigate	200	Educational, Other
15-0000182-000	05/14/2015	10:02:00	70 Assistance, Other	419	1 or 2 family dwelling
15-0000215-000	06/11/2015	19:58:00	53 Evacuate area	599	Business office
Incident Type Count:	**16**			**Percent of All:**	**6.8%**
413 Oil or other combustible liquid spill					
15-0000165-000	05/02/2015	13:14:00	70 Assistance, Other	419	1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
424 Carbon monoxide incident					
15-0000013-000	01/09/2015	18:18:00	40 Hazardous condition,	429	Multifamily dwelling
15-0000084-000	02/26/2015	14:45:00	40 Hazardous condition,	429	Multifamily dwelling

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use	
424 Carbon monoxide incident					
Incident Type Count:	**2**			**Percent of All:**	**0.8%**
440 Electrical wiring/equipment problem, Other					
15-0000052-000	02/06/2015	09:55:00	86 Investigate	311	24-hour care Nursing
15-0000098-000	03/16/2015	08:36:00	86 Investigate	962	Residential street, road
15-0000115-000	03/31/2015	20:30:00	86 Investigate	965	Vehicle parking area
15-0000126-000	04/07/2015	05:49:00	86 Investigate	429	Multifamily dwelling
15-0000127-000	04/07/2015	09:27:00	86 Investigate	361	Jail, prison (not
15-0000128-000	04/08/2015	14:10:00	86 Investigate	311	24-hour care Nursing
15-0000129-000	04/08/2015	15:53:00	86 Investigate	311	24-hour care Nursing
15-0000147-000	04/19/2015	09:24:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**8**			**Percent of All:**	**3.4%**
444 Power line down					
15-0000006-000	01/05/2015	11:46:00	70 Assistance, Other	961	Highway or divided
15-0000102-000	03/17/2015	16:05:00	86 Investigate	961	Highway or divided
15-0000192-000	05/20/2015	08:15:00	86 Investigate	215	High school/junior high
Incident Type Count:	**3**			**Percent of All:**	**1.2%**
445 Arcing, shorted electrical equipment					
15-0000001-000	01/01/2015	19:42:00	86 Investigate	449	Hotel/motel, commercial
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
500 Service Call, other					
15-0000031-000	01/22/2015	17:47:00	70 Assistance, Other	419	1 or 2 family dwelling
15-0000039-000	01/30/2015	13:16:00	70 Assistance, Other	419	1 or 2 family dwelling
15-0000153-000	04/24/2015	11:22:00	86 Investigate	210	Schools, non-adult, other
15-0000206-000	05/30/2015	15:03:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**4**			**Percent of All:**	**1.7%**
520 Water problem, Other					
15-0000015-000	01/11/2015	13:19:00	70 Assistance, Other	429	Multifamily dwelling
15-0000068-000	02/17/2015	16:00:00	86 Investigate	419	1 or 2 family dwelling
15-0000092-000	03/12/2015	01:49:00	70 Assistance, Other	419	1 or 2 family dwelling
15-0000094-000	03/12/2015	12:43:00	70 Assistance, Other	419	1 or 2 family dwelling
15-0000100-000	03/16/2015	13:40:00	70 Assistance, Other	419	1 or 2 family dwelling

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use	
520 Water problem, Other					
Incident Type Count:	**5**			**Percent of All:**	**2.1%**
542 Animal rescue					
15-0000060-000	02/03/2015	12:29:00	70 Assistance, Other	962	Residential street, road
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
550 Public service assistance, Other					
15-0000082-000	02/24/2015	17:17:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
551 Assist police or other governmental agency					
15-0000046-000	02/03/2015	20:20:00	70 Assistance, Other	419	1 or 2 family dwelling
15-0000123-000	04/03/2015	11:00:00	86 Investigate	429	Multifamily dwelling
15-0000148-000	04/20/2015	12:47:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**3**			**Percent of All:**	**1.2%**
561 Unauthorized burning					
15-0000122-000	04/02/2015	21:14:00	00 Action taken, Other	419	1 or 2 family dwelling
15-0000166-000	05/03/2015	15:21:00	11 Extinguishment by	419	1 or 2 family dwelling
15-0000218-000	06/14/2015	12:41:00	11 Extinguishment by	419	1 or 2 family dwelling
Incident Type Count:	**3**			**Percent of All:**	**1.2%**
571 Cover assignment, standby, moveup					
15-0000008-000	01/07/2015	16:12:00	90 Fill-in, standby,	429	Multifamily dwelling
15-0000012-000	01/09/2015	17:47:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000037-000	01/28/2015	16:38:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000044-000	02/03/2015	12:59:00	90 Fill-in, standby,	700	Manufacturing, processing
15-0000045-000	02/03/2015	13:07:00	82 Notify other	700	Manufacturing, processing
15-0000057-000	02/08/2015	18:21:00	70 Assistance, Other	961	Highway or divided
15-0000058-000	02/09/2015	08:50:00	70 Assistance, Other	961	Highway or divided
15-0000061-000	02/14/2015	15:03:00	90 Fill-in, standby,	961	Highway or divided
15-0000065-000	02/16/2015	21:09:00	70 Assistance, Other	961	Highway or divided
15-0000080-000	02/23/2015	14:09:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000085-000	02/28/2015	23:26:00	90 Fill-in, standby,	808	Outbuilding or shed
15-0000088-000	03/06/2015	16:32:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000104-000	03/19/2015	03:37:00	91 Fill-in or moveup	429	Multifamily dwelling
15-0000118-000	04/02/2015	17:22:00	90 Fill-in, standby,	700	Manufacturing, processing
15-0000119-000	04/02/2015	17:24:00	90 Fill-in, standby,	700	Manufacturing, processing

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use	
571 Cover assignment, standby, moveup					
15-0000120-000	04/02/2015	18:00:00	00 Action taken, Other	700	Manufacturing, processing
15-0000121-000	04/02/2015	18:32:00	90 Fill-in, standby,	700	Manufacturing, processing
15-0000130-000	04/09/2015	11:23:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000134-000	04/12/2015	15:46:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000135-000	04/12/2015	18:52:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000136-000	04/12/2015	18:52:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000137-000	04/12/2015	19:15:00	90 Fill-in, standby,	419	1 or 2 family dwelling
15-0000155-000	04/27/2015	14:36:00	90 Fill-in, standby,	669	Forest, timberland,
15-0000156-000	04/27/2015	14:40:00	90 Fill-in, standby,	700	Manufacturing, processing
15-0000187-000	05/17/2015	04:34:00	00 Action taken, Other	311	24-hour care Nursing
15-0000188-000	05/18/2015	16:33:00	90 Fill-in, standby,	429	Multifamily dwelling
15-0000193-000	05/22/2015	07:02:00	70 Assistance, Other	593	Office: veterinary or
15-0000194-000	05/22/2015	07:11:00	90 Fill-in, standby,	593	Office: veterinary or
15-0000195-000	05/22/2015	10:05:00	90 Fill-in, standby,	961	Highway or divided
15-0000199-000	05/25/2015	17:44:00	70 Assistance, Other	419	1 or 2 family dwelling
15-0000200-000	05/26/2015	20:46:00	70 Assistance, Other	419	1 or 2 family dwelling
15-0000205-000	05/29/2015	09:03:00	90 Fill-in, standby,	961	Highway or divided
15-0000210-000	06/04/2015	12:18:00	00 Action taken, Other	419	1 or 2 family dwelling
15-0000219-000	06/16/2015	10:45:00	90 Fill-in, standby,	961	Highway or divided
15-0000222-000	06/19/2015	11:50:00	90 Fill-in, standby,	700	Manufacturing, processing
15-0000229-000	06/25/2015	20:24:00	90 Fill-in, standby,	429	Multifamily dwelling
Incident Type Count:	**36**			**Percent of All:**	**15.3%**
600 Good intent call, Other					
15-0000002-000	01/03/2015	21:04:00	86 Investigate	961	Highway or divided
15-0000009-000	01/07/2015	18:29:00	86 Investigate	961	Highway or divided
15-0000032-000	01/23/2015	10:26:00	86 Investigate	419	1 or 2 family dwelling
15-0000048-000	02/04/2015	20:31:00	86 Investigate	900	Outside or special
15-0000063-000	02/15/2015	13:37:00	86 Investigate	210	Schools, non-adult, other
15-0000067-000	02/17/2015	07:21:00	86 Investigate	571	Service station, gas
15-0000072-000	02/20/2015	16:30:00	86 Investigate	419	1 or 2 family dwelling
15-0000075-000	02/21/2015	00:03:00	86 Investigate	419	1 or 2 family dwelling
15-0000078-000	02/22/2015	20:00:00	86 Investigate	700	Manufacturing, processing
15-0000083-000	02/25/2015	21:54:00	86 Investigate	419	1 or 2 family dwelling
15-0000101-000	03/16/2015	15:43:00	86 Investigate	961	Highway or divided
15-0000107-000	03/23/2015	17:14:00	86 Investigate	419	1 or 2 family dwelling
15-0000110-000	03/28/2015	09:27:00	86 Investigate	961	Highway or divided
15-0000116-000	04/01/2015	09:05:00	86 Investigate	419	1 or 2 family dwelling
15-0000117-000	04/02/2015	11:27:00	86 Investigate	599	Business office
15-0000125-000	04/07/2015	01:18:00	86 Investigate	419	1 or 2 family dwelling
15-0000131-000	04/10/2015	07:29:00	86 Investigate	599	Business office
15-0000159-000	04/28/2015	09:01:00	86 Investigate	962	Residential street, road

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use	
600 Good intent call, Other					
15-0000163-000	04/30/2015	21:30:00	86 Investigate	361	Jail, prison (not
15-0000167-000	05/04/2015	08:41:00	86 Investigate	961	Highway or divided
15-0000171-000	05/07/2015	17:25:00	86 Investigate	961	Highway or divided
15-0000176-000	05/09/2015	22:33:00	86 Investigate	419	1 or 2 family dwelling
15-0000177-000	05/10/2015	01:58:00	86 Investigate	429	Multifamily dwelling
15-0000189-000	05/18/2015	20:38:00	86 Investigate	419	1 or 2 family dwelling
15-0000191-000	05/20/2015	03:44:00	86 Investigate	639	Communications center
15-0000198-000	05/25/2015	13:00:00	86 Investigate	639	Communications center
15-0000201-000	05/26/2015	21:03:00	86 Investigate	419	1 or 2 family dwelling
15-0000207-000	05/30/2015	21:29:00	86 Investigate	961	Highway or divided
15-0000211-000	06/04/2015	18:27:00	86 Investigate	419	1 or 2 family dwelling
15-0000225-000	06/20/2015	22:10:00	86 Investigate	962	Residential street, road
15-0000231-000	06/28/2015	10:04:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**31**			**Percent of All:**	**13.2%**
611 Dispatched & cancelled en route					
15-0000004-000	01/04/2015	02:49:00	93 Cancelled en route	419	1 or 2 family dwelling
15-0000033-000	01/27/2015	14:12:00	93 Cancelled en route	429	Multifamily dwelling
15-0000105-000	03/23/2015	09:09:00	93 Cancelled en route	961	Highway or divided
15-0000114-000	03/31/2015	17:22:00	93 Cancelled en route	UUU	Undetermined
15-0000180-000	05/11/2015	19:13:00	93 Cancelled en route	419	1 or 2 family dwelling
15-0000183-000	05/14/2015	13:25:00	93 Cancelled en route	419	1 or 2 family dwelling
15-0000186-000	05/15/2015	17:56:00	93 Cancelled en route	961	Highway or divided
15-0000217-000	06/12/2015	04:05:00	93 Cancelled en route	419	1 or 2 family dwelling
Incident Type Count:	**8**			**Percent of All:**	**3.4%**
671 HazMat release investigation w/no HazMat					
15-0000070-000	02/19/2015	13:04:00	86 Investigate	419	1 or 2 family dwelling
15-0000076-000	02/21/2015	18:02:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**2**			**Percent of All:**	**0.8%**
700 False alarm or false call, Other					
15-0000005-000	01/05/2015	10:34:00	86 Investigate	599	Business office
15-0000007-000	01/06/2015	17:53:00	86 Investigate	808	Outbuilding or shed
15-0000010-000	01/08/2015	10:46:00	86 Investigate	160	Eating, drinking places,
15-0000017-000	01/12/2015	14:50:00	86 Investigate	419	1 or 2 family dwelling
15-0000027-000	01/19/2015	07:19:00	86 Investigate	700	Manufacturing, processing
15-0000028-000	01/19/2015	08:51:00	86 Investigate	599	Business office
15-0000030-000	01/22/2015	14:30:00	86 Investigate	215	High school/junior high
15-0000036-000	01/28/2015	10:25:00	86 Investigate	300	Health care, detention, &

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use	
700 False alarm or false call, Other					
15-0000038-000	01/28/2015	20:10:00	86 Investigate	210	Schools, non-adult, other
15-0000051-000	02/06/2015	06:07:00	86 Investigate	200	Educational, Other
15-0000053-000	02/06/2015	14:44:00	86 Investigate	599	Business office
15-0000095-000	03/12/2015	20:49:00	86 Investigate	419	1 or 2 family dwelling
15-0000143-000	04/15/2015	18:20:00	86 Investigate	419	1 or 2 family dwelling
15-0000150-000	04/22/2015	10:45:00	86 Investigate	210	Schools, non-adult, other
15-0000151-000	04/22/2015	16:49:00	86 Investigate	419	1 or 2 family dwelling
15-0000157-000	04/27/2015	17:51:00	86 Investigate	210	Schools, non-adult, other
15-0000160-000	04/28/2015	18:20:00	86 Investigate	300	Health care, detention, &
15-0000168-000	05/05/2015	10:32:00	86 Investigate	361	Jail, prison (not
15-0000169-000	05/05/2015	14:29:00	86 Investigate	700	Manufacturing, processing
15-0000170-000	05/07/2015	11:32:00	86 Investigate	429	Multifamily dwelling
15-0000172-000	05/08/2015	08:43:00	86 Investigate	215	High school/junior high
15-0000179-000	05/11/2015	13:00:00	86 Investigate	700	Manufacturing, processing
15-0000184-000	05/15/2015	14:30:00	86 Investigate	150	Public or government,
15-0000185-000	05/15/2015	15:36:00	86 Investigate	900	Outside or special
15-0000202-000	05/27/2015	19:51:00	86 Investigate	429	Multifamily dwelling
15-0000203-000	05/28/2015	04:04:00	86 Investigate	311	24-hour care Nursing
15-0000213-000	06/10/2015	21:45:00	86 Investigate	888	Fire station
15-0000233-000	06/30/2015	13:24:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**28**			**Percent of All:**	**11.9%**
730 System malfunction, Other					
15-0000220-000	06/16/2015	01:07:00	86 Investigate	700	Manufacturing, processing
15-0000223-000	06/19/2015	13:14:00	86 Investigate	361	Jail, prison (not
Incident Type Count:	**2**			**Percent of All:**	**0.8%**
733 Smoke detector activation due to malfunction					
15-0000003-000	01/03/2015	21:49:00	86 Investigate	599	Business office
15-0000020-000	01/13/2015	18:57:00	86 Investigate	311	24-hour care Nursing
15-0000043-000	02/02/2015	17:11:00	86 Investigate	419	1 or 2 family dwelling
15-0000133-000	04/11/2015	14:13:00	86 Investigate	210	Schools, non-adult, other
15-0000144-000	04/16/2015	08:22:00	86 Investigate	599	Business office
15-0000149-000	04/20/2015	15:28:00	86 Investigate	599	Business office
15-0000234-000	05/28/2015	16:26:00	86 Investigate	429	Multifamily dwelling
15-0000212-000	06/05/2015	23:58:00	86 Investigate	361	Jail, prison (not
15-0000226-000	06/21/2015	07:50:00	86 Investigate	429	Multifamily dwelling
15-0000230-000	06/28/2015	01:31:00	86 Investigate	429	Multifamily dwelling
Incident Type Count:	**10**			**Percent of All:**	**4.2%**

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2015} And {06/30/2015}

Incident	Alm Date	Time	Primary Action	Property Use	
736 CO detector activation due to malfunction					
15-0000019-000	01/13/2015	17:18:00	86 Investigate	429	Multifamily dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.4%**
743 Smoke detector activation, no fire - unintentional					
15-0000022-000	01/15/2015	18:05:00	86 Investigate	419	1 or 2 family dwelling
15-0000059-000	02/10/2015	17:26:00	86 Investigate	419	1 or 2 family dwelling
15-0000062-000	02/14/2015	16:36:00	86 Investigate	419	1 or 2 family dwelling
15-0000091-000	03/09/2015	12:59:00	86 Investigate	891	Warehouse
15-0000096-000	03/14/2015	20:19:00	86 Investigate	449	Hotel/motel, commercial
15-0000108-000	03/24/2015	17:26:00	86 Investigate	419	1 or 2 family dwelling
15-0000139-000	04/14/2015	10:41:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**7**			**Percent of All:**	**2.9%**
744 Detector activation, no fire - unintentional					
15-0000079-000	02/23/2015	12:15:00	86 Investigate	361	Jail, prison (not
15-0000232-000	06/28/2015	10:47:00	86 Investigate	599	Business office
Incident Type Count:	**2**			**Percent of All:**	**0.8%**
746 Carbon monoxide detector activation, no CO					
15-0000040-000	01/30/2015	17:46:00	86 Investigate	419	1 or 2 family dwelling
15-0000112-000	03/31/2015	02:21:00	86 Investigate	419	1 or 2 family dwelling
15-0000113-000	03/31/2015	08:55:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**3**			**Percent of All:**	**1.2%**

Total Incident Count: 234

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use
111 Building fire				
14-0000007-000	01/03/2014	16:26:00	90 Fill-in, standby,	419 1 or 2 family dwelling
14-0000016-000	01/07/2014	11:15:00	90 Fill-in, standby,	429 Multifamily dwelling
14-0000017-000	01/08/2014	11:09:00	90 Fill-in, standby,	429 Multifamily dwelling
14-0000019-000	01/10/2014	02:01:00	90 Fill-in, standby,	419 1 or 2 family dwelling
14-0000020-000	01/10/2014	02:08:00	90 Fill-in, standby,	419 1 or 2 family dwelling
14-0000043-000	02/03/2014	04:22:00	11 Extinguishment by	419 1 or 2 family dwelling
14-0000160-000	04/23/2014	21:30:00	86 Investigate	419 1 or 2 family dwelling
14-0000212-000	06/02/2014	10:54:00	11 Extinguishment by	419 1 or 2 family dwelling
14-0000230-000	06/13/2014	16:43:00	11 Extinguishment by	429 Multifamily dwelling
14-0000283-000	08/02/2014	04:00:07	11 Extinguishment by	419 1 or 2 family dwelling
14-0000345-000	09/14/2014	12:09:00	11 Extinguishment by	419 1 or 2 family dwelling
14-0000371-000	10/05/2014	04:40:00	11 Extinguishment by	419 1 or 2 family dwelling
14-0000382-000	10/17/2014	22:13:00	11 Extinguishment by	419 1 or 2 family dwelling
14-0000413-000	11/08/2014	21:04:00	11 Extinguishment by	419 1 or 2 family dwelling
14-0000422-000	11/17/2014	21:05:00	11 Extinguishment by	419 1 or 2 family dwelling
14-0000433-000	11/27/2014	02:02:00	11 Extinguishment by	419 1 or 2 family dwelling
14-0000447-000	12/06/2014	20:29:00	11 Extinguishment by	580 General retail, Other
14-0000470-000	12/28/2014	20:49:00	11 Extinguishment by	419 1 or 2 family dwelling
Incident Type Count:	**18**			**Percent of All:** **3.7%**
113 Cooking fire, confined to container				
14-0000192-000	05/18/2014	20:52:00	10 Fire control or	419 1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:** **0.2%**
114 Chimney or flue fire, confined to chimney or flue				
14-0000006-000	01/03/2014	13:48:00	92 Standby	419 1 or 2 family dwelling
14-0000438-000	11/28/2014	17:52:00	11 Extinguishment by	419 1 or 2 family dwelling
Incident Type Count:	**2**			**Percent of All:** **0.4%**
131 Passenger vehicle fire				
14-0000005-000	01/03/2014	07:58:00	11 Extinguishment by	500 Mercantile, business,
14-0000154-000	04/21/2014	13:33:00	11 Extinguishment by	961 Highway or divided
14-0000276-000	07/29/2014	19:00:00	11 Extinguishment by	961 Highway or divided
14-0000282-000	08/01/2014	12:29:00	11 Extinguishment by	963 Street or road in
14-0000472-000	12/30/2014	20:11:00	11 Extinguishment by	961 Highway or divided
Incident Type Count:	**5**			**Percent of All:** **1.0%**
142 Brush or brush-and-grass mixture fire				
14-0000357-000	09/22/2014	15:25:00	86 Investigate	962 Residential street, road

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Incident	Alm Date	Time	Primary Action	Property Use	
142 Brush or brush-and-grass mixture fire					
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
143 Grass fire					
14-0000135-000	04/09/2014	11:33:00	86 Investigate	961	Highway or divided
14-0000165-000	04/25/2014	17:35:00	10 Fire control or	961	Highway or divided
14-0000355-000	09/20/2014	22:58:00	11 Extinguishment by	962	Residential street, road
14-0000401-000	11/03/2014	13:37:00	11 Extinguishment by	961	Highway or divided
Incident Type Count:	**4**			**Percent of All:**	**0.8%**
152 Garbage dump or sanitary landfill fire					
14-0000471-000	12/30/2014	15:31:00	11 Extinguishment by	919	Dump, sanitary landfill
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
160 Special outside fire, Other					
14-0000155-000	04/21/2014	13:45:00	11 Extinguishment by	900	Outside or special
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
251 Excessive heat, scorch burns with no ignition					
14-0000441-000	12/01/2014	08:42:00	86 Investigate	215	High school/junior high
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
322 Motor vehicle accident with injuries					
14-0000035-000	01/26/2014	07:57:00	24 Recover body	961	Highway or divided
14-0000037-000	01/29/2014	09:10:00	70 Assistance, Other	961	Highway or divided
14-0000038-000	01/29/2014	13:36:00	70 Assistance, Other	961	Highway or divided
14-0000039-000	01/29/2014	13:57:00	24 Recover body	961	Highway or divided
14-0000048-000	02/06/2014	14:18:00	70 Assistance, Other	961	Highway or divided
14-0000061-000	02/15/2014	14:02:00	70 Assistance, Other	961	Highway or divided
14-0000086-000	02/24/2014	12:48:00	70 Assistance, Other	961	Highway or divided
14-0000097-000	03/05/2014	18:20:00	23 Extricate,	961	Highway or divided
14-0000144-000	04/14/2014	13:44:00	86 Investigate	961	Highway or divided
14-0000145-000	04/16/2014	07:24:00	23 Extricate,	961	Highway or divided
14-0000170-000	04/27/2014	12:18:00	70 Assistance, Other	961	Highway or divided
14-0000172-000	04/30/2014	23:13:00	70 Assistance, Other	961	Highway or divided
14-0000190-000	05/17/2014	11:24:00	70 Assistance, Other	961	Highway or divided
14-0000219-000	06/06/2014	16:03:00	70 Assistance, Other	961	Highway or divided
14-0000221-000	06/09/2014	15:49:00	70 Assistance, Other	961	Highway or divided
14-0000229-000	06/13/2014	15:10:00	70 Assistance, Other	961	Highway or divided

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Incident	Alm Date	Time	Primary Action	Property Use
322 Motor vehicle accident with injuries				
14-0000241-000	06/26/2014	21:47:00	86 Investigate	961 Highway or divided
14-0000279-000	07/30/2014	20:09:00	70 Assistance, Other	961 Highway or divided
14-0000294-000	08/09/2014	17:11:00	70 Assistance, Other	961 Highway or divided
14-0000297-000	08/11/2014	12:50:00	70 Assistance, Other	961 Highway or divided
14-0000304-000	08/17/2014	17:43:00	70 Assistance, Other	961 Highway or divided
14-0000305-000	08/18/2014	08:11:00	70 Assistance, Other	961 Highway or divided
14-0000320-000	08/30/2014	16:31:00	70 Assistance, Other	961 Highway or divided
14-0000324-000	08/31/2014	22:19:00	70 Assistance, Other	961 Highway or divided
14-0000332-000	09/03/2014	17:18:00	70 Assistance, Other	961 Highway or divided
14-0000343-000	09/12/2014	18:15:00	55 Establish safe area	961 Highway or divided
14-0000373-000	10/10/2014	02:36:00	30 Emergency medical	961 Highway or divided
14-0000389-000	10/23/2014	19:47:00	70 Assistance, Other	961 Highway or divided
14-0000396-000	10/29/2014	12:51:00	70 Assistance, Other	961 Highway or divided
14-0000399-000	10/31/2014	11:46:00	70 Assistance, Other	961 Highway or divided
14-0000403-000	11/04/2014	18:42:00	23 Extricate,	500 Mercantile, business,
14-0000425-000	11/19/2014	22:15:00	70 Assistance, Other	961 Highway or divided
14-0000445-000	12/04/2014	13:55:00	70 Assistance, Other	962 Residential street, road
14-0000451-000	12/08/2014	17:54:00	70 Assistance, Other	961 Highway or divided
Incident Type Count:	**34**			**Percent of All:** **7.1%**
324 Motor Vehicle Accident with no injuries				
14-0000066-000	02/18/2014	11:15:00	86 Investigate	961 Highway or divided
14-0000067-000	02/18/2014	12:38:00	86 Investigate	961 Highway or divided
14-0000068-000	02/18/2014	12:46:00	86 Investigate	961 Highway or divided
14-0000073-000	02/20/2014	08:35:00	70 Assistance, Other	961 Highway or divided
14-0000076-000	02/22/2014	00:43:00	86 Investigate	961 Highway or divided
14-0000106-000	03/13/2014	07:56:00	86 Investigate	254 Day care, in commercial
14-0000126-000	04/01/2014	09:29:00	70 Assistance, Other	961 Highway or divided
14-0000128-000	04/01/2014	16:48:00	70 Assistance, Other	961 Highway or divided
14-0000139-000	04/10/2014	19:38:00	86 Investigate	900 Outside or special
14-0000176-000	05/05/2014	00:10:00	86 Investigate	961 Highway or divided
14-0000207-000	05/30/2014	11:18:00	86 Investigate	340 Clinics, doctors offices,
14-0000210-000	06/02/2014	01:55:00	86 Investigate	961 Highway or divided
14-0000215-000	06/03/2014	15:34:00	90 Fill-in, standby,	961 Highway or divided
14-0000225-000	06/13/2014	09:04:00	70 Assistance, Other	961 Highway or divided
14-0000240-000	06/26/2014	21:39:00	86 Investigate	961 Highway or divided
14-0000252-000	07/04/2014	10:12:00	70 Assistance, Other	963 Street or road in
14-0000255-000	07/14/2014	20:07:00	70 Assistance, Other	963 Street or road in
14-0000272-000	07/26/2014	16:29:00	70 Assistance, Other	961 Highway or divided
14-0000277-000	07/30/2014	11:39:00	86 Investigate	961 Highway or divided
14-0000309-000	08/21/2014	13:49:00	70 Assistance, Other	961 Highway or divided
14-0000319-000	08/28/2014	17:36:00	70 Assistance, Other	961 Highway or divided

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Incident	Alm Date	Time	Primary Action	Property Use	
324 Motor Vehicle Accident with no injuries					
14-0000336-000	09/05/2014	14:06:00	86 Investigate	961	Highway or divided
14-0000349-000	09/17/2014	13:28:00	86 Investigate	961	Highway or divided
14-0000370-000	10/05/2014	00:04:00	86 Investigate	961	Highway or divided
14-0000418-000	11/12/2014	07:15:04	86 Investigate	961	Highway or divided
14-0000448-000	12/07/2014	00:35:00	70 Assistance, Other	961	Highway or divided
Incident Type Count:	**26**			**Percent of All:**	**5.4%**
350 Extrication, rescue, Other					
14-0000014-000	01/05/2014	22:25:00	70 Assistance, Other	960	Street, Other
14-0000021-000	01/10/2014	04:22:00	50 Fires, rescues &	961	Highway or divided
14-0000026-000	01/17/2014	04:24:00	22 Rescue, remove from	960	Street, Other
14-0000027-000	01/18/2014	23:32:00	22 Rescue, remove from	960	Street, Other
Incident Type Count:	**4**			**Percent of All:**	**0.8%**
352 Extrication of victim(s) from vehicle					
14-0000137-000	04/09/2014	22:20:00	23 Extricate,	961	Highway or divided
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
353 Removal of victim(s) from stalled elevator					
14-0000105-000	03/12/2014	17:07:00	86 Investigate	599	Business office
14-0000387-000	10/22/2014	19:23:00	70 Assistance, Other	599	Business office
Incident Type Count:	**2**			**Percent of All:**	**0.4%**
400 Hazardous condition, Other					
14-0000220-000	06/07/2014	17:54:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
411 Gasoline or other flammable liquid spill					
14-0000168-000	04/26/2014	09:33:00	55 Establish safe area	571	Service station, gas
14-0000284-000	08/02/2014	11:43:00	70 Assistance, Other	961	Highway or divided
14-0000446-000	12/06/2014	09:13:00	70 Assistance, Other	965	Vehicle parking area
Incident Type Count:	**3**			**Percent of All:**	**0.6%**
412 Gas leak (natural gas or LPG)					
14-0000012-000	01/05/2014	01:27:00	45 Remove hazard	419	1 or 2 family dwelling
14-0000053-000	02/09/2014	09:10:00	82 Notify other	131	Church, mosque,
14-0000077-000	02/22/2014	06:39:00	86 Investigate	311	24-hour care Nursing

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Incident	Alm Date	Time	Primary Action	Property Use	
412 Gas leak (natural gas or LPG)					
14-0000101-000	03/11/2014	02:13:00	82 Notify other	962	Residential street, road
14-0000120-000	03/23/2014	19:56:00	86 Investigate	419	1 or 2 family dwelling
14-0000125-000	03/29/2014	09:27:00	51 Ventilate	419	1 or 2 family dwelling
14-0000131-000	04/04/2014	17:18:00	86 Investigate	419	1 or 2 family dwelling
14-0000133-000	04/07/2014	10:13:00	86 Investigate	599	Business office
14-0000148-000	04/18/2014	08:42:00	86 Investigate	599	Business office
14-0000256-000	07/15/2014	07:38:00	86 Investigate	599	Business office
14-0000292-000	08/06/2014	15:00:00	86 Investigate	419	1 or 2 family dwelling
14-0000299-000	08/14/2014	10:25:00	86 Investigate	700	Manufacturing, processing
14-0000329-000	09/01/2014	07:56:00	86 Investigate	361	Jail, prison (not
14-0000338-000	09/06/2014	11:10:00	45 Remove hazard	429	Multifamily dwelling
14-0000358-000	09/22/2014	16:56:00	86 Investigate	961	Highway or divided
14-0000397-000	10/29/2014	14:18:00	86 Investigate	429	Multifamily dwelling
Incident Type Count:	**16**			**Percent of All:**	**3.3%**
422 Chemical spill or leak					
14-0000334-000	09/04/2014	14:31:00	43 Hazardous materials	961	Highway or divided
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
424 Carbon monoxide incident					
14-0000082-000	02/23/2014	14:48:00	40 Hazardous condition,	419	1 or 2 family dwelling
14-0000288-000	08/04/2014	11:54:00	86 Investigate	419	1 or 2 family dwelling
14-0000374-000	10/10/2014	19:28:00	86 Investigate	429	Multifamily dwelling
14-0000416-000	11/10/2014	16:32:00	86 Investigate	429	Multifamily dwelling
14-0000440-000	12/01/2014	05:58:00	86 Investigate	419	1 or 2 family dwelling
14-0000458-000	12/16/2014	22:15:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**6**			**Percent of All:**	**1.2%**
440 Electrical wiring/equipment problem, Other					
14-0000008-000	01/03/2014	16:56:00	40 Hazardous condition,	300	Health care, detention, &
14-0000058-000	02/14/2014	17:52:00	86 Investigate	419	1 or 2 family dwelling
14-0000098-000	03/06/2014	05:34:00	86 Investigate	419	1 or 2 family dwelling
14-0000123-000	03/26/2014	07:26:00	86 Investigate	311	24-hour care Nursing
14-0000150-000	04/18/2014	13:34:00	51 Ventilate	311	24-hour care Nursing
14-0000262-000	07/19/2014	10:01:00	86 Investigate	160	Eating, drinking places,
14-0000325-000	08/03/2014	18:58:00	86 Investigate	961	Highway or divided
14-0000306-000	08/18/2014	09:11:00	86 Investigate	254	Day care, in commercial
14-0000314-000	08/26/2014	02:34:00	86 Investigate	361	Jail, prison (not
14-0000383-000	10/18/2014	13:52:00	86 Investigate	599	Business office
14-0000434-000	11/27/2014	04:45:00	86 Investigate	962	Residential street, road

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Incident	Alm Date	Time	Primary Action	Property Use	
440 Electrical wiring/equipment problem, Other					
14-0000463-000	12/20/2014	00:05:00	86 Investigate	419	1 or 2 family dwelling
14-0000465-000	12/21/2014	20:26:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**13**			**Percent of All:**	**2.7%**
442 Overheated motor					
14-0000029-000	01/22/2014	01:59:00	82 Notify other	160	Eating, drinking places,
14-0000036-000	01/27/2014	17:15:00	86 Investigate	311	24-hour care Nursing
14-0000280-000	07/31/2014	09:46:00	86 Investigate	311	24-hour care Nursing
14-0000295-000	08/11/2014	07:33:00	86 Investigate	599	Business office
Incident Type Count:	**4**			**Percent of All:**	**0.8%**
444 Power line down					
14-0000104-000	03/12/2014	16:01:00	82 Notify other	961	Highway or divided
14-0000226-000	06/13/2014	10:09:00	86 Investigate	962	Residential street, road
14-0000298-000	08/13/2014	18:27:00	86 Investigate	963	Street or road in
14-0000341-000	09/11/2014	13:31:00	86 Investigate	961	Highway or divided
14-0000437-000	11/27/2014	21:31:00	86 Investigate	642	Electrical distribution
Incident Type Count:	**5**			**Percent of All:**	**1.0%**
445 Arcing, shorted electrical equipment					
14-0000057-000	02/13/2014	20:04:00	86 Investigate	642	Electrical distribution
14-0000246-000	06/30/2014	07:25:00	86 Investigate	300	Health care, detention, &
14-0000274-000	07/28/2014	22:51:00	86 Investigate	642	Electrical distribution
14-0000361-000	09/25/2014	12:00:00	86 Investigate	962	Residential street, road
Incident Type Count:	**4**			**Percent of All:**	**0.8%**
460 Accident, potential accident, Other					
14-0000118-000	03/22/2014	17:01:00	70 Assistance, Other	419	1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
500 Service Call, other					
14-0000009-000	01/04/2014	02:45:00	86 Investigate	419	1 or 2 family dwelling
14-0000208-000	06/01/2014	14:52:00	86 Investigate	419	1 or 2 family dwelling
14-0000231-000	06/13/2014	17:57:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000232-000	06/13/2014	21:21:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000233-000	06/13/2014	23:11:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000238-000	06/24/2014	12:19:00	86 Investigate	429	Multifamily dwelling
14-0000452-000	12/09/2014	18:06:00	70 Assistance, Other	419	1 or 2 family dwelling

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Incident	Alm Date	Time	Primary Action	Property Use	
500 Service Call, other					
Incident Type Count:	**7**			**Percent of All:**	**1.4%**
520 Water problem, Other					
14-0000004-000	01/03/2014	02:32:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000015-000	01/06/2014	07:45:00	40 Hazardous condition,	419	1 or 2 family dwelling
14-0000018-000	01/08/2014	15:57:00	40 Hazardous condition,	419	1 or 2 family dwelling
14-0000196-000	05/23/2014	21:21:00	66 Remove water	419	1 or 2 family dwelling
14-0000197-000	05/23/2014	21:27:00	86 Investigate	419	1 or 2 family dwelling
14-0000198-000	05/23/2014	23:00:00	66 Remove water	419	1 or 2 family dwelling
14-0000199-000	05/24/2014	09:11:00	66 Remove water	419	1 or 2 family dwelling
Incident Type Count:	**7**			**Percent of All:**	**1.4%**
531 Smoke or odor removal					
14-0000065-000	02/17/2014	16:16:00	45 Remove hazard	419	1 or 2 family dwelling
14-0000174-000	05/02/2014	12:56:00	70 Assistance, Other	419	1 or 2 family dwelling
Incident Type Count:	**2**			**Percent of All:**	**0.4%**
542 Animal rescue					
14-0000273-000	07/27/2014	15:00:04	70 Assistance, Other	669	Forest, timberland,
14-0000449-000	12/07/2014	12:48:00	70 Assistance, Other	419	1 or 2 family dwelling
Incident Type Count:	**2**			**Percent of All:**	**0.4%**
550 Public service assistance, Other					
14-0000072-000	02/19/2014	23:31:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000089-000	02/24/2014	19:00:00	70 Assistance, Other	965	Vehicle parking area
14-0000269-000	07/24/2014	10:19:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000395-000	10/28/2014	20:20:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000405-000	11/04/2014	21:59:00	70 Assistance, Other	961	Highway or divided
14-0000409-000	11/08/2014	08:01:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000439-000	11/30/2014	19:48:00	86 Investigate	963	Street or road in
Incident Type Count:	**7**			**Percent of All:**	**1.4%**
551 Assist police or other governmental agency					
14-0000114-000	03/18/2014	15:32:00	70 Assistance, Other	669	Forest, timberland,
14-0000119-000	03/22/2014	19:37:00	86 Investigate	160	Eating, drinking places,
Incident Type Count:	**2**			**Percent of All:**	**0.4%**

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Incident	Alm Date	Time	Primary Action	Property Use	
561 Unauthorized burning					
14-0000117-000	03/20/2014	19:52:00	11 Extinguishment by	669	Forest, timberland,
14-0000140-000	04/11/2014	15:11:00	86 Investigate	931	Open land or field
14-0000147-000	04/16/2014	23:08:00	11 Extinguishment by	900	Outside or special
14-0000260-000	07/18/2014	20:25:00	11 Extinguishment by	700	Manufacturing, processing
Incident Type Count:	**4**			**Percent of All:**	**0.8%**
571 Cover assignment, standby, moveup					
14-0000001-000	01/02/2014	15:50:00	73 Provide manpower	419	1 or 2 family dwelling
14-0000081-000	02/23/2014	14:41:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000083-000	02/23/2014	14:43:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000084-000	02/23/2014	15:14:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000093-000	03/01/2014	11:40:06	70 Assistance, Other	419	1 or 2 family dwelling
14-0000094-000	03/01/2014	11:54:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000107-000	03/14/2014	13:12:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000113-000	03/18/2014	14:15:00	70 Assistance, Other	700	Manufacturing, processing
14-0000158-000	04/23/2014	18:35:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000159-000	04/23/2014	18:39:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000162-000	04/24/2014	14:35:00	86 Investigate	419	1 or 2 family dwelling
14-0000166-000	04/25/2014	18:43:00	00 Action taken, Other	419	1 or 2 family dwelling
14-0000167-000	04/25/2014	19:01:00	00 Action taken, Other	419	1 or 2 family dwelling
14-0000169-000	04/26/2014	11:46:00	00 Action taken, Other	961	Highway or divided
14-0000177-000	05/05/2014	11:03:00	90 Fill-in, standby,	700	Manufacturing, processing
14-0000178-000	05/05/2014	11:59:00	70 Assistance, Other	700	Manufacturing, processing
14-0000179-000	05/05/2014	17:35:00	90 Fill-in, standby,	700	Manufacturing, processing
14-0000181-000	05/08/2014	16:08:00	90 Fill-in, standby,	419	1 or 2 family dwelling
14-0000193-000	05/18/2014	22:11:00	90 Fill-in, standby,	419	1 or 2 family dwelling
14-0000203-000	05/28/2014	23:26:00	90 Fill-in, standby,	419	1 or 2 family dwelling
14-0000206-000	05/29/2014	14:45:00	90 Fill-in, standby,	579	Motor vehicle or boat
14-0000214-000	06/03/2014	14:43:00	90 Fill-in, standby,	419	1 or 2 family dwelling
14-0000217-000	06/04/2014	07:38:00	90 Fill-in, standby,	419	1 or 2 family dwelling
14-0000244-000	06/28/2014	02:39:00	90 Fill-in, standby,	961	Highway or divided
14-0000245-000	06/28/2014	20:02:00	90 Fill-in, standby,	700	Manufacturing, processing
14-0000258-000	07/16/2014	07:29:00	90 Fill-in, standby,	419	1 or 2 family dwelling
14-0000321-000	08/30/2014	18:54:00	70 Assistance, Other	419	1 or 2 family dwelling
14-0000339-000	09/09/2014	15:04:00	90 Fill-in, standby,	961	Highway or divided
14-0000347-000	09/16/2014	20:14:00	70 Assistance, Other	429	Multifamily dwelling
14-0000348-000	09/16/2014	20:27:00	86 Investigate	429	Multifamily dwelling
14-0000353-000	09/20/2014	15:24:00	86 Investigate	961	Highway or divided
14-0000385-000	10/21/2014	06:45:00	00 Action taken, Other	599	Business office
14-0000398-000	10/31/2014	04:40:00	00 Action taken, Other	961	Highway or divided
14-0000415-000	11/10/2014	15:48:00	70 Assistance, Other	210	Schools, non-adult, other
14-0000430-000	11/24/2014	12:14:00	70 Assistance, Other	961	Highway or divided

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use	
571 Cover assignment, standby, moveup					
14-0000431-000	11/26/2014	11:41:00	70 Assistance, Other	700	Manufacturing, processing
14-0000443-000	12/03/2014	12:24:00	90 Fill-in, standby,	429	Multifamily dwelling
14-0000453-000	12/11/2014	02:10:00	90 Fill-in, standby,	419	1 or 2 family dwelling
14-0000454-000	12/11/2014	15:34:00	70 Assistance, Other	961	Highway or divided
14-0000457-000	12/16/2014	20:56:00	70 Assistance, Other	669	Forest, timberland,
14-0000469-000	12/28/2014	19:56:00	90 Fill-in, standby,	419	1 or 2 family dwelling
Incident Type Count:	**41**			**Percent of All:**	**8.6%**
600 Good intent call, Other					
14-0000011-000	01/04/2014	17:26:00	86 Investigate	155	Courthouse
14-0000013-000	01/05/2014	19:59:00	86 Investigate	960	Street, Other
14-0000022-000	01/11/2014	12:42:00	80 Information,	100	Assembly, Other
14-0000025-000	01/15/2014	00:48:00	80 Information,	419	1 or 2 family dwelling
14-0000045-000	02/04/2014	09:51:00	82 Notify other	429	Multifamily dwelling
14-0000046-000	02/05/2014	07:00:00	82 Notify other	961	Highway or divided
14-0000049-000	02/07/2014	07:03:00	82 Notify other	419	1 or 2 family dwelling
14-0000059-000	02/14/2014	18:11:00	86 Investigate	419	1 or 2 family dwelling
14-0000060-000	02/15/2014	10:19:00	86 Investigate	419	1 or 2 family dwelling
14-0000062-000	02/15/2014	14:58:00	86 Investigate	961	Highway or divided
14-0000063-000	02/16/2014	17:40:00	86 Investigate	962	Residential street, road
14-0000064-000	02/16/2014	17:42:00	86 Investigate	962	Residential street, road
14-0000090-000	02/27/2014	09:30:00	86 Investigate	592	Bank
14-0000099-000	03/07/2014	20:20:00	86 Investigate	963	Street or road in
14-0000109-000	03/16/2014	16:03:00	86 Investigate	962	Residential street, road
14-0000111-000	03/17/2014	06:56:00	86 Investigate	961	Highway or divided
14-0000149-000	04/18/2014	11:53:00	86 Investigate	419	1 or 2 family dwelling
14-0000151-000	04/19/2014	20:20:00	86 Investigate	419	1 or 2 family dwelling
14-0000182-000	05/09/2014	17:40:00	86 Investigate	963	Street or road in
14-0000183-000	05/10/2014	19:11:00	86 Investigate	888	Fire station
14-0000189-000	05/14/2014	07:17:00	86 Investigate	419	1 or 2 family dwelling
14-0000195-000	05/23/2014	18:02:00	86 Investigate	931	Open land or field
14-0000216-000	06/03/2014	16:31:00	86 Investigate	419	1 or 2 family dwelling
14-0000247-000	07/01/2014	13:00:00	86 Investigate	419	1 or 2 family dwelling
14-0000250-000	07/03/2014	18:08:00	86 Investigate	419	1 or 2 family dwelling
14-0000251-000	07/04/2014	02:56:00	86 Investigate	210	Schools, non-adult, other
14-0000253-000	07/08/2014	08:37:00	86 Investigate	419	1 or 2 family dwelling
14-0000254-000	07/13/2014	11:30:00	86 Investigate	419	1 or 2 family dwelling
14-0000326-000	07/19/2014	18:05:00	86 Investigate	419	1 or 2 family dwelling
14-0000265-000	07/21/2014	14:40:00	86 Investigate	419	1 or 2 family dwelling
14-0000266-000	07/22/2014	18:00:00	86 Investigate	700	Manufacturing, processing
14-0000275-000	07/29/2014	10:05:00	86 Investigate	419	1 or 2 family dwelling
14-0000281-000	08/01/2014	10:01:00	86 Investigate	311	24-hour care Nursing

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use	
600 Good intent call, Other					
14-0000302-000	08/14/2014	15:12:00	86 Investigate	961	Highway or divided
14-0000303-000	08/15/2014	07:38:00	86 Investigate	210	Schools, non-adult, other
14-0000308-000	08/20/2014	17:06:00	86 Investigate	000	Property Use, Other
14-0000313-000	08/23/2014	21:13:00	86 Investigate	961	Highway or divided
14-0000318-000	08/28/2014	12:07:00	86 Investigate	449	Hotel/motel, commercial
14-0000322-000	08/31/2014	11:17:00	86 Investigate	419	1 or 2 family dwelling
14-0000331-000	09/01/2014	17:10:00	86 Investigate	961	Highway or divided
14-0000333-000	09/03/2014	19:19:00	86 Investigate	961	Highway or divided
14-0000390-000	10/24/2014	00:33:00	70 Assistance, Other	961	Highway or divided
14-0000391-000	10/25/2014	15:49:00	86 Investigate	961	Highway or divided
14-0000404-000	11/04/2014	20:18:00	86 Investigate	961	Highway or divided
14-0000417-000	11/11/2014	15:14:00	86 Investigate	419	1 or 2 family dwelling
14-0000423-000	11/19/2014	14:07:00	86 Investigate	311	24-hour care Nursing
14-0000427-000	11/22/2014	05:05:00	86 Investigate	571	Service station, gas
14-0000428-000	11/23/2014	13:36:00	86 Investigate	931	Open land or field
14-0000432-000	11/26/2014	18:34:00	86 Investigate	962	Residential street, road
14-0000467-000	12/26/2014	16:49:00	86 Investigate	961	Highway or divided
Incident Type Count:	**50**			**Percent of All:**	**10.5%**
611 Dispatched & cancelled en route					
14-0000002-000	01/03/2014	01:29:00	93 Cancelled en route	419	1 or 2 family dwelling
14-0000003-000	01/03/2014	01:56:00	93 Cancelled en route	419	1 or 2 family dwelling
14-0000034-000	01/26/2014	19:46:00	93 Cancelled en route	961	Highway or divided
14-0000042-000	02/02/2014	00:50:00	93 Cancelled en route	UUU	Undetermined
14-0000044-000	02/04/2014	00:10:00	93 Cancelled en route	961	Highway or divided
14-0000091-000	02/27/2014	11:52:00	93 Cancelled en route	888	Fire station
14-0000127-000	04/01/2014	12:01:00	93 Cancelled en route	961	Highway or divided
14-0000156-000	04/21/2014	15:00:00	93 Cancelled en route	669	Forest, timberland,
14-0000163-000	04/24/2014	16:17:00	93 Cancelled en route	000	Property Use, Other
14-0000164-000	04/25/2014	16:14:00	93 Cancelled en route	000	Property Use, Other
14-0000264-000	07/21/2014	00:43:00	93 Cancelled en route	429	Multifamily dwelling
14-0000286-000	08/03/2014	08:37:00	93 Cancelled en route	963	Street or road in
14-0000293-000	08/07/2014	14:53:00	93 Cancelled en route	963	Street or road in
14-0000296-000	08/11/2014	09:56:00	93 Cancelled en route	961	Highway or divided
14-0000351-000	09/18/2014	21:25:00	93 Cancelled en route	961	Highway or divided
14-0000352-000	09/20/2014	10:55:00	93 Cancelled en route	961	Highway or divided
14-0000354-000	09/20/2014	16:01:00	93 Cancelled en route	961	Highway or divided
14-0000367-000	10/03/2014	13:06:00	93 Cancelled en route	961	Highway or divided
14-0000368-000	10/03/2014	13:26:00	93 Cancelled en route	961	Highway or divided
14-0000379-000	10/15/2014	07:57:00	93 Cancelled en route	961	Highway or divided
14-0000388-000	10/23/2014	19:25:00	93 Cancelled en route	961	Highway or divided
14-0000392-000	10/27/2014	09:25:00	93 Cancelled en route	419	1 or 2 family dwelling

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use	
611 Dispatched & cancelled en route					
14-0000393-000	10/27/2014	12:43:00	93 Cancelled en route	419	1 or 2 family dwelling
14-0000394-000	10/28/2014	14:03:00	93 Cancelled en route	669	Forest, timberland,
14-0000426-000	11/20/2014	11:25:00	93 Cancelled en route	419	1 or 2 family dwelling
14-0000450-000	12/08/2014	08:22:00	93 Cancelled en route	429	Multifamily dwelling
14-0000459-000	12/17/2014	09:45:00	93 Cancelled en route	961	Highway or divided
14-0000460-000	12/17/2014	17:03:00	93 Cancelled en route	961	Highway or divided
14-0000474-000	12/31/2014	10:48:00	93 Cancelled en route	419	1 or 2 family dwelling
14-0000475-000	12/31/2014	10:53:00	93 Cancelled en route	419	1 or 2 family dwelling
Incident Type Count:	**30**			**Percent of All:**	**6.3%**
631 Authorized controlled burning					
14-0000032-000	01/24/2014	17:07:00	86 Investigate	419	1 or 2 family dwelling
14-0000173-000	05/02/2014	09:55:00	86 Investigate	961	Highway or divided
14-0000175-000	05/02/2014	21:50:00	86 Investigate	200	Educational, Other
14-0000180-000	05/06/2014	06:34:00	86 Investigate	900	Outside or special
14-0000402-000	11/04/2014	16:48:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**5**			**Percent of All:**	**1.0%**
671 HazMat release investigation w/no HazMat					
14-0000030-000	01/23/2014	08:08:00	40 Hazardous condition,	419	1 or 2 family dwelling
14-0000033-000	01/25/2014	19:32:00	86 Investigate	419	1 or 2 family dwelling
14-0000289-000	08/05/2014	12:06:00	86 Investigate	429	Multifamily dwelling
14-0000335-000	09/05/2014	09:12:01	86 Investigate	429	Multifamily dwelling
14-0000346-000	09/16/2014	16:03:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**5**			**Percent of All:**	**1.0%**
700 False alarm or false call, Other					
14-0000023-000	01/11/2014	21:52:00	80 Information,	361	Jail, prison (not
14-0000024-000	01/15/2014	10:28:00	80 Information,	700	Manufacturing, processing
14-0000028-000	01/21/2014	05:08:00	80 Information,	160	Eating, drinking places,
14-0000047-000	02/05/2014	08:31:00	86 Investigate	919	Dump, sanitary landfill
14-0000050-000	02/07/2014	11:16:00	86 Investigate	155	Courthouse
14-0000051-000	02/07/2014	15:22:00	86 Investigate	155	Courthouse
14-0000052-000	02/08/2014	07:45:00	86 Investigate	419	1 or 2 family dwelling
14-0000054-000	02/10/2014	11:23:00	86 Investigate	215	High school/junior high
14-0000056-000	02/12/2014	12:59:00	86 Investigate	361	Jail, prison (not
14-0000055-000	02/12/2014	14:12:00	86 Investigate	215	High school/junior high
14-0000074-000	02/20/2014	09:22:00	86 Investigate	155	Courthouse
14-0000075-000	02/21/2014	09:36:00	86 Investigate	150	Public or government,
14-0000078-000	02/22/2014	13:09:00	86 Investigate	580	General retail, Other

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use
700 False alarm or false call, Other				
14-0000079-000	02/22/2014	15:12:00	86 Investigate	155 Courthouse
14-0000085-000	02/23/2014	20:37:00	86 Investigate	361 Jail, prison (not
14-0000087-000	02/24/2014	13:51:00	86 Investigate	600 Ind., utility, defense,
14-0000088-000	02/24/2014	14:16:00	86 Investigate	919 Dump, sanitary landfill
14-0000100-000	03/10/2014	13:58:00	86 Investigate	700 Manufacturing, processing
14-0000108-000	03/14/2014	17:25:00	86 Investigate	419 1 or 2 family dwelling
14-0000116-000	03/20/2014	13:02:00	86 Investigate	599 Business office
14-0000130-000	04/04/2014	11:05:00	86 Investigate	592 Bank
14-0000134-000	04/08/2014	22:48:00	86 Investigate	419 1 or 2 family dwelling
14-0000143-000	04/14/2014	10:43:00	86 Investigate	599 Business office
14-0000146-000	04/16/2014	13:31:00	86 Investigate	419 1 or 2 family dwelling
14-0000161-000	04/24/2014	13:31:00	86 Investigate	419 1 or 2 family dwelling
14-0000200-000	05/24/2014	11:21:00	86 Investigate	511 Convenience store
14-0000201-000	05/25/2014	11:38:00	86 Investigate	700 Manufacturing, processing
14-0000202-000	05/28/2014	14:03:00	86 Investigate	361 Jail, prison (not
14-0000205-000	05/29/2014	13:41:00	86 Investigate	419 1 or 2 family dwelling
14-0000218-000	06/06/2014	10:49:00	86 Investigate	210 Schools, non-adult, other
14-0000223-000	06/11/2014	12:15:00	86 Investigate	210 Schools, non-adult, other
14-0000224-000	06/11/2014	21:18:00	86 Investigate	361 Jail, prison (not
14-0000227-000	06/13/2014	10:16:00	86 Investigate	599 Business office
14-0000242-000	06/27/2014	07:13:00	86 Investigate	361 Jail, prison (not
14-0000248-000	07/02/2014	03:35:00	86 Investigate	599 Business office
14-0000249-000	07/02/2014	15:51:00	86 Investigate	961 Highway or divided
14-0000257-000	07/15/2014	17:36:00	86 Investigate	888 Fire station
14-0000259-000	07/17/2014	03:15:00	86 Investigate	419 1 or 2 family dwelling
14-0000261-000	07/18/2014	22:34:00	86 Investigate	311 24-hour care Nursing
14-0000263-000	07/20/2014	07:25:00	86 Investigate	361 Jail, prison (not
14-0000285-000	08/03/2014	05:58:00	86 Investigate	419 1 or 2 family dwelling
14-0000290-000	08/06/2014	01:41:00	86 Investigate	311 24-hour care Nursing
14-0000291-000	08/06/2014	10:13:00	86 Investigate	311 24-hour care Nursing
14-0000300-000	08/14/2014	19:27:00	86 Investigate	361 Jail, prison (not
14-0000301-000	08/14/2014	20:04:00	86 Investigate	419 1 or 2 family dwelling
14-0000340-000	09/09/2014	21:17:00	86 Investigate	361 Jail, prison (not
14-0000344-000	09/14/2014	07:17:00	86 Investigate	500 Mercantile, business,
14-0000350-000	09/18/2014	12:31:00	86 Investigate	361 Jail, prison (not
14-0000359-000	09/23/2014	16:27:00	86 Investigate	599 Business office
14-0000360-000	09/23/2014	23:08:00	86 Investigate	150 Public or government,
14-0000363-000	09/29/2014	13:56:00	86 Investigate	210 Schools, non-adult, other
14-0000364-000	09/30/2014	13:19:00	86 Investigate	700 Manufacturing, processing
14-0000366-000	10/01/2014	13:15:00	86 Investigate	808 Outbuilding or shed
14-0000369-000	10/04/2014	10:53:00	86 Investigate	300 Health care, detention, &
14-0000377-000	10/13/2014	16:08:00	86 Investigate	700 Manufacturing, processing
14-0000378-000	10/14/2014	21:28:00	86 Investigate	361 Jail, prison (not

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use	
700 False alarm or false call, Other					
14-0000381-000	10/16/2014	18:08:00	86 Investigate	300	Health care, detention, &
14-0000384-000	10/20/2014	15:07:00	86 Investigate	888	Fire station
14-0000400-000	11/01/2014	20:48:00	86 Investigate	419	1 or 2 family dwelling
14-0000411-000	11/08/2014	15:49:00	86 Investigate	419	1 or 2 family dwelling
14-0000429-000	11/24/2014	05:12:00	86 Investigate	155	Courthouse
14-0000435-000	11/27/2014	19:35:00	86 Investigate	808	Outbuilding or shed
14-0000436-000	11/27/2014	21:20:00	86 Investigate	419	1 or 2 family dwelling
14-0000444-000	12/04/2014	08:47:00	86 Investigate	215	High school/junior high
14-0000456-000	12/15/2014	12:44:00	86 Investigate	599	Business office
14-0000462-000	12/19/2014	09:56:00	86 Investigate	700	Manufacturing, processing
14-0000464-000	12/20/2014	10:35:00	86 Investigate	321	Mental
Incident Type Count:	**67**			**Percent of All:**	**14.1%**
710 Malicious, mischievous false call, Other					
14-0000129-000	04/03/2014	15:08:00	51 Ventilate	361	Jail, prison (not
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
714 Central station, malicious false alarm					
14-0000142-000	04/13/2014	20:01:00	86 Investigate	100	Assembly, Other
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
730 System malfunction, Other					
14-0000213-000	06/03/2014	11:43:00	86 Investigate	160	Eating, drinking places,
14-0000278-000	07/30/2014	15:40:00	86 Investigate	210	Schools, non-adult, other
14-0000307-000	08/19/2014	15:43:00	86 Investigate	311	24-hour care Nursing
14-0000312-000	08/22/2014	21:09:00	86 Investigate	215	High school/junior high
14-0000317-000	08/27/2014	20:37:00	86 Investigate	150	Public or government,
14-0000323-000	08/31/2014	15:00:00	86 Investigate	150	Public or government,
14-0000330-000	09/01/2014	11:30:00	86 Investigate	300	Health care, detention, &
14-0000365-000	10/01/2014	11:30:00	86 Investigate	599	Business office
14-0000372-000	10/08/2014	19:55:02	86 Investigate	700	Manufacturing, processing
14-0000406-000	11/05/2014	01:15:00	86 Investigate	361	Jail, prison (not
14-0000407-000	11/05/2014	03:54:00	86 Investigate	429	Multifamily dwelling
14-0000408-000	11/08/2014	09:43:00	86 Investigate	210	Schools, non-adult, other
14-0000410-000	11/08/2014	11:42:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**13**			**Percent of All:**	**2.7%**
731 Sprinkler activation due to malfunction					
14-0000010-000	01/04/2014	14:27:00	64 Shut down system	155	Courthouse

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use	
731 Sprinkler activation due to malfunction					
Incident Type Count: 1				**Percent of All:**	0.2%
733 Smoke detector activation due to malfunction					
14-0000112-000	03/18/2014	14:11:00	86 Investigate	419	1 or 2 family dwelling
14-0000115-000	03/18/2014	19:35:00	86 Investigate	419	1 or 2 family dwelling
14-0000121-000	03/25/2014	12:14:00	86 Investigate	700	Manufacturing, processing
14-0000124-000	03/29/2014	05:10:00	86 Investigate	311	24-hour care Nursing
14-0000157-000	04/23/2014	00:34:00	86 Investigate	311	24-hour care Nursing
14-0000234-000	06/15/2014	22:18:00	86 Investigate	419	1 or 2 family dwelling
14-0000235-000	06/18/2014	05:27:00	86 Investigate	599	Business office
14-0000236-000	06/22/2014	10:34:00	86 Investigate	311	24-hour care Nursing
14-0000237-000	06/22/2014	15:39:00	86 Investigate	419	1 or 2 family dwelling
14-0000239-000	06/26/2014	08:41:00	86 Investigate	599	Business office
14-0000268-000	07/23/2014	11:08:00	86 Investigate	311	24-hour care Nursing
14-0000270-000	07/24/2014	17:29:00	86 Investigate	419	1 or 2 family dwelling
14-0000271-000	07/25/2014	05:35:00	86 Investigate	210	Schools, non-adult, other
14-0000327-000	09/01/2014	05:04:00	86 Investigate	150	Public or government,
14-0000328-000	09/01/2014	07:30:00	86 Investigate	150	Public or government,
14-0000342-000	09/12/2014	14:15:00	86 Investigate	700	Manufacturing, processing
14-0000362-000	09/27/2014	16:43:00	86 Investigate	131	Church, mosque,
14-0000473-000	12/31/2014	01:46:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count: 18				**Percent of All:**	3.7%
743 Smoke detector activation, no fire - unintentional					
14-0000031-000	01/24/2014	14:55:00	00 Action taken, Other	419	1 or 2 family dwelling
14-0000041-000	01/30/2014	16:50:00	63 Restore fire alarm	110	Fixed-use recreation
14-0000069-000	02/18/2014	13:24:00	86 Investigate	300	Health care, detention, &
14-0000070-000	02/18/2014	13:32:00	86 Investigate	361	Jail, prison (not
14-0000095-000	03/02/2014	16:53:00	86 Investigate	419	1 or 2 family dwelling
14-0000096-000	03/05/2014	11:33:00	86 Investigate	429	Multifamily dwelling
14-0000102-000	03/11/2014	15:50:00	86 Investigate	599	Business office
14-0000110-000	03/16/2014	23:18:00	86 Investigate	449	Hotel/motel, commercial
14-0000122-000	03/25/2014	13:27:00	86 Investigate	429	Multifamily dwelling
14-0000138-000	04/10/2014	16:53:00	86 Investigate	419	1 or 2 family dwelling
14-0000141-000	04/13/2014	15:54:00	86 Investigate	419	1 or 2 family dwelling
14-0000152-000	04/19/2014	21:41:00	86 Investigate	419	1 or 2 family dwelling
14-0000153-000	04/21/2014	08:39:00	86 Investigate	419	1 or 2 family dwelling
14-0000171-000	04/28/2014	12:10:00	86 Investigate	592	Bank
14-0000185-000	05/12/2014	17:34:00	86 Investigate	419	1 or 2 family dwelling
14-0000186-000	05/12/2014	18:14:00	86 Investigate	419	1 or 2 family dwelling
14-0000188-000	05/13/2014	23:11:00	86 Investigate	419	1 or 2 family dwelling

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use	
743 Smoke detector activation, no fire - unintentional					
14-0000209-000	06/01/2014	19:51:00	86 Investigate	429	Multifamily dwelling
14-0000211-000	06/02/2014	07:33:00	86 Investigate	419	1 or 2 family dwelling
14-0000228-000	06/13/2014	11:16:00	86 Investigate	700	Manufacturing, processing
14-0000287-000	08/03/2014	11:25:00	86 Investigate	419	1 or 2 family dwelling
14-0000310-000	08/22/2014	20:19:00	70 Assistance, Other	429	Multifamily dwelling
14-0000311-000	08/22/2014	20:57:00	86 Investigate	419	1 or 2 family dwelling
14-0000315-000	08/26/2014	17:17:00	86 Investigate	361	Jail, prison (not
14-0000316-000	08/26/2014	23:51:00	86 Investigate	300	Health care, detention, &
14-0000337-000	09/05/2014	17:30:00	86 Investigate	419	1 or 2 family dwelling
14-0000380-000	10/15/2014	11:30:00	86 Investigate	700	Manufacturing, processing
14-0000386-000	10/21/2014	19:10:00	86 Investigate	429	Multifamily dwelling
14-0000412-000	11/08/2014	19:50:00	86 Investigate	419	1 or 2 family dwelling
14-0000442-000	12/01/2014	16:58:00	86 Investigate	419	1 or 2 family dwelling
14-0000461-000	12/17/2014	17:56:00	86 Investigate	429	Multifamily dwelling
14-0000466-000	12/24/2014	19:19:00	86 Investigate	419	1 or 2 family dwelling
14-0000468-000	12/27/2014	09:38:00	86 Investigate	449	Hotel/motel, commercial
Incident Type Count:	**33**			**Percent of All:**	**6.9%**
744 Detector activation, no fire - unintentional					
14-0000040-000	01/30/2014	08:44:00	86 Investigate	361	Jail, prison (not
14-0000184-000	05/11/2014	17:57:00	86 Investigate	210	Schools, non-adult, other
14-0000187-000	05/13/2014	19:00:00	86 Investigate	311	24-hour care Nursing
14-0000194-000	05/23/2014	13:36:00	86 Investigate	311	24-hour care Nursing
14-0000204-000	05/29/2014	06:55:00	86 Investigate	700	Manufacturing, processing
14-0000267-000	07/23/2014	10:46:00	86 Investigate	215	High school/junior high
14-0000419-000	11/16/2014	10:33:00	86 Investigate	311	24-hour care Nursing
14-0000455-000	12/11/2014	16:57:00	86 Investigate	311	24-hour care Nursing
Incident Type Count:	**8**			**Percent of All:**	**1.6%**
745 Alarm system activation, no fire - unintentional					
14-0000376-000	10/11/2014	14:09:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.2%**
746 Carbon monoxide detector activation, no CO					
14-0000071-000	02/19/2014	18:20:00	86 Investigate	419	1 or 2 family dwelling
14-0000080-000	02/22/2014	15:26:00	86 Investigate	419	1 or 2 family dwelling
14-0000092-000	02/27/2014	21:43:00	86 Investigate	419	1 or 2 family dwelling
14-0000103-000	03/11/2014	22:23:00	86 Investigate	419	1 or 2 family dwelling
14-0000132-000	04/07/2014	00:12:00	86 Investigate	419	1 or 2 family dwelling
14-0000136-000	04/09/2014	12:45:00	86 Investigate	419	1 or 2 family dwelling

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2014} And {12/31/2014}

Incident	Alm Date	Time	Primary Action	Property Use	
746 Carbon monoxide detector activation, no CO					
14-0000191-000	05/17/2014	15:47:00	86 Investigate	419	1 or 2 family dwelling
14-0000222-000	06/10/2014	19:21:00	86 Investigate	419	1 or 2 family dwelling
14-0000356-000	09/21/2014	10:27:00	86 Investigate	419	1 or 2 family dwelling
14-0000375-000	10/11/2014	12:06:00	86 Investigate	419	1 or 2 family dwelling
14-0000414-000	11/09/2014	01:45:00	86 Investigate	419	1 or 2 family dwelling
14-0000420-000	11/16/2014	14:37:00	86 Investigate	419	1 or 2 family dwelling
14-0000424-000	11/19/2014	20:30:00	86 Investigate	419	1 or 2 family dwelling
Incident Type Count:	**13**			**Percent of All:**	**2.7%**
900 Special type of incident, Other					
14-0000243-000	06/27/2014	08:50:00	86 Investigate	961	Highway or divided
14-0000421-000	11/17/2014	17:01:00	86 Investigate	640	Utility or Distribution
Incident Type Count:	**2**			**Percent of All:**	**0.4%**

Total Incident Count: **475**

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use	
100 Fire, Other					
13-0000323-000	07/02/2013	12:00:00	86 Investigate	400	Residential, Other
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
111 Building fire					
13-0000284-000	08/02/2013	23:02:00	10 Fire control or	400	Residential, Other
13-0000317-000	08/26/2013	20:31:00	86 Investigate	400	Residential, Other
Incident Type Count:	**2**			**Percent of All:**	**0.3%**
112 Fires in structure other than in a building					
13-0000121-000	04/07/2013	16:34:00	11 Extinguishment by	400	Residential, Other
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
113 Cooking fire, confined to container					
13-0000109-000	03/30/2013	09:52:00	51 Ventilate	400	Residential, Other
13-0000469-000	11/26/2013	02:44:07	80 Information,	400	Residential, Other
Incident Type Count:	**2**			**Percent of All:**	**0.3%**
116 Fuel burner/boiler malfunction, fire confined					
13-0000512-000	12/22/2013	07:02:00	80 Information,	323	Asylum, mental
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
118 Trash or rubbish fire, contained					
13-0000373-000	10/04/2013	16:46:00	11 Extinguishment by	429	Multifamily dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
130 Mobile property (vehicle) fire, Other					
13-0000311-000	08/20/2013	07:22:00	86 Investigate	961	Highway or divided
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
131 Passenger vehicle fire					
13-0000023-000	01/23/2013	16:40:00	11 Extinguishment by	965	Vehicle parking area
13-0000219-000	06/13/2013	08:32:00	11 Extinguishment by	962	Residential street, road
13-0000445-000	11/10/2013	23:54:00	80 Information,	961	Highway or divided
13-0000497-000	12/12/2013	14:51:00	11 Extinguishment by	961	Highway or divided

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use	
131 Passenger vehicle fire					
Incident Type Count:	**4**			**Percent of All:**	**0.7%**
138 Off-road vehicle or heavy equipment fire					
13-0000439-000	11/06/2013	08:07:00	78 Control traffic	961	Highway or divided
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
142 Brush or brush-and-grass mixture fire					
13-0000161-000	05/02/2013	19:10:00	11 Extinguishment by	961	Highway or divided
13-0000166-000	05/06/2013	14:35:00	11 Extinguishment by	150	Public or government,
13-0000453-000	11/16/2013	11:05:00	11 Extinguishment by	961	Highway or divided
13-0000455-000	11/16/2013	22:22:00	11 Extinguishment by	961	Highway or divided
Incident Type Count:	**4**			**Percent of All:**	**0.7%**
150 Outside rubbish fire, Other					
13-0000146-000	04/23/2013	14:31:00	11 Extinguishment by	400	Residential, Other
13-0000396-000	10/16/2013	17:27:00	11 Extinguishment by	931	Open land or field
13-0000398-000	10/19/2013	13:41:00	11 Extinguishment by	400	Residential, Other
13-0000406-000	10/25/2013	09:27:00	11 Extinguishment by	400	Residential, Other
Incident Type Count:	**4**			**Percent of All:**	**0.7%**
151 Outside rubbish, trash or waste fire					
13-0000122-000	04/08/2013	14:53:00	11 Extinguishment by	419	1 or 2 family dwelling
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
200 Overpressure rupture, explosion, overheat other					
13-0000048-000	02/10/2013	08:00:00	80 Information,	961	Highway or divided
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
251 Excessive heat, scorch burns with no ignition					
13-0000063-000	02/18/2013	16:31:00	51 Ventilate	300	Health care, detention, &
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
300 Rescue, EMS incident, other					
13-0000468-000	11/25/2013	08:23:00	80 Information,	961	Highway or divided

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use	
300 Rescue, EMS incident, other					
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
322 Motor vehicle accident with injuries					
13-0000013-000	01/15/2013	06:48:00	23 Extricate,	961	Highway or divided
13-0000018-000	01/22/2013	20:06:00	78 Control traffic	961	Highway or divided
13-0000019-000	01/22/2013	20:31:00	23 Extricate,	961	Highway or divided
13-0000038-000	01/31/2013	02:28:00	23 Extricate,	961	Highway or divided
13-0000040-000	02/02/2013	03:00:00	23 Extricate,	961	Highway or divided
13-0000041-000	02/02/2013	21:09:00	80 Information,	961	Highway or divided
13-0000051-000	02/11/2013	07:23:00	80 Information,	961	Highway or divided
13-0000066-000	02/19/2013	07:26:00	23 Extricate,	961	Highway or divided
13-0000073-000	02/27/2013	10:19:00	80 Information,	961	Highway or divided
13-0000081-000	03/10/2013	13:58:00	90 Fill-in, standby,	962	Residential street, road
13-0000087-000	03/14/2013	14:32:00	78 Control traffic	961	Highway or divided
13-0000164-000	05/05/2013	06:24:00	23 Extricate,	961	Highway or divided
13-0000327-000	07/28/2013	17:31:00	86 Investigate	961	Highway or divided
13-0000290-000	08/06/2013	15:46:00	78 Control traffic	961	Highway or divided
13-0000307-000	08/18/2013	12:54:00	23 Extricate,	400	Residential, Other
13-0000312-000	08/20/2013	10:24:00	78 Control traffic	961	Highway or divided
13-0000319-000	08/28/2013	13:31:00	23 Extricate,	961	Highway or divided
13-0000353-000	09/24/2013	15:49:00	43 Hazardous materials	961	Highway or divided
13-0000357-000	09/27/2013	06:58:00	78 Control traffic	961	Highway or divided
13-0000360-000	09/28/2013	17:58:00	78 Control traffic	961	Highway or divided
13-0000376-000	10/07/2013	07:45:00	78 Control traffic	962	Residential street, road
13-0000379-000	10/08/2013	10:28:00	78 Control traffic	961	Highway or divided
13-0000391-000	10/14/2013	11:42:00	78 Control traffic	961	Highway or divided
13-0000394-000	10/16/2013	12:42:00	78 Control traffic	961	Highway or divided
13-0000397-000	10/17/2013	22:22:00	78 Control traffic	961	Highway or divided
13-0000408-000	10/26/2013	15:34:00	78 Control traffic	961	Highway or divided
13-0000508-000	12/21/2013	03:43:00	78 Control traffic	961	Highway or divided
13-0000527-000	12/31/2013	17:40:00	78 Control traffic	962	Residential street, road
Incident Type Count:	**28**			**Percent of All:**	**5.2%**
324 Motor Vehicle Accident with no injuries					
13-0000009-000	01/11/2013	08:07:00	80 Information,	961	Highway or divided
13-0000010-000	01/13/2013	04:04:00	78 Control traffic	961	Highway or divided
13-0000011-000	01/13/2013	05:00:00	78 Control traffic	961	Highway or divided
13-0000029-000	01/27/2013	18:20:00	78 Control traffic	961	Highway or divided
13-0000031-000	01/28/2013	14:06:00	78 Control traffic	961	Highway or divided
13-0000044-000	02/04/2013	23:36:00	80 Information,	961	Highway or divided
13-0000045-000	02/08/2013	13:00:00	78 Control traffic	961	Highway or divided

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
324 Motor Vehicle Accident with no injuries				
13-0000047-000	02/08/2013	13:34:00	78 Control traffic	961 Highway or divided
13-0000061-000	02/18/2013	05:20:00	90 Fill-in, standby,	961 Highway or divided
13-0000064-000	02/18/2013	16:39:00	80 Information,	961 Highway or divided
13-0000078-000	03/08/2013	12:04:00	90 Fill-in, standby,	961 Highway or divided
13-0000091-000	03/19/2013	04:31:00	80 Information,	961 Highway or divided
13-0000092-000	03/19/2013	11:13:00	90 Fill-in, standby,	961 Highway or divided
13-0000093-000	03/19/2013	12:17:00	78 Control traffic	961 Highway or divided
13-0000102-000	03/25/2013	17:32:00	78 Control traffic	961 Highway or divided
13-0000105-000	03/27/2013	09:40:00	90 Fill-in, standby,	961 Highway or divided
13-0000112-000	03/30/2013	23:24:00	80 Information,	961 Highway or divided
13-0000115-000	04/02/2013	07:30:00	78 Control traffic	961 Highway or divided
13-0000123-000	04/08/2013	16:25:00	78 Control traffic	961 Highway or divided
13-0000128-000	04/09/2013	16:41:00	78 Control traffic	961 Highway or divided
13-0000132-000	04/10/2013	16:41:00	78 Control traffic	961 Highway or divided
13-0000134-000	04/12/2013	11:11:00	78 Control traffic	961 Highway or divided
13-0000141-000	04/18/2013	18:57:00	80 Information,	961 Highway or divided
13-0000154-000	04/29/2013	07:12:00	78 Control traffic	961 Highway or divided
13-0000155-000	04/29/2013	16:23:00	78 Control traffic	962 Residential street, road
13-0000173-000	05/11/2013	22:49:00	80 Information,	961 Highway or divided
13-0000182-000	05/25/2013	23:41:00	00 Action taken, Other	961 Highway or divided
13-0000190-000	05/31/2013	12:38:00	78 Control traffic	961 Highway or divided
13-0000278-000	06/03/2013	02:37:00	80 Information,	961 Highway or divided
13-0000204-000	06/04/2013	17:17:00	78 Control traffic	961 Highway or divided
13-0000209-000	06/08/2013	21:04:00	78 Control traffic	961 Highway or divided
13-0000213-000	06/10/2013	16:52:00	58 Operate apparatus or	961 Highway or divided
13-0000279-000	06/10/2013	17:15:00	31 Provide first aid &	961 Highway or divided
13-0000224-000	06/16/2013	10:14:00	86 Investigate	961 Highway or divided
13-0000228-000	06/20/2013	21:28:00	78 Control traffic	961 Highway or divided
13-0000280-000	06/23/2013	22:28:00	80 Information,	961 Highway or divided
13-0000247-000	07/05/2013	11:22:00	78 Control traffic	961 Highway or divided
13-0000248-000	07/05/2013	12:24:00	30 Emergency medical	961 Highway or divided
13-0000255-000	07/10/2013	17:12:00	80 Information,	961 Highway or divided
13-0000257-000	07/10/2013	22:12:00	78 Control traffic	961 Highway or divided
13-0000258-000	07/11/2013	00:50:00	78 Control traffic	961 Highway or divided
13-0000262-000	07/14/2013	11:01:00	78 Control traffic	961 Highway or divided
13-0000267-000	07/18/2013	13:57:00	78 Control traffic	961 Highway or divided
13-0000275-000	07/26/2013	15:38:00	78 Control traffic	961 Highway or divided
13-0000276-000	07/31/2013	12:10:00	78 Control traffic	961 Highway or divided
13-0000286-000	08/05/2013	08:16:00	78 Control traffic	961 Highway or divided
13-0000288-000	08/05/2013	09:45:00	78 Control traffic	961 Highway or divided
13-0000294-000	08/09/2013	09:21:00	78 Control traffic	961 Highway or divided
13-0000300-000	08/09/2013	13:41:00	86 Investigate	961 Highway or divided
13-0000301-000	08/10/2013	00:33:00	78 Control traffic	961 Highway or divided

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
324 Motor Vehicle Accident with no injuries				
13-0000308-000	08/18/2013	23:38:00	78 Control traffic	961 Highway or divided
13-0000329-000	09/02/2013	08:38:00	78 Control traffic	961 Highway or divided
13-0000333-000	09/06/2013	08:29:00	30 Emergency medical	961 Highway or divided
13-0000346-000	09/17/2013	17:35:00	78 Control traffic	961 Highway or divided
13-0000347-000	09/18/2013	07:41:00	78 Control traffic	961 Highway or divided
13-0000349-000	09/23/2013	09:11:00	78 Control traffic	961 Highway or divided
13-0000352-000	09/24/2013	14:39:00	78 Control traffic	961 Highway or divided
13-0000361-000	09/29/2013	03:07:00	78 Control traffic	961 Highway or divided
13-0000371-000	10/03/2013	14:20:00	78 Control traffic	961 Highway or divided
13-0000372-000	10/03/2013	15:52:00	78 Control traffic	961 Highway or divided
13-0000392-000	10/15/2013	11:41:00	78 Control traffic	961 Highway or divided
13-0000402-000	10/21/2013	16:58:00	78 Control traffic	961 Highway or divided
13-0000412-000	10/27/2013	11:28:00	78 Control traffic	961 Highway or divided
13-0000423-000	10/31/2013	09:46:00	78 Control traffic	960 Street, Other
13-0000432-000	11/01/2013	05:48:00	78 Control traffic	961 Highway or divided
13-0000433-000	11/01/2013	14:42:00	78 Control traffic	961 Highway or divided
13-0000448-000	11/13/2013	12:37:00	78 Control traffic	961 Highway or divided
13-0000463-000	11/22/2013	11:30:00	78 Control traffic	961 Highway or divided
13-0000465-000	11/24/2013	00:03:00	78 Control traffic	961 Highway or divided
13-0000531-000	11/26/2013	08:10:00	78 Control traffic	961 Highway or divided
13-0000471-000	11/26/2013	14:48:00	78 Control traffic	961 Highway or divided
13-0000472-000	11/26/2013	22:14:00	78 Control traffic	961 Highway or divided
13-0000495-000	12/12/2013	10:52:00	78 Control traffic	961 Highway or divided
13-0000502-000	12/14/2013	20:24:00	80 Information,	961 Highway or divided
Incident Type Count:	**74**			**Percent of All:** **13.9%**
400 Hazardous condition, Other				
13-0000006-000	01/09/2013	14:54:00	80 Information,	400 Residential, Other
13-0000028-000	01/26/2013	20:03:00	80 Information,	400 Residential, Other
13-0000033-000	01/29/2013	13:12:00	80 Information,	700 Manufacturing, processing
13-0000060-000	02/17/2013	22:10:00	00 Action taken, Other	400 Residential, Other
13-0000068-000	02/22/2013	08:34:00	80 Information,	400 Residential, Other
13-0000084-000	03/11/2013	14:38:00	80 Information,	300 Health care, detention, &
13-0000090-000	03/18/2013	01:16:00	80 Information,	961 Highway or divided
13-0000113-000	04/01/2013	00:36:00	80 Information,	961 Highway or divided
13-0000147-000	04/23/2013	18:58:00	80 Information,	400 Residential, Other
13-0000178-000	05/18/2013	12:08:00	80 Information,	400 Residential, Other
13-0000181-000	05/21/2013	10:20:00	80 Information,	429 Multifamily dwelling
13-0000242-000	05/28/2013	09:10:00	84 Refer to proper	400 Residential, Other
13-0000191-000	05/31/2013	18:09:00	80 Information,	961 Highway or divided
13-0000195-000	06/01/2013	12:04:00	86 Investigate	419 1 or 2 family dwelling
13-0000229-000	06/21/2013	07:56:00	80 Information,	400 Residential, Other

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
400 Hazardous condition, Other				
13-0000230-000	06/21/2013	10:48:00	86 Investigate	961 Highway or divided
13-0000232-000	06/22/2013	19:46:00	80 Information,	400 Residential, Other
13-0000233-000	06/22/2013	21:56:00	80 Information,	961 Highway or divided
13-0000235-000	06/26/2013	20:29:00	84 Refer to proper	961 Highway or divided
13-0000250-000	07/06/2013	13:49:00	78 Control traffic	961 Highway or divided
13-0000259-000	07/12/2013	08:55:00	80 Information,	300 Health care, detention, &
13-0000265-000	07/18/2013	04:32:00	64 Shut down system	400 Residential, Other
13-0000273-000	07/25/2013	12:04:00	78 Control traffic	300 Health care, detention, &
13-0000296-000	08/09/2013	09:48:00	86 Investigate	112 Billiard center, pool
13-0000302-000	08/11/2013	09:31:00	86 Investigate	100 Assembly, Other
13-0000309-000	08/19/2013	17:08:00	86 Investigate	400 Residential, Other
13-0000313-000	08/20/2013	13:18:00	86 Investigate	961 Highway or divided
13-0000314-000	08/22/2013	14:49:00	40 Hazardous condition,	961 Highway or divided
13-0000315-000	08/22/2013	20:01:00	86 Investigate	400 Residential, Other
13-0000318-000	08/26/2013	22:39:00	86 Investigate	400 Residential, Other
13-0000322-000	08/31/2013	13:37:00	86 Investigate	400 Residential, Other
13-0000336-000	09/09/2013	13:26:00	44 Hazardous materials	511 Convenience store
13-0000429-000	09/17/2013	06:42:00	80 Information,	400 Residential, Other
13-0000355-000	09/25/2013	21:22:00	80 Information,	400 Residential, Other
13-0000356-000	09/26/2013	21:42:00	80 Information,	400 Residential, Other
13-0000363-000	09/29/2013	08:15:00	80 Information,	100 Assembly, Other
13-0000388-000	10/12/2013	08:43:00	80 Information,	429 Multifamily dwelling
13-0000389-000	10/12/2013	16:21:00	78 Control traffic	961 Highway or divided
13-0000400-000	10/21/2013	10:55:00	80 Information,	429 Multifamily dwelling
13-0000415-000	10/27/2013	20:29:00	80 Information,	961 Highway or divided
13-0000419-000	10/29/2013	11:43:00	80 Information,	400 Residential, Other
13-0000421-000	10/29/2013	18:08:00	78 Control traffic	961 Highway or divided
13-0000434-000	11/02/2013	13:54:00	51 Ventilate	400 Residential, Other
13-0000447-000	11/11/2013	13:46:00	80 Information,	961 Highway or divided
13-0000450-000	11/14/2013	10:13:00	51 Ventilate	160 Eating, drinking places,
13-0000452-000	11/14/2013	23:15:00	50 Fires, rescues &	200 Educational, Other
13-0000466-000	11/24/2013	11:34:00	80 Information,	400 Residential, Other
13-0000483-000	12/03/2013	20:38:00	80 Information,	400 Residential, Other
13-0000515-000	12/23/2013	18:13:00	80 Information,	400 Residential, Other
13-0000516-000	12/24/2013	12:33:00	80 Information,	400 Residential, Other
13-0000526-000	12/29/2013	08:44:00	80 Information,	161 Restaurant or cafeteria
Incident Type Count:	**51**			**Percent of All:** **9.6%**
413 Oil or other combustible liquid spill				
13-0000289-000	08/05/2013	16:35:00	86 Investigate	961 Highway or divided

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
413 Oil or other combustible liquid spill				
13-0000510-000	12/19/2013	20:33:00	80 Information,	400 Residential, Other
Incident Type Count: 1				**Percent of All: 0.1%**
424 Carbon monoxide incident				
13-0000003-000	01/04/2013	11:31:00	80 Information,	400 Residential, Other
13-0000016-000	01/16/2013	19:37:00	80 Information,	400 Residential, Other
13-0000032-000	01/29/2013	09:30:00	80 Information,	400 Residential, Other
13-0000039-000	02/01/2013	17:54:00	80 Information,	400 Residential, Other
13-0000043-000	02/04/2013	13:14:00	80 Information,	400 Residential, Other
13-0000050-000	02/11/2013	05:06:00	51 Ventilate	400 Residential, Other
13-0000065-000	02/18/2013	23:51:00	80 Information,	400 Residential, Other
13-0000075-000	03/02/2013	20:20:00	80 Information,	400 Residential, Other
13-0000083-000	03/11/2013	10:25:00	80 Information,	400 Residential, Other
13-0000103-000	03/25/2013	23:27:00	80 Information,	400 Residential, Other
13-0000116-000	04/03/2013	20:31:00	80 Information,	429 Multifamily dwelling
13-0000157-000	04/30/2013	19:59:00	80 Information,	400 Residential, Other
13-0000185-000	05/27/2013	19:56:00	80 Information,	400 Residential, Other
13-0000186-000	05/29/2013	13:27:00	80 Information,	400 Residential, Other
13-0000196-000	06/01/2013	12:41:00	80 Information,	400 Residential, Other
13-0000201-000	06/03/2013	02:33:00	80 Information,	500 Mercantile, business,
13-0000208-000	06/08/2013	10:24:00	80 Information,	400 Residential, Other
13-0000293-000	08/08/2013	21:48:00	86 Investigate	400 Residential, Other
13-0000368-000	08/28/2013	19:59:00	80 Information,	429 Multifamily dwelling
13-0000366-000	08/29/2013	15:15:00	80 Information,	400 Residential, Other
13-0000354-000	09/25/2013	19:34:00	80 Information,	400 Residential, Other
13-0000384-000	10/10/2013	21:56:00	80 Information,	400 Residential, Other
13-0000404-000	10/24/2013	15:38:00	80 Information,	400 Residential, Other
13-0000405-000	10/24/2013	15:54:00	80 Information,	150 Public or government,
13-0000413-000	10/27/2013	12:24:00	80 Information,	400 Residential, Other
13-0000417-000	10/28/2013	14:00:00	86 Investigate	429 Multifamily dwelling
13-0000451-000	11/14/2013	19:10:00	80 Information,	400 Residential, Other
13-0000457-000	11/17/2013	19:32:00	80 Information,	400 Residential, Other
13-0000460-000	11/21/2013	07:08:00	80 Information,	400 Residential, Other
13-0000470-000	11/26/2013	11:07:00	80 Information,	400 Residential, Other
13-0000491-000	12/09/2013	19:27:00	80 Information,	400 Residential, Other
13-0000510-000	12/19/2013	20:33:00	80 Information,	400 Residential, Other
Incident Type Count: 32				**Percent of All: 6.0%**
444 Power line down				
13-0000159-000	03/12/2013	06:44:00	80 Information,	962 Residential street, road

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use	
444 Power line down					
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
500 Service Call, other					
13-0000111-000	03/30/2013	14:37:00	80 Information,	UUU	Undetermined
13-0000137-000	04/14/2013	14:13:00	80 Information,	400	Residential, Other
13-0000254-000	07/08/2013	12:07:00	80 Information,	419	1 or 2 family dwelling
13-0000297-000	08/09/2013	11:34:00	86 Investigate	400	Residential, Other
13-0000298-000	08/09/2013	11:57:00	86 Investigate	400	Residential, Other
13-0000299-000	08/09/2013	13:28:00	86 Investigate	155	Courthouse
Incident Type Count:	**6**			**Percent of All:**	**1.1%**
531 Smoke or odor removal					
13-0000004-000	01/05/2013	07:28:00	80 Information,	961	Highway or divided
13-0000062-000	02/18/2013	12:39:00	51 Ventilate	150	Public or government,
13-0000082-000	03/11/2013	08:56:00	80 Information,	400	Residential, Other
13-0000221-000	06/14/2013	13:57:00	80 Information,	961	Highway or divided
13-0000231-000	06/21/2013	12:28:00	80 Information,	400	Residential, Other
13-0000243-000	07/02/2013	10:38:00	80 Information,	961	Highway or divided
13-0000245-000	07/03/2013	22:10:00	80 Information,	511	Convenience store
13-0000246-000	07/04/2013	09:42:00	80 Information,	511	Convenience store
13-0000249-000	07/05/2013	14:28:00	80 Information,	161	Restaurant or cafeteria
13-0000251-000	07/06/2013	21:09:00	80 Information,	400	Residential, Other
13-0000426-000	09/06/2013	15:34:00	86 Investigate	931	Open land or field
13-0000334-000	09/08/2013	12:09:00	45 Remove hazard	961	Highway or divided
13-0000390-000	10/13/2013	23:54:00	80 Information,	961	Highway or divided
13-0000449-000	11/14/2013	09:34:00	80 Information,	300	Health care, detention, &
13-0000458-000	11/18/2013	13:07:00	80 Information,	342	Doctor, dentist or oral
13-0000503-000	12/15/2013	15:09:00	80 Information,	200	Educational, Other
Incident Type Count:	**16**			**Percent of All:**	**3.0%**
540 Animal problem, Other					
13-0000489-000	12/07/2013	00:22:00	78 Control traffic	961	Highway or divided
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
550 Public service assistance, Other					
13-0000162-000	05/03/2013	15:06:00	80 Information,	962	Residential street, road
13-0000171-000	05/11/2013	03:41:00	80 Information,	549	Specialty shop
13-0000180-000	05/20/2013	16:12:00	21 Search	961	Highway or divided
13-0000338-000	09/09/2013	16:01:00	78 Control traffic	UUU	Undetermined

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use	
550 Public service assistance, Other					
13-0000435-000	11/03/2013	15:16:00	78 Control traffic	419	1 or 2 family dwelling
13-0000436-000	11/03/2013	17:10:00	78 Control traffic	961	Highway or divided
13-0000446-000	11/11/2013	08:46:00	78 Control traffic	961	Highway or divided
13-0000509-000	12/19/2013	18:55:00	78 Control traffic	961	Highway or divided
Incident Type Count:	**8**			**Percent of All:**	**1.5%**
571 Cover assignment, standby, moveup					
13-0000001-000	01/03/2013	11:06:00	90 Fill-in, standby,	UUU	Undetermined
13-0000002-000	01/04/2013	09:18:00	90 Fill-in, standby,	449	Hotel/motel, commercial
13-0000017-000	01/20/2013	16:20:00	90 Fill-in, standby,	000	Property Use, Other
13-0000020-000	01/23/2013	11:55:00	90 Fill-in, standby,	961	Highway or divided
13-0000022-000	01/23/2013	14:50:00	90 Fill-in, standby,	UUU	Undetermined
13-0000026-000	01/26/2013	16:09:00	90 Fill-in, standby,	UUU	Undetermined
13-0000027-000	01/26/2013	16:26:00	90 Fill-in, standby,	000	Property Use, Other
13-0000042-000	02/04/2013	09:51:00	90 Fill-in, standby,	200	Educational, Other
13-0000049-000	02/10/2013	12:00:00	90 Fill-in, standby,	UUU	Undetermined
13-0000086-000	03/13/2013	14:41:00	92 Standby	961	Highway or divided
13-0000088-000	03/17/2013	04:14:00	92 Standby	808	Outbuilding or shed
13-0000089-000	03/17/2013	04:41:00	92 Standby	808	Outbuilding or shed
13-0000095-000	03/20/2013	11:01:00	92 Standby	400	Residential, Other
13-0000098-000	03/23/2013	22:14:00	92 Standby	961	Highway or divided
13-0000107-000	03/27/2013	11:04:00	92 Standby	UUU	Undetermined
13-0000106-000	03/27/2013	11:07:00	92 Standby	UUU	Undetermined
13-0000108-000	03/29/2013	04:35:00	92 Standby	UUU	Undetermined
13-0000110-000	03/30/2013	14:04:00	92 Standby	UUU	Undetermined
13-0000117-000	04/04/2013	09:42:00	92 Standby	UUU	Undetermined
13-0000118-000	04/04/2013	20:19:00	92 Standby	UUU	Undetermined
13-0000120-000	04/05/2013	16:47:00	92 Standby	592	Bank
13-0000124-000	04/08/2013	20:17:00	92 Standby	UUU	Undetermined
13-0000125-000	04/08/2013	20:21:00	92 Standby	UUU	Undetermined
13-0000126-000	04/08/2013	20:30:00	92 Standby	UUU	Undetermined
13-0000127-000	04/09/2013	14:34:00	91 Fill-in or moveup	900	Outside or special
13-0000136-000	04/12/2013	20:23:00	92 Standby	400	Residential, Other
13-0000139-000	04/15/2013	13:16:00	92 Standby	419	1 or 2 family dwelling
13-0000144-000	04/20/2013	22:48:00	92 Standby	UUU	Undetermined
13-0000149-000	04/24/2013	11:31:00	92 Standby	UUU	Undetermined
13-0000151-000	04/24/2013	17:30:00	92 Standby	UUU	Undetermined
13-0000156-000	04/29/2013	19:56:00	92 Standby	UUU	Undetermined
13-0000194-000	04/30/2013	15:57:00	92 Standby	429	Multifamily dwelling
13-0000163-000	05/03/2013	17:27:00	92 Standby	961	Highway or divided
13-0000165-000	05/05/2013	17:18:00	92 Standby	962	Residential street, road
13-0000167-000	05/06/2013	20:13:00	92 Standby	429	Multifamily dwelling

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
571 Cover assignment, standby, moveup				
13-0000240-000	05/13/2013	23:16:00	90 Fill-in, standby,	UUU Undetermined
13-0000174-000	05/16/2013	10:43:00	80 Information,	UUU Undetermined
13-0000179-000	05/19/2013	15:06:00	92 Standby	UUU Undetermined
13-0000184-000	05/27/2013	12:09:00	92 Standby	UUU Undetermined
13-0000207-000	06/07/2013	17:29:00	90 Fill-in, standby,	961 Highway or divided
13-0000217-000	06/11/2013	20:27:00	90 Fill-in, standby,	UUU Undetermined
13-0000285-000	08/03/2013	10:43:00	90 Fill-in, standby,	UUU Undetermined
13-0000303-000	08/12/2013	15:21:00	90 Fill-in, standby,	UUU Undetermined
13-0000306-000	08/17/2013	15:49:00	90 Fill-in, standby,	UUU Undetermined
13-0000367-000	08/28/2013	21:56:00	90 Fill-in, standby,	UUU Undetermined
13-0000428-000	09/12/2013	20:03:00	90 Fill-in, standby,	UUU Undetermined
13-0000431-000	09/24/2013	07:39:00	90 Fill-in, standby,	UUU Undetermined
13-0000380-000	10/08/2013	14:27:00	90 Fill-in, standby,	UUU Undetermined
13-0000401-000	10/21/2013	16:53:00	90 Fill-in, standby,	UUU Undetermined
13-0000409-000	10/26/2013	16:37:00	90 Fill-in, standby,	UUU Undetermined
13-0000411-000	10/27/2013	10:50:00	90 Fill-in, standby,	UUU Undetermined
13-0000420-000	10/29/2013	14:21:00	91 Fill-in or moveup	UUU Undetermined
13-0000424-000	10/31/2013	16:21:00	78 Control traffic	961 Highway or divided
13-0000440-000	11/06/2013	17:30:00	92 Standby	UUU Undetermined
13-0000459-000	11/19/2013	17:57:00	92 Standby	UUU Undetermined
13-0000464-000	11/22/2013	21:44:00	92 Standby	931 Open land or field
13-0000475-000	11/29/2013	06:25:00	92 Standby	419 1 or 2 family dwelling
13-0000476-000	11/29/2013	06:51:00	92 Standby	419 1 or 2 family dwelling
13-0000482-000	12/02/2013	12:56:00	90 Fill-in, standby,	961 Highway or divided
13-0000485-000	12/04/2013	15:32:00	80 Information,	961 Highway or divided
13-0000501-000	12/14/2013	16:40:00	90 Fill-in, standby,	UUU Undetermined
13-0000525-000	12/28/2013	19:38:00	90 Fill-in, standby,	891 Warehouse
Incident Type Count:	**62**			**Percent of All:** **11.6%**
600 Good intent call, Other				
13-0000152-000	04/28/2013	20:35:00	80 Information,	962 Residential street, road
13-0000272-000	07/25/2013	05:05:00	78 Control traffic	519 Food and beverage sales,
13-0000456-000	11/17/2013	10:41:00	86 Investigate	962 Residential street, road
13-0000505-000	12/18/2013	08:07:00	80 Information,	961 Highway or divided
13-0000518-000	12/25/2013	14:17:00	80 Information,	961 Highway or divided
Incident Type Count:	**5**			**Percent of All:** **0.9%**
611 Dispatched & cancelled en route				
13-0000015-000	01/15/2013	18:30:00	93 Cancelled en route	961 Highway or divided
13-0000053-000	02/13/2013	12:06:00	93 Cancelled en route	961 Highway or divided
13-0000071-000	02/26/2013	15:01:00	93 Cancelled en route	519 Food and beverage sales,

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use	
611 Dispatched & cancelled en route					
13-0000072-000	02/26/2013	20:42:00	93 Cancelled en route	579	Motor vehicle or boat
13-0000158-000	03/03/2013	01:00:00	93 Cancelled en route	961	Highway or divided
13-0000193-000	04/15/2013	23:39:00	93 Cancelled en route	961	Highway or divided
13-0000150-000	04/24/2013	16:35:00	93 Cancelled en route	UUU	Undetermined
13-0000168-000	05/07/2013	20:03:00	93 Cancelled en route	429	Multifamily dwelling
13-0000241-000	05/14/2013	18:32:00	93 Cancelled en route	961	Highway or divided
13-0000188-000	05/29/2013	14:25:00	93 Cancelled en route	961	Highway or divided
13-0000200-000	06/02/2013	15:07:00	93 Cancelled en route	961	Highway or divided
13-0000203-000	06/03/2013	18:08:00	93 Cancelled en route	596	Post office or mailing
13-0000210-000	06/09/2013	18:41:00	93 Cancelled en route	961	Highway or divided
13-0000216-000	06/11/2013	19:32:00	93 Cancelled en route	961	Highway or divided
13-0000220-000	06/13/2013	09:58:00	93 Cancelled en route	UUU	Undetermined
13-0000244-000	07/03/2013	12:38:00	93 Cancelled en route	UUU	Undetermined
13-0000252-000	07/07/2013	11:51:00	93 Cancelled en route	961	Highway or divided
13-0000260-000	07/12/2013	14:07:00	93 Cancelled en route	UUU	Undetermined
13-0000324-000	07/15/2013	20:00:00	93 Cancelled en route	UUU	Undetermined
13-0000326-000	07/23/2013	01:29:00	93 Cancelled en route	UUU	Undetermined
13-0000330-000	09/03/2013	08:39:00	93 Cancelled en route	UUU	Undetermined
13-0000345-000	09/17/2013	16:45:00	93 Cancelled en route	UUU	Undetermined
13-0000348-000	09/19/2013	18:27:00	93 Cancelled en route	UUU	Undetermined
13-0000351-000	09/24/2013	08:18:00	93 Cancelled en route	UUU	Undetermined
13-0000382-000	10/09/2013	21:03:00	93 Cancelled en route	UUU	Undetermined
13-0000387-000	10/12/2013	02:05:00	93 Cancelled en route	961	Highway or divided
13-0000395-000	10/16/2013	12:50:00	93 Cancelled en route	400	Residential, Other
13-0000410-000	10/26/2013	20:51:00	93 Cancelled en route	961	Highway or divided
13-0000414-000	10/27/2013	18:03:00	93 Cancelled en route	UUU	Undetermined
13-0000467-000	11/24/2013	19:28:00	93 Cancelled en route	UUU	Undetermined
13-0000530-000	11/26/2013	07:44:00	93 Cancelled en route	961	Highway or divided
13-0000479-000	11/30/2013	19:27:00	93 Cancelled en route	961	Highway or divided
13-0000492-000	12/10/2013	00:34:00	93 Cancelled en route	UUU	Undetermined
13-0000498-000	12/13/2013	16:28:00	93 Cancelled en route	UUU	Undetermined
13-0000506-000	12/18/2013	09:37:00	93 Cancelled en route	UUU	Undetermined
13-0000517-000	12/25/2013	06:45:00	93 Cancelled en route	UUU	Undetermined
13-0000519-000	12/25/2013	17:30:00	93 Cancelled en route	962	Residential street, road
13-0000520-000	12/25/2013	18:39:00	93 Cancelled en route	419	1 or 2 family dwelling
13-0000521-000	12/25/2013	22:27:00	93 Cancelled en route	UUU	Undetermined
13-0000522-000	12/26/2013	09:32:00	93 Cancelled en route	961	Highway or divided
13-0000524-000	12/26/2013	23:46:00	93 Cancelled en route	419	1 or 2 family dwelling
Incident Type Count:	**41**			**Percent of All:**	**7.7%**
631 Authorized controlled burning					
13-0000253-000	07/07/2013	14:38:00	80 Information,	400	Residential, Other

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use	
631 Authorized controlled burning					
13-0000490-000	12/08/2013	11:38:00	80 Information,	961	Highway or divided
Incident Type Count:	**2**			**Percent of All:**	**0.3%**
651 Smoke scare, odor of smoke					
13-0000021-000	01/23/2013	11:53:00	80 Information,	200	Educational, Other
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
661 EMS call, party transported by non-fire agency					
13-0000176-000	05/17/2013	12:14:00	74 Provide apparatus	931	Open land or field
Incident Type Count:	**1**			**Percent of All:**	**0.1%**
700 False alarm or false call, Other					
13-0000070-000	02/24/2013	20:30:00	80 Information,	888	Fire station
13-0000114-000	04/01/2013	17:44:00	80 Information,	300	Health care, detention, &
13-0000263-000	07/15/2013	17:54:00	80 Information,	300	Health care, detention, &
Incident Type Count:	**3**			**Percent of All:**	**0.5%**
740 Unintentional transmission of alarm, Other					
13-0000005-000	01/05/2013	12:47:00	80 Information,	363	Reformatory, juvenile
13-0000007-000	01/09/2013	16:51:00	80 Information,	155	Courthouse
13-0000008-000	01/09/2013	18:49:00	80 Information,	400	Residential, Other
13-0000012-000	01/14/2013	16:34:00	80 Information,	363	Reformatory, juvenile
13-0000014-000	01/15/2013	10:05:00	80 Information,	200	Educational, Other
13-0000024-000	01/24/2013	18:19:00	80 Information,	429	Multifamily dwelling
13-0000025-000	01/26/2013	23:30:00	80 Information,	311	24-hour care Nursing
13-0000030-000	01/28/2013	11:41:00	80 Information,	449	Hotel/motel, commercial
13-0000034-000	01/30/2013	03:24:00	80 Information,	200	Educational, Other
13-0000035-000	01/30/2013	11:44:00	80 Information,	400	Residential, Other
13-0000036-000	01/30/2013	11:56:00	80 Information,	400	Residential, Other
13-0000037-000	01/30/2013	14:11:00	80 Information,	400	Residential, Other
13-0000052-000	02/11/2013	23:21:00	80 Information,	363	Reformatory, juvenile
13-0000054-000	02/13/2013	13:03:00	80 Information,	700	Manufacturing, processing
13-0000055-000	02/13/2013	14:28:00	80 Information,	519	Food and beverage sales,
13-0000056-000	02/14/2013	09:25:00	80 Information,	150	Public or government,
13-0000057-000	02/14/2013	13:01:00	80 Information,	150	Public or government,
13-0000058-000	02/14/2013	18:27:00	80 Information,	519	Food and beverage sales,
13-0000059-000	02/15/2013	11:45:00	80 Information,	593	Office: veterinary or
13-0000067-000	02/19/2013	12:49:00	80 Information,	161	Restaurant or cafeteria
13-0000069-000	02/24/2013	15:30:00	80 Information,	300	Health care, detention, &

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Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
740 Unintentional transmission of alarm, Other				
13-0000074-000	02/27/2013	21:46:00	80 Information,	593 Office: veterinary or
13-0000076-000	03/04/2013	08:04:00	80 Information,	500 Mercantile, business,
13-0000077-000	03/04/2013	13:44:00	80 Information,	300 Health care, detention, &
13-0000079-000	03/09/2013	07:51:00	80 Information,	300 Health care, detention, &
13-0000080-000	03/09/2013	16:11:00	80 Information,	400 Residential, Other
13-0000085-000	03/12/2013	13:42:00	80 Information,	400 Residential, Other
13-0000094-000	03/19/2013	16:08:00	80 Information,	300 Health care, detention, &
13-0000096-000	03/21/2013	13:41:00	80 Information,	400 Residential, Other
13-0000097-000	03/23/2013	11:36:00	80 Information,	363 Reformatory, juvenile
13-0000099-000	03/24/2013	22:23:00	80 Information,	400 Residential, Other
13-0000100-000	03/25/2013	11:44:00	80 Information,	400 Residential, Other
13-0000101-000	03/25/2013	14:04:00	80 Information,	400 Residential, Other
13-0000104-000	03/27/2013	07:30:00	80 Information,	300 Health care, detention, &
13-0000119-000	04/05/2013	01:39:00	80 Information,	519 Food and beverage sales,
13-0000129-000	04/09/2013	21:23:00	80 Information,	000 Property Use, Other
13-0000130-000	04/10/2013	03:16:00	80 Information,	300 Health care, detention, &
13-0000131-000	04/10/2013	07:27:00	80 Information,	300 Health care, detention, &
13-0000133-000	04/11/2013	15:57:00	80 Information,	161 Restaurant or cafeteria
13-0000135-000	04/12/2013	11:18:00	80 Information,	300 Health care, detention, &
13-0000138-000	04/14/2013	17:48:00	80 Information,	569 Professional supplies,
13-0000140-000	04/17/2013	02:38:00	80 Information,	569 Professional supplies,
13-0000142-000	04/19/2013	12:19:00	80 Information,	300 Health care, detention, &
13-0000143-000	04/19/2013	22:36:00	80 Information,	571 Service station, gas
13-0000145-000	04/21/2013	12:46:00	80 Information,	300 Health care, detention, &
13-0000148-000	04/24/2013	10:21:00	80 Information,	161 Restaurant or cafeteria
13-0000153-000	04/28/2013	23:14:00	80 Information,	161 Restaurant or cafeteria
13-0000160-000	05/01/2013	18:55:00	80 Information,	300 Health care, detention, &
13-0000169-000	05/07/2013	21:53:00	80 Information,	400 Residential, Other
13-0000170-000	05/08/2013	08:43:00	80 Information,	300 Health care, detention, &
13-0000172-000	05/11/2013	10:28:00	80 Information,	100 Assembly, Other
13-0000175-000	05/16/2013	15:48:00	80 Information,	150 Public or government,
13-0000177-000	05/17/2013	14:48:00	80 Information,	200 Educational, Other
13-0000183-000	05/26/2013	00:54:00	86 Investigate	449 Hotel/motel, commercial
13-0000187-000	05/29/2013	14:13:00	80 Information,	150 Public or government,
13-0000189-000	05/30/2013	21:02:00	80 Information,	300 Health care, detention, &
13-0000192-000	05/31/2013	18:24:00	80 Information,	300 Health care, detention, &
13-0000277-000	06/01/2013	07:00:00	78 Control traffic	300 Health care, detention, &
13-0000197-000	06/01/2013	18:43:00	80 Information,	300 Health care, detention, &
13-0000198-000	06/02/2013	08:38:00	80 Information,	900 Outside or special
13-0000199-000	06/02/2013	09:24:00	80 Information,	365 Police station
13-0000202-000	06/03/2013	12:20:00	80 Information,	161 Restaurant or cafeteria
13-0000206-000	06/06/2013	09:18:00	80 Information,	300 Health care, detention, &
13-0000211-000	06/10/2013	12:44:00	80 Information,	155 Courthouse

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
740 Unintentional transmission of alarm, Other				
13-0000212-000	06/10/2013	15:39:00	80 Information,	300 Health care, detention, &
13-0000214-000	06/11/2013	08:52:00	80 Information,	449 Hotel/motel, commercial
13-0000215-000	06/11/2013	12:05:00	80 Information,	131 Church, mosque,
13-0000218-000	06/12/2013	06:14:00	80 Information,	300 Health care, detention, &
13-0000222-000	06/15/2013	16:03:00	80 Information,	300 Health care, detention, &
13-0000223-000	06/15/2013	16:44:00	80 Information,	891 Warehouse
13-0000225-000	06/17/2013	10:00:00	80 Information,	592 Bank
13-0000226-000	06/19/2013	07:12:00	80 Information,	300 Health care, detention, &
13-0000227-000	06/19/2013	13:29:00	80 Information,	342 Doctor, dentist or oral
13-0000234-000	06/24/2013	11:54:00	80 Information,	511 Convenience store
13-0000236-000	06/28/2013	09:57:00	80 Information,	150 Public or government,
13-0000237-000	06/28/2013	12:24:00	80 Information,	891 Warehouse
13-0000238-000	06/28/2013	16:01:00	80 Information,	300 Health care, detention, &
13-0000239-000	06/28/2013	20:37:00	80 Information,	200 Educational, Other
13-0000256-000	07/10/2013	20:25:00	80 Information,	210 Schools, non-adult, other
13-0000261-000	07/14/2013	09:24:00	80 Information,	300 Health care, detention, &
13-0000264-000	07/17/2013	13:00:00	80 Information,	400 Residential, Other
13-0000266-000	07/18/2013	13:36:00	78 Control traffic	449 Hotel/motel, commercial
13-0000268-000	07/19/2013	12:27:00	80 Information,	891 Warehouse
13-0000325-000	07/20/2013	10:59:00	86 Investigate	449 Hotel/motel, commercial
13-0000269-000	07/20/2013	12:28:00	80 Information,	449 Hotel/motel, commercial
13-0000270-000	07/22/2013	05:33:00	80 Information,	100 Assembly, Other
13-0000271-000	07/24/2013	19:47:00	80 Information,	400 Residential, Other
13-0000274-000	07/26/2013	11:00:00	80 Information,	400 Residential, Other
13-0000281-000	08/01/2013	12:26:00	80 Information,	200 Educational, Other
13-0000282-000	08/01/2013	19:41:00	80 Information,	300 Health care, detention, &
13-0000283-000	08/02/2013	10:55:00	80 Information,	640 Utility or Distribution
13-0000287-000	08/05/2013	09:13:00	80 Information,	200 Educational, Other
13-0000291-000	08/07/2013	14:02:00	80 Information,	200 Educational, Other
13-0000292-000	08/08/2013	01:22:00	80 Information,	200 Educational, Other
13-0000295-000	08/09/2013	09:30:00	86 Investigate	400 Residential, Other
13-0000304-000	08/16/2013	19:41:00	86 Investigate	300 Health care, detention, &
13-0000305-000	08/17/2013	15:26:00	86 Investigate	161 Restaurant or cafeteria
13-0000310-000	08/20/2013	05:35:00	86 Investigate	300 Health care, detention, &
13-0000316-000	08/23/2013	09:59:00	86 Investigate	161 Restaurant or cafeteria
13-0000320-000	08/29/2013	08:55:00	86 Investigate	300 Health care, detention, &
13-0000321-000	08/30/2013	21:09:00	86 Investigate	300 Health care, detention, &
13-0000328-000	09/01/2013	04:58:00	80 Information,	429 Multifamily dwelling
13-0000331-000	09/05/2013	14:42:00	80 Information,	200 Educational, Other
13-0000332-000	09/05/2013	17:41:00	80 Information,	155 Courthouse
13-0000335-000	09/08/2013	13:19:00	80 Information,	400 Residential, Other
13-0000337-000	09/09/2013	15:18:00	80 Information,	100 Assembly, Other
13-0000339-000	09/11/2013	13:11:00	80 Information,	200 Educational, Other

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
740 Unintentional transmission of alarm, Other				
13-0000340-000	09/11/2013	13:51:00	80 Information,	400 Residential, Other
13-0000341-000	09/11/2013	15:06:00	80 Information,	131 Church, mosque,
13-0000342-000	09/14/2013	20:06:00	80 Information,	361 Jail, prison (not
13-0000343-000	09/16/2013	16:22:00	80 Information,	300 Health care, detention, &
13-0000344-000	09/16/2013	22:47:00	80 Information,	500 Mercantile, business,
13-0000350-000	09/23/2013	09:50:00	80 Information,	400 Residential, Other
13-0000358-000	09/27/2013	10:34:00	80 Information,	400 Residential, Other
13-0000359-000	09/27/2013	21:51:00	80 Information,	323 Asylum, mental
13-0000362-000	09/29/2013	07:43:00	80 Information,	400 Residential, Other
13-0000364-000	09/29/2013	12:55:00	80 Information,	429 Multifamily dwelling
13-0000365-000	09/30/2013	15:17:00	80 Information,	500 Mercantile, business,
13-0000369-000	10/02/2013	00:58:00	80 Information,	519 Food and beverage sales,
13-0000370-000	10/02/2013	18:11:00	80 Information,	400 Residential, Other
13-0000374-000	10/06/2013	00:31:00	80 Information,	400 Residential, Other
13-0000375-000	10/06/2013	09:23:00	78 Control traffic	519 Food and beverage sales,
13-0000377-000	10/07/2013	13:27:00	80 Information,	100 Assembly, Other
13-0000378-000	10/07/2013	13:48:00	80 Information,	100 Assembly, Other
13-0000381-000	10/08/2013	14:50:00	80 Information,	400 Residential, Other
13-0000385-000	10/11/2013	08:47:00	80 Information,	593 Office: veterinary or
13-0000386-000	10/11/2013	13:35:00	80 Information,	200 Educational, Other
13-0000393-000	10/15/2013	12:03:00	78 Control traffic	100 Assembly, Other
13-0000399-000	10/20/2013	18:38:00	80 Information,	511 Convenience store
13-0000403-000	10/24/2013	11:37:00	80 Information,	400 Residential, Other
13-0000407-000	10/26/2013	12:03:00	80 Information,	400 Residential, Other
13-0000416-000	10/27/2013	21:44:00	80 Information,	429 Multifamily dwelling
13-0000418-000	10/29/2013	08:29:00	80 Information,	500 Mercantile, business,
13-0000422-000	10/30/2013	16:05:00	80 Information,	100 Assembly, Other
13-0000441-000	11/02/2013	22:31:00	51 Ventilate	300 Health care, detention, &
13-0000528-000	11/03/2013	18:56:00	80 Information,	400 Residential, Other
13-0000437-000	11/04/2013	07:54:00	80 Information,	400 Residential, Other
13-0000438-000	11/04/2013	13:39:00	80 Information,	342 Doctor, dentist or oral
13-0000442-000	11/09/2013	11:17:00	80 Information,	160 Eating, drinking places,
13-0000443-000	11/10/2013	00:18:00	80 Information,	400 Residential, Other
13-0000444-000	11/10/2013	02:36:00	80 Information,	400 Residential, Other
13-0000529-000	11/12/2013	08:18:23	80 Information,	300 Health care, detention, &
13-0000454-000	11/16/2013	11:08:00	80 Information,	900 Outside or special
13-0000461-000	11/21/2013	17:33:00	80 Information,	593 Office: veterinary or
13-0000462-000	11/21/2013	18:27:00	80 Information,	300 Health care, detention, &
13-0000473-000	11/26/2013	16:19:00	80 Information,	593 Office: veterinary or
13-0000474-000	11/28/2013	17:31:00	80 Information,	300 Health care, detention, &
13-0000480-000	12/01/2013	16:02:00	80 Information,	400 Residential, Other
13-0000481-000	12/02/2013	06:30:00	80 Information,	400 Residential, Other
13-0000484-000	12/04/2013	08:35:00	80 Information,	647 Water utility

Goshen Fire District

Incident Type Report

Alarm Date Between {01/01/2013} And {12/31/2013}

Incident	Alm Date	Time	Primary Action	Property Use
740 Unintentional transmission of alarm, Other				
13-0000486-000	12/04/2013	20:48:00	80 Information,	400 Residential, Other
13-0000487-000	12/04/2013	23:53:00	80 Information,	400 Residential, Other
13-0000488-000	12/06/2013	10:09:00	80 Information,	210 Schools, non-adult, other
13-0000493-000	12/10/2013	13:00:00	80 Information,	519 Food and beverage sales,
13-0000494-000	12/11/2013	08:35:00	80 Information,	200 Educational, Other
13-0000496-000	12/12/2013	13:34:00	80 Information,	155 Courthouse
13-0000499-000	12/13/2013	16:51:00	80 Information,	519 Food and beverage sales,
13-0000500-000	12/13/2013	18:01:00	80 Information,	400 Residential, Other
13-0000504-000	12/17/2013	09:43:00	80 Information,	400 Residential, Other
13-0000507-000	12/19/2013	07:48:00	80 Information,	200 Educational, Other
13-0000511-000	12/22/2013	06:37:00	80 Information,	400 Residential, Other
13-0000513-000	12/22/2013	12:27:00	80 Information,	300 Health care, detention, &
13-0000514-000	12/22/2013	13:51:00	80 Information,	300 Health care, detention, &
13-0000523-000	12/26/2013	22:02:00	80 Information,	323 Asylum, mental
Incident Type Count:	**164**			**Percent of All:** **30.9%**
745 Alarm system activation, no fire - unintentional				
13-0000046-000	02/08/2013	13:28:00	80 Information,	400 Residential, Other
13-0000425-000	09/01/2013	05:00:00	86 Investigate	511 Convenience store
13-0000427-000	09/06/2013	15:49:00	86 Investigate	311 24-hour care Nursing
13-0000430-000	09/21/2013	03:25:00	86 Investigate	321 Mental
13-0000477-000	11/29/2013	06:53:00	86 Investigate	311 24-hour care Nursing
13-0000478-000	11/30/2013	16:17:00	86 Investigate	200 Educational, Other
Incident Type Count:	**6**			**Percent of All:** **1.1%**
746 Carbon monoxide detector activation, no CO				
13-0000383-000	10/10/2013	16:57:00	86 Investigate	429 Multifamily dwelling
Incident Type Count:	**1**			**Percent of All:** **0.1%**

Total Incident Count: **530**

AKRF, Inc.
Environmental Planning Consultants
34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

July 2, 2015

Goshen Volunteer Ambulance Corps
P.O. Box 695
Goshen, NY 10924

Re: Request for Information Regarding the Amy's Kitchen and Science of the Soul Project

Dear Sir/Madam:

AKRF, Inc. has been retained by Amy's Kitchen, Inc. to assess the potential environmental effects of the construction of an approximately 369,000 square-foot food manufacturing facility on a +/- 60-acre property located on Hartley Road in the Town of Goshen, New York. In addition, Science of the Soul ("SoS") proposes to construct an approximately 200,000 square-foot conference center on an approximately 195-acre property located on NYS Route 17M and Echo Lake Road in the Town of Goshen, New York. SoS is a registered 501(c)(3) religious non-profit organization. The two entities, Amy's Kitchen and SoS, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents and to share certain access, water supply, and wastewater treatment infrastructure. AKRF is currently preparing the Environmental Impact Statement (EIS) under SEQRA for this project.

The Amy's Kitchen facility would be constructed in two (2) phases: an initial approximately 226,000 square-foot plant, including an 11,000 square-foot office area, to be opened in the First Quarter of 2018 with an approximately 140,000 square-foot expansion (134,000 square feet of production space plus 6,000 square feet of office area) to be opened in approximately 2023. An ancillary building of approximately 3,000 square feet would be constructed for on-site medical treatment of Amy's Kitchen staff as part of Phase 1. The manufacturing site includes approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces. Approximately 20 to 30 loading bays would be provided. The Amy's Kitchen manufacturing facility would employ approximately 459 full-time people on the Project Site upon completion of Phase 1, and approximately 681 full-time people upon completion of Phase 2 of the Project. In Phase 1, access to the Amy's Kitchen facility is proposed from Hartley Road.

The SoS conference center would comprise an approximately 200,000 square-foot open-air pavilion; ancillary buildings for administration and support; parking areas (both paved and gravel) to accommodate approximately 2,043 cars and an additional 130 buses; two (2) approximately 2,600 square-foot caretaker residences; and one (1) five-bedroom guest-house. The conference center would be used to host one (1) annual three-day national conference ("National Conference"), with attendance of up to 12,000 people. The National Conference would typically be held over a weekend. In addition, SoS would hold one (1) regional conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees over one to two days, as well as regular weekly meetings on Sunday mornings for local congregants ("Weekly Meeting"), estimated between 200 and 400 people. Each day's program for a National or Regional

Conference would run from 9:00 AM until 1:00 PM. During the week, a small staff (5 to 10 people) and a small number of volunteers would attend to normal administrative and property management tasks. The conference center would not be used for weddings or other cultural events, nor would it be rented to the general public for any use.

Access to SoS would be from a new entrance roadway off NYS Route 17M, which would also eventually serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface.

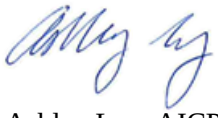
For our analysis, we need to obtain information relevant to the current services provided by Goshen Volunteer Ambulance Corps to the Project Site, which is shown in the attached map. Specifically, we need to obtain the following information:

- Level of Staffing
- Anticipated response times to the Project Site
- Number and types of all service calls by the Goshen Volunteer Ambulance Corps within Goshen from 2013-2015

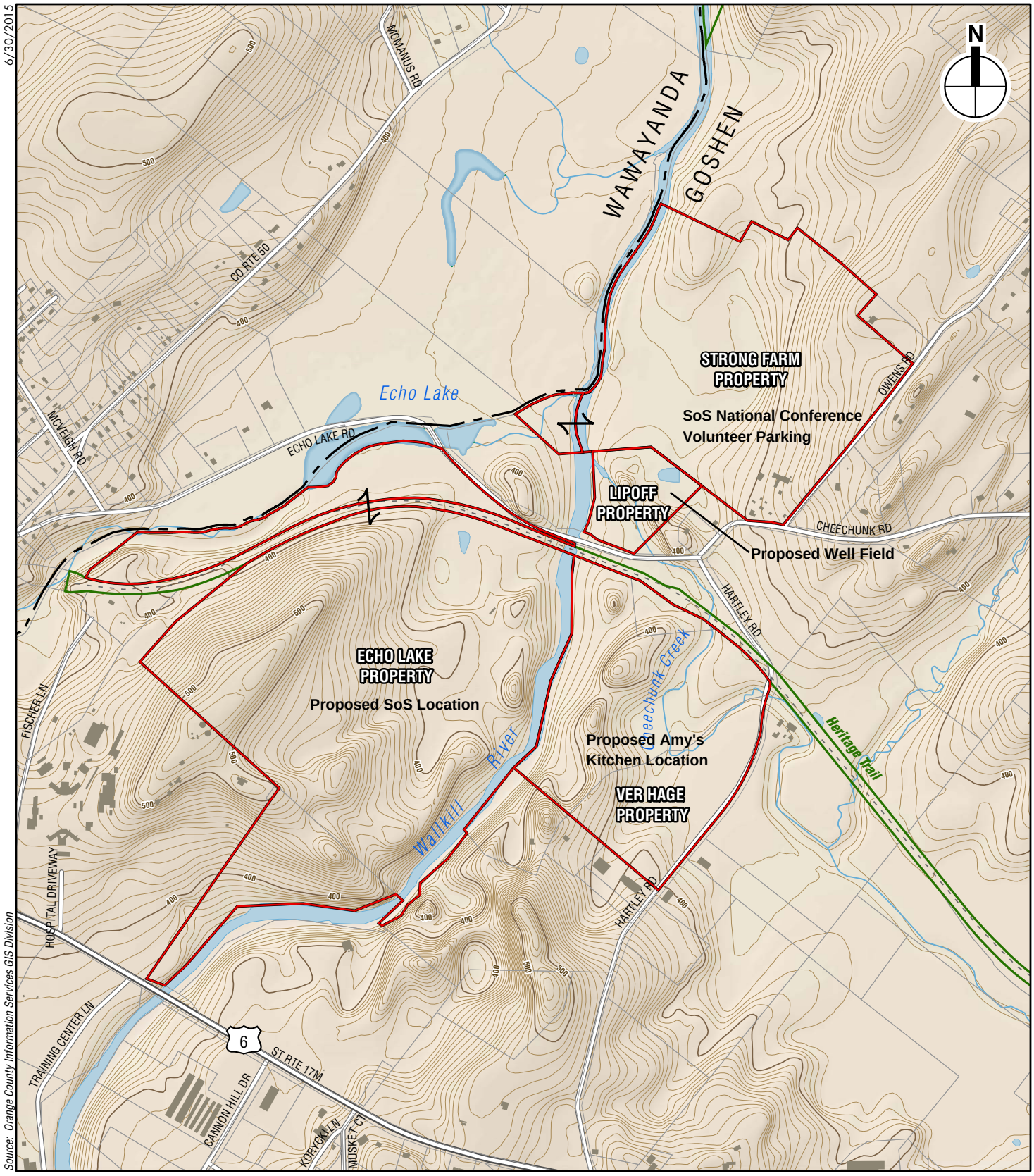
In addition to the above information, please provide any relevant information on anticipated changes to the Goshen Volunteer Ambulance Corps that may affect its future capacities to respond to emergencies, such as new equipment, anticipated changes in personnel or budget, or other factors that are expected to increase or decrease capacity.

I would greatly appreciate a response as soon as possible. You can respond via mail or telephone to the address/telephone number above, or via e-mail to aley@akrf.com. Thank you in advance for your attention to this matter.

Sincerely,



Ashley Ley, AICP
Technical Director



Amy's Kitchen
Science of the Soul

Properties comprising the Project Site

Material Safety Data Sheet

SECTION 1: IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name: BromMax® (US Patent Nos. 7,045,153 and 7,455,859)

Description: Water treatment antimicrobial solution.

Manufacturer: ENVIRO TECH CHEMICAL SERVICES, Inc.
500 Winmoore Way
Modesto, CA 95358

Company's Informational Telephone: 209-581-9576
Company's Transportation Emergency: **CHEMTREC US Toll Free 800-424-9300 / International 703-527-3887**

SECTION 2: HAZARDS IDENTIFICATION

NFPA 704M / HMIS Rating: 2/2 Health 0/0 Flammability 1/1 Reactivity COR/Other

Emergency Overview:
WARNING: Causes irritation to skin and eyes. Do not get in eyes, on skin, or on clothing. Do not take internally. Keep container closed when not in use. Keep container away from heat and sunlight.

Potential Health Effects:

Primary Route (s) of Exposure: Eye, Skin
Eye Contact: Can cause acute burns and irritation.
Skin Contact: Can cause irritation of various degrees.
Ingestion: Severe intestinal tract irritant. Do not induce vomiting.
Inhalation: May cause irritation to the respiratory tract and lungs.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s). Hazardous components are marked with an asterisk* as listed under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 15 for the nature/limits of the hazard.

Ingredients	CAS #	Approx. %
*Sodium hydroxide	1310-73-2	<5%
Sulfamic acid, N-Bromo, sodium salt	1004542-84-0	23-33%
Sodium Chloride	7647-14-5	5-15%
Water	7732-18-5	Balance

SECTION 4: FIRST AID MEASURES

Eyes: Flush with water for 15 minutes holding eyelids open. Call a physician.
Skin: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician.
Ingestion: Do not induce vomiting. Give water. Call a physician.
Inhalation: Remove to fresh air. Treat symptoms. Call a physician.
Note to Physicians: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.
CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: None (PMCC) ASTM D-93
Extinguishing Media: Water spray, carbon dioxide, foam, dry chemical
Unusual fire and Explosion Hazard: Material is a strong oxidizer. May combine with various metals (at decomposition) to form further flammable mixtures.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Small Liquid Spill: Contain with absorbent material such as clay or inert absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal.
Large liquid Spill: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. This product can be neutralized of its halogen (active ingredient) components by sprinkling sodium metabisulfite or sodium sulfite on the spilled material.
For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 8.

SECTION 7: HANDLING AND STORAGE

Storage: Keep container closed when not in use.
Handling: Avoid contact with skin, eyes, and clothing

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits of hazardous ingredients;

Ingredient	**ACGIH-TLV**	**OSHA-PEL**	**NIOSH-REL**
Sodium Hydroxide	$2mg/m^3$ (ceiling)	$2mg/m^3$ (ceiling)	$2mg/m^3$ (ceiling)

Respiratory Protections: If it is possible to generate hazardous decomposition products, or vapors, or mists, a NIOSH approved or equivalent respirator is recommended.
For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilations, a positive pressure, self contained breathing apparatus is recommended.
Ventilation: General ventilation is recommended. Local ventilation is recommended where misting can occur.
Protective Equipment: Use impermeable gloves, boots, apron, and a face shield with chemical splash goggles. Suitable impermeable gloves include neoprene, nitrile, PVC, natural rubber, viton and butyl. A full slicker suit is recommended if gross exposure is possible.
The availability of an eye wash fountain and safety shower is recommended.
If clothing is contaminated, remove and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid	
Color:	Golden colored liquid	
Water Solubility:	Complete	
Density:	11.9-12.1 lbs./gal. @ 68° F	
Specific Gravity:	1.42-1.46 @ 68° F	ASTM D-1298
Viscosity:	N/A	ASTM D-2983
pH (neat):	>13	ASTM E-70
Freeze Point:	<30 deg F	ASTM D-1177
Flash Point:	none (PMCC)	ASTM D-93
VOC Content %	none	EPA Method 24

Note: These physical properties are typical values for this product but are not absolute

SECTION 10: STABILITY AND REACTIVITY

Avoid contact with strong acids, (i.e. Sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfamic) which can generate heat, splattering or boiling and the release of toxic fumes. Avoid contact with copper and iron.

Avoid contact with strong oxidizers (i.e. peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions, and the release of toxic fumes.

Thermal Decomposition Products: In the event of combustion, nitrogen, bromine, hydrobromic acid vapors or gases may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity Studies: Toxicity studies have been completed on this product. The results are shown below:

Acute Oral Toxicity (Albino Rats):	> 5,000 mg/kg
Acute Dermal Toxicity (Albino Rats):	> 2,000 mg/kg
Acute Inhalation Toxicity (Rats) (LC_{50})	> 2.06 mg/L
Primary Skin Irritation Test (Albino Rabbits):	No data (corrosive product)
Primary Eye Irritation Test (Albino Rabbits):	No data (corrosive product)

SECTION 12: ECOLOGICAL CONSIDERATION

Results below are based on the active product (reported as Cl_2).

Avian Exposure:

Upland Game Birds:	
Acute oral LD_{50}	>2,510 mg/kg
Subacute Dietary LC_{50}	>5,000 mg/kg

Aquatic Data:

Cold Water Fish, acute toxicity, LC_{50}	1.35 ppm (max) (96 hr)
Warm Water Fish, acute toxicity, LC_{50}	2.1 ppm (max) (96 hr)
Invertebrate (D. magna), acute toxicity, LC_{50}	2.3 ppm (max) (48 hr)

SECTION 13: DISPOSAL CONSIDERATION

Disposal: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource and Recovery Act (RCRA) 40 CFR 261. It does not have the characteristics of Subpart C, nor is it listed under Subpart D.

If neutralized in accordance with Section 6, this product becomes a non- hazardous liquid waste. It should be solidified with stabilizing agents (such as sand, clay or fly ash) so that no free liquid remains before disposal to a licensed industrial waste landfill. A non -hazardous liquid waste can also be deep well injected in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORT INFORMATION

Proper shipping name/hazard class may vary by packaging, properties, and mode of transportation. Typical proper shipping names for this product are:

Road Transportation Modes:	Corrosive liquid, n.o.s. (bromide salts) UN1760
Air Transportation:	Corrosive liquid, n.o.s. (bromide salts) UN 1760
Marine Transportation:	Corrosive liquid, n.o.s. (bromide salts) UN 1760
Hazard Class, Primary:	8 – Corrosive
Packaging Group:	III
IMDG Page No:	ND

IATA Packing Instruction:	808
IATA Cargo Aircraft Limit:	1.0 L
Flash Point:	None
Technical Name:	N/A
RQ LBS (Per Package):	N/A
RQ Components:	N/A

SECTION 15: REGULATORY INFORMATION

The following regulations apply to this product.

Federal Regulations:

OSHA's Hazard Communication Rule, 29 CFR 1910.1200: Based on our evaluation there are no applicable hazardous components.
CERLA/SUPERFUND, 40 CFR 117, 301: **N/A**
SARA/SUPERFUND AMENDMENTS ACT OF 1986 (TITLE III) – SECTIONS 302,311,312,AND 313:
Section 302 – Extremely hazardous substances (40 CFR 355): This product does not contain ingredients listed in Appendix A and B as an extremely hazardous substance.
Sections 311 and 312 – Material Safety Data Sheet Requirements (40 CFR 370): Our hazard evaluation has found this product to be mildly hazardous due to skin and eye corrosivity. The product should be reported under the following EPA hazard categories:

Yes	Immediate (acute) health hazard (due to pH)
no	Delayed (chronic) health hazard
no	Fire hazard

Section 313 - List of Toxic Chemicals (40CFR 372): This product does not contain ingredients on the list of Toxic Chemicals.
Toxic Substance Control act (TSCA): The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).
Food and Drug Administration: Federal Food, Drug, and Cosmetic Act: **N/A**
Resource Conservation and Recovery Act (RCRA), 40CFR 261 Subpart C and D: Consult Section 13 for RCRA classification.
Federal Water Pollution Control Act, Clean Water Act, 40 CFR 401.15: **N/A**

State Regulations:

California Proposition 65: None of the chemicals on the current Proposition 65 list are known to be present in this product.
Michigan Critical Materials: This product does not contain substance (s) identified on this list.
State Right to Know Laws: N/A

SECTION 16: OTHER INFORMATION

This product material safety data sheet provides health and safety information. Product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information.

N/A = Not Applicable
ND = None Detected

Updated: February 2010; M.S. Harvey

All information appearing herein is based upon data obtained from the legislative and/or recognized technical sources. While the information is believed to be accurate, Enviro Tech makes no representation as to its accuracy or sufficiency. Conditions of use are beyond Enviro Tech's control and therefore users are responsible to verify this data under their own operating conditions to determine whether this product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of , or reliance upon, information contained herein., This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

MATERIAL SAFETY DATA SHEET 2116

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Watercare Industrial Services
PO Box 464
Washougal, WA 98671
INFORMATION PHONE: (360) 835-7284
EMERGENCY PHONE: (360) 835-7284
INFOTRAC: 1-800-535-5053

PRODUCT NAME: 2116

DATE PREPARED: 9-11-12
LAST REVISION: 06-20-12

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	OSHA PEL	ACGIH TLV	Weight %
TRIPHOSPHONIC ACID, PENTASODIUM SALT	7758294	N/A	N/A	10-20%
SODIUM POLYACRYLATE	9003047	10.0ppm	2.0ppm	5-10%

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW:
N/A

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: May cause irritation or damage to the eyes.

INHALATION: Irritating to the nose, throat and respiratory tract.

INGESTION: Swallowing the liquid can be irritating to the gastrointestinal tract.

SKIN CONTACT: May cause irritation or damage to the skin.

SIGNS AND SYMPTOMS OF EXPOSURE:
Irritation, pain, coughing, redness of skin.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with water for at least 15 minutes. Hold eyelids open while flushing the eyes. Get Medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison

Control center immediately. Never give anything by mouth to an unconscious person.

SKIN CONTACT: Wash with soap and water. Change contaminated clothing. Get medical attention if irritation develops or persists.

AGGRAVATED MEDICAL CONDITIONS:
Pre-existing eye, skin or respiratory conditions.

SUPPLEMENTAL HEALTH INFORMATION:
The effects of long-term, low-level exposure to this product have not been determined. Safe handling material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposures.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: None **FLASH POINT METHOD USED:** N/A

AUTO IGNITION: N/A **LEL:** **UEL:**

EXTINGUISHING MEDIA:
Use extinguishing media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:
Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece in positive Pressure mode. Move containers away from fire area if it can be done without risk. Use waster to keep fire-exposed containers Cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
None known.

COMBUSTION PRODUCTS:
Oxides of Carbon

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:
Small spills: Mop up, wipe up or soak up immediately. Remove to out of doors. Large spills: Evacuate area. Contain liquid; transfer To closed poly containers. Keep out of water supply.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Protect from freezing. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

OTHER PRECAUTIONS:
For industrial use only. Keep away from children. Keep containers closed while not in use.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA approved respirator appropriate for vapor concentration at Point of use.

VENTILATION: Local exhaust sufficient to keep exposure below TLV.

WORK/HYGIENIC PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before Smoking, or using the toilet.

PROTECTIVE GLOVES: Rubber or other impervious material with gauntlets.

EYE PROTECTION: Safety glasses with side shields (or goggles).

OTHER PROTECTIVE EQUIP: Boots, apron, lab coat or coveralls of impervious material, safety shower, eyewash.

ENGINEERING CONTROLS: Facilities storing or utilizing this material should be equipped with an eyewash facility And a safety shower.

EXPOSURE GUIDELINES: N/A

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE AND ODOR: Clear, colorless liquid. No appreciable odor.

SOLUBILITY IN WATER: Complete

BOILING POINT: >212 deg F

pH: 8.8+/-0.2

VAPOR PRESSURE: N/A

VAPOR DENSITY: N/A

SPECIFIC GRAVITY: 1.11

POUNDS PER GALLON: 9.26

MELTING POINT: N/A

OTHER PROPERTIES: N/A

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID:
None known.

INCOMPATIBILITY:
None known.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:
None known.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID:
N/A

11. TOXICOLOGICAL INFORMATION
N/A

12. ECOLOGICAL INFORMATION
N/A

13. DISPOSAL CONSIDERATIONS
Dilute with large amounts of water, neutralize with dilute acid, and dispose to municipal or industrial waste treatment facility in accordance with applicable regulations.

14. TRANSPORT INFORMATION

DOT CLASS: Non-Regulated Material, Liquid
HAZARD CLASS: N/A
UN NUMBER: N/A
PACKING GROUP: N/A
GUIDE NUMBER: N/A
PROPER SHIPPING NAME: Non-Regulated Material, Liquid

15. REGULATORY INFORMATION
No information available.

16. OTHER INFORMATION

HMIS INFORMATION:	**HEALTH: 1**	**FLAMMABILITY: 0**	**REACTIVE: 0**	**PROTECTIVE: B**
NFPA INFORMATION:	**TOXICITY: 1**	**FIRE: 0**	**REACTIVITY: 0**	**SPECIAL: N**

Watercare Industrial Services expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Watercare Industrial Services makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Watercare Industrial Services' control and therefore users are responsible to verify this data under their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication of use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

MATERIAL SAFETY DATA SHEET

Bellacide 355

1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME Bellacide 355

PRODUCT NO. BWA00110723

PRODUCT USE Industrial Water Treatment

SUPPLIER BWA Water Additives US LLC
1979 Lakeside Parkway
Suite 925
Tucker
GA 30084
TEL (800) 600-4523
CUSTOMER SERVICE

EMERGENCY TELEPHONE Chemtrec Phone: 1-800-424-9300

IDENTIFICATION No. 1760

2 HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

INHALATION

May cause irritation to the respiratory system.

INGESTION

Harmful if swallowed.

SKIN CONTACT

Causes burns.

EYE CONTACT

Causes burns.

HEALTH WARNINGS

This substance is corrosive.

ROUTE OF ENTRY

Skin and/or eye contact. Ingestion. Inhalation.

TARGET ORGANS

Eyes. Skin.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Weight
Tributyl tetradecyl phosphonium chloride	279-808-2	81741-28-8	5-10%

4 FIRST-AID MEASURES

INHALATION

Remove victim immediately from source of exposure. Provide rest, warmth and fresh air. Get medical attention if any discomfort continues.

INGESTION

NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! DO NOT INDUCE VOMITING! Immediately rinse mouth and provide fresh air. Get medical attention.

SKIN CONTACT

Remove victim immediately from source of exposure. Immediately remove contaminated clothing. Wash skin thoroughly with soap and water for several minutes. Get medical attention if any discomfort continues.

EYE CONTACT

Remove victim immediately from source of exposure. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Contact physician if irritation persists.

Bellacide 355

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Fire can be extinguished using: Carbon dioxide (CO2). Foam. Dry chemicals, sand, dolomite etc. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES

Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Keep run-off water out of sewers and water sources. Dike for water control.

UNUSUAL FIRE & EXPLOSION HAZARDS

No unusual fire or explosion hazards noted.

SPECIFIC HAZARDS

Fire creates: Toxic gases/vapors/fumes of Carbon monoxide (CO). Carbon dioxide (CO2). Oxides of: Phosphorus. Chlorine.

PROTECTIVE MEASURES IN FIRE

Leave danger zone immediately. Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Follow precautions for safe handling described in this safety data sheet. For personal protection, see section 8.

ENVIRONMENTAL PRECAUTIONS

Avoid release to the environment. To prevent release, place container with damaged side up.

SPILL CLEAN UP METHODS

Should be prevented from entering drains. Absorb in vermiculite, dry sand or earth and place into containers. Collect and reclaim or dispose in sealed containers in licensed waste. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

7 HANDLING AND STORAGE

HANDLING

Avoid spilling, skin and eye contact. Observe good industrial hygiene practices.

STORAGE

Do NOT use container made of: Carbon steel. Store separated from: Alkalies. Reducing Agents. Keep containers tightly closed. Keep separate from food, feedstuffs, fertilizers and other sensitive material. Store at moderate temperatures in dry, well ventilated area. Protect from light, including direct sunrays.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT COMMENTS

No exposure limits noted for ingredient(s).

PROCESS CONDITIONS

Provide eyewash station.

PROTECTIVE EQUIPMENT

ENGINEERING MEASURES

Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide adequate ventilation.

RESPIRATORY EQUIPMENT

No specific recommendation made, but respiratory protection must be used if the general level exceeds the Recommended Occupational Exposure Limit

HAND PROTECTION

Selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Gloves should be replaced immediately if signs of degradation are observed. It has been found that gloves made from rubber, neoprene or PVC provide short-term splash protection.

Bellacide 355

EYE PROTECTION

Wear approved safety goggles. Use face shield in case of splash risk.

HYGIENE MEASURES

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.

SKIN PROTECTION

Wear apron or protective clothing in case of contact.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid
COLOR	Colorless
ODOR	Slight odor
PHYSICAL DATA COMMENTS	Information given concerns the concentrated solution.
BOILING POINT (°C)	100
pH-VALUE, CONC. SOLUTION	6 - 8

10 STABILITY AND REACTIVITY

STABILITY

Stable under normal temperature conditions and recommended use.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire creates: Toxic gases/vapors/fumes of: Carbon monoxide (CO). Carbon dioxide (CO_2). Oxides of: Phosphorus. Chlorine.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50	1002 mg/kg (oral rat)
TOXIC DOSE 2 - LD 50	4000 mg/kg (ipr-rat)

TOXICOLOGICAL INFORMATION

Ames Test negative

INHALATION

May cause irritation to the respiratory system.

INGESTION

Harmful if swallowed.

SKIN CONTACT

Causes burns.

EYE CONTACT

Causes burns.

HEALTH WARNINGS

This substance is corrosive.

12 ECOLOGICAL INFORMATION

ECOTOXICITY

The product contains a substance which is toxic to aquatic organisms and which may cause long term adverse effects in the aquatic environment.

LC 50, 96 Hrs, FISH mg/l	0.58
EC 50, 48 Hrs, DAPHNIA, mg/l	0.25

ECOLOGICAL INFORMATION

Ecotoxicological information based on the individual components properties.

13 DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT

When handling waste, consideration should be made to the safety precautions applying to handling of the product.

DISPOSAL METHODS

Absorb in vermiculite or dry sand, dispose in licensed hazardous waste. Liquid material should be incinerated. Material absorbed onto sand or earth should be disposed of as solid waste in accordance with local regulations. Empty packaging may contain product residues and due consideration should be given prior to disposal.

Bellacide 355

14 TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME	CORROSIVE LIQUID N.O.S.(Contains Tributyl tetradecyl phosphonium chloride)
TDG SHIPPING NAME	CORROSIVE LIQUID N.O.S.(Contains Tributyl tetradecyl phosphonium chloride)
IDENTIFICATION No.	1760
DOT HAZARD CLASS	8
DOT PACKING GROUP	II
U.S DOT HAZARD LABEL	Corrosive
UN NO. SEA	1760
IMDG CLASS	8
IMDG PACK GR.	II
EMS	F-A, S-B
MARINE POLLUTANT	No.
UN NO. AIR	1760
AIR CLASS	8
AIR PACK GR.	II
TDG CLASS	8
TDG PACKING GROUP	II

15 REGULATORY INFORMATION

INVENTORIES

COMPONENT	CAN	US	EU	AUS	JAP	KOR	CHN	PHLP
Tributyl tetradecyl phosphonium chloride	DSL	Yes						

COMPONENT	CAS	CA	FL	MA	MN	NJ	PA	RI
Tributyl tetradecyl phosphonium chloride	81741-28-8	No	No	No	No	No	No	No

REGULATORY STATUS (US)

TSCA: The ingredients of this product are on the TSCA Inventory. PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity and for which warnings are now required. SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

REGULATORY REFERENCES

29 CFR 1910.1010 Federal Regulations (OSHA Standard).

ENVIRONMENTAL LISTING

EPA REGISTRATION NUMBER:83451-15

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM -WHIMIS

LABEL(S) FOR SUPPLY

Corrosive Material.

Materials Causing Other Toxic Effects.

Bellacide 355

CONTROLLED PRODUCT CLASSIFICATION

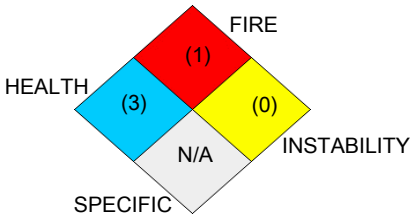
Canadian WHMIS Classification E D2B

16 OTHER INFORMATION

HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS)

HEALTH	3
FLAMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	D

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)



REVISION COMMENTS

New company name & new format

ISSUED BY

G.B.

REVISION DATE 24th October 2007

VERSION No. 1

SAFETY DATA SHEET STATUS

Approved.

DISCLAIMER

For safety reasons it is IMPERATIVE that customers:-

1. Ensure that all those within their control who use the products are supplied with all relevant information contained within the Safety Data Sheet and Technical Bulletin concerning the applications for which the product is designed and any instructions and warnings contained therein.

2. Consult BWA Water Additives before using or supplying the product for any other applications. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

Northstar Chemical, Inc.

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): **NORTHSTAR SODIUM HYDROXIDE LIQUID (1% - 40%)**

CHEMICAL NAME/CLASS: Sodium Hydroxide Solution

PRODUCT USE: Metal finishing, neutralization, industrial cleaners, chemical processing.

SUPPLIER/MANUFACTURER'S NAME: **Northstar Chemical, Inc.**

ADDRESS: **Corporate Office**
14200 S.W. Tualatin-Sherwood Rd.
Sherwood, OR 97140

BUSINESS PHONE: 888-793-9476

EMERGENCY PHONE: **CHEMTREC**: 800-424-9300

DATE OF PREPARATION: January 12, 2009

Si usted no entiende las Hojas de Informacion de Seguridad sobre Materials, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the Material Safety Data Sheet, find someone to explain it to you in detail.)

s

2. COMPOSITION AND INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	%w/w	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV mg/m^3	STEL mg/m^3	PEL mg/m^3	STEL mg/m^3	IDLH mg/m^3	OTHER mg/m^3
Sodium Hydroxide	1310-73-2	1-40	2, C	NE	2, C (Vacated 1989 PELs)	NE	10	NIOSH REL: 2 DFG MAKs: 2
Water and other ingredients. The other ingredients are each present in less than 1 percent concentration in this product.		Balance	The components present in the balance of this product do not contribute any significant, additional hazards. All hazard information pertinent to this product has been presented in the remaining sections of this Material Safety Data Sheet, per the requirements of Federal Occupational Safety and Health Hazard Communication Standard (29 CFR 1910.1200).					

NE = Not Established. C = Ceiling Limit. See Section 16 for Definitions of Terms Used.
NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is a clear to turbid liquid solution. This solution is corrosive, and can be damaging to contaminated tissue. Ingestion of large quantities can be fatal. In the event of fire or spill, adequate precautions must be taken. This solution reacts with water to generate heat. If involved in a fire, this product may decompose to produce sodium oxides and a variety of other compounds (i.e. carbon monoxide and carbon dioxide). Emergency responders must wear the proper personal protective equipment suitable for the situation to which the are responding.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: This solution can damage skin, eyes, mucous membranes, and other contaminated tissue. Burns may not be immediately painful or visible.

INHALATION: If mists or sprays of this solution are inhaled, this product may cause pulmonary irritation, irritation of the mucus membranes, coughing, and a sore throat. Damage to the tissues of the respiratory system may occur.

CONTACT WITH SKIN or EYES: Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage possibly blindness. Skin contact may result in a “soapy” feel and cause reddening, discomfort, and irritation. Prolonged exposure may result in ulcerating burns which could leave scars.

SKIN ABSORPTION: Skin absorption is not anticipated to be a significant route of over-exposure to any component of this product.

INGESTION: Though ingestion is not anticipated to be a significant route of over-exposure to this product, if ingestion does occur burning and irritation of the mouth, throat, esophagus, and other tissues of the digestive system will occur immediately upon contact. Ingestion of large quantities may be fatal.

INJECTION: Though injection is not anticipated to be a significant route of over-exposure to this product, if it occurs, may cause local reddening, tissue swelling, and discomfort.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**.

ACUTE: This solution is corrosive, and can burn and damage eyes, skin, mucous membranes, and any other exposed tissue. If inhaled, irritation of the respiratory system may occur, with coughing, and breathing difficulty. Though unlikely to occur during occupational use, ingestion of large quantities may be fatal.

CHRONIC: Repeated skin contact with this product may result in dermatitis (inflammation and reddening of the skin).

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	3
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	1
PROTECTIVE EQUIPMENT		D

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		

For routine industrial applications

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

SKIN EXPOSURE: If the product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove contaminated clothing, taking care not to contaminate eyes. Washing with large amounts of clean water should continue until affected skin surface no longer feels slippery. Victim must seek medical attention.

EYE EXPOSURE: If this product enters the eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Do not attempt to neutralize. Oils or ointments should not be used at this time. Victim must seek immediate medical attention.

INHALATION: If vapors, mists, or sprays of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

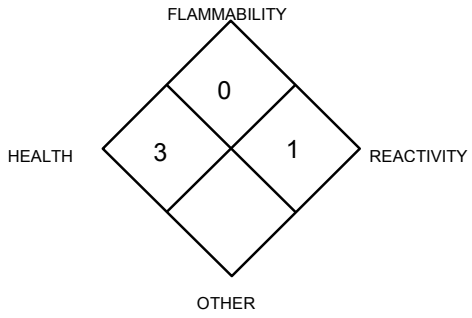
INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Victim should drink milk, egg whites, or large quantities of water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow.

Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with victim.

5. FIRE-FIGHTING MEASURES

FLASH POINT, °C (method): Not flammable.
AUTOIGNITION TEMPERATURE, °C: Not flammable.
FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

NFPA RATING



FIRE EXTINGUISHING MATERIALS:

Water Spray: YES
Carbon Dioxide: YES
Foam: YES
Dry Chemical: YES
Halon: YES
Other: Any "ABC" Class.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Not considered flammable or combustible. Does not support combustion. However, contact with water or acids may generate sufficient heat to ignite nearby combustible materials. Contact with aluminum, tin or zinc will result in the generation of heat and release of hydrogen gas. Run-off from fire control may cause pollution. Keep fire-exposed containers cool with water spray to prevent rupture due to excessive heat. High pressure water hose may spread product from broken containers increasing contamination. When involved in a fire, this material may decompose and produce irritating fumes and toxic gases (including carbon monoxide, carbon dioxide and sodium oxides). Products of combustion are irritating to the respiratory tract and may cause breathing difficulty. Symptoms may be delayed several hours or longer depending upon the extent of exposure.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment. If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel.

The proper personal protective equipment for incidental releases (e.g.-1 L of the product released in a well-ventilated area) use impermeable gloves, specific for the material handled, goggles, face shield, and appropriate body protection. In the event of a large release, use impermeable gloves, specific for the material handled, chemically resistant suit and boots, and hard-hat. Self Contained Breathing Apparatus or respirator may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, Select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendations.
Absorb spilled liquid with polypads or other suitable absorbent materials. Neutralize residue with citric acid or other caustic neutralizing agent. Decontaminate the area thoroughly. Test area with litmus paper to confirm neutralization. Place all spill residue in a suitable container. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations).

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash hands after handling this product. Do not eat or drink while handling this material. Remove contaminated clothing immediately. Discard contaminated clothing items, or launder before re-use. Inform anyone handling such contaminated laundry of the hazards associated with this product. Use ventilation and other engineering controls to minimize potential exposure to this product.

7. HANDLING and STORAGE (Continued)

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid breathing mists or sprays generated by this product. It is best to never add water to this product, always add product, with constant stirring, slowly to surface of lukewarm (80-100 °F, 27-38 °C) water, to assure product is being completely dispersed as it is added. Only trained personnel can add water to this product. Never add more product than can be absorbed by solution while maintaining temperatures below 200 °F(93 °C) to prevent boiling and spattering of caustic solution. Use in a well-ventilated location.

For Non-Bulk Containers: Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers, or in a diked area, as appropriate. Store containers away from incompatible chemicals. Keep container tightly closed when not in use. Wash thoroughly after using this material. Storage areas should be made of fire-resistant materials. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Empty containers may contain residual liquid, therefore, empty containers should be handled with care.

Bulk Containers: All tanks and pipelines which contain this material must be labeled. Perform routine maintenance on tanks or pipelines which contain this product. Report all leaks immediately to the proper personnel.

Tank Car Shipments: Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer's recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment.). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tank (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be clean and free of incompatible chemicals, prior to connection to the tank car or vessel. Valves and hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment before maintenance begins by a triple-rinse with water followed, if necessary, by using caustic neutralizing agent and an additional rinse. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: If required use a corrosion-resistant ventilation system separate from other exhaust ventilation systems to ensure that there is no potential for overexposure to sprays, or mists of this product and that exposures are below those in section 2 (Composition and Information on Ingredients). Ensure eyewash/safety shower stations are available near areas where this product is used.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below exposure limits listed in Section 2 (Composition and Information on Ingredients). If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, or applicable State regulations. If adequate ventilation is not available or if there is potential for airborne exposure above the exposure limits (listed in Section 2) a respirator may be worn up to respirator exposure limitations, check with respirator equipment manufactures recommendations/limitations. For a higher level of protection use positive pressure supplied air respiration protection or Self Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS:

Positive pressure, full-facepiece Self Contained Breathing Apparatus; or positive pressure, full-facepiece Self Contained Breathing Apparatus with an auxiliary positive pressure Self Contained Breathing Apparatus.

EYE PROTECTION: Splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

HAND PROTECTION: Wear appropriate gloves for routine industrial use. Use appropriate gloves for spill response, as stated in Section 6 of this MSDS (Accidental Release Measures).

BODY PROTECTION: Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from natural rubber are generally acceptable, depending upon the task.

9. PHYSICAL and CHEMICAL PROPERTIES

Physical and chemical properties for various concentrations of Sodium Hydroxide, the main component of this product are as follows:

	Series			
	10	**20**	**30**	**40**
PHYSICAL STATE:	Liquid			
BOILING POINT @ 760 mm Hg:	110°C	113°C	119°C	129°C
FREEZING POINT:	-12°C 10°F	-26°C -14°F	0°C 32°F	13°C 56°F
VAPOR PRESSURE mm Hg @ 60°C:	**135**	110	76	46
SPECIFIC GRAVITY @ 15.6° C	**1.11**	1.22	1.33	1.43
DENSITY – lb-gal @ 15.6°C:	**9.26**	10.17	11.09	11.92
VAPOR DENSITY:	Not Determined			
EVAPORATION RATE (water = 1):	Similar to or slower than water depending upon weight percent.			
pH:	14.0 pH @ 7.5% solution			
SOLUBILITY in H_2O - % by wt:	Completely Soluble			

ODOR THRESHOLD: Not available.

APPEARANCE AND COLOR: This product is a clear light straw to turbid liquid solution.
HOW TO DETECT THIS SUBSTANCE (warning properties): Litmus paper will turn blue-purple upon contact with this solution even with low concentrations.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: Thermal decomposition products of this solution can include carbon monoxide, carbon dioxide, and sodium compounds.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product reacts with strong acids. Additionally, it is incompatible with organic halogen compounds, organic nitro compounds, aluminum, zinc, tin, and other metals. Avoid contact with leather and wool. **Reactions with various food sugars may form carbon monoxide.**

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure or contact to extreme temperatures and incompatible chemicals.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: Additional toxicology information for components greater than 1 percent in concentration is provided below.

SODIUM HYDROXIDE:
Eye Irritancy (monkey) = 1% solution, 24 hr, Severe.
Skin Irritancy (rabbit) = 500 mg, 24 hr, Severe.
Eye Irritancy (rabbit) = 4 g, Mild.
Eye Irritancy (rabbit) = 1% solution, Severe.
Eye Irritancy (rabbit) = 50 :g, 24 hr, Severe.
Eye Irritancy (rabbit) = 1 mg, 24 hr, Severe.
Eye Irritancy (rabbit) = 100 mg with rinse, Severe.
Cytogenic Analysis System (grasshopper, parenteral) = 20 mg
LD_{50} (intraperitoneal, mouse) = 40 mg/kg.
LDLo (oral, rabbit) = 500 mg/kg.

11. TOXICOLOGICAL INFORMATION (Continued)

SUSPECTED CANCER AGENT: The components of this product's ingredients are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA; and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: This product is severely irritating to contaminated tissue.

SENSITIZATION TO THE PRODUCT: No component of this product is known to be a sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans. Mutation data is available for the Sodium Hydroxide (component of this product), obtained during clinical studies on animal tissues exposed to high doses of this compound.
Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.
Teratogenicity: This product is not reported to cause teratogenic effects in humans.
Reproductive Toxicity: This product is not reported to cause reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

BIOLOGICAL EXPOSURE INDICES: Currently there are no Biological Exposure Indices (BEIs) associated with the components of this product.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE Skin disorders can be aggravated by over-exposure to this product. Inhalation of this products mists may aggravate respiratory conditions.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate over-exposure to this product.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: The components of this product are relatively stable in the environment; they may degrade, after time, into other organic and inorganic constituents. Additional environmental data is available for the components of this product as follows:

SODIUM HYDROXIDE: K_{OW} = too low to be measured. Water solubility = 9 g/0.9 ml water. BOD: None.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: This product is harmful to plant and animal life if this product is released into the environment. As with all chemicals, work practices should be aimed at eliminating environmental releases.

EFFECT OF CHEMICAL ON AQUATIC LIFE This product can substantially raise the pH of an aquatic environment and can be extremely toxic to fish and aquatic plants. As with all chemicals, work practices should be aimed at eliminating environmental releases. Additional aquatic data for the components of this product is available as follows:

SODIUM HYDROXIDE:
LC_{100} (*Cyprimus carpio)* = 180 ppm/24 hr/25 °C
TL_m (mosquito fish) = 125 ppm/96 hr (fresh water)
TL_m (bluegill) = 99 mg/L/48 hr (tap water)

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

EPA WASTE NUMBER: D002 (Characteristic, corrosive), applicable to wastes consisting only of this solution.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME:	Sodium Hydroxide solution
HAZARD CLASS NUMBER and DESCRIPTION:	8 (Corrosive Material)
UN IDENTIFICATION NUMBER:	UN 1824
PACKING GROUP:	II
DOT LABEL(S) REQUIRED:	Corrosive

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 154

MARINE POLLUTANT: This product does not contain any components which are designated by the Department of Transportation to be Marine Pollutants. (49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

Note: The latest DOT information is provided, please verify all DOT information as it subject to change without notice.

15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: The components of this product subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act are as follows.

COMPONENT	SARA 302	SARA 304	SARA 313
Sodium Hydroxide	No	Yes	No

SARA Threshold Planning Quantity: Not applicable.

TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY (RQ): Sodium Hydroxide = 1000 lbs.

OTHER FEDERAL REGULATIONS: Not applicable.

STATE REGULATORY INFORMATION: Components of this product are covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: Sodium Hydroxide.
California - Permissible Exposure Limits for Chemical Contaminants: Sodium Hydroxide.
Florida - Substance List: Sodium Hydroxide.
Illinois - Toxic Substance List: Sodium Hydroxide.
Kansas - Section 302/313 List: Sodium Hydroxide.
Minnesota - List of Hazardous Substances: Sodium Hydroxide.
Missouri - Employer Information/Toxic Substance List: Sodium Hydroxide.
New Jersey - Right to Know Hazardous Substance List: Sodium Hydroxide.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: Sodium Hydroxide.
Pennsylvania - Hazardous Substance List: Sodium Hydroxide.
Rhode Island - Hazardous Substance List: Sodium Hydroxide.
Texas - Hazardous Substance List: Sodium Hydroxide.
West Virginia Substance List: Sodium Hydroxide.
Wisconsin - Toxic and Hazardous Substances: Sodium Hydroxide.

CALIFORNIA PROPOSITION 65 No component of this product is on the California Proposition 65 lists.

LABELING (Precautionary Statements): **DANGER!** CORROSIVE MATERIAL! LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. MAY CAUSE LUNG DAMAGE. REACTS VIOLENTLY WITH ACIDS. REACTS WITH WATER TO GENERATE HEAT. AVOID SPATTERING BY SLOWLY ADDING TO SOLUTION. Do not get into eyes, on skin or clothing. Avoid breathing spray or mist. Do not take internally. Use with adequate ventilation and employ respiratory protection when exposed to the mist or spray. When handling, wear chemical splash goggles, face shield, rubber gloves and protective clothing. Do not transfer to unlabeled containers. Use with adequate ventilation. Wash thoroughly after handling, Keep container closed when not in use. FIRST-AID: In case of contact, immediately flush skin or eyes for at least 15 minutes. If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do not induce vomiting. IN CASE OF FIRE: Use water, dry chemical, CO_2, or alcohol foam. IN CASE OF SPILL: Dike area to contain spill. Only trained personnel equipped full acid- protective gear should be permitted in this area. Spilled material may be absorbed into an appropriate absorbent material. Spills should be removed using a vacuum truck. Neutralize remaining traces of material with any dilute inorganic acid or citric acid and then flush with water. If necessary a liberal covering of sodium bicarbonate should then be applied and then rinsed with water. Do not wash into storm or sanitary sewer system.

TARGET ORGANS: Skin, eyes and respiratory system.

15. REGULATORY INFORMATION (Continued)

WHMIS SYMBOLS: E- Corrosive Material

16. OTHER INFORMATION

INFORMATION SOURCE: CHEMICAL SAFETY ASSOCIATES, Inc.

PREPARED BY: BASIC CHEMICAL SOLUTIONS

THIS INFORMATION IS DRAWN FROM RECOGNIZED SOURCES BELIEVED TO BE RELIABLE. BASIC CHEMICAL SOLUTIONS MAKES NO GUARANTEES NOR ASSUMES ANY LIABILITY IN CONNECTION WITH THIS INFORMATION. THE USER SHOULD BE AWARE OF CHANGING TECHNOLOGY, RESEARCH, REGULATIONS AND ANALYTICAL PROCEDURES THAT MAY REQUIRE CHANGES HEREIN. THE ABOVE DATA IS SUPPLIED UPON THE CONDITION THAT PERSONS WILL EVALUATE THIS INFORMATION AND THEN DETERMINE ITS SUITABILITY FOR THEIR USE.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:
ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.
TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour **Time Weighted Average (TWA)**, the 15-minute **Short Term Exposure Limit**, and the instantaneous **Ceiling Level**. Skin adsorption effects must also be considered.
OSHA - U.S. Occupational Safety and Health Administration.
PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.
IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE** is made for reference.

FLAMMABILITY LIMITS IN AIR:
Much of the information related to fire and explosion is derived from the **N**ational **F**ire **P**rotection **A**ssociation (**NFPA**). LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:
Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause death. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REGULATORY INFORMATION:
This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Other acronyms used are: **Superfund Amendments and Reauthorization Act (SARA)**; the **Toxic Substance Control Act (TSCA)**; Marine Pollutant status according to the **DOT**; California's Safe Drinking Water Act (**Proposition 65**); the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)**; and various state regulations. This section also includes information on the precautionary warnings which appear on the materials package label.

Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

Product name : **EA-840**

Company : **Northstar Chemical Inc.**

Telephone : **(503) 625-3770**

Telefax : **(503) 625-1478**

E-mail : **info@northstarchemical.com**

Product Use : Processing aid for industrial applications.

2. HAZARDS IDENTIFICATION

Appearance and Odor

Form : Viscous Liquid

Color : Milky

Odor : Aliphatic

Emergency Overview :

Aqueous solutions or powders that become wet render surfaces extremely slippery.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Identification : Anionic water-soluble polymer.

Regulated Components:

None.

4. FIRST AID MEASURES

Inhalation : No hazards which require special first aid measures.

Skin contact : No hazards which require special first aid measures. Wash with water and soap as a precaution. Call a physician if irritation persists

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. In case of persistent eye irritation, consult a physician.

Ingestion : The product is not considered toxic based on studies on laboratory animals.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water. Water spray. Foam. Carbon dioxide (CO2). Dry powder.

Precautions : Aqueous solutions or powders that become wet render surfaces extremely slippery.

Special protective equipment for firefighters : No special protective equipment required.

Flash point : Does not flash.

Autoignition temperature : Does not ignite

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : No special precautions required.

Environmental precautions : As with all chemical products, do not flush into surface water. Do not contaminate water.

Methods for cleaning up : Do not flush with water Dam up. Soak up with inert absorbent material. If liquid has been spilt inlarge quantities clean up promptly by scoop or vacuum. Keep in suitable and closed containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling

Safe handling advice : Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Wash hands before breaks and at the end of the workday.

Storage

Keep in a cool dry place (0-30 C) and away from heat and sources of ignition. Freezing will affect the physical condition and may damage the material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Use local exhaust if dusting occurs. Natural ventilation is adequate in absence of dusts.

Personal protective equipment

Respiratory protection : None.

Hand protection : Rubber gloves.

Eye protection : Safety glasses with side-shields. Do not wear contact lenses where this product is used.

Skin and body protection : Chemical resistant apron or protective suit if splashing or repeated contact with solution is likely.

Hygiene measures

Wash hands before breaks and at the end of workday. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : Viscous Liquid

Color : Milky

Odor : Aliphatic

pH : 3-7 @ 5 g/l

Melting point/range : Not applicable

Flash point : Does not flash

Autoignition temperature : Does not ignite

Approx. bulk density : 1.05

Water solubility : See Technical Bulletin

10. STABILITY AND REACTIVITY

Stability : Stable. Hazardous polymerisation does not occur.

Materials to avoid : Oxidizing agents may cause exothermic reactions.

Hazardous decomposition products : Thermal decomposition may produce. Hydrogen chloride gas. Nitrogen oxides (NOx). Carbon oxides (COx).

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Skin : The results of testing on rabbits showed this material to be non-toxic even at high dose levels.

Oral : LD50/oral/rat > 5000 mg/kg.

Inhalation : The product is not expected to be toxic by inhalation.

Irritation

Skin : The results of testing on rabbits showed this material to be non-irritating to the skin.

Eyes : Testing conducted according to the Draize technique showed the material produces no corneal or iridial effects and only slight transitory conjuctival effects similar to those which all granular materials have on conjuctivae.

Sensitization : The results of testing on guinea pigs showed this material to be non-sensitizing.

Chronic toxicity : A one-year feeding study on rats did not reveal adverse health effects. A one-year feeding study on dogs did not reveal adverse health effects. Prolonged skin contact may defat the skin and produce dermatitis.

12. ECOLOGICAL INFORMATION

Aquatic toxicity

Toxicity to fish : LC50/96 hours = 5-10 mg/l (OECD 203), (Based on the toxicity of the components using the Conventional Method).

Toxicity to daphnia : EC(I)50/Daphnia m./48 hours = 20-50 mg/L, (Based on the toxicity of the components using the Conventional Method).

Toxicity to algae : Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.

Environmental fate

Hydrolysis : At natural pHs (>6) the polymer degrades due to hydrolysis to more than 70% in 28 days. The hydrolysis products are not harmful to aquatic organisms.

Other ecological information :

The effects of this product on aquatic organisms are rapidly and significantly mitigated by the presence of dissolved organic carbon in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Disposal : In accordance with local, state and federal regulations.

Container : Rinse empty containers with water and use the rinse water to prepare the working solution. Can be landfilled or incinerated, when in compliance with local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT

Not classified as dangerous in the meaning of DOT regulations.

IMDG/IMO

Not classified as dangerous in the meaning of IMO/IMDG regulations..

ICAO/IATA

Not classified as dangerous in the meaning of ICAO/IATA regulations..

15. REGULATORY INFORMATION

International Inventories

European Union (EINECS/ELINCS) : All components of this product are either listed on the inventory or are exempt from listing.

USA (TSCA) : All components of this product are either listed on the inventory or are exempt from listing.

Canada (DSL) : All components of this product are either listed on the inventory or are exempt from listing.

Canada (NDSL): All components listed on inventory.

China (IECSC) : All components of this product are either listed on the inventory or are exempt from listing.

Japan (ENCS) : All components of this product are either listed on the inventory or are exempt from listing.

Korea (ECL) : All components of this product are either listed on the inventory or are exempt from listing.

Philippines (PICCS) : All components of this product are either listed on the inventory or are exempt from listing.

16. OTHER INFORMATION .

NFPA and HMIS Ratings :

NFPA :

Health : 1

Flammability : 1

Instability : 0

HMIS :

Health : 1

Flammability : 1

Physical Hazard : 0

This MSDS was prepared in accordance with the following :

ISO 11014-1: Material Safety Data Sheet for Chemical Products

ANSI Z400.1-2004; Material Safety Data Sheets - Preparation

Contact : Regulatory Affairs Manager: (912)-880-8014

The data in this Material Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained. This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

MATERIAL SAFETY DATA SHEET NS-2103

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Watercare Industrial Services
PO Box 464
Washougal, WA 98671

DISTRIBUTED BY: Northstar Chemical
14200 SW Tualatin Sherwood Rd
Sherwood, OR 97140

INFORMATION PHONE: (503) 625-3770
EMERGENCY PHONE: (503) 625-3770
INFOTRAC: 1-800-535-5053

PRODUCT NAME: NS-2103

DATE PREPARED: 01/07/98
LAST REVISION: 12/05/05

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	OSHA PEL	ACGIH TLV	Weight %
POTASSIUM HYDROXIDE	1310583	N/A	TLV=2 mg/M3	<15
SODIUM BISULFITE	7631-90-5	N/A	TWL=2 mg/M3	<50

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: N/A

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Can cause severe eye irritation.

INHALATION: Can damage nasal and respiratory passages.

INGESTION: Swallowing this product can be irritating to the gastrointestinal tract.

SKIN CONTACT: Vapors, liquid and mists are irritants to the skin. Prolonged contact may cause reddening.

SIGNS AND SYMPTOMS OF EXPOSURE:

Irritation, pain, coughing, redness of skin.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with water for at least 15 minutes. Hold eyelids open while flushing the eyes. Get medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

INGESTION: If swallowed, do NOT induce vomiting. Give victim lots of water. Get medical attention immediately. Never give anything by mouth to an unconscious or convulsing person.

SKIN CONTACT: Wash with soup and water. Change contaminated clothing. Get medical attention if irritation develops or persists.

AGGRAVATED MEDICAL CONDITIONS:

Pre-existing eye, skin or respiratory conditions.

SUPPLEMENTAL HEALTH INFORMATION:

The effects of long-term, low-level exposure to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposures.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: None **FLASH POINT METHOD USED:** N/A

AUTO IGNITION: N/A **LEL:** **UEL:**

EXTINGUISHING MEDIA:

Use extinguishing media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:

Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece in positive pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None known.

COMBUSTION PRODUCTS:

N/A

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Small spills: Mop up, wipe up or soak up immediately. Remove to out of doors. Large spills: Evacuate area. Contain liquid; transfer to closed poly containers. Keep out of water supply.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Keep product above 50° F. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

OTHER PRECAUTIONS:

For industrial use only. Keep away from children. Keep containers closed while not in use.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA approved respirator appropriate for vapor concentration at point of use.

VENTILATION: Local exhaust sufficient to keep exposure below TLV.

WORK/HYGIENIC PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before smoking, or using the toilet.

PROTECTIVE GLOVES: Rubber or other impervious material with gauntlets.

EYE PROTECTION: Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

OTHER PROTECTIVE EQUIP: Boots, apron, lab coat or coveralls of impervious material, safety shower, eyewash.

ENGINEERING CONTROLS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

EXPOSURE GUIDELINES: N/A

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE AND ODOR: Clear, colorless to slight yellow liquid. No appreciable odor.

SOLUBILITY IN WATER: Complete

BOILING POINT:	222° F	**pH:**	7.8 +/- 0.5
VAPOR PRESSURE:	N/A	**VAPOR DENSITY:**	N/A
SPECIFIC GRAVITY:	1.27	**POUNDS PER GALLON:**	11
MELTING POINT:	N/A	**OTHER PROPERTIES:**	N/A

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY: Oxidizers

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Oxides of sulfur

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: None known

11. TOXICOLOGICAL INFORMATION

N/A

12. ECOLOGICAL INFORMATION

N/A

13. DISPOSAL CONSIDERATIONS

Dilute with large amounts of water and dispose to municipal or industrial waste treatment facility in accordance with applicable regulations.

14. TRANSPORT INFORMATION

DOT CLASS:	Non-Regulated Material, Liquid
HAZARD CLASS:	N/A
UN NUMBER:	N/A
PACKING GROUP:	N/A
GUIDE NUMBER:	N/A
PROPER SHIPPING NAME:	Non-Regulated Material, Liquid

15. REGULATORY INFORMATION

Authorized by USDA for use in federally inspected meat and poultry plants.

16. OTHER INFORMATION

HMIS INFORMATION:	HEALTH: 2	FLAMMABILITY: 0	REACTIVE: 0	PROTECTIVE: B
NFPA INFORMATION:	TOXICITY: 2	FIRE: 0	REACTIVITY: 0	SPECIAL: N

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MATERIAL SAFETY DATA SHEET NS-2131

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Watercare Industrial Services
PO Box 464
Washougal, WA 98671

DISTRIBUTED BY: Northstar Chemical
14200 SW Tualatin Sherwood Rd
Sherwood, OR 97140

INFORMATION PHONE: (503) 625-3770
EMERGENCY PHONE: (503) 625-3770
INFOTRAC: 1-800-535-5053

PRODUCT NAME: NS-2131

DATE PREPARED: 1/7/98
LAST REVISION: 1/7/98

MSDS ID #: 45

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	OSHA PEL	ACGIH TLV	Weight %
SODIUM HYDROXIDE	1310732	PEL=2mg/M3	STEL=C 2 mg/M3	<10
1-HYDROXYETHYLIDENE-1, 1-DIPHOSPHONIC ACID	2809214	N/A	N/A	<9

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW:
N/A

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Vapors, liquid and mists are extremely corrosive to the eyes. Brief contact of the liquid or mists will Severely damage the eyes and prolonged contact may cause permanent eye injury which may be followed By blindness.

INHALATION: Irritating to the nose, throat and respiratory tract.

INGESTION: Vapors, liquid and mists are extremely corrosive to the mouth and throat. Swallowing the liquid Burns the tissues, causes severe abdominal pain, nausea, vomiting and collapse. Swallowing large quantities Can cause death.

SKIN CONTACT: Vapors, liquid, and mists are irritants to the skin. Prolonged contact mat cause reddening.

SIGNS AND SYMPTOMS OF EXPOSURE:
Irritation, pain, coughing, redness of skin.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with water for at least 15 minutes. Hold eyelids open while flushing the eyes. Get

Medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

INGESTION: If swallowed, do NOT induce vomiting. Give victim lots of water or milk. Get medical attention Immediately. Never give anything by mouth to an unconscious or convulsing person.

SKIN CONTACT: Wash with soap and water. Change contaminated clothing. Get medical attention if irritation develops or persists.

AGGRAVATED MEDICAL CONDITIONS:
Pre-existing eye, skin or respiratory conditions.

SUPPLEMENTAL HEALTH INFORMATION:
The effects of long-term, low-level exposure to this product have not been determined. Safe handling material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposures.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: None **FLASH POINT METHOD USED:** N/A

AUTO IGNITION: N/A **LEL:** **UEL:**

EXTINGUISHING MEDIA:
Use extinguishing media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:
Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece in positive Pressure mode. Move containers away from fire area if it can be done without risk. Use water to keep fire-exposed containers Cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
None known.

COMBUSTION PRODUCTS:
Oxides of Carbon, phosphines

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:
Small spills: Mop up, wipe up or soak up immediately. Remove to out of doors. Large spills: Evacuate area. Contain liquid; transfer To closed poly containers. Keep out of water supply.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Protect from freezing. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

OTHER PRECAUTIONS:
For industrial use only. Keep away from children. Keep containers closed while not in use.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA approved respirator appropriate for vapor concentration at Point of use.

VENTILATION: Local exhaust sufficient to keep exposure below TLV.

WORK/HYGIENIC PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before Smoking, or using the toilet.

PROTECTIVE GLOVES: Rubber or other impervious material with gauntlets.

EYE PROTECTION: Use chemical safety goggles and/or full face shield where splashing is possible. Contact Lenses should not be worn when working with this material. Maintain eye wash fountain And quick-drench facilities in work areas.

OTHER PROTECTIVE EQUIP: Alkali resistant slicker, trousers, and boots, safety shower, eyewash.

ENGINEERING CONTROLS: Facilities storing or utilizing this material should be equipped with an eyewash facility And a safety shower.

EXPOSURE GUIDELINES: N/A

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE AND ODOR: Clear, light amber liquid. No appreciable odor.

SOLUBILITY IN WATER: Complete

BOILING POINT: 214 deg F

pH: 12.5+/-0.5

VAPOR PRESSURE: N/A

VAPOR DENSITY: N/A

SPECIFIC GRAVITY: 1.08

POUNDS PER GALLON: 9.0

MELTING POINT: N/A

OTHER PROPERTIES: N/A

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID:
None known.

INCOMPATIBILITY:

Acids, strong oxidizing agents

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:
Phosphines, carbon monoxide

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID:
None

11. TOXICOLOGICAL INFORMATION
N/A

12. ECOLOGICAL INFORMATION
N/A

13. DISPOSAL CONSIDERATIONS
Dilute with large amounts of water, neutralize with dilute acid, and dispose to municipal or industrial waste treatment facility in accordance with applicable regulations.

14. TRANSPORT INFORMATION

DOT CLASS: Non-Regulated Material, Liquid
HAZARD CLASS: N/A
UN NUMBER: N/A
PACKING GROUP: N/A
GUIDE NUMBER: N/A
PROPER SHIPPING NAME: Non-Regulated Material, Liquid

15. REGULATORY INFORMATION
Authorized by USDA for use in Federally inspected meat and poultry plants. All components listed in 21 CFR 173.310 Section C, list of substances for boiler water additives, or are GRAS.

16. OTHER INFORMATION

HMIS INFORMATION:	**HEALTH: 2**	**FLAMMABILITY: 0**	**REACTIVE: 0**	**PROTECTIVE: C**
NFPA INFORMATION:	**TOXICITY: 2**	**FIRE: 0**	**REACTIVITY: 0**	**SPECIAL: N**

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MATERIAL SAFETY DATA SHEET 2329

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Watercare Industrial Services
PO Box 464
Washougal, WA 98671
INFORMATION PHONE: (360) 835-7284
EMERGENCY PHONE: (360) 835-7284
INFOTRAC: 1-800-535-5053

PRODUCT NAME: 2329

DATE PREPARED: 08/24/11
LAST REVISION: 08/24/11

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	OSHA PEL	ACGIH TLV	Weight %
SODIUM HYDROXIDE 50%	1310732	N/A	STEL= C 2 mg/M3	<10%

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW:
CORROSIVE!

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Corrosive to the eyes and may cause severe damage including blindness.

INHALATION: May cause headache and dizziness.

INGESTION: Corrosive and may cause permanent damage to the mouth, throat and stomach .

SKIN CONTACT: Severely irritating, may cause permanent skin damage.

SIGNS AND SYMPTOMS OF EXPOSURE:
Irritation, pain, coughing, redness of skin.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with water for at least 15 minutes. Hold eyelids open while flushing the eyes. Get Medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Get medical attention immediately.

INGESTION: If swallowed, do NOT induce vomiting. Give victim lots of water or milk. Get medical attention immediately. Never give anything by mouth to an unconscious or convulsing person.

SKIN CONTACT: Wash with soap and water. Change contaminated clothing. Get medical attention if irritation develops or persists.

AGGRAVATED MEDICAL CONDITIONS:
Pre-existing eye, skin or respiratory conditions.

SUPPLEMENTAL HEALTH INFORMATION:
The effects of long-term, low-level exposure to this product have not been determined. Safe handling material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposures.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: None **FLASH POINT METHOD USED:** N/A

AUTO IGNITION: N/A **LEL:** **UEL:**

EXTINGUISHING MEDIA:
Use extinguishing media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:
Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece in positive Pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Spills produce slippery surfaces.

COMBUSTION PRODUCTS:
Oxides of Carbon

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:
Small spills: Mop up, wipe up, or soak up immediately. Remove to out of doors. Large spills: Evacuate area. Contain liquid; transfer to closed poly containers. Keep out of water supply.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Protect from freezing. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

OTHER PRECAUTIONS:
For industrial use only. Keep away from children. Keep containers closed while not in use.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA approved respirator appropriate for vapor concentration at point Of use.

VENTILATION: Local exhaust sufficient to keep exposure below TLV.

WORK/HYGIENIC PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before Smoking, or using the toilet.

PROTECTIVE GLOVES:	Rubber or other impervious material with gauntlets.
EYE PROTECTION:	Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick drench facilities in work areas.
OTHER PROTECTIVE EQUIP:	Boots, apron, lab coat or coveralls of impervious material, safety shower, eyewash.
ENGINEERING CONTROLS:	Facilities storing or utilizing this material should be equipped with an eyewash facility And a safety shower.
EXPOSURE GUIDELINES:	N/A

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
APPEARANCE AND ODOR: Clear, light yellow liquid. medium odor.

SOLUBILITY IN WATER: Complete

BOILING POINT:	N/A	**PH:**	11.0 +/- 0.5
VAPOR PRESSURE:	N/A	**VAPOR DENSITY:**	N/A
SPECIFIC GRAVITY:	1.06	**POUNDS PER GALLON:**	8.84
MELTING POINT:	N/A	**OTHER PROPERTIES:**	N/A

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID:
None known.

INCOMPATIBILITY:
Strong acidic compounds and metals such as zinc, aluminum and tin.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:
Phosphines, oxides of carbon, potassium oxide

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID:
None

11. TOXICOLOGICAL INFORMATION

N/A

12. ECOLOGICAL INFORMATION

Keep out of waterways.

13. DISPOSAL CONSIDERATIONS

Dilute with large amounts of water and dispose to municipal or industrial waste treatment facility in accordance with applicable regulations.

14. TRANSPORT INFORMATION

DOT CLASS: Corrosive Liquid, Basic, Inorganic n.o.s. (Sodium Hydroxide)
HAZARD CLASS: 8
UN NUMBER: UN3266
PACKING GROUP: II
GUIDE NUMBER: 154
PROPER SHIPPING NAME: Corrosive Liquid, Basic, Inorganic n.o.s. (Sodium Hydroxide)

15. REGULATORY INFORMATION

No information available.

16. OTHER INFORMATION

HMIS INFORMATION:	**HEALTH: 2**	**FLAMMABILITY: 0**	**REACTIVE: 0**	**PROTECTIVE: C**
NFPA INFORMATION:	**TOXICITY: 2**	**FIRE: 0**	**REACTIVITY: 0**	**SPECIAL: N**

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MATERIAL SAFETY DATA SHEET NS-2887

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Watercare Industrial Services
PO Box 464
Washougal, WA 98671

DISTRIBUTED BY: Northstar Chemical
14200 SW Tualatin Sherwood Rd
Sherwood, OR 97140

INFORMATION PHONE: (503) 625-3770
EMERGENCY PHONE: (503) 625-3770
INFOTRAC: 1-800-535-5053

PRODUCT NAME: NS-2887

DATE PREPARED: 1/12/00
LAST REVISION: 5/4/05

2. OSHA HAZARD CLASSIFICATIONS

Irritating to eyes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	OSHA PEL	ACGIH TLV	Weight %

Based on best available information, this product does not contain any reportable OSHA hazardous materials.

4. FIRST AID MEASURES

EYE CONTACT: Flush immediately with copious amounts of tap water or normal saline (minimum of 15 minutes). Take exposed individual to a health care professional, preferably an ophthalmologist, for further evaluation.

INHALATION: If exposure by inhalation is suspected, immediately move exposed individual to fresh air. If individual experiences nausea, headache, dizziness, has difficulty in breathing or is cyanotic, seek a health care professional immediately.

INGESTION: DO NOT INDUCE VOMITTING. Rinse with copious amounts of water or milk, first. Irrigate the esophagus and dilute stomach contents by slowly giving one (1) to two (2) glasses of water or milk. Avoid giving alcohol or alcohol related products. In cases where the individual is semi-comatose, comatose or convulsing, DO NOT GIVE FLUIDS BY MOUTH. In case of intentional ingestion of the product seek medical assistance immediately; take individual to nearest medical facility.

SKIN CONTACT: Wash exposed area with plenty of water. Repeat washing. Remove contaminated clothing and wash thoroughly before reuse. If irritation persists consult a health care professional.

5. PRIMARY ROUTES OF EXPOSURE

EFFECTS FROM ACUTE EXPOSURE:

EYE EXPOSURE: Slightly hazardous in case of eye contact (irritant).

SKIN EXPOSURE: Slightly hazardous in case of skin contact (irritant). Non-sensitizer for skin. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.

INHALATION: Slightly hazardous in case of inhalation. Effects will depend upon concentration and length of time of exposure.

INGESTION: Ingestion is not expected to be a primary route of exposure.

EFFECTS FROM CHRONIC EXPOSURE:

The effects from chronic exposure to this product have not been fully evaluated.

6. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS:

Acute	Oral	(LD50)=1951 mg/kg Male Rat
Acute	Oral	(LD50)=2587 mg/kg Female Rat
Acute	Dermal	(LD50)=>2000 mg/kg Rabbit
Acute	Inhalation	(LC50)=2.9 ppm (4 hours) Rat

IRRITANT/SENSITIZATION EFFECTS: Slightly hazardous in case of eye contact (irritant).
Slightly hazardous in case of skin contact (irritant). Non-sensitizer for skin. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.
Slightly hazardous in case of inhalation. Effects will depend on concentration and length of time of exposure.

CARCINOGENIC POTENTIAL: Not tested by Watercare Industrial Services. Not shown as a carcinogen by OSHA, IARC, or NTP. A two year rat carcinogenicity study showed a slight increase in c-cell adenomas in female rats. Studies with male rats and male and female mice did not show any evidence of carcinogenic response. This product is not considered a carcinogen.

TARGET ORGANS EFFECTS: May cause damage to the following organs: upper respiratory tract, skin, eyes.

OTHER HEALTH EFFECTS: None known.

7. ENVIRONMENTAL TOXICOLOGICAL INFORMATION

LC50=0.37 mg/l 48 hours Invertebrate
LC50=0.26 mg/l 96 hours Fathead minnow
LC50=0.21 mg/l 96 hours Bluegill sunfish
LC50=0.047 mg/l 96 hours Rainbow trout
LC50=>600 mg/l 96 hours Sheepshead minnow
LC50=13 mg/l 96 hours Mysid shrimp

8. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear, pale yellow liquid

ODOR: Mild

SOLUBILITY IN WATER: Easily soluble in cold water. Easily soluble in hot water.

BOILING POINT: >100 °C (212°F)

pH (Neat): 7 (Neutral)

VAPOR PRESSURE: Not available

pH (100 ppm in water): 6-7

FLASH POINT: >100°C (212°F) – CLOSED CUP

MELTING/FREEZING POINT: <-16°C (3.2°F)

DENSITY: 1.15 g/cm^3

o/w PARTITION COEFFICIENT: Not available

OXIDIZING/REDUCING PROPERTIES: Not available

VISCOSITY: Kinetic: 125 cS

NOTE: The physical data presented above are typical values and should not be construed as specifications.

9. FIRE AND EXPLOSION INFORMATION

FLAMMABLE LIMITS: Not available.

EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

10. REACTIVITY INFORMATION

STABILITY: Stable under normal conditions of use and storage.

INCOMPATIBILITY: Anionic polymers

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Carbon monoxide may be formed upon burning.

11. HANDLING PRECAUTIONS

Eye-wash fountains in the work place are strongly recommended. Rubber gloves, safety glasses or goggles and body protective clothing and shoes are required. The handling precautions for this product are based on the characteristics of the neat product unless otherwise specified.

12. SATISFACTORY MATERIALS OF CONSTRUCTION

Plexiglas, Teflon, Buna-N rubber, Viton, EPDM rubber, PVC-flexible, Neoprene, Polyethylene-low density, Tygon, Tyril 880, Silicone rubber, Hypalon, Stainless steels 304 and 316, 6/6 Nylon, Polyethylene-high density, Polypropylene, PVC-rigid, Butyl rubber, ABS (plastic), Morton test liner (108 T 44LV), Fiberglass, Gum rubber, FRP lined mild steel.

13. SPILL, LEAK AND DISPOSAL PROCEDURES

SPILL AND LEAK RESPONSE GUIDELINES: Important: Before responding to a spill or leak of this product, review each section of this MSDS. Follow the recommendations given in the Handling Precautions section. Check the Fire and Explosion Data section to determine if the use of non-sparking tools is merited. Insure that spilled or leaked product does not come into contact with materials listed as incompatible. If irritating fumes are present, consider evacuation of enclosed areas.

Initially minimize area affected by the spill or leak. Block any potential routes to water systems (e.g., sewers, streams, lakes, etc). Based on the product's toxicological and chemical properties, and on the size and location of the spill or leak, assess the impact on contaminated environments (e.g. water systems, ground, air equipment, etc). There are no methods available to completely eliminate any toxicity this product may have on aquatic environments. Minimize adverse effects on these environments. Determine if federal, state, and/or local release notification is required (see Regulatory Classifications section of this MSDS). Recover as much of the pure product as possible into appropriate containers. Later, determine if this recovered product can be used for its intended purpose. Address clean-up of contaminated environments. Spill or leak residuals may have to be collected and disposed of. Clay, soil, or commercially available absorbents may be used to recover any material that can not readily be recovered as pure product. Flushing residual material to an industrial sewer, if present at the site of a spill or leak incident, may be acceptable if authorized approval is obtained. If product and/or spill/leak residuals are flushed to an industrial sewer, insure that they do not come into contact with incompatible materials. Contact the person(s) responsible for the operation of your facility's industrial sewer system prior to intentionally flushing or pumping spills or leaks of this product to the industrial sewer.

DISPOSAL GUIDELINES: Follow federal, state and local regulations governing the disposal of waste materials. Contaminated Materials: Determine if waste containing this product can be handled by available industrial effluent system or other on-site waste management unit. If off-site management is required, contact a company experienced in industrial waste management. This product is not specifically listed in 40 CFR 261 as a Resource Conservation and Recovery Act (RCRA) hazardous waste. However, spill or leak residuals may meet the criteria of a characteristic hazardous waste under this Act. Check the characteristics of the material to be disposed of and/or the physical and reactivity data given in this MSDS for the neat product. Container Disposal: Empty containers, as defined by appropriate sections of the RCRA, are not RCRA hazardous wastes. However, insure proper management of any residuals remaining in container.

14. TRANSPORT INFORMATION

DOT SHIPPING INFORMATION:

DOT CLASS: Non-regulated Material, Liquid
HAZARD CLASS: N/A
UN NUMBER: N/A
PACKING GROUP: N/A
GUIDE NUMBER: N/A
PROPER SHIPPING NAME: Non-regulated Material, Liquid

IMO/IMDG SHIPPING INFORMATION: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylene dichloride]), Class 9, UN3082, PG III, MARINE POLLUTANT, (EmS No. F-A, S-F, ERG Guide 171, HazMat Code 4960131).

IATA SHIPPING INFORMATION: Non-regulated Material

15. REGULATORY INFORMATION

The following regulations are known to apply to the use and disposal of this product. Additional Federal, State and Local regulations may also be applicable.

SARA 302: No components of this product are listed.

SARA 312: Immediate (Acute) health hazard

SARA 313: No components of this product are present above the *de minimus* levels.

CERCLA: No components of this product are present above the *de minimus* levels.

RCRA: No components of this product are listed.

CWA: No components of this product are listed.

FDA: This product is not approved for food contact uses.

NSF: This product is listed by the NSF under NSF/ANSI Standard 60 for use in potable water applications with the following maximum allowable use rates: Concentrations of 2-5 ppm can be used at the initiation of treatment for up to 21 days. Thereafter, the maximum use rate is 0.5 ppm for potable water systems.

TSCA: All components may not be listed on the TSCA Inventory. Registered pesticides are exempt from the requirements of TSCA.

FIFRA: Registered Pesticide. EPA Supplemental Number: 1448-212-72520, EPA Est. Number: 72520-WA-01.

HMIS INFORMATION:	HEALTH: 1	FLAMMABILITY: 1	REACTIVE: 0	PROTECTIVE:
NFPA INFORMATION:	TOXICITY: 1	FIRE: 1	REACTIVITY: 0	SPECIAL:

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14200 SW Tualatin-Sherwood Rd. Sherwood, OR 97140
(Phone) 503-625-3770 (Fax) 503-625-1478

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identity: M-1883

Intended Use: Waste Water Treatment

HMIS Hazard Ratings

Health	2
Fire	0
Reactivity	0

Manufacturer:
Northstar Chemical
14200 SW Tualatin-Sherwood Rd
Sherwood OR, 97140
Telephone: 503-625-3770
Fax: 503-625-1478
Internet: Northstar@northstarchemical.com
Emergency Phone: 1-888-793-9476
MSDS Date of Preparation: **5/1/2009**
Prepared by: Robert Hansford

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	Amount
Aluminum Chlorohydrate	12042-91-0	50%
Water	7732-18-5	50%

3. HAZARDS IDENTIFICATION

This product is a clear, colorless to yellow liquid with no odor.

EMERGENCY OVERVIEW

WARNING!

Causes eye irritation. May cause skin irritation. Inhalation of mists may cause mucous membrane and respiratory irritation.

4. FIRST AID MEASURES

Eye: Immediately flush victim's eyes with large quantities of water for at least 15 minutes, holding the eyelids apart. Get immediate medical attention.
Skin: Immediately flush skin with plenty of water for 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention. Launder clothing before re-use.
Ingestion: Do Not induce vomiting. Rinse mouth with water and give one glass of water to drink. Never give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.
Inhalation: Immediately remove victim to fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention**.**

5. FIRE FIGHTING MEASURES

Flashpoint: None
Flammable Limits: LEL: Not applicable **UEL**: Not applicable
Autoignition Temperature: None
Extinguishing Media: Use media appropriate for surrounding fire. Cool fire exposed containers and structures with water.
Unusual Fire or Explosion Hazards: None known.
Special Fire-Fighting Instructions: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.
Hazardous Combustion Products: Oxides of carbon and chlorine compounds including hydrogen chloride.
Explosion Data (sensitivity to mechanical impact or static discharge): None known.

6. ACCIDENTAL RELEASE MEASURES

Evacuate spill area and keep unprotected personnel away. Wear appropriate protective clothing as described in Section 8. Contain and recover liquid where possible. Collect using an inert absorbent material and place in appropriate containers for disposal. Prevent spill from entering sewers and water courses. Report releases as required by local, state and federal authorities.

7. HANDLING AND STORAGE

Handling: Avoid contact with the eyes. Avoid prolonged or repeated skin contact. Avoid breathing mists or aerosols. Wear protective clothing and equipment as described in Section 8. Use with adequate ventilation. Wash thoroughly with soap and water after handling. Keep containers closed when not in use.

Do not reuse containers. Empty containers retain product residues can be hazardous. Follow all MSDS precautions when handling empty containers.

Storage: Store in a cool, dry, well ventilated area away from heat and incompatible materials. Protect from physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Aluminum Chlorohydrate	2 mg/m3 TLV-TWA (as Al)
Water	None Established

Engineering Controls: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.
Respiratory Protection: In operations where exposure levels are exceeded, a NIOSH approved respirator with dust/mist cartridges or supplied air respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.
Skin Protection: Wear impervious gloves such as rubber or neoprene.
Eye Protection: Chemical safety goggles where splashing is possible.
Other: Impervious coveralls, apron and boots as needed to prevent contact. A safety shower and eye wash should be available in the immediate work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance And Odor: Clear, colorless liquid to yellow with no odor.

Physical State: Liquid	**Boiling Point:** 212°F
Vapor Density: Same as water	**Vapor Pressure:** Same as water
Solubility In Water: Soluble	**Evaporation Rate:** Same as water
Specific Gravity: 1.34	**pH:** (15% w/w): 4.0-5.0
Melting Point: 22°F	**Octanol/Water Coefficient:** Not determined
VOC Content: 0%	

10. STABILITY AND REACTIVITY

Stability: Stable under normal storage and handling conditions.
Incompatibility: Metals (zinc and aluminum), alkalies.
Hazardous Decomposition Products: When heated to decomposition emits toxic oxides of carbon and chlorine compounds including hydrogen chloride. Reacts with metals to form flammable hydrogen gas.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

HEALTH HAZARDS:
Ingestion: Ingestion may cause irritation of the mucous membranes, esophagus and stomach. May cause nausea, vomiting and diarrhea. Large amounts may cause liver and kidney effects.
Inhalation: Inhalation of mists may cause irritation of the nose throat and upper respiratory tract.
Eye: May cause moderate to severe irritation with pain and tearing. Corneal damage is possible.
Skin: May cause irritation on prolonged or repeated contact.
Sensitization: This material is not known to cause sensitization.
Chronic: Prolonged inhalation of aluminum chlorohydrate in laboratory animals cases fibrosis of the lungs..
Carcinogenicity: None of the components is listed as a carcinogen or suspected carcinogen by IARC, NTP or OSHA.
Mutagenicity: None currently known.
Medical Conditions Aggravated by Exposure: Employees with pre-existing eye, skin and respiratory disease may be at increased risk from exposure.

Acute Toxicity Values:
No data available.

12. ECOLOGICAL INFORMATION

No ecotoxicity data is available.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal environmental regulations.

14. TRANSPORT INFORMATION

Dot Hazardous Materials Description:
Proper Shipping Name: Not Regulated

UN Number: None
Hazard Class/Packing Group: None
Labels Required: None

15. REGULATORY INFORMATION

CERCLA: This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA Hazard Category (311/312): Acute Health

SARA 313: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

EPA TSCA Inventory: All of the ingredients in this product are listed on the EPA TSCA Inventory.

CANADA:
This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.
Canadian CEPA: All the components of this product are listed on the Canadian DSL.
Canadian WHMIS Classification: Class D-2-B (Toxic material causing other chronic effects)

16. OTHER INFORMATION

NFPA Rating: Health = 1 Fire = 0 Reactivity = 0
HMIS Rating: Health = 1 Fire = 0 Reactivity = 0

NOTICE

This above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. Northstar Chemical shall not be held liable for any damage resulting from handling or from contact with the above product. This information relates only to the product designated herein and does not relate to its use in combination with any other material or process.

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

Northstar Chemical, Inc.

Liquid Caustic Soda 50%

MSDS No: **Rev. Date:** 03-06-2013 **Rev. Num.**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME (AS LABELED): **Liquid Caustic Soda. Membrane Grade (50%)**

CHEMICAL NAME/CLASS: Caustic Soda

PRODUCT USE: Chemical Processing, soaps and detergents, water treatment, pulp and paper.

SUPPLIER/MANUFACTURER'S NAME: **Northstar Chemical, Inc.**

ADDRESS: **Corporate Office**
14200 S.W. Tualatin-Sherwood Rd.
Sherwood, OR 97140

BUSINESS PHONE: 888-793-9476

EMERGENCY PHONE: **CHEMTREC**: 800-424-9300

DATE OF PREPARATION: January 03, 2013

Si usted no entiende las Hojas de Informacion de Seguridad sobre Materials, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the Material Safety Data Sheet, find someone to explain it to you in detail.)

2. HAZARDS IDENTIFICATION

Emergency Overview:
DANGER!

Causes severe skin burns and eye damage.

May cause respiratory irritation.

Onset of symptoms may be delayed following exposure.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	**Percent (%)**
Sodium Hydroxide	50
CAS Number:	1310-73-2
GHS Classification:	Corrosive 1B, STOT-SE 3; H314, H335

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water for at least 15 minutes. Hold eyelids open to ensure adequate flushing. Get immediate medical attention.

Skin Contact: Remove contaminated clothing and shoes. Wash affected skin area with soap and water. Get immediate medical attention.

Inhalation: Remove to fresh air. Get immediate medical attention.

Ingestion: If ingested, dilute swallowed material by drinking water. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Other Instructions: Rescue personnel must wear appropriate protective equipment during removal of victims from contaminated areas. Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

Flash Point: Not applicable

Autoignition Temperature: Not applicable

Flammable Limits, in Air:

LEL (%): Not applicable

UEL (%): Not applicable

Extinguishing Media: Dry chemical, foam, water or carbon dioxide.

Special Fire Fighting Procedure: In the event of a fire, wear a NIOSH (US) or CEN (EU) approved, positive pressure, self-contained breathing apparatus (SCBA) and full protective clothing. Evacuate all non-essential personnel from the danger area.

Unusual Fire and Explosion Hazards: Direct contact with water may cause a violent exothermic reaction. This material reacts violently with acids, organic halogen compounds and metals (zinc, tin, aluminum etc.) giving off highly flammable hydrogen gas.

Hazardous Combustion Products Carbon monoxide, carbon dioxide and other irritating and harmful gases and fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Restrict access to keep out unauthorized or unprotected personnel. Stay upwind of spilled material. Wear appropriate personal protective equipment during all clean-up activities. Avoid inhalation and direct contact.

Environmental Precautions: Keep spilled material away from sewage/drainage systems and waterways. This product contains a U.S. EPA Reportable Quantity (RQ) substance. If amounts exceeding the Reportable Quantity are released, notification of the National Response Center (800) 424-8802 is required. See Section 15 for more information.

Methods for Clean-Up: All clean-up personnel must be properly trained. Confine the spill and remove incompatible materials and ignition sources. Ensure adequate ventilation. Secure the source of the leak if conditions are safe. Neutralize spill and collect using an appropriate absorbent material such as clay or vermiculite. Place waste in an appropriate container for disposal. Use care during clean-up to avoid exposure to the material and injury from broken containers.

7. HANDLING and STORAGE

Handling: Use with adequate ventilation. Wear proper personal protective equipment. Do not mix with water or acids without dilution and agitation to prevent a potentially violent reaction.

Storage: Store in closed, properly labeled containers. Protect containers from heat, physical damage, ignition sources and incompatible materials. Have emergency equipment for fires and spills readily available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection: Wear chemical splash goggles or face shield.

Skin Protection: Minimize contact with product. Wear chemical resistant coveralls, boots, gloves, apron and/or suitable long-sleeved clothing. Consult protective equipment manufacturer for chemical resistance information.

Respiratory Protection: An industrial hygiene risk assessment is required to determine the appropriate respiratory protection. A NIOSH (US) or CEN (EU) approved full-face, air-purifying cartridge respirator may be appropriate under limited exposure conditions. Wear an approved supplied air respirator if there is a potential for an uncontrolled release, exposure levels are not known, or in other circumstances where air-purifying respirators may not provide adequate protection.

Engineering Controls: Ensure adequate ventilation. Emergency eyewash and safety shower facilities should be available in the immediate work area.

Required Work/Hygiene Procedure: Wash hands thoroughly after handling. Do not eat, drink or smoke in work area. If unusual exposures are expected, an industrial hygiene review of work practices,

engineering controls and personal protective equipment is recommended.

Exposure Guidelines:
OSHA PEL-TWA: 2 mg/m3
ACGIH TLV-Ceiling: 2 mg/m3
NIOSH IDLH: 10 mg/m3

9. PHYSICAL and CHEMICAL PROPERTIES

Physical Form:	Liquid
Color:	Clear to opaque
Odor:	No distinct odor
Molecular Weight:	40.0
Boiling Point:	221-284 °F (105-140 °C)
Melting Point:	10-50 °F (-12-10 °C)
Freezing Point:	53 °F (12 °C)
Solubility in Water:	Soluble
Density:	1.515 g/cm3
Vapor Density:	1.38 (*air = 1*)
Evaporation Rate:	Not applicable (*butyl acetate =1*)
Vapor Pressure:	< 24 hPa (< 18 mmHg) at 68 °F (20 °C)
% Volatile:	Not applicable
pH:	14

10. STABILITY and REACTIVITY

Stability:	Stable under recommended storage conditions.
Conditions to Avoid:	Keep away from water, organic materials, chlorinated solvents, aluminum, phosphorus, tin/tin oxides, and zinc.
Hazardous Decomposition:	Direct contact with water may cause a violent exothermic reaction. This material reacts violently with acids, organic halogen compounds and metals (zinc, tin, aluminum etc.) giving off highly flammable hydrogen gas.
Hazardous Polymerization:	Not expected to occur.

11. TOXICOLOGICAL INFORMATION

Primary Route(s) of Exposure:	Eye, skin contact, inhalation
Potential Health Effects:	
Eye Contact:	Causes severe eye damage.
Skin Contact:	Causes skin burns. Onset of symptoms may be delayed following exposure.
Inhalation:	Causes respiratory irritation.
Ingestion:	May be harmful if swallowed. Ingestion may cause chemical burns, pain, vomiting, difficulty breathing and other gastrointestinal effects.
Carcinogenicity:	The components of this product are not classified as carcinogenic by OSHA, NTP or IARC.
Medical Conditions Aggravated by Overexposure:	Asthma and other respiratory conditions, skin disorders.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No data are available on the adverse effects of this material on the environment.

13. DISPOSAL CONSIDERATIONS

Disposal Method: This product must be disposed of in accordance with Federal, state and local environmental regulations. Discarded materials may be considered hazardous waste due to pH/corrosivity.

It is the responsibility of the product user to determine at the time of disposal whether a material containing, or derived from, this product should be classified as hazardous waste.

14. TRANSPORTATION INFORMATION

Proper Shipping Name:	Sodium Hydroxide Solution
Hazard Label:	Corrosive
Hazard Class:	8
UN/NA Number:	UN 1824
Packing Group:	II
EPA Reportable Quantity (RQ):	1000 lbs. (sodium hydroxide); 2000 lbs. (product as supplied)
Marine Pollutant:	No
Emergency Response Guide:	154

15. REGULATORY INFORMATION

U.N. GHS Classification & Labeling Information:

Classification: Corrosive 1B

Specific Target Organ Toxicity (STOT)
- Single Exposure 3

Signal Word: DANGER

H Statements: H314: Causes severe skin burns and eye damage.
H335: May cause respiratory irritation.

P Statements: P307+315: If exposed, get immediate medical attention.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P264: Wash thoroughly after handling.
P273: Avoid release into the environment.

NFPA 704 Information:

Health Rating:	3
Flammability Rating:	0
Reactivity Rating:	1
Other Hazards:	CORROSIVE

U.S. Federal Regulatory Information:

EPA Clean Air Act:	Not listed
EPA Clean Water Act:	Not listed
TSCA:	The ingredients of this product are listed on TSCA inventory (40 CFR 710).
RCRA:	This product as supplied is a D002 (corrosive) waste.
CERCLA RQ:	1000 lbs. (sodium hydroxide); 2000 lbs. (product as supplied)
SARA Title III § 302:	None
SARA Title III § 311/312:	Acute Health Hazard
SARA Title III § 313:	Not listed

U.S. State Regulatory Information:

California Proposition 65: This product is not listed as a carcinogen or reproductive hazard under California's Proposition 65 Safe Drinking Water and Toxic Enforcement Act. However, materials used the manufacturing process may result in contamination with trace quantities of various compounds listed under Proposition 65.

European Union Regulatory Information:

DSD/DPD Risk (R) Phrases: R35: Causes severe burns

DSD/DPD Hazard Symbol: C: Corrosive

DSD/DPD Safety (S) Phrases:
S18: Handle and open containers with care.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39: Wear suitable gloves and eye/face protection.
S62: If swallowed, do not induce vomiting.
S64: If swallowed, rinse mouth with water if victim is conscious.

Canadian Regulatory Information:

WHMIS Category:	Class E Corrosive Material
Ingredient Disclosure List:	Listed
Domestic Substances List (DSL):	Listed

16. OTHER INFORMATION

European Union Compliance:

This MSDS conforms to regulations 1907/2006/EC (REACH). This product has been classified in accordance with 67/548/EEC, 1999/45/EC, 1272/2008 (CLP) and amendments.

Prepared By:

Northstar Chemical Inc.
Corporate Environment, Safety & Communications Department

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MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

Northstar Chemical, Inc.

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): **NORTHSTAR SULFURIC ACID (1 - 50%)**

CHEMICAL NAME/CLASS: Sulfuric Acid Solution

PRODUCT USE: Neutralization, battery acid.

SUPPLIER/MANUFACTURER'S NAME: **Northstar Chemical, Inc.**

ADDRESS: **Corporate Office**
14200 S.W. Tualatin-Sherwood Rd.
Sherwood, OR 97140

BUSINESS PHONE: 888-793-9476

EMERGENCY PHONE: **CHEMTREC**: 800-424-9300

DATE OF PREPARATION: January 12, 2001

Si usted no entiende las Hojas de Informacion de Seguridad sobre Materials, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the Material Safety Data Sheet, find someone to explain it to you in detail.)

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	%w/w	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV mg/m^3	STEL mg/m^3	PEL mg/m^3	STEL mg/m^3	IDLH	OTHER mg/m^3
Sulfuric Acid	7664-93-9	1-50	1 mg/m^3	10	1 mg/m^3	3 mg/m^3	15 mg/m^3	NA
Water and other ingredients. The other ingredients are each present in less than 1 percent concentration in this product.		Balance	The components present in the balance of this product do not contribute any significant, additional hazards. All hazard information pertinent to this product has been presented in the remaining sections of this Material Safety Data Sheet, per the requirements of Federal Occupational Safety and Health Hazard Communication Standard (29 CFR 1910.1200).					

NE = Not Established. C = Ceiling Limit. See Section 16 for Definitions of Terms Used.
NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is a clear solution. This solution is corrosive, and can be damaging to contaminated tissue. Ingestion or inhalation of large quantities can be fatal. In the event of fire or spill, adequate precautions must be taken. this product may decompose to produce a variety of compounds (i.e. carbon monoxide, carbon dioxide and oxides of sulfur). Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding.

3. HAZARD IDENTIFICATION (Continued)

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational overexposure are inhalation and contact with skin and eyes. The symptoms of overexposure to this product are as follows:

INHALATION: If mists or sprays of this solution are inhaled, this product may cause pulmonary irritation, irritation of the mucus membranes, coughing, and a sore throat. Inhalation of high concentrations of this product may cause damage to the tissues of the respiratory system, producing potentially fatal lung disorders (chemical pneumonitis and pulmonary edema) and erosion of the tooth enamel.

CONTACT WITH SKIN or EYES: Contact with the eyes may cause severe irritation, eye burns and permanent eye damage. Contact with the skin may cause severe irritation, skin burns and permanent skin damage. Prolonged exposure may result in ulcerating burns which could leave scars.

SKIN ABSORPTION: Skin absorption is not anticipated to be a significant route of over-exposure to any component of this product.

INGESTION: Though ingestion is not anticipated to be a significant route of over-exposure to this product, if ingestion does occur burning and irritation of the mouth, throat, esophagus, and other tissues of the digestive system will occur immediately upon contact. Ingestion of large quantities may be fatal.

INJECTION: Though injection is not anticipated to be a significant route of over-exposure to this product, if it occurs, may cause local reddening, tissue swelling, and discomfort.

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	3
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	2

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		

For routine industrial applications

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**.

ACUTE: This solution is corrosive, and can burn and damage eyes, skin, mucous membranes, and any other exposed tissue. If inhaled, irritation of the respiratory system may occur, with coughing, and breathing difficulty. Though unlikely to occur during occupational use, ingestion or injection of large quantities may be fatal.

CHRONIC: This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11).

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

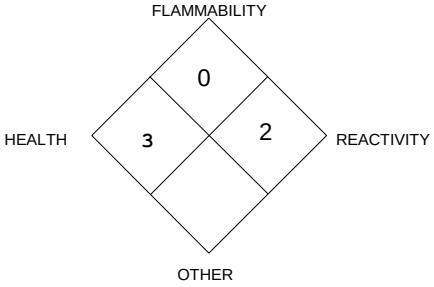
SKIN EXPOSURE: If the product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove contaminated clothing, taking care not to contaminate eyes. Victim must seek medical attention.
EYE EXPOSURE: If this product enters the eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victim must seek immediate medical attention.
INHALATION: If vapors, mists, or sprays of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.
INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, **do not induce vomiting**. Victim should rinse mouth with large amounts of water. Victim should drink 2-3 glasses of water to dilute the ingested material. Never induce vomiting or give diluents (water) to someone who is unconscious, having convulsions, or who cannot swallow. The use of gastric lavage is controversial. The removal of acid must be weighed against the risk of perforation or bleeding. If a large amount of acid (greater than 1ml /kg body weight) has been ingested , cautious gastric lavage is generally advised if the patient is alert and there is little risk of convulsions. Consultation with a gastroenterologist and/or surgeon is advised. Serious complications such as perforation or stricture of the esophagus may occur requiring care by specialist. Laryngeal edema may develop requiring intubation or tracheostomy.

Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with victim.

5. FIRE-FIGHTING MEASURES

FLASH POINT, °C (method): Not flammable.
AUTOIGNITION TEMPERATURE, °C: Not flammable.
FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): Not applicable.
Upper (UEL):Not applicable.

NFPA RATING



FIRE EXTINGUISHING MATERIALS:

Water Spray: YES Carbon Dioxide: YES
Foam: YES Dry Chemical: YES
Halon: YES Other: NO.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is corrosive, and presents a significant contact hazard to fire-fighters. When involved in a fire, this material may decompose and produce irritating fumes and toxic gases (including carbon monoxide, carbon dioxide and oxides of sulfur).

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment. If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel.

The proper personal protective equipment for incidental releases (e.g.-1 L of the product released in a well-ventilated area) use impermeable gloves, specific for the material handled, goggles, face shield, and appropriate body protection. In the event of a large release, use impermeable gloves, specific for the material handled, chemically resistant suit and boots, and hard-hat. Self Contained Breathing Apparatus or respirator may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, Select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendations.
Absorb spilled liquid with polypads or other suitable absorbent materials. Neutralize residue with lime or soda ash or other acid neutralizing agent. Decontaminate the area thoroughly. Test area with litmus paper to confirm neutralization. Place all spill residue in a suitable container. Dispose of in accordance with Federal, State and local hazardous waste disposal regulations (see Section 13 – Disposal Considerations.)

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash hands after handling this product. Do not eat or drink while handling this material. Remove contaminated clothing immediately. Use ventilation and other engineering controls to minimize potential exposure to this product.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid breathing mists or sprays generated by this product. Use in a well-ventilated location.

For Non-Bulk Containers: Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers, or in a diked area, as appropriate. Store containers away from incompatible chemicals. Keep container tightly closed when not in use. Wash thoroughly after using this material. Storage areas should be made of fire-resistant materials. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

Empty containers may contain residual liquid. Therefore, empty containers should be handled with care.

7. HANDLING and STORAGE (Continued)

Bulk Containers: All tanks and pipelines which contain this material must be labeled. Perform routine maintenance on tanks or pipelines which contain this product. Report all leaks immediately to the proper personnel.

Tank Car Shipments: Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer's recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment.). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tank (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be clean and free of incompatible chemicals, prior to connection to the tank car or vessel. Valves and hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment before maintenance begins by a triple-rinse with water followed, if necessary, by using acid neutralizing agent and an additional rinse. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: If required use a corrosion-resistant ventilation system separate from other exhaust ventilation systems to ensure that there is no potential for overexposure to sprays, or mists of this product and that exposures are below those in section 2. Ensure eyewash/safety shower stations are available near areas where this product is used.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below exposure limits listed in Section 2 (Composition and Information on Ingredients). If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, or applicable State regulations. If adequate ventilation is not available or if there is potential for airborne exposure above the exposure limits (listed in Section 2) a respirator may be worn up to respirator exposure limitations, check with respirator equipment manufactures recommendations/limitations. For a higher level of protection use positive pressure supplied air respiration protection or Self Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS:
Positive pressure, full-facepiece Self Contained Breathing Apparatus; or positive pressure, full-facepiece Self Contained Breathing Apparatus with an auxiliary positive pressure Self Contained Breathing Apparatus.

EYE PROTECTION: Splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

HAND PROTECTION: Wear appropriate gloves for routine industrial use. Use appropriate gloves for spill response, as stated in Section 6 of this MSDS (Accidental Release Measures).

BODY PROTECTION: Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from natural rubber or other appropriate materials are generally acceptable, depending upon the task.

9. PHYSICAL and CHEMICAL PROPERTIES

Physical and chemical properties for Sulfuric Acid.

	Sulfuric Acid **Percentage**				
	10	**20**	**30**	**36**	**50**
PHYSICAL STATE:	Liquid				
BOILING POINT @ 760 mm Hg:	102°C 215°F	104°C 219°F	108°C 226°	123°C 255°F	123°C 253°F
FREEZING POINT:	-4°C 24°F	-13°C 8°F	-33°C -28°F	-64°C -83°F	-2°C -36°F
VAPOR PRESSURE lb./in.^{2} abs. @60°F	0.242	0.226	0.191	0.151	0.089
SPECIFIC GRAVITY @ 15.6° C	1.066	1.142	1.219	1.272	1.394
DENSITY – lb-gal @ 15.6°C:	8.89	9.52	10.17	10.61	11.63
VAPOR DENSITY:	Not Determined				
EVAPORATION RATE (water = 1):	Not Determined				
pH:	1% solution has an approximate pH of 1				
SOLUBILITY in H_2O - % by wt:	Completely Soluble				

ODOR THRESHOLD: Not available.
APPEARANCE AND COLOR: No odor.
HOW TO DETECT THIS SUBSTANCE (warning properties): Litmus paper will turn red upon contact with even low concentrations of this solution.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: Thermal decomposition products of this solution can include carbon monoxide, carbon dioxide and oxides of sulfur.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product reacts with bases, reducing agents, alkali metals, carbides, cyanides, sulfides and metal powders. . Do not mix this product with sodium hypochlorite, sodium bisulfite, Chlorine Sanitizers or Chlorinated Cleaners – a deadly gas can be formed.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure or contact to extreme temperatures and incompatible chemicals.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: Additional toxicology information for components greater than 1 percent in concentration is provided below.
SULFURIC ACID:
LD_{50} (oral, rat) 2140 mg/kg
LC_{50} (rat) 510 mg/m3 /2 hrs.

SUSPECTED CANCER AGENT: The components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA; and are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

NORTHSTAR only adds water to produce lower concentrations of sulfuric acid. The following quote is from a 93% sulfuric acid MSDS dated 5/7/97 from Rodia Inc., who is a producer of sulfuric acid and is regarding cancer and strong acid mists. "The International Agency for Research on cancer (IARC) has classified strong inorganic acid mists containing sulfuric as a known human carcinogen (IARC Category 1). This classification applies to sulfuric acid when it is generated as a mist. There is still debate in the scientific community whether the studies reviewed by IARC adequately controlled for confounding occupational exposures and personal habits such as smoking and alcohol consumption. A few epidemiology studies have suggested a possible association between sulfuric acid exposure and laryngeal or lung cancer; however, in all these studies, workers were exposed to many other chemicals, some of which are recognized carcinogens, such as diethylsulfate and nickel. Considering the multiple chemical exposures and other limitations of the studies we (Rodia Inc.) disagree with IARC's conclusions that a cause and effect relationship between cancer and exposure to strong inorganic acid mist containing sulfuric acid has been demonstrated."

11. TOXICOLOGICAL INFORMATION (Continued)

IRRITANCY OF PRODUCT: This product is severely irritating to contaminated tissue.

SENSITIZATION TO THE PRODUCT: No component of this product is known to be a sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans.
Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.
Teratogenicity: This product is not reported to cause teratogenic effects in humans.
Reproductive Toxicity: This product is not reported to cause reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

BIOLOGICAL EXPOSURE INDICES: Currently there are no Biological Exposure Indices (BEIs) associated with the components of this product.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE Skin disorders can be aggravated by over-exposure to this product. Inhalation of this products mists may aggravate respiratory conditions.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate over-exposure to this product.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No chemical fate data found.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: This product is harmful or fatal to plant and animal life if released into the environment. As with all chemicals, work practices should be aimed at eliminating environmental releases. Refer to Section 11 (Toxicological Information) for further toxicological data.

EFFECT OF CHEMICAL ON AQUATIC LIFE The toxicity of sulfuric acid to fish is dependent on the resulting pH of the water. lethality at a ph of 5.0 or below. Required to cause lethality varies depending on the hardness of the water (hard water has some buffering capacity) and the species of fish (some fish are more resistant to the effects of acidity) . McKee, JE, and Wolf, HA (Editors) Water Quality Criteria, 2nd ed., Publications No. 3-A, p. 279, California State Water Quality Resources Control Board, Sacramento, CA (Rev. 1963).

As with all chemicals, work practices should be aimed at eliminating environmental releases.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

EPA WASTE NUMBER: D002 (Characteristic, Corrosivity), applicable to wastes consisting only of this solution.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME:	Sulfuric Acid, with not more than 51% acid
HAZARD CLASS NUMBER and DESCRIPTION:	8 (Corrosive Material)
UN IDENTIFICATION NUMBER:	UN 2796
PACKING GROUP:	II
DOT LABEL(S) REQUIRED:	Corrosive

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 157

14. TRANSPORTATION INFORMATION—(Continued)

MARINE POLLUTANT: This product does not contain any components which are designated by the Department of Transportation to be Marine Pollutants. (49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

Note: The latest DOT information is provided, please verify all DOT information as it subject to change without notice.

15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: The components of this product subject to the reporting requirements of Section 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act are as follows.

COMPONENT	SARA 302	SARA 304	SARA 313
Sulfuric Acid	Yes	Yes	No

SARA Threshold Planning Quantity: NA

TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY (RQ): Sulfuric Acid = 1000 lbs,
OTHER FEDERAL REGULATIONS: Not applicable.

STATE REGULATORY INFORMATION: Not determined.

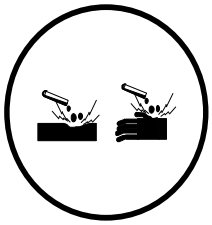
CALIFORNIA PROPOSITION 65: No component of this product is on the California Proposition 65 lists.

LABELING (Precautionary Statements): **DANGER!** CORROSIVE MATERIAL! LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. MAY CAUSE LUNG DAMAGE. Do not get into eyes, on skin or clothing. Avoid breathing spray or mist. Do not take internally. Use with adequate ventilation and employ respiratory protection when exposed to the mist or spray. When handling, wear chemical splash goggles, face shield, rubber gloves and protective clothing. Do not transfer to unlabeled containers. Wash thoroughly after handling, Keep container closed when not in use. FIRST AID: In case of contact, immediately flush skin or eyes for at least 15 minutes. If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do not induce vomiting. IN CASE OF FIRE: Use water, dry chemical, CO_2, or alcohol foam. IN CASE OF SPILL: Neutralize residue with acid neutralizing agent. Refer to MSDS for additional information.

TARGET ORGANS: Skin, eyes and respiratory system.
WHMIS SYMBOLS:

D1A- Poisonous and Infectious Materials
Very Toxic Materials

E- Corrosive Material



16. OTHER INFORMATION

INFORMATION SOURCE: CHEMICAL SAFETY ASSOCIATES, Inc.
Rhodia Inc.

PREPARED BY: BASIC CHEMICAL SOLUTIONS

THIS INFORMATION IS DRAWN FROM RECOGNIZED SOURCES BELIEVED TO BE RELIABLE. BASIC CHEMICAL SOLUTIONS MAKES NO GUARANTEES NOR ASSUMES ANY LIABILITY IN CONNECTION WITH THIS INFORMATION. THE USER SHOULD BE AWARE OF CHANGING TECHNOLOGY, RESEARCH, REGULATIONS AND ANALYTICAL PROCEDURES THAT MAY REQUIRE CHANGES HEREIN. THE ABOVE DATA IS SUPPLIED UPON THE CONDITION THAT PERSONS WILL EVALUATE THIS INFORMATION AND THEN DETERMINE ITS SUITABILITY FOR THEIR USE.

DEFINITIONS OF TERMS

15. OTHER INFORMATION (Continued)

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:
ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.
TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour **Time Weighted Average (TWA)**, the 15-minute **Short Term Exposure Limit**, and the instantaneous **Ceiling Level**. Skin adsorption effects must also be considered.
OSHA - U.S. Occupational Safety and Health Administration.
PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.
IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE** is made for reference.

FLAMMABILITY LIMITS IN AIR:
Much of the information related to fire and explosion is derived from the **N**ational **F**ire **P**rotection **A**ssociation (**NFPA**). LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:
Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause death. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REGULATORY INFORMATION:
This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Other acronyms used are: **Superfund Amendments and Reauthorization Act (SARA)**; the **Toxic Substance Control Act (TSCA)**; Marine Pollutant status according to the **DOT**; California's Safe Drinking Water Act (**Proposition 65**); the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)**; and various state regulations. This section also includes information on the precautionary warnings which appear on the materials package label.

SULPHURIC ACID
MATERIAL SAFETY DATA SHEET

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Identity: Sulphuric Acid (93 percent)

Manufacturer:
Teck Metals Ltd.
Trail Operations
Trail, British Columbia
V1R 4L8
Emergency Telephone: 250-364-4214

Supplier:
Teck Metals Ltd.
Trail Operations
Trail, British Columbia
V1R 4L8

MSDS Preparer:
Teck Metals Ltd.
Suite 3300 – 550 Burrard Street
Vancouver, British Columbia
V6C 0B3

Date of Last Edit: April 18, 2012.

Date of Last Review: December 10, 2009

Product Use: Used in the manufacture of chlorine dioxide (a pulp and paper bleaching chemical), in the manufacture of phosphate and sulphate fertilizers, in the manufacturing of metal sulfates, as a metal pickling chemical and as a component of lead storage batteries.

SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient	Approximate Percent by Weight	CAS Number	Occupational Exposure Limits (OELs)	LD_{50} / LC_{50} Species and Route
Sulphuric Acid	93%	7664-93-9	OSHA PEL 1 mg/m^3 ACGIH TLV 0.2 mg/m^3 (Thoracic) NIOSH REL 1 mg/m^3	LD_{50}, rat, oral 2140 mg/kg LC_{50}, rat, inhal 510 mg/m^3/2Hr LC_{50}, rat, inhal 375 mg/m^3/4Hr

NOTE: OELs for individual jurisdictions may differ from OSHA PELs. Check with local authorities for the applicable OELs in your jurisdiction. OSHA - Occupational Safety and Health Administration; ACGIH - American Conference of Governmental Industrial Hygienists; NIOSH - National Institute for Occupational Safety and Health. OEL – Occupational Exposure Limit, PEL – Permissible Exposure Limit, TLV – Threshold Limit Value, REL – Recommended Exposure Limit.

Trade Names and Synonyms: Oil of vitriol, electrolyte acid, battery acid, matting acid, H_2SO_4.

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview: A strong mineral acid present as a colorless and odorless oily liquid when pure but may appear yellow to dark brown when impure. Extremely corrosive to all body tissues, causing rapid tissue destruction and serious chemical burns. Skin or eye contact requires immediate first aid. Can decompose at high temperatures, forming toxic gases such as sulphur oxides. Non-flammable but reacts violently with water, generating large amounts of heat with potential for spattering of the acid. Can react with combustible materials to generate heat and ignition. Reacts with most metals, particularly when diluted with water, to form flammable hydrogen gas which may create an explosion hazard. It is highly toxic to aquatic organisms and plant life.

Potential Health Effects: Sulphuric acid is not very volatile and workplace exposures are therefore primarily due to accidental splashes or to processes or actions that generate an acid mist. It is extremely corrosive to all body tissues, causing rapid tissue destruction and serious chemical burns on contact with the skin or eyes. Skin or eye contact requires immediate first aid. Inhalation of sulphuric acid mist or fumes may produce irritation of the nose, throat and respiratory tract. High levels of acid mist are also irritating to the skin and eyes. Chronic inhalation of acid mist may cause pitting and erosion of tooth enamel. Suphuric acid, per se, is not listed as a carcinogen by OSHA, NTP, IARC, or the ACGIH. However, IARC, the ACGIH and the NTP have concluded there is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulphuric acid is carcinogenic or potentially carcinogenic to humans. (See Toxicological Information, Section 11)

Potential Ecological Effects: Sulphuric acid is highly toxic to aquatic organisms and terrestrial plant life; however, it does not bioaccumulate or bioconcentrate through the food chain. (See Ecological Information, Section 12)

SECTION 4. FIRST AID MEASURES

Eye Contact: Avoid direct contact. Wear chemical protective gloves if necessary. Quickly and gently blot excess acid off face. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water, for at least 30 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Neutral saline solution may be used as soon as it is available. DO NOT INTERUPT FLUSHING. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto the face. Quickly transport victim to an emergency care facility.

Skin Contact: Avoid direct contact. Wear chemical protective clothing if necessary. As quickly as possible, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts) under shower. Flush with lukewarm, gently flowing water for at least 30 minutes. DO NOT INTERUPT FLUSHING. If necessary, and if it can be done safely, continue flushing during transport to emergency care facility. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

Inhalation: Take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment, use the buddy system). Remove source of contamination or move victim from exposure area to fresh air immediately. If breathing has stopped, trained personnel should begin artificial respiration. If the heart has stopped, immediately start cardiopulmonary resuscitation (CPR), or automated external defibrillation (AED). Avoid mouth-to-mouth contact by using mouth guard or shields. Quickly transport victim to an emergency care facility.

Ingestion: NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 2 – 8 oz. (60 – 240 ml) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility and bring a copy of this MSDS.

SECTION 5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Sulphuric acid is not flammable or combustible. However, fires may result from the heat generated by contact of concentrated sulphuric acid with combustible materials. Sulphuric acid reacts with most metals, especially when diluted with water, to produce hydrogen gas which can accumulate to explosive concentrations inside confined spaces. It reacts violently with water and organic materials evolving a considerable amount of heat and is very hazardous when in contact with carbides, cyanides, and sulfides.

Extinguishing Media: Use dry chemical or carbon dioxide extinguishers to extinguish small fires in surrounding combustible materials. Use water spray or fog to cool fire-exposed containers and to knock down large fires. Use water streams only if absolutely necessary and DO NOT USE WATER DIRECTLY ON ACID as a violent reaction may occur resulting in spattering of the acid. Do not release runoff from fire control methods to sewers or waterways.

Fire Fighting: Fire fighters must be fully-trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask. For fires close to a spill or where vapors are present, use acid-resistant personal protective equipment.

Flashpoint and Method: Not Applicable.

Upper and Lower Flammable Limit: Not Applicable.

Autoignition Temperature: Not Applicable.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup: Control source of release if possible to do safely. Contain spill, isolate hazard area, and deny entry to unauthorized personnel. Prevent from entering sewage or drainage systems and bodies of water. Dike area around spill and pump uncontaminated acid back to process if possible. Neutralize spilled material with alkali such as sodium carbonate or sodium bicarbonate, soda ash, lime or limestone granules. If neutralized with lime rock or soda ash, good ventilation is required during neutralization because of the release of carbon dioxide gas. Allow to stand for 1-2 hours to complete neutralization, then absorb any liquid in solid absorbent such as vermiculite or clay absorbents. Place spilled material in suitable labeled containers for final disposal. Treat or dispose of waste spilled material and/or contaminated absorbent material in accordance with all local, regional and national regulations.

Personal Precautions: Acid resistant protective clothing and gloves. Sleeves and pant legs should be worn outside, not tucked into gloves and rubber boots. Use close-fitting safety goggles or a combination of safety goggles and a face shield where

splashing is a possibility. Respiratory protection equipment should be worn where exposure to hazardous levels of mist or fume is possible.

Environmental Precautions: This product has the potential to pose ecological risks to organisms in both aquatic and terrestrial environments. Discharge of the product to soil and water should be prevented. Prevent spillage from entering sewers or natural watercourses.

SECTION 7. HANDLING AND STORAGE

Store in a dry, cool, well-ventilated area away from incompatible substances. Keep in tightly closed containers which are appropriately labeled. Do not allow contact with water. Do not store near alkaline substances. Always practice good personal hygiene. Refrain from eating, drinking, or smoking in work areas. Thoroughly wash hands before eating, drinking, or smoking.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Protective Clothing: Protective clothing and gloves as well as glasses, goggles or face shield. Appropriate protective clothing should be worn where any possibility exists that skin contact can occur. Use close-fitting safety goggles or a combination of safety goggles and a face shield where any possibility exists that eye contact can occur. An eyewash and quick drench should be provided. Workers should wash immediately when skin becomes contaminated and at the end of each work shift.

Ventilation: Use adequate local or general ventilation to maintain the concentration of sulphuric acid aerosol mists below recommended occupational exposure limits.

Respiratory Protection: Where sulphuric acid mists are generated and cannot be controlled to within acceptable levels, use appropriate NIOSH-approved respiratory protection equipment (a combination of a 42CFR84 Class N, R or P-100 particulate filter and an acid gas cartridge). Note: sulphuric acid mist also causes eye irritation at high concentrations and a full face respirator or supplied air respirator may be necessary in some cases.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, colorless, oily liquid	**Odor:** Odorless when cold	**Physical State:** Liquid	**pH:** Concentration dependant <0.1 (93% Sol'n), 0.3 (5% or 1N Sol'n)
Vapor Pressure: <0.04 kPa (<0.3 mm Hg) @ 25ºC	**Vapor Density:** 3.4 (air = 1)	**Boiling Point/Range:** 280°C	**Freezing Point/Range:** -35°C
Specific Gravity: 1.84	**Evaporation Rate:** Not Applicable	**Coefficient of Water/Oil Distribution:** No Data Available	**Odor Threshold:** > 1 mg/m³ (Acid mist will irritate the nose and may be sensed as a pungent odor)

Solubility in Water:
Completely soluble with generation of significant heat.

SECTION 10. STABILITY AND REACTIVITY

Stability & Reactivity: Sulphuric acid is stable and not considered autoreactive under normal temperatures and pressures. Hazardous polymerization or runaway reactions will not occur. Decomposes at 340ºC into sulphur trioxide and water. Extremely reactive with metals, alkalis, reducing agents and many other organic and inorganic chemicals. Hazardous gases such as hydrogen cyanide, hydrogen sulfide and acetylene are evolved on contact with chemicals such as cyanides, sulfides and carbides respectively. Contact with combustible organic matter may cause fire or explosion. Dilution with water generates excessive heat and spattering or boiling may occur. Always add acid to water, NEVER ADD WATER TO ACID. Corrosive to most metals including mild steel, copper, aluminum, zinc, etc, especially when diluted to below 90%.

Incompatibilities: Combustible materials, organic materials, reducing agents, amines, bases, water, excess heat, and metals.

Hazardous Decomposition Products: Sulphur dioxide, sulphur trioxide and sulphuric acid fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

General: Concentrated sulphuric acid is a direct acting toxicant, producing local effects at the site(s) of contact but no systemic effect. It exerts a strong corrosive action on all tissues due to its severe dehydration action (removing water from tissues). The severity of the chemical burn produced by the concentrated acid is proportional to the strength of the acid and the duration of contact. Burns are deep but typically not severely painful.

Acute:
Skin/Eye: Splashes can cause severe eye burns and may cause irreversible eye injury and possible blindness. Skin contact results in severe burns and may result in permanent scarring. High levels of sulphuric acid mists and aerosols are also irritating to the eyes and skin.

Inhalation: Inhalation may cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath, laryngeal spasm and delayed lung edema. These symptoms may be aggravated by physical exertion. Asthmatics may be more sensitive to inhaling sulphuric acid mists and asthma may be aggravated by exposure to sulphuric acid.

Ingestion: Ingestion is unlikely in industrial use but would result in severe burns to the mouth, throat, esophagus and stomach which could lead to permanent damage to the digestive tract. Small amounts of acid can also enter the lungs during ingestion or subsequent vomiting and cause serious lung injury.

Chronic: Prolonged exposure to dilute solutions or mists may result in eye irritation (chronic conjunctivitis) and produce skin dermatitis. Exposure to high concentrations of acid mist has caused erosion and discoloration of the anterior teeth. Inhalation of sulphuric acid mist may decrease the ability of the respiratory tract to remove other small particles which may be inhaled. Sulphuric acid, per se, is not listed as a carcinogen by OSHA, the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), or the ACGIH. IARC has concluded that there is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulphuric acid is carcinogenic to humans, resulting in an increased incidence of primarily laryngeal cancers. The ACGIH lists strong inorganic acid mists containing sulphuric acid as a suspect human carcinogen (A2) and the NTP have recently re-classified strong inorganic acid mists containing sulphuric acid to a known human carcinogen. OSHA does not list sulphuric acid mist as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Sulphuric acid is highly toxic to aquatic organisms and terrestrial plant life; however, it does not bioaccumulate or bioconcentrate through the food chain.

SECTION 13. DISPOSAL CONSIDERATIONS

Do not wash down drain or allow to reach natural watercourses. Dispose of neutralized waste consistent with regulatory requirements. If neutralized with lime rock or soda ash, good ventilation is required during neutralization because of the release of carbon dioxide gas.

SECTION 14. TRANSPORT INFORMATION

Proper Shipping Name Transport Canada and U.S. DOT.....Sulphuric Acid
Transport Canada and U.S. DOT Hazard Classification .....Class 8 Packing Group II (RQ)
U.S. RQ for Sulfuric Acid .....1,000 lbs.
Transport Canada and U.S. DOT Product Identification Number.....UN1830
Marine Pollutant.....No
IMO Classification.....Class 8

SECTION 15. REGULATORY INFORMATION

U.S.
Listed on TSCA Inventory.....Yes

Hazardous Under Hazard Communication Standard .....Yes

CERCLA Section 103 Hazardous Substances.....Sulfuric Acid ..... Yes .....RQ: 1000 lbs. (454 kg.)

EPCRA Section 302 Extremely Hazardous Substance.....Yes .....RQ: 1000 lbs. (454 kg.)
Threshold Planning Quantity: 1000 lbs.

EPCRA Section 311/312 Hazard Categories .....Immediate (Acute) Health Hazard - Corrosive
Immediate (Acute) Health Hazard - Highly Toxic

EPCRA Section 313 Toxic Release Inventory..... .....Sulfuric Acid ..... CAS NO. 7664-93-9
Percent by Weight: 93%

CANADIAN:
Listed on Domestic Substances List:.....Yes
WHMIS Classification .....Controlled Product, Classification D1A (Immediate & Serious Toxic Effects), E (Corrosive Material)

SECTION 16. OTHER INFORMATION

The information in this Material Safety Data Sheet is based on the following references:

- American Conference of Governmental Industrial Hygienists, 2004, Documentation of the Threshold Limit Values and Biological Exposure Indices, Seventh Edition plus updates.
- American Conference of Governmental Industrial Hygienists, 2009, Guide to Occupational Exposure Values.
- American Conference of Governmental Industrial Hygienists, 2009, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.
- Bretherick's Handbook of Reactive Chemical Hazards, 20th Anniversary Edition. (P. G. Urben, Ed.) 1995.
- Canadian Centre for Occupational Health & Safety CHEMINFO Record No. 122 - Sulphuric Acid, 2009-04.
- Commission de la santé et la sécurité du travail, Service du Répertoire toxicologique, Acide Sulfurique, 2006-02-08.
- Industry Canada, Controlled Products Regulations SOR/88-66, as amended.
- International Agency for Research on Cancer (IARC), Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, 1972 – 2009, (multi-volume work), World Health Organization, Geneva.
- International Chemical Safety Cards (WHO/IPCS/ILO), ICSC:0362 – Sulphuric Acid (Revised Oct 2008).
- Merck & Co., Inc., 2001, The Merck Index, An Encyclopedia of Chemicals, Drugs, and Biologicals, Thirteenth Edition.
- National Industrial Chemicals Notification and Assessment Scheme (NICNAS), Sydney, Australia – Existing Chemicals Information Sheet – Sulphuric Acid, 30 June 2003.
- OECD Screening Information Data Base (SIDS) Initial Assessment Report – Sulphuric Acid, January 2001.
- Patty's Toxicology, Fifth Edition, 2001: E. Bingham, B. Cohrssen & C.H. Powell, Ed.
- U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health. NIOSH Pocket Guide to Chemical Hazards. CD-ROM Edition September 2005.
- ,U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, Registry of Toxic Effects of Chemical Substances (RTECS) CCOHS Web Access subscription.
- U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, Toxicological Profile for Sulfur Trioxide and Sulfuric Acid, December 1998.
- U.S. Occupational Safety and Health Administration, 1989, Code of Federal Regulations, Title 29, Part 1910.

Notice to Reader
Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. Teck Metals Ltd. extends no warranty and assumes no responsibility for the accuracy of the content and expressly disclaims all liability for reliance thereon. This material safety data sheet provides guidelines for the safe handling and processing of this product; it does not and cannot advise on all possible situations. Therefore, your specific use of this product should be evaluated to determine if additional precautions are required. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

Chapter III.M Fiscal Impacts -- Proportional Valuation Municipal Cost Calculations - Year 3

Proposed Site Assessed Valuation and Real Property Taxes Paid			
Full Market Valuation	$	45,162,813	
Assessed Valuation	$	30,259,085	Rates
2015 County Tax	$	176,047	5.818
2015 Part Town	$	51,683	1.7080
2015 Town Tax	$	77,742	2.5692
2015 Highway Tax	$	77,845	2.5726
2015 Goshen Fire 1 Tax	$	71,508	2.3632
2015 Goshen Library Tax	$	29,463	0.973689
15-16 Goshen CSD Tax	$	1,041,683	34.42546
Total	**$**	**1,525,970**	

Year 3 Improvement Market Value:	$ 42,500,000
Year 3 Improvement Assessed Value:	$ 28,475,000
Year 3 Assessed Value of Land:	$ 1,784,085
Year 3 Total Assessed Value:	$ 30,259,085

Quantitative Costing Analysis: Town of Goshen General Fund (A)		
A	2015 Real Property Tax Levy	$1,798,007
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Municipal Expenditures Attributable to Nonresidential Uses [AxDxJ]	$193,275
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 50.09
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.13
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.1443394
P	Share of Municipal Expenditures Assigned to Proposed Use [K*N*O]	$3,626.63

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Quantitative Costing Analysis: Town Outside Village (B)		
A	2015 Real Property Tax Levy	$1,002,835
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Expenditures Attributable to Nonresidential Uses [AxDxJ]	$107,799
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 50.09
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.13
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.1443394
P	Share of Expenditures Assigned to Proposed Use [K*N*O]	$2,022.75

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Quantitative Costing Analysis: Highway Townwide (DA)		
A	2015 Real Property Tax Levy	$649,420
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Municipal Expenditures Attributable to Nonresidential Uses [AxDxJ]	$69,809
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 50.09
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.13
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.1443394
P	Share of Municipal Expenditures Assigned to Proposed Use [K*N*O]	$1,309.90

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Quantitative Costing Analysis: Highway Outside Village (DB)		
A	2015 Real Property Tax Levy	$1,510,677
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Municipal Expenditures Attributable to Nonresidential Uses [AxDxJ]	$162,388
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 50.09
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.13
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.1443394
P	Share of Municipal Expenditures Assigned to Proposed Use [K*N*O]	$3,047.08

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Chapter III.M Fiscal Impacts -- Proportional Valuation Municipal Cost Calculations - Year 3 (Cont.)

Quantitative Costing Analysis: Goshen Fire Districts		
A	2015 Real Property Tax Levy	$2,104,179
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Expenditures Attributable to Nonresidential Uses [AxDxJ]	$226,186
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 50.09
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.13
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.1443394
P	Share of Expenditures Assigned to Proposed Use [K*N*O]	$4,244.19

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Quantitative Costing Analysis: County of Orange		
A	2015 Real Property Tax Levy	$116,009,779
B	Total Nonresidential Real Assessed Value	$1,764,758,105
C	Total Assessed Value	$4,898,694,627
D	Percentage of Total Value in Nonresidential Use [B/C]	36.03%
E	Nonresidential Land Parcels	12,331
F	Total Land Parcels	109,179
G	Percentage of Parcels Used for Nonresidential	11.29%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	23.66%
K	Expenditures Attributable to Nonresidential Uses [AxDxJ]	$27,447,546
L	Average Nonresidential Parcel Value	$143,116
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 211.43
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.05
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.017
P	Share of Expenditures Assigned to Proposed Use [K*N*O]	$23,531.20

Sources: NYS Office of Real Property, 2015 Orange County Legislative Budget

Chapter III.M Fiscal Impacts -- Proportional Valuation Municipal Cost Calculations - Year 5

Proposed Site Assessed Valuation and Real Property Taxes Paid			
Full Market Valuation	$	70,331,278	
Assessed Valuation	$	47,121,956	Rates
2015 County Tax	$	274,156	5.818
2015 Part Town	$	80,484	1.708
2015 Town Tax	$	121,066	2.569
2015 Highway Tax	$	121,226	2.573
2015 Goshen Fire 1 Tax	$	111,359	2.363
2015 Goshen Library Tax	$	45,882	0.974
15-16 Goshen CSD Tax	$	1,622,195	34.425
Total	**$**	**2,376,367**	

Year 5 Improvement Market Value:	$	67,730,000
Year 5 Improvement Assessed Value:	$	45,379,100
Year 5 Assessed Value of Land:	$	1,742,856
Year 5 Total Assessed Value:	$	47,121,956

Quantitative Costing Analysis: Town of Goshen General Fund (A)		
A	2015 Real Property Tax Levy	$1,798,007
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Municipal Expenditures Attributable to Nonresidential Uses [AxDxJ]	$193,275
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 78.00
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.09
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.224777282
P	Share of Municipal Expenditures Assigned to Proposed Use [K*N*O]	$3,909.94

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Quantitative Costing Analysis: Town Outside Village (B)		
A	2015 Real Property Tax Levy	$1,002,835
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Expenditures Attributable to Nonresidential Uses [AxDxJ]	$107,799
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 78.00
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.09
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.224777282
P	Share of Expenditures Assigned to Proposed Use [K*N*O]	$2,180.76

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Quantitative Costing Analysis: Highway Townwide (DA)		
A	2015 Real Property Tax Levy	$649,420
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Municipal Expenditures Attributable to Nonresidential Uses [AxDxJ]	$69,809
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 78.00
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.09
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.224777282
P	Share of Municipal Expenditures Assigned to Proposed Use [K*N*O]	$1,412.23

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Quantitative Costing Analysis: Highway Outside Village (DB)		
A	2015 Real Property Tax Levy	$1,510,677
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
E	Nonresidential Land Parcels	347
F	Total Land Parcels	5,576
G	Percentage of Parcels Used for Nonresidential	6.22%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	10.75%
K	Municipal Expenditures Attributable to Nonresidential Uses [AxDxJ]	$162,388
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 78.00
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.09
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.224777282
P	Share of Municipal Expenditures Assigned to Proposed Use [K*N*O]	$3,285.11

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Chapter III.M Fiscal Impacts -- Proportional Valuation Municipal Cost Calculations - Year 5 (cont.)

Quantitative Costing Analysis: Goshen Fire Districts		
A	2015 Real Property Tax Levy	$2,104,179
B	Total Nonresidential Real Assessed Value	$209,638,428
C	Total Assessed Value	$1,372,368,013
D	Percentage of Total Value in Nonresidential Use [B/C]	15.28%
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K	Expenditures Attributable to Nonresidential Uses [AxDxJ]	$226,186
L	Average Nonresidential Parcel Value	$604,145
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 78.00
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.09
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.224777282
P	Share of Expenditures Assigned to Proposed Use [K*N*O]	$4,575.74

Sources: NYS Office of Real Property, 2015 Goshen Town Budget

Quantitative Costing Analysis: County of Orange		
A	2014 Real Property Tax Levy	$116,009,779
B	Total Nonresidential Real Assessed Value	$1,764,758,105
C	Total Assessed Value	$4,898,694,627
D	Percentage of Total Value in Nonresidential Use [B/C]	36.03%
E	Nonresidential Land Parcels	12,331
F	Total Land Parcels	109,179
G	Percentage of Parcels Used for Nonresidential	11.29%
H	Percentage Share of Nonresidential-Associated Expenditures [(G+D)/2)]	23.66%
K	Expenditures Attributable to Nonresidential Uses [AxDxJ]	$27,447,546
L	Average Nonresidential Parcel Value	$143,116
M	Proportion of Proposed Assessed Value to Average Value of Nonresidential	$ 329.26
N	Refinement Coefficient for Determining Expenditure Share of Proposed Use	0.03
O	Proportion of Proposed Assessed Value to Total Value of Nonresidential	0.027
P	Share of Expenditures Assigned to Proposed Use [K*N*O]	$21,986.84

Sources: NYS Office of Real Property, 2015 Orange County Legislative Budget

ver Hage Property
Goshen, New York

Phase I Environmental Site Assessment

AKRF Project Number: 40525

Prepared for:

Amy's Kitchen, Inc.
1650 Corporate Circle, Suite 200
Petaluma, CA 94955

Prepared by:

AKRF, Inc.
34 South Broadway, Suite 314
White Plains, NY 10601
914-949-7336

DECEMBER 2015

EXECUTIVE SUMMARY

AKRF, Inc. (AKRF) was retained by Amy's Kitchen Inc. to perform a Phase I Environmental Site Assessment (ESA) of an approximately 71.1-acre property located at 103-111 Hartley Road, Goshen, Orange County, New York (the Subject Property or the Property). The Town of Goshen identified the Subject Property as Parcel Numbers 12-1-1.222 and 12-1-19.2. The Subject Property is zoned by the Town of Goshen as Industrial (I). No buildings or structures are present on the Property. The Wallkill River followed by the Echo Lake Industrial site is located west of the Subject Property. The "Old Al Turi Landfill" (a New York State Inactive Hazardous Waste Site) and structures associated with a waste transfer station and a landfill gas to energy plant are located south-adjacent to the Subject Property, with the associated former Al Turi Landfill (a closed NYSDEC 6 NYCRR Part 360 permitted landfill) located further to the south. The Orange County Heritage Trail followed by Echo Lake Road is located north of the Subject Property. Hartley Road followed by an Orange and Rockland substation, bus depot, and forested land is located east of the Subject Property. The greater surrounding area is predominantly forested and residential. This Phase I ESA was performed in accordance with customary principles and practices in the environmental consulting industry, and in conformance with the scope and limitations of ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, this practice are described in Sections 9.0, 10.0, and 11.0 of this report.

The main objective of the Phase I ESA is to identify recognized environmental conditions (RECs) and environmental concerns associated with the Subject Property resulting from past or current site usage and usage of neighboring properties. RECs are defined in ASTM International (ASTM) Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property. The Standard also includes definitions of Historic REC (HREC), Controlled REC (CREC), and *de minimis* Condition. A *de minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action. Note that CRECs are considered to be RECs and are listed in the Conclusions of this Phase I ESA. Additionally, vapor encroachment conditions (VECs) were evaluated as per ASTM E 2600-10. The regulatory databases, historical aerial photographs, and visual site inspection have indicated that the Subject Property has historically been used as farmland and for soil mining and/or potential landfilling, and is currently vacant.

This Phase I ESA revealed the following RECs, CRECs and/or VECs associated with the Property:

<u>*On-Site VEC:*</u>

- The VOC trichloroethene (TCE) was detected in one on-site groundwater monitoring well at a concentration exceeding its NYSDEC Class GA Water Quality Standard, and the TCE degradation product *cis* 1,2-dichlorethene (*cis* 1,2-DCE) was detected in the same well at a concentration below its Class GA standard, as documented in the 2007 groundwater monitoring report for the south-adjacent Old Al Turi Landfill (however, more recent monitoring events for the Old Al Turi Landfill conducted between 2008 and 2013 indicated that groundwater concentrations were below the Class GA groundwater standards in monitoring wells on the Subject Property.)

<u>*Off-Site CRECs:*</u>

- The south-adjacent parcel operated an unlined landfill (the Old Al Turi Landfill) from 1968 to 1983 and is listed as a New York State Inactive Hazardous Waste Disposal Site due to disposal of solvents and other materials in the landfill. TCE and *cis* 1,2-DCE detected in groundwater on the Subject Property are likely associated with this facility. In 2010, the NYSDEC changed the classification of

the Inactive Hazardous Waste Site from Class 2 to 4[1] based on the remedy completed and results of on-going groundwater monitoring.

- A Part 360 permitted solid waste landfill (the Al Turi Landfill), which also operated at the south-adjacent parcel, further to the south of the Old Al Turi Landfill, has been capped and closed (with post-closure monitoring under NYSDEC oversight).

The Phase I ESA revealed the following HRECs, *de minimis* conditions and other environmental concerns:

Off-Site HRECs

- Fourteen closed-status Spills (two tank failures and 12 miscellaneous/other causes) were reported at the south-adjacent property. Closed-status spills at this off-site property are considered HRECs.

De Minimis Conditions

- Areas of disturbance noted in the western portion of the Subject Property on the 1964 and 1991-1994 aerial photographs and discarded items (tires, piping, etc.) noted during the Property reconnaissance indicate the potential for historic disposal and/or import of fill materials of unknown origin. Evidence of widespread fill was not noted during a geotechnical investigation conducted in 2015 in connection with the proposed project.
- Apparent agricultural fields were noted throughout the Subject Property on the 1940 through 1975 aerial photographs. Residual pesticides from the former agricultural uses could be present in shallow or deeper soil at the Property.

Other Environmental Concerns

- A review of the New York State Department of Health database indicated that the average level of radon found in basements in the Town of Goshen is 5.23 picocuries/liter, above the USEPA recommended action level is 4.0 picocuries/liter.
- The US Army Corps of Engineers issued a violation to the current property owner associated with placement of approximately 4,000 square feet of fill into the Cheechunk Creek resulting in approximately 1,000 linear feet of stream being bypassed.

[1] Class 4 sites are those considered properly closed, but requiring continued management.

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FIGURES

Figure 1 – Property Location
Figure 2 – Property Detail

APPENDICES

Appendix A – Photographic Documentation
Appendix B – Historical Topographic Maps/Historical Aerial Photographs
Appendix C – Regulatory Records Review
Appendix D – Supporting Documentation
Appendix E – State and Local Records

1.0 INTRODUCTION

AKRF, Inc. (AKRF) was retained by Amy's Kitchen Inc. to perform a Phase I Environmental Site Assessment (ESA) of an approximately 71-acre property located at 103-111 Hartley Road, Goshen, Orange County, New York (the Subject Property or the Site). The Town of Goshen identifies the Subject Property as Parcel Numbers 12-1-1.222 and 12-1-19.2. The Subject Property is zoned by the Town of Goshen as Industrial (I). The Property consists of vacant vegetated land, and is generally bounded by the Wallkill River to the west, the Old Al Turi Landfill and beyond that the closed Al Turi Landfill to the south, the Orange County Heritage Trail followed by Echo Lake Road to the north, and Hartley Road to the east of the Subject Property. The greater surrounding area is predominantly agricultural and residential, with some light industrial uses to the south and west. The scope of services for this assessment included the following:

- Visual observations of the Subject Property and surrounding property were made to identify potential sources or indications of chemical contamination.

  In addition, readily-observable portions of the properties immediately adjacent to the Subject Property were viewed from public rights-of-way to identify or determine the likelihood of any of the aforementioned potential sources of contamination being present.

- Published geological and groundwater information was obtained from available sources to determine the possibility of contamination from off-site sources.

- A visual inspection of the Subject Property was conducted to identify and evaluate the potential presence and condition of any suspect asbestos-containing materials (ACMs) identified on-site. No samples of suspect materials were collected for analysis as part of this assessment.

- The Property was evaluated for the potential presence of lead-based paint, and, if found, the condition of the painted surfaces was assessed. No samples were collected for analysis as part of this assessment.

- Historical aerial photographs for the Subject Property and adjacent properties were reviewed to evaluate previous land use.

- The following federal regulatory databases that were reviewed to determine the regulatory status of the Subject Property, adjacent properties, and properties within a predetermined study area include, but were not limited to: National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Resource Conservation and Recovery Act (RCRA) Information System; and RCRA Corrective Action Activity (CORRACTS).

- The following state regulatory databases that were reviewed to determine the regulatory status of the Subject Property, adjacent properties, and properties within a predetermined study area include, but were not limited to: State Hazardous Waste Sites (SHWS); Site Discovery and Assessment Database (SDADB); Leaking Underground Storage Tank (LUST); Leachate and Waste Water Discharge Inventory (CT LWDS); Underground Storage Tank (UST); and Facility and Manifest Data (MANIFEST).

- Freedom of Information Law (FOIL) requests were submitted to the Goshen Town Clerk, Orange County Department of Health, New York State Department of Health (NYSDOH) and New York State Department of Environmental Conservation (NYSDEC) to obtain information likely to be pertinent to this assessment.

2.0 PHYSICAL SITE DESCRIPTION

On June 2, 2015, Ms. Elizabeth Matamoros of AKRF performed a visual inspection of the Subject Property and adjacent properties. At the time of the inspection, the weather was overcast and approximately 65º F with light rain. The Subject Property was inspected for the presence of stained surfaces and soil, drums, leaking pipes, dumping, transformers, and other evidence of hazardous material usage and storage on-site. The Subject Property inspection included an inventory of any active or inactive storage tanks and other stored materials. A Subject Property location map is included as Figure 1. Photographs documenting the Subject Property inspection are included in *Appendix A*.

2.1 General Site Conditions

The Subject Property consists of an approximately 71-acre vacant wooded and cleared parcel. Access to the Property was gained by a main entrance gate facing Hartley Road near the southeastern corner of the Subject Property. The Wallkill River followed by the Echo Lake Industrial site is located west of the Subject Property. The "Old Al Turi Landfill" (a New York State Inactive Hazardous Waste Site) and structures associated with a waste transfer station operated by Interstate Waste and a landfill gas to energy plant operated by Ameresco are located south-adjacent to the Subject Property, with the associated former Al Turi Landfill (a closed NYSDEC 6 NYCRR Part 360 permitted landfill) located further to the south. The Orange County Heritage Trail followed by Echo Lake Road is located north of the Subject Property. Hartley Road followed by an Orange and Rockland substation, a bus depot, and forested land is located east of the Subject Property. The greater surrounding area is predominantly agricultural and residential, with some light industrial uses to the south and west.

At the time of the site inspection, the Property was vacant, undeveloped land. The southeastern area fronting Hartley Road was lined with trees. The Cheechunk Creek, a tributary of the Wallkill River, was noted traversing the Property in the northeast portion. A dirt and gravel access road was noted along the southern portion of the Property, leading from the access gate on Hartley Road. The remainder of the land was cleared of trees but contained low vegetation, with evidence of limited off-road vehicle use off the main access road, possibly to access monitoring wells noted throughout the Property. During the inspection, a geotechnical investigation (Preliminary findings summarized below in Section 8.0) was being conducted in the western half of the Property. No fill ports, vents, or evidence of tanks were observed in visible areas. A large concrete culvert was noted running north-south under the access road. No sheen or odors were noted, and no water was observed in the culvert. Stored or discarded materials, including geotextile and landscaping materials and large pipes, were noted on the southwestern portion of the Property. An asphalt-paved area immediately adjacent to Hartley Road in the driveway was observed to be in good condition; no other asphalt or paving was noted on the Property.

2.2 Topography, Geology, and Hydrogeology

Based on reports compiled by the U.S. Geological Survey Goshen and Middletown Quadrangles, the elevation at the Subject Property ranges from approximately 360 feet to 420 feet above the National Geodetic Vertical Datum of 1929 (an approximation of mean sea level) sloping gradually upward to the west-southwest, and then steeply down to the Wallkill River to the west. Bedrock at the Property is mapped as Trenton Group of shales at depths of 20 to 100 feet below ground surface. Overlying the bedrock are unconsolidated sediments including alluvium and outwash sand and gravel. The Wallkill River is located along the western Property boundary and flows in a northerly direction. The Cheechunk Creek flows through the northeastern portion of the Subject Property and discharges to the Wallkill River north of the Property. Groundwater was

measured at depths ranging from 14.5 to 19.7 feet below ground surface in two observation wells installed at the Subject Property during a geotechnical investigation conducted in connection with the proposed project. These water level depths are generally consistent with those reported in existing on-site monitoring wells associated with an on-going groundwater monitoring program for the Old Al Turi landfill on the south-adjacent parcel. A water table contour map included with a January 2013 monitoring report for the closed Part 360 Al Turi Landfill indicates a predominantly west-northwesterly inferred flow direction across the Property toward the Wallkill River, with a more north-northwesterly flow component in the southeastern portion of the Property. Actual water table depth and groundwater flow direction can be affected by many factors including subsurface openings or obstructions, current or past pumping of groundwater (for potable or non-potable uses), past filling, and other factors beyond the scope of this assessment.

2.3 Storage Tanks

No petroleum storage tanks were observed or reported to be present at the Subject Property.

2.4 Polychlorinated Biphenyls (PCBs) and Mercury

Prior to 1979, polychlorinated biphenyls (PCBs) were widely used for their cooling properties in electrical equipment such as transformers, capacitors, switches, voltage regulators, and hydraulic equipment. No suspect PCB-containing materials were observed during inspection.

2.5 Lead-Based Paint

The use of lead-based paint was banned for residential use by the Consumer Products Safety Commission in 1977. The use of lead-based paint in commercial structures was severely restricted by the Consumer Products Safety Commission in 1977. Lead-based paint is potentially hazardous when in a deteriorating condition (i.e., chipped, broken, crumbling, pulverized). Lead is potentially harmful to humans, particularly children, if ingested, inhaled or otherwise absorbed.

No structures that might contain LBP were observed at the Property during the site reconnaissance.

2.6 Utilities

Electricity and gas do not currently serve the Property. The area is not provided with municipal water and sewer services.

2.7 Waste Management and Chemical Handling

No waste generation or chemical handling and/or storage were associated with the Subject Property at the time of inspection. Some discarded materials, including geotextile and landscaping materials and large pipes, were noted on the southwestern portion of the Property.

2.8 Radon

Radon is a colorless, odorless gas produced by the radioactive decay of certain elements. The most common sources of radon are igneous and metamorphic rocks containing uranium (such as pitchblende), granite, shale, or phosphate, as well as soils or sediments derived from these parent materials. Radon may also be found in soils contaminated with certain industrial wastes (such as uranium or phosphate mine tailings) or in earth-derived building products which include industrial wastes that contain phosphate slag. In areas where the potential for radon accumulation is high, special ventilation systems may offset potential health hazards.

According to data compiled by the US Environmental Protection Agency, the Town of Goshen has an average indoor radon measurement of 5.23 picocuries/liter. This value is above the USEPA recommended action level of 4.0 picocuries/liter.

3.0 ASBESTOS-CONTAINING MATERIALS (ACM)

Asbestos, a known human carcinogen, is a generic name assigned to a group of naturally occurring minerals exhibiting high tensile strength and possessing excellent fire resistance and insulating properties. These minerals include chrysotile, amosite, crocidolite, actinolite, tremolite, and anthophyllite. Asbestos is commonly found as a component of building materials including: thermal system insulation (TSI), pipe insulation, spray-applied fireproofing, spray- or trowel-applied surfacing materials, vinyl asbestos floor tiles and sheeting, plaster, sheetrock/joint compound, ceiling tiles, fire door fill, roofing materials, thermal gaskets, mastics, caulks and a range of other products.

Building materials containing greater than one percent asbestos are considered to be asbestos-containing materials (ACM). ACM are classified as friable or non-friable. Friable ACM are those which can be crumbled, pulverized, or reduced to powder when dry by hand or other mechanical pressure. Friable ACM, such as thermal system insulation and spray-applied fireproofing, are generally associated with a higher risk of releasing asbestos fibers than non-friable ACM, such as vinyl floor tiles and built-up roofing materials.

No suspect ACM were observed during the reconnaissance.

4.0 ADJACENT LAND USE

The Wallkill River followed by the Echo Lake Site is located west of the Subject Property. The “Old Al Turi Landfill” (a New York State Inactive Hazardous Waste Site) and structures associated with a waste transfer station operated by Interstate Waste and a landfill gas to energy plant operated by Ameresco are located south-adjacent to the Subject Property, with the associated former Al Turi Landfill (a closed NYSDEC 6 NYCRR Part 360 permitted landfill) located further to the south. The Orange County Heritage Trail followed by Echo Lake Road is located north of the Subject Property. Hartley Road followed by an Orange and Rockland electrical substation, a bus depot, and forested land is located east of the Subject Property. The greater surrounding area is predominantly agricultural and residential, with some light industrial uses to the south and west.

5.0 USER PROVIDED INFORMATION

The user of this Phase I report provided access to the current Property owner. Mr. Richard Ver Hage, who has been the owner’s principal manager for the past 2 years, filled out an interview questionnaire. Details associated with the interview are included in Section 7.0.

6.0 SITE HISTORY AND RECORDS REVIEW

6.1 Prior Ownership and Usage

Historical aerial photographs, USGS topographical maps, city directories, property tax files, recorded land title records, and records were reviewed to determine site history, prior ownership, and usage.

6.1.1 Historical Maps

A search for historical fire insurance maps for the Subject Property and adjoining properties was conducted by EDR. No Sanborn Fire Insurance maps were available for review.

6.1.2 Historical Aerial Photographs

Historical aerial photographs were reviewed for indications of industrial usage or other evidence suggesting the use or disposal of hazardous materials on or adjacent to the Subject Property. Specifically, aerial photographs from 1940, 1942, 1975, 1981, 1984, 1991, 1994, 2006, 2009, and 2011 were reviewed. Copies of the aerial photographs are included in *Appendix B*. Details of these photographs are discussed below:

1940

The Subject Property appeared to be undeveloped land. Hartley Road, Echo Lake Road, and Cheechunk Road appear to be developed. The Wallkill River was noted running north-south west of the Subject Property. Apparent railroad tracks are noted running along the northern boundary of the Property, just south of Echo Lake Road. A smaller stream (the Cheechunk Creek) was noted running through the Subject Property, connecting to the Wallkill River north of the Property. Apparent agricultural fields, two of which appeared to have been recently plowed or cleared, were noted throughout the Property, with trees lining the Wallkill River and the area near the Cheechunk Creek. Surrounding land consisted of additional agricultural fields with few small structures.

1942

Due to the poor resolution of the photograph, details of the Subject Property could not clearly be identified. The Subject Property appears similar to the 1940 photograph, with different cleared areas noted. No significant changes were noted in the surrounding area from the 1940 photograph.

1975

More of the Subject Property was covered with trees than in the previous photographs. An apparent dirt road is noted leading from Hartley Road in the northeastern portion of the Property to an area of apparent soil disturbance in the north-central portion. No structures were shown on the Property. A large area of cleared/disturbed land is noted on the south-adjacent property. No further significant changes were noted from the 1942 photograph.

1981

Due to the poor resolution of the photograph, details of the Subject Property could not be clearly identified; however, the Property and surrounding areas appeared generally similar to the 1975 photograph.

1984

A large excavation is noted in the north-central portion of the Property, at the location of soil disturbance noted on the 1975 photograph. The remainder of the Property appears similar to the 1975 photograph. Several structures are noted on the south-adjacent property, near Hartley Road. Apparent roads are also noted on the south-adjacent property, surrounding a large cleared area.

1991

The area of soil disturbance and excavations has expanded compared to previous photographs, encompassing most of the western half of the Property, indicating potential soil mining or landfill activities. An access road is noted running through the central portion of the excavation area leading to the south-adjacent property. The south-adjacent and west-adjacent sites were shown to have significant land disturbance. Some ponds or lagoons are noted on the south-adjacent parcel. Additional details could not be identified due to the poor resolution of this photograph.

1994

The Subject Property remained similar to the 1991 photograph, with significant disturbance on the western portion of the Property. Some small structures or trucks are visible within this area. The eastern portion of the Property, fronting Hartley Road, appeared undisturbed. Several structures and vehicles are noted south-adjacent to the Property. The area of land disturbance noted on the south-adjacent property on previous maps appears to be vegetated, with some roadways or terracing noted. No significant changes were noted in the surrounding area.

2006-2011

The Subject Property appeared to be fully vegetated and vacant. The former railroad tracks north-adjacent to the Property are no longer present, and appear to have been replaced by a trailway. The adjacent properties were occupied with small structures and mostly comprised of meadows and trees.

To summarize, the Subject Property was occupied by vacant cleared land (most likely agricultural fields) and trees. Significant disturbance and apparent excavation was observed in the western portion of the Property in the 1975 through 1994 photographs, indicative of potential mining or landfilling. Land disturbance indicative of potential landfilling was also noted on the south-adjacent property. The greater surrounding area consisted of large cleared parcels or agricultural fields, with some small structures on them.

6.1.3 Historical USGS Topographic Maps

USGS Topographic Maps from 1908 (Goshen Quadrangle) and 1942, 1969, and 1976 (Middletown Quadrangle) and adjacent maps from 1942, 1979, and 1957 (Goshen Quadrangle) were reviewed. The USGS maps are included in *Appendix B.*

1908: Goshen Quadrangle 1:62500

Subject Property: The Subject Property was shown as undeveloped land. A stream was shown running through the Property. The elevation on Property ranges from approximately 360 feet to 420 feet above sea level, sloping gradually up to the west-southwest, and then steeply down to the Wallkill River to the west.

Surrounding Properties: The Wallkill River is located along the western Subject Property boundary, and flows south to north. The east-west trending Erie Railroad was shown north-adjacent to the Subject Property. A structure was shown east of the Subject Property opposite Hartley Road. The wider area surrounding the Subject Property contained sparse unspecified development and vacant land. Four small structures, likely dwellings, were shown north of the Subject Property along Echo Lake Road. Some

wetlands are shown approximately two-miles east of the Subject Property. Some clusters of structures were shown at the intersection of roads, with larger developments around Goshen and Middletown, approximately 2.5-miles east and 2.5-miles northwest respectively.

1942: Middletown and Goshen Quadrangles 1:24000

Subject Property: A small structure was shown on the Subject Property near Hartley Road immediately south of the stream. The Subject Property otherwise appears similar to the 1908 map.

Surrounding Properties: A small structure was shown off of Hartley Road, north of the Subject Property and the Erie Railroad tracks. A structure is shown on the south-adjacent lot, near Hartley Road. Some of the area south-adjacent and in the greater surrounding area were shaded green. Echo Lake was shown approximately one-half mile northwest of the Subject Property. Route 6 and 17 were shown running east-west approximately ¾-mile south of the Subject Property. A Sewage Disposal Plant was shown approximately 1.25-mile east of the Subject Property. The main town two-miles east appears further developed with more and larger buildings, a hospital, and the US Coast and Geodetic Survey Dome were shown. No further significant changes were noted from the 1908 map.

1949: Goshen Quadrangle 1:25000

Subject Property: The western portion of the Subject Property was not shown. The Subject Property appears similar to the 1942 map.

Surrounding Properties: No significant changes were noted from the 1942 map.

1957: Goshen Quadrangle 1:24000

Subject Property: The western portion of the Subject Property was not shown. The structure previously shown on the 1942-1949 maps is no longer shown.

Surrounding Properties: No significant changes were noted from the 1949 map.

1969: Middletown Quadrangle 1:24000

Subject Property: The eastern portion of the Subject Property was not shown. Portions of the Property along the Wallkill River and some in the middle of the Property are shaded green indicating vegetation.

Surrounding Properties: Water tanks were shown approximately one-mile west of the Subject Property. The area west of the Subject Property had been further developed with small structures, and the New Hampton Training School was shown approximately 1.5-miles west of the Property. A gravel pit was shown approximately 1.5-miles southwest of the Property. The Interstate 84 Interchange was shown approximately 2.5-miles west of the Subject Property.

1976: Middletown Quadrangle 1:24000

Subject Property: The eastern portion of the Subject Property was not shown. The Subject Property appears similar to the 1969 map.

Surrounding Properties: No significant changes were noted from the 1969 map.

To summarize, the Subject Property parcel was developed with a small structure between 1942 and 1949, and was otherwise vacant. The immediate surrounding area was very sparsely developed, and contained vegetation.

6.1.4 City Directories

A City Directory prepared by Environmental Data Resource, Inc. was reviewed as part of this Phase I ESA. The City Directory consisted of the names of businesses located on-site and for adjacent properties, compiled from city and reverse telephone directories for the years including 1995, 1999, 2003, 2008, and 2013.

The Subject Property was not listed in commercial directories provided. The names of listings on Cheechunk Road, the north-adjacent road to the Subject Property, appeared to be residential tenants. The listings on Hartley Road include Al Turi Landfill Inc., J-W Operating Co., Northern Recycling, Ryan Sanitation, Waste Management Inc., Interstate Waste Services, and All Waste Systems Inc for addresses 73-121 Hartley Road. Additional listings on Hartley Road included some residential uses, Luzon Wildflower Nursery at 108 Hartley Road in 1999, and Hig Fabrications at 100 Hartley Road in 2013.

Copies of the directories provided by EDR are included in *Appendix D*.

6.1.5 Property Tax Files and Zoning Records

Based on information provided by Orange County, the tax lots containing the Subject Property is zoned as I (Industrial). Some of the Property, specifically the eastern portion is overlain by the Stream Corridor and Reservoir Watershed Overlay as well as the Floodplain and Ponding Area Overlay. A watershed boundary and a stream run through the Subject Property. The Property owner was listed as Ver Hage Industries LLC. The legal lot size is listed on the Tax Map as 71.7 acres for the two parcels. The records reviewed are provided in *Appendix E*.

6.1.6 Recorded Land Title Records

Title records were obtained from Orange County and the Town of Goshen. Ver Hage Industries LLC was listed as the owner, with the two parcels that comprise the Subject Property purchased in January and August 2014 from Al Turi Landfill Inc. The records reviewed are provided in *Appendix E*. No Building Department or Health Department violations were found for the Subject Property, as reported by the Orange County Department of Health, and the Town of Goshen building department.

6.2 Regulatory Review

Toxics Targeting was contracted to obtain information regarding the regulatory status of the Subject Property and the surrounding area. This information included records from databases maintained by the USEPA and the NYSDEC. AKRF reviewed these records to identify the use, generation, storage, treatment and/or disposal of hazardous material and chemicals, or releases of such materials, which may impact the Subject Property. All applicable regulatory databases meet ASTM guidelines requesting utilization of information within 90 days' receipt from the appropriate agency. Copies of the pertinent sections of the EDR report are included in *Appendix C*.

6.2.1 Federal

Federal ASTM standard records reviewed included: the National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned (CERCLIS-NFRAP); CORRACTS (Corrective Actions Report); RCRIS (Resource Conservation and Recovery Information System); and Emergency Response Notification System (ERNS).

Federal ASTM supplemental records reviewed included: CONSENT (Superfund Consent Decrees); and Delisted NPL (National priority List Deletions).

National Priority List (NPL)

The NPL is the USEPA's database of some of the most serious uncontrolled or abandoned hazardous waste sites identified for probable remedial action under the Superfund Program. These sites may constitute an immediate threat to human health and the environment. Due to the amount of public attention focused on NPL sites, they pose a significant risk of stigmatizing surrounding properties and potentially impacting property values.

The Subject Property was not listed in the NPL database, and no NPL sites were identified within a one-mile radius of the Property.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

CERCLIS is a compilation of known or suspected, uncontrolled or abandoned hazardous waste sites which the USEPA has investigated, or plans to investigate, for a release, or threatened release, of hazardous substances pursuant to the Superfund Act of 1980 (CERCLA). Some of these sites may constitute a potential threat to human health and the environment. While it has been determined by the USEPA that some CERCLIS sites require no action, others could pose a real or perceived environmental threat to neighboring properties, thus affecting property values.

The Subject Property was not listed in the CERCLIS database, and no CERCLIS sites were identified within a half-mile radius of the Property.

Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned (CERCLIS-NFRAP)

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" have been removed from CERCLIS. NFRAP sites may be sites where, following an investigation, no contamination was discovered, contamination was removed quickly without the need for the Subject Property to be place on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

The Subject Property was not listed in the CERCLIS-NFRAP database. One CERCLIS NFRAP site, Al Turi Landfill, was identified within a half-mile radius of the Property. Al Turi Landfill, located south-adjacent to the Property on Hartley Road, was identified for groundwater contamination with organic and inorganic contaminants. The listing indicated that the NYSDEC was conducting a remedial investigation, and the site was granted NFRAP status in 1988 and archived in 1993. Based on the details, this listing appears to be associated with the "Old Al Turi Landfill", which is also listed in the New

York State Inactive Hazardous Waste Site database, and not the closed Part 360 permitted solid waste Al Turi Landfill further to the south.

CORRACTS (Corrective Actions Report)

The CORRACTS database identifies hazardous waste handlers with RCRA corrective action activity.

The Subject Property was not listed in the CORRACTS database and no CORRACTS sites were identified within a one-mile radius of the Subject Property.

Emergency Response Notification System (ERNS)

This federal database, compiled by the Emergency Response Notification System, records and stores information on reported releases of petroleum and other potentially hazardous substances.

The Subject Property was not listed in the ERNS database.

Toxic Chemical Release Inventory System (TRIS)

This federal database, compiled by the EPA, identifies facilities that release chemicals to the air, water, and land in reportable quantities.

The Subject Property was not listed in the TRIS database and no TRIS sites were identified within one-quarter mile of the Property.

CONSENT (Superfund Consent Decrees)

Superfund consent decrees are major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. These decrees are periodically released by the United States District Courts after settlement by parties to litigation matters.

The Property was not listed in the CONSENT database, and no CONSENT sites were identified within a one-mile radius of the Subject Property.

Delisted NPL (National Priority List Deletions)

This database described former NPL sites that are removed from the NPL list by the US EPA. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establish the criteria used by the EPA to delist sites where no further federal response is needed.

The Subject Property was not listed in the delisted NPL database, and no delisted NPL sites were identified within a one-mile radius of the Subject Property.

6.2.2 State

The state records reviewed included the listings of hazardous material spills (SPILLS); Resource Conservation and Recovery Act Notifiers (RCRA); Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal Sites (SHWS); Major Oil Storage Facilities (MOSF); Brownfield Sites; and Historic Utility Sites.

New York SPILLS Database

The New York SPILLS database includes a list of releases reported to NYSDEC, including those attributed to tank test failures and tank failures. The tank test failures list

only covers tanks that are below ground, while the tank failures list includes tanks that are either below or above ground. This database also lists spills that occur during the transportation of chemicals.

Sixteen closed spills were reported within a half-mile radius of the Subject Property, no active status spills were listed. No spills were listed for the Property.

- Fourteen closed-status spills (two closed status tank failures and 12 miscellaneous/other causes) were reported for the south-adjacent property under various names.
  - The tank failures included one spill of gasoline encountered in 1999 during removal of 2 USTs. Contaminated soil was removed totaling approximately 30 cubic yards. The spill was closed in June 1999. The second tank failure was reported for a 45-gallon spill of diesel in June 2004. The spill was reported to have been cleaned up with SpeedyDri, and no further information was provided. The spill was closed in June 2004.
  - A 2001 spill of 100-gallons of compressor oil was due to a broken gasket. The oil was contained and the affected soil was cleaned up and sampled. The spill was closed later that same year.
  - A hydraulic line broke on a garbage truck in 2001, and 25 gallons of hydraulic oil were spilled. The spill was contained on concrete and cleaned up.
  - A 2003 spill of hydrogen peroxide, potassium permanganate, and calcium chloride was identified. The spilled material was involved in a fire, and affected material was containerized and water was pumped out.
  - A 2002 spill of antifreeze and crank case oil on gravel was identified, the affected material was dug out to identify the extent of contamination, and the spill was closed later that year.
  - An overfilled #2 fuel oil tank caused a spill in 2005, the spill was cleaned up and two 1000-gallon tanks were removed. The spill was closed later that year.
  - A spill was reported in 2006 for four separate structures with spills observed around them, and a fifth area was noted near a gas production engine. Spilled materials included motor oil and ethylene glycol. Soil staining was observed by the NYSDEC, in areas near engines associated with Landfill Gas Recovery. Three 550-gallon ASTs were placed in secondary containment containers and a waste oil tank was found leaking on site. Contaminated soil was removed, and groundwater was pumped out. Contaminants were mostly heavy oil and sidewall samples were taken. The spill was closed in December 2011, but was listed as as "does not meet standards."
  - An equipment failure in 2007 caused 200-gallons of lubricating oil from an industrial engine, most was contained in the building, and all impacted soil was stockpiled. The spill was closed in 2010.
  - A large dump truck was observed dumping unknown material at the closed landfill in 2015. The truck was observed by the Town Building Inspector as a landscaping truck. Cleanup is pending, and the spill was closed the next day.

- Human errors and equipment failures accounted for four additional spills involving small releases of petroleum compounds. All affected soil was cleaned up and removed.

Based on the spill details and their distance from the Subject Property, the remaining two off-site spill listings are not expected to have impacted the Property subsurface. Details from all spills are included in *Appendix C*.

RCRA (Resource Conservation and Recovery Act Notifiers

The Resource Conservation and Recovery Act Notifiers database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste defined by the Resource Conservation and Recovery Act (RCRA).

The Subject Property was not listed in the RCRIS Gen/Trans database, and six RCRIS sites were identified within a half-mile radius of the Property. All six listings appear to be associated with the south-adjacent property, listed under various names, including All-Waste Systems Inc.; Waste Management – Northern Recycling, JW Operating Co., Al Turi Landfill, Inc., and Al Turi Landfill. J.W. Operating Co. reported generation of 1550 gallons of spent halogenated solvents in 1995; no hazardous waste activity was reported for the other listings. Waste Management – Northern Recycling was classified as a historic Small Quantity Generator (SQG); no generator type was specified for the other listings. It is not clear from the generator names whether the listings are for the Part 360 permitted landfill or the unlined "Old Al Turi Landfill"; however, based on the type of waste generated (spent halogenated solvents), the listing for J.W. Operating Co. may be associated with remediation of the unlined landfill.

Chemical Bulk Storage (CBS) Database

The New York CBS is a list of facilities that store regulated non-petroleum substances in aboveground tanks with capacities greater than 185 gallons and/or in underground tanks of any size.

The Subject Property was not listed in the CBS database. One CBS facility was listed within a one-quarter mile radius of the Property. Ameresco LFG, located south-adjacent to the Property on Hartley Road, was identified for storage of three 500-gallon ASTs of ethylene glycol.

Solid Waste Facilities/Landfill Sites (SWF/LF)

This database includes certain landfills, incinerators, transfer stations, recycling centers, and other sites which manage solid waste.

Six Solid Waste Facilities/Landfill Sites were identified within a half-mile radius of the Subject Property. All listings appear to be for the south-adjacent landfill. The activities include inactive listings for construction and debris processing and a municipal solid waste landfill; and active listings as a transfer station and landfill gas recovery facility.

Petroleum Bulk Storage (PBS) Database

This database lists facilities that registered having either aboveground or underground petroleum tanks with total storage exceeding 1,100 gallons. Facilities with more than 400,000 gallons appear on the Major Oil Storage Facilities (MOSF) database (see below).

Three PBS facilities were identified within a one-eighth mile radius of the Property. Details of the three facilities (all located on the south-adjacent property) with the potential to affect the Subject Property are included in Table 1 below:

Table 1
Area Petroleum Bulk Storage Facility Data

Location	Capacity (gallons)	Product Stored	Status	Distance/Direction from Subject Site
Waste Management of NY 95 Hartley Road	1 x 10,000 UST	Diesel	Closed-Removed	South-adjacent
	1 x 6500 UST	Diesel	Closed-Removed	
	1 x 500 UST	Diesel	Closed-Removed	
	1 x 5000 UST	Gasoline	Closed-Removed	
	2 x 275 AST	Lube Oil	Open-In Use	
	1 x 370 AST	Diesel	Open-In Use	
	2 x 1000 UST	#2 Fuel Oil	Closed-Removed	
Ameresco LFG-1 Inc. 91 Hartley Road	1 x 4200 AST*	Lube Oil	Closed-Removed	South-adjacent
	1 x 1000 AST*	Lube Oil	Closed-Removed	
	1 x 1000 AST*	Waste Oil	Closed-Removed	
	4 x 55 AST	Lube Oil	Closed-Removed	
	1 x 30 AST	Lube Oil	Open-In Use	
	1 x 750 AST	Other	Closed-Prior	
	1 x 500 AST	Other	Closed-Prior	
	1 x 2 AST	Other	Closed-Removed	
	4 x 15 AST	Other	Closed-Removed	
	1 x 1000 AST*	Other	Closed-Removed	
	1 x 500 AST	Waste Oil	Open-In Use	
	1 x 500 AST	Lube Oil	Open-In Use	
	1 x 275 AST*	Lube Oil	Closed-Removed	
	1 x 275 AST	Waste Oil	Closed-Removed	
	1 x 275 AST	Kerosene	Closed-Removed	
	2 x 30 AST	Lube Oil	Open-In Use	
	1 x 1500 AST	Other	Open-In Use	
Al Turi Landfill 73 Hartley Road	2 x 2000 AST*	Diesel	Closed-Removed	South-adjacent
	1 x 10,000 UST	#2 Fuel Oil	Open-In Use	
	1 x 275 AST	#2 Fuel Oil	Open-In Use	
	1 x 1000 AST	Diesel	Closed-Removed	
	1 x 1000 UST	#2 Fuel Oil	Closed-Removed	
	1 x 275 AST	Diesel	Open-In Use	
	1 x 1000 UST	#2 Fuel Oil	Closed-Removed	
	1 x 300 AST*	Other	Closed-Removed	
	1 x 1000 AST	Gasoline	Open-In Use	
	1 x 1000 AST*	Gasoline	Closed-Removed	
	1 x 275 AST	Lube Oil	Open-In Use	
	1 x 550 AST*	Diesel	Closed-Removed	
	1 x 275 AST	Lube Oil	Open-In Use	
	1 x 500 AST	Diesel	Open-In Use	

Notes: AST - aboveground storage tank
UST - underground storage tank

*-in contact with soil

State Inactive Hazardous Waste Disposal Site Registry (SHWS)

This program (also known as State Superfund) lists information regarding a variety of sites likely requiring cleanup.

One State Inactive Hazardous Waste Disposal Site was reported within a one-mile radius of the Subject Property. The Old Al Turi Landfill, located south-adjacent to the Subject Property at 73 Hartley Road, was listed for hazardous waste disposal from 1968 to 1983. The unlined landfill has been capped with a geomembrane, a barrier protection layer of soil, and top soil capable of sustaining vegetative cover; and landfill gas collection and monitoring systems have been installed. There is an adjoining solid waste landfill, also owned by Al Turi that also has been closed. The database listing indicates that at least 230 tons of waste solvents, allyl isothiocyanate, and still bottom residue were disposed at this site in the 1970's. Confirmed wastes disposed include chlorinated volatile organic compounds (VOCs) and metals of unknown quantities. A Remedial Investigation was completed in 1996 and a Record of Decision (ROD) was issued in March 1996. In addition to capping the landfill, a groundwater monitoring program was established and a deed restriction was placed on the Old Al Turi Landfill property pursuant to the ROD. The database listing indicates that construction of the remedy was completed in 2001 and that subsequent groundwater monitoring indicates that the implemented remedy has been effective in decreasing leachate-related groundwater quality impacts at the Old Al Turi Landfill property. A May 25, 2010 letter from the NYSDEC to Mr. Joseph Gambino of Al Turi Landfill Inc. (obtained from a FOIL request submitted to the NYSDEC) indicates that the classification of the landfill was changed from Class 2 to 4[1] based on the remedy completed and groundwater monitoring results. Additional information on groundwater monitoring associated with this facility obtained from our FOIL request is included in Section 8.0.

State Hazardous Substance Waste Disposal Site Study (SHSWDS)

This database tracks certain sites that were not listed on the SHWS, but may still require investigation and/or cleanup.

No SHSWDSs were identified within a half-mile radius of the Subject Property.

Major Oil Storage Facilities (MOSF) Database

These facilities have petroleum storage of 400,000 gallons or more.

No Major Oil Storage Facilities were reported within a one-eighth mile radius of the Subject Property.

Environmental Restoration Program

These sites (which are generally municipally-owned) are receiving New York State funding for site investigation and remediation. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

[1] Class 4 sites are those considered properly closed, but requiring continued management.

No ERP sites were identified within a half-mile radius of the Subject Property.

Voluntary Cleanup Program

The Voluntary Cleanup Program is a NYSDEC program for investigation and remediation of (generally) privately-owned sites. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No Voluntary Cleanup Program sites were identified within a half-mile radius of the Subject Property.

Brownfield Cleanup Program

This NYSDEC program is the successor to the Voluntary Cleanup Program. Some sites have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No Brownfield Cleanup Program sites were identified within a half-mile radius of the Subject Property.

6.2.3 Local

Records available from the Orange County Department of Health and the Town of Goshen were requested in FOIL requests on June 11, 2015. The Orange County Department of Health provided a faxed response on June 18, 2015 indicating that they did not have any records on file for the Subject Property.

The Town of Goshen provided information about a violation issued to the property owner on November 2014 for moving the Cheechunk Stream on the Property. Specifically, letters from the US Army Corps of Engineers dated November 2014, January 2015, and March 2015 indicated that approximately 4,000 square feet of fill had been placed into the waters resulting in approximately 1,000 linear feet of stream being bypassed. The notice from the US Army Corps of Engineers ordered the fill removed and normal stream flows restored by March 31, 2015. No further information was provided regarding whether or not the corrective actions were completed.

7.0 INTERVIEWS

7.1 Interview with Owner

An Environmental Site Assessment Questionnaire was submitted to Mr. Richard Ver Hage, the owner's principal member. Mr. Ver Hage provided the following pertinent information:

- Mr. Ver Hage has been associated with the Subject Property for 2 years.
- The Subject Property was previously used as a landfill.
- No sewers or municipal water system was on the Subject Property, and the Property has wells.
- Mr. Ver Hage indicated that he provided copies of the "former landfill license and a current permit from the NYSDEC" to the buyer.
- A Record of Decision (ROD) was issued in 1996 by the NYSDEC that includes a deed restriction to prevent any drinking water wells for the meadow on-site.

The information provided by Mr. Ver Hage regarding a former landfill on the Subject Property is not consistent with anecdotal, government, and historical records for the Property. No other sources reported landfill activities on the Property, rather only on the south-adjacent parcel. The landfill license referenced in the questionnaire was not made available for review. The completed questionnaire is included in *Appendix D*.

7.2 Interview with Site Manager

The owner also acts as the Property manager.

7.3 Interview with Occupants

No occupants other than the owner were available for interview.

7.4 Interview with Local Government Officials

Federal, state, and local regulatory databases were consulted for identifying recognized environmental conditions (RECs) on the Subject Property due to on-site or off-site conditions. The files obtained for the Subject Property are included in *Appendix E*.

8.0 PREVIOUS STUDIES

Phase I reports for a west-adjacent site and a nearby properties were made available.

Phase I Environmental Site Assessment – Echo Lake Industrial Site, Goshen and Wawayanda, NY, Environmental Compliance Services, Inc., December 2013

At the time of the 2013 Phase I ESA, the "Echo Lake Industrial Site", located west-adjacent to the Subject Property (west of the Wallkill River) was occupied by 212 acres, including more than 12.4 acres of freshwater wetlands, a former dairy farm with farmstead structures, a former sand and gravel mine, groundwater monitoring wells for the east-adjacent landfill, and remnants of field vegetation. This Phase I ESA Identified the following:

- Possible storage and use of fuel oil for farmstead structures, and gasoline for operating farm equipment.
- Three dump sites were observed, containing various materials buried and/or scattered across the surface of each area. Materials included farm equipment, vehicles, household items, empty 55-gallon drums, waste, glass, wood, plastics, building materials, and large metal objects.
- Sand and gravel mines reportedly used by local dairy farmers located on the eastern portion of the property (west-adjacent to ver Hage Site) were identified. No regulation of fill materials existed when the area was backfilled, and the fill may contain additional waste materials.
- The former Town of Wallkill Mine on the southern part of the property (southwest of the ver Hage Site) contained stockpiles of tree stumps and limbs. The type of material used to backfill this mine could not be determined.
- Former use of the property as a dairy farm with vegetation that may have used persistent organic pollutants as pesticides.

Phase I Environmental Site Assessment – Strong Farm, Goshen, NY, William L. Going & Associates Inc., April 2015

At the time of the 2015 Phase I ESA, the "Strong Farm" property (located north of the Subject Property, across Echo Lake Road) was occupied by a main house, tenant house, barns, and approximately 110 acres

of farmland, as well as a single family residence and the associated 2.9 acres. This Phase I ESA identified the following:

- The single family residence at 51 Owens Road utilized a 550-gallon UST that failed a tightness test and was removed in early 2015.

Additionally, samples were collected from wells at the tenant house and from the main house. The samples were negative for Total Coliform and E. Coli, and no VOCs or semivolatile organic compounds (SVOCs) were identified. These wells were located approximately one-half mile northwest of the Subject Property.

July 2007 through January 2013 Semi-Annual Groundwater Quality Monitoring Reports – Al Turi Landfill Operational and Class II Site, Goshen, New York, Ground Water Investigations Inc., dated November 2007 through June 2013

These sampling reports were obtained from the NYSDEC in response to a FOIL request submitted on June 11, 2015. The reports were prepared as part of groundwater monitoring programs for the south-adjacent Old Al-Turi Landfill Class II Inactive Hazardous Waste Site and the closed Al Turi solid waste landfill, which included sampling of groundwater monitoring wells located on the ver Hage Property. Results from the July 2007 report indicate that trichloroethene (TCE) was detected in monitoring well W-40, located adjacent to the Wallkill River on the Subject Property, at a concentration of 7.9 parts per billion (ppb), which exceeded the NYSDEC Class GA groundwater standard for this compound. The TCE degradation product *cis* 1,2-dichloroethene was also detected in monitoring well W-40 at an estimated concentration of 2 ppb, which is below its Class GA standard of 5 ppb. No other VOCs were detected in the other on-site wells during the July 2007 sampling event, and no VOCs were reported in any of the on-site monitoring wells in the 2008 through 2013 reports. The approximate location of monitoring well W-40 on the ver Hage Property is shown on Figure 2.

A groundwater contour map included with the January 2013 semi-annual report shows that groundwater flows in a predominantly west-northwesterly direction across the Property toward the Wallkill River, with a more north-northwesterly component of low near the southeastern portion of the Subject Property.

Preliminary Geotechnical Engineering Report, Amy's Kitchen – Ver Hage Property, AKRF Inc., June 26, 2015

The study included ten geotechnical test borings, in the vicinity and footprint of the planned project buildings, ranging from 32 to 52 feet below ground surface (bgs), and two groundwater observation wells. Samples were tested for particle size distribution. Groundwater level was measured between 14.5 and 19.7 feet bgs, and both observation wells were on the southern portion of the parcel. The general conclusions of the study showed that the Subject Property is typically underlain by glacial deposits of sand and gravel with localized discontinuous strata of silt and clay. There appears to be two glacial deposits consisting of an upper deposit characterized by brown sand and brown gravel, and a lower deposit characterized by grey sand and grey gravel. No fill material was noted. The report also includes recommendations for foundation and construction design.

9.0 LIMITATIONS

This assessment met the requirements of the American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-13. The following limitations should be noted:

- Results of this investigation are valid as of the dates on which the investigation was performed.

- No sampling was performed as part of this assessment.
- Not all areas of the Subject Property were available for inspection due to overgrown vegetation.
- The Property area history review was not conducted in five-year intervals. However, sufficient information about the history of the Property and surrounding area could be obtained from the available aerial photographs, topographic maps, city directories, and local records, and this data gap is not likely to alter the conclusions of this report.

10.0 DEVIATIONS

The User did not request any deviations from the ASTM Standard, and no deviations from the Standard were made while performing the assessment.

11.0 DATA GAPS

Section 3.3.20 of ASTM Standard E 1527-13 defines a data gap as the inability to obtain information required by the ASTM Standard despite good faith efforts to obtain applicable data. Data gaps may result from incompleteness in any of the activities required by the ASTM Standard. While limitations to this report are described in Section 9.0, there were no data gaps identified where the absence of information would materially change the findings of the assessment.

12.0 FINDINGS

AKRF, Inc. (AKRF) performed a Phase I Environmental Site Assessment (ESA) of an approximately 71.1-acre property located at 103-111 Hartley Road, Goshen, Orange County, New York (the Subject Property or Property). The Town of Goshen identified the Subject Property as Parcel Numbers 12-1-1.222 and 12-1-19.2. The Subject Property is zoned by the Town of Goshen as Industrial (I). No buildings or structures are present on-site. The Wallkill River followed by the Echo Lake Industrial Site is located west of the Subject Property. The former Al Turi Landfill (a closed NYSDEC 6 NYCRR Part 360 permitted landfill) is located south of the Subject Property, and is used as an Interstate Waste Transfer Station and as a landfill gas to energy plant. The Orange County Heritage Trail followed by Echo Lake Road is located north of the Subject Property. Hartley Road followed by an Orange and Rockland substation, bus depot, and forested land is located east of the Subject Property. The greater surrounding area is predominantly forested and residential.

The main objective of the Phase I ESA is to identify recognized environmental conditions (RECs) and environmental concerns associated with the Subject Property resulting from past or current site usage and usage of neighboring properties. RECs are defined in ASTM International (ASTM) Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property. The Standard also includes definitions of Historic REC (HREC), Controlled REC (CREC), and *de minimis* Condition. A *de minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action. Note that controlled recognized environmental conditions (CRECs) are considered to be RECs and are listed in the Executive Summary and Conclusions of this Phase I ESA. Additionally, vapor encroachment conditions (VECs) were evaluated as per ASTM E 2600-10. The regulatory databases, historical aerial photographs, and visual site inspection have indicated that the Subject Property has historically been used as farmland and for soil mining and/or potential landfilling, and is currently vacant.

This Phase I ESA revealed the following RECs, CRECs and/or VECs associated with the Property:

On-Site VEC:

- The VOC trichloroethene (TCE) was detected in one on-site groundwater monitoring well at a concentration exceeding its NYSDEC Class GA Water Quality Standard, and the TCE degradation product *cis* 1,2-dichlorethene (*cis* 1,2-DCE) was detected in the same well at a concentration below its Class GA standard, as documented in the 2007 groundwater monitoring report for the south-adjacent Old Al Turi Landfill (however, more recent monitoring events for the Old Al Turi Landfill conducted between 2008 and 2013 indicated that groundwater concentrations were below the Class GA groundwater standards in monitoring wells on the Subject Property.)

Off-Site CRECs:

- The south-adjacent parcel operated an unlined landfill (the Old Al Turi Landfill) from 1968 to 1983 and is listed as a New York State Inactive Hazardous Waste Disposal Site due to disposal of solvents and other materials in the landfill. TCE and *cis* 1,2-DCE detected in groundwater on the Subject Property are likely associated with this facility. In 2010, the NYSDEC changed the classification of the Inactive Hazardous Waste Site from Class 2 to 4[1] based on the remedy completed and results of on-going groundwater monitoring.
- A Part 360 permitted solid waste landfill (the Al Turi Landfill), which also operated at the south-adjacent parcel, further to the south of the Old Al Turi Landfill, has been capped and closed (with post-closure monitoring under NYSDEC oversight).

The Phase I ESA revealed the following HRECs, *de minimis* conditions and other environmental concerns:

Off-Site HRECs

- Fourteen closed-status Spills (two tank failures and 12 miscellaneous/other causes) were reported at the south-adjacent property. Closed-status spills at this off-site property are considered HRECs.

De Minimis Conditions

- Areas of disturbance noted in the western portion of the Subject Property on the 1964 and 1991-1994 aerial photographs and discarded items (tires, piping, etc.) noted during the reconnaissance indicate the potential for historic disposal and/or import of fill materials of unknown origin. Evidence of widespread fill was not noted during a geotechnical investigation conducted in 2015 in connection with the proposed project.
- Apparent agricultural fields were noted throughout the Subject Property on the 1940 through 1975 aerial photographs. Residual pesticides from the former agricultural uses could be present in shallow or deeper soil at the Property.

Other Environmental Concerns

- A review of the New York State Department of Health database indicated that the average level of radon found in basements in the Town of Goshen is 5.23 picocuries/liter, above the USEPA recommended action level is 4.0 picocuries/liter.

[1] Class 4 sites are those considered properly closed, but requiring continued management.

- The US Army Corps of Engineers issued a violation to the current property owner associated with placement of approximately 4,000 square feet of fill into the Cheechunk Creek resulting in approximately 1,000 linear feet of stream being bypassed.

13.0 CONCLUSIONS

This Phase I Environmental Site Assessment was performed in accordance with customary principles and practices in the environmental consulting industry, and in conformance with the scope and limitations of ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, these practices are described in Sections 9.0, 10.0, and 11.0 of this report.

The main objective of the Phase I ESA is to identify recognized environmental conditions (RECs) and environmental concerns associated with the Subject Property resulting from past or current site usage and usage of neighboring properties. RECs are defined in ASTM International (ASTM) Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property. The regulatory databases, historical aerial photographs, and visual site inspection have indicated that the Property has historically been used as farmland and for soil mining and/or potential landfilling, and is currently vacant.

This Phase I ESA has revealed the following RECs associated with the Property:

On-Site REC/VEC

- The volatile organic compound (VOC) trichloroethene (TCE) was detected in one on-site groundwater monitoring well at a concentrations exceeding its NYSDEC Class GA Water Quality Standard, and the TCE degradation product *cis* 1,2-dichloroethene (*cis* 1,2-DCE) was detected in the same well at a concentration below its Class GA standard, as documented in the 2007 groundwater monitoring report for the south-adjacent closed Old Al Turi Landfill. The potential presence of VOCs in groundwater at the Property is considered a VEC.

Off-Site RECs

- The south-adjacent parcel operated an unlined landfill (the Old Al Turi Landfill) from 1968 to 1983 and is listed as a New York State Inactive Hazardous Waste Disposal Site due to disposal of solvents and other materials in the landfill, and was also identified as a RCRIS hazardous waste generator. TCE and *cis* 1,2-DCE detected in groundwater at the Subject Property are likely associated with this facility. In 2010, the NYSDEC changed the classification of the Inactive Hazardous Waste Site from Class 2 to 4 based on the remedy completed and results of on-going groundwater monitoring. This facility is considered a Controlled REC (CREC).
- A Part 360 permitted solid waste landfill (the Al Turi Landfill), which also operated at the south-adjacent parcel, has been capped and closed. This facility is considered a CREC.

Recommendations:

A subsurface (Phase II) investigation is recommended to further investigate the identified RECs/CRECs/VECs and other environmental concerns and to characterize subsurface conditions of soil, groundwater, and soil vapor in areas where subsurface disturbance is anticipated for the proposed development (including an assessment for LBP, ACM and PCB-containing materials if fill or demolition debris is identified). Furthermore, the engineering and institutional controls associated with the south-adjacent Old Al Turi Landfill, including the on-site monitoring wells, should be maintained as appropriate to ensure the efficacy of the remedy. Based on the Phase II findings, recommendations for soil and groundwater management and potential vapor mitigation measures should be developed for incorporation into the proposed site development plans.

14.0 SIGNATURE PAGE

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. I have performed all the appropriate inquiries in conformance with standards and practices set forth in 40 CFR Part 312.

_____

Marc S. Godick, LEP
Senior Vice President

15.0 QUALIFICATIONS

The purpose of this assessment was to convey a professional opinion about the potential presence or absence of contamination, or possible sources of contamination on the Subject Property, and to identify existing and/or potential environmental problems associated with the Subject Property.

The assessment was performed in accordance with customary principles and practices in the environmental consulting industry, and in accordance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice.* It is intended for use as a supplement to the Subject Property appraisal, and is only to be used as a guide in determining the possible presence or absence of hazardous materials on the Subject Property at the time of the inspection. This assessment is based upon the review of readily available records relating to previous use of both the Subject Property and the surrounding area, as well as a visual inspection of the current condition of the Subject Property. Environmental characteristics at this Property and surrounding sites may be subject to change in the future.

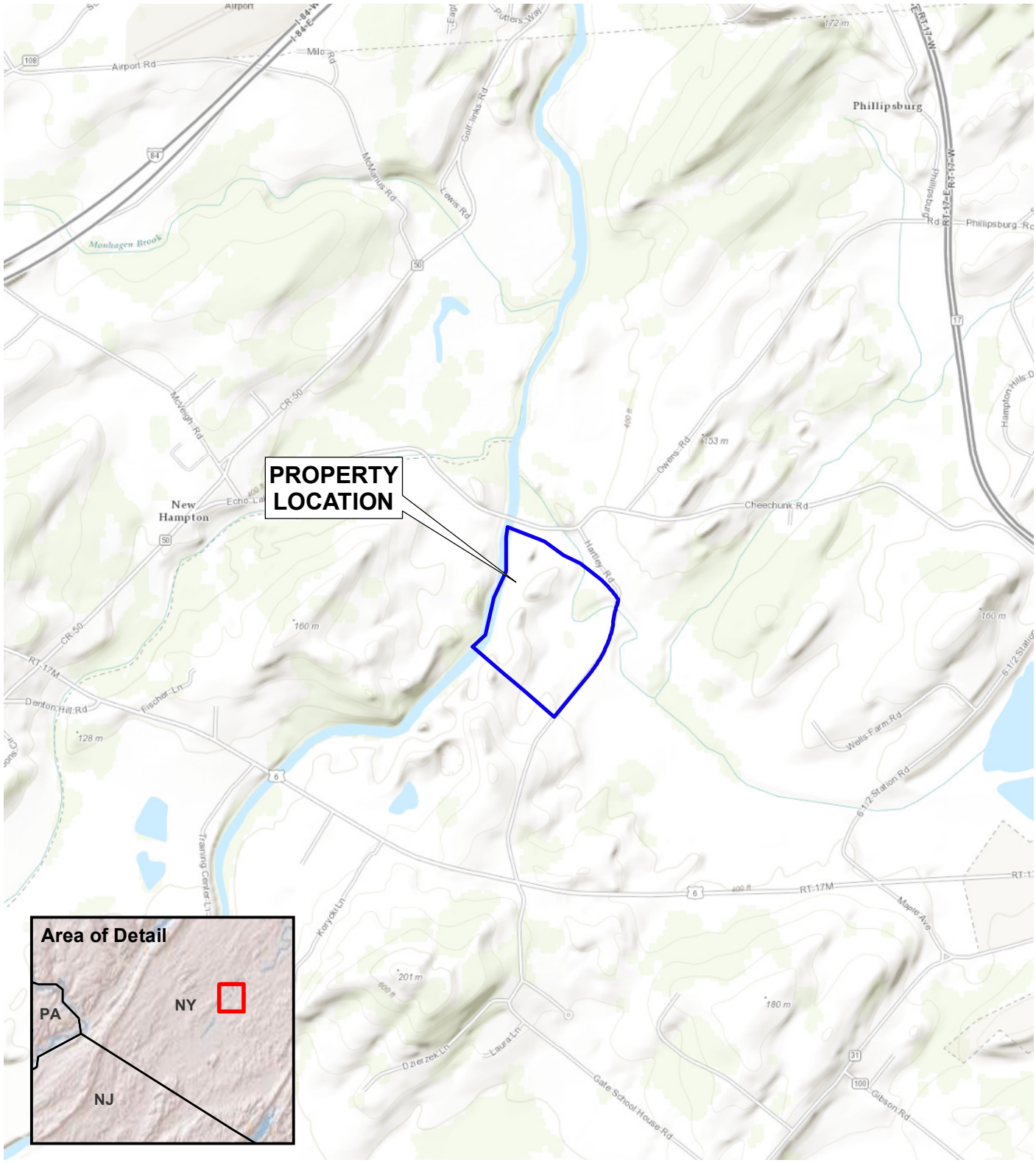
This Phase I Assessment is not, and should not be construed as, a guarantee, warranty, or certification of the presence or absence of hazardous substances, which can be made only with testing, and contains no formal plans or recommendations to rectify or remediate the presence of any hazardous substances which may be subject to regulatory approval. This report is not a regulatory compliance audit.

This report is based on services performed by AKRF, Inc. professional staff and observation of the Subject Property and its surrounding area. We represent that observations made in this assessment are accurate to the best of our knowledge, and that no findings or observations concerning the potential presence of hazardous substances have been withheld or amended. The research and inspections have been carried to a level that meets accepted industry and professional standards. Nevertheless, AKRF and the undersigned shall have no liability or obligation to any party other than Amy's Kitchen, Inc. and their successors or assignees, and AKRF's obligations and liabilities to the above, their successors or assignees is limited to fraudulent statements made, or negligent or willful acts or omissions.

16.0 REFERENCES

1. Toxics Targeting Inc, Inc.; Amy's Kitchen ver Hage, Goshen, New York; Regulatory Radius Search; June 1, 2015.
2. Environmental Data Resources, Inc.; Amy's Kitchen Hartley Road/Cheechunk Road, Goshen, New York; Topographic Map Report; May 28, 2015.
3. Environmental Data Resources, Inc.; Amy's Kitchen Hartley Road/Cheechunk Road, Goshen, New York; Aerial Photograph Report; May 28, 2015.
4. U.S. Geological Survey; Geohydrology and Water Quality of the Wallkill River Valley Near Middletown, New York; Open File Report 97-241; 1998.
5. Environmental Data Resources, Inc.; Amy's Kitchen Hartley Road/Cheechunk Road, Goshen, New York, City Directories; May 28, 2015.
6. U.S. Geological Survey; *Middletown, New York*; 7.5 minute Series (Topographic); Scale 1:24,000; 1976.
7. Phase I Environmental Site Assessment – Echo Lake Industrial Site, Goshen and Wawayanda, NY, Environmental Compliance Services, Inc., December 2013
8. July 2007 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational and Class II Site, Goshen, New York. Ground Water Investigations Inc., November 2007.
9. July 2008 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational and Class II Site, Goshen, New York. Ground Water Investigations Inc., December 2008.
10. January 2009 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational and Class II Site, Goshen, New York. Ground Water Investigations Inc., July 2009.
11. July 2009 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational and Class II Site, Goshen, New York. Ground Water Investigations Inc., December 2009.
12. July 2010 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational Site, Goshen, New York. Ground Water Investigations, December 2010.
13. January 2011 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational and Class II Site, Goshen, New York. Ground Water Investigations Inc., April 2011.
14. July 2011 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational and Class II Site, Goshen, New York. Ground Water Investigations Inc., October 2011.
15. January 2012 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational and Class II Site, Goshen, New York. Ground Water Investigations Inc., June 2012.
16. January 2013 Semi-Annual Groundwater Quality Monitoring Report, Al Turi Landfill – Operational and Class II Site, Goshen, New York. Ground Water Investigations Inc., June 2013.
17. Phase I Environmental Site Assessment – Strong Farm, Goshen, NY, William L. Going & Associates Inc., April 2015

FIGURES



SOURCE
USGS 7.5 Minute Topographic Map
MIDDLETOWN and GOSHEN Quads 2011

0 1,000 2,000
Feet

Amy's Kitchen Goshen Ver Hage
Goshen, New York

PROPERTY LOCATION

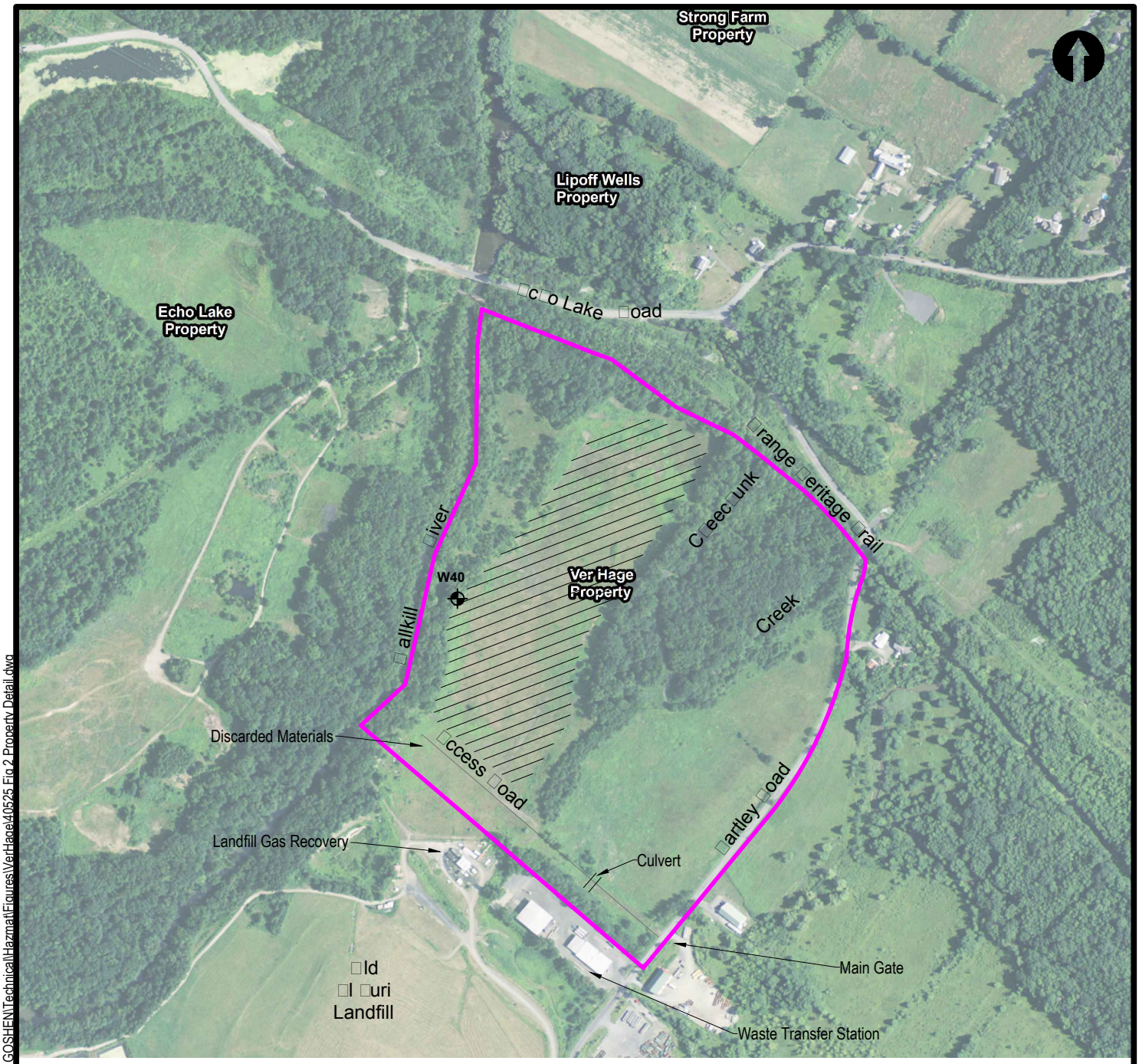
AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6/18/2015

PROJECT No.
40525

FIGURE
1

©2014 AKRF, Inc. Environmental Consultants Q:\Projects\40525 - AMY'S KITCHEN GOSHEN\Technical\GIS and Graphics\Hazmat\40525 Fig 1 prop location Ver Hage.mxd



Aerial Source: ESRI World Imagery, ESRI Digital Globe, GeoEye, USDA Farm Service Agency, USGS, and the GIS User Community

LEGEND:

- Property Detail VerHage
- Area of Disturbance (1984-1994 Aerials)
- W40 — Approximate Location of Monitoring Welll

Amy's Kitchen Goshen Ver Hage

Goshen, New York

PROPERTY DETAIL

AKRF Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE	11.23.2015
PROJECT No.	40525
SCALE	as shown
FIGURE	2

©2015 AKRF, Inc. Environmental Consultants Q:\Projects\40525 - AMY'S KITCHEN GOSHEN\Technical\Hazmat\Figures\VerHage\40525 Fig 2 Property Detail.dwg

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

Photograph 1: Site access from driveway on Hartley Road.

Photograph 2: Access road on southern part of the Property.

Photograph 3: Representative growth western portion of the Property.

Photograph 4: Culvert on southern part of the Property.

Photograph 5: Monitoring well near center of the Property.

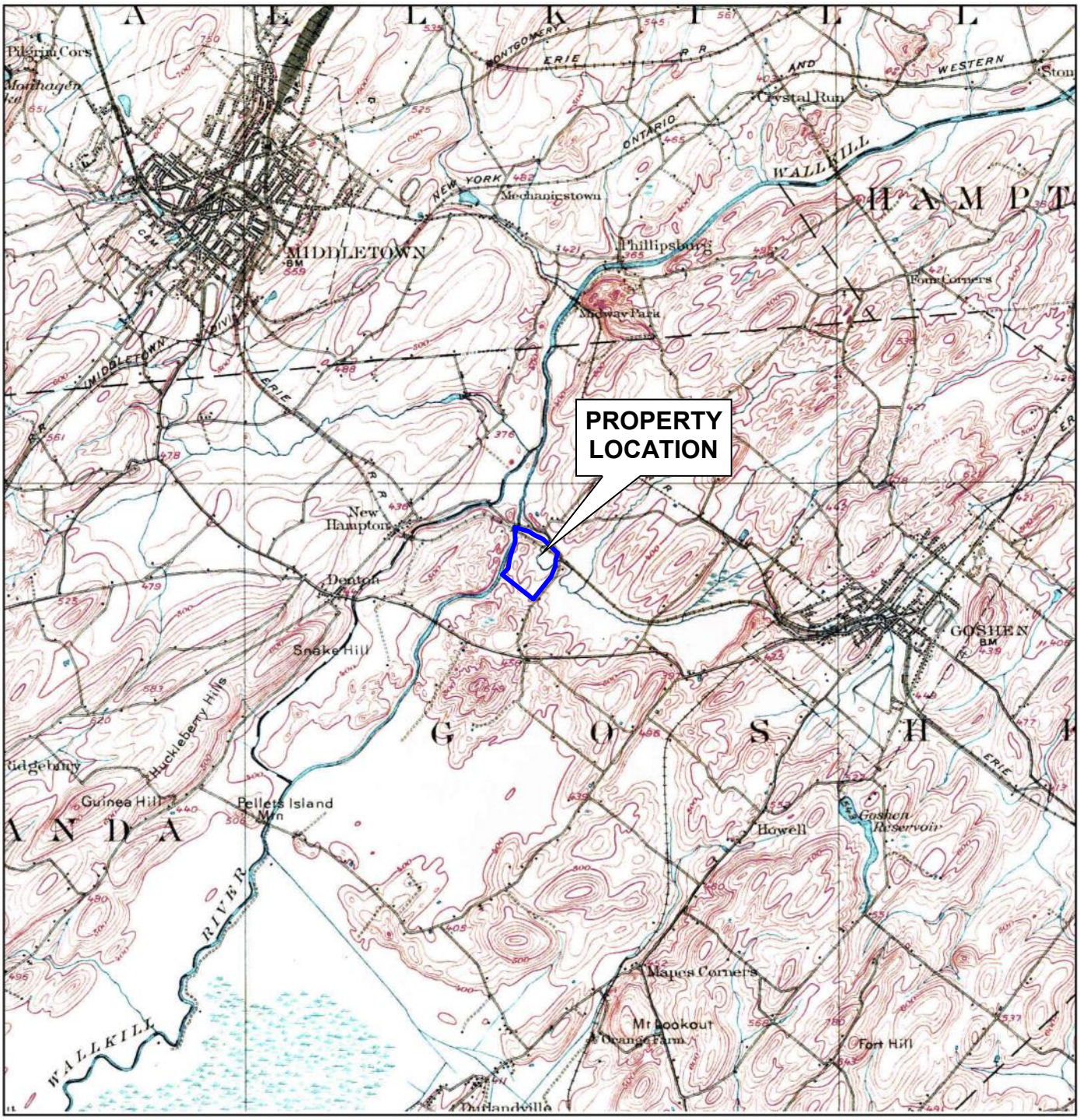
Photograph 6: Small pile of soil/fill on northwestern part of Property.

Photograph 7: Geotextile and landscaping material on southern Property Boundary.

APPENDIX B

HISTORICAL TOPOGRAPHIC MAPS/HISTORICAL AERIAL PHOTOGRAPHS

Historical Topographic Map



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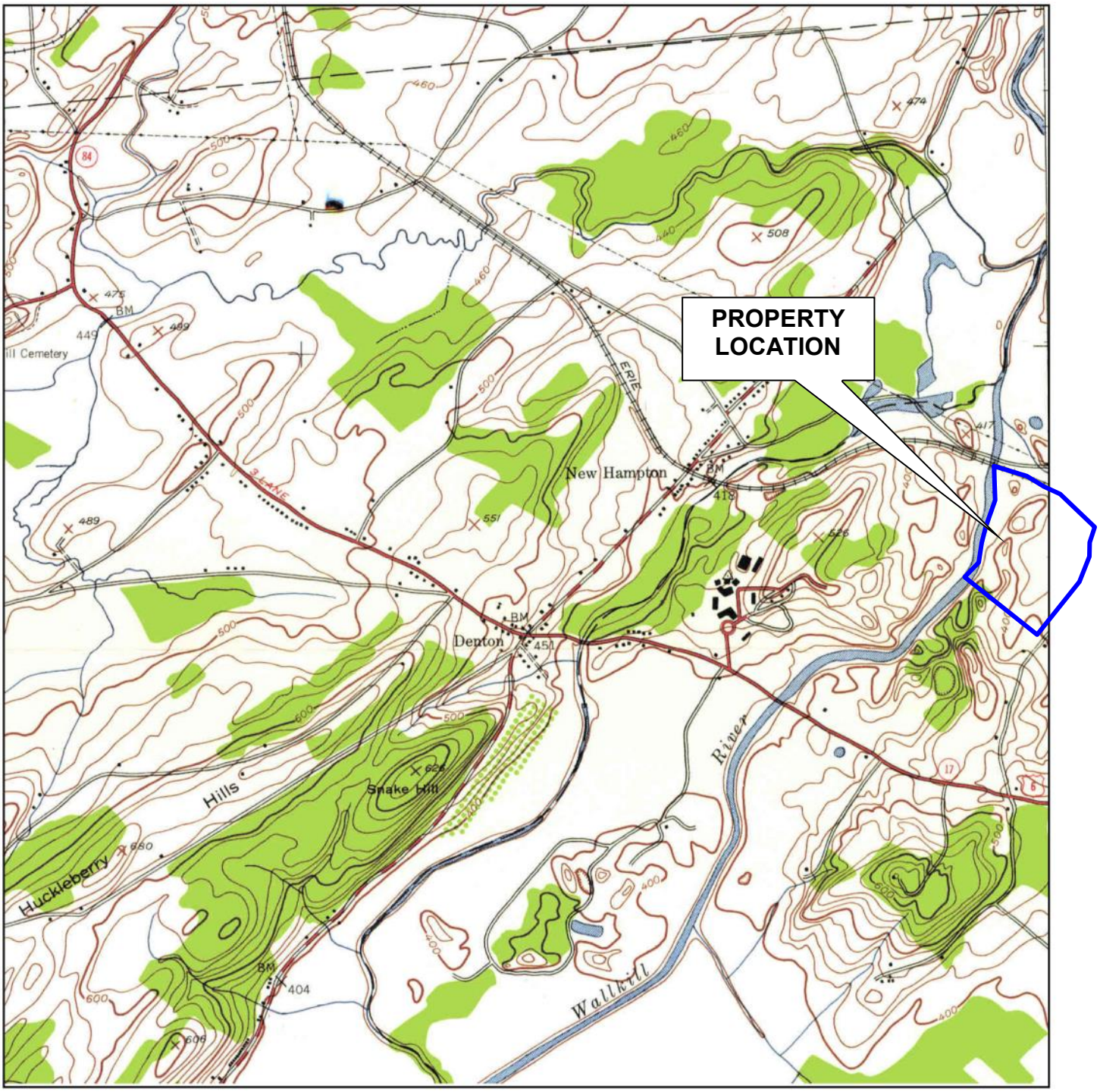

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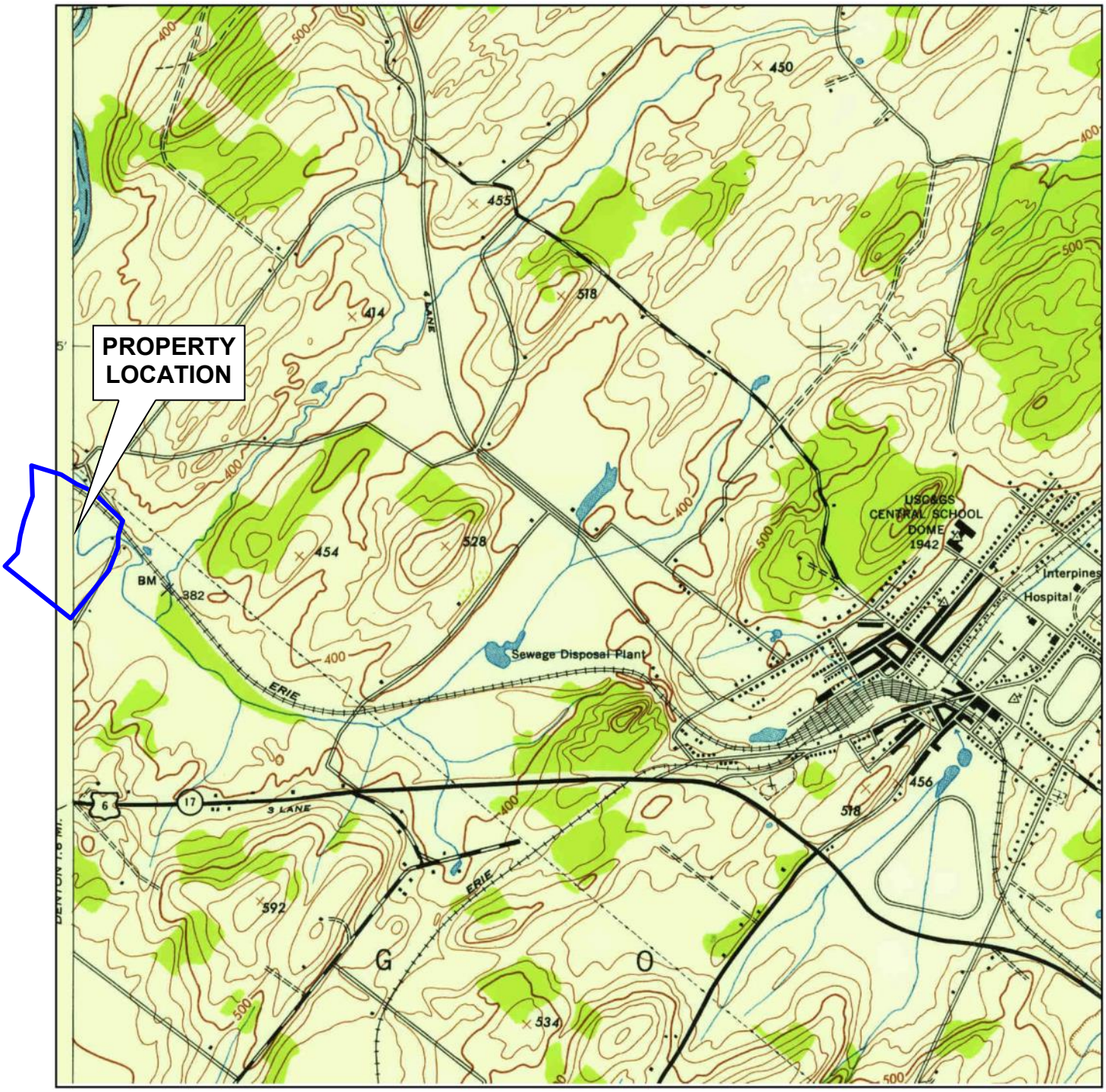

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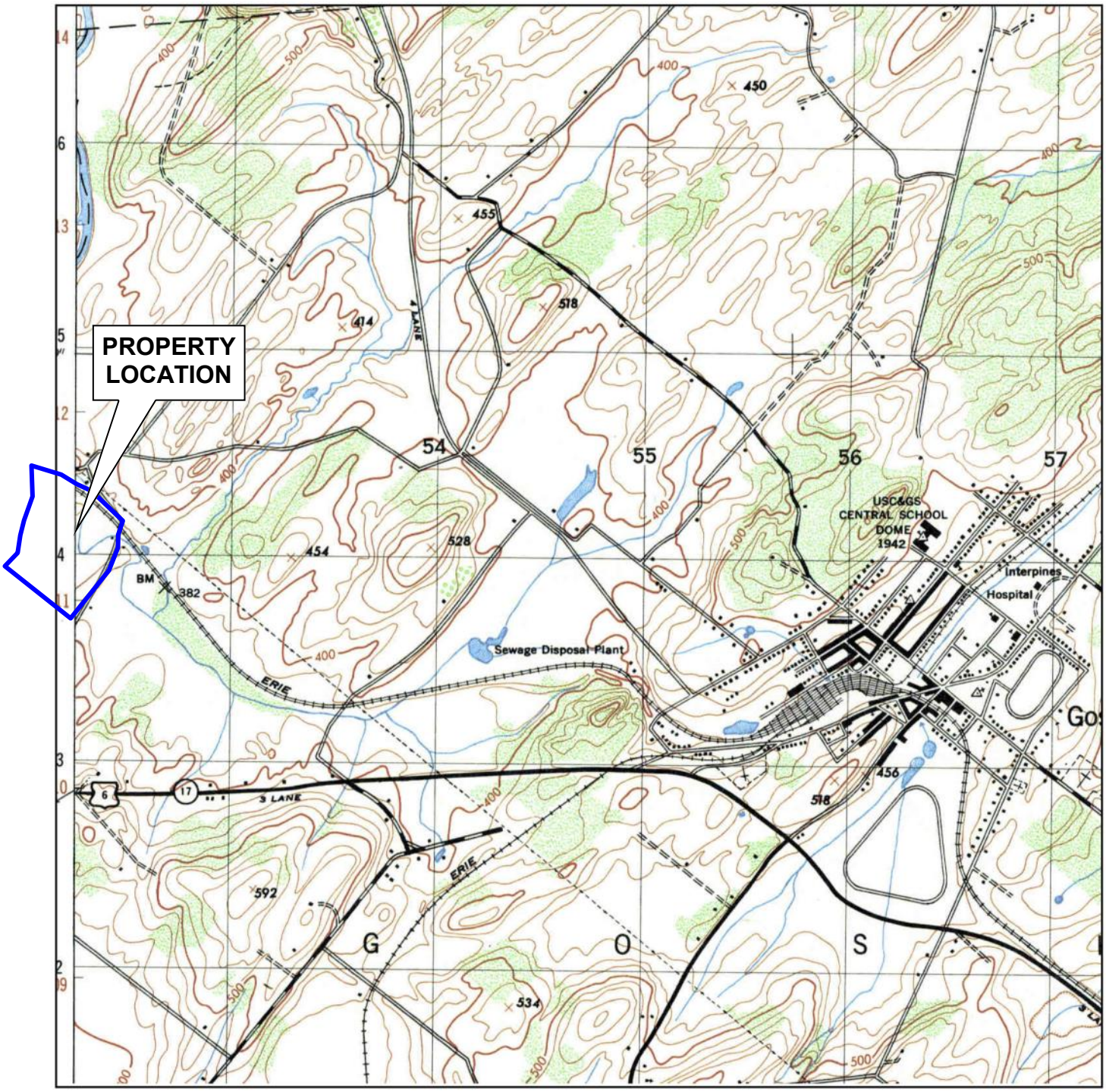

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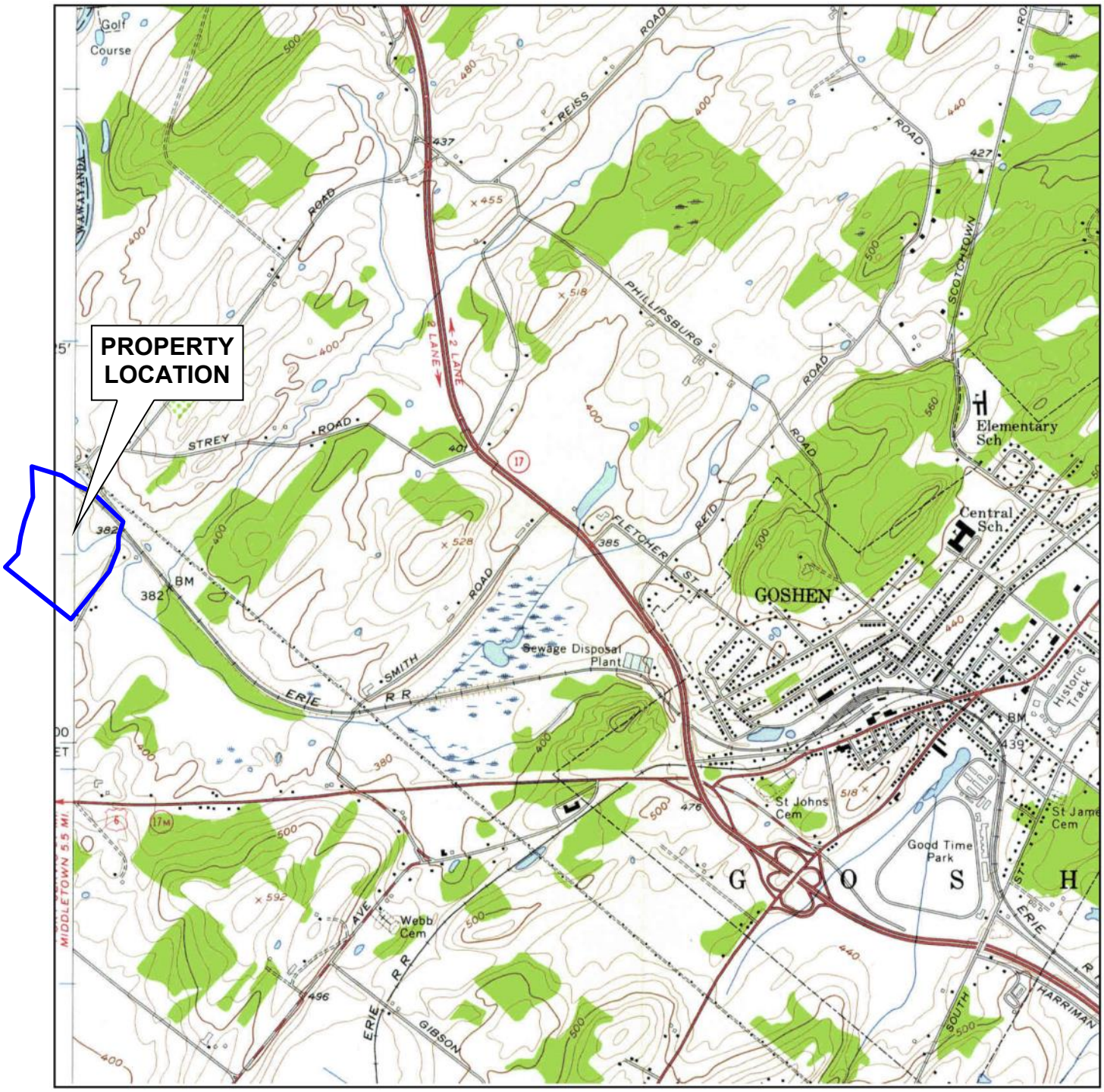

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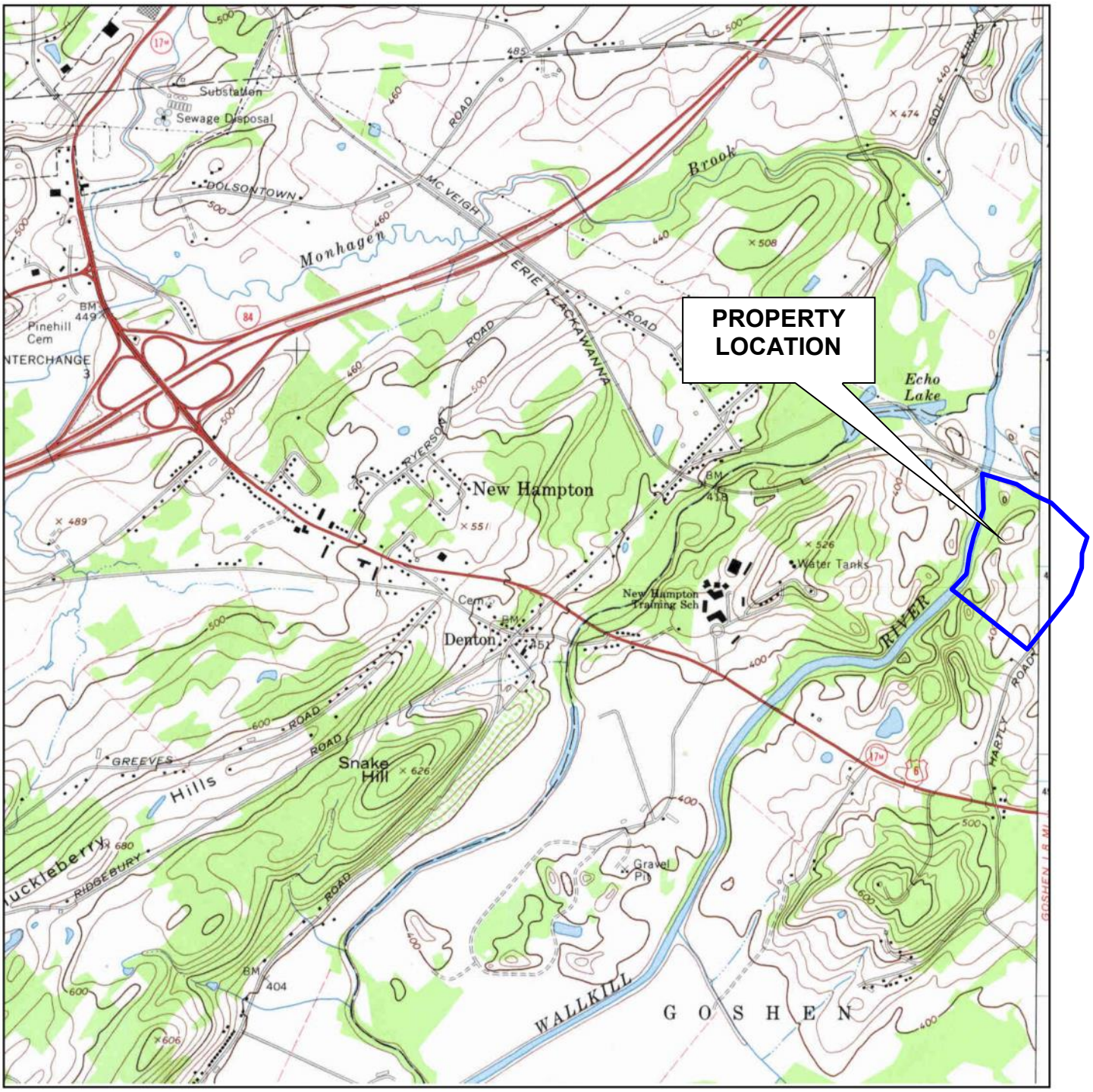

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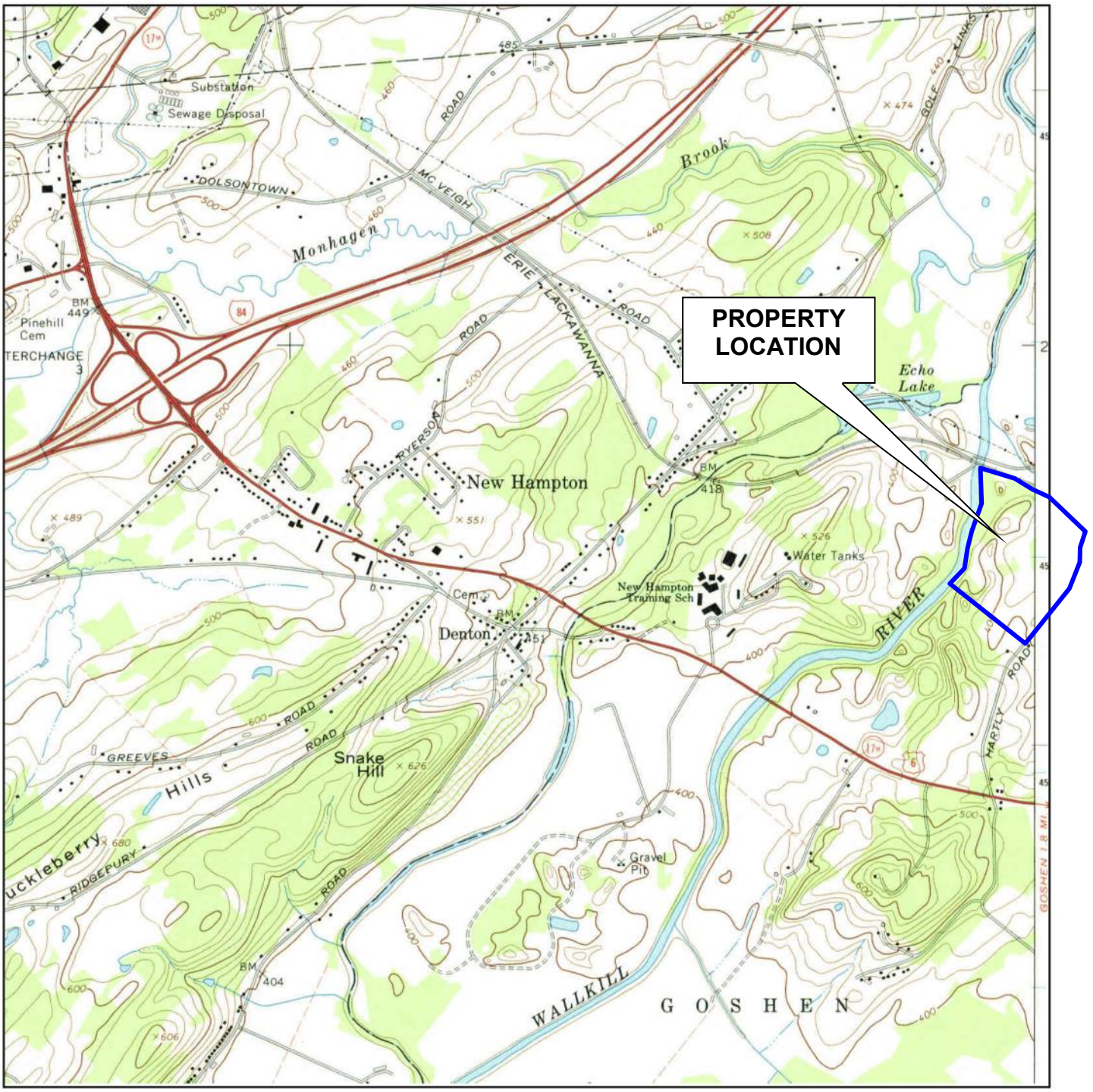

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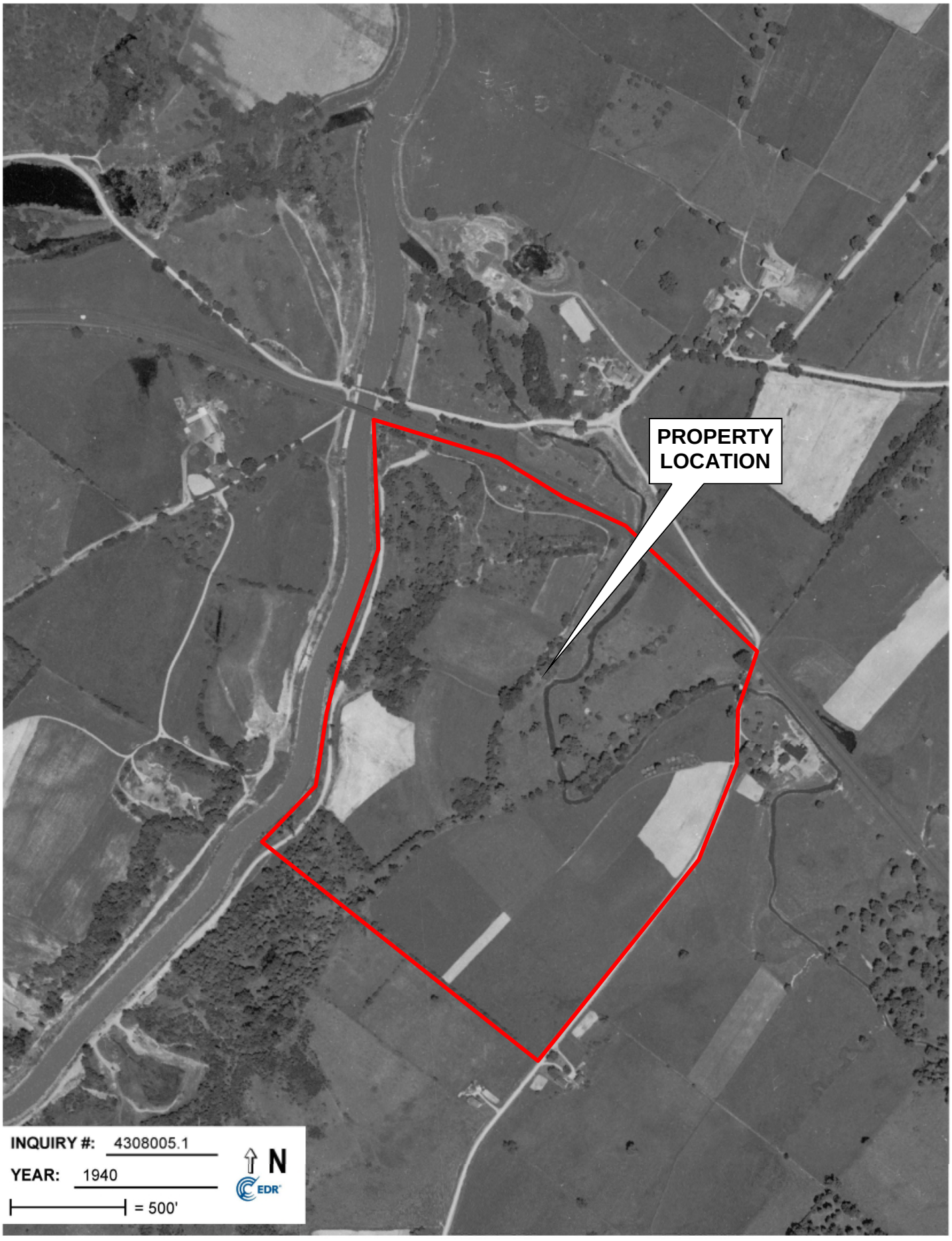
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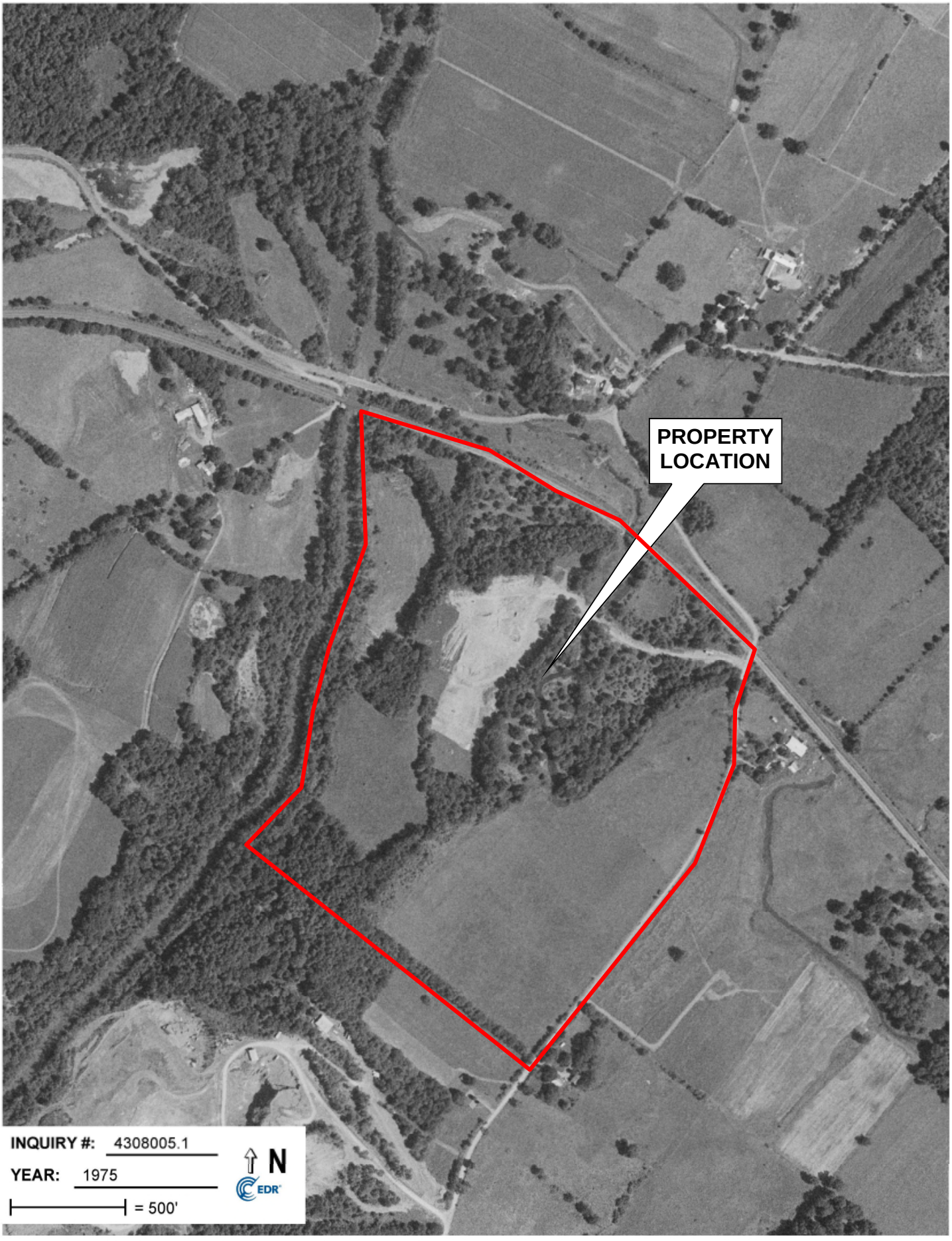
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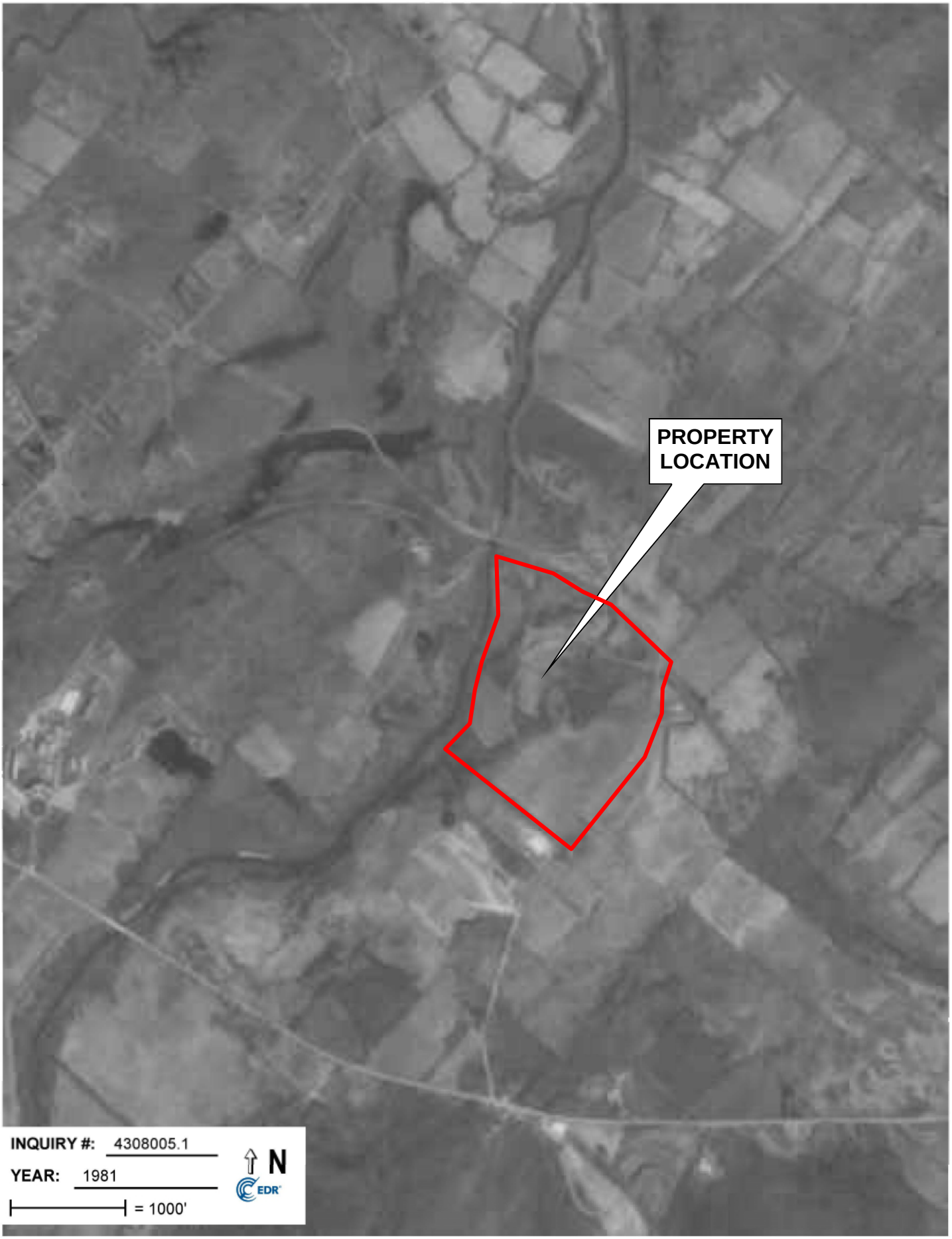
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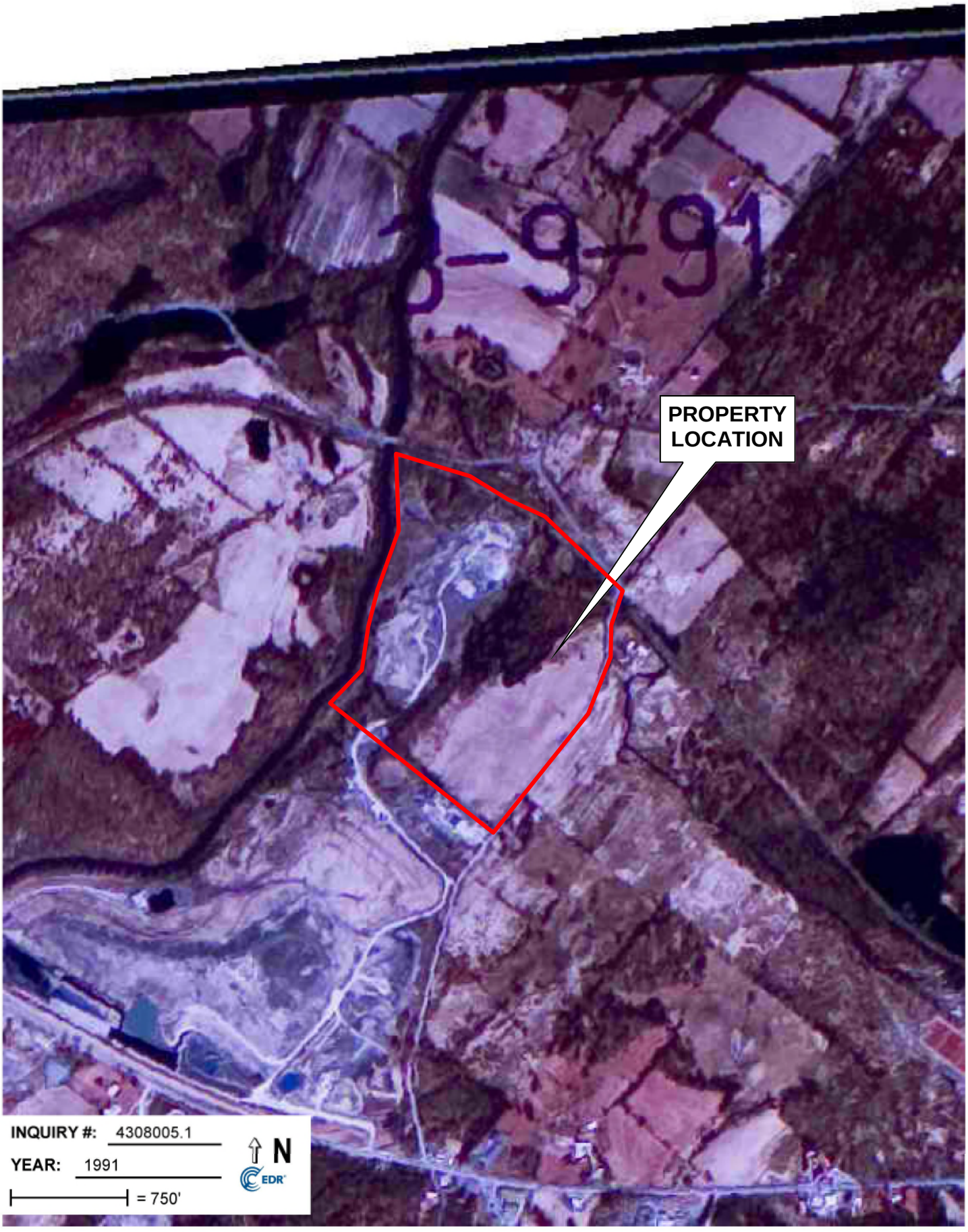
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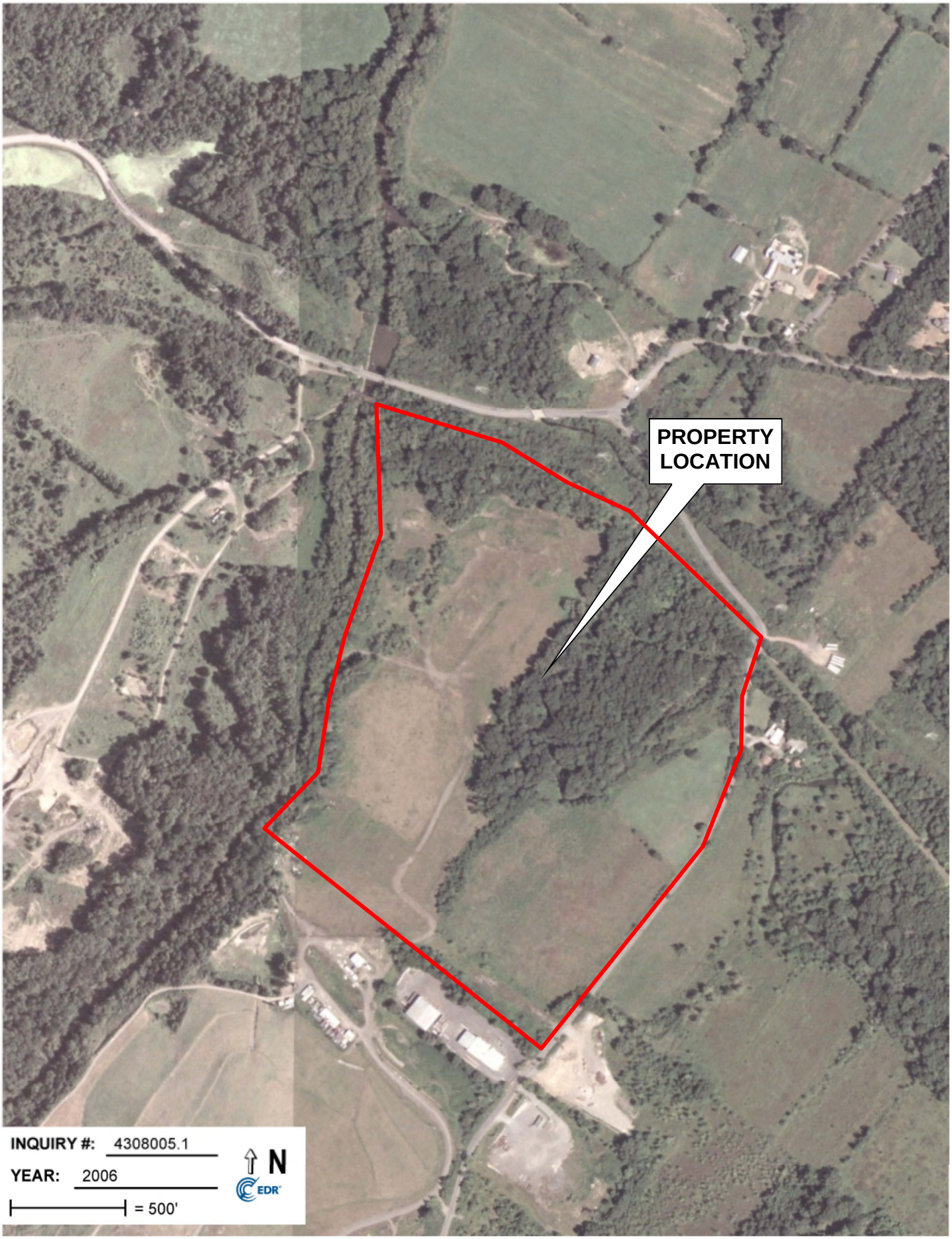
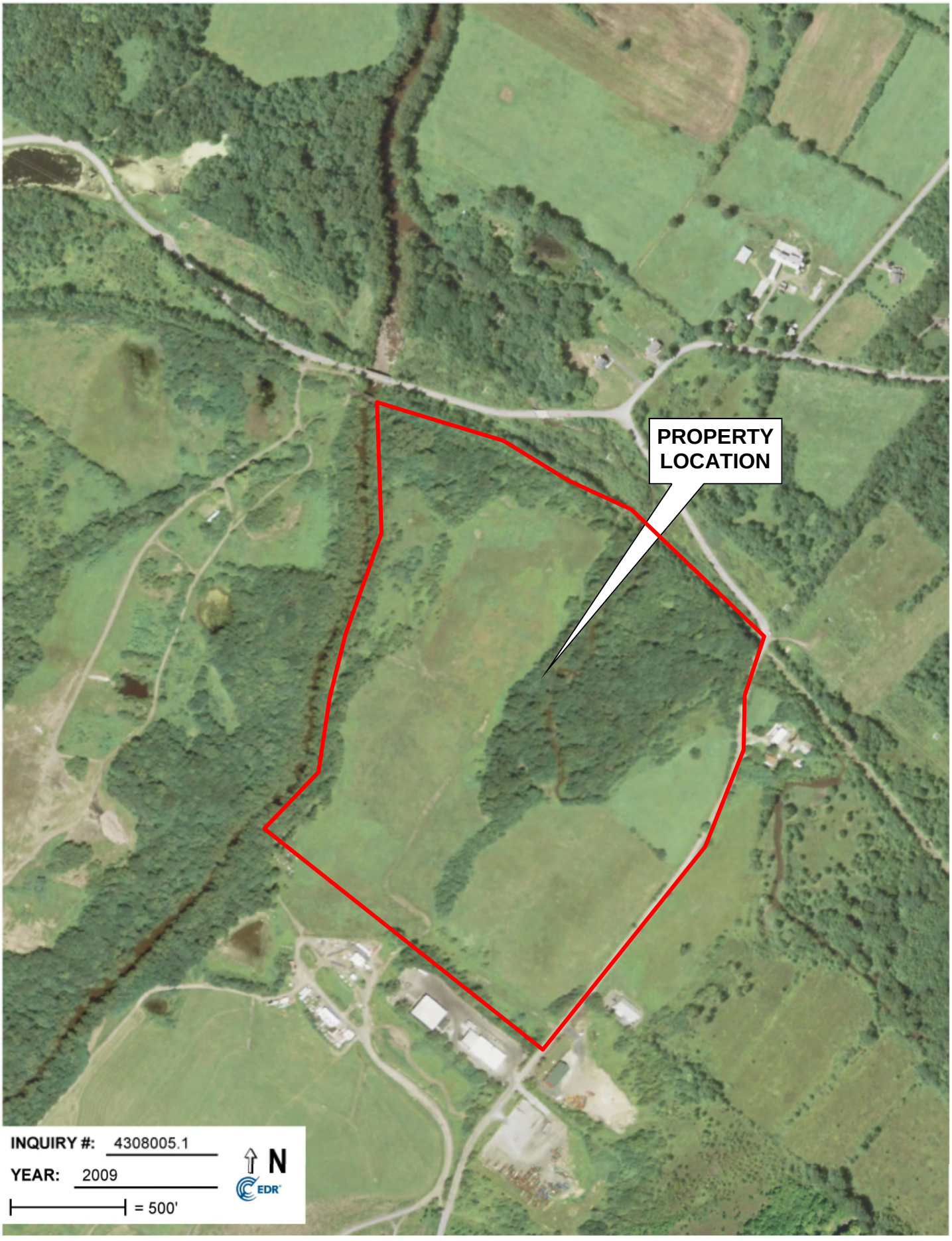
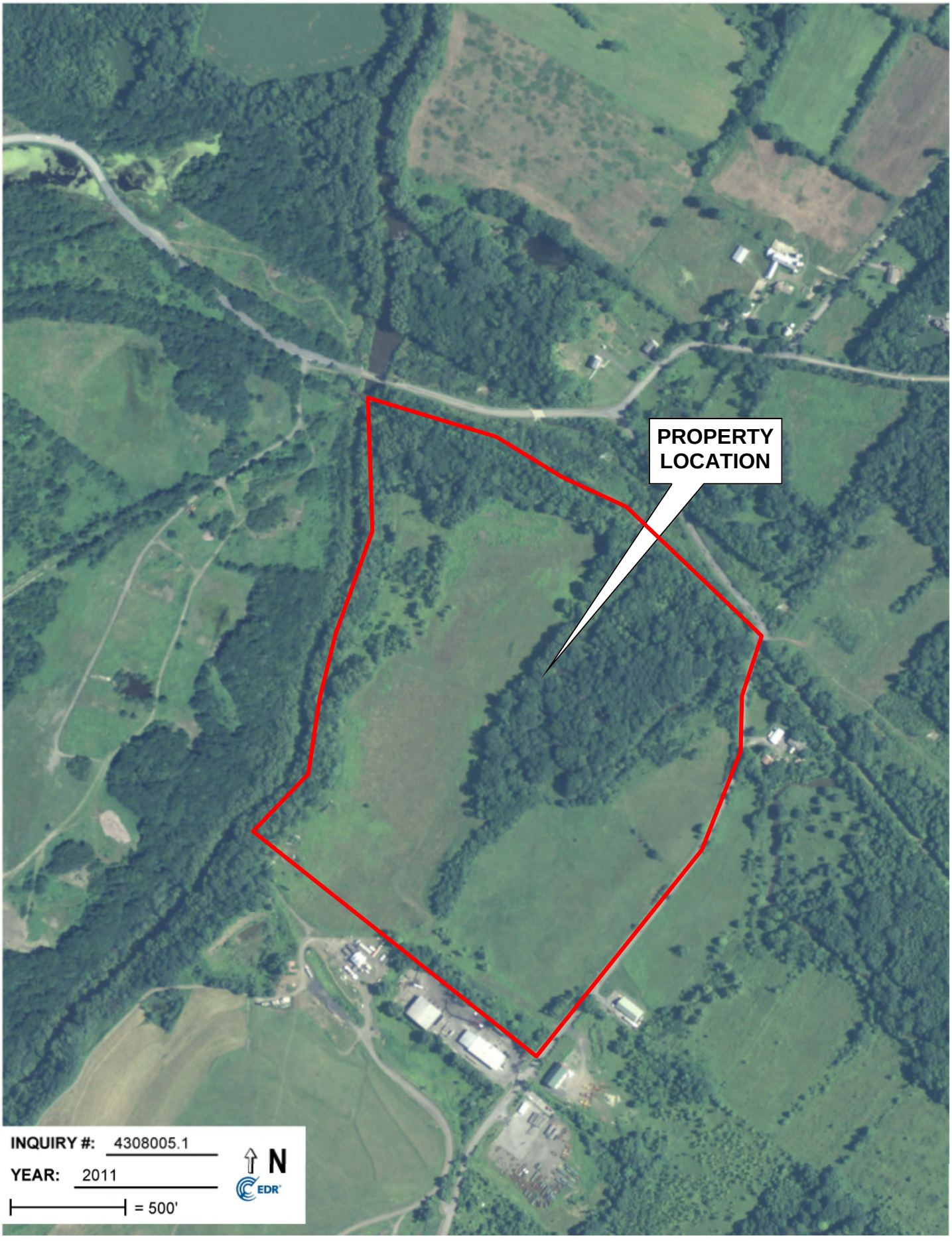

PROPERTY
LOCATION
INQUIRY #: 4308005.1
YEAR: 2006
= 500'
N
EDR


PROPERTY
LOCATION
INQUIRY #: 4308005.1
YEAR: 2009
= 500'
N
EDR


PROPERTY
LOCATION
INQUIRY #: 4308005.1
YEAR: 2011
= 500'
N
EDR

APPENDIX C
REGULATORY RECORDS REVIEW

TOXICS TARGETING

Phase I
Environmental Database Report

Amy`s Kitchen - verHage
Goshen, NY 10924

June 01, 2015

Privileged and Confidential.

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Who is Covered

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PLEASE REFER TO PAGES ONE AND FIVE FOR A DESCRIPTION OF SOME OF THE LIMITATIONS OF THIS ENVIRONMENTAL REPORT.

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Introduction

Toxics Targeting has combined environmental database searches, extensive regulatory analysis and sophisticated mapping techniques to produce your *Environmental Report.* It checks for the presence of 21 categories of government-reported toxic sites and provides detailed, up-to-date information on each identified site. The findings of your report are presented in an easy-to-understand format that:

1. ***Maps*** the approximate locations of selected government-reported toxic sites identified on or near a specified target address.

2. ***Estimates*** the distance and direction between the target address and each identified toxic site.

3. ***Reports*** air and water permit non-compliance and other regulatory violations.

4. ***Profiles*** some aspects of the usage, manufacture, storage, handling, transport or disposal of toxic chemicals at individual sites.

5. ***Summarizes*** some potential health effect information and drinking water standards for selected chemicals reported at individual sites.

The Three Sections Of Your Report

The first section highlights your report's findings by summarizing identified sites according to: **a)** distance intervals, **b)** direction, **c)** proximity to the target address and **d)** individual site categories. In addition, the locations of all identified toxic sites are illustrated on individual maps for each radius search distance used in your report. A close-up map illustrates the locations of all identified toxic sites, at the shortest radius search distance used in your report. Finally, a map of tax parcels and a table of selected information about those parcels are included.

The second section of your report contains *Toxic Site Profiles* that provide detailed information on each identified toxic site. The information in each *Toxic Site Profile* varies according to its source. Some toxic site categories have extensive information, some have limited information. All the information is updated on a regular basis.

The third section of the report contains appendices that identify: **1)** on-site spills reported to the national Emergency Response Notification System (ERNS), **2)** various toxic sites that cannot be mapped due to incomplete or erroneous addresses or other mapping problems, **3)** codes that characterize hazardous wastes reported at various facilities, **4)** methods used to map toxic sites identified in your report and **5)** information sources used in your report.

How to Use Your Report

- Check Table One to see the number of identified sites by distance intervals.

- Check Table Two to see identified sites sorted by direction.

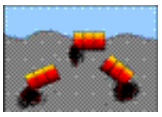
- Check Table Three to see identified sites sorted by site categories.

- Check Table Four to see identified sites ranked by proximity to the target address.

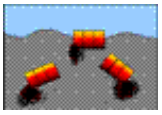
- Use Table Five to get info for the subject parcel and every parcel found on the Tax Parcel Map
- Refer to the various maps to see the locations of identified toxic sites. Refer to the *Toxic Site Profile* and *Appendix* sections for additional information.

Toxic Site Databases Analyzed In Your Report

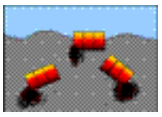
Search Radius

One-Mile 

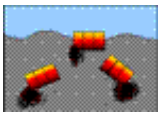
1) ***National Priority List for Federal Superfund Cleanup****:* a listing of sites known to pose environmental or health hazards that are being investigated or cleaned up under the Federal Superfund program.

Half-Mile 

2) ***Delisted National Priority List Sites****:* a listing of NPL sites that have been removed from the National Priority List.

One-Mile 

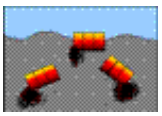
3) ***New York Inactive Hazardous Waste Disposal Site Registry****:* a state listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

One-Mile 

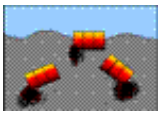
4) ***New York Inactive Hazardous Waste Disposal Site Registry Qualifying****:* a state listing of sites that qualify for possible inclusion to the NYDEC Inactive Haz. Waste Disposal Site Registry.

One-Mile

5) ***RCRA Corrective Action Activity (CORRACTS):*** waste facilities with RCRA corrective action activity reported by the USEPA.

Half-Mile 

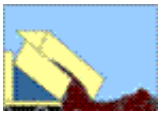
6) ***CERCLIS*** (Comprehensive Environmental Response, Compensation and Liability Information System): a federal listing of Non-NFRAP sites that can pose environmental or public health hazards requiring investigation or clean up.

Half-Mile 

7) ***CERCLIS NFRAP:*** a federal listing of CERCLIS sites that have no further remedial action planned.

Half-Mile

8) ***New York State Brownfield Cleanup Sites****:* a listing of sites that are abandoned, idled or under-used industrial and commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.

Half-Mile 

9) ***New York Solid Waste Facilities Registry****:* active and inactive landfills, incinerators, transfer stations or other solid waste management facilities.

Half-Mile

10) ***New York and Federal Hazardous Waste Treatment, Storage or Disposal Facilities****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRIS). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act..

Half-Mile

11) ***Toxic Spills: active and inactive or closed*** spills reported to state environmental authorities, including *remediated* and *unremediated* leaking underground storage tanks. This database includes the following categories:

- Tank Failures
- Tank Test Failures
- Unknown Spill Cause or Other Spill Causes
- Miscellaneous Spill Causes

Quarter-Mile

12) ***New York State Major Oil Storage Facilities****:* sites with more than a 400,000-gallon capacity for storing petroleum products.

Quarter-Mile

13) ***New York and Local Petroleum Bulk Storage Facilities****:* sites with more than a 1,100-gallon capacity for storing petroleum products.

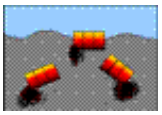
Quarter-Mile

14) ***New York and Federal Hazardous Waste Generators and Transporters****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRA). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.

Quarter-Mile

15) ***New York Chemical Bulk Storage Facilities****:* sites storing hazardous substances listed in 6 NYCRR Part 597 in aboveground tanks with capacities of 185 gallons or more and/or underground tanks of any size

Half-Mile 

16) ***New York Hazardous Substance Disposal Site Draft Study****:* a state listing of sites contaminated with toxic substances that can pose environmental or public health hazards. These sites are not eligible for state clean up funding programs.

Quarter-Mile

17) ***Federal Toxic Release Inventory Facilities****:* discharges of selected toxic chemicals to air, land, water or treatment facilities.

Quarter-Mile

18) ***Federal Air Discharges****:* Air pollution point sources monitored by U.S. EPA and/or state and local air regulatory agencies.

Quarter-Mile

19) ***Federal Permit Compliance System Toxic Wastewater Discharges:*** permitted toxic wastewater discharges.

Quarter-Mile

20) ***Federal Civil and Administrative Enforcement Docket****:* judiciary cases filed on behalf of the U. S. Environmental Protection Agency by the Department of Justice.

Property only

21) ***ERNS: Federal Emergency Response Notification System Spills****:* a listing of federally reported spills.

Limitations Of The Information In Your Report

The information presented in your *Environmental Report* has been obtained from various local, state and federal government agencies. Please be aware that: **1)** additional information on individual sites may be available, **2)** newly discovered sites are continually reported and **3)** all map locations are approximate. As a result, this report is intended to be the FIRST STEP in the process of identifying and evaluating possible environmental threats to specific properties and can only serve as a guide for conducting on-site visits or additional, more detailed toxic hazard research.

Toxics Targeting tries to ensure that the information in your report is presented accurately and with minimal alteration. The only systematic changes that are made correct obvious address errors in order to allow sites to be mapped. Any address changes that are made are noted in the map information section at the top of each corresponding *Toxic Site Profile*. Since the information presented in your report is not edited, please be aware that it can contain reporting errors or typographical mistakes made by the site owners/operators or government agencies that produced the information. Please be aware of some other limitations of the information in your report:

- The map used by *Toxics Targeting* is the same one used by the U. S. Census. While the map is generally accurate, no map is perfect. In addition, *Toxics Targeting's* mapping methods estimate where toxic site addresses are located if the address is not specifically designated on the Census map. FOR THESE REASONS, ALL MAP LOCATIONS OF ADDRESSES AND REPORTED TOXIC SITES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY ON-SITE VISITS;

- UNDISCOVERED, UNREPORTED OR UNMAPPABLE TOXIC SITES MIGHT NOT BE IDENTIFIED BY THIS REPORT'S CHECK OF 21 TOXIC SITE CATEGORIES. TOXIC SITES REPORTED IN OTHER GOVERNMENT DATABASES MIGHT ALSO EXIST. FOR THESE REASONS, YOUR REPORT MIGHT NOT IDENTIFY ALL THE TOXIC SITES THAT EXIST IN THE AREA IT SEARCHES;

- The appendix of your report contains a listing of sites that could not be mapped due to incomplete or erroneous address information or other mapping problems. This listing includes unmappable toxic sites in zip code areas within one mile of the target address as well as toxic sites without zip codes reported in the same county. IF YOU WOULD LIKE INFORMATION ON ANY OF THE LISTED SITES, PLEASE CONTACT *TOXICS TARGETING AND REFER TO THE SITE ID NUMBER.*

- Some toxic sites identified in your report may be classified as **known hazards**. Most of the toxic sites identified in your report involve **potential hazards** related to the on-site use, manufacture, handling, storage, transport or disposal of toxic chemicals. Some of the toxic sites identified in your report may be the addresses of parties responsible for toxic sites located elsewhere. YOU SHOULD ONLY CONCLUDE THAT TOXIC HAZARDS ACTUALLY EXIST AT A SPECIFIC SITE WHEN GOVERNMENT AUTHORITIES MAKE THAT DETERMINATION OR WHEN THAT CONCLUSION IS FULLY DOCUMENTED BY THE FINDINGS OF AN APPROPRIATE SITE INVESTIGATION UNDERTAKEN BY LICENSED PROFESSIONALS;

- Compass directions and distances are approximate. Compass directions are calculated from the subject property address to the mapped location of each identified toxic site. The compass direction does not necessarily refer to the closest property boundary of an identified toxic site. The compass direction also can vary substantially for toxic sites that are located very close to the subject property address.

- The information presented in your report is a summary of the information that *Toxics Targeting* obtains from government agencies on reported toxic sites. YOU MAY BE ABLE TO OBTAIN ADDITIONAL INFORMATION ABOUT REPORTED SITES WITH THE FREEDOM OF INFORMATION REQUEST FORM LETTERS THAT ARE PROVIDED ON THE INSIDE OF THE BACK COVER.

Section One:

Report Summary

- *Table One: Number of Identified Toxic Sites By Distance Interval*
- *Table Two: Identified Toxic Sites By Direction*
- *Table Three: Identified Toxic Sites By Category*
- *Table Four: Identified Toxic Sites By Proximity*
- *Map One: One-Mile Radius Map*
- *Map Two: Half-Mile Radius Map*
- *Map Three: Quarter-Mile Radius Map*
- *Map Four: Quarter-Mile Radius Close up Map*

NUMBER OF IDENTIFIED SITES BY DISTANCE INTERVAL

Database Searched	0 − 100 ft	100 ft − 1/8 mi	1/8 mi − 1/4 mi	1/4 mi − 1/2 mi	1/2 mi − 1 mi	Site Category Totals
ASTM−Required 1 Mile Search						
National Priority List (NPL) Sites	0	0	0	0	0	0
NYS Inactive Hazardous Waste Disposal Site Registry	0	0	1	0	0	1
NYS Inactive Haz Waste Disposal Site Registry Qualifying	0	0	0	0	0	0
RCRA Corrective Action (CORRACTS) Sites	0	0	0	0	0	0
ASTM−Required 1/2 Mile Search						
Delisted National Priority List (NPL) Sites	0	0	0	0	Not searched	0
CERCLIS Superfund Non−NFRAP Sites	0	0	0	0	Not searched	0
CERCLIS Superfund NFRAP Sites	0	0	1	0	Not searched	1
Brownfields Sites						
Voluntary Cleanup Program	0	0	0	0	Not searched	0
Environmental Restoration Program	0	0	0	0	Not searched	0
Brownfield Cleanup Program	0	0	0	0	Not searched	0
NYSDEC Solid Waste Facilities / Landfills	0	4	2	0	Not searched	6
RCRA Hazardous Waste Treatment, Storage, Disposal Sites	0	0	0	0	Not searched	0
NYS Toxic Spills						
Active Tank Failures	0	0	0	0	Not searched	0
Active Tank Test Failures	0	0	0	0	Not searched	0
Active Spills − Unknown / Other Causes	0	0	0	0	Not searched	0
Active Spills − Miscellaneous Causes	0	0	0	0	Not searched	0
Closed Tank Failures	0	2	0	0	Not searched	2
Closed Tank Test Failures	0	0	0	0	Not searched	0
Closed Spills − Unknown / Other Causes	0	3	0	0	Not searched	3
Closed Spills − Miscellaneous Causes	0	10	1	0	Not searched	11
ASTM−Required Property & Adjacent Property (1/4 Mile Search)						
NYS Major Oil Storage Facilities	0	0	0	Not searched	Not searched	0
Local & State Petroleum Bulk Storage Sites	1	2	0	Not searched	Not searched	3
RCRA Hazardous Waste Generators & Transporters	0	2	4	Not searched	Not searched	6
NYS Chemical Bulk Storage Sites	0	1	0	Not searched	Not searched	1
Emergency Response Notification System (ERNS)	0	Not searched	Not searched	Not searched	Not searched	0
Institutional Controls / Engineering Controls (IC/EC)	See databases for NPL, CERCLIS, Inactive Hazardous Waste Disposal Site Registry and Brownfield Sites.					
ASTM−Required Databases Distance Interval Totals	**1**	**24**	**9**	**0**	**0**	**34(0)**

Numbers in ( ) indicate spills not mapped and profiled in this report, and are listed at the end of the active and closed spills sections. See these lists for a description of the parameters involved with identifying these spills.

NOTE: Table continues on next page.

Non−ASTM Databases 1/2 Mile Search						
Hazardous Substance Waste Disposal Sites	0	0	0	0	Not searched	0
Non−ASTM Databases 1/4 Mile Search						
Toxic Release Inventory Sites (TRI)	0	0	0	Not searched	Not searched	0
Permit Compliance System (PCS) Toxic Wastewater Discharges	0	1	0	Not searched	Not searched	1
Air Discharges	0	2	0	Not searched	Not searched	2
Civil & Administrative Enforcement Docket Facilities	0	0	0	Not searched	Not searched	0
Non−ASTM Databases Distance Interval Totals	**0**	**3**	**0**	**0**	**Not Searched**	**3**
Distance Interval Totals	***1***	***27***	***9***	***0***	***0***	***37(0)***

Numbers in ( ) indicate spills not mapped and profiled in this report, and are listed at the end of the active and closed spills sections. See these lists for a description of the parameters involved with identifying these spills.

Identified Toxic Sites by Direction

Amy's Kitchen – verHage
Goshen, NY 10924

* Compass directions can vary substantially for sites located very close to the subject property address.

Sites less than 100 feet from subject property sorted by distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
26	WASTE MANAGEMENT OF NY, LLC	95 HARTLEY RD	84 feet to the S*	Petroleum Bulk Storage Site

Sites between 100 ft and 660 ft from the subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
18	POWER LINE RIGHT−OF−WAY	160 HARTLEY RD	268 feet to the NE	Closed Status Spill (Misc. Spill Cause)
10	ALL WASTE SYSTEMS INC	HARTLY RD	109 feet to the S*	Closed Status Tank Failure
11	WASTE MANAGEMENT	95 HARTLEY ROAD	109 feet to the S*	Closed Status Tank Failure
12	WASTE MANAGEMENT	95 HARTLY ROAD	109 feet to the S*	Closed Status Spill (Unk/Other Cause)
13	AMERSCO	95 HARTLEY ROAD	109 feet to the S*	Closed Status Spill (Unk/Other Cause)
15	NORTHERN RECYCLING	HARTLEY RD	109 feet to the S*	Closed Status Spill (Misc. Spill Cause)
16	BUSINESS	95 HARTLY ROAD	109 feet to the S*	Closed Status Spill (Misc. Spill Cause)
17	NORTHERN RECYCLING	95 HARTLEY ROAD	109 feet to the S*	Closed Status Spill (Misc. Spill Cause)
29	ALL−WASTE SYSTEMS INC	PO BOX 284, HARTLEY ROAD	133 feet to the S*	Hazardous Waste Generator/Transporter
30	WASTE MGMT − NORTHERN RECYCLING	95 HARTLEY RD	133 feet to the S*	Hazardous Waste Generator/Transporter
3	NORTHERN RECYCLING	HARTLEY ROAD	149 feet to the S*	Solid Waste Facility
4	IWS GOSHEN TRANSFER STATION (NORTHERN)	95 HARTLEY ROAD	149 feet to the S*	Solid Waste Facility
27	AMERESCO LFG−1, INC.	91 HARTLEY ROAD	266 feet to the S	Petroleum Bulk Storage Site
35	AMERESCO LFG−1, INC.	91 HARTLEY ROAD	275 feet to the S	Chemical Bulk Storage Facility
14	AMERESCO LFG−1,INC	HARTLY RD	278 feet to the S	Closed Status Spill (Unk/Other Cause)
19	EQUIPTMENT FAILURE	91 HARTLEY ROAD	278 feet to the S	Closed Status Spill (Misc. Spill Cause)
20	AL TURI LANDFILL	91 HARTLEY ROAD	278 feet to the S	Closed Status Spill (Misc. Spill Cause)
21	J−W AL TURI	91 HARTLEY RD	278 feet to the S	Closed Status Spill (Misc. Spill Cause)
5	AMERESCO − FORMERLY MIDDLETOWN LFG, LTD.	AL TURI LANDFILL	373 feet to the SSW	Solid Waste Facility
6	MIDDLETOWN LFG, LTD. (AT)	AL TURI LANDFILL	373 feet to the SSW	Solid Waste Facility
37	MIDDLETOWN LFG/JW OPERATING CORP	ROUTE 17M & HARTLEY ROAD	407 feet to the SSW	Air Discharge Site
28	AL TURI LANDFILL	73 HARTLEY ROAD	572 feet to the SSW	Petroleum Bulk Storage Site
36	AL TURI LANDFILL	73 HARTLEY ROAD	584 feet to the SSW	Wastewater Discharge Facility
22	ALTERI LANDFILL	RT 17M	587 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
23	AL TURI LANDFILL	17 M HARTLEY RD	587 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
24	AMARESCO LANDFILL/GAS SIG	73 HARTLEY RD	587 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
38	AL TURI INC (LANDFILL)	RD1 BOX 14	612 feet to the SSW	Air Discharge Site

Sites equal to or greater than 660 ft from subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
25	BASEMENT CONCRETE FLOOR	138 CHEECHUNK ROAD	1281 feet to the NE	Closed Status Spill (Misc. Spill Cause)
1	OLD AL TURI LANDFILL	73 HARTLEY ROAD	750 feet to the SSW	NYSDEC Inactive Haz Waste Disposal Site
2	AL TURI LF	HARTLEY RD	750 feet to the SSW	CERCLIS Superfund NFRAP Site
31	JW OPERATING CO	ALTERI LANDFILL/ROUTE 17	766 feet to the SSW	Hazardous Waste Generator/Transporter
32	AL TURI LANDFILL INC	RTE 17M & HARTLEY RD	766 feet to the SSW	Hazardous Waste Generator/Transporter
33	AL TURI LANDFILL	RR1 BOX 14 HARTLEY RD	766 feet to the SSW	Hazardous Waste Generator/Transporter
34	AL TURI LANDFILL INC.	RD #1 BOX 14 HARTLEY ROAD	766 feet to the SSW	Hazardous Waste Generator/Transporter
7	AL TURI LF, INC.	73 HARTLEY ROAD	773 feet to the SSW	Solid Waste Facility
8	ALTURI GAS RECOVERY		774 feet to the SSW	Solid Waste Facility
9	AL TURI LF, INC.	73 HARTLEY ROAD	1834 feet to the SSW	Solid Waste Facility

Identified Toxic Sites by Category

Amy‘s Kitchen – verHage
Goshen, NY 10924

* Compass directions can vary substantially for sites located very close to the subject property address.

NYSDEC Inactive Haz. Waste Disposal Site Registry –– Total Sites – 1

Database searched at 1 MILE – ASTM required search distance: 1 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
1	336016	OLD AL TURI LANDFILL	73 HARTLEY ROAD	750 feet to the SSW

CERCLIS Superfund NFRAP Sites –– Total Sites – 1

Database searched at 1/2 MILE – ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
2	NYD980506190	AL TURI LF	HARTLEY RD	750 feet to the SSW

Solid Waste Facilities –– Total Sites – 6

Database searched at 1/2 MILE – ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
3	NY00000002417	NORTHERN RECYCLING	HARTLEY ROAD	149 feet to the S*
4	NY40000010175	IWS GOSHEN TRANSFER STATION (NORTHERN)	95 HARTLEY ROAD	149 feet to the S*
5	NY00000002403	AMERESCO – FORMERLY MIDDLETOWN LFG, LTD.	AL TURI LANDFILL	373 feet to the SSW
6	36F02	MIDDLETOWN LFG, LTD. (AT)	AL TURI LANDFILL	373 feet to the SSW
7	NY00000002387	AL TURI LF, INC.	73 HARTLEY ROAD	773 feet to the SSW
8	36E04	ALTURI GAS RECOVERY		774 feet to the SSW
9	NY00000002387	AL TURI LF, INC.	73 HARTLEY ROAD	1834 feet to the SSW

Closed Status Tank Failures –– Total Sites – 2

Database searched at 1/2 MILE – ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
10	9813685	ALL WASTE SYSTEMS INC	HARTLY RD	109 feet to the S*
11	0402719	WASTE MANAGEMENT	95 HARTLEY ROAD	109 feet to the S*

Closed Status Spills (Unknown Causes & Other Causes) –– Total Sites – 3

Database searched at 1/2 MILE – ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
12	0303549	WASTE MANAGEMENT	95 HARTLY ROAD	109 feet to the S*
13	0303544	AMERSCO	95 HARTLEY ROAD	109 feet to the S*
14	0201480	AMERESCO LFG–1,INC	HARTLY RD	278 feet to the S

Closed Status Spills (Miscellaneous Spill Causes) –– Total Sites – 11

Database searched at 1/2 MILE – ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
15	9813898	NORTHERN RECYCLING	HARTLEY RD	109 feet to the S*
16	0508422	BUSINESS	95 HARTLY ROAD	109 feet to the S*
17	0100169	NORTHERN RECYCLING	95 HARTLEY ROAD	109 feet to the S*
18	1407791	POWER LINE RIGHT–OF–WAY	160 HARTLEY RD	268 feet to the NE
19	0703954	EQUIPTMENT FAILURE	91 HARTLEY ROAD	278 feet to the S
20	0102801	AL TURI LANDFILL	91 HARTLEY ROAD	278 feet to the S
21	0001815	J–W AL TURI	91 HARTLEY RD	278 feet to the S
22	8909638	ALTERI LANDFILL	RT 17M	587 feet to the SSW
23	1500285	AL TURI LANDFILL	17 M HARTLEY RD	587 feet to the SSW
24	0607693	AMARESCO LANDFILL/GAS SIG	73 HARTLEY RD	587 feet to the SSW
25	1206546	BASEMENT CONCRETE FLOOR	138 CHEECHUNK ROAD	1281 feet to the NE

Petroleum Bulk Storage Sites –– Total Sites – 3

Database searched at 1/4 MILE – ASTM required search distance: Property & Adjacent

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
26	3–412465	WASTE MANAGEMENT OF NY, LLC	95 HARTLEY RD	84 feet to the S*
27	3–496863	AMERESCO LFG–1, INC.	91 HARTLEY ROAD	266 feet to the S
28	3–457825	AL TURI LANDFILL	73 HARTLEY ROAD	572 feet to the SSW

Hazardous Waste Generators, Transporters −− Total Sites − 6

Database searched at 1/4 MILE − ASTM required search distance: Property & Adjacent

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
29	NYN00003A172	ALL−WASTE SYSTEMS INC	PO BOX 284, HARTLEY ROAD	133 feet to the S*
30	NYR000075499	WASTE MGMT − NORTHERN RECYCLING	95 HARTLEY RD	133 feet to the S*
31	NYD982792194	JW OPERATING CO	ALTERI LANDFILL/ROUTE 17	766 feet to the SSW
32	NYD986895118	AL TURI LANDFILL INC	RTE 17M & HARTLEY RD	766 feet to the SSW
33	NYN000036S04	AL TURI LANDFILL	RR1 BOX 14 HARTLEY RD	766 feet to the SSW
34	NYN30003A470	AL TURI LANDFILL INC.	RD #1 BOX 14 HARTLEY ROAD	766 feet to the SSW

Chemical Bulk Storage Facilities −− Total Sites − 1

Database searched at 1/4 MILE − ASTM required search distance: Property & Adjacent

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
35	3−000323	AMERESCO LFG−1, INC.	91 HARTLEY ROAD	275 feet to the S

Wastewater Discharge Facilities −− Total Sites − 1

Database searched at 1/4 MILE − Non−ASTM Database

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
36	NY0166511	AL TURI LANDFILL	73 HARTLEY ROAD	584 feet to the SSW

Air Discharge Sites −− Total Sites − 2

Database searched at 1/4 MILE − Non−ASTM Database

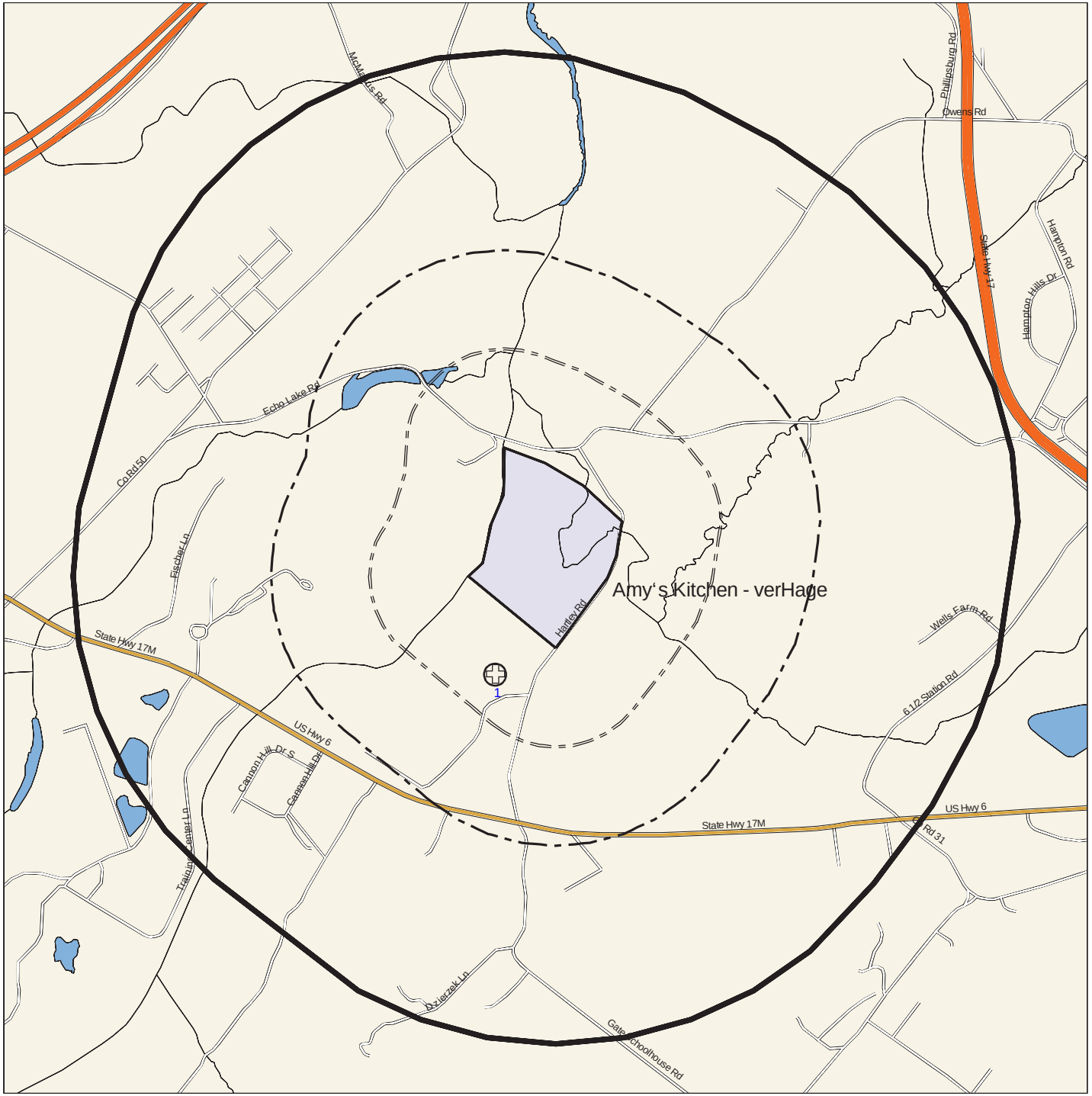
MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
37	3607100150	MIDDLETOWN LFG/JW OPERATING CORP	ROUTE 17M & HARTLEY ROAD	407 feet to the SSW
38	3607100153	AL TURI INC (LANDFILL)	RD1 BOX 14	612 feet to the SSW

Identified Toxic Sites by Proximity

Amy‘s Kitchen − verHage, Goshen, NY 10924

* Compass directions can vary substantially for sites located very close to the subject property address.

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
26	WASTE MANAGEMENT OF NY, LLC	95 HARTLEY RD	84 feet to the S*	Petroleum Bulk Storage Site
10	ALL WASTE SYSTEMS INC	HARTLY RD	109 feet to the S*	Closed Status Tank Failure
11	WASTE MANAGEMENT	95 HARTLEY ROAD	109 feet to the S*	Closed Status Tank Failure
12	WASTE MANAGEMENT	95 HARTLY ROAD	109 feet to the S*	Closed Status Spill (Unk/Other Cause)
13	AMERSCO	95 HARTLEY ROAD	109 feet to the S*	Closed Status Spill (Unk/Other Cause)
15	NORTHERN RECYCLING	HARTLEY RD	109 feet to the S*	Closed Status Spill (Misc. Spill Cause)
16	BUSINESS	95 HARTLY ROAD	109 feet to the S*	Closed Status Spill (Misc. Spill Cause)
17	NORTHERN RECYCLING	95 HARTLEY ROAD	109 feet to the S*	Closed Status Spill (Misc. Spill Cause)
29	ALL−WASTE SYSTEMS INC	PO BOX 284, HARTLEY ROAD	133 feet to the S*	Hazardous Waste Generator/Transporter
30	WASTE MGMT − NORTHERN RECYCLING	95 HARTLEY RD	133 feet to the S*	Hazardous Waste Generator/Transporter
3	NORTHERN RECYCLING	HARTLEY ROAD	149 feet to the S*	Solid Waste Facility
4	IWS GOSHEN TRANSFER STATION (NORTHERN)	95 HARTLEY ROAD	149 feet to the S*	Solid Waste Facility
27	AMERESCO LFG−1, INC.	91 HARTLEY ROAD	266 feet to the S	Petroleum Bulk Storage Site
18	POWER LINE RIGHT−OF−WAY	160 HARTLEY RD	268 feet to the NE	Closed Status Spill (Misc. Spill Cause)
35	AMERESCO LFG−1, INC.	91 HARTLEY ROAD	275 feet to the S	Chemical Bulk Storage Facility
14	AMERESCO LFG−1,INC	HARTLY RD	278 feet to the S	Closed Status Spill (Unk/Other Cause)
19	EQUIPTMENT FAILURE	91 HARTLEY ROAD	278 feet to the S	Closed Status Spill (Misc. Spill Cause)
20	AL TURI LANDFILL	91 HARTLEY ROAD	278 feet to the S	Closed Status Spill (Misc. Spill Cause)
21	J−W AL TURI	91 HARTLEY RD	278 feet to the S	Closed Status Spill (Misc. Spill Cause)
5	AMERESCO − FORMERLY MIDDLETOWN LFG, LTD.	AL TURI LANDFILL	373 feet to the SSW	Solid Waste Facility
6	MIDDLETOWN LFG, LTD. (AT)	AL TURI LANDFILL	373 feet to the SSW	Solid Waste Facility
37	MIDDLETOWN LFG/JW OPERATING CORP	ROUTE 17M & HARTLEY ROAD	407 feet to the SSW	Air Discharge Site
28	AL TURI LANDFILL	73 HARTLEY ROAD	572 feet to the SSW	Petroleum Bulk Storage Site
36	AL TURI LANDFILL	73 HARTLEY ROAD	584 feet to the SSW	Wastewater Discharge Facility
22	ALTERI LANDFILL	RT 17M	587 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
23	AL TURI LANDFILL	17 M HARTLEY RD	587 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
24	AMARESCO LANDFILL/GAS SIG	73 HARTLEY RD	587 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
38	AL TURI INC (LANDFILL)	RD1 BOX 14	612 feet to the SSW	Air Discharge Site
1	OLD AL TURI LANDFILL	73 HARTLEY ROAD	750 feet to the SSW	NYSDEC Inactive Haz Waste Disposal Site
2	AL TURI LF	HARTLEY RD	750 feet to the SSW	CERCLIS Superfund NFRAP Site
31	JW OPERATING CO	ALTERI LANDFILL/ROUTE 17	766 feet to the SSW	Hazardous Waste Generator/Transporter
32	AL TURI LANDFILL INC	RTE 17M & HARTLEY RD	766 feet to the SSW	Hazardous Waste Generator/Transporter
33	AL TURI LANDFILL	RR1 BOX 14 HARTLEY RD	766 feet to the SSW	Hazardous Waste Generator/Transporter
34	AL TURI LANDFILL INC.	RD #1 BOX 14 HARTLEY ROAD	766 feet to the SSW	Hazardous Waste Generator/Transporter
7	AL TURI LF, INC.	73 HARTLEY ROAD	773 feet to the SSW	Solid Waste Facility
8	ALTURI GAS RECOVERY		774 feet to the SSW	Solid Waste Facility
25	BASEMENT CONCRETE FLOOR	138 CHEECHUNK ROAD	1281 feet to the NE	Closed Status Spill (Misc. Spill Cause)
9	AL TURI LF, INC.	73 HARTLEY ROAD	1834 feet to the SSW	Solid Waste Facility



Toxics Targeting
1 Mile Buffer Search Map

Amy's Kitchen - verHage

Goshen, NY 10924

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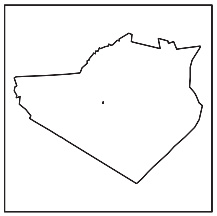


Orange County

National Priority List (NPL)

Inactive Hazardous Waste Disposal Registry Site

Inact. Haz Waste Disp. Registry Qualifying

RCRA Corrective Action Facility

Subject Area

Waterbody

County Border

Railroad Tracks

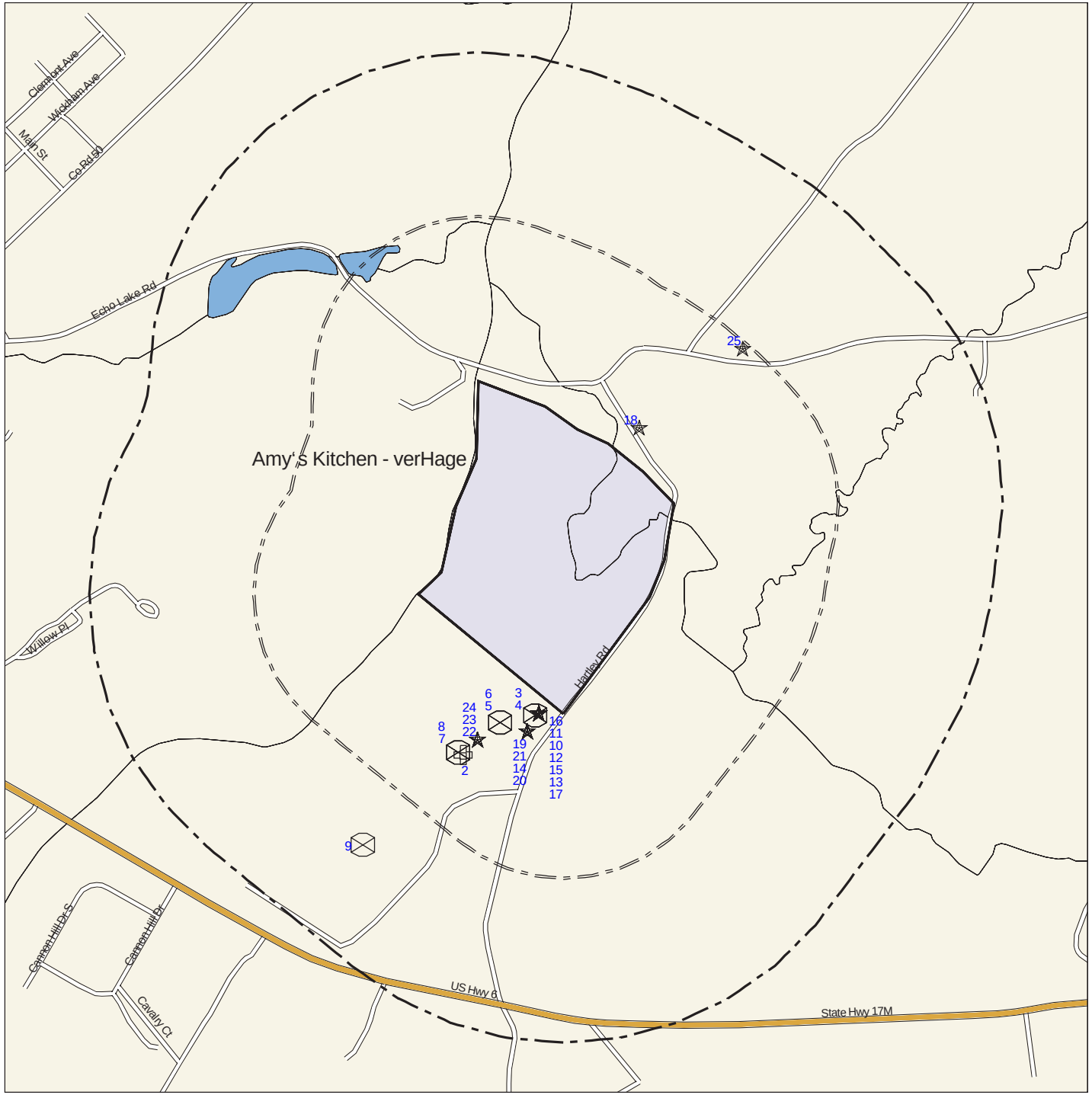
1 Mile Radius

1/2 Mile Radius

1/4 Mile Radius

1/8 Mile Radius

Scale: 1 inch = 1957 feet



Toxics Targeting
1/2 Mile Buffer Search Map

Amy's Kitchen - verHage

Goshen, NY 10924

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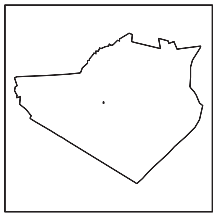


Orange County

Delisted NPL Site

CERCLIS Superfund Non-NFRAP Site

CERCLIS Superfund NFRAP Site

Hazardous Waste Treater, Storer, Disposer

Hazardous Substance Waste Disposal Site

Solid Waste Facility

Brownfields Site

Hazardous Material Spill

Subject Area

Waterbody

County Border

Railroad Tracks

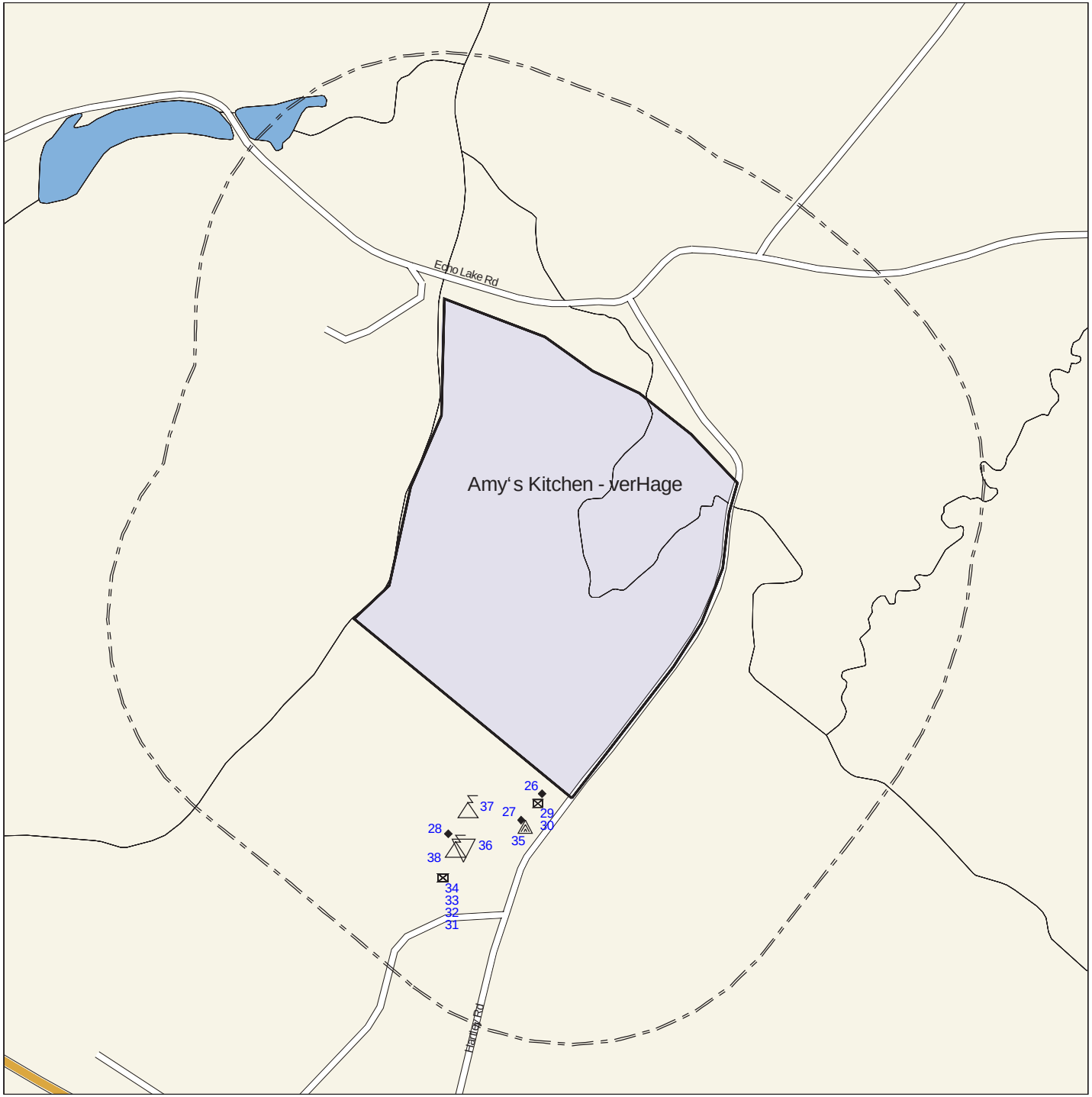
1 Mile Radius

1/2 Mile Radius

1/4 Mile Radius

1/8 Mile Radius

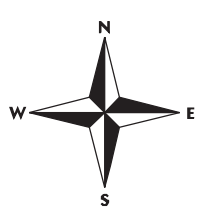
Scale: 1 inch = 1176 feet

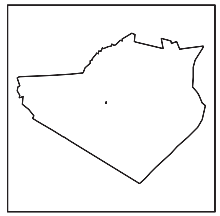


Toxics Targeting
1/4 Mile Buffer Search Map

Amy‘s Kitchen - verHage

Goshen, NY 10924



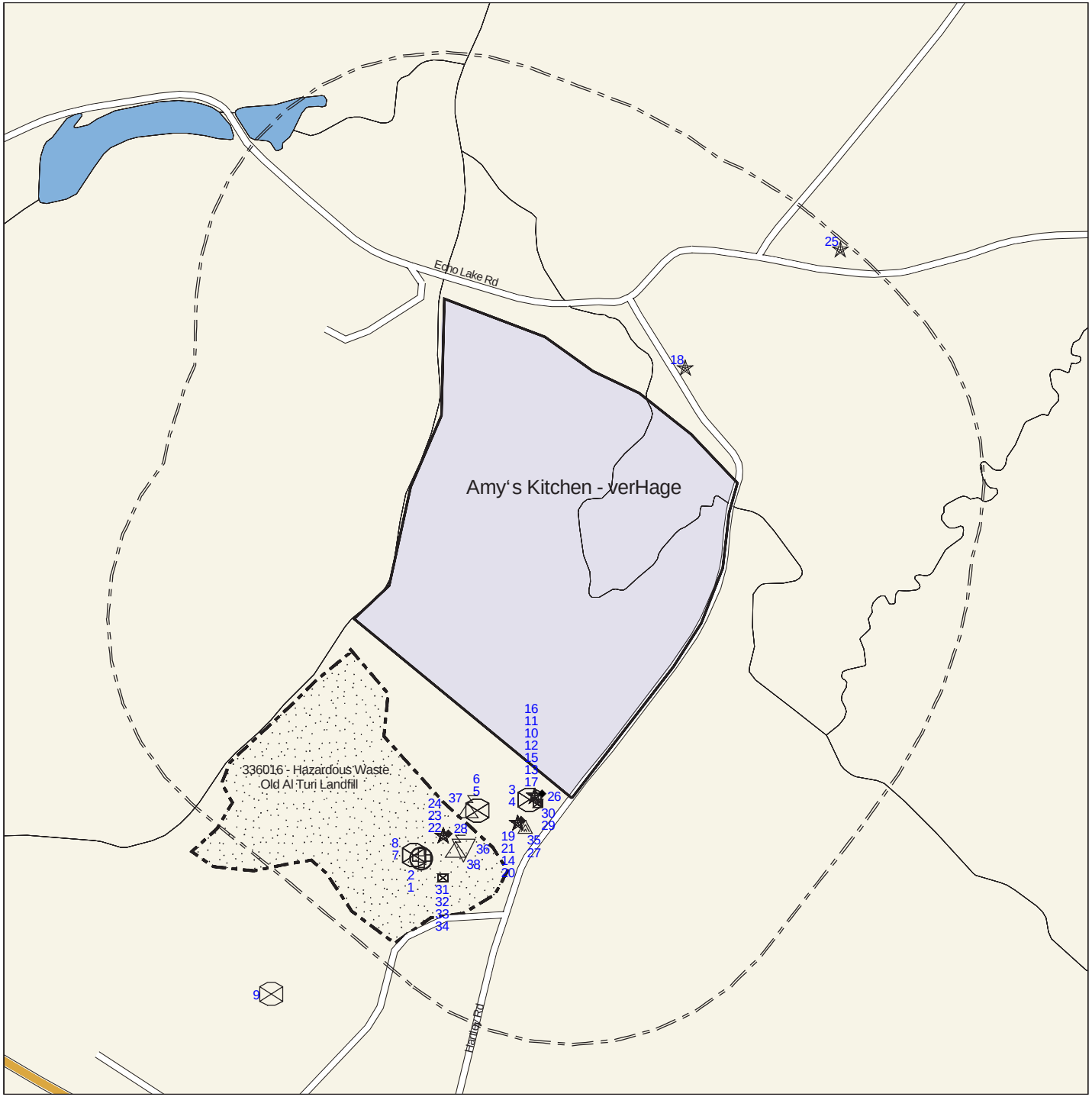


Orange County

- Major Oil Storage Facility
- Chemical Storage Facility
- Toxic Release
- Wastewater Discharge
- Enforcement Docket Facility
- Air Release
- Petroleum Bulk Storage Facility
- Hazardous Waste Generator, Transp.

- Subject Area
- County Border
- 1/4 Mile Radius
- Waterbody
- Railroad Tracks
- 1/8 Mile Radius

Scale: 1 inch = 786 feet



Toxics Targeting
1/4 Mile Buffer Closeup Map

Amy's Kitchen - verHage

Goshen, NY 10924

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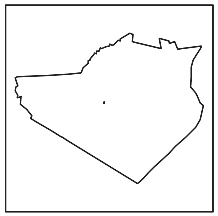

Orange County

- National Priority List (NPL) *
- Delisted NPL Site **
- CERCLIS Superfund Non-NFRAP Site **
- CERCLIS Superfund NFRAP Site **
- Inactive Hazardous Waste Disposal Registry Site *
- Inact. Haz Waste Disp. Registry Qualifying *
- Hazardous Waste Treater, Storer, Disposer **
- RCRA Corrective Action Facility *
- Hazardous Substance Waste Disposal Site **
- Solid Waste Facility **
- Major Oil Storage Facility ***
- Brownfields Site **
- Chemical Storage Facility ***
- Hazardous Material Spill **
- Toxic Release ***
- Wastewater Discharge ***
- Petroleum Bulk Storage Facility ***
- Enforcement Docket Facility ***
- Hazardous Waste Generator, Transp. ***
- Air Release ***
- Remediation Site Borders

- Subject Area
- Waterbody
- County Border
- Railroad Tracks
- 1/4 Mile Radius
- 1/8 Mile Radius

Scale: 1 inch = 786 feet

* 1 Mile Search Radius

** 1/2 Mile Search Radius

*** 1/4 Mile Search Radius

Section Two: Toxic Site Profiles

The heading of each *Toxic Site Profile* refers to the site's map location and details:

- The facility name, address, city, state, and zip code.
- Any changes that were made to a site's address in order to map its location.
- The site mapping method that was used (see ***How Sites are Located***, at the end of this section for more information).

Toxic Site Profiles summarize information provided by site owners or operators and government agencies regarding various toxic chemical activities reported at each site, such as:

- Whether chemicals were stored, produced, transported, discharged or disposed of.
- The name of chemicals and their Chemical Abstract Series (CAS) numbers.
- The amount of chemicals and the units (gallons/pounds) the chemical was measured in.
- Whether the site or storage tanks at the site are currently active or inactive.
- Special codes used by government agencies to regulate hazardous waste activities at some sites, or a complete description of the codes follows the profiles section.

For selected individual chemicals reported at various toxic sites, some potential health effect summary information appears below the site profile. Each potential health effect summary identifies chemicals by name and by Chemical Abstract Series (CAS) Number. An "x" under each potential health effect heading indicates positive toxicity testing results reported by the National Institute of Occupational Safety and Health's Registry of Toxic Effects of Chemical Substances (RTECS). Some chemicals (mostly appearing in profiles of Hazardous Waste facilities), are reported as mixtures, and RTECS health effect information is only available for individual chemicals. In addition, RTECS only provides information on approximately 100,000 common chemicals. Consequently, the absence of potential health effect summary information for a particular chemical identified in a Toxic Site Profile does not necessarily mean that the chemical does not pose potential health effects.

The Maximum Contaminant Level (MCL) in drinking water allowed for selected chemicals is also noted. In most cases, the only applicable MCL has been set by the New York State Department of Health (NYSDOH). Where NYSDOH has not set an MCL, the federal standard, if one exists, is listed and is marked by an asterisk.

Presented below are column headings that describe the health effect definitions used in RTECS and applicable New York State and federal drinking water standards. Reference sources for information presented in this section are also provided.

ACUTE TOX: **Acute Toxicity**: Short-term exposure to this chemical can cause lethal and non-lethal toxicity effects not included in the following four categories.

TUMOR TOX: **Tumorigenic Toxicity**: The chemical can cause an increase in the incidence of tumors.

MUTAG TOX: **Mutagenic Toxicity**: The chemical can cause genetic alterations that are passed from one generation to the next.

REPRO TOX: **Reproductive Toxicity**: May signify one of the following effects: maternal effects, paternal effects, effects on fertility, effects on the embryo or fetus, specific developmental abnormalities, tumorigenic effects, or effects on the newborn (only positive reproductive effects data for mammalian species are referenced).

IRRIT TOX: **Primary Irritant**: The chemical can cause eye or skin irritation.

MCL: **Drinking Water Standard - Maximum Contaminant Level** (MCL) listed under Drinking Water Supplies, 10 NYCRR Part 5, Subparts 1.51(f),(g), and (h) for NYDOH MCL's and under the Safe Drinking Water Act, 40 CFR 141, Subparts B and G, (* indicates value for total trihalomethanes) for federal MCL's.

Reference Source for Toxicity Information: Registry of Toxic Effects of Chemical Substances (RTECS), NIOSH (on-line database); For further information, contact: NIOSH, 4676 Columbia Parkway, Cincinnati, OH, 45226, 800/35-NIOSH.

Reference Source for Drinking Water Standards: New York State Department of Health, Bureau of Toxic Substances Assessment, 2 University Place, Room 240, Albany, NY 12203, 518/458-6373.

U.S. Environmental Protection Agency, Office of Drinking Water, 401 M St SW, Mailstop WH-556, Washington, DC, 20460, 202/260-5700.

Inactive Hazardous Waste Disposal Site Classifications:

1 -- Causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or the environment -- immediate action required;
2 -- Significant threat to the public health or environment -- action required;
3 -- Does not Present a significant threat to the environment or public health -- action may be deferred;
4 -- Site properly closed --requires continued management;
5 -- Site properly closed, no evidence of present or potential adverse impact -- no further action required;
2a -- This temporary classification has been assigned to sites where there is inadequate data to assign them to the five classifications specified by law;
A -- Work underway and not yet complete;
P -- Potential Site;
$D_{1, 2, 3}$ -- Delisted Site (1: hazardous waste not found; 2: remediated; 3: consolidated site or site incorrectly listed);
C -- Remediation Complete (formerly D2).

NO NATIONAL PRIORITIES LIST (NPL) SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

INACTIVE HAZ WASTE DISPOSAL REGISTRY OR REGISTRY−QUALIFYING SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 1 **OLD AL TURI LANDFILL** **Facility Id: 336016**
73 HARTLEY ROAD GOSHEN, NY 10924 TT−Id: 120A−0004−885

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 750 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Special Note: This site is one of 421 Inactive Hazardous Waste Disposal Sites that reportedly are being reinvestigated for chlorinated solvents that may pose soil gas vapor intrusion hazards. Prior to 2003, many of these sites were determined to be cleaned up or not to pose hazards.

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 336016
CLASSIFICATION CODE: 04 REGION: 3 DEC ID: 56005
CLASSIFICATION CODE DESCRIPTION:
Site is properly closed - requires continued management.

NAME OF SITE: Old Al Turi Landfill
STREET ADDRESS: 73 Hartley Road TOWN: Goshen
CITY: Goshen ZIP: 10924 COUNTY: Orange

ESTIMATED SIZE: 43.5 Acres
SITE TYPE: Dump- Structure- Lagoon- Landfill-X Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
Ground Water Use Restriction
Cover System
Deed Restriction

CROSS REFERENCES:

IDENTIFIER	SOURCE
36-S-04	Muni. Waste ID

Deed control No County Recording Identifier
NYD980506190 EPA Site ID
W3-00777-87-06 Agreement/Consent Order Number

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:
CURRENT OWNER(S):

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:
NAME: AL TURI LANDFILL, INC. Operator Type: PRP - Class 2 HazSubs
JOSEPH GAMBINO
ADDRESS: 73 HARTLEY ROAD
GOSHEN, NY 10924

HAZARDOUS WASTE DISPOSAL PERIOD: from 1968 to 1983

SITE DESCRIPTION:
Location Description: This 44 acre site is a privately owned, inactive and unlined landfill located west of the Village of Goshen in Orange County. The landfill is bordered on the west by a man-made diversion of the Wallkill River known as the Cheechunk Canal, to the east by Hartley Road, to the south by Route 17M, and to the north by a meadow owned by the Al Turi Landfill.

Site Features: The landfill has been capped with geo-membrane, a barrier protection layer of soil and top soil capable of sustaining a vegetative cover. There is a gas collection and monitoring system installed on-site and the gas is used to generate electricity or is flared when the generator is not operational. An adjoining solid waste landfill, also owned by Al Turi, Inc., has also been closed.

Current Use: The site is not in use.

Surrounding Uses: The area is primarily industrial with scattered residential development. To the west of the site is the Hudson Psychiatric Center. Commercial and mixed use establishments exist north and south of the site.

Historical Sources of Contamination: The landfill accepted wastes from municipal, commercial and industrial sources from 1968 to 1981. Right-to-know reports indicate that at least 230 tons of still bottom residue, waste solvents and allyl isothiocyanate waste were disposed of at this site during the 1970’s from Hercules, Inc.

Investigation/Actions completed to date: Groundwater monitoring has been conducted at the site since 1979. A Remedial Investigation/ Feasibility was completed in 1996 and a Record of Decision (ROD) was issued in March 1996. Pursuant to the ROD, the landfill was capped in accordance with Part 360, a groundwater monitoring network was established and institutional controls in the form of a deed restriction were put in place. Construction of the remedy was completed in August 2001. A contingency plan to address any significant impact to the Wallkill River, also required by the ROD, is in place.

The potential for soil vapor intrusion was evaluated by the NYSDOH and the NYSDEC, and no further actions were deemed necessary in July 2008.

Current Status: Groundwater and landfill gas are monitored periodically. A 2009 review of the semi-annual analytical results for the years 2006 to 2008 indicates that the Ground Water Trigger Levels (GWTLs) have not been exceeded. The decrease in the median concentration of ammonia since the capping of the landfill in 2001 indicates that the implemented remedy has been effective in decreasing leachate-related groundwater quality impact at the site.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
VINYL CHLORIDE	UNKNOWN
CHLOROETHYLENE	UNKNOWN
ETHYLIDENE DICHLORIDE	UNKNOWN
CYANIDES(SOLUBLE CYANIDE SALTS)	UNKNOWN
BARIUM	UNKNOWN
MAGNESIUM	UNKNOWN
MANGANESE	UNKNOWN
IRON	UNKNOWN
BENZENE	UNKNOWN
DICHLOROETHYLENE	UNKNOWN
TRICHLOROETHENE (TCE)	UNKNOWN
1,1-DICHLOROETHANE	UNKNOWN
TRICHLOROMONOFLUOROMETHANE	UNKNOWN
1,2-DICHLOROETHANE	UNKNOWN
DICHLORODIFLUOROMETHANE	UNKNOWN
CHROMIUM	UNKNOWN
ZINC	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Nature and Extent of Contamination: The contaminants of concern identified at this site include inorganics (metals) and volatile organic compounds.

Unknown quantities of the following volatile organic compounds (VOCs) are suspected to have been disposed at the site: vinyl chloride, benzene, dichlorodifluoromethane, cis-1,2-dichloroethene, and 1,1-dichloroethane.

Extent of contamination: Groundwater in the vicinity of the landfill has been impacted. Since the groundwater discharges to the nearby Wallkill River, the potential for impact to the Wallkill River is being monitored to ensure that the thresholds levels established in the contingency plan for the various contaminants of concern are not exceeded.

For each of the thirteen groundwater wells that are monitored as a part of the contingency plan, groundwater trigger levels for the contaminants of concern have been established.

ASSESSMENT OF HEALTH PROBLEMS:

Contact with contaminated soils is not likely because the soils are consolidated, covered by clean fill, and a fence surrounds the site. Drinking contaminated groundwater is not expected since there are no private water supplies downgradient from the site.

PROJECT COMPLETIONS:
Operable Unit 01 - REMEDIAL PROGRAM

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Investigation		03/01/1996	Actual
Remedial Design		07/01/1998	Actual
Remedial Action		08/15/2001	Actual

The New York State Department of Environmental Conservation has not publicly updated the following fields since 2003:

ANALYTICAL DATA AVAILABLE FOR:	Air-X	Surface Water-X	Groundwater-X	Soil-X	Sediment-X
APPLICABLE STANDARDS EXCEEDED IN:	Groundwater-X	Drinking Water-	Surface Water-	Air-	

GEOTECHNICAL INFORMATION:

SOIL/ROCK TYPE:	Intermixed sand-rich and silt-rich loam over till.			
GROUNDWATER DEPTH:	Range: 10 to 70 feet.			
LEGAL ACTION:	Type: Consent Order		State-X	Federal-
STATUS:	Negotiation in Progress-		Order Signed-X	
REMEDIAL ACTION:	Proposed-	Under Design-X	In Progress-	Completed-X
NATURE OF ACTION:	Cap.			

NO RCRA CORRECTIVE ACTION SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

CERCLIS SUPERFUND SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 2 **AL TURI LF** **EPA Facility Id: NYD980506190**
HARTLEY RD GOSHEN, NY 10924 TT−Id: 240A−0006−066

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 750 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

****

USEPA COMPREHENSIVE ENVIRONMENTAL RESPONSE
COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)

SITE INFORMATION

EPA-ID: NYD980506190 Site-ID: 0201688
Site Name: AL TURI LF
Site Street: HARTLEY RD
Site City/State/Zip: GOSHEN, NY 10924

NFRAP (No Further Remedial Activity Planned) Status: NO FURTHER REMEDIAL ACTION PLANNED

USGS Hydrological Unit: 02020008 NPL Status Indicator: Not on the NPL
Incident Category: RCRA Flag:
Non-NPL Status: NFRAP Non-NPL Stat Date: 03/30/1993
Federal Facility Flag: Not a Federal Facility

SITE DESCRIPTION
The following information was dropped by the US EPA:
GW ON-SITE IS CONTAMINATED WITH ORGANIC & INORGANIC CONTAMINANTS. THE DEC IS ALREADY CONDUCTING A RI AT THE FACILITY UNDER THE STATE'S AUTHORIZATION.

OPERABLE UNIT INFORMATION

Operable Unit ID: 00 Operable Unit Name: SITEWIDE

ACTION INFORMATION

Name:	Discovery	Start Date:		Operable Unit ID: 00
Lead:	EPA Fund-Financed	Completion Date:	08/01/1980	
Qualifier:		Fin Budget Src:		
Name:	Preliminary Assessment	Start Date:	05/20/1987	Operable Unit ID: 00
Lead:	State, Fund Financed	Completion Date:	06/08/1987	
Qualifier:	High	Fin Budget Src:	Remedial	
Name:	Site Inspection	Start Date:	10/01/1988	Operable Unit ID: 00
Lead:	State, Fund Financed	Completion Date:	11/01/1988	
Qualifier:	NFRAP (No Futher Remedial Action Planned)	Fin Budget Src:	Remedial	
Name:	Archive Site	Start Date:		Operable Unit ID: 00
Lead:	EPA In-House	Completion Date:	03/30/1993	
Qualifier:		Fin Budget Src:		

FINANCIAL INFORMATION

No financial information was provided

NO BROWNFIELDS SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

SOLID WASTE FACILITIES IDENTIFIED WITHIN THE 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 3 **NORTHERN RECYCLING** **Facility Id: NY00000002417**
HARTLEY ROAD, GOSHEN, NY 0 TT−Id: 390A−0014−889

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 149 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
36W01	C&D processing − permit	No	None	06/01/1997			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
Frank Celli PO Box 591, GOSHEN, NY, 10924	Owner	02/08/2002	

Map Identification Number 4 **IWS GOSHEN TRANSFER STATION (NORTHERN)** **Facility Id: NY40000010175**
95 HARTLEY ROAD, GOSHEN, NY 10924 TT−Id: 390A−0008−928

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 149 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
36T07	Transfer station − permit	Yes	Permit	02/17/2001			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
Anthony Gambino	Operator	02/17/2001	
Interstate Waste Services 89 Black Meadow Road, Chester, NY, 10918	Owner	02/17/2001	

Map Identification Number 5 **AMERESCO − FORMERLY MIDDLETOWN LFG, LTD.** **Facility Id: NY00000002403**
AL TURI LANDFILL, GOSHEN, NY 10924 TT−Id: 390A−0008−803

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 373 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: ALLEY TURI LANDFILL
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
36F01	Landfill gas recovery	Yes	None	02/17/2002			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
Lori Smith United States	Operator	02/08/2002	
Ameresco LFG−1, Inc 1230 Oakwood Lane, Hudson, WI, 54016	Owner	02/08/2002	

Map Identification Number 6 **MIDDLETOWN LFG, LTD. (AT)** **Facility Id: 36F02**
AL TURI LANDFILL, GOSHEN, NY 10924 TT−Id: 380A−0002−124

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 373 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: HARTLEY RD
Revised zip code: NO CHANGE

The following is historic data. The Activity ID (Facility ID) is attributed to the following facility:
Facility ID: NY00000002400
Facility Name: LANDFILL ENERGY PARTNERS
Facility Address: ORANGE COUNTY LF, GOSHEN, NY

PERMIT NUMBER	PERMIT EXPIRES	FACILITY TYPE	FACILITY STATUS	WASTE TYPES
3333000084000010	02/17/2000	LANDFILL GAS RECOVERY	None	'Landfill Gas'

Map Identification Number 7 **AL TURI LF, INC.** **Facility Id: NY00000002387**
73 HARTLEY ROAD, GOSHEN, NY 10924 TT−Id: 390A−0014−888

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 773 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
36S04	Landfill − municipal solid waste	No	Permit	02/17/2002			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
Al Turi, Inc 73 Hartley Road, Goshen, NY, 10924	Owner	02/08/2002	
Joseph Gambino United States	Operator	02/08/2002	
Joesph Gambino United States	Contact	02/08/2002	
Joseph Gambino − President RR 3 Box 14, Hartly Rd., Goshen, NY, 10924−	Financial Assurance Contact	02/12/2002	

Map Identification Number 8 **ALTURI GAS RECOVERY** **Facility Id: 36E04**
TT−Id: 380A−0002−114

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 774 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: HARTLEY RD
Revised zip code: 10924

The following is historic data. The Activity ID is not associated with any other solid waste facilities.

PERMIT NUMBER	PERMIT EXPIRES	FACILITY TYPE	FACILITY STATUS	WASTE TYPES
4432		SOLID WASTE INCINERATOR WITH ENERGY RECOVERY		XX

Map Identification Number 9 **AL TURI LF, INC.** **Facility Id: NY00000002387**
73 HARTLEY ROAD, GOSHEN, NY 10924 TT−Id: 390A−0008−792

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 1834 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
36S04	Landfill − municipal solid waste	No	Permit	02/17/2002			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
Al Turi, Inc 73 Hartley Road, Goshen, NY, 10924	Owner	02/08/2002	
Joseph Gambino United States	Operator	02/08/2002	
Joesph Gambino United States	Contact	02/08/2002	
Joseph Gambino − President RR 3 Box 14, Hartly Rd., Goshen, NY, 10924−	Financial Assurance Contact	02/12/2002	

NO HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSERS IDENTIFIED WITHIN THE 1/2 MILE SEARCH RADIUS

HAZARDOUS MATERIAL SPILLS INTRODUCTION

The Hazardous Material Spills in this section are divided into eight spill cause groupings. These include:

Active Spills Section: Spills with incomplete paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

1) Tank Failures
2) Tank Test Failures
3) Unknown Spill Cause or Other Spill Cause Hazardous Spills
4) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, Vandalism and Storms.

Closed Status Spills Section: Spills with completed paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

5) Tank Failures
6) Tank Test Failures
7) Unknown Spill Cause or Other Spill Cause Hazardous Spills
8) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, Vandalism and Storms.

All spills within each spill cause category are presented in order of proximity to the subject site address.

Please note that spills reported within 0.25 mile (or one−eighth mile in New York City) are mapped and profiled.

Between 0.25 mile (or one−eighth mile in New York City) and 0.5 mile, only the following spills are mapped and profiled:

* Tank Failures;

* Tank Test Failures;

* Unknown Spill Cause or Other Spill Cause;

* Spills greater than 100 units of quantity; and

* Spills reported in the NYSDEC Fall 1998 MTBE Survey.

A table at the end of each section presents a listing of reported Miscellanous Spills with less than 100 units located between 0.25 mile (or one−eighth mile in Manhattan) and 0.5 mile. These spills are neither mapped nor profiled.

NO ACTIVE TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 mile. Between 1/4 mile and 1/2 mile search radius, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

THE FOLLOWING ACTIVE SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE SEARCH RADIUS FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM, OR STORMS. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY

No dropped spills found for this category

CLOSED STATUS TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 10 **ALL WASTE SYSTEMS INC** **Spill Number: 9813685** **Close Date: 06/28/1999**
HARTLY RD GOSHEN, NY TT−Id: 520A−0308−463
PO BOX 591

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 109 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: HARTLEY RD
Revised zip code: 10924

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	JOHN − ALL WASTE SYSTEMS INC	Spiller Phone:	(914) 294−8808
Notifier Type:	Other	Notifier Name:	MARK LOUREIRO	Notifier Phone:	(717) 586−1306
Caller Name:	MARK LOUREIRO	Caller Agency:	D & A ENVIRONMENTAL	Caller Phone:	(717) 586−1306
DEC Investigator:	dvwehrfr	Contact for more spill info:	JOHN	Contact Person Phone:	(914) 294−8808

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/09/1999		TANK FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

removed 2 under ground tanks & encountered contaminated soil − they are excavating soil at this time − so far have removed about 30 cubic yards

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "WEHRFRITZS"

Map Identification Number 11 **WASTE MANAGEMENT** **Spill Number: 0402719** **Close Date: 06/14/2004**
95 HARTLEY ROAD GOSHEN, NY TT−Id: 520A−0240−888

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 109 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	GEORGE CABEL JR. − GM CABEL TRUCKING	Spiller Phone:	(570) 233−1134
Notifier Type:	Affected Persons	Notifier Name:	CHRIS DOLCE	Notifier Phone:	(845) 294−1555
Caller Name:	CHRIS DOLCE	Caller Agency:	WASTE MANAGEMENT	Caller Phone:	(845) 294−1555
DEC Investigator:	DVWEHRFR	Contact for more spill info:	CHRIS DOLCE	Contact Person Phone:	(845) 294−1555

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/11/2004		TANK FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	45.00	GALLONS	45.00	GALLONS	SOIL

Caller Remarks:

Spill has been cleaned up with speedydri.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "WEHRFRITZ"

NO CLOSED STATUS TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

CLOSED STATUS UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 12 **WASTE MANAGEMENT** **Spill Number: 0303549** **Close Date: 08/30/2003**
95 HARTLY ROAD GOSHEN, NY TT−Id: 520A−0308−465

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 109 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: 95 HARTLY RD
Revised zip code: 10924

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	SORRENTO CHEESE	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:		Notifier Phone:	
Caller Name:	RANDALL BURR	Caller Agency:	WASTE MANAGEMENT	Caller Phone:	(845) 294−1555
DEC Investigator:	jkomara	Contact for more spill info:	RANDALL BURR	Contact Person Phone:	(845) 294−1555

Category: Known release which created a fire/explosion hazards (inside or outdoors), drinking water supply contamination, or significant releases to surface waters.
Class: Unknown RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/04/2003		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDROGEN PEROXIDE	HAZARDOUS MATERIAL	0	GALLONS	0	GALLONS	SOIL
POTASSIUM PERMANGANATE	HAZARDOUS MATERIAL	0	GALLONS	0	GALLONS	SOIL
CALCIUM CHLORIDE	OTHER	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

materials came in a 30 yard container that was picked up by waste management − the container was picked up at serento cheese on 17a in goshen − they are isolating the material into another 30 yard container − a portion of it was involved in a fire − goshen fire dept responded − dht septic is coming to pump the water out of the containment are tomorrow − DUPLICATE SPILL − 0303544

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "O’MARA"

Map Identification Number 13 **AMERSCO** **Spill Number: 0303544** **Close Date: 01/22/2009**
95 HARTLEY ROAD GOSHEN, NY TT−Id: 520A−0240−851

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 109 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ROBERT YANKANIN	Spiller Phone:	(914) 774−1727
Notifier Type:	Fire Department	Notifier Name:	GOSHEN CAR 2	Notifier Phone:	
Caller Name:	DISP BABCOCK	Caller Agency:	ORANGE CO FIRE	Caller Phone:	(845) 469−4911
DEC Investigator:	Unassigned	Contact for more spill info:	ROBERT YANKANIN	Contact Person Phone:	(914) 774−1727

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/04/2003		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN HAZARDOUS MATERIAL	HAZARDOUS MATERIAL	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

occurring at a waste management facility − fd on the scene of a fire that is out of control − several oxidizers involved − fd is req a call back

DUPLICATE SPILL − 0303549

DEC Investigator Remarks:

NFA DT

Map Identification Number 14 **AMERESCO LFG−1,INC** **Spill Number: 0201480** **Close Date: 09/30/2002**
HARTLY RD GOSHEN, NY TT−Id: 520A−0308−466

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 278 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: HARTLEY RD
Revised zip code: 10924

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	AMERESCO LFG−1,INC	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	STEVEN MILLER	Notifier Phone:	
Caller Name:	ANTHONY RUSSO	Caller Agency:	ENVIROMENTAL COMPLIENCE	Caller Phone:	(845) 342−6540
DEC Investigator:	DVWEHRFR	Contact for more spill info:	TONY RUSSO	Contact Person Phone:	(845) 342−6540

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/24/2002		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
ANTIFREEZE	OTHER	1.00	GALLONS	0.00	GALLONS	SOIL
CRANK CASE OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

THEY SPOKE W/ ZACH HOGAN, SOLID WASTE, & DELORES WHINIFRTIZ, REG 3 − THEY ENCOUNTERED DRIPPINGS & STAINING ON THE GRAVEL AT THE ALL TURI LANDFILL − 73 & 91 HARLTY RD − COULD HAVE GOTTEN THERE OVER TIME − THEY DUG DOWN IN THE GRAVEL & PUT 5 TEST HOLES SHOWING 5X20 FT AREA OF CONTAMINATION

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "WEHRFRITZ"
soil to be dug up, and a concrete pad to be installed to prevent spill into gravel and soil. DW 5/14/02

CLOSED STATUS HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 mile. Between 1/4 mile and 1/2 mile search radius, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 15 **NORTHERN RECYCLING** **Spill Number: 9813898** **Close Date: 02/27/1999**
HARTLEY RD GOSHEN, NY TT−Id: 520A−0308−470

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 109 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: UNKNOWN

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	JOHN MARCUS − NORTHERN RECYCLING	Spiller Phone:	(914) 294−8808
Notifier Type:	DEC	Notifier Name:	ZACHARY COGON	Notifier Phone:	(914) 256−3121
Caller Name:	ZACHARY COGON	Caller Agency:	DEC	Caller Phone:	(914) 256−3121
DEC Investigator:	DVWEHRFR	Contact for more spill info:	JOHN MARCUS	Contact Person Phone:	(914) 294−8808

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/16/1999		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

small amount dripped from a tanker that is parked and being used a a storage tank during a tank removal

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "WEHRFRITZ"

Map Identification Number 16 **BUSINESS** **Spill Number: 0508422** **Close Date: 12/06/2005**
95 HARTLY ROAD GOSHEN, NY TT−Id: 520A−0241−272

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 109 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: 16 HARTLEY RD
Revised zip code: 10924

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	JAY KAPLAN − BUSINESS	Spiller Phone:	(718) 533−5310
Notifier Type:	Other	Notifier Name:	JAY KAPLAN	Notifier Phone:	(718) 533−5310
Caller Name:	JAY KAPLAN	Caller Agency:	WASTE MANAGEMENT	Caller Phone:	(718) 533−5310
DEC Investigator:	RDBENDEL	Contact for more spill info:	JAY KAPLAN	Contact Person Phone:	(718) 533−5310

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/14/2005		TANK OVERFILL	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

DUE TO AN OVERFILL, CLEANED UP

DEC Investigator Remarks:

2−1K u/g tanks removed. Bendell aware of.

12/06/2005 Spill number closed out per D. Bendell based on TRC submitted by JR Pietropaoli, Inc.−−−BHY

Map Identification Number 17 **NORTHERN RECYCLING** **Spill Number: 0100169** **Close Date: 04/10/2001**
95 HARTLEY ROAD GOSHEN, NY TT−Id: 520A−0118−866

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 109 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	CALLER − WASTE MANAGEMENT	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	RALPH VANDEREE	Caller Agency:	WASTE MANAGEMENT	Caller Phone:	(845) 469−6414
DEC Investigator:	UNASSIGNED	Contact for more spill info:	RALPH VANDEREE	Contact Person Phone:	(845) 469−6414

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/05/2001		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	25.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

hydraulic line broke on garbage truck − ira conklin contacted for clean up

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was " "
04/05/2001 IRA CONKLIN ON SITE TO DO CLEANUP. SPILL CONTAINED ON CONCRETE TO TRANSFER STATION YARD.

NOTIFIED SITE MONITOR ZACH COGON. NFA

Map Identification Number 18 **POWER LINE RIGHT−OF−WAY** **Spill Number: 1407791** **Close Date: 10/29/2014**
160 HARTLEY RD GOSHEN, NY TT−Id: 520A−0303−867

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 268 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	NORTH LINE UTILITIES	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	MBMASTRO	Contact for more spill info:	MIKE	Contact Person Phone:	5853297127

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/28/2014		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	3.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Hydraulic line failed on bucket truck on O&R right of way. Spill was to stone and dirt. Clean up started with spill kit, further clean up pending until bucket, which is stuck extended, can be moved. Estimated 2−3 gallons lost.

DEC Investigator Remarks:

Spill from boom on truck. Oil on the ground is soaked up and pads down to catch drips. Machine will be fixed tonight, mechanic is on his way. Remainder of material will be cleaned up after machine is repaired and moved, nfa..m

Map Identification Number 19 **EQUIPTMENT FAILURE** **Spill Number: 0703954** **Close Date: 06/21/2010**
91 HARTLEY ROAD GOSHEN, NY TT−Id: 520A−0241−022

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 278 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	UNKNOWN	Spiller:	EHRIN	Spiller Phone:	(845) 294−3944
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dvwehrfr	Contact for more spill info:	EHRIN	Contact Person Phone:	(845) 294−3944

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/09/2007		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	50.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

A LEAKING VALVE ON AN ENGINE, ON AN INDUSTRIAL ENGINE: UNIT #1463− WAS ALL CLEANED UP AND WAS VIRGIN OIL, CALLER HAS A PERMIT
AN ALARM ALERTED THEM LAST NIGHT:

DEC Investigator Remarks:

LUBRICATING OIL FROM ENGINE. VALVE ON PIPING FAILED WHICH CAUSED LEAK. 200 GAL. LEAKED − MOST CONTAINED INSIDE BUILDING. APPROX. 50 GALS. OUTSIDE TO GRAVEL ROAD & GRASS/SOIL. ENVIRON. COMPOIANCE SERVICES ON SITE SUPERVISING CLEAN UP. IMPACTED SOILS BEING STOCKPILED. ECS TO CONTACT D. POLLACK & D. WEHRFRITZ.

Map Identification Number 20 **AL TURI LANDFILL** **Spill Number: 0102801** **Close Date: 08/30/2001**
91 HARTLEY ROAD GOSHEN, NY TT−Id: 520A−0118−865

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 278 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	JOHN DUTTON − J−W OPERATING CO	Spiller Phone:	(845) 294−3544
Notifier Type:	Responsible Party	Notifier Name:	JOHN DUTTON	Notifier Phone:	(845) 294−3544
Caller Name:	JOHN DUTTON	Caller Agency:	J−W OPERATING CO	Caller Phone:	(845) 294−3544
DEC Investigator:	DVWEHRFR	Contact for more spill info:	JOHN DUTTON	Contact Person Phone:	(845) 294−3544

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/13/2001		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
COMPRESSOR OIL	PETROLEUM	100.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

cleanup in progress

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "WEHRFRITZ"
06/13/2001 J. DUTTON @ J.W. OPERATING − GASKET ON LINE BROKE, OIL CONTAINED. CONTRACTOR TO BE HIRED TO CLEAN UP. TO SAMPLE SOIL.

Map Identification Number 21 **J−W AL TURI** **Spill Number: 0001815** **Close Date: 05/12/2000**
91 HARTLEY RD GOSHEN, NY TT−Id: 520A−0240−785
AL TURI LF

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 278 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	LORI SMITH − J−W	Spiller Phone:	(914) 294−3544
Notifier Type:	Responsible Party	Notifier Name:	LORI SMITH	Notifier Phone:	(914) 294−3544
Caller Name:	LORI SMITH	Caller Agency:	J−W	Caller Phone:	(914) 294−3544
DEC Investigator:	DVWEHRFR	Contact for more spill info:	LORI SMITH	Contact Person Phone:	(914) 294−3544

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/12/2000		HUMAN ERROR	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
MOTOR OIL	PETROLEUM	1.00	GALLONS	1.00	GALLONS	SOIL

Caller Remarks:

valve was left open causing 1 pint of oil and 20 gals rainwater

to escape from containment area − spill cleaned up

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "WEHRFRITZ"
05/12/2000 METHANE CONVERSION @ AL TURI LF. CONTAINMENT AREA FOR MOTOR OIL TANK 4700 GALLONS. EMPLOYEE DRAINED AREA BY MISTAKE. WATER VACUUMED WHERE PUDDLED − SOME SOIL BEING REMOVED. Z. COGON, DEC, ON SITE. NFA

Map Identification Number 22 **ALTERI LANDFILL** **Spill Number: 8909638** **Close Date: 01/10/1990**
RT 17M GOSHEN, NY TT−Id: 520A−0308−472

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 587 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: RT. 17M
Revised zip code: UNKNOWN

Source of Spill: COMMERCIAL VEHICLE Spiller: SAME Spiller Phone: ( ) 341−3259
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: TONY RUSSO Caller Agency: WEHREN ENG. Caller Phone: (914) 343−3259
DEC Investigator: jkomara Contact for more spill info: Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
01/08/1990	01/08/1990	TRAFFIC ACCIDENT	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	200.00	GALLONS	0.00	GALLONS	SURFACE WATER

Caller Remarks:

TRACTOR TRAILER WITH BULLDOZER IN WATER LOST APPROX. 200 GAL. J.O’MARATO RESPOND.ENV OIL HIRED TO CLEANUP REPORT TO FOLLOW

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "J. O’MARA"

Map Identification Number 23 **AL TURI LANDFILL** **Spill Number: 1500285** **Close Date: 04/10/2015**
17 M HARTLEY RD GOSHEN, NY TT−Id: 520A−0307−425

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 587 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: RT 17M / HARTLEY RD
Revised zip code: 10924

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	NEIL HELLORAN − 5−L ENTERPRIZES	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	DXTRAVER	Contact for more spill info:	NEIL HELLORAN	Contact Person Phone:	(845) 294−6430 ext. 2

Category: Investigation indicates there was no spill.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/09/2015		DELIBERATE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN MATERIAL	OTHER	0	UNKNOWN	0	UNKNOWN	SOIL

Caller Remarks:

large tandem dump truck going into a land fill and dumping its load unknown what material clean up pending Neil (Cell # 845−5901608)

DEC Investigator Remarks:

4/9/15− spoke to caller, he is Town building inspector. H ewitnessed dump truck dump unk. solid waste at closed landill. Dump truck entered landill via a side entrance. Dump truck had name of landscaping business on it.

Referred to DMM. NFA DT^

Map Identification Number 24 **AMARESCO LANDFILL/GAS SIG** **Spill Number: 0607693** **Close Date: 12/07/2011**
73 HARTLEY RD GOSHEN, NY TT−Id: 520A−0240−979

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 587 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	LOUIS KRUGER − AMARESCO LANDFILL/GAS SIG	Spiller Phone: (704) 467−2895 ext. 0
Notifier Type:	DEC	Notifier Name:		Notifier Phone:
Caller Name:		Caller Agency:		Caller Phone:
DEC Investigator:	dvwehrfr	Contact for more spill info:	LOUIS KRUGER	Contact Person Phone: (704) 463−2811

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/05/2006		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
MOTOR OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL
ETHYLENE GLYCOL	HAZARDOUS MATERIAL	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

4 separate structures that had some type of spill around them. A gas production engine had staining around it. Small PBS unit is

leaking waste oil. One other PBS unit is said to have no secondary containment unit... DEC will investigate that. These spills have been occuring for sometime. The Ethylene glycol was in an expansion building (sight #2− Single motor building) this material was spilled out from the building across the concrete and impacting soil. This was the largest staining the DEC found.

DEC Investigator Remarks:

FIVE SEPERATE SPILL AREAS. SPILLS ASSOCIATED WITH ENGINES FOR LANDFILL GAS RECOVERY.. 3−550 GAL A/G TANKS IN SECONDARY CONTAINMENT. 1 TANK (WASTE OIL) IS/HAS LEAKED IN THIS AREA. GROUNDWATER MW’S ALREADY EXIST ON SITE.

D. Wehrfritz inspected site and noted areas of spills. Site to arrange to cleanup areas. D. Pollock of DSHW is DEC lead for site.

Closure report rec. 5−14−07. 9 areas of concern excavated by Luzon Environ. 1−17 to 29−07. 279.78 tons taken to Albany landfill.
contaim. exists below concrete structures at Site II.
Report recommends cleanup plan to be proposed to address inaccessible contamination.

12−17−09

1. Met Tony Russo, Evironmental Compliance Services Inc., on site (914−850−2990).
2. Continue to excavate contaminated soil where 4 structures associated with landfill gas generating plant were removed.
3. PID used to screen areas being excavated.
4. Soil stockpiled on plastic and covered with plastic.
5. Tams Construction on site with excavator, backhoe and 2 10−wheel dumps.
6. Advised Mr Russo that post excavation samples should be taken every 30 linear feet along sidewalls where PID shows area to be clean, and in questionable areas, samples should be taken every 20 linear feet. Also advised him that bottom samples should be taken every 300 sq
ft.
7. Work expected to continue into next week.
J Schreyer

12−22−09
1. I went to site and met with Topny Russo (914−850−2990)
2. Continue to excavate and stockpile contaminated soil on plastic. Cover at night.
3. Two sumps are in place to collect groundwater, one near excavation and one near stockpile. Water is pumped to two frac tanks as needed.
4. Some waste/garbage encountered in excavation. This material will be placed in a 40yd rolloff for testing and disposal after telephone discussion with Dave Pollock and Janet Brown at the NYSDEC.
5. Zach Cogan on site for NYSDEC.
6. Mr Russo continues to take post excavation samples as recommended.
7. Advised Mr Russo that access road to landfill may have to be temporarily relocated to allow for excavation of contaminated soil underneath.
J Schreyer

3/12/10− Meeting in NP with Tony Russo of ECS and J. Schreyer of DEC. Discussed site status regarding removal/excavation of petroleum impacted soils. Contaminant is mostly heavy oil (motor oil, lube oil,etc). Post−ex results demonstrate no VOC/SVOC. Requested that TIC’s be reported on future sample results.
Further excavation under road to take place next week.

6/15/11− Meeting in NP office to discuss August 2010 cleanup report. Requested summary table of total PAH compounds. DT

Summary table of PAH’s received. Total TIC PAH’s <100ppm in one location. All data reviewed again. SSCO guidance value in CP−51 exceeded for protection of groundwater. Based upon all data submitted, work performed and site history/location, No Further Action required at this time. Spill will be closed as "does not meet standards". DT

Map Identification Number 25 **BASEMENT CONCRETE FLOOR** **Spill Number: 1206546** **Close Date: 09/19/2013**
138 CHEECHUNK ROAD GOSHEN, NY TT−Id: 520A−0279−481

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 1281 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	PRIVATE DWELLING	Spiller:	DONNA ALLEN − HOMEOWNER	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxtraver	Contact for more spill info:	DONNA ALLEN	Contact Person Phone:	(347) 672−6315

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/02/2012		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

Lightning strike. Clean up done.

DEC Investigator Remarks:

10/2/12− Spoke to owner, Donna Allen. She reports spill occurred on 7/26/12. Oil line damaged by lightning strike. Oil line on top of floor with burn hole that caused some 30−40 gals. of oil to leak. She conducted initial cleanup herself with kitty liter, then a cleanup company known as Belfor completed cleanup and left ventilation fans in place. Her Ins. Co. is Travelers. She reports there still are odors, but not that noticeable.
She will not be available to meet on site until Monday, 10/8/12. DT

Belfor− White Plains, NY ; Philip Smith, 914−798−1440.

10/15/12− Site inspection with owner. Inspected basement of home where line leak occurred. 2 ventilation fans in place from Belfor. Noted where core drills were placed thru slab in basement. Report of findings of this work performed by Hygenix, Inc. provided by owner.
DEC to review report and comment. DT

11/2/12− Sent email to Hygenix approving RAP with comments. DT

3/5/13− Site inspection with owners, Hygenix, Belfor, and Travelers. Inspected basement where some floor removal and excavation work has been performed. Excavation is some 3 feet deep by 2 feet wide. Hygenix reports that soil samples from sidewalls of excavation still exceed cleanup guidance criteria. Owners report that groundwater did enter excavation during recent heavy rain event.
Hygenix proposed to delineate soil impacts under floor by installing additional core borings around current excavation; DEC/owners found this acceptable. Work to be conducted today and samples collected. Findings to be reported by end of next week with proposal for additional work.
Owners had concerns of oil odors in residence. No odors detected by PID meter in entire residence. DEC recommended that excavation be covered with plastic at end of work days to eliminate any potential for odors. Belfor to arrange for removal of some 10 drums of excavated soil from property. DT

3/19/13− Discussed recent findings with Art Morris of Hygenix. He proposes to saw cut slab and do limited soil removal from trench to one boring location that has SVOC impact. He will email proposal to DEC.
DEC received email proposal and approved. DT

8/14/13− Spoke to Art Morris of Hygenix. site work has been completed and floor restred with subslab piping. Indoor air sampling tentatively scheduled for early September.
DEC required report of work to date up including floor restration/subslab piping. DT

8/28/13− Received report of cleanup activity to date. Additional sub slab soils removed since site inspection of 3/5/13. Postex samples well below cleanup guidance values. Area backfilled with sub slab piping installed. Indoor air sampling is proposed for Sept./Oct. DT

9/18/13− Spoke to owner, Donna Allen. Advised her of proposed air sampling by Hygenix. She reported she has no concerns in regards to indoor air quality. DEC/DOH (spoke to Steve Gagnon) to not require indoor air sampling based upon resident/owner statement and previous inspections where odors were not noted.
Contacted Hygenix, Art Morris, in regards to indoor air sampling and no concern from owner of odors. DEC to not require indoor air sampling and will close spill. NFA DT

THE FOLLOWING CLOSED SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM OR STORMS. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY

No dropped spills found for this category

NO OIL STORAGE FACILITIES LARGER THAN 400,000 GALLONS IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

PETROLEUM BULK STORAGE FACILITIES LESS THAN 400,000 GALLONS IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 26 **WASTE MANAGEMENT OF NY, LLC** **Facility Id: 3−412465** **Source: NYS DEC**
95 HARTLEY RD GOSHEN, 10924 TT−Id: 640A−0084−627

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 84 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Trucking/Transportation/Fleet Operation
Site Status: Unregulated/Closed
Expiration Date of the facility's registration certificate: 10/19/2010
Operator Name: CHRIS DOLCE
Operator Phone #: (845) 294−1555
Owner Name: JAY KAPLAN − ENVIRONMENTAL MANAGER
Owner Company: WASTE MANAGEMENT OF NY, LLC.
Owner Type: Corporate or Commercial
Owner Address: 123 VARICK AVENUE, BROOKLYN, NY 11237

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Closed − Removed	Diesel	10000	Underground	10/01/1978	10/01/1994	02/10/1999
3	Closed − Removed	Diesel	6500	Aboveground on Crib Rack or Cradle	12/01/1998		05/30/1999
2	Closed − Removed	Diesel	500	Aboveground on Crib Rack or Cradle	05/01/1998		08/26/2005
2−A	Closed − Removed	Gasoline	5000	Underground		10/01/1994	02/10/1999
4	In Service	Lube Oil	275	Aboveground on Crib Rack or Cradle			
5	In Service	Lube Oil	275	Aboveground on Crib Rack or Cradle			
6	In Service	Diesel	370	Aboveground on Crib Rack or Cradle	07/22/2005		
7	Closed − Removed	#2 Fuel Oil	1000	Underground			09/20/2005
8	Closed − Removed	#2 Fuel Oil	1000	Underground			09/20/2005

TANK NUMBER: 1
TANK TYPE: Steel/Carbon Steel/Iron
TK INT. PROTECTION: Epoxy Liner
TANK EXT. PROTECTION: None
TANK LEAK DETECTN: None
TK SEC. CONTAINMNT: None
PIPING EXT. PROTECTN: None
PIPING LEAK DETECTN:
PIPE SEC. CONTAINMNT:
PIPING TYPE: Steel/Carbon Steel/Iron
PIPING LOCATION: Underground/On−ground
OVERFILL PROTECTION: None
SPILL PREVENTION:
DISPENSER METHOD: Suction

TANK NUMBER: 3
TANK TYPE: Stainless Steel Alloy
TK INT. PROTECTION: None
TANK EXT. PROTECTION: None
TANK LEAK DETECTN: None
TK SEC. CONTAINMNT: None
PIPING EXT. PROTECTN: None
PIPING LEAK DETECTN:
PIPE SEC. CONTAINMNT:

**** TANK INFO FOR THIS SITE CONTINUES ON NEXT PAGE ****

PIPING TYPE:	Steel/Carbon Steel/Iron	PIPING LOCATION:	No Piping		
OVERFILL PROTECTION:		SPILL PREVENTION:	Catch Basin	DISPENSER METHOD:	Suction
TANK NUMBER:	2	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	Other
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:		PIPE SEC. CONTAINMNT:	
PIPING TYPE:	Steel/Carbon Steel/Iron	PIPING LOCATION:	Aboveground		
OVERFILL PROTECTION:		SPILL PREVENTION:	Catch Basin	DISPENSER METHOD:	Suction
TANK NUMBER:	2−A	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:		PIPE SEC. CONTAINMNT:	
PIPING TYPE:	Galvanized Steel	PIPING LOCATION:	Underground/On−ground		
OVERFILL PROTECTION:	None	SPILL PREVENTION:		DISPENSER METHOD:	Suction
TANK NUMBER:	4	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	Painted/Asphalt Coating	TANK LEAK DETECTN:	Imperv. Barrier/Concrete Pad (A/G)	TK SEC. CONTAINMNT:	Impervious Underlayment
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:	None	PIPE SEC. CONTAINMNT:	Diking (Aboveground)
PIPING TYPE:	Flexible Piping	PIPING LOCATION:	Aboveground		
OVERFILL PROTECTION:	Product Level Gauge (A/G)	SPILL PREVENTION:	Transfer Station Containment	DISPENSER METHOD:	Suction
TANK NUMBER:	5	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	Painted/Asphalt Coating	TANK LEAK DETECTN:	Imperv. Barrier/Concrete Pad (A/G)	TK SEC. CONTAINMNT:	Impervious Underlayment
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:	None	PIPE SEC. CONTAINMNT:	Diking (Aboveground)
PIPING TYPE:	Flexible Piping	PIPING LOCATION:	Aboveground		
OVERFILL PROTECTION:	Product Level Gauge (A/G)	SPILL PREVENTION:	Transfer Station Containment	DISPENSER METHOD:	Suction
TANK NUMBER:	6	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	Painted/Asphalt Coating	TANK LEAK DETECTN:	Imperv. Barrier/Concrete Pad (A/G)	TK SEC. CONTAINMNT:	Diking (Aboveground)
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:	None	PIPE SEC. CONTAINMNT:	Diking (Aboveground)
PIPING TYPE:	Flexible Piping	PIPING LOCATION:	Aboveground		
OVERFILL PROTECTION:	High Level Alarm Product Level Gauge (A/G)	SPILL PREVENTION:	Transfer Station Containment	DISPENSER METHOD:	Suction
TANK NUMBER:	7	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:	Exempt Suction Piping	PIPE SEC. CONTAINMNT:	None
PIPING TYPE:	Copper	PIPING LOCATION:	Aboveground/Underground Combination		
OVERFILL PROTECTION:	Vent Whistle	SPILL PREVENTION:	None	DISPENSER METHOD:	Suction
TANK NUMBER:	8	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:	Exempt Suction Piping	PIPE SEC. CONTAINMNT:	None
PIPING TYPE:	Copper	PIPING LOCATION:	Aboveground/Underground Combination		
OVERFILL PROTECTION:	Vent Whistle	SPILL PREVENTION:	None	DISPENSER METHOD:	Suction

Map Identification Number 27 **AMERESCO LFG−1, INC.** **Facility Id: 3−496863** **Source: NYS DEC**
91 HARTLEY ROAD GOSHEN, 10924 TT−Id: 640A−0084−631

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 266 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Apartment Building/Office Building
Site Status: Active
Expiration Date of the facility's registration certificate: 09/13/2016
Operator Name: ROB HOFFMAN
Operator Phone #: (845) 294−3544
Owner Name: BEN HEUISER − DIRECTOR − PLANT OPERATIONS
Owner Company: AMERESCO LFG−1, INC.
Owner Type: Corporate or Commercial
Owner Address: 111 SPEEN STREET, STE 410, FRAMINGHAM, MA 01701

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Closed − Removed	Lube Oil	4200	Aboveground − In Contact with Soil	03/01/1989		09/11/2009
2	Closed − Removed	Lube Oil	1000	Aboveground − In Contact with Soil	03/01/1989		09/11/2009
3	Closed − Removed	Waste Oil/Used Oil	1000	Aboveground − In Contact with Soil	03/01/1989		09/11/2009
5	Closed − Removed	Lube Oil	55	Aboveground on Crib Rack or Cradle	02/01/1989		09/11/2009
6	Closed − Removed	Lube Oil	55	Aboveground on Crib Rack or Cradle	02/01/1989		09/11/2009
7	Closed − Removed	Lube Oil	55	Aboveground on Crib Rack or Cradle	02/01/1989		09/11/2009
8	Closed − Removed	Lube Oil	55	Aboveground on Crib Rack or Cradle	03/01/1989		09/11/2009
009	In Service	Lube Oil	30	Aboveground on Crib Rack or Cradle	03/01/1989		
12	Closed Prior to Micro Conversion 03/91	Other	750	Aboveground on Crib Rack or Cradle	09/01/1989		
13	Closed Prior to Micro Conversion 03/91	Other	500	Aboveground on Crib Rack or Cradle	02/01/1989		
11	Closed − Removed	Other	2	Aboveground on Crib Rack or Cradle	09/01/1989		07/01/1995
14	Closed − Removed	Other	15	Aboveground on Crib Rack or Cradle	11/01/1989		12/01/1993
15	Closed − Removed	Other	15	Aboveground on Crib Rack or Cradle	02/01/1989		12/01/1993
16	Closed − Removed	Other	15	Aboveground on Crib Rack or Cradle	02/01/1989		12/01/1993
17	Closed − Removed	Other	15	Aboveground on Crib Rack or Cradle	02/01/1989		12/01/1993
019	Closed − Removed	Other	1000	Aboveground − In Contact with Soil	12/01/1989		12/01/1993
020	In Service	Waste Oil/Used Oil	500	Abovegrnd − In Contact w/Imperv. Barrier	04/01/1995		
021	In Service	Lube Oil	500	Abovegrnd − In Contact w/Imperv. Barrier	04/01/1995		
22	Closed − Removed	Lube Oil	275	Aboveground − In Contact with Soil	12/01/1998		09/11/2009
10	Closed − Removed	Waste Oil/Used Oil	275	Aboveground on Crib Rack or Cradle	05/01/1989		09/11/2009
10−A	Closed − In Place	Kerosene	275	Aboveground on Crib Rack or Cradle	03/01/1989		
009B	In Service	Lube Oil	30	Aboveground on Crib Rack or Cradle	08/01/2011		
009C	In Service	Lube Oil	30	Aboveground on Crib Rack or Cradle	08/01/2011		
The following tank(s) were either deleted from the reported data or the number was re−assigned.							
4	In Service	OTHER	1500	Aboveground	11/89		

Map Identification Number 28 **AL TURI LANDFILL** **Facility Id: 3−457825** **Source: NYS DEC**
73 HARTLEY ROAD GOSHEN, 10924 TT−Id: 640A−0043−496

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 572 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Other
Site Status: Active
Expiration Date of the facility's registration certificate: 07/28/2018
Operator Name: JOSEPH GAMBINO
Operator Phone #: (845) 294−5630
Owner Name: JOSEPH GAMBINO − PRESIDENT
Owner Company: AL TURI LANDFILL, INC.
Owner Type: Corporate or Commercial
Owner Address: 73 HARTLEY ROAD, GOSHEN, NY 10924

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
5−A	Closed − Removed	Diesel	2000	Aboveground − In Contact with Soil	12/01/1973		02/01/1990
1	In Service	#2 Fuel Oil	10000	Underground	07/01/1988		
6	In Service	#2 Fuel Oil	275	Abovegrnd − In Contact w/Imperv. Barrier	07/01/1988		
8	Closed − Removed	Diesel	1000	Aboveground on Crib Rack or Cradle	01/01/1993		11/28/2002
7	Closed − Removed	#2 Fuel Oil	1000	Underground	03/01/1984		05/13/2008
9	In Service	Diesel	275	Abovegrnd − In Contact w/Imperv. Barrier	04/01/1997		
9−A	Closed − Removed	#2 Fuel Oil	1000	Underground	12/01/1984		
2	Closed − Removed	Diesel	2000	Aboveground − In Contact with Soil	12/01/1983		02/01/1990
2−A	Closed − Removed	Other	300	Aboveground − In Contact with Soil	02/01/1990		11/28/2002
3	In Service	Gasoline	1000	Abovegrnd − In Contact w/Imperv. Barrier	02/01/1990		
3−A	Closed − Removed	Gasoline	1000	Aboveground − In Contact with Soil	12/01/1986		02/01/1990
4	In Service	Lube Oil	275	Aboveground on Crib Rack or Cradle	08/01/1987		
4−A	Closed − Removed	Diesel	550	Aboveground − In Contact with Soil	12/01/1984		02/01/1990
5	In Service	Lube Oil	275	Aboveground on Crib Rack or Cradle	08/01/1987		
10	In Service	Diesel	500	Abovegrnd − In Contact w/Imperv. Barrier	01/01/2000		

HAZARDOUS WASTE GENERATORS/TRANSPORTERS IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 29 **NYSDEC Name:** **ALL−WASTE SYSTEMS INC** **Facility Id: NYN00003A172**
NYSDEC Address: PO BOX 284, HARTLEY ROAD GOSHEN, NY 10924 TT−Id: 740A−0132−141

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 133 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

This facility has been deleted from the reported data. Data reflects last reported information.
US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
NONE	No hazardous waste activity reported by NYS up to 4/28/2015.						

Map Identification Number 30 **NYSDEC Name:** **WASTE MGMT − NORTHERN RECYCLING** **Facility Id: NYR000075499**
NYSDEC Address: 95 HARTLEY RD GOSHEN, NY 10924 TT−Id: 740A−0069−975
EPA (RCRA) Name: WASTE MGMT − NORTHERN RECYCLING
EPA (RCRA) Address: 95 HARTLEY RD GOSHEN, NY 10924

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 133 feet to the S*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: 08/19/1999
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: RAY ROGENER Source Type: Implementer Contact Phone: 914−294−1555 Contact Info Date: 01/01/2007
Contact Name: RAY ROGENER Source Type: Notification Contact Phone: 914−294−1555 Contact Info Date: 08/19/1999

Historically listed as the following USEPA RCRA Generator Size(s) as well:
SMALL QUANTITY GENERATOR

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
NONE	Site reported by US EPA. No hazardous waste activity reported by NYS.						

Map Identification Number 31 **NYSDEC Name:** **JW OPERATING CO** **Facility Id: NYD982792194**

NYSDEC Address: ALTERI LANDFILL/ROUTE 17 GOSHEN, NY 10924 TT−Id: 740A−0132−138
EPA (RCRA) Name: J W OPERATING
EPA (RCRA) Address: HARTLEY RD GOSHEN, NY 10924

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 766 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: HARTLEY RD
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: 09/15/1989
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:

Contact Name: BILL MAVER	Source Type: Implementer	Contact Phone: 914−294−6099	Contact Info Date: 01/01/2007
Contact Name: BILL MAVER	Source Type: Notification	Contact Phone: 914−294−6099	Contact Info Date: 09/15/1989
Contact Name: LORI SMITH	Source Type: Annual/Biennial Report	Contact Phone: 914−294−3544	Contact Info Date: 03/18/1996

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
F002	Spent halogenated solvents	1550	GALLONS	GENERATED	1995		

Map Identification Number 32 **NYSDEC Name:** **AL TURI LANDFILL INC** **Facility Id: NYD986895118**
NYSDEC Address: RTE 17M & HARTLEY RD GOSHEN, NY 10924 TT−Id: 740A−0036−593
LEACHATE STORAGE LAGOON 2
EPA (RCRA) Name: AL TURI LANDFILL INC
EPA (RCRA) Address: RTE 17M & HARTLEY RD GOSHEN, NY 10924
LEACHATE STORAGE LAGOON 2

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 766 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: STATE HWY 17M / HARTLEY RD
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:

Notification date: 09/12/1995
Incinerator:
Transporter:

Contact Name: JOSEPH GAMBINO Source Type: Notification Contact Phone: 914−294−5630 Contact Info Date: 09/12/1995

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
NONE	Site reported by US EPA. No hazardous waste activity reported by NYS.						

Map Identification Number 33 **NYSDEC Name:** **AL TURI LANDFILL** **Facility Id: NYN000036S04**
NYSDEC Address: RR1 BOX 14 HARTLEY RD GOSHEN, NY 10924 TT−Id: 740A−0132−140

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 766 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: HARTLY RD
Revised zip code: NO CHANGE

This facility has been deleted from the reported data. Data reflects last reported information.
US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR

NONE No hazardous waste activity reported by NYS up to 4/28/2015.

Map Identification Number 34 **NYSDEC Name:** **AL TURI LANDFILL INC.** **Facility Id: NYN30003A470**
NYSDEC Address: RD #1 BOX 14 HARTLEY ROAD GOSHEN, NY 10294 TT−Id: 740A−0132−142

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 766 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: HARTLEY RD
Revised zip code: 10924

This facility has been deleted from the reported data. Data reflects last reported information.
US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR

NONE No hazardous waste activity reported by NYS up to 4/28/2015.

CHEMICAL STORAGE FACILITIES IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 35 **AMERESCO LFG−1, INC.** **Facility Id: 3−000323**
91 HARTLEY ROAD GOSHEN, NY 10924 TT−Id: 780A−0001−897

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 275 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 91 HARTLEY RD
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 09/12/2015
Site Type: Other

Site Status: Active

NOTE: The following detailed facility and tank information has not been made publicly available by the NYSDEC since 1/1/2002.

Owner Name: AMERESCO LFG−1, INC.
Owner Address: 111 SPEEN ST. SUITE 410 FRAMINGHAM, MA 01701
Operator Name: STEVEN MILLER Facility Phone #: (845) 294−3544

TANK NUMBER	TANK STATUS	CHEMICAL NAME	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	DATE CLOSED
001A	IN SERVICE	ETHYLENE GLYCOL	500	ABOVEGROUND	00/93	
002A	IN SERVICE	ETHYLENE GLYCOL	500	ABOVEGROUND	00/94	
003A	IN SERVICE	ETHYLENE GLYCOL	500	ABOVEGROUND	04/95	

Toxicity Information Summary

CHEMICAL NAME	CAS−NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
ETHYLENE GLYCOL	107211	X	X	X	X	X	50 ug/L

NO HAZARDOUS SUBSTANCE WASTE DISPOSAL SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO TOXIC AIR, LAND AND WATER RELEASES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

WASTEWATER DISCHARGES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 36 **AL TURI LANDFILL** **Facility Id: NY0166511**
73 HARTLEY ROAD GOSHEN, NY 10924 TT−Id: 880A−0004−856

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 584 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Contact Name: JOSEPH GAMBINO PRESIDENT

Contact Phone:

Receiving Waterbody: WALLKILL R

Average Design Flow (in millions of gallons/day):

Standard Industrial Code Description	Facility Type	Discharge Indicator	Facility Status	Permit Issued Date	Permit Expiration Date	Date Permit First Issued
REFUSE SYSTEMS	INDUSTRIAL	MINOR	ACTIVE	01/07/1997	05/01/2002	08/15/1986

AIR DISCHARGE FACILITIES IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 37 **MIDDLETOWN LFG/JW OPERATING CORP** **Facility Id: 3607100150** **State−county CDS Id: 3607100150**
ROUTE 17M & HARTLEY ROAD GOSHEN, NY 10924 State−county NED id: 360710882
EPA (FINDS) Name: LFG/KWE CONVERSION FACILITY TT−ID: 900A−0005−028
EPA (FINDS) Address: RTE. 17M AND HARTLEY ROAD GOSHEN 10924

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 407 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: STATE HWY 17M / HARTLEY RD
Revised zip code: NO CHANGE

CDS−ID: 00150 NED−ID: 0882 EPA−ID: None Given FINDS−ID: NY0001416825
Plant Phone #1: None Given Plant Phone #2: (214)233−8191
Operating Status: OPERATING
EPA Classification:
State Classification: ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS
EPA Plant Compliance Status:
State Plant Compliance Status: UNKNOWN COMPLIANCE STATUS

AIR PROGRAM INFORMATION
Regulatory Air Program: SIP SOURCE Program Status: OPERATING
Regulatory Air Program: TITLE V PERMITS Program Status: OPERATING

POLLUTANT INFORMATION
Pollutant: NITROGEN DIOXIDE
State Pollutant Compliance for this pollutant: UNKNOWN COMPLIANCE STATUS

Map Identification Number 38 **AL TURI INC (LANDFILL)** **Facility Id: 3607100153** **State−county CDS Id: 3607100153**
RD1 BOX 14 GOSHEN, NY 10924 State−county NED id:
TT−ID: 900A−0008−010

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 612 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

CDS−ID: 00153 NED−ID: None Given EPA−ID: None Given FINDS−ID: None Given
Plant Phone #1: None Given Plant Phone #2: None Given
Operating Status: LANDFILL
EPA Classification:
State Classification: ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS
EPA Plant Compliance Status:
State Plant Compliance Status: UNKNOWN COMPLIANCE STATUS

AIR PROGRAM INFORMATION
Regulatory Air Program: SIP SOURCE Program Status: LANDFILL
Regulatory Air Program: TITLE V PERMITS Program Status: LANDFILL

POLLUTANT INFORMATION
Pollutant: FACILITY−WIDE PERMIT REQUIREMENTS
State Pollutant Compliance for this pollutant: UNKNOWN COMPLIANCE STATUS

NO CIVIL & ADMINISTRATIVE ENFORCEMENT DOCKET FACILITIES IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

U.S. EPA EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) SPILLS
AT THE LOCATION OR POTENTIALLY AT THE LOCATION OF
Amy's Kitchen - verHage
Goshen, NY 10924

* Any ERNS Spills listed below are NOT mapped in this report *

ONSITE ERNS (A count of these spills can be found in the distance interval table):
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

POTENTIALLY ONSITE ERNS:
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

Copyright 2015 Toxics Targeting, Inc. May 29, 2015 'Amy's Kitchen - verHage'

Unmappable facilities for 'Orange' County

NPL/CERCLIS/NYSDEC Inactive Haz. Waste or Reg. Qual. Sites

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
336040	MONTGOMERY OVERALL SERVICE	336040 MONTGOMERY OVERALL SERVICE		UNKNOWN
336047	REVERE SMELTING & REFINING CORP. OF NJ			UNKNOWN

Solid Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
36S12	CEJWIN'S CAMPS			UNKNOWN
36S13	CNTRAL HUDSON GAS & ELEC.			UNKNOWN
36T04	GREENWOOD LAKE T.S.			10924
36W02	TAYLOR RECYCLING FACILITY			UNKNOWN
36W06	NEW WINSOR EQUIPMENT RENT			UNKNOWN
36W07	MAYBROOK MATERIALS			UNKNOWN
36X01	SYNCOR NUCLEAR PHARMACY S			UNKNOWN
36Y03	NEAL ALDER'S TOPSOIL			UNKNOWN
NY40000010514	GOSHEN RECYCLING CENTER	GOSHEN RECYCLING CENTER	GOSHEN	10924

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
1410487	ORANGE COUNTY EM. RES.	21 SOUTH PUTT CORNERS ROAD		UNKNOWN
9811873	ORANGE CO HIGHWAY	RT 17M	GOSHEN	UNKNOWN

Hazardous Spills - TANK FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9708772	ORANGE CO DPW	RT 17M	GOSHEN	10924
9600289	RESIDENCE	RT 17M	GOSHEN	10924
9202967	TEL CHEF	RT 17M	GOSHEN	UNKNOWN
9709135	MIDHUDSON INSTITUTION	ROUTE 17M	NEW HAMPTON	UNKNOWN
9416349	MARKEL RESIDENCE	ECHO LAKE ROAD	NEW HAMPTON	UNKNOWN
9212512	MID-HUDSON PSYCH. CENTER	RT. 17M	NEW HAMPTON	10924
8703951	MID HUDSON PSYCH	MID HUD PSYCH CENTRE	NEW HAMPTON	10924
9410311	DOUHERTY RESIDENCE	RD 4 BOX 390	WAWAYANDA	10973

Hazardous Spills - TANK TEST FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9304784	O & R UTIL.	RT 17M	GOSHEN	10940
9210866	ORANGE CO. DPW	RT 17M	GOSHEN	UNKNOWN
9210739	GOSHEN SCH.DIST.BUS GAR.	OFF STOCKTOWN ROAD	GOSHEN	10924
9210685	RT. 17M DEPT. PUB. WORKS	3 ORANORCO ROAD	GOSHEN	UNKNOWN
8706698	ORANGE CO DPW	RT 17M	GOSHEN	10924

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9612574	SPILL NUMBER 9612574	RD 1 BOX 499		UNKNOWN
9315557	111111111111	UNKNOWN		UNKNOWN
9314382	111111111	UNKNOWN		UNKNOWN
9312516	111111111	UNKNOWN		UNKNOWN
9307357	11111111111111111111	UNKNOWN		UNKNOWN
9307010	11111111111111	UNKNOWN		UNKNOWN
9306124	11111111111	UNKNOWN		UNKNOWN
9305931	1111111111	UNKNOWN		UNKNOWN
9305322	111111111111	UNKNOWN		UNKNOWN
9303425	11111111111	UNKNOWN		UNKNOWN
9303357	1111111111	UNKNOWN		UNKNOWN
9303329	1111111111	UNKNOWN		UNKNOWN

9301341	11111111111	UNKNOWN		UNKNOWN
9300671	11111111111	UNKNOWN		UNKNOWN
9214241	111111111	UNKNOWN		UNKNOWN
9213074	1111111	UNKNOWN		UNKNOWN
9205774	1111111111111	UNKNOWN		UNKNOWN
9202836	11111111111	UNKNOWN		UNKNOWN
1106445	ORANGE IRENE	ALL OF ORANGE COUNTY		UNKNOWN
9935032	HUDSON VALLEY LANDSCAPING	RT 17M	GOSHEN	UNKNOWN
9814382	GOSHEN SECURE CENTER	CROSSROAD	GOSHEN	10924
9600891	MACK BROTHER FOODS	RT 17M	GOSHEN	10924
8904718	PLAY TOGS DEPT. STORE	RT 17M	GOSHEN	10940
8700999	DEC DUMP	ROUTE 17 M	GOSHEN	10924
0135035	NEW HAMPTON WATER DEPT	RT 17M	GOSHEN	10924
9513154	MID-HUDSON PSYCH CENTER	RT17M	NEW HAMPTON	10924
9013302	NEW HAMPTON LUMBER	RT. 17M & US 6	NEW HAMPTON	10958
0707132	MID HUDSON FORENSIC PSYCH	RT. 17M	NEW HAMPTON	10958
0405167	POLE	CTY RT 12/RT17M	NEW HAMPTON	10958
0307506	MID HUDSON PHYC CENTER	RT 17 M	NEW HAMPTON	10958
0504313	MID HUDSON MENTAL HEALTH	RT 17M, BOX 158	NORTH HAMPTON	10958
9206561	STACK OFFICE	RT 6	WAWAYANDA	10973
8908621	B & B ASSOCIATES	445 GATE RD	WAWAYANDA	10973
8900273	SPILL NUMBER 8900273	MOREEN DRIVE/ROBIN MEADOW	WAWAYANDA	10973
8100682			WAYANDA	10973

Hazardous Spills - MISC. SPILL CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9912574	POLE 49278-51483	CHEECHUNK RD	GOSHEN	10924
9810071	BY COUNTY CONVENIENCE	RTE 17 M	GOSHEN	UNKNOWN
9614152	ORANGE COUNTY DPW	RT 17M	GOSHEN	10924
9505676	RD 3 PO BOX 452	RD 3 PO BOX 452	GOSHEN	10924
9408114	MAIN GARAGE AT DPW	RT 17M	GOSHEN	UNKNOWN
9312507	LANG CITGO	17M COUNTRY COVENIENT	GOSHEN	10924
9212263	VALLEY FRAGRANCE & FLAVOR	RT 17M	GOSHEN	UNKNOWN
9111224	JACK PERRY FORD	RT 17M	GOSHEN	UNKNOWN
9011451	ALTAN LANDFILL	RT 17M WEST	GOSHEN	UNKNOWN
9010678	LEO MAPLE SERVICE STATION	RT 17M	GOSHEN	10940
9000484	EXXON S/S	P.O. BOX 702	GOSHEN	UNKNOWN
8709311	MC BRIDE	MCBRIDE TERMINAL	GOSHEN	10924
8706108	MCBRIDE	MCBRIDE TERMINAL	GOSHEN	10924
8604416	WEHRAN ENGINEERING	JACK PERRY FORD	GOSHEN	10924
1000001	POLE 49653-49841	MELBOURNE RD	GOSHEN	10924
0404229	MID HUDSON FORESIC AND PH	ROUTE 17 M	GOSHEN	10924
0400631	PAD MOUNT	SOUTH GATE RD	GOSHEN	10924
0205065	SPILL NUMBER 0205065	354 FAIRWELLS TRAILS	GOSHEN	UNKNOWN
0202980	POLE #31/61	HALLSTOWN RD	GOSHEN	10924
0202611	GOSHEN COLISION CENTER	RT 17M	GOSHEN	10924
9303896	HUDSON PSYPH. CENTER	ROUTE 17M	MIDDLETOWN	10940
9905706	MID HUDSON FORENSIC PSYCH	RT17M	NEW HAMPTON	10958
9713092	MID-HUDSON PSYCH CENTER	RT 17M	NEW HAMPTON	10958
9709171	MID-HUDSON PSYCHIATRIC CE	ROUTE 17M	NEW HAMPTON	UNKNOWN
9709034	MID-HUDSON PSYCHIATRIC CE	ROUTE 17M	NEW HAMPTON	UNKNOWN
9707149	MID HUDSON PSYCHIATRIC	RT 17 M	NEW HAMPTON	UNKNOWN
9700394	MIDHUDSON PSYCHIATRIC CTR	17K ROUTE 6	NEW HAMPTON	10958
9609097	RUDDYS SUNOCO	ROUTE 17M	NEW HAMPTON	10958
9308294	RUDY'S SUNOCO	ROUTE 17M	NEW HAMPTON	UNKNOWN
9303465	MIDHUDSON PSYCH. CENTER	RT. 17M	NEW HAMPTON	10924
9302229	NEW HAMPTON SUNOCO	RT.17M NEXT TO FIRE HOUSE	NEW HAMPTON	UNKNOWN
9112569	MID HUDSON PSYCH. CENTER	IN RKG AREA	NEW HAMPTON	10924
8809480	VALLEY AUTOMOTIVE	ROUTE 17M	NEW HAMPTON	UNKNOWN
1305069	OUTFLOW	P.O. BOX 158	NEW HAMPTON	10958

1304530	MID HUD. FORENSIC PSYCH CENTER	2834 ROUTE 17M	NEW HAMPTON	10924
1201168	MIDHUDSON CENTER	RT 17N	NEW HAMPTON	10924
1200328	MID HUDSON FORENSIC PSY. CTR.	RT 17 M	NEW HAMPTON	10924
0607146	MIDHUSON FORENSIC PSHYCHI	BOX 158 ROUTE 17M	NEW HAMPTON	10924
0111087	MID HUDSON FORENSIC PSYCH	RT 17M	NEW HAMPTON	10924
0106558	ABANDONED DRUMS	ECHO LAKE RD	NEW HAMPTON	10958
0104782	MID HUDSON PSYCHIATRIC	BOX 158 RT.17M	NEW HAMPTON	10958
1302188	BULLDOZER	11 TRAINING CENTER LANE	NEW HEMPSTEAD	10924
9912412	GERCZAK RESIDENCE	GERCZAK RESIDENCE	UNKNOWN	UNKNOWN
9416346	MARKEL RESIDENCE	ECHO LAKE ROAD	WAWAYANDA	10973
9105746	CP 78 & RT, 17M	RT 17M	WAWAYANDA	10973
0607097	CONSTRUCITON SITE	ROUTE 6	WAWAYANDA	UNKNOWN
0506556	POLE #45264/50559	ROUTE 6	WAWAYANDA	UNKNOWN

Petroleum Bulk Storage Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
3-049662	MID-HUDSON FORENSIC PSYCHIATRIC CENTER	2834 ROUTE 17M	NEW HAMPTON	10958
3-173452	PIERCE WELL DRLL, CO INC	RD BOX 192	NEW HAMPTON	10958

Hazardous Waste Generation or Transport Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYN30003A508	032299-DELISTED			UNKNOWN
NYD980778328	MID HUDSON PSYCHIATRIC CENTER	ROUTE 17 M	GOSHEN	10924
NYD982184673	P P G INDUSTRIES INCORPORATED	LOC #1273 WEST GATE IND PK	GOSHEN	10924
NYD982794174	LANDFILL GENERATING PARTNERS IC O OCL	RTE 17M	GOSHEN	10924
NYD982794182	LANDFILL GENERATING PARTNERS I CO OCL	RTE 17M	GOSHEN	10924
NYD987016755	NYSDOT BIN 1003140	RTE 6 OVER EL RR - ABANDONED	GOSHEN	UNKNOWN
NYN300000009	ORANGE COUNTY DEPT. OF PUBLIC WORKS	P.O. BOX 509	GOSHEN	UNKNOWN
NYN300000079	DYKSHOORN FARM	RD 2 BOX 105	GOSHEN	UNKNOWN
NYN30003A465	ORANGE CO DEPT E F & S	ROUTE 17M	GOSHEN	10924
NYP000952945	VALUE FRAGRANCES	7 MUSKET CT	GOSHEN	10924
NYR000125633	SORRENTO CHEESE	1 SORRENTO DR RTE 17A RTE 17A	GOSHEN	10924
NYD002015360	GOLZ ENTERPRISES INC	RD 1 BOX 673	NEW HAMPTON	UNKNOWN
NYD084013945	AL SCALA DATSUN	RTE 17M BOX 399	NEW HAMPTON	UNKNOWN

Wastewater Discharges

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NY0145157	BLUE BEACON OF MONTGOMERY			UNKNOWN
NY0165255	IDC SOILS RECLAMATION			UNKNOWN
NY0208345	WESTWOOD CHEMICAL CORP			UNKNOWN
NY0218693	FEDERAL BLOCK CORP			UNKNOWN
NY0219843	MILL POND STP			UNKNOWN
NY0233617	AGWAY PETROLEUM CORP			UNKNOWN
NY0234117	ROLLING HILLS SD			UNKNOWN
NY0235423	MOBIL S/S 06-LYZ REM PROJ			UNKNOWN
NY0248011	ADVANCED FUEL INC			UNKNOWN
NY0250384	FRANKIE'S SUNOCO REM PROJ			UNKNOWN
NYG997901				UNKNOWN
NYP080080				10940
NYP080090				UNKNOWN
NYP080100				UNKNOWN
NYP080140				UNKNOWN
NYP080260				10940
NYU300060	AAR BROOKS			UNKNOWN
NYU300089				UNKNOWN
NYU300101				UNKNOWN
NYU900047	ORANGE CO. SANITARY LANDFILL			10924
NY0005622	MACK BROTHERS LTD	PO BOX 431	GOSHEN	10924

Air Releases

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
3607100038	MID-HUDSON PSYCHIATRIC CENTER	BOX 58-ROUTE 17M	WAWAYANDA	10924

Hazardous waste codes presented in individual Toxic Information Profiles are defined below.

F002 The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1−trichloroethane, chlorobenzene, 1,1,2−trichloro−1,2,2−trifluoroethane, ortho−dichlorobenzene, trichlorofluoromethane, and 1,1,2−trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (T)

Source: U. S. Environmental Protection Agency

How Toxic Site Locations Are Mapped

Toxics Targeting maps toxic site locations on a digital version of the U. S. Census map or those used by local authorities using addresses and map coordinates provided by site owners/operators or government agencies. In order to allow site locations to be verified independently, the information used to map each site is presented in the first section of each Toxic Site Profile, along with a description of the mapping technique used and any address corrections that were made in order to locate toxic sites with incomplete or inadequate site location information. The mapping process is explained below.

Map Identification Number: 12 Site Name: Acme World Manufacturing, Inc.

Site Address: 55 Main Street Anytown, NY 11797

MAP LOCATION INFORMATION

Site location mapped by:

Address Matching

1) Most toxic sites are mapped by matching addresses provided by site owners/operators or government agencies with locations on a digital version of the street or parcel map. These site locations are identified with the method used to map them.

Note: Some sites have an address match location and a map coordinate location. Both locations are mapped because they can be equally correct.

or Map Coordinate

2) Some toxic sites are located using map coordinates provided by site owners/ operators or government agencies. These site locations are identified "map coordinate." Map coordinates for Toxic Wastewater Discharges, Toxic Release Inventory sites and Major Oil Storage Facilities should be considered suspect.

or Manual Mapping

or Site Visit

3) Incomplete addresses or map coordinates require some site locations to be determined by commercial street maps (manual mapping), site visits, map coordinates from other databases and address location services. Application of any of these methods is identified accordingly.

ADDRESS CHANGE INFORMATION

Revised Street: NO CHANGE

Revised zip code: NO CHANGE

4) Site addresses are sometimes corrected to eliminate obvious errors that prevent sites from being mapped. All address corrections are noted here.

Information Source Guide

Toxics Targeting's Environmental Reports contain government and other information compiled on 18 categories of reported known or potential toxic sites. Each toxic site database is described below with information detailing a) the source of the information, b) the date when each database is covered to and c) when *Toxics Targeting* obtained the information..

1) **National Priority List for Federal Superfund Cleanup:** Toxic sites nominated for cleanup under the Federal Superfund program. Annual compilation of special two-page detailed profiles of NPL sites. Also includes delisted NPL sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated from: 2/09/2015. Data obtained by Toxics Targeting: 2/09/2015.
New Facilities updated through: 2/09/2015. Data obtained by Toxics Targeting: 2/09/2015.

2) **Inactive Hazardous Waste Disposal Site Registry:** New York State database that maintains information and aids decision making regarding the investigation and cleanup of toxic sites. The Registry's data includes two-page profiles noting site name, ID number, description, classification, cleanup status, types of cleanup, owner information, types and quantities of contaminants, and assessment of health and environmental problems. Also included are sites that qualify for possible inclusion on the Registry. These Registry Qualifying sites may or may not be on the Site Registry.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 5/08/2015. Data obtained by Toxics Targeting: 5/08/2015.
New Facilities updated to: 5/08/2015. Data obtained by Toxics Targeting: 5/08/2015.

3) **Corrective Action Activity (CORRACTS):** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]
Data attributes updated through: 5/12/2015. Data obtained by Toxics Targeting: 5/14/2015.
New facilities updated through: 5/12/2015. Data obtained by Toxics Targeting: 5/14/2015.

4) **CERCLIS:** Toxic sites listed in the Federal Comprehensive Environmental Response, Compensation and Liability Information System. Includes Active and No Further Remedial Action Planned (NFRAP) sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated through: 10/25/2013. Data obtained by Toxics Targeting: 1/7/2014.
New Facilities updated through: 10/25/2013. Data obtained by Toxics Targeting: 1/7/2014.

5) **Brownfield Programs:** NYS programs for sites that are abandoned, idled or under-used industrial and/or commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.
ASTM required.* Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 5/08/2015. Data obtained by Toxics Targeting: 5/08/2015.
New Facilities updated to: 5/08/2015. Data obtained by Toxics Targeting: 5/08/2015.

(a) **Brownfield Cleanup Program (BCP)**
(b) **Voluntary Cleanup Program (VCP)**
(c) **Environmental Restoration Program (ERP)**

6) **Solid Waste Facilities: NYS Solid Waste Registry**, including, but not limited to, landfills, incinerators, transfer stations, recycling centers.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated to: 4/1/2013. Data obtained by Toxics Targeting: 4/1/2013.

7) **RCRA Hazardous Waste Treatment, Storage or Disposal Facility Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the DEC's Division of Environmental Remediation pursuant to NYS Law and the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 4/28/2015. New facilities obtained by Toxics Targeting: 5/18/2015.
Manifest transactions data updated to: 4/28/2015. Manifest transactions data obtained by Toxics Targeting: 5/18/2015.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 5/12/2015. Data obtained by Toxics Targeting: 5/14/2015.
Data attributes updated through: 5/12/2015. Data obtained by Toxics Targeting: 5/14/2015.

8) **Spills Information Database:** Spills reported to the DEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from Petroleum Bulk Storage Regulations) or 6 NYCRR Section 595.2 (from Chemical Bulk Storage Regulations). This database includes both *active* and *closed* spills.
ASTM required.* Fannie Mae.** Source: NYS Department of Environmental Conservation.[2]

New spills through: 4/24/2015 New spills data obtained by Toxics Targeting: 4/24/2015
Spill attribute data through: 4/24/2015 Spill attribute data obtained by Toxics Targeting: 4/24/2015

Active spills: paperwork not completed. Closed spills: paperwork completed.
Both active and closed spills may or may not have been cleaned up (see Date Cleanup Ceased in spill profiles).

9) **Major Oil Storage Facilities:** NYS database of facilities licensed pursuant to Article 12 of the Navigation Law, 6NYCRR Parts 610 and 17NYCRR Part 30, such as onshore facilities or vessels, with petroleum storage capacities equal to or greater than 400,000 gallons. **Tank and other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

Data updated through: 5/11/2015. Data obtained by Toxics Targeting: 5/11/2015.

10) **Petroleum Bulk Storage Facilities:** County or State databases of aboveground and underground petroleum storage facilities.
ASTM required.* Fannie Mae required.**

All New York Counties except Cortland, Nassau, Rockland, Suffolk:
NYS Petroleum Bulk Storage Database. This includes all New York State counties except Cortland, Nassau, Rockland, Suffolk, and Westchester. ASTM required.* Fannie Mae required.**
Source: NYS Department of Environmental Conservation.[2]
New facilities updated through: 5/11/2015. Data obtained by Toxics Targeting: 5/11/2015.
Tank data updated through: 5/11/2015. Data obtained by Toxics Targeting: 5/11/2015.

Westchester County: Data updated through 10/1/1998

Cortland County: **Cortland County Health Dept. Tank database**.
Source: Cortland County Health Department[7]
Data updated through: 7/15/2004 Data obtained by Toxics Targeting: 7/23/2004

Nassau County: a compilation of the following 2 databases:
Heat producing products and other products:
Source: Nassau County Department of Health.[3]
NOTE: This data is being withheld by the Nassau County DOH
Data updated through: 4/1/2001. Data obtained by Toxics Targeting: 1/2/2002

Generally non-heat producing products:
Source: Nassau County Fire Marshal.[4]
Data updated through: 8/6/2009. Data obtained by Toxics Targeting: 9/22/2009

Rockland County: **Rockland County Dept. of Health Tank database.**
Source: Rockland County Department of Health.[5]
Data updated through: 4/13/2004. Data obtained by Toxics Targeting: 4/16/2004.

Suffolk County: **Suffolk County Dept. of Health Article 12 database**
Source: Suffolk County Department of Health Services.[6]
Data updated through: 1/30/2014. Data obtained by Toxics Targeting: 7/22/2014.

11) **RCRA Hazardous Waste Generators and/or Transporters Databases:**
(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the NYS Department of Environmental Conservation's Division of Environmental Remediation pursuant to New York State Law.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 4/28/2015. New facilities obtained by Toxics Targeting: 5/18/2015.
Manifest transactions data updated to: 4/28/2015. Manifest transactions data obtained by Toxics Targeting: 5/18/2015.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]

New facilities updated through:	5/12/2015.	Data obtained by Toxics Targeting:	5/14/2015.
Data attributes updated through:	5/12/2015.	Data obtained by Toxics Targeting:	5/14/2015.

12) **Chemical Bulk Storage Facilities:** New York State database of facilities compiled pursuant to 6NYCRR Part 596 that store regulated substances listed in 6NYCRR Part 597 in aboveground tanks with capacities greater than 185 gallons and /or in underground tanks of any size. **Tank and other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated through: 5/11/2015. Data obtained by Toxics Targeting: 5/11/2015.

13) **Hazardous Substance Waste Disposal Site Study:** NYS database of waste disposal sites that may pose threats to public health or the environment, but could not be remediated using monies from the Hazardous Waste Remedial Fund.
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 5/16/2000. Data obtained by Toxics Targeting: 5/16/2000.

14) **Toxic Release Inventory (TRI):** Federal database of manufacturing facilities required under Section 313 of the Federal Emergency Planning and Community Right-to-Know Act to report releases to the air, water and land of any specifically listed toxic chemical. See Fannie Mae requirement** below.
Source: U. S. Environmental Protection Agency.[1] / NYS Department of Environmental Conservation[2]
Data updated through: 3/8/2004. Data obtained by Toxics Targeting: 3/25/2004

15) **Toxic Wastewater Discharges (Permit Compliance System):** Federal database of discharges of wastewater to surface waters and groundwaters. See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 6/17/2004. Data obtained by Toxics Targeting: 7/19/2004.

16) **Air Discharge Facilities:** EPA AIRS database containing address information on each air emission facility and the type of air pollutant emission it is. Compliance information is also provided on each pollutant as well as the facility itself.
See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency[1]
Data updated through: 11/24/1999. Data obtained by Toxics Targeting: 1/6/2000

17) **Civil Enforcement & Administrative Docket:** This database is the U. S. EPA's system for tracking administrative and civil judiciary cases filed on behalf of the agency by the Department of Justice. Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
New Sites through: 10/14/1999.
Data updated through: 10/14/1999. Data obtained by Toxics Targeting: 11/18/1999.

18) **Emergency Response Notification System (ERNS):** Federal database of spills compiled by the Emergency Response Notification System. On-site searches only.
ASTM required.* See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 1/31/2000. Data obtained by Toxics Targeting: 2/15/2000

* American Society of Testing Materials: Standard Practice on Environmental Site Assessments: Phase I Environmental Site Assessment Process (E1527-05).
** Fannie Mae's Part X Environmental Hazards Management Procedures specify 1.0 mile searches for "any state or Federal list of hazardous waste sites (e.g. CERCLIS, HWDMS etc.)." Searches for the property and adjacent properties are specified for "chemical manufacturing plants," "obvious high risk neighbors engaging in storing or transporting hazardous waste, chemicals or substances" and "...any documented or visible evidence of dangerous waste handling... (e.g. stressed vegetation, stained soil, open or leaking containers, foul fumes or smells, oily ponds, etc." Searches for property and adjacent properties can include sites up to a quarter mile away (W. Hayward, Director, Multi-Family Business Planning and Control, Fannie Mae, personal communication, 5/94).

[1]U. S. Environmental Protection Agency, 290 Broadway, NY, NY 10007-1866.

[2]NYS Department of Environmental Conservation, 625 Broadway, Albany, NY 12233.

[3]Nassau County Department of Health, Bureau of Land Resources Management, 240 Old Country Road, Mineola, NY 11501.

[4]Nassau County Fire Commission, Office of the Fire Marshal, 899 Jerusalem Avenue, P. O. Box 128, Uniondale, NY 11553.

[5]Rockland County Department of Health, The Dr. Robert Yeager Health Center, Building D, Sanitorium Road, Pomona, NY 10970.

[6]Suffolk County Department of Health, Hazardous Materials Management, 15 Horseblock Place, Farmingville, NY 11738-1220.

[7]Cortland County Department of Health, 60 Central Avenue, Cortland, NY 13045-2746

APPENDIX D

SUPPORTING DOCUMENTATION

Environmental Site Assessment – Site Questionnaire

Please answer all questions to the best of your actual knowledge. Please call with any questions or comments.

AKRF Contact: _____
Office phone: _____
Cell phone: _____

Person completing questionnaire: RICHARD VERHAGE

Relationship to the site: OWNER'S PRINCIPAL MEMBER

Length of time associated with the site: 2 YEARS

1) When were the current buildings constructed? Do you have surveyed drawings? Blueprints? Geotechnical subsurface studies?

N/A

2) Have there been any renovation or additions since initial construction?

NO

3) Is there any historic fill on-site? (Construction and demolition debris? Ash? Dredge spoils?) FORMER LANDFILL

4) Have there been any asbestos or lead assessment or abatement activities at the property? If there is asbestos on-site do you have an operations and maintenance plan? NO

5) Please describe land use at the property prior to construction of the current buildings. FORMER LANDFILL

6) Please describe activities at the site since construction of the current buildings, including previous tenants. Commercial activities such as dry cleaning and auto repair are of particular interest to this study.

N/A

7) Do you know of specific chemicals that are present or once were present at the property? NO

8) Do you know of any environmental cleanups that have taken place at the property? NO

9) Do municipal water and sewers service the site, or does it rely on private wells and/or a septic system?

WELLS

10) Are you aware of any wells, public or private, on or near the subject property?

PRIVATE WELLS

11) Please indicate the nature and frequency of trash removal from the subject property. N/A

12) Are you aware of the current or former use, storage or production of any hazardous materials (petroleum products, solvents, paints, pesticides, etc) in any part of the subject site?

NO

13) Are any environmental permits or licenses held currently, or in the past, relating to the property?

FORMER LANDFILL + CURRENT PERMIT FROM DEC & COPY PROVIDED TO BUYER

14) Are there any registrations held for underground or above ground storage tanks at the property (NYSDEC, NYCDOB, FDNY)?

NO

15) Have any previous environmental reports, audits or investigations been performed at the site? If available, please provide copies, preferably prior to the site visit.

ALREDY PROVIDED

16) Does the site or any part of the site operate under a community right-to-know plan, safety plan, preparedness and prevention plan, spill prevention, countermeasure or control plan?

NO

17) Does the property have any activity and use limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?

NO

18) Are you aware of any reports regarding hydrogeologic or geotechnical conditions on the property or surrounding area?

NO

19) Please provide copies of any notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating environmental liens encumbering the property.

ALREADY PROVIDED

20) Please provide copies of any hazardous waste generator notices or reports.

N/A

21) Please advise of:

ALL DOCUMENTATION PREVIOUSLY PROVIDED

a. any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on or from the property,

b. any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the property; and

c. any notices from any government entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

22) Have any environmental liens been filed or recorded against the property under federal, tribal, state or local law?

NO

23) Are you aware of value reduction on the property due to environmental issues?

NO

24) Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

YES

25) Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

NO

26) Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of releases at the property?

NO

Amys Kitchen
Hartley Road/Cheechunk Road
Goshen, NY 10924

Inquiry Number: 4308005.3
May 29, 2015

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2013	☑	☐	Cole Information Services
2008	☑	☐	Cole Information Services
2003	☑	☐	Cole Information Services
1999	☑	☐	Cole Information Services
1995	☑	☐	Cole Information Services

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

Hartley Road/Cheechunk Road
Goshen, NY 10924

Year	*CD Image*	*Source*
CHEECHUNK RD		
2013	pg A1	Cole Information Services
2008	pg A3	Cole Information Services
2003	pg A5	Cole Information Services
1999	pg A7	Cole Information Services
1995	pg A9	Cole Information Services
HARTLEY RD		
2013	pg A2	Cole Information Services
2008	pg A4	Cole Information Services
2003	pg A6	Cole Information Services
1999	pg A8	Cole Information Services
1995	pg A10	Cole Information Services

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
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CHEECHUNK RD 2013

2	DAN RONGA
111	ANO MEDINA
112	JAMES CARROLL
113	BRUCE JOHNSON
115	ALANA BUONO
116	FRED VANDERHEIDE
117	GABRIEL PATZUK
118	WILLIAM KAHN
120	FRANK FLANIGAN
121	RYAN REED
123	GEORG ROBERTSON
124	BRIAN BURROW
126	HARRY FOOTE
127	DANNY LAI
128	STEVEN NEIL
129	MELODY MIKULEWICZ
131	OCCUPANT UNKNOWN
132	BRIAN FOOTE
	FOOTES AMISH SHEDS
133	CHUNWEN LIANG
136	ANDREW PEDEN
138	DONNA ALLEN
212	JEAN STRONG
214	DANIEL RONGA
216	RICHARD FUCCI

Target Street	Cross Street	Source
✓	-	Cole Information Services

HARTLEY RD 2013

91	AL TURI LANDFILL TREATMENT FACILITY
	JW OPERATING COMPANY
95	ALLWASTE SYSTEMS INC
	NORTHERN RECYCLING
96	E C 2 INC
	OCCUPANT UNKNOWN
100	HIG FABRICATIONS
112	GERALD HIGBIE
121	TURI AL

Target Street	Cross Street	Source
✓	-	Cole Information Services

CHEECHUNK RD 2008

2	DAN RONGA
111	RUTH HANNIBAL
112	WILLIAM ACKERSON
113	BRUCE JOHNSON
115	ALANA BUONO
116	FRED VANDERHEIDE
117	GABRIEL PATZUK
118	ERNEST KAHN
119	HENRY ANDRYSHAK
120	ELIZABETH RAFFA
121	JOHN LYONS
123	OCCUPANT UNKNOWN
124	BRIAN BURROW
126	HARRY FOOTE
127	DANNY LAI
	TQM ASSOCIATES INC
128	STEVEN NEIL
129	MELODY MIKULEWICZ
131	HAROLD BIEN
132	FOOTES AMISH SHEDS
133	CHUNWEN LIANG
136	ANDREW PEDEN
138	DONNA ALLEN
212	JEAN STRONG
214	GARY ODOWD
216	RICHARD FUCCI

Target Street	Cross Street	Source
✓	-	Cole Information Services

HARTLEY RD 2008

95	INTER STATE WASTE SERVICES
	NORTHERN RECYCLING
	WASTE MANAGEMENT INC
112	DON KERR
121	TURI AL

Target Street	Cross Street	Source
✓	-	Cole Information Services

CHEECHUNK RD 2003

111	ANO MEDINA
112	CHARLES DOLSON
113	SHIRLEY JOHNSON
115	ALANA BUONO
116	FRED VANDERHEIDE
117	GABRIEL PATZUK
118	MARIANNE KAHN
119	JOHN NEW
120	ELIZABETH RAFFA
121	GLENN MURPHY
123	GEORGE ROBERTSON
124	GREGG COSTA
126	MARRY FOOTE
	ORANGE COUNTY LAND IMPROVEMENT
127	PETER LAI
131	ROBERT MIKULEWICZ
133	CHUN LIANG
212	JEAN STRONG

Target Street	Cross Street	Source
✓	-	Cole Information Services

HARTLEY RD 2003

73	AL TURI LANDFILL INC
91	JW OPERATING CO
95	OCCUPANT UNKNOWN
112	DON KERR
121	TURI AL

Target Street	Cross Street	Source
✓	-	Cole Information Services

CHEECHUNK RD 1999

17	JOHN NEW
	KRISTOP HARMS
112	CHARLES DOLSON
116	FRED VANDERHEIDE
118	E KAHN
124	DEANNA SUPLINA
127	PETER LAI
206	ROBERT HUFCUT
212	WILLIAM STRONG

Target Street	Cross Street	Source
✓	-	Cole Information Services

HARTLEY RD 1999

108 LUZON WILDFLOWER NURSERY

Target Street	Cross Street	Source
✓	-	Cole Information Services

CHEECHUNK RD 1995

0	BEREGOWITZ CATHERINE

Target Street	Cross Street	Source
✓	-	Cole Information Services

HARTLEY RD 1995

0
AL TURI LANDFILL INC
J-W OPERATING CO
J-W OPERATING CO INC
NORTHERN RECYCLING
RYAN SANITATION

APPENDIX E
STATE AND LOCAL RECORDS

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Technical Support, 11th Floor
625 Broadway, Albany, NY 12233-7020
Phone: (518) 402-9553 • Fax: (518) 402-9547
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

May 25, 2010

Mr. Joseph Gambino, President
Al Turi Landfill, Inc.
73 Hartley Road
Goshen, NY 10924

Dear Mr. Gambino:

As mandated by Section 27-1305 of the Environmental Conservation Law (ECL), the New York State Department of Environmental Conservation (Department) must maintain a Registry of all inactive disposal sites suspected or known to contain hazardous waste. The ECL also mandates that this Department notify the owner of all or any part of each site or area included in the Registry of Inactive Hazardous Waste Disposal Sites as to changes in site classification.

Our records indicate that you are the owner or part owner of the site listed below. Therefore, this letter constitutes notification of change in the classification of such site in the Registry of Inactive Hazardous Waste Disposal Sites in New York State.

DEC Site No.: 336016
Site Name: Old Al Turi Landfill
Site Address: 73 Hartley Road

Classification change from class 2 to class 4

The reason for the change is as follows:

Since the landfill was capped and a gas collection system was installed in 2001, groundwater monitoring data indicates that the implemented remedy has been effective in decreasing leachate-related contaminants in groundwater. Contact with the landfilled waste is prevented by the permanent soil and grass-covered cap underlain by a geo-membrane barrier. Drinking contaminated groundwater is not likely as there are no drinking water wells downgradient of the landfill. In addition, institutional controls, in the form of a deed restriction, prevent the installation of drinking water wells in the 'Meadow Area' located north of the site and a long-term operation, maintenance and monitoring plan has been implemented. Should specified groundwater criteria be exceeded a contingency plan will be implemented for the site.

Enclosed is a copy of the Department's Inactive Hazardous Waste Disposal Site Report form as it appears in the Registry. An explanation of the site classifications is available at http://www.dec.ny.gov/chemical/8663.html. The Law allows the owner and/or operator of a site listed in the Registry to petition the Commissioner of the New York State Department of Environmental Conservation for deletion of such site, modification of site classification, or modification of any information regarding such site, by submitting a written statement setting forth the grounds of the petition.

Such petition may be addressed to:

Honorable Alexander B. Grannis
Commissioner
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-1010

For additional information, please contact Ms. Janet Brown at 845-256-3826.

Sincerely,

Kelly A. Lewandowski

Kelly A. Lewandowski, P.E.
Chief
Site Control Section

KAL/WB/ss
Enclosures

ec: D. Desnoyers
D. Weigel
A. English
K. Lewandowski

bec: w/Enc.
G. Litwin, NYSDOH
R. Schick Chief, Remedial Bureau C
J. Parker, Regional Attorney, Region 3
A. Ciesluk, Regional Permit Administrator, Region 3
E. Moore, RHWRE, Region 3
J. Brown, Region 3
W. Bayer, Originator

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
Inactive Hazardous Waste Disposal Report

Site Code	336016					
Site Name	Old Al Turi Landfill	**Address**	73 Hartley Road			
Classification	04	**City**	Goshen	**Zip**	10924	
Region	3	**County**	Orange	**Town**	Goshen	
Latitude	41 degrees, 24 minutes, 12.94 seconds			**Estimated Size**		43.5000
Longitude	-74 degrees, 22 minutes, 41.53 seconds					
Site Type	Landfill					

Site Description

Location Description: This 44 acre site is a privately owned, inactive and unlined landfill located west of the Village of Goshen in Orange County. The landfill is bordered on the west by a man-made diversion of the Wallkill River known as the Cheechunk Canal, to the east by Hartley Road, to the south by Route 17M, and to the north by a meadow owned by the Al Turi Landfill.

Site Features: The landfill has been capped with geo-membrane, a barrier protection layer of soil and top soil capable of sustaining a vegetative cover. There is a gas collection and monitoring system installed on-site and the gas is used to generate electricity or is flared when the generator is not operational. An adjoining solid waste landfill, also owned by Al Turi, Inc., has also been closed.

Current Use: The site is not in use.

Surrounding Uses: The area is primarily industrial with scattered residential development. To the west of the site is the Hudson Psychiatric Center. Commercial and mixed use establishments exist north and south of the site.

Historical Sources of Contamination: The landfill accepted wastes from municipal, commercial and industrial sources from 1968 to 1981. Right-to-know reports indicate that at least 230 tons of still bottom residue, waste solvents and allyl isothiocyanate waste were disposed of at this site during the 1970's from Hercules, Inc.

Investigation/Actions completed to date: Groundwater monitoring has been conducted at the site since 1979. A Remedial Investigation/ Feasibility was completed in 1996 and a Record of Decision (ROD) was issued in March 1996. Pursuant to the ROD, the landfill was capped in accordance with Part 360, a groundwater monitoring network was established and institutional controls in the form of a deed restriction were put in place. Construction of the remedy was completed in August 2001. A contingency plan to address any significant impact to the Wallkill River, also required by the ROD, is in place.

The potential for soil vapor intrusion was evaluated by the NYSDOH and the NYSDEC, and no further actions were deemed necessary in July 2008.

Current Status: Groundwater and landfill gas are monitored periodically. A 2009 review of the semi-annual analytical results for the years 2006 to 2008 indicates that the Ground Water Trigger Levels (GWTLs) have not been exceeded. The decrease in the median concentration of ammonia since the capping of the landfill in 2001 indicates that the implemented remedy has been effective in decreasing leachate-related groundwater quality impact at the site.

Contaminants of Concern (Including Materials Disposed) Quantity

OU 01

BENZENE
BARIUM
MAGNESIUM
VINYL CHLORIDE
TRICHLOROMONOFLUOROMETHANE
DICHLORODIFLUOROMETHANE
1,1-DICHLOROETHANE
DICHLOROETHYLENE

5/24/2010

1,2-DICHLOROETHANE
DICHLOROETHYLENE
TRICHLOROETHENE (TCE)
CHROMIUM
ZINC

Analytical Data Available for : Groundwater, Surface Water, Soil, Sediment, Soil Vapor

Applicable Standards Exceeded for: Groundwater

Site Environmental Assessment

Nature and Extent of Contamination: The contaminants of concern identified at this site include inorganics (metals) and volatile organic compounds.

Unknown quantities of the following volatile organic compounds (VOCs) are suspected to have been disposed at the site: vinyl chloride, benzene, dichlorodifluoromethane, cis-1,2-dichloroethene, and 1,1-dichloroethane.

Extent of contamination: Groundwater in the vicinity of the landfill has been impacted. Since the groundwater discharges to the near by Wallkill River, the potential for impact to the Wallkill River is being monitored to ensure that the thresholds levels established in the contingency plan for the various contaminants of concern are not exceeded.

For each of the thirteen groundwater wells that are monitored as a part of the contingency plan, groundwater trigger levels for the contaminants of concern have been established.

Site Health Assessment

Residences and businesses in the area use private wells although none of the wells are directly downgradient from the site. No site-related contamination has been detected in river water samples or private well samples collected adjacent to the site. Therefore, exposures to contaminants via drinking water or surface water are not expected. The landfill was capped in 1983 with a low permeable till which reduced potential exposures due to direct contact. The existing active gas collection and treatment system minimizes potential exposures to air emissions. Construction on a new landfill cap has been completed. This will further reduce the potential for migration of contaminants from the landfill to nearby private wells. The potential for soil vapor intrusion was evaluated, and no further actions were deemed necessary.

Owners

Operators

Current Operator(s)

JOSEPH GAMBINO

AL TURI LANDFILL, INC.

73 HARTLEY ROAD

GOSHEN NY 10924

GWI
Tel: (845) 744-6191
Fax: (845) 744-2421

GROUND WATER INVESTIGATIONS, INC.
Professional Hydrogeologic Services

65 Main Street
P.O. Box 1070
Pine Bush, NY 12566

November 29, 2007

Mr. Steven Parisio
New York State Department of
Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561-3042

Re: Al Turi Landfill - NYSDEC Solid Waste No. 36-S-04
July 2007 Groundwater Quality Results – Operational and Class II Sites

Dear Mr. Parisio:

Enclosed please find one complete copy of the July 2007 Groundwater Monitoring Report that includes environmental data for both the Operational and Class II sites located at the Al Turi Landfill. In accordance with the requirements of Special Condition No. 39 of the now expired Landfill Operating Permit (NYSDEC Permit No. 3-3330-00002/21) and the July 2005 Environmental Monitoring Plan (EMP), this report includes the July 2007 analytical data and summary tables of the groundwater data collected for the July sampling event, as well as a brief report discussing the current groundwater quality management program at the facility. The report provides an evaluation of the data generated in July 2007 with respect to applicable water quality standards, as well as developed trigger values as they relate to the identification of any apparent changes in water quality.

A diskette that presents the historical groundwater quality data (including the July 2007 data) has been included.

Sincerely,

Ground Water Investigations, Inc.

Marc A. Colantuono
Senior Environmental Scientist
Project Manager

cc: J. Gambino - Al Turi Landfill (without diskette)
T. Russo – ECSI (without diskette)

2007 SAMPLING YEAR

AL TURI LANDFILL
WATER QUALITY MONITORING REPORT

OPERATIONAL AND CLASS II SITE

GOSHEN, NEW YORK

Prepared For

AL TURI LANDFILL, INC.
Goshen, New York

Prepared By

GROUND WATER INVESTIGATIONS, INC.
Pine Bush, New York 12566

November 2007

Ground Water Investigations, Inc.
Professional Hydrogeologic Services

2007 SAMPLING YEAR
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – OPERATIONAL SITE
GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

November 2007

Prepared by

Ground Water Investigations
65 Main Street
Pine Bush, New York 12566

Project 256-00-00

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OPERATIONAL LANDFILL

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Attachments

Drawing No. 1 - Well Location Plan Pocket

Diskette - Laboratory Analytical Data Pocket

1 INTRODUCTION

The water quality management program at the Al Turi Landfill, Goshen, New York, includes the semi-annual sampling and analysis of groundwater, surface water, contained leachate, and sediment samples from locations in and around the "Operational Landfill" and the evaluation of the data generated by these samples. The facility has completed closure and is now in the post-closure period. During the January and July 2007 sampling events, modified baseline sampling was performed in accordance with 6 NYCRR Part 360-2.17(a), the requirements of Special Condition Nos. 36 through 38 of the facility's expired September 1997 Landfill Operating Permit (Permit No. 3-3330-00002/21), and in accordance with the revised and approved July 2005 Environmental Monitoring Plan (EMP).

Water quality data generated in 2007 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The environmental data collected from the Operational Landfill site has been presented and evaluated in this report.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

For the Operational Landfill, water quality data generated in 2007 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The trigger values were developed using a limited database that was established for the Al Turi Landfill prior to the promulgation of regulations governing the collection of such data. The values were developed from two or three sampling events for baseline parameters conducted in August through October 1983 for three overburden wells (W-5S, W-6S, and W-7S), and 2 bedrock wells (W-6D and W-8D). Well W-6D has since been replaced with well W-6DA. Additionally, trigger values for metals were calculated based on the dissolved fraction results from field-filtered analyses. The Department values, or Part 703 standards, whichever are higher, serve as the trigger values for contingency monitoring at the Al Turi Landfill. Due to the limited pre-operational database, and the presence of undetected values for many of the parameters, the results do not constitute a "normal distribution" as required under Part 360-2.11(c)(5)(i)(c). Therefore, these values should be applied with caution. Given the limited available data, the 1983 values represent the best available estimate of pre-operational water quality, and are suitable as a screening tool in the monitoring program.

Because the Al Turi Landfill began operation prior to the promulgation of the current regulations, certain aspects of the regulations cannot be strictly applied. Notable deviations are the absence of an adequate pre-operational database and the lack of expanded parameter data for many of the monitoring points.

Semi-annual monitoring at the Operational Landfill currently consists of modified baseline analysis. This sampling is conducted in January and July of each year. The analysis for each event includes 6NYCRR Part 360 Baseline parameters with the exception of the parameters BOD, COD, TKN, sulfate and bromide. Sediment samples from the Wallkill River are analyzed for the 6NYCRR Part 360 baseline metals and TOC. Under updated regulations, the presence of baseline parameters above trigger values requires initiation of contingency monitoring, in which expanded parameters are analyzed. A trigger value exceedance occurs when the groundwater analytical data exceeds either the NYSDEC developed trigger values and/or the Part 703 State standards, whichever is higher.

The 6 NYCRR Part 360 regulations allow for the modification of the expanded parameter list to correspond with contaminants detected at a given facility. The analyses apply to all media sampled at the facility (groundwater, surface water, sediment, and contained leachate). The former contingency parameter list that was utilized at the facility consisted of the baseline parameter list plus the expanded parameters sulfide, phenol, naphthalene, 2-methyl phenol, 3-methyl phenol, and 4-methyl phenol. However, because the above mentioned expanded parameters were not detected within contingency groundwater monitoring wells, the NYSDEC approved a revised contingency monitoring list on June 22, 1999 and again on May 14, 2002. Monitoring at the facility has since been modified and now includes the monitoring program established in the July 2005 EMP.

Semi-annual groundwater quality is monitored at 21 groundwater monitoring wells (shallow and deep wells) located within the boundaries of the facility's property. One well, W-8D, is designated as the upgradient background well for the facility. Drawing 1 (in pocket) provides a site map of the facility indicating the locations of the monitoring points. In addition, baseline groundwater sampling and analysis is performed quarterly at Jesus Christ Triumphant Church (representing a 22nd well) located along Route 17M just south of the facility. Surface water and sediment samples are collected at two locations in the Wallkill River, upstream and downstream of the facility, while Sediment Basins A, B and D are sampled for water quality only. In addition, leachate samples are collected semi-annually from the primary and secondary leachate collection systems, and analyzed for a modified expanded parameter list. Sampling procedures utilized are also identified in the July 2005 EMP.

2.1 Operational Water Quality - Overburden Water Quality

Fourteen overburden groundwater monitoring wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the 2007 sampling year demonstrate that the following routine analytes were above their respective trigger values in the overburden monitoring wells during both semi-annual events: turbidity (14 wells); alkalinity (1 well); hardness (2 wells); ammonia (1 well); total dissolved solids (6 wells); calcium (2 wells); iron (14 wells); manganese (3 wells); and sodium (8 wells). Non-routine inorganic parameters detected above their respective trigger values during both sampling events in the overburden wells are limited to color (2 wells) and arsenic (3 wells).

It should also be noted that alkalinity, chloride, color, TDS, potassium and zinc were also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the overburden groundwater monitoring are presented in Table 2-1.

A review of the January 2007 volatile organic data indicates that with the exception of toluene in well W-28S, no volatile organic compounds were confirmed above groundwater standards during the January 2007 sampling event. Several observations of the compounds carbon disulfide and acetone were also observed in January 2007. However, these compounds have no historical confirmation, and were not observed during the July 2007 sampling event. Additionally, a review of the July 2007 volatile organic data indicates that with the exception of a low level detection of acetone in well W-7S and W-9S, no unflagged volatile organic compounds were detected in the shallow wells in 2007. The presence of acetone was considered to be artifact since its presence was also observed in one of the laboratory supplied holding blanks

Several elevated parameters were observed in well W-28S during the January 2007 sampling event. A review of the field data sheet for this well shows that a dead animal (mouse/mole) was observed in the well at the time of sampling. The presence of toluene and elevated inorganic parameters observed during this sampling event are believed to be attributable to the presence of the mouse in this well. This same scenario was encountered in January 2002, when a mouse was observed in the well and elevated data was reported. An inspection of the well by landfill personnel confirmed that the inner well cap was missing from this well, but has since been replaced.

2.2 Deep Well Water Quality

Seven deep wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from 2007 identified the following routine analytes as being above their respective trigger values in the deep water quality monitoring wells during both semi-annual sampling events: turbidity (7 wells); alkalinity (2 wells); hardness (2 wells); total dissolved solids (1 well); calcium (2 wells); iron (7 wells); manganese (2 wells); and sodium (1 well). In 2007, non-routine inorganic parameters detected above trigger limits were limited to arsenic in well W-10D and selenium in well W-30.

It should also be noted that alkalinity, chloride, color, TDS, potassium and zinc were detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the deep well monitoring are presented in Table 2-2.

2.3 Contingency Monitoring

Wells that were analyzed as part of contingency monitoring in 2007 included: W-1, W-6S, W-9S and W-17S. Contingency monitoring was performed for these wells due to

the historical confirmation of baseline parameters at concentrations above established trigger values. The baseline parameters of concern include arsenic in the samples from wells W-6S, W-9S and W-17S and benzene in W-1.

Arsenic was detected above its respective trigger value in well W-6S and W-9S during both 2007 sampling events and in well W-17S during the July 2007 sampling event only. Additionally arsenic in wells W-10D and W-16D and selenium in well W-30 were above their trigger limits during both sampling events in 2007. As part of continued monitoring, arsenic and selenium will again be sampled for during the 2008 sampling year (2 events).

A review of the volatile organic data, generated during the 2007 sampling year, indicates that with the exception of acetone (a common laboratory artifact), no confirmed detections of volatile organic compounds were reported. In 2007, benzene was reported as non-detect in well W-1.

The graphical representations of arsenic show an overall increasing trend in concentration changes for well W-9S, while the trends for wells W-6S and W-17S appear to have stabilized. Since January 1998 in well W-6S, the graph seems to suggest that the arsenic trend has also stabilized.

A graphical representation for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

2.4 Background Water Quality

Water quality data has been collected from groundwater monitoring wells which are installed in the meadow north of both the Al Turi Landfill and All-Waste Facility (Northern Recycling). These wells have been evaluated to assist in determining background water quality in the vicinity of the landfill. As part of the Remedial Investigation of the Old Al Turi Landfill, several wells have been shown to be clearly beyond the influence of groundwater moving toward the Wallkill River from beneath the landfill (Supplemental Remedial Investigation Report, Old Al Turi Landfill, Wehran, February 1994, Sheet 4 of 9) and are representative of background water quality. Additional historical data generated from the meadow wells indicates that several metals have been historically present in the local groundwater at concentrations above the New York State Groundwater Quality Standards (6 NYCRR Part 703).

The meadow wells have been re-developed to further help in the reduction of turbid conditions. However, several of the wells remained turbid throughout re-development, indicating that turbid conditions may also be reflective of local groundwater quality.

Based on the historical analytical results from these wells, it is clear that several analytes (iron and manganese) are present in the local groundwater at concentrations above the State standards, and at similar levels as those detected at the landfill. Data collected from the meadow wells are limited, when compared to the larger resource data base from the on-site operational monitoring wells, but the results do indicate that the exceedances observed in many of the on-site monitoring wells may be a function of local groundwater quality, and not a release from the landfill.

2.5 Church Well

Monitoring of the off-site residential well (church well) is performed quarterly and sampling of the well was conducted in July 2007 for the baseline parameters. A review of the data shows that, with the exception of a low level detection of selenium, no parameters were detected above trigger values in the church well. The data collected to date in 2007 from the church well are presented in Table 2-2.

3 SURFACE WATER/SEDIMENT QUALITY

Surface water and sediment samples are also collected semi-annually from the Wallkill River as part of continued monitoring at the Al Turi Landfill.

Surface water samples were collected with a stainless steel bucket at mid-stream locations from both the Route 17M Bridge (upstream) and Cheechunk Road Bridge (downstream). Field measurement readings obtained did not indicate the presence of river stratification at either location. Sediment samples collected at each location were collected from the bank of the river closest to the landfill.

The surface water samples collected from the Wallkill River upstream and downstream of the landfill in 2007 found that aluminum (July only) and iron (both events) were in exceedance of their Class C standards in both samples. A summary of the surface water data and sediment data collected from the Wallkill River is provided in Table 3-1 and Table 3-2, respectively. A review of the data indicates that conditions observed upstream of the facility are similar to conditions observed downstream of the facility.

Historically, water quality data from the river has shown a number of analytes at concentrations above the Class C standards in both the upstream and downstream samples. It has been determined that groundwater from beneath the landfill does discharge to the Wallkill River, and a comparison of the upstream and downstream surface water data continues to indicate that discharge of this groundwater has had no observable impact on the river's water quality.

In addition to the collection of surface water samples from the Wallkill River, sediment samples are collected from the upstream and downstream surface water sampling locations. A review of the data indicates that concentrations observed upstream were generally similar to concentrations that were observed downstream.

During the 2007 sampling year, efforts were made to collect water samples from Sediment Basins A, B and D. However, during the January 2007 sampling event each basin was frozen, and in July 2007, basin D was dry. A review of the July data from basins A and B shows that aluminum and iron were above their Class C standards in both basins. Additionally pH was above its limits in July for Basin A. A summary of the previously collected sediment basin sampling data is provided in Table 3-1.

4 LEACHATE MONITORING

In accordance with Special Condition No. 36 of the expired Operating Permit, samples are obtained from the primary and secondary leachate collection system associated with Areas 11, 12, and 13 (includes Areas 9 and 10) of the landfill. Samples from the leachate collection system are collected semi-annually. Because leachate from Area 13 drains into Area 12, the common primary and secondary monitoring points for these areas is sampled. Additionally, leachate from Areas 9 and 10, which are underlain with single composite liners and are not equipped with a secondary collection system, drains to the primary collection system associated with Area 13 and then Area 12.

During the 2007 sampling year, sampling of the leachate monitoring points was conducted in January and July. The analytical results from this sampling event have been provided in Table 4-1. Leachate collection system analytical results in the LCH-11S/11P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions include slightly higher concentrations of nitrate and zinc in LCH-11S.

Additionally, leachate collection system analytical results in the LCH-12S/12P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions include higher concentration of nitrate, sulfate, calcium, thallium and zinc in LCH-12S.

With the exception of acetone in LCH-11S, no non-flagged organic compounds, PCBs or pesticides/herbicides were detected in any of the leachate samples. Several low level dioxins and furans were detected in each of the primary leachate locations. Leachate samples will again be collected semi-annually in 2008.

5 IRON FLOC EVALUATION

The Wallkill River has been identified as a groundwater discharge area for shallow groundwater flowing from the Al Turi Landfill site. Surface water and sediment sampling is performed at upgradient and downgradient locations on the River as shown on Drawing 1.

During periods of abnormally low flow conditions, seepage of shallow groundwater has been observed along the banks of the Wallkill River. Occasionally orange staining has been observed at some of these seepage points, which has proven to be characteristic of iron oxidation. Past sampling of these seeps has suggested that the seepage water reflects observed shallow groundwater quality and is not the result of direct leachate seepage from the landfill.

In 2007, iron floc sampling was attempted in October 2007. Absorbent pads were placed in identified iron floc areas for the collection of a 5-day sample. However, during the 5-day collection period, heavy rain occurred and the river elevation rose to a level where sample points were no longer accessible. The Al Turi Landfill will continue to monitor the river elevation and conduct iron floc sampling when the seep area is once again accessible.

6 CONCLUSIONS

Contingency monitoring will continue during the 2008 sampling year in 4 groundwater monitoring wells as a result of the presence of non-routine parameter exceedances of established trigger values that are utilized to evaluate groundwater quality. The contingency monitoring wells and their non-routine parameters of concern include: W-6S (arsenic); W-9S (arsenic); W-17S (arsenic); and well W-1 (benzene only). Additional determinations were made from the data obtained in 2007:

- Many of the exceedances observed for parameters, such as iron and manganese, are likely due to the local groundwater quality rather than a landfill-related impact.

- Background historical groundwater quality data from the wells north of the site (the meadow wells) have indicated that a number of analytes are present in the local groundwater at similar concentrations to that observed in the on-site landfill monitoring wells. A number of parameters being detected in the background wells are at levels similar to those detected in the on-site landfill monitoring wells.

- A review of the volatile organic data, generated during the 2007 sampling year, indicates that no confirmed detections of volatile organic compounds were reported. Acetone, a common laboratory contaminate, was detected in several wells in 2007. Benzene was reported as non-detect in well W-1 in 2007.

- Arsenic was detected above its respective trigger value in wells W-6S, W-9S and W-10D during both 2007 sampling events. Arsenic was only detected above its trigger value in well W-17S during the July 2007 sampling event. As part of continued monitoring, arsenic will again be sampled for during the 2008 sampling year (2 events). Arsenic was also present in wells W-16D during both 2007 sampling events. Selenium was slightly above its trigger limit in the church well in July 2007.

- Although it has been demonstrated that groundwater from beneath the landfill does discharge to the Wallkill River, downstream surface water quality continues to demonstrate similar results to upstream surface water quality. Historical surface water data indicate that no significant change in water quality has occurred in the Wallkill River as a result of on-going landfill operations. Data collected in 2007 continues to demonstrate that the landfill has had no observable impact on water quality in the River.

APPENDIX A

OPERATIONAL LANDFILL
LABORATORY ANALYTICAL DATA

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2007
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-01	**7/26/06**	31.83	20.9	6.70	-12	2120	49.8	640	385	200	<0.010	579	<0.010	0.22	68	0.035	1310	34	0.28
W-01	**1/24/07**	25.98	8.6	6.93	-	2400	48.8	130	364	80	<0.010	580	<0.010	0.238	57.5	<0.005	1170	39	<0.100
W-01	**7/26/07**	27.40	18.9	6.55	-300	2520	78.7	740	452	550	<0.010	505	<0.020	<0.2	76.7	<0.005	640	74.6	0.922
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-03A	**1/26/06**	8.44	8.6	7.86	35	500	13.6	280	19.7	<5.0	<0.010	249	<0.010	0.39	<0.50	<0.005	447	<3.0	1.67
W-03A	**7/26/06**	12.49	15.1	8.29	-70	424	6.58	250	14.6	5	<0.010	175	<0.010	0.21	<0.50	<0.005	280	<3.0	0.371
W-03A	**1/24/07**	11.50	13.2	8.15	137	287	12.3	170	10.9	7	<0.010	168	<0.010	0.401	<0.50	<0.005	262	<3.0	0.25
W-03A	**7/26/07**	16.55	15.6	6.94	-63	1139	47.8	200	8.14	90	<0.010	288	<0.010	0.228	<0.50	0.006	170	<3.0	8.06
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-05S	**1/25/06**	15	7.7	7.25	-35	1231	5.32	570	54.9	10	<0.010	691	<0.010	<0.20	<0.50	<0.005	925	<3.0	<0.100
W-05S	**7/26/06**	18.75	21	7.06	-31	1049	26.2	470	112	120	<0.010	523	<0.010	<0.20	<0.50	<0.005	807	<3.0	<0.100
W-05S	**1/24/07**	18.24	15.2	6.94	-30	1142	8.62	520	91.9	25	<0.010	489	<0.010	<0.20	<0.50	<0.005	740	1.2	<0.100
W-05S	**7/26/07**	20.05	19.2	7.51	-77	517	103	470	104	1250	<0.010	591	<0.010	<0.20	<0.50	<0.005	777	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-06S	**1/25/06**	23.44	8.6	7.41	-60	852	42.6	500	17.1	22	<0.010	423	<0.010	0.25	1.09	<0.005	498	15	<0.100
W-06S	**7/26/06**	27.74	20.2	7.41	-25	1138	21.8	520	10.5	150	<0.010	455	<0.010	<0.20	2.1	<0.005	568	8	0.245
W-06S	**1/24/07**	27.13	14.6	6.90	-48	845	16.7	530	11.3	30	<0.010	505	<0.010	<0.20	1.8	<0.005	402	10.9	1.3
W-06S	**7/26/07**	28.57	21.7	6.88	-48	497	46.7	490	6.65	1400	<0.010	537	<0.040	0.4	1.77	<0.005	1000	7.7	1.84
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-07S	**1/25/06**	29.75	8.8	7.21	-40	1388	2.05	540	63.7	10	<0.010	795	<0.010	<0.2	<0.50	<0.005	950	<3.0	<0.10
W-07S	**7/26/06**	34.63	21.2	7.54	-30	1477	2.09	520	64.9	120	<0.010	674	<0.010	<0.20	<0.50	<0.005	1040	<3.0	0.144
W-07S	**1/24/07**	33.38	13.2	6.80	-32	1327	15.9	500	70.6	25	<0.010	821	<0.010	<0.20	<0.500	<0.005	955	5.3	0.264
W-07S	**7/26/07**	35.04	22.9	6.68	-41	598	39.1	470	72.4	300	<0.010	753	<0.020	0.207	<0.50	<0.005	172	<3.0	0.242
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-09S	**1/25/06**	39.88	9.8	6.81	3	1870	53.6	690	54.9	8	<0.010	793	<0.010	<0.2	<0.50	<0.005	910	7	3.18
W-09S	**7/26/06**	45.21	20	7.92	-40	1284	9.52	680	13.2	120	<0.010	559	<0.010	<0.20	<0.50	<0.005	732	3	0.182
W-09S	**1/24/07**	49.19	11.9	6.88	-45	1374	10.7	640	250	120	<0.010	759	<0.010	0.202	1.16	<0.005	682	34	4.94
W-09S	**7/26/07**	50.78	18.9	6.99	-45	607	52.1	540	16.6	1500	<0.010	565	<0.040	<0.20	<0.50	<0.005	698	25.7	0.123
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16S	**1/25/06**	37.09	5.3	8.29	8.5	432	16.6	200	2.59	<5.0	<0.010	194	<0.010	<0.20	<0.50	<0.005	300	<3.0	2.07
W-16S	**7/25/06**	42.62	15.6	8.31	-60	388	4.47	260	9.91	24	<0.010	155	<0.010	<0.20	<0.50	<0.005	262	<3.0	<0.100
W-16S	**1/24/07**	41.91	14.8	7.91	-35	373	12.7	280	17.1	7	<0.010	143	<0.010	<0.20	<0.50	<0.005	202	1.5	<0.100
W-16S	**7/26/07**	43.36	18.7	7.16	-69	236	8.25	180	<1.0	180	<0.010	97.7	<0.010	<0.20	<0.50	<0.005	252	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2007
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-01	**7/26/06**	<0.015	<0.010	0.604	<0.003	0.823	0.00527	145	0.00681	<0.020	0.0042	43.8	0.0035	<0.030	52.9	4.6	<0.0002	0.0110	48.1
W-01	**1/24/07**	<0.015	<0.010	0.663	<0.003	0.691	<0.005	143	<0.005	<0.020	<0.010	54.8	0.00345	<0.030	53.9	4.59	<0.0002	<0.030	41.5
W-01	**7/26/07**	<0.015	<0.010	0.708	<0.003	0.976	<0.005	121	0.0082	<0.020	<0.010	42.3	<0.003	<0.030	49.5	4.07	<0.0002	<0.030	53.1
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-03A	**1/26/06**	<0.015	<0.010	0.076	<0.003	<0.50	<0.005	74.1	0.0034	<0.020	0.012	3.45	0.0028	<0.030	15.4	0.215	<0.0002	0.0065	1.22
W-03A	**7/26/06**	<0.015	<0.010	0.181	<0.003	<0.50	<0.005	44	0.0028	<0.020	0.0061	0.715	0.00467	<0.030	15.8	2.28	<0.0002	<0.030	1.19
W-03A	**1/24/07**	<0.015	<0.010	0.0572	<0.003	<0.50	<0.005	44.7	<0.005	<0.020	<0.010	0.437	<0.003	<0.030	13.7	0.106	<0.0002	<0.030	1.24
W-03A	**7/26/07**	<0.015	<0.010	0.128	<0.003	0.764	<0.005	74.8	0.0128	<0.020	0.0291	14.9	0.0115	<0.030	24.6	1.49	<0.0002	<0.030	2.73
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-05S	**1/25/06**	<0.015	0.0172	0.15	<0.003	<0.500	<0.005	218	<0.005	<0.020	0.0129	13.8	<0.003	<0.030	35.7	2.15	<0.0002	<0.030	2.94
W-05S	**7/26/06**	<0.015	0.0144	0.133	<0.003	0.12	<0.005	170	<0.005	<0.020	0.0037	13.5	<0.003	<0.030	23.9	1.85	<0.0002	<0.030	2.48
W-05S	**1/24/07**	<0.015	0.0109	0.137	<0.003	<0.500	<0.005	161	<0.005	<0.020	<0.010	11.4	<0.003	<0.030	20.8	1.77	<0.0002	<0.030	2.25
W-05S	**7/26/07**	<0.015	0.916	0.451	<0.003	1.17	0.0146	191	<0.005	<0.020	<0.010	198	0.00593	<0.030	27.7	2.57	<0.0002	<0.030	<1.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-06S	**1/25/06**	<0.015	0.0296	0.34	<0.003	0.11	<0.005	134	0.0185	<0.020	0.0047	45.7	0.0065	<0.030	21.5	2.29	<0.0002	0.012	2.73
W-06S	**7/26/06**	<0.015	0.0599	0.466	<0.003	0.34	0.0071	141	0.009	<0.020	<0.010	63.2	0.00508	<0.030	24.8	2.38	<0.0002	0.0058	3.11
W-06S	**1/24/07**	<0.015	0.0566	0.541	<0.003	<0.500	<0.005	159	<0.005	<0.020	0.0139	69.7	0.00841	<0.030	26.4	2.59	<0.0002	<0.030	2.8
W-06S	**7/26/07**	<0.015	0.0445	0.448	<0.003	<0.50	0.0061	169	0.005	<0.020	0.0016	73	0.016	<0.030	27.7	3.11	<0.0002	<0.030	<1.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-07S	**1/25/06**	<0.015	0.0073	0.0658	<0.003	<0.50	<0.005	233	<0.005	<0.020	0.0112	20.8	0.0023	<0.030	51.9	1.88	<0.0002	<0.030	4.19
W-07S	**7/26/06**	<0.015	0.0105	0.0549	<0.003	0.12	<0.005	196	0.0029	<0.020	0.0417	21.9	0.00353	<0.030	45.1	1.67	<0.0002	<0.030	3.73
W-07S	**1/24/07**	<0.015	0.0247	0.063	<0.003	<0.500	<0.005	240	0.00947	<0.020	0.0468	28.4	<0.003	<0.030	53.9	1.98	<0.0002	<0.030	4.63
W-07S	**7/26/07**	<0.015	0.0146	0.055	<0.003	<0.500	<0.005	221	0.00752	<0.020	0.045	29.3	<0.003	<0.030	49	1.84	<0.0002	<0.030	4.23
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-09S	**1/25/06**	<0.015	0.0356	0.457	<0.003	0.3	0.0051	248	0.0033	<0.020	0.023	41.8	0.015	0.005	42.1	2.81	<0.0002	0.0035	4.93
W-09S	**7/26/06**	<0.015	0.0222	0.57	<0.003	0.16	<0.005	167	0.0036	0.0077	0.0034	28.9	0.002	<0.030	34.6	1.13	<0.0002	0.012	2.8
W-09S	**1/24/07**	<0.015	0.0358	0.895	<0.003	<0.500	<0.005	231	0.0183	<0.020	0.0215	62.7	0.0126	<0.030	44.5	2.43	<0.0002	<0.030	4.7
W-09S	**7/26/07**	<0.015	0.145	0.874	<0.003	<0.500	<0.005	180	<0.005	<0.005	<0.010	35.7	<0.003	<0.030	28.4	0.87	<0.0002	<0.030	2.96
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16S	**1/25/06**	<0.015	0.0096	0.0658	<0.003	0.12	<0.005	56	0.0118	<0.020	0.0175	19.7	0.013	<0.030	13.3	0.906	<0.0002	0.011	3.27
W-16S	**7/25/06**	<0.015	<0.010	0.032	<0.003	<0.500	<0.005	41.8	<0.005	<0.020	0.0047	1.6	0.0024	<0.030	12.4	0.311	<0.0002	<0.030	2.52
W-16S	**1/24/07**	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	37.4	<0.005	<0.020	<0.010	1.93	<0.003	<0.030	12	0.251	<0.0002	<0.030	3.39
W-16S	**7/26/07**	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	18.4	<0.005	<0.020	<0.010	0.959	<0.003	<0.030	12.6	0.067	<0.0002	<0.030	6

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2007
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-01	**7/26/06**	0.0088	<0.010	244	<0.010	0.0281
W-01	**1/24/07**	<0.005	<0.010	272	<0.010	0.017
W-01	**7/26/07**	<0.005	<0.010	270	<0.010	0.0299
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-03A	**1/26/06**	0.0134	<0.010	15.5	0.007	0.0318
W-03A	**7/26/06**	<0.005	<0.010	11.2	<0.010	0.0348
W-03A	**1/24/07**	<0.005	<0.010	14.2	<0.010	0.0182
W-03A	**7/26/07**	<0.005	<0.010	14.7	<0.010	0.0893
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-05S	**1/25/06**	0.0055	<0.010	23.2	<0.010	0.0491
W-05S	**7/26/06**	<0.005	<0.010	28.1	<0.010	0.0458
W-05S	**1/24/07**	0.0164	0.0594	31.6	<0.010	0.0901
W-05S	**7/26/07**	<0.005	<0.010	38.9	<0.010	0.4880
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-06S	**1/25/06**	0.0061	<0.010	4.64	<0.010	0.0317
W-06S	**7/26/06**	<0.005	<0.010	5.41	<0.010	0.0361
W-06S	**1/24/07**	<0.005	<0.010	4.89	<0.010	0.0436
W-06S	**7/26/07**	<0.005	<0.010	5.7	<0.010	0.067
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-07S	**1/25/06**	<0.005	<0.010	33.2	<0.010	0.0176
W-07S	**7/26/06**	0.00954	<0.010	35.1	<0.010	0.0463
W-07S	**1/24/07**	<0.005	<0.010	39.6	<0.010	0.0304
W-07S	**7/26/07**	0.00946	<0.010	41.2	<0.010	0.0678
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-09S	**1/25/06**	0.008	<0.010	34.2	<0.010	0.202
W-09S	**7/26/06**	<0.005	<0.010	11	<0.010	0.0335
W-09S	**1/24/07**	<0.005	<0.010	13.5	<0.010	0.157
W-09S	**7/26/07**	<0.005	<0.010	14.7	<0.010	0.0402
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16S	**1/25/06**	0.0077	<0.010	12.5	0.008	0.0475
W-16S	**7/25/06**	<0.005	<0.010	14.3	<0.010	0.0819
W-16S	**1/24/07**	<0.005	<0.010	11.6	<0.010	0.0203
W-16S	**7/26/07**	<0.005	<0.010	33.5	<0.010	0.0186

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2007
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16D	**1/25/06**	36.52	3.7	7.97	25	531	5.12	260	4.4	<5.0	<0.010	283	<0.010	<0.20	<0.50	<0.005	375	<3.0	<0.100
W-16D	**7/25/06**	42.18	16.8	8.17	-60	519	12.1	250	2.24	110	<0.010	212	<0.010	<0.20	<0.50	<0.005	340	<3.0	0.115
W-16D	**1/24/07**	41.34	13.8	7.82	98	427	16.1	260	2.91	7	<0.010	291	<0.010	<0.20	<0.50	0.007	322	1.5	0.445
W-16D	**7/26/07**	43.14	21.3	7.38	-77	314	16.6	260	1.38	<125	<0.010	281	<0.010	<0.20	<0.50	<0.005	803	<3.0	0.301
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17S	**1/25/06**	16.34	7.4	7.23	-70	1023	10.2	660	17.6	20	<0.010	587	<0.010	<0.20	<0.50	<0.005	700	6	0.982
W-17S	**7/25/06**	20.24	18.3	6.84	-19	968	110.2	560	60	70	<0.010	515	<0.010	<0.20	<0.50	<0.005	747	5	9.61
W-17S	**1/24/07**	19.74	15.8	6.95	-35	1017	7.77	540	35.6	30	<0.010	614	<0.010	<0.20	<0.50	<0.005	642	3.7	2.38
W-17S	**7/26/07**	21.47	17.3	6.94	-43	703	48.3	450	94.9	1200	<0.010	690	<0.040	<0.20	<0.50	<0.005	825	70.7	1.29
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17D	**1/25/06**	15.66	4.1	7.31	115	999	22.5	380	85.9	7	<0.010	547	<0.010	<0.20	<0.50	<0.005	570	3	0.228
W-17D	**7/25/06**	19.38	20.7	7.66	-63	850	17.64	390	119	16	<0.010	435	<0.010	<0.20	<0.50	<0.005	718	4	0.13
W-17D	**1/24/07**	19.51	8	7.49	-70	1121	22.2	430	110	10	<0.010	601	<0.010	<0.20	<0.50	<0.005	698	<3.0	0.179
W-17D	**7/26/07**	18.78	19.3	7.22	30	2700	12.7	440	110	36	<0.010	619	<0.010	<0.20	<0.50	<0.005	230	<3.0	0.164
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27S	**1/25/06**	35.33	11.1	6.94	-45	1391	13.9	880	4.92	500	<0.010	867	<0.010	<0.20	<0.50	<0.005	1040	37	<0.100
W-27S	**7/25/06**	38.81	21.7	7.27	-20	1398	9.81	710	72.2	130	<0.010	655	<0.010	<0.20	<0.50	<0.005	908	5	0.889
W-27S	**1/24/07**	38.41	15.5	6.79	-6	617	10.4	320	60	20	<0.010	637	<0.010	<0.20	0.678	<0.005	807	28.6	0.671
W-27S	**7/26/07**	DRY																	
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27D	**1/25/06**	35.73	8.8	7.66	55	561	26.5	250	<1.00	7	<0.010	95.8	<0.010	<0.2	<0.50	<0.005	280	<3.0	0.825
W-27D	**7/26/06**	42.3	22.4	8.35	-100	376	32.6	280	6.52	25	<0.010	81.1	<0.010	<0.20	<0.50	<0.005	225	<3.0	0.269
W-27D	**1/24/07**	38.02	9	8.37	-40	456	18.2	180	2.38	15	<0.010	101	<0.010	0.21	<0.50	<0.005	277	45	0.219
W-27D	**7/26/07**	37.7	18.7	7.91	-45	443	25.8	170	<1.00	35	<0.010	97.8	<0.010	<0.20	<0.50	0.006	190	<3.0	0.366
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28S	**1/26/06**	38.4	5.5	7.12	-30	1115	9.92	720	34.2	6	<0.010	694	<0.010	<0.2	1.17	<0.005	817	5	0.104
W-28S	**7/26/06**	43.65	19.2	7.79	-40	1202	3.18	660	39.8	100	<0.010	678	<0.010	<0.20	<0.50	<0.005	922	17	<0.100
W-28S	**1/24/07**	43.03	11.4	6.79	-	1100	226	650	561	22	<0.010	858	<0.010	<0.200	3.55	0.745	740	24	0.149
W-28S	**7/26/07**	44.7	20.2	7.12	-50	512	42.1	470	47.1	280	<0.010	683	<0.040	<0.20	0.558	<0.005	785	17.5	0.146
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28D	**1/26/06**	39.97	7.7	7.64	100	389	8.26	320	10.4	<5.0	<0.010	94.2	<0.010	<0.20	<0.50	<0.005	202	14	0.174
W-28D	**7/26/06**	41.38	21.9	8.16	-91	333	20.4	160	6.25	7	<0.010	85.4	<0.010	<0.20	<0.50	<0.005	200	<3.0	<0.100
W-28D	**1/24/07**	44.26	11.8	8.39	-70	412	8.2	160	5.9	7	<0.010	94.8	<0.010	<0.20	<0.50	<0.005	197	<3.0	0.103
W-28D	**7/26/07**	42.7	15.7	8.02	40	383	20.8	150	7.01	40	<0.010	109	<0.010	<0.20	<0.50	<0.005	312	<3.0	0.504

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2007
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16D	**1/25/06**	<0.015	0.0227	0.0806	<0.003	<0.500	<0.005	81.4	<0.005	<0.020	0.0118	2.06	0.0027	<0.030	19.4	1.01	<0.0002	0.013	1.61
W-16D	**7/25/06**	<0.015	0.0354	0.0574	<0.003	<0.500	<0.005	60.2	<0.005	0.014	0.0043	2.63	0.0021	<0.030	14.9	0.683	<0.0002	0.027	1.37
W-16D	**1/24/07**	<0.015	0.0279	0.0969	<0.003	<0.500	<0.005	83.4	<0.005	<0.020	<0.010	6.13	<0.003	<0.030	20.1	1.2	<0.0002	<0.030	1.87
W-16D	**7/26/07**	<0.015	0.0465	0.101	<0.003	<0.500	<0.005	80.9	<0.005	<0.020	<0.010	5.62	<0.003	<0.030	19.2	1.24	<0.0002	<0.030	<1.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17S	**1/25/06**	<0.015	0.0186	0.483	<0.003	<0.500	<0.005	174	0.0056	<0.020	0.012	30.9	0.002	<0.030	37.2	0.661	<0.0002	<0.030	2.61
W-17S	**7/25/06**	<0.015	0.0195	0.526	<0.003	0.26	<0.005	144	0.0212	0.0074	0.0461	39.7	0.021	0.014	38	0.831	<0.0002	0.023	2.61
W-17S	**1/24/07**	<0.015	<0.010	0.574	<0.003	<0.500	<0.005	178	0.0516	<0.020	0.0157	31.4	0.00465	<0.030	41.5	0.561	<0.0002	<0.030	2.52
W-17S	**7/26/07**	<0.015	0.062	0.308	<0.003	0.791	<0.005	190	<0.005	<0.020	0.0216	16.1	0.0039	<0.030	52.4	1.35	<0.0002	<0.030	2.39
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17D	**1/25/06**	<0.015	0.008	0.114	<0.003	<0.500	0.0049	169	0.0077	<0.020	0.0239	1.67	0.009	<0.030	30.2	1.14	<0.0002	0.0087	4.29
W-17D	**7/25/06**	<0.015	<0.010	0.096	<0.003	<0.500	<0.005	131	0.00524	<0.020	0.0133	1.33	0.00317	<0.030	26.3	0.784	<0.0002	0.0056	4.98
W-17D	**1/24/07**	<0.015	<0.010	0.114	<0.003	<0.500	<0.005	188	<0.005	<0.020	<0.010	1.51	<0.003	<0.030	31.9	1.09	<0.0002	<0.030	2.24
W-17D	**7/26/07**	<0.015	<0.010	0.12	<0.003	<0.500	<0.005	193	<0.005	<0.020	0.0102	1.19	<0.003	<0.030	33	1.13	<0.0002	<0.030	1.7
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27S	**1/25/06**	<0.015	<0.010	0.131	<0.003	0.11	<0.005	259	<0.005	<0.020	0.032	15.3	0.00378	<0.030	53.4	7.66	<0.0002	0.0063	5.07
W-27S	**7/25/06**	<0.015	<0.010	0.123	<0.003	0.13	<0.005	203	0.0036	<0.020	0.0213	20.5	0.0115	<0.030	35.8	3.73	<0.0002	0.0060	4.38
W-27S	**1/24/07**	<0.015	<0.010	0.127	<0.003	<0.500	<0.005	202	<0.005	<0.020	0.0297	13.5	0.00419	<0.030	32.5	4.39	<0.0002	<0.030	5.2
W-27S	**7/26/07**																		
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27D	**1/25/06**	<0.015	<0.010	0.0562	<0.003	0.19	<0.005	22.5	0.00647	<0.020	0.0118	1.64	0.008	<0.030	9.64	0.232	<0.0002	<0.030	1.59
W-27D	**7/26/06**	<0.015	<0.010	0.0691	<0.003	<0.500	<0.005	18.9	0.0047	<0.020	0.0082	1.87	0.00391	<0.030	8.26	0.137	<0.0002	<0.030	1.47
W-27D	**1/24/07**	<0.015	<0.010	0.569	<0.003	<0.500	<0.005	24.7	0.00753	<0.020	<0.010	1.56	<0.003	<0.030	9.52	0.142	<0.0002	<0.030	1.51
W-27D	**7/26/07**	<0.015	<0.010	0.055	<0.003	0.838	<0.005	23.8	0.0078	<0.020	<0.010	0.817	<0.003	<0.030	9.3	0.167	<0.0002	<0.030	2.27
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28S	**1/26/06**	<0.015	0.0648	0.139	<0.003	0.2	<0.005	222	0.0052	<0.020	0.0089	19.2	0.004	<0.030	33.7	1.33	<0.0002	0.0098	2.86
W-28S	**7/26/06**	<0.015	<0.010	0.0879	<0.003	<0.500	<0.005	214	<0.005	<0.020	0.0045	2.78	<0.003	<0.030	34.8	2.68	<0.0002	<0.030	3.37
W-28S	**1/24/07**	<0.015	0.027	0.156	<0.003	<0.500	<0.005	273	0.0149	<0.020	0.0208	11.2	<0.003	<0.030	43.1	3.44	<0.0002	<0.030	5.64
W-28S	**7/26/07**	<0.015	<0.010	0.116	<0.003	0.904	<0.005	217	<0.005	<0.020	0.0104	9.24	0.00307	<0.030	34.1	1.21	<0.0002	<0.030	2.64
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28D	**1/26/06**	<0.015	<0.010	0.139	0.0514	0.11	<0.005	24	0.0044	<0.020	0.0068	0.577	0.0049	<0.030	8.3	0.218	<0.0002	<0.030	1.67
W-28D	**7/26/06**	<0.015	<0.010	0.0633	<0.003	<0.500	<0.005	21.5	0.0028	<0.020	0.0059	0.243	<0.003	<0.030	7.72	0.121	<0.0002	<0.030	2.35
W-28D	**1/24/07**	<0.015	<0.010	0.538	<0.003	<0.500	<0.005	24	0.0169	<0.020	<0.010	0.443	<0.003	<0.030	8.48	0.122	<0.0002	<0.030	1.58
W-28D	**7/26/07**	<0.015	<0.010	0.058	<0.003	0.695	<0.005	27.9	<0.005	<0.020	<0.010	0.656	<0.003	<0.030	9.47	0.15	<0.0002	<0.030	2.35

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2007
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16D	**1/25/06**	0.00632	<0.010	4.23	<0.010	0.106
W-16D	**7/25/06**	<0.005	<0.010	3.46	<0.010	0.231
W-16D	**1/24/07**	0.011	<0.010	4.67	<0.010	0.113
W-16D	**7/26/07**	0.0093	<0.010	4.04	<0.010	0.0593
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17S	**1/25/06**	0.0058	0.057	4.65	<0.010	0.023
W-17S	**7/25/06**	<0.005	<0.010	10.1	<0.010	0.0983
W-17S	**1/24/07**	0.0058	<0.010	7.73	<0.010	0.0349
W-17S	**7/26/07**	<0.005	<0.010	30	<0.010	0.0289
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17D	**1/25/06**	0.009	<0.010	28.7	0.0042	0.041
W-17D	**7/25/06**	0.0063	<0.010	21.1	<0.010	0.067
W-17D	**1/24/07**	0.0151	<0.010	22.4	<0.010	0.0186
W-17D	**7/26/07**	<0.005	<0.010	23.6	<0.010	0.0336
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27S	**1/25/06**	0.00739	<0.010	12.3	<0.010	0.0158
W-27S	**7/25/06**	<0.005	<0.010	35.3	<0.010	0.0738
W-27S	**1/24/07**	0.0192	<0.010	35.3	<0.010	0.026
W-27S	**7/26/07**					
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27D	**1/25/06**	<0.005	<0.010	47.2	<0.010	0.0685
W-27D	**7/26/06**	<0.005	<0.010	38.5	<0.010	0.0241
W-27D	**1/24/07**	0.00724	<0.010	48.1	<0.010	0.03
W-27D	**7/26/07**	<0.005	<0.010	48.5	<0.010	0.0659
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28S	**1/26/06**	0.0097	<0.010	21.8	<0.004	0.027
W-28S	**7/26/06**	<0.005	<0.010	18	<0.010	0.0599
W-28S	**1/24/07**	0.016	<0.010	28.1	<0.010	0.058
W-28S	**7/26/07**	0.00572	<0.010	24.9	<0.010	0.041
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28D	**1/26/06**	<0.005	<0.010	33.6	<0.004	0.099
W-28D	**7/26/06**	<0.005	<0.010	29.7	<0.010	0.0498
W-28D	**1/24/07**	<0.005	<0.010	31.5	<0.010	0.0243
W-28D	**7/26/07**	<0.005	<0.010	35.7	<0.010	0.0257

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2007
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-05D	**1/26/06**	14.98	10.2	8.41	86	168	66.5	160	2.33	15	<0.010	127	<0.010	0.2	<0.50	<0.005	188	<3.0
W-05D	**7/25/06**	18.63	20.9	8.34	-101	214	29.6	130	3.07	70	<0.010	108	<0.010	<0.2	<0.50	<0.005	193	<3.0
W-05D	**1/24/07**	20.55	9.2	8.58	-40	430	29.8	130	4.06	20	<0.010	124	<0.010	0.2	<0.50	<0.005	145	4
W-05D	**7/26/07**	18.3	21.5	8.20	110	271	890	130	4.06	20	<0.010	124	<0.010	0.2	<0.50	<0.005	145	4
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-06DA	**1/26/06**	13.74	9	8.08	100	406	5.22	160	<1.0	5	<0.010	187	<0.010	<0.20	<0.50	<0.005	268	<3.0
W-06DA	**7/25/06**	17.94	18.4	7.72	-40	429	5.23	160	5.62	6	<0.010	159	<0.010	<0.20	<0.50	<0.005	310	<3.0
W-06DA	**1/24/07**	18.40	9	7.86	-70	501	42.2	150	4.16	7	<0.010	209	<0.010	<0.20	<0.50	<0.005	345	<3.0
W-06DA	**7/26/07**	17.81	17.4	7.86	80	447	34	140	2.27	21	<0.010	194	<0.010	<0.20	<0.50	<0.005	1280	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-08D*	**1/26/06**	57.02	6.3	7.62	-10	434	23.4	180	4.40	<5.0	<0.010	196	<0.010	<0.20	<0.50	<0.005	345	<3.0
W-08D*	**7/26/06**	59.31	16.6	8.28	-65	476	7.31	180	4.09	25	<0.010	167	<0.010	<0.20	<0.50	<0.005	262	<3.0
W-08D*	**1/24/07**	83.27	9	7.86	156	501	42.2	150	4.16	7	<0.010	209	<0.010	<0.20	<0.50	<0.005	345	<3.0
W-08D*	**7/26/07**	82.58	16.6	7.85	-104	250	24.3	440	24.90	<125	<0.010	327	<0.010	0.262	<0.500	<0.005	510	<3.0

*** BACKGROUND WELL**

TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-09D	**1/26/06**	41.52	10.2	7.66	52	1146	27.2	160	122	5	<0.010	169	<0.010	<0.20	<0.50	<0.005	532	<3.0
W-09D	**7/26/06**	44.36	22.8	7.78	-70	735	42.6	150	124	10	<0.010	152	<0.010	<0.20	<0.50	<0.005	477	<3.0
W-09D	**1/24/07**	42.8	10.4	7.77	-50	1005	18.6	150	134	10	<0.010	168	<0.010	0.202	5.43	<0.005	495	<3.0
W-09D	**7/26/07**	42.5	16.5	7.76	-45	894	13.4	150	142	50	<0.010	158	<0.010	<0.20	<0.50	<0.005	532	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-10D	**1/26/06**	55.71	5.5	6.87	25	1259	11.6	630	39.9	<5.0	<0.010	792	<0.010	<0.20	<0.50	<0.005	1020	<3.0
W-10D	**7/26/06**	58.4	17.8	7.97	-55	1169	5.21	480	53.6	7	<0.010	616	<0.010	<0.20	<0.50	<0.005	857	86
W-10D	**1/24/07**	58.21	12.2	7.21	-10	1049	9.83	420	20.6	7	<0.010	651	<0.010	<0.200	<0.50	<0.005	778	<3.0
W-10D	**7/26/07**	59.6	18	6.73	-42	477	37.5	440	25.4	275	<0.010	657	<0.010	0.257	<0.50	<0.005	353	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2007
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-05D	**1/26/06**	2.01	<0.015	0.0055	0.069	<0.003	<0.500	<0.005	34.3	0.008	<0.020	0.016	4.41	0.008	<0.030	10.1	1.07	<0.0002	0.016
W-05D	**7/25/06**	1.07	<0.015	<0.010	0.044	<0.003	<0.500	<0.005	28.6	0.0043	<0.020	0.0068	2.04	<0.003	<0.030	8.75	0.11	<0.0002	0.005
W-05D	**1/24/07**	1.25	<0.015	<0.010	0.065	<0.003	<0.500	<0.005	33.6	0.0062	<0.020	<0.010	2.57	<0.003	<0.030	9.87	0.114	<0.0002	<0.030
W-05D	**7/26/07**	1.25	<0.015	<0.010	0.065	<0.003	<0.500	<0.005	33.6	0.0062	<0.020	<0.010	2.57	<0.003	<0.030	9.87	0.114	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-06DA	**1/26/06**	0.643	<0.015	0.006	0.077	<0.003	0.13	<0.005	59	0.005	<0.020	0.011	2.75	0.004	<0.030	9.62	0.254	<0.0002	<0.030
W-06DA	**7/25/06**	<0.100	<0.015	<0.010	0.0515	<0.003	<0.500	<0.005	50	<0.005	<0.020	0.0049	0.0891	0.00464	<0.030	8.35	<0.010	<0.0002	<0.030
W-06DA	**1/24/07**	0.875	<0.015	<0.010	0.0803	<0.003	<0.500	<0.005	65.4	<0.005	<0.020	<0.010	2.01	<0.003	<0.030	11	0.241	<0.0002	<0.030
W-06DA	**7/26/07**	0.49	<0.015	<0.010	0.0687	<0.003	<0.500	<0.005	61.2	<0.005	<0.020	<0.010	1.01	<0.003	<0.030	9.91	0.206	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-08D*	**1/26/06**	0.634	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	58.2	<0.005	<0.020	0.0063	1.02	0.003	<0.030	12.3	0.11	<0.0002	<0.03
W-08D*	**7/26/06**	0.639	<0.015	<0.010	0.036	<0.003	<0.500	<0.005	48.7	0.009	<0.020	0.0063	2.06	<0.003	<0.030	10.9	0.116	<0.0002	0.007
W-08D*	**1/24/07**	0.875	<0.015	<0.010	0.0803	<0.003	<0.500	<0.005	65.4	0.00589	<0.020	<0.010	2.01	<0.003	<0.030	11	0.241	<0.0002	<0.030
W-08D*	**7/26/07**	1.71	<0.015	<0.010	0.0738	<0.003	<0.500	<0.005	94.9	<0.005	<0.020	0.016	2.57	<0.003	<0.030	22	0.671	<0.0002	<0.030

*** BACKGROUND WELL**

TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-09D	**1/26/06**	0.149	<0.015	<0.010	0.0588	<0.003	<0.500	<0.005	33.6	0.0096	<0.020	0.01	0.926	0.0052	<0.030	20.6	0.624	<0.0002	0.007
W-09D	**7/26/06**	0.144	<0.015	<0.010	0.0708	<0.003	<0.500	<0.005	29.8	0.0136	<0.020	0.0077	0.69	0.00315	<0.030	18.9	0.557	<0.0002	0.011
W-09D	**1/24/07**	<0.100	<0.015	<0.010	0.0576	<0.003	<0.500	<0.005	33.5	0.0524	<0.020	<0.010	0.437	<0.003	<0.030	20.6	0.543	<0.0002	<0.030
W-09D	**7/26/07**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	31.6	<0.005	<0.020	<0.010	0.86	<0.003	<0.030	19.2	0.49	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-10D	**1/26/06**	1.99	<0.015	0.0059	0.102	<0.003	<0.500	<0.005	259	0.005	0.0093	0.013	4.24	0.0053	<0.030	35.1	4.23	<0.0002	0.013
W-10D	**7/26/06**	0.164	<0.015	<0.010	0.13	<0.003	<0.500	<0.005	174	0.00727	<0.020	0.0044	0.338	<0.003	<0.030	44	0.534	<0.0002	0.008
W-10D	**1/24/07**	0.246	<0.015	0.0368	0.0988	<0.003	<0.500	<0.005	185	<0.005	<0.020	<0.010	5.92	<0.003	<0.030	45.9	1.34	<0.0002	<0.030
W-10D	**7/26/07**	0.772	<0.015	0.027	0.106	<0.003	0.746	<0.005	184	0.016	<0.020	0.0163	4.65	0.0031	<0.030	48.1	1.59	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2007
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-05D	**1/26/06**	2.61	0.0067	<0.010	7.07	<0.010	0.037
W-05D	**7/25/06**	1.83	<0.005	<0.010	5.21	0.005	0.0245
W-05D	**1/24/07**	3.56	<0.005	<0.010	6.98	<0.010	0.0339
W-05D	**7/26/07**	3.56	<0.005	<0.010	6.98	<0.010	0.0339
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-06DA	**1/26/06**	1.44	0.011	<0.010	9.45	0.009	0.026
W-06DA	**7/25/06**	1.36	0.023	<0.010	8.86	<0.010	0.021
W-06DA	**1/24/07**	1.61	0.0165	<0.010	10.6	<0.010	0.0325
W-06DA	**7/26/07**	2.21	0.007	<0.010	9.95	<0.010	0.0266
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-08D*	**1/26/06**	0.91	0.0085	<0.010	5.14	0.005	0.013
W-08D*	**7/26/06**	1.07	<0.005	<0.010	4.62	0.006	0.0243
W-08D*	**1/24/07**	1.61	0.0165	<0.010	10.6	<0.010	0.0325
W-08D*	**7/26/07**	2.27	0.0069	<0.010	14.9	<0.010	0.081

*** BACKGROUND WELL**

TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-09D	**1/26/06**	3.57	0.0069	<0.010	130	<0.010	0.0289
W-09D	**7/26/06**	3.04	<0.005	<0.010	112	<0.010	0.0395
W-09D	**1/24/07**	3.46	<0.008	<0.010	12.4	<0.010	0.0231
W-09D	**7/26/07**	3.36	<0.005	<0.010	117	<0.010	0.0189
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-10D	**1/26/06**	2.82	0.0153	<0.010	21.1	<0.010	0.037
W-10D	**7/26/06**	3.54	<0.005	<0.010	20	<0.010	0.0473
W-10D	**1/24/07**	3.53	0.017	<0.010	19.2	<0.010	0.0246
W-10D	**7/26/07**	5.72	<0.017	<0.010	24.2	<0.010	0.053

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2007
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-30	**1/26/06**	47.44	4.3	7.25	29	240	8	490	178	<5.0	<0.010	885	<0.010	<0.2	<0.5	<0.005	1200	<3.0
W-30	**7/26/06**	62.42	18.5	8.01	-60	1763	4.01	450	333	5	<0.010	728	<0.010	0.22	<0.5	<0.005	1240	<3.0
W-30	**1/24/07**	51.33	8.6	7.51	-15	1652	10.2	440	177	12	<0.010	900	<0.010	0.771	<0.500	<0.005	1090	<3.0
W-30	**7/26/07**	49.74	15.3	7.01	105	1639	17.8	400	176	60	<0.010	875	<0.010	<0.20	<0.50	0.006	1290	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
SS882	**1/26/06**	24.62	4.7	7.37	25	773	3.58	340	6.73	<5.0	<0.010	410	<0.010	<0.2	<0.5	<0.005	517	<3.0
SS882	**7/26/06**	30.29	16.5	8.18	-65	428	5.18	200	5.82	9	<0.010	164	<0.010	<0.2	<0.5	<0.005	288	<3.0
SS882	**1/24/07**	33.52	14.3	8.06	151	424	10.7	290	8.3	7	<0.010	215	<0.010	0.205	<0.500	<0.005	340	<3.0
SS882	**7/26/07**	37.57	17.5	7.06	-61	344	18.5	200	3.8	950	<0.010	347	<0.040	<0.20	<0.50	<0.005	265	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2007
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-30	**1/26/06**	0.368	<0.015	<0.010	0.033	<0.003	0.2	<0.005	197	0.0061	<0.020	0.0189	1.18	0.0041	<0.030	95.3	0.038	<0.0002	0.007
W-30	**7/26/06**	<0.100	<0.015	<0.010	0.024	<0.003	0.13	<0.005	157	0.0123	<0.020	0.0073	0.323	<0.003	<0.030	81.4	0.009	<0.0002	0.009
W-30	**1/24/07**	0.419	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	200	0.025	<0.020	0.0168	1.57	<0.003	<0.030	97.4	0.0764	<0.0002	0.034
W-30	**7/26/07**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	191	0.0251	<0.020	0.0254	0.8	<0.003	<0.030	96.8	0.0443	<0.0002	0.033
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
SS882	**1/26/06**	<0.1	<0.015	0.0054	0.069	<0.003	<0.500	<0.005	107	0.0031	<0.020	0.013	0.078	0.0076	<0.030	34.7	2.38	<0.0002	0.006
SS882	**7/26/06**	<0.1	<0.015	<0.010	0.0641	<0.003	<0.500	<0.005	43.9	<0.005	<0.020	0.006	0.182	<0.003	<0.030	13.2	0.139	<0.0002	<0.030
SS882	**1/24/07**	0.238	<0.015	<0.010	0.060	<0.003	<0.500	<0.005	58.2	<0.005	<0.020	0.0144	0.824	<0.003	<0.030	17.1	0.193	<0.0002	<0.030
SS882	**7/26/07**	0.365	<0.015	0.016	0.1	<0.003	<0.500	<0.005	96	<0.005	<0.020	0.0142	4.49	<0.003	<0.030	26.1	1.92	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2007
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-30	**1/26/06**	5.55	0.0092	<0.010	65.6	<0.010	0.0286
W-30	**7/26/06**	6.1	<0.005	<0.010	57.4	0.008	0.0275
W-30	**1/24/07**	6.59	0.0211	0.0152	68.3	<0.010	0.0677
W-30	**7/26/07**	6.28	0.0122	<0.010	67.8	<0.010	0.0337
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
SS882	**1/26/06**	2.04	0.01	<0.010	10.2	<0.010	0.021
SS882	**7/26/06**	1.75	<0.005	<0.010	18.2	0.005	0.0364
SS882	**1/24/07**	2.190	<0.005	<0.010	18.6	<0.010	0.0362
SS882	**7/26/07**	1.56	<0.005	<0.010	16.8	<0.010	0.0449

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2007
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Cr +6	Nitrate
NYS LIMIT:				**6.5-8.5**			**5.0**				**250.0**		**15.0**	**0.2**		**0.05**	**10.0**
CAS NO.																18540-29-9	
TRIG. VALUE:								**258**			**14.4**		**40**		**354**	**0.05**	**0.48**
CHURCH	**10/6/06**	-	11.3	7.94	361	333	3.76	150	<4.0	<0.20	6.76	<20.0	5	<0.010	176	<0.010	<0.20
CHURCH	**1/24/07**	-	8.8	8.09	-45	507	1.68	160	<4.0	<0.20	7.51	<20.0	7	<0.010	171	<0.010	<0.2
CHURCH	**4/7/07**	-	9	8.4	-16.3	291.7	3.9	130	<4.0	<0.20	6.33	<20.0	15	<0.010	142	<0.010	<0.2
CHURCH	**7/26/07**	-	21	7.85	10	459	30.6	160	<4.0	<0.20	5.55	<20.0	7	<0.010	164	<0.010	<0.2

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2007
(all units are in mg/l)

		NH4	TKN	Phenol	TDS	TOC	Sulfate	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe
NYS LIMIT:		**2.0**		**0.001**	**500**				**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**
CAS NO.		7664-41-7		108-95-2									7440-42-8						
TRIG. VALUE:		**0.6**		**0.014**	**488**	**30**		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**
CHURCH	**10/6/06**	<0.50	<0.50	<0.005	212	37	31.3	<0.1	<0.015	<0.010	<0.050	<0.003	<0.50	<0.005	49.1	<0.005	<0.020	0.0124	0.0766
CHURCH	**1/24/07**	<0.50	<0.500	<0.005	223	<3.0	31.6	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	47.5	<0.005	<0.020	0.0297	0.118
CHURCH	**4/7/07**	<0.50	<0.500	<0.005	182	<3.0	37.7	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	41.2	<0.005	<0.020	0.0127	4.51
CHURCH	**7/26/07**	<0.50	<0.500	<0.005	252	<3.0	80.2	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	45.9	<0.005	<0.020	0.0167	<0.060

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2007
(all units are in mg/l)

		Pb	V	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.025**			**0.3**	**0.0007**	**0.1**		**0.01**	**0.05**	**20**		
CAS NO.													
TRIG. VALUE:		**0.025**			**0.3**	**0.002**			**0.0014**	**0.05**	**20**		**0.3**
CHURCH	**10/6/06**	<0.003	<0.030	13	<0.010	<0.0002	<0.030	<1.0	<0.010	<0.010	15.2	<0.010	0.127
CHURCH	**1/24/07**	0.00587	<0.030	12.6	<0.010	<0.0002	<0.030	<1.0	0.007	<0.010	14.7	<0.010	0.0298
CHURCH	**4/7/07**	0.00385	<0.030	9.42	0.113	<0.0002	<0.030	2.19	0.010	<0.010	10.4	0.016	0.062
CHURCH	**7/26/07**	<0.003	<0.030	12.1	<0.010	<0.0002	<0.030	<1.0	0.0143	<0.010	12.6	<0.010	0.0441

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2007
(all units are in mg/l)

		Dis O2	SC	eH	pH	Temp	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols
CLASS C STD:		**<4**			**6.5-8.5**						**9**		**0.011**		**2**	
WALL-UP	**1/24/06**	10.3	752	102	8.72	3.1	10.72	120	50.7	50	<0.010	99.8	<0.010	0.82	<0.5	<0.005
WALL-UP	**7/24/06**	10.0	394	-72	8.10	23.7	38.7	110	49.9	32	<0.010	127	<0.010	0.67	<0.5	<0.005
WALL-UP	**1/24/07**	-	1019	-15	8.48	0	23.4	120	38.5	25	<0.010	126	<0.010	1.17	24.7	<0.005
WALL-UP	**7/24/07**	-	1050	115	7.57	24.2	66.9	120	52.3	100	<0.010	231	<0.010	3.99	<0.500	<0.005
WALL-DN	**1/24/06**	9.91	670	100	8.68	3.9	11.2	80	41.9	50	<0.010	106	<0.010	1.0	<0.5	<0.005
WALL-DN	**7/24/06**	10.78	378	-70	7.79	24.9	37.2	120	55.5	48	<0.010	123	<0.010	1.2	<0.500	<0.005
WALL-DN	**1/24/07**	-	519	50	8.31	0.2	23.8	110	39.9	30	<0.010	109	<0.010	1.25	<0.500	<0.005
WALL-DN	**7/24/07**	-	557	155	7.73	21.1	79.4	110	50.5	130	<0.010	230	<0.010	4.14	<0.500	<0.005
Basin A	**1/24/06**	10.2	731	101	8.66	4.6	10.2	230	0.78	22	<0.010	210	<0.010	0.47	<0.5	<0.005
Basin A	**7/24/06**	6.26	313	-91	8.13	29.2	12.2	250	2.58	36	<0.010	164	<0.010	<0.2	<0.500	<0.005
Basin A	**1/24/07**	Frozen														
Basin A	**7/24/07**	9.33	156	85	9.34	28.4	33	57	<1.00	130	<0.010	68.7	<0.010	<0.20	<0.50	<0.005
Basin B	**1/24/06**	9.37	973	95	8.64	4.7	10.6	230	<1.0	12	<0.010	293	<0.010	<0.20	<0.50	<0.005
Basin B	**7/24/06**	5.58	177	-182	9.75	29.4	27.4	87	2.81	38	<0.010	96	<0.010	<0.20	<0.500	<0.005
Basin B	**1/24/07**	Frozen														
Basin B	**7/24/07**	9.22	147	110	8.04	29.3	112	42	<1.00	110	<0.010	72.3	<0.010	<0.20	<0.500	<0.005
Basin D	**1/24/06**	Frozen														
Basin D	**7/24/06**	4.02	91.7	-141	8.65	29.3	30.2	74	1.83	34	<0.010	84.9	<0.01	<0.1	<0.500	<0.005
Basin D	**1/24/07**	Frozen														
Basin D	**7/24/07**	Dry														

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2007
(all units are in mg/l)

		DS	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
CLASS C STD:		**500**		**0.1**				**1.1**	**10**				**0.005**		**0.3**		**0.014**	
WALL-UP	**1/24/06**	218	5.0	0.463	<0.015	<0.010	0.021	<0.003	0.11	<0.005	26	0.0024	<0.020	0.0096	0.728	0.0038	<0.030	8.45
WALL-UP	**7/24/06**	248	7.0	0.328	<0.015	0.0051	0.022	<0.003	0.11	<0.005	33.5	<0.005	<0.020	0.0065	0.99	<0.003	<0.030	10.5
WALL-UP	**1/24/07**	195	6.0	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	32.4	<0.005	<0.020	<0.010	0.368	<0.003	<0.030	11
WALL-UP	**7/24/07**	420	19.1	1.24	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	64.5	<0.005	<0.020	0.0154	2.55	<0.003	<0.030	16.9
WALL-DN	**1/24/06**	215	5.0	0.331	<0.015	<0.010	<0.050	<0.003	<0.005	<0.005	27.7	<0.005	<0.020	0.011	0.567	0.0029	<0.030	8.96
WALL-DN	**7/24/06**	272	9.0	0.331	<0.015	0.0051	<0.050	<0.003	0.12	<0.005	32.9	<0.005	<0.020	0.0063	0.921	<0.003	<0.030	9.87
WALL-DN	**1/24/07**	188	5.0	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	28	0.008	<0.020	<0.010	0.422	0.0077	<0.030	9.49
WALL-DN	**7/24/07**	352	18.3	1.64	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	64	<0.005	<0.020	0.0147	3.13	<0.003	<0.030	17.1
Basin A	**1/24/06**	293	3.0	0.387	<0.015	<0.010	0.02	<0.003	<0.005	<0.005	66.9	<0.005	<0.020	0.01	0.657	<0.003	<0.030	10.4
Basin A	**7/24/06**	220	7.0	<0.100	<0.015	0.0044	0.021	<0.003	0.12	<0.005	49.7	<0.005	<0.020	0.0052	0.266	<0.003	<0.030	9.69
Basin A	**1/24/07**																	
Basin A	**7/24/07**	100	10.6	0.278	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	18.6	<0.005	<0.020	<0.010	0.624	<0.003	<0.030	5.39
Basin B	**1/24/06**	410	4.0	1.39	<0.015	<0.010	0.026	<0.003	<0.005	<0.005	99.7	0.0025	<0.020	0.0012	1.98	0.004	<0.030	10.7
Basin B	**7/24/06**	182	11.0	0.226	<0.015	0.0072	<0.050	<0.003	0.11	<0.005	28.2	<0.005	<0.020	0.0074	0.438	0.0018	<0.030	6.25
Basin B	**1/24/07**																	
Basin B	**7/24/07**	97	6.0	1.94	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	24.4	<0.005	<0.020	0.012	3.63	0.0038	<0.030	2.73
Basin D	**1/24/06**																	
Basin D	**7/24/06**	145	9	0.886	<0.001	0.0067	<0.050	<0.003	0.12	<0.005	23.3	<0.005	<0.020	0.0061	1.52	0.00345	<0.01	6.5
Basin D	**1/24/07**																	
Basin D	**7/24/07**																	

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2007
(all units are in mg/l)

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
CLASS C STD:									**0.008**	
WALL-UP	**1/24/06**	0.044	<0.0002	<0.030	1.32	0.008	<0.010	22.4	0.014	0.026
WALL-UP	**7/24/06**	0.0795	<0.0002	<0.030	2.85	<0.005	<0.010	19.6	<0.010	0.958
WALL-UP	**1/24/07**	0.0584	<0.0002	<0.030	1.55	0.0144	<0.010	19.3	<0.010	0.196
WALL-UP	**7/24/07**	0.319	<0.0002	<0.030	5.35	0.0157	<0.010	26.3	<0.010	0.201
WALL-DN	**1/24/06**	0.0497	<0.0002	<0.030	1.38	<0.005	<0.010	23.8	0.0089	0.034
WALL-DN	**7/24/06**	0.0796	<0.0002	<0.030	2.99	<0.005	<0.010	21.9	<0.010	0.391
WALL-DN	**1/24/07**	0.0516	<0.0002	<0.030	1.41	0.0077	0.0157	16.8	<0.010	0.292
WALL-DN	**7/24/07**	0.356	<0.0002	<0.030	5.18	0.0157	<0.010	26.4	<0.010	0.39
Basin A	**1/24/06**	0.031	<0.0002	<0.030	1.11	0.013	<0.010	1.89	0.008	0.032
Basin A	**7/24/06**	0.383	<0.0002	<0.030	2.95	0.0071	<0.010	2.56	<0.010	0.073
Basin A	**1/24/07**									
Basin A	**7/24/07**	0.179	<0.0002	<0.030	1.33	0.005	<0.010	1.68	<0.010	0.0254
Basin B	**1/24/06**	0.103	<0.0002	<0.030	1.74	0.01	<0.010	2.3	0.009	0.029
Basin B	**7/24/06**	0.0767	<0.0002	<0.030	4.07	0.0107	<0.010	2.28	<0.010	0.115
Basin B	**1/24/07**									
Basin B	**7/24/07**	0.119	<0.0002	<0.030	3.26	0.01	<0.010	<1.0	<0.010	0.0798
Basin D	**1/24/06**									
Basin D	**7/24/06**	0.0834	<0.0002	<0.030	<1.0	<0.005	<0.01	1.92	<0.010	0.0814
Basin D	**1/24/07**									
Basin D	**7/24/07**									

TABLE 3-2
AL TURI SANITARY LANDFILL
SEDIMENT / FLOC MONITORING ANALYTICAL RESULTS
2007
(all units are in mg/kg)

		% Moisture	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
Sed UP	**7/28/05**	-	-	10500	<6.3	5.09	37.2	0.51	24.2	0.57	11800	13.8	10.4	12.4	24400	11.4 E	15	10900
Sed UP	**1/24/06**	31.7	45400	5700	<4.39	5.04	50.7	<0.878	<146	1.83	13200	9.2	6.54	28.3	12700	15.4	9.43	5840
Sed UP	**7/24/06**	41.6	12000	7220	<5.13	4.12	47.8	<1.03	<171	1.8	12300	12.3	7.17	17.3	15900	20.2	11.8	7490
Sed UP	**1/22/07**	34.5	17000	8150	<4.58	6.92	64.7	5.12	<153	3.76	7010	58	10.7	87	38000	747	12.4	5080
Sed DN	**7/28/05**	-	-	9310	<5.0	6.82 E	32.2	0.4	16.4	0.48	7030	12.9	7.8	12.1	20600	7.92 E	12.9	7760
Sed DN	**1/24/06**	30.4	17200	6440	<4.31	3.32	34.5	<0.862	<144	1.79	9550	11.8	6.69	17.4	14900	27.3	10.3	6670
Sed DN	**7/24/06**	30.2	15000	5120	<4.30	5.66	30.1	<0.859	<143	1.5	6460	8.19	<5.73	12	13600	7.81	<8.59	4910
Sed DN	**1/22/07**	23.7	16000	7120	<3.93	3.95	33	<0.786	<131	1.91	5740	10.7	6.4	15.3	16700	30.6	10.7	6380

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
Sed UP	**7/28/05**	473	<0.048	21.7	1320	<0.57	<1.2	1150	<0.57	87.6
Sed UP	**1/24/06**	512	0.045	14.2	500	3.1	<2.93	<293	<2.93	77.4
Sed UP	**7/24/06**	676	0.14	17.3	1050	<1.71	<3.42	365	<3.42	106
Sed UP	**1/22/07**	612	<0.153	37.7	821	<1.53	<3.05	980	<3.05	427
Sed DN	**7/28/05**	442	<0.059	18.5	1020	<0.48	<0.91	113	<0.48	77.3
Sed DN	**1/24/06**	379	0.048	15	617	<1.44	<2.87	<287	<2.87	100
Sed DN	**7/24/06**	424	0.11	12.9	513	1.57	<2.86	<286	<2.86	76.9
Sed DN	**1/22/07**	251	<0.131	15.6	805	<0.131	<2.62	285	<2.62	70.2

E - Estimated

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2007
(all units are in mg/l)

		SC	eH	pH	Temp	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Nitrate	NH4	TKN
LCH-11P	**1/24/06**	20700	4	6.82	16.5	310	1600	79	57	6160	914	150	<0.010	3470	<0.20	206	244
LCH-11P	**7/24/06**	1523	-37	7.17	25.7	>250	1300	18	85	8390	465	125	<0.010	3500	0.76	234	214
LCH-11P	**1/22/07**	6320	-	7.03	15.01	52.7	1400	12	<0.2	3730	427	200	<0.010	2410	0.396	200	209
LCH-11P	**7/24/07**	2160	-30	6.93	22.7	67.9	1800	29	80	8510	194	150	<0.010	4140	0.409	305	26
LCH-11S	**1/24/06**	1804	61	8.05	9.2	7.42	860	<8.0	<0.20	75	24	15	<0.010	476	1.9	<0.50	0.823
LCH-11S	**7/24/06**	760	-94	8.22	21.3	21.2	630	<4.0	<2.0	41.2	<20.0	8	<0.010	307	1.2	<0.50	36.2
LCH-11S	**1/22/07**	2.69	30	7.68	6.3	10.2	230	<8.0	<20.0	194	37	7	<0.010	231	1.23	<0.500	2.2
LCH-11S	**7/24/07**	381	120	8.23	21.2	6.85	260	<4.0	<0.20	52.1	<20.0	10	<0.010	310	0.973	<0.500	0.924
LCH-12P	**1/24/06**	1384	33	7.35	19.7	21.2	3300	78	<20.0	1420	1030	650	<0.010	788	0.74	780	991
LCH-12P	**7/24/06**	9310	-37	7.16	33.6	136	2200	66	<2.0	2350	428	600	<0.010	579	0.39	477	438
LCH-12P	**1/22/07**	9540	-	7.35	20.6	72.4	3000	50	<20.0	1940	847	200	<0.010	641	0.797	365	564
LCH-12P	**7/24/07**	1291	-80	7.23	27	17.1	3700	60	<200	3100	572	1000	<0.010	851	<0.20	802	8.16
LCH-12S	**1/24/06**	1735	20	7.07	14.3	297	380	21	<2.0	17.3	42	15	<0.010	2040	3.8	1.12	2.47
LCH-12S	**7/24/06**	983	-34	7.15	24.9	23.4	430	10	<2.0	62.9	<20.0	11	<0.010	435	9.2	<0.500	18.1
LCH-12S	**1/22/07**	491	-25	7.32	10.4	25.6	350	<8.0	53	51.3	32	15	<0.010	528	6.86	0.828	2.2
LCH-12S	**7/24/07**	1613	65	7.96	18.8	14.3	200	<4.0	<20.0	107	<20.0	19	<0.010	723	20.2	<0.500	<0.500

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2007
(all units are in mg/l)

		Phenols	TDS	Sulfate	Sulfide	Cr +6	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
LCH-11P	**1/24/06**	0.231	12300	1870	<0.1	<0.010	57	28.2	0.009	0.04	0.274	0.001	16.8	<0.012	503	0.044	0.0238
LCH-11P	**7/24/06**	0.014	16400	2050	<0.100	<0.010	440	0.129	<0.015	0.0107	0.191	<0.003	17.1	<0.005	560	<0.005	<0.020
LCH-11P	**1/22/07**	<0.005	12800	1420	0.494	<0.010	16.7	0.12	0.0177	<0.010	0.198	<0.003	11.6	<0.005	388	0.005	<0.020
LCH-11P	**7/24/07**	<0.008	17300	3960	0.864	<0.020	59.3	0.192	0.0277	0.064	0.215	<0.003	20.9	<0.005	554	0.0112	<0.020
LCH-11S	**1/24/06**	<0.005	1470	140	<0.1	<0.010	4	<0.100	<0.015	0.0061	0.042	<0.003	0.533	<0.005	142	<0.005	<0.020
LCH-11S	**7/24/06**	0.008	985	78.1	<0.1	<0.010	3	<0.100	<0.015	<0.010	<0.050	<0.003	0.4	<0.005	93.6	<0.005	<0.020
LCH-11S	**1/22/07**	<0.005	462	83.2	<0.100	<0.010	6	<0.100	<0.015	<0.010	<0.050	<0.003	<0.50	<0.005	69.7	<0.005	<0.020
LCH-11S	**7/24/07**	0.005	660	166	<0.100	<0.010	<3.0	<0.100	<0.015	<0.010	<0.050	<0.003	0.648	<0.005	93.1	<0.005	<0.020
LCH-12P	**1/24/06**	0.027	5450	200	<0.10	<0.010	37	5.06	<0.015	0.13	0.608	<0.003	6.79	0.006	152	0.0478	0.04
LCH-12P	**7/24/06**	0.037	5020	89.7	<0.100	<0.010	490	11.8	<0.015	0.0705	0.253	<0.003	3.91	<0.005	133	0.0244	<0.020
LCH-12P	**1/22/07**	<0.005	4690	<5.00	<0.100	<0.010	3.8	<0.100	0.0644	0.119	0.387	<0.003	6.49	<0.005	100	0.0311	0.026
LCH-12P	**7/24/07**	0.013	6900	125	<0.100	<0.020	205	0.337	0.0162	0.134	0.501	<0.003	8.21	<0.005	113	0.0418	0.0339
LCH-12S	**1/24/06**	<0.005	995	218	<0.100	<0.010	54	161	<0.015	0.444	1.42	0.007	0.687	0.0637	668	0.232	0.179
LCH-12S	**7/24/06**	0.005	935	208	<0.100	<0.010	6	0.517	<0.015	<0.010	0.532	0.0137	0.36	<0.005	137	0.247	0.127
LCH-12S	**1/22/07**	<0.005	772	143	<0.100	<0.010	8	0.966	<0.015	<0.010	0.057	<0.003	<0.500	<0.005	161	<0.005	<0.020
LCH-12S	**7/24/07**	<0.005	1150	635	<0.100	<0.010	4.5	<0.100	<0.015	<0.010	0.0534	<0.003	0.556	<0.005	226	<0.005	<0.020

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2007
(all units are in mg/l)

		Cu	Fe	K	Pb	V	Mg	Mn	Hg	Ni	Se	Ag	Na	Sn	Th	Zn
LCH-11P	**1/24/06**	0.095	94.9	645	0.035	0.0374	538	5.42	<0.0002	0.085	0.016	<0.010	5240	<0.30	<0.010	0.171
LCH-11P	**7/24/06**	<0.010	18.5	779	<0.003	<0.030	510	5.82	<0.0002	0.0428	<0.005	<0.010	4210	<0.300	<0.010	0.156
LCH-11P	**1/22/07**	<0.010	21.9	661	<0.003	<0.030	350	5.59	<0.0002	0.0403	0.0174	<0.010	3100	<0.300	<0.010	0.252
LCH-11P	**7/24/07**	0.0216	28.4	808	<0.003	<0.030	671	6.72	0.00028	0.0713	0.0319	<0.010	4930	<0.300	<0.010	0.229
LCH-11S	**1/24/06**	0.011	0.893	16.8	<0.003	<0.030	29.6	0.971	<0.0002	0.007	0.01	0.006	75.3	0.3	0.0078	0.041
LCH-11S	**7/24/06**	<0.010	0.151	8.42	<0.003	<0.030	17.9	0.0116	<0.0002	<0.030	<0.005	<0.010	31.5	<0.300	<0.010	0.095
LCH-11S	**1/22/07**	<0.010	0.0985	9.53	<0.003	<0.030	13.8	0.109	<0.0002	<0.030	0.0113	<0.010	30.8	<0.300	<0.010	0.96
LCH-11S	**7/24/07**	0.0129	<0.060	11.5	<0.003	<0.030	18.9	0.0117	<0.0002	<0.030	0.0193	<0.010	42	<0.300	<0.010	0.287
LCH-12P	**1/24/06**	0.0569	49	449	0.0136	0.041	99.1	2.59	<0.0002	0.196	0.0053	0.016	1410	<0.300	<0.010	0.285
LCH-12P	**7/24/06**	0.0595	3.67	218	0.00533	<0.030	59.8	0.311	<0.0002	0.0934	<0.005	<0.010	737	<0.300	<0.010	0.537
LCH-12P	**1/22/07**	<0.010	4.32	391	<0.003	<0.030	95	0.357	<0.0002	0.145	0.0212	<0.010	1260	<0.300	<0.010	0.0612
LCH-12P	**7/24/07**	0.0163	4.45	506	<0.003	0.0334	138	0.359	<0.0002	0.171	0.0314	<0.010	1870	<0.300	<0.010	0.136
LCH-12S	**1/24/06**	0.473	766	24.1	0.362	0.254	89.8	66.2	0.0004	0.334	<0.005	<0.010	20.8	<0.30	<0.010	1.84
LCH-12S	**7/24/06**	0.0724	1.31	7.23	<0.003	0.125	22.7	0.112	<0.0002	0.436	<0.005	0.0291	28.8	<0.300	<0.010	0.093
LCH-12S	**1/22/07**	0.0156	3.15	10.6	<0.003	<0.030	30.5	0.407	<0.0002	<0.030	0.0119	<0.010	39.7	<0.300	<0.010	0.363
LCH-12S	**7/24/07**	0.0125	0.0988	17.8	<0.003	<0.030	38.7	0.0255	<0.0002	<0.030	0.0239	<0.010	85.1	<0.300	0.0117	0.146

JULY 2007
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – CLASS II SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

November 2007

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Project 256-00-00

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Attachments

Drawing No. 1 - Well Location Plan	Pocket
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1 INTRODUCTION

The Water Quality Management Program developed for the post-closure monitoring of the Al Turi Landfill – Class II site, located in Goshen, New York, includes the semi-annual groundwater sampling and analysis of select parameters from monitoring wells downgradient of the Class II landfill facility and the evaluation of the data generated by these samples. This program was developed to monitor historical constituents of concern within groundwater, and to identify any changes in the concentration of these constituents that may warrant further evaluation. The identification of conditions warranting further evaluation is based primarily on the comparison of detected concentrations with groundwater trigger levels (GWTLs). The Constituents of Concern and their GWTLs were presented to the Department in December 2001 in the Post-Closure Contingency Monitoring Plan prepared by the ENVIRON Corporation of Princeton, New Jersey. The Constituents of Concern are listed on Table 1-1.

Semi-annual groundwater quality is monitored at 17 groundwater monitoring wells (overburden and bedrock wells) located within the boundaries of the Al Turi Landfill property. The 17 monitoring wells are divided into two types: "Type 1" wells and "Type 2" wells. Type 1 wells are wells that are located adjacent (within 150 feet) to the Wallkill River while Type 2 wells are located beyond 150 feet from the River. The location of each well in relation to the Wallkill River was a factor when considering GWTLs for each well. Drawing 1 (in pocket) provides a site map of the area indicating the locations of the Type 1 and Type 2 groundwater monitoring wells.

Of the 17 groundwater monitoring wells, two wells (W-1 and W-3A), are monitored semi-annually as part of post closure monitoring of the adjacent Al Turi Landfill. Monitoring of these wells consists of modified Part 360 semi-annual analysis. As part of this sampling event, the Part 360 landfill data collected for well W-1 and well W-3A were utilized. In addition, the Wallkill River, which is located along the western portion of the site, is monitored semi-annually both upgradient and downgradient of the Al Turi Property.

Proper groundwater sampling procedures were followed and all samples were kept in ice filled coolers prior to delivery to the contracted analytical laboratory. Completed chain of custody forms accompanied the samples during shipment.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

2.1 Type 1 Groundwater Quality

Eight Type 1 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill site as part of post-closure monitoring requirements. Of the eight Type 1 groundwater monitoring wells, six wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-38S was dry.

Analytical results collected from the Type 1 groundwater monitoring wells are presented in Table 2-1, as are established GWTL values for each well. A review of the inorganic analyses collected during the July 2007 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 1 groundwater monitoring wells. In addition, a review of the Type 1 volatile organic data collected during the July 2007 sampling event indicates that no volatile organic compounds (VOC's) were present above established GWTLs.

The laboratory supplied summary tables presenting the July 2007 analytical data are provided in Appendix A.

The Type 1 groundwater monitoring wells will be sampled again in January 2008 as part of continued semi-annual groundwater monitoring for the Class II Al Turi Landfill.

2.2 Type 2 Groundwater Quality

Nine Type 2 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill as part of post-closure monitoring at the facility. Of the nine Type 2 groundwater monitoring wells, seven wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-20S was dry.

Analytical results collected from the Type 2 groundwater monitoring wells are presented in Table 2-2, as are the Type 2 established GWTLs. A review of the inorganic analyses collected during the July 2007 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type

2 groundwater monitoring wells. In addition, a review of the Type 2 volatile organic data, collected during the July 2007 sampling event indicates that no volatile organic compounds (VOC's) were present above established GWTLs.

The laboratory supplied summary tables presenting the July 2007 analytical data are provided in Appendix A.

The Type 2 groundwater monitoring wells will be sampled again in January 2008 as part of continued semi-annual groundwater monitoring.

3 ASSESSMENT OF CUMULATIVE EFFECTS

In addition to the direct comparison of measured groundwater concentrations from individual monitoring wells to the appropriate GWTLs, the cumulative effects of ground water discharges to the Wallkill River from the Class II Landfill site are evaluated as part of routine post-closure monitoring. The cumulative mass loading to the river is approximated, as follows:

1. The estimated total mass loading to the river for each Type 1 well is calculated by multiplying the measured concentration with the discharge rate calculated using ground water elevations observed during the same monitoring event (the ground water elevations from the July 2007 event are provided on Table 3-1):

$$M_i = C_i \bullet (Ki \bullet i_i \bullet w_i \bullet d) \bullet CF$$

where:

M_i	=	mass loading rate for well i (kg/day);
C_i	=	measured ground water concentration in well i (mg/L);
K_i	=	hydraulic conductivity for discharge zone segment associated with well i (ft/day);
i_i	=	calculated ground water gradient of for well i (ft/ft);
w_i	=	width of discharge zone segment associated with well i (ft);
d	=	aquifer thickness (ft); and
CF	=	conversion factor 28.32 $L/ft^3 * 10^{-6}$ kg/mg

2. The mass loading rate from each Type 1 well is then summed to estimate the cumulative mass loading to the river, ($M_c = \Sigma M_i$) for each constituent.

3. The estimated river concentration is then calculated by dividing the cumulative mass loading M_c by the measured river flow rate. On July 26, 2007, the average gauge height was 1.02 ft (river elevation of 355.11 ft MSL), which represents an estimated river flow of 67 cfs.

The estimated river concentrations are then compared to the lower of the aquatic criteria and human health benchmarks for surface water presented in the December 2001 Post-Closure Monitoring Plan.

The results for the estimated cumulative effects assessment are presented on Table 3-2. As indicated on Table 3-2, the estimated in-stream concentrations resulting from the discharge of groundwater to the Wallkill River based on the observed flow conditions in the river at the time of sampling are all below the lower of the surface water benchmarks. A copy of the Al Turi Landfill Stream Gauge Hydrograph Record is included in Appendix B.

4 CONCLUSIONS

A review of the July 2007 groundwater data shows that no Constituents of Concern were observed above GWTLs in any of the groundwater monitoring wells. Because there are no Constituents of Concern observed above any of the established GWTLs, and the assessment of cumulative effects did not identify a potential for unacceptable impacts on the river as a result of groundwater discharges, the routine post-closure monitoring program will continue as specified in the Post-Closure Monitoring Plan for the Class II Al Turi Landfill.

Semi-annual monitoring of 17 groundwater monitoring wells for the identified constituents of concern will continue in January 2008 at the Class II Al Turi Landfill as part of continued post closure monitoring.

APPENDIX A

CLASS II SITE
LABORATORY ANALYTICAL DATA

APPENDIX B

AL TURI LANDFILL HYDRO GRAPH RECORD

TABLE 1-1

AL TURI LANDFILL - CLASS II SITE
CONSTITUENTS OF CONCERN
JULY 2007 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

Volatile Organic Compounds	***Metals***
Chloromethane	Antimony
Vinyl Chloride	Arsenic
Trichlorofluoromethane	Barium
Dichlorodifluoromethane	Chromium, hexavalent
1,1-Dichloroethene	Chromium
1,1-Dichloroethane	Copper
cis-1,2-Dichloroethene	Lead
Benzene	Magnesium
Trichloroethene	Sodium
	Zinc

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2007 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2007 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	**W-1**		**W-11S**		**W-24S**		**W-38S**	
	26-Jul-07		**25-Jul-07**		**24-Jul-07**		**24-Jul-07**	
Compounds of Concern	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**
Volatile Organic Compounds (VOCs) By Method 8260 (Results in mg/l)								
Chloromethane	ND	2.21	ND	35	ND	35	DRY	35
Vinyl Chloride	ND	27.6	ND	27.6	ND	27.6	DRY	27.6
Trichlorofluoromethane	ND	11	ND	11	ND	11	DRY	11
Dichlorodifluoromethane	ND	2.8	0.0092	2.8	ND	2.8	DRY	2.8
1,1-Dichloroethene	ND	3.59	ND	6.12	ND	5.07	DRY	5.32
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	50.6	DRY	50.6
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	17.5	DRY	17.5
Benzene	ND	2.21	ND	3.78	ND	3.13	DRY	3.28
Trichloroethene	ND	11	ND	11	ND	11	DRY	11
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***
Antimony	ND	8,828	ND	15,074	ND	12,478	DRY	13,097
Arsenic	ND	0.81	ND	1.38	ND	1.14	DRY	1.2
Barium	0.708	***	ND	***	0.0684	***	DRY	***
Chromium, hexavalent	ND	4.54	ND	7.76	ND	6.42	DRY	6.74
Chromium	0.0082	38	ND	65	0.0187	54	DRY	57
Copper	ND	4.65	ND	7.94	0.0166	6.57	DRY	6.9
Lead	ND	1.85	ND	3.16	0.0141	2.61	DRY	2.74
Magnesium	49.5	***	19.8	***	30.6	***	DRY	***
Sodium	270	103,222	3.55	176,259	11.9	145,911	DRY	153,146
Zinc	0.0299	42.86	0.0229	73.19	0.0828	60.59	DRY	63.6

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2007 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2007 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	***W-39S***		***W-40***		***W-1D***	***W-37D***	***FB-02***	***TB-01***
	25-Jul-07		***24-Jul-07***		***25-Jul-07***	***26-Jul-07***	***26-Jul-07***	***25-Jul-07***
Compounds of Concern	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) By Method 8260 (Results in ug/l)								
Chloromethane	ND	35	ND	35	ND	ND	ND	ND
Vinyl Chloride	ND	27.6	ND	27.6	ND	ND	ND	ND
Trichlorofluoromethane	ND	11	ND	11	ND	ND	ND	ND
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	ND	ND	ND
1,1-Dichloroethene	ND	5.71	ND	17.05	ND	ND	ND	ND
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	17.5	0.002 J	17.5	ND	ND	ND	ND
Benzene	ND	3.53	ND	10.53	ND	ND	ND	ND
Trichloroethene	ND	11	0.0079	11	0.001 J	ND	ND	ND
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Antimony	ND	14,072	ND	41,986	ND	ND	ND	-
Arsenic	ND	1.29	ND	3.85	ND	ND	ND	-
Barium	0.0989	***	0.068	***	0.0529	0.253	ND	-
Chromium, hexavalent	ND	7.24	ND	21.6	0.061	ND	ND	-
Chromium	0.0068	61	ND	181	0.026	0.0193	ND	-
Copper	0.0198	7.41	0.0102	22.12	0.0158	0.0465	ND	-
Lead	0.0085	2.95	0.003	8.79	0.0048	0.0047	ND	-
Magnesium	20.3	***	16.8	***	5.64	19	ND	-
Sodium	12.3	164,544	23.6	490,952	77.8	45.6	ND	-
Zinc	0.0479	68.33	0.0432	203.87	0.0936	0.162	0.0218	-

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-2

AL TURI LANDFILL - CLASS II SITE
TYPE 2 GROUNDWATER MONITORING WELLS
JULY 2007 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2007 SAMPLING EVENT

		Laboratory Analytical Results										
Sample ID		***W-3A***	***W-12SA***	***W-13S***	***W-18S***	***W-19S***	***W-20***	***W-29***	***W-3D*****	***W-12DA*****	***FB-01***	***TB-01***
Sample Date		***26-Jul-07***	***26-Jul-07***	***26-Jul-07***	***26-Jul-07***	***24-Jul-07***	***26-Jul-07***	***26-Jul-07***	***25-Jul-07***	***25-Jul-07***	***26-Jul-07***	***25-Jul-07***
Compounds of Concern	***GWTL***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) (Results in mg/l)												
Chloromethane	35	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
Vinyl Chloride	27.6	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
Trichlorofluoromethane	11	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
Dichlorodifluoromethane	2.8	ND	ND	0.004 J	ND	ND	-	ND	ND	ND	-	ND
1,1-Dichloroethene	17.05	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
1,1-Dichloroethane	50.6	ND	ND	ND	0.005 J	ND	-	0.003 J	0.0059	ND	ND	ND
cis-1,2-Dichloroethene	17.5	ND	ND	0.002 J	0.022	ND	-	0.005 J	0.0079	ND	ND	ND
Benzene	10.53	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND
Trichloroethene	11	ND	ND	ND	0.0056	ND	-	0.001 J	ND	ND	ND	ND
Total Metals (Results in mg/l)												
Antimony	41,986	ND	ND	0.0152	ND	ND	-	ND	ND	ND	ND	-
Arsenic	3.85	ND	ND	0.099	ND	ND	-	ND	ND	ND	ND	-
Barium	***	0.708	0.057	1.17	0.0637	0.064	-	0.287	0.072	0.115	ND	-
Chromium, hexavalent	21.6	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	-
Chromium	181	0.008	ND	0.277	0.0232	ND	-	ND	ND	ND	ND	-
Copper	22.1	ND	ND	0.663	0.0198	0.017	-	0.012	ND	ND	ND	-
Lead	8.79	ND	ND	0.21	0.0068	0.0053	-	0.004	0.0035	0.0047	ND	-
Magnesium	***	49.5	14.2	159	17.7	32.4	-	50.1	26.9	8.75	ND	-
Sodium	490,952	270	3.2	11.8	3.17	5.8	-	75	16.1	23.8	ND	-
Zinc	203.87	0.0299	0.018	1.15	0.099	0.052	-	0.022	0.116	0.0361	0.0218	-

Notes:

Well W-20 was Dry at the Time of Sampling.

** - Groundwater Trigger Levels Not Applicable to These Wells.

*** - Groundwater Trigger Level is Greater Than $1X10^{b}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

TABLE 3-1
AL TURI LANDFILL - CLASS II SITE
SUMMARY OF WATER-LEVEL ELEVATIONS
JULY 2007 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

	Top of Casing	Well Bottom	Depth to Water (ft)	Water Level Elevation *
Type 1 Wells - Overburden				
W-1	383.5	342.05	27.4	356.1
W-11S	376.2	346.18	14.32	361.88
W-24	377.18	352.23	20.40	356.78
W-38S	429.45	342.82	> 86.63	342.82
W-39S	379.32	349.32	22.23	357.09
W-40	381.81	349.81	24.53	357.28
Type 1 Wells - Bedrock				
W-1D	376.5	247.5	17.10	359.40
W-37D	385.91	301.66	26.62	359.29
Type 2 Wells - Overburden				
W-3A	424.62	393.62	16.55	408.07
W-12SA	421.08	380.71	35.51	385.57
W-13S	407.78	354.47	34.86	372.92
W-18S	411.04	362.04	40.28	370.76
W-19S	413.43	353.28	50.84	362.59
W-20S	386.32	361.24	-	-
W-29	425.5	365.65	52.17	373.33
Type 2 Wells - Bedrock				
W-3D	423.99	350.99	11.68	412.31
W-12DA	NA	NA	79.55	NA
River Gauge				355.60

Notes:

* Reference elevation in feet, MSL

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2007 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Vinyl Chloride		Dichlorodifluoromethane		1,1-Dichloroethane		cis-1,2-Dichloroethene	
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
W-1	818.18	60	3.40	0.0193	3.22E+03	3.73E-02	0.002	1.83E+02	0.002	1.83E+02	0.002	1.83E+02	0.002	1.83E+02
W-38S	294.31	60	1.00	0.0356	6.29E+02	7.28E-03	0.002	3.56E+01	0.002	3.56E+01	0.002	3.56E+01	0.002	3.56E+01
W-11S	243.15	60	2.11	0.0430	1.33E+03	1.53E-02	0.002	7.51E+01	0.0092	3.45E+01	0.002	7.51E+01	0.002	7.51E+01
W-39S	255.39	60	3.40	0.0283	1.47E+03	1.70E-02	0.002	8.34E+01	0.002	8.34E+01	0.002	8.34E+01	0.002	8.34E+01
W-24	194.99	60	15.08	0.0108	1.91E+03	2.21E-02	0.002	1.08E+02	0.002	1.08E+02	0.002	1.08E+02	0.002	1.08E+02
W-40	239.24	60	3.40	0.0113	5.52E+02	6.39E-03	0.002	3.13E+01	0.002	3.13E+01	0.002	3.13E+01	0.002	3.13E+01
				Total Mass Loading (mg/d) =			**5.16E+02**		**7.86E+02**		**5.16E+02**		**5.16E+02**	
		Estimated In-Stream Concentration (mg/L)[5] =					**3.15E-06**		**4.80E-06**		**3.15E-06**		**3.15E-06**	
		Surface Water Quality Benchmark (mg/L)[6] =					**2.00E-03**		**1.00E+01**		**9.86E+00**		**1.00E+00**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2007.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 67 cfs which is based on an average measured river gauge height of 1.02 feet on July 26, 2007.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2007 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Benzene		Trichloroethene		Antimony		Arsenic	
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
W-1	818.18	60	3.40	0.0193	3.22E+03	3.73E-02	0.002	1.83E+02	0.002	1.83E+02	0.005	4.56E+02	0.005	4.56E+02
W-38S	294.31	60	1.00	0.0356	6.29E+02	7.28E-03	0.002	3.56E+01	0.002	3.56E+01	0.005	8.90E+01	0.005	8.90E+01
W-11S	243.15	60	2.11	0.0430	1.33E+03	1.53E-02	0.002	7.51E+01	0.002	7.51E+01	0.005	1.88E+02	0.005	1.88E+02
W-39S	255.39	60	3.40	0.0283	1.47E+03	1.70E-02	0.002	8.34E+01	0.002	8.34E+01	0.005	2.09E+02	0.005	2.09E+02
W-24	194.99	60	15.08	0.0108	1.91E+03	2.21E-02	0.002	1.08E+02	0.002	1.08E+02	0.005	2.70E+02	0.005	2.70E+02
W-40	239.24	60	3.40	0.0113	5.52E+02	6.39E-03	0.002	3.13E+01	0.0079	1.23E+02	0.005	7.82E+01	0.005	7.82E+01
				Total Mass Loading (mg/d) =			**5.16E+02**		**6.08E+02**		**1.29E+03**		**1.29E+03**	
			Estimated In-Stream Concentration (mg/L)[5] =				**3.15E-06**		**3.71E-06**		**7.87E-06**		**7.87E-06**	
			Surface Water Quality Benchmark (mg/L)[6] =				**1.00E-02**		**1.00E-02**		**5.00E-05**		**5.00E-05**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2007.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 67 cfs which is based on an average measured river gauge height of 1.02 feet on July 26, 2007.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2007 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Barium		Chromium (total)		Copper		Le
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0193	3.22E+03	3.73E-02	0.708	6.46E+04	0.0082	7.48E+02	0.005	4.56E+02	0.005
W-38S	294.31	60	1.00	0.0356	6.29E+02	7.28E-03	0.025	4.45E+02	0.002	3.56E+01	0.005	8.90E+01	0.005
W-11S	243.15	60	2.11	0.0430	1.33E+03	1.53E-02	0.025	9.38E+02	0.002	7.51E+01	0.005	1.88E+02	0.005
W-39S	255.39	60	3.40	0.0283	1.47E+03	1.70E-02	0.0989	4.13E+03	0.0068	2.84E+02	0.0198	8.26E+02	0.0085
W-24	194.99	60	15.08	0.0108	1.91E+03	2.21E-02	0.0684	3.70E+03	0.0187	1.01E+03	0.0166	8.97E+02	0.0141
W-40	239.24	60	3.40	0.0113	5.52E+02	6.39E-03	0.068	1.06E+03	0.002	3.13E+01	0.102	1.59E+03	0.003
				Total Mass Loading (mg/d) =			**7.49E+04**		**2.18E+03**		**4.05E+03**		**1.90E**
			Estimated In-Stream Concentration (mg/L)[5] =				**4.57E-04**		**1.33E-05**		**2.47E-05**		**1.16E**
			Surface Water Quality Benchmark (mg/L)[6] =				**2.48E+03**		**9.20E-02**		**1.10E-02**		**4.00E**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2007.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 67 cfs which is based on an average measured river gauge height of 1.02 feet on July 26, 2007.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2007 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

ad								Magnesium		Sodium		Zinc	
Mass Loading (mg/d)	Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
4.56E+02	W-1	818.18	60	3.40	0.0193	3.22E+03	3.73E-02	49.5	4.52E+06	270	2.46E+07	0.0299	2.73E+03
8.90E+01	W-38S	294.31	60	1.00	0.0356	6.29E+02	7.28E-03	0.005	8.90E+01	0.005	8.90E+01	0.005	8.90E+01
1.88E+02	W-11S	243.15	60	2.11	0.0430	1.33E+03	1.53E-02	19.8	7.43E+05	3.55	1.33E+05	0.0229	8.60E+02
3.55E+02	W-39S	255.39	60	3.40	0.0283	1.47E+03	1.70E-02	20.3	8.47E+05	12.3	5.13E+05	0.0479	2.00E+03
7.62E+02	W-24	194.99	60	15.08	0.0108	1.91E+03	2.21E-02	30.6	1.65E+06	11.9	6.43E+05	0.0828	4.47E+03
4.69E+01	W-40	239.24	60	3.40	0.0113	5.52E+02	6.39E-03	16.8	2.63E+05	23.6	3.69E+05	0.0432	6.75E+02
E+03					**Total Mass Loading (mg/d) =**			**8.02E+06**		**2.63E+07**		**1.08E+04**	
E-05				**Estimated In-Stream Concentration (mg/L)[5] =**				**4.90E-02**		**1.60E-01**		**6.60E-05**	
E-03				**Surface Water Quality Benchmark (mg/L)[6] =**				**3.44E+05**		**2.50E+02**		**1.04E-01**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2007.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 67 cfs which is based on an average measured river gauge height of 1.02 feet on July 26, 2007.

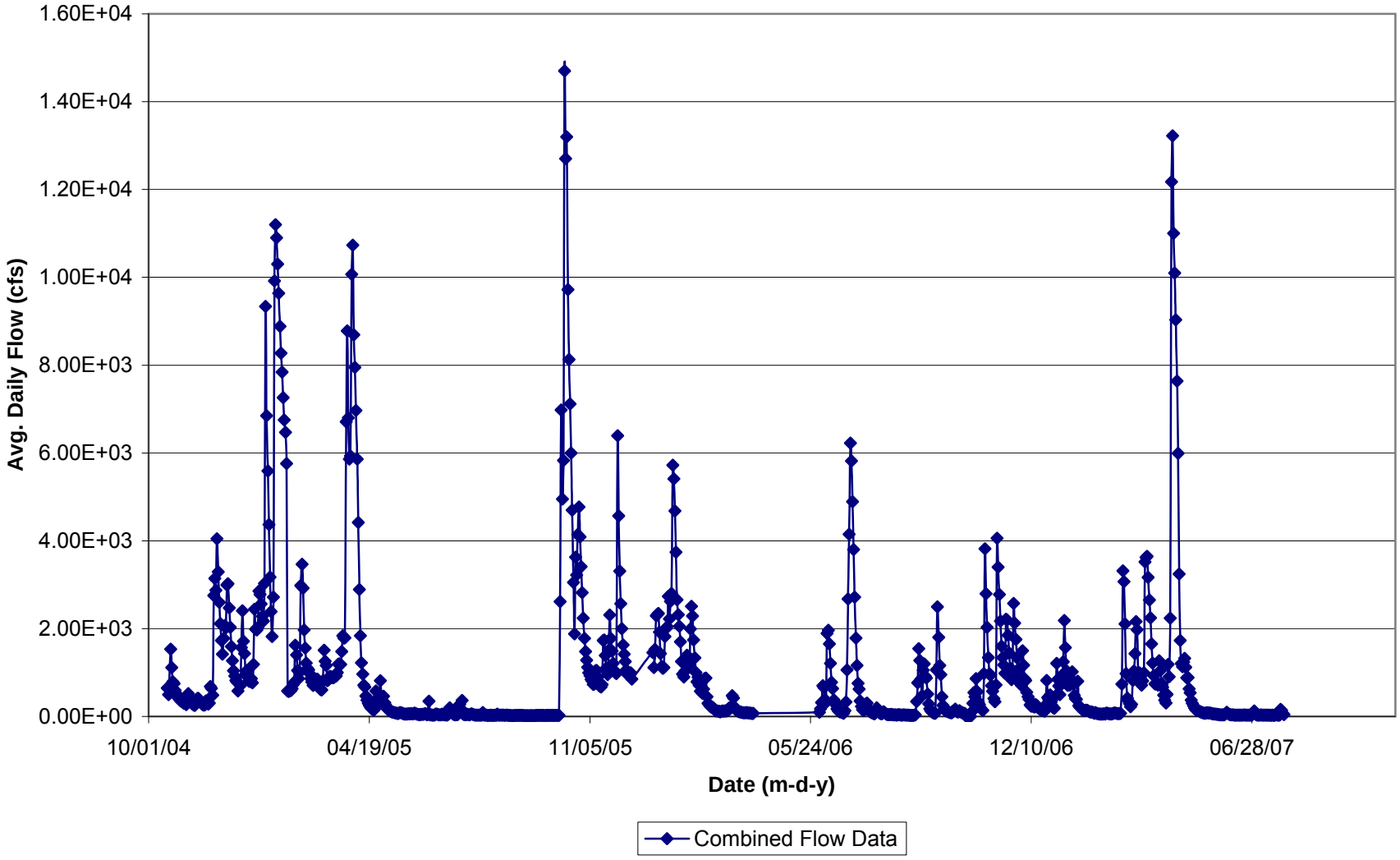
6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

Al Turi Landfill Stream Gauge - Hydrograph Record

(see notes)



JULY 2008
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – CLASS II SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

December 2008

Prepared by

Ground Water Investigations
65 Main Street
Pine Bush, New York 12566

Project 256-00-00

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Attachments

Drawing No. 1 - Well Location Plan	Pocket
Diskette - Laboratory Analytical Data	Pocket

1 INTRODUCTION

The Water Quality Management Program developed for the post-closure monitoring of the Al Turi Landfill – Class II site, located in Goshen, New York, includes the semi-annual groundwater sampling and analysis of select parameters from monitoring wells downgradient of the Class II landfill facility and the evaluation of the data generated by these samples. This program was developed to monitor historical constituents of concern within groundwater, and to identify any changes in the concentration of these constituents that may warrant further evaluation. The identification of conditions warranting further evaluation is based primarily on the comparison of detected concentrations with groundwater trigger levels (GWTLs). The Constituents of Concern and their GWTLs were presented to the Department in December 2001 in the Post-Closure Contingency Monitoring Plan prepared by the ENVIRON International Corporation of Princeton, New Jersey. The Constituents of Concern are listed on Table 1-1.

Semi-annual groundwater quality is monitored at 17 groundwater monitoring wells (overburden and bedrock wells) located within the boundaries of the Al Turi Landfill property. The 17 monitoring wells are divided into two types: "Type 1" wells and "Type 2" wells. Type 1 wells are wells that are located adjacent (within 150 feet) to the Wallkill River while Type 2 wells are located beyond 150 feet from the River. The location of each well in relation to the Wallkill River was a factor when considering GWTLs for each well. Drawing 1 (in pocket) provides a site map of the area indicating the locations of the Type 1 and Type 2 groundwater monitoring wells.

Of the 17 groundwater monitoring wells, two wells (W-1 and W-3A), are monitored semi-annually as part of post closure monitoring of the adjacent Al Turi Landfill. Monitoring of these wells consists of modified Part 360 semi-annual analysis. As part of this sampling event, the Part 360 landfill data collected for well W-1 and well W-3A were utilized. In addition, the Wallkill River, which is located along the western portion of the site, is monitored semi-annually both upgradient and downgradient of the Al Turi Property.

Proper groundwater sampling procedures were followed and all samples were kept in ice filled coolers prior to delivery to the contracted analytical laboratory. Completed chain of custody forms accompanied the samples during shipment.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

2.1 Type 1 Groundwater Quality

Eight Type 1 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill site as part of post-closure monitoring requirements. Of the eight Type 1 groundwater monitoring wells, six wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-38S was dry.

Analytical results collected from the Type 1 groundwater monitoring wells are presented in Table 2-1, as are established GWTL values for each well. A review of the inorganic analyses collected during the July 2008 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 1 groundwater monitoring wells. In addition, a review of the Type 1 volatile organic data collected during the July 2008 sampling event indicates that no volatile organic compounds (VOCs) were present above established GWTLs.

The laboratory supplied summary tables presenting the July 2008 analytical data are provided in Appendix A.

The Type 1 groundwater monitoring wells will be sampled again in January 2009 as part of continued semi-annual groundwater monitoring for the Class II Al Turi Landfill.

2.2 Type 2 Groundwater Quality

Nine Type 2 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill as part of post-closure monitoring at the facility. Of the nine Type 2 groundwater monitoring wells, seven wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer.

Analytical results collected from the Type 2 groundwater monitoring wells are presented in Table 2-2, as are the Type 2 established GWTLs. A review of the inorganic analyses collected during the July 2008 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 2 groundwater monitoring wells. In addition, a review of the Type 2 volatile organic

data, collected during the July 2008 sampling event indicates that no volatile organic compounds (VOCs) were present above established GWTLs.

The laboratory supplied summary tables presenting the July 2008 analytical data are provided in Appendix A.

The Type 2 groundwater monitoring wells will be sampled again in January 2009 as part of continued semi-annual groundwater monitoring.

3 ASSESSMENT OF CUMULATIVE EFFECTS

In addition to the direct comparison of measured groundwater concentrations from individual monitoring wells to the appropriate GWTLs, the cumulative effects of ground water discharges to the Wallkill River from the Class II Landfill site are evaluated as part of routine post-closure monitoring. The cumulative mass loading to the river is approximated, as follows:

1. The estimated total mass loading to the river for each Type 1 well is calculated by multiplying the measured concentration with the discharge rate calculated using ground water elevations observed during the same monitoring event (the ground water elevations from the July 2008 event are provided on Table 3-1):

$$M_i = C_i \bullet (Ki \bullet i_i \bullet w_i \bullet d) \bullet CF$$

where:

M_i	=	mass loading rate for well i (kg/day);
C_i	=	measured ground water concentration in well i (mg/L);
K_i	=	hydraulic conductivity for discharge zone segment associated with well i (ft/day);
i_i	=	calculated ground water gradient of for well i (ft/ft);
w_i	=	width of discharge zone segment associated with well i (ft);
d	=	aquifer thickness (ft); and
CF	=	conversion factor 28.32 $L/ft^3 * 10^{-6}$ kg/mg

2. The mass loading rate from each Type 1 well is then summed to estimate the cumulative mass loading to the river, ($M_c = \Sigma M_i$) for each constituent.

3. The estimated river concentration is then calculated by dividing the cumulative mass loading M_c by the measured river flow rate. On July 29, 2008, the average gauge height was 0.34 ft (river elevation of 354.43 ft MSL), which represents an estimated river flow of 27 cfs.

The estimated river concentrations are then compared to the lower of the aquatic criteria and human health benchmarks for surface water presented in the December 2001 Post-Closure Monitoring Plan.

The results for the estimated cumulative effects assessment are presented on Table 3-2. As indicated on Table 3-2, the estimated in-stream concentrations resulting from the discharge of groundwater to the Wallkill River based on the observed flow conditions in the river at the time of sampling are all below the lower of the surface water benchmarks. A copy of the 2008 (January thru July) Al Turi Landfill Stream Gauge Hydrograph Record is included in Appendix B.

4 CONCLUSIONS

A review of the July 2008 groundwater data shows that no Constituents of Concern were observed above GWTLs in any of the groundwater monitoring wells. Because there are no Constituents of Concern observed above any of the established GWTLs, and the assessment of cumulative effects did not identify a potential for unacceptable impacts on the river as a result of groundwater discharges, the routine post-closure monitoring program will continue as specified in the Post-Closure Monitoring Plan for the Class II Al Turi Landfill.

Semi-annual monitoring of 17 groundwater monitoring wells for the identified constituents of concern will continue in January 2009 at the Class II Al Turi Landfill as part of continued post closure monitoring.

APPENDIX A

CLASS II SITE
LABORATORY ANALYTICAL DATA

APPENDIX B

AL TURI LANDFILL HYDRO GRAPH RECORD

TABLE 1-1

AL TURI LANDFILL - CLASS II SITE
CONSTITUENTS OF CONCERN
JULY 2008 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

Volatile Organic Compounds	***Metals***
Chloromethane	Antimony
Vinyl Chloride	Arsenic
Trichlorofluoromethane	Barium
Dichlorodifluoromethane	Chromium, hexavalent
1,1-Dichloroethene	Chromium
1,1-Dichloroethane	Copper
cis-1,2-Dichloroethene	Lead
Benzene	Magnesium
Trichloroethene	Sodium
	Zinc

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2008 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2008 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	**W-1**		**W-11S**		**W-24S**		**W-38S**	
	31-Jul-08		**29-Jul-08**		**29-Jul-08**		**29-Jul-08**	
Compounds of Concern	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**
Volatile Organic Compounds (VOCs) By Method 8260 (Results in mg/l)								
Chloromethane	ND	2.21	ND	35	ND	35	DRY	35
Vinyl Chloride	ND	27.6	ND	27.6	ND	27.6	DRY	27.6
Trichlorofluoromethane	ND	11	ND	11	ND	11	DRY	11
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	2.8	DRY	2.8
1,1-Dichloroethene	ND	3.59	ND	6.12	ND	5.07	DRY	5.32
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	50.6	DRY	50.6
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	17.5	DRY	17.5
Benzene	ND	2.21	ND	3.78	ND	3.13	DRY	3.28
Trichloroethene	ND	11	ND	11	ND	11	DRY	11
Total Metals (Results in mg/l)								
	Result	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**
Antimony	ND	8,828	ND	15,074	ND	12,478	DRY	13,097
Arsenic	ND	0.81	ND	1.38	ND	1.14	DRY	1.2
Barium	0.817	***	0.0578	***	0.0675	***	DRY	***
Chromium, hexavalent	ND	4.54	ND	7.76	ND	6.42	DRY	6.74
Chromium	ND	38	0.01	65	0.131	54	DRY	57
Copper	ND	4.65	ND	7.94	ND	6.57	DRY	6.9
Lead	ND	1.85	ND	3.16	ND	2.61	DRY	2.74
Magnesium	61.8	***	17	***	19.1	***	DRY	***
Sodium	345	103,222	2.33	176,259	4.95	145,911	DRY	153,146
Zinc	ND	42.86	0.0192	73.19	ND	60.59	DRY	63.6

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2008 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2008 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	***W-39S***		***W-40S***		***W-1D***	***W-37D***	***FB-01***	***TB-01***
	29-Jul-08		***29-Jul-08***		***28-Jul-08***	***31-Jul-08***	***29-Jul-08***	***31-Jul-08***
Compounds of Concern	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) By Method 8260 (Results in ug/l)								
Chloromethane	ND	35	ND	35	ND	ND	ND	ND
Vinyl Chloride	ND	27.6	ND	27.6	ND	ND	ND	ND
Trichlorofluoromethane	ND	11	ND	11	ND	ND	ND	ND
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	ND	-	ND
1,1-Dichloroethene	ND	5.71	ND	17.05	ND	ND	ND	ND
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	ND	ND	ND
Benzene	ND	3.53	ND	10.53	ND	ND	ND	ND
Trichloroethene	ND	11	ND	11	ND	ND	ND	ND
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Antimony	ND	14,072	ND	41,986	ND	ND	ND	-
Arsenic	ND	1.29	ND	3.85	ND	ND	ND	-
Barium	0.079	***	0.0979	***	ND	0.18	ND	-
Chromium, hexavalent	ND	7.24	ND	21.6	ND	ND	ND	-
Chromium	0.0055	61	0.0051	181	0.0326	0.0183	ND	-
Copper	0.0106	7.41	0.0139	22.12	ND	0.0179	ND	-
Lead	ND	2.95	ND	8.79	ND	ND	ND	-
Magnesium	19.8	***	19.1	***	5.05	18	ND	-
Sodium	10.4	164,544	26.7	490,952	79.5	65.4	ND	-
Zinc	0.0144	68.33	0.0309	203.87	ND	0.0625	ND	-

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-2

AL TURI LANDFILL - CLASS II SITE
TYPE 2 GROUNDWATER MONITORING WELLS
JULY 2008 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2008 SAMPLING EVENT

		Laboratory Analytical Results										
Sample ID		***W-3A***	***W-12SA***	***W-13S***	***W-18S***	***W-19S***	***W-20***	***W-29***	***W-3D*****	***W-12DA*****	***FB-01***	***TB-01***
Sample Date		***29-Jul-08***	***29-Jul-08***	***29-Jul-08***	***29-Jul-08***	***29-Jul-08***	***29-Jul-08***	***29-Jul-08***	***29-Jul-08***	***31-Jul-08***	***30-Jul-08***	***31-Jul-08***
Compounds of Concern	***GWTL***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) (Results in mg/l)												
Chloromethane	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	27.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND
1,1-Dichloroethene	17.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	50.6	ND	2 J	ND	0.004 J	ND	ND	ND	0.005	ND	ND	ND
cis-1,2-Dichloroethene	17.5	ND	ND	ND	0.016	ND	ND	ND	0.0066	ND	ND	ND
Benzene	10.53	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	11	ND	ND	ND	0.0057	ND	ND	ND	ND	ND	ND	ND
Total Metals (Results in mg/l)												
Antimony	41,986	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Arsenic	3.85	ND	ND	0.01	ND	0.0292	ND	0.0208	ND	ND	ND	-
Barium	***	0.121	0.0543	0.404	ND	0.327	0.0972	0.472	0.0619	ND	ND	-
Chromium, hexavalent	21.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Chromium	181	0.0057	ND	0.0953	0.0105	0.0751	13.4	0.0096	ND	ND	ND	-
Copper	22.1	0.0144	ND	0.287	ND	0.138	0.193	0.0132	ND	ND	ND	-
Lead	8.79	ND	ND	0.0779	ND	0.0701	ND	ND	ND	ND	ND	-
Magnesium	***	21.6	16.4	109	14.5	36.2	9.37	48.8	27.7	ND	ND	-
Sodium	490,952	14.4	3.18	12.9	1.83	3.42	14.1	79.5	16.7	41	ND	-
Zinc	203.87	0.0232	ND	0.427	ND	0.24	ND	0.0214	ND	ND	ND	-

Notes:

Well W-20 was Dry at the Time of Sampling.

** - Groundwater Trigger Levels Not Applicable to These Wells.

*** - Groundwater Trigger Level is Greater Than $1X10^{b}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

TABLE 3-1
AL TURI LANDFILL - CLASS II SITE
SUMMARY OF WATER-LEVEL ELEVATIONS
JULY 2008 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

	Top of Casing	Well Bottom	Depth to Water (ft)	Water Level Elevation *
Type 1 Wells - Overburden				
W-1	383.5	342.05	29.70	353.8
W-11S	376.2	346.18	20.03	356.17
W-24	377.18	352.23	20.56	356.62
W-38S	429.45	342.82	> 86.63	342.82
W-39S	379.32	349.32	23.47	355.85
W-40	381.81	349.81	25.12	356.69
Type 1 Wells - Bedrock				
W-1D	376.5	247.5	19.71	356.79
W-37D	385.91	301.66	29.45	356.46
Type 2 Wells - Overburden				
W-3A	424.62	393.62	16.20	408.42
W-12SA	421.08	380.71	35.23	385.85
W-13S	407.78	354.47	34.58	373.2
W-18S	411.04	362.04	46.18	364.86
W-19S	413.43	353.28	50.95	362.48
W-20S	386.32	361.24	22.97	363.35
W-29	425.5	365.65	52.00	373.5
Type 2 Wells - Bedrock				
W-3D	423.99	350.99	10.46	413.53
W-12DA	NA	NA	79.10	NA
River Gauge				354.04

Notes:

* Reference elevation in feet, MSL

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2008 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Vinyl Chloride		Dichlorodifluoromethane		1,1-Dichloroethane		cis-1,2-Dichloroethene	
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
W-1	818.18	60	3.40	0.0150	2.50E+03	2.90E-02	0.002	1.42E+02	0.002	1.42E+02	0.002	1.42E+02	0.002	1.42E+02
W-38S	294.31	60	1.00	0.0377	6.66E+02	7.71E-03	0.002	3.77E+01	0.002	3.77E+01	0.002	3.77E+01	0.002	3.77E+01
W-11S	243.15	60	2.11	0.0474	1.46E+03	1.69E-02	0.002	8.27E+01	0.002	8.27E+01	0.002	8.27E+01	0.002	8.27E+01
W-39S	255.39	60	3.40	0.0316	1.65E+03	1.91E-02	0.002	9.33E+01	0.002	9.33E+01	0.002	9.33E+01	0.002	9.33E+01
W-24	194.99	60	15.08	0.0108	1.91E+03	2.20E-02	0.002	1.08E+02	0.002	1.08E+02	0.002	1.08E+02	0.002	1.08E+02
W-40	239.24	60	3.40	0.0111	5.40E+02	6.25E-03	0.002	3.06E+01	0.002	3.06E+01	0.002	3.06E+01	0.002	3.06E+01
				Total Mass Loading (mg/d) =			**4.94E+02**		**4.94E+02**		**4.94E+02**		**4.94E+02**	
		Estimated In-Stream Concentration (mg/L)[5] =					**7.59E-06**		**7.59E-06**		**7.59E-06**		**7.59E-06**	
		Surface Water Quality Benchmark (mg/L)[6] =					**2.00E-03**		**1.00E+01**		**9.86E+00**		**1.00E+00**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2008.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 26.6 cfs which is based on an average measured river gauge height of 0.34 feet on July 30, 2008.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2008 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Benzene		Trichloroethene		Antimony		Arsenic	
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
W-1	818.18	60	3.40	0.0150	2.50E+03	2.90E-02	0.002	1.42E+02	0.002	1.42E+02	0.005	3.55E+02	0.005	3.55E+02
W-38S	294.31	60	1.00	0.0377	6.66E+02	7.71E-03	0.002	3.77E+01	0.002	3.77E+01	0.005	9.43E+01	0.005	9.43E+01
W-11S	243.15	60	2.11	0.0474	1.46E+03	1.69E-02	0.002	8.27E+01	0.002	8.27E+01	0.005	2.07E+02	0.005	2.07E+02
W-39S	255.39	60	3.40	0.0316	1.65E+03	1.91E-02	0.002	9.33E+01	0.002	9.33E+01	0.005	2.33E+02	0.005	2.33E+02
W-24	194.99	60	15.08	0.0108	1.91E+03	2.20E-02	0.002	1.08E+02	0.002	1.08E+02	0.005	2.70E+02	0.005	2.70E+02
W-40	239.24	60	3.40	0.0111	5.40E+02	6.25E-03	0.002	3.06E+01	0.002	3.06E+01	0.005	7.64E+01	0.005	7.64E+01
				Total Mass Loading (mg/d) =			**4.94E+02**		**4.94E+02**		**1.23E+03**		**1.23E+03**	
			Estimated In-Stream Concentration (mg/L)[5] =				**7.59E-06**		**7.59E-06**		**1.90E-05**		**1.90E-05**	
			Surface Water Quality Benchmark (mg/L)[6] =				**1.00E-02**		**1.00E-02**		**5.00E-01**		**5.00E-01**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2008.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 26.6 cfs which is based on an average measured river gauge height of 0.34 feet on July 30, 2008.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2008 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Barium		Chromium (total)		Copper		Le
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0150	2.50E+03	2.90E-02	0.817	5.80E+04	0.002	1.42E+02	0.005	3.55E+02	0.005
W-38S	294.31	60	1.00	0.0377	6.66E+02	7.71E-03	0.025	4.71E+02	0.002	3.77E+01	0.005	9.43E+01	0.005
W-11S	243.15	60	2.11	0.0474	1.46E+03	1.69E-02	0.0578	2.39E+03	0.01	4.13E+02	0.005	2.07E+02	0.005
W-39S	255.39	60	3.40	0.0316	1.65E+03	1.91E-02	0.079	3.68E+03	0.0055	2.56E+02	0.0106	4.94E+02	0.005
W-24	194.99	60	15.08	0.0108	1.91E+03	2.20E-02	0.0675	3.64E+03	0.131	7.06E+03	0.005	2.70E+02	0.005
W-40	239.24	60	3.40	0.0111	5.40E+02	6.25E-03	0.0979	1.50E+03	0.0051	7.80E+01	0.0139	2.13E+02	0.005
				Total Mass Loading (mg/d) =			**6.96E+04**		**7.99E+03**		**1.63E+03**		**1.23E**
			Estimated In-Stream Concentration (mg/L)[5] =				**1.07E-03**		**1.23E-04**		**2.51E-05**		**1.90E**
			Surface Water Quality Benchmark (mg/L)[6] =				**2.48E+03**		**9.20E-02**		**1.10E-02**		**4.00E**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2008.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 26.6 cfs which is based on an average measured river gauge height of 0.34 feet on July 30, 2008.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2008 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

ad								Magnesium		Sodium		Zinc	
Mass Loading (mg/d)	Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
3.55E+02	W-1	818.18	60	3.40	0.0150	2.50E+03	2.90E-02	61.8	4.38E+06	345	2.45E+07	0.005	3.55E+02
9.43E+01	W-38S	294.31	60	1.00	0.0377	6.66E+02	7.71E-03	0.005	9.43E+01	0.005	9.43E+01	0.005	9.43E+01
2.07E+02	W-11S	243.15	60	2.11	0.0474	1.46E+03	1.69E-02	17	7.03E+05	2.33	9.63E+04	0.0192	7.94E+02
2.33E+02	W-39S	255.39	60	3.40	0.0316	1.65E+03	1.91E-02	19.8	9.23E+05	10.4	4.85E+05	0.0144	6.71E+02
2.70E+02	W-24	194.99	60	15.08	0.0108	1.91E+03	2.20E-02	19.1	1.03E+06	4.95	2.67E+05	0.005	2.70E+02
7.64E+01	W-40	239.24	60	3.40	0.0111	5.40E+02	6.25E-03	19.1	2.92E+05	26.7	4.08E+05	0.0309	4.72E+02
Ξ+03					**Total Mass Loading (mg/d) =**			**7.33E+06**		**2.57E+07**		**2.66E+03**	
E-05				**Estimated In-Stream Concentration (mg/L)[5] =**				**1.13E-01**		**3.95E-01**		**4.08E-05**	
E-03				**Surface Water Quality Benchmark (mg/L)[6] =**				**3.44E+05**		**2.50E+02**		**1.04E-01**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2008.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 26.6 cfs which is based on an average measured river gauge height of 0.34 feet on July 30, 2008.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

ESTIMATED WALLKILL RIVER FLOW AT THE AL TURI LANDFILL SITE

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/04							
10/12/04							
10/13/04							
10/14/04							
10/15/04							
10/16/04							
10/17/04							
10/18/04	356.00	2.71	6.47E+02			2.71	6.47E+02
10/19/04	355.00	2.51	4.95E+02			2.51	4.95E+02
10/20/04							
10/21/04	356.00	4.34	1.53E+03			4.34	1.53E+03
10/22/04	357.00	3.74	1.11E+03			3.74	1.11E+03
10/23/04	355.80	3.19	7.88E+02			3.19	7.88E+02
10/24/04	356.17	2.82	7.49E+02			2.82	7.49E+02
10/25/04	356.00	2.64	5.91E+02			2.64	5.91E+02
10/26/04	356.00	2.55	5.20E+02			2.55	5.20E+02
10/27/04	356.00	2.47	4.66E+02			2.47	4.66E+02
10/28/04	356.00	2.39	4.19E+02			2.39	4.19E+02
10/29/04	356.00	2.32	3.82E+02			2.32	3.82E+02
10/30/04	356.00	2.26	3.52E+02			2.26	3.52E+02
10/31/04	356.00	2.23	3.40E+02	5.20E+02		2.23	3.40E+02
11/01/04	356.00	2.20	3.27E+02	5.01E+02		2.20	3.27E+02
11/02/04	356.00	2.14	2.99E+02	4.77E+02		2.14	2.99E+02
11/03/04	356.00	2.15	3.06E+02	4.74E+02		2.15	3.06E+02
11/04/04	356.00	2.05	2.66E+02	4.60E+02		2.05	2.66E+02
11/05/04	356.00	2.15	3.06E+02	7.67E+02		2.15	3.06E+02
11/06/04	356.00	2.55	5.23E+02	7.32E+02		2.55	5.23E+02
11/07/04	356.00	2.43	4.42E+02	6.48E+02		2.43	4.42E+02
11/08/04	356.00	2.26	3.55E+02	5.60E+02		2.26	3.55E+02
11/09/04	356.00	2.16	3.08E+02	5.04E+02		2.16	3.08E+02
11/10/04	356.00	2.09	2.79E+02	4.51E+02		2.09	2.79E+02
11/11/04	356.00	2.03	2.58E+02	4.35E+02		2.03	2.58E+02
11/12/04	356.00	2.01	2.51E+02	4.66E+02		2.01	2.51E+02
11/13/04	356.00	2.12	2.93E+02	4.99E+02		2.12	2.93E+02
11/14/04	356.00	2.37	4.08E+02	5.94E+02		2.37	4.08E+02
11/15/04	356.00	2.37	4.11E+02	5.64E+02		2.37	4.11E+02
11/16/04	356.00	2.25	3.49E+02	5.65E+02		2.25	3.49E+02
11/17/04	356.00	2.20	3.25E+02	5.20E+02		2.20	3.25E+02
11/18/04	356.00	2.12	2.94E+02	4.93E+02		2.12	2.94E+02
11/19/04	356.00	2.06	2.68E+02	4.49E+02		2.06	2.68E+02
11/20/04	356.00	2.03	2.59E+02	4.56E+02		2.03	2.59E+02
11/21/04	356.00	2.05	2.66E+02	5.43E+02		2.05	2.66E+02
11/22/04	356.00	2.25	3.50E+02	5.83E+02		2.25	3.50E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/23/04	356.00	2.21	3.29E+02	5.29E+02		2.21	3.29E+02
11/24/04	356.00	2.09	2.80E+02	5.41E+02		2.09	2.80E+02
11/25/04	356.00	2.15	3.03E+02	1.00E+03		2.15	3.03E+02
11/26/04	356.00	2.75	6.82E+02	1.06E+03		2.75	6.82E+02
11/27/04	356.00	2.71	6.43E+02	8.65E+02		2.71	6.43E+02
11/28/04	356.00	2.50	4.86E+02	2.16E+03		2.50	4.86E+02
11/29/04	359.33	5.69	2.75E+03	4.35E+03		5.69	2.75E+03
11/30/04	359.83	6.05	3.14E+03	3.22E+03		6.05	3.14E+03
12/01/04	359.00	5.81	2.87E+03	4.31E+03		5.81	2.87E+03
12/02/04	360.50	6.80	4.05E+03	4.52E+03		6.80	4.05E+03
12/03/04	360.00	6.19	3.30E+03	3.29E+03	3.29E+03	6.19	3.29E+03
12/04/04	359.00	5.69	2.75E+03	2.60E+03	2.60E+03	5.69	2.60E+03
12/05/04	359.00	5.14	2.21E+03	2.11E+03	2.11E+03	5.14	2.11E+03
12/06/04	358.00	4.60	1.74E+03	1.73E+03	1.73E+03	4.60	1.73E+03
12/07/04	358.00	4.19	1.42E+03	1.81E+03		4.19	1.42E+03
12/08/04	358.33	4.65	1.78E+03	2.91E+03		4.65	1.78E+03
12/09/04	358.67	4.99	2.07E+03	2.32E+03		4.99	2.07E+03
12/10/04	358.33	4.93	2.01E+03	3.38E+03		4.93	2.01E+03
12/11/04	359.50	5.92	2.99E+03	4.32E+03		5.92	2.99E+03
12/12/04	359.67	5.94	3.02E+03	3.32E+03		5.94	3.02E+03
12/13/04	359.00	5.41	2.47E+03	2.56E+03		5.41	2.47E+03
12/14/04	358.50	4.94	2.03E+03	2.12E+03		4.94	2.03E+03
12/15/04	358.00	4.42	1.59E+03	1.68E+03		4.42	1.59E+03
12/16/04	357.67	3.98	1.27E+03	1.38E+03		3.98	1.27E+03
12/17/04	357.00	3.63	1.04E+03	1.22E+03		3.63	1.04E+03
12/18/04	357.00	3.43	9.20E+02	1.10E+03		3.43	9.20E+02
12/19/04	357.00	3.24	8.17E+02	1.02E+03		3.24	8.17E+02
12/20/04	356.00	3.18	7.82E+02	9.20E+02		3.18	7.82E+02
12/21/04	354.00			5.82E+02	5.82E+02		5.82E+02
12/22/04				7.49E+02	7.49E+02		7.49E+02
12/23/04	355.67	2.77	7.00E+02	1.47E+03		2.77	7.00E+02
12/24/04	357.83	4.39	1.57E+03	4.00E+03		4.39	1.57E+03
12/25/04	359.00	5.35	2.41E+03	2.57E+03		5.35	2.41E+03
12/26/04	356.67	4.78	1.88E+03	1.71E+03	1.71E+03	4.78	1.71E+03
12/27/04				1.43E+03	1.43E+03		1.43E+03
12/28/04				9.37E+02	9.37E+02		9.37E+02
12/29/04				1.05E+03	1.05E+03		1.05E+03
12/30/04	356.00	3.38	8.93E+02	1.21E+03		3.38	8.93E+02
12/31/04	357.00	3.22	8.04E+02	1.09E+03		3.22	8.04E+02
01/01/05	357.00	3.21	7.98E+02	1.12E+03		3.21	7.98E+02
01/02/05	357.00	3.32	8.60E+02	1.10E+03		3.32	8.60E+02
01/03/05	357.00	3.14	7.64E+02	1.16E+03		3.14	7.64E+02
01/04/05	357.50	3.85	1.18E+03	3.35E+03		3.85	1.18E+03
01/05/05	359.00	5.39	2.44E+03	2.96E+03		5.39	2.44E+03
01/06/05	358.50	4.90	1.99E+03	2.35E+03		4.90	1.99E+03
01/07/05	358.50	4.87	1.97E+03	2.41E+03		4.87	1.97E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/08/05	358.67	4.93	2.02E+03	2.76E+03		4.93	2.02E+03
01/09/05	359.67	5.79	2.85E+03	3.67E+03		5.79	2.85E+03
01/10/05	359.17	5.71	2.78E+03	3.01E+03		5.71	2.78E+03
01/11/05	359.00	5.50	2.56E+03	2.84E+03		5.50	2.56E+03
01/12/05	359.00	5.22	2.28E+03	2.63E+03		5.22	2.28E+03
01/13/05	359.00	5.10	2.17E+03	2.85E+03		5.10	2.17E+03
01/14/05	359.67	5.95	3.03E+03	9.11E+03		5.95	3.03E+03
01/15/05	363.83	10.02	9.34E+03	9.80E+03		10.02	9.34E+03
01/16/05	361.50	9.49	8.32E+03	6.85E+03	6.85E+03	9.49	6.85E+03
01/17/05	354.00			5.59E+03	5.59E+03		5.59E+03
01/18/05	354.00			4.37E+03	4.37E+03		4.37E+03
01/19/05	354.00			3.17E+03	3.17E+03		3.17E+03
01/20/05				2.39E+03	2.39E+03		2.39E+03
01/21/05				1.82E+03	1.82E+03		1.82E+03
01/22/05				2.72E+03	2.72E+03		2.72E+03
01/23/05				9.92E+03	9.92E+03		9.92E+03
01/24/05				1.12E+04	1.12E+04		1.12E+04
01/25/05				1.09E+04	1.09E+04		1.09E+04
01/26/05				1.03E+04	1.03E+04		1.03E+04
01/27/05				9.64E+03	9.64E+03		9.64E+03
01/28/05				8.88E+03	8.88E+03		8.88E+03
01/29/05				8.27E+03	8.27E+03		8.27E+03
01/30/05				7.84E+03	7.84E+03		7.84E+03
01/31/05				7.26E+03	7.26E+03		7.26E+03
02/01/05	354.00			6.75E+03	6.75E+03		6.75E+03
02/02/05	354.00			6.47E+03	6.47E+03		6.47E+03
02/03/05	354.00			5.76E+03	5.76E+03		5.76E+03
02/04/05	354.33	2.63	5.81E+02	5.41E+03		2.63	5.81E+02
02/05/05	356.00	2.61	5.66E+02	5.21E+03		2.61	5.66E+02
02/06/05	356.00	2.63	5.81E+02	4.86E+03		2.63	5.81E+02
02/07/05	356.00	2.65	5.93E+02	4.72E+03		2.65	5.93E+02
02/08/05	356.00	2.70	6.37E+02	4.52E+03		2.70	6.37E+02
02/09/05	356.00	2.80	7.26E+02	4.59E+03		2.80	7.26E+02
02/10/05	356.83	3.17	7.78E+02	7.65E+03		3.17	7.78E+02
02/11/05	358.00	4.45	1.62E+03	8.58E+03		4.45	1.62E+03
02/12/05	358.00	4.16	1.40E+03	6.68E+03		4.16	1.40E+03
02/13/05	357.00	3.64	1.05E+03	4.98E+03		3.64	1.05E+03
02/14/05	357.00	3.32	8.59E+02	3.90E+03		3.32	8.59E+02
02/15/05	357.33	3.58	1.01E+03	9.76E+03		3.58	1.01E+03
02/16/05	359.67	5.91	2.98E+03	5.74E+03		5.91	2.98E+03
02/17/05	360.00	6.33	3.46E+03	4.01E+03		6.33	3.46E+03
02/18/05	359.50	5.91	2.99E+03	2.92E+03	2.92E+03	5.91	2.92E+03
02/19/05	358.00	5.11	2.18E+03	1.97E+03	1.97E+03	5.11	1.97E+03
02/20/05	356.67	4.37	1.56E+03	1.61E+03		4.37	1.56E+03
02/21/05	357.50	3.90	1.22E+03	1.35E+03		3.90	1.22E+03
02/22/05	357.00	3.72	1.10E+03	1.36E+03		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/23/05	357.00	3.65	1.06E+03	1.29E+03		3.65	1.06E+03
02/24/05	357.00	3.52	9.75E+02	1.17E+03		3.52	9.75E+02
02/25/05	357.00	3.32	8.61E+02	1.09E+03		3.32	8.61E+02
02/26/05	357.00	3.18	7.83E+02	9.65E+02		3.18	7.83E+02
02/27/05	356.00	3.03	7.04E+02	9.07E+02		3.03	7.04E+02
02/28/05	356.83	2.93	8.64E+02	8.67E+02		2.93	8.64E+02
03/01/05	356.00	2.82	7.49E+02	8.45E+02		2.82	7.49E+02
03/02/05	356.67	2.91	8.45E+02	8.83E+02		2.91	8.45E+02
03/03/05	356.67	2.93	8.70E+02	8.48E+02	8.48E+02	2.93	8.48E+02
03/04/05	356.00	2.75	6.80E+02	7.68E+02		2.75	6.80E+02
03/05/05	356.00	2.71	6.43E+02	7.41E+02		2.71	6.43E+02
03/06/05	356.00	2.67	6.09E+02	7.37E+02		2.67	6.09E+02
03/07/05	356.00	2.66	6.07E+02	8.00E+02		2.66	6.07E+02
03/08/05	356.67	3.23	8.09E+02	1.73E+03		3.23	8.09E+02
03/09/05	357.33	4.30	1.51E+03	1.84E+03		4.30	1.51E+03
03/10/05	356.75	3.96	1.26E+03	1.48E+03		3.96	1.26E+03
03/11/05	355.20	3.82	1.16E+03	1.30E+03		3.82	1.16E+03
03/12/05	354.60	3.24	8.15E+02	1.12E+03		3.24	8.15E+02
03/13/05	357.00	3.27	8.34E+02	1.11E+03		3.27	8.34E+02
03/14/05	357.00	3.41	9.11E+02	1.20E+03		3.41	9.11E+02
03/15/05	357.00	3.41	9.11E+02	1.22E+03		3.41	9.11E+02
03/16/05	357.00	3.37	8.87E+02	1.28E+03		3.37	8.87E+02
03/17/05	357.00	3.37	8.85E+02	1.26E+03		3.37	8.85E+02
03/18/05	357.00	3.37	8.85E+02	1.36E+03		3.37	8.85E+02
03/19/05	357.00	3.43	9.22E+02	1.42E+03		3.43	9.22E+02
03/20/05	357.00	3.43	9.24E+02	1.41E+03		3.43	9.24E+02
03/21/05	357.00	3.56	9.98E+02	1.50E+03		3.56	9.98E+02
03/22/05	357.33	3.86	1.19E+03	1.66E+03		3.86	1.19E+03
03/23/05	357.17	3.88	1.20E+03	1.74E+03		3.88	1.20E+03
03/24/05	357.17	3.86	1.19E+03	1.63E+03		3.86	1.19E+03
03/25/05	358.00	4.27	1.48E+03	2.01E+03		4.27	1.48E+03
03/26/05	358.00	4.72	1.84E+03	2.34E+03		4.72	1.84E+03
03/27/05	358.00	4.66	1.78E+03	2.17E+03		4.66	1.78E+03
03/28/05	358.17	4.66	1.79E+03	4.34E+03		4.66	1.79E+03
03/29/05	362.17	8.60	6.71E+03	1.16E+04		8.60	6.71E+03
03/30/05	364.00	10.10	9.51E+03	8.78E+03	8.78E+03	10.10	8.78E+03
03/31/05	364.00	9.96	9.22E+03	6.80E+03	6.80E+03	9.96	6.80E+03
04/01/05	362.83	9.34	8.03E+03	5.86E+03	5.86E+03	9.34	5.86E+03
04/02/05	361.67	8.12	5.93E+03	9.07E+03		8.12	5.93E+03
04/03/05	364.00	10.37	1.01E+04	1.68E+04		10.37	1.01E+04
04/04/05	364.00	10.68	1.07E+04	1.10E+04		10.68	1.07E+04
04/05/05	365.00	11.23	1.19E+04	8.69E+03	8.69E+03	11.23	8.69E+03
04/06/05	364.83	11.11	1.17E+04	7.95E+03	7.95E+03	11.11	7.95E+03
04/07/05	364.00	10.44	1.02E+04	6.97E+03	6.97E+03	10.44	6.97E+03
04/08/05	362.67	9.20	7.76E+03	5.86E+03	5.86E+03	9.20	5.86E+03
04/09/05	361.00	7.39	4.84E+03	4.42E+03	4.42E+03	7.39	4.42E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/10/05	359.33	5.82	2.89E+03	3.11E+03		5.82	2.89E+03
04/11/05	358.33	4.72	1.84E+03	2.40E+03		4.72	1.84E+03
04/12/05	357.50	3.91	1.22E+03	1.82E+03		3.91	1.22E+03
04/13/05	357.00	3.50	9.63E+02			3.50	9.63E+02
04/14/05	356.83	3.04	7.10E+02	1.36E+03		3.04	7.10E+02
04/15/05	356.00	2.74	6.69E+02	1.20E+03		2.74	6.69E+02
04/16/05	356.00	2.47	4.68E+02	1.06E+03		2.47	4.68E+02
04/17/05	356.00	2.29	3.70E+02	9.95E+02		2.29	3.70E+02
04/18/05	356.00	2.13	2.97E+02	9.04E+02		2.13	2.97E+02
04/19/05	355.20	2.00	2.50E+02	8.45E+02		2.00	2.50E+02
04/20/05	354.83	1.89	2.13E+02	7.94E+02		1.89	2.13E+02
04/21/05	355.00	1.76	1.81E+02	7.32E+02		1.76	1.81E+02
04/22/05	355.00	1.70	1.66E+02	6.92E+02		1.70	1.66E+02
04/23/05	354.83	1.60	1.46E+02	7.66E+02		1.60	1.46E+02
04/24/05	354.67	1.91	2.21E+02	1.75E+03		1.91	2.21E+02
04/25/05	355.00	2.63	5.81E+02	1.54E+03		2.63	5.81E+02
04/26/05	355.33	2.36	4.06E+02	1.14E+03		2.36	4.06E+02
04/27/05	355.33	2.01	2.52E+02	1.23E+03		2.01	2.52E+02
04/28/05	355.50	2.34	3.94E+02	1.87E+03		2.34	3.94E+02
04/29/05	356.17	2.88	8.16E+02	1.43E+03		2.88	8.16E+02
04/30/05	355.67	2.38	4.14E+02	1.16E+03		2.38	4.14E+02
05/01/05	354.67	2.10	2.83E+02	1.28E+03		2.10	2.83E+02
05/02/05	355.67	2.46	4.62E+02	1.21E+03		2.46	4.62E+02
05/03/05	356.00	2.17	3.11E+02	1.05E+03		2.17	3.11E+02
05/04/05	356.00	2.00	2.49E+02	9.44E+02		2.00	2.49E+02
05/05/05	355.17	1.83	1.98E+02	8.44E+02		1.83	1.98E+02
05/06/05	355.00	1.65	1.56E+02	7.66E+02		1.65	1.56E+02
05/07/05	354.83	1.55	1.35E+02	7.04E+02		1.55	1.35E+02
05/08/05	355.00	1.47	1.22E+02	6.77E+02		1.47	1.22E+02
05/09/05	354.83	1.38	1.08E+02	6.18E+02		1.38	1.08E+02
05/10/05	354.83	1.30	9.69E+01	5.90E+02		1.30	9.69E+01
05/11/05	354.67	1.28	9.43E+01	5.23E+02		1.28	9.43E+01
05/12/05	354.83	1.19	8.42E+01	5.41E+02		1.19	8.42E+01
05/13/05	354.67	1.16	8.07E+01	4.61E+02		1.16	8.07E+01
05/14/05	354.67	1.06	6.99E+01	4.67E+02		1.06	6.99E+01
05/15/05	354.50	1.01	6.61E+01	4.63E+02		1.01	6.61E+01
05/16/05	354.33	1.11	7.52E+01	5.31E+02		1.11	7.52E+01
05/17/05	354.50	1.26	9.25E+01	5.43E+02		1.26	9.25E+01
05/18/05	354.50	1.16	8.08E+01	4.54E+02		1.16	8.08E+01
05/19/05	354.50	1.05	6.91E+01	4.44E+02		1.05	6.91E+01
05/20/05	354.83	0.94	6.00E+01	4.16E+02		0.94	6.00E+01
05/21/05	354.00	0.88	5.50E+01	3.85E+02		0.88	5.50E+01
05/22/05	354.00	0.85	5.27E+01	3.97E+02		0.85	5.27E+01
05/23/05	354.00	0.86	5.36E+01	4.34E+02		0.86	5.36E+01
05/24/05	355.00	0.97	6.19E+01	4.52E+02		0.97	6.19E+01
05/25/05	354.67	0.95	6.05E+01	4.51E+02		0.95	6.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/26/05	354.67	0.98	6.27E+01	4.54E+02		0.98	6.27E+01
05/27/05	354.67	1.01	6.58E+01	4.65E+02		1.01	6.58E+01
05/28/05	354.67	0.97	6.25E+01	4.46E+02		0.97	6.25E+01
05/29/05	354.33	0.90	5.70E+01	5.59E+02		0.90	5.70E+01
05/30/05	354.67	1.15	7.97E+01	5.24E+02		1.15	7.97E+01
05/31/05	354.83	1.00	6.49E+01	4.79E+02		1.00	6.49E+01
06/01/05	354.00	0.85	5.30E+01	3.60E+02		0.85	5.30E+01
06/02/05	354.00	0.78	4.85E+01	3.67E+02		0.78	4.85E+01
06/03/05	354.00	0.70	4.31E+01	3.11E+02		0.70	4.31E+01
06/04/05	354.00	0.67	4.14E+01	2.96E+02		0.67	4.14E+01
06/05/05	354.00	0.73	4.50E+01	3.15E+02		0.73	4.50E+01
06/06/05	354.00	0.80	4.93E+01	3.47E+02		0.80	4.93E+01
06/07/05	354.00	0.74	4.57E+01	3.32E+02		0.74	4.57E+01
06/08/05	354.50	0.97	6.25E+01	3.49E+02		0.97	6.25E+01
06/09/05	354.33	1.02	6.62E+01	3.67E+02		1.02	6.62E+01
06/10/05	354.00	0.69	4.27E+01	3.34E+02		0.69	4.27E+01
06/11/05	354.00	0.65	4.05E+01	3.00E+02		0.65	4.05E+01
06/12/05	354.00			3.46E+02	3.46E+02		3.46E+02
06/13/05	354.00	0.58	3.70E+01	3.16E+02		0.58	3.70E+01
06/14/05	354.00	0.55	3.54E+01	2.59E+02		0.55	3.54E+01
06/15/05	354.00	0.47	3.16E+01	2.23E+02		0.47	3.16E+01
06/16/05	354.00	0.45	3.10E+01	2.19E+02		0.45	3.10E+01
06/17/05	354.00	0.41	2.93E+01	2.66E+02		0.41	2.93E+01
06/18/05	354.00	0.84	5.26E+01	2.86E+02		0.84	5.26E+01
06/19/05	354.00	0.87	5.41E+01	3.10E+02		0.87	5.41E+01
06/20/05	354.00	0.74	4.58E+01	2.86E+02		0.74	4.58E+01
06/21/05	354.00	0.61	3.82E+01	2.40E+02		0.61	3.82E+01
06/22/05	354.00	0.59	3.74E+01	2.10E+02		0.59	3.74E+01
06/23/05	354.00	0.58	3.71E+01	2.06E+02		0.58	3.71E+01
06/24/05	354.50	0.90	5.66E+01	2.98E+02		0.90	5.66E+01
06/25/05	354.00	0.67	4.18E+01	2.61E+02		0.67	4.18E+01
06/26/05	354.00	0.56	3.58E+01	2.08E+02		0.56	3.58E+01
06/27/05	354.00	0.51	3.36E+01	1.61E+02		0.51	3.36E+01
06/28/05	354.00	0.49	3.26E+01	1.65E+02		0.49	3.26E+01
06/29/05	354.00	0.52	3.41E+01	2.35E+02		0.52	3.41E+01
06/30/05	354.33	0.91	5.71E+01	2.60E+02		0.91	5.71E+01
07/01/05	355.00	1.82	1.96E+02	5.36E+02		1.82	1.96E+02
07/02/05	354.33	1.69	1.63E+02	6.48E+02		1.69	1.63E+02
07/03/05	355.00	1.24	8.98E+01	4.29E+02		1.24	8.98E+01
07/04/05	354.33	0.84	5.22E+01	2.91E+02		0.84	5.22E+01
07/05/05	354.00	0.65	4.05E+01	2.41E+02		0.65	4.05E+01
07/06/05	354.00	0.58	3.68E+01	1.97E+02		0.58	3.68E+01
07/07/05	354.00	0.62	3.90E+01	1.67E+02		0.62	3.90E+01
07/08/05	354.00	0.68	4.21E+01	2.69E+02		0.68	4.21E+01
07/09/05	354.50	1.11	7.47E+01	4.95E+02		1.11	7.47E+01
07/10/05	356.00	2.07	2.72E+02	6.46E+02		2.07	2.72E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/11/05	354.83	1.75	1.78E+02	4.99E+02		1.75	1.78E+02
07/12/05	354.00			3.63E+02	3.63E+02		3.63E+02
07/13/05	354.33	0.90	5.67E+01	3.52E+02		0.90	5.67E+01
07/14/05	354.00	0.71	4.41E+01	2.48E+02		0.71	4.41E+01
07/15/05	354.00	0.63	3.96E+01	1.85E+02		0.63	3.96E+01
07/16/05	354.00	0.63	3.94E+01	1.57E+02		0.63	3.94E+01
07/17/05	354.00	0.77	4.76E+01	2.13E+02		0.77	4.76E+01
07/18/05	354.00	0.68	4.23E+01	3.81E+02		0.68	4.23E+01
07/19/05	354.00	0.61	3.83E+01	3.81E+02		0.61	3.83E+01
07/20/05	354.50	0.88	5.52E+01	3.16E+02		0.88	5.52E+01
07/21/05	354.83	0.94	6.00E+01	2.80E+02		0.94	6.00E+01
07/22/05	354.00	0.71	4.39E+01	2.14E+02		0.71	4.39E+01
07/23/05	354.00	0.55	3.55E+01	1.73E+02		0.55	3.55E+01
07/24/05	354.00	0.47	3.20E+01	1.25E+02		0.47	3.20E+01
07/25/05	354.00	0.49	3.27E+01	1.20E+02		0.49	3.27E+01
07/26/05	354.00	0.43	2.99E+01	1.16E+02		0.43	2.99E+01
07/27/05	354.00	0.42	2.98E+01	1.04E+02		0.42	2.98E+01
07/28/05	354.00	0.42	2.96E+01	1.02E+02		0.42	2.96E+01
07/29/05	354.00	0.44	3.06E+01	9.00E+01		0.44	3.06E+01
07/30/05	354.00	0.44	3.03E+01	9.30E+01		0.44	3.03E+01
07/31/05	354.00			8.70E+01	8.70E+01		8.70E+01
08/01/05	354.00	0.40	2.88E+01	7.90E+01		0.40	2.88E+01
08/02/05	354.00	0.36	2.75E+01	7.80E+01		0.36	2.75E+01
08/03/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/04/05	354.00	0.34	2.66E+01	7.00E+01		0.34	2.66E+01
08/05/05	354.00	0.34	2.65E+01	6.60E+01		0.34	2.65E+01
08/06/05	354.00	0.34	2.66E+01	6.30E+01		0.34	2.66E+01
08/07/05	354.00	0.35	2.71E+01	5.90E+01		0.35	2.71E+01
08/08/05	354.00	0.34	2.67E+01	5.90E+01		0.34	2.67E+01
08/09/05	354.00	0.32	2.59E+01	6.00E+01		0.32	2.59E+01
08/10/05	354.00	0.33	2.64E+01	5.80E+01		0.33	2.64E+01
08/11/05	354.00	0.35	2.71E+01	5.40E+01		0.35	2.71E+01
08/12/05	354.00	0.31	2.57E+01	5.40E+01		0.31	2.57E+01
08/13/05	354.00			5.50E+01	5.50E+01		5.50E+01
08/14/05	354.00	0.36	2.73E+01	6.30E+01		0.36	2.73E+01
08/15/05	354.00	0.36	2.75E+01	7.40E+01		0.36	2.75E+01
08/16/05	354.00	0.44	3.06E+01	7.40E+01		0.44	3.06E+01
08/17/05	354.00	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
08/18/05	354.00	0.38	2.82E+01	8.70E+01		0.38	2.82E+01
08/19/05	354.00	0.36	2.76E+01	7.80E+01		0.36	2.76E+01
08/20/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/21/05	354.00	0.35	2.70E+01	7.20E+01		0.35	2.70E+01
08/22/05	354.00	0.37	2.78E+01	6.70E+01		0.37	2.78E+01
08/23/05	354.00	0.34	2.68E+01	6.30E+01		0.34	2.68E+01
08/24/05	354.00	0.32	2.61E+01	6.10E+01		0.32	2.61E+01
08/25/05	354.00	0.18	2.15E+01	5.30E+01		0.18	2.15E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/26/05	354.00	0.16	2.09E+01	4.90E+01		0.16	2.09E+01
08/27/05	354.00	0.14	2.04E+01	4.70E+01		0.14	2.04E+01
08/28/05	354.00	0.15	2.05E+01	4.80E+01		0.15	2.05E+01
08/29/05	354.00	0.21	2.23E+01	5.20E+01		0.21	2.23E+01
08/30/05	354.00	0.28	2.47E+01	5.20E+01		0.28	2.47E+01
08/31/05	354.00	0.32	2.58E+01			0.32	2.58E+01
09/01/05	354.00	0.28	2.47E+01	6.00E+01		0.28	2.47E+01
09/02/05	354.00	0.25	2.38E+01	7.20E+01		0.25	2.38E+01
09/03/05	354.00	0.24	2.34E+01	6.70E+01		0.24	2.34E+01
09/04/05	354.00	0.20	2.22E+01	5.60E+01		0.20	2.22E+01
09/05/05	354.00	0.19	2.19E+01	4.90E+01		0.19	2.19E+01
09/06/05	354.00	0.15	2.07E+01	4.70E+01		0.15	2.07E+01
09/07/05	354.00	0.11	1.96E+01	4.50E+01		0.11	1.96E+01
09/08/05	354.00	0.09	1.90E+01	4.30E+01		0.09	1.90E+01
09/09/05	354.00	0.06	1.84E+01	4.20E+01		0.06	1.84E+01
09/10/05	354.00	0.04	1.79E+01	4.00E+01		0.04	1.79E+01
09/11/05	354.00	0.02	1.74E+01	4.00E+01		0.02	1.74E+01
09/12/05	354.00	0.04	1.78E+01	3.70E+01		0.04	1.78E+01
09/13/05	354.00	0.07	1.87E+01	3.60E+01		0.07	1.87E+01
09/14/05	354.00	0.06	1.83E+01	3.50E+01		0.06	1.83E+01
09/15/05	354.00	0.06	1.83E+01	4.00E+01		0.06	1.83E+01
09/16/05	354.00	0.14	2.05E+01	3.90E+01		0.14	2.05E+01
09/17/05	354.00	0.20	2.21E+01	3.90E+01		0.20	2.21E+01
09/18/05	354.00	0.27	2.42E+01	3.80E+01		0.27	2.42E+01
09/19/05	354.00	0.28	2.46E+01	4.00E+01		0.28	2.46E+01
09/20/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/21/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/22/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
09/23/05	354.00	0.19	2.18E+01	4.10E+01		0.19	2.18E+01
09/24/05	354.00	0.16	2.10E+01	4.00E+01		0.16	2.10E+01
09/25/05	354.00	0.15	2.06E+01	3.90E+01		0.15	2.06E+01
09/26/05	354.00	0.17	2.12E+01	4.10E+01		0.17	2.12E+01
09/27/05	354.00	0.17	2.12E+01	4.30E+01		0.17	2.12E+01
09/28/05	354.00	0.17	2.12E+01	4.50E+01		0.17	2.12E+01
09/29/05	354.00	0.19	2.19E+01	4.40E+01		0.19	2.19E+01
09/30/05	354.00	0.21	2.25E+01	4.30E+01		0.21	2.25E+01
10/01/05	354.00	0.23	2.30E+01	4.00E+01		0.23	2.30E+01
10/02/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/03/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
10/04/05	354.00	0.25	2.35E+01	4.10E+01		0.25	2.35E+01
10/05/05	354.00	0.23	2.30E+01	4.10E+01		0.23	2.30E+01
10/06/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/07/05	354.00	0.20	2.21E+01	4.00E+01		0.20	2.21E+01
10/08/05	354.00	0.28	2.46E+01	2.89E+03		0.28	2.46E+01
10/09/05	359.40	5.56	2.61E+03	1.20E+04		5.56	2.61E+03
10/10/05				6.98E+03	6.98E+03		6.98E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/05	361.00	7.57	5.10E+03	4.95E+03	4.95E+03	7.57	4.95E+03
10/12/05				5,830	5.83E+03		5.83E+03
10/13/05				14,700	1.47E+04		1.47E+04
10/14/05				12,700	1.27E+04		1.27E+04
10/15/05				13,200	1.32E+04		1.32E+04
10/16/05				9,720	9.72E+03		9.72E+03
10/17/05				8,130	8.13E+03		8.13E+03
10/18/05				7,120	7.12E+03		7.12E+03
10/19/05				6,000	6.00E+03		6.00E+03
10/20/05				4,700	4.70E+03		4.70E+03
10/21/05				3,050	3.05E+03		3.05E+03
10/22/05				1,880	1.88E+03		1.88E+03
10/23/05				3,630	3.63E+03		3.63E+03
10/24/05				3,220	3.22E+03		3.22E+03
10/25/05				4,140	4.14E+03		4.14E+03
10/26/05				4,770	4.77E+03		4.77E+03
10/27/05				4,090	4.09E+03		4.09E+03
10/28/05				3,410	3.41E+03		3.41E+03
10/29/05				2,820	2.82E+03		2.82E+03
10/30/05				2,240	2.24E+03		2.24E+03
10/31/05				1,780	1.78E+03		1.78E+03
11/01/05				1,480	1.48E+03		1.48E+03
11/02/05				1,280	1.28E+03		1.28E+03
11/03/05				1,120	1.12E+03		1.12E+03
11/04/05				993	9.93E+02		9.93E+02
11/05/05				926	9.26E+02		9.26E+02
11/06/05				842	8.42E+02		8.42E+02
11/07/05				807	8.07E+02		8.07E+02
11/08/05				729	7.29E+02		7.29E+02
11/09/05				735	7.35E+02		7.35E+02
11/10/05				1,040	1.04E+03		1.04E+03
11/11/05				1,050	1.05E+03		1.05E+03
11/12/05				891	8.91E+02		8.91E+02
11/13/05				772	7.72E+02		7.72E+02
11/14/05				688	6.88E+02		6.88E+02
11/15/05				672	6.72E+02		6.72E+02
11/16/05				724	7.24E+02		7.24E+02
11/17/05				1,730	1.73E+03		1.73E+03
11/18/05				1,740	1.74E+03		1.74E+03
11/19/05				1,390	1.39E+03		1.39E+03
11/20/05				1,110	1.11E+03		1.11E+03
11/21/05				953	9.53E+02		9.53E+02
11/22/05				1,510	1.51E+03		1.51E+03
11/23/05				2,310	2.31E+03		2.31E+03
11/24/05				1,780	1.78E+03		1.78E+03
11/25/05				1,490	1.49E+03		1.49E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/26/05				1,210	1.21E+03		1.21E+03
11/27/05				1,050	1.05E+03		1.05E+03
11/28/05				998	9.98E+02		9.98E+02
11/29/05				973	9.73E+02		9.73E+02
11/30/05				6,390	6.39E+03		6.39E+03
12/01/05				4,570	4.57E+03		4.57E+03
12/02/05				3,310	3.31E+03		3.31E+03
12/03/05				2,570	2.57E+03		2.57E+03
12/04/05				2,000	2.00E+03		2.00E+03
12/05/05				1,630	1.63E+03		1.63E+03
12/06/05				1,420	1.42E+03		1.42E+03
12/07/05				1,250	1.25E+03		1.25E+03
12/08/05				1,060	1.06E+03		1.06E+03
12/09/05				960	9.60E+02		9.60E+02
12/10/05				972	9.72E+02		9.72E+02
12/11/05				983	9.83E+02		9.83E+02
12/12/05				992	9.92E+02		9.92E+02
12/13/05				848	8.48E+02		8.48E+02
12/14/05				Ice			
12/15/05				Ice			
12/16/05				Ice			
12/17/05				Ice			
12/18/05				Ice			
12/19/05				Ice			
12/20/05				Ice			
12/21/05				Ice			
12/22/05				Ice			
12/23/05				Ice			
12/24/05				Ice			
12/25/05				Ice			
12/26/05				Ice			
12/27/05				Ice			
12/28/05				Ice			
12/29/05				Ice			
12/30/05				Ice			
12/31/05				Ice			
01/01/06	358.32	4.23	1.45E+03	ice		4.23	1.45E+03
01/02/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/03/06	358.42	4.33	1.53E+03	ice		4.33	1.53E+03
01/04/06	359.32	5.23	2.29E+03	ice		5.23	2.29E+03
01/05/06	359.35	5.26	2.32E+03	ice		5.26	2.32E+03
01/06/06	359.38	5.29	2.35E+03	ice		5.29	2.35E+03
01/07/06	358.91	4.82	1.92E+03	ice		4.82	1.92E+03
01/08/06	358.29	4.20	1.43E+03	ice		4.20	1.43E+03
01/09/06	357.87	3.78	1.14E+03	ice		3.78	1.14E+03
01/10/06	357.81	3.72	1.10E+03	ice		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/11/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/12/06	358.79	4.70	1.82E+03	3.01E+03		4.70	1.82E+03
01/13/06	359.00	4.91	2.00E+03	3.11E+03		4.91	2.00E+03
01/14/06	359.05	4.96	2.05E+03	3.55E+03		4.96	2.05E+03
01/15/06	359.77	5.68	2.74E+03	4.66E+03		5.68	2.74E+03
01/16/06	359.24	5.15	2.22E+03	3.17E+03		5.15	2.22E+03
01/17/06	360.20	6.11	3.21E+03	2.62E+03	2.62E+03	6.11	2.62E+03
01/18/06	359.83	5.74	2.80E+03	5.40E+03		5.74	2.80E+03
01/19/06	362.07	7.98	5.72E+03	7.34E+03		7.98	5.72E+03
01/20/06	361.87	7.78	5.41E+03	5.47E+03		7.78	5.41E+03
01/21/06	361.37	7.28	4.68E+03	4.71E+03		7.28	4.68E+03
01/22/06	360.65	6.56	3.74E+03	4.01E+03		6.56	3.74E+03
01/23/06	359.69	5.60	2.66E+03	3.25E+03		5.60	2.66E+03
01/24/06	359.35	5.26	2.32E+03	2.82E+03		5.26	2.32E+03
01/25/06	359.06	4.97	2.05E+03	2.62E+03		4.97	2.05E+03
01/26/06	358.64	4.55	1.70E+03	2.32E+03		4.55	1.70E+03
01/27/06	358.04	3.95	1.25E+03	1.87E+03		3.95	1.25E+03
01/28/06	357.59	3.50	9.65E+02	1.63E+03		3.50	9.65E+02
01/29/06	357.48	3.39	8.96E+02	1.64E+03		3.39	8.96E+02
01/30/06	357.70	3.61	1.03E+03	1.97E+03		3.61	1.03E+03
01/31/06	358.11	4.02	1.30E+03	2.53E+03		4.02	1.30E+03
02/01/06	358.24	4.15	1.39E+03	2.41E+03		4.15	1.39E+03
02/02/06	357.86	3.77	1.13E+03	1.97E+03		3.77	1.13E+03
02/03/06	357.92	3.83	1.17E+03	2.82E+03		3.83	1.17E+03
02/04/06	358.99	4.90	2.00E+03	3.46E+03		4.90	2.00E+03
02/05/06	359.50	5.45	2.51E+03	4.35E+03		5.45	2.51E+03
02/06/06	359.31	5.22	2.28E+03			5.22	2.28E+03
02/07/06	358.69	4.60	1.74E+03			4.60	1.74E+03
02/08/06	358.16	4.07	1.33E+03			4.07	1.33E+03
02/09/06	357.65	3.56	1.00E+03			3.56	1.00E+03
02/10/06	357.29	3.20	7.92E+02			3.20	7.92E+02
02/11/06	357.04	2.95	8.94E+02			2.95	8.94E+02
02/12/06	356.87	2.78	7.14E+02			2.78	7.14E+02
02/13/06	356.71	2.62	5.76E+02			2.62	5.76E+02
02/14/06	356.72	2.63	5.79E+02			2.63	5.79E+02
02/15/06	356.65	2.56	5.27E+02			2.56	5.27E+02
02/16/06	356.77	2.68	6.20E+02			2.68	6.20E+02
02/17/06	357.01	2.92	8.63E+02			2.92	8.63E+02
02/18/06	357.02	2.93	8.72E+02			2.93	8.72E+02
02/19/06	356.53	2.44	4.48E+02			2.44	4.48E+02
02/20/06	356.23	2.14	3.01E+02			2.14	3.01E+02
02/21/06	356.14	2.05	2.67E+02			2.05	2.67E+02
02/22/06	356.04	1.95	2.31E+02			1.95	2.31E+02
02/23/06	355.97	1.88	2.11E+02			1.88	2.11E+02
02/24/06	355.97	1.88	2.12E+02			1.88	2.12E+02
02/25/06	355.86	1.77	1.84E+02			1.77	1.84E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/26/06	355.79	1.70	1.66E+02			1.70	1.66E+02
02/27/06	355.60	1.51	1.29E+02			1.51	1.29E+02
02/28/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/01/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/02/06	355.53	1.44	1.17E+02			1.44	1.17E+02
03/03/06	355.44	1.35	1.04E+02			1.35	1.04E+02
03/04/06	355.52	1.43	1.16E+02			1.43	1.16E+02
03/05/06	355.57	1.48	1.24E+02			1.48	1.24E+02
03/06/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/07/06	355.58	1.49	1.26E+02			1.49	1.26E+02
03/08/06	355.57	1.48	1.23E+02			1.48	1.23E+02
03/09/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/10/06	355.66	1.57	1.39E+02			1.57	1.39E+02
03/11/06	355.90	1.81	1.92E+02			1.81	1.92E+02
03/12/06	355.85	1.76	1.80E+02			1.76	1.80E+02
03/13/06	355.96	1.87	2.08E+02			1.87	2.08E+02
03/14/06	356.56	2.47	4.71E+02			2.47	4.71E+02
03/15/06	356.47	2.38	4.16E+02			2.38	4.16E+02
03/16/06	355.98	1.89	2.16E+02			1.89	2.16E+02
03/17/06	355.75	1.66	1.57E+02			1.66	1.57E+02
03/18/06	355.64	1.55	1.36E+02			1.55	1.36E+02
03/19/06	355.53	1.44	1.18E+02			1.44	1.18E+02
03/20/06	355.48	1.39	1.10E+02			1.39	1.10E+02
03/21/06	355.41	1.32	9.91E+01			1.32	9.91E+01
03/22/06	355.37	1.28	9.39E+01			1.28	9.39E+01
03/23/06	355.34	1.25	9.10E+01			1.25	9.10E+01
03/24/06	355.29	1.20	8.51E+01			1.20	8.51E+01
03/25/06	355.27	1.18	8.29E+01			1.18	8.29E+01
03/26/06	355.29	1.20	8.49E+01			1.20	8.49E+01
03/27/06	355.33	1.24	8.94E+01			1.24	8.94E+01
03/28/06	355.27	1.18	8.23E+01			1.18	8.23E+01
03/29/06	355.23	1.14	7.83E+01			1.14	7.83E+01
03/30/06	355.20	1.11	7.56E+01			1.11	7.56E+01
03/31/06	355.15	1.06	7.03E+01			1.06	7.03E+01
04/01/06	355.11	1.02	6.70E+01			1.02	6.70E+01
04/02/06	355.14	1.05	6.94E+01			1.05	6.94E+01
04/03/06							
04/04/06							
04/05/06							
04/06/06							
04/07/06							
04/08/06							
04/09/06							
04/10/06							
04/11/06							
04/12/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/13/06							
04/14/06							
04/15/06							
04/16/06							
04/17/06							
04/18/06							
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05/26/06							
05/27/06							
05/28/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/29/06							
05/30/06							
05/31/06							
06/01/06	355.38	1.29	9.59E+01			1.29	9.59E+01
06/02/06	355.81	1.72	1.72E+02			1.72	1.72E+02
06/03/06	356.27	2.18	3.18E+02			2.18	3.18E+02
06/04/06	356.86	2.77	7.00E+02			2.77	7.00E+02
06/05/06	356.82	2.73	6.61E+02			2.73	6.61E+02
06/06/06	356.43	2.34	3.91E+02			2.34	3.91E+02
06/07/06	356.27	2.18	3.17E+02			2.18	3.17E+02
06/08/06	358.87	4.78	1.89E+03			4.78	1.89E+03
06/09/06	358.96	4.87	1.96E+03			4.87	1.96E+03
06/10/06	358.58	4.49	1.65E+03			4.49	1.65E+03
06/11/06	357.98	3.89	1.21E+03			3.89	1.21E+03
06/12/06	357.26	3.17	7.78E+02			3.17	7.78E+02
06/13/06	356.79	2.70	6.34E+02			2.70	6.34E+02
06/14/06	356.40	2.31	3.75E+02			2.31	3.75E+02
06/15/06	356.25	2.16	3.09E+02			2.16	3.09E+02
06/16/06	356.14	2.05	2.65E+02			2.05	2.65E+02
06/17/06	355.83	1.74	1.76E+02			1.74	1.76E+02
06/18/06	355.61	1.52	1.31E+02			1.52	1.31E+02
06/19/06	355.47	1.38	1.07E+02			1.38	1.07E+02
06/20/06	355.43	1.34	1.02E+02			1.34	1.02E+02
06/21/06	355.44	1.35	1.03E+02			1.35	1.03E+02
06/22/06	355.29	1.20	8.53E+01			1.20	8.53E+01
06/23/06	355.20	1.11	7.47E+01			1.11	7.47E+01
06/24/06	355.60	1.51	1.29E+02			1.51	1.29E+02
06/25/06	356.30	2.21	3.30E+02			2.21	3.30E+02
06/26/06	357.75	3.66	1.06E+03			3.66	1.06E+03
06/27/06	359.71	5.62	2.68E+03			5.62	2.68E+03
06/28/06	360.97	6.88	4.15E+03			6.88	4.15E+03
06/29/06	362.39	8.30	6.22E+03			8.30	6.22E+03
06/30/06	362.14	8.05	5.82E+03			8.05	5.82E+03
07/01/06	361.52	7.43	4.89E+03			7.43	4.89E+03
07/02/06	360.70	6.61	3.80E+03			6.61	3.80E+03
07/03/06	359.75	5.66	2.72E+03			5.66	2.72E+03
07/04/06	358.74	4.65	1.78E+03			4.65	1.78E+03
07/05/06	357.91	3.82	1.16E+03			3.82	1.16E+03
07/06/06	357.21	3.12	7.52E+02			3.12	7.52E+02
07/07/06	356.77	2.68	6.23E+02			2.68	6.23E+02
07/08/06	356.35	2.26	3.53E+02			2.26	3.53E+02
07/09/06	356.03	1.94	2.30E+02			1.94	2.30E+02
07/10/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/11/06	355.62	1.53	1.32E+02			1.53	1.32E+02
07/12/06	355.79	1.70	1.67E+02			1.70	1.67E+02
07/13/06	356.18	2.09	2.81E+02			2.09	2.81E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/14/06	356.25	2.16	3.07E+02			2.16	3.07E+02
07/15/06	355.85	1.76	1.81E+02			1.76	1.81E+02
07/16/06	355.61	1.52	1.31E+02			1.52	1.31E+02
07/17/06	355.45	1.36	1.05E+02			1.36	1.05E+02
07/18/06	355.31	1.22	8.72E+01			1.22	8.72E+01
07/19/06	355.22	1.13	7.68E+01			1.13	7.68E+01
07/20/06	355.11	1.02	6.65E+01			1.02	6.65E+01
07/21/06	355.05	0.96	6.11E+01			0.96	6.11E+01
07/22/06	355.44	1.35	1.04E+02			1.35	1.04E+02
07/23/06	355.92	1.83	1.99E+02			1.83	1.99E+02
07/24/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/25/06	355.35	1.26	9.21E+01			1.26	9.21E+01
07/26/06	355.14	1.05	6.94E+01			1.05	6.94E+01
07/27/06	355.00	0.91	5.78E+01			0.91	5.78E+01
07/28/06	355.10	1.01	6.56E+01			1.01	6.56E+01
07/29/06	355.48	1.39	1.10E+02			1.39	1.10E+02
07/30/06	355.34	1.25	9.04E+01			1.25	9.04E+01
07/31/06	355.08	0.99	6.39E+01			0.99	6.39E+01
08/01/06	354.90	0.81	5.04E+01			0.81	5.04E+01
08/02/06	354.79	0.70	4.33E+01			0.70	4.33E+01
08/03/06	354.71	0.62	3.89E+01			0.62	3.89E+01
08/04/06	354.78	0.69	4.25E+01			0.69	4.25E+01
08/05/06	354.86	0.77	4.73E+01			0.77	4.73E+01
08/06/06	354.72	0.63	3.92E+01			0.63	3.92E+01
08/07/06	354.60	0.51	3.35E+01			0.51	3.35E+01
08/08/06	354.60	0.51	3.36E+01			0.51	3.36E+01
08/09/06	354.61	0.52	3.40E+01			0.52	3.40E+01
08/10/06	354.51	0.42	2.97E+01			0.42	2.97E+01
08/11/06	354.65	0.56	3.58E+01			0.56	3.58E+01
08/12/06	354.78	0.69	4.26E+01			0.69	4.26E+01
08/13/06	354.62	0.53	3.43E+01			0.53	3.43E+01
08/14/06	354.51	0.42	2.95E+01			0.42	2.95E+01
08/15/06	354.51	0.42	2.99E+01			0.42	2.99E+01
08/16/06	354.70	0.61	3.81E+01			0.61	3.81E+01
08/17/06	354.66	0.57	3.62E+01			0.57	3.62E+01
08/18/06	354.52	0.43	3.01E+01			0.43	3.01E+01
08/19/06	354.46	0.37	2.79E+01			0.37	2.79E+01
08/20/06	354.47	0.38	2.80E+01			0.38	2.80E+01
08/21/06	354.45	0.36	2.73E+01			0.36	2.73E+01
08/22/06	354.43	0.34	2.66E+01			0.34	2.66E+01
08/23/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/24/06	354.39	0.30	2.53E+01			0.30	2.53E+01
08/25/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/26/06	354.50	0.41	2.91E+01			0.41	2.91E+01
08/27/06	354.69	0.60	3.76E+01			0.60	3.76E+01
08/28/06	356.32	2.23	3.41E+02			2.23	3.41E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/29/06	357.24	3.15	7.65E+02			3.15	7.65E+02
08/30/06	358.44	4.35	1.54E+03			4.35	1.54E+03
08/31/06	358.08	3.99	1.27E+03			3.99	1.27E+03
09/01/06	357.40	3.31	8.52E+02			3.31	8.52E+02
09/02/06	356.56	2.47	4.71E+02			2.47	4.71E+02
09/03/06	357.74	3.65	1.05E+03			3.65	1.05E+03
09/04/06	357.96	3.87	1.20E+03			3.87	1.20E+03
09/05/06	357.51	3.42	9.14E+02			3.42	9.14E+02
09/06/06	357.03	2.94	8.76E+02			2.94	8.76E+02
09/07/06	356.62	2.53	5.10E+02			2.53	5.10E+02
09/08/06	356.20	2.11	2.88E+02			2.11	2.88E+02
09/09/06	355.83	1.74	1.76E+02			1.74	1.76E+02
09/10/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/11/06	355.44	1.35	1.03E+02			1.35	1.03E+02
09/12/06	355.27	1.18	8.30E+01			1.18	8.30E+01
09/13/06	355.17	1.08	7.21E+01			1.08	7.21E+01
09/14/06	355.17	1.08	7.19E+01			1.08	7.19E+01
09/15/06	357.75	3.66	1.06E+03			3.66	1.06E+03
09/16/06	359.53	5.44	2.49E+03			5.44	2.49E+03
09/17/06	358.76	4.67	1.80E+03			4.67	1.80E+03
09/18/06	357.91	3.82	1.16E+03			3.82	1.16E+03
09/19/06	357.09	3.00	9.52E+02			3.00	9.52E+02
09/20/06	356.53	2.44	4.50E+02			2.44	4.50E+02
09/21/06	356.10	2.01	2.51E+02			2.01	2.51E+02
09/22/06	355.81	1.72	1.70E+02			1.72	1.70E+02
09/23/06	355.63	1.54	1.33E+02			1.54	1.33E+02
09/24/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/25/06	355.49	1.40	1.11E+02			1.40	1.11E+02
09/26/06	355.41	1.32	9.98E+01			1.32	9.98E+01
09/27/06	355.34	1.25	9.10E+01			1.25	9.10E+01
09/28/06	355.26	1.17	8.10E+01			1.17	8.10E+01
09/29/06	355.31	1.22	8.67E+01			1.22	8.67E+01
09/30/06	355.53	1.44	1.17E+02			1.44	1.17E+02
10/01/06	355.57	1.48	1.24E+02			1.48	1.24E+02
10/02/06	355.79	1.70	1.65E+02			1.70	1.65E+02
10/03/06	355.60	1.51	1.29E+02			1.51	1.29E+02
10/04/06	355.44	1.35	1.03E+02			1.35	1.03E+02
10/05/06	355.42	1.33	1.01E+02			1.33	1.01E+02
10/06/06	355.62	1.53	1.32E+02			1.53	1.32E+02
10/07/06	355.43	1.34	1.03E+02			1.34	1.03E+02
10/08/06	355.32	1.23	8.84E+01			1.23	8.84E+01
10/09/06	355.22	1.13	7.71E+01			1.13	7.71E+01
10/10/06	355.14	1.05	6.93E+01			1.05	6.93E+01
10/11/06	355.08	0.99	6.37E+01			0.99	6.37E+01
10/12/06							
10/13/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/14/06							
10/15/06							
10/16/06	354.09						
10/17/2006	355.45	1.36	1.06E+02	5.32E+02		1.36	1.06E+02
10/18/2006	356.23	2.14	2.99E+02	1.63E+03		2.14	2.99E+02
10/19/2006	356.67	2.58	5.45E+02	1.33E+03		2.58	5.45E+02
10/20/2006	356.52	2.43	4.46E+02	1.33E+03		2.43	4.46E+02
10/21/2006	357.01	2.92	8.63E+02	1.59E+03		2.92	8.63E+02
10/22/2006	356.70	2.61	5.65E+02	1.28E+03		2.61	5.65E+02
10/23/2006	356.30	2.21	3.32E+02	1.05E+03		2.21	3.32E+02
10/24/2006	356.14	2.05	2.66E+02	8.85E+02		2.05	2.66E+02
10/25/2006	355.92	1.83	1.98E+02	7.67E+02		1.83	1.98E+02
10/26/2006	355.77	1.68	1.61E+02	6.73E+02		1.68	1.61E+02
10/27/2006	355.66	1.57	1.39E+02	5.96E+02		1.57	1.39E+02
10/28/2006	357.61	3.52	9.77E+02	5.70E+03		3.52	9.77E+02
10/29/2006	360.71	6.62	3.82E+03	6.47E+03		6.62	3.82E+03
10/30/2006	359.82	5.73	2.80E+03	3.99E+03		5.73	2.80E+03
10/31/2006	359.03	4.94	2.03E+03	2.77E+03		4.94	2.03E+03
11/1/2006	358.17	4.08	1.34E+03	2.12E+03		4.08	1.34E+03
11/2/2006	357.60	3.51	9.71E+02	1.97E+03		3.51	9.71E+02
11/3/2006	357.55	3.46	9.41E+02	1.86E+03		3.46	9.41E+02
11/4/2006	357.11	3.02	7.00E+02	1.48E+03		3.02	7.00E+02
11/5/2006	356.72	2.63	5.77E+02	1.24E+03		2.63	5.77E+02
11/6/2006	356.46	2.37	4.07E+02	1.02E+03		2.37	4.07E+02
11/7/2006	356.31	2.22	3.36E+02	9.51E+02		2.22	3.36E+02
11/8/2006	356.88	2.79	7.16E+02	2.52E+03		2.79	7.16E+02
11/9/2006	360.90	6.81	4.06E+03	6.68E+03		6.81	4.06E+03
11/10/2006	360.37	6.28	3.40E+03	4.65E+03		6.28	3.40E+03
11/11/2006	359.81	5.72	2.78E+03	3.40E+03		5.72	2.78E+03
11/12/2006	359.19	5.10	2.17E+03	2.74E+03		5.10	2.17E+03
11/13/2006	358.51	4.42	1.60E+03	2.42E+03		4.42	1.60E+03
11/14/2006	358.17	4.08	1.34E+03	2.16E+03		4.08	1.34E+03
11/15/2006	357.92	3.83	1.17E+03	1.97E+03		3.83	1.17E+03
11/16/2006	357.62	3.53	9.81E+02	1.81E+03		3.53	9.81E+02
11/17/2006	359.24	5.15	2.21E+03	3.58E+03		5.15	2.21E+03
11/18/2006	359.22	5.13	2.20E+03	3.05E+03		5.13	2.20E+03
11/19/2006	358.83	4.74	1.85E+03	2.44E+03		4.74	1.85E+03
11/20/2006	358.32	4.23	1.45E+03	2.06E+03		4.23	1.45E+03
11/21/2006	357.79	3.70	1.09E+03	1.70E+03		3.70	1.09E+03
11/22/2006	357.37	3.28	8.36E+02	1.46E+03		3.28	8.36E+02
11/23/2006	357.74	3.65	1.05E+03	1.64E+03		3.65	1.05E+03
11/24/2006	359.61	5.52	2.57E+03	3.14E+03		5.52	2.57E+03
11/25/2006	359.14	5.05	2.12E+03	2.67E+03		5.05	2.12E+03
11/26/2006	358.71	4.62	1.75E+03	2.22E+03		4.62	1.75E+03
11/27/2006	358.16	4.07	1.33E+03	1.86E+03		4.07	1.33E+03
11/28/2006	357.76	3.67	1.07E+03	1.61E+03		3.67	1.07E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/29/2006	357.48	3.39	8.96E+02	1.45E+03		3.39	8.96E+02
11/30/2006	357.21	3.12	7.51E+02	1.34E+03		3.12	7.51E+02
12/1/2006	357.12	3.03	7.04E+02	1.42E+03		3.03	7.04E+02
12/2/2006	358.39	4.30	1.50E+03	2.27E+03		4.30	1.50E+03
12/3/2006	357.92	3.83	1.17E+03	1.88E+03		3.83	1.17E+03
12/4/2006	357.41	3.32	8.57E+02	1.50E+03		3.32	8.57E+02
12/5/2006	356.98	2.89	8.21E+02	1.27E+03		2.89	8.21E+02
12/6/2006	356.68	2.59	5.51E+02	1.10E+03		2.59	5.51E+02
12/7/2006	356.52	2.43	4.46E+02	1.02E+03		2.43	4.46E+02
12/8/2006	356.42	2.33	3.87E+02	9.61E+02		2.33	3.87E+02
12/9/2006	356.14	2.05	2.65E+02	7.94E+02		2.05	2.65E+02
12/10/2006	356.04	1.95	2.31E+02	7.39E+02		1.95	2.31E+02
12/11/2006	356.05	1.96	2.37E+02	7.31E+02		1.96	2.37E+02
12/12/2006	356.00	1.91	2.21E+02	7.47E+02		1.91	2.21E+02
12/13/2006	355.97	1.88	2.13E+02	7.46E+02		1.88	2.13E+02
12/14/2006	356.15	2.06	2.68E+02	8.45E+02		2.06	2.68E+02
12/15/2006	356.10	2.01	2.51E+02	8.26E+02		2.01	2.51E+02
12/16/2006	355.94	1.85	2.05E+02	7.61E+02		1.85	2.05E+02
12/17/2006	355.84	1.75	1.77E+02	6.99E+02		1.75	1.77E+02
12/18/2006	355.76	1.67	1.59E+02	6.40E+02		1.67	1.59E+02
12/19/2006	355.70	1.61	1.47E+02	6.01E+02		1.61	1.47E+02
12/20/2006	355.68	1.59	1.44E+02	5.66E+02		1.59	1.44E+02
12/21/2006	355.63	1.54	1.34E+02	5.30E+02		1.54	1.34E+02
12/22/2006	355.56	1.47	1.22E+02	5.23E+02		1.47	1.22E+02
12/23/2006	356.14	2.05	2.66E+02	1.18E+03		2.05	2.66E+02
12/24/2006	356.97	2.88	8.17E+02	1.46E+03		2.88	8.17E+02
12/25/2006	356.50	2.41	4.31E+02	1.14E+03		2.41	4.31E+02
12/26/2006	356.42	2.33	3.86E+02	1.38E+03		2.33	3.86E+02
12/27/2006	356.60	2.51	4.92E+02	1.28E+03		2.51	4.92E+02
12/28/2006	356.30	2.21	3.30E+02	1.06E+03		2.21	3.30E+02
12/29/2006	356.08	1.99	2.45E+02	8.53E+02		1.99	2.45E+02
12/30/2006	355.93	1.84	2.00E+02	7.77E+02		1.84	2.00E+02
12/31/2006	355.87	1.78	1.86E+02	7.31E+02		1.78	1.86E+02
1/1/2007	356.56	2.47	4.67E+02	1.57E+03		2.47	4.67E+02
1/2/2007	357.98	3.89	1.21E+03	2.29E+03		3.89	1.21E+03
1/3/2007	357.38	3.29	8.43E+02	1.68E+03		3.29	8.43E+02
1/4/2007	356.85	2.76	6.94E+02	1.33E+03		2.76	6.94E+02
1/5/2007	356.60	2.51	4.97E+02	1.18E+03		2.51	4.97E+02
1/6/2007	356.88	2.79	7.23E+02	1.69E+03		2.79	7.23E+02
1/7/2007	357.08	2.99	9.46E+02	1.67E+03		2.99	9.46E+02
1/8/2007	358.04	3.95	1.25E+03	3.56E+03		3.95	1.25E+03
1/9/2007	359.21	5.12	2.19E+03	3.70E+03		5.12	2.19E+03
1/10/2007	358.48	4.39	1.57E+03	2.59E+03		4.39	1.57E+03
1/11/2007	357.71	3.62	1.04E+03	1.90E+03		3.62	1.04E+03
1/12/2007	357.12	3.03	7.06E+02	1.50E+03		3.03	7.06E+02
1/13/2007	356.97	2.88	8.17E+02	1.38E+03		2.88	8.17E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/14/2007	357.13	3.04	7.12E+02	1.48E+03		3.04	7.12E+02
1/15/2007	357.40	3.31	8.55E+02	2.14E+03		3.31	8.55E+02
1/16/2007	357.68	3.59	1.02E+03	2.25E+03		3.59	1.02E+03
1/17/2007	357.17	3.08	7.28E+02	1.63E+03		3.08	7.28E+02
1/18/2007	356.58	2.49	4.78E+02	1.21E+03		2.49	4.78E+02
1/19/2007	356.46	2.37	4.10E+02	1.05E+03		2.37	4.10E+02
1/20/2007	356.42	2.33	3.88E+02	1.02E+03		2.33	3.88E+02
1/21/2007	361.31	7.22	4.60E+03	8.01E+02	8.01E+02	7.22	8.01E+02
1/22/2007	356.09	2.00	2.47E+02	8.16E+02		2.00	2.47E+02
1/23/2007	355.96	1.87	2.08E+02	7.72E+02		1.87	2.08E+02
1/24/2007	355.91	1.82	1.96E+02	7.39E+02		1.82	1.96E+02
1/25/2007	355.83	1.74	1.76E+02	6.85E+02		1.74	1.76E+02
1/26/2007	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/27/2007	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/28/2007	355.65	1.56	1.38E+02	Ice		1.56	1.38E+02
1/29/2007	355.67	1.58	1.41E+02	Ice		1.58	1.41E+02
1/30/2007	355.66	1.57	1.40E+02	Ice		1.57	1.40E+02
1/31/2007	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
2/1/2007	355.45	1.36	1.05E+02	Ice		1.36	1.05E+02
2/2/2007	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
2/3/2007	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/4/2007	355.31	1.22	8.72E+01	Ice		1.22	8.72E+01
2/5/2007	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
2/6/2007	355.35	1.26	9.23E+01	Ice		1.26	9.23E+01
2/7/2007	355.15	1.06	7.03E+01	Ice		1.06	7.03E+01
2/8/2007	355.07	0.98	6.29E+01	Ice		0.98	6.29E+01
2/9/2007	355.01	0.92	5.81E+01	Ice		0.92	5.81E+01
2/10/2007	354.98	0.89	5.60E+01	Ice		0.89	5.60E+01
2/11/2007	354.95	0.86	5.35E+01	Ice		0.86	5.35E+01
2/12/2007	354.94	0.85	5.27E+01	Ice		0.85	5.27E+01
2/13/2007	354.94	0.85	5.28E+01	Ice		0.85	5.28E+01
2/14/2007	355.04	0.95	6.08E+01	Ice		0.95	6.08E+01
2/15/2007	354.97	0.88	5.49E+01	Ice		0.88	5.49E+01
2/16/2007	355.21	1.12	7.61E+01	Ice		1.12	7.61E+01
2/17/2007	355.14	1.05	6.93E+01	Ice		1.05	6.93E+01
2/18/2007	355.07	0.98	6.33E+01	Ice		0.98	6.33E+01
2/19/2007	355.02	0.93	5.87E+01	Ice		0.93	5.87E+01
2/20/2007	354.99	0.90	5.67E+01	Ice		0.90	5.67E+01
2/21/2007	355.03	0.94	5.97E+01	Ice		0.94	5.97E+01
2/22/2007	355.12	1.03	6.77E+01	Ice		1.03	6.77E+01
2/23/2007	355.21	1.12	7.66E+01	Ice		1.12	7.66E+01
2/24/2007	355.22	1.13	7.73E+01	Ice		1.13	7.73E+01
2/25/2007	355.18	1.09	7.32E+01	Ice		1.09	7.32E+01
2/26/2007	355.12	1.03	6.74E+01	Ice		1.03	6.74E+01
2/27/2007	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/28/2007	355.11	1.02	6.70E+01	Ice [P]		1.02	6.70E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/1/2007	355.19	1.10	7.41E+01	Ice [P]		1.10	7.41E+01
3/2/2007	356.90	2.81	7.36E+02	Ice [P]		2.81	7.36E+02
3/3/2007	360.30	6.21	3.32E+03	Ice [P]		6.21	3.32E+03
3/4/2007	360.08	5.99	3.07E+03	Ice [P]		5.99	3.07E+03
3/5/2007	359.12	5.03	2.11E+03	Ice [P]		5.03	2.11E+03
3/6/2007	357.61	3.52	9.74E+02	Ice [P]		3.52	9.74E+02
3/7/2007	356.47	2.38	4.17E+02	Ice		2.38	4.17E+02
3/8/2007	370.57	16.48	2.74E+04	Ice		16.48	3.56E+02
3/9/2007	356.21	2.12	2.94E+02	Ice		2.12	2.94E+02
3/10/2007	355.99	1.90	2.19E+02	Ice		1.90	2.19E+02
3/11/2007	356.16	2.07	2.72E+02	Ice		2.07	2.72E+02
3/12/2007	357.34	3.25	8.21E+02	Ice		3.25	8.21E+02
3/13/2007	357.71	3.62	1.03E+03	Ice		3.62	1.03E+03
3/14/2007	358.30	4.21	1.43E+03	3.33E+03		4.21	1.43E+03
3/15/2007	359.18	5.09	2.16E+03	4.37E+03		5.09	2.16E+03
3/16/2007	358.97	4.88	1.98E+03	3.53E+03		4.88	1.98E+03
3/17/2007	357.48	3.39	9.01E+02	1.96E+03		3.39	9.01E+02
3/18/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/19/2007	357.42	3.33	8.67E+02	1.78E+03		3.33	8.67E+02
3/20/2007	357.14	3.05	7.13E+02	1.59E+03		3.05	7.13E+02
3/21/2007	357.32	3.23	8.08E+02	1.59E+03		3.23	8.08E+02
3/22/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/23/2007	360.47	6.38	3.52E+03	5.04E+03		6.38	3.52E+03
3/24/2007	360.55	6.46	3.62E+03	5.40E+03		6.46	3.62E+03
3/25/2007	360.57	6.48	3.65E+03	5.54E+03		6.48	3.65E+03
3/26/2007	360.16	6.07	3.17E+03	4.58E+03		6.07	3.17E+03
3/27/2007	359.69	5.60	2.65E+03	3.99E+03		5.60	2.65E+03
3/28/2007	359.27	5.18	2.25E+03	3.48E+03		5.18	2.25E+03
3/29/2007	358.58	4.49	1.65E+03	2.73E+03		4.49	1.65E+03
3/30/2007	357.98	3.89	1.21E+03	2.15E+03		3.89	1.21E+03
3/31/2007	357.53	3.44	9.27E+02	1.78E+03		3.44	9.27E+02
4/1/2007	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
4/2/2007	357.18	3.09	7.37E+02	1.55E+03		3.09	7.37E+02
4/3/2007	357.20	3.11	7.45E+02	1.59E+03		3.11	7.45E+02
4/4/2007	357.13	3.04	7.10E+02	1.75E+03		3.04	7.10E+02
4/5/2007	358.07	3.98	1.27E+03	2.55E+03		3.98	1.27E+03
4/6/2007	357.73	3.64	1.05E+03	1.99E+03		3.64	1.05E+03
4/7/2007	357.22	3.13	7.55E+02	1.62E+03		3.13	7.55E+02
4/8/2007	356.82	2.73	6.65E+02	1.36E+03		2.73	6.65E+02
4/9/2007	356.58	2.49	4.84E+02	1.18E+03		2.49	4.84E+02
4/10/2007	356.39	2.30	3.71E+02	1.04E+03		2.30	3.71E+02
4/11/2007	356.24	2.15	3.04E+02	9.02E+02		2.15	3.04E+02
4/12/2007	356.61	2.52	5.00E+02			2.52	5.00E+02
4/13/2007	357.94	3.85	1.18E+03			3.85	1.18E+03
4/14/2007	357.49	3.40	9.02E+02	1.75E+03		3.40	9.02E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/15/2007	359.26	5.17	2.24E+03	5.67E+03		5.17	2.24E+03
4/16/2007	365.42	11.33	1.22E+04	1.97E+04		11.33	1.22E+04
4/17/2007	365.86	11.77	1.32E+04	1.54E+04		11.77	1.32E+04
4/18/2007	366.70	12.61	1.54E+04	1.10E+04	1.10E+04	12.61	1.10E+04
4/19/2007	366.56	12.47	1.50E+04	1.01E+04	1.01E+04	12.47	1.01E+04
4/20/2007	365.68	11.59	1.28E+04	9.03E+03	9.03E+03	11.59	9.03E+03
4/21/2007	364.43	10.34	1.00E+04	7.64E+03	7.64E+03	10.34	7.64E+03
4/22/2007	362.63	8.54	6.61E+03	5.99E+03	5.99E+03	8.54	5.99E+03
4/23/2007	360.23	6.14	3.25E+03	4.06E+03		6.14	3.25E+03
4/24/2007	358.68	4.59	1.73E+03	2.48E+03		4.59	1.73E+03
4/25/2007	357.97	3.88	1.20E+03	1.85E+03		3.88	1.20E+03
4/26/2007	357.87	3.78	1.13E+03	1.84E+03		3.78	1.13E+03
4/27/2007	358.03	3.94	1.24E+03	1.99E+03		3.94	1.24E+03
4/28/2007	358.15	4.06	1.32E+03	2.11E+03		4.06	1.32E+03
4/29/2007	357.85	3.76	1.12E+03	1.83E+03		3.76	1.12E+03
4/30/2007	357.45	3.36	8.83E+02	1.57E+03		3.36	8.83E+02
5/1/2007	357.03	2.94	8.84E+02	1.35E+03		2.94	8.84E+02
5/2/2007	356.78	2.69	6.30E+02	1.22E+03		2.69	6.30E+02
5/3/2007	356.66	2.57	5.39E+02	1.18E+03		2.57	5.39E+02
5/4/2007	356.39	2.30	3.73E+02	9.31E+02		2.30	3.73E+02
5/5/2007	356.23	2.14	3.02E+02	8.60E+02		2.14	3.02E+02
5/6/2007	356.06	1.97	2.38E+02	8.32E+02		1.97	2.38E+02
5/7/2007	355.89	1.80	1.91E+02	7.33E+02		1.80	1.91E+02
5/8/2007	355.73	1.64	1.53E+02	6.95E+02		1.64	1.53E+02
5/9/2007	355.66	1.57	1.40E+02	6.64E+02		1.57	1.40E+02
5/10/2007	355.60	1.51	1.29E+02	5.98E+02		1.51	1.29E+02
5/11/2007	355.57	1.48	1.24E+02	6.00E+02		1.48	1.24E+02
5/12/2007	355.48	1.39	1.09E+02	5.63E+02		1.39	1.09E+02
5/13/2007	355.40	1.31	9.85E+01	5.52E+02		1.31	9.85E+01
5/14/2007	355.35	1.26	9.19E+01	4.99E+02		1.26	9.19E+01
5/15/2007	355.24	1.15	7.94E+01	4.59E+02		1.15	7.94E+01
5/16/2007	355.17	1.08	7.19E+01	4.44E+02		1.08	7.19E+01
5/17/2007	355.24	1.15	7.94E+01	4.53E+02		1.15	7.94E+01
5/18/2007	355.26	1.17	8.19E+01	4.53E+02		1.17	8.19E+01
5/19/2007	355.27	1.18	8.29E+01	4.57E+02		1.18	8.29E+01
5/20/2007	355.24	1.15	7.92E+01	4.62E+02		1.15	7.92E+01
5/21/2007	355.25	1.16	8.03E+01	4.68E+02		1.16	8.03E+01
5/22/2007	355.14	1.05	6.93E+01	4.40E+02		1.05	6.93E+01
5/23/2007	355.04	0.95	6.09E+01	3.69E+02		0.95	6.09E+01
5/24/2007	355.01	0.92	5.80E+01	3.43E+02		0.92	5.80E+01
5/25/2007	354.96	0.87	5.47E+01	3.20E+02		0.87	5.47E+01
5/26/2007	354.91	0.82	5.09E+01	2.84E+02		0.82	5.09E+01
5/27/2007	354.87	0.78	4.83E+01	2.51E+02		0.78	4.83E+01
5/28/2007	354.86	0.77	4.75E+01	2.52E+02		0.77	4.75E+01
5/29/2007	354.79	0.70	4.32E+01	2.50E+02		0.70	4.32E+01
5/30/2007	354.70	0.61	3.84E+01	2.36E+02		0.61	3.84E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
5/31/2007	354.65	0.56	3.57E+01	2.22E+02		0.56	3.57E+01
6/1/2007	354.61	0.52	3.39E+01	2.03E+02		0.52	3.39E+01
6/2/2007	354.59	0.50	3.31E+01	1.91E+02		0.50	3.31E+01
6/3/2007	354.65	0.56	3.60E+01	2.65E+02		0.56	3.60E+01
6/4/2007	355.00	0.91	5.78E+01	5.13E+02		0.91	5.78E+01
6/5/2007	355.37	1.28	9.44E+01	6.19E+02		1.28	9.44E+01
6/6/2007	355.19	1.10	7.42E+01	5.21E+02		1.10	7.42E+01
6/7/2007	354.97	0.88	5.49E+01	4.04E+02		0.88	5.49E+01
6/8/2007	354.78	0.69	4.25E+01	3.05E+02		0.69	4.25E+01
6/9/2007	354.68	0.59	3.76E+01	2.43E+02		0.59	3.76E+01
6/10/2007	354.64	0.55	3.55E+01	2.19E+02		0.55	3.55E+01
6/11/2007	354.60	0.51	3.36E+01	1.76E+02		0.51	3.36E+01
6/12/2007	354.54	0.45	3.10E+01	1.85E+02		0.45	3.10E+01
6/13/2007	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
6/14/2007	354.46	0.37	2.79E+01	1.59E+02		0.37	2.79E+01
6/15/2007	354.48	0.39	2.86E+01	1.39E+02		0.39	2.86E+01
6/16/2007	354.48	0.39	2.86E+01	1.47E+02		0.39	2.86E+01
6/17/2007	354.50	0.41	2.93E+01	1.50E+02		0.41	2.93E+01
6/18/2007	354.50	0.41	2.95E+01	1.71E+02		0.41	2.95E+01
6/19/2007	354.49	0.40	2.91E+01	1.57E+02		0.40	2.91E+01
6/20/2007	354.49	0.40	2.90E+01	1.79E+02		0.40	2.90E+01
6/21/2007	354.63	0.54	3.48E+01	2.40E+02		0.54	3.48E+01
6/22/2007	354.56	0.47	3.18E+01	2.13E+02		0.47	3.18E+01
6/23/2007	354.55	0.46	3.15E+01	1.85E+02		0.46	3.15E+01
6/24/2007	354.46	0.37	2.78E+01	1.55E+02		0.37	2.78E+01
6/25/2007	354.46	0.37	2.79E+01	1.26E+02		0.37	2.79E+01
6/26/2007	354.46	0.37	2.79E+01	1.24E+02		0.37	2.79E+01
6/27/2007	354.45	0.36	2.74E+01	1.19E+02		0.36	2.74E+01
6/28/2007	354.58	0.49	3.25E+01	1.21E+02		0.49	3.25E+01
6/29/2007	355.29	1.20	8.51E+01	1.92E+02		1.20	8.51E+01
6/30/2007	355.59	1.50	1.27E+02	4.10E+02		1.50	1.27E+02
7/1/2007	355.01	0.92	5.79E+01	4.07E+02		0.92	5.79E+01
7/2/2007	354.63	0.54	3.47E+01	2.52E+02		0.54	3.47E+01
7/3/2007	354.48	0.39	2.85E+01	1.66E+02		0.39	2.85E+01
7/4/2007	354.44	0.35	2.72E+01	1.54E+02		0.35	2.72E+01
7/5/2007	354.50	0.41	2.95E+01	2.81E+02		0.41	2.95E+01
7/6/2007	354.59	0.50	3.31E+01	8.12E+02		0.50	3.31E+01
7/7/2007	354.52	0.43	3.01E+01	4.44E+02		0.43	3.01E+01
7/8/2007	354.47	0.38	2.80E+01	2.43E+02		0.38	2.80E+01
7/9/2007	354.47	0.38	2.80E+01	1.72E+02		0.38	2.80E+01
7/10/2007	354.45	0.36	2.74E+01	1.47E+02		0.36	2.74E+01
7/11/2007	354.45	0.36	2.74E+01	1.40E+02		0.36	2.74E+01
7/12/2007	354.45	0.36	2.74E+01	1.68E+02		0.36	2.74E+01
7/13/2007	354.44	0.35	2.71E+01	1.77E+02		0.35	2.71E+01
7/14/2007	354.44	0.35	2.70E+01	1.43E+02		0.35	2.70E+01
7/15/2007	354.43	0.34	2.67E+01	1.28E+02		0.34	2.67E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/16/2007	354.45	0.36	2.73E+01	1.53E+02		0.36	2.73E+01
7/17/2007	354.44	0.35	2.69E+01	1.49E+02		0.35	2.69E+01
7/18/2007	354.43	0.34	2.68E+01	1.27E+02		0.34	2.68E+01
7/19/2007	354.57	0.48	3.20E+01	1.40E+02		0.48	3.20E+01
7/20/2007	354.74	0.65	4.04E+01	2.05E+02		0.65	4.04E+01
7/21/2007	354.50	0.41	2.93E+01	2.37E+02		0.41	2.93E+01
7/22/2007	354.45	0.36	2.75E+01	1.46E+02		0.36	2.75E+01
7/23/2007	354.52	0.43	2.99E+01	1.54E+02		0.43	2.99E+01
7/24/2007	355.76	1.67	1.59E+02	4.40E+02		1.67	1.59E+02
7/25/2007	355.64	1.55	1.35E+02	6.59E+02		1.55	1.35E+02
7/26/2007	355.11	1.02	6.70E+01	4.84E+02		1.02	6.70E+01
7/27/2007	354.72	0.63	3.95E+01	2.82E+02		0.63	3.95E+01
7/28/2007	354.73	0.64	4.00E+01	2.87E+02		0.64	4.00E+01
7/29/2007	354.96	0.87	5.45E+01	3.02E+02		0.87	5.45E+01
7/30/2007	354.81	0.72	4.47E+01	3.18E+02		0.72	4.47E+01
7/31/2007	354.65	0.56	3.61E+01	3.12E+02		0.56	3.61E+01
8/1/2007	354.54	0.45	3.08E+01	2.24E+02		0.45	3.08E+01
8/2/2007	354.44	0.35	2.72E+01	1.51E+02		0.35	2.72E+01
8/3/2007	354.43	0.34	2.68E+01	1.46E+02		0.34	2.68E+01
8/4/2007	354.44	0.35	2.71E+01	1.34E+02		0.35	2.71E+01
8/5/2007	354.43	0.34	2.68E+01	1.16E+02		0.34	2.68E+01
8/6/2007	354.44	0.35	2.69E+01	1.07E+02		0.35	2.69E+01
8/7/2007	354.44	0.35	2.69E+01	1.01E+02		0.35	2.69E+01
8/8/2007	354.73	0.64	4.00E+01	1.38E+02		0.64	4.00E+01
8/9/2007	355.69	1.60	1.46E+02	3.94E+02		1.60	1.46E+02
8/10/2007	356.03	1.94	2.30E+02	9.23E+02		1.94	2.30E+02
8/11/2007	356.97	2.88	8.10E+02	1.48E+03		2.88	8.10E+02
8/12/2007	356.22	2.13	2.95E+02	1.01E+03		2.13	2.95E+02
8/13/2007	355.42	1.33	1.01E+02	6.43E+02		1.33	1.01E+02
8/14/2007	355.01	0.92	5.85E+01	4.42E+02		0.92	5.85E+01
8/15/2007	354.80	0.71	4.39E+01	2.83E+02		0.71	4.39E+01
8/16/2007	354.64	0.55	3.53E+01	2.41E+02		0.55	3.53E+01
8/17/2007	354.54	0.45	3.09E+01	2.27E+02		0.45	3.09E+01
8/18/2007	354.49	0.40	2.89E+01	2.38E+02		0.40	2.89E+01
8/19/2007	354.46	0.37	2.79E+01	2.12E+02		0.37	2.79E+01
8/20/2007	354.45	0.36	2.74E+01	1.63E+02		0.36	2.74E+01
8/21/2007	354.54	0.45	3.08E+01	1.65E+02		0.45	3.08E+01
8/22/2007	355.45	1.36	1.05E+02	4.84E+02		1.36	1.05E+02
8/23/2007	355.34	1.25	9.04E+01	5.80E+02		1.25	9.04E+01
8/24/2007	355.02	0.93	5.92E+01	4.32E+02		0.93	5.92E+01
8/25/2007	354.86	0.77	4.78E+01	3.39E+02		0.77	4.78E+01
8/26/2007	354.76	0.67	4.14E+01	2.73E+02		0.67	4.14E+01
8/27/2007	354.78	0.69	4.26E+01	2.35E+02		0.69	4.26E+01
8/28/2007	354.73	0.64	3.98E+01	2.27E+02		0.64	3.98E+01
8/29/2007	354.66	0.57	3.65E+01	2.07E+02		0.57	3.65E+01
8/30/2007	354.64	0.55	3.54E+01	1.75E+02		0.55	3.54E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
8/31/2007	354.62	0.53	3.45E+01	1.47E+02		0.53	3.45E+01
9/1/2007	354.61	0.52	3.38E+01	1.42E+02		0.52	3.38E+01
9/2/2007	354.58	0.49	3.25E+01	1.31E+02		0.49	3.25E+01
9/3/2007	354.58	0.49	3.25E+01	1.19E+02		0.49	3.25E+01
9/4/2007	354.56	0.47	3.17E+01	1.09E+02		0.47	3.17E+01
9/5/2007	354.56	0.47	3.19E+01	1.05E+02		0.47	3.19E+01
9/6/2007	354.56	0.47	3.16E+01	9.50E+01		0.47	3.16E+01
9/7/2007	354.56	0.47	3.17E+01	8.50E+01		0.47	3.17E+01
9/8/2007	354.55	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
9/9/2007	354.55	0.46	3.15E+01	9.40E+01		0.46	3.15E+01
9/10/2007	354.56	0.47	3.17E+01	1.15E+02		0.47	3.17E+01
9/11/2007	354.56	0.47	3.16E+01	1.21E+02		0.47	3.16E+01
9/12/2007	354.58	0.49	3.26E+01	1.46E+02		0.49	3.26E+01
9/13/2007	354.58	0.49	3.28E+01	1.42E+02		0.49	3.28E+01
9/14/2007	354.57	0.48	3.23E+01	1.24E+02		0.48	3.23E+01
9/15/2007	354.56	0.47	3.17E+01	1.07E+02		0.47	3.17E+01
9/16/2007	354.53	0.44	3.06E+01	8.90E+01		0.44	3.06E+01
9/17/2007	354.53	0.44	3.06E+01	8.10E+01		0.44	3.06E+01
9/18/2007	354.54	0.45	3.11E+01	7.50E+01		0.45	3.11E+01
9/19/2007	354.53	0.44	3.03E+01	9.00E+01		0.44	3.03E+01
9/20/2007	354.51	0.42	2.96E+01	7.70E+01		0.42	2.96E+01
9/21/2007	354.51	0.42	2.97E+01	7.00E+01		0.42	2.97E+01
9/22/2007	354.50	0.41	2.95E+01	6.30E+01		0.41	2.95E+01
9/23/2007	354.51	0.42	2.97E+01	6.10E+01		0.42	2.97E+01
9/24/2007	354.51	0.42	2.96E+01	6.00E+01		0.42	2.96E+01
9/25/2007	354.51	0.42	2.98E+01	5.60E+01		0.42	2.98E+01
9/26/2007	354.52	0.43	3.02E+01	5.40E+01		0.43	3.02E+01
9/27/2007	354.53	0.44	3.06E+01	5.10E+01		0.44	3.06E+01
9/28/2007	354.53	0.44	3.05E+01	5.00E+01		0.44	3.05E+01
9/29/2007	354.53	0.44	3.03E+01	5.30E+01		0.44	3.03E+01
9/30/2007	354.53	0.44	3.04E+01	5.00E+01		0.44	3.04E+01
10/1/2007	354.54	0.45	3.10E+01	4.90E+01		0.45	3.10E+01
10/2/2007	354.53	0.44	3.07E+01	4.70E+01		0.44	3.07E+01
10/3/2007	354.54	0.45	3.08E+01	4.80E+01		0.45	3.08E+01
10/4/2007	354.55	0.46	3.12E+01	4.90E+01		0.46	3.12E+01
10/5/2007	354.54	0.45	3.11E+01	4.80E+01		0.45	3.11E+01
10/6/2007	354.54	0.45	3.08E+01	4.60E+01		0.45	3.08E+01
10/7/2007	354.54	0.45	3.10E+01	4.60E+01		0.45	3.10E+01
10/8/2007	354.57	0.48	3.23E+01	4.60E+01		0.48	3.23E+01
10/9/2007	354.59	0.50	3.30E+01	4.80E+01		0.50	3.30E+01
10/10/2007	354.72	0.63	3.93E+01	7.40E+01		0.63	3.93E+01
10/11/2007	354.88	0.79	4.91E+01	1.95E+02		0.79	4.91E+01
10/12/2007	355.38	1.29	9.54E+01	2.44E+02		1.29	9.54E+01
10/13/2007	356.34	2.25	3.47E+02	5.70E+02		2.25	3.47E+02
10/14/2007	355.94	1.85	2.03E+02	6.20E+02		1.85	2.03E+02
10/15/2007	355.29	1.20	8.53E+01	4.50E+02		1.20	8.53E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/16/2007	354.96	0.87	5.42E+01	3.03E+02		0.87	5.42E+01
10/17/2007	354.78	0.69	4.29E+01	2.19E+02		0.69	4.29E+01
10/18/2007	354.67	0.58	3.71E+01	1.60E+02		0.58	3.71E+01
10/19/2007	354.63	0.54	3.50E+01	1.75E+02		0.54	3.50E+01
10/20/2007	355.33	1.24	8.90E+01	2.44E+02		1.24	8.90E+01
10/21/2007	356.00	1.91	2.19E+02	5.50E+02		1.91	2.19E+02
10/22/2007	355.59	1.50	1.27E+02	5.34E+02		1.50	1.27E+02
10/23/2007	355.18	1.09	7.28E+01	3.95E+02		1.09	7.28E+01
10/24/2007	355.03	0.94	5.97E+01	3.22E+02		0.94	5.97E+01
10/25/2007	355.03	0.94	5.99E+01	2.75E+02		0.94	5.99E+01
10/26/2007	355.01	0.92	5.79E+01	2.86E+02		0.92	5.79E+01
10/27/2007	356.42	2.33	3.89E+02	1.36E+03		2.33	3.89E+02
10/28/2007	359.10	5.01	2.09E+03	3.05E+03		5.01	2.09E+03
10/29/2007	358.60	4.51	1.67E+03	2.16E+03		4.51	1.67E+03
10/30/2007	357.95	3.86	1.19E+03	1.59E+03		3.86	1.19E+03
10/31/2007	356.85	2.76	6.92E+02	1.17E+03		2.76	6.92E+02
11/1/2007	356.05	1.96	2.34E+02	7.92E+02		1.96	2.34E+02
11/2/2007	355.68	1.59	1.43E+02	6.10E+02		1.59	1.43E+02
11/3/2007	355.47	1.38	1.08E+02	5.00E+02		1.38	1.08E+02
11/4/2007	355.34	1.25	9.08E+01	4.50E+02		1.25	9.08E+01
11/5/2007	355.22	1.13	7.73E+01	4.08E+02		1.13	7.73E+01
11/6/2007	355.15	1.06	7.02E+01	3.67E+02		1.06	7.02E+01
11/7/2007	355.23	1.14	7.87E+01	4.03E+02		1.14	7.87E+01
11/8/2007	355.20	1.11	7.52E+01	4.02E+02		1.11	7.52E+01
11/9/2007	355.07	0.98	6.32E+01	3.55E+02		0.98	6.32E+01
11/10/2007	355.12	1.03	6.79E+01	3.64E+02		1.03	6.79E+01
11/11/2007	355.40	1.31	9.87E+01	4.31E+02		1.31	9.87E+01
11/12/2007	355.35	1.26	9.21E+01	4.77E+02		1.26	9.21E+01
11/13/2007	355.26	1.17	8.14E+01	4.41E+02		1.17	8.14E+01
11/14/2007	355.35	1.26	9.25E+01	4.61E+02		1.26	9.25E+01
11/15/2007	355.55	1.46	1.20E+02	8.62E+02		1.46	1.20E+02
11/16/2007	357.14	3.05	7.14E+02	1.55E+03		3.05	7.14E+02
11/17/2007	356.84	2.75	6.83E+02	1.29E+03		2.75	6.83E+02
11/18/2007	356.21	2.12	2.92E+02	9.67E+02		2.12	2.92E+02
11/19/2007	355.80	1.71	1.69E+02	7.55E+02		1.71	1.69E+02
11/20/2007	355.83	1.74	1.75E+02	6.98E+02		1.74	1.75E+02
11/21/2007	356.28	2.19	3.22E+02	8.49E+02		2.19	3.22E+02
11/22/2007	356.17	2.08	2.76E+02	8.46E+02		2.08	2.76E+02
11/23/2007	355.91	1.82	1.94E+02	7.37E+02		1.82	1.94E+02
11/24/2007	355.62	1.53	1.33E+02	6.15E+02		1.53	1.33E+02
11/25/2007	355.48	1.39	1.10E+02	5.44E+02		1.39	1.10E+02
11/26/2007	356.25	2.16	3.08E+02	9.78E+02		2.16	3.08E+02
11/27/2007	358.81	4.72	1.83E+03	3.10E+03		4.72	1.83E+03
11/28/2007	358.49	4.40	1.58E+03	2.43E+03		4.40	1.58E+03
11/29/2007	357.65	3.56	1.00E+03	1.74E+03		3.56	1.00E+03
11/30/2007	357.17	3.08	7.28E+02	1.41E+03		3.08	7.28E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/1/2007	356.67	2.58	5.41E+02	1.16E+03		2.58	5.41E+02
12/2/2007	356.29	2.20	3.26E+02	9.33E+02		2.20	3.26E+02
12/3/2007	356.27	2.18	3.17E+02	1.16E+03		2.18	3.17E+02
12/4/2007	356.79	2.70	6.37E+02	1.43E+03		2.70	6.37E+02
12/5/2007	356.56	2.47	4.66E+02	1.20E+03		2.47	4.66E+02
12/6/2007	356.17	2.08	2.76E+02	9.39E+02		2.08	2.76E+02
12/7/2007	355.88	1.79	1.88E+02	7.73E+02		1.79	1.88E+02
12/8/2007	355.82	1.73	1.73E+02	7.22E+02		1.73	1.73E+02
12/9/2007	355.73	1.64	1.53E+02	7.06E+02		1.64	1.53E+02
12/10/2007	356.03	1.94	2.30E+02	8.36E+02		1.94	2.30E+02
12/11/2007	356.48	2.39	4.18E+02	1.11E+03		2.39	4.18E+02
12/12/2007	356.60	2.51	4.95E+02	1.28E+03		2.51	4.95E+02
12/13/2007	356.73	2.64	5.89E+02	1.28E+03		2.64	5.89E+02
12/14/2007	356.46	2.37	4.12E+02	1.16E+03		2.37	4.12E+02
12/15/2007	356.44	2.35	3.97E+02	1.10E+03		2.35	3.97E+02
12/16/2007	355.99	1.90	2.16E+02	9.44E+02		1.90	2.16E+02
12/17/2007	356.20	2.11	2.88E+02	8.63E+02		2.11	2.88E+02
12/18/2007	356.34	2.25	3.50E+02	1.10E+03		2.25	3.50E+02
12/19/2007	356.12	2.03	2.59E+02	1.06E+03		2.03	2.59E+02
12/20/2007	355.96	1.87	2.10E+02	8.76E+02		1.87	2.10E+02
12/21/2007	355.93	1.84	2.01E+02	8.25E+02		1.84	2.01E+02
12/22/2007	355.90	1.81	1.92E+02	7.83E+02		1.81	1.92E+02
12/23/2007	356.00	1.91	2.20E+02	1.08E+03		1.91	2.20E+02
12/24/2007	360.17	6.08	3.17E+03	6.03E+03		6.08	3.17E+03
12/25/2007	361.03	6.94	4.22E+03	4.80E+03		6.94	4.22E+03
12/26/2007	360.43	6.34	3.48E+03	3.95E+03		6.34	3.48E+03
12/27/2007	359.69	5.60	2.66E+03	3.28E+03		5.60	2.66E+03
12/28/2007	359.06	4.97	2.05E+03	2.90E+03		4.97	2.05E+03
12/29/2007	359.35	5.26	2.32E+03	3.49E+03		5.26	2.32E+03
12/30/2007	359.66	5.57	2.62E+03	3.80E+03		5.57	2.62E+03
12/31/2007	359.62	5.53	2.58E+03	3.37E+03		5.53	2.58E+03
1/1/2008	359.62	5.53	2.58E+03	3.36E+03		5.53	2.58E+03
1/2/2008	359.42	5.33	2.39E+03	2.95E+03		5.33	2.39E+03
1/3/2008	358.65	4.56	1.71E+03	2.21E+03		4.56	1.71E+03
1/4/2008	357.91	3.82	1.16E+03	1.72E+03		3.82	1.16E+03
1/5/2008	357.65	3.56	9.97E+02	1.62E+03		3.56	9.97E+02
1/6/2008	357.33	3.24	8.17E+02	1.54E+03		3.24	8.17E+02
1/7/2008	357.49	3.40	9.04E+02	1.78E+03		3.40	9.04E+02
1/8/2008	357.96	3.87	1.20E+03	2.58E+03		3.87	1.20E+03
1/9/2008	358.22	4.13	1.38E+03	3.52E+03		4.13	1.38E+03
1/10/2008	358.13	4.04	1.31E+03	3.19E+03		4.04	1.31E+03
1/11/2008	357.74	3.65	1.05E+03	2.67E+03		3.65	1.05E+03
1/12/2008	357.86	3.77	1.13E+03	2.61E+03		3.77	1.13E+03
1/13/2008	357.52	3.43	9.23E+02	2.07E+03		3.43	9.23E+02
1/14/2008	357.29	3.20	7.94E+02	1.85E+03		3.20	7.94E+02
1/15/2008	357.46	3.37	8.85E+02	1.90E+03		3.37	8.85E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/16/2008	357.17	3.08	7.30E+02	1.66E+03		3.08	7.30E+02
1/17/2008	356.73	2.64	5.87E+02	1.36E+03		2.64	5.87E+02
1/18/2008	356.62	2.53	5.08E+02	1.32E+03		2.53	5.08E+02
1/19/2008	357.07	2.98	9.25E+02	1.53E+03		2.98	9.25E+02
1/20/2008	356.80	2.71	6.47E+02	1.33E+03		2.71	6.47E+02
1/21/2008	356.08	1.99	2.46E+02	9.35E+02		1.99	2.46E+02
1/22/2008	356.19	2.10	2.83E+02	7.59E+02		2.10	2.83E+02
1/23/2008	355.98	1.89	2.14E+02	9.01E+02		1.89	2.14E+02
1/24/2008	355.85	1.76	1.80E+02	8.14E+02		1.76	1.80E+02
1/25/2008	355.88	1.79	1.87E+02	6.30E+02		1.79	1.87E+02
1/26/2008	355.85	1.76	1.81E+02	6.36E+02		1.76	1.81E+02
1/27/2008	355.58	1.49	1.26E+02	6.55E+02		1.49	1.26E+02
1/28/2008	355.51	1.42	1.14E+02	5.89E+02		1.42	1.14E+02
1/29/2008	355.49	1.40	1.10E+02	5.74E+02		1.40	1.10E+02
1/30/2008	355.55	1.46	1.20E+02	6.30E+02		1.46	1.20E+02
1/31/2008	355.77	1.68	1.62E+02	7.05E+02		1.68	1.62E+02
2/1/2008	355.65	1.56	1.37E+02	7.49E+02		1.56	1.37E+02
2/2/2008	357.23	3.14	7.60E+02	2.12E+03		3.14	7.60E+02
2/3/2008	357.80	3.71	1.09E+03	2.24E+03		3.71	1.09E+03
2/4/2008	357.55	3.46	9.37E+02	1.95E+03		3.46	9.37E+02
2/5/2008	357.18	3.09	7.38E+02	2.12E+03		3.09	7.38E+02
2/6/2008	358.70	4.61	1.75E+03	4.28E+03		4.61	1.75E+03
2/7/2008	359.89	5.80	2.86E+03	6.61E+03		5.80	2.86E+03
2/8/2008	359.59	5.50	2.56E+03	4.28E+03		5.50	2.56E+03
2/9/2008	358.72	4.63	1.77E+03	2.98E+03		4.63	1.77E+03
2/10/2008	358.09	4.00	1.29E+03	2.38E+03		4.00	1.29E+03
2/11/2008	357.41	3.32	8.57E+02	1.76E+03		3.32	8.57E+02
2/12/2008	357.35	3.26	8.24E+02	1.35E+03		3.26	8.24E+02
2/13/2008	358.31	4.22	1.44E+03	3.84E+03		4.22	1.44E+03
2/14/2008	362.30	8.21	6.08E+03	8.45E+03		8.21	6.08E+03
2/15/2008	362.42	8.33	6.27E+03	7.21E+03		8.33	6.27E+03
2/16/2008	362.10	8.01	5.77E+03	6.01E+03		8.01	5.77E+03
2/17/2008	361.46	7.37	4.81E+03	5.03E+03		7.37	4.81E+03
2/18/2008	362.13	8.04	5.81E+03	7.66E+03		8.04	5.81E+03
2/19/2008	363.14	9.05	7.49E+03	9.19E+03		9.05	7.49E+03
2/20/2008	362.63	8.54	6.61E+03	6.75E+03		8.54	6.61E+03
2/21/2008	361.89	7.80	5.43E+03	5.35E+03	5.35E+03	7.80	5.35E+03
2/22/2008	360.77	6.68	3.89E+03	4.24E+03		6.68	3.89E+03
2/23/2008	359.57	5.48	2.54E+03	3.32E+03		5.48	2.54E+03
2/24/2008	358.67	4.58	1.72E+03	2.56E+03		4.58	1.72E+03
2/25/2008	358.18	4.09	1.35E+03	2.04E+03		4.09	1.35E+03
2/26/2008	357.87	3.78	1.14E+03	1.96E+03		3.78	1.14E+03
2/27/2008	358.76	4.67	1.80E+03	2.59E+03		4.67	1.80E+03
2/28/2008	358.49	4.40	1.58E+03	2.49E+03		4.40	1.58E+03
2/29/2008	357.91	3.82	1.16E+03	1.84E+03		3.82	1.16E+03
3/1/2008	357.48	3.39	8.97E+02	1.72E+03		3.39	8.97E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/2/2008	357.29	3.20	7.92E+02	1.58E+03		3.20	7.92E+02
3/3/2008	357.25	3.16	7.73E+02	1.50E+03		3.16	7.73E+02
3/4/2008	358.06	3.97	1.26E+03	2.07E+03		3.97	1.26E+03
3/5/2008	362.44	8.35	6.31E+03	1.24E+04		8.35	6.31E+03
3/6/2008	363.23	9.14	7.66E+03	1.10E+04		9.14	7.66E+03
3/7/2008	362.92	8.83	7.11E+03	8.02E+03		8.83	7.11E+03
3/8/2008	363.68	9.59	8.49E+03	1.30E+04		9.59	8.49E+03
3/9/2008	364.87	10.78	1.09E+04	1.67E+04		10.78	1.09E+04
3/10/2008	364.48	10.39	1.01E+04	9.74E+03	9.74E+03	10.39	9.74E+03
3/11/2008	364.22	10.13	9.57E+03	7.98E+03	7.98E+03	10.13	7.98E+03
3/12/2008	363.61	9.52	8.36E+03	7.19E+03	7.19E+03	9.52	7.19E+03
3/13/2008	362.28	8.19	6.04E+03	6.09E+03		8.19	6.04E+03
3/14/2008	360.59	6.50	3.67E+03	4.63E+03		6.50	3.67E+03
3/15/2008	359.74	5.65	2.71E+03	4.06E+03		5.65	2.71E+03
3/16/2008	359.35	5.26	2.32E+03	3.71E+03		5.26	2.32E+03
3/17/2008	358.90	4.81	1.91E+03	3.12E+03		4.81	1.91E+03
3/18/2008	358.33	4.24	1.46E+03	2.48E+03		4.24	1.46E+03
3/19/2008	358.64	4.55	1.70E+03	3.13E+03		4.55	1.70E+03
3/20/2008	360.86	6.77	4.00E+03	5.85E+03		6.77	4.00E+03
3/21/2008	360.29	6.20	3.31E+03	4.51E+03		6.20	3.31E+03
3/22/2008	359.63	5.54	2.59E+03	3.44E+03		5.54	2.59E+03
3/23/2008	358.96	4.87	1.96E+03	2.81E+03		4.87	1.96E+03
3/24/2008	358.33	4.24	1.46E+03	2.30E+03		4.24	1.46E+03
3/25/2008	357.85	3.76	1.13E+03	1.94E+03		3.76	1.13E+03
3/26/2008	357.50	3.41	9.11E+02	1.69E+03		3.41	9.11E+02
3/27/2008	357.21	3.12	7.49E+02	1.50E+03		3.12	7.49E+02
3/28/2008	357.04	2.95	8.98E+02	1.47E+03		2.95	8.98E+02
3/29/2008	356.97	2.88	8.17E+02	1.44E+03		2.88	8.17E+02
3/30/2008	356.73	2.64	5.88E+02	1.27E+03		2.64	5.88E+02
3/31/2008	356.52	2.43	4.41E+02	1.20E+03		2.43	4.41E+02
4/1/2008	356.76	2.67	6.16E+02	1.43E+03		2.67	6.16E+02
4/2/2008	357.15	3.06	7.19E+02	1.75E+03		3.06	7.19E+02
4/3/2008	356.94	2.85	7.80E+02	1.50E+03		2.85	7.80E+02
4/4/2008	356.89	2.80	7.26E+02	2.03E+03		2.80	7.26E+02
4/5/2008	357.65	3.56	9.98E+02	2.58E+03		3.56	9.98E+02
4/6/2008	357.31	3.22	8.04E+02	1.93E+03		3.22	8.04E+02
4/7/2008	356.90	2.81	7.41E+02	1.56E+03		2.81	7.41E+02
4/8/2008	356.65	2.56	5.28E+02	1.32E+03		2.56	5.28E+02
4/9/2008	356.43	2.34	3.94E+02	1.13E+03		2.34	3.94E+02
4/10/2008	356.27	2.18	3.17E+02	1.09E+03		2.18	3.17E+02
4/11/2008	356.15	2.06	2.71E+02	1.01E+03		2.06	2.71E+02
4/12/2008	356.40	2.31	3.77E+02	1.30E+03		2.31	3.77E+02
4/13/2008	356.71	2.62	5.71E+02	1.41E+03		2.62	5.71E+02
4/14/2008	356.39	2.30	3.75E+02	1.19E+03		2.30	3.75E+02
4/15/2008	356.12	2.03	2.59E+02	1.01E+03		2.03	2.59E+02
4/16/2008	355.95	1.86	2.06E+02	8.69E+02		1.86	2.06E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/17/2008	355.81	1.72	1.71E+02	8.16E+02		1.72	1.71E+02
4/18/2008	355.72	1.63	1.51E+02	7.53E+02		1.63	1.51E+02
4/19/2008	355.64	1.55	1.36E+02	7.11E+02		1.55	1.36E+02
4/20/2008	355.52	1.43	1.16E+02	6.67E+02		1.43	1.16E+02
4/21/2008	355.47	1.38	1.07E+02	6.27E+02		1.38	1.07E+02
4/22/2008	355.43	1.34	1.03E+02	6.07E+02		1.34	1.03E+02
4/23/2008	355.34	1.25	9.06E+01	5.40E+02		1.25	9.06E+01
4/24/2008	355.29	1.20	8.44E+01	5.25E+02		1.20	8.44E+01
4/25/2008	355.24	1.15	7.90E+01	5.15E+02		1.15	7.90E+01
4/26/2008	355.17	1.08	7.26E+01	4.84E+02		1.08	7.26E+01
4/27/2008	355.16	1.07	7.10E+01	4.64E+02		1.07	7.10E+01
4/28/2008	355.26	1.17	8.14E+01	8.26E+02		1.17	8.14E+01
4/29/2008	357.81	3.72	1.10E+03	3.29E+03		3.72	1.10E+03
4/30/2008	357.64	3.55	9.91E+02	2.24E+03		3.55	9.91E+02
5/1/2008	356.68	2.59	5.47E+02	1.50E+03		2.59	5.47E+02
5/2/2008	356.35	2.26	3.53E+02	1.12E+03		2.26	3.53E+02
5/3/2008	356.35	2.26	3.55E+02	1.12E+03		2.26	3.55E+02
5/4/2008	356.39	2.30	3.74E+02	1.26E+03		2.30	3.74E+02
5/5/2008	356.46	2.37	4.07E+02	1.25E+03		2.37	4.07E+02
5/6/2008	356.08	1.99	2.46E+02	1.02E+03		1.99	2.46E+02
5/7/2008	355.80	1.71	1.68E+02	8.37E+02		1.71	1.68E+02
5/8/2008	355.63	1.54	1.34E+02	7.24E+02		1.54	1.34E+02
5/9/2008	355.65	1.56	1.38E+02	7.50E+02		1.56	1.38E+02
5/10/2008	356.68	2.59	5.51E+02	1.23E+03		2.59	5.51E+02
5/11/2008	356.64	2.55	5.23E+02	1.23E+03		2.55	5.23E+02
5/12/2008	356.15	2.06	2.71E+02	9.64E+02		2.06	2.71E+02
5/13/2008	355.86	1.77	1.84E+02	7.72E+02		1.77	1.84E+02
5/14/2008	355.64	1.55	1.36E+02	6.72E+02		1.55	1.36E+02
5/15/2008	355.51	1.42	1.14E+02	6.17E+02		1.42	1.14E+02
5/16/2008	355.59	1.50	1.27E+02	6.60E+02		1.50	1.27E+02
5/17/2008	357.36	3.27	8.29E+02	1.82E+03		3.27	8.29E+02
5/18/2008	357.53	3.44	9.26E+02	1.76E+03		3.44	9.26E+02
5/19/2008	357.23	3.14	7.62E+02	1.51E+03		3.14	7.62E+02
5/20/2008	356.85	2.76	6.88E+02	1.23E+03		2.76	6.88E+02
5/21/2008	356.67	2.58	5.40E+02	1.07E+03		2.58	5.40E+02
5/22/2008	356.57	2.48	4.77E+02	1.01E+03		2.48	4.77E+02
5/23/2008	356.41	2.32	3.83E+02	9.27E+02		2.32	3.83E+02
5/24/2008	356.10	2.01	2.52E+02	8.05E+02		2.01	2.52E+02
5/25/2008	355.86	1.77	1.83E+02	6.69E+02		1.77	1.83E+02
5/26/2008	355.63	1.54	1.34E+02	5.91E+02		1.54	1.34E+02
5/27/2008	355.49	1.40	1.11E+02	5.33E+02		1.40	1.11E+02
5/28/2008	356.15	2.06	2.69E+02	5.76E+02		2.06	2.69E+02
5/29/2008	356.18	2.09	2.79E+02	7.19E+02		2.09	2.79E+02
5/30/2008	355.81	1.72	1.70E+02	6.30E+02		1.72	1.70E+02
5/31/2008	355.47	1.38	1.08E+02	4.93E+02		1.38	1.08E+02
6/1/2008	355.52	1.43	1.15E+02	5.07E+02		1.43	1.15E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/2/2008	355.50	1.41	1.13E+02	4.94E+02		1.41	1.13E+02
6/3/2008	355.23	1.14	7.82E+01	4.35E+02		1.14	7.82E+01
6/4/2008	355.15	1.06	7.07E+01	3.78E+02		1.06	7.07E+01
6/5/2008	355.31	1.22	8.67E+01	4.06E+02		1.22	8.67E+01
6/6/2008	355.23	1.14	7.78E+01	4.77E+02		1.14	7.78E+01
6/7/2008	355.14	1.05	6.89E+01	4.44E+02		1.05	6.89E+01
6/8/2008	355.08	0.99	6.37E+01	3.69E+02		0.99	6.37E+01
6/9/2008	355.07	0.98	6.27E+01	3.43E+02		0.98	6.27E+01
6/10/2008	355.01	0.92	5.81E+01	3.46E+02		0.92	5.81E+01
6/11/2008	355.01	0.92	5.79E+01	3.00E+02		0.92	5.79E+01
6/12/2008	355.04	0.95	6.03E+01	2.83E+02		0.95	6.03E+01
6/13/2008	354.92	0.83	5.14E+01	2.80E+02		0.83	5.14E+01
6/14/2008	354.79	0.70	4.35E+01	2.50E+02		0.70	4.35E+01
6/15/2008	354.77	0.68	4.24E+01	2.08E+02		0.68	4.24E+01
6/16/2008	354.80	0.71	4.39E+01	2.04E+02		0.71	4.39E+01
6/17/2008	354.76	0.67	4.14E+01	2.15E+02		0.67	4.14E+01
6/18/2008	354.70	0.61	3.85E+01	2.08E+02		0.61	3.85E+01
6/19/2008	354.82	0.73	4.51E+01	2.59E+02		0.73	4.51E+01
6/20/2008	354.87	0.78	4.84E+01	2.47E+02		0.78	4.84E+01
6/21/2008	354.79	0.70	4.35E+01	2.31E+02		0.70	4.35E+01
6/22/2008	354.82	0.73	4.48E+01	2.05E+02		0.73	4.48E+01
6/23/2008	354.77	0.68	4.20E+01	2.85E+02		0.68	4.20E+01
6/24/2008	354.71	0.62	3.90E+01	2.48E+02		0.62	3.90E+01
6/25/2008	354.62	0.53	3.46E+01	1.96E+02		0.53	3.46E+01
6/26/2008	354.55	0.46	3.12E+01	1.86E+02		0.46	3.12E+01
6/27/2008	354.51	0.42	2.99E+01	1.33E+02		0.42	2.99E+01
6/28/2008	354.53	0.44	3.03E+01	1.24E+02		0.44	3.03E+01
6/29/2008	354.50	0.41	2.94E+01	1.35E+02		0.41	2.94E+01
6/30/2008	354.52	0.43	3.01E+01	1.57E+02		0.43	3.01E+01
7/1/2008	354.50	0.41	2.93E+01	1.51E+02		0.41	2.93E+01
7/2/2008	354.45	0.36	2.73E+01	1.31E+02		0.36	2.73E+01
7/3/2008	354.43	0.34	2.67E+01	1.30E+02		0.34	2.67E+01
7/4/2008	354.43	0.34	2.67E+01	1.35E+02		0.34	2.67E+01
7/5/2008	354.49	0.40	2.88E+01	1.34E+02		0.40	2.88E+01
7/6/2008	354.49	0.40	2.90E+01	1.33E+02		0.40	2.90E+01
7/7/2008	354.50	0.41	2.93E+01	1.31E+02		0.41	2.93E+01
7/8/2008	354.45	0.36	2.74E+01	1.20E+02		0.36	2.74E+01
7/9/2008	354.44	0.35	2.70E+01	1.13E+02		0.35	2.70E+01
7/10/2008	354.44	0.35	2.69E+01	1.22E+02		0.35	2.69E+01
7/11/2008	354.43	0.34	2.65E+01	1.12E+02		0.34	2.65E+01
7/12/2008	354.45	0.36	2.73E+01	8.80E+01		0.36	2.73E+01
7/13/2008	354.46	0.37	2.79E+01	8.10E+01		0.37	2.79E+01
7/14/2008	354.48	0.39	2.87E+01	9.40E+01		0.39	2.87E+01
7/15/2008	354.49	0.40	2.90E+01	1.15E+02		0.40	2.90E+01
7/16/2008	354.45	0.36	2.76E+01	1.07E+02		0.36	2.76E+01
7/17/2008	354.45	0.36	2.73E+01	9.20E+01		0.36	2.73E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/18/2008	354.47	0.38	2.83E+01	8.40E+01		0.38	2.83E+01
7/19/2008	354.48	0.39	2.86E+01	6.40E+01		0.39	2.86E+01
7/20/2008	354.49	0.40	2.88E+01	6.10E+01		0.40	2.88E+01
7/21/2008	354.48	0.39	2.87E+01	7.80E+01		0.39	2.87E+01
7/22/2008	354.48	0.39	2.86E+01	7.40E+01		0.39	2.86E+01
7/23/2008	354.49	0.40	2.90E+01	7.70E+01		0.40	2.90E+01
7/24/2008	354.59	0.50	3.32E+01	2.16E+02		0.50	3.32E+01
7/25/2008	355.23	1.14	7.83E+01	4.43E+02		1.14	7.83E+01
7/26/2008	354.86	0.77	4.73E+01	3.35E+02		0.77	4.73E+01
7/27/2008	354.48	0.39	2.85E+01	2.36E+02		0.39	2.85E+01
7/28/2008	354.40	0.31	2.58E+01	1.40E+02		0.31	2.58E+01
7/29/2008	354.40	0.31	2.56E+01	1.49E+02		0.31	2.56E+01
7/30/2008	354.43	0.34	2.66E+01	1.19E+02		0.34	2.66E+01
7/31/2008	354.46	0.37	2.76E+01	1.06E+02		0.37	2.76E+01

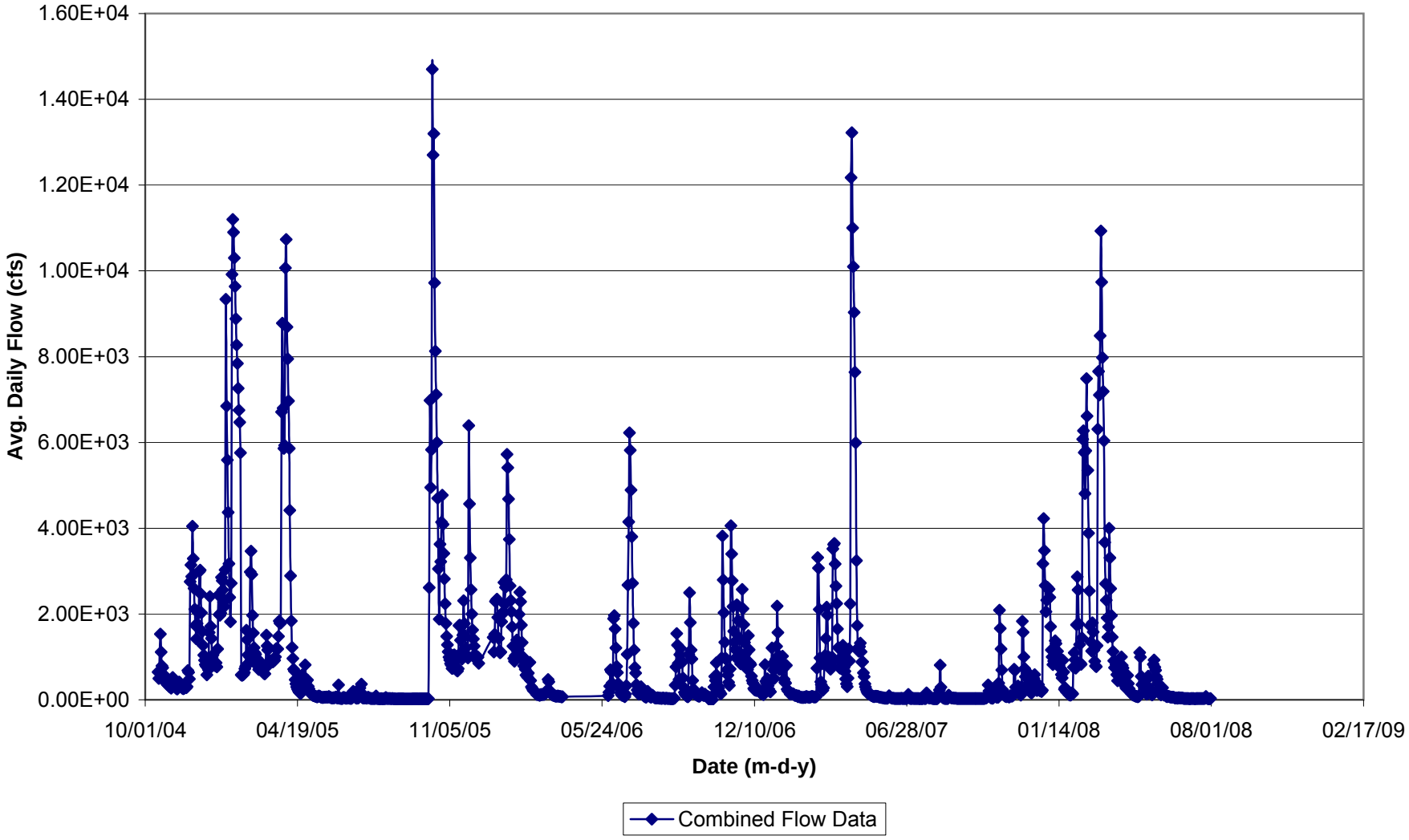
Notes:

1. Al Turi Estimated Average Daily Flows are based on stream gauge rating curve provided with the Contingency Monitoring Plan (ENVIRON 2001). The USGS flows are based on records for the USGS gauge located downstream of the Al Turi Landfill Site at Gardiner, New York (Gauge No. 01371500).

2. The Al Turi Landfill gauge hydrograph is based on Wallkill River flows estimated using the Al Turi Estimated Avg Daily Flows, except when the estimated flows exceed the recorded USGS flow at Gardiner, NY. In these cases, the USGS data are used to represent the flow conditions.

Al Turi Landfill Stream Gauge - Hydrograph Record

(see notes)



2008 SAMPLING YEAR
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – OPERATIONAL SITE
GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

December 2008

Prepared by

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Project 256-00-00

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Drawing No. 1 - Well Location Plan Pocket

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1 INTRODUCTION

The water quality management program at the Al Turi Landfill, Goshen, New York, includes the semi-annual sampling and analysis of groundwater, surface water, contained leachate, and sediment samples from locations in and around the "Operational Landfill" and the evaluation of the data generated by these samples. The facility has completed closure and is now in the post-closure period. During the January and July 2008 sampling events, modified baseline sampling was performed in accordance with 6 NYCRR Part 360-2.17(a), the requirements of Special Condition Nos. 36 through 38 of the facility's expired September 1997 Landfill Operating Permit (Permit No. 3-3330-00002/21), and in accordance with the revised and approved July 2005 Environmental Monitoring Plan (EMP).

Water quality data generated in 2008 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The environmental data collected from the Operational Landfill site has been presented and evaluated in this report.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

For the Operational Landfill, water quality data generated in 2008 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The trigger values were developed using a limited database that was established for the Al Turi Landfill prior to the promulgation of regulations governing the collection of such data. The values were developed from two or three sampling events for baseline parameters conducted in August through October 1983 for three overburden wells (W-5S, W-6S, and W-7S), and 2 bedrock wells (W-6D and W-8D). Well W-6D has since been replaced with well W-6DA. Additionally, trigger values for metals were calculated based on the dissolved fraction results from field-filtered analyses. The Department values, or Part 703 standards, whichever are higher, serve as the trigger values for contingency monitoring at the Al Turi Landfill. Due to the limited pre-operational database, and the presence of undetected values for many of the parameters, the results do not constitute a "normal distribution" as required under Part 360-2.11(c)(5)(i)(c). Therefore, these values should be applied with caution. Given the limited available data, the 1983 values represent the best available estimate of pre-operational water quality, and are suitable as a screening tool in the monitoring program.

Because the Al Turi Landfill began operation prior to the promulgation of the current regulations, certain aspects of the regulations cannot be strictly applied. Notable deviations are the absence of an adequate pre-operational database and the lack of expanded parameter data for many of the monitoring points.

Semi-annual monitoring at the Operational Landfill currently consists of modified baseline analysis. This sampling is conducted in January and July of each year. The analysis for each event includes 6NYCRR Part 360 Baseline parameters with the exception of the parameters BOD, COD, TKN, sulfate and bromide. Sediment samples from the Wallkill River are analyzed for the 6NYCRR Part 360 baseline metals and TOC. Under updated regulations, the presence of baseline parameters above trigger values requires initiation of contingency monitoring, in which expanded parameters are analyzed. A trigger value exceedance occurs when the groundwater analytical data exceeds either the NYSDEC developed trigger values and/or the Part 703 State standards, whichever is higher.

The 6 NYCRR Part 360 regulations allow for the modification of the expanded parameter list to correspond with contaminants detected at a given facility. The analyses apply to all media sampled at the facility (groundwater, surface water, sediment, and contained leachate). The former contingency parameter list that was utilized at the facility consisted of the baseline parameter list plus the expanded parameters sulfide, phenol, naphthalene, 2-methyl phenol, 3-methyl phenol, and 4-methyl phenol. However, because the above mentioned expanded parameters were not detected within contingency groundwater monitoring wells, the NYSDEC approved a revised contingency monitoring list on June 22, 1999 and again on May 14, 2002. Monitoring at the facility has since been modified and now includes the monitoring program established in the July 2005 EMP.

Semi-annual groundwater quality is monitored at 21 groundwater monitoring wells (shallow and deep wells) located within the boundaries of the facility's property. One well, W-8D, is designated as the upgradient background well for the facility. Drawing 1 (in pocket) provides a site map of the facility indicating the locations of the monitoring points. In addition, baseline groundwater sampling and analysis is performed quarterly at Jesus Christ Triumphant Church (representing a 22nd well) located along Route 17M just south of the facility. Surface water and sediment samples are collected at two locations in the Wallkill River, upstream and downstream of the facility, while Sediment Basins A, B and D are sampled for water quality only. In addition, leachate samples are collected semi-annually from the primary and secondary leachate collection systems, and analyzed for a modified expanded parameter list. Sampling procedures utilized are also identified in the July 2005 EMP.

2.1 Operational Water Quality - Overburden Water Quality

Fourteen overburden groundwater monitoring wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the 2008 sampling year demonstrate that the following routine analytes were above their respective trigger values in the overburden monitoring wells during both semi-annual events: turbidity (14 wells); alkalinity (7 wells); chloride (1 well); hardness (1 well); ammonia (1 well); total dissolved solids (9 wells); calcium (4 wells); iron (14 wells); manganese (4 wells); and sodium (9 wells). Non-routine inorganic parameters detected above their respective trigger values during both sampling events in the overburden wells are limited to color (3 wells), boron (1 well); and arsenic (2 wells).

It should also be noted that alkalinity, chloride, color and TDS were also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the overburden groundwater monitoring are presented in Table 2-1.

A review of the 2008 volatile organic data indicates that with the exception of chloroethane in well MW-1 (January 2008), and vinyl chloride in well MW-9S, (both events), no volatile organic compounds were confirmed above groundwater standards in 2008. The detection of vinyl chloride in July 2008 in well MW-9S was flagged as estimated.

Several observations of the compounds carbon disulfide and acetone were observed in January 2008. Carbon disulfide was detected in well MW-16D and the site trip blank, and acetone was detected in MW-6S, MW-9S and MW-28S. Acetone is a common laboratory artifact and has no historical confirmation at the site. The compounds were not observed during the July 2008 sampling event. These compounds will be sampled again during the 2009 sampling year.

2.2 Deep Well Water Quality

Seven deep wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from 2008 identified the following routine analytes as being above their respective trigger values in the deep water quality monitoring wells during both semi-annual sampling events: turbidity (7 wells); alkalinity (2 wells); hardness (2 wells); total dissolved solids (2 wells); calcium (2 wells); iron (7 wells); manganese (2 wells); and sodium (2 wells). In 2008, no non-routine inorganic parameters were detected above their established trigger limits.

It should also be noted that alkalinity, chloride, color and TDS were also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the deep well monitoring are presented in Table 2-2.

2.3 Contingency Monitoring

Wells that were analyzed as part of contingency monitoring in 2008 included: W-1, W-6S, W-9S, W-16D and W-17S. Contingency monitoring was performed for these wells due to the historical confirmation of baseline parameters at concentrations above established trigger values. The baseline parameters of concern include arsenic in the samples from wells W-6S, W-9S, W-16D and W-17S and benzene in W-1.

Arsenic was detected above its respective trigger value in well W-9S during both 2008 sampling events. In January 2008 arsenic was observed in wells W-6S and W-16D above its trigger value. Arsenic was above its trigger value in well W-28S during the July 2008

sampling event. As part of continued monitoring, arsenic will again be sampled for during the 2008 sampling year (2 events).

A review of the volatile organic data, generated during the 2008 sampling year, indicates that benzene was reported as non-detect in well W-1 during both sampling events.

The graphical representations of arsenic show an overall increasing trend in concentration changes for well W-17S, while the trends for wells W-6S, W-16D and W-17S appear to have stabilized.

A graphical representation for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

2.4 Background Water Quality

Water quality data has been collected from groundwater monitoring wells which are installed in the meadow north of both the Al Turi Landfill and All-Waste Facility (Northern Recycling). These wells have been evaluated to assist in determining background water quality in the vicinity of the landfill. As part of the Remedial Investigation of the Old Al Turi Landfill, several wells have been shown to be clearly beyond the influence of groundwater moving toward the Wallkill River from beneath the landfill (Supplemental Remedial Investigation Report, Old Al Turi Landfill, Wehran, February 1994, Sheet 4 of 9) and are representative of background water quality. Additional historical data generated from the meadow wells indicates that several metals have been historically present in the local groundwater at concentrations above the New York State Groundwater Quality Standards (6 NYCRR Part 703).

The meadow wells have been re-developed to further help in the reduction of turbid conditions. However, several of the wells remained turbid throughout re-development, indicating that turbid conditions may also be reflective of local groundwater quality.

Based on the historical analytical results from these wells, it is clear that several analytes (iron and manganese) are present in the local groundwater at concentrations above the State standards, and at similar levels as those detected at the landfill. Data collected from the meadow wells are limited, when compared to the larger resource data base from the on-site operational monitoring wells, but the results do indicate that the exceedances observed in many of the on-site monitoring wells may be a function of local groundwater quality, and not a release from the landfill.

2.5 Church Well

Monitoring of the off-site residential well (church well) is performed quarterly and sampling of the well was conducted in July 2008 for the baseline parameters. A review of the data shows that, with the exception of pH in January and July, no parameters were detected above trigger values in the church well. The data collected to date in 2008 from the church well are presented in Table 2-2.

3 SURFACE WATER/SEDIMENT QUALITY

Surface water and sediment samples are also collected semi-annually from the Wallkill River as part of continued monitoring at the Al Turi Landfill.

Surface water samples were collected with a stainless steel bucket at mid-stream locations from both the Route 17M Bridge (upstream) and Cheechunk Road Bridge (downstream). Field measurement readings obtained did not indicate the presence of river stratification at either location. Sediment samples collected at each location were collected from the bank of the river closest to the landfill.

The surface water samples collected from the Wallkill River upstream and downstream of the landfill in 2008 found that iron (January 2008) and aluminum (Wall-DN in January 2008) were the only exceedances of their Class C standards. A summary of the surface water data and sediment data collected from the Wallkill River is provided in Table 3-1 and Table 3-2, respectively. A review of the data indicates that conditions observed upstream of the facility are similar to conditions observed downstream of the facility.

Historically, water quality data from the river has shown a number of analytes at concentrations above the Class C standards in both the upstream and downstream samples. It has been determined that groundwater from beneath the landfill does discharge to the Wallkill River, and a comparison of the upstream and downstream surface water data continues to indicate that discharge of this groundwater has had no observable impact on the river's water quality.

In addition to the collection of surface water samples from the Wallkill River, sediment samples are collected from the upstream and downstream surface water sampling locations. A review of the data indicates that concentrations observed upstream were generally similar to concentrations that were observed downstream.

During the 2008 sampling year, efforts were made to collect water samples from Sediment Basins A, B and D. However, during the January 2008 sampling event each basin was either frozen or dry, and in July 2008, only Basin A had water. A review of the July data from basin A shows that no parameters were above their Class C standards. A summary of the previously collected sediment basin sampling data is provided in Table 3-1.

4 LEACHATE MONITORING

In accordance with Special Condition No. 36 of the expired Operating Permit, samples are obtained from the primary and secondary leachate collection system associated with Areas 11, 12, and 13 (includes Areas 9 and 10) of the landfill. Samples from the leachate collection system are collected semi-annually. Because leachate from Area 13 drains into Area 12, the common primary and secondary monitoring points for these areas is sampled. Additionally, leachate from Areas 9 and 10, which are underlain with single composite liners and are not equipped with a secondary collection system, drains to the primary collection system associated with Area 13 and then Area 12.

During the 2008 sampling year, sampling of the leachate monitoring points was conducted in January and July. The analytical results from this sampling event have been provided in Table 4-1. Leachate collection system analytical results in the LCH-11S/11P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples.

Additionally, leachate collection system analytical results in the LCH-12S/12P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions include higher concentration of nitrate, sulfate and calcium in LCH-12S.

In 2008, no non-flagged organic compounds, PCBs or pesticides/herbicides were detected in any of the leachate samples. No dioxins and furans were detected in the July 2008 sampling data. Leachate samples will again be collected semi-annually in 2009.

5 IRON FLOC EVALUATION

The Wallkill River has been identified as a groundwater discharge area for shallow groundwater flowing from the Al Turi Landfill site. Surface water and sediment sampling is performed at upgradient and downgradient locations on the River as shown on Drawing 1.

During periods of abnormally low flow conditions, seepage of shallow groundwater has been observed along the banks of the Wallkill River. Occasionally orange staining has been observed at some of these seepage points, which has proven to be characteristic of iron oxidation. Past sampling of these seeps has suggested that the seepage water reflects observed shallow groundwater quality and is not the result of direct leachate seepage from the landfill.

In 2008, iron floc sampling was attempted in September. Absorbent pads were placed in identified iron floc areas for the collection of a 5-day sample. However, during the 5-day collection period, heavy rain occurred and the river elevation rose to a level where sample points were no longer accessible. The Al Turi Landfill will continue to monitor the river elevation and conduct iron floc sampling when the seep area is once again accessible.

6 CONCLUSIONS

Contingency monitoring will continue during the 2009 sampling year in 5 groundwater monitoring wells as a result of the presence of non-routine parameter exceedances of established trigger values that are utilized to evaluate groundwater quality. The contingency monitoring wells and their non-routine parameters of concern include: W-6S (arsenic); W-9S (arsenic); W-16D (arsenic); W-17S (arsenic); and well W-1 (benzene only). Additional determinations were made from the data obtained in 2008:

- Many of the exceedances observed for parameters, such as iron and manganese, are likely due to the local groundwater quality rather than a landfill-related impact.

- Background historical groundwater quality data from the wells north of the site (the meadow wells) have indicated that a number of analytes are present in the local groundwater at similar concentrations to that observed in the on-site landfill monitoring wells. A number of parameters being detected in the background wells are at levels similar to those detected in the on-site landfill monitoring wells.

- A review of the volatile organic data, generated during the 2008 sampling year, indicates that no confirmed detections of volatile organic compounds were reported. Benzene was reported as non-detect in well W-1 in 2008.

- Arsenic was detected above its respective trigger value in well W-9S during both 2008 sampling events. In January 2008 arsenic was observed in wells W-6S and W-16D above its trigger value. Arsenic was above its trigger value in well W- 28S during the July 2008 sampling event.

- Although it has been demonstrated that groundwater from beneath the landfill does discharge to the Wallkill River, downstream surface water quality continues to demonstrate similar results to upstream surface water quality. Historical surface water data indicate that no significant change in water quality has occurred in the Wallkill River as a result of on-going landfill operations. Data collected in 2008 continues to demonstrate that the landfill has had no observable impact on water quality in the River.

APPENDIX A

OPERATIONAL LANDFILL
LABORATORY ANALYTICAL DATA

2008 SAMPLING YEAR

AL TURI LANDFILL
WATER QUALITY MONITORING REPORT

OPERATIONAL AND CLASS II SITE

GOSHEN, NEW YORK

Prepared For

AL TURI LANDFILL, INC.
Goshen, New York

Prepared By

GROUND WATER INVESTIGATIONS, INC.
Pine Bush, New York 12566

December 2008

Ground Water Investigations, Inc.
Professional Hydrogeologic Services

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2008
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-01	**1/24/07**	25.98	8.6	6.93	-	2400	48.8	130	364	80	<0.010	580	<0.010	0.238	57.5	<0.005	1170	39	<0.100
W-01	**7/26/07**	27.40	18.9	6.55	-300	2520	78.7	740	452	550	<0.010	505	<0.020	<0.2	76.7	<0.005	640	74.6	0.922
W-01	**1/30/08**	27.50	10.6	7.10	-4	340	76.8	740	445	260	<0.010	536	<0.10	<0.2	71.3	<0.005	1200	<9.0	0.188
W-01	**7/31/08**	29.70	16.7	7.56	-32	1170	49.8	800	566	145	<0.010	665	<0.010	<0.20	76.7	<0.005	1490	39	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-03A	**1/24/07**	11.50	13.2	8.15	137	287	12.3	170	10.9	7	<0.010	168	<0.010	0.401	<0.50	<0.005	262	<3.0	0.25
W-03A	**7/26/07**	16.55	15.6	6.94	-63	1139	47.8	200	8.14	90	<0.010	288	<0.010	0.228	<0.50	0.006	170	<3.0	8.06
W-03A	**1/30/08**	10.13	8.8	8.04	183	509	6.73	280	89.2	<5.0	<0.010	324	<0.010	<0.20	<0.50	<0.005	425	<3.0	0.379
W-03A	**7/31/08**	16.20	16.8	8.09	-63	410	38	220	11.3	12	<0.010	274	<0.010	<0.20	<0.50	<0.005	312	<3.0	3.36
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-05S	**1/24/07**	18.24	15.2	6.94	-30	1142	8.62	520	91.9	25	<0.010	489	<0.010	<0.20	<0.50	<0.005	740	1.2	<0.100
W-05S	**7/26/07**	20.05	19.2	7.51	-77	517	103	470	104	1250	<0.010	591	<0.010	<0.20	<0.50	<0.005	777	<3.0	<0.100
W-05S	**1/30/08**	18.81	10.4	7.58	-22	706	10.5	500	78.3	105	<0.010	637	<0.02	<0.20	<0.50	<0.005	808	51.3	<0.100
W-05S	**7/31/08**	33.31	19.4	7.87	-50	1042	19.7	490	94.8	18	<0.010	644	<0.010	<0.20	<0.50	<0.005	816	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-06S	**1/24/07**	27.13	14.6	6.90	-48	845	16.7	530	11.3	30	<0.010	505	<0.010	<0.20	1.8	<0.005	402	10.9	1.3
W-06S	**7/26/07**	28.57	21.7	6.88	-48	497	46.7	490	6.65	1400	<0.010	537	<0.040	0.4	1.77	<0.005	1000	7.7	1.84
W-06S	**1/30/08**	27.80	7.9	7.57	-61	583	30.3	530	71	115	<0.010	518	<0.10	<0.20	1.44	<0.005	632	<6.0	0.754
W-06S	**7/31/08**	29.72	17.2	7.83	-47	441	266	510	10.2	38	<0.010	892	<0.010	<0.20	1.59	<0.005	604	5.9	3.36
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-07S	**1/24/07**	33.38	13.2	6.80	-32	1327	15.9	500	70.6	25	<0.010	821	<0.010	<0.20	<0.500	<0.005	955	5.3	0.264
W-07S	**7/26/07**	35.04	22.9	6.68	-41	598	39.1	470	72.4	300	<0.010	753	<0.020	0.207	<0.50	<0.005	172	<3.0	0.242
W-07S	**1/30/08**	33.93	12.7	7.28	-52	1168	17.1	500	14.6	105	<0.010	745	<0.050	0.237	<0.50	<0.005	935	<6.0	0.258
W-07S	**7/31/08**	35.82	17.5	7.75	35.82	651	38.3	550	66.1	18	<0.010	793	<0.010	<0.200	<0.50	<0.005	964	<3.0	0.241
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-09S	**1/24/07**	49.19	11.9	6.88	-45	1374	10.7	640	250	120	<0.010	759	<0.010	0.202	1.16	<0.005	682	34	4.94
W-09S	**7/26/07**	50.78	18.9	6.99	-45	607	52.1	540	16.6	1500	<0.010	565	<0.040	<0.20	<0.50	<0.005	698	25.7	0.123
W-09S	**1/30/08**	45.19	10.1	7.46	-28	430	34.7	580	49	130	<0.010	641	<0.050	<0.20	<0.50	<0.005	765	72.1	0.387
W-09S	**7/31/08**	47.17	20.4	7.48	-28	1031	42.7	590	21	23	<0.010	679	<0.010	<0.200	<0.500	<0.005	680	<3.0	2.04
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16S	**1/24/07**	41.91	14.8	7.91	-35	373	12.7	280	17.1	7	<0.010	143	<0.010	<0.20	<0.50	<0.005	202	1.5	<0.100
W-16S	**7/26/07**	43.36	18.7	7.16	-69	236	8.25	180	<1.0	180	<0.010	97.7	<0.010	<0.20	<0.50	<0.005	252	<3.0	<0.100
W-16S	**1/30/08**	DRY																	
W-16S	**7/30/08**	44.61	13.9	8.25	-71	387	19.6	220	2.53	12	<0.01	184	<0.010	<0.20	<0.50	<0.005	232	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2008
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-01	**1/24/07**	<0.015	<0.010	0.663	<0.003	0.691	<0.005	143	<0.005	<0.020	<0.010	54.8	0.00345	<0.030	53.9	4.59	<0.0002	<0.030	41.5
W-01	**7/26/07**	<0.015	<0.010	0.708	<0.003	0.976	<0.005	121	0.0082	<0.020	<0.010	42.3	<0.003	<0.030	49.5	4.07	<0.0002	<0.030	53.1
W-01	**1/30/08**	<0.015	<0.010	0.672	<0.003	1.04	<0.005	132	<0.005	<0.020	<0.010	52.6	<0.003	<0.030	50.3	4.37	<0.0002	<0.030	51.8
W-01	**7/31/08**	<0.030	<0.010	0.817	<0.003	1.09	0.0057	165	<0.005	<0.020	<0.010	59	<0.003	<0.030	61.8	5.05	<0.0002	<0.030	66.2
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-03A	**1/24/07**	<0.015	<0.010	0.0572	<0.003	<0.50	<0.005	44.7	<0.005	<0.020	<0.010	0.437	<0.003	<0.030	13.7	0.106	<0.0002	<0.030	1.24
W-03A	**7/26/07**	<0.015	<0.010	0.128	<0.003	0.764	<0.005	74.8	0.0128	<0.020	0.0291	14.9	0.0115	<0.030	24.6	1.49	<0.0002	<0.030	2.73
W-03A	**1/30/08**	<0.015	<0.010	0.0524	<0.003	<0.50	<0.005	103	<0.005	<0.020	<0.010	0.452	<0.003	<0.030	16	0.294	<0.0002	<0.030	1.02
W-03A	**7/31/08**	<0.030	<0.010	0.121	<0.003	<0.500	<0.005	74.1	0.0057	<0.020	0.0144	4.7	<0.003	<0.030	21.6	1.14	<0.0002	<0.030	1.75
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-05S	**1/24/07**	<0.015	0.0109	0.137	<0.003	<0.500	<0.005	161	<0.005	<0.020	<0.010	11.4	<0.003	<0.030	20.8	1.77	<0.0002	<0.030	2.25
W-05S	**7/26/07**	<0.015	0.916	0.451	<0.003	1.17	0.0146	191	<0.005	<0.020	<0.010	198	0.00593	<0.030	27.7	2.57	<0.0002	<0.030	<1.0
W-05S	**1/30/08**	<0.015	0.0225	0.152	<0.003	<0.500	<0.005	204	<0.005	<0.020	<0.010	12.1	<0.003	<0.030	31.1	2.25	<0.0002	<0.030	2.61
W-05S	**7/31/08**	<0.015	<0.010	0.142	<0.003	<0.500	<0.005	211	<0.005	<0.020	<0.010	12.7	<0.003	<0.030	28.6	2.42	<0.0002	<0.030	2.7
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-06S	**1/24/07**	<0.015	0.0566	0.541	<0.003	<0.500	<0.005	159	<0.005	<0.020	0.0139	69.7	0.00841	<0.030	26.4	2.59	<0.0002	<0.030	2.8
W-06S	**7/26/07**	<0.015	0.0445	0.448	<0.003	<0.50	0.0061	169	0.005	<0.020	0.0016	73	0.016	<0.030	27.7	3.11	<0.0002	<0.030	<1.0
W-06S	**1/30/08**	<0.015	0.0737	0.566	<0.003	<0.50	0.0050	160	0.018	<0.020	<0.010	59.6	0.0034	<0.030	28.9	2.07	<0.0002	<0.030	3.02
W-06S	**7/31/08**	<0.030	<0.010	0.516	<0.003	<0.500	0.0092	298	0.006	0.0218	0.026	76.2	0.00229	<0.030	36	5.54	<0.0002	0.0321	3.11
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-07S	**1/24/07**	<0.015	0.0247	0.063	<0.003	<0.500	<0.005	240	0.00947	<0.020	0.0468	28.4	<0.003	<0.030	53.9	1.98	<0.0002	<0.030	4.63
W-07S	**7/26/07**	<0.015	0.0146	0.055	<0.003	<0.500	<0.005	221	0.00752	<0.020	0.045	29.3	<0.003	<0.030	49	1.84	<0.0002	<0.030	4.23
W-07S	**1/30/08**	<0.015	<0.010	0.0556	<0.003	<0.500	<0.005	217	0.00717	<0.020	0.0491	22.2	<0.003	<0.030	49.4	1.85	<0.0002	<0.030	4.23
W-07S	**7/31/08**	<0.030	<0.010	0.094	<0.300	<0.500	0.0055	235	0.0052	<0.020	0.048	24.1	<0.003	<0.030	50	2.39	<0.0002	<0.030	4.33
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-09S	**1/24/07**	<0.015	0.0358	0.895	<0.003	<0.500	<0.005	231	0.0183	<0.020	0.0215	62.7	0.0126	<0.030	44.5	2.43	<0.0002	<0.030	4.7
W-09S	**7/26/07**	<0.015	0.145	0.874	<0.003	<0.500	<0.005	180	<0.005	<0.005	<0.010	35.7	<0.003	<0.030	28.4	0.87	<0.0002	<0.030	2.96
W-09S	**1/30/08**	<0.015	0.033	0.839	<0.003	<0.500	<0.005	194	0.0055	<0.005	<0.010	31.4	<0.003	<0.030	38.2	0.808	<0.0002	<0.030	2.96
W-09S	**7/31/08**	<0.030	0.033	1.12	<0.003	<0.500	<0.005	210	0.0199	<0.020	<0.010	36.9	<0.003	<0.030	37.5	1.13	<0.0002	<0.030	3.76
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16S	**1/24/07**	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	37.4	<0.005	<0.020	<0.010	1.93	<0.003	<0.030	12	0.251	<0.0002	<0.030	3.39
W-16S	**7/26/07**	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	18.4	<0.005	<0.020	<0.010	0.959	<0.003	<0.030	12.6	0.067	<0.0002	<0.030	6
W-16S	**1/30/08**																		
W-16S	**7/30/08**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	43.8	<0.005	<0.020	<0.010	6.11	<0.003	<0.030	18	0.5	<0.0002	<0.030	3.36

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2008
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-01	**1/24/07**	<0.005	<0.010	272	<0.010	0.017
W-01	**7/26/07**	<0.005	<0.010	270	<0.010	0.0299
W-01	**1/30/08**	<0.005	<0.010	238	<0.010	<0.010
W-01	**7/31/08**	<0.005	<0.010	345	<0.010	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-03A	**1/24/07**	<0.005	<0.010	14.2	<0.010	0.0182
W-03A	**7/26/07**	<0.005	<0.010	14.7	<0.010	0.0893
W-03A	**1/30/08**	0.0062	<0.010	18.4	<0.010	0.0138
W-03A	**7/31/08**	<0.005	<0.010	14.4	<0.010	0.0232
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-05S	**1/24/07**	0.0164	0.0594	31.6	<0.010	0.0901
W-05S	**7/26/07**	<0.005	<0.010	38.9	<0.010	0.4880
W-05S	**1/30/08**	<0.005	<0.010	37.2	<0.010	0.0794
W-05S	**7/31/08**	<0.005	0.012	37.7	<0.010	0.0530
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-06S	**1/24/07**	<0.005	<0.010	4.89	<0.010	0.0436
W-06S	**7/26/07**	<0.005	<0.010	5.7	<0.010	0.067
W-06S	**1/30/08**	<0.005	0.2	5.33	<0.010	0.0357
W-06S	**7/31/08**	<0.005	0.0114	4.24	<0.010	0.145
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-07S	**1/24/07**	<0.005	<0.010	39.6	<0.010	0.0304
W-07S	**7/26/07**	0.00946	<0.010	41.2	<0.010	0.0678
W-07S	**1/30/08**	<0.005	<0.010	41.1	<0.010	0.027
W-07S	**7/31/08**	<0.005	<0.010	41	<0.010	0.107
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-09S	**1/24/07**	<0.005	<0.010	13.5	<0.010	0.157
W-09S	**7/26/07**	<0.005	<0.010	14.7	<0.010	0.0402
W-09S	**1/30/08**	<0.005	<0.010	13.8	<0.010	0.0289
W-09S	**7/31/08**	<0.005	0.0157	17.3	<0.010	0.0573
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16S	**1/24/07**	<0.005	<0.010	11.6	<0.010	0.0203
W-16S	**7/26/07**	<0.005	<0.010	33.5	<0.010	0.0186
W-16S	**1/30/08**					
W-16S	**7/30/08**	<0.005	<0.010	24.9	<0.010	<0.010

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2008
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16D	**1/24/07**	41.34	13.8	7.82	98	427	16.1	260	2.91	7	<0.010	291	<0.010	<0.20	<0.50	0.007	322	1.5	0.445
W-16D	**7/26/07**	43.14	21.3	7.38	-77	314	16.6	260	1.38	<125	<0.010	281	<0.010	<0.20	<0.50	<0.005	803	<3.0	0.301
W-16D	**1/30/08**	42.40	8.4	8.09	30	334	28.5	280	3.53	3.53	<0.010	279	<0.010	<0.20	<0.50	<0.005	283	5.6	0.386
W-16D	**7/30/08**	44.20	14.8	8.04	-60	515	26.3	290	7.6	19	<0.010	279	<0.010	<0.20	<0.50	<0.005	312	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17S	**1/24/07**	19.74	15.8	6.95	-35	1017	7.77	540	35.6	30	<0.010	614	<0.010	<0.20	<0.50	<0.005	642	3.7	2.38
W-17S	**7/26/07**	21.47	17.3	6.94	-43	703	48.3	450	94.9	1200	<0.010	690	<0.040	<0.20	<0.50	<0.005	825	70.7	1.29
W-17S	**1/30/08**	20.29	9.8	7.60	-29	460	40.3	530	37.3	130	<0.010	631	<0.050	<0.20	<0.50	<0.005	700	60.5	1.59
W-17S	**7/30/08**	22.07	16.1	7.05	-4	1000	178	530	57.2	38	<0.010	664	<0.010	<0.20	<0.50	<0.005	772	<3.0	0.579
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17D	**1/24/07**	19.51	8	7.49	-70	1121	22.2	430	110	10	<0.010	601	<0.010	<0.20	<0.50	<0.005	698	<3.0	0.179
W-17D	**7/26/07**	18.78	19.3	7.22	30	2700	12.7	440	110	36	<0.010	619	<0.010	<0.20	<0.50	<0.005	230	<3.0	0.164
W-17D	**1/30/08**	19.30	9.4	8.12	174	1211	41.5	340	100	18	<0.010	506	<0.010	0.789	<0.50	<0.005	612	10.1	0.219
W-17D	**7/30/08**	21.25	16.5	8.25	110	428	86.4	350	91.5	15	<0.010	539	<0.010	0.663	<0.50	<0.005	676	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27S	**1/24/07**	38.41	15.5	6.79	-6	617	10.4	320	60	20	<0.010	637	<0.010	<0.20	0.678	<0.005	807	28.6	0.671
W-27S	**7/26/07**	DRY																	
W-27S	**1/30/08**	39.01	11.5	7.29	-30	662	43	620	90.9	140	<0.010	665	<0.050	<0.20	0.799	<0.005	752	73.7	2.29
W-27S	**7/29/08**	39.7	20.3	7.62	-36	1093	21.3	580	103	26	<0.010	638	<0.010	<0.20	0.783	<0.005	712	3.8	0.162
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27D	**1/24/07**	38.02	9	8.37	-40	456	18.2	180	2.38	15	<0.010	101	<0.010	0.21	<0.50	<0.005	277	45	0.219
W-27D	**7/26/07**	37.7	18.7	7.91	-45	443	25.8	170	<1.00	35	<0.010	97.8	<0.010	<0.20	<0.50	0.006	190	<3.0	0.366
W-27D	**1/30/08**	38.6	11.8	8.36	106	575	80.2	170	2.34	12	<0.010	101	<0.010	<0.20	<0.50	<0.005	225	<3.0	0.565
W-27D	**7/30/08**	40.02	18.7	8.51	83	291	24.7	180	1.68	11	<0.010	98.9	<0.010	<0.20	<0.50	<0.005	164	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28S	**1/24/07**	43.03	11.4	6.79	-	1100	226	650	561	22	<0.010	858	<0.010	<0.200	3.55	0.745	740	24	0.149
W-28S	**7/26/07**	44.7	20.2	7.12	-50	512	42.1	470	47.1	280	<0.010	683	<0.040	<0.20	0.558	<0.005	785	17.5	0.146
W-28S	**1/30/08**	43.64	9.7	7.60	-41	415	19.8	620	49.2	140	<0.010	830	<0.040	<0.20	<0.50	<0.005	927	96.1	0.124
W-28S	**7/29/08**	45.87	18.2	8.00	-57	986	18.1	560	52.1	18	<0.010	638	<0.010	<0.20	<0.50	<0.005	792	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28D	**1/24/07**	44.26	11.8	8.39	-70	412	8.2	160	5.9	7	<0.010	94.8	<0.010	<0.20	<0.50	<0.005	197	<3.0	0.103
W-28D	**7/26/07**	42.7	15.7	8.02	40	383	20.8	150	7.01	40	<0.010	109	<0.010	<0.20	<0.50	<0.005	312	<3.0	0.504
W-28D	**1/30/08**	43.2	12.1	8.36	25	534	21.7	150	14.9	12	<0.010	99.7	<0.010	<0.20	<0.50	<0.005	188	<3.0	0.192
W-28D	**7/30/08**	45.1	20.2	8.53	47	208	49.8	160	3.99	11	<0.010	103	<0.010	0.217	<0.50	<0.005	248	<3.0	<0.10

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2008
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16D	**1/24/07**	<0.015	0.0279	0.0969	<0.003	<0.500	<0.005	83.4	<0.005	<0.020	<0.010	6.13	<0.003	<0.030	20.1	1.2	<0.0002	<0.030	1.87
W-16D	**7/26/07**	<0.015	0.0465	0.101	<0.003	<0.500	<0.005	80.9	<0.005	<0.020	<0.010	5.62	<0.003	<0.030	19.2	1.24	<0.0002	<0.030	<1.0
W-16D	**1/30/08**	<0.015	0.0427	0.118	<0.003	<0.500	<0.005	79.7	<0.005	<0.020	<0.010	5.95	<0.003	<0.030	19.4	1.07	<0.0002	<0.030	1.59
W-16D	**7/30/08**	<0.030	<0.010	0.111	<0.003	<0.500	<0.005	81.3	<0.005	<0.020	<0.010	3.99	<0.003	<0.030	18.4	1.01	<0.0002	<0.030	1.43
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17S	**1/24/07**	<0.015	<0.010	0.574	<0.003	<0.500	<0.005	178	0.0516	<0.020	0.0157	31.4	0.00465	<0.030	41.5	0.561	<0.0002	<0.030	2.52
W-17S	**7/26/07**	<0.015	0.062	0.308	<0.003	0.791	<0.005	190	<0.005	<0.020	0.0216	16.1	0.0039	<0.030	52.4	1.35	<0.0002	<0.030	2.39
W-17S	**1/30/08**	<0.015	0.013	0.449	<0.003	<0.500	<0.005	174	0.011	<0.020	0.0494	24.6	<0.003	<0.030	47.4	0.588	<0.0002	<0.030	2.36
W-17S	**7/30/08**	<0.030	<0.010	0.459	<0.003	<0.500	<0.0005	192	<0.005	<0.020	0.0167	24.7	0.00403	<0.030	44.7	0.582	<0.0002	<0.030	2.14
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17D	**1/24/07**	<0.015	<0.010	0.114	<0.003	<0.500	<0.005	188	<0.005	<0.020	<0.010	1.51	<0.003	<0.030	31.9	1.09	<0.0002	<0.030	2.24
W-17D	**7/26/07**	<0.015	<0.010	0.12	<0.003	<0.500	<0.005	193	<0.005	<0.020	0.0102	1.19	<0.003	<0.030	33	1.13	<0.0002	<0.030	1.7
W-17D	**1/30/08**	<0.015	<0.010	0.107	<0.003	<0.500	<0.005	151	<0.005	<0.020	<0.010	0.422	<0.003	<0.030	31.4	0.127	<0.0002	<0.030	6.14
W-17D	**7/30/08**	<0.030	<0.010	0.125	<0.003	<0.500	<0.005	163	<0.005	<0.020	0.011	0.532	<0.003	<0.030	32.2	0.212	<0.0002	<0.030	10.4
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27S	**1/24/07**	<0.015	<0.010	0.127	<0.003	<0.500	<0.005	202	<0.005	<0.020	0.0297	13.5	0.00419	<0.030	32.5	4.39	<0.0002	<0.030	5.2
W-27S	**7/26/07**																		
W-27S	**1/30/08**	<0.015	<0.010	0.206	<0.003	<0.500	<0.005	210	0.0085	<0.020	0.046	34.4	0.0163	<0.030	34.4	2.47	<0.0002	<0.030	5.78
W-27S	**7/29/08**	<0.030	<0.010	0.39	<0.003	<0.500	<0.005	204	<0.005	<0.020	<0.010	36.5	<0.003	<0.030	31.2	1.06	<0.0002	<0.030	6.41
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27D	**1/24/07**	<0.015	<0.010	0.569	<0.003	<0.500	<0.005	24.7	0.00753	<0.020	<0.010	1.56	<0.003	<0.030	9.52	0.142	<0.0002	<0.030	1.51
W-27D	**7/26/07**	<0.015	<0.010	0.055	<0.003	0.838	<0.005	23.8	0.0078	<0.020	<0.010	0.817	<0.003	<0.030	9.3	0.167	<0.0002	<0.030	2.27
W-27D	**1/30/08**	<0.015	<0.010	0.0587	<0.003	<0.500	<0.005	23.6	0.0083	<0.020	<0.010	1.6	<0.003	<0.030	10.2	0.276	<0.0002	<0.030	1.41
W-27D	**7/30/08**	<0.030	<0.010	0.0534	<0.003	<0.50	<0.005	23.5	0.0069	<0.020	<0.010	0.411	<0.003	<0.030	9.77	0.0977	<0.0002	<0.030	1.36
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28S	**1/24/07**	<0.015	0.027	0.156	<0.003	<0.500	<0.005	273	0.0149	<0.020	0.0208	11.2	<0.003	<0.030	43.1	3.44	<0.0002	<0.030	5.64
W-28S	**7/26/07**	<0.015	<0.010	0.116	<0.003	0.904	<0.005	217	<0.005	<0.020	0.0104	9.24	0.00307	<0.030	34.1	1.21	<0.0002	<0.030	2.64
W-28S	**1/30/08**	<0.015	0.022	0.123	<0.003	<0.500	<0.005	257	<0.005	<0.020	<0.010	8.36	<0.003	<0.030	45.8	3.08	<0.0002	<0.030	3.19
W-28S	**7/29/08**	<0.030	0.059	0.122	<0.003	<0.50	<0.005	204	<0.005	<0.020	<0.010	1.27	<0.003	<0.030	31.4	0.784	<0.0002	<0.030	2.94
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28D	**1/24/07**	<0.015	<0.010	0.538	<0.003	<0.500	<0.005	24	0.0169	<0.020	<0.010	0.443	<0.003	<0.030	8.48	0.122	<0.0002	<0.030	1.58
W-28D	**7/26/07**	<0.015	<0.010	0.058	<0.003	0.695	<0.005	27.9	<0.005	<0.020	<0.010	0.656	<0.003	<0.030	9.47	0.15	<0.0002	<0.030	2.35
W-28D	**1/30/08**	<0.015	<0.010	0.054	<0.003	0.5	<0.005	25.5	<0.005	<0.020	<0.010	0.485	<0.003	<0.030	8.77	0.244	<0.0002	<0.030	1.60
W-28D	**7/30/08**	<0.030	<0.010	0.0594	<0.003	<0.50	<0.005	26.6	<0.005	<0.020	<0.010	0.463	<0.003	<0.030	8.92	0.145	<0.0002	0.0315	2.05

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2008
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16D	**1/24/07**	0.011	<0.010	4.67	<0.010	0.113
W-16D	**7/26/07**	0.0093	<0.010	4.04	<0.010	0.0593
W-16D	**1/30/08**	<0.005	<0.010	3.75	<0.010	0.0732
W-16D	**7/30/08**	<0.005	<0.010	3.32	<0.010	0.051
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17S	**1/24/07**	0.0058	<0.010	7.73	<0.010	0.0349
W-17S	**7/26/07**	<0.005	<0.010	30	<0.010	0.0289
W-17S	**1/30/08**	<0.005	<0.010	11.4	<0.010	0.0164
W-17S	**7/30/08**	<0.005	0.0126	17	<0.010	0.0247
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17D	**1/24/07**	0.0151	<0.010	22.4	<0.010	0.0186
W-17D	**7/26/07**	<0.005	<0.010	23.6	<0.010	0.0336
W-17D	**1/30/08**	<0.005	<0.010	24.7	<0.010	0.017
W-17D	**7/30/08**	<0.005	<0.010	28	<0.010	0.0239
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27S	**1/24/07**	0.0192	<0.010	35.3	<0.010	0.026
W-27S	**7/26/07**					
W-27S	**1/30/08**	<0.005	<0.010	42.7	<0.010	0.0552
W-27S	**7/29/08**	<0.005	0.0130	50.2	<0.010	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27D	**1/24/07**	0.00724	<0.010	48.1	<0.010	0.03
W-27D	**7/26/07**	<0.005	<0.010	48.5	<0.010	0.0659
W-27D	**1/30/08**	<0.005	<0.010	46.6	<0.010	0.0166
W-27D	**7/30/08**	<0.005	<0.010	47.1	<0.010	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28S	**1/24/07**	0.016	<0.010	28.1	<0.010	0.058
W-28S	**7/26/07**	0.00572	<0.010	24.9	<0.010	0.041
W-28S	**1/30/08**	<0.005	<0.010	21.8	<0.010	0.012
W-28S	**7/29/08**	<0.005	0.0128	22.9	<0.010	0.0209
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28D	**1/24/07**	<0.005	<0.010	31.5	<0.010	0.0243
W-28D	**7/26/07**	<0.005	<0.010	35.7	<0.010	0.0257
W-28D	**1/30/08**	<0.005	<0.010	36.1	<0.010	0.01
W-28D	**7/30/08**	<0.005	<0.010	35.8	<0.010	0.0185

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2008
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-05D	**1/24/07**	20.55	9.2	8.58	-40	430	29.8	130	4.06	20	<0.010	124	<0.010	0.2	<0.50	<0.005	145	4
W-05D	**7/26/07**	18.3	21.5	8.20	110	271	890	130	4.06	20	<0.010	124	<0.010	0.2	<0.50	<0.005	145	4
W-05D	**1/30/08**	18.6	4.2	8.44	113	855	92.5	120	17	<25	<0.010	127	<0.010	<0.20	<0.50	<0.005	122	<3.0
W-05D	**7/31/08**	20.55	18.1	8.22	83	154	142	120	2.93	16	<0.010	130	<0.010	<0.20	<0.50	<0.005	160	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-06DA	**1/24/07**	18.40	9	7.86	-70	501	42.2	150	4.16	7	<0.010	209	<0.010	<0.20	<0.50	<0.005	345	<3.0
W-06DA	**7/26/07**	17.81	17.4	7.86	80	447	34	140	2.27	21	<0.010	194	<0.010	<0.20	<0.50	<0.005	1280	<3.0
W-06DA	**1/30/08**	18.20	9.6	8.33	175	724	62.4	160	9.6	18	<0.010	210	<0.010	<0.20	<0.50	0.04	255	<3.0
W-06DA	**7/31/08**	20.50	16.5	8.36	101	378	86.8	190	17.8	15	<0.010	211	<0.010	<0.20	<0.50	<0.005	308	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-08D*	**1/24/07**	83.27	9	7.86	156	501	42.2	150	4.16	7	<0.010	209	<0.010	<0.20	<0.50	<0.005	345	<3.0
W-08D*	**7/26/07**	82.58	16.6	7.85	-104	250	24.3	440	24.90	<125	<0.010	327	<0.010	0.262	<0.500	<0.005	510	<3.0
W-08D*	**1/30/08**	73.25	9.5	8.21	211	270	28	180	3.75	12	<0.010	210	<0.010	<0.20	<0.500	<0.005	250	<3.0
W-08D*	**7/30/08**	82.28	17.4	8.14	-67	457	102	190	4.32	38	<0.010	245	<0.010	0.278	<0.500	<0.005	372	<3.0

*** BACKGROUND WELL**

TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-09D	**1/24/07**	42.8	10.4	7.77	-50	1005	18.6	150	134	10	<0.010	168	<0.010	0.202	5.43	<0.005	495	<3.0
W-09D	**7/26/07**	42.5	16.5	7.76	-45	894	13.4	150	142	50	<0.010	158	<0.010	<0.20	<0.50	<0.005	532	<3.0
W-09D	**1/30/08**	43.05	14.1	8.08	-4	1034	38.4	140	145	26	<0.010	166	<0.010	<0.20	<0.50	<0.005	490	<3.0
W-09D	**7/30/08**	44.61	-	8.56	91	360	29.5	140	128	9	<0.010	166	<0.010	0.224	<0.50	<0.005	468	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-10D	**1/24/07**	58.21	12.2	7.21	-10	1049	9.83	420	20.6	7	<0.010	651	<0.010	<0.200	<0.50	<0.005	778	<3.0
W-10D	**7/26/07**	59.6	18	6.73	-42	477	37.5	440	25.4	275	<0.010	657	<0.010	0.257	<0.50	<0.005	353	<3.0
W-10D	**1/30/08**	58.37	10	7.59	124	659	17.7	580	20.6	12	<0.010	742	<0.010	<0.200	<0.50	<0.005	837	68
W-10D	**7/30/08**	59.98	17.1	7.85	-49	1053	42.5	550	17.5	17	<0.010	831	<0.010	<0.200	<0.50	<0.005	924	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2008
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-05D	**1/24/07**	1.25	<0.015	<0.010	0.065	<0.003	<0.500	<0.005	33.6	0.0062	<0.020	<0.010	2.57	<0.003	<0.030	9.87	0.114	<0.0002	<0.030
W-05D	**7/26/07**	1.25	<0.015	<0.010	0.065	<0.003	<0.500	<0.005	33.6	0.0062	<0.020	<0.010	2.57	<0.003	<0.030	9.87	0.114	<0.0002	<0.030
W-05D	**1/30/08**	0.626	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	34.2	<0.005	<0.020	<0.010	1.11	<0.003	<0.030	10	0.076	<0.0002	<0.030
W-05D	**7/31/08**	0.211	<0.030	<0.010	0.051	<0.003	<0.500	<0.005	36.2	<0.005	<0.020	<0.010	0.433	<0.003	<0.030	9.63	0.0811	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-06DA	**1/24/07**	0.875	<0.015	<0.010	0.0803	<0.003	<0.500	<0.005	65.4	<0.005	<0.020	<0.010	2.01	<0.003	<0.030	11	0.241	<0.0002	<0.030
W-06DA	**7/26/07**	0.49	<0.015	<0.010	0.0687	<0.003	<0.500	<0.005	61.2	<0.005	<0.020	<0.010	1.01	<0.003	<0.030	9.91	0.206	<0.0002	<0.030
W-06DA	**1/30/08**	0.513	<0.015	<0.010	0.0735	<0.003	<0.500	<0.005	65.6	<0.005	<0.020	<0.010	1.02	<0.003	<0.030	11.2	0.116	<0.0002	<0.030
W-06DA	**7/31/08**	0.153	<0.030	<0.010	0.0933	<0.003	<0.500	<0.005	67.2	<0.005	<0.020	0.0147	0.676	0.0048	<0.030	10.6	0.158	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-08D*	**1/24/07**	0.875	<0.015	<0.010	0.0803	<0.003	<0.500	<0.005	65.4	0.00589	<0.020	<0.010	2.01	<0.003	<0.030	11	0.241	<0.0002	<0.030
W-08D*	**7/26/07**	1.71	<0.015	<0.010	0.0738	<0.003	<0.500	<0.005	94.9	<0.005	<0.020	0.016	2.57	<0.003	<0.030	22	0.671	<0.0002	<0.030
W-08D*	**1/30/08**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	63.5	<0.005	<0.020	0.014	0.338	<0.030	<0.030	12.6	0.0283	<0.0002	<0.030
W-08D*	**7/30/08**	2.94	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	74.7	0.0065	<0.020	0.0156	3.57	<0.003	<0.010	14.1	0.0916	<0.0002	<0.030

*** BACKGROUND WELL**

TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-09D	**1/24/07**	<0.100	<0.015	<0.010	0.0576	<0.003	<0.500	<0.005	33.5	0.0524	<0.020	<0.010	0.437	<0.003	<0.030	20.6	0.543	<0.0002	<0.030
W-09D	**7/26/07**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	31.6	<0.005	<0.020	<0.010	0.86	<0.003	<0.030	19.2	0.49	<0.0002	<0.030
W-09D	**1/30/08**	<0.100	<0.015	<0.010	0.0536	<0.003	<0.500	<0.005	33.1	0.00956	<0.020	<0.010	0.65	<0.003	<0.030	20.3	0.399	<0.0002	<0.030
W-09D	**7/30/08**	<0.100	<0.030	<0.010	0.055	<0.003	<0.500	<0.005	33.9	<0.005	<0.020	<0.010	0.419	<0.003	<0.030	19.7	0.226	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-10D	**1/24/07**	0.246	<0.015	0.0368	0.0988	<0.003	<0.500	<0.005	185	<0.005	<0.020	<0.010	5.92	<0.003	<0.030	45.9	1.34	<0.0002	<0.030
W-10D	**7/26/07**	0.772	<0.015	0.027	0.106	<0.003	0.746	<0.005	184	0.016	<0.020	0.0163	4.65	0.0031	<0.030	48.1	1.59	<0.0002	<0.030
W-10D	**1/30/08**	0.315	<0.015	<0.010	0.094	<0.003	<0.500	<0.005	222	<0.005	<0.020	<0.010	1.96	<0.003	<0.030	45.7	2.08	<0.0002	<0.030
W-10D	**7/30/08**	0.568	<0.030	<0.010	0.115	<0.003	<0.500	<0.005	258	<0.005	<0.020	0.0123	2.24	<0.003	<0.030	45.4	2.79	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2008
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-05D	**1/24/07**	3.56	<0.005	<0.010	6.98	<0.010	0.0339
W-05D	**7/26/07**	3.56	<0.005	<0.010	6.98	<0.010	0.0339
W-05D	**1/30/08**	1.78	<0.005	<0.010	5.75	<0.010	0.0112
W-05D	**7/31/08**	1.97	<0.005	<0.010	5.68	<0.010	0.011
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-06DA	**1/24/07**	1.61	0.0165	<0.010	10.6	<0.010	0.0325
W-06DA	**7/26/07**	2.21	0.007	<0.010	9.95	<0.010	0.0266
W-06DA	**1/30/08**	1.73	<0.005	<0.010	10.4	<0.010	0.0223
W-06DA	**7/31/08**	2.12	<0.005	<0.010	10.8	<0.010	0.126
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-08D*	**1/24/07**	1.61	0.0165	<0.010	10.6	<0.010	0.0325
W-08D*	**7/26/07**	2.27	0.0069	<0.010	14.9	<0.010	0.081
W-08D*	**1/30/08**	<1.0	<0.005	<0.010	5.96	<0.010	0.0392
W-08D*	**7/30/08**	1.36	<0.005	<0.010	5.28	<0.010	0.0147

*** BACKGROUND WELL**

TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-09D	**1/24/07**	3.46	<0.008	<0.010	12.4	<0.010	0.0231
W-09D	**7/26/07**	3.36	<0.005	<0.010	117	<0.010	0.0189
W-09D	**1/30/08**	3.11	<0.005	<0.010	118	<0.010	0.0181
W-09D	**7/30/08**	3.07	<0.005	<0.010	123	<0.010	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-10D	**1/24/07**	3.53	0.017	<0.010	19.2	<0.010	0.0246
W-10D	**7/26/07**	5.72	<0.017	<0.010	24.2	<0.010	0.053
W-10D	**1/30/08**	2.86	<0.005	<0.010	17.1	<0.010	0.0206
W-10D	**7/30/08**	3.1	<0.005	0.0109	22.7	<0.010	0.0418

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2008
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-30	**1/24/07**	51.33	8.6	7.51	-15	1652	10.2	440	177	12	<0.010	900	<0.010	0.771	<0.500	<0.005	1090	<3.0
W-30	**7/26/07**	49.74	15.3	7.01	105	1639	17.8	400	176	60	<0.010	875	<0.010	<0.20	<0.50	0.006	1290	<3.0
W-30	**1/30/08**	49.45	10.2	7.68	81	259	24.4	400	153	<5.0	<0.010	854	<0.010	<0.20	<0.50	<0.005	1140	35.7
W-30	**7/31/08**	51.82	15.1	8.56	138	633	74.2	460	152	<5.0	<0.010	957	<0.010	0.236	<0.500	<0.005	1060	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
SS882	**1/24/07**	33.52	14.3	8.06	151	424	10.7	290	8.3	7	<0.010	215	<0.010	0.205	<0.500	<0.005	340	<3.0
SS882	**7/26/07**	37.57	17.5	7.06	-61	344	18.5	200	3.8	950	<0.010	347	<0.040	<0.20	<0.50	<0.005	265	<3.0
SS882	**1/30/08**	32.77	9.7	7.89	187	596	13.5	330	30.3	12	<0.010	258	<0.010	<0.20	<0.50	<0.005	355	66.1
SS882	**7/30/08**	36.4	18.7	8.10	-64	553	18.3	280	5.94	50	<0.010	374	<0.010	<0.20	<0.50	<0.005	476	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2008
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-30	**1/24/07**	0.419	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	200	0.025	<0.020	0.0168	1.57	<0.003	<0.030	97.4	0.0764	<0.0002	0.034
W-30	**7/26/07**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	191	0.0251	<0.020	0.0254	0.8	<0.003	<0.030	96.8	0.0443	<0.0002	0.033
W-30	**1/30/08**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	186	<0.005	<0.020	<0.010	0.0998	<0.003	<0.030	94.4	<0.010	<0.0002	<0.030
W-30	**7/31/08**	0.159	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	214	0.007	<0.020	0.021	2.04	<0.003	<0.030	102	0.05	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
SS882	**1/24/07**	0.238	<0.015	<0.010	0.060	<0.003	<0.500	<0.005	58.2	<0.005	<0.020	0.0144	0.824	<0.003	<0.030	17.1	0.193	<0.0002	<0.030
SS882	**7/26/07**	0.365	<0.015	0.016	0.1	<0.003	<0.500	<0.005	96	<0.005	<0.020	0.0142	4.49	<0.003	<0.030	26.1	1.92	<0.0002	<0.030
SS882	**1/30/08**	0.145	<0.015	<0.010	0.06	<0.003	<0.500	<0.005	72.8	<0.005	<0.020	<0.010	0.628	<0.003	<0.030	18.5	0.804	<0.0002	<0.030
SS882	**7/30/08**	<0.100	<0.030	<0.010	0.107	<0.003	<0.500	<0.005	105	<0.005	<0.020	<0.010	1.51	<0.003	<0.030	27.2	0.586	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2008
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-30	**1/24/07**	6.59	0.0211	0.0152	68.3	<0.010	0.0677
W-30	**7/26/07**	6.28	0.0122	<0.010	67.8	<0.010	0.0337
W-30	**1/30/08**	7.09	<0.005	<0.010	66.5	<0.010	0.0166
W-30	**7/31/08**	5.64	<0.005	<0.010	70.7	<0.010	0.0407
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
SS882	**1/24/07**	2.190	<0.005	<0.010	18.6	<0.010	0.0362
SS882	**7/26/07**	1.56	<0.005	<0.010	16.8	<0.010	0.0449
SS882	**1/30/08**	2.23	<0.005	<0.010	16.8	<0.010	<0.010
SS882	**7/30/08**	2.3	<0.005	<0.010	16.7	<0.010	<0.010

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2008
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Cr +6	Nitrate
NYS LIMIT:				**6.5-8.5**			**5.0**				**250.0**		**15.0**	**0.2**		**0.05**	**10.0**
CAS NO.																18540-29-9	
TRIG. VALUE:								**258**			**14.4**		**40**		**354**	**0.05**	**0.48**
CHURCH	**10/30/07**	-	13.2	6.78	-46.1	603	3.81	100	<4.0	<0.20	5.33	<20.0	<5.0	<0.010	164	<0.010	<0.2
CHURCH	**1/28/08**	-	9.9	8.67	110	772	5.28	160	<4.0	<0.20	5.68	<20.0	<5.0	<0.010	161	<0.010	<0.2
CHURCH	**4/22/08**	-	14.2	7.82	-46	309	0.33	150	5	<0.20	5.38	<20.0	8	<0.010	167	<0.010	<0.2
CHURCH	**7/29/08**	-	18.2	8.69	42	231	9.34	150	<4.0	<2.0	5.61	<20.0	15	<0.010	139	<0.010	0.208

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2008
(all units are in mg/l)

		NH4	TKN	Phenol	TDS	TOC	Sulfate	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe
NYS LIMIT:		**2.0**		**0.001**	**500**				**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**
CAS NO.		7664-41-7		108-95-2									7440-42-8						
TRIG. VALUE:		**0.6**		**0.014**	**488**	**30**		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**
CHURCH	**10/30/07**	<0.50	<0.500	<0.005	156	<3.0	20.6	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	46	<0.005	<0.020	0.032	0.211
CHURCH	**1/28/08**	<0.50	<0.500	<0.005	155	6.1	38.7	<0.100	<0.015	<0.010	0.0695	<0.003	<0.500	<0.005	44.2	<0.005	<0.020	0.0201	0.0742
CHURCH	**4/22/08**	<0.50	<0.500	<0.005	208	<3.0	40	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	47.1	<0.005	<0.020	0.0148	<0.060
CHURCH	**7/29/08**	<0.50	<0.500	<0.005	272	<3.0	42.8	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	39.2	<0.005	<0.020	0.01	<0.060

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2008
(all units are in mg/l)

		Pb	V	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.025**			**0.3**	**0.0007**	**0.1**		**0.01**	**0.05**	**20**		
CAS NO.													
TRIG. VALUE:		**0.025**			**0.3**	**0.002**			**0.0014**	**0.05**	**20**		**0.3**
CHURCH	**10/30/07**	0.005	<0.030	11.9	<0.010	<0.0002	<0.030	<1.0	<0.005	<0.010	12.9	<0.010	0.034
CHURCH	**1/28/08**	<0.003	<0.030	12.2	<0.010	<0.0002	<0.030	<1.0	<0.005	<0.010	11.7	<0.010	0.205
CHURCH	**4/22/08**	<0.003	<0.030	12.1	<0.010	<0.0002	<0.030	<1.0	<0.005	<0.010	12.7	<0.010	0.0126
CHURCH	**7/29/08**	0.003	<0.030	9.85	<0.010	<0.0002	<0.030	<1.0	<0.005	<0.010	10	<0.010	0.026

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2008
(all units are in mg/l)

		Dis O2	SC	eH	pH	Temp	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols
CLASS C STD:		**<4**			**6.5-8.5**						**9**		**0.011**		**2**	
WALL-UP	**1/24/07**	-	1019	-15	8.48	0	23.4	120	38.5	25	<0.010	126	<0.010	1.17	24.7	<0.005
WALL-UP	**7/24/07**	-	1050	115	7.57	24.2	66.9	120	52.3	100	<0.010	231	<0.010	3.99	<0.500	<0.005
WALL-UP	**1/28/08**	-	1589	125	8.60	1.1	20	110	66.9	29	<0.010	143	<0.010	0.998	<0.500	<0.005
WALL-UP	**7/28/08**	-	553	65	8.48	25.8	74.1	120	62.8	42	<0.010	144	<0.010	0.667	<0.500	<0.005
WALL-DN	**1/24/07**	-	519	50	8.31	0.2	23.8	110	39.9	30	<0.010	109	<0.010	1.25	<0.500	<0.005
WALL-DN	**7/24/07**	-	557	155	7.73	21.1	79.4	110	50.5	130	<0.010	230	<0.010	4.14	<0.500	<0.005
WALL-DN	**1/28/08**	-	156	101	8.94	1.8	17	120	66.7	29	<0.010	144	<0.010	1.00	<0.500	<0.005
WALL-DN	**7/28/08**	-	501	73	8.45	26.1	56.2	130	64.3	46	<0.010	142	<0.010	0.728	<0.500	<0.005
Basin A	**1/24/07**	Frozen														
Basin A	**7/24/07**	9.33	156	85	9.34	28.4	33	57	<1.00	130	<0.010	68.7	<0.010	<0.20	<0.50	<0.005
Basin A	**1/28/08**	Frozen														
Basin A	**7/29/08**	6.47	183	13	8.37	25.1	23.2	120	5.81	29	<0.010	49.4	<0.010	<0.20	<0.50	<0.005
Basin B	**1/24/07**	Frozen														
Basin B	**7/24/07**	9.22	147	110	8.04	29.3	112	42	<1.00	110	<0.010	72.3	<0.010	<0.20	<0.500	<0.005
Basin B	**1/28/08**	Frozen														
Basin B	**7/29/08**	Dry														
Basin D	**1/24/07**	Frozen														
Basin D	**7/24/07**	Dry														
Basin D	**1/28/08**	Dry														
Basin D	**7/29/08**	Dry														

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2008
(all units are in mg/l)

		DS	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
CLASS C STD:		**500**		**0.1**				**1.1**	**10**				**0.005**		**0.3**		**0.014**	
WALL-UP	**1/24/07**	195	6.0	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	32.4	<0.005	<0.020	<0.010	0.368	<0.003	<0.030	11
WALL-UP	**7/24/07**	420	19.1	1.24	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	64.5	<0.005	<0.020	0.0154	2.55	<0.003	<0.030	16.9
WALL-UP	**1/28/08**	237	31.6	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	36.3	<0.005	<0.020	<0.010	0.327	<0.003	<0.030	12.7
WALL-UP	**7/28/08**	324	6.1	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	37.3	<0.005	<0.020	<0.010	<0.060	<0.003	<0.030	12.5
WALL-DN	**1/24/07**	188	5.0	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	28	0.008	<0.020	<0.010	0.422	0.0077	<0.030	9.49
WALL-DN	**7/24/07**	352	18.3	1.64	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	64	<0.005	<0.020	0.0147	3.13	<0.003	<0.030	17.1
WALL-DN	**1/28/08**	230	<3.0	0.108	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	36.6	<0.005	<0.020	0.0147	0.482	<0.003	<0.030	12.7
WALL-DN	**7/28/08**	344	6.8	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	37	<0.005	<0.020	0.011	0.0854	<0.003	<0.030	12.1
Basin A	**1/24/07**																	
Basin A	**7/24/07**	100	10.6	0.278	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	18.6	<0.005	<0.020	<0.010	0.624	<0.003	<0.030	5.39
Basin A	**1/28/08**																	
Basin A	**7/29/08**	132	6.8	<0.10	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	12.9	<0.005	<0.020	<0.010	<0.060	<0.003	<0.030	4.17
Basin B	**1/24/07**																	
Basin B	**7/24/07**	97	6.0	1.94	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	24.4	<0.005	<0.020	0.012	3.63	0.0038	<0.030	2.73
Basin B	**1/28/08**																	
Basin B	**7/29/08**																	
Basin D	**1/24/07**																	
Basin D	**7/24/07**																	
Basin D	**1/28/08**																	
Basin D	**7/29/08**																	

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2008
(all units are in mg/l)

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
CLASS C STD:									**0.008**	
WALL-UP	**1/24/07**	0.0584	<0.0002	<0.030	1.55	0.0144	<0.010	19.3	<0.010	0.196
WALL-UP	**7/24/07**	0.319	<0.0002	<0.030	5.35	0.0157	<0.010	26.3	<0.010	0.201
WALL-UP	**1/28/08**	0.0713	<0.0002	<0.030	1.69	<0.005	<0.010	25.2	<0.010	0.0667
WALL-UP	**7/28/08**	<0.010	<0.0002	<0.030	2.57	<0.005	<0.010	27	<0.010	0.0381
WALL-DN	**1/24/07**	0.0516	<0.0002	<0.030	1.41	0.0077	0.0157	16.8	<0.010	0.292
WALL-DN	**7/24/07**	0.356	<0.0002	<0.030	5.18	0.0157	<0.010	26.4	<0.010	0.39
WALL-DN	**1/28/08**	0.081	<0.0002	<0.030	1.5	<0.005	<0.010	26.1	<0.010	0.109
WALL-DN	**7/28/08**	<0.010	<0.0002	<0.030	3.5	<0.005	<0.010	27.2	<0.010	0.622
Basin A	**1/24/07**									
Basin A	**7/24/07**	0.179	<0.0002	<0.030	1.33	0.005	<0.010	1.68	<0.010	0.0254
Basin A	**1/28/08**									
Basin A	**7/29/08**	<0.010	<0.0002	<0.030	<1.0	<0.010	<0.010	1.35	<0.010	0.0199
Basin B	**1/24/07**									
Basin B	**7/24/07**	0.119	<0.0002	<0.030	3.26	0.01	<0.010	<1.0	<0.010	0.0798
Basin B	**1/28/08**									
Basin B	**7/29/08**									
Basin D	**1/24/07**									
Basin D	**7/24/07**									
Basin D	**1/28/08**									
Basin D	**7/29/08**									

TABLE 3-2
AL TURI SANITARY LANDFILL
SEDIMENT / FLOC MONITORING ANALYTICAL RESULTS
2008
(all units are in mg/kg)

		% Moisture	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
Sed UP	**1/22/07**	34.5	17000	8150	<4.58	6.92	64.7	5.12	<153	3.76	7010	58	10.7	87	38000	747	12.4	5080
Sed UP	**7/24/07**	18.2	12480	9010	<3.67	3.27	56.3	3.94	160	1.75	21700	33.6	14.7	98.7	24400	206	14.6	7070
Sed UP	**1/28/08**	4.78	2760	5250	<3.15	<2.10	21.7	0.971	<105	<1.05	9250	12.2	6.14	22.9	12800	30.4	8.47	7360
Sed UP	**7/27/08**	17.6	3170	9670	<3.64	<2.43	107	32.2	366	2	8250	186	45.7	543	47400	572	12	7650
Sed DN	**1/22/07**	23.7	16000	7120	<3.93	3.95	33	<0.786	<131	1.91	5740	10.7	6.4	15.3	16700	30.6	10.7	6380
Sed DN	**7/24/07**	15	7439	6110	<3.53	<2.35	24.6	<0.706	<118	<1.18	9760	9.33	6.13	13.3	14100	7.13	9.22	7670
Sed DN	**1/28/08**	24.9	62800	6800	<4.00	3.23	60	<0.799	<133	<1.33	15300	11.9	7.88	33.8	15500	20.6	11.8	7420
Sed DN	**7/27/08**	26.9	9370	6660	<4.01	<2.74	31.4	<0.821	<137	<1.37	3960	9.55	5.61	13.2	14700	10.7	9.32	5120

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
Sed UP	**1/22/07**	612	<0.153	37.7	821	<1.53	<3.05	980	<3.05	427
Sed UP	**7/24/07**	646	<0.122	58.7	882	<1.22	<2.45	258	<2.45	402
Sed UP	**1/28/08**	268	<0.105	18.3	527	<1.05	<2.10	<210	<2.10	122
Sed UP	**7/27/08**	817	<0.060	253	695	<1.21	<2.43	290	<2.43	2240
Sed DN	**1/22/07**	251	<0.131	15.6	805	<0.131	<2.62	285	<2.62	70.2
Sed DN	**7/24/07**	290	<0.118	16.2	602	<1.18	<2.35	<235	<2.35	83.6
Sed DN	**1/28/08**	678	<0.133	17.8	543	<1.33	<2.66	4850	<2.66	103
Sed DN	**7/27/08**	325	<0.068	13.7	647	<1.37	<2.74	<274	<2.74	54.7

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2008
(all units are in mg/l)

		SC	eH	pH	Temp	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Nitrate	NH4	TKN
LCH-11P	**1/22/07**	6320	-	7.03	15.01	52.7	1400	12	<0.2	3730	427	200	<0.010	2410	0.396	200	209
LCH-11P	**7/24/07**	2160	-30	6.93	22.7	67.9	1800	29	80	8510	194	150	<0.010	4140	0.409	305	26
LCH-11P	**1/28/08**	2100	-17	6.98	14.7	146	1700	<8.0	<200	605	268	135	<0.010	3150	0.381	215	200
LCH-11P	**7/29/08**	538	-65	7.49	26.5	207	2000	15	<200	8940	298	110	<0.0001	4500	0.826	164	167
LCH-11S	**1/22/07**	2.69	30	7.68	6.3	10.2	230	<8.0	<20.0	194	37	7	<0.010	231	1.23	<0.500	2.2
LCH-11S	**7/24/07**	381	120	8.23	21.2	6.85	260	<4.0	<0.20	52.1	<20.0	10	<0.010	310	0.973	<0.500	0.924
LCH-11S	**1/28/08**	206	5	8.48	10.2	10.1	220	<4.0	<0.20	39.8	<20.0	20	<0.010	265	0.919	<0.500	0.596
LCH-11S	**7/29/08**	348	45	8.62	19.1	10.3	230	<4.0	<2.0	36.6	<20.0	22	<0.0001	273	0.718	<0.500	<0.500
LCH-12P	**1/22/07**	9540	-	7.35	20.6	72.4	3000	50	<20.0	1940	847	200	<0.010	641	0.797	365	564
LCH-12P	**7/24/07**	1291	-80	7.23	27	17.1	3700	60	<200	3100	572	1000	<0.010	851	<0.20	802	8.16
LCH-12P	**1/28/08**	1602	20	7.55	16.2	157	3100	66	<200	2490	820	650	<0.010	775	2.54	591	418
LCH-12P	**7/29/08**	5000	70	7.76	28.1	>1,000	2200	32	<200	1470	635	725	<0.0001	763	16.9	490	466
LCH-12S	**1/22/07**	491	-25	7.32	10.4	25.6	350	<8.0	53	51.3	32	15	<0.010	528	6.86	0.828	2.2
LCH-12S	**7/24/07**	1613	65	7.96	18.8	14.3	200	<4.0	<20.0	107	<20.0	19	<0.010	723	20.2	<0.500	<0.500
LCH-12S	**1/28/08**	2220	157	7.66	7	21.1	400	<4.0	<20.0	70.1	<20.0	21	<0.010	606	8.6	2.83	<0.50
LCH-12S	**7/29/08**	981	45	8.52	19.9	30.2	400	<4.0	<20.0	224	20	18	<0.010	642	28.2	0.545	0.779

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2008
(all units are in mg/l)

		Phenols	TDS	Sulfate	Sulfide	Cr +6	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
LCH-11P	**1/22/07**	<0.005	12800	1420	0.494	<0.010	16.7	0.12	0.0177	<0.010	0.198	<0.003	11.6	<0.005	388	0.005	<0.020
LCH-11P	**7/24/07**	<0.008	17300	3960	0.864	<0.020	59.3	0.192	0.0277	0.064	0.215	<0.003	20.9	<0.005	554	0.0112	<0.020
LCH-11P	**1/28/08**	0.009	13400	984	<0.100	<0.020	50.8	0.108	0.0161	<0.010	0.153	<0.003	17.4	<0.005	408	<0.005	<0.020
LCH-11P	**7/29/08**	<0.005	20600	3000	<0.100	<0.010	35.2	<0.100	<0.015	0.0173	0.154	<0.003	22.7	<0.005	549	<0.005	<0.020
LCH-11S	**1/22/07**	<0.005	462	83.2	<0.100	<0.010	6	<0.100	<0.015	<0.010	<0.050	<0.003	<0.50	<0.005	69.7	<0.005	<0.020
LCH-11S	**7/24/07**	0.005	660	166	<0.100	<0.010	<3.0	<0.100	<0.015	<0.010	<0.050	<0.003	0.648	<0.005	93.1	<0.005	<0.020
LCH-11S	**1/28/08**	<0.005	495	163	<0.100	<0.010	51.1	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	77.4	<0.005	<0.020
LCH-11S	**7/29/08**	<0.050	632	195	<0.100	<0.010	3.4	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	78.7	<0.005	<0.020
LCH-12P	**1/22/07**	<0.005	4690	<5.00	<0.100	<0.010	3.8	<0.100	0.0644	0.119	0.387	<0.003	6.49	<0.005	100	0.0311	0.026
LCH-12P	**7/24/07**	0.013	6900	125	<0.100	<0.020	205	0.337	0.0162	0.134	0.501	<0.003	8.21	<0.005	113	0.0418	0.0339
LCH-12P	**1/28/08**	0.015	5480	147	9.39	<0.10	282	2.76	0.0162	0.122	0.518	<0.003	6.27	<0.005	137	0.0318	0.0316
LCH-12P	**7/29/08**	<0.005	3560	577	<0.100	<0.010	157	0.64	<0.015	0.058	0.292	<0.003	3.77	<0.005	192	0.0165	0.0267
LCH-12S	**1/22/07**	<0.005	772	143	<0.100	<0.010	8	0.966	<0.015	<0.010	0.057	<0.003	<0.500	<0.005	161	<0.005	<0.020
LCH-12S	**7/24/07**	<0.005	1150	635	<0.100	<0.010	4.5	<0.100	<0.015	<0.010	0.0534	<0.003	0.556	<0.005	226	<0.005	<0.020
LCH-12S	**1/28/08**	<0.005	920	316	<0.100	<0.010	96.4	0.117	<0.015	<0.010	0.0551	<0.003	<0.500	<0.005	185	<0.005	<0.020
LCH-12S	**7/29/08**	<0.005	1950	668	<0.100	<0.010	5.8	<0.100	<0.015	<0.010	0.0561	<0.003	<0.500	<0.005	199	<0.005	<0.020

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2008
(all units are in mg/l)

		Cu	Fe	K	Pb	V	Mg	Mn	Hg	Ni	Se	Ag	Na	Sn	Th	Zn
LCH-11P	**1/22/07**	<0.010	21.9	661	<0.003	<0.030	350	5.59	<0.0002	0.0403	0.0174	<0.010	3100	<0.300	<0.010	0.252
LCH-11P	**7/24/07**	0.0216	28.4	808	<0.003	<0.030	671	6.72	0.00028	0.0713	0.0319	<0.010	4930	<0.300	<0.010	0.229
LCH-11P	**1/28/08**	<0.010	24.2	23.4	<0.003	<0.030	517	5.59	0.00028	0.0461	<0.005	<0.010	138	<0.300	<0.010	0.543
LCH-11P	**7/29/08**	0.0109	9.16	719	<0.003	<0.030	761	6.29	<0.0002	0.0521	<0.005	<0.010	4490	<0.300	<0.010	0.0729
LCH-11S	**1/22/07**	<0.010	0.0985	9.53	<0.003	<0.030	13.8	0.109	<0.0002	<0.030	0.0113	<0.010	30.8	<0.300	<0.010	0.96
LCH-11S	**7/24/07**	0.0129	<0.060	11.5	<0.003	<0.030	18.9	0.0117	<0.0002	<0.030	0.0193	<0.010	42	<0.300	<0.010	0.287
LCH-11S	**1/28/08**	<0.010	0.0625	8.75	<0.003	<0.030	17.3	0.0533	<0.0002	<0.030	<0.005	<0.010	34	<0.300	<0.010	0.124
LCH-11S	**7/29/08**	<0.010	<0.060	10.9	<0.003	<0.030	18.6	0.083	0.307	<0.030	<0.005	<0.010	38	<0.300	<0.010	0.13
LCH-12P	**1/22/07**	<0.010	4.32	391	<0.003	<0.030	95	0.357	<0.0002	0.145	0.0212	<0.010	1260	<0.300	<0.010	0.0612
LCH-12P	**7/24/07**	0.0163	4.45	506	<0.003	0.0334	138	0.359	<0.0002	0.171	0.0314	<0.010	1870	<0.300	<0.010	0.136
LCH-12P	**1/28/08**	0.277	30.2	11.8	0.0033	0.0309	105	1.14	<0.0002	0.139	<0.005	<0.010	47.4	<0.300	<0.010	0.527
LCH-12P	**7/29/08**	0.031	1.82	207	<0.003	<0.030	68.8	2.48	0.212	0.103	<0.005	<0.010	755	<0.300	<0.010	0.131
LCH-12S	**1/22/07**	0.0156	3.15	10.6	<0.003	<0.030	30.5	0.407	<0.0002	<0.030	0.0119	<0.010	39.7	<0.300	<0.010	0.363
LCH-12S	**7/24/07**	0.0125	0.0988	17.8	<0.003	<0.030	38.7	0.0255	<0.0002	<0.030	0.0239	<0.010	85.1	<0.300	0.0117	0.146
LCH-12S	**1/28/08**	<0.010	0.307	11.1	<0.003	<0.030	35	0.232	<0.0002	<0.030	<0.005	<0.010	47.3	<0.300	<0.010	0.241
LCH-12S	**7/29/08**	0.01	0.153	18.2	<0.003	<0.030	35.2	0.247	<0.0002	<0.030	<0.005	<0.010	10.4	<0.300	<0.010	0.0674

2009 SAMPLING YEAR
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – OPERATIONAL SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

July 2009

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1 INTRODUCTION

The water quality management program at the Al Turi Landfill, Goshen, New York, includes the semi-annual sampling and analysis of groundwater, surface water, contained leachate, and sediment samples from locations in and around the "Operational Landfill" and the evaluation of the data generated by these samples. The facility has completed closure and is now in the post-closure period. During the January 2009 sampling event, modified baseline sampling was performed in accordance with 6 NYCRR Part 360-2.17(a), the requirements of Special Condition Nos. 36-38 of the facility's expired September 1997 Landfill Operating Permit (Permit No. 3-3330-00002/21), and in accordance with the revised and approved July 2005 Environmental Monitoring Plan (EMP).

Water quality data generated in January 2009 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The environmental data collected from the Operational Landfill site has been presented and evaluated in this report.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

For the Operational Landfill, water quality data generated in 2009 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The trigger values were developed using a limited database that was established for the Al Turi Landfill prior to the promulgation of regulations governing the collection of such data. The values were developed from two or three sampling events for baseline parameters conducted in August through October 1983 for three overburden wells (W-5S, W-6S, and W-7S), and 2 bedrock wells (W-6D and W-8D). Well W-6D has since been replaced with well W-6DA. Additionally, trigger values for metals were calculated based on the dissolved fraction results from field-filtered analyses. The Department values, or Part 703 standards, whichever are higher, serve as the trigger values for contingency monitoring at the Al Turi Landfill. Due to the limited pre-operational database, and the presence of undetected values for many of the parameters, the results do not constitute a "normal distribution" as required under Part 360-2.11(c)(5)(i)(c). Therefore, these values should be applied with caution. Given the limited available data, the 1983 values represent the best available estimate of pre-operational water quality, and are suitable as a screening tool in the monitoring program.

Because the Al Turi Landfill began operation prior to the promulgation of the current regulations, certain aspects of the regulations cannot be strictly applied. Notable deviations are the absence of an adequate pre-operational database and the lack of expanded parameter data for many of the monitoring points.

Semi-annual monitoring at the Operational Landfill currently consists of modified baseline analysis. This sampling is conducted in January and July of each year. The analysis for each event includes 6NYCRR Part 360 Baseline parameters with the exception of the parameters BOD, COD, TKN, sulfate and bromide. Sediment samples from the Wallkill River are analyzed for the 6NYCRR Part 360 baseline metals and TOC. Under updated regulations, the presence of baseline parameters above trigger values requires initiation of contingency monitoring, in which expanded parameters are analyzed. A trigger value exceedance occurs when the groundwater analytical data exceeds either the NYSDEC developed trigger values and/or the Part 703 State standards, whichever is higher.

The 6 NYCRR Part 360 regulations allow for the modification of the expanded parameter list to correspond with contaminants detected at a given facility. The analyses apply to all media sampled at the facility (groundwater, surface water, sediment, and contained leachate). The former contingency parameter list that was utilized at the facility consisted of the baseline parameter list plus the expanded parameters sulfide, phenol, naphthalene, 2-methyl phenol, 3-methyl phenol, and 4-methyl phenol. However, because the above mentioned expanded parameters were not detected within contingency groundwater monitoring wells, the NYSDEC approved a revised contingency monitoring list on June 22, 1999 and again on May 14, 2002. Monitoring at the facility has since been modified and now includes the monitoring program established in the July 2005 EMP.

Semi-annual groundwater quality is monitored at 21 groundwater monitoring wells (shallow and deep wells) located within the boundaries of the facility's property. One well, W-8D, is designated as the upgradient background well for the facility. Drawing 1 (in pocket) provides a site map of the facility indicating the locations of the monitoring points. In addition, baseline groundwater sampling and analysis is performed quarterly at Jesus Christ Triumphant Church (representing a 22nd well) located along Route 17M just south of the facility. Surface water and sediment samples are collected at two locations in the Wallkill River, upstream and downstream of the facility, while Sediment Basins A, B and D are sampled for water quality only. In addition, leachate samples are collected semi-annually from the primary and secondary leachate collection systems, and analyzed for a modified expanded parameter list. Sampling procedures utilized are also identified in the July 2005 EMP.

2.1 Operational Water Quality - Overburden Water Quality

Fourteen overburden groundwater monitoring wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the January 2009 sampling event demonstrate that the following routine analytes were above their respective trigger values in the overburden monitoring wells: turbidity (14 wells); alkalinity (7 wells); chloride (1 well); hardness (5 wells); total dissolved solids (8 wells); TOC (3 wells); calcium (5 wells); iron (13 wells); lead (1 well); manganese (9 wells); and sodium (8 wells). Non-routine inorganic parameters detected above their respective trigger values in the overburden wells are limited to color (8 wells) and barium (1 well).

It should also be noted that zinc was also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the overburden groundwater monitoring are presented in Table 2-1.

A review of the January 2009 volatile organic data indicates that with the exception of acetone (5 wells) and 2-butanone (1 well), no volatile organic compounds were confirmed above groundwater standards during the January 2009 sampling event. Acetone and 2-butanone are common laboratory artifacts and have no historical confirmation at the site. These compounds will be sampled again during the July 2009 sampling event.

2.2 Deep Well Water Quality

Seven deep wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from January 2009 identified the following routine analytes as being above their respective trigger values in the deep water quality monitoring wells: turbidity (7 wells); alkalinity (2 wells); hardness (1 wells); total dissolved solids (2 wells); calcium (2 wells); iron (6 wells); manganese (2 wells); and sodium (2 wells).

In January 2009, non-routine inorganic parameters detected above established trigger limits in the deep water quality wells included color (1 well) and aluminum (1 well). Additionally, with the exception of acetone (a commonly known laboratory artifact) detected in two wells, no volatile organic compounds were detected in the deep wells in January 2009.

It should also be noted that zinc was detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the deep well monitoring are presented in Table 2-2.

2.3 Contingency Monitoring

Wells that are analyzed as part of contingency monitoring at the Al Turi Landfill include: W-1, W-6S, W-9S, W-16D and W-17S. Contingency monitoring was performed for these wells due to the historical confirmation of baseline parameters at concentrations above established trigger values. The baseline parameters of concern include arsenic in the samples from wells W-6S, W-9S, W-16D and W-17S and benzene in W-1.

Arsenic was reported as non-detect for all wells in January 2009. As part of continued monitoring, arsenic will again be sampled for during the July 2009 sampling event.

A review of the volatile organic data, generated during the January 2009 sampling event, indicates that benzene was reported as non-detect in well W-1.

The graphical representations of arsenic show an overall increasing trend in concentration changes for well W-17S, while the trends for wells W-6S, W-16D and W-9S appear to have stabilized.

A graphical representation for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

2.4 Background Water Quality

Water quality data has been collected from groundwater monitoring wells which are installed in the meadow north of both the Al Turi Landfill and All-Waste Facility (Northern Recycling). These wells have been evaluated to assist in determining background water quality in the vicinity of the landfill. As part of the Remedial Investigation of the Old Al Turi Landfill, several wells have been shown to be clearly beyond the influence of groundwater moving toward the Wallkill River from beneath the landfill (Supplemental Remedial Investigation Report, Old Al Turi Landfill, Wehran, February 1994, Sheet 4 of 9) and are representative of background water quality. Additional historical data generated from the meadow wells indicates that several metals have been historically present in the local groundwater at concentrations above the New York State Groundwater Quality Standards (6 NYCRR Part 703).

The meadow wells have been re-developed to further help in the reduction of turbid conditions. However, several of the wells remained turbid throughout re-development, indicating that turbid conditions may also be reflective of local groundwater quality.

Based on the historical analytical results from these wells, it is clear that several analytes (iron and manganese) are present in the local groundwater at concentrations above the State standards, and at similar levels as those detected at the landfill. Data collected from the meadow wells are limited, when compared to the larger resource data base from the on-site operational monitoring wells, but the results do indicate that the exceedances observed in many of the on-site monitoring wells may be a function of local groundwater quality, and not a release from the landfill.

2.5 Church Well

Monitoring of the off-site residential well (church well) is performed quarterly and sampling of the well was conducted in January 2009 for the baseline parameters. A review of the data shows with the exception of pH and turbidity, field measured parameters, and ammonia, no parameters were detected above trigger values in the church well. These parameters will again be sampled for during the April 2009 church

sampling event. The January 2009 data collected from the church well are presented in Table 2-2.

3 SURFACE WATER/SEDIMENT QUALITY

Surface water and sediment samples are also collected semi-annually from the Wallkill River as part of continued monitoring at the Al Turi Landfill.

Surface water samples were collected with a stainless steel bucket at mid-stream locations from both the Route 17M Bridge (upstream) and Cheechunk Road Bridge (downstream). Field measurement readings obtained did not indicate the presence of river stratification at either location. Sediment samples collected at each location were collected from the bank of the river closest to the landfill.

The surface water samples collected from the Wallkill River upstream (WALL-UP) and downstream (WALL-DN) of the landfill found that iron and aluminum were in exceedance of their Class C standards in both samples. A review of the VOC data shows that no VOCs were present in the Wallkill River samples.

A summary of the surface water data and sediment data collected from the Wallkill River is provided in Table 3-1 and Table 3-2, respectively. A review of the data indicates that conditions observed upstream of the facility are generally similar to conditions observed downstream of the facility.

Historically, water quality data from the river has detected a number of analytes at concentrations above the Class C standards in both the upstream and downstream samples. It has been determined that groundwater from beneath the landfill does discharge to the Wallkill River, and a comparison of the upstream and downstream surface water data continues to indicate that discharge of this groundwater has had no observable impact on the river's water quality.

In addition to the collection of surface water samples from the Wallkill River, sediment samples are collected from the upstream and downstream banks of the river. A review of the January 2009 data indicates that during this sampling event, concentrations observed upstream of the landfill were generally lower than concentrations reported downstream of the landfill.

During the January 2009 sampling event, water samples were not collected from the sediment basins due to frozen and/or dry conditions.

4 LEACHATE MONITORING

In accordance with Special Condition No. 36 of the expired Operating Permit, samples are obtained from the primary and secondary leachate collection system associated with Areas 11, 12, and 13 (includes Areas 9 and 10) of the landfill. Samples from the leachate collection system are collected semi-annually. Because leachate from Area 13 drains into Area 12, the common primary and secondary monitoring points for these areas is sampled. Additionally, leachate from Areas 9 and 10, which are underlain with single composite liners and are not equipped with a secondary collection system, drains to the primary collection system associated with Area 13 and then Area 12.

In January 2009, sampling of the leachate monitoring points was conducted. The analytical results from this sampling event have been provided in Table 4-1. Leachate collection system analytical results in the LCH-11S/11P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions include slightly higher concentrations of chloride, hardness, nitrate, TDS, sulfate, calcium, potassium, magnesium, manganese and sodium in LCH-11S.

Additionally, leachate collection system analytical results in the LCH-12S/12P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions include higher concentration of hardness, nitrate, sulfate, calcium and zinc in LCH-12S.

In January 2009, only non-flagged detections of phenol, acetone and 2-butanone were observed in LCH-11P. No other non-flagged organic compounds, PCBs or pesticides/herbicides were detected in any of the leachate samples. Dioxins or furans were not required for collection during this sampling event. Leachate samples, along with dioxins and furans, will be collected during the July 2009 sampling event.

5 IRON FLOC EVALUATION

The Wallkill River has been identified as a groundwater discharge area for shallow groundwater flowing from the Al Turi Landfill site. Surface water and sediment sampling is performed at upgradient and downgradient locations on the River as shown on Drawing 1.

During periods of abnormally low flow conditions, seepage of shallow groundwater has been observed along the banks of the Wallkill River. Occasionally orange staining has been observed at some of these seepage points, which has proven to be characteristic of iron oxidation. Past sampling of these seeps has suggested that the seepage water reflects observed shallow groundwater quality and is not the result of direct leachate seepage from the landfill.

To date, iron floc sampling has not been conducted in 2009 due to river elevation levels above the identified seep area. The Al Turi Landfill will continue to monitor the river elevation and conduct iron floc sampling when the seep area is accessible.

6 CONCLUSIONS

Contingency monitoring will continue during the 2009 sampling year in 5 groundwater monitoring wells as a result of the confirmed presence of non-routine parameter exceedances of established trigger values that are utilized to evaluate groundwater quality. The contingency monitoring wells and their non-routine parameters of concern include: W-6S (arsenic); W-9S (arsenic); W-17S (arsenic); W-16D (arsenic) and well W-1 (benzene only). Additional determinations were made from the data obtained in January 2009:

- Many of the exceedances observed for parameters, such as iron and manganese, are likely due to the local groundwater quality rather than a landfill-related impact.

- Background historical groundwater quality data from the wells north of the site (the meadow wells) have indicated that a number of analytes are present in the local groundwater at similar concentrations to that observed in the on-site landfill monitoring wells. A number of parameters being detected in the background wells are at levels similar to those detected in the on-site landfill monitoring wells.

- A review of the volatile organic data, generated during the January 2009 sampling event, indicates that no volatile organics were detected above groundwater standards. Benzene was not detected above its detection limit during this sampling event.

- Arsenic was not detected above its trigger limit in any of the contingency wells during the January 2009 sampling event.

- Ammonia was detected above its trigger limit in the church well during the January 2009 sampling event. This reported concentration is well above any historical detection and was considered to be artifact. Ammonia will again be sampled for during the April 2009 church sampling event.

- Although it has been demonstrated that groundwater from beneath the landfill does discharge to the Wallkill River, downstream surface water quality continues to demonstrate similar results to upstream surface water quality. Historical surface water data indicate that no significant change in water quality has occurred in the Wallkill River as a result of on-going landfill operations. Data collected in January 2009 continues to demonstrate that the landfill has had no observable impact on water quality in the River.

APPENDIX A

OPERATIONAL LANDFILL
LABORATORY ANALYTICAL DATA

TABLES

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-01	**7/26/07**	27.40	18.9	6.55	-300	2520	78.7	740	452	550	<0.010	505	<0.020	<0.2	76.7	<0.005	640	74.6	0.922
W-01	**1/30/08**	27.50	10.6	7.10	-4	340	76.8	740	445	260	<0.010	536	<0.10	<0.2	71.3	<0.005	1200	<9.0	0.188
W-01	**7/31/08**	29.70	16.7	7.56	-32	1170	49.8	800	566	145	<0.010	665	<0.010	<0.20	76.7	<0.005	1490	39	<0.100
W-01	**1/21/09**	22.42	8.7	6.88	-42	850	56.4	710	620	500	<0.010	634	<0.010	<0.20	<0.50	0.006	1330	53.8	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-03A	**7/26/07**	16.55	15.6	6.94	-63	1139	47.8	200	8.14	90	<0.010	288	<0.010	0.228	<0.50	0.006	170	<3.0	8.06
W-03A	**1/30/08**	10.13	8.8	8.04	183	509	6.73	280	89.2	<5.0	<0.010	324	<0.010	<0.20	<0.50	<0.005	425	<3.0	0.379
W-03A	**7/31/08**	16.20	16.8	8.09	-63	410	38	220	11.3	12	<0.010	274	<0.010	<0.20	<0.50	<0.005	312	<3.0	3.36
W-03A	**1/21/09**	10.68	5.6	7.81	-45	498	39.1	210	20.4	8	<0.010	260	<0.010	<0.20	<0.50	<0.005	315	<3.0	1.22
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-05S	**7/26/07**	20.05	19.2	7.51	-77	517	103	470	104	1250	<0.010	591	<0.010	<0.20	<0.50	<0.005	777	<3.0	<0.100
W-05S	**1/30/08**	18.81	10.4	7.58	-22	706	10.5	500	78.3	105	<0.010	637	<0.02	<0.20	<0.50	<0.005	808	51.3	<0.100
W-05S	**7/31/08**	33.31	19.4	7.87	-50	1042	19.7	490	94.8	18	<0.010	644	<0.010	<0.20	<0.50	<0.005	816	<3.0	<0.100
W-05S	**1/21/09**	18.34	11.8	7.41	-23	992	23.5	480	76	65	<0.010	634	<0.010	<0.200	<0.50	<0.005	700	28.3	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-06S	**7/26/07**	28.57	21.7	6.88	-48	497	46.7	490	6.65	1400	<0.010	537	<0.040	0.4	1.77	<0.005	1000	7.7	1.84
W-06S	**1/30/08**	27.80	7.9	7.57	-61	583	30.3	530	71	115	<0.010	518	<0.10	<0.20	1.44	<0.005	632	<6.0	0.754
W-06S	**7/31/08**	29.72	17.2	7.83	-47	441	266	510	10.2	38	<0.010	892	<0.010	<0.20	1.59	<0.005	604	5.9	3.36
W-06S	**1/21/09**	27.42	9.9	7.71	-39	869	40.5	500	12.7	250	<0.010	523	<0.010	<0.200	0.973	<0.005	524	7	1.02
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-07S	**7/26/07**	35.04	22.9	6.68	-41	598	39.1	470	72.4	300	<0.010	753	<0.020	0.207	<0.50	<0.005	172	<3.0	0.242
W-07S	**1/30/08**	33.93	12.7	7.28	-52	1168	17.1	500	14.6	105	<0.010	745	<0.050	0.237	<0.50	<0.005	935	<6.0	0.258
W-07S	**7/31/08**	35.82	17.5	7.75	35.82	651	38.3	550	66.1	18	<0.010	793	<0.010	<0.200	<0.50	<0.005	964	<3.0	0.241
W-07S	**1/21/09**	34.45	9.4	7.58	-32	1068	12.5	550	60.5	60	<0.010	713	<0.010	<0.20	<0.50	<0.005	772	23.7	0.553
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-09S	**7/26/07**	50.78	18.9	6.99	-45	607	52.1	540	16.6	1500	<0.010	565	<0.040	<0.20	<0.50	<0.005	698	25.7	0.123
W-09S	**1/30/08**	45.19	10.1	7.46	-28	430	34.7	580	49	130	<0.010	641	<0.050	<0.20	<0.50	<0.005	765	72.1	0.387
W-09S	**7/31/08**	47.17	20.4	7.48	-28	1031	42.7	590	21	23	<0.010	679	<0.010	<0.200	<0.500	<0.005	680	<3.0	2.04
W-09S	**1/21/09**	44.8	10.8	7.77	-41	932	209	610	28.7	135	<0.010	668	<0.010	<0.200	<0.500	<0.005	662	<3.0	3.36
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16S	**7/26/07**	43.36	18.7	7.16	-69	236	8.25	180	<1.0	180	<0.010	97.7	<0.010	<0.20	<0.50	<0.005	252	<3.0	<0.100
W-16S	**1/30/08**	DRY																	
W-16S	**7/30/08**	44.61	13.9	8.25	-71	387	19.6	220	2.53	12	<0.01	184	<0.010	<0.20	<0.50	<0.005	232	<3.0	<0.100
W-16S	**1/21/09**	42.48	7.1	8.04	-57	408	25.1	210	1.87	20	<0.010	202	<0.010	<0.20	<0.500	<0.005	222	7.2	0.634

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-01	**7/26/07**	<0.015	<0.010	0.708	<0.003	0.976	<0.005	121	0.0082	<0.020	<0.010	42.3	<0.003	<0.030	49.5	4.07	<0.0002	<0.030	53.1
W-01	**1/30/08**	<0.015	<0.010	0.672	<0.003	1.04	<0.005	132	<0.005	<0.020	<0.010	52.6	<0.003	<0.030	50.3	4.37	<0.0002	<0.030	51.8
W-01	**7/31/08**	<0.030	<0.010	0.817	<0.003	1.09	0.0057	165	<0.005	<0.020	<0.010	59	<0.003	<0.030	61.8	5.05	<0.0002	<0.030	66.2
W-01	**1/21/09**	<0.030	<0.010	0.745	<0.003	0.949	<0.005	159	<0.010	<0.020	<0.010	65.2	0.0049	<0.030	57.3	4.85	<0.0002	<0.030	57.5
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-03A	**7/26/07**	<0.015	<0.010	0.128	<0.003	0.764	<0.005	74.8	0.0128	<0.020	0.0291	14.9	0.0115	<0.030	24.6	1.49	<0.0002	<0.030	2.73
W-03A	**1/30/08**	<0.015	<0.010	0.0524	<0.003	<0.50	<0.005	103	<0.005	<0.020	<0.010	0.452	<0.003	<0.030	16	0.294	<0.0002	<0.030	1.02
W-03A	**7/31/08**	<0.030	<0.010	0.121	<0.003	<0.500	<0.005	74.1	0.0057	<0.020	0.0144	4.7	<0.003	<0.030	21.6	1.14	<0.0002	<0.030	1.75
W-03A	**1/21/09**	<0.030	<0.010	0.077	<0.003	<0.500	<0.005	77.5	<0.010	<0.020	<0.010	2	<0.003	<0.030	16.1	0.388	<0.0002	<0.030	1.74
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-05S	**7/26/07**	<0.015	0.916	0.451	<0.003	1.17	0.0146	191	<0.005	<0.020	<0.010	198	0.0059	<0.030	27.7	2.57	<0.0002	<0.030	<1.0
W-05S	**1/30/08**	<0.015	0.0225	0.152	<0.003	<0.500	<0.005	204	<0.005	<0.020	<0.010	12.1	<0.003	<0.030	31.1	2.25	<0.0002	<0.030	2.61
W-05S	**7/31/08**	<0.015	<0.010	0.142	<0.003	<0.500	<0.005	211	<0.005	<0.020	<0.010	12.7	<0.003	<0.030	28.6	2.42	<0.0002	<0.030	2.7
W-05S	**1/21/09**	<0.030	<0.010	0.145	<0.003	<0.500	<0.005	207	<0.005	<0.020	<0.010	12.8	<0.003	<0.030	28.5	2.35	<0.0002	<0.030	2.47
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-06S	**7/26/07**	<0.015	0.0445	0.448	<0.003	<0.50	0.0061	169	0.005	<0.020	0.0016	73	0.016	<0.030	27.7	3.11	<0.0002	<0.030	<1.0
W-06S	**1/30/08**	<0.015	0.0737	0.566	<0.003	<0.50	0.0050	160	0.018	<0.020	<0.010	59.6	0.0034	<0.030	28.9	2.07	<0.0002	<0.030	3.02
W-06S	**7/31/08**	<0.030	<0.010	0.516	<0.003	<0.500	0.0092	298	0.006	0.0218	0.026	76.2	0.0023	<0.030	36	5.54	<0.0002	0.0321	3.11
W-06S	**1/21/09**	<0.030	<0.010	0.439	<0.003	<0.500	<0.005	166	0.0166	<0.020	<0.010	64.8	0.0534	<0.030	26.4	2.53	<0.0002	<0.030	2.89
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-07S	**7/26/07**	<0.015	0.0146	0.055	<0.003	<0.500	<0.005	221	0.00752	<0.020	0.045	29.3	<0.003	<0.030	49	1.84	<0.0002	<0.030	4.23
W-07S	**1/30/08**	<0.015	<0.010	0.0556	<0.003	<0.500	<0.005	217	0.00717	<0.020	0.0491	22.2	<0.003	<0.030	49.4	1.85	<0.0002	<0.030	4.23
W-07S	**7/31/08**	<0.030	<0.010	0.094	<0.300	<0.500	0.0055	235	0.0052	<0.020	0.048	24.1	<0.003	<0.030	50	2.39	<0.0002	<0.030	4.33
W-07S	**1/21/09**	<0.030	<0.010	0.09	<0.003	<0.500	<0.005	211	0.0158	<0.020	0.0328	27.6	<0.003	<0.030	45.1	1.76	<0.0002	<0.030	4.42
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-09S	**7/26/07**	<0.015	0.145	0.874	<0.003	<0.500	<0.005	180	<0.005	<0.005	<0.010	35.7	<0.003	<0.030	28.4	0.87	<0.0002	<0.030	2.96
W-09S	**1/30/08**	<0.015	0.033	0.839	<0.003	<0.500	<0.005	194	0.0055	<0.005	<0.010	31.4	<0.003	<0.030	38.2	0.808	<0.0002	<0.030	2.96
W-09S	**7/31/08**	<0.030	0.033	1.12	<0.003	<0.500	<0.005	210	0.0199	<0.020	<0.010	36.9	<0.003	<0.030	37.5	1.13	<0.0002	<0.030	3.76
W-09S	**1/21/09**	<0.030	<0.010	1.03	<0.003	<0.500	<0.005	202	0.0362	<0.020	0.0112	43.8	0.0083	<0.030	39.7	1.28	<0.0002	0.0342	3.82
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16S	**7/26/07**	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	18.4	<0.005	<0.020	<0.010	0.959	<0.003	<0.030	12.6	0.067	<0.0002	<0.030	6
W-16S	**1/30/08**																		
W-16S	**7/30/08**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	43.8	<0.005	<0.020	<0.010	6.11	<0.003	<0.030	18	0.5	<0.0002	<0.030	3.36
W-16S	**1/21/09**	<0.030	<0.010	0.0529	<0.003	<0.500	<0.005	54.8	<0.010	<0.020	<0.010	11.4	<0.003	<0.030	15.8	0.534	<0.0002	<0.030	3

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-01	**7/26/07**	<0.005	<0.010	270	<0.010	0.0299
W-01	**1/30/08**	<0.005	<0.010	238	<0.010	<0.010
W-01	**7/31/08**	<0.005	<0.010	345	<0.010	<0.010
W-01	**1/21/09**	<0.005	<0.010	293	<0.010	0.0161
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-03A	**7/26/07**	<0.005	<0.010	14.7	<0.010	0.0893
W-03A	**1/30/08**	0.0062	<0.010	18.4	<0.010	0.0138
W-03A	**7/31/08**	<0.005	<0.010	14.4	<0.010	0.0232
W-03A	**1/21/09**	<0.005	<0.010	17.4	<0.010	0.0285
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-05S	**7/26/07**	<0.005	<0.010	38.9	<0.010	0.4880
W-05S	**1/30/08**	<0.005	<0.010	37.2	<0.010	0.0794
W-05S	**7/31/08**	<0.005	0.012	37.7	<0.010	0.0530
W-05S	**1/21/09**	<0.005	<0.010	28	<0.010	0.0768
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-06S	**7/26/07**	<0.005	<0.010	5.7	<0.010	0.067
W-06S	**1/30/08**	<0.005	0.2	5.33	<0.010	0.0357
W-06S	**7/31/08**	<0.005	0.0114	4.24	<0.010	0.145
W-06S	**1/21/09**	<0.005	<0.010	5	<0.010	0.0244
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-07S	**7/26/07**	0.00946	<0.010	41.2	<0.010	0.0678
W-07S	**1/30/08**	<0.005	<0.010	41.1	<0.010	0.027
W-07S	**7/31/08**	<0.005	<0.010	41	<0.010	0.107
W-07S	**1/21/09**	<0.005	<0.010	38.2	<0.010	0.0354
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-09S	**7/26/07**	<0.005	<0.010	14.7	<0.010	0.0402
W-09S	**1/30/08**	<0.005	<0.010	13.8	<0.010	0.0289
W-09S	**7/31/08**	<0.005	0.0157	17.3	<0.010	0.0573
W-09S	**1/21/09**	<0.005	<0.010	15.3	<0.010	0.0778
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16S	**7/26/07**	<0.005	<0.010	33.5	<0.010	0.0186
W-16S	**1/30/08**					
W-16S	**7/30/08**	<0.005	<0.010	24.9	<0.010	<0.010
W-16S	**1/21/09**	<0.005	<0.010	13.8	<0.010	0.0136

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16D	**7/26/07**	43.14	21.3	7.38	-77	314	16.6	260	1.38	<125	<0.010	281	<0.010	<0.20	<0.50	<0.005	803	<3.0	0.301
W-16D	**1/30/08**	42.40	8.4	8.09	30	334	28.5	280	3.53	3.53	<0.010	279	<0.010	<0.20	<0.50	<0.005	283	5.6	0.386
W-16D	**7/30/08**	44.20	14.8	8.04	-60	515	26.3	290	7.6	19	<0.010	279	<0.010	<0.20	<0.50	<0.005	312	<3.0	<0.100
W-16D	**1/21/09**	41.80	6.5	8.03	-57	509	31.8	270	2.33	19	<0.010	692	<0.010	<0.200	<0.500	<0.005	283	13.2	0.109
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17S	**7/26/07**	21.47	17.3	6.94	-43	703	48.3	450	94.9	1200	<0.010	690	<0.040	<0.20	<0.50	<0.005	825	70.7	1.29
W-17S	**1/30/08**	20.29	9.8	7.60	-29	460	40.3	530	37.3	130	<0.010	631	<0.050	<0.20	<0.50	<0.005	700	60.5	1.59
W-17S	**7/30/08**	22.07	16.1	7.05	-4	1000	178	530	57.2	38	<0.010	664	<0.010	<0.20	<0.50	<0.005	772	<3.0	0.579
W-17S	**1/21/09**	19.84	10.8	7.59	-32	951	20.2	520	40.1	75	<0.010	644	<0.010	<0.20	<0.500	<0.005	660	3.2	0.469
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17D	**7/26/07**	18.78	19.3	7.22	30	2700	12.7	440	110	36	<0.010	619	<0.010	<0.20	<0.50	<0.005	230	<3.0	0.164
W-17D	**1/30/08**	19.30	9.4	8.12	174	1211	41.5	340	100	18	<0.010	506	<0.010	0.789	<0.50	<0.005	612	10.1	0.219
W-17D	**7/30/08**	21.25	16.5	8.25	110	428	86.4	350	91.5	15	<0.010	539	<0.010	0.663	<0.50	<0.005	676	<3.0	<0.100
W-17D	**1/21/09**	18.95	2.2	8.50	-37	489	49.2	460	106	10	<0.010	642	<0.010	<0.200	<0.500	<0.005	680	<3.0	0.372
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27S	**7/26/07**	DRY																	
W-27S	**1/30/08**	39.01	11.5	7.29	-30	662	43	620	90.9	140	<0.010	665	<0.050	<0.20	0.799	<0.005	752	73.7	2.29
W-27S	**7/29/08**	39.7	20.3	7.62	-36	1093	21.3	580	103	26	<0.010	638	<0.010	<0.20	0.783	<0.005	712	3.8	0.162
W-27S	**1/21/09**	38.47	11.3	7.66	36	1087	51.9	690	74	110	<0.010	727	<0.010	<0.20	<0.500	<0.005	795	3.8	1.98
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27D	**7/26/07**	37.7	18.7	7.91	-45	443	25.8	170	<1.00	35	<0.010	97.8	<0.010	<0.20	<0.50	0.006	190	<3.0	0.366
W-27D	**1/30/08**	38.6	11.8	8.36	106	575	80.2	170	2.34	12	<0.010	101	<0.010	<0.20	<0.50	<0.005	225	<3.0	0.565
W-27D	**7/30/08**	40.02	18.7	8.51	83	291	24.7	180	1.68	11	<0.010	98.9	<0.010	<0.20	<0.50	<0.005	164	<3.0	<0.10
W-27D	**1/21/09**	38.31	3.5	8.40	-95	219	40.1	79	3.1	21	<0.010	95.2	<0.010	<0.20	<0.500	<0.005	184	<3.0	0.273
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28S	**7/26/07**	44.7	20.2	7.12	-50	512	42.1	470	47.1	280	<0.010	683	<0.040	<0.20	0.558	<0.005	785	17.5	0.146
W-28S	**1/30/08**	43.64	9.7	7.60	-41	415	19.8	620	49.2	140	<0.010	830	<0.040	<0.20	<0.50	<0.005	927	96.1	0.124
W-28S	**7/29/08**	45.87	18.2	8.00	-57	986	18.1	560	52.1	18	<0.010	638	<0.010	<0.20	<0.50	<0.005	792	<3.0	<0.100
W-28S	**1/21/09**	43.19	9.8	7.58	-32	1050	34.2	590	53.7	105	<0.010	759	<0.010	<0.200	<0.500	<0.005	795	83.4	0.53
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28D	**7/26/07**	42.7	15.7	8.02	40	383	20.8	150	7.01	40	<0.010	109	<0.010	<0.20	<0.50	<0.005	312	<3.0	0.504
W-28D	**1/30/08**	43.2	12.1	8.36	25	534	21.7	150	14.9	12	<0.010	99.7	<0.010	<0.20	<0.50	<0.005	188	<3.0	0.192
W-28D	**7/30/08**	45.1	20.2	8.53	47	208	49.8	160	3.99	11	<0.010	103	<0.010	0.217	<0.50	<0.005	248	<3.0	<0.10
W-28D	**1/21/09**	43.00	9.6	8.05	-90	252	20.5	150	6.07	15	<0.010	97.2	<0.010	<0.20	<0.50	<0.005	120	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16D	**7/26/07**	<0.015	0.0465	0.101	<0.003	<0.500	<0.005	80.9	<0.005	<0.020	<0.010	5.62	<0.003	<0.030	19.2	1.24	<0.0002	<0.030	<1.0
W-16D	**1/30/08**	<0.015	0.0427	0.118	<0.003	<0.500	<0.005	79.7	<0.005	<0.020	<0.010	5.95	<0.003	<0.030	19.4	1.07	<0.0002	<0.030	1.59
W-16D	**7/30/08**	<0.030	<0.010	0.111	<0.003	<0.500	<0.005	81.3	<0.005	<0.020	<0.010	3.99	<0.003	<0.030	18.4	1.01	<0.0002	<0.030	1.43
W-16D	**1/21/09**	<0.030	<0.010	0.0835	<0.003	<0.500	<0.005	214	<0.010	<0.020	<0.010	1.08	<0.003	<0.030	38	2.77	<0.0002	<0.030	2.42
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17S	**7/26/07**	<0.015	0.062	0.308	<0.003	0.791	<0.005	190	<0.005	<0.020	0.0216	16.1	0.0039	<0.030	52.4	1.35	<0.0002	<0.030	2.39
W-17S	**1/30/08**	<0.015	0.013	0.449	<0.003	<0.500	<0.005	174	0.011	<0.020	0.0494	24.6	<0.003	<0.030	47.4	0.588	<0.0002	<0.030	2.36
W-17S	**7/30/08**	<0.030	<0.010	0.459	<0.003	<0.500	<0.005	192	<0.005	<0.020	0.0167	24.7	0.004	<0.030	44.7	0.582	<0.0002	<0.030	2.14
W-17S	**1/21/09**	<0.030	<0.010	0.4	<0.003	<0.500	<0.005	181	<0.010	<0.020	<0.010	23.2	<0.003	<0.030	46.6	0.521	<0.0002	<0.030	2
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17D	**7/26/07**	<0.015	<0.010	0.12	<0.003	<0.500	<0.005	193	<0.005	<0.020	0.0102	1.19	<0.003	<0.030	33	1.13	<0.0002	<0.030	1.7
W-17D	**1/30/08**	<0.015	<0.010	0.107	<0.003	<0.500	<0.005	151	<0.005	<0.020	<0.010	0.422	<0.003	<0.030	31.4	0.127	<0.0002	<0.030	6.14
W-17D	**7/30/08**	<0.030	<0.010	0.125	<0.003	<0.500	<0.005	163	<0.005	<0.020	0.011	0.532	<0.003	<0.030	32.2	0.212	<0.0002	<0.030	10.4
W-17D	**1/21/09**	<0.030	<0.010	0.129	<0.003	<0.500	<0.005	203	<0.010	<0.020	<0.010	1.51	<0.003	<0.030	32.6	1.24	<0.0002	<0.030	2.32
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27S	**7/26/07**																		
W-27S	**1/30/08**	<0.015	<0.010	0.206	<0.003	<0.500	<0.005	210	0.0085	<0.020	0.046	34.4	0.0163	<0.030	34.4	2.47	<0.0002	<0.030	5.78
W-27S	**7/29/08**	<0.030	<0.010	0.39	<0.003	<0.500	<0.005	204	<0.005	<0.020	<0.010	36.5	<0.003	<0.030	31.2	1.06	<0.0002	<0.030	6.41
W-27S	**1/21/09**	<0.030	<0.010	0.207	<0.003	<0.500	<0.005	226	0.0185	<0.020	0.0268	24.9	0.0144	<0.030	39.5	3.23	<0.0002	<0.030	6.05
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27D	**7/26/07**	<0.015	<0.010	0.055	<0.003	0.838	<0.005	23.8	0.0078	<0.020	<0.010	0.817	<0.003	<0.030	9.3	0.167	<0.0002	<0.030	2.27
W-27D	**1/30/08**	<0.015	<0.010	0.0587	<0.003	<0.500	<0.005	23.6	0.0083	<0.020	<0.010	1.6	<0.003	<0.030	10.2	0.276	<0.0002	<0.030	1.41
W-27D	**7/30/08**	<0.030	<0.010	0.0534	<0.003	<0.50	<0.005	23.5	0.0069	<0.020	<0.010	0.411	<0.003	<0.030	9.77	0.0977	<0.0002	<0.030	1.36
W-27D	**1/21/09**	<0.030	<0.010	0.0581	<0.003	<0.050	<0.005	23.3	<0.010	<0.020	<0.010	0.648	<0.003	<0.030	8.98	0.166	<0.0002	<0.030	1.29
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28S	**7/26/07**	<0.015	<0.010	0.116	<0.003	0.904	<0.005	217	<0.005	<0.020	0.0104	9.24	0.0031	<0.030	34.1	1.21	<0.0002	<0.030	2.64
W-28S	**1/30/08**	<0.015	0.022	0.123	<0.003	<0.500	<0.005	257	<0.005	<0.020	<0.010	8.36	<0.003	<0.030	45.8	3.08	<0.0002	<0.030	3.19
W-28S	**7/29/08**	<0.030	0.059	0.122	<0.003	<0.50	<0.005	204	<0.005	<0.020	<0.010	1.27	<0.003	<0.030	31.4	0.784	<0.0002	<0.030	2.94
W-28S	**1/21/09**	<0.030	<0.010	0.136	<0.003	<0.500	<0.005	240	<0.010	<0.020	<0.010	11.9	<0.003	<0.030	38.8	1.79	<0.0002	<0.030	3.01
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28D	**7/26/07**	<0.015	<0.010	0.058	<0.003	0.695	<0.005	27.9	<0.005	<0.020	<0.010	0.656	<0.003	<0.030	9.47	0.15	<0.0002	<0.030	2.35
W-28D	**1/30/08**	<0.015	<0.010	0.054	<0.003	0.5	<0.005	25.5	<0.005	<0.020	<0.010	0.485	<0.003	<0.030	8.77	0.244	<0.0002	<0.030	1.60
W-28D	**7/30/08**	<0.030	<0.010	0.0594	<0.003	<0.50	<0.005	26.6	<0.005	<0.020	<0.010	0.463	<0.003	<0.030	8.92	0.145	<0.0002	0.0315	2.05
W-28D	**1/21/09**	<0.030	<0.010	0.0551	<0.003	<0.500	<0.005	25.3	<0.010	<0.020	<0.010	0.248	<0.003	<0.030	8.25	0.107	<0.0002	<0.030	1.88

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16D	**7/26/07**	0.0093	<0.010	4.04	<0.010	0.0593
W-16D	**1/30/08**	<0.005	<0.010	3.75	<0.010	0.0732
W-16D	**7/30/08**	<0.005	<0.010	3.32	<0.010	0.051
W-16D	**1/21/09**	<0.005	<0.010	18.1	<0.010	0.0178
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17S	**7/26/07**	<0.005	<0.010	30	<0.010	0.0289
W-17S	**1/30/08**	<0.005	<0.010	11.4	<0.010	0.0164
W-17S	**7/30/08**	<0.005	0.0126	17	<0.010	0.0247
W-17S	**1/21/09**	<0.005	<0.010	14.8	<0.010	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17D	**7/26/07**	<0.005	<0.010	23.6	<0.010	0.0336
W-17D	**1/30/08**	<0.005	<0.010	24.7	<0.010	0.017
W-17D	**7/30/08**	<0.005	<0.010	28	<0.010	0.0239
W-17D	**1/21/09**	<0.005	<0.010	22.6	<0.010	0.0111
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27S	**7/26/07**					
W-27S	**1/30/08**	<0.005	<0.010	42.7	<0.010	0.0552
W-27S	**7/29/08**	<0.005	0.0130	50.2	<0.010	<0.010
W-27S	**1/21/09**	<0.005	<0.010	38	<0.010	0.057
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27D	**7/26/07**	<0.005	<0.010	48.5	<0.010	0.0659
W-27D	**1/30/08**	<0.005	<0.010	46.6	<0.010	0.0166
W-27D	**7/30/08**	<0.005	<0.010	47.1	<0.010	<0.010
W-27D	**1/21/09**	<0.030	<0.010	44.2	<0.030	0.0108
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28S	**7/26/07**	0.00572	<0.010	24.9	<0.010	0.041
W-28S	**1/30/08**	<0.005	<0.010	21.8	<0.010	0.012
W-28S	**7/29/08**	<0.005	0.0128	22.9	<0.010	0.0209
W-28S	**1/21/09**	<0.005	<0.010	25.2	<0.010	0.0149
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28D	**7/26/07**	<0.005	<0.010	35.7	<0.010	0.0257
W-28D	**1/30/08**	<0.005	<0.010	36.1	<0.010	0.01
W-28D	**7/30/08**	<0.005	<0.010	35.8	<0.010	0.0185
W-28D	**1/21/09**	<0.005	<0.010	33.3	<0.010	0.013

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-05D	**7/26/07**	18.3	21.5	8.20	110	271	890	130	4.06	20	<0.010	124	<0.010	0.2	<0.50	<0.005	145	4
W-05D	**1/30/08**	18.6	4.2	8.44	113	855	92.5	120	17	<25	<0.010	127	<0.010	<0.20	<0.50	<0.005	122	<3.0
W-05D	**7/31/08**	20.55	18.1	8.22	83	154	142	120	2.93	16	<0.010	130	<0.010	<0.20	<0.50	<0.005	160	<3.0
W-05D	**1/21/09**	18.21	3.3	8.40	-107	117	30.1	100	3.24	8	<0.010	122	<0.010	0.212	<0.500	<0.005	120	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-06DA	**7/26/07**	17.81	17.4	7.86	80	447	34	140	2.27	21	<0.010	194	<0.010	<0.20	<0.50	<0.005	1280	<3.0
W-06DA	**1/30/08**	18.20	9.6	8.33	175	724	62.4	160	9.6	18	<0.010	210	<0.010	<0.20	<0.50	0.04	255	<3.0
W-06DA	**7/31/08**	20.50	16.5	8.36	101	378	86.8	190	17.8	15	<0.010	211	<0.010	<0.20	<0.50	<0.005	308	<3.0
W-06DA	**1/21/09**	17.63	3.4	9.01	-20	93.2	12.4	140	3.66	8	<0.010	193	<0.010	<0.20	<0.50	<0.005	372	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-08D*	**7/26/07**	82.58	16.6	7.85	-104	250	24.3	440	24.90	<125	<0.010	327	<0.010	0.262	<0.500	<0.005	510	<3.0
W-08D*	**1/30/08**	73.25	9.5	8.21	211	270	28	180	3.75	12	<0.010	210	<0.010	<0.20	<0.500	<0.005	250	<3.0
W-08D*	**7/30/08**	82.28	17.4	8.14	-67	457	102	190	4.32	38	<0.010	245	<0.010	0.278	<0.500	<0.005	372	<3.0
W-08D*	**1/21/09**	76.81	8.9	8.07	-60	410	88.3	180	3.34	105	<0.010	234	<0.010	0.441	<0.500	<0.005	282	<3.0

*** BACKGROUND WELL**

TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-09D	**7/26/07**	42.5	16.5	7.76	-45	894	13.4	150	142	50	<0.010	158	<0.010	<0.20	<0.50	<0.005	532	<3.0
W-09D	**1/30/08**	43.05	14.1	8.08	-4	1034	38.4	140	145	26	<0.010	166	<0.010	<0.20	<0.50	<0.005	490	<3.0
W-09D	**7/30/08**	44.61	-	8.56	91	360	29.5	140	128	9	<0.010	166	<0.010	0.224	<0.50	<0.005	468	<3.0
W-09D	**1/21/09**	42.4	8	7.86	-91	495	19.2	130	135	28	<0.010	162	<0.010	0.212	<0.500	<0.005	444	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-10D	**7/26/07**	59.6	18	6.73	-42	477	37.5	440	25.4	275	<0.010	657	<0.010	0.257	<0.50	<0.005	353	<3.0
W-10D	**1/30/08**	58.37	10	7.59	124	659	17.7	580	20.6	12	<0.010	742	<0.010	<0.200	<0.50	<0.005	837	68
W-10D	**7/30/08**	59.98	17.1	7.85	-49	1053	42.5	550	17.5	17	<0.010	831	<0.010	<0.200	<0.50	<0.005	924	<3.0
W-10D	**1/21/09**	57.69	8.8	7.73	-42	940	17.6	550	17.8	10	<0.010	272	<0.010	<0.200	<0.50	<0.005	757	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-05D	**7/26/07**	1.25	<0.015	<0.010	0.065	<0.003	<0.500	<0.005	33.6	0.0062	<0.020	<0.010	2.57	<0.003	<0.030	9.87	0.114	<0.0002	<0.030
W-05D	**1/30/08**	0.626	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	34.2	<0.005	<0.020	<0.010	1.11	<0.003	<0.030	10	0.076	<0.0002	<0.030
W-05D	**7/31/08**	0.211	<0.030	<0.010	0.051	<0.003	<0.500	<0.005	36.2	<0.005	<0.020	<0.010	0.433	<0.003	<0.030	9.63	0.0811	<0.0002	<0.030
W-05D	**1/21/09**	0.116	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	34.1	<0.005	<0.020	<0.010	0.26	<0.003	<0.030	8.99	0.0517	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-06DA	**7/26/07**	0.49	<0.015	<0.010	0.0687	<0.003	<0.500	<0.005	61.2	<0.005	<0.020	<0.010	1.01	<0.003	<0.030	9.91	0.206	<0.0002	<0.030
W-06DA	**1/30/08**	0.513	<0.015	<0.010	0.0735	<0.003	<0.500	<0.005	65.6	<0.005	<0.020	<0.010	1.02	<0.003	<0.030	11.2	0.116	<0.0002	<0.030
W-06DA	**7/31/08**	0.153	<0.030	<0.010	0.0933	<0.003	<0.500	<0.005	67.2	<0.005	<0.020	0.0147	0.676	0.0048	<0.030	10.6	0.158	<0.0002	<0.030
W-06DA	**1/21/09**	<0.100	<0.030	<0.010	0.0679	<0.003	<0.500	<0.005	62	<0.005	<0.020	<0.010	0.36	<0.003	<0.030	9.19	0.0357	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-08D*	**7/26/07**	1.71	<0.015	<0.010	0.0738	<0.003	<0.500	<0.005	94.9	<0.005	<0.020	0.016	2.57	<0.003	<0.030	22	0.671	<0.0002	<0.030
W-08D*	**1/30/08**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	63.5	<0.005	<0.020	0.014	0.338	<0.030	<0.030	12.6	0.0283	<0.0002	<0.030
W-08D*	**7/30/08**	2.94	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	74.7	0.0065	<0.020	0.0156	3.57	<0.003	<0.010	14.1	0.0916	<0.0002	<0.030
W-08D*	**1/21/09**	4.56	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	69.5	0.0118	<0.020	0.0153	5.73	<0.003	<0.030	14.8	0.0892	<0.0002	<0.030

*** BACKGROUND WELL**

TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-09D	**7/26/07**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	31.6	<0.005	<0.020	<0.010	0.86	<0.003	<0.030	19.2	0.49	<0.0002	<0.030
W-09D	**1/30/08**	<0.100	<0.015	<0.010	0.0536	<0.003	<0.500	<0.005	33.1	0.00956	<0.020	<0.010	0.65	<0.003	<0.030	20.3	0.399	<0.0002	<0.030
W-09D	**7/30/08**	<0.100	<0.030	<0.010	0.055	<0.003	<0.500	<0.005	33.9	<0.005	<0.020	<0.010	0.419	<0.003	<0.030	19.7	0.226	<0.0002	<0.030
W-09D	**1/21/09**	<0.100	<0.030	<0.010	0.0522	<0.003	<0.500	<0.005	33.2	<0.005	<0.020	<0.010	0.573	<0.003	<0.030	19.4	0.497	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-10D	**7/26/07**	0.772	<0.015	0.027	0.106	<0.003	0.746	<0.005	184	0.016	<0.020	0.0163	4.65	0.0031	<0.030	48.1	1.59	<0.0002	<0.030
W-10D	**1/30/08**	0.315	<0.015	<0.010	0.094	<0.003	<0.500	<0.005	222	<0.005	<0.020	<0.010	1.96	<0.003	<0.030	45.7	2.08	<0.0002	<0.030
W-10D	**7/30/08**	0.568	<0.030	<0.010	0.115	<0.003	<0.500	<0.005	258	<0.005	<0.020	0.0123	2.24	<0.003	<0.030	45.4	2.79	<0.0002	<0.030
W-10D	**1/21/09**	0.855	<0.030	<0.010	0.148	<0.003	<0.500	<0.005	80	0.0163	<0.020	<0.010	7.85	<0.003	<0.030	17.5	1.00	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-05D	**7/26/07**	3.56	<0.005	<0.010	6.98	<0.010	0.0339
W-05D	**1/30/08**	1.78	<0.005	<0.010	5.75	<0.010	0.0112
W-05D	**7/31/08**	1.97	<0.005	<0.010	5.68	<0.010	0.011
W-05D	**1/21/09**	3.52	<0.005	<0.010	6.02	<0.010	0.0137
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-06DA	**7/26/07**	2.21	0.007	<0.010	9.95	<0.010	0.0266
W-06DA	**1/30/08**	1.73	<0.005	<0.010	10.4	<0.010	0.0223
W-06DA	**7/31/08**	2.12	<0.005	<0.010	10.8	<0.010	0.126
W-06DA	**1/21/09**	1.36	<0.005	<0.010	8.91	<0.010	0.0216
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-08D*	**7/26/07**	2.27	0.0069	<0.010	14.9	<0.010	0.081
W-08D*	**1/30/08**	<1.0	<0.005	<0.010	5.96	<0.010	0.0392
W-08D*	**7/30/08**	1.36	<0.005	<0.010	5.28	<0.010	0.0147
W-08D*	**1/21/09**	1.94	<0.005	<0.010	5.28	<0.010	0.0255

*** BACKGROUND WELL**

TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-09D	**7/26/07**	3.36	<0.005	<0.010	117	<0.010	0.0189
W-09D	**1/30/08**	3.11	<0.005	<0.010	118	<0.010	0.0181
W-09D	**7/30/08**	3.07	<0.005	<0.010	123	<0.010	<0.010
W-09D	**1/21/09**	3.19	<0.005	<0.010	11.7	<0.010	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-10D	**7/26/07**	5.72	<0.017	<0.010	24.2	<0.010	0.053
W-10D	**1/30/08**	2.86	<0.005	<0.010	17.1	<0.010	0.0206
W-10D	**7/30/08**	3.1	<0.005	0.0109	22.7	<0.010	0.0418
W-10D	**1/21/09**	1.55	<0.005	<0.010	2.97	<0.010	0.0668

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-30	**7/26/07**	49.74	15.3	7.01	105	1639	17.8	400	176	60	<0.010	875	<0.010	<0.20	<0.50	0.006	1290	<3.0
W-30	**1/30/08**	49.45	10.2	7.68	81	259	24.4	400	153	<5.0	<0.010	854	<0.010	<0.20	<0.50	<0.005	1140	35.7
W-30	**7/31/08**	51.82	15.1	8.56	138	633	74.2	460	152	<5.0	<0.010	957	<0.010	0.236	<0.500	<0.005	1060	<3.0
W-30	**1/21/09**	48.85	2.6	8.29	37	459	34.9	450	137	12	<0.010	835	<0.010	<0.20	<0.500	<0.005	1040	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
SS882	**7/26/07**	37.57	17.5	7.06	-61	344	18.5	200	3.8	950	<0.010	347	<0.040	<0.20	<0.50	<0.005	265	<3.0
SS882	**1/30/08**	32.77	9.7	7.89	187	596	13.5	330	30.3	12	<0.010	258	<0.010	<0.20	<0.50	<0.005	355	66.1
SS882	**7/30/08**	36.4	18.7	8.10	-64	553	18.3	280	5.94	50	<0.010	374	<0.010	<0.20	<0.50	<0.005	476	<3.0
SS882	**1/21/09**	32.5	10.3	7.89	-50	482	19.4	220	4.52	40	<0.010	251	<0.010	<0.20	<0.50	<0.005	335	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-30	**7/26/07**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	191	0.0251	<0.020	0.0254	0.8	<0.003	<0.030	96.8	0.0443	<0.0002	0.033
W-30	**1/30/08**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	186	<0.005	<0.020	<0.010	0.0998	<0.003	<0.030	94.4	<0.010	<0.0002	<0.030
W-30	**7/31/08**	0.159	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	214	0.007	<0.020	0.021	2.04	<0.003	<0.030	102	0.05	<0.0002	<0.030
W-30	**1/21/09**	0.244	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	187	0.0138	<0.020	<0.010	1.21	<0.003	<0.030	89.4	0.0333	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
SS882	**7/26/07**	0.365	<0.015	0.016	0.1	<0.003	<0.500	<0.005	96	<0.005	<0.020	0.0142	4.49	<0.003	<0.030	26.1	1.92	<0.0002	<0.030
SS882	**1/30/08**	0.145	<0.015	<0.010	0.06	<0.003	<0.500	<0.005	72.8	<0.005	<0.020	<0.010	0.628	<0.003	<0.030	18.5	0.804	<0.0002	<0.030
SS882	**7/30/08**	<0.100	<0.030	<0.010	0.107	<0.003	<0.500	<0.005	105	<0.005	<0.020	<0.010	1.51	<0.003	<0.030	27.2	0.586	<0.0002	<0.030
SS882	**1/21/09**	0.285	<0.030	<0.010	0.069	<0.003	<0.500	<0.005	71.1	<0.010	<0.020	<0.010	1.27	<0.003	<0.030	17.8	0.198	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-30	**7/26/07**	6.28	0.0122	<0.010	67.8	<0.010	0.0337
W-30	**1/30/08**	7.09	<0.005	<0.010	66.5	<0.010	0.0166
W-30	**7/31/08**	5.64	<0.005	<0.010	70.7	<0.010	0.0407
W-30	**1/21/09**	5.26	<0.005	<0.010	59.5	<0.010	0.0235
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
SS882	**7/26/07**	1.56	<0.005	<0.010	16.8	<0.010	0.0449
SS882	**1/30/08**	2.23	<0.005	<0.010	16.8	<0.010	<0.010
SS882	**7/30/08**	2.3	<0.005	<0.010	16.7	<0.010	<0.010
SS882	**1/21/09**	2.13	<0.005	<0.010	15.7	<0.010	<0.010

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Cr +6	Nitrate
NYS LIMIT:				**6.5-8.5**			**5.0**				**250.0**		**15.0**	**0.2**		**0.05**	**10.0**
CAS NO.																18540-29-9	
TRIG. VALUE:								**258**			**14.4**		**40**		**354**	**0.05**	**0.48**
CHURCH	**4/22/08**	-	14.2	7.82	-46	309	0.33	150	5	<0.20	5.38	<20.0	8	<0.010	167	<0.010	<0.2
CHURCH	**7/29/08**	-	18.2	8.69	42	231	9.34	150	<4.0	<2.0	5.61	<20.0	15	<0.010	139	<0.010	0.208
CHURCH	**11/6/08**	-	13.6	8.17	69.2	347	1.06	150	<4.0	<0.20	9.07	<20.0	<5.0	<0.010	171	<0.010	<0.20
CHURCH	**1/20/09**	-	10.3	9.47	-62	279	7.62	140	<4.0	<0.20	5.8	<20.0	<5.0	<0.010	181	<0.010	<0.20

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		NH4	TKN	Phenol	TDS	TOC	Sulfate	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe
NYS LIMIT:		**2.0**		**0.001**	**500**				**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**
CAS NO.		7664-41-7		108-95-2									7440-42-8						
TRIG. VALUE:		**0.6**		**0.014**	**488**	**30**		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**
CHURCH	**4/22/08**	<0.50	<0.500	<0.005	208	<3.0	40	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	47.1	<0.005	<0.020	0.0148	<0.060
CHURCH	**7/29/08**	<0.50	<0.500	<0.005	272	<3.0	42.8	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	39.2	<0.005	<0.020	0.01	<0.060
CHURCH	**11/6/08**	<0.50	<0.500	<0.005	256	<3.0	37.8	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	48.8	<0.005	<0.020	0.0123	<0.060
CHURCH	**1/20/09**	4.39	<0.500	<0.005	260	<3.0	40.9	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	51	<0.005	<0.020	0.033	0.172

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		Pb	V	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.025**			**0.3**	**0.0007**	**0.1**		**0.01**	**0.05**	**20**		
CAS NO.													
TRIG. VALUE:		**0.025**			**0.3**	**0.002**			**0.0014**	**0.05**	**20**		**0.3**
CHURCH	**4/22/08**	<0.003	<0.030	12.1	<0.010	<0.0002	<0.030	<1.0	<0.005	<0.010	12.7	<0.010	0.0126
CHURCH	**7/29/08**	0.003	<0.030	9.85	<0.010	<0.0002	<0.030	<1.0	<0.005	<0.010	10	<0.010	0.026
CHURCH	**11/6/08**	<0.003	<0.030	11.8	0.311	<0.0002	<0.030	<1.0	<0.005	<0.010	12	<0.010	0.0129
CHURCH	**1/20/09**	<0.003	<0.030	13.1	0.0117	<0.0002	<0.030	<1.0	<0.005	<0.010	14	<0.010	0.0337

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2009
(all units are in mg/l)

		Dis O2	SC	eH	pH	Temp	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols
CLASS C STD:		**<4**			**6.5-8.5**						**9**		**0.011**		**2**	
WALL-UP	**7/24/07**	-	1050	115	7.57	24.2	66.9	120	52.3	100	<0.010	231	<0.010	3.99	<0.500	<0.005
WALL-UP	**1/28/08**	-	1589	125	8.60	1.1	20	110	66.9	29	<0.010	143	<0.010	0.998	<0.500	<0.005
WALL-UP	**7/28/08**	-	553	65	8.48	25.8	74.1	120	62.8	42	<0.010	144	<0.010	0.667	<0.500	<0.005
WALL-UP	**1/19/09**	-	312	-17	8.60	0.2	14.6	120	74.2	25	<0.010	182	<0.010	1.04	<0.500	<0.005
WALL-DN	**7/24/07**	-	557	155	7.73	21.1	79.4	110	50.5	130	<0.010	230	<0.010	4.14	<0.500	<0.005
WALL-DN	**1/28/08**	-	156	101	8.94	1.8	17	120	66.7	29	<0.010	144	<0.010	1.00	<0.500	<0.005
WALL-DN	**7/28/08**	-	501	73	8.45	26.1	56.2	130	64.3	46	<0.010	142	<0.010	0.728	<0.500	<0.005
WALL-DN	**1/19/09**	-	294	-25	8.18	0.9	15.6	120	70.6	24	<0.010	183	<0.010	1.030	<0.500	<0.005
Basin A	**7/24/07**	9.33	156	85	9.34	28.4	33	57	<1.00	130	<0.010	68.7	<0.010	<0.20	<0.50	<0.005
Basin A	**1/28/08**	Frozen														
Basin A	**7/29/08**	6.47	183	13	8.37	25.1	23.2	120	5.81	29	<0.010	49.4	<0.010	<0.20	<0.50	<0.005
Basin A	**1/20/09**	Frozen														
Basin B	**7/24/07**	9.22	147	110	8.04	29.3	112	42	<1.00	110	<0.010	72.3	<0.010	<0.20	<0.500	<0.005
Basin B	**1/28/08**	Frozen														
Basin B	**7/29/08**	Dry														
Basin B	**1/20/09**	Dry														
Basin D	**7/24/07**	Dry														
Basin D	**1/28/08**	Dry														
Basin D	**7/29/08**	Dry														
Basin D	**1/20/09**	Dry														

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2009
(all units are in mg/l)

		DS	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
CLASS C STD:		**500**		**0.1**				**1.1**	**10**				**0.005**		**0.3**		**0.014**	
WALL-UP	**7/24/07**	420	19.1	1.24	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	64.5	<0.005	<0.020	0.0154	2.55	<0.003	<0.030	16.9
WALL-UP	**1/28/08**	237	31.6	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	36.3	<0.005	<0.020	<0.010	0.327	<0.003	<0.030	12.7
WALL-UP	**7/28/08**	324	6.1	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	37.3	<0.005	<0.020	<0.010	<0.060	<0.003	<0.030	12.5
WALL-UP	**1/19/09**	300	3.6	0.151	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	45.5	<0.010	<0.020	<0.010	0.386	<0.003	<0.030	15.3
WALL-DN	**7/24/07**	352	18.3	1.64	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	64	<0.005	<0.020	0.0147	3.13	<0.003	<0.030	17.1
WALL-DN	**1/28/08**	230	<3.0	0.108	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	36.6	<0.005	<0.020	0.0147	0.482	<0.003	<0.030	12.7
WALL-DN	**7/28/08**	344	6.8	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	37	<0.005	<0.020	0.011	0.0854	<0.003	<0.030	12.1
WALL-DN	**1/19/09**	308	4.6	0.141	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	47.8	<0.005	<0.020	0.0283	0.394	<0.003	<0.030	15.4
Basin A	**7/24/07**	100	10.6	0.278	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	18.6	<0.005	<0.020	<0.010	0.624	<0.003	<0.030	5.39
Basin A	**1/28/08**																	
Basin A	**7/29/08**	132	6.8	<0.10	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	12.9	<0.005	<0.020	<0.010	<0.060	<0.003	<0.030	4.17
Basin A	**1/20/09**																	
Basin B	**7/24/07**	97	6.0	1.94	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	24.4	<0.005	<0.020	0.012	3.63	0.0038	<0.030	2.73
Basin B	**1/28/08**																	
Basin B	**7/29/08**																	
Basin B	**1/20/09**																	
Basin D	**7/24/07**																	
Basin D	**1/28/08**																	
Basin D	**7/29/08**																	
Basin D	**1/20/09**																	

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2009
(all units are in mg/l)

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
CLASS C STD:									**0.008**	
WALL-UP	**7/24/07**	0.319	<0.0002	<0.030	5.35	0.0157	<0.010	26.3	<0.010	0.201
WALL-UP	**1/28/08**	0.0713	<0.0002	<0.030	1.69	<0.005	<0.010	25.2	<0.010	0.0667
WALL-UP	**7/28/08**	<0.010	<0.0002	<0.030	2.57	<0.005	<0.010	27	<0.010	0.0381
WALL-UP	**1/19/09**	0.0734	<0.0002	<0.030	1.77	<0.005	<0.010	36	<0.010	0.0512
WALL-DN	**7/24/07**	0.356	<0.0002	<0.030	5.18	0.0157	<0.010	26.4	<0.010	0.39
WALL-DN	**1/28/08**	0.081	<0.0002	<0.030	1.5	<0.005	<0.010	26.1	<0.010	0.109
WALL-DN	**7/28/08**	<0.010	<0.0002	<0.030	3.5	<0.005	<0.010	27.2	<0.010	0.622
WALL-DN	**1/19/09**	0.0799	<0.0002	<0.030	2.37	<0.005	<0.010	36.8	<0.010	0.0661
Basin A	**7/24/07**	0.179	<0.0002	<0.030	1.33	0.005	<0.010	1.68	<0.010	0.0254
Basin A	**1/28/08**									
Basin A	**7/29/08**	<0.010	<0.0002	<0.030	<1.0	<0.010	<0.010	1.35	<0.010	0.0199
Basin A	**1/20/09**									
Basin B	**7/24/07**	0.119	<0.0002	<0.030	3.26	0.01	<0.010	<1.0	<0.010	0.0798
Basin B	**1/28/08**									
Basin B	**7/29/08**									
Basin B	**1/20/09**									
Basin D	**7/24/07**									
Basin D	**1/28/08**									
Basin D	**7/29/08**									
Basin D	**1/20/09**									

TABLE 3-2
AL TURI SANITARY LANDFILL
SEDIMENT / FLOC MONITORING ANALYTICAL RESULTS
2008
(all units are in mg/kg)

		% Moisture	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
Sed UP	**7/24/07**	18.2	12480	9010	<3.67	3.27	56.3	3.94	160	1.75	21700	33.6	14.7	98.7	24400	206	14.6	7070
Sed UP	**1/28/08**	4.78	2760	5250	<3.15	<2.10	21.7	0.971	<105	<1.05	9250	12.2	6.14	22.9	12800	30.4	8.47	7360
Sed UP	**7/27/08**	17.6	3170	9670	<3.64	<2.43	107	32.2	366	2	8250	186	45.7	543	47400	572	12	7650
Sed UP	**1/19/09**	9.03	16100	5160	<3.30	<2.20	29.1	<0.665	<110	<1.10	10700	7.84	5.51	9.33	12500	8.89	8.44	7090
Sed DN	**7/24/07**	15	7439	6110	<3.53	<2.35	24.6	<0.706	<118	<1.18	9760	9.33	6.13	13.3	14100	7.13	9.22	7670
Sed DN	**1/28/08**	24.9	62800	6800	<4.00	3.23	60	<0.799	<133	<1.33	15300	11.9	7.88	33.8	15500	20.6	11.8	7420
Sed DN	**7/27/08**	26.9	9370	6660	<4.01	<2.74	31.4	<0.821	<137	<1.37	3960	9.55	5.61	13.2	14700	10.7	9.32	5120
Sed DN	**1/19/09**	69.6	401000	4130	<9.88	8.11	99.8	<1.98	<329	<3.29	41200	<6.58	<13.2	30.3	17200	8.98	<19.8	4770

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
Sed UP	**7/24/07**	646	<0.122	58.7	882	<1.22	<2.45	258	<2.45	402
Sed UP	**1/28/08**	268	<0.105	18.3	527	<1.05	<2.10	<210	<2.10	122
Sed UP	**7/27/08**	817	<0.060	253	695	<1.21	<2.43	290	<2.43	2240
Sed UP	**1/19/09**	333	<0.055	12	423	<1.10	<2.20	<220	<2.20	57.1
Sed DN	**7/24/07**	290	<0.118	16.2	602	<1.18	<2.35	<235	<2.35	83.6
Sed DN	**1/28/08**	678	<0.133	17.8	543	<1.33	<2.66	4850	<2.66	103
Sed DN	**7/27/08**	325	<0.068	13.7	647	<1.37	<2.74	<274	<2.74	54.7
Sed DN	**1/19/09**	1090	<0.165	<19.8	<658	<3.29	<6.58	<658	<6.58	78.0

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2009
(all units are in mg/l)

		SC	eH	pH	Temp	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Nitrate	NH4	TKN
LCH-11P	**7/24/07**	2160	-30	6.93	22.7	67.9	1800	29	80	8510	194	150	<0.010	4140	0.409	305	26
LCH-11P	**1/28/08**	2100	-17	6.98	14.7	146	1700	<8.0	<200	605	268	135	<0.010	3150	0.381	215	200
LCH-11P	**7/29/08**	538	-65	7.49	26.5	207	2000	15	<200	8940	298	110	<0.0001	4500	0.826	164	167
LCH-11P	**1/19/09**	2120	-49	7.95	6.7	45.3	1700	70	<2.0	13.7	154	40	<0.010	123	<0.20	502	565
LCH-11S	**7/24/07**	381	120	8.23	21.2	6.85	260	<4.0	<0.20	52.1	<20.0	10	<0.010	310	0.973	<0.500	0.924
LCH-11S	**1/28/08**	206	5	8.48	10.2	10.1	220	<4.0	<0.20	39.8	<20.0	20	<0.010	265	0.919	<0.500	0.596
LCH-11S	**7/29/08**	348	45	8.62	19.1	10.3	230	<4.0	<2.0	36.6	<20.0	22	<0.0001	273	0.718	<0.500	<0.500
LCH-11S	**1/19/09**	550	-34	7.88	9.1	4.76	170	<4.0	<0.20	43.3	<20.0	20	<0.010	289	0.875	<0.500	0.523
LCH-12P	**7/24/07**	1291	-80	7.23	27	17.1	3700	60	<200	3100	572	1000	<0.010	851	<0.20	802	8.16
LCH-12P	**1/28/08**	1602	20	7.55	16.2	157	3100	66	<200	2490	820	650	<0.010	775	2.54	591	418
LCH-12P	**7/29/08**	5000	70	7.76	28.1	>1,000	2200	32	<200	1470	635	725	<0.0001	763	16.9	490	466
LCH-12P	**1/19/09**	7960	-1	6.92	16.2	84.6	3100	78	<20.0	2150	784	700	<0.010	575	1.21	710	736
LCH-12S	**7/24/07**	1613	65	7.96	18.8	14.3	200	<4.0	<20.0	107	<20.0	19	<0.010	723	20.2	<0.500	<0.500
LCH-12S	**1/28/08**	2220	157	7.66	7	21.1	400	<4.0	<20.0	70.1	<20.0	21	<0.010	606	8.6	2.83	<0.50
LCH-12S	**7/29/08**	981	45	8.52	19.9	30.2	400	<4.0	<20.0	224	20	18	<0.010	642	28.2	0.545	0.779
LCH-12S	**1/19/09**	802	34	7.17	10.4	46.9	360	<4.0	<0.20	47.8	<20.0	10	<0.010	626	7.72	<0.500	<0.500

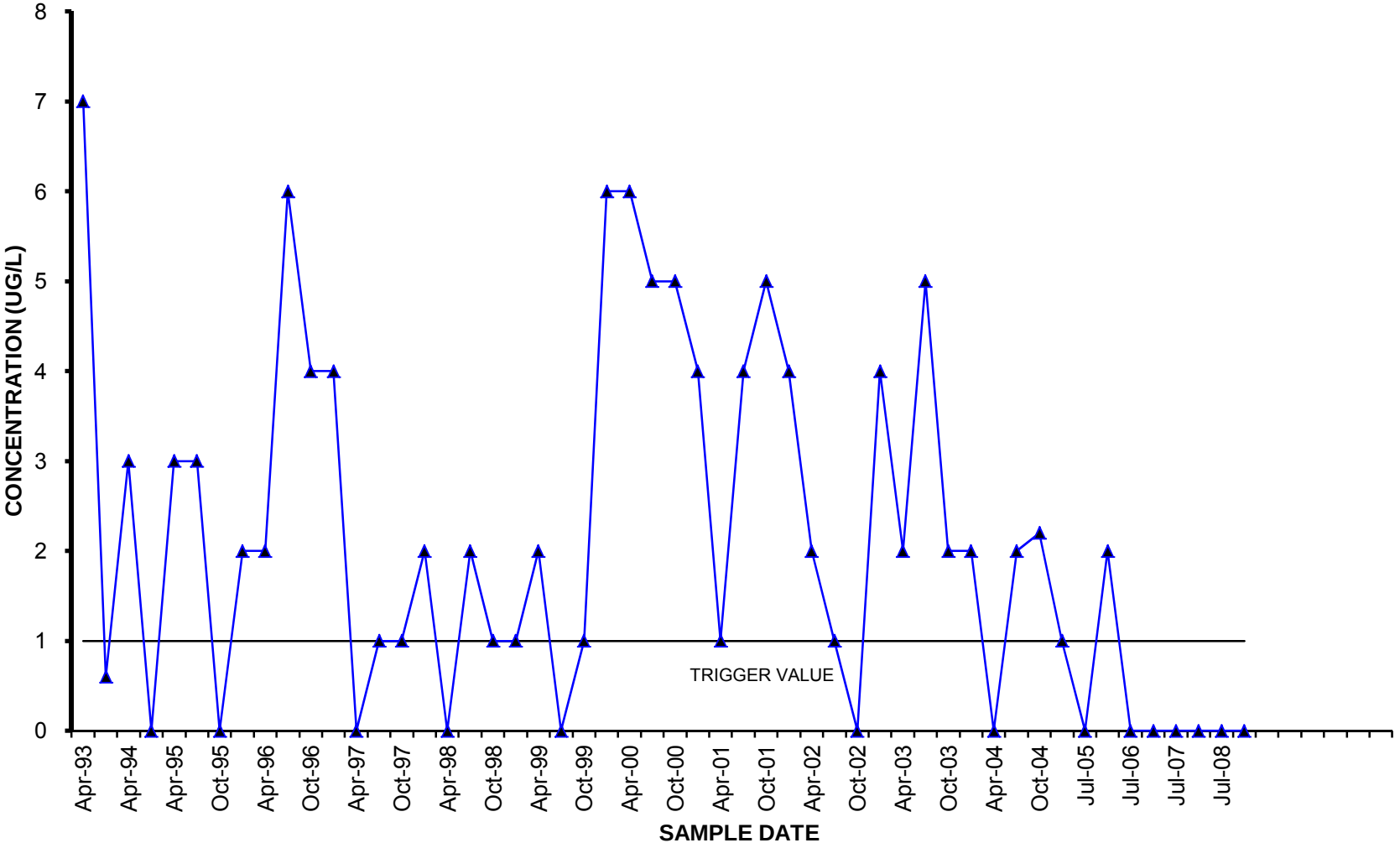
TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2009
(all units are in mg/l)

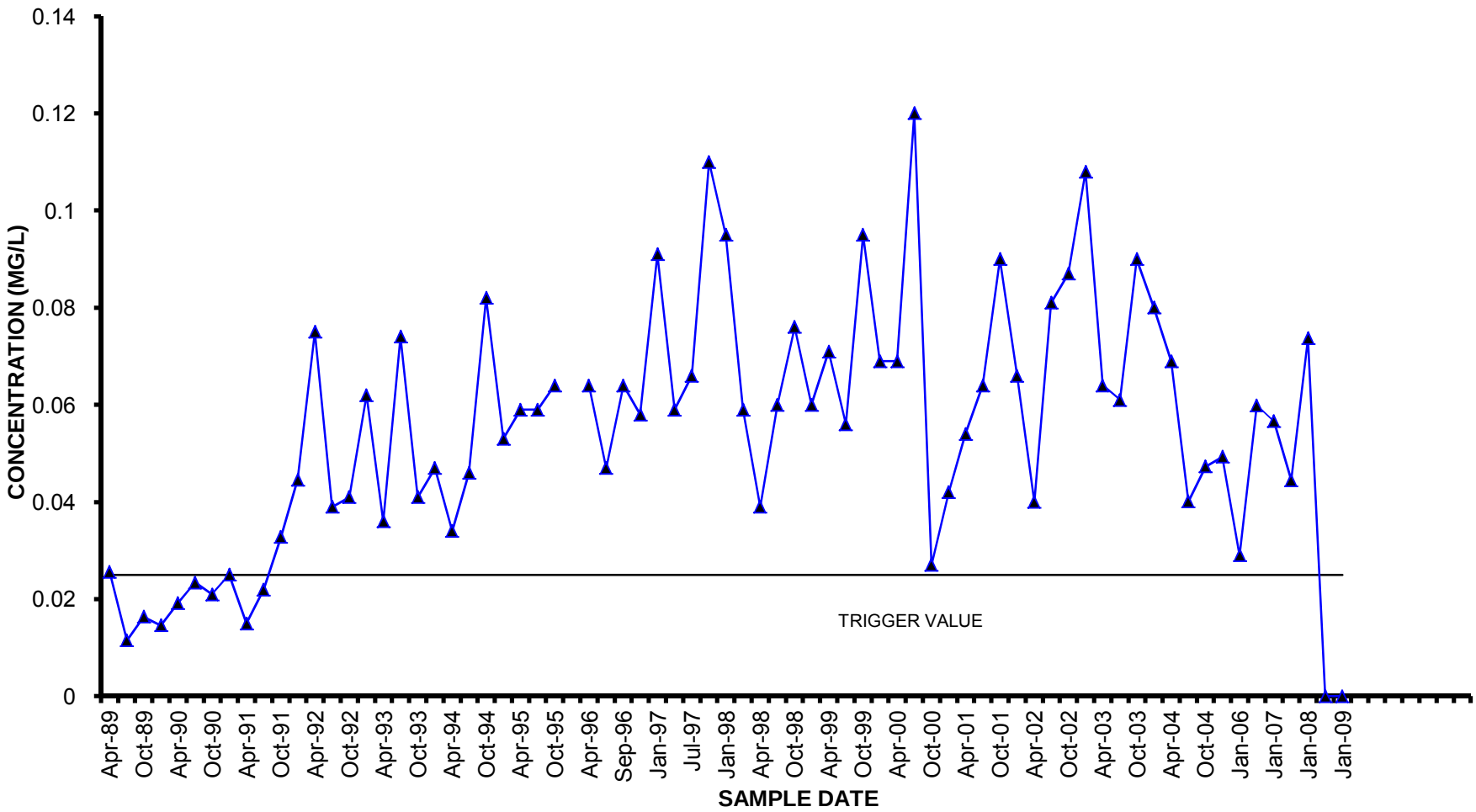
		Phenols	TDS	Sulfate	Sulfide	Cr +6	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
LCH-11P	**7/24/07**	<0.008	17300	3960	0.864	<0.020	59.3	0.192	0.0277	0.064	0.215	<0.003	20.9	<0.005	554	0.0112	<0.020
LCH-11P	**1/28/08**	0.009	13400	984	<0.100	<0.020	50.8	0.108	0.0161	<0.010	0.153	<0.003	17.4	<0.005	408	<0.005	<0.020
LCH-11P	**7/29/08**	<0.005	20600	3000	<0.100	<0.010	35.2	<0.100	<0.015	0.0173	0.154	<0.003	22.7	<0.005	549	<0.005	<0.020
LCH-11P	**1/19/09**	9.21	212	59.1	<0.100	<0.010	38	<0.100	<0.030	0.0838	<0.050	<0.003	<0.500	<0.005	38.7	<0.010	<0.020
LCH-11S	**7/24/07**	0.005	660	166	<0.100	<0.010	<3.0	<0.100	<0.015	<0.010	<0.050	<0.003	0.648	<0.005	93.1	<0.005	<0.020
LCH-11S	**1/28/08**	<0.005	495	163	<0.100	<0.010	51.1	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	77.4	<0.005	<0.020
LCH-11S	**7/29/08**	<0.050	632	195	<0.100	<0.010	3.4	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	78.7	<0.005	<0.020
LCH-11S	**1/19/09**	0.006	428	178	<0.100	<0.010	<3.0	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	82.8	<0.010	<0.020
LCH-12P	**7/24/07**	0.013	6900	125	<0.100	<0.020	205	0.337	0.0162	0.134	0.501	<0.003	8.21	<0.005	113	0.0418	0.0339
LCH-12P	**1/28/08**	0.015	5480	147	9.39	<0.10	282	2.76	0.0162	0.122	0.518	<0.003	6.27	<0.005	137	0.0318	0.0316
LCH-12P	**7/29/08**	<0.005	3560	577	<0.100	<0.010	157	0.64	<0.015	0.058	0.292	<0.003	3.77	<0.005	192	0.0165	0.0267
LCH-12P	**1/19/09**	0.353	4460	<5.00	<0.100	<0.040	203	0.647	<0.015	0.115	0.417	<0.003	6.06	<0.005	103	0.0273	0.0322
LCH-12S	**7/24/07**	<0.005	1150	635	<0.100	<0.010	4.5	<0.100	<0.015	<0.010	0.0534	<0.003	0.556	<0.005	226	<0.005	<0.020
LCH-12S	**1/28/08**	<0.005	920	316	<0.100	<0.010	96.4	0.117	<0.015	<0.010	0.0551	<0.003	<0.500	<0.005	185	<0.005	<0.020
LCH-12S	**7/29/08**	<0.005	1950	668	<0.100	<0.010	5.8	<0.100	<0.015	<0.010	0.0561	<0.003	<0.500	<0.005	199	<0.005	<0.020
LCH-12S	**1/19/09**	<0.005	768	216	<0.100	<0.010	3.1	0.37	<0.030	<0.010	0.0723	<0.003	<0.500	<0.005	196	<0.010	<0.020

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2009
(all units are in mg/l)

		Cu	Fe	K	Pb	V	Mg	Mn	Hg	Ni	Se	Ag	Na	Sn	Th	Zn
LCH-11P	**7/24/07**	0.0216	28.4	808	<0.003	<0.030	671	6.72	0.00028	0.0713	0.0319	<0.010	4930	<0.300	<0.010	0.229
LCH-11P	**1/28/08**	<0.010	24.2	23.4	<0.003	<0.030	517	5.59	0.00028	0.0461	<0.005	<0.010	138	<0.300	<0.010	0.543
LCH-11P	**7/29/08**	0.0109	9.16	719	<0.003	<0.030	761	6.29	<0.0002	0.0521	<0.005	<0.010	4490	<0.300	<0.010	0.0729
LCH-11P	**1/19/09**	<0.010	1.37	1.06	<0.003	<0.030	6.46	0.0574	<0.0002	<0.030	<0.005	<0.010	5.85	<0.030	<0.010	0.229
LCH-11S	**7/24/07**	0.0129	<0.060	11.5	<0.003	<0.030	18.9	0.0117	<0.0002	<0.030	0.0193	<0.010	42	<0.300	<0.010	0.287
LCH-11S	**1/28/08**	<0.010	0.0625	8.75	<0.003	<0.030	17.3	0.0533	<0.0002	<0.030	<0.005	<0.010	34	<0.300	<0.010	0.124
LCH-11S	**7/29/08**	<0.010	<0.060	10.9	<0.003	<0.030	18.6	0.083	0.307	<0.030	<0.005	<0.010	38	<0.300	<0.010	0.13
LCH-11S	**1/19/09**	<0.010	0.0974	9.87	<0.003	<0.030	19.9	0.106	<0.0002	<0.030	<0.005	<0.010	40.9	<0.300	<0.010	0.237
LCH-12P	**7/24/07**	0.0163	4.45	506	<0.003	0.0334	138	0.359	<0.0002	0.171	0.0314	<0.010	1870	<0.300	<0.010	0.136
LCH-12P	**1/28/08**	0.277	30.2	11.8	0.0033	0.0309	105	1.14	<0.0002	0.139	<0.005	<0.010	47.4	<0.300	<0.010	0.527
LCH-12P	**7/29/08**	0.031	1.82	207	<0.003	<0.030	68.8	2.48	0.212	0.103	<0.005	<0.010	755	<0.300	<0.010	0.131
LCH-12P	**1/19/09**	0.0163	3.64	312	<0.003	<0.030	76.9	0.332	<0.0002	0.162	<0.005	<0.010	1110	<0.300	<0.010	0.108
LCH-12S	**7/24/07**	0.0125	0.0988	17.8	<0.003	<0.030	38.7	0.0255	<0.0002	<0.030	0.0239	<0.010	85.1	<0.300	0.0117	0.146
LCH-12S	**1/28/08**	<0.010	0.307	11.1	<0.003	<0.030	35	0.232	<0.0002	<0.030	<0.005	<0.010	47.3	<0.300	<0.010	0.241
LCH-12S	**7/29/08**	0.01	0.153	18.2	<0.003	<0.030	35.2	0.247	<0.0002	<0.030	<0.005	<0.010	10.4	<0.300	<0.010	0.0674
LCH-12S	**1/19/09**	<0.0104	0.784	7.55	<0.003	<0.030	33.1	0.175	<0.0002	<0.030	<0.005	<0.010	39.1	<0.300	<0.010	0.248

W-1 Benzene


CONCENTRATION (UG/L)
0
1
2
3
4
5
6
7
8
TRIGGER VALUE
Apr-93
Apr-94
Apr-95
Oct-95
Apr-96
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
SAMPLE DATE


W-6S Arsenic
CONCENTRATION (MG/L)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Apr-89
Oct-89
Apr-90
Oct-90
Apr-91
Oct-91
Apr-92
Oct-92
Apr-93
Oct-93
Apr-94
Oct-94
Apr-95
Oct-95
Apr-96
Sep-96
Jan-97
Jul-97
Jan-98
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
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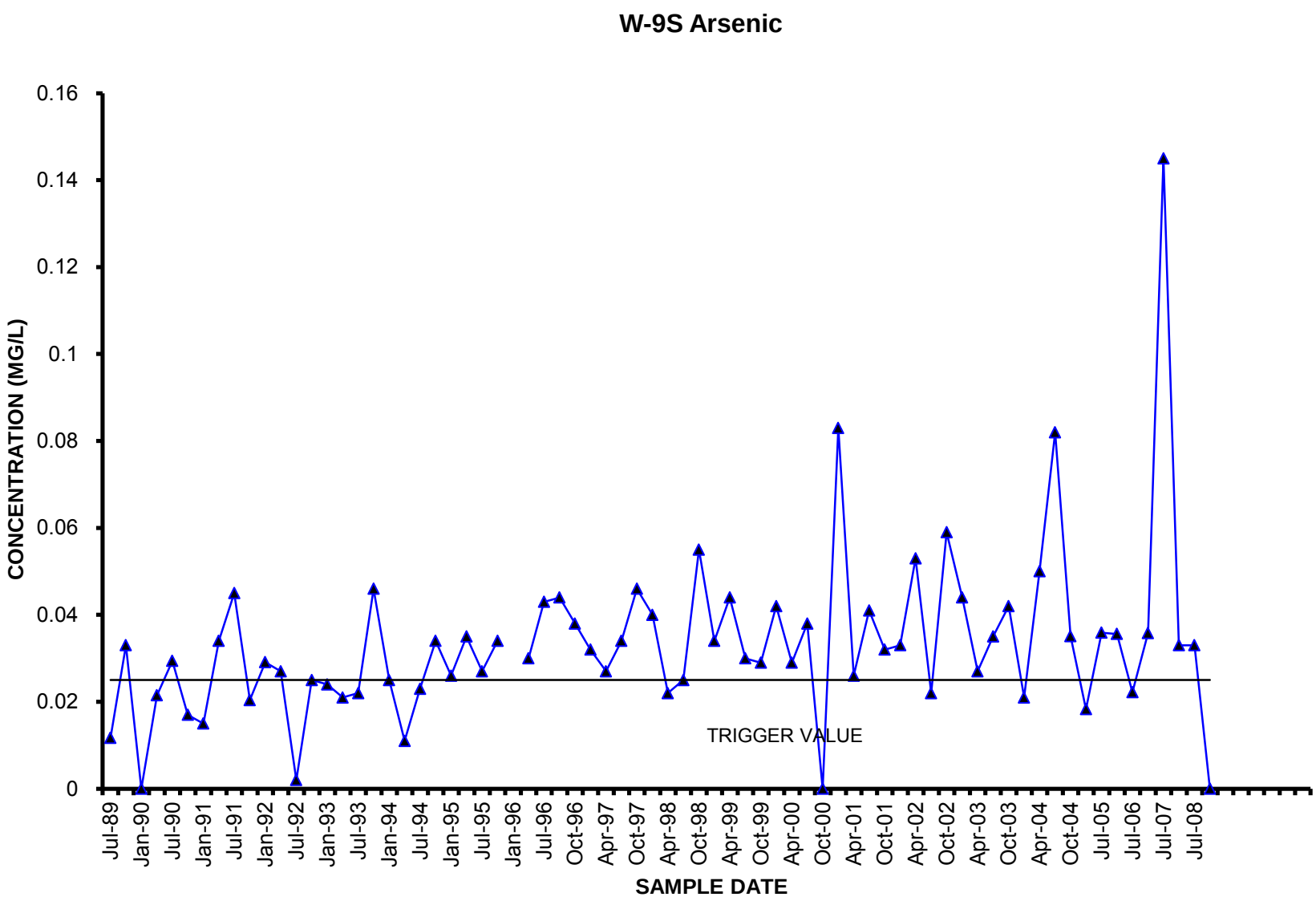
Apr-04
Oct-04
Jan-06
Jan-07
Jan-08
Jan-09
SAMPLE DATE


W-9S Arsenic
CONCENTRATION (MG/L)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Jul-89
Jan-90
Jul-90
Jan-91
Jul-91
Jan-92
Jul-92
Jan-93
Jul-93
Jan-94
Jul-94
Jan-95
Jul-95
Jan-96
Jul-96
Oct-96
Apr-97
Oct-97
Apr-98
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Apr-99
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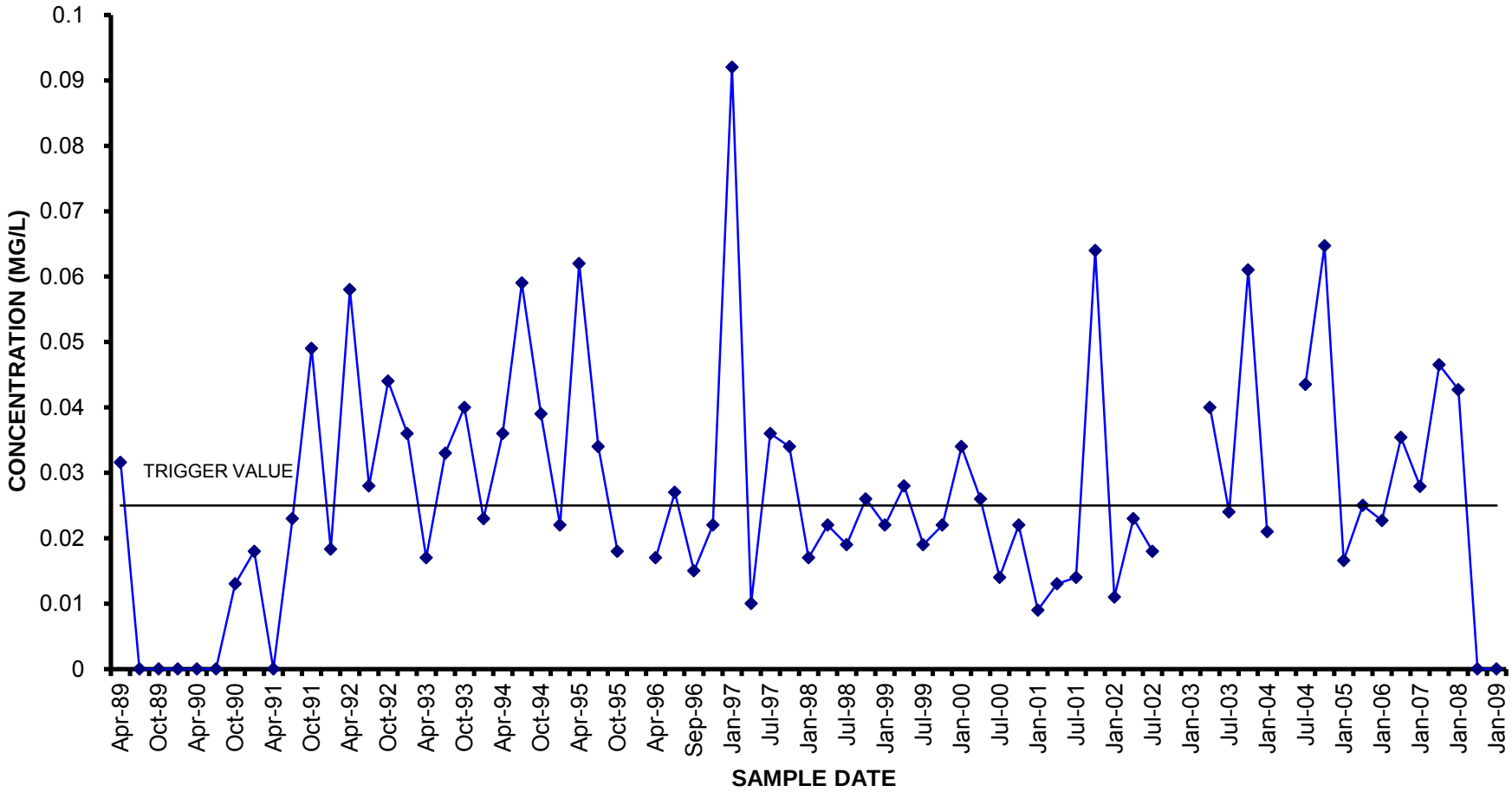
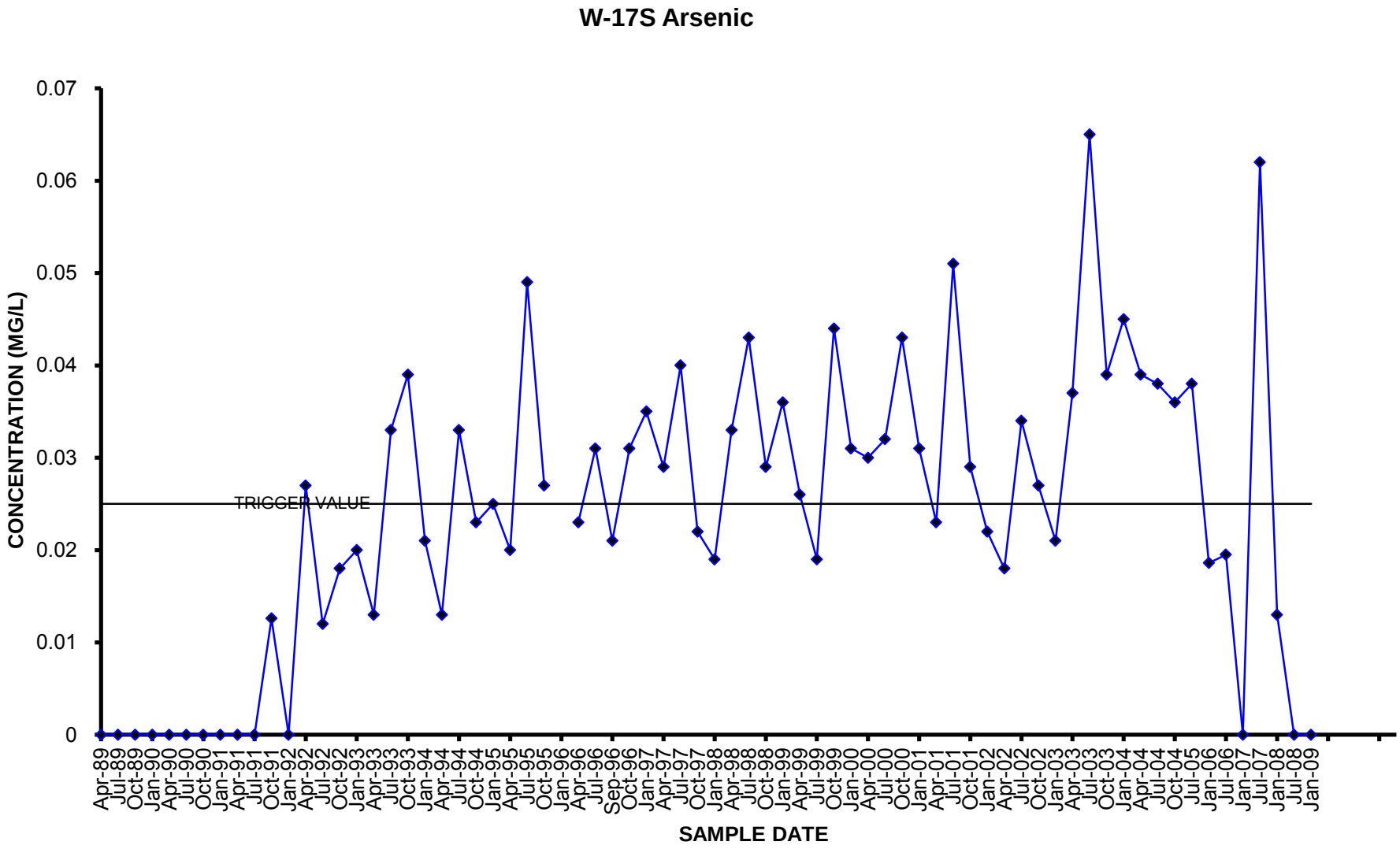
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
SAMPLE DATE

W-16D Arsenic




W-17S Arsenic
CONCENTRATION (MG/L)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
TRIGGER VALUE
Apr-89
Jul-89
Oct-89
Jan-90
Apr-90
Jul-90
Oct-90
Jan-91
Apr-91
Jul-91
Oct-91
Jan-92
Apr-92
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Jan-04
Apr-04
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Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
SAMPLE DATE

CLASS II SITE
SEMI-ANNUAL REPORT

JANUARY 2009
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – CLASS II SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

July 2009

Prepared by

Ground Water Investigations
65 Main Street
Pine Bush, New York 12566

Project 256-00-00

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Attachments

Drawing No. 1 - Well Location Plan	Pocket
Diskette - Laboratory Analytical Data	Pocket

1 INTRODUCTION

The Water Quality Management Program developed for the post-closure monitoring of the Al Turi Landfill – Class II site, located in Goshen, New York, includes the semi-annual groundwater sampling and analysis of select parameters from monitoring wells downgradient of the Class II landfill facility and the evaluation of the data generated by these samples. This program was developed to monitor historical constituents of concern within groundwater, and to identify any changes in the concentration of these constituents that may warrant further evaluation. The identification of conditions warranting further evaluation is based primarily on the comparison of detected concentrations with groundwater trigger levels (GWTLs). The Constituents of Concern and their GWTLs were presented to the Department in December 2001 in the Post-Closure Contingency Monitoring Plan prepared by the ENVIRON International Corporation of Princeton, New Jersey. The Constituents of Concern are listed on Table 1-1.

Semi-annual groundwater quality is monitored at 17 groundwater monitoring wells (overburden and bedrock wells) located within the boundaries of the Al Turi Landfill property. The 17 monitoring wells are divided into two types: "Type 1" wells and "Type 2" wells. Type 1 wells are wells that are located adjacent (within 150 feet) to the Wallkill River while Type 2 wells are located beyond 150 feet from the River. The location of each well in relation to the Wallkill River was a factor when considering GWTLs for each well. Drawing 1 (in pocket) provides a site map of the area indicating the locations of the Type 1 and Type 2 groundwater monitoring wells.

Of the 17 groundwater monitoring wells, two wells (W-1 and W-3A), are monitored semi-annually as part of post closure monitoring of the adjacent Al Turi Landfill. Monitoring of these wells consists of modified Part 360 semi-annual analysis. As part of this sampling event, the Part 360 landfill data collected for well W-1 and well W-3A were utilized. In addition, the Wallkill River, which is located along the western portion of the site, is monitored semi-annually both upgradient and downgradient of the Al Turi Property.

Proper groundwater sampling procedures were followed and all samples were kept in ice filled coolers prior to delivery to the contracted analytical laboratory. Completed chain of custody forms accompanied the samples during shipment.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

2.1 Type 1 Groundwater Quality

Eight Type 1 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill site as part of post-closure monitoring requirements. Of the eight Type 1 groundwater monitoring wells, six wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-38S was dry.

Analytical results collected from the Type 1 groundwater monitoring wells are presented in Table 2-1, as are established GWTL values for each well. A review of the inorganic analyses collected during the January 2009 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 1 groundwater monitoring wells. In addition, a review of the Type 1 volatile organic data collected during the January 2009 sampling event indicates that no volatile organic compounds (VOCs) were present above established GWTLs.

The laboratory supplied summary tables presenting the January 2009 analytical data are provided in Appendix A.

The Type 1 groundwater monitoring wells will be sampled again in July 2009 as part of continued semi-annual groundwater monitoring for the Class II Al Turi Landfill.

2.2 Type 2 Groundwater Quality

Nine Type 2 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill as part of post-closure monitoring at the facility. Of the nine Type 2 groundwater monitoring wells, seven wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer.

Analytical results collected from the Type 2 groundwater monitoring wells are presented in Table 2-2, as are the Type 2 established GWTLs. A review of the inorganic analyses collected during the January 2009 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 2 groundwater monitoring wells. In addition, a review of the Type 2 volatile organic

data, collected during the January 2009 sampling event indicates that no volatile organic compounds (VOCs) were present above established GWTLs.

The laboratory supplied summary tables presenting the January 2009 analytical data are provided in Appendix A.

The Type 2 groundwater monitoring wells will be sampled again in July 2009 as part of continued semi-annual groundwater monitoring.

3 ASSESSMENT OF CUMULATIVE EFFECTS

In addition to the direct comparison of measured groundwater concentrations from individual monitoring wells to the appropriate GWTLs, the cumulative effects of ground water discharges to the Wallkill River from the Class II Landfill site are evaluated as part of routine post-closure monitoring. The cumulative mass loading to the river is approximated, as follows:

1. The estimated total mass loading to the river for each Type 1 well is calculated by multiplying the measured concentration with the discharge rate calculated using ground water elevations observed during the same monitoring event (the ground water elevations from the January 2009 event are provided on Table 3-1):

$$M_i = C_i \bullet (Ki \bullet i_i \bullet w_i \bullet d) \bullet CF$$

where:

M_i	=	mass loading rate for well i (kg/day);
C_i	=	measured ground water concentration in well i (mg/L);
K_i	=	hydraulic conductivity for discharge zone segment associated with well i (ft/day);
i_i	=	calculated ground water gradient of for well i (ft/ft);
w_i	=	width of discharge zone segment associated with well i (ft);
d	=	aquifer thickness (ft); and
CF	=	conversion factor 28.32 $L/ft^3 * 10^{-6}$ kg/mg

2. The mass loading rate from each Type 1 well is then summed to estimate the cumulative mass loading to the river, ($M_c = \Sigma M_i$) for each constituent.

3. The estimated river concentration is then calculated by dividing the cumulative mass loading M_c by the measured river flow rate. On January 22, 2009, the average gauge height was 1.56 (river elevation of 355.65 ft MSL), which represents an estimated river flow of 137 cfs.

The estimated river concentrations are then compared to the lower of the aquatic criteria and human health benchmarks for surface water presented in the December 2001 Post-Closure Monitoring Plan.

The results for the estimated cumulative effects assessment are presented on Table 3-2. As indicated on Table 3-2, the estimated in-stream concentrations resulting from the discharge of groundwater to the Wallkill River based on the observed flow conditions in the river at the time of sampling are all below the lower of the surface water benchmarks. A copy of the 2009 (January) Al Turi Landfill Stream Gauge Hydrograph Record is included in Appendix B.

4 CONCLUSIONS

A review of the January 2009 groundwater data shows that no Constituents of Concern were observed above GWTLs in any of the groundwater monitoring wells. Because there are no Constituents of Concern observed above any of the established GWTLs, and the assessment of cumulative effects did not identify a potential for unacceptable impacts on the river as a result of groundwater discharges, the routine post-closure monitoring program will continue as specified in the Post-Closure Monitoring Plan for the Class II Al Turi Landfill.

Semi-annual monitoring of 17 groundwater monitoring wells for the identified constituents of concern will continue in July 2009 at the Class II Al Turi Landfill as part of continued post closure monitoring.

APPENDIX A

AL TURI LANDFILL HYDRO GRAPH RECORD

TABLE 1-1

AL TURI LANDFILL - CLASS II SITE
CONSTITUENTS OF CONCERN
JANUARY 2009 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

Volatile Organic Compounds	***Metals***
Chloromethane	Antimony
Vinyl Chloride	Arsenic
Trichlorofluoromethane	Barium
Dichlorodifluoromethane	Chromium, hexavalent
1,1-Dichloroethene	Chromium
1,1-Dichloroethane	Copper
cis-1,2-Dichloroethene	Lead
Benzene	Magnesium
Trichloroethene	Sodium
	Zinc

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JANUARY 2009 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2009 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	**W-1**		**W-11S**		**W-24S**		**W-38S**	
	21-Jan-09		**19-Jan-09**		**19-Jan-09**		**20-Jan-09**	
Compounds of Concern	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**
Volatile Organic Compounds (VOCs) By Method 8260 (Results in mg/l)								
Chloromethane	ND	35	ND	35	ND	35	DRY	35
Vinyl Chloride	ND	27.6	ND	27.6	ND	27.6	DRY	27.6
Trichlorofluoromethane	ND	11	ND	11	ND	11	DRY	11
Dichlorodifluoromethane	ND	2.8	0.003 J	2.8	ND	2.8	DRY	2.8
1,1-Dichloroethene	ND	3.59	ND	6.12	ND	5.07	DRY	5.32
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	50.6	DRY	50.6
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	17.5	DRY	17.5
Benzene	ND	2.21	ND	3.78	ND	3.13	DRY	3.28
Trichloroethene	ND	11	ND	11	ND	11	DRY	11
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***
Antimony	ND	8,828	ND	15,074	ND	12,478	DRY	13,097
Arsenic	ND	0.81	ND	1.38	ND	1.14	DRY	1.2
Barium	0.745	***	0.0526	***	0.0661	***	DRY	***
Chromium, hexavalent	ND	4.54	ND	7.76	ND	6.42	DRY	6.74
Chromium	ND	38	0.0125	65	ND	54	DRY	57
Copper	ND	4.65	ND	7.94	ND	6.57	DRY	6.9
Lead	0.0048	1.85	ND	3.16	ND	2.61	DRY	2.74
Magnesium	57.3	***	19.7	***	17.1	***	DRY	***
Sodium	293	103,222	3.32	176,259	5.56	145,911	DRY	153,146
Zinc	0.0161	42.86	0.0279	73.19	ND	60.59	DRY	63.6

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JANUARY 2009 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2009 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	***W-39S***		***W-40S***		***W-1D***	***W-37D***	***FB-01***	***TB-01***
	19-Jan-09		***19-Jan-09***		***21-Jan-09***	***21-Jan-09***	***21-Jan-09***	***19-Jan-09***
Compounds of Concern	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) By Method 8260 (Results in ug/l)								
Chloromethane	ND	35	ND	35	ND	ND	ND	ND
Vinyl Chloride	ND	27.6	ND	27.6	ND	ND	ND	ND
Trichlorofluoromethane	ND	11	ND	11	ND	ND	ND	ND
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	ND	-	ND
1,1-Dichloroethene	ND	5.71	ND	17.05	ND	ND	ND	ND
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	ND	ND	ND
Benzene	ND	3.53	ND	10.53	ND	ND	ND	ND
Trichloroethene	ND	11	ND	11	ND	ND	ND	ND
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Antimony	ND	14,072	ND	41,986	ND	ND	ND	-
Arsenic	ND	1.29	ND	3.85	ND	ND	ND	-
Barium	0.0963	***	0.494	***	ND	0.533	ND	-
Chromium, hexavalent	ND	7.24	ND	21.6	0.046	ND	ND	-
Chromium	ND	61	0.0562	181	0.0899	0.0136	ND	-
Copper	0.0108	7.41	0.158	22.12	ND	0.015	ND	-
Lead	0.0439	2.95	0.0417	8.79	ND	0.00402	ND	-
Magnesium	22.6	***	30.3	***	5.34	27.9	ND	-
Sodium	13.5	164,544	22.5	490,952	75	101	ND	-
Zinc	0.0272	68.33	0.415	203.87	ND	0.0327	0.011	-

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-2

AL TURI LANDFILL - CLASS II SITE
TYPE 2 GROUNDWATER MONITORING WELLS
JANUARY 2009 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2009 SAMPLING EVENT

		Laboratory Analytical Results										
Sample ID		***W-3A***	***W-12SA***	***W-13S***	***W-18S***	***W-19S***	***W-20***	***W-29***	***W-3D*****	***W-12DA*****	***FB-01***	***TB-01***
Sample Date		***21-Jan-09***	***19-Jan-09***	***19-Jan-09***	***19-Jan-09***	***19-Jan-09***	***20-Jan-09***	***19-Jan-09***	***20-Jan-09***	***20-Jan-09***	***21-Jan-09***	***19-Jan-09***
Compounds of Concern	***GWTL***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) (Results in mg/l)												
Chloromethane	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	27.6	ND	ND	ND	ND	1 J	ND	1 J	ND	ND	ND	ND
Trichlorofluoromethane	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	2.8	ND	ND	2 J	ND	3 J	ND	ND	0.0069	ND	-	ND
1,1-Dichloroethene	17.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	50.6	ND	ND	ND	2 J	ND	ND	3 J	0.0053	ND	ND	ND
cis-1,2-Dichloroethene	17.5	ND	2 J	ND	0.015	ND	ND	3 J	ND	ND	ND	ND
Benzene	10.53	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	11	ND	1 J	ND	0.008	ND	ND	1 J	ND	ND	ND	ND
Total Metals (Results in mg/l)												
Antimony	41,986	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Arsenic	3.85	ND	ND	0.0535	ND	ND	ND	ND	ND	ND	ND	-
Barium	***	0.0771	ND	0.853	ND	0.0542	0.0717	0.482	0.071	ND	ND	-
Chromium, hexavalent	21.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Chromium	181	ND	0.0164	0.205	0.0224	ND	4.29	0.0363	ND	ND	ND	-
Copper	22.1	ND	ND	0.335	ND	ND	0.0644	0.0293	ND	ND	ND	-
Lead	8.79	ND	ND	0.104	0.00338	0.00375	ND	0.00707	ND	ND	ND	-
Magnesium	***	16.1	15.1	142	18.2	25.5	15.8	49.4	25.8	1.01	ND	-
Sodium	490,952	17.4	2.44	14.9	2.27	4.39	34	70.3	15.1	37.4	ND	-
Zinc	203.87	0.0285	ND	0.669	0.0105	0.0182	ND	0.0637	ND	0.0126	0.011	-

Notes:

** - Groundwater Trigger Levels Not Applicable to These Wells.

*** - Groundwater Trigger Level is Greater Than $1X10^{p}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

TABLE 3-1
AL TURI LANDFILL - CLASS II SITE
SUMMARY OF WATER-LEVEL ELEVATIONS
JANUARY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

	Top of Casing	Well Bottom	Depth to Water (ft)	Water Level Elevation *
Type 1 Wells - Overburden				
W-1	383.5	342.05	22.42	361.08
W-11S	376.2	346.18	17.8	358.40
W-24	377.18	352.23	18.42	358.76
W-38S	429.45	342.82	> 86.63	342.82
W-39S	379.32	349.32	21.94	357.38
W-40	381.81	349.81	23.08	358.73
Type 1 Wells - Bedrock				
W-1D	376.5	247.5	18.15	358.35
W-37D	385.91	301.66	27.55	358.36
Type 2 Wells - Overburden				
W-3A	424.62	393.62	10.68	413.94
W-12SA	421.08	380.71	31.52	389.56
W-13S	407.78	354.47	34.53	373.25
W-18S	411.04	362.04	41.09	369.95
W-19S	413.43	353.28	47.99	365.44
W-20S	386.32	361.24	19.64	366.68
W-29	425.5	365.65	48.02	377.48
Type 2 Wells - Bedrock				
W-3D	423.99	350.99	4.53	419.46
W-12DA	NA	NA	73.12	NA
River Gauge				355.65

Notes:

* Reference elevation in feet, MSL

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Vinyl Chloride		Dichlorodifluoromethane		1,1-Dichloroethane		cis-1,2-Dichloroethene	
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
W-1	818.18	60	3.40	0.0193	3.22E+03	3.73E-02	0.002	1.83E+02	0.002	1.83E+02	0.002	1.83E+02	0.002	1.83E+02
W-38S	294.31	60	1.00	0.0394	6.96E+02	8.06E-03	0.002	3.94E+01	0.002	3.94E+01	0.002	3.94E+01	0.002	3.94E+01
W-11S	243.15	60	2.11	0.0502	1.55E+03	1.79E-02	0.002	8.76E+01	0.003	1.31E+02	0.002	8.76E+01	0.002	8.76E+01
W-39S	255.39	60	3.40	0.0343	1.79E+03	2.07E-02	0.002	1.01E+02	0.002	1.01E+02	0.002	1.01E+02	0.002	1.01E+02
W-24	194.99	60	15.08	0.0105	1.84E+03	2.13E-02	0.002	1.04E+02	0.002	1.04E+02	0.002	1.04E+02	0.002	1.04E+02
W-40	239.24	60	3.40	0.0094	4.59E+02	5.31E-03	0.002	2.60E+01	0.002	2.60E+01	0.002	2.60E+01	0.002	2.60E+01
				Total Mass Loading (mg/d) =			**5.41E+02**		**5.85E+02**		**5.41E+02**		**5.41E+02**	
		Estimated In-Stream Concentration (mg/L)[5] =					**1.61E-06**		**1.74E-06**		**1.61E-06**		**1.61E-06**	
		Surface Water Quality Benchmark (mg/L)[6] =					**2.00E-03**		**1.00E+01**		**9.86E+00**		**1.00E+00**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in January 2009.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 137 cfs which is based on an average measured river gauge height of 1.56 feet on January 21, 2009.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Benzene		Trichloroethene		Antimony		Arsenic	
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
W-1	818.18	60	3.40	0.0193	3.22E+03	3.73E-02	0.002	1.83E+02	0.002	1.83E+02	0.005	4.56E+02	0.005	4.56E+02
W-38S	294.31	60	1.00	0.0394	6.96E+02	8.06E-03	0.002	3.94E+01	0.002	3.94E+01	0.005	9.86E+01	0.005	9.86E+01
W-11S	243.15	60	2.11	0.0502	1.55E+03	1.79E-02	0.002	8.76E+01	0.002	8.76E+01	0.005	2.19E+02	0.005	2.19E+02
W-39S	255.39	60	3.40	0.0343	1.79E+03	2.07E-02	0.002	1.01E+02	0.002	1.01E+02	0.005	2.53E+02	0.005	2.53E+02
W-24	194.99	60	15.08	0.0105	1.84E+03	2.13E-02	0.002	1.04E+02	0.002	1.04E+02	0.005	2.61E+02	0.005	2.61E+02
W-40	239.24	60	3.40	0.0094	4.59E+02	5.31E-03	0.002	2.60E+01	0.002	2.60E+01	0.005	6.49E+01	0.005	6.49E+01
				Total Mass Loading (mg/d) =			**5.41E+02**		**5.41E+02**		**1.35E+03**		**1.35E+03**	
			Estimated In-Stream Concentration (mg/L)[5] =				**1.61E-06**		**1.61E-06**		**4.03E-06**		**4.03E-06**	
			Surface Water Quality Benchmark (mg/L)[6] =				**1.00E-02**		**1.00E-02**		**5.00E-01**		**5.00E-01**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in January 2009.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 137 cfs which is based on an average measured river gauge height of 1.56 feet on January 21, 2009.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Barium		Chromium (total)		Copper		Le
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0193	3.22E+03	3.73E-02	0.745	6.80E+04	0.002	1.83E+02	0.005	4.56E+02	0.0048
W-38S	294.31	60	1.00	0.0394	6.96E+02	8.06E-03	0.025	4.93E+02	0.002	3.94E+01	0.005	9.86E+01	0.005
W-11S	243.15	60	2.11	0.0502	1.55E+03	1.79E-02	0.0526	2.39E+03	0.0125	5.48E+02	0.005	2.19E+02	0.005
W-39S	255.39	60	3.40	0.0343	1.79E+03	2.07E-02	0.0963	4.88E+03	0.002	1.01E+02	0.0108	5.47E+02	0.0439
W-24	194.99	60	15.08	0.0105	1.84E+03	2.13E-02	0.0661	3.45E+03	0.002	1.04E+02	0.005	2.61E+02	0.005
W-40	239.24	60	3.40	0.0094	4.59E+02	5.31E-03	0.494	6.42E+03	0.0562	7.30E+02	0.158	2.05E+03	0.0417
				Total Mass Loading (mg/d) =			**8.55E+04**		**1.71E+03**		**3.63E+03**		**3.78E**
			Estimated In-Stream Concentration (mg/L)[5] =				**2.55E-04**		**5.08E-06**		**1.08E-05**		**1.13E**
			Surface Water Quality Benchmark (mg/L)[6] =				**2.48E+03**		**9.20E-02**		**1.10E-02**		**4.00E**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in January 2009.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 137 cfs which is based on an average measured river gauge height of 1.56 feet on January 21, 2009.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

ad								Magnesium		Sodium		Zinc	
Mass Loading (mg/d)	Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)
4.38E+02	W-1	818.18	60	3.40	0.0193	3.22E+03	3.73E-02	57.3	5.23E+06	293	2.67E+07	0.0161	1.47E+03
9.86E+01	W-38S	294.31	60	1.00	0.0394	6.96E+02	8.06E-03	0.005	9.86E+01	0.005	9.86E+01	0.005	9.86E+01
2.19E+02	W-11S	243.15	60	2.11	0.0502	1.55E+03	1.79E-02	19.7	8.63E+05	3.32	1.45E+05	0.0279	1.22E+03
2.22E+03	W-39S	255.39	60	3.40	0.0343	1.79E+03	2.07E-02	22.6	1.14E+06	13.5	6.84E+05	0.0272	1.38E+03
2.61E+02	W-24	194.99	60	15.08	0.0105	1.84E+03	2.13E-02	17.1	8.93E+05	5.56	2.90E+05	0.005	2.61E+02
5.42E+02	W-40	239.24	60	3.40	0.0094	4.59E+02	5.31E-03	30.3	3.94E+05	22.5	2.92E+05	0.415	5.39E+03
Ξ+03					**Total Mass Loading (mg/d) =**			**8.52E+06**		**2.82E+07**		**9.82E+03**	
E-05				**Estimated In-Stream Concentration (mg/L)[5] =**				**2.54E-02**		**8.39E-02**		**2.92E-05**	
E-03				**Surface Water Quality Benchmark (mg/L)[6] =**				**3.44E+05**		**2.50E+02**		**1.04E-01**	

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in January 2009.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 137 cfs which is based on an average measured river gauge height of 1.56 feet on January 21, 2009.

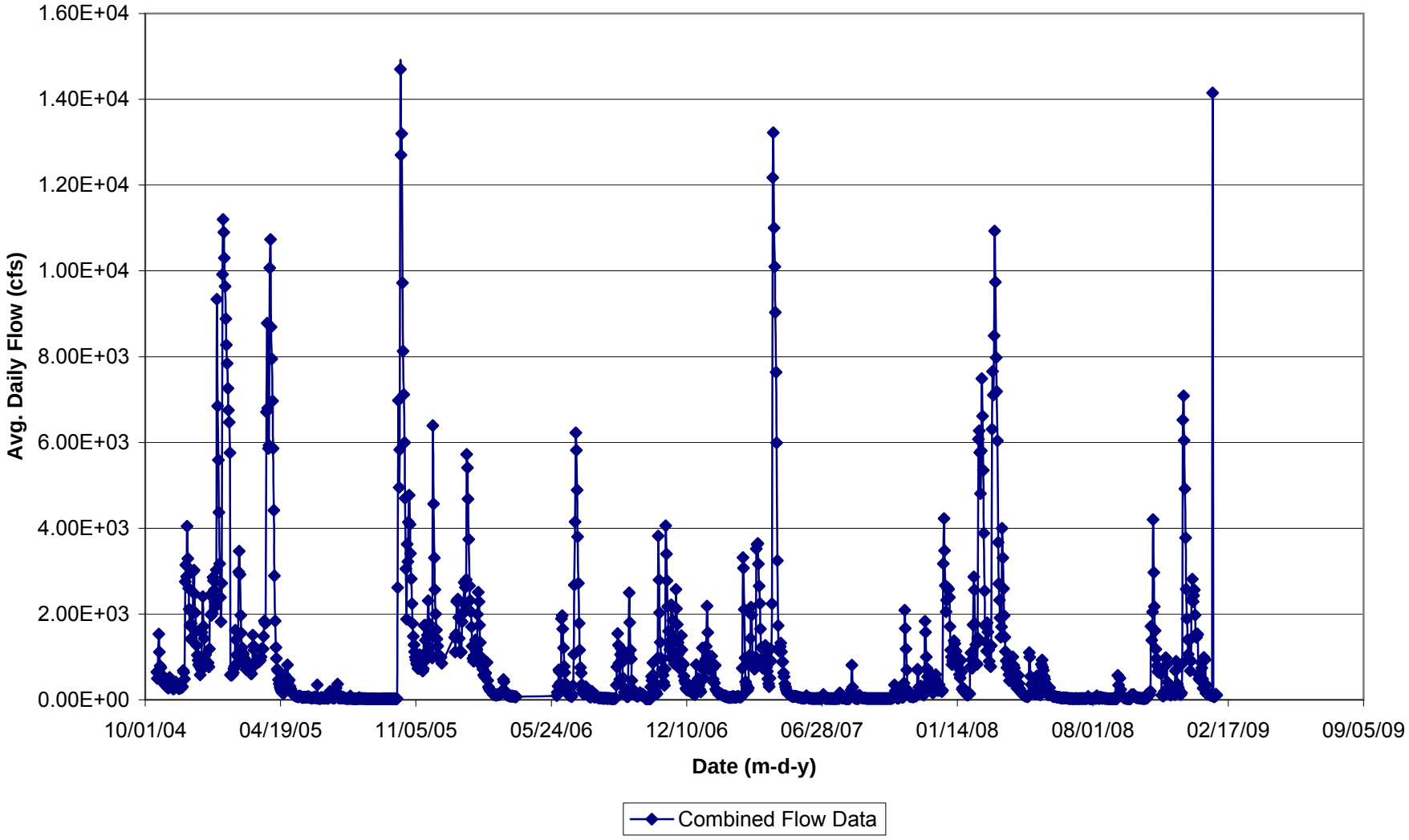
6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

Al Turi Landfill Stream Gauge - Hydrograph Record

(see notes)



ESTIMATED WALLKILL RIVER FLOW AT THE AL TURI LANDFILL SITE

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/04							
10/12/04							
10/13/04							
10/14/04							
10/15/04							
10/16/04							
10/17/04							
10/18/04	356.00	2.71	6.47E+02			2.71	6.47E+02
10/19/04	355.00	2.51	4.95E+02			2.51	4.95E+02
10/20/04							
10/21/04	356.00	4.34	1.53E+03			4.34	1.53E+03
10/22/04	357.00	3.74	1.11E+03			3.74	1.11E+03
10/23/04	355.80	3.19	7.88E+02			3.19	7.88E+02
10/24/04	356.17	2.82	7.49E+02			2.82	7.49E+02
10/25/04	356.00	2.64	5.91E+02			2.64	5.91E+02
10/26/04	356.00	2.55	5.20E+02			2.55	5.20E+02
10/27/04	356.00	2.47	4.66E+02			2.47	4.66E+02
10/28/04	356.00	2.39	4.19E+02			2.39	4.19E+02
10/29/04	356.00	2.32	3.82E+02			2.32	3.82E+02
10/30/04	356.00	2.26	3.52E+02			2.26	3.52E+02
10/31/04	356.00	2.23	3.40E+02	5.20E+02		2.23	3.40E+02
11/01/04	356.00	2.20	3.27E+02	5.01E+02		2.20	3.27E+02
11/02/04	356.00	2.14	2.99E+02	4.77E+02		2.14	2.99E+02
11/03/04	356.00	2.15	3.06E+02	4.74E+02		2.15	3.06E+02
11/04/04	356.00	2.05	2.66E+02	4.60E+02		2.05	2.66E+02
11/05/04	356.00	2.15	3.06E+02	7.67E+02		2.15	3.06E+02
11/06/04	356.00	2.55	5.23E+02	7.32E+02		2.55	5.23E+02
11/07/04	356.00	2.43	4.42E+02	6.48E+02		2.43	4.42E+02
11/08/04	356.00	2.26	3.55E+02	5.60E+02		2.26	3.55E+02
11/09/04	356.00	2.16	3.08E+02	5.04E+02		2.16	3.08E+02
11/10/04	356.00	2.09	2.79E+02	4.51E+02		2.09	2.79E+02
11/11/04	356.00	2.03	2.58E+02	4.35E+02		2.03	2.58E+02
11/12/04	356.00	2.01	2.51E+02	4.66E+02		2.01	2.51E+02
11/13/04	356.00	2.12	2.93E+02	4.99E+02		2.12	2.93E+02
11/14/04	356.00	2.37	4.08E+02	5.94E+02		2.37	4.08E+02
11/15/04	356.00	2.37	4.11E+02	5.64E+02		2.37	4.11E+02
11/16/04	356.00	2.25	3.49E+02	5.65E+02		2.25	3.49E+02
11/17/04	356.00	2.20	3.25E+02	5.20E+02		2.20	3.25E+02
11/18/04	356.00	2.12	2.94E+02	4.93E+02		2.12	2.94E+02
11/19/04	356.00	2.06	2.68E+02	4.49E+02		2.06	2.68E+02
11/20/04	356.00	2.03	2.59E+02	4.56E+02		2.03	2.59E+02
11/21/04	356.00	2.05	2.66E+02	5.43E+02		2.05	2.66E+02
11/22/04	356.00	2.25	3.50E+02	5.83E+02		2.25	3.50E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/23/04	356.00	2.21	3.29E+02	5.29E+02		2.21	3.29E+02
11/24/04	356.00	2.09	2.80E+02	5.41E+02		2.09	2.80E+02
11/25/04	356.00	2.15	3.03E+02	1.00E+03		2.15	3.03E+02
11/26/04	356.00	2.75	6.82E+02	1.06E+03		2.75	6.82E+02
11/27/04	356.00	2.71	6.43E+02	8.65E+02		2.71	6.43E+02
11/28/04	356.00	2.50	4.86E+02	2.16E+03		2.50	4.86E+02
11/29/04	359.33	5.69	2.75E+03	4.35E+03		5.69	2.75E+03
11/30/04	359.83	6.05	3.14E+03	3.22E+03		6.05	3.14E+03
12/01/04	359.00	5.81	2.87E+03	4.31E+03		5.81	2.87E+03
12/02/04	360.50	6.80	4.05E+03	4.52E+03		6.80	4.05E+03
12/03/04	360.00	6.19	3.30E+03	3.29E+03	3.29E+03	6.19	3.29E+03
12/04/04	359.00	5.69	2.75E+03	2.60E+03	2.60E+03	5.69	2.60E+03
12/05/04	359.00	5.14	2.21E+03	2.11E+03	2.11E+03	5.14	2.11E+03
12/06/04	358.00	4.60	1.74E+03	1.73E+03	1.73E+03	4.60	1.73E+03
12/07/04	358.00	4.19	1.42E+03	1.81E+03		4.19	1.42E+03
12/08/04	358.33	4.65	1.78E+03	2.91E+03		4.65	1.78E+03
12/09/04	358.67	4.99	2.07E+03	2.32E+03		4.99	2.07E+03
12/10/04	358.33	4.93	2.01E+03	3.38E+03		4.93	2.01E+03
12/11/04	359.50	5.92	2.99E+03	4.32E+03		5.92	2.99E+03
12/12/04	359.67	5.94	3.02E+03	3.32E+03		5.94	3.02E+03
12/13/04	359.00	5.41	2.47E+03	2.56E+03		5.41	2.47E+03
12/14/04	358.50	4.94	2.03E+03	2.12E+03		4.94	2.03E+03
12/15/04	358.00	4.42	1.59E+03	1.68E+03		4.42	1.59E+03
12/16/04	357.67	3.98	1.27E+03	1.38E+03		3.98	1.27E+03
12/17/04	357.00	3.63	1.04E+03	1.22E+03		3.63	1.04E+03
12/18/04	357.00	3.43	9.20E+02	1.10E+03		3.43	9.20E+02
12/19/04	357.00	3.24	8.17E+02	1.02E+03		3.24	8.17E+02
12/20/04	356.00	3.18	7.82E+02	9.20E+02		3.18	7.82E+02
12/21/04	354.00			5.82E+02	5.82E+02		5.82E+02
12/22/04				7.49E+02	7.49E+02		7.49E+02
12/23/04	355.67	2.77	7.00E+02	1.47E+03		2.77	7.00E+02
12/24/04	357.83	4.39	1.57E+03	4.00E+03		4.39	1.57E+03
12/25/04	359.00	5.35	2.41E+03	2.57E+03		5.35	2.41E+03
12/26/04	356.67	4.78	1.88E+03	1.71E+03	1.71E+03	4.78	1.71E+03
12/27/04				1.43E+03	1.43E+03		1.43E+03
12/28/04				9.37E+02	9.37E+02		9.37E+02
12/29/04				1.05E+03	1.05E+03		1.05E+03
12/30/04	356.00	3.38	8.93E+02	1.21E+03		3.38	8.93E+02
12/31/04	357.00	3.22	8.04E+02	1.09E+03		3.22	8.04E+02
01/01/05	357.00	3.21	7.98E+02	1.12E+03		3.21	7.98E+02
01/02/05	357.00	3.32	8.60E+02	1.10E+03		3.32	8.60E+02
01/03/05	357.00	3.14	7.64E+02	1.16E+03		3.14	7.64E+02
01/04/05	357.50	3.85	1.18E+03	3.35E+03		3.85	1.18E+03
01/05/05	359.00	5.39	2.44E+03	2.96E+03		5.39	2.44E+03
01/06/05	358.50	4.90	1.99E+03	2.35E+03		4.90	1.99E+03
01/07/05	358.50	4.87	1.97E+03	2.41E+03		4.87	1.97E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/08/05	358.67	4.93	2.02E+03	2.76E+03		4.93	2.02E+03
01/09/05	359.67	5.79	2.85E+03	3.67E+03		5.79	2.85E+03
01/10/05	359.17	5.71	2.78E+03	3.01E+03		5.71	2.78E+03
01/11/05	359.00	5.50	2.56E+03	2.84E+03		5.50	2.56E+03
01/12/05	359.00	5.22	2.28E+03	2.63E+03		5.22	2.28E+03
01/13/05	359.00	5.10	2.17E+03	2.85E+03		5.10	2.17E+03
01/14/05	359.67	5.95	3.03E+03	9.11E+03		5.95	3.03E+03
01/15/05	363.83	10.02	9.34E+03	9.80E+03		10.02	9.34E+03
01/16/05	361.50	9.49	8.32E+03	6.85E+03	6.85E+03	9.49	6.85E+03
01/17/05	354.00			5.59E+03	5.59E+03		5.59E+03
01/18/05	354.00			4.37E+03	4.37E+03		4.37E+03
01/19/05	354.00			3.17E+03	3.17E+03		3.17E+03
01/20/05				2.39E+03	2.39E+03		2.39E+03
01/21/05				1.82E+03	1.82E+03		1.82E+03
01/22/05				2.72E+03	2.72E+03		2.72E+03
01/23/05				9.92E+03	9.92E+03		9.92E+03
01/24/05				1.12E+04	1.12E+04		1.12E+04
01/25/05				1.09E+04	1.09E+04		1.09E+04
01/26/05				1.03E+04	1.03E+04		1.03E+04
01/27/05				9.64E+03	9.64E+03		9.64E+03
01/28/05				8.88E+03	8.88E+03		8.88E+03
01/29/05				8.27E+03	8.27E+03		8.27E+03
01/30/05				7.84E+03	7.84E+03		7.84E+03
01/31/05				7.26E+03	7.26E+03		7.26E+03
02/01/05	354.00			6.75E+03	6.75E+03		6.75E+03
02/02/05	354.00			6.47E+03	6.47E+03		6.47E+03
02/03/05	354.00			5.76E+03	5.76E+03		5.76E+03
02/04/05	354.33	2.63	5.81E+02	5.41E+03		2.63	5.81E+02
02/05/05	356.00	2.61	5.66E+02	5.21E+03		2.61	5.66E+02
02/06/05	356.00	2.63	5.81E+02	4.86E+03		2.63	5.81E+02
02/07/05	356.00	2.65	5.93E+02	4.72E+03		2.65	5.93E+02
02/08/05	356.00	2.70	6.37E+02	4.52E+03		2.70	6.37E+02
02/09/05	356.00	2.80	7.26E+02	4.59E+03		2.80	7.26E+02
02/10/05	356.83	3.17	7.78E+02	7.65E+03		3.17	7.78E+02
02/11/05	358.00	4.45	1.62E+03	8.58E+03		4.45	1.62E+03
02/12/05	358.00	4.16	1.40E+03	6.68E+03		4.16	1.40E+03
02/13/05	357.00	3.64	1.05E+03	4.98E+03		3.64	1.05E+03
02/14/05	357.00	3.32	8.59E+02	3.90E+03		3.32	8.59E+02
02/15/05	357.33	3.58	1.01E+03	9.76E+03		3.58	1.01E+03
02/16/05	359.67	5.91	2.98E+03	5.74E+03		5.91	2.98E+03
02/17/05	360.00	6.33	3.46E+03	4.01E+03		6.33	3.46E+03
02/18/05	359.50	5.91	2.99E+03	2.92E+03	2.92E+03	5.91	2.92E+03
02/19/05	358.00	5.11	2.18E+03	1.97E+03	1.97E+03	5.11	1.97E+03
02/20/05	356.67	4.37	1.56E+03	1.61E+03		4.37	1.56E+03
02/21/05	357.50	3.90	1.22E+03	1.35E+03		3.90	1.22E+03
02/22/05	357.00	3.72	1.10E+03	1.36E+03		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/23/05	357.00	3.65	1.06E+03	1.29E+03		3.65	1.06E+03
02/24/05	357.00	3.52	9.75E+02	1.17E+03		3.52	9.75E+02
02/25/05	357.00	3.32	8.61E+02	1.09E+03		3.32	8.61E+02
02/26/05	357.00	3.18	7.83E+02	9.65E+02		3.18	7.83E+02
02/27/05	356.00	3.03	7.04E+02	9.07E+02		3.03	7.04E+02
02/28/05	356.83	2.93	8.64E+02	8.67E+02		2.93	8.64E+02
03/01/05	356.00	2.82	7.49E+02	8.45E+02		2.82	7.49E+02
03/02/05	356.67	2.91	8.45E+02	8.83E+02		2.91	8.45E+02
03/03/05	356.67	2.93	8.70E+02	8.48E+02	8.48E+02	2.93	8.48E+02
03/04/05	356.00	2.75	6.80E+02	7.68E+02		2.75	6.80E+02
03/05/05	356.00	2.71	6.43E+02	7.41E+02		2.71	6.43E+02
03/06/05	356.00	2.67	6.09E+02	7.37E+02		2.67	6.09E+02
03/07/05	356.00	2.66	6.07E+02	8.00E+02		2.66	6.07E+02
03/08/05	356.67	3.23	8.09E+02	1.73E+03		3.23	8.09E+02
03/09/05	357.33	4.30	1.51E+03	1.84E+03		4.30	1.51E+03
03/10/05	356.75	3.96	1.26E+03	1.48E+03		3.96	1.26E+03
03/11/05	355.20	3.82	1.16E+03	1.30E+03		3.82	1.16E+03
03/12/05	354.60	3.24	8.15E+02	1.12E+03		3.24	8.15E+02
03/13/05	357.00	3.27	8.34E+02	1.11E+03		3.27	8.34E+02
03/14/05	357.00	3.41	9.11E+02	1.20E+03		3.41	9.11E+02
03/15/05	357.00	3.41	9.11E+02	1.22E+03		3.41	9.11E+02
03/16/05	357.00	3.37	8.87E+02	1.28E+03		3.37	8.87E+02
03/17/05	357.00	3.37	8.85E+02	1.26E+03		3.37	8.85E+02
03/18/05	357.00	3.37	8.85E+02	1.36E+03		3.37	8.85E+02
03/19/05	357.00	3.43	9.22E+02	1.42E+03		3.43	9.22E+02
03/20/05	357.00	3.43	9.24E+02	1.41E+03		3.43	9.24E+02
03/21/05	357.00	3.56	9.98E+02	1.50E+03		3.56	9.98E+02
03/22/05	357.33	3.86	1.19E+03	1.66E+03		3.86	1.19E+03
03/23/05	357.17	3.88	1.20E+03	1.74E+03		3.88	1.20E+03
03/24/05	357.17	3.86	1.19E+03	1.63E+03		3.86	1.19E+03
03/25/05	358.00	4.27	1.48E+03	2.01E+03		4.27	1.48E+03
03/26/05	358.00	4.72	1.84E+03	2.34E+03		4.72	1.84E+03
03/27/05	358.00	4.66	1.78E+03	2.17E+03		4.66	1.78E+03
03/28/05	358.17	4.66	1.79E+03	4.34E+03		4.66	1.79E+03
03/29/05	362.17	8.60	6.71E+03	1.16E+04		8.60	6.71E+03
03/30/05	364.00	10.10	9.51E+03	8.78E+03	8.78E+03	10.10	8.78E+03
03/31/05	364.00	9.96	9.22E+03	6.80E+03	6.80E+03	9.96	6.80E+03
04/01/05	362.83	9.34	8.03E+03	5.86E+03	5.86E+03	9.34	5.86E+03
04/02/05	361.67	8.12	5.93E+03	9.07E+03		8.12	5.93E+03
04/03/05	364.00	10.37	1.01E+04	1.68E+04		10.37	1.01E+04
04/04/05	364.00	10.68	1.07E+04	1.10E+04		10.68	1.07E+04
04/05/05	365.00	11.23	1.19E+04	8.69E+03	8.69E+03	11.23	8.69E+03
04/06/05	364.83	11.11	1.17E+04	7.95E+03	7.95E+03	11.11	7.95E+03
04/07/05	364.00	10.44	1.02E+04	6.97E+03	6.97E+03	10.44	6.97E+03
04/08/05	362.67	9.20	7.76E+03	5.86E+03	5.86E+03	9.20	5.86E+03
04/09/05	361.00	7.39	4.84E+03	4.42E+03	4.42E+03	7.39	4.42E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/10/05	359.33	5.82	2.89E+03	3.11E+03		5.82	2.89E+03
04/11/05	358.33	4.72	1.84E+03	2.40E+03		4.72	1.84E+03
04/12/05	357.50	3.91	1.22E+03	1.82E+03		3.91	1.22E+03
04/13/05	357.00	3.50	9.63E+02			3.50	9.63E+02
04/14/05	356.83	3.04	7.10E+02	1.36E+03		3.04	7.10E+02
04/15/05	356.00	2.74	6.69E+02	1.20E+03		2.74	6.69E+02
04/16/05	356.00	2.47	4.68E+02	1.06E+03		2.47	4.68E+02
04/17/05	356.00	2.29	3.70E+02	9.95E+02		2.29	3.70E+02
04/18/05	356.00	2.13	2.97E+02	9.04E+02		2.13	2.97E+02
04/19/05	355.20	2.00	2.50E+02	8.45E+02		2.00	2.50E+02
04/20/05	354.83	1.89	2.13E+02	7.94E+02		1.89	2.13E+02
04/21/05	355.00	1.76	1.81E+02	7.32E+02		1.76	1.81E+02
04/22/05	355.00	1.70	1.66E+02	6.92E+02		1.70	1.66E+02
04/23/05	354.83	1.60	1.46E+02	7.66E+02		1.60	1.46E+02
04/24/05	354.67	1.91	2.21E+02	1.75E+03		1.91	2.21E+02
04/25/05	355.00	2.63	5.81E+02	1.54E+03		2.63	5.81E+02
04/26/05	355.33	2.36	4.06E+02	1.14E+03		2.36	4.06E+02
04/27/05	355.33	2.01	2.52E+02	1.23E+03		2.01	2.52E+02
04/28/05	355.50	2.34	3.94E+02	1.87E+03		2.34	3.94E+02
04/29/05	356.17	2.88	8.16E+02	1.43E+03		2.88	8.16E+02
04/30/05	355.67	2.38	4.14E+02	1.16E+03		2.38	4.14E+02
05/01/05	354.67	2.10	2.83E+02	1.28E+03		2.10	2.83E+02
05/02/05	355.67	2.46	4.62E+02	1.21E+03		2.46	4.62E+02
05/03/05	356.00	2.17	3.11E+02	1.05E+03		2.17	3.11E+02
05/04/05	356.00	2.00	2.49E+02	9.44E+02		2.00	2.49E+02
05/05/05	355.17	1.83	1.98E+02	8.44E+02		1.83	1.98E+02
05/06/05	355.00	1.65	1.56E+02	7.66E+02		1.65	1.56E+02
05/07/05	354.83	1.55	1.35E+02	7.04E+02		1.55	1.35E+02
05/08/05	355.00	1.47	1.22E+02	6.77E+02		1.47	1.22E+02
05/09/05	354.83	1.38	1.08E+02	6.18E+02		1.38	1.08E+02
05/10/05	354.83	1.30	9.69E+01	5.90E+02		1.30	9.69E+01
05/11/05	354.67	1.28	9.43E+01	5.23E+02		1.28	9.43E+01
05/12/05	354.83	1.19	8.42E+01	5.41E+02		1.19	8.42E+01
05/13/05	354.67	1.16	8.07E+01	4.61E+02		1.16	8.07E+01
05/14/05	354.67	1.06	6.99E+01	4.67E+02		1.06	6.99E+01
05/15/05	354.50	1.01	6.61E+01	4.63E+02		1.01	6.61E+01
05/16/05	354.33	1.11	7.52E+01	5.31E+02		1.11	7.52E+01
05/17/05	354.50	1.26	9.25E+01	5.43E+02		1.26	9.25E+01
05/18/05	354.50	1.16	8.08E+01	4.54E+02		1.16	8.08E+01
05/19/05	354.50	1.05	6.91E+01	4.44E+02		1.05	6.91E+01
05/20/05	354.83	0.94	6.00E+01	4.16E+02		0.94	6.00E+01
05/21/05	354.00	0.88	5.50E+01	3.85E+02		0.88	5.50E+01
05/22/05	354.00	0.85	5.27E+01	3.97E+02		0.85	5.27E+01
05/23/05	354.00	0.86	5.36E+01	4.34E+02		0.86	5.36E+01
05/24/05	355.00	0.97	6.19E+01	4.52E+02		0.97	6.19E+01
05/25/05	354.67	0.95	6.05E+01	4.51E+02		0.95	6.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/26/05	354.67	0.98	6.27E+01	4.54E+02		0.98	6.27E+01
05/27/05	354.67	1.01	6.58E+01	4.65E+02		1.01	6.58E+01
05/28/05	354.67	0.97	6.25E+01	4.46E+02		0.97	6.25E+01
05/29/05	354.33	0.90	5.70E+01	5.59E+02		0.90	5.70E+01
05/30/05	354.67	1.15	7.97E+01	5.24E+02		1.15	7.97E+01
05/31/05	354.83	1.00	6.49E+01	4.79E+02		1.00	6.49E+01
06/01/05	354.00	0.85	5.30E+01	3.60E+02		0.85	5.30E+01
06/02/05	354.00	0.78	4.85E+01	3.67E+02		0.78	4.85E+01
06/03/05	354.00	0.70	4.31E+01	3.11E+02		0.70	4.31E+01
06/04/05	354.00	0.67	4.14E+01	2.96E+02		0.67	4.14E+01
06/05/05	354.00	0.73	4.50E+01	3.15E+02		0.73	4.50E+01
06/06/05	354.00	0.80	4.93E+01	3.47E+02		0.80	4.93E+01
06/07/05	354.00	0.74	4.57E+01	3.32E+02		0.74	4.57E+01
06/08/05	354.50	0.97	6.25E+01	3.49E+02		0.97	6.25E+01
06/09/05	354.33	1.02	6.62E+01	3.67E+02		1.02	6.62E+01
06/10/05	354.00	0.69	4.27E+01	3.34E+02		0.69	4.27E+01
06/11/05	354.00	0.65	4.05E+01	3.00E+02		0.65	4.05E+01
06/12/05	354.00			3.46E+02	3.46E+02		3.46E+02
06/13/05	354.00	0.58	3.70E+01	3.16E+02		0.58	3.70E+01
06/14/05	354.00	0.55	3.54E+01	2.59E+02		0.55	3.54E+01
06/15/05	354.00	0.47	3.16E+01	2.23E+02		0.47	3.16E+01
06/16/05	354.00	0.45	3.10E+01	2.19E+02		0.45	3.10E+01
06/17/05	354.00	0.41	2.93E+01	2.66E+02		0.41	2.93E+01
06/18/05	354.00	0.84	5.26E+01	2.86E+02		0.84	5.26E+01
06/19/05	354.00	0.87	5.41E+01	3.10E+02		0.87	5.41E+01
06/20/05	354.00	0.74	4.58E+01	2.86E+02		0.74	4.58E+01
06/21/05	354.00	0.61	3.82E+01	2.40E+02		0.61	3.82E+01
06/22/05	354.00	0.59	3.74E+01	2.10E+02		0.59	3.74E+01
06/23/05	354.00	0.58	3.71E+01	2.06E+02		0.58	3.71E+01
06/24/05	354.50	0.90	5.66E+01	2.98E+02		0.90	5.66E+01
06/25/05	354.00	0.67	4.18E+01	2.61E+02		0.67	4.18E+01
06/26/05	354.00	0.56	3.58E+01	2.08E+02		0.56	3.58E+01
06/27/05	354.00	0.51	3.36E+01	1.61E+02		0.51	3.36E+01
06/28/05	354.00	0.49	3.26E+01	1.65E+02		0.49	3.26E+01
06/29/05	354.00	0.52	3.41E+01	2.35E+02		0.52	3.41E+01
06/30/05	354.33	0.91	5.71E+01	2.60E+02		0.91	5.71E+01
07/01/05	355.00	1.82	1.96E+02	5.36E+02		1.82	1.96E+02
07/02/05	354.33	1.69	1.63E+02	6.48E+02		1.69	1.63E+02
07/03/05	355.00	1.24	8.98E+01	4.29E+02		1.24	8.98E+01
07/04/05	354.33	0.84	5.22E+01	2.91E+02		0.84	5.22E+01
07/05/05	354.00	0.65	4.05E+01	2.41E+02		0.65	4.05E+01
07/06/05	354.00	0.58	3.68E+01	1.97E+02		0.58	3.68E+01
07/07/05	354.00	0.62	3.90E+01	1.67E+02		0.62	3.90E+01
07/08/05	354.00	0.68	4.21E+01	2.69E+02		0.68	4.21E+01
07/09/05	354.50	1.11	7.47E+01	4.95E+02		1.11	7.47E+01
07/10/05	356.00	2.07	2.72E+02	6.46E+02		2.07	2.72E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/11/05	354.83	1.75	1.78E+02	4.99E+02		1.75	1.78E+02
07/12/05	354.00			3.63E+02	3.63E+02		3.63E+02
07/13/05	354.33	0.90	5.67E+01	3.52E+02		0.90	5.67E+01
07/14/05	354.00	0.71	4.41E+01	2.48E+02		0.71	4.41E+01
07/15/05	354.00	0.63	3.96E+01	1.85E+02		0.63	3.96E+01
07/16/05	354.00	0.63	3.94E+01	1.57E+02		0.63	3.94E+01
07/17/05	354.00	0.77	4.76E+01	2.13E+02		0.77	4.76E+01
07/18/05	354.00	0.68	4.23E+01	3.81E+02		0.68	4.23E+01
07/19/05	354.00	0.61	3.83E+01	3.81E+02		0.61	3.83E+01
07/20/05	354.50	0.88	5.52E+01	3.16E+02		0.88	5.52E+01
07/21/05	354.83	0.94	6.00E+01	2.80E+02		0.94	6.00E+01
07/22/05	354.00	0.71	4.39E+01	2.14E+02		0.71	4.39E+01
07/23/05	354.00	0.55	3.55E+01	1.73E+02		0.55	3.55E+01
07/24/05	354.00	0.47	3.20E+01	1.25E+02		0.47	3.20E+01
07/25/05	354.00	0.49	3.27E+01	1.20E+02		0.49	3.27E+01
07/26/05	354.00	0.43	2.99E+01	1.16E+02		0.43	2.99E+01
07/27/05	354.00	0.42	2.98E+01	1.04E+02		0.42	2.98E+01
07/28/05	354.00	0.42	2.96E+01	1.02E+02		0.42	2.96E+01
07/29/05	354.00	0.44	3.06E+01	9.00E+01		0.44	3.06E+01
07/30/05	354.00	0.44	3.03E+01	9.30E+01		0.44	3.03E+01
07/31/05	354.00			8.70E+01	8.70E+01		8.70E+01
08/01/05	354.00	0.40	2.88E+01	7.90E+01		0.40	2.88E+01
08/02/05	354.00	0.36	2.75E+01	7.80E+01		0.36	2.75E+01
08/03/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/04/05	354.00	0.34	2.66E+01	7.00E+01		0.34	2.66E+01
08/05/05	354.00	0.34	2.65E+01	6.60E+01		0.34	2.65E+01
08/06/05	354.00	0.34	2.66E+01	6.30E+01		0.34	2.66E+01
08/07/05	354.00	0.35	2.71E+01	5.90E+01		0.35	2.71E+01
08/08/05	354.00	0.34	2.67E+01	5.90E+01		0.34	2.67E+01
08/09/05	354.00	0.32	2.59E+01	6.00E+01		0.32	2.59E+01
08/10/05	354.00	0.33	2.64E+01	5.80E+01		0.33	2.64E+01
08/11/05	354.00	0.35	2.71E+01	5.40E+01		0.35	2.71E+01
08/12/05	354.00	0.31	2.57E+01	5.40E+01		0.31	2.57E+01
08/13/05	354.00			5.50E+01	5.50E+01		5.50E+01
08/14/05	354.00	0.36	2.73E+01	6.30E+01		0.36	2.73E+01
08/15/05	354.00	0.36	2.75E+01	7.40E+01		0.36	2.75E+01
08/16/05	354.00	0.44	3.06E+01	7.40E+01		0.44	3.06E+01
08/17/05	354.00	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
08/18/05	354.00	0.38	2.82E+01	8.70E+01		0.38	2.82E+01
08/19/05	354.00	0.36	2.76E+01	7.80E+01		0.36	2.76E+01
08/20/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/21/05	354.00	0.35	2.70E+01	7.20E+01		0.35	2.70E+01
08/22/05	354.00	0.37	2.78E+01	6.70E+01		0.37	2.78E+01
08/23/05	354.00	0.34	2.68E+01	6.30E+01		0.34	2.68E+01
08/24/05	354.00	0.32	2.61E+01	6.10E+01		0.32	2.61E+01
08/25/05	354.00	0.18	2.15E+01	5.30E+01		0.18	2.15E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/26/05	354.00	0.16	2.09E+01	4.90E+01		0.16	2.09E+01
08/27/05	354.00	0.14	2.04E+01	4.70E+01		0.14	2.04E+01
08/28/05	354.00	0.15	2.05E+01	4.80E+01		0.15	2.05E+01
08/29/05	354.00	0.21	2.23E+01	5.20E+01		0.21	2.23E+01
08/30/05	354.00	0.28	2.47E+01	5.20E+01		0.28	2.47E+01
08/31/05	354.00	0.32	2.58E+01			0.32	2.58E+01
09/01/05	354.00	0.28	2.47E+01	6.00E+01		0.28	2.47E+01
09/02/05	354.00	0.25	2.38E+01	7.20E+01		0.25	2.38E+01
09/03/05	354.00	0.24	2.34E+01	6.70E+01		0.24	2.34E+01
09/04/05	354.00	0.20	2.22E+01	5.60E+01		0.20	2.22E+01
09/05/05	354.00	0.19	2.19E+01	4.90E+01		0.19	2.19E+01
09/06/05	354.00	0.15	2.07E+01	4.70E+01		0.15	2.07E+01
09/07/05	354.00	0.11	1.96E+01	4.50E+01		0.11	1.96E+01
09/08/05	354.00	0.09	1.90E+01	4.30E+01		0.09	1.90E+01
09/09/05	354.00	0.06	1.84E+01	4.20E+01		0.06	1.84E+01
09/10/05	354.00	0.04	1.79E+01	4.00E+01		0.04	1.79E+01
09/11/05	354.00	0.02	1.74E+01	4.00E+01		0.02	1.74E+01
09/12/05	354.00	0.04	1.78E+01	3.70E+01		0.04	1.78E+01
09/13/05	354.00	0.07	1.87E+01	3.60E+01		0.07	1.87E+01
09/14/05	354.00	0.06	1.83E+01	3.50E+01		0.06	1.83E+01
09/15/05	354.00	0.06	1.83E+01	4.00E+01		0.06	1.83E+01
09/16/05	354.00	0.14	2.05E+01	3.90E+01		0.14	2.05E+01
09/17/05	354.00	0.20	2.21E+01	3.90E+01		0.20	2.21E+01
09/18/05	354.00	0.27	2.42E+01	3.80E+01		0.27	2.42E+01
09/19/05	354.00	0.28	2.46E+01	4.00E+01		0.28	2.46E+01
09/20/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/21/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/22/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
09/23/05	354.00	0.19	2.18E+01	4.10E+01		0.19	2.18E+01
09/24/05	354.00	0.16	2.10E+01	4.00E+01		0.16	2.10E+01
09/25/05	354.00	0.15	2.06E+01	3.90E+01		0.15	2.06E+01
09/26/05	354.00	0.17	2.12E+01	4.10E+01		0.17	2.12E+01
09/27/05	354.00	0.17	2.12E+01	4.30E+01		0.17	2.12E+01
09/28/05	354.00	0.17	2.12E+01	4.50E+01		0.17	2.12E+01
09/29/05	354.00	0.19	2.19E+01	4.40E+01		0.19	2.19E+01
09/30/05	354.00	0.21	2.25E+01	4.30E+01		0.21	2.25E+01
10/01/05	354.00	0.23	2.30E+01	4.00E+01		0.23	2.30E+01
10/02/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/03/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
10/04/05	354.00	0.25	2.35E+01	4.10E+01		0.25	2.35E+01
10/05/05	354.00	0.23	2.30E+01	4.10E+01		0.23	2.30E+01
10/06/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/07/05	354.00	0.20	2.21E+01	4.00E+01		0.20	2.21E+01
10/08/05	354.00	0.28	2.46E+01	2.89E+03		0.28	2.46E+01
10/09/05	359.40	5.56	2.61E+03	1.20E+04		5.56	2.61E+03
10/10/05				6.98E+03	6.98E+03		6.98E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/05	361.00	7.57	5.10E+03	4.95E+03	4.95E+03	7.57	4.95E+03
10/12/05				5,830	5.83E+03		5.83E+03
10/13/05				14,700	1.47E+04		1.47E+04
10/14/05				12,700	1.27E+04		1.27E+04
10/15/05				13,200	1.32E+04		1.32E+04
10/16/05				9,720	9.72E+03		9.72E+03
10/17/05				8,130	8.13E+03		8.13E+03
10/18/05				7,120	7.12E+03		7.12E+03
10/19/05				6,000	6.00E+03		6.00E+03
10/20/05				4,700	4.70E+03		4.70E+03
10/21/05				3,050	3.05E+03		3.05E+03
10/22/05				1,880	1.88E+03		1.88E+03
10/23/05				3,630	3.63E+03		3.63E+03
10/24/05				3,220	3.22E+03		3.22E+03
10/25/05				4,140	4.14E+03		4.14E+03
10/26/05				4,770	4.77E+03		4.77E+03
10/27/05				4,090	4.09E+03		4.09E+03
10/28/05				3,410	3.41E+03		3.41E+03
10/29/05				2,820	2.82E+03		2.82E+03
10/30/05				2,240	2.24E+03		2.24E+03
10/31/05				1,780	1.78E+03		1.78E+03
11/01/05				1,480	1.48E+03		1.48E+03
11/02/05				1,280	1.28E+03		1.28E+03
11/03/05				1,120	1.12E+03		1.12E+03
11/04/05				993	9.93E+02		9.93E+02
11/05/05				926	9.26E+02		9.26E+02
11/06/05				842	8.42E+02		8.42E+02
11/07/05				807	8.07E+02		8.07E+02
11/08/05				729	7.29E+02		7.29E+02
11/09/05				735	7.35E+02		7.35E+02
11/10/05				1,040	1.04E+03		1.04E+03
11/11/05				1,050	1.05E+03		1.05E+03
11/12/05				891	8.91E+02		8.91E+02
11/13/05				772	7.72E+02		7.72E+02
11/14/05				688	6.88E+02		6.88E+02
11/15/05				672	6.72E+02		6.72E+02
11/16/05				724	7.24E+02		7.24E+02
11/17/05				1,730	1.73E+03		1.73E+03
11/18/05				1,740	1.74E+03		1.74E+03
11/19/05				1,390	1.39E+03		1.39E+03
11/20/05				1,110	1.11E+03		1.11E+03
11/21/05				953	9.53E+02		9.53E+02
11/22/05				1,510	1.51E+03		1.51E+03
11/23/05				2,310	2.31E+03		2.31E+03
11/24/05				1,780	1.78E+03		1.78E+03
11/25/05				1,490	1.49E+03		1.49E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/26/05				1,210	1.21E+03		1.21E+03
11/27/05				1,050	1.05E+03		1.05E+03
11/28/05				998	9.98E+02		9.98E+02
11/29/05				973	9.73E+02		9.73E+02
11/30/05				6,390	6.39E+03		6.39E+03
12/01/05				4,570	4.57E+03		4.57E+03
12/02/05				3,310	3.31E+03		3.31E+03
12/03/05				2,570	2.57E+03		2.57E+03
12/04/05				2,000	2.00E+03		2.00E+03
12/05/05				1,630	1.63E+03		1.63E+03
12/06/05				1,420	1.42E+03		1.42E+03
12/07/05				1,250	1.25E+03		1.25E+03
12/08/05				1,060	1.06E+03		1.06E+03
12/09/05				960	9.60E+02		9.60E+02
12/10/05				972	9.72E+02		9.72E+02
12/11/05				983	9.83E+02		9.83E+02
12/12/05				992	9.92E+02		9.92E+02
12/13/05				848	8.48E+02		8.48E+02
12/14/05				Ice			
12/15/05				Ice			
12/16/05				Ice			
12/17/05				Ice			
12/18/05				Ice			
12/19/05				Ice			
12/20/05				Ice			
12/21/05				Ice			
12/22/05				Ice			
12/23/05				Ice			
12/24/05				Ice			
12/25/05				Ice			
12/26/05				Ice			
12/27/05				Ice			
12/28/05				Ice			
12/29/05				Ice			
12/30/05				Ice			
12/31/05				Ice			
01/01/06	358.32	4.23	1.45E+03	ice		4.23	1.45E+03
01/02/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/03/06	358.42	4.33	1.53E+03	ice		4.33	1.53E+03
01/04/06	359.32	5.23	2.29E+03	ice		5.23	2.29E+03
01/05/06	359.35	5.26	2.32E+03	ice		5.26	2.32E+03
01/06/06	359.38	5.29	2.35E+03	ice		5.29	2.35E+03
01/07/06	358.91	4.82	1.92E+03	ice		4.82	1.92E+03
01/08/06	358.29	4.20	1.43E+03	ice		4.20	1.43E+03
01/09/06	357.87	3.78	1.14E+03	ice		3.78	1.14E+03
01/10/06	357.81	3.72	1.10E+03	ice		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/11/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/12/06	358.79	4.70	1.82E+03	3.01E+03		4.70	1.82E+03
01/13/06	359.00	4.91	2.00E+03	3.11E+03		4.91	2.00E+03
01/14/06	359.05	4.96	2.05E+03	3.55E+03		4.96	2.05E+03
01/15/06	359.77	5.68	2.74E+03	4.66E+03		5.68	2.74E+03
01/16/06	359.24	5.15	2.22E+03	3.17E+03		5.15	2.22E+03
01/17/06	360.20	6.11	3.21E+03	2.62E+03	2.62E+03	6.11	2.62E+03
01/18/06	359.83	5.74	2.80E+03	5.40E+03		5.74	2.80E+03
01/19/06	362.07	7.98	5.72E+03	7.34E+03		7.98	5.72E+03
01/20/06	361.87	7.78	5.41E+03	5.47E+03		7.78	5.41E+03
01/21/06	361.37	7.28	4.68E+03	4.71E+03		7.28	4.68E+03
01/22/06	360.65	6.56	3.74E+03	4.01E+03		6.56	3.74E+03
01/23/06	359.69	5.60	2.66E+03	3.25E+03		5.60	2.66E+03
01/24/06	359.35	5.26	2.32E+03	2.82E+03		5.26	2.32E+03
01/25/06	359.06	4.97	2.05E+03	2.62E+03		4.97	2.05E+03
01/26/06	358.64	4.55	1.70E+03	2.32E+03		4.55	1.70E+03
01/27/06	358.04	3.95	1.25E+03	1.87E+03		3.95	1.25E+03
01/28/06	357.59	3.50	9.65E+02	1.63E+03		3.50	9.65E+02
01/29/06	357.48	3.39	8.96E+02	1.64E+03		3.39	8.96E+02
01/30/06	357.70	3.61	1.03E+03	1.97E+03		3.61	1.03E+03
01/31/06	358.11	4.02	1.30E+03	2.53E+03		4.02	1.30E+03
02/01/06	358.24	4.15	1.39E+03	2.41E+03		4.15	1.39E+03
02/02/06	357.86	3.77	1.13E+03	1.97E+03		3.77	1.13E+03
02/03/06	357.92	3.83	1.17E+03	2.82E+03		3.83	1.17E+03
02/04/06	358.99	4.90	2.00E+03	3.46E+03		4.90	2.00E+03
02/05/06	359.50	5.45	2.51E+03	4.35E+03		5.45	2.51E+03
02/06/06	359.31	5.22	2.28E+03			5.22	2.28E+03
02/07/06	358.69	4.60	1.74E+03			4.60	1.74E+03
02/08/06	358.16	4.07	1.33E+03			4.07	1.33E+03
02/09/06	357.65	3.56	1.00E+03			3.56	1.00E+03
02/10/06	357.29	3.20	7.92E+02			3.20	7.92E+02
02/11/06	357.04	2.95	8.94E+02			2.95	8.94E+02
02/12/06	356.87	2.78	7.14E+02			2.78	7.14E+02
02/13/06	356.71	2.62	5.76E+02			2.62	5.76E+02
02/14/06	356.72	2.63	5.79E+02			2.63	5.79E+02
02/15/06	356.65	2.56	5.27E+02			2.56	5.27E+02
02/16/06	356.77	2.68	6.20E+02			2.68	6.20E+02
02/17/06	357.01	2.92	8.63E+02			2.92	8.63E+02
02/18/06	357.02	2.93	8.72E+02			2.93	8.72E+02
02/19/06	356.53	2.44	4.48E+02			2.44	4.48E+02
02/20/06	356.23	2.14	3.01E+02			2.14	3.01E+02
02/21/06	356.14	2.05	2.67E+02			2.05	2.67E+02
02/22/06	356.04	1.95	2.31E+02			1.95	2.31E+02
02/23/06	355.97	1.88	2.11E+02			1.88	2.11E+02
02/24/06	355.97	1.88	2.12E+02			1.88	2.12E+02
02/25/06	355.86	1.77	1.84E+02			1.77	1.84E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/26/06	355.79	1.70	1.66E+02			1.70	1.66E+02
02/27/06	355.60	1.51	1.29E+02			1.51	1.29E+02
02/28/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/01/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/02/06	355.53	1.44	1.17E+02			1.44	1.17E+02
03/03/06	355.44	1.35	1.04E+02			1.35	1.04E+02
03/04/06	355.52	1.43	1.16E+02			1.43	1.16E+02
03/05/06	355.57	1.48	1.24E+02			1.48	1.24E+02
03/06/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/07/06	355.58	1.49	1.26E+02			1.49	1.26E+02
03/08/06	355.57	1.48	1.23E+02			1.48	1.23E+02
03/09/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/10/06	355.66	1.57	1.39E+02			1.57	1.39E+02
03/11/06	355.90	1.81	1.92E+02			1.81	1.92E+02
03/12/06	355.85	1.76	1.80E+02			1.76	1.80E+02
03/13/06	355.96	1.87	2.08E+02			1.87	2.08E+02
03/14/06	356.56	2.47	4.71E+02			2.47	4.71E+02
03/15/06	356.47	2.38	4.16E+02			2.38	4.16E+02
03/16/06	355.98	1.89	2.16E+02			1.89	2.16E+02
03/17/06	355.75	1.66	1.57E+02			1.66	1.57E+02
03/18/06	355.64	1.55	1.36E+02			1.55	1.36E+02
03/19/06	355.53	1.44	1.18E+02			1.44	1.18E+02
03/20/06	355.48	1.39	1.10E+02			1.39	1.10E+02
03/21/06	355.41	1.32	9.91E+01			1.32	9.91E+01
03/22/06	355.37	1.28	9.39E+01			1.28	9.39E+01
03/23/06	355.34	1.25	9.10E+01			1.25	9.10E+01
03/24/06	355.29	1.20	8.51E+01			1.20	8.51E+01
03/25/06	355.27	1.18	8.29E+01			1.18	8.29E+01
03/26/06	355.29	1.20	8.49E+01			1.20	8.49E+01
03/27/06	355.33	1.24	8.94E+01			1.24	8.94E+01
03/28/06	355.27	1.18	8.23E+01			1.18	8.23E+01
03/29/06	355.23	1.14	7.83E+01			1.14	7.83E+01
03/30/06	355.20	1.11	7.56E+01			1.11	7.56E+01
03/31/06	355.15	1.06	7.03E+01			1.06	7.03E+01
04/01/06	355.11	1.02	6.70E+01			1.02	6.70E+01
04/02/06	355.14	1.05	6.94E+01			1.05	6.94E+01
04/03/06							
04/04/06							
04/05/06							
04/06/06							
04/07/06							
04/08/06							
04/09/06							
04/10/06							
04/11/06							
04/12/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/13/06							
04/14/06							
04/15/06							
04/16/06							
04/17/06							
04/18/06							
04/19/06							
04/20/06							
04/21/06							
04/22/06							
04/23/06							
04/24/06							
04/25/06							
04/26/06							
04/27/06							
04/28/06							
04/29/06							
04/30/06							
05/01/06							
05/02/06							
05/03/06							
05/04/06							
05/05/06							
05/06/06							
05/07/06							
05/08/06							
05/09/06							
05/10/06							
05/11/06							
05/12/06							
05/13/06							
05/14/06							
05/15/06							
05/16/06							
05/17/06							
05/18/06							
05/19/06							
05/20/06							
05/21/06							
05/22/06							
05/23/06							
05/24/06							
05/25/06							
05/26/06							
05/27/06							
05/28/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/29/06							
05/30/06							
05/31/06							
06/01/06	355.38	1.29	9.59E+01			1.29	9.59E+01
06/02/06	355.81	1.72	1.72E+02			1.72	1.72E+02
06/03/06	356.27	2.18	3.18E+02			2.18	3.18E+02
06/04/06	356.86	2.77	7.00E+02			2.77	7.00E+02
06/05/06	356.82	2.73	6.61E+02			2.73	6.61E+02
06/06/06	356.43	2.34	3.91E+02			2.34	3.91E+02
06/07/06	356.27	2.18	3.17E+02			2.18	3.17E+02
06/08/06	358.87	4.78	1.89E+03			4.78	1.89E+03
06/09/06	358.96	4.87	1.96E+03			4.87	1.96E+03
06/10/06	358.58	4.49	1.65E+03			4.49	1.65E+03
06/11/06	357.98	3.89	1.21E+03			3.89	1.21E+03
06/12/06	357.26	3.17	7.78E+02			3.17	7.78E+02
06/13/06	356.79	2.70	6.34E+02			2.70	6.34E+02
06/14/06	356.40	2.31	3.75E+02			2.31	3.75E+02
06/15/06	356.25	2.16	3.09E+02			2.16	3.09E+02
06/16/06	356.14	2.05	2.65E+02			2.05	2.65E+02
06/17/06	355.83	1.74	1.76E+02			1.74	1.76E+02
06/18/06	355.61	1.52	1.31E+02			1.52	1.31E+02
06/19/06	355.47	1.38	1.07E+02			1.38	1.07E+02
06/20/06	355.43	1.34	1.02E+02			1.34	1.02E+02
06/21/06	355.44	1.35	1.03E+02			1.35	1.03E+02
06/22/06	355.29	1.20	8.53E+01			1.20	8.53E+01
06/23/06	355.20	1.11	7.47E+01			1.11	7.47E+01
06/24/06	355.60	1.51	1.29E+02			1.51	1.29E+02
06/25/06	356.30	2.21	3.30E+02			2.21	3.30E+02
06/26/06	357.75	3.66	1.06E+03			3.66	1.06E+03
06/27/06	359.71	5.62	2.68E+03			5.62	2.68E+03
06/28/06	360.97	6.88	4.15E+03			6.88	4.15E+03
06/29/06	362.39	8.30	6.22E+03			8.30	6.22E+03
06/30/06	362.14	8.05	5.82E+03			8.05	5.82E+03
07/01/06	361.52	7.43	4.89E+03			7.43	4.89E+03
07/02/06	360.70	6.61	3.80E+03			6.61	3.80E+03
07/03/06	359.75	5.66	2.72E+03			5.66	2.72E+03
07/04/06	358.74	4.65	1.78E+03			4.65	1.78E+03
07/05/06	357.91	3.82	1.16E+03			3.82	1.16E+03
07/06/06	357.21	3.12	7.52E+02			3.12	7.52E+02
07/07/06	356.77	2.68	6.23E+02			2.68	6.23E+02
07/08/06	356.35	2.26	3.53E+02			2.26	3.53E+02
07/09/06	356.03	1.94	2.30E+02			1.94	2.30E+02
07/10/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/11/06	355.62	1.53	1.32E+02			1.53	1.32E+02
07/12/06	355.79	1.70	1.67E+02			1.70	1.67E+02
07/13/06	356.18	2.09	2.81E+02			2.09	2.81E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/14/06	356.25	2.16	3.07E+02			2.16	3.07E+02
07/15/06	355.85	1.76	1.81E+02			1.76	1.81E+02
07/16/06	355.61	1.52	1.31E+02			1.52	1.31E+02
07/17/06	355.45	1.36	1.05E+02			1.36	1.05E+02
07/18/06	355.31	1.22	8.72E+01			1.22	8.72E+01
07/19/06	355.22	1.13	7.68E+01			1.13	7.68E+01
07/20/06	355.11	1.02	6.65E+01			1.02	6.65E+01
07/21/06	355.05	0.96	6.11E+01			0.96	6.11E+01
07/22/06	355.44	1.35	1.04E+02			1.35	1.04E+02
07/23/06	355.92	1.83	1.99E+02			1.83	1.99E+02
07/24/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/25/06	355.35	1.26	9.21E+01			1.26	9.21E+01
07/26/06	355.14	1.05	6.94E+01			1.05	6.94E+01
07/27/06	355.00	0.91	5.78E+01			0.91	5.78E+01
07/28/06	355.10	1.01	6.56E+01			1.01	6.56E+01
07/29/06	355.48	1.39	1.10E+02			1.39	1.10E+02
07/30/06	355.34	1.25	9.04E+01			1.25	9.04E+01
07/31/06	355.08	0.99	6.39E+01			0.99	6.39E+01
08/01/06	354.90	0.81	5.04E+01			0.81	5.04E+01
08/02/06	354.79	0.70	4.33E+01			0.70	4.33E+01
08/03/06	354.71	0.62	3.89E+01			0.62	3.89E+01
08/04/06	354.78	0.69	4.25E+01			0.69	4.25E+01
08/05/06	354.86	0.77	4.73E+01			0.77	4.73E+01
08/06/06	354.72	0.63	3.92E+01			0.63	3.92E+01
08/07/06	354.60	0.51	3.35E+01			0.51	3.35E+01
08/08/06	354.60	0.51	3.36E+01			0.51	3.36E+01
08/09/06	354.61	0.52	3.40E+01			0.52	3.40E+01
08/10/06	354.51	0.42	2.97E+01			0.42	2.97E+01
08/11/06	354.65	0.56	3.58E+01			0.56	3.58E+01
08/12/06	354.78	0.69	4.26E+01			0.69	4.26E+01
08/13/06	354.62	0.53	3.43E+01			0.53	3.43E+01
08/14/06	354.51	0.42	2.95E+01			0.42	2.95E+01
08/15/06	354.51	0.42	2.99E+01			0.42	2.99E+01
08/16/06	354.70	0.61	3.81E+01			0.61	3.81E+01
08/17/06	354.66	0.57	3.62E+01			0.57	3.62E+01
08/18/06	354.52	0.43	3.01E+01			0.43	3.01E+01
08/19/06	354.46	0.37	2.79E+01			0.37	2.79E+01
08/20/06	354.47	0.38	2.80E+01			0.38	2.80E+01
08/21/06	354.45	0.36	2.73E+01			0.36	2.73E+01
08/22/06	354.43	0.34	2.66E+01			0.34	2.66E+01
08/23/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/24/06	354.39	0.30	2.53E+01			0.30	2.53E+01
08/25/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/26/06	354.50	0.41	2.91E+01			0.41	2.91E+01
08/27/06	354.69	0.60	3.76E+01			0.60	3.76E+01
08/28/06	356.32	2.23	3.41E+02			2.23	3.41E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/29/06	357.24	3.15	7.65E+02			3.15	7.65E+02
08/30/06	358.44	4.35	1.54E+03			4.35	1.54E+03
08/31/06	358.08	3.99	1.27E+03			3.99	1.27E+03
09/01/06	357.40	3.31	8.52E+02			3.31	8.52E+02
09/02/06	356.56	2.47	4.71E+02			2.47	4.71E+02
09/03/06	357.74	3.65	1.05E+03			3.65	1.05E+03
09/04/06	357.96	3.87	1.20E+03			3.87	1.20E+03
09/05/06	357.51	3.42	9.14E+02			3.42	9.14E+02
09/06/06	357.03	2.94	8.76E+02			2.94	8.76E+02
09/07/06	356.62	2.53	5.10E+02			2.53	5.10E+02
09/08/06	356.20	2.11	2.88E+02			2.11	2.88E+02
09/09/06	355.83	1.74	1.76E+02			1.74	1.76E+02
09/10/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/11/06	355.44	1.35	1.03E+02			1.35	1.03E+02
09/12/06	355.27	1.18	8.30E+01			1.18	8.30E+01
09/13/06	355.17	1.08	7.21E+01			1.08	7.21E+01
09/14/06	355.17	1.08	7.19E+01			1.08	7.19E+01
09/15/06	357.75	3.66	1.06E+03			3.66	1.06E+03
09/16/06	359.53	5.44	2.49E+03			5.44	2.49E+03
09/17/06	358.76	4.67	1.80E+03			4.67	1.80E+03
09/18/06	357.91	3.82	1.16E+03			3.82	1.16E+03
09/19/06	357.09	3.00	9.52E+02			3.00	9.52E+02
09/20/06	356.53	2.44	4.50E+02			2.44	4.50E+02
09/21/06	356.10	2.01	2.51E+02			2.01	2.51E+02
09/22/06	355.81	1.72	1.70E+02			1.72	1.70E+02
09/23/06	355.63	1.54	1.33E+02			1.54	1.33E+02
09/24/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/25/06	355.49	1.40	1.11E+02			1.40	1.11E+02
09/26/06	355.41	1.32	9.98E+01			1.32	9.98E+01
09/27/06	355.34	1.25	9.10E+01			1.25	9.10E+01
09/28/06	355.26	1.17	8.10E+01			1.17	8.10E+01
09/29/06	355.31	1.22	8.67E+01			1.22	8.67E+01
09/30/06	355.53	1.44	1.17E+02			1.44	1.17E+02
10/01/06	355.57	1.48	1.24E+02			1.48	1.24E+02
10/02/06	355.79	1.70	1.65E+02			1.70	1.65E+02
10/03/06	355.60	1.51	1.29E+02			1.51	1.29E+02
10/04/06	355.44	1.35	1.03E+02			1.35	1.03E+02
10/05/06	355.42	1.33	1.01E+02			1.33	1.01E+02
10/06/06	355.62	1.53	1.32E+02			1.53	1.32E+02
10/07/06	355.43	1.34	1.03E+02			1.34	1.03E+02
10/08/06	355.32	1.23	8.84E+01			1.23	8.84E+01
10/09/06	355.22	1.13	7.71E+01			1.13	7.71E+01
10/10/06	355.14	1.05	6.93E+01			1.05	6.93E+01
10/11/06	355.08	0.99	6.37E+01			0.99	6.37E+01
10/12/06							
10/13/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/14/06							
10/15/06							
10/16/06	354.09						
10/17/2006	355.45	1.36	1.06E+02	5.32E+02		1.36	1.06E+02
10/18/2006	356.23	2.14	2.99E+02	1.63E+03		2.14	2.99E+02
10/19/2006	356.67	2.58	5.45E+02	1.33E+03		2.58	5.45E+02
10/20/2006	356.52	2.43	4.46E+02	1.33E+03		2.43	4.46E+02
10/21/2006	357.01	2.92	8.63E+02	1.59E+03		2.92	8.63E+02
10/22/2006	356.70	2.61	5.65E+02	1.28E+03		2.61	5.65E+02
10/23/2006	356.30	2.21	3.32E+02	1.05E+03		2.21	3.32E+02
10/24/2006	356.14	2.05	2.66E+02	8.85E+02		2.05	2.66E+02
10/25/2006	355.92	1.83	1.98E+02	7.67E+02		1.83	1.98E+02
10/26/2006	355.77	1.68	1.61E+02	6.73E+02		1.68	1.61E+02
10/27/2006	355.66	1.57	1.39E+02	5.96E+02		1.57	1.39E+02
10/28/2006	357.61	3.52	9.77E+02	5.70E+03		3.52	9.77E+02
10/29/2006	360.71	6.62	3.82E+03	6.47E+03		6.62	3.82E+03
10/30/2006	359.82	5.73	2.80E+03	3.99E+03		5.73	2.80E+03
10/31/2006	359.03	4.94	2.03E+03	2.77E+03		4.94	2.03E+03
11/1/2006	358.17	4.08	1.34E+03	2.12E+03		4.08	1.34E+03
11/2/2006	357.60	3.51	9.71E+02	1.97E+03		3.51	9.71E+02
11/3/2006	357.55	3.46	9.41E+02	1.86E+03		3.46	9.41E+02
11/4/2006	357.11	3.02	7.00E+02	1.48E+03		3.02	7.00E+02
11/5/2006	356.72	2.63	5.77E+02	1.24E+03		2.63	5.77E+02
11/6/2006	356.46	2.37	4.07E+02	1.02E+03		2.37	4.07E+02
11/7/2006	356.31	2.22	3.36E+02	9.51E+02		2.22	3.36E+02
11/8/2006	356.88	2.79	7.16E+02	2.52E+03		2.79	7.16E+02
11/9/2006	360.90	6.81	4.06E+03	6.68E+03		6.81	4.06E+03
11/10/2006	360.37	6.28	3.40E+03	4.65E+03		6.28	3.40E+03
11/11/2006	359.81	5.72	2.78E+03	3.40E+03		5.72	2.78E+03
11/12/2006	359.19	5.10	2.17E+03	2.74E+03		5.10	2.17E+03
11/13/2006	358.51	4.42	1.60E+03	2.42E+03		4.42	1.60E+03
11/14/2006	358.17	4.08	1.34E+03	2.16E+03		4.08	1.34E+03
11/15/2006	357.92	3.83	1.17E+03	1.97E+03		3.83	1.17E+03
11/16/2006	357.62	3.53	9.81E+02	1.81E+03		3.53	9.81E+02
11/17/2006	359.24	5.15	2.21E+03	3.58E+03		5.15	2.21E+03
11/18/2006	359.22	5.13	2.20E+03	3.05E+03		5.13	2.20E+03
11/19/2006	358.83	4.74	1.85E+03	2.44E+03		4.74	1.85E+03
11/20/2006	358.32	4.23	1.45E+03	2.06E+03		4.23	1.45E+03
11/21/2006	357.79	3.70	1.09E+03	1.70E+03		3.70	1.09E+03
11/22/2006	357.37	3.28	8.36E+02	1.46E+03		3.28	8.36E+02
11/23/2006	357.74	3.65	1.05E+03	1.64E+03		3.65	1.05E+03
11/24/2006	359.61	5.52	2.57E+03	3.14E+03		5.52	2.57E+03
11/25/2006	359.14	5.05	2.12E+03	2.67E+03		5.05	2.12E+03
11/26/2006	358.71	4.62	1.75E+03	2.22E+03		4.62	1.75E+03
11/27/2006	358.16	4.07	1.33E+03	1.86E+03		4.07	1.33E+03
11/28/2006	357.76	3.67	1.07E+03	1.61E+03		3.67	1.07E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/29/2006	357.48	3.39	8.96E+02	1.45E+03		3.39	8.96E+02
11/30/2006	357.21	3.12	7.51E+02	1.34E+03		3.12	7.51E+02
12/1/2006	357.12	3.03	7.04E+02	1.42E+03		3.03	7.04E+02
12/2/2006	358.39	4.30	1.50E+03	2.27E+03		4.30	1.50E+03
12/3/2006	357.92	3.83	1.17E+03	1.88E+03		3.83	1.17E+03
12/4/2006	357.41	3.32	8.57E+02	1.50E+03		3.32	8.57E+02
12/5/2006	356.98	2.89	8.21E+02	1.27E+03		2.89	8.21E+02
12/6/2006	356.68	2.59	5.51E+02	1.10E+03		2.59	5.51E+02
12/7/2006	356.52	2.43	4.46E+02	1.02E+03		2.43	4.46E+02
12/8/2006	356.42	2.33	3.87E+02	9.61E+02		2.33	3.87E+02
12/9/2006	356.14	2.05	2.65E+02	7.94E+02		2.05	2.65E+02
12/10/2006	356.04	1.95	2.31E+02	7.39E+02		1.95	2.31E+02
12/11/2006	356.05	1.96	2.37E+02	7.31E+02		1.96	2.37E+02
12/12/2006	356.00	1.91	2.21E+02	7.47E+02		1.91	2.21E+02
12/13/2006	355.97	1.88	2.13E+02	7.46E+02		1.88	2.13E+02
12/14/2006	356.15	2.06	2.68E+02	8.45E+02		2.06	2.68E+02
12/15/2006	356.10	2.01	2.51E+02	8.26E+02		2.01	2.51E+02
12/16/2006	355.94	1.85	2.05E+02	7.61E+02		1.85	2.05E+02
12/17/2006	355.84	1.75	1.77E+02	6.99E+02		1.75	1.77E+02
12/18/2006	355.76	1.67	1.59E+02	6.40E+02		1.67	1.59E+02
12/19/2006	355.70	1.61	1.47E+02	6.01E+02		1.61	1.47E+02
12/20/2006	355.68	1.59	1.44E+02	5.66E+02		1.59	1.44E+02
12/21/2006	355.63	1.54	1.34E+02	5.30E+02		1.54	1.34E+02
12/22/2006	355.56	1.47	1.22E+02	5.23E+02		1.47	1.22E+02
12/23/2006	356.14	2.05	2.66E+02	1.18E+03		2.05	2.66E+02
12/24/2006	356.97	2.88	8.17E+02	1.46E+03		2.88	8.17E+02
12/25/2006	356.50	2.41	4.31E+02	1.14E+03		2.41	4.31E+02
12/26/2006	356.42	2.33	3.86E+02	1.38E+03		2.33	3.86E+02
12/27/2006	356.60	2.51	4.92E+02	1.28E+03		2.51	4.92E+02
12/28/2006	356.30	2.21	3.30E+02	1.06E+03		2.21	3.30E+02
12/29/2006	356.08	1.99	2.45E+02	8.53E+02		1.99	2.45E+02
12/30/2006	355.93	1.84	2.00E+02	7.77E+02		1.84	2.00E+02
12/31/2006	355.87	1.78	1.86E+02	7.31E+02		1.78	1.86E+02
1/1/2007	356.56	2.47	4.67E+02	1.57E+03		2.47	4.67E+02
1/2/2007	357.98	3.89	1.21E+03	2.29E+03		3.89	1.21E+03
1/3/2007	357.38	3.29	8.43E+02	1.68E+03		3.29	8.43E+02
1/4/2007	356.85	2.76	6.94E+02	1.33E+03		2.76	6.94E+02
1/5/2007	356.60	2.51	4.97E+02	1.18E+03		2.51	4.97E+02
1/6/2007	356.88	2.79	7.23E+02	1.69E+03		2.79	7.23E+02
1/7/2007	357.08	2.99	9.46E+02	1.67E+03		2.99	9.46E+02
1/8/2007	358.04	3.95	1.25E+03	3.56E+03		3.95	1.25E+03
1/9/2007	359.21	5.12	2.19E+03	3.70E+03		5.12	2.19E+03
1/10/2007	358.48	4.39	1.57E+03	2.59E+03		4.39	1.57E+03
1/11/2007	357.71	3.62	1.04E+03	1.90E+03		3.62	1.04E+03
1/12/2007	357.12	3.03	7.06E+02	1.50E+03		3.03	7.06E+02
1/13/2007	356.97	2.88	8.17E+02	1.38E+03		2.88	8.17E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/14/2007	357.13	3.04	7.12E+02	1.48E+03		3.04	7.12E+02
1/15/2007	357.40	3.31	8.55E+02	2.14E+03		3.31	8.55E+02
1/16/2007	357.68	3.59	1.02E+03	2.25E+03		3.59	1.02E+03
1/17/2007	357.17	3.08	7.28E+02	1.63E+03		3.08	7.28E+02
1/18/2007	356.58	2.49	4.78E+02	1.21E+03		2.49	4.78E+02
1/19/2007	356.46	2.37	4.10E+02	1.05E+03		2.37	4.10E+02
1/20/2007	356.42	2.33	3.88E+02	1.02E+03		2.33	3.88E+02
1/21/2007	361.31	7.22	4.60E+03	8.01E+02	8.01E+02	7.22	8.01E+02
1/22/2007	356.09	2.00	2.47E+02	8.16E+02		2.00	2.47E+02
1/23/2007	355.96	1.87	2.08E+02	7.72E+02		1.87	2.08E+02
1/24/2007	355.91	1.82	1.96E+02	7.39E+02		1.82	1.96E+02
1/25/2007	355.83	1.74	1.76E+02	6.85E+02		1.74	1.76E+02
1/26/2007	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/27/2007	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/28/2007	355.65	1.56	1.38E+02	Ice		1.56	1.38E+02
1/29/2007	355.67	1.58	1.41E+02	Ice		1.58	1.41E+02
1/30/2007	355.66	1.57	1.40E+02	Ice		1.57	1.40E+02
1/31/2007	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
2/1/2007	355.45	1.36	1.05E+02	Ice		1.36	1.05E+02
2/2/2007	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
2/3/2007	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/4/2007	355.31	1.22	8.72E+01	Ice		1.22	8.72E+01
2/5/2007	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
2/6/2007	355.35	1.26	9.23E+01	Ice		1.26	9.23E+01
2/7/2007	355.15	1.06	7.03E+01	Ice		1.06	7.03E+01
2/8/2007	355.07	0.98	6.29E+01	Ice		0.98	6.29E+01
2/9/2007	355.01	0.92	5.81E+01	Ice		0.92	5.81E+01
2/10/2007	354.98	0.89	5.60E+01	Ice		0.89	5.60E+01
2/11/2007	354.95	0.86	5.35E+01	Ice		0.86	5.35E+01
2/12/2007	354.94	0.85	5.27E+01	Ice		0.85	5.27E+01
2/13/2007	354.94	0.85	5.28E+01	Ice		0.85	5.28E+01
2/14/2007	355.04	0.95	6.08E+01	Ice		0.95	6.08E+01
2/15/2007	354.97	0.88	5.49E+01	Ice		0.88	5.49E+01
2/16/2007	355.21	1.12	7.61E+01	Ice		1.12	7.61E+01
2/17/2007	355.14	1.05	6.93E+01	Ice		1.05	6.93E+01
2/18/2007	355.07	0.98	6.33E+01	Ice		0.98	6.33E+01
2/19/2007	355.02	0.93	5.87E+01	Ice		0.93	5.87E+01
2/20/2007	354.99	0.90	5.67E+01	Ice		0.90	5.67E+01
2/21/2007	355.03	0.94	5.97E+01	Ice		0.94	5.97E+01
2/22/2007	355.12	1.03	6.77E+01	Ice		1.03	6.77E+01
2/23/2007	355.21	1.12	7.66E+01	Ice		1.12	7.66E+01
2/24/2007	355.22	1.13	7.73E+01	Ice		1.13	7.73E+01
2/25/2007	355.18	1.09	7.32E+01	Ice		1.09	7.32E+01
2/26/2007	355.12	1.03	6.74E+01	Ice		1.03	6.74E+01
2/27/2007	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/28/2007	355.11	1.02	6.70E+01	Ice [P]		1.02	6.70E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/1/2007	355.19	1.10	7.41E+01	Ice [P]		1.10	7.41E+01
3/2/2007	356.90	2.81	7.36E+02	Ice [P]		2.81	7.36E+02
3/3/2007	360.30	6.21	3.32E+03	Ice [P]		6.21	3.32E+03
3/4/2007	360.08	5.99	3.07E+03	Ice [P]		5.99	3.07E+03
3/5/2007	359.12	5.03	2.11E+03	Ice [P]		5.03	2.11E+03
3/6/2007	357.61	3.52	9.74E+02	Ice [P]		3.52	9.74E+02
3/7/2007	356.47	2.38	4.17E+02	Ice		2.38	4.17E+02
3/8/2007	370.57	16.48	2.74E+04	Ice		16.48	3.56E+02
3/9/2007	356.21	2.12	2.94E+02	Ice		2.12	2.94E+02
3/10/2007	355.99	1.90	2.19E+02	Ice		1.90	2.19E+02
3/11/2007	356.16	2.07	2.72E+02	Ice		2.07	2.72E+02
3/12/2007	357.34	3.25	8.21E+02	Ice		3.25	8.21E+02
3/13/2007	357.71	3.62	1.03E+03	Ice		3.62	1.03E+03
3/14/2007	358.30	4.21	1.43E+03	3.33E+03		4.21	1.43E+03
3/15/2007	359.18	5.09	2.16E+03	4.37E+03		5.09	2.16E+03
3/16/2007	358.97	4.88	1.98E+03	3.53E+03		4.88	1.98E+03
3/17/2007	357.48	3.39	9.01E+02	1.96E+03		3.39	9.01E+02
3/18/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/19/2007	357.42	3.33	8.67E+02	1.78E+03		3.33	8.67E+02
3/20/2007	357.14	3.05	7.13E+02	1.59E+03		3.05	7.13E+02
3/21/2007	357.32	3.23	8.08E+02	1.59E+03		3.23	8.08E+02
3/22/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/23/2007	360.47	6.38	3.52E+03	5.04E+03		6.38	3.52E+03
3/24/2007	360.55	6.46	3.62E+03	5.40E+03		6.46	3.62E+03
3/25/2007	360.57	6.48	3.65E+03	5.54E+03		6.48	3.65E+03
3/26/2007	360.16	6.07	3.17E+03	4.58E+03		6.07	3.17E+03
3/27/2007	359.69	5.60	2.65E+03	3.99E+03		5.60	2.65E+03
3/28/2007	359.27	5.18	2.25E+03	3.48E+03		5.18	2.25E+03
3/29/2007	358.58	4.49	1.65E+03	2.73E+03		4.49	1.65E+03
3/30/2007	357.98	3.89	1.21E+03	2.15E+03		3.89	1.21E+03
3/31/2007	357.53	3.44	9.27E+02	1.78E+03		3.44	9.27E+02
4/1/2007	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
4/2/2007	357.18	3.09	7.37E+02	1.55E+03		3.09	7.37E+02
4/3/2007	357.20	3.11	7.45E+02	1.59E+03		3.11	7.45E+02
4/4/2007	357.13	3.04	7.10E+02	1.75E+03		3.04	7.10E+02
4/5/2007	358.07	3.98	1.27E+03	2.55E+03		3.98	1.27E+03
4/6/2007	357.73	3.64	1.05E+03	1.99E+03		3.64	1.05E+03
4/7/2007	357.22	3.13	7.55E+02	1.62E+03		3.13	7.55E+02
4/8/2007	356.82	2.73	6.65E+02	1.36E+03		2.73	6.65E+02
4/9/2007	356.58	2.49	4.84E+02	1.18E+03		2.49	4.84E+02
4/10/2007	356.39	2.30	3.71E+02	1.04E+03		2.30	3.71E+02
4/11/2007	356.24	2.15	3.04E+02	9.02E+02		2.15	3.04E+02
4/12/2007	356.61	2.52	5.00E+02			2.52	5.00E+02
4/13/2007	357.94	3.85	1.18E+03			3.85	1.18E+03
4/14/2007	357.49	3.40	9.02E+02	1.75E+03		3.40	9.02E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/15/2007	359.26	5.17	2.24E+03	5.67E+03		5.17	2.24E+03
4/16/2007	365.42	11.33	1.22E+04	1.97E+04		11.33	1.22E+04
4/17/2007	365.86	11.77	1.32E+04	1.54E+04		11.77	1.32E+04
4/18/2007	366.70	12.61	1.54E+04	1.10E+04	1.10E+04	12.61	1.10E+04
4/19/2007	366.56	12.47	1.50E+04	1.01E+04	1.01E+04	12.47	1.01E+04
4/20/2007	365.68	11.59	1.28E+04	9.03E+03	9.03E+03	11.59	9.03E+03
4/21/2007	364.43	10.34	1.00E+04	7.64E+03	7.64E+03	10.34	7.64E+03
4/22/2007	362.63	8.54	6.61E+03	5.99E+03	5.99E+03	8.54	5.99E+03
4/23/2007	360.23	6.14	3.25E+03	4.06E+03		6.14	3.25E+03
4/24/2007	358.68	4.59	1.73E+03	2.48E+03		4.59	1.73E+03
4/25/2007	357.97	3.88	1.20E+03	1.85E+03		3.88	1.20E+03
4/26/2007	357.87	3.78	1.13E+03	1.84E+03		3.78	1.13E+03
4/27/2007	358.03	3.94	1.24E+03	1.99E+03		3.94	1.24E+03
4/28/2007	358.15	4.06	1.32E+03	2.11E+03		4.06	1.32E+03
4/29/2007	357.85	3.76	1.12E+03	1.83E+03		3.76	1.12E+03
4/30/2007	357.45	3.36	8.83E+02	1.57E+03		3.36	8.83E+02
5/1/2007	357.03	2.94	8.84E+02	1.35E+03		2.94	8.84E+02
5/2/2007	356.78	2.69	6.30E+02	1.22E+03		2.69	6.30E+02
5/3/2007	356.66	2.57	5.39E+02	1.18E+03		2.57	5.39E+02
5/4/2007	356.39	2.30	3.73E+02	9.31E+02		2.30	3.73E+02
5/5/2007	356.23	2.14	3.02E+02	8.60E+02		2.14	3.02E+02
5/6/2007	356.06	1.97	2.38E+02	8.32E+02		1.97	2.38E+02
5/7/2007	355.89	1.80	1.91E+02	7.33E+02		1.80	1.91E+02
5/8/2007	355.73	1.64	1.53E+02	6.95E+02		1.64	1.53E+02
5/9/2007	355.66	1.57	1.40E+02	6.64E+02		1.57	1.40E+02
5/10/2007	355.60	1.51	1.29E+02	5.98E+02		1.51	1.29E+02
5/11/2007	355.57	1.48	1.24E+02	6.00E+02		1.48	1.24E+02
5/12/2007	355.48	1.39	1.09E+02	5.63E+02		1.39	1.09E+02
5/13/2007	355.40	1.31	9.85E+01	5.52E+02		1.31	9.85E+01
5/14/2007	355.35	1.26	9.19E+01	4.99E+02		1.26	9.19E+01
5/15/2007	355.24	1.15	7.94E+01	4.59E+02		1.15	7.94E+01
5/16/2007	355.17	1.08	7.19E+01	4.44E+02		1.08	7.19E+01
5/17/2007	355.24	1.15	7.94E+01	4.53E+02		1.15	7.94E+01
5/18/2007	355.26	1.17	8.19E+01	4.53E+02		1.17	8.19E+01
5/19/2007	355.27	1.18	8.29E+01	4.57E+02		1.18	8.29E+01
5/20/2007	355.24	1.15	7.92E+01	4.62E+02		1.15	7.92E+01
5/21/2007	355.25	1.16	8.03E+01	4.68E+02		1.16	8.03E+01
5/22/2007	355.14	1.05	6.93E+01	4.40E+02		1.05	6.93E+01
5/23/2007	355.04	0.95	6.09E+01	3.69E+02		0.95	6.09E+01
5/24/2007	355.01	0.92	5.80E+01	3.43E+02		0.92	5.80E+01
5/25/2007	354.96	0.87	5.47E+01	3.20E+02		0.87	5.47E+01
5/26/2007	354.91	0.82	5.09E+01	2.84E+02		0.82	5.09E+01
5/27/2007	354.87	0.78	4.83E+01	2.51E+02		0.78	4.83E+01
5/28/2007	354.86	0.77	4.75E+01	2.52E+02		0.77	4.75E+01
5/29/2007	354.79	0.70	4.32E+01	2.50E+02		0.70	4.32E+01
5/30/2007	354.70	0.61	3.84E+01	2.36E+02		0.61	3.84E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
5/31/2007	354.65	0.56	3.57E+01	2.22E+02		0.56	3.57E+01
6/1/2007	354.61	0.52	3.39E+01	2.03E+02		0.52	3.39E+01
6/2/2007	354.59	0.50	3.31E+01	1.91E+02		0.50	3.31E+01
6/3/2007	354.65	0.56	3.60E+01	2.65E+02		0.56	3.60E+01
6/4/2007	355.00	0.91	5.78E+01	5.13E+02		0.91	5.78E+01
6/5/2007	355.37	1.28	9.44E+01	6.19E+02		1.28	9.44E+01
6/6/2007	355.19	1.10	7.42E+01	5.21E+02		1.10	7.42E+01
6/7/2007	354.97	0.88	5.49E+01	4.04E+02		0.88	5.49E+01
6/8/2007	354.78	0.69	4.25E+01	3.05E+02		0.69	4.25E+01
6/9/2007	354.68	0.59	3.76E+01	2.43E+02		0.59	3.76E+01
6/10/2007	354.64	0.55	3.55E+01	2.19E+02		0.55	3.55E+01
6/11/2007	354.60	0.51	3.36E+01	1.76E+02		0.51	3.36E+01
6/12/2007	354.54	0.45	3.10E+01	1.85E+02		0.45	3.10E+01
6/13/2007	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
6/14/2007	354.46	0.37	2.79E+01	1.59E+02		0.37	2.79E+01
6/15/2007	354.48	0.39	2.86E+01	1.39E+02		0.39	2.86E+01
6/16/2007	354.48	0.39	2.86E+01	1.47E+02		0.39	2.86E+01
6/17/2007	354.50	0.41	2.93E+01	1.50E+02		0.41	2.93E+01
6/18/2007	354.50	0.41	2.95E+01	1.71E+02		0.41	2.95E+01
6/19/2007	354.49	0.40	2.91E+01	1.57E+02		0.40	2.91E+01
6/20/2007	354.49	0.40	2.90E+01	1.79E+02		0.40	2.90E+01
6/21/2007	354.63	0.54	3.48E+01	2.40E+02		0.54	3.48E+01
6/22/2007	354.56	0.47	3.18E+01	2.13E+02		0.47	3.18E+01
6/23/2007	354.55	0.46	3.15E+01	1.85E+02		0.46	3.15E+01
6/24/2007	354.46	0.37	2.78E+01	1.55E+02		0.37	2.78E+01
6/25/2007	354.46	0.37	2.79E+01	1.26E+02		0.37	2.79E+01
6/26/2007	354.46	0.37	2.79E+01	1.24E+02		0.37	2.79E+01
6/27/2007	354.45	0.36	2.74E+01	1.19E+02		0.36	2.74E+01
6/28/2007	354.58	0.49	3.25E+01	1.21E+02		0.49	3.25E+01
6/29/2007	355.29	1.20	8.51E+01	1.92E+02		1.20	8.51E+01
6/30/2007	355.59	1.50	1.27E+02	4.10E+02		1.50	1.27E+02
7/1/2007	355.01	0.92	5.79E+01	4.07E+02		0.92	5.79E+01
7/2/2007	354.63	0.54	3.47E+01	2.52E+02		0.54	3.47E+01
7/3/2007	354.48	0.39	2.85E+01	1.66E+02		0.39	2.85E+01
7/4/2007	354.44	0.35	2.72E+01	1.54E+02		0.35	2.72E+01
7/5/2007	354.50	0.41	2.95E+01	2.81E+02		0.41	2.95E+01
7/6/2007	354.59	0.50	3.31E+01	8.12E+02		0.50	3.31E+01
7/7/2007	354.52	0.43	3.01E+01	4.44E+02		0.43	3.01E+01
7/8/2007	354.47	0.38	2.80E+01	2.43E+02		0.38	2.80E+01
7/9/2007	354.47	0.38	2.80E+01	1.72E+02		0.38	2.80E+01
7/10/2007	354.45	0.36	2.74E+01	1.47E+02		0.36	2.74E+01
7/11/2007	354.45	0.36	2.74E+01	1.40E+02		0.36	2.74E+01
7/12/2007	354.45	0.36	2.74E+01	1.68E+02		0.36	2.74E+01
7/13/2007	354.44	0.35	2.71E+01	1.77E+02		0.35	2.71E+01
7/14/2007	354.44	0.35	2.70E+01	1.43E+02		0.35	2.70E+01
7/15/2007	354.43	0.34	2.67E+01	1.28E+02		0.34	2.67E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/16/2007	354.45	0.36	2.73E+01	1.53E+02		0.36	2.73E+01
7/17/2007	354.44	0.35	2.69E+01	1.49E+02		0.35	2.69E+01
7/18/2007	354.43	0.34	2.68E+01	1.27E+02		0.34	2.68E+01
7/19/2007	354.57	0.48	3.20E+01	1.40E+02		0.48	3.20E+01
7/20/2007	354.74	0.65	4.04E+01	2.05E+02		0.65	4.04E+01
7/21/2007	354.50	0.41	2.93E+01	2.37E+02		0.41	2.93E+01
7/22/2007	354.45	0.36	2.75E+01	1.46E+02		0.36	2.75E+01
7/23/2007	354.52	0.43	2.99E+01	1.54E+02		0.43	2.99E+01
7/24/2007	355.76	1.67	1.59E+02	4.40E+02		1.67	1.59E+02
7/25/2007	355.64	1.55	1.35E+02	6.59E+02		1.55	1.35E+02
7/26/2007	355.11	1.02	6.70E+01	4.84E+02		1.02	6.70E+01
7/27/2007	354.72	0.63	3.95E+01	2.82E+02		0.63	3.95E+01
7/28/2007	354.73	0.64	4.00E+01	2.87E+02		0.64	4.00E+01
7/29/2007	354.96	0.87	5.45E+01	3.02E+02		0.87	5.45E+01
7/30/2007	354.81	0.72	4.47E+01	3.18E+02		0.72	4.47E+01
7/31/2007	354.65	0.56	3.61E+01	3.12E+02		0.56	3.61E+01
8/1/2007	354.54	0.45	3.08E+01	2.24E+02		0.45	3.08E+01
8/2/2007	354.44	0.35	2.72E+01	1.51E+02		0.35	2.72E+01
8/3/2007	354.43	0.34	2.68E+01	1.46E+02		0.34	2.68E+01
8/4/2007	354.44	0.35	2.71E+01	1.34E+02		0.35	2.71E+01
8/5/2007	354.43	0.34	2.68E+01	1.16E+02		0.34	2.68E+01
8/6/2007	354.44	0.35	2.69E+01	1.07E+02		0.35	2.69E+01
8/7/2007	354.44	0.35	2.69E+01	1.01E+02		0.35	2.69E+01
8/8/2007	354.73	0.64	4.00E+01	1.38E+02		0.64	4.00E+01
8/9/2007	355.69	1.60	1.46E+02	3.94E+02		1.60	1.46E+02
8/10/2007	356.03	1.94	2.30E+02	9.23E+02		1.94	2.30E+02
8/11/2007	356.97	2.88	8.10E+02	1.48E+03		2.88	8.10E+02
8/12/2007	356.22	2.13	2.95E+02	1.01E+03		2.13	2.95E+02
8/13/2007	355.42	1.33	1.01E+02	6.43E+02		1.33	1.01E+02
8/14/2007	355.01	0.92	5.85E+01	4.42E+02		0.92	5.85E+01
8/15/2007	354.80	0.71	4.39E+01	2.83E+02		0.71	4.39E+01
8/16/2007	354.64	0.55	3.53E+01	2.41E+02		0.55	3.53E+01
8/17/2007	354.54	0.45	3.09E+01	2.27E+02		0.45	3.09E+01
8/18/2007	354.49	0.40	2.89E+01	2.38E+02		0.40	2.89E+01
8/19/2007	354.46	0.37	2.79E+01	2.12E+02		0.37	2.79E+01
8/20/2007	354.45	0.36	2.74E+01	1.63E+02		0.36	2.74E+01
8/21/2007	354.54	0.45	3.08E+01	1.65E+02		0.45	3.08E+01
8/22/2007	355.45	1.36	1.05E+02	4.84E+02		1.36	1.05E+02
8/23/2007	355.34	1.25	9.04E+01	5.80E+02		1.25	9.04E+01
8/24/2007	355.02	0.93	5.92E+01	4.32E+02		0.93	5.92E+01
8/25/2007	354.86	0.77	4.78E+01	3.39E+02		0.77	4.78E+01
8/26/2007	354.76	0.67	4.14E+01	2.73E+02		0.67	4.14E+01
8/27/2007	354.78	0.69	4.26E+01	2.35E+02		0.69	4.26E+01
8/28/2007	354.73	0.64	3.98E+01	2.27E+02		0.64	3.98E+01
8/29/2007	354.66	0.57	3.65E+01	2.07E+02		0.57	3.65E+01
8/30/2007	354.64	0.55	3.54E+01	1.75E+02		0.55	3.54E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
8/31/2007	354.62	0.53	3.45E+01	1.47E+02		0.53	3.45E+01
9/1/2007	354.61	0.52	3.38E+01	1.42E+02		0.52	3.38E+01
9/2/2007	354.58	0.49	3.25E+01	1.31E+02		0.49	3.25E+01
9/3/2007	354.58	0.49	3.25E+01	1.19E+02		0.49	3.25E+01
9/4/2007	354.56	0.47	3.17E+01	1.09E+02		0.47	3.17E+01
9/5/2007	354.56	0.47	3.19E+01	1.05E+02		0.47	3.19E+01
9/6/2007	354.56	0.47	3.16E+01	9.50E+01		0.47	3.16E+01
9/7/2007	354.56	0.47	3.17E+01	8.50E+01		0.47	3.17E+01
9/8/2007	354.55	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
9/9/2007	354.55	0.46	3.15E+01	9.40E+01		0.46	3.15E+01
9/10/2007	354.56	0.47	3.17E+01	1.15E+02		0.47	3.17E+01
9/11/2007	354.56	0.47	3.16E+01	1.21E+02		0.47	3.16E+01
9/12/2007	354.58	0.49	3.26E+01	1.46E+02		0.49	3.26E+01
9/13/2007	354.58	0.49	3.28E+01	1.42E+02		0.49	3.28E+01
9/14/2007	354.57	0.48	3.23E+01	1.24E+02		0.48	3.23E+01
9/15/2007	354.56	0.47	3.17E+01	1.07E+02		0.47	3.17E+01
9/16/2007	354.53	0.44	3.06E+01	8.90E+01		0.44	3.06E+01
9/17/2007	354.53	0.44	3.06E+01	8.10E+01		0.44	3.06E+01
9/18/2007	354.54	0.45	3.11E+01	7.50E+01		0.45	3.11E+01
9/19/2007	354.53	0.44	3.03E+01	9.00E+01		0.44	3.03E+01
9/20/2007	354.51	0.42	2.96E+01	7.70E+01		0.42	2.96E+01
9/21/2007	354.51	0.42	2.97E+01	7.00E+01		0.42	2.97E+01
9/22/2007	354.50	0.41	2.95E+01	6.30E+01		0.41	2.95E+01
9/23/2007	354.51	0.42	2.97E+01	6.10E+01		0.42	2.97E+01
9/24/2007	354.51	0.42	2.96E+01	6.00E+01		0.42	2.96E+01
9/25/2007	354.51	0.42	2.98E+01	5.60E+01		0.42	2.98E+01
9/26/2007	354.52	0.43	3.02E+01	5.40E+01		0.43	3.02E+01
9/27/2007	354.53	0.44	3.06E+01	5.10E+01		0.44	3.06E+01
9/28/2007	354.53	0.44	3.05E+01	5.00E+01		0.44	3.05E+01
9/29/2007	354.53	0.44	3.03E+01	5.30E+01		0.44	3.03E+01
9/30/2007	354.53	0.44	3.04E+01	5.00E+01		0.44	3.04E+01
10/1/2007	354.54	0.45	3.10E+01	4.90E+01		0.45	3.10E+01
10/2/2007	354.53	0.44	3.07E+01	4.70E+01		0.44	3.07E+01
10/3/2007	354.54	0.45	3.08E+01	4.80E+01		0.45	3.08E+01
10/4/2007	354.55	0.46	3.12E+01	4.90E+01		0.46	3.12E+01
10/5/2007	354.54	0.45	3.11E+01	4.80E+01		0.45	3.11E+01
10/6/2007	354.54	0.45	3.08E+01	4.60E+01		0.45	3.08E+01
10/7/2007	354.54	0.45	3.10E+01	4.60E+01		0.45	3.10E+01
10/8/2007	354.57	0.48	3.23E+01	4.60E+01		0.48	3.23E+01
10/9/2007	354.59	0.50	3.30E+01	4.80E+01		0.50	3.30E+01
10/10/2007	354.72	0.63	3.93E+01	7.40E+01		0.63	3.93E+01
10/11/2007	354.88	0.79	4.91E+01	1.95E+02		0.79	4.91E+01
10/12/2007	355.38	1.29	9.54E+01	2.44E+02		1.29	9.54E+01
10/13/2007	356.34	2.25	3.47E+02	5.70E+02		2.25	3.47E+02
10/14/2007	355.94	1.85	2.03E+02	6.20E+02		1.85	2.03E+02
10/15/2007	355.29	1.20	8.53E+01	4.50E+02		1.20	8.53E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/16/2007	354.96	0.87	5.42E+01	3.03E+02		0.87	5.42E+01
10/17/2007	354.78	0.69	4.29E+01	2.19E+02		0.69	4.29E+01
10/18/2007	354.67	0.58	3.71E+01	1.60E+02		0.58	3.71E+01
10/19/2007	354.63	0.54	3.50E+01	1.75E+02		0.54	3.50E+01
10/20/2007	355.33	1.24	8.90E+01	2.44E+02		1.24	8.90E+01
10/21/2007	356.00	1.91	2.19E+02	5.50E+02		1.91	2.19E+02
10/22/2007	355.59	1.50	1.27E+02	5.34E+02		1.50	1.27E+02
10/23/2007	355.18	1.09	7.28E+01	3.95E+02		1.09	7.28E+01
10/24/2007	355.03	0.94	5.97E+01	3.22E+02		0.94	5.97E+01
10/25/2007	355.03	0.94	5.99E+01	2.75E+02		0.94	5.99E+01
10/26/2007	355.01	0.92	5.79E+01	2.86E+02		0.92	5.79E+01
10/27/2007	356.42	2.33	3.89E+02	1.36E+03		2.33	3.89E+02
10/28/2007	359.10	5.01	2.09E+03	3.05E+03		5.01	2.09E+03
10/29/2007	358.60	4.51	1.67E+03	2.16E+03		4.51	1.67E+03
10/30/2007	357.95	3.86	1.19E+03	1.59E+03		3.86	1.19E+03
10/31/2007	356.85	2.76	6.92E+02	1.17E+03		2.76	6.92E+02
11/1/2007	356.05	1.96	2.34E+02	7.92E+02		1.96	2.34E+02
11/2/2007	355.68	1.59	1.43E+02	6.10E+02		1.59	1.43E+02
11/3/2007	355.47	1.38	1.08E+02	5.00E+02		1.38	1.08E+02
11/4/2007	355.34	1.25	9.08E+01	4.50E+02		1.25	9.08E+01
11/5/2007	355.22	1.13	7.73E+01	4.08E+02		1.13	7.73E+01
11/6/2007	355.15	1.06	7.02E+01	3.67E+02		1.06	7.02E+01
11/7/2007	355.23	1.14	7.87E+01	4.03E+02		1.14	7.87E+01
11/8/2007	355.20	1.11	7.52E+01	4.02E+02		1.11	7.52E+01
11/9/2007	355.07	0.98	6.32E+01	3.55E+02		0.98	6.32E+01
11/10/2007	355.12	1.03	6.79E+01	3.64E+02		1.03	6.79E+01
11/11/2007	355.40	1.31	9.87E+01	4.31E+02		1.31	9.87E+01
11/12/2007	355.35	1.26	9.21E+01	4.77E+02		1.26	9.21E+01
11/13/2007	355.26	1.17	8.14E+01	4.41E+02		1.17	8.14E+01
11/14/2007	355.35	1.26	9.25E+01	4.61E+02		1.26	9.25E+01
11/15/2007	355.55	1.46	1.20E+02	8.62E+02		1.46	1.20E+02
11/16/2007	357.14	3.05	7.14E+02	1.55E+03		3.05	7.14E+02
11/17/2007	356.84	2.75	6.83E+02	1.29E+03		2.75	6.83E+02
11/18/2007	356.21	2.12	2.92E+02	9.67E+02		2.12	2.92E+02
11/19/2007	355.80	1.71	1.69E+02	7.55E+02		1.71	1.69E+02
11/20/2007	355.83	1.74	1.75E+02	6.98E+02		1.74	1.75E+02
11/21/2007	356.28	2.19	3.22E+02	8.49E+02		2.19	3.22E+02
11/22/2007	356.17	2.08	2.76E+02	8.46E+02		2.08	2.76E+02
11/23/2007	355.91	1.82	1.94E+02	7.37E+02		1.82	1.94E+02
11/24/2007	355.62	1.53	1.33E+02	6.15E+02		1.53	1.33E+02
11/25/2007	355.48	1.39	1.10E+02	5.44E+02		1.39	1.10E+02
11/26/2007	356.25	2.16	3.08E+02	9.78E+02		2.16	3.08E+02
11/27/2007	358.81	4.72	1.83E+03	3.10E+03		4.72	1.83E+03
11/28/2007	358.49	4.40	1.58E+03	2.43E+03		4.40	1.58E+03
11/29/2007	357.65	3.56	1.00E+03	1.74E+03		3.56	1.00E+03
11/30/2007	357.17	3.08	7.28E+02	1.41E+03		3.08	7.28E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/1/2007	356.67	2.58	5.41E+02	1.16E+03		2.58	5.41E+02
12/2/2007	356.29	2.20	3.26E+02	9.33E+02		2.20	3.26E+02
12/3/2007	356.27	2.18	3.17E+02	1.16E+03		2.18	3.17E+02
12/4/2007	356.79	2.70	6.37E+02	1.43E+03		2.70	6.37E+02
12/5/2007	356.56	2.47	4.66E+02	1.20E+03		2.47	4.66E+02
12/6/2007	356.17	2.08	2.76E+02	9.39E+02		2.08	2.76E+02
12/7/2007	355.88	1.79	1.88E+02	7.73E+02		1.79	1.88E+02
12/8/2007	355.82	1.73	1.73E+02	7.22E+02		1.73	1.73E+02
12/9/2007	355.73	1.64	1.53E+02	7.06E+02		1.64	1.53E+02
12/10/2007	356.03	1.94	2.30E+02	8.36E+02		1.94	2.30E+02
12/11/2007	356.48	2.39	4.18E+02	1.11E+03		2.39	4.18E+02
12/12/2007	356.60	2.51	4.95E+02	1.28E+03		2.51	4.95E+02
12/13/2007	356.73	2.64	5.89E+02	1.28E+03		2.64	5.89E+02
12/14/2007	356.46	2.37	4.12E+02	1.16E+03		2.37	4.12E+02
12/15/2007	356.44	2.35	3.97E+02	1.10E+03		2.35	3.97E+02
12/16/2007	355.99	1.90	2.16E+02	9.44E+02		1.90	2.16E+02
12/17/2007	356.20	2.11	2.88E+02	8.63E+02		2.11	2.88E+02
12/18/2007	356.34	2.25	3.50E+02	1.10E+03		2.25	3.50E+02
12/19/2007	356.12	2.03	2.59E+02	1.06E+03		2.03	2.59E+02
12/20/2007	355.96	1.87	2.10E+02	8.76E+02		1.87	2.10E+02
12/21/2007	355.93	1.84	2.01E+02	8.25E+02		1.84	2.01E+02
12/22/2007	355.90	1.81	1.92E+02	7.83E+02		1.81	1.92E+02
12/23/2007	356.00	1.91	2.20E+02	1.08E+03		1.91	2.20E+02
12/24/2007	360.17	6.08	3.17E+03	6.03E+03		6.08	3.17E+03
12/25/2007	361.03	6.94	4.22E+03	4.80E+03		6.94	4.22E+03
12/26/2007	360.43	6.34	3.48E+03	3.95E+03		6.34	3.48E+03
12/27/2007	359.69	5.60	2.66E+03	3.28E+03		5.60	2.66E+03
12/28/2007	359.06	4.97	2.05E+03	2.90E+03		4.97	2.05E+03
12/29/2007	359.35	5.26	2.32E+03	3.49E+03		5.26	2.32E+03
12/30/2007	359.66	5.57	2.62E+03	3.80E+03		5.57	2.62E+03
12/31/2007	359.62	5.53	2.58E+03	3.37E+03		5.53	2.58E+03
1/1/2008	359.62	5.53	2.58E+03	3.36E+03		5.53	2.58E+03
1/2/2008	359.42	5.33	2.39E+03	2.95E+03		5.33	2.39E+03
1/3/2008	358.65	4.56	1.71E+03	2.21E+03		4.56	1.71E+03
1/4/2008	357.91	3.82	1.16E+03	1.72E+03		3.82	1.16E+03
1/5/2008	357.65	3.56	9.97E+02	1.62E+03		3.56	9.97E+02
1/6/2008	357.33	3.24	8.17E+02	1.54E+03		3.24	8.17E+02
1/7/2008	357.49	3.40	9.04E+02	1.78E+03		3.40	9.04E+02
1/8/2008	357.96	3.87	1.20E+03	2.58E+03		3.87	1.20E+03
1/9/2008	358.22	4.13	1.38E+03	3.52E+03		4.13	1.38E+03
1/10/2008	358.13	4.04	1.31E+03	3.19E+03		4.04	1.31E+03
1/11/2008	357.74	3.65	1.05E+03	2.67E+03		3.65	1.05E+03
1/12/2008	357.86	3.77	1.13E+03	2.61E+03		3.77	1.13E+03
1/13/2008	357.52	3.43	9.23E+02	2.07E+03		3.43	9.23E+02
1/14/2008	357.29	3.20	7.94E+02	1.85E+03		3.20	7.94E+02
1/15/2008	357.46	3.37	8.85E+02	1.90E+03		3.37	8.85E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/16/2008	357.17	3.08	7.30E+02	1.66E+03		3.08	7.30E+02
1/17/2008	356.73	2.64	5.87E+02	1.36E+03		2.64	5.87E+02
1/18/2008	356.62	2.53	5.08E+02	1.32E+03		2.53	5.08E+02
1/19/2008	357.07	2.98	9.25E+02	1.53E+03		2.98	9.25E+02
1/20/2008	356.80	2.71	6.47E+02	1.33E+03		2.71	6.47E+02
1/21/2008	356.08	1.99	2.46E+02	9.35E+02		1.99	2.46E+02
1/22/2008	356.19	2.10	2.83E+02	7.59E+02		2.10	2.83E+02
1/23/2008	355.98	1.89	2.14E+02	9.01E+02		1.89	2.14E+02
1/24/2008	355.85	1.76	1.80E+02	8.14E+02		1.76	1.80E+02
1/25/2008	355.88	1.79	1.87E+02	6.30E+02		1.79	1.87E+02
1/26/2008	355.85	1.76	1.81E+02	6.36E+02		1.76	1.81E+02
1/27/2008	355.58	1.49	1.26E+02	6.55E+02		1.49	1.26E+02
1/28/2008	355.51	1.42	1.14E+02	5.89E+02		1.42	1.14E+02
1/29/2008	355.49	1.40	1.10E+02	5.74E+02		1.40	1.10E+02
1/30/2008	355.55	1.46	1.20E+02	6.30E+02		1.46	1.20E+02
1/31/2008	355.77	1.68	1.62E+02	7.05E+02		1.68	1.62E+02
2/1/2008	355.65	1.56	1.37E+02	7.49E+02		1.56	1.37E+02
2/2/2008	357.23	3.14	7.60E+02	2.12E+03		3.14	7.60E+02
2/3/2008	357.80	3.71	1.09E+03	2.24E+03		3.71	1.09E+03
2/4/2008	357.55	3.46	9.37E+02	1.95E+03		3.46	9.37E+02
2/5/2008	357.18	3.09	7.38E+02	2.12E+03		3.09	7.38E+02
2/6/2008	358.70	4.61	1.75E+03	4.28E+03		4.61	1.75E+03
2/7/2008	359.89	5.80	2.86E+03	6.61E+03		5.80	2.86E+03
2/8/2008	359.59	5.50	2.56E+03	4.28E+03		5.50	2.56E+03
2/9/2008	358.72	4.63	1.77E+03	2.98E+03		4.63	1.77E+03
2/10/2008	358.09	4.00	1.29E+03	2.38E+03		4.00	1.29E+03
2/11/2008	357.41	3.32	8.57E+02	1.76E+03		3.32	8.57E+02
2/12/2008	357.35	3.26	8.24E+02	1.35E+03		3.26	8.24E+02
2/13/2008	358.31	4.22	1.44E+03	3.84E+03		4.22	1.44E+03
2/14/2008	362.30	8.21	6.08E+03	8.45E+03		8.21	6.08E+03
2/15/2008	362.42	8.33	6.27E+03	7.21E+03		8.33	6.27E+03
2/16/2008	362.10	8.01	5.77E+03	6.01E+03		8.01	5.77E+03
2/17/2008	361.46	7.37	4.81E+03	5.03E+03		7.37	4.81E+03
2/18/2008	362.13	8.04	5.81E+03	7.66E+03		8.04	5.81E+03
2/19/2008	363.14	9.05	7.49E+03	9.19E+03		9.05	7.49E+03
2/20/2008	362.63	8.54	6.61E+03	6.75E+03		8.54	6.61E+03
2/21/2008	361.89	7.80	5.43E+03	5.35E+03	5.35E+03	7.80	5.35E+03
2/22/2008	360.77	6.68	3.89E+03	4.24E+03		6.68	3.89E+03
2/23/2008	359.57	5.48	2.54E+03	3.32E+03		5.48	2.54E+03
2/24/2008	358.67	4.58	1.72E+03	2.56E+03		4.58	1.72E+03
2/25/2008	358.18	4.09	1.35E+03	2.04E+03		4.09	1.35E+03
2/26/2008	357.87	3.78	1.14E+03	1.96E+03		3.78	1.14E+03
2/27/2008	358.76	4.67	1.80E+03	2.59E+03		4.67	1.80E+03
2/28/2008	358.49	4.40	1.58E+03	2.49E+03		4.40	1.58E+03
2/29/2008	357.91	3.82	1.16E+03	1.84E+03		3.82	1.16E+03
3/1/2008	357.48	3.39	8.97E+02	1.72E+03		3.39	8.97E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/2/2008	357.29	3.20	7.92E+02	1.58E+03		3.20	7.92E+02
3/3/2008	357.25	3.16	7.73E+02	1.50E+03		3.16	7.73E+02
3/4/2008	358.06	3.97	1.26E+03	2.07E+03		3.97	1.26E+03
3/5/2008	362.44	8.35	6.31E+03	1.24E+04		8.35	6.31E+03
3/6/2008	363.23	9.14	7.66E+03	1.10E+04		9.14	7.66E+03
3/7/2008	362.92	8.83	7.11E+03	8.02E+03		8.83	7.11E+03
3/8/2008	363.68	9.59	8.49E+03	1.30E+04		9.59	8.49E+03
3/9/2008	364.87	10.78	1.09E+04	1.67E+04		10.78	1.09E+04
3/10/2008	364.48	10.39	1.01E+04	9.74E+03	9.74E+03	10.39	9.74E+03
3/11/2008	364.22	10.13	9.57E+03	7.98E+03	7.98E+03	10.13	7.98E+03
3/12/2008	363.61	9.52	8.36E+03	7.19E+03	7.19E+03	9.52	7.19E+03
3/13/2008	362.28	8.19	6.04E+03	6.09E+03		8.19	6.04E+03
3/14/2008	360.59	6.50	3.67E+03	4.63E+03		6.50	3.67E+03
3/15/2008	359.74	5.65	2.71E+03	4.06E+03		5.65	2.71E+03
3/16/2008	359.35	5.26	2.32E+03	3.71E+03		5.26	2.32E+03
3/17/2008	358.90	4.81	1.91E+03	3.12E+03		4.81	1.91E+03
3/18/2008	358.33	4.24	1.46E+03	2.48E+03		4.24	1.46E+03
3/19/2008	358.64	4.55	1.70E+03	3.13E+03		4.55	1.70E+03
3/20/2008	360.86	6.77	4.00E+03	5.85E+03		6.77	4.00E+03
3/21/2008	360.29	6.20	3.31E+03	4.51E+03		6.20	3.31E+03
3/22/2008	359.63	5.54	2.59E+03	3.44E+03		5.54	2.59E+03
3/23/2008	358.96	4.87	1.96E+03	2.81E+03		4.87	1.96E+03
3/24/2008	358.33	4.24	1.46E+03	2.30E+03		4.24	1.46E+03
3/25/2008	357.85	3.76	1.13E+03	1.94E+03		3.76	1.13E+03
3/26/2008	357.50	3.41	9.11E+02	1.69E+03		3.41	9.11E+02
3/27/2008	357.21	3.12	7.49E+02	1.50E+03		3.12	7.49E+02
3/28/2008	357.04	2.95	8.98E+02	1.47E+03		2.95	8.98E+02
3/29/2008	356.97	2.88	8.17E+02	1.44E+03		2.88	8.17E+02
3/30/2008	356.73	2.64	5.88E+02	1.27E+03		2.64	5.88E+02
3/31/2008	356.52	2.43	4.41E+02	1.20E+03		2.43	4.41E+02
4/1/2008	356.76	2.67	6.16E+02	1.43E+03		2.67	6.16E+02
4/2/2008	357.15	3.06	7.19E+02	1.75E+03		3.06	7.19E+02
4/3/2008	356.94	2.85	7.80E+02	1.50E+03		2.85	7.80E+02
4/4/2008	356.89	2.80	7.26E+02	2.03E+03		2.80	7.26E+02
4/5/2008	357.65	3.56	9.98E+02	2.58E+03		3.56	9.98E+02
4/6/2008	357.31	3.22	8.04E+02	1.93E+03		3.22	8.04E+02
4/7/2008	356.90	2.81	7.41E+02	1.56E+03		2.81	7.41E+02
4/8/2008	356.65	2.56	5.28E+02	1.32E+03		2.56	5.28E+02
4/9/2008	356.43	2.34	3.94E+02	1.13E+03		2.34	3.94E+02
4/10/2008	356.27	2.18	3.17E+02	1.09E+03		2.18	3.17E+02
4/11/2008	356.15	2.06	2.71E+02	1.01E+03		2.06	2.71E+02
4/12/2008	356.40	2.31	3.77E+02	1.30E+03		2.31	3.77E+02
4/13/2008	356.71	2.62	5.71E+02	1.41E+03		2.62	5.71E+02
4/14/2008	356.39	2.30	3.75E+02	1.19E+03		2.30	3.75E+02
4/15/2008	356.12	2.03	2.59E+02	1.01E+03		2.03	2.59E+02
4/16/2008	355.95	1.86	2.06E+02	8.69E+02		1.86	2.06E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/17/2008	355.81	1.72	1.71E+02	8.16E+02		1.72	1.71E+02
4/18/2008	355.72	1.63	1.51E+02	7.53E+02		1.63	1.51E+02
4/19/2008	355.64	1.55	1.36E+02	7.11E+02		1.55	1.36E+02
4/20/2008	355.52	1.43	1.16E+02	6.67E+02		1.43	1.16E+02
4/21/2008	355.47	1.38	1.07E+02	6.27E+02		1.38	1.07E+02
4/22/2008	355.43	1.34	1.03E+02	6.07E+02		1.34	1.03E+02
4/23/2008	355.34	1.25	9.06E+01	5.40E+02		1.25	9.06E+01
4/24/2008	355.29	1.20	8.44E+01	5.25E+02		1.20	8.44E+01
4/25/2008	355.24	1.15	7.90E+01	5.15E+02		1.15	7.90E+01
4/26/2008	355.17	1.08	7.26E+01	4.84E+02		1.08	7.26E+01
4/27/2008	355.16	1.07	7.10E+01	4.64E+02		1.07	7.10E+01
4/28/2008	355.26	1.17	8.14E+01	8.26E+02		1.17	8.14E+01
4/29/2008	357.81	3.72	1.10E+03	3.29E+03		3.72	1.10E+03
4/30/2008	357.64	3.55	9.91E+02	2.24E+03		3.55	9.91E+02
5/1/2008	356.68	2.59	5.47E+02	1.50E+03		2.59	5.47E+02
5/2/2008	356.35	2.26	3.53E+02	1.12E+03		2.26	3.53E+02
5/3/2008	356.35	2.26	3.55E+02	1.12E+03		2.26	3.55E+02
5/4/2008	356.39	2.30	3.74E+02	1.26E+03		2.30	3.74E+02
5/5/2008	356.46	2.37	4.07E+02	1.25E+03		2.37	4.07E+02
5/6/2008	356.08	1.99	2.46E+02	1.02E+03		1.99	2.46E+02
5/7/2008	355.80	1.71	1.68E+02	8.37E+02		1.71	1.68E+02
5/8/2008	355.63	1.54	1.34E+02	7.24E+02		1.54	1.34E+02
5/9/2008	355.65	1.56	1.38E+02	7.50E+02		1.56	1.38E+02
5/10/2008	356.68	2.59	5.51E+02	1.23E+03		2.59	5.51E+02
5/11/2008	356.64	2.55	5.23E+02	1.23E+03		2.55	5.23E+02
5/12/2008	356.15	2.06	2.71E+02	9.64E+02		2.06	2.71E+02
5/13/2008	355.86	1.77	1.84E+02	7.72E+02		1.77	1.84E+02
5/14/2008	355.64	1.55	1.36E+02	6.72E+02		1.55	1.36E+02
5/15/2008	355.51	1.42	1.14E+02	6.17E+02		1.42	1.14E+02
5/16/2008	355.59	1.50	1.27E+02	6.60E+02		1.50	1.27E+02
5/17/2008	357.36	3.27	8.29E+02	1.82E+03		3.27	8.29E+02
5/18/2008	357.53	3.44	9.26E+02	1.76E+03		3.44	9.26E+02
5/19/2008	357.23	3.14	7.62E+02	1.51E+03		3.14	7.62E+02
5/20/2008	356.85	2.76	6.88E+02	1.23E+03		2.76	6.88E+02
5/21/2008	356.67	2.58	5.40E+02	1.07E+03		2.58	5.40E+02
5/22/2008	356.57	2.48	4.77E+02	1.01E+03		2.48	4.77E+02
5/23/2008	356.41	2.32	3.83E+02	9.27E+02		2.32	3.83E+02
5/24/2008	356.10	2.01	2.52E+02	8.05E+02		2.01	2.52E+02
5/25/2008	355.86	1.77	1.83E+02	6.69E+02		1.77	1.83E+02
5/26/2008	355.63	1.54	1.34E+02	5.91E+02		1.54	1.34E+02
5/27/2008	355.49	1.40	1.11E+02	5.33E+02		1.40	1.11E+02
5/28/2008	356.15	2.06	2.69E+02	5.76E+02		2.06	2.69E+02
5/29/2008	356.18	2.09	2.79E+02	7.19E+02		2.09	2.79E+02
5/30/2008	355.81	1.72	1.70E+02	6.30E+02		1.72	1.70E+02
5/31/2008	355.47	1.38	1.08E+02	4.93E+02		1.38	1.08E+02
6/1/2008	355.52	1.43	1.15E+02	5.07E+02		1.43	1.15E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/2/2008	355.50	1.41	1.13E+02	4.94E+02		1.41	1.13E+02
6/3/2008	355.23	1.14	7.82E+01	4.35E+02		1.14	7.82E+01
6/4/2008	355.15	1.06	7.07E+01	3.78E+02		1.06	7.07E+01
6/5/2008	355.31	1.22	8.67E+01	4.06E+02		1.22	8.67E+01
6/6/2008	355.23	1.14	7.78E+01	4.77E+02		1.14	7.78E+01
6/7/2008	355.14	1.05	6.89E+01	4.44E+02		1.05	6.89E+01
6/8/2008	355.08	0.99	6.37E+01	3.69E+02		0.99	6.37E+01
6/9/2008	355.07	0.98	6.27E+01	3.43E+02		0.98	6.27E+01
6/10/2008	355.01	0.92	5.81E+01	3.46E+02		0.92	5.81E+01
6/11/2008	355.01	0.92	5.79E+01	3.00E+02		0.92	5.79E+01
6/12/2008	355.04	0.95	6.03E+01	2.83E+02		0.95	6.03E+01
6/13/2008	354.92	0.83	5.14E+01	2.80E+02		0.83	5.14E+01
6/14/2008	354.79	0.70	4.35E+01	2.50E+02		0.70	4.35E+01
6/15/2008	354.77	0.68	4.24E+01	2.08E+02		0.68	4.24E+01
6/16/2008	354.80	0.71	4.39E+01	2.04E+02		0.71	4.39E+01
6/17/2008	354.76	0.67	4.14E+01	2.15E+02		0.67	4.14E+01
6/18/2008	354.70	0.61	3.85E+01	2.08E+02		0.61	3.85E+01
6/19/2008	354.82	0.73	4.51E+01	2.59E+02		0.73	4.51E+01
6/20/2008	354.87	0.78	4.84E+01	2.47E+02		0.78	4.84E+01
6/21/2008	354.79	0.70	4.35E+01	2.31E+02		0.70	4.35E+01
6/22/2008	354.82	0.73	4.48E+01	2.05E+02		0.73	4.48E+01
6/23/2008	354.77	0.68	4.20E+01	2.85E+02		0.68	4.20E+01
6/24/2008	354.71	0.62	3.90E+01	2.48E+02		0.62	3.90E+01
6/25/2008	354.62	0.53	3.46E+01	1.96E+02		0.53	3.46E+01
6/26/2008	354.55	0.46	3.12E+01	1.86E+02		0.46	3.12E+01
6/27/2008	354.51	0.42	2.99E+01	1.33E+02		0.42	2.99E+01
6/28/2008	354.53	0.44	3.03E+01	1.24E+02		0.44	3.03E+01
6/29/2008	354.50	0.41	2.94E+01	1.35E+02		0.41	2.94E+01
6/30/2008	354.52	0.43	3.01E+01	1.57E+02		0.43	3.01E+01
7/1/2008	354.50	0.41	2.93E+01	2.15E+02		0.41	2.93E+01
7/2/2008	354.45	0.36	2.73E+01	1.92E+02		0.36	2.73E+01
7/3/2008	354.43	0.34	2.67E+01	1.91E+02		0.34	2.67E+01
7/4/2008	354.43	0.34	2.67E+01	1.97E+02		0.34	2.67E+01
7/5/2008	354.49	0.40	2.88E+01	1.97E+02		0.40	2.88E+01
7/6/2008	354.49	0.40	2.90E+01	1.96E+02		0.40	2.90E+01
7/7/2008	354.50	0.41	2.93E+01	1.92E+02		0.41	2.93E+01
7/8/2008	354.45	0.36	2.74E+01	1.79E+02		0.36	2.74E+01
7/9/2008	354.44	0.35	2.70E+01	1.71E+02		0.35	2.70E+01
7/10/2008	354.44	0.35	2.69E+01	1.82E+02		0.35	2.69E+01
7/11/2008	354.43	0.34	2.65E+01	1.69E+02		0.34	2.65E+01
7/12/2008	354.45	0.36	2.73E+01	1.41E+02		0.36	2.73E+01
7/13/2008	354.46	0.37	2.79E+01	1.32E+02		0.37	2.79E+01
7/14/2008	354.48	0.39	2.87E+01	1.48E+02		0.39	2.87E+01
7/15/2008	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
7/16/2008	354.45	0.36	2.76E+01	1.63E+02		0.36	2.76E+01
7/17/2008	354.45	0.36	2.73E+01	1.45E+02		0.36	2.73E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/18/2008	354.47	0.38	2.83E+01	1.35E+02		0.38	2.83E+01
7/19/2008	354.48	0.39	2.86E+01	1.09E+02		0.39	2.86E+01
7/20/2008	354.49	0.40	2.88E+01	1.05E+02		0.40	2.88E+01
7/21/2008	354.48	0.39	2.87E+01	1.00E+02		0.39	2.87E+01
7/22/2008	354.48	0.39	2.86E+01	9.00E+01		0.39	2.86E+01
7/23/2008	354.49	0.40	2.90E+01	9.50E+01		0.40	2.90E+01
7/24/2008	354.59	0.50	3.32E+01	2.86E+02		0.50	3.32E+01
7/25/2008	355.23	1.14	7.83E+01	5.35E+02		1.14	7.83E+01
7/26/2008	354.86	0.77	4.73E+01	4.18E+02		0.77	4.73E+01
7/27/2008	354.48	0.39	2.85E+01	3.10E+02		0.39	2.85E+01
7/28/2008	354.40	0.31	2.58E+01	2.00E+02		0.31	2.58E+01
7/29/2008	354.40	0.31	2.56E+01	2.13E+02		0.31	2.56E+01
7/30/2008	354.43	0.34	2.66E+01	1.77E+02		0.34	2.66E+01
7/31/2008	354.46	0.37	2.76E+01	1.62E+02		0.37	2.76E+01
8/1/2008	354.45	0.36	2.74E+01	9.60E+01		0.36	2.74E+01
8/2/2008	354.45	0.36	2.76E+01	1.18E+02		0.36	2.76E+01
8/3/2008	354.61	0.52	3.41E+01	1.36E+02		0.52	3.41E+01
8/4/2008	354.67	0.58	3.70E+01	2.14E+02		0.58	3.70E+01
8/5/2008	354.58	0.49	3.28E+01	1.93E+02		0.49	3.28E+01
8/6/2008	354.59	0.50	3.33E+01	1.80E+02		0.50	3.33E+01
8/7/2008	355.38	1.29	9.61E+01	2.48E+02		1.29	9.61E+01
8/8/2008	354.98	0.89	5.61E+01	3.95E+02		0.89	5.61E+01
8/9/2008	354.63	0.54	3.50E+01	2.86E+02		0.54	3.50E+01
8/10/2008	354.46	0.37	2.76E+01	2.24E+02		0.37	2.76E+01
8/11/2008	354.48	0.39	2.86E+01	1.73E+02		0.39	2.86E+01
8/12/2008	355.06	0.97	6.23E+01	2.33E+02		0.97	6.23E+01
8/13/2008	355.00	0.91	5.71E+01	3.48E+02		0.91	5.71E+01
8/14/2008	354.73	0.64	3.99E+01	3.90E+02		0.64	3.99E+01
8/15/2008	354.58	0.49	3.26E+01	3.22E+02		0.49	3.26E+01
8/16/2008	354.73	0.64	3.99E+01	2.66E+02		0.64	3.99E+01
8/17/2008	354.79	0.70	4.31E+01	2.39E+02		0.70	4.31E+01
8/18/2008	354.65	0.56	3.57E+01	2.29E+02		0.56	3.57E+01
8/19/2008	354.54	0.45	3.08E+01	1.82E+02		0.45	3.08E+01
8/20/2008	354.47	0.38	2.81E+01	1.68E+02		0.38	2.81E+01
8/21/2008	354.45	0.36	2.73E+01	1.51E+02		0.36	2.73E+01
8/22/2008	354.44	0.35	2.69E+01	1.08E+02		0.35	2.69E+01
8/23/2008	354.42	0.33	2.62E+01	7.80E+01		0.33	2.62E+01
8/24/2008	354.42	0.33	2.62E+01	8.40E+01		0.33	2.62E+01
8/25/2008	354.40	0.31	2.56E+01	8.70E+01		0.31	2.56E+01
8/26/2008	354.38	0.29	2.49E+01	8.90E+01		0.29	2.49E+01
8/27/2008	354.36	0.27	2.43E+01	8.40E+01		0.27	2.43E+01
8/28/2008	354.35	0.26	2.40E+01	7.90E+01		0.26	2.40E+01
8/29/2008	354.35	0.26	2.41E+01	7.60E+01		0.26	2.41E+01
8/30/2008	354.38	0.29	2.48E+01	7.90E+01		0.29	2.48E+01
8/31/2008	354.38	0.29	2.48E+01	7.70E+01		0.29	2.48E+01
9/1/2008	354.36	0.27	2.43E+01	7.90E+01		0.27	2.43E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/2/2008	354.35	0.26	2.40E+01	7.80E+01		0.26	2.40E+01
9/3/2008	354.32	0.23	2.31E+01	7.50E+01		0.23	2.31E+01
9/4/2008	354.32	0.23	2.31E+01	7.20E+01		0.23	2.31E+01
9/5/2008	354.34	0.25	2.37E+01	6.80E+01		0.25	2.37E+01
9/6/2008	354.47	0.38	2.80E+01	1.04E+02		0.38	2.80E+01
9/7/2008	356.71	2.62	5.70E+02	6.35E+02		2.62	5.70E+02
9/8/2008	356.32	2.23	3.39E+02	8.42E+02		2.23	3.39E+02
9/9/2008	355.75	1.66	1.58E+02	7.02E+02		1.66	1.58E+02
9/10/2008	356.61	2.52	5.02E+02	1.03E+03		2.52	5.02E+02
9/11/2008	356.06	1.97	2.40E+02	7.76E+02		1.97	2.40E+02
9/12/2008	355.40	1.31	9.82E+01	4.85E+02		1.31	9.82E+01
9/13/2008	355.28	1.19	8.32E+01	4.26E+02		1.19	8.32E+01
9/14/2008	355.21	1.12	7.63E+01	4.80E+02		1.12	7.63E+01
9/15/2008	355.05	0.96	6.11E+01	3.97E+02		0.96	6.11E+01
9/16/2008	354.89	0.80	4.93E+01	2.66E+02		0.80	4.93E+01
9/17/2008	354.74	0.65	4.06E+01	2.08E+02		0.65	4.06E+01
9/18/2008	354.64	0.55	3.52E+01	1.84E+02		0.55	3.52E+01
9/19/2008	354.56	0.47	3.20E+01	1.50E+02		0.47	3.20E+01
9/20/2008	354.49	0.40	2.89E+01	1.08E+02		0.40	2.89E+01
9/21/2008	354.45	0.36	2.74E+01	1.13E+02		0.36	2.74E+01
9/22/2008	354.44	0.35	2.70E+01	1.07E+02		0.35	2.70E+01
9/23/2008	354.42	0.33	2.65E+01	1.16E+02		0.33	2.65E+01
9/24/2008	354.42	0.33	2.62E+01	7.10E+01		0.33	2.62E+01
9/25/2008	354.41	0.32	2.61E+01	1.00E+02		0.32	2.61E+01
9/26/2008	354.55	0.46	3.12E+01	1.36E+02		0.46	3.12E+01
9/27/2008	355.53	1.44	1.17E+02	3.58E+02		1.44	1.17E+02
9/28/2008	355.33	1.24	9.00E+01	4.60E+02		1.24	9.00E+01
9/29/2008	355.41	1.32	9.96E+01	4.97E+02		1.32	9.96E+01
9/30/2008	355.57	1.48	1.23E+02	5.43E+02		1.48	1.23E+02
10/1/2008	355.29	1.20	8.51E+01	4.58E+02		1.20	8.51E+01
10/2/2008	355.22	1.13	7.69E+01	3.73E+02		1.13	7.69E+01
10/3/2008	355.08	0.99	6.40E+01	3.07E+02		0.99	6.40E+01
10/4/2008	354.94	0.85	5.27E+01	2.56E+02		0.85	5.27E+01
10/5/2008	354.84	0.75	4.63E+01	2.19E+02		0.75	4.63E+01
10/6/2008	354.87	0.78	4.85E+01	2.02E+02		0.78	4.85E+01
10/7/2008	354.82	0.73	4.49E+01	1.98E+02		0.73	4.49E+01
10/8/2008	354.74	0.65	4.07E+01	1.71E+02		0.65	4.07E+01
10/9/2008	354.70	0.61	3.85E+01	1.77E+02		0.61	3.85E+01
10/10/2008	354.66	0.57	3.63E+01	1.68E+02		0.57	3.63E+01
10/11/2008	354.63	0.54	3.48E+01	1.26E+02		0.54	3.48E+01
10/12/2008	354.60	0.51	3.34E+01	1.31E+02		0.51	3.34E+01
10/13/2008	354.58	0.49	3.25E+01	1.34E+02		0.49	3.25E+01
10/14/2008	354.57	0.48	3.20E+01	1.20E+02		0.48	3.20E+01
10/15/2008	354.55	0.46	3.13E+01	1.21E+02		0.46	3.13E+01
10/16/2008	354.53	0.44	3.06E+01	1.12E+02		0.44	3.06E+01
10/17/2008	354.53	0.44	3.05E+01	1.03E+02		0.44	3.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/18/2008	354.62	0.53	3.43E+01	1.03E+02		0.53	3.43E+01
10/19/2008	354.66	0.57	3.64E+01	1.09E+02		0.57	3.64E+01
10/20/2008	354.66	0.57	3.63E+01	1.17E+02		0.57	3.63E+01
10/21/2008				1.35E+02	1.35E+02		1.35E+02
10/22/2008				1.16E+02	1.16E+02		1.16E+02
10/23/2008				1.16E+02	1.16E+02		1.16E+02
10/24/2008				1.21E+02	1.21E+02		1.21E+02
10/25/2008				2.00E+02	2.00E+02		2.00E+02
10/26/2008				1.71E+03	1.71E+03		1.71E+03
10/27/2008				1.39E+03	1.39E+03		1.39E+03
10/28/2008				2.05E+03	2.05E+03		2.05E+03
10/29/2008				4.20E+03	4.20E+03		4.20E+03
10/30/2008				2.97E+03	2.97E+03		2.97E+03
10/31/2008				2.17E+03	2.17E+03		2.17E+03
11/1/2008				1.61E+03	1.61E+03		1.61E+03
11/2/2008				1.18E+03	1.18E+03		1.18E+03
11/3/2008				9.61E+02	9.61E+02		9.61E+02
11/4/2008				7.99E+02	7.99E+02		7.99E+02
11/5/2008				6.54E+02	6.54E+02		6.54E+02
11/6/2008				6.44E+02	6.44E+02		6.44E+02
11/7/2008				7.06E+02	7.06E+02		7.06E+02
11/8/2008				7.13E+02	7.13E+02		7.13E+02
11/9/2008				6.50E+02	6.50E+02		6.50E+02
11/10/2008				6.02E+02	6.02E+02		6.02E+02
11/11/2008	355.47	1.38	1.08E+02	5.35E+02		1.38	1.08E+02
11/12/2008	355.37	1.28	9.46E+01	4.82E+02		1.28	9.46E+01
11/13/2008	355.28	1.19	8.38E+01	4.46E+02		1.19	8.38E+01
11/14/2008	355.54	1.45	1.18E+02	6.33E+02		1.45	1.18E+02
11/15/2008	355.91	1.82	1.95E+02	9.10E+02		1.82	1.95E+02
11/16/2008	357.60	3.51	9.71E+02	2.26E+03		3.51	9.71E+02
11/17/2008	357.62	3.53	9.83E+02	1.94E+03		3.53	9.83E+02
11/18/2008	356.98	2.89	8.19E+02	1.42E+03		2.89	8.19E+02
11/19/2008	356.47	2.38	4.13E+02	1.10E+03		2.38	4.13E+02
11/20/2008	356.12	2.03	2.60E+02	9.01E+02		2.03	2.60E+02
11/21/2008	355.95	1.86	2.06E+02	7.91E+02		1.86	2.06E+02
11/22/2008	355.76	1.67	1.60E+02	6.92E+02		1.67	1.60E+02
11/23/2008	355.57	1.48	1.24E+02	5.90E+02		1.48	1.24E+02
11/24/2008	355.47	1.38	1.09E+02	5.44E+02		1.38	1.09E+02
11/25/2008	355.65	1.56	1.38E+02	6.82E+02		1.56	1.38E+02
11/26/2008	356.23	2.14	2.99E+02	9.48E+02		2.14	2.99E+02
11/27/2008	356.04	1.95	2.32E+02	9.12E+02		1.95	2.32E+02
11/28/2008	355.80	1.71	1.68E+02	7.63E+02		1.71	1.68E+02
11/29/2008	355.64	1.55	1.37E+02	6.68E+02		1.55	1.37E+02
11/30/2008	355.55	1.46	1.21E+02	6.40E+02		1.46	1.21E+02
12/1/2008	356.83	2.74	6.76E+02	1.58E+03		2.74	6.76E+02
12/2/2008	357.48	3.39	8.98E+02	1.82E+03		3.39	8.98E+02

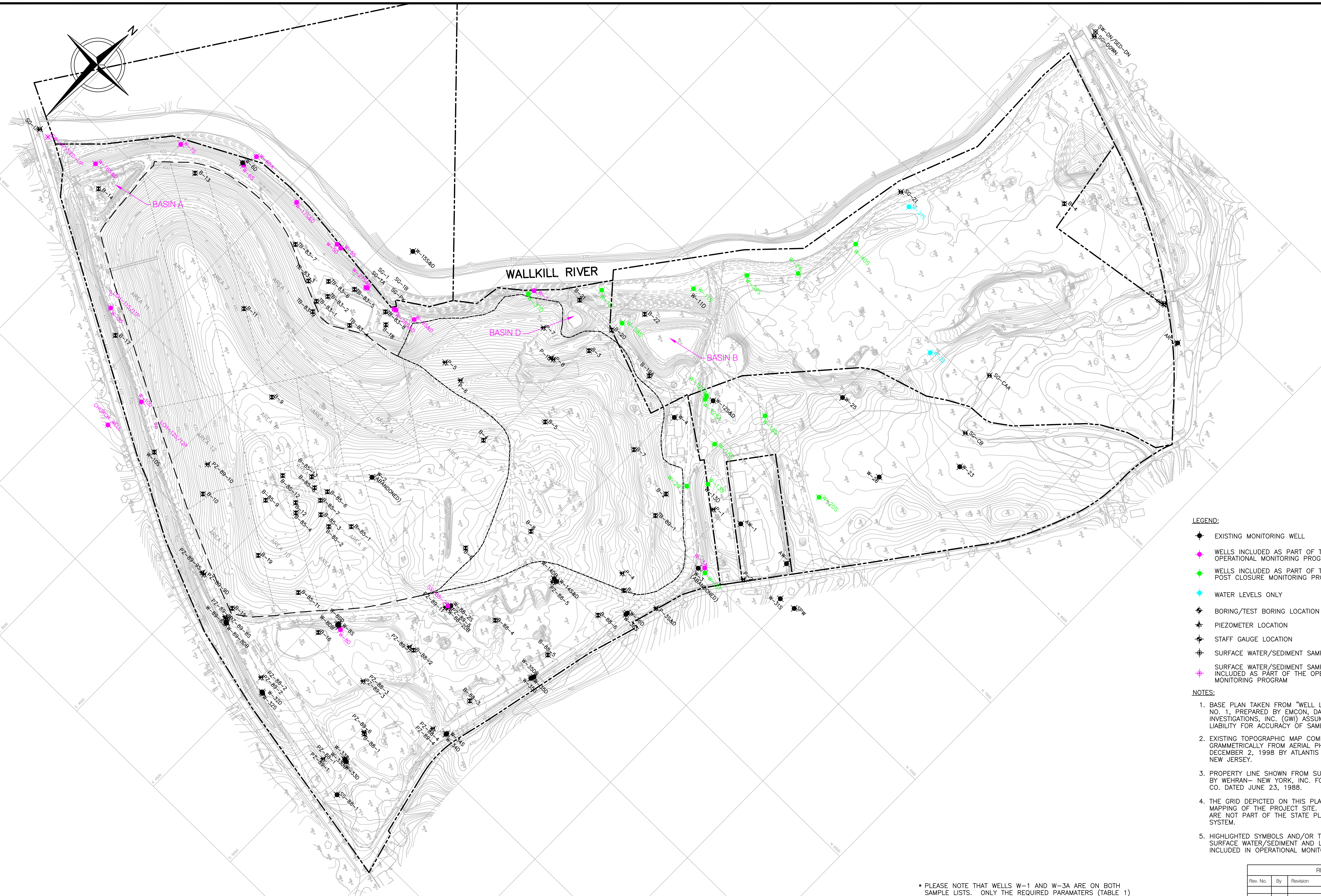
AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/3/2008	356.87	2.78	7.13E+02	1.38E+03		2.78	7.13E+02
12/4/2008	356.37	2.28	3.62E+02	1.08E+03		2.28	3.62E+02
12/5/2008	356.21	2.12	2.93E+02	9.50E+02		2.12	2.93E+02
12/6/2008	356.08	1.99	2.44E+02	8.44E+02		1.99	2.44E+02
12/7/2008	355.88	1.79	1.89E+02	7.70E+02		1.79	1.89E+02
12/8/2008	355.66	1.57	1.39E+02	6.44E+02		1.57	1.39E+02
12/9/2008	355.56	1.47	1.22E+02	6.00E+02		1.47	1.22E+02
12/10/2008	355.78	1.69	1.63E+02	9.53E+02		1.69	1.63E+02
12/11/2008	357.39	3.30	8.45E+02	2.12E+03		3.30	8.45E+02
12/12/2008	362.58	8.49	6.53E+03	1.19E+04		8.49	6.53E+03
12/13/2008	362.91	8.82	7.09E+03	9.01E+03		8.82	7.09E+03
12/14/2008	362.28	8.19	6.04E+03	6.22E+03		8.19	6.04E+03
12/15/2008	361.54	7.45	4.92E+03	5.03E+03		7.45	4.92E+03
12/16/2008	360.68	6.59	3.78E+03	4.30E+03		6.59	3.78E+03
12/17/2008	359.61	5.52	2.58E+03	3.43E+03		5.52	2.58E+03
12/18/2008	358.87	4.78	1.89E+03	2.84E+03		4.78	1.89E+03
12/19/2008	358.26	4.17	1.40E+03	2.28E+03		4.17	1.40E+03
12/20/2008	357.74	3.65	1.06E+03	1.85E+03		3.65	1.06E+03
12/21/2008	357.58	3.49	9.56E+02	1.69E+03		3.49	9.56E+02
12/22/2008	358.25	4.16	1.40E+03	1.49E+03		4.16	1.40E+03
12/23/2008	356.83	2.74	6.74E+02	1.28E+03		2.74	6.74E+02
12/24/2008	357.05	2.96	9.06E+02	1.69E+03		2.96	9.06E+02
12/25/2008	359.35	5.26	2.33E+03	4.78E+03		5.26	2.33E+03
12/26/2008	359.84	5.75	2.81E+03	4.49E+03		5.75	2.81E+03
12/27/2008	359.31	5.22	2.28E+03	3.33E+03		5.22	2.28E+03
12/28/2008	359.46	5.37	2.43E+03	3.84E+03		5.37	2.43E+03
12/29/2008	359.60	5.51	2.56E+03	4.40E+03		5.51	2.56E+03
12/30/2008	358.97	4.88	1.98E+03	3.20E+03		4.88	1.98E+03
12/31/2008	358.42	4.33	1.52E+03	2.48E+03		4.33	1.52E+03
1/1/2009	358.33	4.24	1.46E+03	1.81E+03		4.24	1.46E+03
1/2/2009	365.20	11.11	1.17E+04	1.54E+03	1.54E+03	11.11	1.54E+03
1/3/2009	367.79	13.70	1.84E+04	1.52E+03	1.52E+03	13.70	1.52E+03
1/4/2009	356.73	2.64	5.85E+02	1.32E+03		2.64	5.85E+02
1/5/2009	356.59	2.50	4.90E+02	1.25E+03		2.50	4.90E+02
1/6/2009	356.54	2.45	4.58E+02	1.18E+03		2.45	4.58E+02
1/7/2009	356.56	2.47	4.71E+02	1.19E+03		2.47	4.71E+02
1/8/2009	357.43	3.34	8.68E+02	1.59E+03		3.34	8.68E+02
1/9/2009	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
1/10/2009	356.59	2.50	4.86E+02	1.19E+03		2.50	4.86E+02
1/11/2009	356.15	2.06	2.69E+02	9.23E+02		2.06	2.69E+02
1/12/2009	359.05	4.96	2.05E+03	9.90E+02	9.90E+02	4.96	9.90E+02
1/13/2009	356.37	2.28	3.65E+02	9.41E+02		2.28	3.65E+02
1/14/2009	361.44	7.35	4.79E+03	9.32E+02	9.32E+02	7.35	9.32E+02
1/15/2009	355.75	1.66	1.57E+02	3.63E+03		1.66	1.57E+02
1/16/2009	356.33	2.24	3.44E+02	Ice		2.24	3.44E+02
1/17/2009	355.75	1.66	1.57E+02	Ice		1.66	1.57E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/18/2009	355.57	1.48	1.24E+02	Ice		1.48	1.24E+02
1/19/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
1/20/2009	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/21/2009	355.55	1.46	1.21E+02	Ice		1.46	1.21E+02
1/22/2009	355.49	1.40	1.11E+02	Ice		1.40	1.11E+02
1/23/2009	355.37	1.28	9.48E+01	Ice		1.28	9.48E+01
1/24/2009	355.38	1.29	9.54E+01	Ice		1.29	9.54E+01
1/25/2009	366.23	12.14	1.41E+04	Ice		12.14	1.41E+04
1/26/2009	355.25	1.16	7.99E+01	Ice		1.16	7.99E+01
1/27/2009	355.18	1.09	7.29E+01	Ice		1.09	7.29E+01
1/28/2009	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
1/29/2009	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
1/30/2009	355.60	1.51	1.29E+02	Ice		1.51	1.29E+02
1/31/2009	355.47	1.38	1.09E+02	Ice		1.38	1.09E+02
2/1/2009	355.37	1.28	9.39E+01	Ice		1.28	9.39E+01
2/2/2009	355.32	1.23	8.86E+01	Ice		1.23	8.86E+01
2/3/2009	355.40	1.31	9.80E+01	Ice		1.31	9.80E+01
2/4/2009	355.40	1.31	9.89E+01	Ice		1.31	9.89E+01
2/5/2009	355.35	1.26	9.25E+01	Ice		1.26	9.25E+01
2/6/2009	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
2/7/2009	355.25	1.16	8.01E+01	Ice		1.16	8.01E+01
2/8/2009	355.34	1.25	9.08E+01	Ice		1.25	9.08E+01
2/9/2009	356.17	2.08	2.78E+02	Ice		2.08	2.78E+02
2/10/2009	356.37	2.28	3.64E+02	Ice		2.28	3.64E+02
2/11/2009	356.42	2.33	3.86E+02	Ice		2.33	3.86E+02
2/12/2009	358.15	4.06	1.32E+03	Ice		4.06	1.32E+03
2/13/2009	359.11	5.02	2.10E+03	Ice		5.02	2.10E+03
2/14/2009	358.20	4.11	1.36E+03	Ice		4.11	1.36E+03
2/15/2009	357.35	3.26	8.28E+02	Ice		3.26	8.28E+02

Notes:

1. Al Turi Estimated Average Daily Flows are based on stream gauge rating curve provided with the Contingency Monitoring Plan (ENVIRON 2001). The USGS flows are based on records for the USGS gauge located downstream of the Al Turi Landfill Site at Gardiner, New York (Gauge No. 01371500).

2. The Al Turi Landfill gauge hydrograph is based on Wallkill River flows estimated using the Al Turi Estimated Avg Daily Flows, except when the estimated flows exceed the recorded USGS flow at Gardiner, NY. In these cases, the USGS data are used to represent the flow conditions.



LEGEND:

- EXISTING MONITORING WELL
- WELLS INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM
- WELLS INCLUDED AS PART OF THE POST CLOSURE MONITORING PROGRAM
- WATER LEVELS ONLY
- BORING/TEST BORING LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM

NOTES:

1. BASE PLAN TAKEN FROM "WELL LOCATION PLAN", DRAWING NO. 1, PREPARED BY EMCON, DATED 7/99 AND GROUND WATER INVESTIGATIONS, INC. (GWI) ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ACCURACY OF SAME.
2. EXISTING TOPOGRAPHIC MAP COMPILED PHOTO-GRAMMETRICALLY FROM AERIAL PHOTOGRAPHY DATED DECEMBER 2, 1998 BY ATLANTIS AERIAL OF BUDD LAKE NEW JERSEY.
3. PROPERTY LINE SHOWN FROM SURVEY MAP PREPARED BY WEHRAN- NEW YORK, INC. FOR TICOR TITLE GUARANTEE CO. DATED JUNE 23, 1988.
4. THE GRID DEPICTED ON THIS PLAN WAS DEVELOPED FOR MAPPING OF THE PROJECT SITE. THE COORDINTES SHOWN ARE NOT PART OF THE STATE PLANE COORDINATE SYSTEM.
5. HIGHLIGHTED SYMBOLS AND/OR TEXT INDICATE GROUNDWATER, SURFACE WATER/SEDIMENT AND LEACHATE SAMPLE LOCATIONS INCLUDED IN OPERATIONAL MONITORING PROGRAM.

* PLEASE NOTE THAT WELLS W-1 AND W-3A ARE ON BOTH SAMPLE LISTS. ONLY THE REQUIRED PARAMATERS (TABLE 1) SHOULD GO INTO THE POST CLOSURE ANALYTICAL REPORT.

REVISION BLOCK

Rev. No.	By	Revision

GROUND WATER INVESTIGATIONS, INC.
Pine Bush, New York

Project No.:	256-00-00
Scale:	1"=200'
Date:	12/19/00
Designed By:	MAC
Checked By:	LFC
Drawn By:	KAH

SHEET 1 OF 1

WELL LOCATION PLAN

TOWN OF GOSHEN
AL TURI LANDFILL, INC.
GROUNDWATER MONITORING PROGRAM
NEW YORK

From: jgturi <jgturi@aol.com>
To: <rrpergad@gw.dec.state.ny.us>
Date: 4/20/2009 10:18 AM
Subject: (no subject)
Attachments: Annual Letter-1-09.doc; Annual-2008.xls; Quarterly-08.xls; Quarterly-2008.xls; Semi-Annual-08.xls

Joe Gambino
Al Turi Landfill
73 Hartley Road
Goshen, NY 10924
E-Mail jgturi@aol.com
Phone (845) 294-5630
Fax (845) 294-3335

Joe Gambino
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73 Hartley Road
Goshen, NY 10924
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Phone (845) 294-5630
Fax (845) 294-3335

The Average US Credit Score is 692. See Yours in Just 2 Easy Steps!

Al Turi Landfill, Inc.
73 Hartley Road
Goshen, New York 10924
Phone (845) 294-5630 Fax (845) 294-3335

January 30, 2009

Mr. Siban Mahamooth
NYS Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

Re: Old Al Turi Landfill - Annual Inspections
NYSDEC Site No. 3-36-016; Facility ID No. 3-3330-00002/21

Dear Mr. Mahamooth:

Enclosed for your use please find a copy of a completed Post-Closure Quarterly, Semi-Annual and Annual Inspection Form for the period of January through December 2008, for the Old Al Turi Landfill, Orange County, Goshen, New York. The inspection was completed in accordance with the O&M Plan requirements for Post-Closure Monitoring of the Old Landfill.

In the interim, if you should have any questions, please call.

Sincerely,
AL TURI LANDFILL, INC.

Joseph Gambino
President

Cc: A. Russo, ECSI
.
R. Pergadia, NYSDEC

Operation & Maintenance, Post Closure Annual Inspection Report
Old Al Turi Landfill

Inspection By: J.Volkmer **Date: December 22, 2008**

Item	Problem to Check For	Observation Check List	
1. Final Cover Surface		OK	Need Repairs
Vegetation	Bare areas or excessive vegetation	OK	
Erosion	Gullies or ruts deeper then 3 inches	OK	
Grades, Cover Settlement	Depressions or ponded water	OK	
Burrowing Animals	Holes or noticeable activities beneath the surface	OK	
2. Diversion Swales			
Sedimentation	Accumulation of excessive sediments	OK	
Grades	Depressions or ponded water	OK	
Obstructions	Debris or rubble in swales	OK	
3. Sediment Basins	Exceeding allowable sediment storage	OK	
4. Monitoring Wells			
Protective Steel Cover	Bent, broken or loose	OK	
Padlock	Open or missing	OK	
Casing	Broken or loose	OK	
Surface	Cracked or heaved	OK	
5. Gas Vents/Wells/Headers	Broken or obstructed	OK	
6. Access Roads			
Surface	Ruts, holes, etc.	OK	
7. Other Remarks	None		
8. List Any Attachments	None		
Drawings, Photographs Maps, Reports, Letters	None		

Recommended Action to be taken: NONE

Operation & Maintenance, Post Closure Quarterly Inspection Report
Old Al Turi Landfill

Inspection By: Joe Volkmer **Date: September 27, 2008**

Item	Problem to Check For	Observation Check List	
1. Final Cover Surface		OK	Need Repairs
Vegetation	Bare areas or excessive vegetation	OK	
Erosion	Gullies or ruts deeper then 3 inches	OK	
Grades, Cover Settlement	Depressions or ponded water	OK	
Burrowing Animals	Holes or noticeable activities beneath the surface	OK	
2. Diversion Swales			
Sedimentation	Accumulation of excessive sediments	OK	
Grades	Depressions or ponded water	OK	
Obstructions	Debris or rubble in swales	OK	
3. Sediment Basins	Exceeding allowable sediment storage	OK	
4. Monitoring Wells			
Protective Steel Cover	Bent, broken or loose	OK	
Padlock	Open or missing	OK	
Casing	Broken or loose	OK	
Surface	Cracked or heaved	OK	
5. Gas Vents/Wells/Headers	Broken or obstructed	OK	
6. Access Roads			
Surface	Ruts, holes, etc.	OK	
7. Other Remarks	None		
8. List Any Attachments	None		
Drawings, Photographs Maps, Reports, Letters	None		

Recommended Action to be taken: NONE

Operation & Maintenance, Post Closure Quarterly Inspection Report
Old Al Turi Landfill

Inspection By: M. Davies **Date: March 31, 2008**

Item	Problem to Check For	Observation Check List	
1. Final Cover Surface		OK	Need Repairs
Vegetation	Bare areas or excessive vegetation	OK	
Erosion	Gullies or ruts deeper then 3 inches	OK	
Grades, Cover Settlement	Depressions or ponded water	OK	
Burrowing Animals	Holes or noticeable activities beneath the surface	OK	
2. Diversion Swales			
Sedimentation	Accumulation of excessive sediments	OK	
Grades	Depressions or ponded water	OK	
Obstructions	Debris or rubble in swales	OK	
3. Sediment Basins	Exceeding allowable sediment storage	OK	
4. Monitoring Wells			
Protective Steel Cover	Bent, broken or loose	OK	
Padlock	Open or missing	OK	
Casing	Broken or loose	OK	
Surface	Cracked or heaved	OK	
5. Gas Vents/Wells/Headers	Broken or obstructed	OK	
6. Access Roads			
Surface	Ruts, holes, etc.	OK	
7. Other Remarks	None		
8. List Any Attachments	None		
Drawings, Photographs Maps, Reports, Letters	None		

Recommended Action to be taken: NONE

Old Al Turi Landfill

Operation & Maintenance, Post Closure Semi-Annual Inspection Report

Inspection By: M. Davies **Date: June 24, 2008**

Item	Problem to Check For	Observation Check List	
1. Final Cover Surface		OK	Need Repairs
Vegetation	Bare areas or excessive vegetation	OK	
Erosion	Gullies or ruts deeper then 3 inches	OK	
Grades, Cover Settlement	Depressions or ponded water	OK	
Burrowing Animals	Holes or noticeable activities beneath the surface	OK	
2. Diversion Swales			
Sedimentation	Accumulation of excessive sediments	OK	
Grades	Depressions or ponded water	OK	
Obstructions	Debris or rubble in swales	OK	
3. Sediment Basins	Exceeding allowable sediment storage	OK	
4. Monitoring Wells			
Protective Steel Cover	Bent, broken or loose	OK	
Padlock	Open or missing	OK	
Casing	Broken or loose	OK	
Surface	Cracked or heaved	OK	
5. Gas Vents/Wells/Headers	Broken or obstructed	OK	
6. Access Roads			
Surface	Ruts, holes, etc.	OK	
7. Other Remarks			
8. List Any Attachments			
Drawings, Photographs Maps, Reports, Letters			

Recommended Action to be taken: NONE

2009 SAMPLING YEAR
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – OPERATIONAL SITE
GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

December 2009

Prepared by

Ground Water Investigations
65 Main Street
Pine Bush, New York 12566

Project 256-00-00

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Drawing No. 1 - Well Location Plan Pocket

Diskette - Laboratory Analytical Data Pocket

1 INTRODUCTION

The water quality management program at the Al Turi Landfill, Goshen, New York, includes the semi-annual sampling and analysis of groundwater, surface water, contained leachate, and sediment samples from locations in and around the "Operational Landfill" and the evaluation of the data generated by these samples. The facility has completed closure and is now in the post-closure period. During the January and July 2009 sampling events, modified baseline sampling was performed in accordance with 6 NYCRR Part 360-2.17(a), the requirements of Special Condition Nos. 36 through 38 of the facility's expired September 1997 Landfill Operating Permit (Permit No. 3-3330-00002/21), and in accordance with the revised and approved July 2005 Environmental Monitoring Plan (EMP).

Water quality data generated in 2009 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The environmental data collected from the Operational Landfill site has been presented and evaluated in this report.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

For the Operational Landfill, water quality data generated in 2009 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The trigger values were developed using a limited database that was established for the Al Turi Landfill prior to the promulgation of regulations governing the collection of such data. The values were developed from two or three sampling events for baseline parameters conducted in August through October 1983 for three overburden wells (W-5S, W-6S, and W-7S), and 2 bedrock wells (W-6D and W-8D). Well W-6D has since been replaced with well W-6DA. Additionally, trigger values for metals were calculated based on the dissolved fraction results from field-filtered analyses. The Department values, or Part 703 standards, whichever are higher, serve as the trigger values for contingency monitoring at the Al Turi Landfill. Due to the limited pre-operational database, and the presence of undetected values for many of the parameters, the results do not constitute a "normal distribution" as required under Part 360-2.11(c)(5)(i)(c). Therefore, these values should be applied with caution. Given the limited available data, the 1983 values represent the best available estimate of pre-operational water quality, and are suitable as a screening tool in the monitoring program.

Because the Al Turi Landfill began operation prior to the promulgation of the current regulations, certain aspects of the regulations cannot be strictly applied. Notable deviations are the absence of an adequate pre-operational database and the lack of expanded parameter data for many of the monitoring points.

Semi-annual monitoring at the Operational Landfill currently consists of modified baseline analysis. This sampling is conducted in January and July of each year. The analysis for each event includes 6NYCRR Part 360 Baseline parameters with the exception of the parameters BOD, COD, TKN, sulfate and bromide. Sediment samples from the Wallkill River are analyzed for the 6NYCRR Part 360 baseline metals and TOC. Under updated regulations, the presence of baseline parameters above trigger values requires initiation of contingency monitoring, in which expanded parameters are analyzed. A trigger value exceedance occurs when the groundwater analytical data exceeds either the NYSDEC developed trigger values and/or the Part 703 State standards, whichever is higher.

The 6 NYCRR Part 360 regulations allow for the modification of the expanded parameter list to correspond with contaminants detected at a given facility. The analyses apply to all media sampled at the facility (groundwater, surface water, sediment, and contained leachate). The former contingency parameter list that was utilized at the facility consisted of the baseline parameter list plus the expanded parameters sulfide, phenol, naphthalene, 2-methyl phenol, 3-methyl phenol, and 4-methyl phenol. However, because the above mentioned expanded parameters were not detected within contingency groundwater monitoring wells, the NYSDEC approved a revised contingency monitoring list on June 22, 1999 and again on May 14, 2002. Monitoring at the facility has since been modified and now includes the monitoring program established in the July 2005 EMP.

Semi-annual groundwater quality is monitored at 21 groundwater monitoring wells (shallow and deep wells) located within the boundaries of the facility's property. One well, W-8D, is designated as the upgradient background well for the facility. Drawing 1 (in pocket) provides a site map of the facility indicating the locations of the monitoring points. In addition, baseline groundwater sampling and analysis is performed quarterly at Jesus Christ Triumphant Church (representing a 22nd well) located along Route 17M just south of the facility. Surface water and sediment samples are collected at two locations in the Wallkill River, upstream and downstream of the facility, while Sediment Basins A, B and D are sampled for water quality only. In addition, leachate samples are collected semi-annually from the primary and secondary leachate collection systems, and analyzed for a modified expanded parameter list. Sampling procedures utilized are also identified in the July 2005 EMP.

2.1 Operational Water Quality - Overburden Water Quality

Fourteen overburden groundwater monitoring wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the 2009 sampling year demonstrate that the following routine analytes were above their respective trigger values in the overburden monitoring wells during both semi-annual events: turbidity (14 wells); alkalinity (6 wells); hardness (4 well); total dissolved solids (8 wells); calcium (4 wells); iron (13 wells); manganese (7 wells); and sodium (8 wells). Non-routine inorganic parameters detected above their respective trigger values during both sampling events in the overburden wells are limited to color (4 wells) and TOC (1 well) only.

It should also be noted that alkalinity, chloride and color were also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the overburden groundwater monitoring are presented in Table 2-1.

A review of the 2009 volatile organic data indicates that suspect compounds observed in January 2009 were not observed during the July 2009 sampling event. In July 2009 an estimated concentration of benzene was observed in MW-1 and an estimated concentration of vinyl chloride was observed in well MW-9S. Acetone, a common laboratory artifact, was observed in well SS-88-2 in July 2009.

Volatile organic compounds will again be sampled for during the 2010 sampling year.

2.2 Deep Well Water Quality

Seven deep wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from 2009 identified the following routine analytes as being above their respective trigger values in the deep water quality monitoring wells during both semi-annual sampling events: turbidity (7 wells); alkalinity (2 wells); hardness (1 well); total dissolved solids (2 wells); calcium (2 wells); iron (6 wells); manganese (2 wells); and sodium (1 well). In 2009, no non-routine inorganic parameters were detected above their established trigger limits.

It should also be noted that alkalinity, chloride and color were also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the deep well monitoring are presented in Table 2-2.

2.3 Contingency Monitoring

Wells that were analyzed as part of contingency monitoring in 2009 included: W-1, W-6S, W-9S, W-16D and W-17S. Contingency monitoring was performed for these wells due to the historical confirmation of baseline parameters at concentrations above established trigger values. The baseline parameters of concern include arsenic in the samples from wells W-6S, W-9S, W-16D and W-17S and benzene in W-1.

A review of the 2009 sampling data shows that arsenic was not detected above its respective trigger value in 2009. As part of continued monitoring, arsenic will again be sampled for during the 2010 sampling year (2 events).

A review of the volatile organic data for well MW-1 in 2009 shows that an estimated concentration of benzene (2 ug/l) was observed in July 2009.

The overall graphical representation of arsenic shows an overall increasing trend in concentration changes for well W-17S. However, during the past three sampling events,

arsenic has been reported as non-detect. A review of the overall trends for wells W-6S, W-9S and W-16D appeared to have stabilized.

A graphical representation for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

2.4 Background Water Quality

Water quality data has been collected from groundwater monitoring wells which are installed in the meadow north of both the Al Turi Landfill and All-Waste Facility (Northern Recycling). These wells have been evaluated to assist in determining background water quality in the vicinity of the landfill. As part of the Remedial Investigation of the Old Al Turi Landfill, several wells have been shown to be clearly beyond the influence of groundwater moving toward the Wallkill River from beneath the landfill (Supplemental Remedial Investigation Report, Old Al Turi Landfill, Wehran, February 1994, Sheet 4 of 9) and are representative of background water quality. Additional historical data generated from the meadow wells indicates that several metals have been historically present in the local groundwater at concentrations above the New York State Groundwater Quality Standards (6 NYCRR Part 703).

The meadow wells have been re-developed to further help in the reduction of turbid conditions. However, several of the wells remained turbid throughout re-development, indicating that turbid conditions may also be reflective of local groundwater quality.

Based on the historical analytical results from these wells, it is clear that several analytes (iron and manganese) are present in the local groundwater at concentrations above the State standards, and at similar levels as those detected at the landfill. Data collected from the meadow wells are limited, when compared to the larger resource data base from the on-site operational monitoring wells, but the results do indicate that the exceedances observed in many of the on-site monitoring wells may be a function of local groundwater quality, and not a release from the landfill.

2.5 Church Well

Monitoring of the off-site residential well (church well) is performed quarterly and to date in 2009 sampling at the church has been conducted in January, April and July for the baseline parameters. A review of the July data shows that, with the exception of turbidity, no parameters were detected above trigger values in the church well. The data collected to date in 2009 from the church well are presented in Table 2-2.

3 SURFACE WATER/SEDIMENT QUALITY

Surface water and sediment samples are also collected semi-annually from the Wallkill River as part of continued monitoring at the Al Turi Landfill.

Surface water samples were collected with a stainless steel bucket at mid-stream locations from both the Route 17M Bridge (upstream) and Cheechunk Road Bridge (downstream). Field measurement readings obtained did not indicate the presence of river stratification at either location. Sediment samples collected at each location were collected from the bank of the river closest to the landfill.

A review of the surface water samples collected from the Wallkill River upstream and downstream of the landfill in 2009 found that only iron and aluminum were observed above their Class C standards. Additionally, pH was above its limit in the Wall-Up sample during the January 2009 sampling event. A summary of the surface water data and sediment data collected from the Wallkill River is provided in Table 3-1 and Table 3-2, respectively. A review of the data indicates that conditions observed upstream of the facility are similar to conditions observed downstream of the facility.

Historically, water quality data from the river has shown a number of analytes at concentrations above the Class C standards in both the upstream and downstream samples. It has been determined that groundwater from beneath the landfill does discharge to the Wallkill River, and a comparison of the upstream and downstream surface water data continues to indicate that discharge of this groundwater has had no observable impact on the river's water quality.

In addition to the collection of surface water samples from the Wallkill River, sediment samples are collected from the upstream and downstream surface water sampling locations. A review of the data indicates that concentrations observed in the July upstream sample were generally elevated when compared to the data collected from the July down stream sample.

During the 2009 sampling year, efforts were made to collect water samples from Sediment Basins A, B and D. However, during the January 2009 sampling event each basin was either frozen or dry. In July 2009, sampling was completed for each basin. A review of the July data shows that iron was above its Class C standard in each basin. Additionally, aluminum was above its Class C standard in Basin B only. A summary of the previously collected sediment basin sampling data is provided in Table 3-1.

4 LEACHATE MONITORING

In accordance with Special Condition No. 36 of the expired Operating Permit, samples are obtained from the primary and secondary leachate collection system associated with Areas 11, 12, and 13 (includes Areas 9 and 10) of the landfill. Samples from the leachate collection system are collected semi-annually. Because leachate from Area 13 drains into Area 12, the common primary and secondary monitoring points for these areas is sampled. Additionally, leachate from Areas 9 and 10, which are underlain with single composite liners and are not equipped with a secondary collection system, drains to the primary collection system associated with Area 13 and then Area 12.

During the 2009 sampling year, sampling of the leachate monitoring points was conducted in January and July. The analytical results from this sampling event have been provided in Table 4-1. Leachate collection system analytical results in the LCH-11S/11P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions noted include nitrate, potassium and zinc.

Additionally, leachate collection system analytical results in the LCH-12S/12P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions include higher concentration of COD, TOC, magnesium and manganese LCH-12S.

In January 2009, non-flagged detections of phenol, acetone and 2-butanone were observed in LCH-11P only. No other non-flagged organic compounds, PCBs or pesticides/herbicides were detected in any of the leachate samples in 2009. No dioxins and furans were detected in the July 2009 sampling data. Leachate samples will again be collected semi-annually in 2010.

5 IRON FLOC EVALUATION

The Wallkill River has been identified as a groundwater discharge area for shallow groundwater flowing from the Al Turi Landfill site. Surface water and sediment sampling is performed at upgradient and downgradient locations on the River as shown on Drawing 1.

During periods of abnormally low flow conditions, seepage of shallow groundwater has been observed along the banks of the Wallkill River. Occasionally orange staining has been observed at some of these seepage points, which has proven to be characteristic of iron oxidation. Past sampling of these seeps has suggested that the seepage water reflects observed shallow groundwater quality and is not the result of direct leachate seepage from the landfill.

In 2009, iron floc sampling was not completed. The Al Turi Landfill will continue to monitor the river elevation and conduct iron floc sampling when the seep area is once again accessible.

6 CONCLUSIONS

Contingency monitoring will continue during the 2010 sampling year in 5 groundwater monitoring wells as a result of the historical presence of non-routine parameter exceedances of established trigger values that are utilized to evaluate groundwater quality. The contingency monitoring wells and their historical non-routine parameters of concern include: W-6S (arsenic); W-9S (arsenic); W-16D (arsenic); W-17S (arsenic); and well W-1 (benzene only). Additional determinations were made from the data obtained in 2009:

- Many of the exceedances observed for parameters, such as iron and manganese, are likely due to the local groundwater quality rather than a landfill-related impact.

- Background historical groundwater quality data from the wells north of the site (the meadow wells) have indicated that a number of analytes are present in the local groundwater at similar concentrations to that observed in the on-site landfill monitoring wells. A number of parameters being detected in the background wells are at levels similar to those detected in the on-site landfill monitoring wells.

- A review of the 2009 volatile organic data indicates that suspect compounds observed in January 2009 were not observed during the July 2009 sampling event. In July 2009, an estimated concentration of benzene was observed in MW-1 and an estimated concentration of vinyl chloride was observed in well MW-9S. Acetone, a common laboratory artifact, was also observed in well SS-88-2 in July 2009.

- A review of the 2009 sampling data shows that arsenic was not detected above its respective trigger value in groundwater samples in 2009.

- Although it has been demonstrated that groundwater from beneath the landfill does discharge to the Wallkill River, downstream surface water quality continues to demonstrate similar results to upstream surface water quality. Historical surface water data indicate that no significant change in water quality has occurred in the Wallkill River as a result of on-going landfill operations. Data collected in 2008 continues to demonstrate that the landfill has had no observable impact on water quality in the River.

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-01	**1/30/08**	27.50	10.6	7.10	-4	340	76.8	740	445	260	<0.010	536	<0.10	<0.2	71.3	<0.005	1200	<9.0	0.188
W-01	**7/31/08**	29.70	16.7	7.56	-32	1170	49.8	800	566	145	<0.010	665	<0.010	<0.20	76.7	<0.005	1490	39	<0.100
W-01	**1/21/09**	22.42	8.7	6.88	-42	850	56.4	710	620	500	<0.010	634	<0.010	<0.20	<0.50	0.006	1330	53.8	<0.100
W-01	**7/21/09**	29.34	19.6	6.92	-37	2222	200	550	224	75	<0.010	608	<0.010	0.28	49.9	<0.005	830	24.8	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-03A	**1/30/08**	10.13	8.8	8.04	183	509	6.73	280	89.2	<5.0	<0.010	324	<0.010	<0.20	<0.50	<0.005	425	<3.0	0.379
W-03A	**7/31/08**	16.20	16.8	8.09	-63	410	38	220	11.3	12	<0.010	274	<0.010	<0.20	<0.50	<0.005	312	<3.0	3.36
W-03A	**1/21/09**	10.68	5.6	7.81	-45	498	39.1	210	20.4	8	<0.010	260	<0.010	<0.20	<0.50	<0.005	315	<3.0	1.22
W-03A	**7/21/09**	12.58	13.8	7.39	179	228	87.1	210	10.8	7	<0.010	295	<0.010	<0.20	<0.50	<0.005	260	<3.0	1.6
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-05S	**1/30/08**	18.81	10.4	7.58	-22	706	10.5	500	78.3	105	<0.010	637	<0.02	<0.20	<0.50	<0.005	808	51.3	<0.100
W-05S	**7/31/08**	33.31	19.4	7.87	-50	1042	19.7	490	94.8	18	<0.010	644	<0.010	<0.20	<0.50	<0.005	816	<3.0	<0.100
W-05S	**1/21/09**	18.34	11.8	7.41	-23	992	23.5	480	76	65	<0.010	634	<0.010	<0.200	<0.50	<0.005	700	28.3	<0.100
W-05S	**7/21/09**	19.45	17.2	6.85	-37	900	14.2	480	83.2	30	<0.010	696	<0.010	<0.200	<0.500	<0.005	710	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-06S	**1/30/08**	27.80	7.9	7.57	-61	583	30.3	530	71	115	<0.010	518	<0.10	<0.20	1.44	<0.005	632	<6.0	0.754
W-06S	**7/31/08**	29.72	17.2	7.83	-47	441	266	510	10.2	38	<0.010	892	<0.010	<0.20	1.59	<0.005	604	5.9	3.36
W-06S	**1/21/09**	27.42	9.9	7.71	-39	869	40.5	500	12.7	250	<0.010	523	<0.010	<0.200	0.973	<0.005	524	7	1.02
W-06S	**7/21/09**	28.18	17.1	7.25	189	441	32.6	500	5.08	35	<0.010	619	<0.010	<0.200	2.36	<0.005	760	7.4	4.54
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-07S	**1/30/08**	33.93	12.7	7.28	-52	1168	17.1	500	14.6	105	<0.010	745	<0.050	0.237	<0.50	<0.005	935	<6.0	0.258
W-07S	**7/31/08**	35.82	17.5	7.75	35.82	651	38.3	550	66.1	18	<0.010	793	<0.010	<0.200	<0.50	<0.005	964	<3.0	0.241
W-07S	**1/21/09**	34.45	9.4	7.58	-32	1068	12.5	550	60.5	60	<0.010	713	<0.010	<0.20	<0.50	<0.005	772	23.7	0.553
W-07S	**7/21/09**	34.01	17.9	7.36	184	448	78.7	500	57.2	6	<0.010	842	<0.010	<0.200	<0.500	<0.005	1000	<3.0	0.402
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-09S	**1/30/08**	45.19	10.1	7.46	-28	430	34.7	580	49	130	<0.010	641	<0.050	<0.20	<0.50	<0.005	765	72.1	0.387
W-09S	**7/31/08**	47.17	20.4	7.48	-28	1031	42.7	590	21	23	<0.010	679	<0.010	<0.200	<0.500	<0.005	680	<3.0	2.04
W-09S	**1/21/09**	44.8	10.8	7.77	-41	932	209	610	28.7	135	<0.010	668	<0.010	<0.200	<0.500	<0.005	662	<3.0	3.36
W-09S	**7/21/09**	46.03	21.2	6.82	-32	944	28.2	580	32.7	35	<0.010	751	<0.010	<0.200	<0.500	<0.005	670	<3.0	0.68
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16S	**1/30/08**	DRY																	
W-16S	**7/30/08**	44.61	13.9	8.25	-71	387	19.6	220	2.53	12	<0.01	184	<0.010	<0.20	<0.50	<0.005	232	<3.0	<0.100
W-16S	**1/21/09**	42.48	7.1	8.04	-57	408	25.1	210	1.87	20	<0.010	202	<0.010	<0.20	<0.500	<0.005	222	7.2	0.634
W-16S	**7/21/09**	43.43	16.8	7.55	170	209	9.54	220	2.79	5	<0.010	221	<0.010	<0.20	<0.500	<0.005	270	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-01	**1/30/08**	<0.015	<0.010	0.672	<0.003	1.04	<0.005	132	<0.005	<0.020	<0.010	52.6	<0.003	<0.030	50.3	4.37	<0.0002	<0.030	51.8
W-01	**7/31/08**	<0.030	<0.010	0.817	<0.003	1.09	0.0057	165	<0.005	<0.020	<0.010	59	<0.003	<0.030	61.8	5.05	<0.0002	<0.030	66.2
W-01	**1/21/09**	<0.030	<0.010	0.745	<0.003	0.949	<0.005	159	<0.010	<0.020	<0.010	65.2	0.0049	<0.030	57.3	4.85	<0.0002	<0.030	57.5
W-01	**7/21/09**	<0.030	<0.010	0.582	<0.003	0.616	0.0051	157	<0.010	<0.020	<0.010	55.5	<0.003	<0.030	52.4	3.91	<0.0002	<0.030	57.5
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-03A	**1/30/08**	<0.015	<0.010	0.0524	<0.003	<0.50	<0.005	103	<0.005	<0.020	<0.010	0.452	<0.003	<0.030	16	0.294	<0.0002	<0.030	1.02
W-03A	**7/31/08**	<0.030	<0.010	0.121	<0.003	<0.500	<0.005	74.1	0.0057	<0.020	0.0144	4.7	<0.003	<0.030	21.6	1.14	<0.0002	<0.030	1.75
W-03A	**1/21/09**	<0.030	<0.010	0.077	<0.003	<0.500	<0.005	77.5	<0.010	<0.020	<0.010	2	<0.003	<0.030	16.1	0.388	<0.0002	<0.030	1.74
W-03A	**7/21/09**	<0.030	<0.010	0.0909	<0.003	<0.500	<0.005	82.4	<0.010	<0.020	<0.010	2.56	<0.003	<0.030	21.8	0.539	<0.0002	<0.030	1.37
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-05S	**1/30/08**	<0.015	0.0225	0.152	<0.003	<0.500	<0.005	204	<0.005	<0.020	<0.010	12.1	<0.003	<0.030	31.1	2.25	<0.0002	<0.030	2.61
W-05S	**7/31/08**	<0.015	<0.010	0.142	<0.003	<0.500	<0.005	211	<0.005	<0.020	<0.010	12.7	<0.003	<0.030	28.6	2.42	<0.0002	<0.030	2.7
W-05S	**1/21/09**	<0.030	<0.010	0.145	<0.003	<0.500	<0.005	207	<0.005	<0.020	<0.010	12.8	<0.003	<0.030	28.5	2.35	<0.0002	<0.030	2.47
W-05S	**7/21/09**	<0.030	0.0243	0.137	<0.003	<0.500	<0.005	227	<0.005	<0.020	<0.010	17.4	<0.003	<0.030	31.5	2.3	<0.0002	<0.030	2.85
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-06S	**1/30/08**	<0.015	0.0737	0.566	<0.003	<0.50	0.0050	160	0.018	<0.020	<0.010	59.6	0.0034	<0.030	28.9	2.07	<0.0002	<0.030	3.02
W-06S	**7/31/08**	<0.030	<0.010	0.516	<0.003	<0.500	0.0092	298	0.006	0.0218	0.026	76.2	0.00229	<0.030	36	5.54	<0.0002	0.0321	3.11
W-06S	**1/21/09**	<0.030	<0.010	0.439	<0.003	<0.500	<0.005	166	0.0166	<0.020	<0.010	64.8	0.0534	<0.030	26.4	2.53	<0.0002	<0.030	2.89
W-06S	**7/21/09**	<0.030	<0.010	0.518	<0.003	<0.500	0.0080	197	0.03	<0.020	0.0155	73.2	<0.003	<0.030	30.8	2.82	<0.0002	<0.030	3.96
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-07S	**1/30/08**	<0.015	<0.010	0.0556	<0.003	<0.500	<0.005	217	0.00717	<0.020	0.0491	22.2	<0.003	<0.030	49.4	1.85	<0.0002	<0.030	4.23
W-07S	**7/31/08**	<0.030	<0.010	0.094	<0.300	<0.500	0.0055	235	0.0052	<0.020	0.048	24.1	<0.003	<0.030	50	2.39	<0.0002	<0.030	4.33
W-07S	**1/21/09**	<0.030	<0.010	0.090	<0.003	<0.500	<0.005	211	0.0158	<0.020	0.0328	27.6	<0.003	<0.030	45.1	1.76	<0.0002	<0.030	4.42
W-07S	**7/21/09**	<0.030	<0.010	0.090	<0.003	<0.500	<0.005	250	0.016	<0.020	0.0316	40.7	<0.003	<0.010	52.9	1.83	<0.0002	<0.030	5.18
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-09S	**1/30/08**	<0.015	0.033	0.839	<0.003	<0.500	<0.005	194	0.0055	<0.005	<0.010	31.4	<0.003	<0.030	38.2	0.808	<0.0002	<0.030	2.96
W-09S	**7/31/08**	<0.030	0.033	1.12	<0.003	<0.500	<0.005	210	0.0199	<0.020	<0.010	36.9	<0.003	<0.030	37.5	1.13	<0.0002	<0.030	3.76
W-09S	**1/21/09**	<0.030	<0.010	1.03	<0.003	<0.500	<0.005	202	0.0362	<0.020	0.0112	43.8	0.00834	<0.030	39.7	1.28	<0.0002	0.0342	3.82
W-09S	**7/21/09**	<0.030	<0.010	0.982	<0.003	<0.500	<0.005	228	<0.010	<0.020	0.017	37	<0.003	<0.030	44.1	1.13	<0.0002	<0.030	3.04
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16S	**1/30/08**																		
W-16S	**7/30/08**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	43.8	<0.005	<0.020	<0.010	6.11	<0.003	<0.030	18	0.5	<0.0002	<0.030	3.36
W-16S	**1/21/09**	<0.030	<0.010	0.0529	<0.003	<0.500	<0.005	54.8	<0.010	<0.020	<0.010	11.4	<0.003	<0.030	15.8	0.534	<0.0002	<0.030	3
W-16S	**7/21/09**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	57.8	<0.010	<0.020	<0.010	1.59	<0.003	<0.030	18.5	0.319	<0.0002	<0.030	4.72

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-01	**1/30/08**	<0.005	<0.010	238	<0.010	<0.010
W-01	**7/31/08**	<0.005	<0.010	345	<0.010	<0.010
W-01	**1/21/09**	<0.005	<0.010	293	<0.010	0.0161
W-01	**7/21/09**	<0.005	<0.010	215	<0.010	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-03A	**1/30/08**	0.0062	<0.010	18.4	<0.010	0.0138
W-03A	**7/31/08**	<0.005	<0.010	14.4	<0.010	0.0232
W-03A	**1/21/09**	<0.005	<0.010	17.4	<0.010	0.0285
W-03A	**7/21/09**	<0.005	<0.010	17.8	<0.010	0.0503
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-05S	**1/30/08**	<0.005	<0.010	37.2	<0.010	0.0794
W-05S	**7/31/08**	<0.005	0.012	37.7	<0.010	0.0530
W-05S	**1/21/09**	<0.005	<0.010	28	<0.010	0.0768
W-05S	**7/21/09**	<0.005	<0.010	41.5	<0.010	0.0618
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-06S	**1/30/08**	<0.005	0.2	5.33	<0.010	0.0357
W-06S	**7/31/08**	<0.005	0.0114	4.24	<0.010	0.145
W-06S	**1/21/09**	<0.005	<0.010	5	<0.010	0.0244
W-06S	**7/21/09**	<0.005	<0.010	5.51	<0.010	0.049
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-07S	**1/30/08**	<0.005	<0.010	41.1	<0.010	0.027
W-07S	**7/31/08**	<0.005	<0.010	41	<0.010	0.107
W-07S	**1/21/09**	<0.005	<0.010	38.2	<0.010	0.0354
W-07S	**7/21/09**	<0.005	<0.010	44.1	<0.010	0.0266
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-09S	**1/30/08**	<0.005	<0.010	13.8	<0.010	0.0289
W-09S	**7/31/08**	<0.005	0.0157	17.3	<0.010	0.0573
W-09S	**1/21/09**	<0.005	<0.010	15.3	<0.010	0.0778
W-09S	**7/21/09**	<0.005	<0.010	21	<0.010	0.063
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16S	**1/30/08**					
W-16S	**7/30/08**	<0.005	<0.010	24.9	<0.010	<0.010
W-16S	**1/21/09**	<0.005	<0.010	13.8	<0.010	0.0136
W-16S	**7/21/09**	<0.005	<0.010	20.1	<0.010	<0.010

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16D	**1/30/08**	42.40	8.4	8.09	30	334	28.5	280	3.53	3.53	<0.010	279	<0.010	<0.20	<0.50	<0.005	283	5.6	0.386
W-16D	**7/30/08**	44.20	14.8	8.04	-60	515	26.3	290	7.6	19	<0.010	279	<0.010	<0.20	<0.50	<0.005	312	<3.0	<0.100
W-16D	**1/21/09**	41.80	6.5	8.03	-57	509	31.8	270	2.33	19	<0.010	692	<0.010	<0.200	<0.500	<0.005	283	13.2	0.109
W-16D	**7/21/09**	42.71	16.5	7.37	180	231	29.3	260	2.77	5	<0.010	306	<0.010	<0.200	<0.500	<0.005	300	<3.0	0.737
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17S	**1/30/08**	20.29	9.8	7.60	-29	460	40.3	530	37.3	130	<0.010	631	<0.050	<0.20	<0.50	<0.005	700	60.5	1.59
W-17S	**7/30/08**	22.07	16.1	7.05	-4	1000	178	530	57.2	38	<0.010	664	<0.010	<0.20	<0.50	<0.005	772	<3.0	0.579
W-17S	**1/21/09**	19.84	10.8	7.59	-32	951	20.2	520	40.1	75	<0.010	644	<0.010	<0.20	<0.500	<0.005	660	3.2	0.469
W-17S	**7/21/09**	21.12	22	6.82	-50	795	562	490	47.1	7	<0.010	685	<0.010	<0.20	<0.500	<0.005	850	3.1	1.09
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17D	**1/30/08**	19.30	9.4	8.12	174	1211	41.5	340	100	18	<0.010	506	<0.010	0.789	<0.50	<0.005	612	10.1	0.219
W-17D	**7/30/08**	21.25	16.5	8.25	110	428	86.4	350	91.5	15	<0.010	539	<0.010	0.663	<0.50	<0.005	676	<3.0	<0.100
W-17D	**1/21/09**	18.95	2.2	8.50	-37	489	49.2	460	106	10	<0.010	642	<0.010	<0.200	<0.500	<0.005	680	<3.0	0.372
W-17D	**7/21/09**	21.15	18	6.72	-48	888	219	450	104	5	<0.010	749	<0.010	<0.20	<0.500	<0.005	870	<3.0	0.379
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27S	**1/30/08**	39.01	11.5	7.29	-30	662	43	620	90.9	140	<0.010	665	<0.050	<0.20	0.799	<0.005	752	73.7	2.29
W-27S	**7/29/08**	39.7	20.3	7.62	-36	1093	21.3	580	103	26	<0.010	638	<0.010	<0.20	0.783	<0.005	712	3.8	0.162
W-27S	**1/21/09**	38.47	11.3	7.66	36	1087	51.9	690	74	110	<0.010	727	<0.010	<0.20	<0.500	<0.005	795	3.8	1.98
W-27S	**7/21/09**	39.62	21	6.83	-24	932	60.6	600	60.7	35	<0.010	792	<0.010	<0.20	0.903	<0.005	790	<3.0	4.65
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27D	**1/30/08**	38.6	11.8	8.36	106	575	80.2	170	2.34	12	<0.010	101	<0.010	<0.20	<0.50	<0.005	225	<3.0	0.565
W-27D	**7/30/08**	40.02	18.7	8.51	83	291	24.7	180	1.68	11	<0.010	98.9	<0.010	<0.20	<0.50	<0.005	164	<3.0	<0.10
W-27D	**1/21/09**	38.31	3.5	8.40	-95	219	40.1	79	3.1	21	<0.010	95.2	<0.010	<0.20	<0.500	<0.005	184	<3.0	0.273
W-27D	**7/21/09**	39.02	18.2	7.64	98	312	98.6	160	2.7	7	<0.010	120	<0.010	0.309	<0.500	<0.005	210	<3.0	0.299
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28S	**1/30/08**	43.64	9.7	7.60	-41	415	19.8	620	49.2	140	<0.010	830	<0.040	<0.20	<0.50	<0.005	927	96.1	0.124
W-28S	**7/29/08**	45.87	18.2	8.00	-57	986	18.1	560	52.1	18	<0.010	638	<0.010	<0.20	<0.50	<0.005	792	<3.0	<0.100
W-28S	**1/21/09**	43.19	9.8	7.58	-32	1050	34.2	590	53.7	105	<0.010	759	<0.010	<0.200	<0.500	<0.005	795	83.4	0.53
W-28S	**7/21/09**	43.81	18.1	7.31	187	457	9.7	600	51.2	25	<0.010	804	<0.010	<0.200	<0.500	<0.005	840	3.7	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28D	**1/30/08**	43.2	12.1	8.36	25	534	21.7	150	14.9	12	<0.010	99.7	<0.010	<0.20	<0.50	<0.005	188	<3.0	0.192
W-28D	**7/30/08**	45.1	20.2	8.53	47	208	49.8	160	3.99	11	<0.010	103	<0.010	0.217	<0.50	<0.005	248	<3.0	<0.10
W-28D	**1/21/09**	43.00	9.6	8.05	-90	252	20.5	150	6.07	15	<0.010	97.2	<0.010	<0.20	<0.50	<0.005	120	<3.0	<0.100
W-28D	**7/21/09**	46.03	17.2	7.87	-16	264	22.6	130	8.34	5	<0.010	115	<0.010	<0.20	<0.50	<0.005	190	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16D	**1/30/08**	<0.015	0.0427	0.118	<0.003	<0.500	<0.005	79.7	<0.005	<0.020	<0.010	5.95	<0.003	<0.030	19.4	1.07	<0.0002	<0.030	1.59
W-16D	**7/30/08**	<0.030	<0.010	0.111	<0.003	<0.500	<0.005	81.3	<0.005	<0.020	<0.010	3.99	<0.003	<0.030	18.4	1.01	<0.0002	<0.030	1.43
W-16D	**1/21/09**	<0.030	<0.010	0.0835	<0.003	<0.500	<0.005	214	<0.010	<0.020	<0.010	1.08	<0.003	<0.030	38	2.77	<0.0002	<0.030	2.42
W-16D	**7/21/09**	<0.030	<0.010	0.137	<0.003	<0.500	<0.005	91.5	<0.010	<0.020	<0.010	2.41	<0.003	<0.030	18.9	0.87	<0.0002	<0.030	1.84
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17S	**1/30/08**	<0.015	0.013	0.449	<0.003	<0.500	<0.005	174	0.011	<0.020	0.0494	24.6	<0.003	<0.030	47.4	0.588	<0.0002	<0.030	2.36
W-17S	**7/30/08**	<0.030	<0.010	0.459	<0.003	<0.500	<0.005	192	<0.005	<0.020	0.0167	24.7	0.00403	<0.030	44.7	0.582	<0.0002	<0.030	2.14
W-17S	**1/21/09**	<0.030	<0.010	0.4	<0.003	<0.500	<0.005	181	<0.010	<0.020	<0.010	23.2	<0.003	<0.030	46.6	0.521	<0.0002	<0.030	2
W-17S	**7/21/09**	<0.003	<0.010	0.431	<0.003	<0.500	<0.005	194	<0.010	<0.020	0.0128	24.8	<0.003	<0.030	48.5	0.567	<0.0002	<0.010	2.19
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17D	**1/30/08**	<0.015	<0.010	0.107	<0.003	<0.500	<0.005	151	<0.005	<0.020	<0.010	0.422	<0.003	<0.030	31.4	0.127	<0.0002	<0.030	6.14
W-17D	**7/30/08**	<0.030	<0.010	0.125	<0.003	<0.500	<0.005	163	<0.005	<0.020	0.011	0.532	<0.003	<0.030	32.2	0.212	<0.0002	<0.030	10.4
W-17D	**1/21/09**	<0.030	<0.010	0.129	<0.003	<0.500	<0.005	203	<0.010	<0.020	<0.010	1.51	<0.003	<0.030	32.6	1.24	<0.0002	<0.030	2.32
W-17D	**7/21/09**	<0.030	<0.010	0.169	<0.003	<0.500	<0.005	234	<0.010	<0.020	<0.010	1.48	<0.003	<0.030	40.1	1.44	<0.0002	<0.030	4.17
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27S	**1/30/08**	<0.015	<0.010	0.206	<0.003	<0.500	<0.005	210	0.0085	<0.020	0.046	34.4	0.0163	<0.030	34.4	2.47	<0.0002	<0.030	5.78
W-27S	**7/29/08**	<0.030	<0.010	0.39	<0.003	<0.500	<0.005	204	<0.005	<0.020	<0.010	36.5	<0.003	<0.030	31.2	1.06	<0.0002	<0.030	6.41
W-27S	**1/21/09**	<0.030	<0.010	0.207	<0.003	<0.500	<0.005	226	0.0185	<0.020	0.0268	24.9	0.0144	<0.030	39.5	3.23	<0.0002	<0.030	6.05
W-27S	**7/21/09**	<0.030	<0.010	0.297	<0.003	<0.500	<0.005	254	<0.010	<0.020	0.159	36.2	0.0291	<0.030	38.4	2.22	<0.0002	<0.030	6.89
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27D	**1/30/08**	<0.015	<0.010	0.0587	<0.003	<0.500	<0.005	23.6	0.0083	<0.020	<0.010	1.6	<0.003	<0.030	10.2	0.276	<0.0002	<0.030	1.41
W-27D	**7/30/08**	<0.030	<0.010	0.0534	<0.003	<0.50	<0.005	23.5	0.0069	<0.020	<0.010	0.411	<0.003	<0.030	9.77	0.0977	<0.0002	<0.030	1.36
W-27D	**1/21/09**	<0.030	<0.010	0.0581	<0.003	<0.050	<0.005	23.3	<0.010	<0.020	<0.010	0.648	<0.003	<0.030	8.98	0.166	<0.0002	<0.030	1.29
W-27D	**7/21/09**	<0.030	<0.010	0.0638	<0.003	<0.050	<0.005	29	<0.010	<0.020	0.0122	0.979	<0.003	<0.030	11.6	0.162	<0.0002	<0.030	1.57
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28S	**1/30/08**	<0.015	0.022	0.123	<0.003	<0.500	<0.005	257	<0.005	<0.020	<0.010	8.36	<0.003	<0.030	45.8	3.08	<0.0002	<0.030	3.19
W-28S	**7/29/08**	<0.030	0.059	0.122	<0.003	<0.50	<0.005	204	<0.005	<0.020	<0.010	1.27	<0.003	<0.030	31.4	0.784	<0.0002	<0.030	2.94
W-28S	**1/21/09**	<0.030	<0.010	0.136	<0.003	<0.500	<0.005	240	<0.010	<0.020	<0.010	11.9	<0.003	<0.030	38.8	1.79	<0.0002	<0.030	3.01
W-28S	**7/21/09**	<0.030	<0.010	0.0985	<0.003	<0.500	<0.005	251	<0.010	<0.020	<0.010	2.86	<0.003	<0.030	43.3	1.38	<0.0002	<0.030	3.9
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28D	**1/30/08**	<0.015	<0.010	0.054	<0.003	0.5	<0.005	25.5	<0.005	<0.020	<0.010	0.485	<0.003	<0.030	8.77	0.244	<0.0002	<0.030	1.60
W-28D	**7/30/08**	<0.030	<0.010	0.0594	<0.003	<0.50	<0.005	26.6	<0.005	<0.020	<0.010	0.463	<0.003	<0.030	8.92	0.145	<0.0002	0.0315	2.05
W-28D	**1/21/09**	<0.030	<0.010	0.0551	<0.003	<0.500	<0.005	25.3	<0.010	<0.020	<0.010	0.248	<0.003	<0.030	8.25	0.107	<0.0002	<0.030	1.88
W-28D	**7/21/09**	<0.030	<0.010	0.0538	<0.003	<0.500	<0.005	29.5	<0.010	<0.020	<0.010	0.255	<0.003	<0.030	10.1	0.129	<0.0002	<0.030	1.73

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS 2009
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16D	**1/30/08**	<0.005	<0.010	3.75	<0.010	0.0732
W-16D	**7/30/08**	<0.005	<0.010	3.32	<0.010	0.051
W-16D	**1/21/09**	<0.005	<0.010	18.1	<0.010	0.0178
W-16D	**7/21/09**	<0.005	<0.010	3.97	<0.010	0.0249
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17S	**1/30/08**	<0.005	<0.010	11.4	<0.010	0.0164
W-17S	**7/30/08**	<0.005	0.0126	17	<0.010	0.0247
W-17S	**1/21/09**	<0.005	<0.010	14.8	<0.010	<0.010
W-17S	**7/21/09**	<0.005	<0.010	14.8	<0.010	0.0204
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17D	**1/30/08**	<0.005	<0.010	24.7	<0.010	0.017
W-17D	**7/30/08**	<0.005	<0.010	28	<0.010	0.0239
W-17D	**1/21/09**	<0.005	<0.010	22.6	<0.010	0.0111
W-17D	**7/21/09**	<0.005	<0.010	55.8	<0.010	0.0159
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27S	**1/30/08**	<0.005	<0.010	42.7	<0.010	0.0552
W-27S	**7/29/08**	<0.005	0.0130	50.2	<0.010	<0.010
W-27S	**1/21/09**	<0.005	<0.010	38	<0.010	0.057
W-27S	**7/21/09**	<0.005	<0.010	42.6	<0.010	0.19
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27D	**1/30/08**	<0.005	<0.010	46.6	<0.010	0.0166
W-27D	**7/30/08**	<0.005	<0.010	47.1	<0.010	<0.010
W-27D	**1/21/09**	<0.030	<0.010	44.2	<0.030	0.0108
W-27D	**7/21/09**	<0.030	<0.010	56.3	<0.030	0.0246
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28S	**1/30/08**	<0.005	<0.010	21.8	<0.010	0.012
W-28S	**7/29/08**	<0.005	0.0128	22.9	<0.010	0.0209
W-28S	**1/21/09**	<0.005	<0.010	25.2	<0.010	0.0149
W-28S	**7/21/09**	<0.005	<0.010	31.9	<0.010	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28D	**1/30/08**	<0.005	<0.010	36.1	<0.010	0.01
W-28D	**7/30/08**	<0.005	<0.010	35.8	<0.010	0.0185
W-28D	**1/21/09**	<0.005	<0.010	33.3	<0.010	0.013
W-28D	**7/21/09**	<0.005	<0.010	39.3	<0.010	<0.010

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-05D	**1/30/08**	18.6	4.2	8.44	113	855	92.5	120	17	<25	<0.010	127	<0.010	<0.20	<0.50	<0.005	122	<3.0
W-05D	**7/31/08**	20.55	18.1	8.22	83	154	142	120	2.93	16	<0.010	130	<0.010	<0.20	<0.50	<0.005	160	<3.0
W-05D	**1/21/09**	18.21	3.3	8.40	-107	117	30.1	100	3.24	8	<0.010	122	<0.010	0.212	<0.500	<0.005	120	<3.0
W-05D	**7/22/09**	19.35	18	8.25	-26	249	13.5	110	3.48	5	<0.010	139	<0.010	<0.20	<0.500	<0.005	180	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-06DA	**1/30/08**	18.20	9.6	8.33	175	724	62.4	160	9.6	18	<0.010	210	<0.010	<0.20	<0.50	0.04	255	<3.0
W-06DA	**7/31/08**	20.50	16.5	8.36	101	378	86.8	190	17.8	15	<0.010	211	<0.010	<0.20	<0.50	<0.005	308	<3.0
W-06DA	**1/21/09**	17.63	3.4	9.01	-20	93.2	12.4	140	3.66	8	<0.010	193	<0.010	<0.20	<0.50	<0.005	372	<3.0
W-06DA	**7/22/09**	18.62	17.2	7.62	90	309	24.1	140	3.97	5	<0.010	237	<0.010	<0.200	0.602	<0.005	280	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-08D*	**1/30/08**	73.25	9.5	8.21	211	270	28	180	3.75	12	<0.010	210	<0.010	<0.20	<0.500	<0.005	250	<3.0
W-08D*	**7/30/08**	82.28	17.4	8.14	-67	457	102	190	4.32	38	<0.010	245	<0.010	0.278	<0.500	<0.005	372	<3.0
W-08D*	**1/21/09**	76.81	8.9	8.07	-60	410	88.3	180	3.34	105	<0.010	234	<0.010	0.441	<0.500	<0.005	282	<3.0
W-08D*	**7/22/09**	76.97	15.8	7.34	184	223	42	180	3.92	25	<0.010	283	<0.010	0.549	<0.500	<0.005	280	<3.0

*** BACKGROUND WELL**

TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-09D	**1/30/08**	43.05	14.1	8.08	-4	1034	38.4	140	145	26	<0.010	166	<0.010	<0.20	<0.50	<0.005	490	<3.0
W-09D	**7/30/08**	44.61	-	8.56	91	360	29.5	140	128	9	<0.010	166	<0.010	0.224	<0.50	<0.005	468	<3.0
W-09D	**1/21/09**	42.4	8	7.86	-91	495	19.2	130	135	28	<0.010	162	<0.010	0.212	<0.500	<0.005	444	<3.0
W-09D	**7/22/09**	43.63	17.6	7.80	-21	528	7.62	130	133	7	<0.010	206	<0.010	<0.20	<0.500	<0.005	530	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-10D	**1/30/08**	58.37	10	7.59	124	659	17.7	580	20.6	12	<0.010	742	<0.010	<0.200	<0.50	<0.005	837	68
W-10D	**7/30/08**	59.98	17.1	7.85	-49	1053	42.5	550	17.5	17	<0.010	831	<0.010	<0.200	<0.50	<0.005	924	<3.0
W-10D	**1/21/09**	57.69	8.8	7.73	-42	940	17.6	550	17.8	10	<0.010	272	<0.010	<0.200	<0.50	<0.005	757	<3.0
W-10D	**7/22/09**	57.30	16.1	6.74	217	426	8.1	480	21.7	5	<0.010	766	<0.010	<0.200	<0.500	<0.005	780	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-05D	**1/30/08**	0.626	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	34.2	<0.005	<0.020	<0.010	1.11	<0.003	<0.030	10	0.076	<0.0002	<0.030
W-05D	**7/31/08**	0.211	<0.030	<0.010	0.051	<0.003	<0.500	<0.005	36.2	<0.005	<0.020	<0.010	0.433	<0.003	<0.030	9.63	0.0811	<0.0002	<0.030
W-05D	**1/21/09**	0.116	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	34.1	<0.005	<0.020	<0.010	0.26	<0.003	<0.030	8.99	0.0517	<0.0002	<0.030
W-05D	**7/22/09**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	38.5	<0.005	<0.020	<0.010	0.149	<0.003	<0.030	10.3	0.0947	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-06DA	**1/30/08**	0.513	<0.015	<0.010	0.0735	<0.003	<0.500	<0.005	65.6	<0.005	<0.020	<0.010	1.02	<0.003	<0.030	11.2	0.116	<0.0002	<0.030
W-06DA	**7/31/08**	0.153	<0.030	<0.010	0.0933	<0.003	<0.500	<0.005	67.2	<0.005	<0.020	0.0147	0.676	0.0048	<0.030	10.6	0.158	<0.0002	<0.030
W-06DA	**1/21/09**	<0.100	<0.030	<0.010	0.0679	<0.003	<0.500	<0.005	62	<0.005	<0.020	<0.010	0.36	<0.003	<0.030	9.19	0.0357	<0.0002	<0.030
W-06DA	**7/22/09**	0.15	<0.030	<0.010	0.0747	<0.003	<0.500	<0.005	75.7	<0.010	<0.020	0.0139	0.465	<0.003	<0.030	11.7	0.0399	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-08D*	**1/30/08**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	63.5	<0.005	<0.020	0.014	0.338	<0.030	<0.030	12.6	0.0283	<0.0002	<0.030
W-08D*	**7/30/08**	2.94	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	74.7	0.0065	<0.020	0.0156	3.57	<0.003	<0.010	14.1	0.0916	<0.0002	<0.030
W-08D*	**1/21/09**	4.56	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	69.5	0.0118	<0.020	0.0153	5.73	<0.003	<0.030	14.8	0.0892	<0.0002	<0.030
W-08D*	**7/22/09**	1.42	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	85.6	<0.010	<0.020	<0.010	1.97	<0.003	<0.030	16.8	0.0595	<0.0002	<0.030

*** BACKGROUND WELL**

TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-09D	**1/30/08**	<0.100	<0.015	<0.010	0.0536	<0.003	<0.500	<0.005	33.1	0.00956	<0.020	<0.010	0.65	<0.003	<0.030	20.3	0.399	<0.0002	<0.030
W-09D	**7/30/08**	<0.100	<0.030	<0.010	0.055	<0.003	<0.500	<0.005	33.9	<0.005	<0.020	<0.010	0.419	<0.003	<0.030	19.7	0.226	<0.0002	<0.030
W-09D	**1/21/09**	<0.100	<0.030	<0.010	0.0522	<0.003	<0.500	<0.005	33.2	<0.005	<0.020	<0.010	0.573	<0.003	<0.030	19.4	0.497	<0.0002	<0.030
W-09D	**7/22/09**	0.215	<0.030	<0.010	0.0755	<0.003	<0.500	<0.005	42.6	0.0353	<0.020	0.0282	1.69	<0.003	<0.030	24.3	0.529	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-10D	**1/30/08**	0.315	<0.015	<0.010	0.094	<0.003	<0.500	<0.005	222	<0.005	<0.020	<0.010	1.96	<0.003	<0.030	45.7	2.08	<0.0002	<0.030
W-10D	**7/30/08**	0.568	<0.030	<0.010	0.115	<0.003	<0.500	<0.005	258	<0.005	<0.020	0.0123	2.24	<0.003	<0.030	45.4	2.79	<0.0002	<0.030
W-10D	**1/21/09**	0.855	<0.030	<0.010	0.148	<0.003	<0.500	<0.005	80	0.0163	<0.020	<0.010	7.85	<0.003	<0.030	17.5	1.00	<0.0002	<0.030
W-10D	**7/22/09**	0.129	<0.030	<0.010	0.0764	<0.003	<0.500	<0.005	231	<0.010	<0.020	<0.010	0.685	<0.003	<0.030	45.8	2.15	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-05D	**1/30/08**	1.78	<0.005	<0.010	5.75	<0.010	0.0112
W-05D	**7/31/08**	1.97	<0.005	<0.010	5.68	<0.010	0.011
W-05D	**1/21/09**	3.52	<0.005	<0.010	6.02	<0.010	0.0137
W-05D	**7/22/09**	2.55	<0.005	<0.010	6.66	<0.010	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-06DA	**1/30/08**	1.73	<0.005	<0.010	10.4	<0.010	0.0223
W-06DA	**7/31/08**	2.12	<0.005	<0.010	10.8	<0.010	0.126
W-06DA	**1/21/09**	1.36	<0.005	<0.010	8.91	<0.010	0.0216
W-06DA	**7/22/09**	1.68	<0.005	0.021	11.9	<0.010	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-08D*	**1/30/08**	<1.0	<0.005	<0.010	5.96	<0.010	0.0392
W-08D*	**7/30/08**	1.36	<0.005	<0.010	5.28	<0.010	0.0147
W-08D*	**1/21/09**	1.94	<0.005	<0.010	5.28	<0.010	0.0255
W-08D*	**7/22/09**	1.05	<0.005	<0.010	6.84	<0.010	0.0275

*** BACKGROUND WELL**

TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-09D	**1/30/08**	3.11	<0.005	<0.010	118	<0.010	0.0181
W-09D	**7/30/08**	3.07	<0.005	<0.010	123	<0.010	<0.010
W-09D	**1/21/09**	3.19	<0.005	<0.010	11.7	<0.010	<0.010
W-09D	**7/22/09**	4.31	<0.005	<0.010	146	<0.010	0.0457
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-10D	**1/30/08**	2.86	<0.005	<0.010	17.1	<0.010	0.0206
W-10D	**7/30/08**	3.1	<0.005	0.0109	22.7	<0.010	0.0418
W-10D	**1/21/09**	1.55	<0.005	<0.010	2.97	<0.010	0.0668
W-10D	**7/22/09**	2.7	<0.005	<0.010	20.2	<0.010	0.0124

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-30	**1/30/08**	49.45	10.2	7.68	81	259	24.4	400	153	<5.0	<0.010	854	<0.010	<0.20	<0.50	<0.005	1140	35.7
W-30	**7/31/08**	51.82	15.1	8.56	138	633	74.2	460	152	<5.0	<0.010	957	<0.010	0.236	<0.500	<0.005	1060	<3.0
W-30	**1/21/09**	48.85	2.6	8.29	37	459	34.9	450	137	12	<0.010	835	<0.010	<0.20	<0.500	<0.005	1040	<3.0
W-30	**7/22/09**	49.61	16.6	7.20	141	892	33.5	420	139	5	<0.010	944	<0.010	<0.20	<0.500	<0.005	1200	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
SS882	**1/30/08**	32.77	9.7	7.89	187	596	13.5	330	30.3	12	<0.010	258	<0.010	<0.20	<0.50	<0.005	355	66.1
SS882	**7/30/08**	36.4	18.7	8.10	-64	553	18.3	280	5.94	50	<0.010	374	<0.010	<0.20	<0.50	<0.005	476	<3.0
SS882	**1/21/09**	32.5	10.3	7.89	-50	482	19.4	220	4.52	40	<0.010	251	<0.010	<0.20	<0.50	<0.005	335	<3.0
SS882	**7/22/09**	33.03	15.6	7.81	156	257	8.88	260	4.64	5	<0.010	339	<0.010	<0.20	<0.50	<0.005	400	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-30	**1/30/08**	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	186	<0.005	<0.020	<0.010	0.0998	<0.003	<0.030	94.4	<0.010	<0.0002	<0.030
W-30	**7/31/08**	0.159	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	214	0.007	<0.020	0.021	2.04	<0.003	<0.030	102	0.05	<0.0002	<0.030
W-30	**1/21/09**	0.244	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	187	0.0138	<0.020	<0.010	1.21	<0.003	<0.030	89.4	0.0333	<0.0002	<0.030
W-30	**7/22/09**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	211	<0.010	<0.020	0.01	0.707	<0.003	<0.030	101	0.0515	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
SS882	**1/30/08**	0.145	<0.015	<0.010	0.06	<0.003	<0.500	<0.005	72.8	<0.005	<0.020	<0.010	0.628	<0.003	<0.030	18.5	0.804	<0.0002	<0.030
SS882	**7/30/08**	<0.100	<0.030	<0.010	0.107	<0.003	<0.500	<0.005	105	<0.005	<0.020	<0.010	1.51	<0.003	<0.030	27.2	0.586	<0.0002	<0.030
SS882	**1/21/09**	0.285	<0.030	<0.010	0.069	<0.003	<0.500	<0.005	71.1	<0.010	<0.020	<0.010	1.27	<0.003	<0.030	17.8	0.198	<0.0002	<0.030
SS882	**7/22/09**	<0.100	<0.030	<0.010	0.099	<0.003	<0.500	<0.005	99	<0.010	<0.020	<0.010	1.04	<0.003	<0.030	22.2	0.841	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - 2009 (all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-30	**1/30/08**	7.09	<0.005	<0.010	66.5	<0.010	0.0166
W-30	**7/31/08**	5.64	<0.005	<0.010	70.7	<0.010	0.0407
W-30	**1/21/09**	5.26	<0.005	<0.010	59.5	<0.010	0.0235
W-30	**7/22/09**	5.88	<0.005	<0.010	69.7	<0.010	0.0155
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
SS882	**1/30/08**	2.23	<0.005	<0.010	16.8	<0.010	<0.010
SS882	**7/30/08**	2.3	<0.005	<0.010	16.7	<0.010	<0.010
SS882	**1/21/09**	2.13	<0.005	<0.010	15.7	<0.010	<0.010
SS882	**7/22/09**	2.22	<0.005	<0.010	16.9	<0.010	<0.010

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Cr +6	Nitrate
NYS LIMIT:				**6.5-8.5**			**5.0**				**250.0**		**15.0**	**0.2**		**0.05**	**10.0**
CAS NO.																18540-29-9	
TRIG. VALUE:								**258**			**14.4**		**40**		**354**	**0.05**	**0.48**
CHURCH	**11/6/08**	-	13.6	8.17	69.2	347	1.06	150	<4.0	<0.20	9.07	<20.0	<5.0	<0.010	171	<0.010	<0.20
CHURCH	**1/20/09**	-	10.3	9.47	-62	279	7.62	140	<4.0	<0.20	5.8	<20.0	<5.0	<0.010	181	<0.010	<0.20
CHURCH	**4/8/09**	-	13.1	8.10	-36.1	391	2.5	260	<4.0	<2.0	7.78	<20.0	<5.0	<0.010	179	<0.010	<0.20
CHURCH	**7/20/09**	-	14.2	7.56	107	337	5.63	160	<4.0	<2.0	8.3	<20.0	5	<0.010	214	<0.010	<0.20

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		NH4	TKN	Phenol	TDS	TOC	Sulfate	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe
NYS LIMIT:		**2.0**		**0.001**	**500**				**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**
CAS NO.		7664-41-7		108-95-2									7440-42-8						
TRIG. VALUE:		**0.6**		**0.014**	**488**	**30**		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**
CHURCH	**11/6/08**	<0.50	<0.500	<0.005	256	<3.0	37.8	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	48.8	<0.005	<0.020	0.0123	<0.060
CHURCH	**1/20/09**	4.39	<0.500	<0.005	260	<3.0	40.9	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	51	<0.005	<0.020	0.033	0.172
CHURCH	**4/8/09**	<0.50	<0.500	<0.005	336	<3.0	38.5	<0.100	<0.030	<0.010	<0.003	<0.003	<0.500	<0.005	48.8	<0.005	<0.020	0.198	0.757
CHURCH	**7/20/09**	<0.50	<0.50	<0.005	220	<3.0	43	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	60.7	<0.005	<0.020	0.0174	0.12

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		Pb	V	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.025**			**0.3**	**0.0007**	**0.1**		**0.01**	**0.05**	**20**		
CAS NO.													
TRIG. VALUE:		**0.025**			**0.3**	**0.002**			**0.0014**	**0.05**	**20**		**0.3**
CHURCH	**11/6/08**	<0.003	<0.030	11.8	0.311	<0.0002	<0.030	<1.0	<0.005	<0.010	12	<0.010	0.0129
CHURCH	**1/20/09**	<0.003	<0.030	13.1	0.0117	<0.0002	<0.030	<1.0	<0.005	<0.010	14	<0.010	0.0337
CHURCH	**4/8/09**	0.0181	<0.030	13.8	<0.010	<0.0002	<0.030	<1.0	<0.005	<0.010	15.1	<0.010	0.15
CHURCH	**7/20/09**	<0.003	<0.030	15.3	0.0168	<0.0002	<0.030	<1.0	<0.005	<0.010	15	<0.010	0.0214

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2009
(all units are in mg/l)

		Dis O2	SC	eH	pH	Temp	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols
CLASS C STD:		**<4**			**6.5-8.5**						**9**		**0.011**		**2**	
WALL-UP	**1/28/08**	-	1589	125	8.60	1.1	20	110	66.9	29	<0.010	143	<0.010	0.998	<0.500	<0.005
WALL-UP	**7/28/08**	-	553	65	8.48	25.8	74.1	120	62.8	42	<0.010	144	<0.010	0.667	<0.500	<0.005
WALL-UP	**1/19/09**	-	312	-17	8.60	0.2	14.6	120	74.2	25	<0.010	182	<0.010	1.04	<0.500	<0.005
WALL-UP	**7/20/09**	-	504	88	7.20	25	35.9	130	62.5	9	<0.010	198	<0.010	0.612	<0.500	<0.005
WALL-DN	**1/28/08**	-	156	101	8.94	1.8	17	120	66.7	29	<0.010	144	<0.010	1.00	<0.500	<0.005
WALL-DN	**7/28/08**	-	501	73	8.45	26.1	56.2	130	64.3	46	<0.010	142	<0.010	0.728	<0.500	<0.005
WALL-DN	**1/19/09**	-	294	-25	8.18	0.9	15.6	120	70.6	24	<0.010	183	<0.010	1.030	<0.500	<0.005
WALL-DN	**7/20/09**	-	1609	74	7.62	25	32.6	140	64.6	6	<0.010	199	<0.010	0.637	<0.500	<0.005
Basin A	**1/28/08**	Frozen														
Basin A	**7/29/08**	6.47	183	13	8.37	25.1	23.2	120	5.81	29	<0.010	49.4	<0.010	<0.20	<0.50	<0.005
Basin A	**1/20/09**	Frozen														
Basin A	**7/20/09**	8.83	324	107	7.82	30	54	170	2.06	9	<0.010	204	<0.010	<0.20	<0.500	<0.005
Basin B	**1/28/08**	Frozen														
Basin B	**7/29/08**	Dry														
Basin B	**1/20/09**	Dry														
Basin B	**7/20/09**	4.51	326	67	7.91	32.0	157	170	3	9	<0.010	220	<0.010	<0.200	<0.500	<0.005
Basin D	**1/28/08**	Dry														
Basin D	**7/29/08**	Dry														
Basin D	**1/20/09**	Dry														
Basin D	**7/20/09**	4.76	363	83	8.27	28.2	22.6	210	1.95	9	<0.010	258	<0.010	<0.200	<0.500	<0.005

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2009
(all units are in mg/l)

		DS	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
CLASS C STD:		**500**		**0.1**				**1.1**	**10**				**0.005**		**0.3**		**0.014**	
WALL-UP	**1/28/08**	237	31.6	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	36.3	<0.005	<0.020	<0.010	0.327	<0.003	<0.030	12.7
WALL-UP	**7/28/08**	324	6.1	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	37.3	<0.005	<0.020	<0.010	<0.060	<0.003	<0.030	12.5
WALL-UP	**1/19/09**	300	3.6	0.151	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	45.5	<0.010	<0.020	<0.010	0.386	<0.003	<0.030	15.3
WALL-UP	**7/20/09**	280	5.1	0.402	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	52	<0.005	<0.020	<0.010	0.7	<0.003	<0.030	16.6
WALL-DN	**1/28/08**	230	<3.0	0.108	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	36.6	<0.005	<0.020	0.0147	0.482	<0.003	<0.030	12.7
WALL-DN	**7/28/08**	344	6.8	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	37	<0.005	<0.020	0.011	0.0854	<0.003	<0.030	12.1
WALL-DN	**1/19/09**	308	4.6	0.141	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	47.8	<0.005	<0.020	0.0283	0.394	<0.003	<0.030	15.4
WALL-DN	**7/20/09**	290	7.0	0.396	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	52.1	<0.005	<0.020	<0.010	0.68	<0.003	<0.030	16.7
Basin A	**1/28/08**																	
Basin A	**7/29/08**	132	6.8	<0.10	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	12.9	<0.005	<0.020	<0.010	<0.060	<0.003	<0.030	4.17
Basin A	**1/20/09**																	
Basin A	**7/20/09**	180	7.6	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	61.4	<0.010	<0.020	0.0189	0.398	<0.003	<0.030	12.3
Basin B	**1/28/08**																	
Basin B	**7/29/08**																	
Basin B	**1/20/09**																	
Basin B	**7/20/09**	210	8.4	1.91	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	74.3	<0.010	<0.020	0.0109	2.9	<0.003	<0.030	8.46
Basin D	**1/28/08**																	
Basin D	**7/29/08**																	
Basin D	**1/20/09**																	
Basin D	**7/20/09**	260	8	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	89.9	<0.010	<0.020	<0.010	0.969	<0.003	<0.030	8.25

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS 2009
(all units are in mg/l)

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
CLASS C STD:									**0.008**	
WALL-UP	**1/28/08**	0.0713	<0.0002	<0.030	1.69	<0.005	<0.010	25.2	<0.010	0.0667
WALL-UP	**7/28/08**	<0.010	<0.0002	<0.030	2.57	<0.005	<0.010	27	<0.010	0.0381
WALL-UP	**1/19/09**	0.0734	<0.0002	<0.030	1.77	<0.005	<0.010	36	<0.010	0.0512
WALL-UP	**7/20/09**	0.103	<0.0002	<0.030	2.35	<0.005	<0.010	34.7	<0.010	0.0609
WALL-DN	**1/28/08**	0.081	<0.0002	<0.030	1.5	<0.005	<0.010	26.1	<0.010	0.109
WALL-DN	**7/28/08**	<0.010	<0.0002	<0.030	3.5	<0.005	<0.010	27.2	<0.010	0.622
WALL-DN	**1/19/09**	0.0799	<0.0002	<0.030	2.37	<0.005	<0.010	36.8	<0.010	0.0661
WALL-DN	**7/20/09**	0.105	<0.0002	<0.030	3.35	<0.005	<0.010	35.7	<0.010	0.14
Basin A	**1/28/08**									
Basin A	**7/29/08**	<0.010	<0.0002	<0.030	<1.0	<0.010	<0.010	1.35	<0.010	0.0199
Basin A	**1/20/09**									
Basin A	**7/20/09**	0.0551	<0.0002	<0.030	2.15	<0.005	<0.010	2.43	<0.010	0.0222
Basin B	**1/28/08**									
Basin B	**7/29/08**									
Basin B	**1/20/09**									
Basin B	**7/20/09**	0.109	<0.0002	<0.030	5.31	<0.005	<0.010	1.63	<0.010	0.0153
Basin D	**1/28/08**									
Basin D	**7/29/08**									
Basin D	**1/20/09**									
Basin D	**7/20/09**	0.167	<0.0002	<0.030	3.52	<0.005	<0.010	1.46	<0.010	<0.010

TABLE 3-2
AL TURI SANITARY LANDFILL
SEDIMENT / FLOC MONITORING ANALYTICAL RESULTS
2008
(all units are in mg/kg)

		% Moisture	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
Sed UP	**1/28/08**	4.78	2760	5250	<3.15	<2.10	21.7	0.971	<105	<1.05	9250	12.2	6.14	22.9	12800	30.4	8.47	7360
Sed UP	**7/27/08**	17.6	3170	9670	<3.64	<2.43	107	32.2	366	2	8250	186	45.7	543	47400	572	12	7650
Sed UP	**1/19/09**	9.03	16100	5160	<3.30	<2.20	29.1	<0.665	<110	<1.10	10700	7.84	5.51	9.33	12500	8.89	8.44	7090
Sed UP	**7/20/09**	33.1	22000	7720	<4.49	<2.99	124	<0.897	<150	5.87	53800	37.3	15.6	47	125000	433	17.5	6060
Sed DN	**1/28/08**	24.9	62800	6800	<4.00	3.23	60	<0.799	<133	<1.33	15300	11.9	7.88	33.8	15500	20.6	11.8	7420
Sed DN	**7/27/08**	26.9	9370	6660	<4.01	<2.74	31.4	<0.821	<137	<1.37	3960	9.55	5.61	13.2	14700	10.7	9.32	5120
Sed DN	**1/19/09**	69.6	401000	4130	<9.88	8.11	99.8	<1.98	<329	<3.29	41200	<6.58	<13.2	30.3	17200	8.98	<19.8	4770
Sed DN	**7/20/09**	30.2	5510	5510	<4.30	<2.87	35.2	<0.860	<143	<1.43	6780	8.23	5.73	15	12900	9.14	<8.60	4080

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
Sed UP	**1/28/08**	268	<0.105	18.3	527	<1.05	<2.10	<210	<2.10	122
Sed UP	**7/27/08**	817	<0.060	253	695	<1.21	<2.43	290	<2.43	2240
Sed UP	**1/19/09**	333	<0.055	12	423	<1.10	<2.20	<220	<2.20	57.1
Sed UP	**7/20/09**	2670	<0.0748	60.4	922	<1.50	<2.99	342	<2.99	137
Sed DN	**1/28/08**	678	<0.133	17.8	543	<1.33	<2.66	4850	<2.66	103
Sed DN	**7/27/08**	325	<0.068	13.7	647	<1.37	<2.74	<274	<2.74	54.7
Sed DN	**1/19/09**	1090	<0.165	<19.8	<658	<3.29	<6.58	<658	<6.58	78.0
Sed UP	**7/20/09**	770	<0.0717	12	511	<1.43	<2.87	<287	<2.87	74.6

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2009
(all units are in mg/l)

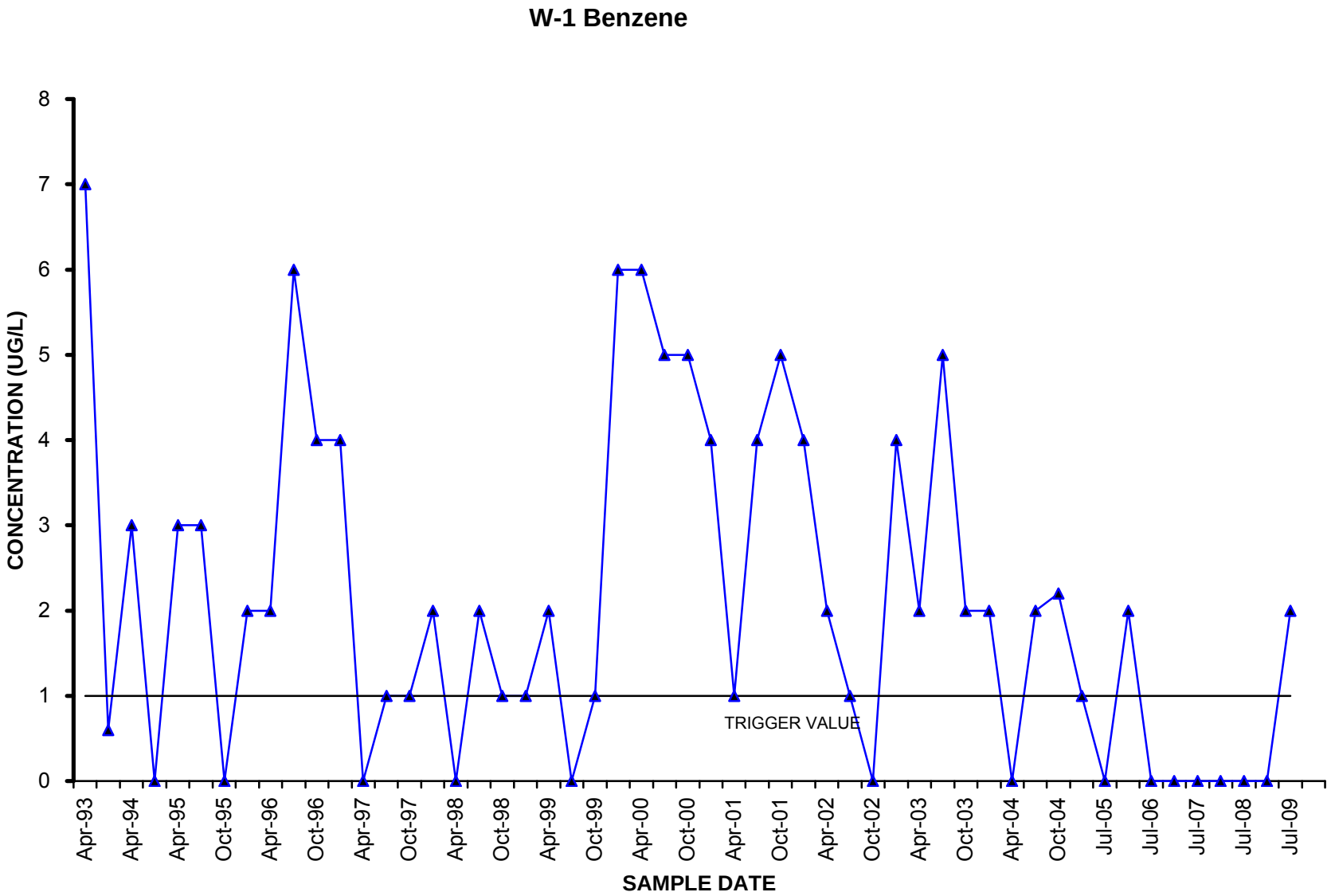
		SC	eH	pH	Temp	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Nitrate	NH4	TKN
LCH-11P	**1/28/08**	2100	-17	6.98	14.7	146	1700	<8.0	<200	605	268	135	<0.010	3150	0.381	215	200
LCH-11P	**7/29/08**	538	-65	7.49	26.5	207	2000	15	<200	8940	298	110	<0.0001	4500	0.826	164	167
LCH-11P	**1/19/09**	2120	-49	7.95	6.7	45.3	1700	70	<2.0	13.7	154	40	<0.010	123	<0.20	502	565
LCH-11P	**7/22/09**	1813	-49	7.24	17.8	25.5	1700	11	63	6150	364	60	<0.010	3840	<0.20	209	209
LCH-11S	**1/28/08**	206	5	8.48	10.2	10.1	220	<4.0	<0.20	39.8	<20.0	20	<0.010	265	0.919	<0.500	0.596
LCH-11S	**7/29/08**	348	45	8.62	19.1	10.3	230	<4.0	<2.0	36.6	<20.0	22	<0.0001	273	0.718	<0.500	<0.500
LCH-11S	**1/19/09**	550	-34	7.88	9.1	4.76	170	<4.0	<0.20	43.3	<20.0	20	<0.010	289	0.875	<0.500	0.523
LCH-11S	**7/22/09**	491	181	6.85	13.6	41.4	120	<8.0	<0.200	30.5	<20.0	5	<0.010	258	1.08	<0.500	<0.500
LCH-12P	**1/28/08**	1602	20	7.55	16.2	157	3100	66	<200	2490	820	650	<0.010	775	2.54	591	418
LCH-12P	**7/29/08**	5000	70	7.76	28.1	>1,000	2200	32	<200	1470	635	725	<0.0001	763	16.9	490	466
LCH-12P	**1/19/09**	7960	-1	6.92	16.2	84.6	3100	78	<20.0	2150	784	700	<0.010	575	1.21	710	736
LCH-12P	**7/22/09**	1184	114	6.92	19.2	109	360	<8.0	<20.0	137	<20.0	5	<0.010	822	27.8	<0.500	<0.500
LCH-12S	**1/28/08**	2220	157	7.66	7	21.1	400	<4.0	<20.0	70.1	<20.0	21	<0.010	606	8.6	2.83	<0.50
LCH-12S	**7/29/08**	981	45	8.52	19.9	30.2	400	<4.0	<20.0	224	20	18	<0.010	642	28.2	0.545	0.779
LCH-12S	**1/19/09**	802	34	7.17	10.4	46.9	360	<4.0	<0.20	47.8	<20.0	10	<0.010	626	7.72	<0.500	<0.500
LCH-12S	**7/22/09**	1082	100	6.80	20	52.6	320	<8.0	<0.20	118	26	5	<0.010	710	20.9	<0.500	<0.500

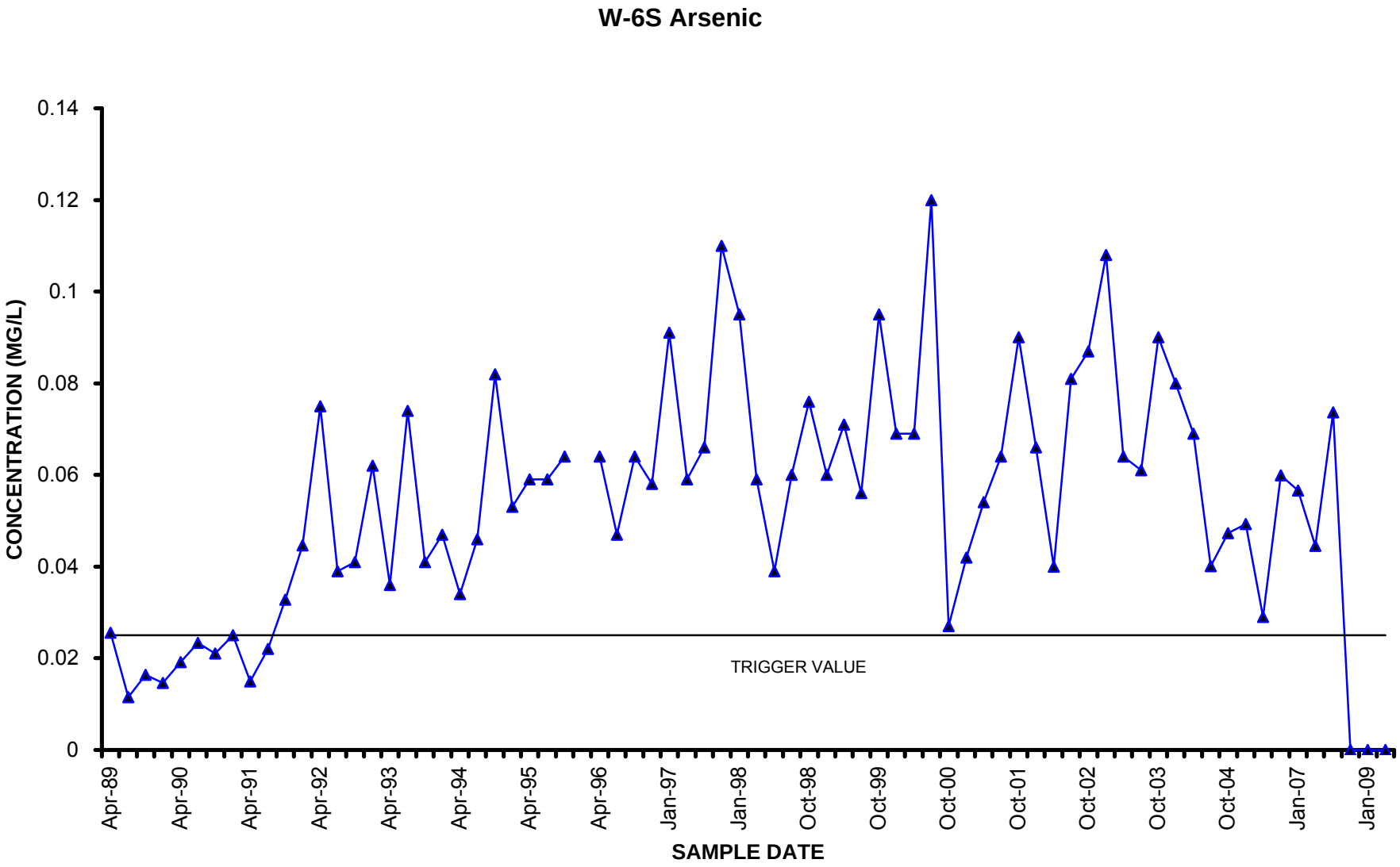
TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2009
(all units are in mg/l)

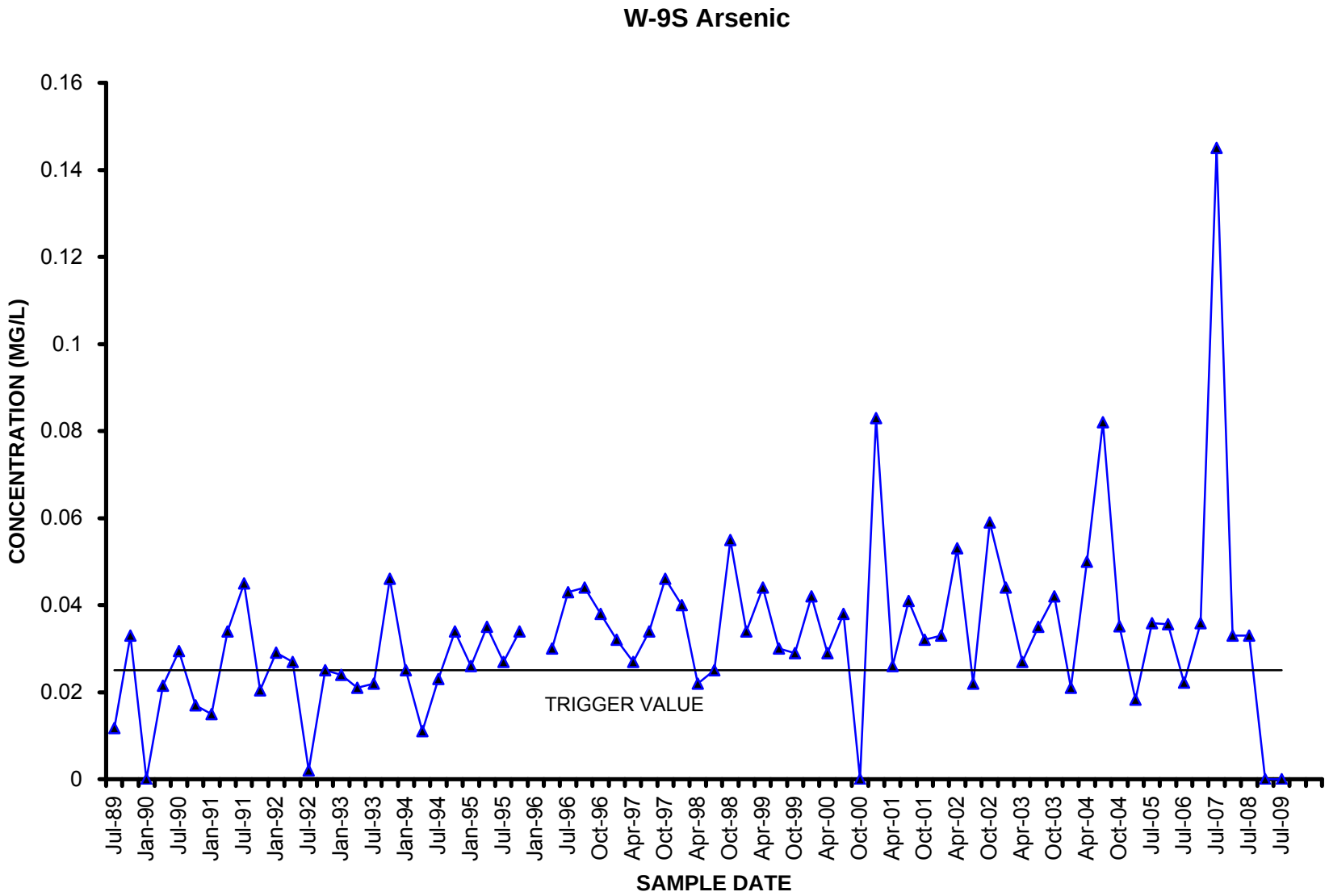
		Phenols	TDS	Sulfate	Sulfide	Cr +6	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
LCH-11P	**1/28/08**	0.009	13400	984	<0.100	<0.020	50.8	0.108	0.0161	<0.010	0.153	<0.003	17.4	<0.005	408	<0.005	<0.020
LCH-11P	**7/29/08**	<0.005	20600	3000	<0.100	<0.010	35.2	<0.100	<0.015	0.0173	0.154	<0.003	22.7	<0.005	549	<0.005	<0.020
LCH-11P	**1/19/09**	9.21	212	59.1	<0.100	<0.010	38	<0.100	<0.030	0.0838	<0.050	<0.003	<0.500	<0.005	38.7	<0.010	<0.020
LCH-11P	**7/22/09**	<0.005	14000	1390	<0.100	<0.010	<75.0	<0.100	<0.030	<0.010	0.154	<0.003	16.8	<0.005	543	<0.010	<0.020
LCH-11S	**1/28/08**	<0.005	495	163	<0.100	<0.010	51.1	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	77.4	<0.005	<0.020
LCH-11S	**7/29/08**	<0.050	632	195	<0.100	<0.010	3.4	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	78.7	<0.005	<0.020
LCH-11S	**1/19/09**	0.006	428	178	<0.100	<0.010	<3.0	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	82.8	<0.010	<0.020
LCH-11S	**7/22/09**	<0.005	510	101	<0.100	<0.010	<3.0	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	73.9	<0.010	<0.020
LCH-12P	**1/28/08**	0.015	5480	147	9.39	<0.10	282	2.76	0.0162	0.122	0.518	<0.003	6.27	<0.005	137	0.0318	0.0316
LCH-12P	**7/29/08**	<0.005	3560	577	<0.100	<0.010	157	0.64	<0.015	0.058	0.292	<0.003	3.77	<0.005	192	0.0165	0.0267
LCH-12P	**1/19/09**	0.353	4460	<5.00	<0.100	<0.040	203	0.647	<0.015	0.115	0.417	<0.003	6.06	<0.005	103	0.0273	0.0322
LCH-12P	**7/22/09**	<0.005	1100	325	<0.100	<0.010	4.7	0.552	<0.030	<0.010	0.0748	<0.003	<0.500	<0.005	253	<0.010	<0.020
LCH-12S	**1/28/08**	<0.005	920	316	<0.100	<0.010	96.4	0.117	<0.015	<0.010	0.0551	<0.003	<0.500	<0.005	185	<0.005	<0.020
LCH-12S	**7/29/08**	<0.005	1950	668	<0.100	<0.010	5.8	<0.100	<0.015	<0.010	0.0561	<0.003	<0.500	<0.005	199	<0.005	<0.020
LCH-12S	**1/19/09**	<0.005	768	216	<0.100	<0.010	3.1	0.37	<0.030	<0.010	0.0723	<0.003	<0.500	<0.005	196	<0.010	<0.020
LCH-12S	**7/22/09**	<0.005	960	196	<0.100	<0.010	4.8	0.304	<0.030	<0.010	0.0637	<0.003	<0.500	<0.005	217	<0.010	<0.020

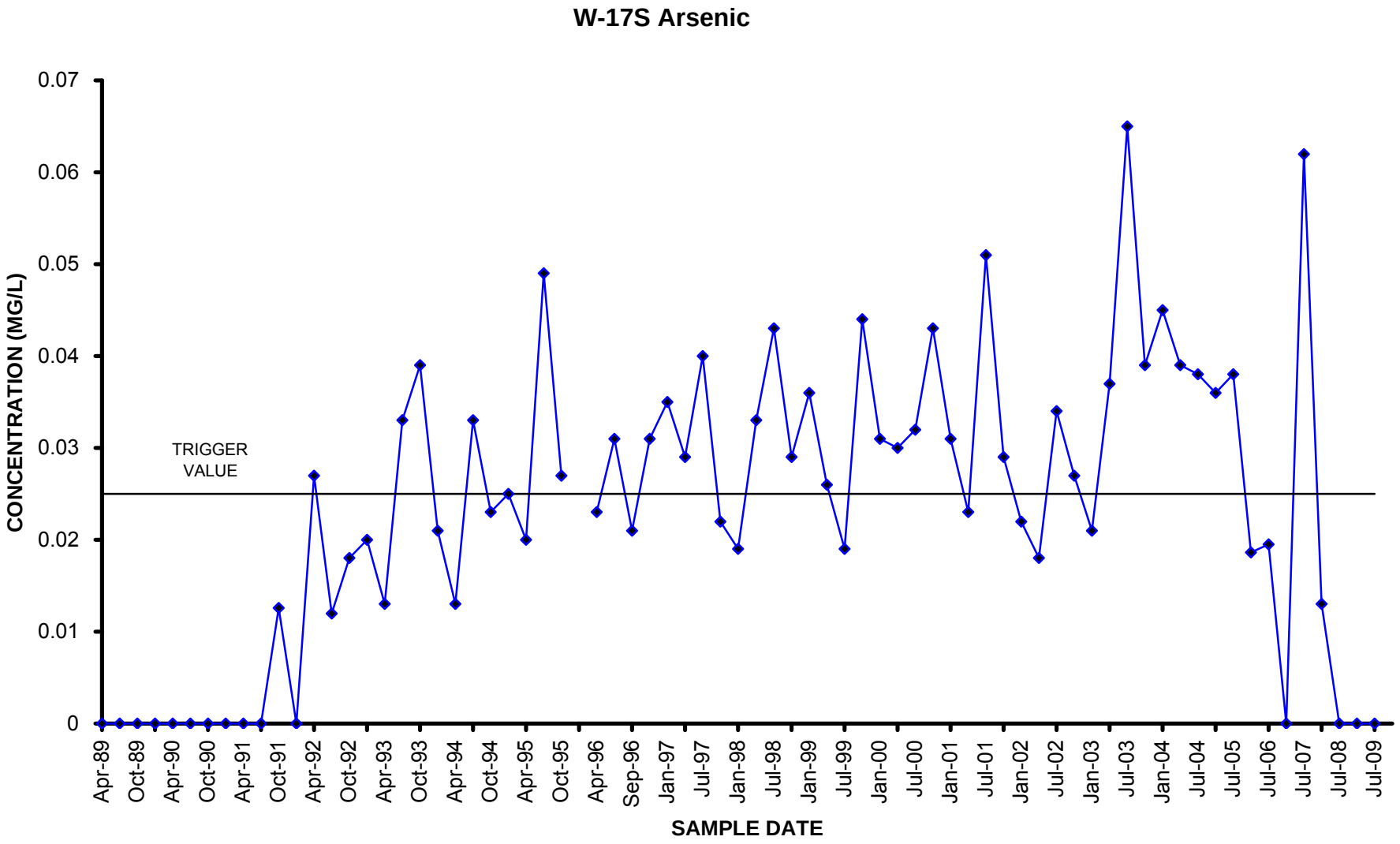
TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
2009
(all units are in mg/l)

		Cu	Fe	K	Pb	V	Mg	Mn	Hg	Ni	Se	Ag	Na	Sn	Th	Zn
LCH-11P	**1/28/08**	<0.010	24.2	23.4	<0.003	<0.030	517	5.59	0.00028	0.0461	<0.005	<0.010	138	<0.300	<0.010	0.543
LCH-11P	**7/29/08**	0.0109	9.16	719	<0.003	<0.030	761	6.29	<0.0002	0.0521	<0.005	<0.010	4490	<0.300	<0.010	0.0729
LCH-11P	**1/19/09**	<0.010	1.37	1.06	<0.003	<0.030	6.46	0.0574	<0.0002	<0.030	<0.005	<0.010	5.85	<0.030	<0.010	0.229
LCH-11P	**7/22/09**	0.0141	22.8	<1.00	<0.003	<0.030	602	5.16	<0.0002	0.0591	<0.005	<0.010	3380	<0.300	<0.010	0.0975
LCH-11S	**1/28/08**	<0.010	0.0625	8.75	<0.003	<0.030	17.3	0.0533	<0.0002	<0.030	<0.005	<0.010	34	<0.300	<0.010	0.124
LCH-11S	**7/29/08**	<0.010	<0.060	10.9	<0.003	<0.030	18.6	0.083	0.307	<0.030	<0.005	<0.010	38	<0.300	<0.010	0.13
LCH-11S	**1/19/09**	<0.010	0.0974	9.87	<0.003	<0.030	19.9	0.106	<0.0002	<0.030	<0.005	<0.010	40.9	<0.300	<0.010	0.237
LCH-11S	**7/22/09**	0.0116	<0.060	9.21	<0.003	<0.030	17.9	0.0825	<0.0002	<0.030	<0.005	<0.010	33.5	<0.300	<0.010	0.25
LCH-12P	**1/28/08**	0.277	30.2	11.8	0.0033	0.0309	105	1.14	<0.0002	0.139	<0.005	<0.010	47.4	<0.300	<0.010	0.527
LCH-12P	**7/29/08**	0.031	1.82	207	<0.003	<0.030	68.8	2.48	0.212	0.103	<0.005	<0.010	755	<0.300	<0.010	0.131
LCH-12P	**1/19/09**	0.0163	3.64	312	<0.003	<0.030	76.9	0.332	<0.0002	0.162	<0.005	<0.010	1110	<0.300	<0.010	0.108
LCH-12P	**7/22/09**	0.0147	2.36	19.7	<0.003	<0.030	46.2	0.161	<0.0002	<0.030	<0.005	<0.010	107	<0.300	<0.010	0.169
LCH-12S	**1/28/08**	<0.010	0.307	11.1	<0.003	<0.030	35	0.232	<0.0002	<0.030	<0.005	<0.010	47.3	<0.300	<0.010	0.241
LCH-12S	**7/29/08**	0.01	0.153	18.2	<0.003	<0.030	35.2	0.247	<0.0002	<0.030	<0.005	<0.010	10.4	<0.300	<0.010	0.0674
LCH-12S	**1/19/09**	<0.0104	0.784	7.55	<0.003	<0.030	33.1	0.175	<0.0002	<0.030	<0.005	<0.010	39.1	<0.300	<0.010	0.248
LCH-12S	**7/22/09**	0.0123	0.644	17.8	<0.003	<0.030	40.8	0.272	<0.0002	<0.030	<0.005	<0.010	93.3	<0.300	<0.010	0.127


W-1 Benzene
CONCENTRATION (UG/L)
0
1
2
3
4
5
6
7
8
TRIGGER VALUE
Apr-93
Apr-94
Apr-95
Oct-95
Apr-96
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
SAMPLE DATE


W-6S Arsenic
CONCENTRATION (MG/L)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Apr-89
Apr-90
Apr-91
Apr-92
Apr-93
Apr-94
Apr-95
Apr-96
Jan-97
Jan-98
Oct-98
Oct-99
Oct-00
Oct-01
Oct-02
Oct-03
Oct-04
Jan-07
Jan-09
SAMPLE DATE


W-9S Arsenic
CONCENTRATION (MG/L)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Jul-89
Jan-90
Jul-90
Jan-91
Jul-91
Jan-92
Jul-92
Jan-93
Jul-93
Jan-94
Jul-94
Jan-95
Jul-95
Jan-96
Jul-96
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
SAMPLE DATE


W-17S Arsenic
CONCENTRATION (MG/L)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
TRIGGER VALUE
Apr-89
Oct-89
Apr-90
Oct-90
Apr-91
Oct-91
Apr-92
Oct-92
Apr-93
Oct-93
Apr-94
Oct-94
Apr-95
Oct-95
Apr-96
Sep-96
Jan-97
Jul-97
Jan-98
Jul-98
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
SAMPLE DATE

LEGEND:

- EXISTING MONITORING WELL
- WELLS INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM
- WELLS INCLUDED AS PART OF THE POST CLOSURE MONITORING PROGRAM
- WATER LEVELS ONLY
- BORING/TEST BORING LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM

NOTES:

1. BASE PLAN TAKEN FROM "WELL LOCATION PLAN", DRAWING NO. 1, PREPARED BY EMCON, DATED 7/99 AND GROUND WATER INVESTIGATIONS, INC. (GWI) ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ACCURACY OF SAME.
2. EXISTING TOPOGRAPHIC MAP COMPILED PHOTO-GRAMMETRICALLY FROM AERIAL PHOTOGRAPHY DATED DECEMBER 2, 1998 BY ATLANTIS AERIAL OF BUDD LAKE NEW JERSEY.
3. PROPERTY LINE SHOWN FROM SURVEY MAP PREPARED BY WEHRAN- NEW YORK, INC. FOR TICOR TITLE GUARANTEE CO. DATED JUNE 23, 1988.
4. THE GRID DEPICTED ON THIS PLAN WAS DEVELOPED FOR MAPPING OF THE PROJECT SITE. THE COORDINTES SHOWN ARE NOT PART OF THE STATE PLANE COORDINATE SYSTEM.
5. HIGHLIGHTED SYMBOLS AND/OR TEXT INDICATE GROUNDWATER, SURFACE WATER/SEDIMENT AND LEACHATE SAMPLE LOCATIONS INCLUDED IN OPERATIONAL MONITORING PROGRAM.

* PLEASE NOTE THAT WELLS W-1 AND W-3A ARE ON BOTH SAMPLE LISTS. ONLY THE REQUIRED PARAMATERS (TABLE 1) SHOULD GO INTO THE POST CLOSURE ANALYTICAL REPORT.

REVISION BLOCK

Rev. No.	By	Revision

GROUND WATER INVESTIGATIONS, INC.
Pine Bush, New York

Project No.:	256-00-00
Scale:	1"=200'
Date:	12/19/00
Designed By:	MAC
Checked By:	LFC
Drawn By:	KAH

SHEET 1 OF 1

WELL LOCATION PLAN

AL TURI LANDFILL, INC.
GROUNDWATER MONITORING PROGRAM

TOWN OF GOSHEN — NEW YORK

JULY 2009
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – CLASS II SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

December 2009

Prepared by

Ground Water Investigations
65 Main Street
Pine Bush, New York 12566

Project 256-00-00

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3 ASSESSMENT OF CUMULATIVE EFFECTS 3-1

4 CONCLUSIONS 4-1

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Attachments

Drawing No. 1 - Well Location Plan	Pocket
Diskette - Laboratory Analytical Data	Pocket

1 INTRODUCTION

The Water Quality Management Program developed for the post-closure monitoring of the Al Turi Landfill – Class II site, located in Goshen, New York, includes the semi-annual groundwater sampling and analysis of select parameters from monitoring wells downgradient of the Class II landfill facility and the evaluation of the data generated by these samples. This program was developed to monitor historical constituents of concern within groundwater, and to identify any changes in the concentration of these constituents that may warrant further evaluation. The identification of conditions warranting further evaluation is based primarily on the comparison of detected concentrations with groundwater trigger levels (GWTLs). The Constituents of Concern and their GWTLs were presented to the Department in December 2001 in the Post-Closure Contingency Monitoring Plan prepared by the ENVIRON International Corporation of Princeton, New Jersey. The Constituents of Concern are listed on Table 1-1.

Semi-annual groundwater quality is monitored at 17 groundwater monitoring wells (overburden and bedrock wells) located within the boundaries of the Al Turi Landfill property. The 17 monitoring wells are divided into two types: "Type 1" wells and "Type 2" wells. Type 1 wells are wells that are located adjacent (within 150 feet) to the Wallkill River while Type 2 wells are located beyond 150 feet from the River. The location of each well in relation to the Wallkill River was a factor when considering GWTLs for each well. Drawing 1 (in pocket) provides a site map of the area indicating the locations of the Type 1 and Type 2 groundwater monitoring wells.

Of the 17 groundwater monitoring wells, two wells (W-1 and W-3A), are monitored semi-annually as part of post closure monitoring of the adjacent Al Turi Landfill. Monitoring of these wells consists of modified Part 360 semi-annual analysis. As part of this sampling event, the Part 360 landfill data collected for well W-1 and well W-3A were utilized. In addition, the Wallkill River, which is located along the western portion of the site, is monitored semi-annually both upgradient and downgradient of the Al Turi Property.

Proper groundwater sampling procedures were followed and all samples were kept in ice filled coolers prior to delivery to the contracted analytical laboratory. Completed chain of custody forms accompanied the samples during shipment.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

2.1 Type 1 Groundwater Quality

Eight Type 1 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill site as part of post-closure monitoring requirements. Of the eight Type 1 groundwater monitoring wells, six wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-38S was dry.

Analytical results collected from the Type 1 groundwater monitoring wells are presented in Table 2-1, as are established GWTL values for each well. A review of the inorganic analyses collected during the July 2009 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 1 groundwater monitoring wells. In addition, a review of the Type 1 volatile organic data collected during the July 2009 sampling event indicates that no volatile organic compounds (VOCs) were present above established GWTLs.

The laboratory supplied summary tables presenting the July 2009 analytical data are provided in Appendix A.

The Type 1 groundwater monitoring wells will be sampled again in January 2010 as part of continued semi-annual groundwater monitoring for the Class II Al Turi Landfill.

2.2 Type 2 Groundwater Quality

Nine Type 2 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill as part of post-closure monitoring at the facility. Of the nine Type 2 groundwater monitoring wells, seven wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer.

Analytical results collected from the Type 2 groundwater monitoring wells are presented in Table 2-2, as are the Type 2 established GWTLs. A review of the inorganic analyses collected during the July 2009 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 2 groundwater monitoring wells. In addition, a review of the Type 2 volatile organic

data, collected during the July 2009 sampling event indicates that no volatile organic compounds (VOCs) were present above established GWTLs.

The laboratory supplied summary tables presenting the July 2009 analytical data are provided in Appendix A.

The Type 2 groundwater monitoring wells will be sampled again in January 2010 as part of continued semi-annual groundwater monitoring.

3 ASSESSMENT OF CUMULATIVE EFFECTS

In addition to the direct comparison of measured groundwater concentrations from individual monitoring wells to the appropriate GWTLs, the cumulative effects of ground water discharges to the Wallkill River from the Class II Landfill site are evaluated as part of routine post-closure monitoring. The cumulative mass loading to the river is approximated, as follows:

1. The estimated total mass loading to the river for each Type 1 well is calculated by multiplying the measured concentration with the discharge rate calculated using ground water elevations observed during the same monitoring event (the ground water elevations from the July 2009 event are provided on Table 3-1):

$$M_i = C_i \bullet (Ki \bullet i_i \bullet w_i \bullet d) \bullet CF$$

where:

M_i	=	mass loading rate for well i (kg/day);
C_i	=	measured ground water concentration in well i (mg/L);
K_i	=	hydraulic conductivity for discharge zone segment associated with well i (ft/day);
i_i	=	calculated ground water gradient of for well i (ft/ft);
w_i	=	width of discharge zone segment associated with well i (ft);
d	=	aquifer thickness (ft); and
CF	=	conversion factor 28.32 $L/ft^3 * 10^{-6}$ kg/mg

2. The mass loading rate from each Type 1 well is then summed to estimate the cumulative mass loading to the river, ($M_c = \Sigma M_i$) for each constituent.

3. The estimated river concentration is then calculated by dividing the cumulative mass loading M_c by the measured river flow rate. On July 21, 2009, the average gauge height was 0.84 feet (river elevation of 354.93 ft MSL), which represents an estimated river flow of 52.4 cfs.

The estimated river concentrations are then compared to the lower of the aquatic criteria and human health benchmarks for surface water presented in the December 2001 Post-Closure Monitoring Plan.

The results for the estimated cumulative effects assessment are presented on Table 3-2. As indicated on Table 3-2, the estimated in-stream concentrations resulting from the discharge of groundwater to the Wallkill River based on the observed flow conditions in the river at the time of sampling are all below the lower of the surface water benchmarks. A copy of the 2009 (July) Al Turi Landfill Stream Gauge Hydrograph Record is included in Appendix B.

4 CONCLUSIONS

A review of the July 2009 groundwater data shows that no Constituents of Concern were observed above GWTLs in any of the groundwater monitoring wells. Because there are no Constituents of Concern observed above any of the established GWTLs, and the assessment of cumulative effects did not identify a potential for unacceptable impacts on the river as a result of groundwater discharges, the routine post-closure monitoring program will continue as specified in the Post-Closure Monitoring Plan for the Class II Al Turi Landfill.

Semi-annual monitoring of 17 groundwater monitoring wells for the identified constituents of concern will continue in January 2010 at the Class II Al Turi Landfill as part of continued post closure monitoring.

APPENDIX A

CLASS II SITE
LABORATORY ANALYTICAL DATA

APPENDIX B

AL TURI LANDFILL HYDRO GRAPH RECORD

TABLE 1-1

AL TURI LANDFILL - CLASS II SITE
CONSTITUENTS OF CONCERN
JULY 2009 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

Volatile Organic Compounds	***Metals***
Chloromethane	Antimony
Vinyl Chloride	Arsenic
Trichlorofluoromethane	Barium
Dichlorodifluoromethane	Chromium, hexavalent
1,1-Dichloroethene	Chromium
1,1-Dichloroethane	Copper
cis-1,2-Dichloroethene	Lead
Benzene	Magnesium
Trichloroethene	Sodium
	Zinc

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2009 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2009 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	**W-1**		**W-11S**		**W-24S**		**W-38S**	
	22-Jul-09		**20-Jul-09**		**20-Jul-09**		**20-Jul-09**	
Compounds of Concern	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**
Volatile Organic Compounds (VOCs) By Method 8260 (Results in mg/l)								
Chloromethane	ND	35	ND	35	ND	35	DRY	35
Vinyl Chloride	ND	27.6	ND	27.6	ND	27.6	DRY	27.6
Trichlorofluoromethane	ND	11	ND	11	ND	11	DRY	11
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	2.8	DRY	2.8
1,1-Dichloroethene	ND	3.59	ND	6.12	ND	5.07	DRY	5.32
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	50.6	DRY	50.6
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	17.5	DRY	17.5
Benzene	0.002 J	2.21	ND	3.78	ND	3.13	DRY	3.28
Trichloroethene	ND	11	ND	11	ND	11	DRY	11
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***
Antimony	ND	8,828	ND	15,074	ND	12,478	DRY	13,097
Arsenic	ND	0.81	ND	1.38	ND	1.14	DRY	1.2
Barium	0.582	***	0.0702	***	0.0788	***	DRY	***
Chromium, hexavalent	ND	4.54	ND	7.76	ND	6.42	DRY	6.74
Chromium	ND	38	ND	65	ND	54	DRY	57
Copper	ND	4.65	0.0116	7.94	ND	6.57	DRY	6.9
Lead	ND	1.85	ND	3.16	ND	2.61	DRY	2.74
Magnesium	52.4	***	18.4	***	17.1	***	DRY	***
Sodium	215	103,222	2.83	176,259	2.01	145,911	DRY	153,146
Zinc	ND	42.86	0.0203	73.19	0.0164	60.59	DRY	63.6

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2009 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2009 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	***W-39S***		***W-40S***		***W-1D***	***W-37D***	***FB-01***	***TB-01***
	21-Jul-09		***20-Jul-09***		***20-Jul-09***	***22-Jul-09***	***20-Jul-09***	***20-Jul-09***
Compounds of Concern	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) By Method 8260 (Results in ug/l)								
Chloromethane	ND	35	ND	35	ND	ND	ND	ND
Vinyl Chloride	ND	27.6	ND	27.6	ND	ND	ND	ND
Trichlorofluoromethane	ND	11	ND	11	ND	ND	ND	ND
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	ND	-	ND
1,1-Dichloroethene	ND	5.71	ND	17.05	ND	ND	ND	ND
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	ND	ND	ND
Benzene	ND	3.53	ND	10.53	ND	ND	ND	ND
Trichloroethene	ND	11	ND	11	ND	ND	ND	ND
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Antimony	ND	14,072	ND	41,986	ND	ND	ND	-
Arsenic	ND	1.29	ND	3.85	ND	ND	ND	-
Barium	0.0761	***	0.0665	***	0.0544	0.42	ND	-
Chromium, hexavalent	ND	7.24	ND	21.6	0.056	ND	ND	-
Chromium	ND	61	ND	181	0.0344	ND	ND	-
Copper	ND	7.41	ND	22.12	0.0115	ND	ND	-
Lead	ND	2.95	ND	8.79	ND	ND	ND	-
Magnesium	22.3	***	17.3	***	6.2	22.9	ND	-
Sodium	15.1	164,544	25.9	490,952	95.4	118	ND	-
Zinc	0.0154	68.33	0.0278	203.87	0.025	0.0156	ND	-

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-2

AL TURI LANDFILL - CLASS II SITE
TYPE 2 GROUNDWATER MONITORING WELLS
JULY 2009 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2009 SAMPLING EVENT

		Laboratory Analytical Results										
Sample ID		***W-3A***	***W-12SA***	***W-13S***	***W-18S***	***W-19S***	***W-20***	***W-29***	***W-3D*****	***W-12DA*****	***FB-01***	***TB-01***
Sample Date		***21-Jul-09***	***20-Jul-09***	***20-Jul-09***	***20-Jul-09***	***20-Jul-09***	***20-Jul-09***	***20-Jul-09***	***20-Jul-09***	***20-Jul-09***	***22-Jul-09***	***20-Jul-09***
Compounds of Concern	***GWTL***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) (Results in mg/l)												
Chloromethane	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	27.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND
1,1-Dichloroethene	17.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	50.6	ND	ND	ND	ND	ND	ND	ND	0.0051	ND	ND	ND
cis-1,2-Dichloroethene	17.5	ND	ND	ND	0.014	ND	ND	ND	0.0084	ND	ND	ND
Benzene	10.53	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	11	ND	ND	ND	0.0088	ND	ND	ND	ND	ND	ND	ND
Total Metals (Results in mg/l)												
Antimony	41,986	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Arsenic	3.85	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Barium	***	0.0909	ND	ND	ND	0.085	0.0676	0.147	0.072	ND	ND	-
Chromium, hexavalent	21.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Chromium	181	ND	ND	ND	ND	ND	2.6	0.0101	ND	ND	ND	-
Copper	22.1	ND	ND	ND	ND	0.0224	0.0404	0.0188	ND	ND	ND	-
Lead	8.79	ND	ND	ND	ND	0.0077	ND	ND	ND	ND	ND	-
Magnesium	***	21.8	13.9	102	17.9	40	12.3	45.4	27.7	1.18	ND	-
Sodium	490,952	17.8	2.14	14.6	2.47	5.6	25.6	40.1	19.8	40.7	ND	-
Zinc	203.87	0.0503	0.0133	0.0136	0.0149	0.0533	ND	0.0721	0.0175	0.014	ND	-

Notes:

** - Groundwater Trigger Levels Not Applicable to These Wells.

*** - Groundwater Trigger Level is Greater Than $1X10^{p}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

TABLE 3-1
AL TURI LANDFILL - CLASS II SITE
SUMMARY OF WATER-LEVEL ELEVATIONS
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

	Top of Casing	Well Bottom	Depth to Water (ft)	Water Level Elevation *
Type 1 Wells - Overburden				
W-1	383.5	342.05	29.34	354.16
W-11S	376.2	346.18	18.31	357.89
W-24	377.18	352.23	18.82	358.36
W-38S	429.45	342.82	> 86.63	342.82
W-39S	379.32	349.32	22.63	356.69
W-40	381.81	349.81	23.46	358.35
Type 1 Wells - Bedrock				
W-1D	376.5	247.5	19.68	356.82
W-37D	385.91	301.66	28.75	357.16
Type 2 Wells - Overburden				
W-3A	424.62	393.62	12.58	412.04
W-12SA	421.08	380.71	30.75	390.33
W-13S	407.78	354.47	33.59	374.19
W-18S	411.04	362.04	43.51	367.53
W-19S	413.43	353.28	47.6	365.83
W-20S	386.32	361.24	19.09	367.23
W-29	425.5	365.65	51.01	374.49
Type 2 Wells - Bedrock				
W-3D	423.99	350.99	6.28	417.71
W-12DA	NA	NA	83.41	NA
River Gauge				355.01

Notes:

* Reference elevation in feet, MSL

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Vinyl Chloride		Dichlorodifluoromethane		1,1-Dichloroethane		cis-1,2-D
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0165	2.76E+03	3.20E-02	0.002	1.56E+02	0.002	1.56E+02	0.002	1.56E+02	0.002
W-38S	294.31	60	1.00	0.0401	7.08E+02	8.20E-03	0.002	4.01E+01	0.002	4.01E+01	0.002	4.01E+01	0.002
W-11S	243.15	60	2.11	0.0517	1.59E+03	1.85E-02	0.002	9.03E+01	0.002	9.03E+01	0.002	9.03E+01	0.002
W-39S	255.39	60	3.40	0.0363	1.89E+03	2.19E-02	0.002	1.07E+02	0.002	1.07E+02	0.002	1.07E+02	0.002
W-24	194.99	60	15.08	0.0115	2.03E+03	2.35E-02	0.002	1.15E+02	0.002	1.15E+02	0.002	1.15E+02	0.002
W-40	239.24	60	3.40	0.0102	4.96E+02	5.74E-03	0.002	2.81E+01	0.002	2.81E+01	0.002	2.81E+01	0.002
				Total Mass Loading (mg/d) =			**5.37E+02**		**5.37E+02**		**5.37E+02**		**5**
		Estimated In-Stream Concentration (mg/L)[5] =					**4.19E-06**		**4.19E-06**		**4.19E-06**		**4**
		Surface Water Quality Benchmark (mg/L)[6] =					**2.00E-03**		**1.00E+01**		**9.86E+00**		**1**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2009.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 52.4 cfs which is based on an average measured river gauge height of 0.84 feet on July 21, 2009.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Dichloroethene
Mass Loading (mg/d)
1.56E+02
4.01E+01
9.03E+01
1.07E+02
1.15E+02
2.81E+01
.37E+02
.19E-06
.00E+00

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Trichloroethene		Antimony		Arsenic		Barium		Chromiu
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0165	2.76E+03	3.20E-02	0.002	1.56E+02	0.005	3.91E+02	0.005	3.91E+02	0.582	4.55E+04	0.002
W-38S	294.31	60	1.00	0.0401	7.08E+02	8.20E-03	0.002	4.01E+01	0.005	1.00E+02	0.005	1.00E+02	0.025	5.02E+02	0.002
W-11S	243.15	60	2.11	0.0517	1.59E+03	1.85E-02	0.002	9.03E+01	0.005	2.26E+02	0.005	2.26E+02	0.0702	2.39E+03	0.002
W-39S	255.39	60	3.40	0.0363	1.89E+03	2.19E-02	0.002	1.07E+02	0.005	2.68E+02	0.005	2.68E+02	0.0761	3.17E+03	0.002
W-24	194.99	60	15.08	0.0115	2.03E+03	2.35E-02	0.002	1.15E+02	0.005	2.88E+02	0.005	2.88E+02	0.0788	4.53E+03	0.002
W-40	239.24	60	3.40	0.0102	4.96E+02	5.74E-03	0.002	2.81E+01	0.005	7.02E+01	0.005	7.02E+01	0.0665	9.34E+02	0.002
				Total Mass Loading (mg/d) =			**5.37E+02**		**1.34E+03**		**1.34E+03**		**5.87E+04**		**5.37E**
			Estimated In-Stream Concentration (mg/L)[5] =				**4.19E-06**		**1.05E-05**		**1.05E-05**		**4.58E-04**		**4.19**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.00E-02**		**5.00E-01**		**5.00E-01**		**2.48E+03**		**9.20**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2009.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 52.4 cfs which is based on an average measured river gauge height of 0.84 feet on July 21, 2009.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

ım (total)
Mass Loading (mg/d)
1.56E+02
4.01E+01
9.03E+01
1.07E+02
1.15E+02
2.81E+01
E+02
E-06
E-02

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Copper		Lead		Magnesium		Sodium		Zi
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0165	2.76E+03	3.20E-02	0.005	3.91E+02	0.005	3.91E+02	52.4	4.10E+06	215	1.68E+07	0.005
W-38S	294.31	60	1.00	0.0401	7.08E+02	8.20E-03	0.005	1.00E+02	0.005	1.00E+02	0.005	1.00E+02	0.005	1.00E+02	0.005
W-11S	243.15	60	2.11	0.0517	1.59E+03	1.85E-02	0.0166	5.24E+02	0.005	2.26E+02	18.4	8.31E+05	2.83	1.43E+05	0.0203
W-39S	255.39	60	3.40	0.0363	1.89E+03	2.19E-02	0.005	2.68E+02	0.005	2.68E+02	22.3	1.20E+06	15.1	8.10E+05	0.0154
W-24	194.99	60	15.08	0.0115	2.03E+03	2.35E-02	0.005	2.88E+02	0.005	2.88E+02	17.1	9.83E+05	2.01	1.16E+05	0.0164
W-40	239.24	60	3.40	0.0102	4.96E+02	5.74E-03	0.005	7.02E+01	0.005	7.02E+01	17.3	2.43E+05	25.9	3.64E+05	0.0278
				Total Mass Loading (mg/d) =			**1.64E+03**		**1.34E+03**		**7.35E+06**		**1.82E+07**		**3.57**
			Estimated In-Stream Concentration (mg/L)[5] =				**1.28E-05**		**1.05E-05**		**5.73E-02**		**1.42E-01**		**2.78**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.10E-02**		**4.00E-03**		**3.44E+05**		**2.50E+02**		**1.04**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2009.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 52.4 cfs which is based on an average measured river gauge height of 0.84 feet on July 21, 2009.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

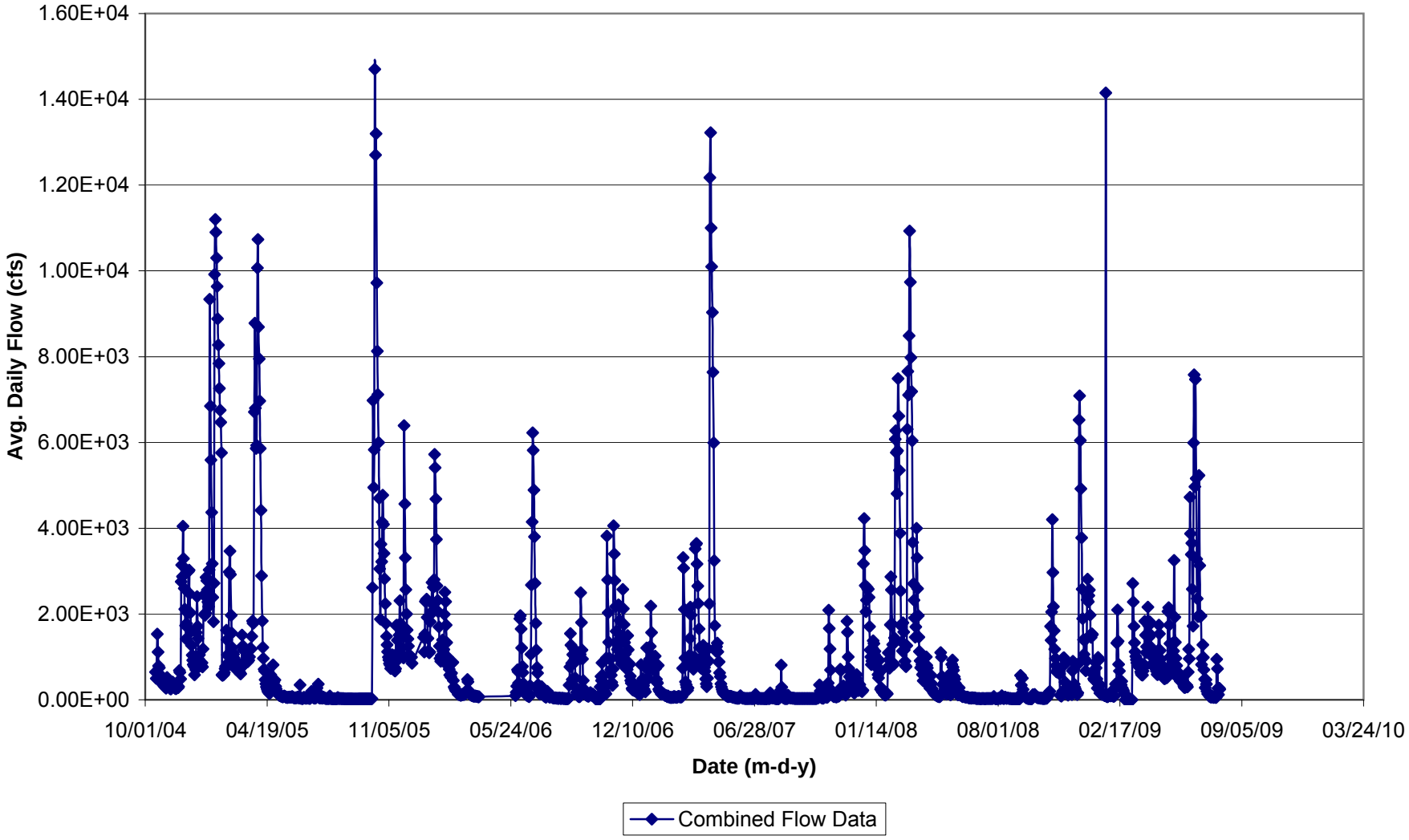
8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

nc
Mass Loading (mg/d)
3.91E+02
1.00E+02
9.16E+02
8.26E+02
9.43E+02
3.90E+02
E+03
E-05
E-01

Al Turi Landfill Stream Gauge - Hydrograph Record

(see notes)



ESTIMATED WALLKILL RIVER FLOW AT THE AL TURI LANDFILL SITE

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/04							
10/12/04							
10/13/04							
10/14/04							
10/15/04							
10/16/04							
10/17/04							
10/18/04	356.00	2.71	6.47E+02			2.71	6.47E+02
10/19/04	355.00	2.51	4.95E+02			2.51	4.95E+02
10/20/04							
10/21/04	356.00	4.34	1.53E+03			4.34	1.53E+03
10/22/04	357.00	3.74	1.11E+03			3.74	1.11E+03
10/23/04	355.80	3.19	7.88E+02			3.19	7.88E+02
10/24/04	356.17	2.82	7.49E+02			2.82	7.49E+02
10/25/04	356.00	2.64	5.91E+02			2.64	5.91E+02
10/26/04	356.00	2.55	5.20E+02			2.55	5.20E+02
10/27/04	356.00	2.47	4.66E+02			2.47	4.66E+02
10/28/04	356.00	2.39	4.19E+02			2.39	4.19E+02
10/29/04	356.00	2.32	3.82E+02			2.32	3.82E+02
10/30/04	356.00	2.26	3.52E+02			2.26	3.52E+02
10/31/04	356.00	2.23	3.40E+02	5.20E+02		2.23	3.40E+02
11/01/04	356.00	2.20	3.27E+02	5.01E+02		2.20	3.27E+02
11/02/04	356.00	2.14	2.99E+02	4.77E+02		2.14	2.99E+02
11/03/04	356.00	2.15	3.06E+02	4.74E+02		2.15	3.06E+02
11/04/04	356.00	2.05	2.66E+02	4.60E+02		2.05	2.66E+02
11/05/04	356.00	2.15	3.06E+02	7.67E+02		2.15	3.06E+02
11/06/04	356.00	2.55	5.23E+02	7.32E+02		2.55	5.23E+02
11/07/04	356.00	2.43	4.42E+02	6.48E+02		2.43	4.42E+02
11/08/04	356.00	2.26	3.55E+02	5.60E+02		2.26	3.55E+02
11/09/04	356.00	2.16	3.08E+02	5.04E+02		2.16	3.08E+02
11/10/04	356.00	2.09	2.79E+02	4.51E+02		2.09	2.79E+02
11/11/04	356.00	2.03	2.58E+02	4.35E+02		2.03	2.58E+02
11/12/04	356.00	2.01	2.51E+02	4.66E+02		2.01	2.51E+02
11/13/04	356.00	2.12	2.93E+02	4.99E+02		2.12	2.93E+02
11/14/04	356.00	2.37	4.08E+02	5.94E+02		2.37	4.08E+02
11/15/04	356.00	2.37	4.11E+02	5.64E+02		2.37	4.11E+02
11/16/04	356.00	2.25	3.49E+02	5.65E+02		2.25	3.49E+02
11/17/04	356.00	2.20	3.25E+02	5.20E+02		2.20	3.25E+02
11/18/04	356.00	2.12	2.94E+02	4.93E+02		2.12	2.94E+02
11/19/04	356.00	2.06	2.68E+02	4.49E+02		2.06	2.68E+02
11/20/04	356.00	2.03	2.59E+02	4.56E+02		2.03	2.59E+02
11/21/04	356.00	2.05	2.66E+02	5.43E+02		2.05	2.66E+02
11/22/04	356.00	2.25	3.50E+02	5.83E+02		2.25	3.50E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/23/04	356.00	2.21	3.29E+02	5.29E+02		2.21	3.29E+02
11/24/04	356.00	2.09	2.80E+02	5.41E+02		2.09	2.80E+02
11/25/04	356.00	2.15	3.03E+02	1.00E+03		2.15	3.03E+02
11/26/04	356.00	2.75	6.82E+02	1.06E+03		2.75	6.82E+02
11/27/04	356.00	2.71	6.43E+02	8.65E+02		2.71	6.43E+02
11/28/04	356.00	2.50	4.86E+02	2.16E+03		2.50	4.86E+02
11/29/04	359.33	5.69	2.75E+03	4.35E+03		5.69	2.75E+03
11/30/04	359.83	6.05	3.14E+03	3.22E+03		6.05	3.14E+03
12/01/04	359.00	5.81	2.87E+03	4.31E+03		5.81	2.87E+03
12/02/04	360.50	6.80	4.05E+03	4.52E+03		6.80	4.05E+03
12/03/04	360.00	6.19	3.30E+03	3.29E+03	3.29E+03	6.19	3.29E+03
12/04/04	359.00	5.69	2.75E+03	2.60E+03	2.60E+03	5.69	2.60E+03
12/05/04	359.00	5.14	2.21E+03	2.11E+03	2.11E+03	5.14	2.11E+03
12/06/04	358.00	4.60	1.74E+03	1.73E+03	1.73E+03	4.60	1.73E+03
12/07/04	358.00	4.19	1.42E+03	1.81E+03		4.19	1.42E+03
12/08/04	358.33	4.65	1.78E+03	2.91E+03		4.65	1.78E+03
12/09/04	358.67	4.99	2.07E+03	2.32E+03		4.99	2.07E+03
12/10/04	358.33	4.93	2.01E+03	3.38E+03		4.93	2.01E+03
12/11/04	359.50	5.92	2.99E+03	4.32E+03		5.92	2.99E+03
12/12/04	359.67	5.94	3.02E+03	3.32E+03		5.94	3.02E+03
12/13/04	359.00	5.41	2.47E+03	2.56E+03		5.41	2.47E+03
12/14/04	358.50	4.94	2.03E+03	2.12E+03		4.94	2.03E+03
12/15/04	358.00	4.42	1.59E+03	1.68E+03		4.42	1.59E+03
12/16/04	357.67	3.98	1.27E+03	1.38E+03		3.98	1.27E+03
12/17/04	357.00	3.63	1.04E+03	1.22E+03		3.63	1.04E+03
12/18/04	357.00	3.43	9.20E+02	1.10E+03		3.43	9.20E+02
12/19/04	357.00	3.24	8.17E+02	1.02E+03		3.24	8.17E+02
12/20/04	356.00	3.18	7.82E+02	9.20E+02		3.18	7.82E+02
12/21/04	354.00			5.82E+02	5.82E+02		5.82E+02
12/22/04				7.49E+02	7.49E+02		7.49E+02
12/23/04	355.67	2.77	7.00E+02	1.47E+03		2.77	7.00E+02
12/24/04	357.83	4.39	1.57E+03	4.00E+03		4.39	1.57E+03
12/25/04	359.00	5.35	2.41E+03	2.57E+03		5.35	2.41E+03
12/26/04	356.67	4.78	1.88E+03	1.71E+03	1.71E+03	4.78	1.71E+03
12/27/04				1.43E+03	1.43E+03		1.43E+03
12/28/04				9.37E+02	9.37E+02		9.37E+02
12/29/04				1.05E+03	1.05E+03		1.05E+03
12/30/04	356.00	3.38	8.93E+02	1.21E+03		3.38	8.93E+02
12/31/04	357.00	3.22	8.04E+02	1.09E+03		3.22	8.04E+02
01/01/05	357.00	3.21	7.98E+02	1.12E+03		3.21	7.98E+02
01/02/05	357.00	3.32	8.60E+02	1.10E+03		3.32	8.60E+02
01/03/05	357.00	3.14	7.64E+02	1.16E+03		3.14	7.64E+02
01/04/05	357.50	3.85	1.18E+03	3.35E+03		3.85	1.18E+03
01/05/05	359.00	5.39	2.44E+03	2.96E+03		5.39	2.44E+03
01/06/05	358.50	4.90	1.99E+03	2.35E+03		4.90	1.99E+03
01/07/05	358.50	4.87	1.97E+03	2.41E+03		4.87	1.97E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/08/05	358.67	4.93	2.02E+03	2.76E+03		4.93	2.02E+03
01/09/05	359.67	5.79	2.85E+03	3.67E+03		5.79	2.85E+03
01/10/05	359.17	5.71	2.78E+03	3.01E+03		5.71	2.78E+03
01/11/05	359.00	5.50	2.56E+03	2.84E+03		5.50	2.56E+03
01/12/05	359.00	5.22	2.28E+03	2.63E+03		5.22	2.28E+03
01/13/05	359.00	5.10	2.17E+03	2.85E+03		5.10	2.17E+03
01/14/05	359.67	5.95	3.03E+03	9.11E+03		5.95	3.03E+03
01/15/05	363.83	10.02	9.34E+03	9.80E+03		10.02	9.34E+03
01/16/05	361.50	9.49	8.32E+03	6.85E+03	6.85E+03	9.49	6.85E+03
01/17/05	354.00			5.59E+03	5.59E+03		5.59E+03
01/18/05	354.00			4.37E+03	4.37E+03		4.37E+03
01/19/05	354.00			3.17E+03	3.17E+03		3.17E+03
01/20/05				2.39E+03	2.39E+03		2.39E+03
01/21/05				1.82E+03	1.82E+03		1.82E+03
01/22/05				2.72E+03	2.72E+03		2.72E+03
01/23/05				9.92E+03	9.92E+03		9.92E+03
01/24/05				1.12E+04	1.12E+04		1.12E+04
01/25/05				1.09E+04	1.09E+04		1.09E+04
01/26/05				1.03E+04	1.03E+04		1.03E+04
01/27/05				9.64E+03	9.64E+03		9.64E+03
01/28/05				8.88E+03	8.88E+03		8.88E+03
01/29/05				8.27E+03	8.27E+03		8.27E+03
01/30/05				7.84E+03	7.84E+03		7.84E+03
01/31/05				7.26E+03	7.26E+03		7.26E+03
02/01/05	354.00			6.75E+03	6.75E+03		6.75E+03
02/02/05	354.00			6.47E+03	6.47E+03		6.47E+03
02/03/05	354.00			5.76E+03	5.76E+03		5.76E+03
02/04/05	354.33	2.63	5.81E+02	5.41E+03		2.63	5.81E+02
02/05/05	356.00	2.61	5.66E+02	5.21E+03		2.61	5.66E+02
02/06/05	356.00	2.63	5.81E+02	4.86E+03		2.63	5.81E+02
02/07/05	356.00	2.65	5.93E+02	4.72E+03		2.65	5.93E+02
02/08/05	356.00	2.70	6.37E+02	4.52E+03		2.70	6.37E+02
02/09/05	356.00	2.80	7.26E+02	4.59E+03		2.80	7.26E+02
02/10/05	356.83	3.17	7.78E+02	7.65E+03		3.17	7.78E+02
02/11/05	358.00	4.45	1.62E+03	8.58E+03		4.45	1.62E+03
02/12/05	358.00	4.16	1.40E+03	6.68E+03		4.16	1.40E+03
02/13/05	357.00	3.64	1.05E+03	4.98E+03		3.64	1.05E+03
02/14/05	357.00	3.32	8.59E+02	3.90E+03		3.32	8.59E+02
02/15/05	357.33	3.58	1.01E+03	9.76E+03		3.58	1.01E+03
02/16/05	359.67	5.91	2.98E+03	5.74E+03		5.91	2.98E+03
02/17/05	360.00	6.33	3.46E+03	4.01E+03		6.33	3.46E+03
02/18/05	359.50	5.91	2.99E+03	2.92E+03	2.92E+03	5.91	2.92E+03
02/19/05	358.00	5.11	2.18E+03	1.97E+03	1.97E+03	5.11	1.97E+03
02/20/05	356.67	4.37	1.56E+03	1.61E+03		4.37	1.56E+03
02/21/05	357.50	3.90	1.22E+03	1.35E+03		3.90	1.22E+03
02/22/05	357.00	3.72	1.10E+03	1.36E+03		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/23/05	357.00	3.65	1.06E+03	1.29E+03		3.65	1.06E+03
02/24/05	357.00	3.52	9.75E+02	1.17E+03		3.52	9.75E+02
02/25/05	357.00	3.32	8.61E+02	1.09E+03		3.32	8.61E+02
02/26/05	357.00	3.18	7.83E+02	9.65E+02		3.18	7.83E+02
02/27/05	356.00	3.03	7.04E+02	9.07E+02		3.03	7.04E+02
02/28/05	356.83	2.93	8.64E+02	8.67E+02		2.93	8.64E+02
03/01/05	356.00	2.82	7.49E+02	8.45E+02		2.82	7.49E+02
03/02/05	356.67	2.91	8.45E+02	8.83E+02		2.91	8.45E+02
03/03/05	356.67	2.93	8.70E+02	8.48E+02	8.48E+02	2.93	8.48E+02
03/04/05	356.00	2.75	6.80E+02	7.68E+02		2.75	6.80E+02
03/05/05	356.00	2.71	6.43E+02	7.41E+02		2.71	6.43E+02
03/06/05	356.00	2.67	6.09E+02	7.37E+02		2.67	6.09E+02
03/07/05	356.00	2.66	6.07E+02	8.00E+02		2.66	6.07E+02
03/08/05	356.67	3.23	8.09E+02	1.73E+03		3.23	8.09E+02
03/09/05	357.33	4.30	1.51E+03	1.84E+03		4.30	1.51E+03
03/10/05	356.75	3.96	1.26E+03	1.48E+03		3.96	1.26E+03
03/11/05	355.20	3.82	1.16E+03	1.30E+03		3.82	1.16E+03
03/12/05	354.60	3.24	8.15E+02	1.12E+03		3.24	8.15E+02
03/13/05	357.00	3.27	8.34E+02	1.11E+03		3.27	8.34E+02
03/14/05	357.00	3.41	9.11E+02	1.20E+03		3.41	9.11E+02
03/15/05	357.00	3.41	9.11E+02	1.22E+03		3.41	9.11E+02
03/16/05	357.00	3.37	8.87E+02	1.28E+03		3.37	8.87E+02
03/17/05	357.00	3.37	8.85E+02	1.26E+03		3.37	8.85E+02
03/18/05	357.00	3.37	8.85E+02	1.36E+03		3.37	8.85E+02
03/19/05	357.00	3.43	9.22E+02	1.42E+03		3.43	9.22E+02
03/20/05	357.00	3.43	9.24E+02	1.41E+03		3.43	9.24E+02
03/21/05	357.00	3.56	9.98E+02	1.50E+03		3.56	9.98E+02
03/22/05	357.33	3.86	1.19E+03	1.66E+03		3.86	1.19E+03
03/23/05	357.17	3.88	1.20E+03	1.74E+03		3.88	1.20E+03
03/24/05	357.17	3.86	1.19E+03	1.63E+03		3.86	1.19E+03
03/25/05	358.00	4.27	1.48E+03	2.01E+03		4.27	1.48E+03
03/26/05	358.00	4.72	1.84E+03	2.34E+03		4.72	1.84E+03
03/27/05	358.00	4.66	1.78E+03	2.17E+03		4.66	1.78E+03
03/28/05	358.17	4.66	1.79E+03	4.34E+03		4.66	1.79E+03
03/29/05	362.17	8.60	6.71E+03	1.16E+04		8.60	6.71E+03
03/30/05	364.00	10.10	9.51E+03	8.78E+03	8.78E+03	10.10	8.78E+03
03/31/05	364.00	9.96	9.22E+03	6.80E+03	6.80E+03	9.96	6.80E+03
04/01/05	362.83	9.34	8.03E+03	5.86E+03	5.86E+03	9.34	5.86E+03
04/02/05	361.67	8.12	5.93E+03	9.07E+03		8.12	5.93E+03
04/03/05	364.00	10.37	1.01E+04	1.68E+04		10.37	1.01E+04
04/04/05	364.00	10.68	1.07E+04	1.10E+04		10.68	1.07E+04
04/05/05	365.00	11.23	1.19E+04	8.69E+03	8.69E+03	11.23	8.69E+03
04/06/05	364.83	11.11	1.17E+04	7.95E+03	7.95E+03	11.11	7.95E+03
04/07/05	364.00	10.44	1.02E+04	6.97E+03	6.97E+03	10.44	6.97E+03
04/08/05	362.67	9.20	7.76E+03	5.86E+03	5.86E+03	9.20	5.86E+03
04/09/05	361.00	7.39	4.84E+03	4.42E+03	4.42E+03	7.39	4.42E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/10/05	359.33	5.82	2.89E+03	3.11E+03		5.82	2.89E+03
04/11/05	358.33	4.72	1.84E+03	2.40E+03		4.72	1.84E+03
04/12/05	357.50	3.91	1.22E+03	1.82E+03		3.91	1.22E+03
04/13/05	357.00	3.50	9.63E+02			3.50	9.63E+02
04/14/05	356.83	3.04	7.10E+02	1.36E+03		3.04	7.10E+02
04/15/05	356.00	2.74	6.69E+02	1.20E+03		2.74	6.69E+02
04/16/05	356.00	2.47	4.68E+02	1.06E+03		2.47	4.68E+02
04/17/05	356.00	2.29	3.70E+02	9.95E+02		2.29	3.70E+02
04/18/05	356.00	2.13	2.97E+02	9.04E+02		2.13	2.97E+02
04/19/05	355.20	2.00	2.50E+02	8.45E+02		2.00	2.50E+02
04/20/05	354.83	1.89	2.13E+02	7.94E+02		1.89	2.13E+02
04/21/05	355.00	1.76	1.81E+02	7.32E+02		1.76	1.81E+02
04/22/05	355.00	1.70	1.66E+02	6.92E+02		1.70	1.66E+02
04/23/05	354.83	1.60	1.46E+02	7.66E+02		1.60	1.46E+02
04/24/05	354.67	1.91	2.21E+02	1.75E+03		1.91	2.21E+02
04/25/05	355.00	2.63	5.81E+02	1.54E+03		2.63	5.81E+02
04/26/05	355.33	2.36	4.06E+02	1.14E+03		2.36	4.06E+02
04/27/05	355.33	2.01	2.52E+02	1.23E+03		2.01	2.52E+02
04/28/05	355.50	2.34	3.94E+02	1.87E+03		2.34	3.94E+02
04/29/05	356.17	2.88	8.16E+02	1.43E+03		2.88	8.16E+02
04/30/05	355.67	2.38	4.14E+02	1.16E+03		2.38	4.14E+02
05/01/05	354.67	2.10	2.83E+02	1.28E+03		2.10	2.83E+02
05/02/05	355.67	2.46	4.62E+02	1.21E+03		2.46	4.62E+02
05/03/05	356.00	2.17	3.11E+02	1.05E+03		2.17	3.11E+02
05/04/05	356.00	2.00	2.49E+02	9.44E+02		2.00	2.49E+02
05/05/05	355.17	1.83	1.98E+02	8.44E+02		1.83	1.98E+02
05/06/05	355.00	1.65	1.56E+02	7.66E+02		1.65	1.56E+02
05/07/05	354.83	1.55	1.35E+02	7.04E+02		1.55	1.35E+02
05/08/05	355.00	1.47	1.22E+02	6.77E+02		1.47	1.22E+02
05/09/05	354.83	1.38	1.08E+02	6.18E+02		1.38	1.08E+02
05/10/05	354.83	1.30	9.69E+01	5.90E+02		1.30	9.69E+01
05/11/05	354.67	1.28	9.43E+01	5.23E+02		1.28	9.43E+01
05/12/05	354.83	1.19	8.42E+01	5.41E+02		1.19	8.42E+01
05/13/05	354.67	1.16	8.07E+01	4.61E+02		1.16	8.07E+01
05/14/05	354.67	1.06	6.99E+01	4.67E+02		1.06	6.99E+01
05/15/05	354.50	1.01	6.61E+01	4.63E+02		1.01	6.61E+01
05/16/05	354.33	1.11	7.52E+01	5.31E+02		1.11	7.52E+01
05/17/05	354.50	1.26	9.25E+01	5.43E+02		1.26	9.25E+01
05/18/05	354.50	1.16	8.08E+01	4.54E+02		1.16	8.08E+01
05/19/05	354.50	1.05	6.91E+01	4.44E+02		1.05	6.91E+01
05/20/05	354.83	0.94	6.00E+01	4.16E+02		0.94	6.00E+01
05/21/05	354.00	0.88	5.50E+01	3.85E+02		0.88	5.50E+01
05/22/05	354.00	0.85	5.27E+01	3.97E+02		0.85	5.27E+01
05/23/05	354.00	0.86	5.36E+01	4.34E+02		0.86	5.36E+01
05/24/05	355.00	0.97	6.19E+01	4.52E+02		0.97	6.19E+01
05/25/05	354.67	0.95	6.05E+01	4.51E+02		0.95	6.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/26/05	354.67	0.98	6.27E+01	4.54E+02		0.98	6.27E+01
05/27/05	354.67	1.01	6.58E+01	4.65E+02		1.01	6.58E+01
05/28/05	354.67	0.97	6.25E+01	4.46E+02		0.97	6.25E+01
05/29/05	354.33	0.90	5.70E+01	5.59E+02		0.90	5.70E+01
05/30/05	354.67	1.15	7.97E+01	5.24E+02		1.15	7.97E+01
05/31/05	354.83	1.00	6.49E+01	4.79E+02		1.00	6.49E+01
06/01/05	354.00	0.85	5.30E+01	3.60E+02		0.85	5.30E+01
06/02/05	354.00	0.78	4.85E+01	3.67E+02		0.78	4.85E+01
06/03/05	354.00	0.70	4.31E+01	3.11E+02		0.70	4.31E+01
06/04/05	354.00	0.67	4.14E+01	2.96E+02		0.67	4.14E+01
06/05/05	354.00	0.73	4.50E+01	3.15E+02		0.73	4.50E+01
06/06/05	354.00	0.80	4.93E+01	3.47E+02		0.80	4.93E+01
06/07/05	354.00	0.74	4.57E+01	3.32E+02		0.74	4.57E+01
06/08/05	354.50	0.97	6.25E+01	3.49E+02		0.97	6.25E+01
06/09/05	354.33	1.02	6.62E+01	3.67E+02		1.02	6.62E+01
06/10/05	354.00	0.69	4.27E+01	3.34E+02		0.69	4.27E+01
06/11/05	354.00	0.65	4.05E+01	3.00E+02		0.65	4.05E+01
06/12/05	354.00			3.46E+02	3.46E+02		3.46E+02
06/13/05	354.00	0.58	3.70E+01	3.16E+02		0.58	3.70E+01
06/14/05	354.00	0.55	3.54E+01	2.59E+02		0.55	3.54E+01
06/15/05	354.00	0.47	3.16E+01	2.23E+02		0.47	3.16E+01
06/16/05	354.00	0.45	3.10E+01	2.19E+02		0.45	3.10E+01
06/17/05	354.00	0.41	2.93E+01	2.66E+02		0.41	2.93E+01
06/18/05	354.00	0.84	5.26E+01	2.86E+02		0.84	5.26E+01
06/19/05	354.00	0.87	5.41E+01	3.10E+02		0.87	5.41E+01
06/20/05	354.00	0.74	4.58E+01	2.86E+02		0.74	4.58E+01
06/21/05	354.00	0.61	3.82E+01	2.40E+02		0.61	3.82E+01
06/22/05	354.00	0.59	3.74E+01	2.10E+02		0.59	3.74E+01
06/23/05	354.00	0.58	3.71E+01	2.06E+02		0.58	3.71E+01
06/24/05	354.50	0.90	5.66E+01	2.98E+02		0.90	5.66E+01
06/25/05	354.00	0.67	4.18E+01	2.61E+02		0.67	4.18E+01
06/26/05	354.00	0.56	3.58E+01	2.08E+02		0.56	3.58E+01
06/27/05	354.00	0.51	3.36E+01	1.61E+02		0.51	3.36E+01
06/28/05	354.00	0.49	3.26E+01	1.65E+02		0.49	3.26E+01
06/29/05	354.00	0.52	3.41E+01	2.35E+02		0.52	3.41E+01
06/30/05	354.33	0.91	5.71E+01	2.60E+02		0.91	5.71E+01
07/01/05	355.00	1.82	1.96E+02	5.36E+02		1.82	1.96E+02
07/02/05	354.33	1.69	1.63E+02	6.48E+02		1.69	1.63E+02
07/03/05	355.00	1.24	8.98E+01	4.29E+02		1.24	8.98E+01
07/04/05	354.33	0.84	5.22E+01	2.91E+02		0.84	5.22E+01
07/05/05	354.00	0.65	4.05E+01	2.41E+02		0.65	4.05E+01
07/06/05	354.00	0.58	3.68E+01	1.97E+02		0.58	3.68E+01
07/07/05	354.00	0.62	3.90E+01	1.67E+02		0.62	3.90E+01
07/08/05	354.00	0.68	4.21E+01	2.69E+02		0.68	4.21E+01
07/09/05	354.50	1.11	7.47E+01	4.95E+02		1.11	7.47E+01
07/10/05	356.00	2.07	2.72E+02	6.46E+02		2.07	2.72E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/11/05	354.83	1.75	1.78E+02	4.99E+02		1.75	1.78E+02
07/12/05	354.00			3.63E+02	3.63E+02		3.63E+02
07/13/05	354.33	0.90	5.67E+01	3.52E+02		0.90	5.67E+01
07/14/05	354.00	0.71	4.41E+01	2.48E+02		0.71	4.41E+01
07/15/05	354.00	0.63	3.96E+01	1.85E+02		0.63	3.96E+01
07/16/05	354.00	0.63	3.94E+01	1.57E+02		0.63	3.94E+01
07/17/05	354.00	0.77	4.76E+01	2.13E+02		0.77	4.76E+01
07/18/05	354.00	0.68	4.23E+01	3.81E+02		0.68	4.23E+01
07/19/05	354.00	0.61	3.83E+01	3.81E+02		0.61	3.83E+01
07/20/05	354.50	0.88	5.52E+01	3.16E+02		0.88	5.52E+01
07/21/05	354.83	0.94	6.00E+01	2.80E+02		0.94	6.00E+01
07/22/05	354.00	0.71	4.39E+01	2.14E+02		0.71	4.39E+01
07/23/05	354.00	0.55	3.55E+01	1.73E+02		0.55	3.55E+01
07/24/05	354.00	0.47	3.20E+01	1.25E+02		0.47	3.20E+01
07/25/05	354.00	0.49	3.27E+01	1.20E+02		0.49	3.27E+01
07/26/05	354.00	0.43	2.99E+01	1.16E+02		0.43	2.99E+01
07/27/05	354.00	0.42	2.98E+01	1.04E+02		0.42	2.98E+01
07/28/05	354.00	0.42	2.96E+01	1.02E+02		0.42	2.96E+01
07/29/05	354.00	0.44	3.06E+01	9.00E+01		0.44	3.06E+01
07/30/05	354.00	0.44	3.03E+01	9.30E+01		0.44	3.03E+01
07/31/05	354.00			8.70E+01	8.70E+01		8.70E+01
08/01/05	354.00	0.40	2.88E+01	7.90E+01		0.40	2.88E+01
08/02/05	354.00	0.36	2.75E+01	7.80E+01		0.36	2.75E+01
08/03/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/04/05	354.00	0.34	2.66E+01	7.00E+01		0.34	2.66E+01
08/05/05	354.00	0.34	2.65E+01	6.60E+01		0.34	2.65E+01
08/06/05	354.00	0.34	2.66E+01	6.30E+01		0.34	2.66E+01
08/07/05	354.00	0.35	2.71E+01	5.90E+01		0.35	2.71E+01
08/08/05	354.00	0.34	2.67E+01	5.90E+01		0.34	2.67E+01
08/09/05	354.00	0.32	2.59E+01	6.00E+01		0.32	2.59E+01
08/10/05	354.00	0.33	2.64E+01	5.80E+01		0.33	2.64E+01
08/11/05	354.00	0.35	2.71E+01	5.40E+01		0.35	2.71E+01
08/12/05	354.00	0.31	2.57E+01	5.40E+01		0.31	2.57E+01
08/13/05	354.00			5.50E+01	5.50E+01		5.50E+01
08/14/05	354.00	0.36	2.73E+01	6.30E+01		0.36	2.73E+01
08/15/05	354.00	0.36	2.75E+01	7.40E+01		0.36	2.75E+01
08/16/05	354.00	0.44	3.06E+01	7.40E+01		0.44	3.06E+01
08/17/05	354.00	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
08/18/05	354.00	0.38	2.82E+01	8.70E+01		0.38	2.82E+01
08/19/05	354.00	0.36	2.76E+01	7.80E+01		0.36	2.76E+01
08/20/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/21/05	354.00	0.35	2.70E+01	7.20E+01		0.35	2.70E+01
08/22/05	354.00	0.37	2.78E+01	6.70E+01		0.37	2.78E+01
08/23/05	354.00	0.34	2.68E+01	6.30E+01		0.34	2.68E+01
08/24/05	354.00	0.32	2.61E+01	6.10E+01		0.32	2.61E+01
08/25/05	354.00	0.18	2.15E+01	5.30E+01		0.18	2.15E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/26/05	354.00	0.16	2.09E+01	4.90E+01		0.16	2.09E+01
08/27/05	354.00	0.14	2.04E+01	4.70E+01		0.14	2.04E+01
08/28/05	354.00	0.15	2.05E+01	4.80E+01		0.15	2.05E+01
08/29/05	354.00	0.21	2.23E+01	5.20E+01		0.21	2.23E+01
08/30/05	354.00	0.28	2.47E+01	5.20E+01		0.28	2.47E+01
08/31/05	354.00	0.32	2.58E+01			0.32	2.58E+01
09/01/05	354.00	0.28	2.47E+01	6.00E+01		0.28	2.47E+01
09/02/05	354.00	0.25	2.38E+01	7.20E+01		0.25	2.38E+01
09/03/05	354.00	0.24	2.34E+01	6.70E+01		0.24	2.34E+01
09/04/05	354.00	0.20	2.22E+01	5.60E+01		0.20	2.22E+01
09/05/05	354.00	0.19	2.19E+01	4.90E+01		0.19	2.19E+01
09/06/05	354.00	0.15	2.07E+01	4.70E+01		0.15	2.07E+01
09/07/05	354.00	0.11	1.96E+01	4.50E+01		0.11	1.96E+01
09/08/05	354.00	0.09	1.90E+01	4.30E+01		0.09	1.90E+01
09/09/05	354.00	0.06	1.84E+01	4.20E+01		0.06	1.84E+01
09/10/05	354.00	0.04	1.79E+01	4.00E+01		0.04	1.79E+01
09/11/05	354.00	0.02	1.74E+01	4.00E+01		0.02	1.74E+01
09/12/05	354.00	0.04	1.78E+01	3.70E+01		0.04	1.78E+01
09/13/05	354.00	0.07	1.87E+01	3.60E+01		0.07	1.87E+01
09/14/05	354.00	0.06	1.83E+01	3.50E+01		0.06	1.83E+01
09/15/05	354.00	0.06	1.83E+01	4.00E+01		0.06	1.83E+01
09/16/05	354.00	0.14	2.05E+01	3.90E+01		0.14	2.05E+01
09/17/05	354.00	0.20	2.21E+01	3.90E+01		0.20	2.21E+01
09/18/05	354.00	0.27	2.42E+01	3.80E+01		0.27	2.42E+01
09/19/05	354.00	0.28	2.46E+01	4.00E+01		0.28	2.46E+01
09/20/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/21/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/22/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
09/23/05	354.00	0.19	2.18E+01	4.10E+01		0.19	2.18E+01
09/24/05	354.00	0.16	2.10E+01	4.00E+01		0.16	2.10E+01
09/25/05	354.00	0.15	2.06E+01	3.90E+01		0.15	2.06E+01
09/26/05	354.00	0.17	2.12E+01	4.10E+01		0.17	2.12E+01
09/27/05	354.00	0.17	2.12E+01	4.30E+01		0.17	2.12E+01
09/28/05	354.00	0.17	2.12E+01	4.50E+01		0.17	2.12E+01
09/29/05	354.00	0.19	2.19E+01	4.40E+01		0.19	2.19E+01
09/30/05	354.00	0.21	2.25E+01	4.30E+01		0.21	2.25E+01
10/01/05	354.00	0.23	2.30E+01	4.00E+01		0.23	2.30E+01
10/02/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/03/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
10/04/05	354.00	0.25	2.35E+01	4.10E+01		0.25	2.35E+01
10/05/05	354.00	0.23	2.30E+01	4.10E+01		0.23	2.30E+01
10/06/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/07/05	354.00	0.20	2.21E+01	4.00E+01		0.20	2.21E+01
10/08/05	354.00	0.28	2.46E+01	2.89E+03		0.28	2.46E+01
10/09/05	359.40	5.56	2.61E+03	1.20E+04		5.56	2.61E+03
10/10/05				6.98E+03	6.98E+03		6.98E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/05	361.00	7.57	5.10E+03	4.95E+03	4.95E+03	7.57	4.95E+03
10/12/05				5,830	5.83E+03		5.83E+03
10/13/05				14,700	1.47E+04		1.47E+04
10/14/05				12,700	1.27E+04		1.27E+04
10/15/05				13,200	1.32E+04		1.32E+04
10/16/05				9,720	9.72E+03		9.72E+03
10/17/05				8,130	8.13E+03		8.13E+03
10/18/05				7,120	7.12E+03		7.12E+03
10/19/05				6,000	6.00E+03		6.00E+03
10/20/05				4,700	4.70E+03		4.70E+03
10/21/05				3,050	3.05E+03		3.05E+03
10/22/05				1,880	1.88E+03		1.88E+03
10/23/05				3,630	3.63E+03		3.63E+03
10/24/05				3,220	3.22E+03		3.22E+03
10/25/05				4,140	4.14E+03		4.14E+03
10/26/05				4,770	4.77E+03		4.77E+03
10/27/05				4,090	4.09E+03		4.09E+03
10/28/05				3,410	3.41E+03		3.41E+03
10/29/05				2,820	2.82E+03		2.82E+03
10/30/05				2,240	2.24E+03		2.24E+03
10/31/05				1,780	1.78E+03		1.78E+03
11/01/05				1,480	1.48E+03		1.48E+03
11/02/05				1,280	1.28E+03		1.28E+03
11/03/05				1,120	1.12E+03		1.12E+03
11/04/05				993	9.93E+02		9.93E+02
11/05/05				926	9.26E+02		9.26E+02
11/06/05				842	8.42E+02		8.42E+02
11/07/05				807	8.07E+02		8.07E+02
11/08/05				729	7.29E+02		7.29E+02
11/09/05				735	7.35E+02		7.35E+02
11/10/05				1,040	1.04E+03		1.04E+03
11/11/05				1,050	1.05E+03		1.05E+03
11/12/05				891	8.91E+02		8.91E+02
11/13/05				772	7.72E+02		7.72E+02
11/14/05				688	6.88E+02		6.88E+02
11/15/05				672	6.72E+02		6.72E+02
11/16/05				724	7.24E+02		7.24E+02
11/17/05				1,730	1.73E+03		1.73E+03
11/18/05				1,740	1.74E+03		1.74E+03
11/19/05				1,390	1.39E+03		1.39E+03
11/20/05				1,110	1.11E+03		1.11E+03
11/21/05				953	9.53E+02		9.53E+02
11/22/05				1,510	1.51E+03		1.51E+03
11/23/05				2,310	2.31E+03		2.31E+03
11/24/05				1,780	1.78E+03		1.78E+03
11/25/05				1,490	1.49E+03		1.49E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/26/05				1,210	1.21E+03		1.21E+03
11/27/05				1,050	1.05E+03		1.05E+03
11/28/05				998	9.98E+02		9.98E+02
11/29/05				973	9.73E+02		9.73E+02
11/30/05				6,390	6.39E+03		6.39E+03
12/01/05				4,570	4.57E+03		4.57E+03
12/02/05				3,310	3.31E+03		3.31E+03
12/03/05				2,570	2.57E+03		2.57E+03
12/04/05				2,000	2.00E+03		2.00E+03
12/05/05				1,630	1.63E+03		1.63E+03
12/06/05				1,420	1.42E+03		1.42E+03
12/07/05				1,250	1.25E+03		1.25E+03
12/08/05				1,060	1.06E+03		1.06E+03
12/09/05				960	9.60E+02		9.60E+02
12/10/05				972	9.72E+02		9.72E+02
12/11/05				983	9.83E+02		9.83E+02
12/12/05				992	9.92E+02		9.92E+02
12/13/05				848	8.48E+02		8.48E+02
12/14/05				Ice			
12/15/05				Ice			
12/16/05				Ice			
12/17/05				Ice			
12/18/05				Ice			
12/19/05				Ice			
12/20/05				Ice			
12/21/05				Ice			
12/22/05				Ice			
12/23/05				Ice			
12/24/05				Ice			
12/25/05				Ice			
12/26/05				Ice			
12/27/05				Ice			
12/28/05				Ice			
12/29/05				Ice			
12/30/05				Ice			
12/31/05				Ice			
01/01/06	358.32	4.23	1.45E+03	ice		4.23	1.45E+03
01/02/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/03/06	358.42	4.33	1.53E+03	ice		4.33	1.53E+03
01/04/06	359.32	5.23	2.29E+03	ice		5.23	2.29E+03
01/05/06	359.35	5.26	2.32E+03	ice		5.26	2.32E+03
01/06/06	359.38	5.29	2.35E+03	ice		5.29	2.35E+03
01/07/06	358.91	4.82	1.92E+03	ice		4.82	1.92E+03
01/08/06	358.29	4.20	1.43E+03	ice		4.20	1.43E+03
01/09/06	357.87	3.78	1.14E+03	ice		3.78	1.14E+03
01/10/06	357.81	3.72	1.10E+03	ice		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/11/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/12/06	358.79	4.70	1.82E+03	3.01E+03		4.70	1.82E+03
01/13/06	359.00	4.91	2.00E+03	3.11E+03		4.91	2.00E+03
01/14/06	359.05	4.96	2.05E+03	3.55E+03		4.96	2.05E+03
01/15/06	359.77	5.68	2.74E+03	4.66E+03		5.68	2.74E+03
01/16/06	359.24	5.15	2.22E+03	3.17E+03		5.15	2.22E+03
01/17/06	360.20	6.11	3.21E+03	2.62E+03	2.62E+03	6.11	2.62E+03
01/18/06	359.83	5.74	2.80E+03	5.40E+03		5.74	2.80E+03
01/19/06	362.07	7.98	5.72E+03	7.34E+03		7.98	5.72E+03
01/20/06	361.87	7.78	5.41E+03	5.47E+03		7.78	5.41E+03
01/21/06	361.37	7.28	4.68E+03	4.71E+03		7.28	4.68E+03
01/22/06	360.65	6.56	3.74E+03	4.01E+03		6.56	3.74E+03
01/23/06	359.69	5.60	2.66E+03	3.25E+03		5.60	2.66E+03
01/24/06	359.35	5.26	2.32E+03	2.82E+03		5.26	2.32E+03
01/25/06	359.06	4.97	2.05E+03	2.62E+03		4.97	2.05E+03
01/26/06	358.64	4.55	1.70E+03	2.32E+03		4.55	1.70E+03
01/27/06	358.04	3.95	1.25E+03	1.87E+03		3.95	1.25E+03
01/28/06	357.59	3.50	9.65E+02	1.63E+03		3.50	9.65E+02
01/29/06	357.48	3.39	8.96E+02	1.64E+03		3.39	8.96E+02
01/30/06	357.70	3.61	1.03E+03	1.97E+03		3.61	1.03E+03
01/31/06	358.11	4.02	1.30E+03	2.53E+03		4.02	1.30E+03
02/01/06	358.24	4.15	1.39E+03	2.41E+03		4.15	1.39E+03
02/02/06	357.86	3.77	1.13E+03	1.97E+03		3.77	1.13E+03
02/03/06	357.92	3.83	1.17E+03	2.82E+03		3.83	1.17E+03
02/04/06	358.99	4.90	2.00E+03	3.46E+03		4.90	2.00E+03
02/05/06	359.50	5.45	2.51E+03	4.35E+03		5.45	2.51E+03
02/06/06	359.31	5.22	2.28E+03			5.22	2.28E+03
02/07/06	358.69	4.60	1.74E+03			4.60	1.74E+03
02/08/06	358.16	4.07	1.33E+03			4.07	1.33E+03
02/09/06	357.65	3.56	1.00E+03			3.56	1.00E+03
02/10/06	357.29	3.20	7.92E+02			3.20	7.92E+02
02/11/06	357.04	2.95	8.94E+02			2.95	8.94E+02
02/12/06	356.87	2.78	7.14E+02			2.78	7.14E+02
02/13/06	356.71	2.62	5.76E+02			2.62	5.76E+02
02/14/06	356.72	2.63	5.79E+02			2.63	5.79E+02
02/15/06	356.65	2.56	5.27E+02			2.56	5.27E+02
02/16/06	356.77	2.68	6.20E+02			2.68	6.20E+02
02/17/06	357.01	2.92	8.63E+02			2.92	8.63E+02
02/18/06	357.02	2.93	8.72E+02			2.93	8.72E+02
02/19/06	356.53	2.44	4.48E+02			2.44	4.48E+02
02/20/06	356.23	2.14	3.01E+02			2.14	3.01E+02
02/21/06	356.14	2.05	2.67E+02			2.05	2.67E+02
02/22/06	356.04	1.95	2.31E+02			1.95	2.31E+02
02/23/06	355.97	1.88	2.11E+02			1.88	2.11E+02
02/24/06	355.97	1.88	2.12E+02			1.88	2.12E+02
02/25/06	355.86	1.77	1.84E+02			1.77	1.84E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/26/06	355.79	1.70	1.66E+02			1.70	1.66E+02
02/27/06	355.60	1.51	1.29E+02			1.51	1.29E+02
02/28/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/01/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/02/06	355.53	1.44	1.17E+02			1.44	1.17E+02
03/03/06	355.44	1.35	1.04E+02			1.35	1.04E+02
03/04/06	355.52	1.43	1.16E+02			1.43	1.16E+02
03/05/06	355.57	1.48	1.24E+02			1.48	1.24E+02
03/06/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/07/06	355.58	1.49	1.26E+02			1.49	1.26E+02
03/08/06	355.57	1.48	1.23E+02			1.48	1.23E+02
03/09/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/10/06	355.66	1.57	1.39E+02			1.57	1.39E+02
03/11/06	355.90	1.81	1.92E+02			1.81	1.92E+02
03/12/06	355.85	1.76	1.80E+02			1.76	1.80E+02
03/13/06	355.96	1.87	2.08E+02			1.87	2.08E+02
03/14/06	356.56	2.47	4.71E+02			2.47	4.71E+02
03/15/06	356.47	2.38	4.16E+02			2.38	4.16E+02
03/16/06	355.98	1.89	2.16E+02			1.89	2.16E+02
03/17/06	355.75	1.66	1.57E+02			1.66	1.57E+02
03/18/06	355.64	1.55	1.36E+02			1.55	1.36E+02
03/19/06	355.53	1.44	1.18E+02			1.44	1.18E+02
03/20/06	355.48	1.39	1.10E+02			1.39	1.10E+02
03/21/06	355.41	1.32	9.91E+01			1.32	9.91E+01
03/22/06	355.37	1.28	9.39E+01			1.28	9.39E+01
03/23/06	355.34	1.25	9.10E+01			1.25	9.10E+01
03/24/06	355.29	1.20	8.51E+01			1.20	8.51E+01
03/25/06	355.27	1.18	8.29E+01			1.18	8.29E+01
03/26/06	355.29	1.20	8.49E+01			1.20	8.49E+01
03/27/06	355.33	1.24	8.94E+01			1.24	8.94E+01
03/28/06	355.27	1.18	8.23E+01			1.18	8.23E+01
03/29/06	355.23	1.14	7.83E+01			1.14	7.83E+01
03/30/06	355.20	1.11	7.56E+01			1.11	7.56E+01
03/31/06	355.15	1.06	7.03E+01			1.06	7.03E+01
04/01/06	355.11	1.02	6.70E+01			1.02	6.70E+01
04/02/06	355.14	1.05	6.94E+01			1.05	6.94E+01
04/03/06							
04/04/06							
04/05/06							
04/06/06							
04/07/06							
04/08/06							
04/09/06							
04/10/06							
04/11/06							
04/12/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/13/06							
04/14/06							
04/15/06							
04/16/06							
04/17/06							
04/18/06							
04/19/06							
04/20/06							
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05/26/06							
05/27/06							
05/28/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/29/06							
05/30/06							
05/31/06							
06/01/06	355.38	1.29	9.59E+01			1.29	9.59E+01
06/02/06	355.81	1.72	1.72E+02			1.72	1.72E+02
06/03/06	356.27	2.18	3.18E+02			2.18	3.18E+02
06/04/06	356.86	2.77	7.00E+02			2.77	7.00E+02
06/05/06	356.82	2.73	6.61E+02			2.73	6.61E+02
06/06/06	356.43	2.34	3.91E+02			2.34	3.91E+02
06/07/06	356.27	2.18	3.17E+02			2.18	3.17E+02
06/08/06	358.87	4.78	1.89E+03			4.78	1.89E+03
06/09/06	358.96	4.87	1.96E+03			4.87	1.96E+03
06/10/06	358.58	4.49	1.65E+03			4.49	1.65E+03
06/11/06	357.98	3.89	1.21E+03			3.89	1.21E+03
06/12/06	357.26	3.17	7.78E+02			3.17	7.78E+02
06/13/06	356.79	2.70	6.34E+02			2.70	6.34E+02
06/14/06	356.40	2.31	3.75E+02			2.31	3.75E+02
06/15/06	356.25	2.16	3.09E+02			2.16	3.09E+02
06/16/06	356.14	2.05	2.65E+02			2.05	2.65E+02
06/17/06	355.83	1.74	1.76E+02			1.74	1.76E+02
06/18/06	355.61	1.52	1.31E+02			1.52	1.31E+02
06/19/06	355.47	1.38	1.07E+02			1.38	1.07E+02
06/20/06	355.43	1.34	1.02E+02			1.34	1.02E+02
06/21/06	355.44	1.35	1.03E+02			1.35	1.03E+02
06/22/06	355.29	1.20	8.53E+01			1.20	8.53E+01
06/23/06	355.20	1.11	7.47E+01			1.11	7.47E+01
06/24/06	355.60	1.51	1.29E+02			1.51	1.29E+02
06/25/06	356.30	2.21	3.30E+02			2.21	3.30E+02
06/26/06	357.75	3.66	1.06E+03			3.66	1.06E+03
06/27/06	359.71	5.62	2.68E+03			5.62	2.68E+03
06/28/06	360.97	6.88	4.15E+03			6.88	4.15E+03
06/29/06	362.39	8.30	6.22E+03			8.30	6.22E+03
06/30/06	362.14	8.05	5.82E+03			8.05	5.82E+03
07/01/06	361.52	7.43	4.89E+03			7.43	4.89E+03
07/02/06	360.70	6.61	3.80E+03			6.61	3.80E+03
07/03/06	359.75	5.66	2.72E+03			5.66	2.72E+03
07/04/06	358.74	4.65	1.78E+03			4.65	1.78E+03
07/05/06	357.91	3.82	1.16E+03			3.82	1.16E+03
07/06/06	357.21	3.12	7.52E+02			3.12	7.52E+02
07/07/06	356.77	2.68	6.23E+02			2.68	6.23E+02
07/08/06	356.35	2.26	3.53E+02			2.26	3.53E+02
07/09/06	356.03	1.94	2.30E+02			1.94	2.30E+02
07/10/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/11/06	355.62	1.53	1.32E+02			1.53	1.32E+02
07/12/06	355.79	1.70	1.67E+02			1.70	1.67E+02
07/13/06	356.18	2.09	2.81E+02			2.09	2.81E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/14/06	356.25	2.16	3.07E+02			2.16	3.07E+02
07/15/06	355.85	1.76	1.81E+02			1.76	1.81E+02
07/16/06	355.61	1.52	1.31E+02			1.52	1.31E+02
07/17/06	355.45	1.36	1.05E+02			1.36	1.05E+02
07/18/06	355.31	1.22	8.72E+01			1.22	8.72E+01
07/19/06	355.22	1.13	7.68E+01			1.13	7.68E+01
07/20/06	355.11	1.02	6.65E+01			1.02	6.65E+01
07/21/06	355.05	0.96	6.11E+01			0.96	6.11E+01
07/22/06	355.44	1.35	1.04E+02			1.35	1.04E+02
07/23/06	355.92	1.83	1.99E+02			1.83	1.99E+02
07/24/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/25/06	355.35	1.26	9.21E+01			1.26	9.21E+01
07/26/06	355.14	1.05	6.94E+01			1.05	6.94E+01
07/27/06	355.00	0.91	5.78E+01			0.91	5.78E+01
07/28/06	355.10	1.01	6.56E+01			1.01	6.56E+01
07/29/06	355.48	1.39	1.10E+02			1.39	1.10E+02
07/30/06	355.34	1.25	9.04E+01			1.25	9.04E+01
07/31/06	355.08	0.99	6.39E+01			0.99	6.39E+01
08/01/06	354.90	0.81	5.04E+01			0.81	5.04E+01
08/02/06	354.79	0.70	4.33E+01			0.70	4.33E+01
08/03/06	354.71	0.62	3.89E+01			0.62	3.89E+01
08/04/06	354.78	0.69	4.25E+01			0.69	4.25E+01
08/05/06	354.86	0.77	4.73E+01			0.77	4.73E+01
08/06/06	354.72	0.63	3.92E+01			0.63	3.92E+01
08/07/06	354.60	0.51	3.35E+01			0.51	3.35E+01
08/08/06	354.60	0.51	3.36E+01			0.51	3.36E+01
08/09/06	354.61	0.52	3.40E+01			0.52	3.40E+01
08/10/06	354.51	0.42	2.97E+01			0.42	2.97E+01
08/11/06	354.65	0.56	3.58E+01			0.56	3.58E+01
08/12/06	354.78	0.69	4.26E+01			0.69	4.26E+01
08/13/06	354.62	0.53	3.43E+01			0.53	3.43E+01
08/14/06	354.51	0.42	2.95E+01			0.42	2.95E+01
08/15/06	354.51	0.42	2.99E+01			0.42	2.99E+01
08/16/06	354.70	0.61	3.81E+01			0.61	3.81E+01
08/17/06	354.66	0.57	3.62E+01			0.57	3.62E+01
08/18/06	354.52	0.43	3.01E+01			0.43	3.01E+01
08/19/06	354.46	0.37	2.79E+01			0.37	2.79E+01
08/20/06	354.47	0.38	2.80E+01			0.38	2.80E+01
08/21/06	354.45	0.36	2.73E+01			0.36	2.73E+01
08/22/06	354.43	0.34	2.66E+01			0.34	2.66E+01
08/23/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/24/06	354.39	0.30	2.53E+01			0.30	2.53E+01
08/25/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/26/06	354.50	0.41	2.91E+01			0.41	2.91E+01
08/27/06	354.69	0.60	3.76E+01			0.60	3.76E+01
08/28/06	356.32	2.23	3.41E+02			2.23	3.41E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/29/06	357.24	3.15	7.65E+02			3.15	7.65E+02
08/30/06	358.44	4.35	1.54E+03			4.35	1.54E+03
08/31/06	358.08	3.99	1.27E+03			3.99	1.27E+03
09/01/06	357.40	3.31	8.52E+02			3.31	8.52E+02
09/02/06	356.56	2.47	4.71E+02			2.47	4.71E+02
09/03/06	357.74	3.65	1.05E+03			3.65	1.05E+03
09/04/06	357.96	3.87	1.20E+03			3.87	1.20E+03
09/05/06	357.51	3.42	9.14E+02			3.42	9.14E+02
09/06/06	357.03	2.94	8.76E+02			2.94	8.76E+02
09/07/06	356.62	2.53	5.10E+02			2.53	5.10E+02
09/08/06	356.20	2.11	2.88E+02			2.11	2.88E+02
09/09/06	355.83	1.74	1.76E+02			1.74	1.76E+02
09/10/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/11/06	355.44	1.35	1.03E+02			1.35	1.03E+02
09/12/06	355.27	1.18	8.30E+01			1.18	8.30E+01
09/13/06	355.17	1.08	7.21E+01			1.08	7.21E+01
09/14/06	355.17	1.08	7.19E+01			1.08	7.19E+01
09/15/06	357.75	3.66	1.06E+03			3.66	1.06E+03
09/16/06	359.53	5.44	2.49E+03			5.44	2.49E+03
09/17/06	358.76	4.67	1.80E+03			4.67	1.80E+03
09/18/06	357.91	3.82	1.16E+03			3.82	1.16E+03
09/19/06	357.09	3.00	9.52E+02			3.00	9.52E+02
09/20/06	356.53	2.44	4.50E+02			2.44	4.50E+02
09/21/06	356.10	2.01	2.51E+02			2.01	2.51E+02
09/22/06	355.81	1.72	1.70E+02			1.72	1.70E+02
09/23/06	355.63	1.54	1.33E+02			1.54	1.33E+02
09/24/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/25/06	355.49	1.40	1.11E+02			1.40	1.11E+02
09/26/06	355.41	1.32	9.98E+01			1.32	9.98E+01
09/27/06	355.34	1.25	9.10E+01			1.25	9.10E+01
09/28/06	355.26	1.17	8.10E+01			1.17	8.10E+01
09/29/06	355.31	1.22	8.67E+01			1.22	8.67E+01
09/30/06	355.53	1.44	1.17E+02			1.44	1.17E+02
10/01/06	355.57	1.48	1.24E+02			1.48	1.24E+02
10/02/06	355.79	1.70	1.65E+02			1.70	1.65E+02
10/03/06	355.60	1.51	1.29E+02			1.51	1.29E+02
10/04/06	355.44	1.35	1.03E+02			1.35	1.03E+02
10/05/06	355.42	1.33	1.01E+02			1.33	1.01E+02
10/06/06	355.62	1.53	1.32E+02			1.53	1.32E+02
10/07/06	355.43	1.34	1.03E+02			1.34	1.03E+02
10/08/06	355.32	1.23	8.84E+01			1.23	8.84E+01
10/09/06	355.22	1.13	7.71E+01			1.13	7.71E+01
10/10/06	355.14	1.05	6.93E+01			1.05	6.93E+01
10/11/06	355.08	0.99	6.37E+01			0.99	6.37E+01
10/12/06							
10/13/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/14/06							
10/15/06							
10/16/06	354.09						
10/17/2006	355.45	1.36	1.06E+02	5.32E+02		1.36	1.06E+02
10/18/2006	356.23	2.14	2.99E+02	1.63E+03		2.14	2.99E+02
10/19/2006	356.67	2.58	5.45E+02	1.33E+03		2.58	5.45E+02
10/20/2006	356.52	2.43	4.46E+02	1.33E+03		2.43	4.46E+02
10/21/2006	357.01	2.92	8.63E+02	1.59E+03		2.92	8.63E+02
10/22/2006	356.70	2.61	5.65E+02	1.28E+03		2.61	5.65E+02
10/23/2006	356.30	2.21	3.32E+02	1.05E+03		2.21	3.32E+02
10/24/2006	356.14	2.05	2.66E+02	8.85E+02		2.05	2.66E+02
10/25/2006	355.92	1.83	1.98E+02	7.67E+02		1.83	1.98E+02
10/26/2006	355.77	1.68	1.61E+02	6.73E+02		1.68	1.61E+02
10/27/2006	355.66	1.57	1.39E+02	5.96E+02		1.57	1.39E+02
10/28/2006	357.61	3.52	9.77E+02	5.70E+03		3.52	9.77E+02
10/29/2006	360.71	6.62	3.82E+03	6.47E+03		6.62	3.82E+03
10/30/2006	359.82	5.73	2.80E+03	3.99E+03		5.73	2.80E+03
10/31/2006	359.03	4.94	2.03E+03	2.77E+03		4.94	2.03E+03
11/1/2006	358.17	4.08	1.34E+03	2.12E+03		4.08	1.34E+03
11/2/2006	357.60	3.51	9.71E+02	1.97E+03		3.51	9.71E+02
11/3/2006	357.55	3.46	9.41E+02	1.86E+03		3.46	9.41E+02
11/4/2006	357.11	3.02	7.00E+02	1.48E+03		3.02	7.00E+02
11/5/2006	356.72	2.63	5.77E+02	1.24E+03		2.63	5.77E+02
11/6/2006	356.46	2.37	4.07E+02	1.02E+03		2.37	4.07E+02
11/7/2006	356.31	2.22	3.36E+02	9.51E+02		2.22	3.36E+02
11/8/2006	356.88	2.79	7.16E+02	2.52E+03		2.79	7.16E+02
11/9/2006	360.90	6.81	4.06E+03	6.68E+03		6.81	4.06E+03
11/10/2006	360.37	6.28	3.40E+03	4.65E+03		6.28	3.40E+03
11/11/2006	359.81	5.72	2.78E+03	3.40E+03		5.72	2.78E+03
11/12/2006	359.19	5.10	2.17E+03	2.74E+03		5.10	2.17E+03
11/13/2006	358.51	4.42	1.60E+03	2.42E+03		4.42	1.60E+03
11/14/2006	358.17	4.08	1.34E+03	2.16E+03		4.08	1.34E+03
11/15/2006	357.92	3.83	1.17E+03	1.97E+03		3.83	1.17E+03
11/16/2006	357.62	3.53	9.81E+02	1.81E+03		3.53	9.81E+02
11/17/2006	359.24	5.15	2.21E+03	3.58E+03		5.15	2.21E+03
11/18/2006	359.22	5.13	2.20E+03	3.05E+03		5.13	2.20E+03
11/19/2006	358.83	4.74	1.85E+03	2.44E+03		4.74	1.85E+03
11/20/2006	358.32	4.23	1.45E+03	2.06E+03		4.23	1.45E+03
11/21/2006	357.79	3.70	1.09E+03	1.70E+03		3.70	1.09E+03
11/22/2006	357.37	3.28	8.36E+02	1.46E+03		3.28	8.36E+02
11/23/2006	357.74	3.65	1.05E+03	1.64E+03		3.65	1.05E+03
11/24/2006	359.61	5.52	2.57E+03	3.14E+03		5.52	2.57E+03
11/25/2006	359.14	5.05	2.12E+03	2.67E+03		5.05	2.12E+03
11/26/2006	358.71	4.62	1.75E+03	2.22E+03		4.62	1.75E+03
11/27/2006	358.16	4.07	1.33E+03	1.86E+03		4.07	1.33E+03
11/28/2006	357.76	3.67	1.07E+03	1.61E+03		3.67	1.07E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/29/2006	357.48	3.39	8.96E+02	1.45E+03		3.39	8.96E+02
11/30/2006	357.21	3.12	7.51E+02	1.34E+03		3.12	7.51E+02
12/1/2006	357.12	3.03	7.04E+02	1.42E+03		3.03	7.04E+02
12/2/2006	358.39	4.30	1.50E+03	2.27E+03		4.30	1.50E+03
12/3/2006	357.92	3.83	1.17E+03	1.88E+03		3.83	1.17E+03
12/4/2006	357.41	3.32	8.57E+02	1.50E+03		3.32	8.57E+02
12/5/2006	356.98	2.89	8.21E+02	1.27E+03		2.89	8.21E+02
12/6/2006	356.68	2.59	5.51E+02	1.10E+03		2.59	5.51E+02
12/7/2006	356.52	2.43	4.46E+02	1.02E+03		2.43	4.46E+02
12/8/2006	356.42	2.33	3.87E+02	9.61E+02		2.33	3.87E+02
12/9/2006	356.14	2.05	2.65E+02	7.94E+02		2.05	2.65E+02
12/10/2006	356.04	1.95	2.31E+02	7.39E+02		1.95	2.31E+02
12/11/2006	356.05	1.96	2.37E+02	7.31E+02		1.96	2.37E+02
12/12/2006	356.00	1.91	2.21E+02	7.47E+02		1.91	2.21E+02
12/13/2006	355.97	1.88	2.13E+02	7.46E+02		1.88	2.13E+02
12/14/2006	356.15	2.06	2.68E+02	8.45E+02		2.06	2.68E+02
12/15/2006	356.10	2.01	2.51E+02	8.26E+02		2.01	2.51E+02
12/16/2006	355.94	1.85	2.05E+02	7.61E+02		1.85	2.05E+02
12/17/2006	355.84	1.75	1.77E+02	6.99E+02		1.75	1.77E+02
12/18/2006	355.76	1.67	1.59E+02	6.40E+02		1.67	1.59E+02
12/19/2006	355.70	1.61	1.47E+02	6.01E+02		1.61	1.47E+02
12/20/2006	355.68	1.59	1.44E+02	5.66E+02		1.59	1.44E+02
12/21/2006	355.63	1.54	1.34E+02	5.30E+02		1.54	1.34E+02
12/22/2006	355.56	1.47	1.22E+02	5.23E+02		1.47	1.22E+02
12/23/2006	356.14	2.05	2.66E+02	1.18E+03		2.05	2.66E+02
12/24/2006	356.97	2.88	8.17E+02	1.46E+03		2.88	8.17E+02
12/25/2006	356.50	2.41	4.31E+02	1.14E+03		2.41	4.31E+02
12/26/2006	356.42	2.33	3.86E+02	1.38E+03		2.33	3.86E+02
12/27/2006	356.60	2.51	4.92E+02	1.28E+03		2.51	4.92E+02
12/28/2006	356.30	2.21	3.30E+02	1.06E+03		2.21	3.30E+02
12/29/2006	356.08	1.99	2.45E+02	8.53E+02		1.99	2.45E+02
12/30/2006	355.93	1.84	2.00E+02	7.77E+02		1.84	2.00E+02
12/31/2006	355.87	1.78	1.86E+02	7.31E+02		1.78	1.86E+02
1/1/2007	356.56	2.47	4.67E+02	1.57E+03		2.47	4.67E+02
1/2/2007	357.98	3.89	1.21E+03	2.29E+03		3.89	1.21E+03
1/3/2007	357.38	3.29	8.43E+02	1.68E+03		3.29	8.43E+02
1/4/2007	356.85	2.76	6.94E+02	1.33E+03		2.76	6.94E+02
1/5/2007	356.60	2.51	4.97E+02	1.18E+03		2.51	4.97E+02
1/6/2007	356.88	2.79	7.23E+02	1.69E+03		2.79	7.23E+02
1/7/2007	357.08	2.99	9.46E+02	1.67E+03		2.99	9.46E+02
1/8/2007	358.04	3.95	1.25E+03	3.56E+03		3.95	1.25E+03
1/9/2007	359.21	5.12	2.19E+03	3.70E+03		5.12	2.19E+03
1/10/2007	358.48	4.39	1.57E+03	2.59E+03		4.39	1.57E+03
1/11/2007	357.71	3.62	1.04E+03	1.90E+03		3.62	1.04E+03
1/12/2007	357.12	3.03	7.06E+02	1.50E+03		3.03	7.06E+02
1/13/2007	356.97	2.88	8.17E+02	1.38E+03		2.88	8.17E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/14/2007	357.13	3.04	7.12E+02	1.48E+03		3.04	7.12E+02
1/15/2007	357.40	3.31	8.55E+02	2.14E+03		3.31	8.55E+02
1/16/2007	357.68	3.59	1.02E+03	2.25E+03		3.59	1.02E+03
1/17/2007	357.17	3.08	7.28E+02	1.63E+03		3.08	7.28E+02
1/18/2007	356.58	2.49	4.78E+02	1.21E+03		2.49	4.78E+02
1/19/2007	356.46	2.37	4.10E+02	1.05E+03		2.37	4.10E+02
1/20/2007	356.42	2.33	3.88E+02	1.02E+03		2.33	3.88E+02
1/21/2007	361.31	7.22	4.60E+03	8.01E+02	8.01E+02	7.22	8.01E+02
1/22/2007	356.09	2.00	2.47E+02	8.16E+02		2.00	2.47E+02
1/23/2007	355.96	1.87	2.08E+02	7.72E+02		1.87	2.08E+02
1/24/2007	355.91	1.82	1.96E+02	7.39E+02		1.82	1.96E+02
1/25/2007	355.83	1.74	1.76E+02	6.85E+02		1.74	1.76E+02
1/26/2007	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/27/2007	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/28/2007	355.65	1.56	1.38E+02	Ice		1.56	1.38E+02
1/29/2007	355.67	1.58	1.41E+02	Ice		1.58	1.41E+02
1/30/2007	355.66	1.57	1.40E+02	Ice		1.57	1.40E+02
1/31/2007	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
2/1/2007	355.45	1.36	1.05E+02	Ice		1.36	1.05E+02
2/2/2007	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
2/3/2007	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/4/2007	355.31	1.22	8.72E+01	Ice		1.22	8.72E+01
2/5/2007	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
2/6/2007	355.35	1.26	9.23E+01	Ice		1.26	9.23E+01
2/7/2007	355.15	1.06	7.03E+01	Ice		1.06	7.03E+01
2/8/2007	355.07	0.98	6.29E+01	Ice		0.98	6.29E+01
2/9/2007	355.01	0.92	5.81E+01	Ice		0.92	5.81E+01
2/10/2007	354.98	0.89	5.60E+01	Ice		0.89	5.60E+01
2/11/2007	354.95	0.86	5.35E+01	Ice		0.86	5.35E+01
2/12/2007	354.94	0.85	5.27E+01	Ice		0.85	5.27E+01
2/13/2007	354.94	0.85	5.28E+01	Ice		0.85	5.28E+01
2/14/2007	355.04	0.95	6.08E+01	Ice		0.95	6.08E+01
2/15/2007	354.97	0.88	5.49E+01	Ice		0.88	5.49E+01
2/16/2007	355.21	1.12	7.61E+01	Ice		1.12	7.61E+01
2/17/2007	355.14	1.05	6.93E+01	Ice		1.05	6.93E+01
2/18/2007	355.07	0.98	6.33E+01	Ice		0.98	6.33E+01
2/19/2007	355.02	0.93	5.87E+01	Ice		0.93	5.87E+01
2/20/2007	354.99	0.90	5.67E+01	Ice		0.90	5.67E+01
2/21/2007	355.03	0.94	5.97E+01	Ice		0.94	5.97E+01
2/22/2007	355.12	1.03	6.77E+01	Ice		1.03	6.77E+01
2/23/2007	355.21	1.12	7.66E+01	Ice		1.12	7.66E+01
2/24/2007	355.22	1.13	7.73E+01	Ice		1.13	7.73E+01
2/25/2007	355.18	1.09	7.32E+01	Ice		1.09	7.32E+01
2/26/2007	355.12	1.03	6.74E+01	Ice		1.03	6.74E+01
2/27/2007	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/28/2007	355.11	1.02	6.70E+01	Ice [P]		1.02	6.70E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/1/2007	355.19	1.10	7.41E+01	Ice [P]		1.10	7.41E+01
3/2/2007	356.90	2.81	7.36E+02	Ice [P]		2.81	7.36E+02
3/3/2007	360.30	6.21	3.32E+03	Ice [P]		6.21	3.32E+03
3/4/2007	360.08	5.99	3.07E+03	Ice [P]		5.99	3.07E+03
3/5/2007	359.12	5.03	2.11E+03	Ice [P]		5.03	2.11E+03
3/6/2007	357.61	3.52	9.74E+02	Ice [P]		3.52	9.74E+02
3/7/2007	356.47	2.38	4.17E+02	Ice		2.38	4.17E+02
3/8/2007	370.57	16.48	2.74E+04	Ice		16.48	3.56E+02
3/9/2007	356.21	2.12	2.94E+02	Ice		2.12	2.94E+02
3/10/2007	355.99	1.90	2.19E+02	Ice		1.90	2.19E+02
3/11/2007	356.16	2.07	2.72E+02	Ice		2.07	2.72E+02
3/12/2007	357.34	3.25	8.21E+02	Ice		3.25	8.21E+02
3/13/2007	357.71	3.62	1.03E+03	Ice		3.62	1.03E+03
3/14/2007	358.30	4.21	1.43E+03	3.33E+03		4.21	1.43E+03
3/15/2007	359.18	5.09	2.16E+03	4.37E+03		5.09	2.16E+03
3/16/2007	358.97	4.88	1.98E+03	3.53E+03		4.88	1.98E+03
3/17/2007	357.48	3.39	9.01E+02	1.96E+03		3.39	9.01E+02
3/18/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/19/2007	357.42	3.33	8.67E+02	1.78E+03		3.33	8.67E+02
3/20/2007	357.14	3.05	7.13E+02	1.59E+03		3.05	7.13E+02
3/21/2007	357.32	3.23	8.08E+02	1.59E+03		3.23	8.08E+02
3/22/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/23/2007	360.47	6.38	3.52E+03	5.04E+03		6.38	3.52E+03
3/24/2007	360.55	6.46	3.62E+03	5.40E+03		6.46	3.62E+03
3/25/2007	360.57	6.48	3.65E+03	5.54E+03		6.48	3.65E+03
3/26/2007	360.16	6.07	3.17E+03	4.58E+03		6.07	3.17E+03
3/27/2007	359.69	5.60	2.65E+03	3.99E+03		5.60	2.65E+03
3/28/2007	359.27	5.18	2.25E+03	3.48E+03		5.18	2.25E+03
3/29/2007	358.58	4.49	1.65E+03	2.73E+03		4.49	1.65E+03
3/30/2007	357.98	3.89	1.21E+03	2.15E+03		3.89	1.21E+03
3/31/2007	357.53	3.44	9.27E+02	1.78E+03		3.44	9.27E+02
4/1/2007	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
4/2/2007	357.18	3.09	7.37E+02	1.55E+03		3.09	7.37E+02
4/3/2007	357.20	3.11	7.45E+02	1.59E+03		3.11	7.45E+02
4/4/2007	357.13	3.04	7.10E+02	1.75E+03		3.04	7.10E+02
4/5/2007	358.07	3.98	1.27E+03	2.55E+03		3.98	1.27E+03
4/6/2007	357.73	3.64	1.05E+03	1.99E+03		3.64	1.05E+03
4/7/2007	357.22	3.13	7.55E+02	1.62E+03		3.13	7.55E+02
4/8/2007	356.82	2.73	6.65E+02	1.36E+03		2.73	6.65E+02
4/9/2007	356.58	2.49	4.84E+02	1.18E+03		2.49	4.84E+02
4/10/2007	356.39	2.30	3.71E+02	1.04E+03		2.30	3.71E+02
4/11/2007	356.24	2.15	3.04E+02	9.02E+02		2.15	3.04E+02
4/12/2007	356.61	2.52	5.00E+02			2.52	5.00E+02
4/13/2007	357.94	3.85	1.18E+03			3.85	1.18E+03
4/14/2007	357.49	3.40	9.02E+02	1.75E+03		3.40	9.02E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/15/2007	359.26	5.17	2.24E+03	5.67E+03		5.17	2.24E+03
4/16/2007	365.42	11.33	1.22E+04	1.97E+04		11.33	1.22E+04
4/17/2007	365.86	11.77	1.32E+04	1.54E+04		11.77	1.32E+04
4/18/2007	366.70	12.61	1.54E+04	1.10E+04	1.10E+04	12.61	1.10E+04
4/19/2007	366.56	12.47	1.50E+04	1.01E+04	1.01E+04	12.47	1.01E+04
4/20/2007	365.68	11.59	1.28E+04	9.03E+03	9.03E+03	11.59	9.03E+03
4/21/2007	364.43	10.34	1.00E+04	7.64E+03	7.64E+03	10.34	7.64E+03
4/22/2007	362.63	8.54	6.61E+03	5.99E+03	5.99E+03	8.54	5.99E+03
4/23/2007	360.23	6.14	3.25E+03	4.06E+03		6.14	3.25E+03
4/24/2007	358.68	4.59	1.73E+03	2.48E+03		4.59	1.73E+03
4/25/2007	357.97	3.88	1.20E+03	1.85E+03		3.88	1.20E+03
4/26/2007	357.87	3.78	1.13E+03	1.84E+03		3.78	1.13E+03
4/27/2007	358.03	3.94	1.24E+03	1.99E+03		3.94	1.24E+03
4/28/2007	358.15	4.06	1.32E+03	2.11E+03		4.06	1.32E+03
4/29/2007	357.85	3.76	1.12E+03	1.83E+03		3.76	1.12E+03
4/30/2007	357.45	3.36	8.83E+02	1.57E+03		3.36	8.83E+02
5/1/2007	357.03	2.94	8.84E+02	1.35E+03		2.94	8.84E+02
5/2/2007	356.78	2.69	6.30E+02	1.22E+03		2.69	6.30E+02
5/3/2007	356.66	2.57	5.39E+02	1.18E+03		2.57	5.39E+02
5/4/2007	356.39	2.30	3.73E+02	9.31E+02		2.30	3.73E+02
5/5/2007	356.23	2.14	3.02E+02	8.60E+02		2.14	3.02E+02
5/6/2007	356.06	1.97	2.38E+02	8.32E+02		1.97	2.38E+02
5/7/2007	355.89	1.80	1.91E+02	7.33E+02		1.80	1.91E+02
5/8/2007	355.73	1.64	1.53E+02	6.95E+02		1.64	1.53E+02
5/9/2007	355.66	1.57	1.40E+02	6.64E+02		1.57	1.40E+02
5/10/2007	355.60	1.51	1.29E+02	5.98E+02		1.51	1.29E+02
5/11/2007	355.57	1.48	1.24E+02	6.00E+02		1.48	1.24E+02
5/12/2007	355.48	1.39	1.09E+02	5.63E+02		1.39	1.09E+02
5/13/2007	355.40	1.31	9.85E+01	5.52E+02		1.31	9.85E+01
5/14/2007	355.35	1.26	9.19E+01	4.99E+02		1.26	9.19E+01
5/15/2007	355.24	1.15	7.94E+01	4.59E+02		1.15	7.94E+01
5/16/2007	355.17	1.08	7.19E+01	4.44E+02		1.08	7.19E+01
5/17/2007	355.24	1.15	7.94E+01	4.53E+02		1.15	7.94E+01
5/18/2007	355.26	1.17	8.19E+01	4.53E+02		1.17	8.19E+01
5/19/2007	355.27	1.18	8.29E+01	4.57E+02		1.18	8.29E+01
5/20/2007	355.24	1.15	7.92E+01	4.62E+02		1.15	7.92E+01
5/21/2007	355.25	1.16	8.03E+01	4.68E+02		1.16	8.03E+01
5/22/2007	355.14	1.05	6.93E+01	4.40E+02		1.05	6.93E+01
5/23/2007	355.04	0.95	6.09E+01	3.69E+02		0.95	6.09E+01
5/24/2007	355.01	0.92	5.80E+01	3.43E+02		0.92	5.80E+01
5/25/2007	354.96	0.87	5.47E+01	3.20E+02		0.87	5.47E+01
5/26/2007	354.91	0.82	5.09E+01	2.84E+02		0.82	5.09E+01
5/27/2007	354.87	0.78	4.83E+01	2.51E+02		0.78	4.83E+01
5/28/2007	354.86	0.77	4.75E+01	2.52E+02		0.77	4.75E+01
5/29/2007	354.79	0.70	4.32E+01	2.50E+02		0.70	4.32E+01
5/30/2007	354.70	0.61	3.84E+01	2.36E+02		0.61	3.84E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
5/31/2007	354.65	0.56	3.57E+01	2.22E+02		0.56	3.57E+01
6/1/2007	354.61	0.52	3.39E+01	2.03E+02		0.52	3.39E+01
6/2/2007	354.59	0.50	3.31E+01	1.91E+02		0.50	3.31E+01
6/3/2007	354.65	0.56	3.60E+01	2.65E+02		0.56	3.60E+01
6/4/2007	355.00	0.91	5.78E+01	5.13E+02		0.91	5.78E+01
6/5/2007	355.37	1.28	9.44E+01	6.19E+02		1.28	9.44E+01
6/6/2007	355.19	1.10	7.42E+01	5.21E+02		1.10	7.42E+01
6/7/2007	354.97	0.88	5.49E+01	4.04E+02		0.88	5.49E+01
6/8/2007	354.78	0.69	4.25E+01	3.05E+02		0.69	4.25E+01
6/9/2007	354.68	0.59	3.76E+01	2.43E+02		0.59	3.76E+01
6/10/2007	354.64	0.55	3.55E+01	2.19E+02		0.55	3.55E+01
6/11/2007	354.60	0.51	3.36E+01	1.76E+02		0.51	3.36E+01
6/12/2007	354.54	0.45	3.10E+01	1.85E+02		0.45	3.10E+01
6/13/2007	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
6/14/2007	354.46	0.37	2.79E+01	1.59E+02		0.37	2.79E+01
6/15/2007	354.48	0.39	2.86E+01	1.39E+02		0.39	2.86E+01
6/16/2007	354.48	0.39	2.86E+01	1.47E+02		0.39	2.86E+01
6/17/2007	354.50	0.41	2.93E+01	1.50E+02		0.41	2.93E+01
6/18/2007	354.50	0.41	2.95E+01	1.71E+02		0.41	2.95E+01
6/19/2007	354.49	0.40	2.91E+01	1.57E+02		0.40	2.91E+01
6/20/2007	354.49	0.40	2.90E+01	1.79E+02		0.40	2.90E+01
6/21/2007	354.63	0.54	3.48E+01	2.40E+02		0.54	3.48E+01
6/22/2007	354.56	0.47	3.18E+01	2.13E+02		0.47	3.18E+01
6/23/2007	354.55	0.46	3.15E+01	1.85E+02		0.46	3.15E+01
6/24/2007	354.46	0.37	2.78E+01	1.55E+02		0.37	2.78E+01
6/25/2007	354.46	0.37	2.79E+01	1.26E+02		0.37	2.79E+01
6/26/2007	354.46	0.37	2.79E+01	1.24E+02		0.37	2.79E+01
6/27/2007	354.45	0.36	2.74E+01	1.19E+02		0.36	2.74E+01
6/28/2007	354.58	0.49	3.25E+01	1.21E+02		0.49	3.25E+01
6/29/2007	355.29	1.20	8.51E+01	1.92E+02		1.20	8.51E+01
6/30/2007	355.59	1.50	1.27E+02	4.10E+02		1.50	1.27E+02
7/1/2007	355.01	0.92	5.79E+01	4.07E+02		0.92	5.79E+01
7/2/2007	354.63	0.54	3.47E+01	2.52E+02		0.54	3.47E+01
7/3/2007	354.48	0.39	2.85E+01	1.66E+02		0.39	2.85E+01
7/4/2007	354.44	0.35	2.72E+01	1.54E+02		0.35	2.72E+01
7/5/2007	354.50	0.41	2.95E+01	2.81E+02		0.41	2.95E+01
7/6/2007	354.59	0.50	3.31E+01	8.12E+02		0.50	3.31E+01
7/7/2007	354.52	0.43	3.01E+01	4.44E+02		0.43	3.01E+01
7/8/2007	354.47	0.38	2.80E+01	2.43E+02		0.38	2.80E+01
7/9/2007	354.47	0.38	2.80E+01	1.72E+02		0.38	2.80E+01
7/10/2007	354.45	0.36	2.74E+01	1.47E+02		0.36	2.74E+01
7/11/2007	354.45	0.36	2.74E+01	1.40E+02		0.36	2.74E+01
7/12/2007	354.45	0.36	2.74E+01	1.68E+02		0.36	2.74E+01
7/13/2007	354.44	0.35	2.71E+01	1.77E+02		0.35	2.71E+01
7/14/2007	354.44	0.35	2.70E+01	1.43E+02		0.35	2.70E+01
7/15/2007	354.43	0.34	2.67E+01	1.28E+02		0.34	2.67E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/16/2007	354.45	0.36	2.73E+01	1.53E+02		0.36	2.73E+01
7/17/2007	354.44	0.35	2.69E+01	1.49E+02		0.35	2.69E+01
7/18/2007	354.43	0.34	2.68E+01	1.27E+02		0.34	2.68E+01
7/19/2007	354.57	0.48	3.20E+01	1.40E+02		0.48	3.20E+01
7/20/2007	354.74	0.65	4.04E+01	2.05E+02		0.65	4.04E+01
7/21/2007	354.50	0.41	2.93E+01	2.37E+02		0.41	2.93E+01
7/22/2007	354.45	0.36	2.75E+01	1.46E+02		0.36	2.75E+01
7/23/2007	354.52	0.43	2.99E+01	1.54E+02		0.43	2.99E+01
7/24/2007	355.76	1.67	1.59E+02	4.40E+02		1.67	1.59E+02
7/25/2007	355.64	1.55	1.35E+02	6.59E+02		1.55	1.35E+02
7/26/2007	355.11	1.02	6.70E+01	4.84E+02		1.02	6.70E+01
7/27/2007	354.72	0.63	3.95E+01	2.82E+02		0.63	3.95E+01
7/28/2007	354.73	0.64	4.00E+01	2.87E+02		0.64	4.00E+01
7/29/2007	354.96	0.87	5.45E+01	3.02E+02		0.87	5.45E+01
7/30/2007	354.81	0.72	4.47E+01	3.18E+02		0.72	4.47E+01
7/31/2007	354.65	0.56	3.61E+01	3.12E+02		0.56	3.61E+01
8/1/2007	354.54	0.45	3.08E+01	2.24E+02		0.45	3.08E+01
8/2/2007	354.44	0.35	2.72E+01	1.51E+02		0.35	2.72E+01
8/3/2007	354.43	0.34	2.68E+01	1.46E+02		0.34	2.68E+01
8/4/2007	354.44	0.35	2.71E+01	1.34E+02		0.35	2.71E+01
8/5/2007	354.43	0.34	2.68E+01	1.16E+02		0.34	2.68E+01
8/6/2007	354.44	0.35	2.69E+01	1.07E+02		0.35	2.69E+01
8/7/2007	354.44	0.35	2.69E+01	1.01E+02		0.35	2.69E+01
8/8/2007	354.73	0.64	4.00E+01	1.38E+02		0.64	4.00E+01
8/9/2007	355.69	1.60	1.46E+02	3.94E+02		1.60	1.46E+02
8/10/2007	356.03	1.94	2.30E+02	9.23E+02		1.94	2.30E+02
8/11/2007	356.97	2.88	8.10E+02	1.48E+03		2.88	8.10E+02
8/12/2007	356.22	2.13	2.95E+02	1.01E+03		2.13	2.95E+02
8/13/2007	355.42	1.33	1.01E+02	6.43E+02		1.33	1.01E+02
8/14/2007	355.01	0.92	5.85E+01	4.42E+02		0.92	5.85E+01
8/15/2007	354.80	0.71	4.39E+01	2.83E+02		0.71	4.39E+01
8/16/2007	354.64	0.55	3.53E+01	2.41E+02		0.55	3.53E+01
8/17/2007	354.54	0.45	3.09E+01	2.27E+02		0.45	3.09E+01
8/18/2007	354.49	0.40	2.89E+01	2.38E+02		0.40	2.89E+01
8/19/2007	354.46	0.37	2.79E+01	2.12E+02		0.37	2.79E+01
8/20/2007	354.45	0.36	2.74E+01	1.63E+02		0.36	2.74E+01
8/21/2007	354.54	0.45	3.08E+01	1.65E+02		0.45	3.08E+01
8/22/2007	355.45	1.36	1.05E+02	4.84E+02		1.36	1.05E+02
8/23/2007	355.34	1.25	9.04E+01	5.80E+02		1.25	9.04E+01
8/24/2007	355.02	0.93	5.92E+01	4.32E+02		0.93	5.92E+01
8/25/2007	354.86	0.77	4.78E+01	3.39E+02		0.77	4.78E+01
8/26/2007	354.76	0.67	4.14E+01	2.73E+02		0.67	4.14E+01
8/27/2007	354.78	0.69	4.26E+01	2.35E+02		0.69	4.26E+01
8/28/2007	354.73	0.64	3.98E+01	2.27E+02		0.64	3.98E+01
8/29/2007	354.66	0.57	3.65E+01	2.07E+02		0.57	3.65E+01
8/30/2007	354.64	0.55	3.54E+01	1.75E+02		0.55	3.54E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
8/31/2007	354.62	0.53	3.45E+01	1.47E+02		0.53	3.45E+01
9/1/2007	354.61	0.52	3.38E+01	1.42E+02		0.52	3.38E+01
9/2/2007	354.58	0.49	3.25E+01	1.31E+02		0.49	3.25E+01
9/3/2007	354.58	0.49	3.25E+01	1.19E+02		0.49	3.25E+01
9/4/2007	354.56	0.47	3.17E+01	1.09E+02		0.47	3.17E+01
9/5/2007	354.56	0.47	3.19E+01	1.05E+02		0.47	3.19E+01
9/6/2007	354.56	0.47	3.16E+01	9.50E+01		0.47	3.16E+01
9/7/2007	354.56	0.47	3.17E+01	8.50E+01		0.47	3.17E+01
9/8/2007	354.55	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
9/9/2007	354.55	0.46	3.15E+01	9.40E+01		0.46	3.15E+01
9/10/2007	354.56	0.47	3.17E+01	1.15E+02		0.47	3.17E+01
9/11/2007	354.56	0.47	3.16E+01	1.21E+02		0.47	3.16E+01
9/12/2007	354.58	0.49	3.26E+01	1.46E+02		0.49	3.26E+01
9/13/2007	354.58	0.49	3.28E+01	1.42E+02		0.49	3.28E+01
9/14/2007	354.57	0.48	3.23E+01	1.24E+02		0.48	3.23E+01
9/15/2007	354.56	0.47	3.17E+01	1.07E+02		0.47	3.17E+01
9/16/2007	354.53	0.44	3.06E+01	8.90E+01		0.44	3.06E+01
9/17/2007	354.53	0.44	3.06E+01	8.10E+01		0.44	3.06E+01
9/18/2007	354.54	0.45	3.11E+01	7.50E+01		0.45	3.11E+01
9/19/2007	354.53	0.44	3.03E+01	9.00E+01		0.44	3.03E+01
9/20/2007	354.51	0.42	2.96E+01	7.70E+01		0.42	2.96E+01
9/21/2007	354.51	0.42	2.97E+01	7.00E+01		0.42	2.97E+01
9/22/2007	354.50	0.41	2.95E+01	6.30E+01		0.41	2.95E+01
9/23/2007	354.51	0.42	2.97E+01	6.10E+01		0.42	2.97E+01
9/24/2007	354.51	0.42	2.96E+01	6.00E+01		0.42	2.96E+01
9/25/2007	354.51	0.42	2.98E+01	5.60E+01		0.42	2.98E+01
9/26/2007	354.52	0.43	3.02E+01	5.40E+01		0.43	3.02E+01
9/27/2007	354.53	0.44	3.06E+01	5.10E+01		0.44	3.06E+01
9/28/2007	354.53	0.44	3.05E+01	5.00E+01		0.44	3.05E+01
9/29/2007	354.53	0.44	3.03E+01	5.30E+01		0.44	3.03E+01
9/30/2007	354.53	0.44	3.04E+01	5.00E+01		0.44	3.04E+01
10/1/2007	354.54	0.45	3.10E+01	4.90E+01		0.45	3.10E+01
10/2/2007	354.53	0.44	3.07E+01	4.70E+01		0.44	3.07E+01
10/3/2007	354.54	0.45	3.08E+01	4.80E+01		0.45	3.08E+01
10/4/2007	354.55	0.46	3.12E+01	4.90E+01		0.46	3.12E+01
10/5/2007	354.54	0.45	3.11E+01	4.80E+01		0.45	3.11E+01
10/6/2007	354.54	0.45	3.08E+01	4.60E+01		0.45	3.08E+01
10/7/2007	354.54	0.45	3.10E+01	4.60E+01		0.45	3.10E+01
10/8/2007	354.57	0.48	3.23E+01	4.60E+01		0.48	3.23E+01
10/9/2007	354.59	0.50	3.30E+01	4.80E+01		0.50	3.30E+01
10/10/2007	354.72	0.63	3.93E+01	7.40E+01		0.63	3.93E+01
10/11/2007	354.88	0.79	4.91E+01	1.95E+02		0.79	4.91E+01
10/12/2007	355.38	1.29	9.54E+01	2.44E+02		1.29	9.54E+01
10/13/2007	356.34	2.25	3.47E+02	5.70E+02		2.25	3.47E+02
10/14/2007	355.94	1.85	2.03E+02	6.20E+02		1.85	2.03E+02
10/15/2007	355.29	1.20	8.53E+01	4.50E+02		1.20	8.53E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/16/2007	354.96	0.87	5.42E+01	3.03E+02		0.87	5.42E+01
10/17/2007	354.78	0.69	4.29E+01	2.19E+02		0.69	4.29E+01
10/18/2007	354.67	0.58	3.71E+01	1.60E+02		0.58	3.71E+01
10/19/2007	354.63	0.54	3.50E+01	1.75E+02		0.54	3.50E+01
10/20/2007	355.33	1.24	8.90E+01	2.44E+02		1.24	8.90E+01
10/21/2007	356.00	1.91	2.19E+02	5.50E+02		1.91	2.19E+02
10/22/2007	355.59	1.50	1.27E+02	5.34E+02		1.50	1.27E+02
10/23/2007	355.18	1.09	7.28E+01	3.95E+02		1.09	7.28E+01
10/24/2007	355.03	0.94	5.97E+01	3.22E+02		0.94	5.97E+01
10/25/2007	355.03	0.94	5.99E+01	2.75E+02		0.94	5.99E+01
10/26/2007	355.01	0.92	5.79E+01	2.86E+02		0.92	5.79E+01
10/27/2007	356.42	2.33	3.89E+02	1.36E+03		2.33	3.89E+02
10/28/2007	359.10	5.01	2.09E+03	3.05E+03		5.01	2.09E+03
10/29/2007	358.60	4.51	1.67E+03	2.16E+03		4.51	1.67E+03
10/30/2007	357.95	3.86	1.19E+03	1.59E+03		3.86	1.19E+03
10/31/2007	356.85	2.76	6.92E+02	1.17E+03		2.76	6.92E+02
11/1/2007	356.05	1.96	2.34E+02	7.92E+02		1.96	2.34E+02
11/2/2007	355.68	1.59	1.43E+02	6.10E+02		1.59	1.43E+02
11/3/2007	355.47	1.38	1.08E+02	5.00E+02		1.38	1.08E+02
11/4/2007	355.34	1.25	9.08E+01	4.50E+02		1.25	9.08E+01
11/5/2007	355.22	1.13	7.73E+01	4.08E+02		1.13	7.73E+01
11/6/2007	355.15	1.06	7.02E+01	3.67E+02		1.06	7.02E+01
11/7/2007	355.23	1.14	7.87E+01	4.03E+02		1.14	7.87E+01
11/8/2007	355.20	1.11	7.52E+01	4.02E+02		1.11	7.52E+01
11/9/2007	355.07	0.98	6.32E+01	3.55E+02		0.98	6.32E+01
11/10/2007	355.12	1.03	6.79E+01	3.64E+02		1.03	6.79E+01
11/11/2007	355.40	1.31	9.87E+01	4.31E+02		1.31	9.87E+01
11/12/2007	355.35	1.26	9.21E+01	4.77E+02		1.26	9.21E+01
11/13/2007	355.26	1.17	8.14E+01	4.41E+02		1.17	8.14E+01
11/14/2007	355.35	1.26	9.25E+01	4.61E+02		1.26	9.25E+01
11/15/2007	355.55	1.46	1.20E+02	8.62E+02		1.46	1.20E+02
11/16/2007	357.14	3.05	7.14E+02	1.55E+03		3.05	7.14E+02
11/17/2007	356.84	2.75	6.83E+02	1.29E+03		2.75	6.83E+02
11/18/2007	356.21	2.12	2.92E+02	9.67E+02		2.12	2.92E+02
11/19/2007	355.80	1.71	1.69E+02	7.55E+02		1.71	1.69E+02
11/20/2007	355.83	1.74	1.75E+02	6.98E+02		1.74	1.75E+02
11/21/2007	356.28	2.19	3.22E+02	8.49E+02		2.19	3.22E+02
11/22/2007	356.17	2.08	2.76E+02	8.46E+02		2.08	2.76E+02
11/23/2007	355.91	1.82	1.94E+02	7.37E+02		1.82	1.94E+02
11/24/2007	355.62	1.53	1.33E+02	6.15E+02		1.53	1.33E+02
11/25/2007	355.48	1.39	1.10E+02	5.44E+02		1.39	1.10E+02
11/26/2007	356.25	2.16	3.08E+02	9.78E+02		2.16	3.08E+02
11/27/2007	358.81	4.72	1.83E+03	3.10E+03		4.72	1.83E+03
11/28/2007	358.49	4.40	1.58E+03	2.43E+03		4.40	1.58E+03
11/29/2007	357.65	3.56	1.00E+03	1.74E+03		3.56	1.00E+03
11/30/2007	357.17	3.08	7.28E+02	1.41E+03		3.08	7.28E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/1/2007	356.67	2.58	5.41E+02	1.16E+03		2.58	5.41E+02
12/2/2007	356.29	2.20	3.26E+02	9.33E+02		2.20	3.26E+02
12/3/2007	356.27	2.18	3.17E+02	1.16E+03		2.18	3.17E+02
12/4/2007	356.79	2.70	6.37E+02	1.43E+03		2.70	6.37E+02
12/5/2007	356.56	2.47	4.66E+02	1.20E+03		2.47	4.66E+02
12/6/2007	356.17	2.08	2.76E+02	9.39E+02		2.08	2.76E+02
12/7/2007	355.88	1.79	1.88E+02	7.73E+02		1.79	1.88E+02
12/8/2007	355.82	1.73	1.73E+02	7.22E+02		1.73	1.73E+02
12/9/2007	355.73	1.64	1.53E+02	7.06E+02		1.64	1.53E+02
12/10/2007	356.03	1.94	2.30E+02	8.36E+02		1.94	2.30E+02
12/11/2007	356.48	2.39	4.18E+02	1.11E+03		2.39	4.18E+02
12/12/2007	356.60	2.51	4.95E+02	1.28E+03		2.51	4.95E+02
12/13/2007	356.73	2.64	5.89E+02	1.28E+03		2.64	5.89E+02
12/14/2007	356.46	2.37	4.12E+02	1.16E+03		2.37	4.12E+02
12/15/2007	356.44	2.35	3.97E+02	1.10E+03		2.35	3.97E+02
12/16/2007	355.99	1.90	2.16E+02	9.44E+02		1.90	2.16E+02
12/17/2007	356.20	2.11	2.88E+02	8.63E+02		2.11	2.88E+02
12/18/2007	356.34	2.25	3.50E+02	1.10E+03		2.25	3.50E+02
12/19/2007	356.12	2.03	2.59E+02	1.06E+03		2.03	2.59E+02
12/20/2007	355.96	1.87	2.10E+02	8.76E+02		1.87	2.10E+02
12/21/2007	355.93	1.84	2.01E+02	8.25E+02		1.84	2.01E+02
12/22/2007	355.90	1.81	1.92E+02	7.83E+02		1.81	1.92E+02
12/23/2007	356.00	1.91	2.20E+02	1.08E+03		1.91	2.20E+02
12/24/2007	360.17	6.08	3.17E+03	6.03E+03		6.08	3.17E+03
12/25/2007	361.03	6.94	4.22E+03	4.80E+03		6.94	4.22E+03
12/26/2007	360.43	6.34	3.48E+03	3.95E+03		6.34	3.48E+03
12/27/2007	359.69	5.60	2.66E+03	3.28E+03		5.60	2.66E+03
12/28/2007	359.06	4.97	2.05E+03	2.90E+03		4.97	2.05E+03
12/29/2007	359.35	5.26	2.32E+03	3.49E+03		5.26	2.32E+03
12/30/2007	359.66	5.57	2.62E+03	3.80E+03		5.57	2.62E+03
12/31/2007	359.62	5.53	2.58E+03	3.37E+03		5.53	2.58E+03
1/1/2008	359.62	5.53	2.58E+03	3.36E+03		5.53	2.58E+03
1/2/2008	359.42	5.33	2.39E+03	2.95E+03		5.33	2.39E+03
1/3/2008	358.65	4.56	1.71E+03	2.21E+03		4.56	1.71E+03
1/4/2008	357.91	3.82	1.16E+03	1.72E+03		3.82	1.16E+03
1/5/2008	357.65	3.56	9.97E+02	1.62E+03		3.56	9.97E+02
1/6/2008	357.33	3.24	8.17E+02	1.54E+03		3.24	8.17E+02
1/7/2008	357.49	3.40	9.04E+02	1.78E+03		3.40	9.04E+02
1/8/2008	357.96	3.87	1.20E+03	2.58E+03		3.87	1.20E+03
1/9/2008	358.22	4.13	1.38E+03	3.52E+03		4.13	1.38E+03
1/10/2008	358.13	4.04	1.31E+03	3.19E+03		4.04	1.31E+03
1/11/2008	357.74	3.65	1.05E+03	2.67E+03		3.65	1.05E+03
1/12/2008	357.86	3.77	1.13E+03	2.61E+03		3.77	1.13E+03
1/13/2008	357.52	3.43	9.23E+02	2.07E+03		3.43	9.23E+02
1/14/2008	357.29	3.20	7.94E+02	1.85E+03		3.20	7.94E+02
1/15/2008	357.46	3.37	8.85E+02	1.90E+03		3.37	8.85E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/16/2008	357.17	3.08	7.30E+02	1.66E+03		3.08	7.30E+02
1/17/2008	356.73	2.64	5.87E+02	1.36E+03		2.64	5.87E+02
1/18/2008	356.62	2.53	5.08E+02	1.32E+03		2.53	5.08E+02
1/19/2008	357.07	2.98	9.25E+02	1.53E+03		2.98	9.25E+02
1/20/2008	356.80	2.71	6.47E+02	1.33E+03		2.71	6.47E+02
1/21/2008	356.08	1.99	2.46E+02	9.35E+02		1.99	2.46E+02
1/22/2008	356.19	2.10	2.83E+02	7.59E+02		2.10	2.83E+02
1/23/2008	355.98	1.89	2.14E+02	9.01E+02		1.89	2.14E+02
1/24/2008	355.85	1.76	1.80E+02	8.14E+02		1.76	1.80E+02
1/25/2008	355.88	1.79	1.87E+02	6.30E+02		1.79	1.87E+02
1/26/2008	355.85	1.76	1.81E+02	6.36E+02		1.76	1.81E+02
1/27/2008	355.58	1.49	1.26E+02	6.55E+02		1.49	1.26E+02
1/28/2008	355.51	1.42	1.14E+02	5.89E+02		1.42	1.14E+02
1/29/2008	355.49	1.40	1.10E+02	5.74E+02		1.40	1.10E+02
1/30/2008	355.55	1.46	1.20E+02	6.30E+02		1.46	1.20E+02
1/31/2008	355.77	1.68	1.62E+02	7.05E+02		1.68	1.62E+02
2/1/2008	355.65	1.56	1.37E+02	7.49E+02		1.56	1.37E+02
2/2/2008	357.23	3.14	7.60E+02	2.12E+03		3.14	7.60E+02
2/3/2008	357.80	3.71	1.09E+03	2.24E+03		3.71	1.09E+03
2/4/2008	357.55	3.46	9.37E+02	1.95E+03		3.46	9.37E+02
2/5/2008	357.18	3.09	7.38E+02	2.12E+03		3.09	7.38E+02
2/6/2008	358.70	4.61	1.75E+03	4.28E+03		4.61	1.75E+03
2/7/2008	359.89	5.80	2.86E+03	6.61E+03		5.80	2.86E+03
2/8/2008	359.59	5.50	2.56E+03	4.28E+03		5.50	2.56E+03
2/9/2008	358.72	4.63	1.77E+03	2.98E+03		4.63	1.77E+03
2/10/2008	358.09	4.00	1.29E+03	2.38E+03		4.00	1.29E+03
2/11/2008	357.41	3.32	8.57E+02	1.76E+03		3.32	8.57E+02
2/12/2008	357.35	3.26	8.24E+02	1.35E+03		3.26	8.24E+02
2/13/2008	358.31	4.22	1.44E+03	3.84E+03		4.22	1.44E+03
2/14/2008	362.30	8.21	6.08E+03	8.45E+03		8.21	6.08E+03
2/15/2008	362.42	8.33	6.27E+03	7.21E+03		8.33	6.27E+03
2/16/2008	362.10	8.01	5.77E+03	6.01E+03		8.01	5.77E+03
2/17/2008	361.46	7.37	4.81E+03	5.03E+03		7.37	4.81E+03
2/18/2008	362.13	8.04	5.81E+03	7.66E+03		8.04	5.81E+03
2/19/2008	363.14	9.05	7.49E+03	9.19E+03		9.05	7.49E+03
2/20/2008	362.63	8.54	6.61E+03	6.75E+03		8.54	6.61E+03
2/21/2008	361.89	7.80	5.43E+03	5.35E+03	5.35E+03	7.80	5.35E+03
2/22/2008	360.77	6.68	3.89E+03	4.24E+03		6.68	3.89E+03
2/23/2008	359.57	5.48	2.54E+03	3.32E+03		5.48	2.54E+03
2/24/2008	358.67	4.58	1.72E+03	2.56E+03		4.58	1.72E+03
2/25/2008	358.18	4.09	1.35E+03	2.04E+03		4.09	1.35E+03
2/26/2008	357.87	3.78	1.14E+03	1.96E+03		3.78	1.14E+03
2/27/2008	358.76	4.67	1.80E+03	2.59E+03		4.67	1.80E+03
2/28/2008	358.49	4.40	1.58E+03	2.49E+03		4.40	1.58E+03
2/29/2008	357.91	3.82	1.16E+03	1.84E+03		3.82	1.16E+03
3/1/2008	357.48	3.39	8.97E+02	1.72E+03		3.39	8.97E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/2/2008	357.29	3.20	7.92E+02	1.58E+03		3.20	7.92E+02
3/3/2008	357.25	3.16	7.73E+02	1.50E+03		3.16	7.73E+02
3/4/2008	358.06	3.97	1.26E+03	2.07E+03		3.97	1.26E+03
3/5/2008	362.44	8.35	6.31E+03	1.24E+04		8.35	6.31E+03
3/6/2008	363.23	9.14	7.66E+03	1.10E+04		9.14	7.66E+03
3/7/2008	362.92	8.83	7.11E+03	8.02E+03		8.83	7.11E+03
3/8/2008	363.68	9.59	8.49E+03	1.30E+04		9.59	8.49E+03
3/9/2008	364.87	10.78	1.09E+04	1.67E+04		10.78	1.09E+04
3/10/2008	364.48	10.39	1.01E+04	9.74E+03	9.74E+03	10.39	9.74E+03
3/11/2008	364.22	10.13	9.57E+03	7.98E+03	7.98E+03	10.13	7.98E+03
3/12/2008	363.61	9.52	8.36E+03	7.19E+03	7.19E+03	9.52	7.19E+03
3/13/2008	362.28	8.19	6.04E+03	6.09E+03		8.19	6.04E+03
3/14/2008	360.59	6.50	3.67E+03	4.63E+03		6.50	3.67E+03
3/15/2008	359.74	5.65	2.71E+03	4.06E+03		5.65	2.71E+03
3/16/2008	359.35	5.26	2.32E+03	3.71E+03		5.26	2.32E+03
3/17/2008	358.90	4.81	1.91E+03	3.12E+03		4.81	1.91E+03
3/18/2008	358.33	4.24	1.46E+03	2.48E+03		4.24	1.46E+03
3/19/2008	358.64	4.55	1.70E+03	3.13E+03		4.55	1.70E+03
3/20/2008	360.86	6.77	4.00E+03	5.85E+03		6.77	4.00E+03
3/21/2008	360.29	6.20	3.31E+03	4.51E+03		6.20	3.31E+03
3/22/2008	359.63	5.54	2.59E+03	3.44E+03		5.54	2.59E+03
3/23/2008	358.96	4.87	1.96E+03	2.81E+03		4.87	1.96E+03
3/24/2008	358.33	4.24	1.46E+03	2.30E+03		4.24	1.46E+03
3/25/2008	357.85	3.76	1.13E+03	1.94E+03		3.76	1.13E+03
3/26/2008	357.50	3.41	9.11E+02	1.69E+03		3.41	9.11E+02
3/27/2008	357.21	3.12	7.49E+02	1.50E+03		3.12	7.49E+02
3/28/2008	357.04	2.95	8.98E+02	1.47E+03		2.95	8.98E+02
3/29/2008	356.97	2.88	8.17E+02	1.44E+03		2.88	8.17E+02
3/30/2008	356.73	2.64	5.88E+02	1.27E+03		2.64	5.88E+02
3/31/2008	356.52	2.43	4.41E+02	1.20E+03		2.43	4.41E+02
4/1/2008	356.76	2.67	6.16E+02	1.43E+03		2.67	6.16E+02
4/2/2008	357.15	3.06	7.19E+02	1.75E+03		3.06	7.19E+02
4/3/2008	356.94	2.85	7.80E+02	1.50E+03		2.85	7.80E+02
4/4/2008	356.89	2.80	7.26E+02	2.03E+03		2.80	7.26E+02
4/5/2008	357.65	3.56	9.98E+02	2.58E+03		3.56	9.98E+02
4/6/2008	357.31	3.22	8.04E+02	1.93E+03		3.22	8.04E+02
4/7/2008	356.90	2.81	7.41E+02	1.56E+03		2.81	7.41E+02
4/8/2008	356.65	2.56	5.28E+02	1.32E+03		2.56	5.28E+02
4/9/2008	356.43	2.34	3.94E+02	1.13E+03		2.34	3.94E+02
4/10/2008	356.27	2.18	3.17E+02	1.09E+03		2.18	3.17E+02
4/11/2008	356.15	2.06	2.71E+02	1.01E+03		2.06	2.71E+02
4/12/2008	356.40	2.31	3.77E+02	1.30E+03		2.31	3.77E+02
4/13/2008	356.71	2.62	5.71E+02	1.41E+03		2.62	5.71E+02
4/14/2008	356.39	2.30	3.75E+02	1.19E+03		2.30	3.75E+02
4/15/2008	356.12	2.03	2.59E+02	1.01E+03		2.03	2.59E+02
4/16/2008	355.95	1.86	2.06E+02	8.69E+02		1.86	2.06E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/17/2008	355.81	1.72	1.71E+02	8.16E+02		1.72	1.71E+02
4/18/2008	355.72	1.63	1.51E+02	7.53E+02		1.63	1.51E+02
4/19/2008	355.64	1.55	1.36E+02	7.11E+02		1.55	1.36E+02
4/20/2008	355.52	1.43	1.16E+02	6.67E+02		1.43	1.16E+02
4/21/2008	355.47	1.38	1.07E+02	6.27E+02		1.38	1.07E+02
4/22/2008	355.43	1.34	1.03E+02	6.07E+02		1.34	1.03E+02
4/23/2008	355.34	1.25	9.06E+01	5.40E+02		1.25	9.06E+01
4/24/2008	355.29	1.20	8.44E+01	5.25E+02		1.20	8.44E+01
4/25/2008	355.24	1.15	7.90E+01	5.15E+02		1.15	7.90E+01
4/26/2008	355.17	1.08	7.26E+01	4.84E+02		1.08	7.26E+01
4/27/2008	355.16	1.07	7.10E+01	4.64E+02		1.07	7.10E+01
4/28/2008	355.26	1.17	8.14E+01	8.26E+02		1.17	8.14E+01
4/29/2008	357.81	3.72	1.10E+03	3.29E+03		3.72	1.10E+03
4/30/2008	357.64	3.55	9.91E+02	2.24E+03		3.55	9.91E+02
5/1/2008	356.68	2.59	5.47E+02	1.50E+03		2.59	5.47E+02
5/2/2008	356.35	2.26	3.53E+02	1.12E+03		2.26	3.53E+02
5/3/2008	356.35	2.26	3.55E+02	1.12E+03		2.26	3.55E+02
5/4/2008	356.39	2.30	3.74E+02	1.26E+03		2.30	3.74E+02
5/5/2008	356.46	2.37	4.07E+02	1.25E+03		2.37	4.07E+02
5/6/2008	356.08	1.99	2.46E+02	1.02E+03		1.99	2.46E+02
5/7/2008	355.80	1.71	1.68E+02	8.37E+02		1.71	1.68E+02
5/8/2008	355.63	1.54	1.34E+02	7.24E+02		1.54	1.34E+02
5/9/2008	355.65	1.56	1.38E+02	7.50E+02		1.56	1.38E+02
5/10/2008	356.68	2.59	5.51E+02	1.23E+03		2.59	5.51E+02
5/11/2008	356.64	2.55	5.23E+02	1.23E+03		2.55	5.23E+02
5/12/2008	356.15	2.06	2.71E+02	9.64E+02		2.06	2.71E+02
5/13/2008	355.86	1.77	1.84E+02	7.72E+02		1.77	1.84E+02
5/14/2008	355.64	1.55	1.36E+02	6.72E+02		1.55	1.36E+02
5/15/2008	355.51	1.42	1.14E+02	6.17E+02		1.42	1.14E+02
5/16/2008	355.59	1.50	1.27E+02	6.60E+02		1.50	1.27E+02
5/17/2008	357.36	3.27	8.29E+02	1.82E+03		3.27	8.29E+02
5/18/2008	357.53	3.44	9.26E+02	1.76E+03		3.44	9.26E+02
5/19/2008	357.23	3.14	7.62E+02	1.51E+03		3.14	7.62E+02
5/20/2008	356.85	2.76	6.88E+02	1.23E+03		2.76	6.88E+02
5/21/2008	356.67	2.58	5.40E+02	1.07E+03		2.58	5.40E+02
5/22/2008	356.57	2.48	4.77E+02	1.01E+03		2.48	4.77E+02
5/23/2008	356.41	2.32	3.83E+02	9.27E+02		2.32	3.83E+02
5/24/2008	356.10	2.01	2.52E+02	8.05E+02		2.01	2.52E+02
5/25/2008	355.86	1.77	1.83E+02	6.69E+02		1.77	1.83E+02
5/26/2008	355.63	1.54	1.34E+02	5.91E+02		1.54	1.34E+02
5/27/2008	355.49	1.40	1.11E+02	5.33E+02		1.40	1.11E+02
5/28/2008	356.15	2.06	2.69E+02	5.76E+02		2.06	2.69E+02
5/29/2008	356.18	2.09	2.79E+02	7.19E+02		2.09	2.79E+02
5/30/2008	355.81	1.72	1.70E+02	6.30E+02		1.72	1.70E+02
5/31/2008	355.47	1.38	1.08E+02	4.93E+02		1.38	1.08E+02
6/1/2008	355.52	1.43	1.15E+02	5.07E+02		1.43	1.15E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/2/2008	355.50	1.41	1.13E+02	4.94E+02		1.41	1.13E+02
6/3/2008	355.23	1.14	7.82E+01	4.35E+02		1.14	7.82E+01
6/4/2008	355.15	1.06	7.07E+01	3.78E+02		1.06	7.07E+01
6/5/2008	355.31	1.22	8.67E+01	4.06E+02		1.22	8.67E+01
6/6/2008	355.23	1.14	7.78E+01	4.77E+02		1.14	7.78E+01
6/7/2008	355.14	1.05	6.89E+01	4.44E+02		1.05	6.89E+01
6/8/2008	355.08	0.99	6.37E+01	3.69E+02		0.99	6.37E+01
6/9/2008	355.07	0.98	6.27E+01	3.43E+02		0.98	6.27E+01
6/10/2008	355.01	0.92	5.81E+01	3.46E+02		0.92	5.81E+01
6/11/2008	355.01	0.92	5.79E+01	3.00E+02		0.92	5.79E+01
6/12/2008	355.04	0.95	6.03E+01	2.83E+02		0.95	6.03E+01
6/13/2008	354.92	0.83	5.14E+01	2.80E+02		0.83	5.14E+01
6/14/2008	354.79	0.70	4.35E+01	2.50E+02		0.70	4.35E+01
6/15/2008	354.77	0.68	4.24E+01	2.08E+02		0.68	4.24E+01
6/16/2008	354.80	0.71	4.39E+01	2.04E+02		0.71	4.39E+01
6/17/2008	354.76	0.67	4.14E+01	2.15E+02		0.67	4.14E+01
6/18/2008	354.70	0.61	3.85E+01	2.08E+02		0.61	3.85E+01
6/19/2008	354.82	0.73	4.51E+01	2.59E+02		0.73	4.51E+01
6/20/2008	354.87	0.78	4.84E+01	2.47E+02		0.78	4.84E+01
6/21/2008	354.79	0.70	4.35E+01	2.31E+02		0.70	4.35E+01
6/22/2008	354.82	0.73	4.48E+01	2.05E+02		0.73	4.48E+01
6/23/2008	354.77	0.68	4.20E+01	2.85E+02		0.68	4.20E+01
6/24/2008	354.71	0.62	3.90E+01	2.48E+02		0.62	3.90E+01
6/25/2008	354.62	0.53	3.46E+01	1.96E+02		0.53	3.46E+01
6/26/2008	354.55	0.46	3.12E+01	1.86E+02		0.46	3.12E+01
6/27/2008	354.51	0.42	2.99E+01	1.33E+02		0.42	2.99E+01
6/28/2008	354.53	0.44	3.03E+01	1.24E+02		0.44	3.03E+01
6/29/2008	354.50	0.41	2.94E+01	1.35E+02		0.41	2.94E+01
6/30/2008	354.52	0.43	3.01E+01	1.57E+02		0.43	3.01E+01
7/1/2008	354.50	0.41	2.93E+01	2.15E+02		0.41	2.93E+01
7/2/2008	354.45	0.36	2.73E+01	1.92E+02		0.36	2.73E+01
7/3/2008	354.43	0.34	2.67E+01	1.91E+02		0.34	2.67E+01
7/4/2008	354.43	0.34	2.67E+01	1.97E+02		0.34	2.67E+01
7/5/2008	354.49	0.40	2.88E+01	1.97E+02		0.40	2.88E+01
7/6/2008	354.49	0.40	2.90E+01	1.96E+02		0.40	2.90E+01
7/7/2008	354.50	0.41	2.93E+01	1.92E+02		0.41	2.93E+01
7/8/2008	354.45	0.36	2.74E+01	1.79E+02		0.36	2.74E+01
7/9/2008	354.44	0.35	2.70E+01	1.71E+02		0.35	2.70E+01
7/10/2008	354.44	0.35	2.69E+01	1.82E+02		0.35	2.69E+01
7/11/2008	354.43	0.34	2.65E+01	1.69E+02		0.34	2.65E+01
7/12/2008	354.45	0.36	2.73E+01	1.41E+02		0.36	2.73E+01
7/13/2008	354.46	0.37	2.79E+01	1.32E+02		0.37	2.79E+01
7/14/2008	354.48	0.39	2.87E+01	1.48E+02		0.39	2.87E+01
7/15/2008	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
7/16/2008	354.45	0.36	2.76E+01	1.63E+02		0.36	2.76E+01
7/17/2008	354.45	0.36	2.73E+01	1.45E+02		0.36	2.73E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/18/2008	354.47	0.38	2.83E+01	1.35E+02		0.38	2.83E+01
7/19/2008	354.48	0.39	2.86E+01	1.09E+02		0.39	2.86E+01
7/20/2008	354.49	0.40	2.88E+01	1.05E+02		0.40	2.88E+01
7/21/2008	354.48	0.39	2.87E+01	1.00E+02		0.39	2.87E+01
7/22/2008	354.48	0.39	2.86E+01	9.00E+01		0.39	2.86E+01
7/23/2008	354.49	0.40	2.90E+01	9.50E+01		0.40	2.90E+01
7/24/2008	354.59	0.50	3.32E+01	2.86E+02		0.50	3.32E+01
7/25/2008	355.23	1.14	7.83E+01	5.35E+02		1.14	7.83E+01
7/26/2008	354.86	0.77	4.73E+01	4.18E+02		0.77	4.73E+01
7/27/2008	354.48	0.39	2.85E+01	3.10E+02		0.39	2.85E+01
7/28/2008	354.40	0.31	2.58E+01	2.00E+02		0.31	2.58E+01
7/29/2008	354.40	0.31	2.56E+01	2.13E+02		0.31	2.56E+01
7/30/2008	354.43	0.34	2.66E+01	1.77E+02		0.34	2.66E+01
7/31/2008	354.46	0.37	2.76E+01	1.62E+02		0.37	2.76E+01
8/1/2008	354.45	0.36	2.74E+01	9.60E+01		0.36	2.74E+01
8/2/2008	354.45	0.36	2.76E+01	1.18E+02		0.36	2.76E+01
8/3/2008	354.61	0.52	3.41E+01	1.36E+02		0.52	3.41E+01
8/4/2008	354.67	0.58	3.70E+01	2.14E+02		0.58	3.70E+01
8/5/2008	354.58	0.49	3.28E+01	1.93E+02		0.49	3.28E+01
8/6/2008	354.59	0.50	3.33E+01	1.80E+02		0.50	3.33E+01
8/7/2008	355.38	1.29	9.61E+01	2.48E+02		1.29	9.61E+01
8/8/2008	354.98	0.89	5.61E+01	3.95E+02		0.89	5.61E+01
8/9/2008	354.63	0.54	3.50E+01	2.86E+02		0.54	3.50E+01
8/10/2008	354.46	0.37	2.76E+01	2.24E+02		0.37	2.76E+01
8/11/2008	354.48	0.39	2.86E+01	1.73E+02		0.39	2.86E+01
8/12/2008	355.06	0.97	6.23E+01	2.33E+02		0.97	6.23E+01
8/13/2008	355.00	0.91	5.71E+01	3.48E+02		0.91	5.71E+01
8/14/2008	354.73	0.64	3.99E+01	3.90E+02		0.64	3.99E+01
8/15/2008	354.58	0.49	3.26E+01	3.22E+02		0.49	3.26E+01
8/16/2008	354.73	0.64	3.99E+01	2.66E+02		0.64	3.99E+01
8/17/2008	354.79	0.70	4.31E+01	2.39E+02		0.70	4.31E+01
8/18/2008	354.65	0.56	3.57E+01	2.29E+02		0.56	3.57E+01
8/19/2008	354.54	0.45	3.08E+01	1.82E+02		0.45	3.08E+01
8/20/2008	354.47	0.38	2.81E+01	1.68E+02		0.38	2.81E+01
8/21/2008	354.45	0.36	2.73E+01	1.51E+02		0.36	2.73E+01
8/22/2008	354.44	0.35	2.69E+01	1.08E+02		0.35	2.69E+01
8/23/2008	354.42	0.33	2.62E+01	7.80E+01		0.33	2.62E+01
8/24/2008	354.42	0.33	2.62E+01	8.40E+01		0.33	2.62E+01
8/25/2008	354.40	0.31	2.56E+01	8.70E+01		0.31	2.56E+01
8/26/2008	354.38	0.29	2.49E+01	8.90E+01		0.29	2.49E+01
8/27/2008	354.36	0.27	2.43E+01	8.40E+01		0.27	2.43E+01
8/28/2008	354.35	0.26	2.40E+01	7.90E+01		0.26	2.40E+01
8/29/2008	354.35	0.26	2.41E+01	7.60E+01		0.26	2.41E+01
8/30/2008	354.38	0.29	2.48E+01	7.90E+01		0.29	2.48E+01
8/31/2008	354.38	0.29	2.48E+01	7.70E+01		0.29	2.48E+01
9/1/2008	354.36	0.27	2.43E+01	7.90E+01		0.27	2.43E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/2/2008	354.35	0.26	2.40E+01	7.80E+01		0.26	2.40E+01
9/3/2008	354.32	0.23	2.31E+01	7.50E+01		0.23	2.31E+01
9/4/2008	354.32	0.23	2.31E+01	7.20E+01		0.23	2.31E+01
9/5/2008	354.34	0.25	2.37E+01	6.80E+01		0.25	2.37E+01
9/6/2008	354.47	0.38	2.80E+01	1.04E+02		0.38	2.80E+01
9/7/2008	356.71	2.62	5.70E+02	6.35E+02		2.62	5.70E+02
9/8/2008	356.32	2.23	3.39E+02	8.42E+02		2.23	3.39E+02
9/9/2008	355.75	1.66	1.58E+02	7.02E+02		1.66	1.58E+02
9/10/2008	356.61	2.52	5.02E+02	1.03E+03		2.52	5.02E+02
9/11/2008	356.06	1.97	2.40E+02	7.76E+02		1.97	2.40E+02
9/12/2008	355.40	1.31	9.82E+01	4.85E+02		1.31	9.82E+01
9/13/2008	355.28	1.19	8.32E+01	4.26E+02		1.19	8.32E+01
9/14/2008	355.21	1.12	7.63E+01	4.80E+02		1.12	7.63E+01
9/15/2008	355.05	0.96	6.11E+01	3.97E+02		0.96	6.11E+01
9/16/2008	354.89	0.80	4.93E+01	2.66E+02		0.80	4.93E+01
9/17/2008	354.74	0.65	4.06E+01	2.08E+02		0.65	4.06E+01
9/18/2008	354.64	0.55	3.52E+01	1.84E+02		0.55	3.52E+01
9/19/2008	354.56	0.47	3.20E+01	1.50E+02		0.47	3.20E+01
9/20/2008	354.49	0.40	2.89E+01	1.08E+02		0.40	2.89E+01
9/21/2008	354.45	0.36	2.74E+01	1.13E+02		0.36	2.74E+01
9/22/2008	354.44	0.35	2.70E+01	1.07E+02		0.35	2.70E+01
9/23/2008	354.42	0.33	2.65E+01	1.16E+02		0.33	2.65E+01
9/24/2008	354.42	0.33	2.62E+01	7.10E+01		0.33	2.62E+01
9/25/2008	354.41	0.32	2.61E+01	1.00E+02		0.32	2.61E+01
9/26/2008	354.55	0.46	3.12E+01	1.36E+02		0.46	3.12E+01
9/27/2008	355.53	1.44	1.17E+02	3.58E+02		1.44	1.17E+02
9/28/2008	355.33	1.24	9.00E+01	4.60E+02		1.24	9.00E+01
9/29/2008	355.41	1.32	9.96E+01	4.97E+02		1.32	9.96E+01
9/30/2008	355.57	1.48	1.23E+02	5.43E+02		1.48	1.23E+02
10/1/2008	355.29	1.20	8.51E+01	4.58E+02		1.20	8.51E+01
10/2/2008	355.22	1.13	7.69E+01	3.73E+02		1.13	7.69E+01
10/3/2008	355.08	0.99	6.40E+01	3.07E+02		0.99	6.40E+01
10/4/2008	354.94	0.85	5.27E+01	2.56E+02		0.85	5.27E+01
10/5/2008	354.84	0.75	4.63E+01	2.19E+02		0.75	4.63E+01
10/6/2008	354.87	0.78	4.85E+01	2.02E+02		0.78	4.85E+01
10/7/2008	354.82	0.73	4.49E+01	1.98E+02		0.73	4.49E+01
10/8/2008	354.74	0.65	4.07E+01	1.71E+02		0.65	4.07E+01
10/9/2008	354.70	0.61	3.85E+01	1.77E+02		0.61	3.85E+01
10/10/2008	354.66	0.57	3.63E+01	1.68E+02		0.57	3.63E+01
10/11/2008	354.63	0.54	3.48E+01	1.26E+02		0.54	3.48E+01
10/12/2008	354.60	0.51	3.34E+01	1.31E+02		0.51	3.34E+01
10/13/2008	354.58	0.49	3.25E+01	1.34E+02		0.49	3.25E+01
10/14/2008	354.57	0.48	3.20E+01	1.20E+02		0.48	3.20E+01
10/15/2008	354.55	0.46	3.13E+01	1.21E+02		0.46	3.13E+01
10/16/2008	354.53	0.44	3.06E+01	1.12E+02		0.44	3.06E+01
10/17/2008	354.53	0.44	3.05E+01	1.03E+02		0.44	3.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/18/2008	354.62	0.53	3.43E+01	1.03E+02		0.53	3.43E+01
10/19/2008	354.66	0.57	3.64E+01	1.09E+02		0.57	3.64E+01
10/20/2008	354.66	0.57	3.63E+01	1.17E+02		0.57	3.63E+01
10/21/2008				1.35E+02	1.35E+02		1.35E+02
10/22/2008				1.16E+02	1.16E+02		1.16E+02
10/23/2008				1.16E+02	1.16E+02		1.16E+02
10/24/2008				1.21E+02	1.21E+02		1.21E+02
10/25/2008				2.00E+02	2.00E+02		2.00E+02
10/26/2008				1.71E+03	1.71E+03		1.71E+03
10/27/2008				1.39E+03	1.39E+03		1.39E+03
10/28/2008				2.05E+03	2.05E+03		2.05E+03
10/29/2008				4.20E+03	4.20E+03		4.20E+03
10/30/2008				2.97E+03	2.97E+03		2.97E+03
10/31/2008				2.17E+03	2.17E+03		2.17E+03
11/1/2008				1.61E+03	1.61E+03		1.61E+03
11/2/2008				1.18E+03	1.18E+03		1.18E+03
11/3/2008				9.61E+02	9.61E+02		9.61E+02
11/4/2008				7.99E+02	7.99E+02		7.99E+02
11/5/2008				6.54E+02	6.54E+02		6.54E+02
11/6/2008				6.44E+02	6.44E+02		6.44E+02
11/7/2008				7.06E+02	7.06E+02		7.06E+02
11/8/2008				7.13E+02	7.13E+02		7.13E+02
11/9/2008				6.50E+02	6.50E+02		6.50E+02
11/10/2008				6.02E+02	6.02E+02		6.02E+02
11/11/2008	355.47	1.38	1.08E+02	5.35E+02		1.38	1.08E+02
11/12/2008	355.37	1.28	9.46E+01	4.82E+02		1.28	9.46E+01
11/13/2008	355.28	1.19	8.38E+01	4.46E+02		1.19	8.38E+01
11/14/2008	355.54	1.45	1.18E+02	6.33E+02		1.45	1.18E+02
11/15/2008	355.91	1.82	1.95E+02	9.10E+02		1.82	1.95E+02
11/16/2008	357.60	3.51	9.71E+02	2.26E+03		3.51	9.71E+02
11/17/2008	357.62	3.53	9.83E+02	1.94E+03		3.53	9.83E+02
11/18/2008	356.98	2.89	8.19E+02	1.42E+03		2.89	8.19E+02
11/19/2008	356.47	2.38	4.13E+02	1.10E+03		2.38	4.13E+02
11/20/2008	356.12	2.03	2.60E+02	9.01E+02		2.03	2.60E+02
11/21/2008	355.95	1.86	2.06E+02	7.91E+02		1.86	2.06E+02
11/22/2008	355.76	1.67	1.60E+02	6.92E+02		1.67	1.60E+02
11/23/2008	355.57	1.48	1.24E+02	5.90E+02		1.48	1.24E+02
11/24/2008	355.47	1.38	1.09E+02	5.44E+02		1.38	1.09E+02
11/25/2008	355.65	1.56	1.38E+02	6.82E+02		1.56	1.38E+02
11/26/2008	356.23	2.14	2.99E+02	9.48E+02		2.14	2.99E+02
11/27/2008	356.04	1.95	2.32E+02	9.12E+02		1.95	2.32E+02
11/28/2008	355.80	1.71	1.68E+02	7.63E+02		1.71	1.68E+02
11/29/2008	355.64	1.55	1.37E+02	6.68E+02		1.55	1.37E+02
11/30/2008	355.55	1.46	1.21E+02	6.40E+02		1.46	1.21E+02
12/1/2008	356.83	2.74	6.76E+02	1.58E+03		2.74	6.76E+02
12/2/2008	357.48	3.39	8.98E+02	1.82E+03		3.39	8.98E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/3/2008	356.87	2.78	7.13E+02	1.38E+03		2.78	7.13E+02
12/4/2008	356.37	2.28	3.62E+02	1.08E+03		2.28	3.62E+02
12/5/2008	356.21	2.12	2.93E+02	9.50E+02		2.12	2.93E+02
12/6/2008	356.08	1.99	2.44E+02	8.44E+02		1.99	2.44E+02
12/7/2008	355.88	1.79	1.89E+02	7.70E+02		1.79	1.89E+02
12/8/2008	355.66	1.57	1.39E+02	6.44E+02		1.57	1.39E+02
12/9/2008	355.56	1.47	1.22E+02	6.00E+02		1.47	1.22E+02
12/10/2008	355.78	1.69	1.63E+02	9.53E+02		1.69	1.63E+02
12/11/2008	357.39	3.30	8.45E+02	2.12E+03		3.30	8.45E+02
12/12/2008	362.58	8.49	6.53E+03	1.19E+04		8.49	6.53E+03
12/13/2008	362.91	8.82	7.09E+03	9.01E+03		8.82	7.09E+03
12/14/2008	362.28	8.19	6.04E+03	6.22E+03		8.19	6.04E+03
12/15/2008	361.54	7.45	4.92E+03	5.03E+03		7.45	4.92E+03
12/16/2008	360.68	6.59	3.78E+03	4.30E+03		6.59	3.78E+03
12/17/2008	359.61	5.52	2.58E+03	3.43E+03		5.52	2.58E+03
12/18/2008	358.87	4.78	1.89E+03	2.84E+03		4.78	1.89E+03
12/19/2008	358.26	4.17	1.40E+03	2.28E+03		4.17	1.40E+03
12/20/2008	357.74	3.65	1.06E+03	1.85E+03		3.65	1.06E+03
12/21/2008	357.58	3.49	9.56E+02	1.69E+03		3.49	9.56E+02
12/22/2008	358.25	4.16	1.40E+03	1.49E+03		4.16	1.40E+03
12/23/2008	356.83	2.74	6.74E+02	1.28E+03		2.74	6.74E+02
12/24/2008	357.05	2.96	9.06E+02	1.69E+03		2.96	9.06E+02
12/25/2008	359.35	5.26	2.33E+03	4.78E+03		5.26	2.33E+03
12/26/2008	359.84	5.75	2.81E+03	4.49E+03		5.75	2.81E+03
12/27/2008	359.31	5.22	2.28E+03	3.33E+03		5.22	2.28E+03
12/28/2008	359.46	5.37	2.43E+03	3.84E+03		5.37	2.43E+03
12/29/2008	359.60	5.51	2.56E+03	4.40E+03		5.51	2.56E+03
12/30/2008	358.97	4.88	1.98E+03	3.20E+03		4.88	1.98E+03
12/31/2008	358.42	4.33	1.52E+03	2.48E+03		4.33	1.52E+03
1/1/2009	358.33	4.24	1.46E+03	1.81E+03		4.24	1.46E+03
1/2/2009	365.20	11.11	1.17E+04	1.54E+03	1.54E+03	11.11	1.54E+03
1/3/2009	367.79	13.70	1.84E+04	1.52E+03	1.52E+03	13.70	1.52E+03
1/4/2009	356.73	2.64	5.85E+02	1.32E+03		2.64	5.85E+02
1/5/2009	356.59	2.50	4.90E+02	1.25E+03		2.50	4.90E+02
1/6/2009	356.54	2.45	4.58E+02	1.18E+03		2.45	4.58E+02
1/7/2009	356.56	2.47	4.71E+02	1.19E+03		2.47	4.71E+02
1/8/2009	357.43	3.34	8.68E+02	1.59E+03		3.34	8.68E+02
1/9/2009	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
1/10/2009	356.59	2.50	4.86E+02	1.19E+03		2.50	4.86E+02
1/11/2009	356.15	2.06	2.69E+02	9.23E+02		2.06	2.69E+02
1/12/2009	359.05	4.96	2.05E+03	9.90E+02	9.90E+02	4.96	9.90E+02
1/13/2009	356.37	2.28	3.65E+02	9.41E+02		2.28	3.65E+02
1/14/2009	361.44	7.35	4.79E+03	9.32E+02	9.32E+02	7.35	9.32E+02
1/15/2009	355.75	1.66	1.57E+02	3.63E+03		1.66	1.57E+02
1/16/2009	356.33	2.24	3.44E+02	Ice		2.24	3.44E+02
1/17/2009	355.75	1.66	1.57E+02	Ice		1.66	1.57E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/18/2009	355.57	1.48	1.24E+02	Ice		1.48	1.24E+02
1/19/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
1/20/2009	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/21/2009	355.55	1.46	1.21E+02	Ice		1.46	1.21E+02
1/22/2009	355.49	1.40	1.11E+02	Ice		1.40	1.11E+02
1/23/2009	355.37	1.28	9.48E+01	Ice		1.28	9.48E+01
1/24/2009	355.38	1.29	9.54E+01	Ice		1.29	9.54E+01
1/25/2009	366.23	12.14	1.41E+04	Ice		12.14	1.41E+04
1/26/2009	355.25	1.16	7.99E+01	Ice		1.16	7.99E+01
1/27/2009	355.18	1.09	7.29E+01	Ice		1.09	7.29E+01
1/28/2009	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
1/29/2009	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
1/30/2009	355.60	1.51	1.29E+02	Ice		1.51	1.29E+02
1/31/2009	355.47	1.38	1.09E+02	Ice		1.38	1.09E+02
2/1/2009	355.37	1.28	9.39E+01	Ice		1.28	9.39E+01
2/2/2009	355.32	1.23	8.86E+01	Ice		1.23	8.86E+01
2/3/2009	355.40	1.31	9.80E+01	Ice		1.31	9.80E+01
2/4/2009	355.40	1.31	9.89E+01	Ice		1.31	9.89E+01
2/5/2009	355.35	1.26	9.25E+01	Ice		1.26	9.25E+01
2/6/2009	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
2/7/2009	355.25	1.16	8.01E+01	Ice		1.16	8.01E+01
2/8/2009	355.34	1.25	9.08E+01	Ice		1.25	9.08E+01
2/9/2009	356.17	2.08	2.78E+02	Ice		2.08	2.78E+02
2/10/2009	356.37	2.28	3.64E+02	Ice		2.28	3.64E+02
2/11/2009	356.42	2.33	3.86E+02	Ice		2.33	3.86E+02
2/12/2009	358.15	4.06	1.32E+03	Ice		4.06	1.32E+03
2/13/2009	359.11	5.02	2.10E+03	Ice		5.02	2.10E+03
2/14/2009	358.20	4.11	1.36E+03	Ice		4.11	1.36E+03
2/15/2009	357.35	3.26	8.28E+02	Ice		3.26	8.28E+02
2/16/2009	356.83	2.74	6.71E+02	Ice		2.74	6.71E+02
2/17/2009	356.54	2.45	4.53E+02	Ice		2.45	4.53E+02
2/18/2009	356.32	2.23	3.39E+02	Ice		2.23	3.39E+02
2/19/2009	356.33	2.24	3.46E+02	Ice		2.24	3.46E+02
2/20/2009	356.50	2.41	4.30E+02	Ice		2.41	4.30E+02
2/21/2009	356.17	2.08	2.77E+02	Ice		2.08	2.77E+02
2/22/2009	356.05	1.96	2.35E+02	Ice		1.96	2.35E+02
2/23/2009	355.94	1.85	2.04E+02	Ice		1.85	2.04E+02
2/24/2009	355.71	1.62	1.49E+02	Ice		1.62	1.49E+02
2/25/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
2/26/2009				Ice			
2/27/2009				Ice			
2/28/2009				Ice			
3/1/2009				Ice			
3/2/2009				Ice			
3/3/2009				Ice			
3/4/2009				Ice			

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/5/2009				Ice			
3/6/2009				Ice			
3/7/2009				Ice			
3/8/2009				Ice			
3/9/2009				Ice			
3/10/2009				2.71E+03	2.71E+03		2.71E+03
3/11/2009				2.28E+03	2.28E+03		2.28E+03
3/12/2009				1.71E+03	1.71E+03		1.71E+03
3/13/2009				1.33E+03	1.33E+03		1.33E+03
3/14/2009				1.12E+03	1.12E+03		1.12E+03
3/15/2009				1.01E+03	1.01E+03		1.01E+03
3/16/2009				9.32E+02	9.32E+02		9.32E+02
3/17/2009				8.64E+02	8.64E+02		8.64E+02
3/18/2009				8.03E+02	8.03E+02		8.03E+02
3/19/2009				7.96E+02	7.96E+02		7.96E+02
3/20/2009				9.03E+02	9.03E+02		9.03E+02
3/21/2009				8.44E+02	8.44E+02		8.44E+02
3/22/2009				7.49E+02	7.49E+02		7.49E+02
3/23/2009				6.54E+02	6.54E+02		6.54E+02
3/24/2009				6.12E+02	6.12E+02		6.12E+02
3/25/2009				5.81E+02	5.81E+02		5.81E+02
3/26/2009				5.76E+02	5.76E+02		5.76E+02
3/27/2009				6.69E+02	6.69E+02		6.69E+02
3/28/2009				7.57E+02	7.57E+02		7.57E+02
3/29/2009				8.13E+02	8.13E+02		8.13E+02
3/30/2009				1.83E+03	1.83E+03		1.83E+03
3/31/2009				1.51E+03	1.51E+03		1.51E+03
4/1/2009				1.10E+03	1.10E+03		1.10E+03
4/2/2009				1.24E+03	1.24E+03		1.24E+03
4/3/2009				1.52E+03	1.52E+03		1.52E+03
4/4/2009				2.16E+03	2.16E+03		2.16E+03
4/5/2009				1.73E+03	1.73E+03		1.73E+03
4/6/2009				1.46E+03	1.46E+03		1.46E+03
4/7/2009				1.82E+03	1.82E+03		1.82E+03
4/8/2009				1.52E+03	1.52E+03		1.52E+03
4/9/2009				1.23E+03	1.23E+03		1.23E+03
4/10/2009				1.02E+03	1.02E+03		1.02E+03
4/11/2009				1.03E+03	1.03E+03		1.03E+03
4/12/2009				9.98E+02	9.98E+02		9.98E+02
4/13/2009				8.63E+02	8.63E+02		8.63E+02
4/14/2009				7.91E+02	7.91E+02		7.91E+02
4/15/2009				7.55E+02	7.55E+02		7.55E+02
4/16/2009				7.78E+02	7.78E+02		7.78E+02
4/17/2009				7.24E+02	7.24E+02		7.24E+02
4/18/2009				6.72E+02	6.72E+02		6.72E+02
4/19/2009				5.94E+02	5.94E+02		5.94E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/20/2009				5.87E+02	5.87E+02		5.87E+02
4/21/2009				1.15E+03	1.15E+03		1.15E+03
4/22/2009				1.74E+03	1.74E+03		1.74E+03
4/23/2009				1.54E+03	1.54E+03		1.54E+03
4/24/2009				1.15E+03	1.15E+03		1.15E+03
4/25/2009				9.48E+02	9.48E+02		9.48E+02
4/26/2009				8.25E+02	8.25E+02		8.25E+02
4/27/2009				7.30E+02	7.30E+02		7.30E+02
4/28/2009				6.35E+02	6.35E+02		6.35E+02
4/29/2009				5.62E+02	5.62E+02		5.62E+02
4/30/2009				5.17E+02	5.17E+02		5.17E+02
5/1/2009				4.89E+02	4.89E+02		4.89E+02
5/2/2009				4.96E+02	4.96E+02		4.96E+02
5/3/2009				5.25E+02	5.25E+02		5.25E+02
5/4/2009				5.19E+02	5.19E+02		5.19E+02
5/5/2009				5.16E+02	5.16E+02		5.16E+02
5/6/2009				6.43E+02	6.43E+02		6.43E+02
5/7/2009				2.06E+03	2.06E+03		2.06E+03
5/8/2009				2.15E+03	2.15E+03		2.15E+03
5/9/2009				1.74E+03	1.74E+03		1.74E+03
5/10/2009				1.31E+03	1.31E+03		1.31E+03
5/11/2009				1.01E+03	1.01E+03		1.01E+03
5/12/2009				8.07E+02	8.07E+02		8.07E+02
5/13/2009				6.91E+02	6.91E+02		6.91E+02
5/14/2009				6.78E+02	6.78E+02		6.78E+02
5/15/2009				1.32E+03	1.32E+03		1.32E+03
5/16/2009				1.14E+03	1.14E+03		1.14E+03
5/17/2009				3.25E+03	3.25E+03		3.25E+03
5/18/2009				1.93E+03	1.93E+03		1.93E+03
5/19/2009				1.34E+03	1.34E+03		1.34E+03
5/20/2009				9.68E+02	9.68E+02		9.68E+02
5/21/2009				7.98E+02	7.98E+02		7.98E+02
5/22/2009				6.66E+02	6.66E+02		6.66E+02
5/23/2009				5.36E+02	5.36E+02		5.36E+02
5/24/2009				4.94E+02	4.94E+02		4.94E+02
5/25/2009				5.08E+02	5.08E+02		5.08E+02
5/26/2009				4.90E+02	4.90E+02		4.90E+02
5/27/2009				4.34E+02	4.34E+02		4.34E+02
5/28/2009				4.51E+02	4.51E+02		4.51E+02
5/29/2009				4.69E+02	4.69E+02		4.69E+02
5/30/2009				5.06E+02	5.06E+02		5.06E+02
5/31/2009				4.56E+02	4.56E+02		4.56E+02
6/1/2009				3.95E+02	3.95E+02		3.95E+02
6/2/2009				3.25E+02	3.25E+02		3.25E+02
6/3/2009				2.86E+02	2.86E+02		2.86E+02
6/4/2009				2.88E+02	2.88E+02		2.88E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/5/2009				3.13E+02	3.13E+02		3.13E+02
6/6/2009				3.44E+02	3.44E+02		3.44E+02
6/7/2009				3.36E+02	3.36E+02		3.36E+02
6/8/2009				3.01E+02	3.01E+02		3.01E+02
6/9/2009				6.45E+02	6.45E+02		6.45E+02
6/10/2009				1.18E+03	1.18E+03		1.18E+03
6/11/2009				9.59E+02	9.59E+02		9.59E+02
6/12/2009				4.72E+03	4.72E+03		4.72E+03
6/13/2009				3.87E+03	3.87E+03		3.87E+03
6/14/2009				3.39E+03	3.39E+03		3.39E+03
6/15/2009				3.65E+03	3.65E+03		3.65E+03
6/16/2009				2.58E+03	2.58E+03		2.58E+03
6/17/2009				1.72E+03	1.72E+03		1.72E+03
6/18/2009				5.99E+03	5.99E+03		5.99E+03
6/19/2009				7.58E+03	7.58E+03		7.58E+03
6/20/2009				4.97E+03	4.97E+03		4.97E+03
6/21/2009				7.47E+03	7.47E+03		7.47E+03
6/22/2009				5.16E+03	5.16E+03		5.16E+03
6/23/2009				3.28E+03	3.28E+03		3.28E+03
6/24/2009				2.36E+03	2.36E+03		2.36E+03
6/25/2009				1.94E+03	1.94E+03		1.94E+03
6/26/2009				1.96E+03	1.96E+03		1.96E+03
6/27/2009				5.23E+03	5.23E+03		5.23E+03
6/28/2009				3.13E+03	3.13E+03		3.13E+03
6/29/2009				1.94E+03	1.94E+03		1.94E+03
6/30/2009				1.96E+03	1.96E+03		1.96E+03
7/1/2009	357.34	3.25	8.23E+02	3.61E+03		3.25	8.23E+02
7/2/2009	357.60	3.51	9.71E+02	2.66E+03		3.51	9.71E+02
7/3/2009	358.09	4.00	1.28E+03	2.69E+03		4.00	1.28E+03
7/4/2009	357.63	3.54	9.88E+02	2.14E+03		3.54	9.88E+02
7/5/2009	357.11	3.02	6.98E+02	1.65E+03		3.02	6.98E+02
7/6/2009	356.58	2.49	4.80E+02	1.29E+03		2.49	4.80E+02
7/7/2009	356.19	2.10	2.83E+02			2.10	2.83E+02
7/8/2009	356.56	2.47	4.68E+02	1.20E+03		2.47	4.68E+02
7/9/2009	356.38	2.29	3.67E+02	1.16E+03		2.29	3.67E+02
7/10/2009	355.92	1.83	1.98E+02	9.19E+02		1.83	1.98E+02
7/11/2009	355.65	1.56	1.38E+02	8.33E+02		1.56	1.38E+02
7/12/2009	355.66	1.57	1.39E+02	8.66E+02		1.57	1.39E+02
7/13/2009	355.59	1.50	1.27E+02	8.07E+02		1.50	1.27E+02
7/14/2009	355.30	1.21	8.59E+01	6.71E+02		1.21	8.59E+01
7/15/2009	355.16	1.07	7.16E+01	5.54E+02		1.07	7.16E+01
7/16/2009	355.13	1.04	6.86E+01	5.20E+02		1.04	6.86E+01
7/17/2009	355.06	0.97	6.22E+01	5.35E+02		0.97	6.22E+01
7/18/2009	355.22	1.13	7.76E+01	6.85E+02		1.13	7.76E+01
7/19/2009	355.25	1.16	8.03E+01	6.76E+02		1.16	8.03E+01
7/20/2009	355.02	0.93	5.89E+01	5.24E+02		0.93	5.89E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/21/2009	354.93	0.84	5.24E+01	4.99E+02		0.84	5.24E+01
7/22/2009	355.09	1.00	6.46E+01	6.67E+02		1.00	6.46E+01
7/23/2009	355.12	1.03	6.76E+01	5.95E+02		1.03	6.76E+01
7/24/2009	354.98	0.89	5.58E+01	5.51E+02		0.89	5.58E+01
7/25/2009	354.92	0.83	5.19E+01	1.12E+03		0.83	5.19E+01
7/26/2009	357.56	3.47	9.46E+02	1.54E+03		3.47	9.46E+02
7/27/2009	357.16	3.07	7.26E+02	1.70E+03		3.07	7.26E+02
7/28/2009	356.15	2.06	2.68E+02	1.35E+03		2.06	2.68E+02
7/29/2009	355.54	1.45	1.18E+02	9.66E+02		1.45	1.18E+02
7/30/2009	356.14	2.05	2.66E+02	2.83E+03		2.05	2.66E+02
7/31/2009	356.08	1.99	2.45E+02	1.62E+03		1.99	2.45E+02

Notes:

1. Al Turi Estimated Average Daily Flows are based on stream gauge rating curve provided with the Contingency Monitoring Plan (ENVIRON 2001). The USGS flows are based on records for the USGS gauge located downstream of the Al Turi Landfill Site at Gardiner, New York (Gauge No. 01371500).

2. The Al Turi Landfill gauge hydrograph is based on Wallkill River flows estimated using the Al Turi Estimated Avg Daily Flows, except when the estimated flows exceed the recorded USGS flow at Gardiner, NY. In these cases, the USGS data are used to represent the flow conditions.

2010 SAMPLING YEAR
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – OPERATIONAL SITE
GOSHEN, NEW YORK

Prepared for

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Goshen, New York

December 2010

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Drawing No. 1 - Well Location Plan Pocket

Diskette - Laboratory Analytical Data Pocket

1 INTRODUCTION

The water quality management program at the Al Turi Landfill, Goshen, New York, includes the semi-annual sampling and analysis of groundwater, surface water, contained leachate, and sediment samples from locations in and around the "Operational Landfill" and the evaluation of the data generated by these samples. The facility has completed closure and is now in the post-closure period. During the January and July 2010 sampling events, modified baseline sampling was performed in accordance with 6 NYCRR Part 360-2.17(a), the requirements of Special Condition Nos. 36 through 38 of the facility's expired September 1997 Landfill Operating Permit (Permit No. 3-3330-00002/21), and in accordance with the revised and approved July 2005 Environmental Monitoring Plan (EMP).

Water quality data generated in 2010 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The environmental data collected from the Operational Landfill site has been presented and evaluated in this report.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

For the Operational Landfill, water quality data generated in 2010 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The trigger values were developed using a limited database that was established for the Al Turi Landfill prior to the promulgation of regulations governing the collection of such data. The values were developed from two or three sampling events for baseline parameters conducted in August through October 1983 for three overburden wells (W-5S, W-6S, and W-7S), and 2 bedrock wells (W-6D and W-8D). Well W-6D has since been replaced with well W-6DA. Additionally, trigger values for metals were calculated based on the dissolved fraction results from field-filtered analyses. The Department values, or Part 703 standards, whichever are higher, serve as the trigger values for contingency monitoring at the Al Turi Landfill. Due to the limited pre-operational database, and the presence of undetected values for many of the parameters, the results do not constitute a "normal distribution" as required under Part 360-2.11(c)(5)(i)(c). Therefore, these values should be applied with caution. Given the limited available data, the 1983 values represent the best available estimate of pre-operational water quality, and are suitable as a screening tool in the monitoring program.

Because the Al Turi Landfill began operation prior to the promulgation of the current regulations, certain aspects of the regulations cannot be strictly applied. Notable deviations are the absence of an adequate pre-operational database and the lack of expanded parameter data for many of the monitoring points.

Semi-annual monitoring at the Operational Landfill currently consists of modified baseline analysis. This sampling is conducted in January and July of each year. The analysis for each event includes 6NYCRR Part 360 Baseline parameters with the exception of the parameters BOD, COD, TKN, sulfate and bromide. Sediment samples from the Wallkill River are analyzed for the 6NYCRR Part 360 baseline metals and TOC. Under updated regulations, the presence of baseline parameters above trigger values requires initiation of contingency monitoring, in which expanded parameters are analyzed. A trigger value exceedance occurs when the groundwater analytical data exceeds either the NYSDEC developed trigger values and/or the Part 703 State standards, whichever is higher.

The 6 NYCRR Part 360 regulations allow for the modification of the expanded parameter list to correspond with contaminants detected at a given facility. The analyses apply to all media sampled at the facility (groundwater, surface water, sediment, and contained leachate). The former contingency parameter list that was utilized at the facility consisted of the baseline parameter list plus the expanded parameters sulfide, phenol, naphthalene, 2-methyl phenol, 3-methyl phenol, and 4-methyl phenol. However, because the above mentioned expanded parameters were not detected within contingency groundwater monitoring wells, the NYSDEC approved a revised contingency monitoring list on June 22, 1999 and again on May 14, 2002. Monitoring at the facility has since been modified and now includes the monitoring program established in the July 2005 EMP.

Semi-annual groundwater quality is monitored at 21 groundwater monitoring wells (shallow and deep wells) located within the boundaries of the facility's property. One well, W-8D, is designated as the upgradient background well for the facility. Drawing 1 (in pocket) provides a site map of the facility indicating the locations of the monitoring points. In addition, baseline groundwater sampling and analysis is performed quarterly at Jesus Christ Triumphant Church (representing a 22nd well) located along Route 17M just south of the facility. Surface water and sediment samples are collected at two locations in the Wallkill River, upstream and downstream of the facility, while Sediment Basins A, B and D are sampled for water quality only. In addition, leachate samples are collected semi-annually from the primary and secondary leachate collection systems, and analyzed for a modified expanded parameter list. Sampling procedures utilized are also identified in the July 2005 EMP.

2.1 Operational Water Quality - Overburden Water Quality

Fourteen overburden groundwater monitoring wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the 2010 sampling year demonstrate that the following routine analytes were above their respective trigger values in the overburden monitoring wells during both 2010 sampling events: turbidity (14 wells); alkalinity (3 wells); hardness (3 wells); ammonia (1 well); total dissolved solids (6 wells); TOC (1 well); calcium (3 wells); iron (11 wells); manganese (5 wells); and sodium (9 wells). Non-routine inorganic parameters detected above their respective trigger values during both sampling events in the overburden wells are limited to color (2 wells); aluminum (1 well); and arsenic (3 wells).

It should also be noted that zinc, color, nitrates and TDS were also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration

reported in the samples. Results of the overburden groundwater monitoring are presented in Table 2-1.

With the exception of an estimated concentration (2 ug/l) of vinyl chloride observed in well MW-9S in July, no volatile organic compounds were observed in overburden monitoring wells during the 2010 sampling year. Volatile organic compounds will again be sampled for during the 2011 sampling year.

2.2 Deep Well Water Quality

Seven deep wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the 2010 sampling year demonstrate that the following routine analytes were above their respective trigger values in the deep monitoring wells during both 2010 sampling events: turbidity (7 wells); alkalinity (3 wells); hardness (2 wells); total dissolved solids (2 wells); calcium (3 wells); iron (5 wells); manganese (2 wells); and sodium (2 wells). In 2010, non-routine inorganic parameters detected above their established trigger limits were limited to aluminum in background well W-8D.

It should also be noted that zinc, color, nitrates and TDS were also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the deep well monitoring are presented in Table 2-2.

2.3 Contingency Monitoring

Wells that were analyzed as part of contingency monitoring in 2010 included: W-1, W-6S, W-9S, W-16D and W-17S. Contingency monitoring was performed for these wells due to the historical confirmation of baseline parameters at concentrations above established trigger values. The baseline parameters of concern include arsenic in the samples from wells W-6S, W-9S, W-16D and W-17S and benzene in W-1.

A review of the 2010 sampling data shows that arsenic was detected above its respective trigger value in wells W-6S and W-9S during both 2010 sampling events. Additionally, arsenic was above its trigger limit in well W-5S during both 2010 sampling events. As part of continued monitoring, arsenic will again be sampled for during the 2011 sampling year.

A review of the volatile organic data for well MW-1 in 2010 shows that benzene was not observed above its detection limit 2010. It was noted that elevated detections were applied to wells W-1 (due to matrix interference) in July 2010.

The overall graphical representation of arsenic shows an overall increasing trend in concentration changes for well W-17S. However, during the past 3 out of 4 sampling sampling events, arsenic has been reported as non-detect. A review of the overall trends for wells W-6S, W-9S and W-16D appeared to have stabilized.

A graphical representation for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

2.4 Background Water Quality

Water quality data has been collected from groundwater monitoring wells which are installed in the meadow north of both the Al Turi Landfill and All-Waste Facility (Northern Recycling). These wells have been evaluated to assist in determining background water quality in the vicinity of the landfill. As part of the Remedial Investigation of the Old Al Turi Landfill, several wells have been shown to be clearly beyond the influence of groundwater moving toward the Wallkill River from beneath the landfill (Supplemental Remedial Investigation Report, Old Al Turi Landfill, Wehran, February 1994, Sheet 4 of 9) and are representative of background water quality. Additional historical data generated from the meadow wells indicates that several metals have been historically present in the local groundwater at concentrations above the New York State Groundwater Quality Standards (6 NYCRR Part 703).

The meadow wells have been re-developed to further help in the reduction of turbid conditions. However, several of the wells remained turbid throughout re-development, indicating that turbid conditions may also be reflective of local groundwater quality.

Based on the historical analytical results from these wells, it is clear that several analytes (iron and manganese) are present in the local groundwater at concentrations above the State standards, and at similar levels as those detected at the landfill. Data collected from the meadow wells are limited, when compared to the larger resource data base from the on-site operational monitoring wells, but the results do indicate that the exceedances observed in many of the on-site monitoring wells may be a function of local groundwater quality, and not a release from the landfill.

2.5 Church Well

Monitoring of the off-site residential well (church well) is performed quarterly and to date in 2010 sampling at the church has been conducted in January, April and July for the baseline parameters. A review of the July data shows that no parameters were detected above trigger values in the church well. The data collected to date in 2010 from the church well are presented in Table 2-2.

3 SURFACE WATER/SEDIMENT QUALITY

Surface water and sediment samples are also collected semi-annually from the Wallkill River as part of continued monitoring at the Al Turi Landfill.

Surface water samples were collected with a stainless steel bucket at mid-stream locations from both the Route 17M Bridge (upstream) and Cheechunk Road Bridge (downstream). Field measurement readings obtained did not indicate the presence of river stratification at either location. Sediment samples collected at each location were collected from the bank of the river closest to the landfill.

A review of the surface water samples collected from the Wallkill River upstream and downstream of the landfill in 2010 found that only iron and aluminum were observed above their Class C standards. A summary of the surface water data and sediment data collected from the Wallkill River is provided in Table 3-1 and Table 3-2, respectively. A review of the data indicates that conditions observed upstream of the facility are similar to conditions observed downstream of the facility.

Historically, water quality data from the river has shown a number of analytes at concentrations above the Class C standards in both the upstream and downstream samples. It has been determined that groundwater from beneath the landfill does discharge to the Wallkill River, and a comparison of the upstream and downstream surface water data continues to indicate that discharge of this groundwater has had no observable impact on the river's water quality.

In addition to the collection of surface water samples from the Wallkill River, sediment samples are collected from the upstream and downstream surface water sampling locations. A review of the data indicates that there is no parameter consistency when comparing concentrations between upstream and down stream samples.

During the 2010 sampling year, efforts were made to collect water samples from Sediment Basins A, B and D. However, in 2010, Basins B and D were dry and Basin A was frozen in January. A review of the July data for Basin A shows that aluminum and iron were above their Class C standards. A summary of the previously collected sediment basin sampling data is provided in Table 3-1.

4 LEACHATE MONITORING

In accordance with Special Condition No. 36 of the expired Operating Permit, samples are obtained from the primary and secondary leachate collection system associated with Areas 11, 12, and 13 (includes Areas 9 and 10) of the landfill. Samples from the leachate collection system are collected semi-annually. Because leachate from Area 13 drains into Area 12, the common primary and secondary monitoring points for these areas is sampled. Additionally, leachate from Areas 9 and 10, which are underlain with single composite liners and are not equipped with a secondary collection system, drains to the primary collection system associated with Area 13 and then Area 12.

During the 2010 sampling year, sampling of the leachate monitoring points was conducted in January and July. During the July sampling event, leachate location LCH-12S was dry. The analytical results from this sampling event have been provided in Table 4-1. Leachate collection system analytical results in the LCH-11S/11P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. No exceptions were noted during the July sampling events.

Additionally, leachate collection system analytical results in the LCH-12S/12P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions include higher concentration of hardness, nitrate, sulfate and calcium LCH-12S (January only).

In 2010, no non-flagged organic compounds, PCBs or pesticides/herbicides were detected in any of the leachate samples. In January 2010, dioxins and furan detections were limited to OCDD in both samples and total HpCDD in LCH-11P. Dioxins and furans analysis was not required in July 2010. Leachate samples will again be collected semi-annually in 2011.

5 IRON FLOC EVALUATION

The Wallkill River has been identified as a groundwater discharge area for shallow groundwater flowing from the Al Turi Landfill site. Surface water and sediment sampling is performed at upgradient and downgradient locations on the River as shown on Drawing 1.

During periods of abnormally low flow conditions, seepage of shallow groundwater has been observed along the banks of the Wallkill River. Occasionally orange staining has been observed at some of these seepage points, which has proven to be characteristic of iron oxidation. Past sampling of these seeps has suggested that the seepage water reflects observed shallow groundwater quality and is not the result of direct leachate seepage from the landfill.

In 2010, iron floc sampling was not completed. The Al Turi Landfill will continue to monitor the river elevation and conduct iron floc sampling when the seep area is once again accessible.

6 CONCLUSIONS

Contingency monitoring will continue during the 2011 sampling year in 5 groundwater monitoring wells as a result of the historical presence of non-routine parameter exceedances of established trigger values that are utilized to evaluate groundwater quality. The contingency monitoring wells and their historical non-routine parameters of concern include: W-6S (arsenic); W-9S (arsenic); W-16D (arsenic); W-17S (arsenic); and well W-1 (benzene only). Additional determinations were made from the data obtained in 2010:

- Many of the exceedances observed for parameters, such as iron and manganese, are likely due to the local groundwater quality rather than a landfill-related impact.

- Background historical groundwater quality data from the wells north of the site (the meadow wells) have indicated that a number of analytes are present in the local groundwater at similar concentrations to that observed in the on-site landfill monitoring wells. A number of parameters being detected in the background wells are at levels similar to those detected in the on-site landfill monitoring wells.

- With the exception of an estimated concentration (2 ug/l) of vinyl chloride observed in well MW-9S in July, no volatile organic compounds were observed in monitoring wells during the 2010 sampling year. Volatile organic compounds will again be sampled for during the 2011 sampling year.

- Although it has been demonstrated that groundwater from beneath the landfill does discharge to the Wallkill River, downstream surface water quality continues to demonstrate similar results to upstream surface water quality. Historical surface water data indicate that no significant change in water quality has occurred in the Wallkill River as a result of on-going landfill operations. Data collected in 2010 continues to demonstrate that the landfill has had no observable impact on water quality in the River.

TABLES

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS JULY 2010
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-01	**1/21/09**	22.42	8.7	6.88	-42	850	56.4	710	620	500	<0.010	634	<0.010	<0.20	<0.50	0.006	1330	53.8	<0.100
W-01	**7/21/09**	29.34	19.6	6.92	-37	2222	200	550	224	75	<0.010	608	<0.010	0.28	49.9	<0.005	830	24.8	<0.100
W-01	**1/14/10**	27.32	11.6	7.04	-31	4.21	31.4	770	509	500	<0.010	608	<0.010	<0.20	78.1	<0.005	1200	37.2	<0.100
W-01	**7/28/10**	33.43	19.4	6.76	-34	388	292	680	564	150	<0.010	629	<0.010	0.084	69	<0.005	1400	35.8	0.193
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-03A	**1/21/09**	10.68	5.6	7.81	-45	498	39.1	210	20.4	8	<0.010	260	<0.010	<0.20	<0.50	<0.005	315	<3.0	1.22
W-03A	**7/21/09**	12.58	13.8	7.39	179	228	87.1	210	10.8	7	<0.010	295	<0.010	<0.20	<0.50	<0.005	260	<3.0	1.6
W-03A	**1/13/10**	10.85	8.3	6.89	188	1688	6.17	200	11.4	<5.0	<0.010	251	<0.010	<0.20	<0.50	<0.005	200	<3.0	<0.100
W-03A	**7/28/10**	15.43	15.4	8.15	305	114	78.5	210	10.9	11	<0.010	272	<0.010	0.127	0.695	<0.005	290	<3.0	0.588
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-05S	**1/21/09**	18.34	11.8	7.41	-23	992	23.5	480	76	65	<0.010	634	<0.010	<0.200	<0.50	<0.005	700	28.3	<0.100
W-05S	**7/21/09**	19.45	17.2	6.85	-37	900	14.2	480	83.2	30	<0.010	696	<0.010	<0.200	<0.500	<0.005	710	<3.0	<0.100
W-05S	**1/13/10**	18.61	12.1	5.78	258	204	17.5	540	64.4	7	<0.010	606	<0.010	<0.200	<0.500	<0.005	640	<3.0	<0.100
W-05S	**7/28/10**	20.97	21.2	7.25	-43	1733	65.1	490	64.1	50	<0.010	712	<0.010	0.137	<0.500	<0.005	920	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-06S	**1/21/09**	27.42	9.9	7.71	-39	869	40.5	500	12.7	250	<0.010	523	<0.010	<0.200	0.973	<0.005	524	7	1.02
W-06S	**7/21/09**	28.18	17.1	7.25	189	441	32.6	500	5.08	35	<0.010	619	<0.010	<0.200	2.36	<0.005	760	7.4	4.54
W-06S	**1/13/10**	27.68	10.7	5.65	263	1636	136	540	7.71	15	<0.010	765	<0.010	<0.200	1.44	<0.005	450	6.9	7.02
W-06S	**7/28/10**	29.12	20.6	7.03	354	233	41.7	410	4.77	150	<0.010	678	<0.010	0.119	5.61	<0.005	460	10.2	8.27
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-07S	**1/21/09**	34.45	9.4	7.58	-32	1068	12.5	550	60.5	60	<0.010	713	<0.010	<0.20	<0.50	<0.005	772	23.7	0.553
W-07S	**7/21/09**	34.01	17.9	7.36	184	448	78.7	500	57.2	6	<0.010	842	<0.010	<0.200	<0.500	<0.005	1000	<3.0	0.402
W-07S	**1/13/10**	33.65	10.8	5.92	249	215	52.3	550	70	30	<0.010	727	<0.010	<0.200	<0.500	<0.005	820	<3.0	0.457
W-07S	**7/28/10**	35.91	20.8	6.94	367	563	37.7	500	77.8	125	<0.010	734	<0.010	0.086	<0.500	<0.005	1000	<3.0	0.284
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-09S	**1/21/09**	44.8	10.8	7.77	-41	932	209	610	28.7	135	<0.010	668	<0.010	<0.200	<0.500	<0.005	662	<3.0	3.36
W-09S	**7/21/09**	46.03	21.2	6.82	-32	944	28.2	580	32.7	35	<0.010	751	<0.010	<0.200	<0.500	<0.005	670	<3.0	0.68
W-09S	**1/13/10**	45.03	12.7	5.80	257	1892	14.3	610	19.8	8	<0.010	640	<0.010	<0.200	<0.500	<0.005	540	<3.0	0.114
W-09S	**7/28/10**	47.28	22.6	6.65	-23	1590	76.5	550	34.2	150	<0.010	646	<0.010	0.051	<0.500	<0.005	670	<3.0	0.636
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16S	**1/21/09**	42.48	7.1	8.04	-57	408	25.1	210	1.87	20	<0.010	202	<0.010	<0.20	<0.500	<0.005	222	7.2	0.634
W-16S	**7/21/09**	43.43	16.8	7.55	170	209	9.54	220	2.79	5	<0.010	221	<0.010	<0.20	<0.500	<0.005	270	<3.0	<0.100
W-16S	**1/13/10**	42.63	8.2	7.22	169	1223	18.7	270	2.93	15	<0.010	156	<0.010	<0.20	<0.500	<0.005	270	<3.0	<0.100
W-16S	**7/28/10**	44.75	18.2	8.85	284	144	41.6	200	3.26	12	<0.010	107	<0.010	0.059	<0.500	<0.005	300	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS JULY 2010
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-01	**1/21/09**	<0.030	<0.010	0.745	<0.003	0.949	<0.005	159	<0.010	<0.020	<0.010	65.2	0.0049	<0.030	57.3	4.85	<0.0002	<0.030	57.5
W-01	**7/21/09**	<0.030	<0.010	0.582	<0.003	0.616	0.0051	157	<0.010	<0.020	<0.010	55.5	<0.003	<0.030	52.4	3.91	<0.0002	<0.030	57.5
W-01	**1/14/10**	<0.030	<0.010	0.795	<0.003	0.923	<0.005	148	<0.010	<0.020	<0.010	45.7	<0.003	<0.030	57.6	4.46	<0.0002	<0.030	57.3
W-01	**7/28/10**	<0.050	0.0094	0.764	<0.003	0.708	0.0107	153	<0.010	<0.020	<0.010	54.6	<0.003	<0.030	59.7	4.26	<0.0002	<0.030	64.8
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-03A	**1/21/09**	<0.030	<0.010	0.077	<0.003	<0.500	<0.005	77.5	<0.010	<0.020	<0.010	2	<0.003	<0.030	16.1	0.388	<0.0002	<0.030	1.74
W-03A	**7/21/09**	<0.030	<0.010	0.0909	<0.003	<0.500	<0.005	82.4	<0.010	<0.020	<0.010	2.56	<0.003	<0.030	21.8	0.539	<0.0002	<0.030	1.37
W-03A	**1/13/10**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	78.4	<0.010	<0.020	<0.010	0.0672	<0.003	<0.030	13.5	0.153	<0.0002	<0.030	<5.0
W-03A	**7/28/10**	<0.005	<0.005	0.11	<0.003	<0.500	<0.005	75.7	<0.010	<0.020	<0.010	1.19	<0.003	<0.030	20.1	0.813	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-05S	**1/21/09**	<0.030	<0.010	0.145	<0.003	<0.500	<0.005	207	<0.005	<0.020	<0.010	12.8	<0.003	<0.030	28.5	2.35	<0.0002	<0.030	2.47
W-05S	**7/21/09**	<0.030	0.0243	0.137	<0.003	<0.500	<0.005	227	<0.005	<0.020	<0.010	17.4	<0.003	<0.030	31.5	2.3	<0.0002	<0.030	2.85
W-05S	**1/13/10**	<0.030	0.0481	0.168	<0.003	<0.500	<0.005	198	<0.005	<0.020	<0.010	15.6	<0.003	<0.030	27.5	2.14	<0.0002	<0.030	2.85
W-05S	**7/28/10**	<0.005	0.033	0.162	<0.003	<0.500	<0.005	230	<0.010	<0.020	<0.010	13.4	<0.003	<0.030	33.5	2.14	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-06S	**1/21/09**	<0.030	<0.010	0.439	<0.003	<0.500	<0.005	166	0.0166	<0.020	<0.010	64.8	0.0534	<0.030	26.4	2.53	<0.0002	<0.030	2.89
W-06S	**7/21/09**	<0.030	<0.010	0.518	<0.003	<0.500	0.0080	197	0.03	<0.020	0.0155	73.2	<0.003	<0.030	30.8	2.82	<0.0002	<0.030	3.96
W-06S	**1/13/10**	<0.030	0.0324	0.578	<0.003	<0.500	<0.005	245	0.0841	<0.020	0.0417	87.7	0.0254	<0.030	37	4.07	<0.0002	0.0407	5.51
W-06S	**7/28/10**	<0.005	0.037	0.454	<0.003	<0.500	0.0168	217	0.0187	<0.020	0.0157	82	<0.003	<0.030	33.3	4.07	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-07S	**1/21/09**	<0.030	<0.010	0.090	<0.003	<0.500	<0.005	211	0.0158	<0.020	0.0328	27.6	<0.003	<0.030	45.1	1.76	<0.0002	<0.030	4.42
W-07S	**7/21/09**	<0.030	<0.010	0.090	<0.003	<0.500	<0.005	250	0.016	<0.020	0.0316	40.7	<0.003	<0.010	52.9	1.83	<0.0002	<0.030	5.18
W-07S	**1/13/10**	<0.030	0.0103	0.076	<0.003	<0.500	<0.005	217	0.0287	<0.020	0.0135	21.9	<0.003	<0.030	45	1.74	<0.0002	<0.030	<5.0
W-07S	**7/28/10**	<0.005	0.013	0.080	<0.003	<0.500	<0.005	215	<0.010	<0.020	0.0185	21.3	<0.003	<0.030	47.8	1.78	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-09S	**1/21/09**	<0.030	<0.010	1.03	<0.003	<0.500	<0.005	202	0.0362	<0.020	0.0112	43.8	0.00834	<0.030	39.7	1.28	<0.0002	0.0342	3.82
W-09S	**7/21/09**	<0.030	<0.010	0.982	<0.003	<0.500	<0.005	228	<0.010	<0.020	0.017	37	<0.003	<0.030	44.1	1.13	<0.0002	<0.030	3.04
W-09S	**1/13/10**	<0.030	0.0262	0.925	<0.003	<0.500	<0.005	197	<0.010	<0.020	<0.010	25.7	<0.003	<0.030	35.8	0.619	<0.0002	<0.030	<5.0
W-09S	**7/28/10**	<0.005	0.072	1.06	<0.003	<0.500	0.0061	205	<0.010	<0.020	<0.010	29.8	<0.003	<0.030	32.4	0.738	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16S	**1/21/09**	<0.030	<0.010	0.0529	<0.003	<0.500	<0.005	54.8	<0.010	<0.020	<0.010	11.4	<0.003	<0.030	15.8	0.534	<0.0002	<0.030	3
W-16S	**7/21/09**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	57.8	<0.010	<0.020	<0.010	1.59	<0.003	<0.030	18.5	0.319	<0.0002	<0.030	4.72
W-16S	**1/13/10**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	35	<0.010	<0.020	<0.010	2.03	<0.003	<0.030	16.6	0.184	<0.0002	<0.030	7.59
W-16S	**7/28/10**	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	17.4	<0.010	<0.020	<0.010	4.03	<0.003	<0.030	15.4	0.186	<0.0002	<0.030	5.37

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS JULY 2010
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-01	**1/21/09**	<0.005	<0.010	293	<0.010	0.0161
W-01	**7/21/09**	<0.005	<0.010	215	<0.010	<0.010
W-01	**1/14/10**	<0.005	<0.010	389	<0.010	0.223
W-01	**7/28/10**	0.03	<0.010	351	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-03A	**1/21/09**	<0.005	<0.010	17.4	<0.010	0.0285
W-03A	**7/21/09**	<0.005	<0.010	17.8	<0.010	0.0503
W-03A	**1/13/10**	<0.005	<0.010	20.2	<0.010	0.0219
W-03A	**7/28/10**	<0.003	<0.010	15.2	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-05S	**1/21/09**	<0.005	<0.010	28	<0.010	0.0768
W-05S	**7/21/09**	<0.005	<0.010	41.5	<0.010	0.0618
W-05S	**1/13/10**	<0.005	<0.010	53	<0.010	0.3880
W-05S	**7/28/10**	<0.003	<0.010	38.3	<0.003	0.0284
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-06S	**1/21/09**	<0.005	<0.010	5	<0.010	0.0244
W-06S	**7/21/09**	<0.005	<0.010	5.51	<0.010	0.049
W-06S	**1/13/10**	<0.005	<0.010	5.94	<0.010	0.178
W-06S	**7/28/10**	<0.003	<0.010	<5.0	<0.003	0.131
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-07S	**1/21/09**	<0.005	<0.010	38.2	<0.010	0.0354
W-07S	**7/21/09**	<0.005	<0.010	44.1	<0.010	0.0266
W-07S	**1/13/10**	<0.005	<0.010	45.9	<0.010	0.0842
W-07S	**7/28/10**	<0.003	<0.010	42.2	<0.003	0.0246
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-09S	**1/21/09**	<0.005	<0.010	15.3	<0.010	0.0778
W-09S	**7/21/09**	<0.005	<0.010	21	<0.010	0.063
W-09S	**1/13/10**	<0.005	<0.010	20.3	<0.010	0.0414
W-09S	**7/28/10**	<0.003	<0.010	23.3	<0.003	0.03
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16S	**1/21/09**	<0.005	<0.010	13.8	<0.010	0.0136
W-16S	**7/21/09**	<0.005	<0.010	20.1	<0.010	<0.010
W-16S	**1/13/10**	<0.005	<0.010	23.7	<0.010	0.0229
W-16S	**7/28/10**	<0.003	0.031	32.9	<0.003	<0.010

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS JULY 2010
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16D	**1/21/09**	41.80	6.5	8.03	-57	509	31.8	270	2.33	19	<0.010	692	<0.010	<0.200	<0.500	<0.005	283	13.2	0.109
W-16D	**7/21/09**	42.71	16.5	7.37	180	231	29.3	260	2.77	5	<0.010	306	<0.010	<0.200	<0.500	<0.005	300	<3.0	0.737
W-16D	**1/13/10**	42.06	8.5	7.32	164	1071	22.2	290	4.59	15	<0.010	287	<0.010	<0.20	<0.500	<0.005	290	<3.0	0.559
W-16D	**7/28/10**	44.32	19.1	8.09	309	155	46.2	260	3.24	30	<0.010	285	<0.010	0.071	<0.500	<0.005	310	<3.0	0.158
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17S	**1/21/09**	19.84	10.8	7.59	-32	951	20.2	520	40.1	75	<0.010	644	<0.010	<0.20	<0.500	<0.005	660	3.2	0.469
W-17S	**7/21/09**	21.12	22	6.82	-50	795	562	490	47.1	7	<0.010	685	<0.010	<0.20	<0.500	<0.005	850	3.1	1.09
W-17S	**1/14/10**	20.1	13.2	5.92	252	1765	72.6	570	36.3	15	<0.010	604	<0.010	<0.200	<0.500	<0.005	440	3.9	0.414
W-17S	**7/27/10**	22.4	18	7.09	-45	1616	44.3	490	74.1	75	<0.010	657	<0.010	0.113	<0.500	<0.005	770	<3.0	0.279
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17D	**7/30/08**	21.25	16.5	8.25	110	428	86.4	350	91.5	15	<0.010	539	<0.010	0.663	<0.50	<0.005	676	<3.0	<0.100
W-17D	**1/21/09**	18.95	2.2	8.50	-37	489	49.2	460	106	10	<0.010	642	<0.010	<0.200	<0.500	<0.005	680	<3.0	0.372
W-17D	**7/21/09**	21.15	18	6.72	-48	888	219	450	104	5	<0.010	749	<0.010	<0.20	<0.500	<0.005	870	<3.0	0.379
W-17D	**7/27/10**	21.47	18.2	7.35	-50	1698	25.9	460	105	7	<0.010	690	<0.010	0.078	<0.500	<0.005	770	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27S	**1/21/09**	38.47	11.3	7.66	36	1087	51.9	690	74	110	<0.010	727	<0.010	<0.20	<0.500	<0.005	795	3.8	1.98
W-27S	**7/21/09**	39.62	21	6.83	-24	932	60.6	600	60.7	35	<0.010	792	<0.010	<0.20	0.903	<0.005	790	<3.0	4.65
W-27S	**1/13/10**	36.73	13.9	5.51	279	224	43.1	620	58.6	7	<0.010	546	<0.010	<0.20	0.798	<0.005	690	<3.0	0.721
W-27S	**7/27/10**	41.2	21.2	6.83	-47	1722	26.3	490	108	35	<0.010	591	<0.010	0.086	0.726	<0.005	750	4.4	0.247
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27D	**1/21/09**	38.31	3.5	8.40	-95	219	40.1	79	3.1	21	<0.010	95.2	<0.010	<0.20	<0.500	<0.005	184	<3.0	0.273
W-27D	**7/21/09**	39.02	18.2	7.64	98	312	98.6	160	2.7	7	<0.010	120	<0.010	0.309	<0.500	<0.005	210	<3.0	0.299
W-27D	**1/13/10**	37.45	13.4	8.17	17	522	12.2	180	2.08	10	<0.010	93.8	<0.010	<0.20	<0.500	<0.005	270	<3.0	<0.10
W-27D	**7/26/10**	40.18	19.9	7.84	-72	556	13.2	160	2.19	15	<0.010	102	<0.010	0.192	<0.500	0.018	210	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28S	**1/21/09**	43.19	9.8	7.58	-32	1050	34.2	590	53.7	105	<0.010	759	<0.010	<0.200	<0.500	<0.005	795	83.4	0.53
W-28S	**7/21/09**	43.81	18.1	7.31	187	457	9.7	600	51.2	25	<0.010	804	<0.010	<0.200	<0.500	<0.005	840	3.7	<0.100
W-28S	**1/13/10**	43.41	12.7	5.91	252	1887	16.7	600	46.1	50	<0.010	704	<0.010	<0.200	<0.500	<0.005	620	3.4	0.236
W-28S	**7/28/10**	45.66	18.9	7.12	161	1396	17.9	310	50.3	125	<0.010	607	<0.010	0.164	<0.500	<0.005	710	<3.0	0.129
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28D	**1/21/09**	43.00	9.6	8.05	-90	252	20.5	150	6.07	15	<0.010	97.2	<0.010	<0.20	<0.50	<0.005	120	<3.0	<0.100
W-28D	**7/21/09**	46.03	17.2	7.87	-16	264	22.6	130	8.34	5	<0.010	115	<0.010	<0.20	<0.50	<0.005	190	<3.0	<0.100
W-28D	**1/13/10**	43.05	15	8.09	-11	460	10.2	150	15.2	5	<0.010	105	<0.010	<0.20	<0.50	<0.005	160	<3.0	<0.100
W-28D	**7/27/10**	45.35	18.7	8.51	130	488	32.2	150	9.38	7	<0.010	107	<0.010	0.177	<0.50	<0.005	200	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS JULY 2010
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16D	**1/21/09**	<0.030	<0.010	0.0835	<0.003	<0.500	<0.005	214	<0.010	<0.020	<0.010	1.08	<0.003	<0.030	38	2.77	<0.0002	<0.030	2.42
W-16D	**7/21/09**	<0.030	<0.010	0.137	<0.003	<0.500	<0.005	91.5	<0.010	<0.020	<0.010	2.41	<0.003	<0.030	18.9	0.87	<0.0002	<0.030	1.84
W-16D	**1/13/10**	<0.003	0.0164	0.143	<0.003	<0.005	<0.005	86	<0.010	<0.020	<0.010	2.8	<0.003	<0.030	17.5	1.06	<0.0002	<0.030	<5.0
W-16D	**7/28/10**	<0.005	0.048	0.149	<0.003	<0.500	<0.005	85.6	<0.010	<0.020	<0.010	4.92	<0.003	<0.030	17.4	0.984	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17S	**1/21/09**	<0.030	<0.010	0.4	<0.003	<0.500	<0.005	181	<0.010	<0.020	<0.010	23.2	<0.003	<0.030	46.6	0.521	<0.0002	<0.030	2
W-17S	**7/21/09**	<0.003	<0.010	0.431	<0.003	<0.500	<0.005	194	<0.010	<0.020	0.0128	24.8	<0.003	<0.030	48.5	0.567	<0.0002	<0.010	2.19
W-17S	**1/14/10**	<0.030	<0.010	0.438	<0.003	<0.500	<0.005	173	<0.010	<0.020	<0.010	20.9	<0.003	<0.030	41.5	0.346	<0.0002	<0.030	<5.0
W-17S	**7/27/10**	<0.005	0.018	0.442	<0.003	<0.500	<0.005	192	<0.010	<0.020	<0.010	21.5	<0.003	<0.030	43.2	0.614	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17D	**7/30/08**	<0.030	<0.010	0.125	<0.003	<0.500	<0.005	163	<0.005	<0.020	0.011	0.532	<0.003	<0.030	32.2	0.212	<0.0002	<0.030	10.4
W-17D	**1/21/09**	<0.030	<0.010	0.129	<0.003	<0.500	<0.005	203	<0.010	<0.020	<0.010	1.51	<0.003	<0.030	32.6	1.24	<0.0002	<0.030	2.32
W-17D	**7/21/09**	<0.030	<0.010	0.169	<0.003	<0.500	<0.005	234	<0.010	<0.020	<0.010	1.48	<0.003	<0.030	40.1	1.44	<0.0002	<0.030	4.17
W-17D	**7/27/10**	<0.005	<0.005	0.127	<0.003	<0.500	<0.005	214	<0.010	<0.020	<0.010	0.452	<0.003	<0.030	37.7	1.6	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27S	**1/21/09**	<0.030	<0.010	0.207	<0.003	<0.500	<0.005	226	0.0185	<0.020	0.0268	24.9	0.0144	<0.030	39.5	3.23	<0.0002	<0.030	6.05
W-27S	**7/21/09**	<0.030	<0.010	0.297	<0.003	<0.500	<0.005	254	<0.010	<0.020	0.159	36.2	0.0291	<0.030	38.4	2.22	<0.0002	<0.030	6.89
W-27S	**1/13/10**	<0.030	<0.010	0.24	<0.003	<0.500	<0.005	177	<0.010	<0.020	<0.010	22.7	<0.003	<0.030	25	1.52	<0.0002	<0.030	5.55
W-27S	**7/27/10**	<0.005	<0.005	0.425	<0.003	<0.500	<0.005	191	<0.010	<0.020	<0.010	30	<0.003	<0.030	27.8	0.984	<0.0002	<0.030	5.92
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27D	**1/21/09**	<0.030	<0.010	0.0581	<0.003	<0.050	<0.005	23.3	<0.010	<0.020	<0.010	0.648	<0.003	<0.030	8.98	0.166	<0.0002	<0.030	1.29
W-27D	**7/21/09**	<0.030	<0.010	0.0638	<0.003	<0.050	<0.005	29	<0.010	<0.020	0.0122	0.979	<0.003	<0.030	11.6	0.162	<0.0002	<0.030	1.57
W-27D	**1/13/10**	<0.030	<0.010	0.0506	<0.003	<0.050	<0.005	22.1	<0.010	<0.020	<0.010	0.237	<0.003	<0.030	9.4	0.136	<0.0002	<0.030	<5.0
W-27D	**7/26/10**	<0.005	<0.005	0.0545	<0.003	<0.500	<0.005	23.8	<0.010	<0.020	<0.010	0.194	<0.003	<0.030	10.4	0.0421	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28S	**1/21/09**	<0.030	<0.010	0.136	<0.003	<0.500	<0.005	240	<0.010	<0.020	<0.010	11.9	<0.003	<0.030	38.8	1.79	<0.0002	<0.030	3.01
W-28S	**7/21/09**	<0.030	<0.010	0.0985	<0.003	<0.500	<0.005	251	<0.010	<0.020	<0.010	2.86	<0.003	<0.030	43.3	1.38	<0.0002	<0.030	3.9
W-28S	**1/13/10**	<0.030	0.018	0.16	<0.003	<0.500	<0.005	219	<0.010	<0.020	<0.010	3.9	<0.003	<0.030	38	0.66	<0.0002	<0.030	<5.0
W-28S	**7/28/10**	<0.005	0.033	0.11	<0.003	<0.500	<0.005	189	<0.010	<0.020	<0.010	4.98	<0.003	<0.030	32.5	0.614	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28D	**1/21/09**	<0.030	<0.010	0.0551	<0.003	<0.500	<0.005	25.3	<0.010	<0.020	<0.010	0.248	<0.003	<0.030	8.25	0.107	<0.0002	<0.030	1.88
W-28D	**7/21/09**	<0.030	<0.010	0.0538	<0.003	<0.500	<0.005	29.5	<0.010	<0.020	<0.010	0.255	<0.003	<0.030	10.1	0.129	<0.0002	<0.030	1.73
W-28D	**1/13/10**	<0.030	<0.010	0.0575	<0.003	<0.500	<0.005	26.6	<0.010	<0.020	<0.010	0.162	<0.003	<0.030	9.36	0.176	<0.0002	<0.030	<5.0
W-28D	**7/27/10**	<0.005	<0.005	0.0592	<0.003	<0.500	<0.005	27.1	<0.010	<0.020	<0.010	0.0923	<0.003	<0.030	9.48	0.0558	<0.0002	<0.030	<5.0

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS JULY 2010
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16D	**1/21/09**	<0.005	<0.010	18.1	<0.010	0.0178
W-16D	**7/21/09**	<0.005	<0.010	3.97	<0.010	0.0249
W-16D	**1/13/10**	<0.005	<0.010	<5.0	<0.010	0.047
W-16D	**7/28/10**	<0.003	<0.010	<5.0	<0.003	0.0364
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17S	**1/21/09**	<0.005	<0.010	14.8	<0.010	<0.010
W-17S	**7/21/09**	<0.005	<0.010	14.8	<0.010	0.0204
W-17S	**1/14/10**	<0.005	<0.010	9.66	<0.010	0.0292
W-17S	**7/27/10**	<0.003	<0.010	18.3	<0.003	0.0318
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17D	**7/30/08**	<0.005	<0.010	28	<0.010	0.0239
W-17D	**1/21/09**	<0.005	<0.010	22.6	<0.010	0.0111
W-17D	**7/21/09**	<0.005	<0.010	55.8	<0.010	0.0159
W-17D	**7/27/10**	<0.003	<0.010	29.8	<0.003	0.0248
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27S	**1/21/09**	<0.005	<0.010	38	<0.010	0.057
W-27S	**7/21/09**	<0.005	<0.010	42.6	<0.010	0.19
W-27S	**1/13/10**	<0.005	<0.010	38.1	<0.010	0.0567
W-27S	**7/27/10**	0.004	<0.010	5.92	<0.003	0.0151
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27D	**1/21/09**	<0.030	<0.010	44.2	<0.030	0.0108
W-27D	**7/21/09**	<0.030	<0.010	56.3	<0.030	0.0246
W-27D	**1/13/10**	<0.005	<0.010	49	<0.010	0.0346
W-27D	**7/26/10**	<0.003	<0.010	52	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28S	**1/21/09**	<0.005	<0.010	25.2	<0.010	0.0149
W-28S	**7/21/09**	<0.005	<0.010	31.9	<0.010	<0.010
W-28S	**1/13/10**	<0.005	<0.010	28.4	<0.010	0.0448
W-28S	**7/28/10**	<0.003	<0.010	28.7	<0.003	0.0295
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28D	**1/21/09**	<0.005	<0.010	33.3	<0.010	0.013
W-28D	**7/21/09**	<0.005	<0.010	39.3	<0.010	<0.010
W-28D	**1/13/10**	<0.005	<0.010	39.2	<0.010	0.0274
W-28D	**7/27/10**	<0.003	<0.010	38	<0.003	<0.010

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JULY 2010
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-05D	**1/21/09**	18.21	3.3	8.40	-107	117	30.1	100	3.24	8	<0.010	122	<0.010	0.212	<0.500	<0.005	120	<3.0
W-05D	**7/22/09**	19.35	18	8.25	-26	249	13.5	110	3.48	5	<0.010	139	<0.010	<0.20	<0.500	<0.005	180	<3.0
W-05D	**1/14/10**	18.35	11.3	8.38	-19	370	>1,000	130	2.59	22	<0.010	256	<0.010	<0.200	<0.500	<0.005	240	<3.0
W-05D	**7/27/10**	20.79	20.1	8.99	68	389	18	110	3.92	12	<0.010	120	<0.010	0.118	<0.500	<0.005	220	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-06DA	**1/21/09**	17.63	3.4	9.01	-20	93.2	12.4	140	3.66	8	<0.010	193	<0.010	<0.20	<0.50	<0.005	372	<3.0
W-06DA	**7/22/09**	18.62	17.2	7.62	90	309	24.1	140	3.97	5	<0.010	237	<0.010	<0.200	0.602	<0.005	280	<3.0
W-06DA	**1/14/10**	17.70	11	8.36	26	501	58.3	180	10.6	10	<0.010	197	<0.010	<0.200	<0.500	<0.005	290	<3.0
W-06DA	**7/27/10**	20.22	16.9	8.53	113	595	33.7	120	4.02	7	<0.010	207	<0.010	0.112	<0.500	<0.005	300	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-08D*	**1/21/09**	76.81	8.9	8.07	-60	410	88.3	180	3.34	105	<0.010	234	<0.010	0.441	<0.500	<0.005	282	<3.0
W-08D*	**7/22/09**	76.97	15.8	7.34	184	223	42	180	3.92	25	<0.010	283	<0.010	0.549	<0.500	<0.005	280	<3.0
W-08D*	**1/14/10**	74.75	11	7.19	175	991	52.1	220	3.51	15	<0.010	263	<0.010	<0.200	<0.500	<0.005	220	<3.0
W-08D*	**7/28/10**	78.32	18.6	7.40	323	151	48.3	180	17.8	85	<0.010	239	<0.010	0.218	<0.500	<0.005	440	<3.0

*** BACKGROUND WELL**

TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-09D	**1/21/09**	42.4	8	7.86	-91	495	19.2	130	135	28	<0.010	162	<0.010	0.212	<0.500	<0.005	444	<3.0
W-09D	**7/22/09**	43.63	17.6	7.80	-21	528	7.62	130	133	7	<0.010	206	<0.010	<0.20	<0.500	<0.005	530	<3.0
W-09D	**1/14/10**	42.95	12.2	8.17	-17	1154	19.5	140	127	10	<0.010	174	<0.010	<0.20	<0.500	<0.005	480	<3.0
W-09D	**7/28/10**	44.81	21.3	7.96	78	1232	18.5	130	129	12	<0.010	171	<0.010	0.218	<0.500	<0.005	480	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-10D	**1/21/09**	57.69	8.8	7.73	-42	940	17.6	550	17.8	10	<0.010	272	<0.010	<0.200	<0.50	<0.005	757	<3.0
W-10D	**7/22/09**	57.30	16.1	6.74	217	426	8.1	480	21.7	5	<0.010	766	<0.010	<0.200	<0.500	<0.005	780	<3.0
W-10D	**1/14/10**	58.37	11.7	6.36	241	1817	17.5	530	13.7	15	<0.010	664	<0.010	<0.20	<0.500	<0.005	700	<3.0
W-10D	**7/28/10**	59.94	17.9	7.05	360	464	43.6	460	30.3	7	<0.010	765	<0.010	0.196	<0.500	<0.005	990	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JULY 2010
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-05D	**1/21/09**	0.116	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	34.1	<0.005	<0.020	<0.010	0.26	<0.003	<0.030	8.99	0.0517	<0.0002	<0.030
W-05D	**7/22/09**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	38.5	<0.005	<0.020	<0.010	0.149	<0.003	<0.030	10.3	0.0947	<0.0002	<0.030
W-05D	**1/14/10**	19.2	<0.030	<0.010	0.155	<0.003	<0.500	<0.005	60.4	0.0552	<0.020	0.0302	29.2	0.00775	<0.030	25.6	0.579	<0.0002	0.036
W-05D	**7/27/10**	0.104	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	31.3	<0.010	<0.020	<0.010	0.354	<0.003	<0.030	10	0.0317	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-06DA	**1/21/09**	<0.100	<0.030	<0.010	0.0679	<0.003	<0.500	<0.005	62	<0.005	<0.020	<0.010	0.36	<0.003	<0.030	9.19	0.0357	<0.0002	<0.030
W-06DA	**7/22/09**	0.15	<0.030	<0.010	0.0747	<0.003	<0.500	<0.005	75.7	<0.010	<0.020	0.0139	0.465	<0.003	<0.030	11.7	0.0399	<0.0002	<0.030
W-06DA	**1/14/10**	0.199	<0.030	<0.010	0.0653	<0.003	<0.500	<0.005	63.1	<0.010	<0.020	<0.010	0.423	<0.003	<0.030	9.66	0.200	<0.0002	<0.030
W-06DA	**7/27/10**	0.118	<0.005	<0.005	0.063	<0.003	<0.500	<0.005	66.1	<0.010	<0.020	<0.010	0.273	<0.003	<0.030	10.2	0.064	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-08D*	**1/21/09**	4.56	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	69.5	0.0118	<0.020	0.0153	5.73	<0.003	<0.030	14.8	0.0892	<0.0002	<0.030
W-08D*	**7/22/09**	1.42	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	85.6	<0.010	<0.020	<0.010	1.97	<0.003	<0.030	16.8	0.0595	<0.0002	<0.030
W-08D*	**1/14/10**	2.77	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	78.6	<0.010	<0.020	<0.010	3.56	<0.003	<0.030	16.3	0.069	<0.0002	<0.030
W-08D*	**7/28/10**	2.6	<0.005	<0.005	0.0735	<0.003	<0.500	<0.005	71.4	<0.010	<0.020	<0.010	3.91	<0.003	<0.030	14.7	0.0786	<0.0002	<0.030

*** BACKGROUND WELL**

TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-09D	**1/21/09**	<0.100	<0.030	<0.010	0.0522	<0.003	<0.500	<0.005	33.2	<0.005	<0.020	<0.010	0.573	<0.003	<0.030	19.4	0.497	<0.0002	<0.030
W-09D	**7/22/09**	0.215	<0.030	<0.010	0.0755	<0.003	<0.500	<0.005	42.6	0.0353	<0.020	0.0282	1.69	<0.003	<0.030	24.3	0.529	<0.0002	<0.030
W-09D	**1/14/10**	<0.100	<0.030	<0.010	0.0577	<0.003	<0.500	<0.005	34.4	0.0143	<0.020	<0.010	0.670	<0.003	<0.030	21.5	0.693	<0.0002	<0.030
W-09D	**7/28/10**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	34	<0.010	<0.020	<0.010	0.362	<0.003	<0.030	21	0.219	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-10D	**1/21/09**	0.855	<0.030	<0.010	0.148	<0.003	<0.500	<0.005	80	0.0163	<0.020	<0.010	7.85	<0.003	<0.030	17.5	1.00	<0.0002	<0.030
W-10D	**7/22/09**	0.129	<0.030	<0.010	0.0764	<0.003	<0.500	<0.005	231	<0.010	<0.020	<0.010	0.685	<0.003	<0.030	45.8	2.15	<0.0002	<0.030
W-10D	**1/14/10**	0.131	<0.030	<0.010	0.0698	<0.003	<0.500	<0.005	202	<0.010	<0.020	<0.010	0.665	<0.003	<0.030	38.4	2.46	<0.0002	<0.030
W-10D	**7/28/10**	0.186	<0.005	0.013	0.0884	<0.003	<0.500	<0.005	216	<0.010	<0.020	<0.010	1.06	<0.003	<0.030	54.7	2.56	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JULY 2010
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-05D	**1/21/09**	3.52	<0.005	<0.010	6.02	<0.010	0.0137
W-05D	**7/22/09**	2.55	<0.005	<0.010	6.66	<0.010	<0.010
W-05D	**1/14/10**	6.32	<0.005	<0.010	6.51	<0.010	0.0981
W-05D	**7/27/10**	7.12	<0.003	<0.010	8.45	<0.010	0.0169
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-06DA	**1/21/09**	1.36	<0.005	<0.010	8.91	<0.010	0.0216
W-06DA	**7/22/09**	1.68	<0.005	0.021	11.9	<0.010	<0.010
W-06DA	**1/14/10**	<5.0	<0.005	<0.010	10.7	<0.010	0.0184
W-06DA	**7/27/10**	<5.0	<0.003	<0.010	12.8	<0.003	0.0102
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-08D*	**1/21/09**	1.94	<0.005	<0.010	5.28	<0.010	0.0255
W-08D*	**7/22/09**	1.05	<0.005	<0.010	6.84	<0.010	0.0275
W-08D*	**1/14/10**	<5.0	<0.005	<0.010	6.09	<0.010	0.0248
W-08D*	**7/28/10**	<5.0	<0.003	<0.010	6.4	<0.003	0.0157

*** BACKGROUND WELL**

TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-09D	**1/21/09**	3.19	<0.005	<0.010	11.7	<0.010	<0.010
W-09D	**7/22/09**	4.31	<0.005	<0.010	146	<0.010	0.0457
W-09D	**1/14/10**	<5.0	<0.005	<0.010	138	<0.010	0.0879
W-09D	**7/28/10**	<5.0	0.0073	<0.010	132	<0.003	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-10D	**1/21/09**	1.55	<0.005	<0.010	2.97	<0.010	0.0668
W-10D	**7/22/09**	2.7	<0.005	<0.010	20.2	<0.010	0.0124
W-10D	**1/14/10**	<5.0	<0.005	<0.010	15.9	<0.010	0.0387
W-10D	**7/28/10**	<5.0	<0.003	<0.010	27.2	<0.003	0.0571

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JULY 2010
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-30	**1/21/09**	48.85	2.6	8.29	37	459	34.9	450	137	12	<0.010	835	<0.010	<0.20	<0.500	<0.005	1040	<3.0
W-30	**7/22/09**	49.61	16.6	7.20	141	892	33.5	420	139	5	<0.010	944	<0.010	<0.20	<0.500	<0.005	1200	<3.0
W-30	**1/14/10**	50.02	11.0	6.11	237	231	15	480	127	7	<0.010	807	<0.010	<0.20	<0.500	<0.005	1100	<3.0
W-30	**7/27/10**	51.87	16.1	7.47	169	215	15.1	430	122	7	<0.010	874	<0.010	0.131	<0.500	<0.005	1200	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
SS882	**1/21/09**	32.5	10.3	7.89	-50	482	19.4	220	4.52	40	<0.010	251	<0.010	<0.20	<0.50	<0.005	335	<3.0
SS882	**7/22/09**	33.03	15.6	7.81	156	257	8.88	260	4.64	5	<0.010	339	<0.010	<0.20	<0.50	<0.005	400	<3.0
SS882	**1/14/10**	33.63	10.8	7.29	169	1269	14.2	260	4.29	15	<0.010	293	<0.010	<0.20	<0.50	<0.005	280	<3.0
SS882	**7/27/10**	35.86	19.4	7.71	335	185	41.1	290	7.24	7	<0.010	360	<0.010	0.076	<0.50	<0.005	480	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JULY 2010
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-30	**1/21/09**	0.244	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	187	0.0138	<0.020	<0.010	1.21	<0.003	<0.030	89.4	0.0333	<0.0002	<0.030
W-30	**7/22/09**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	211	<0.010	<0.020	0.01	0.707	<0.003	<0.030	101	0.0515	<0.0002	<0.030
W-30	**1/14/10**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	185	<0.010	<0.020	<0.010	0.18	<0.003	<0.030	83.8	0.0174	<0.0002	<0.030
W-30	**7/27/10**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	192	<0.010	<0.020	<0.010	0.124	<0.003	<0.030	95.6	0.0107	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
SS882	**1/21/09**	0.285	<0.030	<0.010	0.069	<0.003	<0.500	<0.005	71.1	<0.010	<0.020	<0.010	1.27	<0.003	<0.030	17.8	0.198	<0.0002	<0.030
SS882	**7/22/09**	<0.100	<0.030	<0.010	0.099	<0.003	<0.500	<0.005	99	<0.010	<0.020	<0.010	1.04	<0.003	<0.030	22.2	0.841	<0.0002	<0.030
SS882	**1/14/10**	<0.100	<0.030	<0.010	0.0811	<0.003	<0.500	<0.005	83.5	<0.010	<0.020	<0.010	1.16	<0.003	<0.030	20.6	0.666	<0.0002	<0.030
SS882	**7/27/10**	0.116	<0.005	0.016	0.131	<0.003	<0.500	<0.005	102	<0.010	<0.020	0.0184	4.56	<0.003	<0.030	25.6	2.32	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JULY 2010
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-30	**1/21/09**	5.26	<0.005	<0.010	59.5	<0.010	0.0235
W-30	**7/22/09**	5.88	<0.005	<0.010	69.7	<0.010	0.0155
W-30	**1/14/10**	5.47	<0.005	<0.010	64.9	<0.010	0.0712
W-30	**7/27/10**	5.72	<0.003	<0.010	66.9	<0.003	0.0132
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
SS882	**1/21/09**	2.13	<0.005	<0.010	15.7	<0.010	<0.010
SS882	**7/22/09**	2.22	<0.005	<0.010	16.9	<0.010	<0.010
SS882	**1/14/10**	<5.0	<0.005	<0.010	18.7	<0.010	0.0233
SS882	**7/27/10**	<5.0	<0.003	<0.010	17.3	<0.003	0.0181

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Cr +6	Nitrate
NYS LIMIT:				**6.5-8.5**			**5.0**				**250.0**		**15.0**	**0.2**		**0.05**	**10.0**
CAS NO.																18540-29-9	
TRIG. VALUE:								**258**			**14.4**		**40**		**354**	**0.05**	**0.48**
CHURCH	**10/30/09**	-	13.7	8.23	-74.3	331	0.08	170	<4.0	<0.2	6.92	<20.0	<5.0	<0.010	220	<0.010	<0.20
CHURCH	**1/13/10**	-	8.8	8.20	-6	571	2.29	170	<4.0	<0.2	9.44	<20.0	<5.0	<0.010	180	<0.010	<0.20
CHURCH	**4/26/10**	-	11	6.68	-47.6	391	1.05	170	<4.0	<0.8	7.48	<20.0	<5.0	<0.010	183	<0.010	0.11
CHURCH	**7/27/10**	-	18.8	8.25	128	610	3.59	170	<4.0	<0.8	7.66	<20.0	6	<0.010	205	<0.010	0.111

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		NH4	TKN	Phenol	TDS	TOC	Sulfate	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe
NYS LIMIT:		**2.0**		**0.001**	**500**				**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**
CAS NO.		7664-41-7		108-95-2									7440-42-8						
TRIG. VALUE:		**0.6**		**0.014**	**488**	**30**		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**
CHURCH	**10/30/09**	<0.50	<0.50	<0.005	260	<3.0	49.8	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	57.8	<0.005	<0.020	0.0132	<0.060
CHURCH	**1/13/10**	<0.50	<0.50	<0.005	180	<3.0	60.7	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	49.3	<0.010	<0.020	0.0125	<0.060
CHURCH	**4/26/10**	<0.50	<0.50	<0.005	300	<3.0	40.3	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	51.6	<0.010	<0.020	<0.010	0.118
CHURCH	**7/27/10**	<0.50	<0.50	<0.005	280	<3.0	43.8	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	57.9	<0.010	<0.020	0.02134	0.12

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2009
(all units are in mg/l)

		Pb	V	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.025**			**0.3**	**0.0007**	**0.1**		**0.01**	**0.05**	**20**		
CAS NO.													
TRIG. VALUE:		**0.025**			**0.3**	**0.002**			**0.0014**	**0.05**	**20**		**0.3**
CHURCH	**10/30/09**	<0.003	<0.030	16.4	0.0423	<0.0002	<0.030	1.24	<0.005	<0.010	18.4	<0.010	0.0192
CHURCH	**1/13/10**	<0.003	<0.030	13.8	<0.010	<0.0002	<0.030	<5.0	<0.005	<0.010	14.7	<0.010	0.0935
CHURCH	**4/26/10**	<0.003	<0.030	13.2	<0.010	<0.0002	<0.030	<5.0	<0.005	<0.010	14.4	<0.010	<0.010
CHURCH	**7/27/10**	0.0057	<0.030	14.8	<0.018	<0.0002	<0.030	<5.00	<0.003	<0.010	15.4	<0.003	0.0318

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS JULY 2010
(all units are in mg/l)

		Dis O2	SC	eH	pH	Temp	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols
CLASS C STD:		**<4**			**6.5-8.5**						**9**		**0.011**		**2**	
WALL-UP	**1/19/09**	-	312	-17	8.60	0.2	14.6	120	74.2	25	<0.010	182	<0.010	1.04	<0.500	<0.005
WALL-UP	**7/20/09**	-	504	88	7.20	25	35.9	130	62.5	9	<0.010	198	<0.010	0.612	<0.500	<0.005
WALL-UP	**1/12/10**	-	720	95	8.86	1.7	16.1	140	60.1	30	<0.010	162	<0.010	0.908	<0.500	<0.005
WALL-UP	**7/28/10**	-	821	75	7.92	27.3	95.3	150	79.3	55	<0.010	216	<0.010	0.973	<0.500	<0.005
WALL-DN	**1/19/09**	-	294	-25	8.18	0.9	15.6	120	70.6	24	<0.010	183	<0.010	1.030	<0.500	<0.005
WALL-DN	**7/20/09**	-	1609	74	7.62	25	32.6	140	64.6	6	<0.010	199	<0.010	0.637	<0.500	<0.005
WALL-DN	**1/12/10**	-	716	86	8.48	1.3	19.7	140	59.5	30	<0.010	162	<0.010	0.987	<0.500	<0.005
WALL-DN	**7/28/10**	-	836	111	8.31	28.1	85.7	140	79.6	50	<0.010	215	<0.010	0.746	<0.500	<0.005
Basin A	**1/20/09**	Frozen														
Basin A	**7/20/09**	8.83	324	107	7.82	30	54	170	2.06	9	<0.010	204	<0.010	<0.20	<0.500	<0.005
Basin A	**1/12/10**	Frozen														
Basin A	**7/28/10**	4.14	470	7	8.13	31.3	140	87	6.54	30	<10.0	114	<0.010	0.053	<0.500	<0.005
Basin B	**1/20/09**	Dry														
Basin B	**7/20/09**	4.51	326	67	7.91	32.0	157	170	3	9	<0.010	220	<0.010	<0.200	<0.500	<0.005
Basin B	**1/12/10**	Dry														
Basin B	**7/28/10**	Dry														
Basin D	**1/20/09**	Dry														
Basin D	**7/20/09**	4.76	363	83	8.27	28.2	22.6	210	1.95	9	<0.010	258	<0.010	<0.200	<0.500	<0.005
Basin D	**1/12/10**	Dry														
Basin D	**7/28/10**	Dry														

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS JULY 2010
(all units are in mg/l)

		DS	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
CLASS C STD:		**500**		**0.1**				**1.1**	**10**				**0.005**		**0.3**		**0.014**	
WALL-UP	**1/19/09**	300	3.6	0.151	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	45.5	<0.010	<0.020	<0.010	0.386	<0.003	<0.030	15.3
WALL-UP	**7/20/09**	280	5.1	0.402	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	52	<0.005	<0.020	<0.010	0.7	<0.003	<0.030	16.6
WALL-UP	**1/12/10**	250	4.6	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	40.7	<0.005	<0.020	<0.010	0.346	<0.003	<0.030	14.7
WALL-UP	**7/28/10**	370	6.4	0.524	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	56	<0.010	<0.020	<0.010	1.09	<0.003	<0.030	18.5
WALL-DN	**1/19/09**	308	4.6	0.141	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	47.8	<0.005	<0.020	0.0283	0.394	<0.003	<0.030	15.4
WALL-DN	**7/20/09**	290	7.0	0.396	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	52.1	<0.005	<0.020	<0.010	0.68	<0.003	<0.030	16.7
WALL-DN	**1/12/10**	270	3.9	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	40.4	<0.005	<0.020	0.0182	0.32	<0.003	<0.030	14.8
WALL-DN	**7/28/10**	470	6.6	0.804	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	55.7	<0.010	<0.020	<0.010	1.53	<0.003	<0.030	18.4
Basin A	**1/20/09**																	
Basin A	**7/20/09**	180	7.6	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	61.4	<0.010	<0.020	0.0189	0.398	<0.003	<0.030	12.3
Basin A	**1/12/10**																	
Basin A	**7/28/10**	200	8.6	1.22	<0.005	0.0054	<0.050	<0.003	<0.500	<0.005	33.6	<0.010	<0.020	<0.010	2.95	<0.003	<0.030	7.23
Basin B	**1/20/09**																	
Basin B	**7/20/09**	210	8.4	1.91	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	74.3	<0.010	<0.020	0.0109	2.9	<0.003	<0.030	8.46
Basin B	**1/12/10**																	
Basin B	**7/28/10**																	
Basin D	**1/20/09**																	
Basin D	**7/20/09**	260	8	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	89.9	<0.010	<0.020	<0.010	0.969	<0.003	<0.030	8.25
Basin D	**1/12/10**																	
Basin D	**7/28/10**																	

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS JULY 2010
(all units are in mg/l)

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
CLASS C STD:									**0.008**	
WALL-UP	**1/19/09**	0.0734	<0.0002	<0.030	1.77	<0.005	<0.010	36	<0.010	0.0512
WALL-UP	**7/20/09**	0.103	<0.0002	<0.030	2.35	<0.005	<0.010	34.7	<0.010	0.0609
WALL-UP	**1/12/10**	0.0792	<0.0002	<0.030	<5.0	<0.005	<0.010	34.5	<0.010	0.064
WALL-UP	**7/28/10**	0.183	<0.0002	<0.030	<5.00	<0.003	<0.010	39.9	<0.003	0.0175
WALL-DN	**1/19/09**	0.0799	<0.0002	<0.030	2.37	<0.005	<0.010	36.8	<0.010	0.0661
WALL-DN	**7/20/09**	0.105	<0.0002	<0.030	3.35	<0.005	<0.010	35.7	<0.010	0.14
WALL-DN	**1/12/10**	0.0761	<0.0002	<0.030	<5.0	<0.005	<0.010	33.5	<0.010	0.035
WALL-DN	**7/28/10**	0.197	<0.0002	<0.030	<5.00	<0.003	<0.010	39.6	<0.003	0.0143
Basin A	**1/20/09**									
Basin A	**7/20/09**	0.0551	<0.0002	<0.030	2.15	<0.005	<0.010	2.43	<0.010	0.0222
Basin A	**1/12/10**									
Basin A	**7/28/10**	0.746	<0.0002	<0.030	<0.030	<0.003	<0.010	<5.00	<0.003	0.228
Basin B	**1/20/09**									
Basin B	**7/20/09**	0.109	<0.0002	<0.030	5.31	<0.005	<0.010	1.63	<0.010	0.0153
Basin B	**1/12/10**									
Basin B	**7/28/10**									
Basin D	**1/20/09**									
Basin D	**7/20/09**	0.167	<0.0002	<0.030	3.52	<0.005	<0.010	1.46	<0.010	<0.010
Basin D	**1/12/10**									
Basin D	**7/28/10**									

TABLE 3-2
AL TURI SANITARY LANDFILL
SEDIMENT / FLOC MONITORING ANALYTICAL RESULTS
JULY 2010
(all units are in mg/kg)

		% Moisture	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
Sed UP	**1/19/09**	9.03	16100	5160	<3.30	<2.20	29.1	<0.665	<110	<1.10	10700	7.84	5.51	9.33	12500	8.89	8.44	7090
Sed UP	**7/20/09**	33.1	22000	7720	<4.49	<2.99	124	<0.897	<150	5.87	53800	37.3	15.6	47	125000	433	17.5	6060
Sed UP	**1/12/10**	16.3	23300	6350	<3.58	<2.39	31.4	<0.717	<119	<1.19	9080	9.35	5.69	13.7	13700	7.56	10.3	6750
Sed UP	**7/27/10**	41.3	29500	8740	<17.0	19.6	66.9	<1.02	<170	<1.70	12200	18.8	9.34	38.6	32.6	70	15.4	6730
Sed DN	**1/19/09**	69.6	401000	4130	<9.88	8.11	99.8	<1.98	<329	<3.29	41200	<6.58	<13.2	30.3	17200	8.98	<19.8	4770
Sed DN	**7/20/09**	30.2	5510	5510	<4.30	<2.87	35.2	<0.860	<143	<1.43	6780	8.23	5.73	15	12900	9.14	<8.60	4080
Sed DN	**1/12/10**	28	19200	9970	<4.17	<2.78	32.4	<0.833	<139	<1.39	6260	13.8	8.29	26.8	22700	8.4	16.5	6430
Sed DN	**7/27/10**	39.6	18000	10800	<16.5	31.2	51.9	<0.993	<0.165	<1.65	8920	17.4	14.2	34.9	25800	98.4	16.8	7480

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
Sed UP	**1/19/09**	333	<0.055	12	423	<1.10	<2.20	<220	<2.20	57.1
Sed UP	**7/20/09**	2670	<0.0748	60.4	922	<1.50	<2.99	342	<2.99	137
Sed UP	**1/12/10**	367	<0.0597	10.8	737	<1.19	<2.39	<239	<2.39	59.2
Sed UP	**7/27/10**	1120	<0.0852	16.9	674	1.37	<3.41	465	<10.2	134
Sed DN	**1/19/09**	1090	<0.165	<19.8	<658	<3.29	<6.58	<658	<6.58	78.0
Sed DN	**7/20/09**	770	<0.0717	12	511	<1.43	<2.87	<287	<2.87	74.6
Sed DN	**1/12/10**	458	<0.0695	29.5	862	<1.39	<2.78	287	<2.78	68
Sed DN	**7/27/10**	1030	0.102	23	946	<9.93	<3.31	<331	<9.93	97.4

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
JULY 2010
(all units are in mg/l)

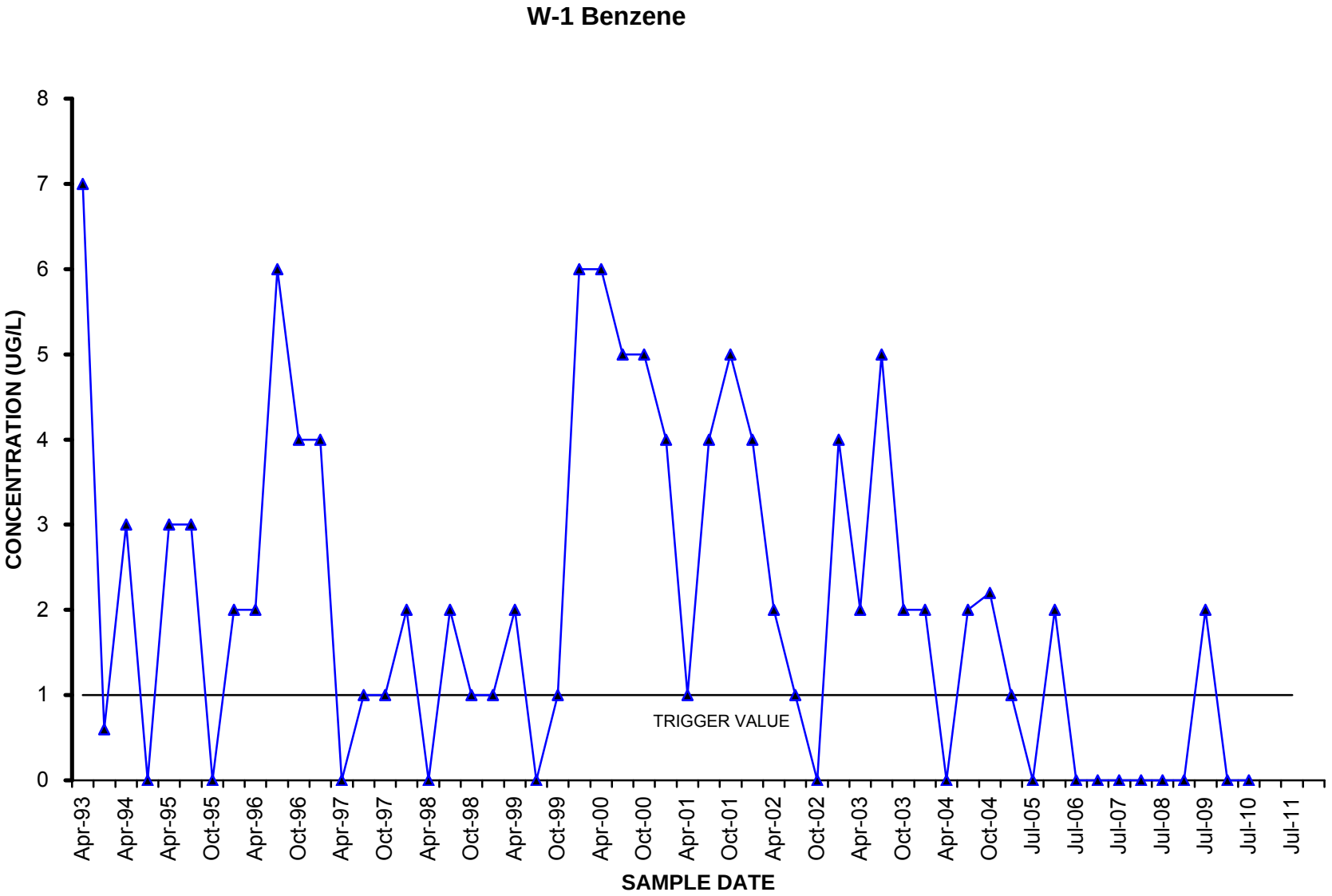
		SC	eH	pH	Temp	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Nitrate	NH4	TKN
LCH-11P	**1/19/09**	2120	-49	7.95	6.7	45.3	1700	70	<2.0	13.7	154	40	<0.010	123	<0.20	502	565
LCH-11P	**7/22/09**	1813	-49	7.24	17.8	25.5	1700	11	63	6150	364	60	<0.010	3840	<0.20	209	209
LCH-11P	**1/14/10**	1425	4	7.29	10.2	62.9	1400	28	<20.0	2250	250	250	<0.010	1340	1.53	233	249
LCH-11P	**7/28/10**	>10,000	13	7.11	20.7	64.2	1800	7	20	8390	200	100	<0.010	3700	1.55	201	229
LCH-11S	**1/19/09**	550	-34	7.88	9.1	4.76	170	<4.0	<0.20	43.3	<20.0	20	<0.010	289	0.875	<0.500	0.523
LCH-11S	**7/22/09**	491	181	6.85	13.6	41.4	120	<8.0	<0.200	30.5	<20.0	5	<0.010	258	1.08	<0.500	<0.500
LCH-11S	**1/14/10**	919	-7	8.22	10.4	5.28	150	<8.0	<0.200	30.8	<20.0	12	<0.010	240	0.719	5.02	<0.500
LCH-11S	**7/28/10**	623	75	8.27	18.4	11.6	88	<4.0	<1.6	25.7	<20.0	30	<0.010	160	0.933	<0.500	<0.500
LCH-12P	**1/19/09**	7960	-1	6.92	16.2	84.6	3100	78	<20.0	2150	784	700	<0.010	575	1.21	710	736
LCH-12P	**7/22/09**	1184	114	6.92	19.2	109	360	<8.0	<20.0	137	<20.0	5	<0.010	822	27.8	<0.500	<0.500
LCH-12P	**1/14/10**	518	22	7.92	18.6	20.7	1200	29	<20.0	549	153	70	<0.010	568	12.5	149	181
LCH-12P	**7/28/10**	1075	13	7.66	26.9	83.9	2200	66	<8.00	1420	490	300	<0.010	568	5.84	456	529
LCH-12S	**1/19/09**	802	34	7.17	10.4	46.9	360	<4.0	<0.20	47.8	<20.0	10	<0.010	626	7.72	<0.500	<0.500
LCH-12S	**7/22/09**	1082	100	6.80	20	52.6	320	<8.0	<0.20	118	26	5	<0.010	710	20.9	<0.500	<0.500
LCH-12S	**1/14/10**	210	45	7.51	10	18.9	280	<8.0	<2.0	120	<20.0	7	<0.010	637	25.6	<0.500	<0.500
LCH-12S	**7/28/10**	DRY															

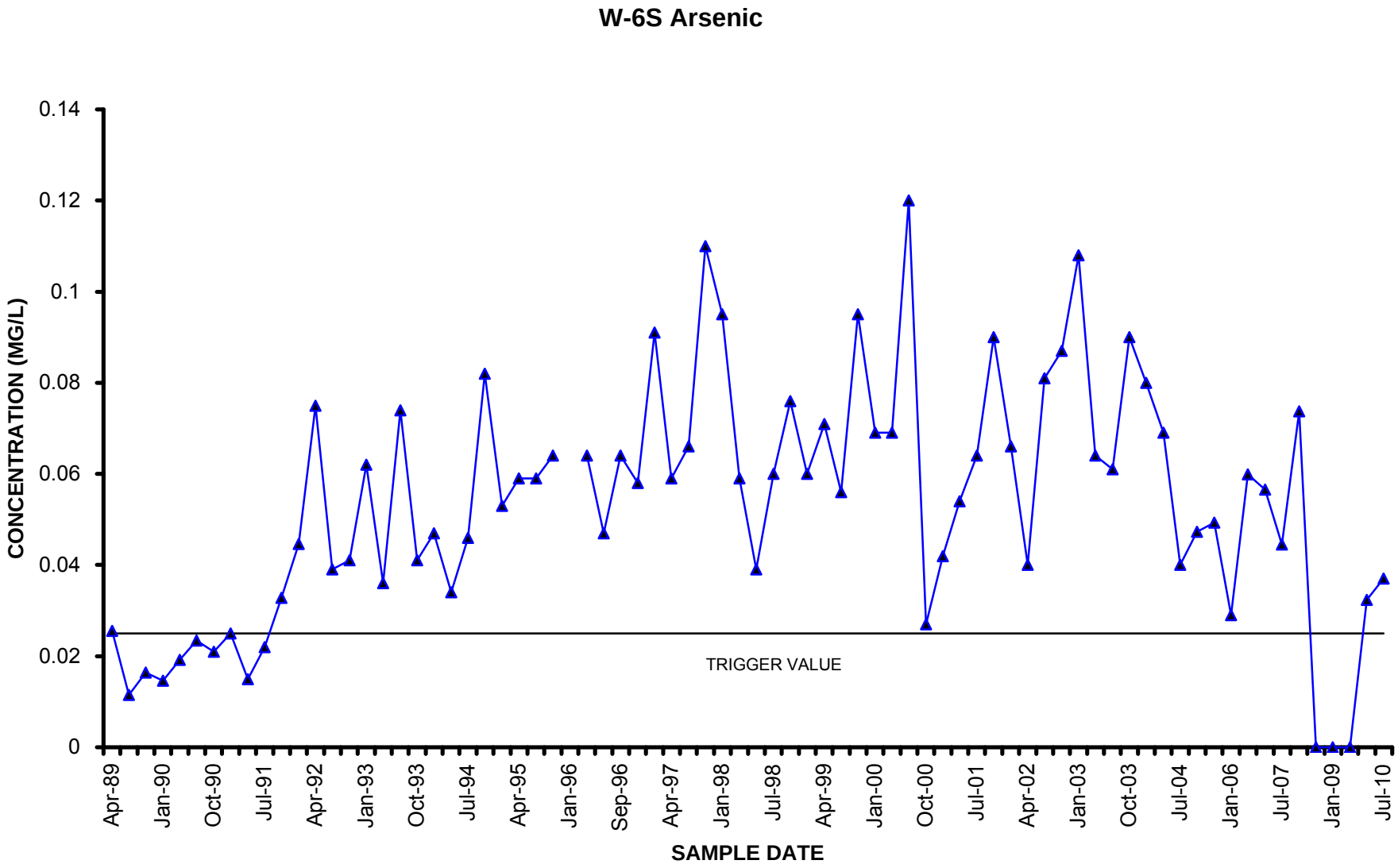
TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
JULY 2010
(all units are in mg/l)

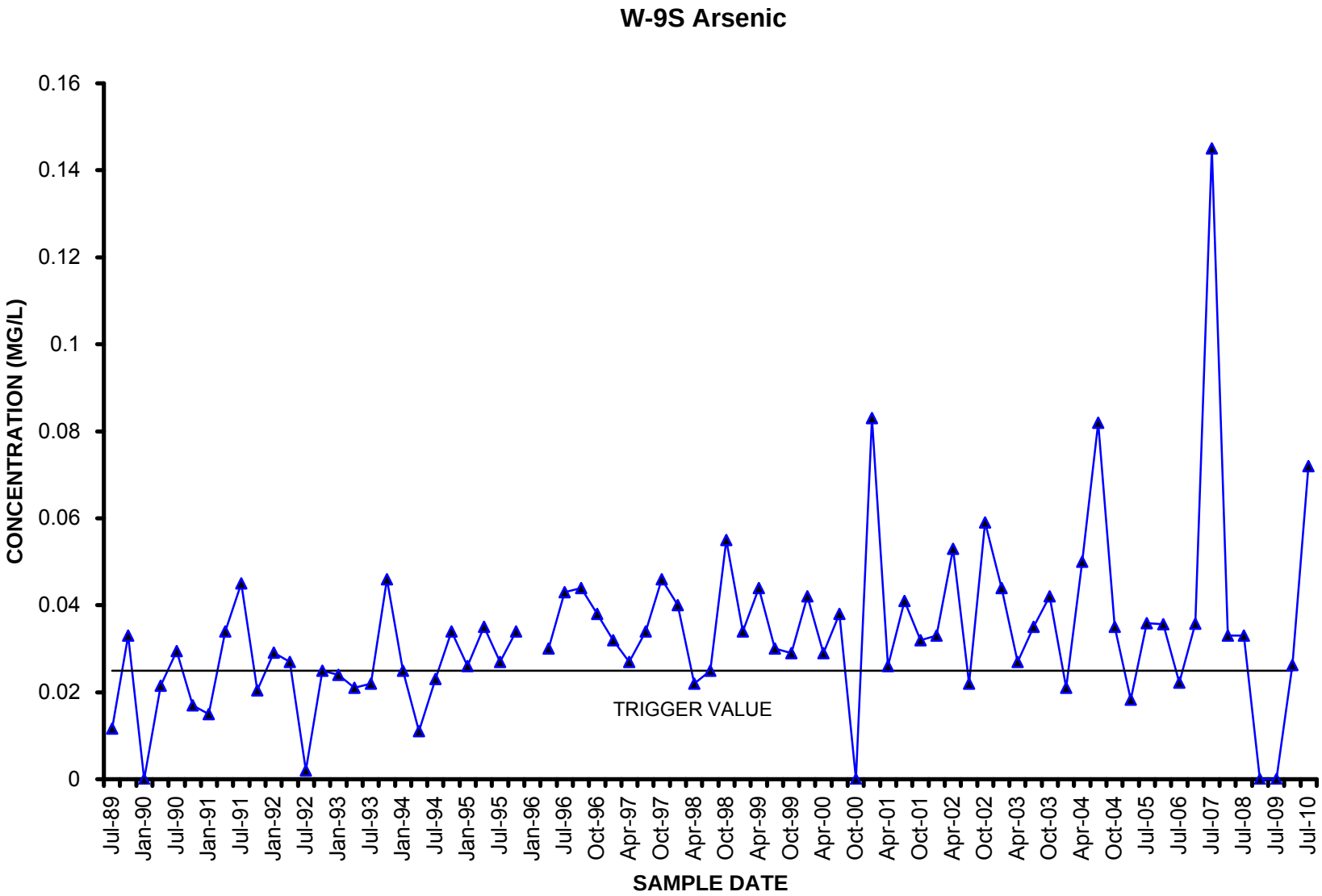
		Phenols	TDS	Sulfate	Sulfide	Cr +6	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
LCH-11P	**1/19/09**	9.21	212	59.1	<0.100	<0.010	38	<0.100	<0.030	0.0838	<0.050	<0.003	<0.500	<0.005	38.7	<0.010	<0.020
LCH-11P	**7/22/09**	<0.005	14000	1390	<0.100	<0.010	<75.0	<0.100	<0.030	<0.010	0.154	<0.003	16.8	<0.005	543	<0.010	<0.020
LCH-11P	**1/14/10**	4.26	5900	1170	<0.100	<0.010	69.2	<0.100	<0.030	0.056	0.09	<0.003	5.68	<0.005	190	<0.010	<0.020
LCH-11P	**7/28/10**	<0.025	17000	2150	<0.100	<0.010	46.8	0.149	<0.050	0.044	0.135	<0.003	20.1	<0.005	489	<0.010	<0.020
LCH-11S	**1/19/09**	0.006	428	178	<0.100	<0.010	<3.0	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	82.8	<0.010	<0.020
LCH-11S	**7/22/09**	<0.005	510	101	<0.100	<0.010	<3.0	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	73.9	<0.010	<0.020
LCH-11S	**1/14/10**	<0.005	400	157	<0.100	<0.010	<3.0	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	66.9	<0.010	<0.020
LCH-11S	**7/28/10**	0.046	460	83.9	<0.100	<0.010	3.9	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	46.5	<0.010	<0.020
LCH-12P	**1/19/09**	0.353	4460	<5.00	<0.100	<0.040	203	0.647	<0.015	0.115	0.417	<0.003	6.06	<0.005	103	0.0273	0.0322
LCH-12P	**7/22/09**	<0.005	1100	325	<0.100	<0.010	4.7	0.552	<0.030	<0.010	0.0748	<0.003	<0.500	<0.005	253	<0.010	<0.020
LCH-12P	**1/14/10**	<0.050	1600	66.6	<0.100	<0.010	64.5	0.12	<0.030	0.016	0.135	<0.003	1.72	<0.005	158	<0.010	<0.020
LCH-12P	**7/28/10**	<0.050	3600	70.2	<0.100	<0.010	165	0.409	<0.030	0.056	0.218	<0.003	4.7	<0.005	125	0.0174	0.0201
LCH-12S	**1/19/09**	<0.005	768	216	<0.100	<0.010	3.1	0.37	<0.030	<0.010	0.0723	<0.003	<0.500	<0.005	196	<0.010	<0.020
LCH-12S	**7/22/09**	<0.005	960	196	<0.100	<0.010	4.8	0.304	<0.030	<0.010	0.0637	<0.003	<0.500	<0.005	217	<0.010	<0.020
LCH-12S	**1/14/10**	<0.005	890	299	<0.100	<0.010	4	0.33	<0.030	<0.010	0.0724	<0.003	<0.500	<0.005	191	<0.010	<0.020
LCH-12S	**7/28/10**																

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
JULY 2010
(all units are in mg/l)

		Cu	Fe	K	Pb	V	Mg	Mn	Hg	Ni	Se	Ag	Na	Sn	Th	Zn
LCH-11P	**1/19/09**	<0.010	1.37	1.06	<0.003	<0.030	6.46	0.0574	<0.0002	<0.030	<0.005	<0.010	5.85	<0.030	<0.010	0.229
LCH-11P	**7/22/09**	0.0141	22.8	<1.00	<0.003	<0.030	602	5.16	<0.0002	0.0591	<0.005	<0.010	3380	<0.300	<0.010	0.0975
LCH-11P	**1/14/10**	<0.010	3.75	297	0.0088	<0.030	209	1.84	<0.0002	0.0433	0.17	<0.010	1430	<0.300	<0.010	1.05
LCH-11P	**7/28/10**	<0.010	3.43	813	<0.003	<0.030	603	4.63	<0.0002	0.0525	<0.075	0.0178	4390	1.26	<0.003	<0.010
LCH-11S	**1/19/09**	<0.010	0.0974	9.87	<0.003	<0.030	19.9	0.106	<0.0002	<0.030	<0.005	<0.010	40.9	<0.300	<0.010	0.237
LCH-11S	**7/22/09**	0.0116	<0.060	9.21	<0.003	<0.030	17.9	0.0825	<0.0002	<0.030	<0.005	<0.010	33.5	<0.300	<0.010	0.25
LCH-11S	**1/14/10**	<0.010	<0.060	9.36	<0.003	<0.030	17.7	0.0221	<0.0002	<0.030	<0.005	0.38	40.9	<0.300	<0.010	0.344
LCH-11S	**7/28/10**	<0.010	<0.060	7.38	<0.003	<0.030	10.7	<0.010	<0.0002	<0.030	<0.030	<0.010	21.7	<0.300	<0.003	0.216
LCH-12P	**1/19/09**	0.0163	3.64	312	<0.003	<0.030	76.9	0.332	<0.0002	0.162	<0.005	<0.010	1110	<0.300	<0.010	0.108
LCH-12P	**7/22/09**	0.0147	2.36	19.7	<0.003	<0.030	46.2	0.161	<0.0002	<0.030	<0.005	<0.010	107	<0.300	<0.010	0.169
LCH-12P	**1/14/10**	<0.010	0.776	129	<0.003	<0.030	42.3	0.675	<0.0002	0.0453	0.0237	<0.010	514	<0.300	<0.010	0.374
LCH-12P	**7/28/10**	<0.010	2.36	304	<0.030	<0.030	61.9	0.471	<0.0002	0.0992	0.11	<0.010	953	<0.300	<0.030	<0.010
LCH-12S	**1/19/09**	<0.0104	0.784	7.55	<0.003	<0.030	33.1	0.175	<0.0002	<0.030	<0.005	<0.010	39.1	<0.300	<0.010	0.248
LCH-12S	**7/22/09**	0.0123	0.644	17.8	<0.003	<0.030	40.8	0.272	<0.0002	<0.030	<0.005	<0.010	93.3	<0.300	<0.010	0.127
LCH-12S	**1/14/10**	<0.010	0.559	16.5	<0.003	<0.030	39.1	0.642	<0.0002	<0.030	<0.005	<0.010	93.2	<0.300	<0.010	0.131
LCH-12S	**7/28/10**															


W-1 Benzene
CONCENTRATION (UG/L)
0
1
2
3
4
5
6
7
8
TRIGGER VALUE
Apr-93
Apr-94
Apr-95
Oct-95
Apr-96
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
SAMPLE DATE


W-6S Arsenic
CONCENTRATION (MG/L)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Apr-89
Jan-90
Oct-90
Jul-91
Apr-92
Jan-93
Oct-93
Jul-94
Apr-95
Jan-96
Sep-96
Apr-97
Jan-98
Jul-98
Apr-99
Jan-00
Oct-00
Jul-01
Apr-02
Jan-03
Oct-03
Jul-04
Jan-06
Jul-07
Jan-09
Jul-10
SAMPLE DATE


W-9S Arsenic
CONCENTRATION (MG/L)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Jul-89
Jan-90
Jul-90
Jan-91
Jul-91
Jan-92
Jul-92
Jan-93
Jul-93
Jan-94
Jul-94
Jan-95
Jul-95
Jan-96
Jul-96
Oct-96
Apr-97
Oct-97
Apr-98
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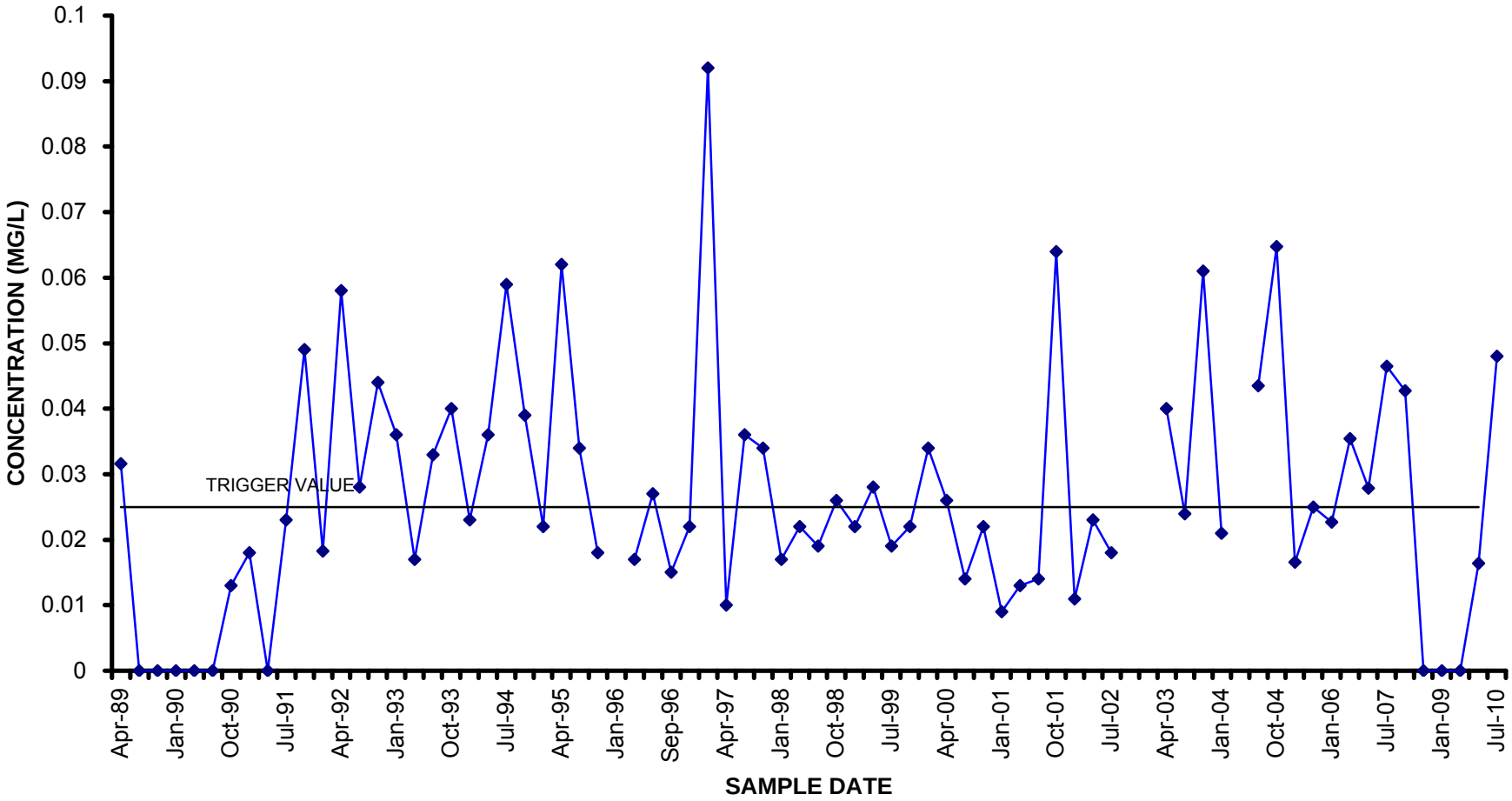
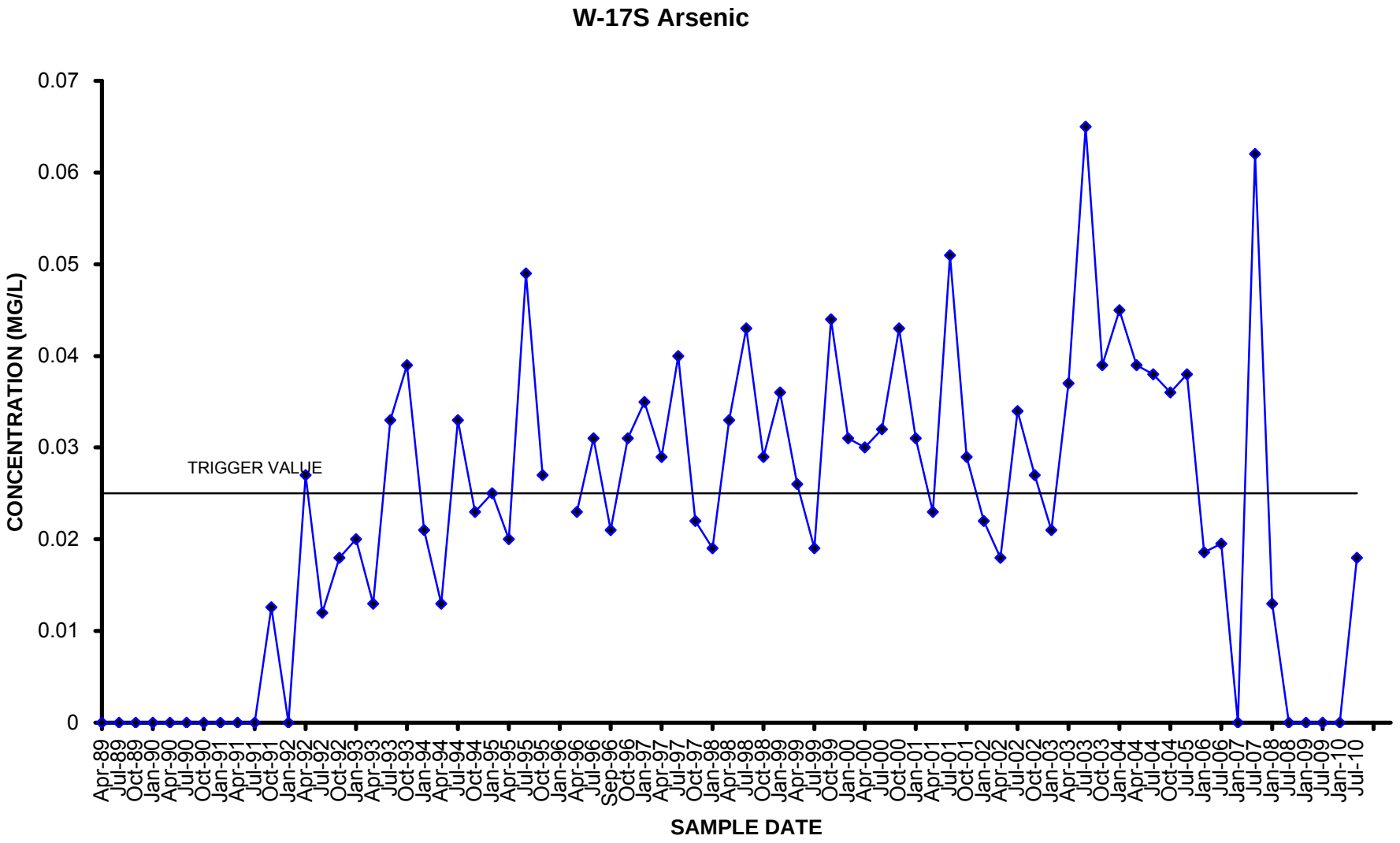
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
SAMPLE DATE

W-16D Arsenic




W-17S Arsenic
CONCENTRATION (MG/L)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
TRIGGER VALUE
Apr-89
Jul-89
Oct-89
Jan-90
Apr-90
Jul-90
Oct-90
Jan-91
Apr-91
Jul-91
Oct-91
Jan-92
Apr-92
Jul-92
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Jul-05
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Jul-09
Jan-10
Jul-10
SAMPLE DATE

JULY 2010
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – CLASS II SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

October 2010

Prepared by

Ground Water Investigations
65 Main Street
Pine Bush, New York 12566

Project 256-00-00

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Attachments

Drawing No. 1 - Well Location Plan	Pocket
Diskette - Laboratory Analytical Data	Pocket

1 INTRODUCTION

The Water Quality Management Program developed for the post-closure monitoring of the Al Turi Landfill – Class II site, located in Goshen, New York, includes the semi-annual groundwater sampling and analysis of select parameters from monitoring wells downgradient of the Class II landfill facility and the evaluation of the data generated by these samples. This program was developed to monitor historical constituents of concern within groundwater, and to identify any changes in the concentration of these constituents that may warrant further evaluation. The identification of conditions warranting further evaluation is based primarily on the comparison of detected concentrations with groundwater trigger levels (GWTLs). The Constituents of Concern and their GWTLs were presented to the Department in December 2001 in the Post-Closure Contingency Monitoring Plan prepared by the ENVIRON International Corporation of Princeton, New Jersey. The Constituents of Concern are listed on Table 1-1.

Semi-annual groundwater quality is monitored at 17 groundwater monitoring wells (overburden and bedrock wells) located within the boundaries of the Al Turi Landfill property. The 17 monitoring wells are divided into two types: "Type 1" wells and "Type 2" wells. Type 1 wells are wells that are located adjacent (within 150 feet) to the Wallkill River while Type 2 wells are located beyond 150 feet from the River. The location of each well in relation to the Wallkill River was a factor when considering GWTLs for each well. Drawing 1 (in pocket) provides a site map of the area indicating the locations of the Type 1 and Type 2 groundwater monitoring wells.

Of the 17 groundwater monitoring wells, two wells (W-1 and W-3A), are monitored semi-annually as part of post closure monitoring of the adjacent Al Turi Landfill. Monitoring of these wells consists of modified Part 360 semi-annual analysis. As part of this sampling event, the Part 360 landfill data collected for well W-1 and well W-3A were utilized. In addition, the Wallkill River, which is located along the western portion of the site, is monitored semi-annually both upgradient and downgradient of the Al Turi Property.

Proper groundwater sampling procedures were followed and all samples were kept in ice filled coolers prior to delivery to the contracted analytical laboratory. Completed chain of custody forms accompanied the samples during shipment.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

2.1 Type 1 Groundwater Quality

Eight Type 1 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill site as part of post-closure monitoring requirements. Of the eight Type 1 groundwater monitoring wells, six wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-38S was dry.

Analytical results collected from the Type 1 groundwater monitoring wells are presented in Table 2-1, as are established GWTL values for each well. A review of the inorganic analyses collected during the July 2010 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 1 groundwater monitoring wells. In addition, a review of the Type 1 volatile organic data collected during the July 2010 sampling event indicates that no volatile organic compounds (VOCs) were present above established GWTLs.

The Type 1 groundwater monitoring wells will be sampled again in January 2011 as part of continued semi-annual groundwater monitoring for the Class II Al Turi Landfill.

2.2 Type 2 Groundwater Quality

Nine Type 2 groundwater monitoring wells are currently sampled at the Class II Al Turi Landfill as part of post-closure monitoring at the facility. Of the nine Type 2 groundwater monitoring wells, seven wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that wells W-13S and W-20 were dry.

Analytical results collected from the Type 2 groundwater monitoring wells are presented in Table 2-2, as are the Type 2 established GWTLs. A review of the inorganic analyses collected during the July 2010 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 2 groundwater monitoring wells. In addition, a review of the Type 2 volatile organic data, collected during the July 2010 sampling event indicates that no volatile organic compounds (VOCs) were present above established GWTLs.

The Type 2 groundwater monitoring wells will be sampled again in January 2011 as part of continued semi-annual groundwater monitoring.

3 ASSESSMENT OF CUMULATIVE EFFECTS

In addition to the direct comparison of measured groundwater concentrations from individual monitoring wells to the appropriate GWTLs, the cumulative effects of ground water discharges to the Wallkill River from the Class II Landfill site are evaluated as part of routine post-closure monitoring. The cumulative mass loading to the river is approximated, as follows:

1. The estimated total mass loading to the river for each Type 1 well is calculated by multiplying the measured concentration with the discharge rate calculated using ground water elevations observed during the same monitoring event (the ground water elevations from the July 2010 event are provided on Table 3-1):

$$M_i = C_i \bullet (Ki \bullet i_i \bullet w_i \bullet d) \bullet CF$$

where:

M_i	=	mass loading rate for well i (kg/day);
C_i	=	measured ground water concentration in well i (mg/L);
K_i	=	hydraulic conductivity for discharge zone segment associated with well i (ft/day);
i_i	=	calculated ground water gradient of for well i (ft/ft);
w_i	=	width of discharge zone segment associated with well i (ft);
d	=	aquifer thickness (ft); and
CF	=	conversion factor 28.32 $L/ft^3 * 10^{-6}$ kg/mg

2. The mass loading rate from each Type 1 well is then summed to estimate the cumulative mass loading to the river, ($M_c = \Sigma M_i$) for each constituent.

3. The estimated river concentration is then calculated by dividing the cumulative mass loading M_c by the measured river flow rate. On July 26, 2010, the average gauge height was 0.14 feet (river elevation of 354.021 ft MSL), which represents an estimated river flow of 20.5 cfs.

The estimated river concentrations are then compared to the lower of the aquatic criteria and human health benchmarks for surface water presented in the December 2001 Post-Closure Monitoring Plan.

The results for the estimated cumulative effects assessment are presented on Table 3-2. As indicated on Table 3-2, the estimated in-stream concentrations resulting from the discharge of groundwater to the Wallkill River based on the observed flow conditions in the river at the time of sampling are all below the lower of the surface water benchmarks. A copy of the updated Al Turi Landfill Stream Gauge Hydrograph Record is included in Appendix A.

4 CONCLUSIONS

A review of the July 2010 groundwater data shows that no Constituents of Concern were observed above GWTLs in any of the groundwater monitoring wells. Because there are no Constituents of Concern observed above any of the established GWTLs, and the assessment of cumulative effects did not identify a potential for unacceptable impacts on the river as a result of groundwater discharges, the routine post-closure monitoring program will continue as specified in the Post-Closure Monitoring Plan for the Class II Al Turi Landfill.

Semi-annual monitoring of 17 groundwater monitoring wells for the identified constituents of concern will continue in January 2011 at the Class II Al Turi Landfill as part of continued post closure monitoring.

APPENDIX A

AL TURI LANDFILL HYDRO GRAPH RECORD

TABLE 1-1

AL TURI LANDFILL - CLASS II SITE
CONSTITUENTS OF CONCERN
JULY 2010 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

Volatile Organic Compounds	***Metals***
Chloromethane	Antimony
Vinyl Chloride	Arsenic
Trichlorofluoromethane	Barium
Dichlorodifluoromethane	Chromium, hexavalent
1,1-Dichloroethene	Chromium
1,1-Dichloroethane	Copper
cis-1,2-Dichloroethene	Lead
Benzene	Magnesium
Trichloroethene	Sodium
	Zinc

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2010 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2010 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	**W-1**		**W-11S**		**W-24S**		**W-38S**	
	27-Jul-10		**26-Jul-10**		**26-Jul-10**		**27-Jul-10**	
Compounds of Concern	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**
Volatile Organic Compounds (VOCs) By Method 8260 (Results in mg/l)								
Chloromethane	ND	35	ND	35	ND	35	DRY	35
Vinyl Chloride	ND	27.6	ND	27.6	ND	27.6	DRY	27.6
Trichlorofluoromethane	ND	11	ND	11	ND	11	DRY	11
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	2.8	DRY	2.8
1,1-Dichloroethene	ND	3.59	ND	6.12	ND	5.07	DRY	5.32
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	50.6	DRY	50.6
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	17.5	DRY	17.5
Benzene	ND	2.21	ND	3.78	ND	3.13	DRY	3.28
Trichloroethene	ND	11	ND	11	ND	11	DRY	11
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***
Antimony	ND	8,828	ND	15,074	ND	12,478	DRY	13,097
Arsenic	0.0094	0.81	ND	1.38	ND	1.14	DRY	1.2
Barium	0.764	***	ND	***	0.0697	***	DRY	***
Chromium, hexavalent	ND	4.54	0.014	7.76	ND	6.42	DRY	6.74
Chromium	ND	38	0.0147	65	ND	54	DRY	57
Copper	ND	4.65	ND	7.94	ND	6.57	DRY	6.9
Lead	ND	1.85	ND	3.16	ND	2.61	DRY	2.74
Magnesium	59.7	***	22.6	***	28.5	***	DRY	***
Sodium	351	103,222	ND	176,259	7.28	145,911	DRY	153,146
Zinc	ND	42.86	ND	73.19	ND	60.59	DRY	63.6

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2010 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2010 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	***W-39S***		***W-40S***		***W-1D***	***W-37D***	***FB-01***	***TB-01***
	26-Jul-10		***26-Jul-10***		***27-Jul-10***	***27-Jul-10***	***27-Jul-10***	***26-Jul-10***
Compounds of Concern	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) By Method 8260 (Results in ug/l)								
Chloromethane	ND	35	ND	35	ND	ND	ND	ND
Vinyl Chloride	ND	27.6	ND	27.6	ND	ND	ND	ND
Trichlorofluoromethane	ND	11	ND	11	ND	ND	ND	ND
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	ND	-	ND
1,1-Dichloroethene	ND	5.71	ND	17.05	ND	ND	ND	ND
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	ND	ND	ND
Benzene	ND	3.53	ND	10.53	ND	ND	ND	ND
Trichloroethene	ND	11	ND	11	ND	ND	ND	ND
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Antimony	ND	14,072	ND	41,986	ND	ND	ND	-
Arsenic	ND	1.29	ND	3.85	ND	0.0053	ND	-
Barium	0.0714	***	0.0656	***	ND	0.431	ND	-
Chromium, hexavalent	ND	7.24	ND	21.6	0.012	ND	ND	-
Chromium	ND	61	ND	181	0.0113	ND	ND	-
Copper	ND	7.41	ND	22.12	ND	ND	ND	-
Lead	ND	2.95	ND	8.79	ND	ND	ND	-
Magnesium	21.1	***	19.7	***	5.77	24.2	ND	-
Sodium	11.8	164,544	27.7	490,952	91.2	124	ND	-
Zinc	ND	68.33	0.0166	203.87	ND	0.0241	0.02	-

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-2

AL TURI LANDFILL - CLASS II SITE
TYPE 2 GROUNDWATER MONITORING WELLS
JULY 2010 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2010 SAMPLING EVENT

		Laboratory Analytical Results										
Sample ID		***W-3A***	***W-12SA***	***W-13S***	***W-18S***	***W-19S***	***W-20***	***W-29***	***W-3D*****	***W-12DA*****	***FB-01***	***TB-01***
Sample Date		***27-Jul-10***	***26-Jul-10***	***26-Jul-10***	***26-Jul-10***	***26-Jul-10***	***26-Jul-10***	***26-Jul-10***	***27-Jul-10***	***27-Jul-10***	***27-Jul-10***	***26-Jul-10***
Compounds of Concern	***GWTL***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) (Results in mg/l)												
Chloromethane	35	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	ND
Vinyl Chloride	27.6	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	ND
Trichlorofluoromethane	11	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	ND
Dichlorodifluoromethane	2.8	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	-	ND
1,1-Dichloroethene	17.05	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	ND
1,1-Dichloroethane	50.6	ND	ND	Dry	0.005 J	ND	Dry	ND	0.004 J	ND	ND	ND
cis-1,2-Dichloroethene	17.5	ND	ND	Dry	0.018	ND	Dry	0.003 J	0.0059	ND	ND	ND
Benzene	10.53	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	ND
Trichloroethene	11	ND	ND	Dry	0.0054	ND	Dry	ND	ND	ND	ND	ND
Total Metals (Results in mg/l)												
Antimony	41,986	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Arsenic	3.85	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Barium	***	0.11	0.051	Dry	ND	ND	Dry	0.11	0.0768	ND	ND	-
Chromium, hexavalent	21.6	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Chromium	181	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Copper	22.1	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Lead	8.79	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Magnesium	***	20.1	16.6	Dry	21.3	22.4	Dry	33.1	26.5	ND	ND	-
Sodium	490,952	15.2	ND	Dry	ND	ND	Dry	24.7	19.6	43	ND	-
Zinc	203.87	ND	0.0127	Dry	ND	ND	Dry	0.0341	ND	ND	0.02	-

Notes:

** - Groundwater Trigger Levels Not Applicable to These Wells.

*** - Groundwater Trigger Level is Greater Than $1X10^{p}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

TABLE 3-1
AL TURI LANDFILL - CLASS II SITE
SUMMARY OF WATER-LEVEL ELEVATIONS
JULY 2010 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

	Top of Casing	Well Bottom	Depth to Water (ft)	Water Level Elevation *
Type 1 Wells - Overburden				
W-1	383.5	342.05	33.43	350.07
W-11S	376.2	346.18	23.03	353.17
W-24	377.18	352.23	20.84	356.34
W-38S	429.45	342.82	> 86.63	342.82
W-39S	379.32	349.32	23.54	355.78
W-40	381.81	349.81	25.28	356.53
Type 1 Wells - Bedrock				
W-1D	376.5	247.5	20.16	356.34
W-37D	385.91	301.66	29.65	356.26
Type 2 Wells - Overburden				
W-3A	424.62	393.62	15.43	409.19
W-12SA	421.08	380.71	35.03	386.05
W-13S	407.78	354.47	>53.31	354.47
W-18S	411.04	362.04	46.91	364.13
W-19S	413.43	353.28	50.9	362.53
W-20S	386.32	361.24	24.03	362.29
W-29	425.5	365.65	52.15	373.35
Type 2 Wells - Bedrock				
W-3D	423.99	350.99	9.14	414.85
W-12DA	NA	NA	85.88	NA
River Gauge				354.02

Notes:

* Reference elevation in feet, MSL

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Vinyl Chloride		Dichlorodifluoromethane		1,1-Dichloroethane		cis-1,2-D
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0190	3.17E+03	3.67E-02	0.002	1.80E+02	0.002	1.80E+02	0.002	1.80E+02	0.002
W-38S	294.31	60	1.00	0.0388	6.86E+02	7.94E-03	0.002	3.88E+01	0.002	3.88E+01	0.002	3.88E+01	0.002
W-11S	243.15	60	2.11	0.0496	1.53E+03	1.77E-02	0.002	8.65E+01	0.002	8.65E+01	0.002	8.65E+01	0.002
W-39S	255.39	60	3.40	0.0329	1.71E+03	1.98E-02	0.002	9.70E+01	0.002	9.70E+01	0.002	9.70E+01	0.002
W-24	194.99	60	15.08	0.0104	1.83E+03	2.12E-02	0.002	1.04E+02	0.002	1.04E+02	0.002	1.04E+02	0.002
W-40	239.24	60	3.40	0.0100	4.89E+02	5.66E-03	0.002	2.77E+01	0.002	2.77E+01	0.002	2.77E+01	0.002
				Total Mass Loading (mg/d) =			**5.34E+02**		**5.34E+02**		**5.34E+02**		**5**
		Estimated In-Stream Concentration (mg/L)[5] =					**1.06E-05**		**1.06E-05**		**1.06E-05**		**1**
		Surface Water Quality Benchmark (mg/L)[6] =					**2.00E-03**		**1.00E+01**		**9.86E+00**		**1**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2010

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 26, 2010.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Dichloroethene
Mass Loading (mg/d)
1.80E+02
3.88E+01
8.65E+01
9.70E+01
1.04E+02
2.77E+01
.34E+02
.06E-05
.00E+00

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Trichloroethene		Antimony		Arsenic		Barium		Chromiu
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0190	3.17E+03	3.67E-02	0.002	1.80E+02	0.005	4.49E+02	0.0094	8.45E+02	0.764	6.87E+04	0.002
W-38S	294.31	60	1.00	0.0388	6.86E+02	7.94E-03	0.002	3.88E+01	0.005	9.71E+01	0.005	9.71E+01	0.025	4.86E+02	0.002
W-11S	243.15	60	2.11	0.0496	1.53E+03	1.77E-02	0.002	8.65E+01	0.005	2.16E+02	0.005	2.16E+02	0.025	1.08E+03	0.0147
W-39S	255.39	60	3.40	0.0329	1.71E+03	1.98E-02	0.002	9.70E+01	0.005	2.43E+02	0.005	2.43E+02	0.0714	3.46E+03	0.002
W-24	194.99	60	15.08	0.0104	1.83E+03	2.12E-02	0.002	1.04E+02	0.005	2.60E+02	0.005	2.60E+02	0.0697	3.62E+03	0.002
W-40	239.24	60	3.40	0.0100	4.89E+02	5.66E-03	0.002	2.77E+01	0.005	6.92E+01	0.005	6.92E+01	0.0656	9.08E+02	0.002
				Total Mass Loading (mg/d) =			**5.34E+02**		**1.33E+03**		**1.73E+03**		**7.82E+04**		**1.08E**
			Estimated In-Stream Concentration (mg/L)[5] =				**1.06E-05**		**2.66E-05**		**3.45E-05**		**1.56E-03**		**2.16E**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.00E-02**		**5.00E-01**		**5.00E-05**		**2.48E+03**		**9.20E**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2010

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 26, 2010.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

ım (total)
Mass Loading (mg/d)
1.80E+02
3.88E+01
6.36E+02
9.70E+01
1.04E+02
2.77E+01
E+03
E-05
E-02

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Copper		Lead		Magnesium		Sodium		Zi
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0190	3.17E+03	3.67E-02	0.005	4.49E+02	0.005	4.49E+02	59.7	5.37E+06	351	3.15E+07	0.005
W-38S	294.31	60	1.00	0.0388	6.86E+02	7.94E-03	0.005	9.71E+01	0.005	9.71E+01	0.005	9.71E+01	0.005	9.71E+01	0.005
W-11S	243.15	60	2.11	0.0496	1.53E+03	1.77E-02	0.005	2.16E+02	0.005	2.16E+02	22.6	9.78E+05	0.005	2.16E+02	0.005
W-39S	255.39	60	3.40	0.0329	1.71E+03	1.98E-02	0.005	2.43E+02	0.005	2.43E+02	21.1	1.02E+06	11.8	5.73E+05	0.005
W-24	194.99	60	15.08	0.0104	1.83E+03	2.12E-02	0.005	2.60E+02	0.005	2.60E+02	28.5	1.48E+06	7.28	3.78E+05	0.005
W-40	239.24	60	3.40	0.0100	4.89E+02	5.66E-03	0.005	6.92E+01	0.005	6.92E+01	19.7	2.73E+05	27.7	3.83E+05	0.0166
				Total Mass Loading (mg/d) =			**1.33E+03**		**1.33E+03**		**9.12E+06**		**3.29E+07**		**1.49**
			Estimated In-Stream Concentration (mg/L)[5] =				**2.66E-05**		**2.66E-05**		**1.82E-01**		**6.56E-01**		**2.98**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.10E-02**		**4.00E-03**		**3.44E+05**		**2.50E+02**		**1.04**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2010

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 26, 2010.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

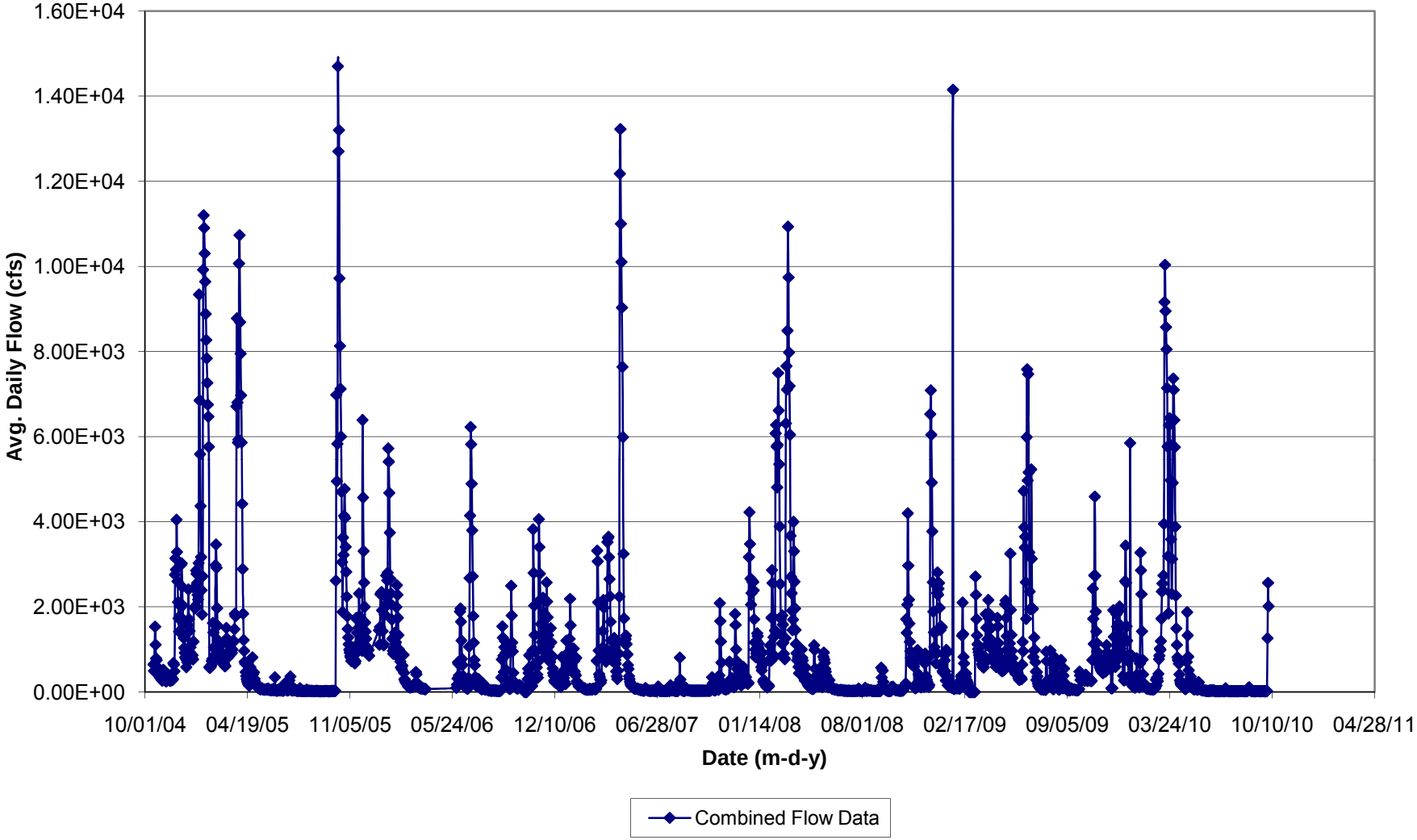
8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2009 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

nc
Mass Loading (mg/d)
4.49E+02
9.71E+01
2.16E+02
2.43E+02
2.60E+02
2.30E+02
E+03
E-05
E-01

Al Turi Landfill Stream Gauge - Hydrograph Record

(see notes)



ESTIMATED WALLKILL RIVER FLOW AT THE AL TURI LANDFILL SITE

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/04							
10/12/04							
10/13/04							
10/14/04							
10/15/04							
10/16/04							
10/17/04							
10/18/04	356.00	2.71	6.47E+02			2.71	6.47E+02
10/19/04	355.00	2.51	4.95E+02			2.51	4.95E+02
10/20/04							
10/21/04	356.00	4.34	1.53E+03			4.34	1.53E+03
10/22/04	357.00	3.74	1.11E+03			3.74	1.11E+03
10/23/04	355.80	3.19	7.88E+02			3.19	7.88E+02
10/24/04	356.17	2.82	7.49E+02			2.82	7.49E+02
10/25/04	356.00	2.64	5.91E+02			2.64	5.91E+02
10/26/04	356.00	2.55	5.20E+02			2.55	5.20E+02
10/27/04	356.00	2.47	4.66E+02			2.47	4.66E+02
10/28/04	356.00	2.39	4.19E+02			2.39	4.19E+02
10/29/04	356.00	2.32	3.82E+02			2.32	3.82E+02
10/30/04	356.00	2.26	3.52E+02			2.26	3.52E+02
10/31/04	356.00	2.23	3.40E+02	5.20E+02		2.23	3.40E+02
11/01/04	356.00	2.20	3.27E+02	5.01E+02		2.20	3.27E+02
11/02/04	356.00	2.14	2.99E+02	4.77E+02		2.14	2.99E+02
11/03/04	356.00	2.15	3.06E+02	4.74E+02		2.15	3.06E+02
11/04/04	356.00	2.05	2.66E+02	4.60E+02		2.05	2.66E+02
11/05/04	356.00	2.15	3.06E+02	7.67E+02		2.15	3.06E+02
11/06/04	356.00	2.55	5.23E+02	7.32E+02		2.55	5.23E+02
11/07/04	356.00	2.43	4.42E+02	6.48E+02		2.43	4.42E+02
11/08/04	356.00	2.26	3.55E+02	5.60E+02		2.26	3.55E+02
11/09/04	356.00	2.16	3.08E+02	5.04E+02		2.16	3.08E+02
11/10/04	356.00	2.09	2.79E+02	4.51E+02		2.09	2.79E+02
11/11/04	356.00	2.03	2.58E+02	4.35E+02		2.03	2.58E+02
11/12/04	356.00	2.01	2.51E+02	4.66E+02		2.01	2.51E+02
11/13/04	356.00	2.12	2.93E+02	4.99E+02		2.12	2.93E+02
11/14/04	356.00	2.37	4.08E+02	5.94E+02		2.37	4.08E+02
11/15/04	356.00	2.37	4.11E+02	5.64E+02		2.37	4.11E+02
11/16/04	356.00	2.25	3.49E+02	5.65E+02		2.25	3.49E+02
11/17/04	356.00	2.20	3.25E+02	5.20E+02		2.20	3.25E+02
11/18/04	356.00	2.12	2.94E+02	4.93E+02		2.12	2.94E+02
11/19/04	356.00	2.06	2.68E+02	4.49E+02		2.06	2.68E+02
11/20/04	356.00	2.03	2.59E+02	4.56E+02		2.03	2.59E+02
11/21/04	356.00	2.05	2.66E+02	5.43E+02		2.05	2.66E+02
11/22/04	356.00	2.25	3.50E+02	5.83E+02		2.25	3.50E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/23/04	356.00	2.21	3.29E+02	5.29E+02		2.21	3.29E+02
11/24/04	356.00	2.09	2.80E+02	5.41E+02		2.09	2.80E+02
11/25/04	356.00	2.15	3.03E+02	1.00E+03		2.15	3.03E+02
11/26/04	356.00	2.75	6.82E+02	1.06E+03		2.75	6.82E+02
11/27/04	356.00	2.71	6.43E+02	8.65E+02		2.71	6.43E+02
11/28/04	356.00	2.50	4.86E+02	2.16E+03		2.50	4.86E+02
11/29/04	359.33	5.69	2.75E+03	4.35E+03		5.69	2.75E+03
11/30/04	359.83	6.05	3.14E+03	3.22E+03		6.05	3.14E+03
12/01/04	359.00	5.81	2.87E+03	4.31E+03		5.81	2.87E+03
12/02/04	360.50	6.80	4.05E+03	4.52E+03		6.80	4.05E+03
12/03/04	360.00	6.19	3.30E+03	3.29E+03	3.29E+03	6.19	3.29E+03
12/04/04	359.00	5.69	2.75E+03	2.60E+03	2.60E+03	5.69	2.60E+03
12/05/04	359.00	5.14	2.21E+03	2.11E+03	2.11E+03	5.14	2.11E+03
12/06/04	358.00	4.60	1.74E+03	1.73E+03	1.73E+03	4.60	1.73E+03
12/07/04	358.00	4.19	1.42E+03	1.81E+03		4.19	1.42E+03
12/08/04	358.33	4.65	1.78E+03	2.91E+03		4.65	1.78E+03
12/09/04	358.67	4.99	2.07E+03	2.32E+03		4.99	2.07E+03
12/10/04	358.33	4.93	2.01E+03	3.38E+03		4.93	2.01E+03
12/11/04	359.50	5.92	2.99E+03	4.32E+03		5.92	2.99E+03
12/12/04	359.67	5.94	3.02E+03	3.32E+03		5.94	3.02E+03
12/13/04	359.00	5.41	2.47E+03	2.56E+03		5.41	2.47E+03
12/14/04	358.50	4.94	2.03E+03	2.12E+03		4.94	2.03E+03
12/15/04	358.00	4.42	1.59E+03	1.68E+03		4.42	1.59E+03
12/16/04	357.67	3.98	1.27E+03	1.38E+03		3.98	1.27E+03
12/17/04	357.00	3.63	1.04E+03	1.22E+03		3.63	1.04E+03
12/18/04	357.00	3.43	9.20E+02	1.10E+03		3.43	9.20E+02
12/19/04	357.00	3.24	8.17E+02	1.02E+03		3.24	8.17E+02
12/20/04	356.00	3.18	7.82E+02	9.20E+02		3.18	7.82E+02
12/21/04	354.00			5.82E+02	5.82E+02		5.82E+02
12/22/04				7.49E+02	7.49E+02		7.49E+02
12/23/04	355.67	2.77	7.00E+02	1.47E+03		2.77	7.00E+02
12/24/04	357.83	4.39	1.57E+03	4.00E+03		4.39	1.57E+03
12/25/04	359.00	5.35	2.41E+03	2.57E+03		5.35	2.41E+03
12/26/04	356.67	4.78	1.88E+03	1.71E+03	1.71E+03	4.78	1.71E+03
12/27/04				1.43E+03	1.43E+03		1.43E+03
12/28/04				9.37E+02	9.37E+02		9.37E+02
12/29/04				1.05E+03	1.05E+03		1.05E+03
12/30/04	356.00	3.38	8.93E+02	1.21E+03		3.38	8.93E+02
12/31/04	357.00	3.22	8.04E+02	1.09E+03		3.22	8.04E+02
01/01/05	357.00	3.21	7.98E+02	1.12E+03		3.21	7.98E+02
01/02/05	357.00	3.32	8.60E+02	1.10E+03		3.32	8.60E+02
01/03/05	357.00	3.14	7.64E+02	1.16E+03		3.14	7.64E+02
01/04/05	357.50	3.85	1.18E+03	3.35E+03		3.85	1.18E+03
01/05/05	359.00	5.39	2.44E+03	2.96E+03		5.39	2.44E+03
01/06/05	358.50	4.90	1.99E+03	2.35E+03		4.90	1.99E+03
01/07/05	358.50	4.87	1.97E+03	2.41E+03		4.87	1.97E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/08/05	358.67	4.93	2.02E+03	2.76E+03		4.93	2.02E+03
01/09/05	359.67	5.79	2.85E+03	3.67E+03		5.79	2.85E+03
01/10/05	359.17	5.71	2.78E+03	3.01E+03		5.71	2.78E+03
01/11/05	359.00	5.50	2.56E+03	2.84E+03		5.50	2.56E+03
01/12/05	359.00	5.22	2.28E+03	2.63E+03		5.22	2.28E+03
01/13/05	359.00	5.10	2.17E+03	2.85E+03		5.10	2.17E+03
01/14/05	359.67	5.95	3.03E+03	9.11E+03		5.95	3.03E+03
01/15/05	363.83	10.02	9.34E+03	9.80E+03		10.02	9.34E+03
01/16/05	361.50	9.49	8.32E+03	6.85E+03	6.85E+03	9.49	6.85E+03
01/17/05	354.00			5.59E+03	5.59E+03		5.59E+03
01/18/05	354.00			4.37E+03	4.37E+03		4.37E+03
01/19/05	354.00			3.17E+03	3.17E+03		3.17E+03
01/20/05				2.39E+03	2.39E+03		2.39E+03
01/21/05				1.82E+03	1.82E+03		1.82E+03
01/22/05				2.72E+03	2.72E+03		2.72E+03
01/23/05				9.92E+03	9.92E+03		9.92E+03
01/24/05				1.12E+04	1.12E+04		1.12E+04
01/25/05				1.09E+04	1.09E+04		1.09E+04
01/26/05				1.03E+04	1.03E+04		1.03E+04
01/27/05				9.64E+03	9.64E+03		9.64E+03
01/28/05				8.88E+03	8.88E+03		8.88E+03
01/29/05				8.27E+03	8.27E+03		8.27E+03
01/30/05				7.84E+03	7.84E+03		7.84E+03
01/31/05				7.26E+03	7.26E+03		7.26E+03
02/01/05	354.00			6.75E+03	6.75E+03		6.75E+03
02/02/05	354.00			6.47E+03	6.47E+03		6.47E+03
02/03/05	354.00			5.76E+03	5.76E+03		5.76E+03
02/04/05	354.33	2.63	5.81E+02	5.41E+03		2.63	5.81E+02
02/05/05	356.00	2.61	5.66E+02	5.21E+03		2.61	5.66E+02
02/06/05	356.00	2.63	5.81E+02	4.86E+03		2.63	5.81E+02
02/07/05	356.00	2.65	5.93E+02	4.72E+03		2.65	5.93E+02
02/08/05	356.00	2.70	6.37E+02	4.52E+03		2.70	6.37E+02
02/09/05	356.00	2.80	7.26E+02	4.59E+03		2.80	7.26E+02
02/10/05	356.83	3.17	7.78E+02	7.65E+03		3.17	7.78E+02
02/11/05	358.00	4.45	1.62E+03	8.58E+03		4.45	1.62E+03
02/12/05	358.00	4.16	1.40E+03	6.68E+03		4.16	1.40E+03
02/13/05	357.00	3.64	1.05E+03	4.98E+03		3.64	1.05E+03
02/14/05	357.00	3.32	8.59E+02	3.90E+03		3.32	8.59E+02
02/15/05	357.33	3.58	1.01E+03	9.76E+03		3.58	1.01E+03
02/16/05	359.67	5.91	2.98E+03	5.74E+03		5.91	2.98E+03
02/17/05	360.00	6.33	3.46E+03	4.01E+03		6.33	3.46E+03
02/18/05	359.50	5.91	2.99E+03	2.92E+03	2.92E+03	5.91	2.92E+03
02/19/05	358.00	5.11	2.18E+03	1.97E+03	1.97E+03	5.11	1.97E+03
02/20/05	356.67	4.37	1.56E+03	1.61E+03		4.37	1.56E+03
02/21/05	357.50	3.90	1.22E+03	1.35E+03		3.90	1.22E+03
02/22/05	357.00	3.72	1.10E+03	1.36E+03		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/23/05	357.00	3.65	1.06E+03	1.29E+03		3.65	1.06E+03
02/24/05	357.00	3.52	9.75E+02	1.17E+03		3.52	9.75E+02
02/25/05	357.00	3.32	8.61E+02	1.09E+03		3.32	8.61E+02
02/26/05	357.00	3.18	7.83E+02	9.65E+02		3.18	7.83E+02
02/27/05	356.00	3.03	7.04E+02	9.07E+02		3.03	7.04E+02
02/28/05	356.83	2.93	8.64E+02	8.67E+02		2.93	8.64E+02
03/01/05	356.00	2.82	7.49E+02	8.45E+02		2.82	7.49E+02
03/02/05	356.67	2.91	8.45E+02	8.83E+02		2.91	8.45E+02
03/03/05	356.67	2.93	8.70E+02	8.48E+02	8.48E+02	2.93	8.48E+02
03/04/05	356.00	2.75	6.80E+02	7.68E+02		2.75	6.80E+02
03/05/05	356.00	2.71	6.43E+02	7.41E+02		2.71	6.43E+02
03/06/05	356.00	2.67	6.09E+02	7.37E+02		2.67	6.09E+02
03/07/05	356.00	2.66	6.07E+02	8.00E+02		2.66	6.07E+02
03/08/05	356.67	3.23	8.09E+02	1.73E+03		3.23	8.09E+02
03/09/05	357.33	4.30	1.51E+03	1.84E+03		4.30	1.51E+03
03/10/05	356.75	3.96	1.26E+03	1.48E+03		3.96	1.26E+03
03/11/05	355.20	3.82	1.16E+03	1.30E+03		3.82	1.16E+03
03/12/05	354.60	3.24	8.15E+02	1.12E+03		3.24	8.15E+02
03/13/05	357.00	3.27	8.34E+02	1.11E+03		3.27	8.34E+02
03/14/05	357.00	3.41	9.11E+02	1.20E+03		3.41	9.11E+02
03/15/05	357.00	3.41	9.11E+02	1.22E+03		3.41	9.11E+02
03/16/05	357.00	3.37	8.87E+02	1.28E+03		3.37	8.87E+02
03/17/05	357.00	3.37	8.85E+02	1.26E+03		3.37	8.85E+02
03/18/05	357.00	3.37	8.85E+02	1.36E+03		3.37	8.85E+02
03/19/05	357.00	3.43	9.22E+02	1.42E+03		3.43	9.22E+02
03/20/05	357.00	3.43	9.24E+02	1.41E+03		3.43	9.24E+02
03/21/05	357.00	3.56	9.98E+02	1.50E+03		3.56	9.98E+02
03/22/05	357.33	3.86	1.19E+03	1.66E+03		3.86	1.19E+03
03/23/05	357.17	3.88	1.20E+03	1.74E+03		3.88	1.20E+03
03/24/05	357.17	3.86	1.19E+03	1.63E+03		3.86	1.19E+03
03/25/05	358.00	4.27	1.48E+03	2.01E+03		4.27	1.48E+03
03/26/05	358.00	4.72	1.84E+03	2.34E+03		4.72	1.84E+03
03/27/05	358.00	4.66	1.78E+03	2.17E+03		4.66	1.78E+03
03/28/05	358.17	4.66	1.79E+03	4.34E+03		4.66	1.79E+03
03/29/05	362.17	8.60	6.71E+03	1.16E+04		8.60	6.71E+03
03/30/05	364.00	10.10	9.51E+03	8.78E+03	8.78E+03	10.10	8.78E+03
03/31/05	364.00	9.96	9.22E+03	6.80E+03	6.80E+03	9.96	6.80E+03
04/01/05	362.83	9.34	8.03E+03	5.86E+03	5.86E+03	9.34	5.86E+03
04/02/05	361.67	8.12	5.93E+03	9.07E+03		8.12	5.93E+03
04/03/05	364.00	10.37	1.01E+04	1.68E+04		10.37	1.01E+04
04/04/05	364.00	10.68	1.07E+04	1.10E+04		10.68	1.07E+04
04/05/05	365.00	11.23	1.19E+04	8.69E+03	8.69E+03	11.23	8.69E+03
04/06/05	364.83	11.11	1.17E+04	7.95E+03	7.95E+03	11.11	7.95E+03
04/07/05	364.00	10.44	1.02E+04	6.97E+03	6.97E+03	10.44	6.97E+03
04/08/05	362.67	9.20	7.76E+03	5.86E+03	5.86E+03	9.20	5.86E+03
04/09/05	361.00	7.39	4.84E+03	4.42E+03	4.42E+03	7.39	4.42E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/10/05	359.33	5.82	2.89E+03	3.11E+03		5.82	2.89E+03
04/11/05	358.33	4.72	1.84E+03	2.40E+03		4.72	1.84E+03
04/12/05	357.50	3.91	1.22E+03	1.82E+03		3.91	1.22E+03
04/13/05	357.00	3.50	9.63E+02			3.50	9.63E+02
04/14/05	356.83	3.04	7.10E+02	1.36E+03		3.04	7.10E+02
04/15/05	356.00	2.74	6.69E+02	1.20E+03		2.74	6.69E+02
04/16/05	356.00	2.47	4.68E+02	1.06E+03		2.47	4.68E+02
04/17/05	356.00	2.29	3.70E+02	9.95E+02		2.29	3.70E+02
04/18/05	356.00	2.13	2.97E+02	9.04E+02		2.13	2.97E+02
04/19/05	355.20	2.00	2.50E+02	8.45E+02		2.00	2.50E+02
04/20/05	354.83	1.89	2.13E+02	7.94E+02		1.89	2.13E+02
04/21/05	355.00	1.76	1.81E+02	7.32E+02		1.76	1.81E+02
04/22/05	355.00	1.70	1.66E+02	6.92E+02		1.70	1.66E+02
04/23/05	354.83	1.60	1.46E+02	7.66E+02		1.60	1.46E+02
04/24/05	354.67	1.91	2.21E+02	1.75E+03		1.91	2.21E+02
04/25/05	355.00	2.63	5.81E+02	1.54E+03		2.63	5.81E+02
04/26/05	355.33	2.36	4.06E+02	1.14E+03		2.36	4.06E+02
04/27/05	355.33	2.01	2.52E+02	1.23E+03		2.01	2.52E+02
04/28/05	355.50	2.34	3.94E+02	1.87E+03		2.34	3.94E+02
04/29/05	356.17	2.88	8.16E+02	1.43E+03		2.88	8.16E+02
04/30/05	355.67	2.38	4.14E+02	1.16E+03		2.38	4.14E+02
05/01/05	354.67	2.10	2.83E+02	1.28E+03		2.10	2.83E+02
05/02/05	355.67	2.46	4.62E+02	1.21E+03		2.46	4.62E+02
05/03/05	356.00	2.17	3.11E+02	1.05E+03		2.17	3.11E+02
05/04/05	356.00	2.00	2.49E+02	9.44E+02		2.00	2.49E+02
05/05/05	355.17	1.83	1.98E+02	8.44E+02		1.83	1.98E+02
05/06/05	355.00	1.65	1.56E+02	7.66E+02		1.65	1.56E+02
05/07/05	354.83	1.55	1.35E+02	7.04E+02		1.55	1.35E+02
05/08/05	355.00	1.47	1.22E+02	6.77E+02		1.47	1.22E+02
05/09/05	354.83	1.38	1.08E+02	6.18E+02		1.38	1.08E+02
05/10/05	354.83	1.30	9.69E+01	5.90E+02		1.30	9.69E+01
05/11/05	354.67	1.28	9.43E+01	5.23E+02		1.28	9.43E+01
05/12/05	354.83	1.19	8.42E+01	5.41E+02		1.19	8.42E+01
05/13/05	354.67	1.16	8.07E+01	4.61E+02		1.16	8.07E+01
05/14/05	354.67	1.06	6.99E+01	4.67E+02		1.06	6.99E+01
05/15/05	354.50	1.01	6.61E+01	4.63E+02		1.01	6.61E+01
05/16/05	354.33	1.11	7.52E+01	5.31E+02		1.11	7.52E+01
05/17/05	354.50	1.26	9.25E+01	5.43E+02		1.26	9.25E+01
05/18/05	354.50	1.16	8.08E+01	4.54E+02		1.16	8.08E+01
05/19/05	354.50	1.05	6.91E+01	4.44E+02		1.05	6.91E+01
05/20/05	354.83	0.94	6.00E+01	4.16E+02		0.94	6.00E+01
05/21/05	354.00	0.88	5.50E+01	3.85E+02		0.88	5.50E+01
05/22/05	354.00	0.85	5.27E+01	3.97E+02		0.85	5.27E+01
05/23/05	354.00	0.86	5.36E+01	4.34E+02		0.86	5.36E+01
05/24/05	355.00	0.97	6.19E+01	4.52E+02		0.97	6.19E+01
05/25/05	354.67	0.95	6.05E+01	4.51E+02		0.95	6.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/26/05	354.67	0.98	6.27E+01	4.54E+02		0.98	6.27E+01
05/27/05	354.67	1.01	6.58E+01	4.65E+02		1.01	6.58E+01
05/28/05	354.67	0.97	6.25E+01	4.46E+02		0.97	6.25E+01
05/29/05	354.33	0.90	5.70E+01	5.59E+02		0.90	5.70E+01
05/30/05	354.67	1.15	7.97E+01	5.24E+02		1.15	7.97E+01
05/31/05	354.83	1.00	6.49E+01	4.79E+02		1.00	6.49E+01
06/01/05	354.00	0.85	5.30E+01	3.60E+02		0.85	5.30E+01
06/02/05	354.00	0.78	4.85E+01	3.67E+02		0.78	4.85E+01
06/03/05	354.00	0.70	4.31E+01	3.11E+02		0.70	4.31E+01
06/04/05	354.00	0.67	4.14E+01	2.96E+02		0.67	4.14E+01
06/05/05	354.00	0.73	4.50E+01	3.15E+02		0.73	4.50E+01
06/06/05	354.00	0.80	4.93E+01	3.47E+02		0.80	4.93E+01
06/07/05	354.00	0.74	4.57E+01	3.32E+02		0.74	4.57E+01
06/08/05	354.50	0.97	6.25E+01	3.49E+02		0.97	6.25E+01
06/09/05	354.33	1.02	6.62E+01	3.67E+02		1.02	6.62E+01
06/10/05	354.00	0.69	4.27E+01	3.34E+02		0.69	4.27E+01
06/11/05	354.00	0.65	4.05E+01	3.00E+02		0.65	4.05E+01
06/12/05	354.00			3.46E+02	3.46E+02		3.46E+02
06/13/05	354.00	0.58	3.70E+01	3.16E+02		0.58	3.70E+01
06/14/05	354.00	0.55	3.54E+01	2.59E+02		0.55	3.54E+01
06/15/05	354.00	0.47	3.16E+01	2.23E+02		0.47	3.16E+01
06/16/05	354.00	0.45	3.10E+01	2.19E+02		0.45	3.10E+01
06/17/05	354.00	0.41	2.93E+01	2.66E+02		0.41	2.93E+01
06/18/05	354.00	0.84	5.26E+01	2.86E+02		0.84	5.26E+01
06/19/05	354.00	0.87	5.41E+01	3.10E+02		0.87	5.41E+01
06/20/05	354.00	0.74	4.58E+01	2.86E+02		0.74	4.58E+01
06/21/05	354.00	0.61	3.82E+01	2.40E+02		0.61	3.82E+01
06/22/05	354.00	0.59	3.74E+01	2.10E+02		0.59	3.74E+01
06/23/05	354.00	0.58	3.71E+01	2.06E+02		0.58	3.71E+01
06/24/05	354.50	0.90	5.66E+01	2.98E+02		0.90	5.66E+01
06/25/05	354.00	0.67	4.18E+01	2.61E+02		0.67	4.18E+01
06/26/05	354.00	0.56	3.58E+01	2.08E+02		0.56	3.58E+01
06/27/05	354.00	0.51	3.36E+01	1.61E+02		0.51	3.36E+01
06/28/05	354.00	0.49	3.26E+01	1.65E+02		0.49	3.26E+01
06/29/05	354.00	0.52	3.41E+01	2.35E+02		0.52	3.41E+01
06/30/05	354.33	0.91	5.71E+01	2.60E+02		0.91	5.71E+01
07/01/05	355.00	1.82	1.96E+02	5.36E+02		1.82	1.96E+02
07/02/05	354.33	1.69	1.63E+02	6.48E+02		1.69	1.63E+02
07/03/05	355.00	1.24	8.98E+01	4.29E+02		1.24	8.98E+01
07/04/05	354.33	0.84	5.22E+01	2.91E+02		0.84	5.22E+01
07/05/05	354.00	0.65	4.05E+01	2.41E+02		0.65	4.05E+01
07/06/05	354.00	0.58	3.68E+01	1.97E+02		0.58	3.68E+01
07/07/05	354.00	0.62	3.90E+01	1.67E+02		0.62	3.90E+01
07/08/05	354.00	0.68	4.21E+01	2.69E+02		0.68	4.21E+01
07/09/05	354.50	1.11	7.47E+01	4.95E+02		1.11	7.47E+01
07/10/05	356.00	2.07	2.72E+02	6.46E+02		2.07	2.72E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/11/05	354.83	1.75	1.78E+02	4.99E+02		1.75	1.78E+02
07/12/05	354.00			3.63E+02	3.63E+02		3.63E+02
07/13/05	354.33	0.90	5.67E+01	3.52E+02		0.90	5.67E+01
07/14/05	354.00	0.71	4.41E+01	2.48E+02		0.71	4.41E+01
07/15/05	354.00	0.63	3.96E+01	1.85E+02		0.63	3.96E+01
07/16/05	354.00	0.63	3.94E+01	1.57E+02		0.63	3.94E+01
07/17/05	354.00	0.77	4.76E+01	2.13E+02		0.77	4.76E+01
07/18/05	354.00	0.68	4.23E+01	3.81E+02		0.68	4.23E+01
07/19/05	354.00	0.61	3.83E+01	3.81E+02		0.61	3.83E+01
07/20/05	354.50	0.88	5.52E+01	3.16E+02		0.88	5.52E+01
07/21/05	354.83	0.94	6.00E+01	2.80E+02		0.94	6.00E+01
07/22/05	354.00	0.71	4.39E+01	2.14E+02		0.71	4.39E+01
07/23/05	354.00	0.55	3.55E+01	1.73E+02		0.55	3.55E+01
07/24/05	354.00	0.47	3.20E+01	1.25E+02		0.47	3.20E+01
07/25/05	354.00	0.49	3.27E+01	1.20E+02		0.49	3.27E+01
07/26/05	354.00	0.43	2.99E+01	1.16E+02		0.43	2.99E+01
07/27/05	354.00	0.42	2.98E+01	1.04E+02		0.42	2.98E+01
07/28/05	354.00	0.42	2.96E+01	1.02E+02		0.42	2.96E+01
07/29/05	354.00	0.44	3.06E+01	9.00E+01		0.44	3.06E+01
07/30/05	354.00	0.44	3.03E+01	9.30E+01		0.44	3.03E+01
07/31/05	354.00			8.70E+01	8.70E+01		8.70E+01
08/01/05	354.00	0.40	2.88E+01	7.90E+01		0.40	2.88E+01
08/02/05	354.00	0.36	2.75E+01	7.80E+01		0.36	2.75E+01
08/03/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/04/05	354.00	0.34	2.66E+01	7.00E+01		0.34	2.66E+01
08/05/05	354.00	0.34	2.65E+01	6.60E+01		0.34	2.65E+01
08/06/05	354.00	0.34	2.66E+01	6.30E+01		0.34	2.66E+01
08/07/05	354.00	0.35	2.71E+01	5.90E+01		0.35	2.71E+01
08/08/05	354.00	0.34	2.67E+01	5.90E+01		0.34	2.67E+01
08/09/05	354.00	0.32	2.59E+01	6.00E+01		0.32	2.59E+01
08/10/05	354.00	0.33	2.64E+01	5.80E+01		0.33	2.64E+01
08/11/05	354.00	0.35	2.71E+01	5.40E+01		0.35	2.71E+01
08/12/05	354.00	0.31	2.57E+01	5.40E+01		0.31	2.57E+01
08/13/05	354.00			5.50E+01	5.50E+01		5.50E+01
08/14/05	354.00	0.36	2.73E+01	6.30E+01		0.36	2.73E+01
08/15/05	354.00	0.36	2.75E+01	7.40E+01		0.36	2.75E+01
08/16/05	354.00	0.44	3.06E+01	7.40E+01		0.44	3.06E+01
08/17/05	354.00	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
08/18/05	354.00	0.38	2.82E+01	8.70E+01		0.38	2.82E+01
08/19/05	354.00	0.36	2.76E+01	7.80E+01		0.36	2.76E+01
08/20/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/21/05	354.00	0.35	2.70E+01	7.20E+01		0.35	2.70E+01
08/22/05	354.00	0.37	2.78E+01	6.70E+01		0.37	2.78E+01
08/23/05	354.00	0.34	2.68E+01	6.30E+01		0.34	2.68E+01
08/24/05	354.00	0.32	2.61E+01	6.10E+01		0.32	2.61E+01
08/25/05	354.00	0.18	2.15E+01	5.30E+01		0.18	2.15E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/26/05	354.00	0.16	2.09E+01	4.90E+01		0.16	2.09E+01
08/27/05	354.00	0.14	2.04E+01	4.70E+01		0.14	2.04E+01
08/28/05	354.00	0.15	2.05E+01	4.80E+01		0.15	2.05E+01
08/29/05	354.00	0.21	2.23E+01	5.20E+01		0.21	2.23E+01
08/30/05	354.00	0.28	2.47E+01	5.20E+01		0.28	2.47E+01
08/31/05	354.00	0.32	2.58E+01			0.32	2.58E+01
09/01/05	354.00	0.28	2.47E+01	6.00E+01		0.28	2.47E+01
09/02/05	354.00	0.25	2.38E+01	7.20E+01		0.25	2.38E+01
09/03/05	354.00	0.24	2.34E+01	6.70E+01		0.24	2.34E+01
09/04/05	354.00	0.20	2.22E+01	5.60E+01		0.20	2.22E+01
09/05/05	354.00	0.19	2.19E+01	4.90E+01		0.19	2.19E+01
09/06/05	354.00	0.15	2.07E+01	4.70E+01		0.15	2.07E+01
09/07/05	354.00	0.11	1.96E+01	4.50E+01		0.11	1.96E+01
09/08/05	354.00	0.09	1.90E+01	4.30E+01		0.09	1.90E+01
09/09/05	354.00	0.06	1.84E+01	4.20E+01		0.06	1.84E+01
09/10/05	354.00	0.04	1.79E+01	4.00E+01		0.04	1.79E+01
09/11/05	354.00	0.02	1.74E+01	4.00E+01		0.02	1.74E+01
09/12/05	354.00	0.04	1.78E+01	3.70E+01		0.04	1.78E+01
09/13/05	354.00	0.07	1.87E+01	3.60E+01		0.07	1.87E+01
09/14/05	354.00	0.06	1.83E+01	3.50E+01		0.06	1.83E+01
09/15/05	354.00	0.06	1.83E+01	4.00E+01		0.06	1.83E+01
09/16/05	354.00	0.14	2.05E+01	3.90E+01		0.14	2.05E+01
09/17/05	354.00	0.20	2.21E+01	3.90E+01		0.20	2.21E+01
09/18/05	354.00	0.27	2.42E+01	3.80E+01		0.27	2.42E+01
09/19/05	354.00	0.28	2.46E+01	4.00E+01		0.28	2.46E+01
09/20/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/21/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/22/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
09/23/05	354.00	0.19	2.18E+01	4.10E+01		0.19	2.18E+01
09/24/05	354.00	0.16	2.10E+01	4.00E+01		0.16	2.10E+01
09/25/05	354.00	0.15	2.06E+01	3.90E+01		0.15	2.06E+01
09/26/05	354.00	0.17	2.12E+01	4.10E+01		0.17	2.12E+01
09/27/05	354.00	0.17	2.12E+01	4.30E+01		0.17	2.12E+01
09/28/05	354.00	0.17	2.12E+01	4.50E+01		0.17	2.12E+01
09/29/05	354.00	0.19	2.19E+01	4.40E+01		0.19	2.19E+01
09/30/05	354.00	0.21	2.25E+01	4.30E+01		0.21	2.25E+01
10/01/05	354.00	0.23	2.30E+01	4.00E+01		0.23	2.30E+01
10/02/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/03/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
10/04/05	354.00	0.25	2.35E+01	4.10E+01		0.25	2.35E+01
10/05/05	354.00	0.23	2.30E+01	4.10E+01		0.23	2.30E+01
10/06/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/07/05	354.00	0.20	2.21E+01	4.00E+01		0.20	2.21E+01
10/08/05	354.00	0.28	2.46E+01	2.89E+03		0.28	2.46E+01
10/09/05	359.40	5.56	2.61E+03	1.20E+04		5.56	2.61E+03
10/10/05				6.98E+03	6.98E+03		6.98E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/05	361.00	7.57	5.10E+03	4.95E+03	4.95E+03	7.57	4.95E+03
10/12/05				5,830	5.83E+03		5.83E+03
10/13/05				14,700	1.47E+04		1.47E+04
10/14/05				12,700	1.27E+04		1.27E+04
10/15/05				13,200	1.32E+04		1.32E+04
10/16/05				9,720	9.72E+03		9.72E+03
10/17/05				8,130	8.13E+03		8.13E+03
10/18/05				7,120	7.12E+03		7.12E+03
10/19/05				6,000	6.00E+03		6.00E+03
10/20/05				4,700	4.70E+03		4.70E+03
10/21/05				3,050	3.05E+03		3.05E+03
10/22/05				1,880	1.88E+03		1.88E+03
10/23/05				3,630	3.63E+03		3.63E+03
10/24/05				3,220	3.22E+03		3.22E+03
10/25/05				4,140	4.14E+03		4.14E+03
10/26/05				4,770	4.77E+03		4.77E+03
10/27/05				4,090	4.09E+03		4.09E+03
10/28/05				3,410	3.41E+03		3.41E+03
10/29/05				2,820	2.82E+03		2.82E+03
10/30/05				2,240	2.24E+03		2.24E+03
10/31/05				1,780	1.78E+03		1.78E+03
11/01/05				1,480	1.48E+03		1.48E+03
11/02/05				1,280	1.28E+03		1.28E+03
11/03/05				1,120	1.12E+03		1.12E+03
11/04/05				993	9.93E+02		9.93E+02
11/05/05				926	9.26E+02		9.26E+02
11/06/05				842	8.42E+02		8.42E+02
11/07/05				807	8.07E+02		8.07E+02
11/08/05				729	7.29E+02		7.29E+02
11/09/05				735	7.35E+02		7.35E+02
11/10/05				1,040	1.04E+03		1.04E+03
11/11/05				1,050	1.05E+03		1.05E+03
11/12/05				891	8.91E+02		8.91E+02
11/13/05				772	7.72E+02		7.72E+02
11/14/05				688	6.88E+02		6.88E+02
11/15/05				672	6.72E+02		6.72E+02
11/16/05				724	7.24E+02		7.24E+02
11/17/05				1,730	1.73E+03		1.73E+03
11/18/05				1,740	1.74E+03		1.74E+03
11/19/05				1,390	1.39E+03		1.39E+03
11/20/05				1,110	1.11E+03		1.11E+03
11/21/05				953	9.53E+02		9.53E+02
11/22/05				1,510	1.51E+03		1.51E+03
11/23/05				2,310	2.31E+03		2.31E+03
11/24/05				1,780	1.78E+03		1.78E+03
11/25/05				1,490	1.49E+03		1.49E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/26/05				1,210	1.21E+03		1.21E+03
11/27/05				1,050	1.05E+03		1.05E+03
11/28/05				998	9.98E+02		9.98E+02
11/29/05				973	9.73E+02		9.73E+02
11/30/05				6,390	6.39E+03		6.39E+03
12/01/05				4,570	4.57E+03		4.57E+03
12/02/05				3,310	3.31E+03		3.31E+03
12/03/05				2,570	2.57E+03		2.57E+03
12/04/05				2,000	2.00E+03		2.00E+03
12/05/05				1,630	1.63E+03		1.63E+03
12/06/05				1,420	1.42E+03		1.42E+03
12/07/05				1,250	1.25E+03		1.25E+03
12/08/05				1,060	1.06E+03		1.06E+03
12/09/05				960	9.60E+02		9.60E+02
12/10/05				972	9.72E+02		9.72E+02
12/11/05				983	9.83E+02		9.83E+02
12/12/05				992	9.92E+02		9.92E+02
12/13/05				848	8.48E+02		8.48E+02
12/14/05				Ice			
12/15/05				Ice			
12/16/05				Ice			
12/17/05				Ice			
12/18/05				Ice			
12/19/05				Ice			
12/20/05				Ice			
12/21/05				Ice			
12/22/05				Ice			
12/23/05				Ice			
12/24/05				Ice			
12/25/05				Ice			
12/26/05				Ice			
12/27/05				Ice			
12/28/05				Ice			
12/29/05				Ice			
12/30/05				Ice			
12/31/05				Ice			
01/01/06	358.32	4.23	1.45E+03	ice		4.23	1.45E+03
01/02/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/03/06	358.42	4.33	1.53E+03	ice		4.33	1.53E+03
01/04/06	359.32	5.23	2.29E+03	ice		5.23	2.29E+03
01/05/06	359.35	5.26	2.32E+03	ice		5.26	2.32E+03
01/06/06	359.38	5.29	2.35E+03	ice		5.29	2.35E+03
01/07/06	358.91	4.82	1.92E+03	ice		4.82	1.92E+03
01/08/06	358.29	4.20	1.43E+03	ice		4.20	1.43E+03
01/09/06	357.87	3.78	1.14E+03	ice		3.78	1.14E+03
01/10/06	357.81	3.72	1.10E+03	ice		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/11/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/12/06	358.79	4.70	1.82E+03	3.01E+03		4.70	1.82E+03
01/13/06	359.00	4.91	2.00E+03	3.11E+03		4.91	2.00E+03
01/14/06	359.05	4.96	2.05E+03	3.55E+03		4.96	2.05E+03
01/15/06	359.77	5.68	2.74E+03	4.66E+03		5.68	2.74E+03
01/16/06	359.24	5.15	2.22E+03	3.17E+03		5.15	2.22E+03
01/17/06	360.20	6.11	3.21E+03	2.62E+03	2.62E+03	6.11	2.62E+03
01/18/06	359.83	5.74	2.80E+03	5.40E+03		5.74	2.80E+03
01/19/06	362.07	7.98	5.72E+03	7.34E+03		7.98	5.72E+03
01/20/06	361.87	7.78	5.41E+03	5.47E+03		7.78	5.41E+03
01/21/06	361.37	7.28	4.68E+03	4.71E+03		7.28	4.68E+03
01/22/06	360.65	6.56	3.74E+03	4.01E+03		6.56	3.74E+03
01/23/06	359.69	5.60	2.66E+03	3.25E+03		5.60	2.66E+03
01/24/06	359.35	5.26	2.32E+03	2.82E+03		5.26	2.32E+03
01/25/06	359.06	4.97	2.05E+03	2.62E+03		4.97	2.05E+03
01/26/06	358.64	4.55	1.70E+03	2.32E+03		4.55	1.70E+03
01/27/06	358.04	3.95	1.25E+03	1.87E+03		3.95	1.25E+03
01/28/06	357.59	3.50	9.65E+02	1.63E+03		3.50	9.65E+02
01/29/06	357.48	3.39	8.96E+02	1.64E+03		3.39	8.96E+02
01/30/06	357.70	3.61	1.03E+03	1.97E+03		3.61	1.03E+03
01/31/06	358.11	4.02	1.30E+03	2.53E+03		4.02	1.30E+03
02/01/06	358.24	4.15	1.39E+03	2.41E+03		4.15	1.39E+03
02/02/06	357.86	3.77	1.13E+03	1.97E+03		3.77	1.13E+03
02/03/06	357.92	3.83	1.17E+03	2.82E+03		3.83	1.17E+03
02/04/06	358.99	4.90	2.00E+03	3.46E+03		4.90	2.00E+03
02/05/06	359.50	5.45	2.51E+03	4.35E+03		5.45	2.51E+03
02/06/06	359.31	5.22	2.28E+03			5.22	2.28E+03
02/07/06	358.69	4.60	1.74E+03			4.60	1.74E+03
02/08/06	358.16	4.07	1.33E+03			4.07	1.33E+03
02/09/06	357.65	3.56	1.00E+03			3.56	1.00E+03
02/10/06	357.29	3.20	7.92E+02			3.20	7.92E+02
02/11/06	357.04	2.95	8.94E+02			2.95	8.94E+02
02/12/06	356.87	2.78	7.14E+02			2.78	7.14E+02
02/13/06	356.71	2.62	5.76E+02			2.62	5.76E+02
02/14/06	356.72	2.63	5.79E+02			2.63	5.79E+02
02/15/06	356.65	2.56	5.27E+02			2.56	5.27E+02
02/16/06	356.77	2.68	6.20E+02			2.68	6.20E+02
02/17/06	357.01	2.92	8.63E+02			2.92	8.63E+02
02/18/06	357.02	2.93	8.72E+02			2.93	8.72E+02
02/19/06	356.53	2.44	4.48E+02			2.44	4.48E+02
02/20/06	356.23	2.14	3.01E+02			2.14	3.01E+02
02/21/06	356.14	2.05	2.67E+02			2.05	2.67E+02
02/22/06	356.04	1.95	2.31E+02			1.95	2.31E+02
02/23/06	355.97	1.88	2.11E+02			1.88	2.11E+02
02/24/06	355.97	1.88	2.12E+02			1.88	2.12E+02
02/25/06	355.86	1.77	1.84E+02			1.77	1.84E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/26/06	355.79	1.70	1.66E+02			1.70	1.66E+02
02/27/06	355.60	1.51	1.29E+02			1.51	1.29E+02
02/28/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/01/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/02/06	355.53	1.44	1.17E+02			1.44	1.17E+02
03/03/06	355.44	1.35	1.04E+02			1.35	1.04E+02
03/04/06	355.52	1.43	1.16E+02			1.43	1.16E+02
03/05/06	355.57	1.48	1.24E+02			1.48	1.24E+02
03/06/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/07/06	355.58	1.49	1.26E+02			1.49	1.26E+02
03/08/06	355.57	1.48	1.23E+02			1.48	1.23E+02
03/09/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/10/06	355.66	1.57	1.39E+02			1.57	1.39E+02
03/11/06	355.90	1.81	1.92E+02			1.81	1.92E+02
03/12/06	355.85	1.76	1.80E+02			1.76	1.80E+02
03/13/06	355.96	1.87	2.08E+02			1.87	2.08E+02
03/14/06	356.56	2.47	4.71E+02			2.47	4.71E+02
03/15/06	356.47	2.38	4.16E+02			2.38	4.16E+02
03/16/06	355.98	1.89	2.16E+02			1.89	2.16E+02
03/17/06	355.75	1.66	1.57E+02			1.66	1.57E+02
03/18/06	355.64	1.55	1.36E+02			1.55	1.36E+02
03/19/06	355.53	1.44	1.18E+02			1.44	1.18E+02
03/20/06	355.48	1.39	1.10E+02			1.39	1.10E+02
03/21/06	355.41	1.32	9.91E+01			1.32	9.91E+01
03/22/06	355.37	1.28	9.39E+01			1.28	9.39E+01
03/23/06	355.34	1.25	9.10E+01			1.25	9.10E+01
03/24/06	355.29	1.20	8.51E+01			1.20	8.51E+01
03/25/06	355.27	1.18	8.29E+01			1.18	8.29E+01
03/26/06	355.29	1.20	8.49E+01			1.20	8.49E+01
03/27/06	355.33	1.24	8.94E+01			1.24	8.94E+01
03/28/06	355.27	1.18	8.23E+01			1.18	8.23E+01
03/29/06	355.23	1.14	7.83E+01			1.14	7.83E+01
03/30/06	355.20	1.11	7.56E+01			1.11	7.56E+01
03/31/06	355.15	1.06	7.03E+01			1.06	7.03E+01
04/01/06	355.11	1.02	6.70E+01			1.02	6.70E+01
04/02/06	355.14	1.05	6.94E+01			1.05	6.94E+01
04/03/06							
04/04/06							
04/05/06							
04/06/06							
04/07/06							
04/08/06							
04/09/06							
04/10/06							
04/11/06							
04/12/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/13/06							
04/14/06							
04/15/06							
04/16/06							
04/17/06							
04/18/06							
04/19/06							
04/20/06							
04/21/06							
04/22/06							
04/23/06							
04/24/06							
04/25/06							
04/26/06							
04/27/06							
04/28/06							
04/29/06							
04/30/06							
05/01/06							
05/02/06							
05/03/06							
05/04/06							
05/05/06							
05/06/06							
05/07/06							
05/08/06							
05/09/06							
05/10/06							
05/11/06							
05/12/06							
05/13/06							
05/14/06							
05/15/06							
05/16/06							
05/17/06							
05/18/06							
05/19/06							
05/20/06							
05/21/06							
05/22/06							
05/23/06							
05/24/06							
05/25/06							
05/26/06							
05/27/06							
05/28/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/29/06							
05/30/06							
05/31/06							
06/01/06	355.38	1.29	9.59E+01			1.29	9.59E+01
06/02/06	355.81	1.72	1.72E+02			1.72	1.72E+02
06/03/06	356.27	2.18	3.18E+02			2.18	3.18E+02
06/04/06	356.86	2.77	7.00E+02			2.77	7.00E+02
06/05/06	356.82	2.73	6.61E+02			2.73	6.61E+02
06/06/06	356.43	2.34	3.91E+02			2.34	3.91E+02
06/07/06	356.27	2.18	3.17E+02			2.18	3.17E+02
06/08/06	358.87	4.78	1.89E+03			4.78	1.89E+03
06/09/06	358.96	4.87	1.96E+03			4.87	1.96E+03
06/10/06	358.58	4.49	1.65E+03			4.49	1.65E+03
06/11/06	357.98	3.89	1.21E+03			3.89	1.21E+03
06/12/06	357.26	3.17	7.78E+02			3.17	7.78E+02
06/13/06	356.79	2.70	6.34E+02			2.70	6.34E+02
06/14/06	356.40	2.31	3.75E+02			2.31	3.75E+02
06/15/06	356.25	2.16	3.09E+02			2.16	3.09E+02
06/16/06	356.14	2.05	2.65E+02			2.05	2.65E+02
06/17/06	355.83	1.74	1.76E+02			1.74	1.76E+02
06/18/06	355.61	1.52	1.31E+02			1.52	1.31E+02
06/19/06	355.47	1.38	1.07E+02			1.38	1.07E+02
06/20/06	355.43	1.34	1.02E+02			1.34	1.02E+02
06/21/06	355.44	1.35	1.03E+02			1.35	1.03E+02
06/22/06	355.29	1.20	8.53E+01			1.20	8.53E+01
06/23/06	355.20	1.11	7.47E+01			1.11	7.47E+01
06/24/06	355.60	1.51	1.29E+02			1.51	1.29E+02
06/25/06	356.30	2.21	3.30E+02			2.21	3.30E+02
06/26/06	357.75	3.66	1.06E+03			3.66	1.06E+03
06/27/06	359.71	5.62	2.68E+03			5.62	2.68E+03
06/28/06	360.97	6.88	4.15E+03			6.88	4.15E+03
06/29/06	362.39	8.30	6.22E+03			8.30	6.22E+03
06/30/06	362.14	8.05	5.82E+03			8.05	5.82E+03
07/01/06	361.52	7.43	4.89E+03			7.43	4.89E+03
07/02/06	360.70	6.61	3.80E+03			6.61	3.80E+03
07/03/06	359.75	5.66	2.72E+03			5.66	2.72E+03
07/04/06	358.74	4.65	1.78E+03			4.65	1.78E+03
07/05/06	357.91	3.82	1.16E+03			3.82	1.16E+03
07/06/06	357.21	3.12	7.52E+02			3.12	7.52E+02
07/07/06	356.77	2.68	6.23E+02			2.68	6.23E+02
07/08/06	356.35	2.26	3.53E+02			2.26	3.53E+02
07/09/06	356.03	1.94	2.30E+02			1.94	2.30E+02
07/10/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/11/06	355.62	1.53	1.32E+02			1.53	1.32E+02
07/12/06	355.79	1.70	1.67E+02			1.70	1.67E+02
07/13/06	356.18	2.09	2.81E+02			2.09	2.81E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/14/06	356.25	2.16	3.07E+02			2.16	3.07E+02
07/15/06	355.85	1.76	1.81E+02			1.76	1.81E+02
07/16/06	355.61	1.52	1.31E+02			1.52	1.31E+02
07/17/06	355.45	1.36	1.05E+02			1.36	1.05E+02
07/18/06	355.31	1.22	8.72E+01			1.22	8.72E+01
07/19/06	355.22	1.13	7.68E+01			1.13	7.68E+01
07/20/06	355.11	1.02	6.65E+01			1.02	6.65E+01
07/21/06	355.05	0.96	6.11E+01			0.96	6.11E+01
07/22/06	355.44	1.35	1.04E+02			1.35	1.04E+02
07/23/06	355.92	1.83	1.99E+02			1.83	1.99E+02
07/24/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/25/06	355.35	1.26	9.21E+01			1.26	9.21E+01
07/26/06	355.14	1.05	6.94E+01			1.05	6.94E+01
07/27/06	355.00	0.91	5.78E+01			0.91	5.78E+01
07/28/06	355.10	1.01	6.56E+01			1.01	6.56E+01
07/29/06	355.48	1.39	1.10E+02			1.39	1.10E+02
07/30/06	355.34	1.25	9.04E+01			1.25	9.04E+01
07/31/06	355.08	0.99	6.39E+01			0.99	6.39E+01
08/01/06	354.90	0.81	5.04E+01			0.81	5.04E+01
08/02/06	354.79	0.70	4.33E+01			0.70	4.33E+01
08/03/06	354.71	0.62	3.89E+01			0.62	3.89E+01
08/04/06	354.78	0.69	4.25E+01			0.69	4.25E+01
08/05/06	354.86	0.77	4.73E+01			0.77	4.73E+01
08/06/06	354.72	0.63	3.92E+01			0.63	3.92E+01
08/07/06	354.60	0.51	3.35E+01			0.51	3.35E+01
08/08/06	354.60	0.51	3.36E+01			0.51	3.36E+01
08/09/06	354.61	0.52	3.40E+01			0.52	3.40E+01
08/10/06	354.51	0.42	2.97E+01			0.42	2.97E+01
08/11/06	354.65	0.56	3.58E+01			0.56	3.58E+01
08/12/06	354.78	0.69	4.26E+01			0.69	4.26E+01
08/13/06	354.62	0.53	3.43E+01			0.53	3.43E+01
08/14/06	354.51	0.42	2.95E+01			0.42	2.95E+01
08/15/06	354.51	0.42	2.99E+01			0.42	2.99E+01
08/16/06	354.70	0.61	3.81E+01			0.61	3.81E+01
08/17/06	354.66	0.57	3.62E+01			0.57	3.62E+01
08/18/06	354.52	0.43	3.01E+01			0.43	3.01E+01
08/19/06	354.46	0.37	2.79E+01			0.37	2.79E+01
08/20/06	354.47	0.38	2.80E+01			0.38	2.80E+01
08/21/06	354.45	0.36	2.73E+01			0.36	2.73E+01
08/22/06	354.43	0.34	2.66E+01			0.34	2.66E+01
08/23/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/24/06	354.39	0.30	2.53E+01			0.30	2.53E+01
08/25/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/26/06	354.50	0.41	2.91E+01			0.41	2.91E+01
08/27/06	354.69	0.60	3.76E+01			0.60	3.76E+01
08/28/06	356.32	2.23	3.41E+02			2.23	3.41E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/29/06	357.24	3.15	7.65E+02			3.15	7.65E+02
08/30/06	358.44	4.35	1.54E+03			4.35	1.54E+03
08/31/06	358.08	3.99	1.27E+03			3.99	1.27E+03
09/01/06	357.40	3.31	8.52E+02			3.31	8.52E+02
09/02/06	356.56	2.47	4.71E+02			2.47	4.71E+02
09/03/06	357.74	3.65	1.05E+03			3.65	1.05E+03
09/04/06	357.96	3.87	1.20E+03			3.87	1.20E+03
09/05/06	357.51	3.42	9.14E+02			3.42	9.14E+02
09/06/06	357.03	2.94	8.76E+02			2.94	8.76E+02
09/07/06	356.62	2.53	5.10E+02			2.53	5.10E+02
09/08/06	356.20	2.11	2.88E+02			2.11	2.88E+02
09/09/06	355.83	1.74	1.76E+02			1.74	1.76E+02
09/10/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/11/06	355.44	1.35	1.03E+02			1.35	1.03E+02
09/12/06	355.27	1.18	8.30E+01			1.18	8.30E+01
09/13/06	355.17	1.08	7.21E+01			1.08	7.21E+01
09/14/06	355.17	1.08	7.19E+01			1.08	7.19E+01
09/15/06	357.75	3.66	1.06E+03			3.66	1.06E+03
09/16/06	359.53	5.44	2.49E+03			5.44	2.49E+03
09/17/06	358.76	4.67	1.80E+03			4.67	1.80E+03
09/18/06	357.91	3.82	1.16E+03			3.82	1.16E+03
09/19/06	357.09	3.00	9.52E+02			3.00	9.52E+02
09/20/06	356.53	2.44	4.50E+02			2.44	4.50E+02
09/21/06	356.10	2.01	2.51E+02			2.01	2.51E+02
09/22/06	355.81	1.72	1.70E+02			1.72	1.70E+02
09/23/06	355.63	1.54	1.33E+02			1.54	1.33E+02
09/24/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/25/06	355.49	1.40	1.11E+02			1.40	1.11E+02
09/26/06	355.41	1.32	9.98E+01			1.32	9.98E+01
09/27/06	355.34	1.25	9.10E+01			1.25	9.10E+01
09/28/06	355.26	1.17	8.10E+01			1.17	8.10E+01
09/29/06	355.31	1.22	8.67E+01			1.22	8.67E+01
09/30/06	355.53	1.44	1.17E+02			1.44	1.17E+02
10/01/06	355.57	1.48	1.24E+02			1.48	1.24E+02
10/02/06	355.79	1.70	1.65E+02			1.70	1.65E+02
10/03/06	355.60	1.51	1.29E+02			1.51	1.29E+02
10/04/06	355.44	1.35	1.03E+02			1.35	1.03E+02
10/05/06	355.42	1.33	1.01E+02			1.33	1.01E+02
10/06/06	355.62	1.53	1.32E+02			1.53	1.32E+02
10/07/06	355.43	1.34	1.03E+02			1.34	1.03E+02
10/08/06	355.32	1.23	8.84E+01			1.23	8.84E+01
10/09/06	355.22	1.13	7.71E+01			1.13	7.71E+01
10/10/06	355.14	1.05	6.93E+01			1.05	6.93E+01
10/11/06	355.08	0.99	6.37E+01			0.99	6.37E+01
10/12/06							
10/13/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/14/06							
10/15/06							
10/16/06	354.09						
10/17/2006	355.45	1.36	1.06E+02	5.32E+02		1.36	1.06E+02
10/18/2006	356.23	2.14	2.99E+02	1.63E+03		2.14	2.99E+02
10/19/2006	356.67	2.58	5.45E+02	1.33E+03		2.58	5.45E+02
10/20/2006	356.52	2.43	4.46E+02	1.33E+03		2.43	4.46E+02
10/21/2006	357.01	2.92	8.63E+02	1.59E+03		2.92	8.63E+02
10/22/2006	356.70	2.61	5.65E+02	1.28E+03		2.61	5.65E+02
10/23/2006	356.30	2.21	3.32E+02	1.05E+03		2.21	3.32E+02
10/24/2006	356.14	2.05	2.66E+02	8.85E+02		2.05	2.66E+02
10/25/2006	355.92	1.83	1.98E+02	7.67E+02		1.83	1.98E+02
10/26/2006	355.77	1.68	1.61E+02	6.73E+02		1.68	1.61E+02
10/27/2006	355.66	1.57	1.39E+02	5.96E+02		1.57	1.39E+02
10/28/2006	357.61	3.52	9.77E+02	5.70E+03		3.52	9.77E+02
10/29/2006	360.71	6.62	3.82E+03	6.47E+03		6.62	3.82E+03
10/30/2006	359.82	5.73	2.80E+03	3.99E+03		5.73	2.80E+03
10/31/2006	359.03	4.94	2.03E+03	2.77E+03		4.94	2.03E+03
11/1/2006	358.17	4.08	1.34E+03	2.12E+03		4.08	1.34E+03
11/2/2006	357.60	3.51	9.71E+02	1.97E+03		3.51	9.71E+02
11/3/2006	357.55	3.46	9.41E+02	1.86E+03		3.46	9.41E+02
11/4/2006	357.11	3.02	7.00E+02	1.48E+03		3.02	7.00E+02
11/5/2006	356.72	2.63	5.77E+02	1.24E+03		2.63	5.77E+02
11/6/2006	356.46	2.37	4.07E+02	1.02E+03		2.37	4.07E+02
11/7/2006	356.31	2.22	3.36E+02	9.51E+02		2.22	3.36E+02
11/8/2006	356.88	2.79	7.16E+02	2.52E+03		2.79	7.16E+02
11/9/2006	360.90	6.81	4.06E+03	6.68E+03		6.81	4.06E+03
11/10/2006	360.37	6.28	3.40E+03	4.65E+03		6.28	3.40E+03
11/11/2006	359.81	5.72	2.78E+03	3.40E+03		5.72	2.78E+03
11/12/2006	359.19	5.10	2.17E+03	2.74E+03		5.10	2.17E+03
11/13/2006	358.51	4.42	1.60E+03	2.42E+03		4.42	1.60E+03
11/14/2006	358.17	4.08	1.34E+03	2.16E+03		4.08	1.34E+03
11/15/2006	357.92	3.83	1.17E+03	1.97E+03		3.83	1.17E+03
11/16/2006	357.62	3.53	9.81E+02	1.81E+03		3.53	9.81E+02
11/17/2006	359.24	5.15	2.21E+03	3.58E+03		5.15	2.21E+03
11/18/2006	359.22	5.13	2.20E+03	3.05E+03		5.13	2.20E+03
11/19/2006	358.83	4.74	1.85E+03	2.44E+03		4.74	1.85E+03
11/20/2006	358.32	4.23	1.45E+03	2.06E+03		4.23	1.45E+03
11/21/2006	357.79	3.70	1.09E+03	1.70E+03		3.70	1.09E+03
11/22/2006	357.37	3.28	8.36E+02	1.46E+03		3.28	8.36E+02
11/23/2006	357.74	3.65	1.05E+03	1.64E+03		3.65	1.05E+03
11/24/2006	359.61	5.52	2.57E+03	3.14E+03		5.52	2.57E+03
11/25/2006	359.14	5.05	2.12E+03	2.67E+03		5.05	2.12E+03
11/26/2006	358.71	4.62	1.75E+03	2.22E+03		4.62	1.75E+03
11/27/2006	358.16	4.07	1.33E+03	1.86E+03		4.07	1.33E+03
11/28/2006	357.76	3.67	1.07E+03	1.61E+03		3.67	1.07E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/29/2006	357.48	3.39	8.96E+02	1.45E+03		3.39	8.96E+02
11/30/2006	357.21	3.12	7.51E+02	1.34E+03		3.12	7.51E+02
12/1/2006	357.12	3.03	7.04E+02	1.42E+03		3.03	7.04E+02
12/2/2006	358.39	4.30	1.50E+03	2.27E+03		4.30	1.50E+03
12/3/2006	357.92	3.83	1.17E+03	1.88E+03		3.83	1.17E+03
12/4/2006	357.41	3.32	8.57E+02	1.50E+03		3.32	8.57E+02
12/5/2006	356.98	2.89	8.21E+02	1.27E+03		2.89	8.21E+02
12/6/2006	356.68	2.59	5.51E+02	1.10E+03		2.59	5.51E+02
12/7/2006	356.52	2.43	4.46E+02	1.02E+03		2.43	4.46E+02
12/8/2006	356.42	2.33	3.87E+02	9.61E+02		2.33	3.87E+02
12/9/2006	356.14	2.05	2.65E+02	7.94E+02		2.05	2.65E+02
12/10/2006	356.04	1.95	2.31E+02	7.39E+02		1.95	2.31E+02
12/11/2006	356.05	1.96	2.37E+02	7.31E+02		1.96	2.37E+02
12/12/2006	356.00	1.91	2.21E+02	7.47E+02		1.91	2.21E+02
12/13/2006	355.97	1.88	2.13E+02	7.46E+02		1.88	2.13E+02
12/14/2006	356.15	2.06	2.68E+02	8.45E+02		2.06	2.68E+02
12/15/2006	356.10	2.01	2.51E+02	8.26E+02		2.01	2.51E+02
12/16/2006	355.94	1.85	2.05E+02	7.61E+02		1.85	2.05E+02
12/17/2006	355.84	1.75	1.77E+02	6.99E+02		1.75	1.77E+02
12/18/2006	355.76	1.67	1.59E+02	6.40E+02		1.67	1.59E+02
12/19/2006	355.70	1.61	1.47E+02	6.01E+02		1.61	1.47E+02
12/20/2006	355.68	1.59	1.44E+02	5.66E+02		1.59	1.44E+02
12/21/2006	355.63	1.54	1.34E+02	5.30E+02		1.54	1.34E+02
12/22/2006	355.56	1.47	1.22E+02	5.23E+02		1.47	1.22E+02
12/23/2006	356.14	2.05	2.66E+02	1.18E+03		2.05	2.66E+02
12/24/2006	356.97	2.88	8.17E+02	1.46E+03		2.88	8.17E+02
12/25/2006	356.50	2.41	4.31E+02	1.14E+03		2.41	4.31E+02
12/26/2006	356.42	2.33	3.86E+02	1.38E+03		2.33	3.86E+02
12/27/2006	356.60	2.51	4.92E+02	1.28E+03		2.51	4.92E+02
12/28/2006	356.30	2.21	3.30E+02	1.06E+03		2.21	3.30E+02
12/29/2006	356.08	1.99	2.45E+02	8.53E+02		1.99	2.45E+02
12/30/2006	355.93	1.84	2.00E+02	7.77E+02		1.84	2.00E+02
12/31/2006	355.87	1.78	1.86E+02	7.31E+02		1.78	1.86E+02
1/1/2007	356.56	2.47	4.67E+02	1.57E+03		2.47	4.67E+02
1/2/2007	357.98	3.89	1.21E+03	2.29E+03		3.89	1.21E+03
1/3/2007	357.38	3.29	8.43E+02	1.68E+03		3.29	8.43E+02
1/4/2007	356.85	2.76	6.94E+02	1.33E+03		2.76	6.94E+02
1/5/2007	356.60	2.51	4.97E+02	1.18E+03		2.51	4.97E+02
1/6/2007	356.88	2.79	7.23E+02	1.69E+03		2.79	7.23E+02
1/7/2007	357.08	2.99	9.46E+02	1.67E+03		2.99	9.46E+02
1/8/2007	358.04	3.95	1.25E+03	3.56E+03		3.95	1.25E+03
1/9/2007	359.21	5.12	2.19E+03	3.70E+03		5.12	2.19E+03
1/10/2007	358.48	4.39	1.57E+03	2.59E+03		4.39	1.57E+03
1/11/2007	357.71	3.62	1.04E+03	1.90E+03		3.62	1.04E+03
1/12/2007	357.12	3.03	7.06E+02	1.50E+03		3.03	7.06E+02
1/13/2007	356.97	2.88	8.17E+02	1.38E+03		2.88	8.17E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/14/2007	357.13	3.04	7.12E+02	1.48E+03		3.04	7.12E+02
1/15/2007	357.40	3.31	8.55E+02	2.14E+03		3.31	8.55E+02
1/16/2007	357.68	3.59	1.02E+03	2.25E+03		3.59	1.02E+03
1/17/2007	357.17	3.08	7.28E+02	1.63E+03		3.08	7.28E+02
1/18/2007	356.58	2.49	4.78E+02	1.21E+03		2.49	4.78E+02
1/19/2007	356.46	2.37	4.10E+02	1.05E+03		2.37	4.10E+02
1/20/2007	356.42	2.33	3.88E+02	1.02E+03		2.33	3.88E+02
1/21/2007	361.31	7.22	4.60E+03	8.01E+02	8.01E+02	7.22	8.01E+02
1/22/2007	356.09	2.00	2.47E+02	8.16E+02		2.00	2.47E+02
1/23/2007	355.96	1.87	2.08E+02	7.72E+02		1.87	2.08E+02
1/24/2007	355.91	1.82	1.96E+02	7.39E+02		1.82	1.96E+02
1/25/2007	355.83	1.74	1.76E+02	6.85E+02		1.74	1.76E+02
1/26/2007	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/27/2007	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/28/2007	355.65	1.56	1.38E+02	Ice		1.56	1.38E+02
1/29/2007	355.67	1.58	1.41E+02	Ice		1.58	1.41E+02
1/30/2007	355.66	1.57	1.40E+02	Ice		1.57	1.40E+02
1/31/2007	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
2/1/2007	355.45	1.36	1.05E+02	Ice		1.36	1.05E+02
2/2/2007	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
2/3/2007	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/4/2007	355.31	1.22	8.72E+01	Ice		1.22	8.72E+01
2/5/2007	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
2/6/2007	355.35	1.26	9.23E+01	Ice		1.26	9.23E+01
2/7/2007	355.15	1.06	7.03E+01	Ice		1.06	7.03E+01
2/8/2007	355.07	0.98	6.29E+01	Ice		0.98	6.29E+01
2/9/2007	355.01	0.92	5.81E+01	Ice		0.92	5.81E+01
2/10/2007	354.98	0.89	5.60E+01	Ice		0.89	5.60E+01
2/11/2007	354.95	0.86	5.35E+01	Ice		0.86	5.35E+01
2/12/2007	354.94	0.85	5.27E+01	Ice		0.85	5.27E+01
2/13/2007	354.94	0.85	5.28E+01	Ice		0.85	5.28E+01
2/14/2007	355.04	0.95	6.08E+01	Ice		0.95	6.08E+01
2/15/2007	354.97	0.88	5.49E+01	Ice		0.88	5.49E+01
2/16/2007	355.21	1.12	7.61E+01	Ice		1.12	7.61E+01
2/17/2007	355.14	1.05	6.93E+01	Ice		1.05	6.93E+01
2/18/2007	355.07	0.98	6.33E+01	Ice		0.98	6.33E+01
2/19/2007	355.02	0.93	5.87E+01	Ice		0.93	5.87E+01
2/20/2007	354.99	0.90	5.67E+01	Ice		0.90	5.67E+01
2/21/2007	355.03	0.94	5.97E+01	Ice		0.94	5.97E+01
2/22/2007	355.12	1.03	6.77E+01	Ice		1.03	6.77E+01
2/23/2007	355.21	1.12	7.66E+01	Ice		1.12	7.66E+01
2/24/2007	355.22	1.13	7.73E+01	Ice		1.13	7.73E+01
2/25/2007	355.18	1.09	7.32E+01	Ice		1.09	7.32E+01
2/26/2007	355.12	1.03	6.74E+01	Ice		1.03	6.74E+01
2/27/2007	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/28/2007	355.11	1.02	6.70E+01	Ice [P]		1.02	6.70E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/1/2007	355.19	1.10	7.41E+01	Ice [P]		1.10	7.41E+01
3/2/2007	356.90	2.81	7.36E+02	Ice [P]		2.81	7.36E+02
3/3/2007	360.30	6.21	3.32E+03	Ice [P]		6.21	3.32E+03
3/4/2007	360.08	5.99	3.07E+03	Ice [P]		5.99	3.07E+03
3/5/2007	359.12	5.03	2.11E+03	Ice [P]		5.03	2.11E+03
3/6/2007	357.61	3.52	9.74E+02	Ice [P]		3.52	9.74E+02
3/7/2007	356.47	2.38	4.17E+02	Ice		2.38	4.17E+02
3/8/2007	370.57	16.48	2.74E+04	Ice		16.48	3.56E+02
3/9/2007	356.21	2.12	2.94E+02	Ice		2.12	2.94E+02
3/10/2007	355.99	1.90	2.19E+02	Ice		1.90	2.19E+02
3/11/2007	356.16	2.07	2.72E+02	Ice		2.07	2.72E+02
3/12/2007	357.34	3.25	8.21E+02	Ice		3.25	8.21E+02
3/13/2007	357.71	3.62	1.03E+03	Ice		3.62	1.03E+03
3/14/2007	358.30	4.21	1.43E+03	3.33E+03		4.21	1.43E+03
3/15/2007	359.18	5.09	2.16E+03	4.37E+03		5.09	2.16E+03
3/16/2007	358.97	4.88	1.98E+03	3.53E+03		4.88	1.98E+03
3/17/2007	357.48	3.39	9.01E+02	1.96E+03		3.39	9.01E+02
3/18/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/19/2007	357.42	3.33	8.67E+02	1.78E+03		3.33	8.67E+02
3/20/2007	357.14	3.05	7.13E+02	1.59E+03		3.05	7.13E+02
3/21/2007	357.32	3.23	8.08E+02	1.59E+03		3.23	8.08E+02
3/22/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/23/2007	360.47	6.38	3.52E+03	5.04E+03		6.38	3.52E+03
3/24/2007	360.55	6.46	3.62E+03	5.40E+03		6.46	3.62E+03
3/25/2007	360.57	6.48	3.65E+03	5.54E+03		6.48	3.65E+03
3/26/2007	360.16	6.07	3.17E+03	4.58E+03		6.07	3.17E+03
3/27/2007	359.69	5.60	2.65E+03	3.99E+03		5.60	2.65E+03
3/28/2007	359.27	5.18	2.25E+03	3.48E+03		5.18	2.25E+03
3/29/2007	358.58	4.49	1.65E+03	2.73E+03		4.49	1.65E+03
3/30/2007	357.98	3.89	1.21E+03	2.15E+03		3.89	1.21E+03
3/31/2007	357.53	3.44	9.27E+02	1.78E+03		3.44	9.27E+02
4/1/2007	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
4/2/2007	357.18	3.09	7.37E+02	1.55E+03		3.09	7.37E+02
4/3/2007	357.20	3.11	7.45E+02	1.59E+03		3.11	7.45E+02
4/4/2007	357.13	3.04	7.10E+02	1.75E+03		3.04	7.10E+02
4/5/2007	358.07	3.98	1.27E+03	2.55E+03		3.98	1.27E+03
4/6/2007	357.73	3.64	1.05E+03	1.99E+03		3.64	1.05E+03
4/7/2007	357.22	3.13	7.55E+02	1.62E+03		3.13	7.55E+02
4/8/2007	356.82	2.73	6.65E+02	1.36E+03		2.73	6.65E+02
4/9/2007	356.58	2.49	4.84E+02	1.18E+03		2.49	4.84E+02
4/10/2007	356.39	2.30	3.71E+02	1.04E+03		2.30	3.71E+02
4/11/2007	356.24	2.15	3.04E+02	9.02E+02		2.15	3.04E+02
4/12/2007	356.61	2.52	5.00E+02			2.52	5.00E+02
4/13/2007	357.94	3.85	1.18E+03			3.85	1.18E+03
4/14/2007	357.49	3.40	9.02E+02	1.75E+03		3.40	9.02E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/15/2007	359.26	5.17	2.24E+03	5.67E+03		5.17	2.24E+03
4/16/2007	365.42	11.33	1.22E+04	1.97E+04		11.33	1.22E+04
4/17/2007	365.86	11.77	1.32E+04	1.54E+04		11.77	1.32E+04
4/18/2007	366.70	12.61	1.54E+04	1.10E+04	1.10E+04	12.61	1.10E+04
4/19/2007	366.56	12.47	1.50E+04	1.01E+04	1.01E+04	12.47	1.01E+04
4/20/2007	365.68	11.59	1.28E+04	9.03E+03	9.03E+03	11.59	9.03E+03
4/21/2007	364.43	10.34	1.00E+04	7.64E+03	7.64E+03	10.34	7.64E+03
4/22/2007	362.63	8.54	6.61E+03	5.99E+03	5.99E+03	8.54	5.99E+03
4/23/2007	360.23	6.14	3.25E+03	4.06E+03		6.14	3.25E+03
4/24/2007	358.68	4.59	1.73E+03	2.48E+03		4.59	1.73E+03
4/25/2007	357.97	3.88	1.20E+03	1.85E+03		3.88	1.20E+03
4/26/2007	357.87	3.78	1.13E+03	1.84E+03		3.78	1.13E+03
4/27/2007	358.03	3.94	1.24E+03	1.99E+03		3.94	1.24E+03
4/28/2007	358.15	4.06	1.32E+03	2.11E+03		4.06	1.32E+03
4/29/2007	357.85	3.76	1.12E+03	1.83E+03		3.76	1.12E+03
4/30/2007	357.45	3.36	8.83E+02	1.57E+03		3.36	8.83E+02
5/1/2007	357.03	2.94	8.84E+02	1.35E+03		2.94	8.84E+02
5/2/2007	356.78	2.69	6.30E+02	1.22E+03		2.69	6.30E+02
5/3/2007	356.66	2.57	5.39E+02	1.18E+03		2.57	5.39E+02
5/4/2007	356.39	2.30	3.73E+02	9.31E+02		2.30	3.73E+02
5/5/2007	356.23	2.14	3.02E+02	8.60E+02		2.14	3.02E+02
5/6/2007	356.06	1.97	2.38E+02	8.32E+02		1.97	2.38E+02
5/7/2007	355.89	1.80	1.91E+02	7.33E+02		1.80	1.91E+02
5/8/2007	355.73	1.64	1.53E+02	6.95E+02		1.64	1.53E+02
5/9/2007	355.66	1.57	1.40E+02	6.64E+02		1.57	1.40E+02
5/10/2007	355.60	1.51	1.29E+02	5.98E+02		1.51	1.29E+02
5/11/2007	355.57	1.48	1.24E+02	6.00E+02		1.48	1.24E+02
5/12/2007	355.48	1.39	1.09E+02	5.63E+02		1.39	1.09E+02
5/13/2007	355.40	1.31	9.85E+01	5.52E+02		1.31	9.85E+01
5/14/2007	355.35	1.26	9.19E+01	4.99E+02		1.26	9.19E+01
5/15/2007	355.24	1.15	7.94E+01	4.59E+02		1.15	7.94E+01
5/16/2007	355.17	1.08	7.19E+01	4.44E+02		1.08	7.19E+01
5/17/2007	355.24	1.15	7.94E+01	4.53E+02		1.15	7.94E+01
5/18/2007	355.26	1.17	8.19E+01	4.53E+02		1.17	8.19E+01
5/19/2007	355.27	1.18	8.29E+01	4.57E+02		1.18	8.29E+01
5/20/2007	355.24	1.15	7.92E+01	4.62E+02		1.15	7.92E+01
5/21/2007	355.25	1.16	8.03E+01	4.68E+02		1.16	8.03E+01
5/22/2007	355.14	1.05	6.93E+01	4.40E+02		1.05	6.93E+01
5/23/2007	355.04	0.95	6.09E+01	3.69E+02		0.95	6.09E+01
5/24/2007	355.01	0.92	5.80E+01	3.43E+02		0.92	5.80E+01
5/25/2007	354.96	0.87	5.47E+01	3.20E+02		0.87	5.47E+01
5/26/2007	354.91	0.82	5.09E+01	2.84E+02		0.82	5.09E+01
5/27/2007	354.87	0.78	4.83E+01	2.51E+02		0.78	4.83E+01
5/28/2007	354.86	0.77	4.75E+01	2.52E+02		0.77	4.75E+01
5/29/2007	354.79	0.70	4.32E+01	2.50E+02		0.70	4.32E+01
5/30/2007	354.70	0.61	3.84E+01	2.36E+02		0.61	3.84E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
5/31/2007	354.65	0.56	3.57E+01	2.22E+02		0.56	3.57E+01
6/1/2007	354.61	0.52	3.39E+01	2.03E+02		0.52	3.39E+01
6/2/2007	354.59	0.50	3.31E+01	1.91E+02		0.50	3.31E+01
6/3/2007	354.65	0.56	3.60E+01	2.65E+02		0.56	3.60E+01
6/4/2007	355.00	0.91	5.78E+01	5.13E+02		0.91	5.78E+01
6/5/2007	355.37	1.28	9.44E+01	6.19E+02		1.28	9.44E+01
6/6/2007	355.19	1.10	7.42E+01	5.21E+02		1.10	7.42E+01
6/7/2007	354.97	0.88	5.49E+01	4.04E+02		0.88	5.49E+01
6/8/2007	354.78	0.69	4.25E+01	3.05E+02		0.69	4.25E+01
6/9/2007	354.68	0.59	3.76E+01	2.43E+02		0.59	3.76E+01
6/10/2007	354.64	0.55	3.55E+01	2.19E+02		0.55	3.55E+01
6/11/2007	354.60	0.51	3.36E+01	1.76E+02		0.51	3.36E+01
6/12/2007	354.54	0.45	3.10E+01	1.85E+02		0.45	3.10E+01
6/13/2007	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
6/14/2007	354.46	0.37	2.79E+01	1.59E+02		0.37	2.79E+01
6/15/2007	354.48	0.39	2.86E+01	1.39E+02		0.39	2.86E+01
6/16/2007	354.48	0.39	2.86E+01	1.47E+02		0.39	2.86E+01
6/17/2007	354.50	0.41	2.93E+01	1.50E+02		0.41	2.93E+01
6/18/2007	354.50	0.41	2.95E+01	1.71E+02		0.41	2.95E+01
6/19/2007	354.49	0.40	2.91E+01	1.57E+02		0.40	2.91E+01
6/20/2007	354.49	0.40	2.90E+01	1.79E+02		0.40	2.90E+01
6/21/2007	354.63	0.54	3.48E+01	2.40E+02		0.54	3.48E+01
6/22/2007	354.56	0.47	3.18E+01	2.13E+02		0.47	3.18E+01
6/23/2007	354.55	0.46	3.15E+01	1.85E+02		0.46	3.15E+01
6/24/2007	354.46	0.37	2.78E+01	1.55E+02		0.37	2.78E+01
6/25/2007	354.46	0.37	2.79E+01	1.26E+02		0.37	2.79E+01
6/26/2007	354.46	0.37	2.79E+01	1.24E+02		0.37	2.79E+01
6/27/2007	354.45	0.36	2.74E+01	1.19E+02		0.36	2.74E+01
6/28/2007	354.58	0.49	3.25E+01	1.21E+02		0.49	3.25E+01
6/29/2007	355.29	1.20	8.51E+01	1.92E+02		1.20	8.51E+01
6/30/2007	355.59	1.50	1.27E+02	4.10E+02		1.50	1.27E+02
7/1/2007	355.01	0.92	5.79E+01	4.07E+02		0.92	5.79E+01
7/2/2007	354.63	0.54	3.47E+01	2.52E+02		0.54	3.47E+01
7/3/2007	354.48	0.39	2.85E+01	1.66E+02		0.39	2.85E+01
7/4/2007	354.44	0.35	2.72E+01	1.54E+02		0.35	2.72E+01
7/5/2007	354.50	0.41	2.95E+01	2.81E+02		0.41	2.95E+01
7/6/2007	354.59	0.50	3.31E+01	8.12E+02		0.50	3.31E+01
7/7/2007	354.52	0.43	3.01E+01	4.44E+02		0.43	3.01E+01
7/8/2007	354.47	0.38	2.80E+01	2.43E+02		0.38	2.80E+01
7/9/2007	354.47	0.38	2.80E+01	1.72E+02		0.38	2.80E+01
7/10/2007	354.45	0.36	2.74E+01	1.47E+02		0.36	2.74E+01
7/11/2007	354.45	0.36	2.74E+01	1.40E+02		0.36	2.74E+01
7/12/2007	354.45	0.36	2.74E+01	1.68E+02		0.36	2.74E+01
7/13/2007	354.44	0.35	2.71E+01	1.77E+02		0.35	2.71E+01
7/14/2007	354.44	0.35	2.70E+01	1.43E+02		0.35	2.70E+01
7/15/2007	354.43	0.34	2.67E+01	1.28E+02		0.34	2.67E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/16/2007	354.45	0.36	2.73E+01	1.53E+02		0.36	2.73E+01
7/17/2007	354.44	0.35	2.69E+01	1.49E+02		0.35	2.69E+01
7/18/2007	354.43	0.34	2.68E+01	1.27E+02		0.34	2.68E+01
7/19/2007	354.57	0.48	3.20E+01	1.40E+02		0.48	3.20E+01
7/20/2007	354.74	0.65	4.04E+01	2.05E+02		0.65	4.04E+01
7/21/2007	354.50	0.41	2.93E+01	2.37E+02		0.41	2.93E+01
7/22/2007	354.45	0.36	2.75E+01	1.46E+02		0.36	2.75E+01
7/23/2007	354.52	0.43	2.99E+01	1.54E+02		0.43	2.99E+01
7/24/2007	355.76	1.67	1.59E+02	4.40E+02		1.67	1.59E+02
7/25/2007	355.64	1.55	1.35E+02	6.59E+02		1.55	1.35E+02
7/26/2007	355.11	1.02	6.70E+01	4.84E+02		1.02	6.70E+01
7/27/2007	354.72	0.63	3.95E+01	2.82E+02		0.63	3.95E+01
7/28/2007	354.73	0.64	4.00E+01	2.87E+02		0.64	4.00E+01
7/29/2007	354.96	0.87	5.45E+01	3.02E+02		0.87	5.45E+01
7/30/2007	354.81	0.72	4.47E+01	3.18E+02		0.72	4.47E+01
7/31/2007	354.65	0.56	3.61E+01	3.12E+02		0.56	3.61E+01
8/1/2007	354.54	0.45	3.08E+01	2.24E+02		0.45	3.08E+01
8/2/2007	354.44	0.35	2.72E+01	1.51E+02		0.35	2.72E+01
8/3/2007	354.43	0.34	2.68E+01	1.46E+02		0.34	2.68E+01
8/4/2007	354.44	0.35	2.71E+01	1.34E+02		0.35	2.71E+01
8/5/2007	354.43	0.34	2.68E+01	1.16E+02		0.34	2.68E+01
8/6/2007	354.44	0.35	2.69E+01	1.07E+02		0.35	2.69E+01
8/7/2007	354.44	0.35	2.69E+01	1.01E+02		0.35	2.69E+01
8/8/2007	354.73	0.64	4.00E+01	1.38E+02		0.64	4.00E+01
8/9/2007	355.69	1.60	1.46E+02	3.94E+02		1.60	1.46E+02
8/10/2007	356.03	1.94	2.30E+02	9.23E+02		1.94	2.30E+02
8/11/2007	356.97	2.88	8.10E+02	1.48E+03		2.88	8.10E+02
8/12/2007	356.22	2.13	2.95E+02	1.01E+03		2.13	2.95E+02
8/13/2007	355.42	1.33	1.01E+02	6.43E+02		1.33	1.01E+02
8/14/2007	355.01	0.92	5.85E+01	4.42E+02		0.92	5.85E+01
8/15/2007	354.80	0.71	4.39E+01	2.83E+02		0.71	4.39E+01
8/16/2007	354.64	0.55	3.53E+01	2.41E+02		0.55	3.53E+01
8/17/2007	354.54	0.45	3.09E+01	2.27E+02		0.45	3.09E+01
8/18/2007	354.49	0.40	2.89E+01	2.38E+02		0.40	2.89E+01
8/19/2007	354.46	0.37	2.79E+01	2.12E+02		0.37	2.79E+01
8/20/2007	354.45	0.36	2.74E+01	1.63E+02		0.36	2.74E+01
8/21/2007	354.54	0.45	3.08E+01	1.65E+02		0.45	3.08E+01
8/22/2007	355.45	1.36	1.05E+02	4.84E+02		1.36	1.05E+02
8/23/2007	355.34	1.25	9.04E+01	5.80E+02		1.25	9.04E+01
8/24/2007	355.02	0.93	5.92E+01	4.32E+02		0.93	5.92E+01
8/25/2007	354.86	0.77	4.78E+01	3.39E+02		0.77	4.78E+01
8/26/2007	354.76	0.67	4.14E+01	2.73E+02		0.67	4.14E+01
8/27/2007	354.78	0.69	4.26E+01	2.35E+02		0.69	4.26E+01
8/28/2007	354.73	0.64	3.98E+01	2.27E+02		0.64	3.98E+01
8/29/2007	354.66	0.57	3.65E+01	2.07E+02		0.57	3.65E+01
8/30/2007	354.64	0.55	3.54E+01	1.75E+02		0.55	3.54E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
8/31/2007	354.62	0.53	3.45E+01	1.47E+02		0.53	3.45E+01
9/1/2007	354.61	0.52	3.38E+01	1.42E+02		0.52	3.38E+01
9/2/2007	354.58	0.49	3.25E+01	1.31E+02		0.49	3.25E+01
9/3/2007	354.58	0.49	3.25E+01	1.19E+02		0.49	3.25E+01
9/4/2007	354.56	0.47	3.17E+01	1.09E+02		0.47	3.17E+01
9/5/2007	354.56	0.47	3.19E+01	1.05E+02		0.47	3.19E+01
9/6/2007	354.56	0.47	3.16E+01	9.50E+01		0.47	3.16E+01
9/7/2007	354.56	0.47	3.17E+01	8.50E+01		0.47	3.17E+01
9/8/2007	354.55	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
9/9/2007	354.55	0.46	3.15E+01	9.40E+01		0.46	3.15E+01
9/10/2007	354.56	0.47	3.17E+01	1.15E+02		0.47	3.17E+01
9/11/2007	354.56	0.47	3.16E+01	1.21E+02		0.47	3.16E+01
9/12/2007	354.58	0.49	3.26E+01	1.46E+02		0.49	3.26E+01
9/13/2007	354.58	0.49	3.28E+01	1.42E+02		0.49	3.28E+01
9/14/2007	354.57	0.48	3.23E+01	1.24E+02		0.48	3.23E+01
9/15/2007	354.56	0.47	3.17E+01	1.07E+02		0.47	3.17E+01
9/16/2007	354.53	0.44	3.06E+01	8.90E+01		0.44	3.06E+01
9/17/2007	354.53	0.44	3.06E+01	8.10E+01		0.44	3.06E+01
9/18/2007	354.54	0.45	3.11E+01	7.50E+01		0.45	3.11E+01
9/19/2007	354.53	0.44	3.03E+01	9.00E+01		0.44	3.03E+01
9/20/2007	354.51	0.42	2.96E+01	7.70E+01		0.42	2.96E+01
9/21/2007	354.51	0.42	2.97E+01	7.00E+01		0.42	2.97E+01
9/22/2007	354.50	0.41	2.95E+01	6.30E+01		0.41	2.95E+01
9/23/2007	354.51	0.42	2.97E+01	6.10E+01		0.42	2.97E+01
9/24/2007	354.51	0.42	2.96E+01	6.00E+01		0.42	2.96E+01
9/25/2007	354.51	0.42	2.98E+01	5.60E+01		0.42	2.98E+01
9/26/2007	354.52	0.43	3.02E+01	5.40E+01		0.43	3.02E+01
9/27/2007	354.53	0.44	3.06E+01	5.10E+01		0.44	3.06E+01
9/28/2007	354.53	0.44	3.05E+01	5.00E+01		0.44	3.05E+01
9/29/2007	354.53	0.44	3.03E+01	5.30E+01		0.44	3.03E+01
9/30/2007	354.53	0.44	3.04E+01	5.00E+01		0.44	3.04E+01
10/1/2007	354.54	0.45	3.10E+01	4.90E+01		0.45	3.10E+01
10/2/2007	354.53	0.44	3.07E+01	4.70E+01		0.44	3.07E+01
10/3/2007	354.54	0.45	3.08E+01	4.80E+01		0.45	3.08E+01
10/4/2007	354.55	0.46	3.12E+01	4.90E+01		0.46	3.12E+01
10/5/2007	354.54	0.45	3.11E+01	4.80E+01		0.45	3.11E+01
10/6/2007	354.54	0.45	3.08E+01	4.60E+01		0.45	3.08E+01
10/7/2007	354.54	0.45	3.10E+01	4.60E+01		0.45	3.10E+01
10/8/2007	354.57	0.48	3.23E+01	4.60E+01		0.48	3.23E+01
10/9/2007	354.59	0.50	3.30E+01	4.80E+01		0.50	3.30E+01
10/10/2007	354.72	0.63	3.93E+01	7.40E+01		0.63	3.93E+01
10/11/2007	354.88	0.79	4.91E+01	1.95E+02		0.79	4.91E+01
10/12/2007	355.38	1.29	9.54E+01	2.44E+02		1.29	9.54E+01
10/13/2007	356.34	2.25	3.47E+02	5.70E+02		2.25	3.47E+02
10/14/2007	355.94	1.85	2.03E+02	6.20E+02		1.85	2.03E+02
10/15/2007	355.29	1.20	8.53E+01	4.50E+02		1.20	8.53E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/16/2007	354.96	0.87	5.42E+01	3.03E+02		0.87	5.42E+01
10/17/2007	354.78	0.69	4.29E+01	2.19E+02		0.69	4.29E+01
10/18/2007	354.67	0.58	3.71E+01	1.60E+02		0.58	3.71E+01
10/19/2007	354.63	0.54	3.50E+01	1.75E+02		0.54	3.50E+01
10/20/2007	355.33	1.24	8.90E+01	2.44E+02		1.24	8.90E+01
10/21/2007	356.00	1.91	2.19E+02	5.50E+02		1.91	2.19E+02
10/22/2007	355.59	1.50	1.27E+02	5.34E+02		1.50	1.27E+02
10/23/2007	355.18	1.09	7.28E+01	3.95E+02		1.09	7.28E+01
10/24/2007	355.03	0.94	5.97E+01	3.22E+02		0.94	5.97E+01
10/25/2007	355.03	0.94	5.99E+01	2.75E+02		0.94	5.99E+01
10/26/2007	355.01	0.92	5.79E+01	2.86E+02		0.92	5.79E+01
10/27/2007	356.42	2.33	3.89E+02	1.36E+03		2.33	3.89E+02
10/28/2007	359.10	5.01	2.09E+03	3.05E+03		5.01	2.09E+03
10/29/2007	358.60	4.51	1.67E+03	2.16E+03		4.51	1.67E+03
10/30/2007	357.95	3.86	1.19E+03	1.59E+03		3.86	1.19E+03
10/31/2007	356.85	2.76	6.92E+02	1.17E+03		2.76	6.92E+02
11/1/2007	356.05	1.96	2.34E+02	7.92E+02		1.96	2.34E+02
11/2/2007	355.68	1.59	1.43E+02	6.10E+02		1.59	1.43E+02
11/3/2007	355.47	1.38	1.08E+02	5.00E+02		1.38	1.08E+02
11/4/2007	355.34	1.25	9.08E+01	4.50E+02		1.25	9.08E+01
11/5/2007	355.22	1.13	7.73E+01	4.08E+02		1.13	7.73E+01
11/6/2007	355.15	1.06	7.02E+01	3.67E+02		1.06	7.02E+01
11/7/2007	355.23	1.14	7.87E+01	4.03E+02		1.14	7.87E+01
11/8/2007	355.20	1.11	7.52E+01	4.02E+02		1.11	7.52E+01
11/9/2007	355.07	0.98	6.32E+01	3.55E+02		0.98	6.32E+01
11/10/2007	355.12	1.03	6.79E+01	3.64E+02		1.03	6.79E+01
11/11/2007	355.40	1.31	9.87E+01	4.31E+02		1.31	9.87E+01
11/12/2007	355.35	1.26	9.21E+01	4.77E+02		1.26	9.21E+01
11/13/2007	355.26	1.17	8.14E+01	4.41E+02		1.17	8.14E+01
11/14/2007	355.35	1.26	9.25E+01	4.61E+02		1.26	9.25E+01
11/15/2007	355.55	1.46	1.20E+02	8.62E+02		1.46	1.20E+02
11/16/2007	357.14	3.05	7.14E+02	1.55E+03		3.05	7.14E+02
11/17/2007	356.84	2.75	6.83E+02	1.29E+03		2.75	6.83E+02
11/18/2007	356.21	2.12	2.92E+02	9.67E+02		2.12	2.92E+02
11/19/2007	355.80	1.71	1.69E+02	7.55E+02		1.71	1.69E+02
11/20/2007	355.83	1.74	1.75E+02	6.98E+02		1.74	1.75E+02
11/21/2007	356.28	2.19	3.22E+02	8.49E+02		2.19	3.22E+02
11/22/2007	356.17	2.08	2.76E+02	8.46E+02		2.08	2.76E+02
11/23/2007	355.91	1.82	1.94E+02	7.37E+02		1.82	1.94E+02
11/24/2007	355.62	1.53	1.33E+02	6.15E+02		1.53	1.33E+02
11/25/2007	355.48	1.39	1.10E+02	5.44E+02		1.39	1.10E+02
11/26/2007	356.25	2.16	3.08E+02	9.78E+02		2.16	3.08E+02
11/27/2007	358.81	4.72	1.83E+03	3.10E+03		4.72	1.83E+03
11/28/2007	358.49	4.40	1.58E+03	2.43E+03		4.40	1.58E+03
11/29/2007	357.65	3.56	1.00E+03	1.74E+03		3.56	1.00E+03
11/30/2007	357.17	3.08	7.28E+02	1.41E+03		3.08	7.28E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/1/2007	356.67	2.58	5.41E+02	1.16E+03		2.58	5.41E+02
12/2/2007	356.29	2.20	3.26E+02	9.33E+02		2.20	3.26E+02
12/3/2007	356.27	2.18	3.17E+02	1.16E+03		2.18	3.17E+02
12/4/2007	356.79	2.70	6.37E+02	1.43E+03		2.70	6.37E+02
12/5/2007	356.56	2.47	4.66E+02	1.20E+03		2.47	4.66E+02
12/6/2007	356.17	2.08	2.76E+02	9.39E+02		2.08	2.76E+02
12/7/2007	355.88	1.79	1.88E+02	7.73E+02		1.79	1.88E+02
12/8/2007	355.82	1.73	1.73E+02	7.22E+02		1.73	1.73E+02
12/9/2007	355.73	1.64	1.53E+02	7.06E+02		1.64	1.53E+02
12/10/2007	356.03	1.94	2.30E+02	8.36E+02		1.94	2.30E+02
12/11/2007	356.48	2.39	4.18E+02	1.11E+03		2.39	4.18E+02
12/12/2007	356.60	2.51	4.95E+02	1.28E+03		2.51	4.95E+02
12/13/2007	356.73	2.64	5.89E+02	1.28E+03		2.64	5.89E+02
12/14/2007	356.46	2.37	4.12E+02	1.16E+03		2.37	4.12E+02
12/15/2007	356.44	2.35	3.97E+02	1.10E+03		2.35	3.97E+02
12/16/2007	355.99	1.90	2.16E+02	9.44E+02		1.90	2.16E+02
12/17/2007	356.20	2.11	2.88E+02	8.63E+02		2.11	2.88E+02
12/18/2007	356.34	2.25	3.50E+02	1.10E+03		2.25	3.50E+02
12/19/2007	356.12	2.03	2.59E+02	1.06E+03		2.03	2.59E+02
12/20/2007	355.96	1.87	2.10E+02	8.76E+02		1.87	2.10E+02
12/21/2007	355.93	1.84	2.01E+02	8.25E+02		1.84	2.01E+02
12/22/2007	355.90	1.81	1.92E+02	7.83E+02		1.81	1.92E+02
12/23/2007	356.00	1.91	2.20E+02	1.08E+03		1.91	2.20E+02
12/24/2007	360.17	6.08	3.17E+03	6.03E+03		6.08	3.17E+03
12/25/2007	361.03	6.94	4.22E+03	4.80E+03		6.94	4.22E+03
12/26/2007	360.43	6.34	3.48E+03	3.95E+03		6.34	3.48E+03
12/27/2007	359.69	5.60	2.66E+03	3.28E+03		5.60	2.66E+03
12/28/2007	359.06	4.97	2.05E+03	2.90E+03		4.97	2.05E+03
12/29/2007	359.35	5.26	2.32E+03	3.49E+03		5.26	2.32E+03
12/30/2007	359.66	5.57	2.62E+03	3.80E+03		5.57	2.62E+03
12/31/2007	359.62	5.53	2.58E+03	3.37E+03		5.53	2.58E+03
1/1/2008	359.62	5.53	2.58E+03	3.36E+03		5.53	2.58E+03
1/2/2008	359.42	5.33	2.39E+03	2.95E+03		5.33	2.39E+03
1/3/2008	358.65	4.56	1.71E+03	2.21E+03		4.56	1.71E+03
1/4/2008	357.91	3.82	1.16E+03	1.72E+03		3.82	1.16E+03
1/5/2008	357.65	3.56	9.97E+02	1.62E+03		3.56	9.97E+02
1/6/2008	357.33	3.24	8.17E+02	1.54E+03		3.24	8.17E+02
1/7/2008	357.49	3.40	9.04E+02	1.78E+03		3.40	9.04E+02
1/8/2008	357.96	3.87	1.20E+03	2.58E+03		3.87	1.20E+03
1/9/2008	358.22	4.13	1.38E+03	3.52E+03		4.13	1.38E+03
1/10/2008	358.13	4.04	1.31E+03	3.19E+03		4.04	1.31E+03
1/11/2008	357.74	3.65	1.05E+03	2.67E+03		3.65	1.05E+03
1/12/2008	357.86	3.77	1.13E+03	2.61E+03		3.77	1.13E+03
1/13/2008	357.52	3.43	9.23E+02	2.07E+03		3.43	9.23E+02
1/14/2008	357.29	3.20	7.94E+02	1.85E+03		3.20	7.94E+02
1/15/2008	357.46	3.37	8.85E+02	1.90E+03		3.37	8.85E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/16/2008	357.17	3.08	7.30E+02	1.66E+03		3.08	7.30E+02
1/17/2008	356.73	2.64	5.87E+02	1.36E+03		2.64	5.87E+02
1/18/2008	356.62	2.53	5.08E+02	1.32E+03		2.53	5.08E+02
1/19/2008	357.07	2.98	9.25E+02	1.53E+03		2.98	9.25E+02
1/20/2008	356.80	2.71	6.47E+02	1.33E+03		2.71	6.47E+02
1/21/2008	356.08	1.99	2.46E+02	9.35E+02		1.99	2.46E+02
1/22/2008	356.19	2.10	2.83E+02	7.59E+02		2.10	2.83E+02
1/23/2008	355.98	1.89	2.14E+02	9.01E+02		1.89	2.14E+02
1/24/2008	355.85	1.76	1.80E+02	8.14E+02		1.76	1.80E+02
1/25/2008	355.88	1.79	1.87E+02	6.30E+02		1.79	1.87E+02
1/26/2008	355.85	1.76	1.81E+02	6.36E+02		1.76	1.81E+02
1/27/2008	355.58	1.49	1.26E+02	6.55E+02		1.49	1.26E+02
1/28/2008	355.51	1.42	1.14E+02	5.89E+02		1.42	1.14E+02
1/29/2008	355.49	1.40	1.10E+02	5.74E+02		1.40	1.10E+02
1/30/2008	355.55	1.46	1.20E+02	6.30E+02		1.46	1.20E+02
1/31/2008	355.77	1.68	1.62E+02	7.05E+02		1.68	1.62E+02
2/1/2008	355.65	1.56	1.37E+02	7.49E+02		1.56	1.37E+02
2/2/2008	357.23	3.14	7.60E+02	2.12E+03		3.14	7.60E+02
2/3/2008	357.80	3.71	1.09E+03	2.24E+03		3.71	1.09E+03
2/4/2008	357.55	3.46	9.37E+02	1.95E+03		3.46	9.37E+02
2/5/2008	357.18	3.09	7.38E+02	2.12E+03		3.09	7.38E+02
2/6/2008	358.70	4.61	1.75E+03	4.28E+03		4.61	1.75E+03
2/7/2008	359.89	5.80	2.86E+03	6.61E+03		5.80	2.86E+03
2/8/2008	359.59	5.50	2.56E+03	4.28E+03		5.50	2.56E+03
2/9/2008	358.72	4.63	1.77E+03	2.98E+03		4.63	1.77E+03
2/10/2008	358.09	4.00	1.29E+03	2.38E+03		4.00	1.29E+03
2/11/2008	357.41	3.32	8.57E+02	1.76E+03		3.32	8.57E+02
2/12/2008	357.35	3.26	8.24E+02	1.35E+03		3.26	8.24E+02
2/13/2008	358.31	4.22	1.44E+03	3.84E+03		4.22	1.44E+03
2/14/2008	362.30	8.21	6.08E+03	8.45E+03		8.21	6.08E+03
2/15/2008	362.42	8.33	6.27E+03	7.21E+03		8.33	6.27E+03
2/16/2008	362.10	8.01	5.77E+03	6.01E+03		8.01	5.77E+03
2/17/2008	361.46	7.37	4.81E+03	5.03E+03		7.37	4.81E+03
2/18/2008	362.13	8.04	5.81E+03	7.66E+03		8.04	5.81E+03
2/19/2008	363.14	9.05	7.49E+03	9.19E+03		9.05	7.49E+03
2/20/2008	362.63	8.54	6.61E+03	6.75E+03		8.54	6.61E+03
2/21/2008	361.89	7.80	5.43E+03	5.35E+03	5.35E+03	7.80	5.35E+03
2/22/2008	360.77	6.68	3.89E+03	4.24E+03		6.68	3.89E+03
2/23/2008	359.57	5.48	2.54E+03	3.32E+03		5.48	2.54E+03
2/24/2008	358.67	4.58	1.72E+03	2.56E+03		4.58	1.72E+03
2/25/2008	358.18	4.09	1.35E+03	2.04E+03		4.09	1.35E+03
2/26/2008	357.87	3.78	1.14E+03	1.96E+03		3.78	1.14E+03
2/27/2008	358.76	4.67	1.80E+03	2.59E+03		4.67	1.80E+03
2/28/2008	358.49	4.40	1.58E+03	2.49E+03		4.40	1.58E+03
2/29/2008	357.91	3.82	1.16E+03	1.84E+03		3.82	1.16E+03
3/1/2008	357.48	3.39	8.97E+02	1.72E+03		3.39	8.97E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/2/2008	357.29	3.20	7.92E+02	1.58E+03		3.20	7.92E+02
3/3/2008	357.25	3.16	7.73E+02	1.50E+03		3.16	7.73E+02
3/4/2008	358.06	3.97	1.26E+03	2.07E+03		3.97	1.26E+03
3/5/2008	362.44	8.35	6.31E+03	1.24E+04		8.35	6.31E+03
3/6/2008	363.23	9.14	7.66E+03	1.10E+04		9.14	7.66E+03
3/7/2008	362.92	8.83	7.11E+03	8.02E+03		8.83	7.11E+03
3/8/2008	363.68	9.59	8.49E+03	1.30E+04		9.59	8.49E+03
3/9/2008	364.87	10.78	1.09E+04	1.67E+04		10.78	1.09E+04
3/10/2008	364.48	10.39	1.01E+04	9.74E+03	9.74E+03	10.39	9.74E+03
3/11/2008	364.22	10.13	9.57E+03	7.98E+03	7.98E+03	10.13	7.98E+03
3/12/2008	363.61	9.52	8.36E+03	7.19E+03	7.19E+03	9.52	7.19E+03
3/13/2008	362.28	8.19	6.04E+03	6.09E+03		8.19	6.04E+03
3/14/2008	360.59	6.50	3.67E+03	4.63E+03		6.50	3.67E+03
3/15/2008	359.74	5.65	2.71E+03	4.06E+03		5.65	2.71E+03
3/16/2008	359.35	5.26	2.32E+03	3.71E+03		5.26	2.32E+03
3/17/2008	358.90	4.81	1.91E+03	3.12E+03		4.81	1.91E+03
3/18/2008	358.33	4.24	1.46E+03	2.48E+03		4.24	1.46E+03
3/19/2008	358.64	4.55	1.70E+03	3.13E+03		4.55	1.70E+03
3/20/2008	360.86	6.77	4.00E+03	5.85E+03		6.77	4.00E+03
3/21/2008	360.29	6.20	3.31E+03	4.51E+03		6.20	3.31E+03
3/22/2008	359.63	5.54	2.59E+03	3.44E+03		5.54	2.59E+03
3/23/2008	358.96	4.87	1.96E+03	2.81E+03		4.87	1.96E+03
3/24/2008	358.33	4.24	1.46E+03	2.30E+03		4.24	1.46E+03
3/25/2008	357.85	3.76	1.13E+03	1.94E+03		3.76	1.13E+03
3/26/2008	357.50	3.41	9.11E+02	1.69E+03		3.41	9.11E+02
3/27/2008	357.21	3.12	7.49E+02	1.50E+03		3.12	7.49E+02
3/28/2008	357.04	2.95	8.98E+02	1.47E+03		2.95	8.98E+02
3/29/2008	356.97	2.88	8.17E+02	1.44E+03		2.88	8.17E+02
3/30/2008	356.73	2.64	5.88E+02	1.27E+03		2.64	5.88E+02
3/31/2008	356.52	2.43	4.41E+02	1.20E+03		2.43	4.41E+02
4/1/2008	356.76	2.67	6.16E+02	1.43E+03		2.67	6.16E+02
4/2/2008	357.15	3.06	7.19E+02	1.75E+03		3.06	7.19E+02
4/3/2008	356.94	2.85	7.80E+02	1.50E+03		2.85	7.80E+02
4/4/2008	356.89	2.80	7.26E+02	2.03E+03		2.80	7.26E+02
4/5/2008	357.65	3.56	9.98E+02	2.58E+03		3.56	9.98E+02
4/6/2008	357.31	3.22	8.04E+02	1.93E+03		3.22	8.04E+02
4/7/2008	356.90	2.81	7.41E+02	1.56E+03		2.81	7.41E+02
4/8/2008	356.65	2.56	5.28E+02	1.32E+03		2.56	5.28E+02
4/9/2008	356.43	2.34	3.94E+02	1.13E+03		2.34	3.94E+02
4/10/2008	356.27	2.18	3.17E+02	1.09E+03		2.18	3.17E+02
4/11/2008	356.15	2.06	2.71E+02	1.01E+03		2.06	2.71E+02
4/12/2008	356.40	2.31	3.77E+02	1.30E+03		2.31	3.77E+02
4/13/2008	356.71	2.62	5.71E+02	1.41E+03		2.62	5.71E+02
4/14/2008	356.39	2.30	3.75E+02	1.19E+03		2.30	3.75E+02
4/15/2008	356.12	2.03	2.59E+02	1.01E+03		2.03	2.59E+02
4/16/2008	355.95	1.86	2.06E+02	8.69E+02		1.86	2.06E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/17/2008	355.81	1.72	1.71E+02	8.16E+02		1.72	1.71E+02
4/18/2008	355.72	1.63	1.51E+02	7.53E+02		1.63	1.51E+02
4/19/2008	355.64	1.55	1.36E+02	7.11E+02		1.55	1.36E+02
4/20/2008	355.52	1.43	1.16E+02	6.67E+02		1.43	1.16E+02
4/21/2008	355.47	1.38	1.07E+02	6.27E+02		1.38	1.07E+02
4/22/2008	355.43	1.34	1.03E+02	6.07E+02		1.34	1.03E+02
4/23/2008	355.34	1.25	9.06E+01	5.40E+02		1.25	9.06E+01
4/24/2008	355.29	1.20	8.44E+01	5.25E+02		1.20	8.44E+01
4/25/2008	355.24	1.15	7.90E+01	5.15E+02		1.15	7.90E+01
4/26/2008	355.17	1.08	7.26E+01	4.84E+02		1.08	7.26E+01
4/27/2008	355.16	1.07	7.10E+01	4.64E+02		1.07	7.10E+01
4/28/2008	355.26	1.17	8.14E+01	8.26E+02		1.17	8.14E+01
4/29/2008	357.81	3.72	1.10E+03	3.29E+03		3.72	1.10E+03
4/30/2008	357.64	3.55	9.91E+02	2.24E+03		3.55	9.91E+02
5/1/2008	356.68	2.59	5.47E+02	1.50E+03		2.59	5.47E+02
5/2/2008	356.35	2.26	3.53E+02	1.12E+03		2.26	3.53E+02
5/3/2008	356.35	2.26	3.55E+02	1.12E+03		2.26	3.55E+02
5/4/2008	356.39	2.30	3.74E+02	1.26E+03		2.30	3.74E+02
5/5/2008	356.46	2.37	4.07E+02	1.25E+03		2.37	4.07E+02
5/6/2008	356.08	1.99	2.46E+02	1.02E+03		1.99	2.46E+02
5/7/2008	355.80	1.71	1.68E+02	8.37E+02		1.71	1.68E+02
5/8/2008	355.63	1.54	1.34E+02	7.24E+02		1.54	1.34E+02
5/9/2008	355.65	1.56	1.38E+02	7.50E+02		1.56	1.38E+02
5/10/2008	356.68	2.59	5.51E+02	1.23E+03		2.59	5.51E+02
5/11/2008	356.64	2.55	5.23E+02	1.23E+03		2.55	5.23E+02
5/12/2008	356.15	2.06	2.71E+02	9.64E+02		2.06	2.71E+02
5/13/2008	355.86	1.77	1.84E+02	7.72E+02		1.77	1.84E+02
5/14/2008	355.64	1.55	1.36E+02	6.72E+02		1.55	1.36E+02
5/15/2008	355.51	1.42	1.14E+02	6.17E+02		1.42	1.14E+02
5/16/2008	355.59	1.50	1.27E+02	6.60E+02		1.50	1.27E+02
5/17/2008	357.36	3.27	8.29E+02	1.82E+03		3.27	8.29E+02
5/18/2008	357.53	3.44	9.26E+02	1.76E+03		3.44	9.26E+02
5/19/2008	357.23	3.14	7.62E+02	1.51E+03		3.14	7.62E+02
5/20/2008	356.85	2.76	6.88E+02	1.23E+03		2.76	6.88E+02
5/21/2008	356.67	2.58	5.40E+02	1.07E+03		2.58	5.40E+02
5/22/2008	356.57	2.48	4.77E+02	1.01E+03		2.48	4.77E+02
5/23/2008	356.41	2.32	3.83E+02	9.27E+02		2.32	3.83E+02
5/24/2008	356.10	2.01	2.52E+02	8.05E+02		2.01	2.52E+02
5/25/2008	355.86	1.77	1.83E+02	6.69E+02		1.77	1.83E+02
5/26/2008	355.63	1.54	1.34E+02	5.91E+02		1.54	1.34E+02
5/27/2008	355.49	1.40	1.11E+02	5.33E+02		1.40	1.11E+02
5/28/2008	356.15	2.06	2.69E+02	5.76E+02		2.06	2.69E+02
5/29/2008	356.18	2.09	2.79E+02	7.19E+02		2.09	2.79E+02
5/30/2008	355.81	1.72	1.70E+02	6.30E+02		1.72	1.70E+02
5/31/2008	355.47	1.38	1.08E+02	4.93E+02		1.38	1.08E+02
6/1/2008	355.52	1.43	1.15E+02	5.07E+02		1.43	1.15E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/2/2008	355.50	1.41	1.13E+02	4.94E+02		1.41	1.13E+02
6/3/2008	355.23	1.14	7.82E+01	4.35E+02		1.14	7.82E+01
6/4/2008	355.15	1.06	7.07E+01	3.78E+02		1.06	7.07E+01
6/5/2008	355.31	1.22	8.67E+01	4.06E+02		1.22	8.67E+01
6/6/2008	355.23	1.14	7.78E+01	4.77E+02		1.14	7.78E+01
6/7/2008	355.14	1.05	6.89E+01	4.44E+02		1.05	6.89E+01
6/8/2008	355.08	0.99	6.37E+01	3.69E+02		0.99	6.37E+01
6/9/2008	355.07	0.98	6.27E+01	3.43E+02		0.98	6.27E+01
6/10/2008	355.01	0.92	5.81E+01	3.46E+02		0.92	5.81E+01
6/11/2008	355.01	0.92	5.79E+01	3.00E+02		0.92	5.79E+01
6/12/2008	355.04	0.95	6.03E+01	2.83E+02		0.95	6.03E+01
6/13/2008	354.92	0.83	5.14E+01	2.80E+02		0.83	5.14E+01
6/14/2008	354.79	0.70	4.35E+01	2.50E+02		0.70	4.35E+01
6/15/2008	354.77	0.68	4.24E+01	2.08E+02		0.68	4.24E+01
6/16/2008	354.80	0.71	4.39E+01	2.04E+02		0.71	4.39E+01
6/17/2008	354.76	0.67	4.14E+01	2.15E+02		0.67	4.14E+01
6/18/2008	354.70	0.61	3.85E+01	2.08E+02		0.61	3.85E+01
6/19/2008	354.82	0.73	4.51E+01	2.59E+02		0.73	4.51E+01
6/20/2008	354.87	0.78	4.84E+01	2.47E+02		0.78	4.84E+01
6/21/2008	354.79	0.70	4.35E+01	2.31E+02		0.70	4.35E+01
6/22/2008	354.82	0.73	4.48E+01	2.05E+02		0.73	4.48E+01
6/23/2008	354.77	0.68	4.20E+01	2.85E+02		0.68	4.20E+01
6/24/2008	354.71	0.62	3.90E+01	2.48E+02		0.62	3.90E+01
6/25/2008	354.62	0.53	3.46E+01	1.96E+02		0.53	3.46E+01
6/26/2008	354.55	0.46	3.12E+01	1.86E+02		0.46	3.12E+01
6/27/2008	354.51	0.42	2.99E+01	1.33E+02		0.42	2.99E+01
6/28/2008	354.53	0.44	3.03E+01	1.24E+02		0.44	3.03E+01
6/29/2008	354.50	0.41	2.94E+01	1.35E+02		0.41	2.94E+01
6/30/2008	354.52	0.43	3.01E+01	1.57E+02		0.43	3.01E+01
7/1/2008	354.50	0.41	2.93E+01	2.15E+02		0.41	2.93E+01
7/2/2008	354.45	0.36	2.73E+01	1.92E+02		0.36	2.73E+01
7/3/2008	354.43	0.34	2.67E+01	1.91E+02		0.34	2.67E+01
7/4/2008	354.43	0.34	2.67E+01	1.97E+02		0.34	2.67E+01
7/5/2008	354.49	0.40	2.88E+01	1.97E+02		0.40	2.88E+01
7/6/2008	354.49	0.40	2.90E+01	1.96E+02		0.40	2.90E+01
7/7/2008	354.50	0.41	2.93E+01	1.92E+02		0.41	2.93E+01
7/8/2008	354.45	0.36	2.74E+01	1.79E+02		0.36	2.74E+01
7/9/2008	354.44	0.35	2.70E+01	1.71E+02		0.35	2.70E+01
7/10/2008	354.44	0.35	2.69E+01	1.82E+02		0.35	2.69E+01
7/11/2008	354.43	0.34	2.65E+01	1.69E+02		0.34	2.65E+01
7/12/2008	354.45	0.36	2.73E+01	1.41E+02		0.36	2.73E+01
7/13/2008	354.46	0.37	2.79E+01	1.32E+02		0.37	2.79E+01
7/14/2008	354.48	0.39	2.87E+01	1.48E+02		0.39	2.87E+01
7/15/2008	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
7/16/2008	354.45	0.36	2.76E+01	1.63E+02		0.36	2.76E+01
7/17/2008	354.45	0.36	2.73E+01	1.45E+02		0.36	2.73E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/18/2008	354.47	0.38	2.83E+01	1.35E+02		0.38	2.83E+01
7/19/2008	354.48	0.39	2.86E+01	1.09E+02		0.39	2.86E+01
7/20/2008	354.49	0.40	2.88E+01	1.05E+02		0.40	2.88E+01
7/21/2008	354.48	0.39	2.87E+01	1.00E+02		0.39	2.87E+01
7/22/2008	354.48	0.39	2.86E+01	9.00E+01		0.39	2.86E+01
7/23/2008	354.49	0.40	2.90E+01	9.50E+01		0.40	2.90E+01
7/24/2008	354.59	0.50	3.32E+01	2.86E+02		0.50	3.32E+01
7/25/2008	355.23	1.14	7.83E+01	5.35E+02		1.14	7.83E+01
7/26/2008	354.86	0.77	4.73E+01	4.18E+02		0.77	4.73E+01
7/27/2008	354.48	0.39	2.85E+01	3.10E+02		0.39	2.85E+01
7/28/2008	354.40	0.31	2.58E+01	2.00E+02		0.31	2.58E+01
7/29/2008	354.40	0.31	2.56E+01	2.13E+02		0.31	2.56E+01
7/30/2008	354.43	0.34	2.66E+01	1.77E+02		0.34	2.66E+01
7/31/2008	354.46	0.37	2.76E+01	1.62E+02		0.37	2.76E+01
8/1/2008	354.45	0.36	2.74E+01	9.60E+01		0.36	2.74E+01
8/2/2008	354.45	0.36	2.76E+01	1.18E+02		0.36	2.76E+01
8/3/2008	354.61	0.52	3.41E+01	1.36E+02		0.52	3.41E+01
8/4/2008	354.67	0.58	3.70E+01	2.14E+02		0.58	3.70E+01
8/5/2008	354.58	0.49	3.28E+01	1.93E+02		0.49	3.28E+01
8/6/2008	354.59	0.50	3.33E+01	1.80E+02		0.50	3.33E+01
8/7/2008	355.38	1.29	9.61E+01	2.48E+02		1.29	9.61E+01
8/8/2008	354.98	0.89	5.61E+01	3.95E+02		0.89	5.61E+01
8/9/2008	354.63	0.54	3.50E+01	2.86E+02		0.54	3.50E+01
8/10/2008	354.46	0.37	2.76E+01	2.24E+02		0.37	2.76E+01
8/11/2008	354.48	0.39	2.86E+01	1.73E+02		0.39	2.86E+01
8/12/2008	355.06	0.97	6.23E+01	2.33E+02		0.97	6.23E+01
8/13/2008	355.00	0.91	5.71E+01	3.48E+02		0.91	5.71E+01
8/14/2008	354.73	0.64	3.99E+01	3.90E+02		0.64	3.99E+01
8/15/2008	354.58	0.49	3.26E+01	3.22E+02		0.49	3.26E+01
8/16/2008	354.73	0.64	3.99E+01	2.66E+02		0.64	3.99E+01
8/17/2008	354.79	0.70	4.31E+01	2.39E+02		0.70	4.31E+01
8/18/2008	354.65	0.56	3.57E+01	2.29E+02		0.56	3.57E+01
8/19/2008	354.54	0.45	3.08E+01	1.82E+02		0.45	3.08E+01
8/20/2008	354.47	0.38	2.81E+01	1.68E+02		0.38	2.81E+01
8/21/2008	354.45	0.36	2.73E+01	1.51E+02		0.36	2.73E+01
8/22/2008	354.44	0.35	2.69E+01	1.08E+02		0.35	2.69E+01
8/23/2008	354.42	0.33	2.62E+01	7.80E+01		0.33	2.62E+01
8/24/2008	354.42	0.33	2.62E+01	8.40E+01		0.33	2.62E+01
8/25/2008	354.40	0.31	2.56E+01	8.70E+01		0.31	2.56E+01
8/26/2008	354.38	0.29	2.49E+01	8.90E+01		0.29	2.49E+01
8/27/2008	354.36	0.27	2.43E+01	8.40E+01		0.27	2.43E+01
8/28/2008	354.35	0.26	2.40E+01	7.90E+01		0.26	2.40E+01
8/29/2008	354.35	0.26	2.41E+01	7.60E+01		0.26	2.41E+01
8/30/2008	354.38	0.29	2.48E+01	7.90E+01		0.29	2.48E+01
8/31/2008	354.38	0.29	2.48E+01	7.70E+01		0.29	2.48E+01
9/1/2008	354.36	0.27	2.43E+01	7.90E+01		0.27	2.43E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/2/2008	354.35	0.26	2.40E+01	7.80E+01		0.26	2.40E+01
9/3/2008	354.32	0.23	2.31E+01	7.50E+01		0.23	2.31E+01
9/4/2008	354.32	0.23	2.31E+01	7.20E+01		0.23	2.31E+01
9/5/2008	354.34	0.25	2.37E+01	6.80E+01		0.25	2.37E+01
9/6/2008	354.47	0.38	2.80E+01	1.04E+02		0.38	2.80E+01
9/7/2008	356.71	2.62	5.70E+02	6.35E+02		2.62	5.70E+02
9/8/2008	356.32	2.23	3.39E+02	8.42E+02		2.23	3.39E+02
9/9/2008	355.75	1.66	1.58E+02	7.02E+02		1.66	1.58E+02
9/10/2008	356.61	2.52	5.02E+02	1.03E+03		2.52	5.02E+02
9/11/2008	356.06	1.97	2.40E+02	7.76E+02		1.97	2.40E+02
9/12/2008	355.40	1.31	9.82E+01	4.85E+02		1.31	9.82E+01
9/13/2008	355.28	1.19	8.32E+01	4.26E+02		1.19	8.32E+01
9/14/2008	355.21	1.12	7.63E+01	4.80E+02		1.12	7.63E+01
9/15/2008	355.05	0.96	6.11E+01	3.97E+02		0.96	6.11E+01
9/16/2008	354.89	0.80	4.93E+01	2.66E+02		0.80	4.93E+01
9/17/2008	354.74	0.65	4.06E+01	2.08E+02		0.65	4.06E+01
9/18/2008	354.64	0.55	3.52E+01	1.84E+02		0.55	3.52E+01
9/19/2008	354.56	0.47	3.20E+01	1.50E+02		0.47	3.20E+01
9/20/2008	354.49	0.40	2.89E+01	1.08E+02		0.40	2.89E+01
9/21/2008	354.45	0.36	2.74E+01	1.13E+02		0.36	2.74E+01
9/22/2008	354.44	0.35	2.70E+01	1.07E+02		0.35	2.70E+01
9/23/2008	354.42	0.33	2.65E+01	1.16E+02		0.33	2.65E+01
9/24/2008	354.42	0.33	2.62E+01	7.10E+01		0.33	2.62E+01
9/25/2008	354.41	0.32	2.61E+01	1.00E+02		0.32	2.61E+01
9/26/2008	354.55	0.46	3.12E+01	1.36E+02		0.46	3.12E+01
9/27/2008	355.53	1.44	1.17E+02	3.58E+02		1.44	1.17E+02
9/28/2008	355.33	1.24	9.00E+01	4.60E+02		1.24	9.00E+01
9/29/2008	355.41	1.32	9.96E+01	4.97E+02		1.32	9.96E+01
9/30/2008	355.57	1.48	1.23E+02	5.43E+02		1.48	1.23E+02
10/1/2008	355.29	1.20	8.51E+01	4.58E+02		1.20	8.51E+01
10/2/2008	355.22	1.13	7.69E+01	3.73E+02		1.13	7.69E+01
10/3/2008	355.08	0.99	6.40E+01	3.07E+02		0.99	6.40E+01
10/4/2008	354.94	0.85	5.27E+01	2.56E+02		0.85	5.27E+01
10/5/2008	354.84	0.75	4.63E+01	2.19E+02		0.75	4.63E+01
10/6/2008	354.87	0.78	4.85E+01	2.02E+02		0.78	4.85E+01
10/7/2008	354.82	0.73	4.49E+01	1.98E+02		0.73	4.49E+01
10/8/2008	354.74	0.65	4.07E+01	1.71E+02		0.65	4.07E+01
10/9/2008	354.70	0.61	3.85E+01	1.77E+02		0.61	3.85E+01
10/10/2008	354.66	0.57	3.63E+01	1.68E+02		0.57	3.63E+01
10/11/2008	354.63	0.54	3.48E+01	1.26E+02		0.54	3.48E+01
10/12/2008	354.60	0.51	3.34E+01	1.31E+02		0.51	3.34E+01
10/13/2008	354.58	0.49	3.25E+01	1.34E+02		0.49	3.25E+01
10/14/2008	354.57	0.48	3.20E+01	1.20E+02		0.48	3.20E+01
10/15/2008	354.55	0.46	3.13E+01	1.21E+02		0.46	3.13E+01
10/16/2008	354.53	0.44	3.06E+01	1.12E+02		0.44	3.06E+01
10/17/2008	354.53	0.44	3.05E+01	1.03E+02		0.44	3.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/18/2008	354.62	0.53	3.43E+01	1.03E+02		0.53	3.43E+01
10/19/2008	354.66	0.57	3.64E+01	1.09E+02		0.57	3.64E+01
10/20/2008	354.66	0.57	3.63E+01	1.17E+02		0.57	3.63E+01
10/21/2008				1.35E+02	1.35E+02		1.35E+02
10/22/2008				1.16E+02	1.16E+02		1.16E+02
10/23/2008				1.16E+02	1.16E+02		1.16E+02
10/24/2008				1.21E+02	1.21E+02		1.21E+02
10/25/2008				2.00E+02	2.00E+02		2.00E+02
10/26/2008				1.71E+03	1.71E+03		1.71E+03
10/27/2008				1.39E+03	1.39E+03		1.39E+03
10/28/2008				2.05E+03	2.05E+03		2.05E+03
10/29/2008				4.20E+03	4.20E+03		4.20E+03
10/30/2008				2.97E+03	2.97E+03		2.97E+03
10/31/2008				2.17E+03	2.17E+03		2.17E+03
11/1/2008				1.61E+03	1.61E+03		1.61E+03
11/2/2008				1.18E+03	1.18E+03		1.18E+03
11/3/2008				9.61E+02	9.61E+02		9.61E+02
11/4/2008				7.99E+02	7.99E+02		7.99E+02
11/5/2008				6.54E+02	6.54E+02		6.54E+02
11/6/2008				6.44E+02	6.44E+02		6.44E+02
11/7/2008				7.06E+02	7.06E+02		7.06E+02
11/8/2008				7.13E+02	7.13E+02		7.13E+02
11/9/2008				6.50E+02	6.50E+02		6.50E+02
11/10/2008				6.02E+02	6.02E+02		6.02E+02
11/11/2008	355.47	1.38	1.08E+02	5.35E+02		1.38	1.08E+02
11/12/2008	355.37	1.28	9.46E+01	4.82E+02		1.28	9.46E+01
11/13/2008	355.28	1.19	8.38E+01	4.46E+02		1.19	8.38E+01
11/14/2008	355.54	1.45	1.18E+02	6.33E+02		1.45	1.18E+02
11/15/2008	355.91	1.82	1.95E+02	9.10E+02		1.82	1.95E+02
11/16/2008	357.60	3.51	9.71E+02	2.26E+03		3.51	9.71E+02
11/17/2008	357.62	3.53	9.83E+02	1.94E+03		3.53	9.83E+02
11/18/2008	356.98	2.89	8.19E+02	1.42E+03		2.89	8.19E+02
11/19/2008	356.47	2.38	4.13E+02	1.10E+03		2.38	4.13E+02
11/20/2008	356.12	2.03	2.60E+02	9.01E+02		2.03	2.60E+02
11/21/2008	355.95	1.86	2.06E+02	7.91E+02		1.86	2.06E+02
11/22/2008	355.76	1.67	1.60E+02	6.92E+02		1.67	1.60E+02
11/23/2008	355.57	1.48	1.24E+02	5.90E+02		1.48	1.24E+02
11/24/2008	355.47	1.38	1.09E+02	5.44E+02		1.38	1.09E+02
11/25/2008	355.65	1.56	1.38E+02	6.82E+02		1.56	1.38E+02
11/26/2008	356.23	2.14	2.99E+02	9.48E+02		2.14	2.99E+02
11/27/2008	356.04	1.95	2.32E+02	9.12E+02		1.95	2.32E+02
11/28/2008	355.80	1.71	1.68E+02	7.63E+02		1.71	1.68E+02
11/29/2008	355.64	1.55	1.37E+02	6.68E+02		1.55	1.37E+02
11/30/2008	355.55	1.46	1.21E+02	6.40E+02		1.46	1.21E+02
12/1/2008	356.83	2.74	6.76E+02	1.58E+03		2.74	6.76E+02
12/2/2008	357.48	3.39	8.98E+02	1.82E+03		3.39	8.98E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/3/2008	356.87	2.78	7.13E+02	1.38E+03		2.78	7.13E+02
12/4/2008	356.37	2.28	3.62E+02	1.08E+03		2.28	3.62E+02
12/5/2008	356.21	2.12	2.93E+02	9.50E+02		2.12	2.93E+02
12/6/2008	356.08	1.99	2.44E+02	8.44E+02		1.99	2.44E+02
12/7/2008	355.88	1.79	1.89E+02	7.70E+02		1.79	1.89E+02
12/8/2008	355.66	1.57	1.39E+02	6.44E+02		1.57	1.39E+02
12/9/2008	355.56	1.47	1.22E+02	6.00E+02		1.47	1.22E+02
12/10/2008	355.78	1.69	1.63E+02	9.53E+02		1.69	1.63E+02
12/11/2008	357.39	3.30	8.45E+02	2.12E+03		3.30	8.45E+02
12/12/2008	362.58	8.49	6.53E+03	1.19E+04		8.49	6.53E+03
12/13/2008	362.91	8.82	7.09E+03	9.01E+03		8.82	7.09E+03
12/14/2008	362.28	8.19	6.04E+03	6.22E+03		8.19	6.04E+03
12/15/2008	361.54	7.45	4.92E+03	5.03E+03		7.45	4.92E+03
12/16/2008	360.68	6.59	3.78E+03	4.30E+03		6.59	3.78E+03
12/17/2008	359.61	5.52	2.58E+03	3.43E+03		5.52	2.58E+03
12/18/2008	358.87	4.78	1.89E+03	2.84E+03		4.78	1.89E+03
12/19/2008	358.26	4.17	1.40E+03	2.28E+03		4.17	1.40E+03
12/20/2008	357.74	3.65	1.06E+03	1.85E+03		3.65	1.06E+03
12/21/2008	357.58	3.49	9.56E+02	1.69E+03		3.49	9.56E+02
12/22/2008	358.25	4.16	1.40E+03	1.49E+03		4.16	1.40E+03
12/23/2008	356.83	2.74	6.74E+02	1.28E+03		2.74	6.74E+02
12/24/2008	357.05	2.96	9.06E+02	1.69E+03		2.96	9.06E+02
12/25/2008	359.35	5.26	2.33E+03	4.78E+03		5.26	2.33E+03
12/26/2008	359.84	5.75	2.81E+03	4.49E+03		5.75	2.81E+03
12/27/2008	359.31	5.22	2.28E+03	3.33E+03		5.22	2.28E+03
12/28/2008	359.46	5.37	2.43E+03	3.84E+03		5.37	2.43E+03
12/29/2008	359.60	5.51	2.56E+03	4.40E+03		5.51	2.56E+03
12/30/2008	358.97	4.88	1.98E+03	3.20E+03		4.88	1.98E+03
12/31/2008	358.42	4.33	1.52E+03	2.48E+03		4.33	1.52E+03
1/1/2009	358.33	4.24	1.46E+03	1.81E+03		4.24	1.46E+03
1/2/2009	365.20	11.11	1.17E+04	1.54E+03	1.54E+03	11.11	1.54E+03
1/3/2009	367.79	13.70	1.84E+04	1.52E+03	1.52E+03	13.70	1.52E+03
1/4/2009	356.73	2.64	5.85E+02	1.32E+03		2.64	5.85E+02
1/5/2009	356.59	2.50	4.90E+02	1.25E+03		2.50	4.90E+02
1/6/2009	356.54	2.45	4.58E+02	1.18E+03		2.45	4.58E+02
1/7/2009	356.56	2.47	4.71E+02	1.19E+03		2.47	4.71E+02
1/8/2009	357.43	3.34	8.68E+02	1.59E+03		3.34	8.68E+02
1/9/2009	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
1/10/2009	356.59	2.50	4.86E+02	1.19E+03		2.50	4.86E+02
1/11/2009	356.15	2.06	2.69E+02	9.23E+02		2.06	2.69E+02
1/12/2009	359.05	4.96	2.05E+03	9.90E+02	9.90E+02	4.96	9.90E+02
1/13/2009	356.37	2.28	3.65E+02	9.41E+02		2.28	3.65E+02
1/14/2009	361.44	7.35	4.79E+03	9.32E+02	9.32E+02	7.35	9.32E+02
1/15/2009	355.75	1.66	1.57E+02	3.63E+03		1.66	1.57E+02
1/16/2009	356.33	2.24	3.44E+02	Ice		2.24	3.44E+02
1/17/2009	355.75	1.66	1.57E+02	Ice		1.66	1.57E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/18/2009	355.57	1.48	1.24E+02	Ice		1.48	1.24E+02
1/19/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
1/20/2009	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/21/2009	355.55	1.46	1.21E+02	Ice		1.46	1.21E+02
1/22/2009	355.49	1.40	1.11E+02	Ice		1.40	1.11E+02
1/23/2009	355.37	1.28	9.48E+01	Ice		1.28	9.48E+01
1/24/2009	355.38	1.29	9.54E+01	Ice		1.29	9.54E+01
1/25/2009	366.23	12.14	1.41E+04	Ice		12.14	1.41E+04
1/26/2009	355.25	1.16	7.99E+01	Ice		1.16	7.99E+01
1/27/2009	355.18	1.09	7.29E+01	Ice		1.09	7.29E+01
1/28/2009	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
1/29/2009	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
1/30/2009	355.60	1.51	1.29E+02	Ice		1.51	1.29E+02
1/31/2009	355.47	1.38	1.09E+02	Ice		1.38	1.09E+02
2/1/2009	355.37	1.28	9.39E+01	Ice		1.28	9.39E+01
2/2/2009	355.32	1.23	8.86E+01	Ice		1.23	8.86E+01
2/3/2009	355.40	1.31	9.80E+01	Ice		1.31	9.80E+01
2/4/2009	355.40	1.31	9.89E+01	Ice		1.31	9.89E+01
2/5/2009	355.35	1.26	9.25E+01	Ice		1.26	9.25E+01
2/6/2009	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
2/7/2009	355.25	1.16	8.01E+01	Ice		1.16	8.01E+01
2/8/2009	355.34	1.25	9.08E+01	Ice		1.25	9.08E+01
2/9/2009	356.17	2.08	2.78E+02	Ice		2.08	2.78E+02
2/10/2009	356.37	2.28	3.64E+02	Ice		2.28	3.64E+02
2/11/2009	356.42	2.33	3.86E+02	Ice		2.33	3.86E+02
2/12/2009	358.15	4.06	1.32E+03	Ice		4.06	1.32E+03
2/13/2009	359.11	5.02	2.10E+03	Ice		5.02	2.10E+03
2/14/2009	358.20	4.11	1.36E+03	Ice		4.11	1.36E+03
2/15/2009	357.35	3.26	8.28E+02	Ice		3.26	8.28E+02
2/16/2009	356.83	2.74	6.71E+02	Ice		2.74	6.71E+02
2/17/2009	356.54	2.45	4.53E+02	Ice		2.45	4.53E+02
2/18/2009	356.32	2.23	3.39E+02	Ice		2.23	3.39E+02
2/19/2009	356.33	2.24	3.46E+02	Ice		2.24	3.46E+02
2/20/2009	356.50	2.41	4.30E+02	Ice		2.41	4.30E+02
2/21/2009	356.17	2.08	2.77E+02	Ice		2.08	2.77E+02
2/22/2009	356.05	1.96	2.35E+02	Ice		1.96	2.35E+02
2/23/2009	355.94	1.85	2.04E+02	Ice		1.85	2.04E+02
2/24/2009	355.71	1.62	1.49E+02	Ice		1.62	1.49E+02
2/25/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
2/26/2009				Ice			
2/27/2009				Ice			
2/28/2009				Ice			
3/1/2009				Ice			
3/2/2009				Ice			
3/3/2009				Ice			
3/4/2009				Ice			

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/5/2009				Ice			
3/6/2009				Ice			
3/7/2009				Ice			
3/8/2009				Ice			
3/9/2009				Ice			
3/10/2009				2.71E+03	2.71E+03		2.71E+03
3/11/2009				2.28E+03	2.28E+03		2.28E+03
3/12/2009				1.71E+03	1.71E+03		1.71E+03
3/13/2009				1.33E+03	1.33E+03		1.33E+03
3/14/2009				1.12E+03	1.12E+03		1.12E+03
3/15/2009				1.01E+03	1.01E+03		1.01E+03
3/16/2009				9.32E+02	9.32E+02		9.32E+02
3/17/2009				8.64E+02	8.64E+02		8.64E+02
3/18/2009				8.03E+02	8.03E+02		8.03E+02
3/19/2009				7.96E+02	7.96E+02		7.96E+02
3/20/2009				9.03E+02	9.03E+02		9.03E+02
3/21/2009				8.44E+02	8.44E+02		8.44E+02
3/22/2009				7.49E+02	7.49E+02		7.49E+02
3/23/2009				6.54E+02	6.54E+02		6.54E+02
3/24/2009				6.12E+02	6.12E+02		6.12E+02
3/25/2009				5.81E+02	5.81E+02		5.81E+02
3/26/2009				5.76E+02	5.76E+02		5.76E+02
3/27/2009				6.69E+02	6.69E+02		6.69E+02
3/28/2009				7.57E+02	7.57E+02		7.57E+02
3/29/2009				8.13E+02	8.13E+02		8.13E+02
3/30/2009				1.83E+03	1.83E+03		1.83E+03
3/31/2009				1.51E+03	1.51E+03		1.51E+03
4/1/2009				1.10E+03	1.10E+03		1.10E+03
4/2/2009				1.24E+03	1.24E+03		1.24E+03
4/3/2009				1.52E+03	1.52E+03		1.52E+03
4/4/2009				2.16E+03	2.16E+03		2.16E+03
4/5/2009				1.73E+03	1.73E+03		1.73E+03
4/6/2009				1.46E+03	1.46E+03		1.46E+03
4/7/2009				1.82E+03	1.82E+03		1.82E+03
4/8/2009				1.52E+03	1.52E+03		1.52E+03
4/9/2009				1.23E+03	1.23E+03		1.23E+03
4/10/2009				1.02E+03	1.02E+03		1.02E+03
4/11/2009				1.03E+03	1.03E+03		1.03E+03
4/12/2009				9.98E+02	9.98E+02		9.98E+02
4/13/2009				8.63E+02	8.63E+02		8.63E+02
4/14/2009				7.91E+02	7.91E+02		7.91E+02
4/15/2009				7.55E+02	7.55E+02		7.55E+02
4/16/2009				7.78E+02	7.78E+02		7.78E+02
4/17/2009				7.24E+02	7.24E+02		7.24E+02
4/18/2009				6.72E+02	6.72E+02		6.72E+02
4/19/2009				5.94E+02	5.94E+02		5.94E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/20/2009				5.87E+02	5.87E+02		5.87E+02
4/21/2009				1.15E+03	1.15E+03		1.15E+03
4/22/2009				1.74E+03	1.74E+03		1.74E+03
4/23/2009				1.54E+03	1.54E+03		1.54E+03
4/24/2009				1.15E+03	1.15E+03		1.15E+03
4/25/2009				9.48E+02	9.48E+02		9.48E+02
4/26/2009				8.25E+02	8.25E+02		8.25E+02
4/27/2009				7.30E+02	7.30E+02		7.30E+02
4/28/2009				6.35E+02	6.35E+02		6.35E+02
4/29/2009				5.62E+02	5.62E+02		5.62E+02
4/30/2009				5.17E+02	5.17E+02		5.17E+02
5/1/2009				4.89E+02	4.89E+02		4.89E+02
5/2/2009				4.96E+02	4.96E+02		4.96E+02
5/3/2009				5.25E+02	5.25E+02		5.25E+02
5/4/2009				5.19E+02	5.19E+02		5.19E+02
5/5/2009				5.16E+02	5.16E+02		5.16E+02
5/6/2009				6.43E+02	6.43E+02		6.43E+02
5/7/2009				2.06E+03	2.06E+03		2.06E+03
5/8/2009				2.15E+03	2.15E+03		2.15E+03
5/9/2009				1.74E+03	1.74E+03		1.74E+03
5/10/2009				1.31E+03	1.31E+03		1.31E+03
5/11/2009				1.01E+03	1.01E+03		1.01E+03
5/12/2009				8.07E+02	8.07E+02		8.07E+02
5/13/2009				6.91E+02	6.91E+02		6.91E+02
5/14/2009				6.78E+02	6.78E+02		6.78E+02
5/15/2009				1.32E+03	1.32E+03		1.32E+03
5/16/2009				1.14E+03	1.14E+03		1.14E+03
5/17/2009				3.25E+03	3.25E+03		3.25E+03
5/18/2009				1.93E+03	1.93E+03		1.93E+03
5/19/2009				1.34E+03	1.34E+03		1.34E+03
5/20/2009				9.68E+02	9.68E+02		9.68E+02
5/21/2009				7.98E+02	7.98E+02		7.98E+02
5/22/2009				6.66E+02	6.66E+02		6.66E+02
5/23/2009				5.36E+02	5.36E+02		5.36E+02
5/24/2009				4.94E+02	4.94E+02		4.94E+02
5/25/2009				5.08E+02	5.08E+02		5.08E+02
5/26/2009				4.90E+02	4.90E+02		4.90E+02
5/27/2009				4.34E+02	4.34E+02		4.34E+02
5/28/2009				4.51E+02	4.51E+02		4.51E+02
5/29/2009				4.69E+02	4.69E+02		4.69E+02
5/30/2009				5.06E+02	5.06E+02		5.06E+02
5/31/2009				4.56E+02	4.56E+02		4.56E+02
6/1/2009				3.95E+02	3.95E+02		3.95E+02
6/2/2009				3.25E+02	3.25E+02		3.25E+02
6/3/2009				2.86E+02	2.86E+02		2.86E+02
6/4/2009				2.88E+02	2.88E+02		2.88E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/5/2009				3.13E+02	3.13E+02		3.13E+02
6/6/2009				3.44E+02	3.44E+02		3.44E+02
6/7/2009				3.36E+02	3.36E+02		3.36E+02
6/8/2009				3.01E+02	3.01E+02		3.01E+02
6/9/2009				6.45E+02	6.45E+02		6.45E+02
6/10/2009				1.18E+03	1.18E+03		1.18E+03
6/11/2009				9.59E+02	9.59E+02		9.59E+02
6/12/2009				4.72E+03	4.72E+03		4.72E+03
6/13/2009				3.87E+03	3.87E+03		3.87E+03
6/14/2009				3.39E+03	3.39E+03		3.39E+03
6/15/2009				3.65E+03	3.65E+03		3.65E+03
6/16/2009				2.58E+03	2.58E+03		2.58E+03
6/17/2009				1.72E+03	1.72E+03		1.72E+03
6/18/2009				5.99E+03	5.99E+03		5.99E+03
6/19/2009				7.58E+03	7.58E+03		7.58E+03
6/20/2009				4.97E+03	4.97E+03		4.97E+03
6/21/2009				7.47E+03	7.47E+03		7.47E+03
6/22/2009				5.16E+03	5.16E+03		5.16E+03
6/23/2009				3.28E+03	3.28E+03		3.28E+03
6/24/2009				2.36E+03	2.36E+03		2.36E+03
6/25/2009				1.94E+03	1.94E+03		1.94E+03
6/26/2009				1.96E+03	1.96E+03		1.96E+03
6/27/2009				5.23E+03	5.23E+03		5.23E+03
6/28/2009				3.13E+03	3.13E+03		3.13E+03
6/29/2009				1.94E+03	1.94E+03		1.94E+03
6/30/2009				1.96E+03	1.96E+03		1.96E+03
7/1/2009	357.34	3.25	8.23E+02	3.61E+03		3.25	8.23E+02
7/2/2009	357.60	3.51	9.71E+02	2.66E+03		3.51	9.71E+02
7/3/2009	358.09	4.00	1.28E+03	2.69E+03		4.00	1.28E+03
7/4/2009	357.63	3.54	9.88E+02	2.14E+03		3.54	9.88E+02
7/5/2009	357.11	3.02	6.98E+02	1.65E+03		3.02	6.98E+02
7/6/2009	356.58	2.49	4.80E+02	1.29E+03		2.49	4.80E+02
7/7/2009	356.19	2.10	2.83E+02			2.10	2.83E+02
7/8/2009	356.56	2.47	4.68E+02	1.20E+03		2.47	4.68E+02
7/9/2009	356.38	2.29	3.67E+02	1.16E+03		2.29	3.67E+02
7/10/2009	355.92	1.83	1.98E+02	9.19E+02		1.83	1.98E+02
7/11/2009	355.65	1.56	1.38E+02	8.33E+02		1.56	1.38E+02
7/12/2009	355.66	1.57	1.39E+02	8.66E+02		1.57	1.39E+02
7/13/2009	355.59	1.50	1.27E+02	8.07E+02		1.50	1.27E+02
7/14/2009	355.30	1.21	8.59E+01	6.71E+02		1.21	8.59E+01
7/15/2009	355.16	1.07	7.16E+01	5.54E+02		1.07	7.16E+01
7/16/2009	355.13	1.04	6.86E+01	5.20E+02		1.04	6.86E+01
7/17/2009	355.06	0.97	6.22E+01	5.35E+02		0.97	6.22E+01
7/18/2009	355.22	1.13	7.76E+01	6.85E+02		1.13	7.76E+01
7/19/2009	355.25	1.16	8.03E+01	6.76E+02		1.16	8.03E+01
7/20/2009	355.02	0.93	5.89E+01	5.24E+02		0.93	5.89E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/21/2009	354.93	0.84	5.24E+01	4.99E+02		0.84	5.24E+01
7/22/2009	355.09	1.00	6.46E+01	6.67E+02		1.00	6.46E+01
7/23/2009	355.12	1.03	6.76E+01	5.95E+02		1.03	6.76E+01
7/24/2009	354.98	0.89	5.58E+01	5.51E+02		0.89	5.58E+01
7/25/2009	354.92	0.83	5.19E+01	1.12E+03		0.83	5.19E+01
7/26/2009	357.56	3.47	9.46E+02	1.54E+03		3.47	9.46E+02
7/27/2009	357.16	3.07	7.26E+02	1.70E+03		3.07	7.26E+02
7/28/2009	356.15	2.06	2.68E+02	1.35E+03		2.06	2.68E+02
7/29/2009	355.54	1.45	1.18E+02	9.66E+02		1.45	1.18E+02
7/30/2009	356.14	2.05	2.66E+02	2.83E+03		2.05	2.66E+02
7/31/2009	356.08	1.99	2.45E+02	1.62E+03		1.99	2.45E+02
8/1/2009	356.10	2.01	2.51E+02	1.50E+03		2.01	2.51E+02
8/2/2009	356.07	1.98	2.41E+02	1.32E+03		1.98	2.41E+02
8/3/2009	357.61	3.52	9.74E+02	2.01E+03		3.52	9.74E+02
8/4/2009	356.86	2.77	6.97E+02	1.58E+03		2.77	6.97E+02
8/5/2009	356.01	1.92	2.24E+02	1.11E+03		1.92	2.24E+02
8/6/2009	355.73	1.64	1.53E+02	8.22E+02		1.64	1.53E+02
8/7/2009	355.54	1.45	1.19E+02	7.19E+02		1.45	1.19E+02
8/8/2009	355.25	1.16	8.01E+01	5.97E+02		1.16	8.01E+01
8/9/2009	355.07	0.98	6.27E+01	5.14E+02		0.98	6.27E+01
8/10/2009	355.50	1.41	1.12E+02	1.14E+03		1.41	1.12E+02
8/11/2009	356.70	2.61	5.66E+02	1.58E+03		2.61	5.66E+02
8/12/2009	356.11	2.02	2.57E+02	1.32E+03		2.02	2.57E+02
8/13/2009	356.95	2.86	7.94E+02	1.46E+03		2.86	7.94E+02
8/14/2009	356.81	2.72	6.53E+02	1.40E+03		2.72	6.53E+02
8/15/2009	356.46	2.37	4.10E+02	1.13E+03		2.37	4.10E+02
8/16/2009	355.95	1.86	2.06E+02	9.61E+02		1.86	2.06E+02
8/17/2009	355.53	1.44	1.18E+02	7.05E+02		1.44	1.18E+02
8/18/2009	355.29	1.20	8.53E+01	5.66E+02		1.20	8.53E+01
8/19/2009	355.15	1.06	7.00E+01	5.05E+02		1.06	7.00E+01
8/20/2009	355.07	0.98	6.35E+01	4.43E+02		0.98	6.35E+01
8/21/2009	355.07	0.98	6.27E+01	4.04E+02		0.98	6.27E+01
8/22/2009	355.57	1.48	1.24E+02	6.02E+02		1.48	1.24E+02
8/23/2009	357.16	3.07	7.25E+02	2.02E+03		3.07	7.25E+02
8/24/2009	356.91	2.82	7.52E+02	1.69E+03		2.82	7.52E+02
8/25/2009	356.18	2.09	2.82E+02	1.13E+03		2.09	2.82E+02
8/26/2009	355.70	1.61	1.48E+02	8.01E+02		1.61	1.48E+02
8/27/2009	355.42	1.33	1.01E+02	6.62E+02		1.33	1.01E+02
8/28/2009	355.30	1.21	8.55E+01	5.79E+02		1.21	8.55E+01
8/29/2009	356.41	2.32	3.85E+02	1.24E+03		2.32	3.85E+02
8/30/2009	356.68	2.59	5.50E+02	1.55E+03		2.59	5.50E+02
8/31/2009	355.99	1.90	2.18E+02	1.08E+03		1.90	2.18E+02
9/1/2009	355.54	1.45	1.19E+02	7.45E+02		1.45	1.19E+02
9/2/2009	355.30	1.21	8.65E+01	6.26E+02		1.21	8.65E+01
9/3/2009	355.17	1.08	7.24E+01	5.28E+02		1.08	7.24E+01
9/4/2009	355.04	0.95	6.08E+01	4.62E+02		0.95	6.08E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/5/2009	354.96	0.87	5.47E+01	4.10E+02		0.87	5.47E+01
9/6/2009	354.91	0.82	5.11E+01	3.81E+02		0.82	5.11E+01
9/7/2009	354.84	0.75	4.65E+01	3.35E+02		0.75	4.65E+01
9/8/2009	354.80	0.71	4.41E+01	3.36E+02		0.71	4.41E+01
9/9/2009	354.78	0.69	4.28E+01	2.74E+02		0.69	4.28E+01
9/10/2009	354.76	0.67	4.15E+01	2.86E+02		0.67	4.15E+01
9/11/2009	354.73	0.64	4.02E+01	2.83E+02		0.64	4.02E+01
9/12/2009	355.11	1.02	6.67E+01	2.75E+02		1.02	6.67E+01
9/13/2009	355.32	1.23	8.84E+01	4.14E+02		1.23	8.84E+01
9/14/2009	355.15	1.06	6.99E+01	4.23E+02		1.06	6.99E+01
9/15/2009	354.97	0.88	5.51E+01	3.55E+02		0.88	5.51E+01
9/16/2009	354.90	0.81	4.99E+01	3.08E+02		0.81	4.99E+01
9/17/2009	355.04	0.95	6.09E+01	3.40E+02		0.95	6.09E+01
9/18/2009	355.07	0.98	6.35E+01	4.22E+02		0.98	6.35E+01
9/19/2009	355.01	0.92	5.85E+01	3.48E+02		0.92	5.85E+01
9/20/2009	354.92	0.83	5.17E+01	3.26E+02		0.83	5.17E+01
9/21/2009	354.88	0.79	4.91E+01	3.00E+02		0.79	4.91E+01
9/22/2009	354.83	0.74	4.56E+01	2.76E+02		0.74	4.56E+01
9/23/2009	354.82	0.73	4.50E+01	2.34E+02		0.73	4.50E+01
9/24/2009	354.82	0.73	4.48E+01	2.41E+02		0.73	4.48E+01
9/25/2009	354.80	0.71	4.39E+01	2.38E+02		0.71	4.39E+01
9/26/2009	354.78	0.69	4.27E+01	2.25E+02		0.69	4.27E+01
9/27/2009	354.91	0.82	5.06E+01	3.19E+02		0.82	5.06E+01
9/28/2009	355.16	1.07	7.08E+01	5.64E+02		1.07	7.08E+01
9/29/2009				4.78E+02	4.78E+02		4.78E+02
9/30/2009				3.87E+02	3.87E+02		3.87E+02
10/1/2009				2.81E+02	2.81E+02		2.81E+02
10/2/2009				2.86E+02	2.86E+02		2.86E+02
10/3/2009				2.73E+02	2.73E+02		2.73E+02
10/4/2009				3.26E+02	3.26E+02		3.26E+02
10/5/2009				3.13E+02	3.13E+02		3.13E+02
10/6/2009				2.83E+02	2.83E+02		2.83E+02
10/7/2009				2.87E+02	2.87E+02		2.87E+02
10/8/2009				2.76E+02	2.76E+02		2.76E+02
10/9/2009				2.64E+02	2.64E+02		2.64E+02
10/10/2009				3.77E+02	3.77E+02		3.77E+02
10/11/2009				4.05E+02	4.05E+02		4.05E+02
10/12/2009				3.42E+02	3.42E+02		3.42E+02
10/13/2009				2.96E+02	2.96E+02		2.96E+02
10/14/2009				2.66E+02	2.66E+02		2.66E+02
10/15/2009				2.61E+02	2.61E+02		2.61E+02
10/16/2009				2.80E+02	2.80E+02		2.80E+02
10/17/2009				3.04E+02	3.04E+02		3.04E+02
10/18/2009				3.16E+02	3.16E+02		3.16E+02
10/19/2009				2.97E+02	2.97E+02		2.97E+02
10/20/2009				2.80E+02	2.80E+02		2.80E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/21/2009				2.64E+02	2.64E+02		2.64E+02
10/22/2009				2.59E+02	2.59E+02		2.59E+02
10/23/2009				2.63E+02	2.63E+02		2.63E+02
10/24/2009				7.50E+02	7.50E+02		7.50E+02
10/25/2009				2.43E+03	2.43E+03		2.43E+03
10/26/2009				1.72E+03	1.72E+03		1.72E+03
10/27/2009				1.13E+03	1.13E+03		1.13E+03
10/28/2009				2.74E+03	2.74E+03		2.74E+03
10/29/2009				4.59E+03	4.59E+03		4.59E+03
10/30/2009				2.73E+03	2.73E+03		2.73E+03
10/31/2009				1.89E+03	1.89E+03		1.89E+03
11/1/2009				1.42E+03	1.42E+03		1.42E+03
11/2/2009				1.15E+03	1.15E+03		1.15E+03
11/3/2009				9.48E+02	9.48E+02		9.48E+02
11/4/2009				8.42E+02	8.42E+02		8.42E+02
11/5/2009				7.50E+02	7.50E+02		7.50E+02
11/6/2009				6.98E+02	6.98E+02		6.98E+02
11/7/2009				6.40E+02	6.40E+02		6.40E+02
11/8/2009				5.87E+02	5.87E+02		5.87E+02
11/9/2009				5.51E+02	5.51E+02		5.51E+02
11/10/2009				5.18E+02	5.18E+02		5.18E+02
11/11/2009				4.93E+02	4.93E+02		4.93E+02
11/12/2009				4.75E+02	4.75E+02		4.75E+02
11/13/2009				4.54E+02	4.54E+02		4.54E+02
11/14/2009				4.43E+02	4.43E+02		4.43E+02
11/15/2009				5.73E+02	5.73E+02		5.73E+02
11/16/2009				6.32E+02	6.32E+02		6.32E+02
11/17/2009				5.79E+02	5.79E+02		5.79E+02
11/18/2009				5.23E+02	5.23E+02		5.23E+02
11/19/2009				4.81E+02	4.81E+02		4.81E+02
11/20/2009				7.98E+02	7.98E+02		7.98E+02
11/21/2009				1.10E+03	1.10E+03		1.10E+03
11/22/2009				9.35E+02	9.35E+02		9.35E+02
11/23/2009				7.65E+02	7.65E+02		7.65E+02
11/24/2009				6.73E+02	6.73E+02		6.73E+02
11/25/2009				6.30E+02	6.30E+02		6.30E+02
11/26/2009				6.23E+02	6.23E+02		6.23E+02
11/27/2009				6.34E+02	6.34E+02		6.34E+02
11/28/2009				5.93E+02	5.93E+02		5.93E+02
11/29/2009				5.32E+02	5.32E+02		5.32E+02
11/30/2009	355.28	1.19	8.40E+01	5.06E+02		1.19	8.40E+01
12/1/2009	355.34	1.25	9.10E+01	4.89E+02		1.25	9.10E+01
12/2/2009	355.35	1.26	9.23E+01	5.19E+02		1.26	9.23E+01
12/3/2009	357.36	3.27	8.30E+02	2.90E+03		3.27	8.30E+02
12/4/2009	358.91	4.82	1.92E+03	3.15E+03		4.82	1.92E+03
12/5/2009	358.11	4.02	1.30E+03	2.26E+03		4.02	1.30E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/6/2009	357.52	3.43	9.22E+02	1.87E+03		3.43	9.22E+02
12/7/2009	357.09	3.00	6.91E+02	1.54E+03		3.00	6.91E+02
12/8/2009	356.73	2.64	5.92E+02	1.29E+03		2.64	5.92E+02
12/9/2009	356.97	2.88	8.08E+02	1.36E+03		2.88	8.08E+02
12/10/2009	358.80	4.71	1.83E+03	2.62E+03		4.71	1.83E+03
12/11/2009	358.43	4.34	1.53E+03	2.43E+03		4.34	1.53E+03
12/12/2009	357.82	3.73	1.10E+03	1.79E+03		3.73	1.10E+03
12/13/2009	357.24	3.15	7.65E+02	1.52E+03		3.15	7.65E+02
12/14/2009	358.53	4.44	1.61E+03	2.70E+03		4.44	1.61E+03
12/15/2009	358.89	4.80	1.90E+03	2.96E+03		4.80	1.90E+03
12/16/2009	359.01	4.92	2.01E+03	3.02E+03		4.92	2.01E+03
12/17/2009	358.39	4.30	1.50E+03	2.36E+03		4.30	1.50E+03
12/18/2009	357.68	3.59	1.02E+03	1.71E+03		3.59	1.02E+03
12/19/2009	382.41	28.32	8.81E+04	1.33E+03	1.33E+03	28.32	1.33E+03
12/20/2009	378.98	24.89	6.67E+04	1.32E+03	1.32E+03	24.89	1.32E+03
12/21/2009	368.53	14.44	2.06E+04	1.14E+03	1.14E+03	14.44	1.14E+03
12/22/2009	357.05	2.96	9.04E+02	1.13E+03		2.96	9.04E+02
12/23/2009	356.41	2.32	3.81E+02	9.24E+02		2.32	3.81E+02
12/24/2009	385.20	31.11	1.08E+05	8.68E+02	8.68E+02	31.11	8.68E+02
12/25/2009	356.15	2.06	2.71E+02	9.49E+02		2.06	2.71E+02
12/26/2009	356.20	2.11	2.88E+02	9.66E+02		2.11	2.88E+02
12/27/2009	359.63	5.54	2.60E+03	5.28E+03		5.54	2.60E+03
12/28/2009	360.40	6.31	3.44E+03	5.04E+03		6.31	3.44E+03
12/29/2009	359.60	5.51	2.57E+03	3.34E+03		5.51	2.57E+03
12/30/2009	358.44	4.35	1.54E+03	2.22E+03		4.35	1.54E+03
12/31/2009	357.97	3.88	1.20E+03	1.92E+03		3.88	1.20E+03
1/1/2010	357.40	3.31	8.55E+02	1.62E+03		3.31	8.55E+02
1/2/2010	357.15	3.06	7.21E+02	1.43E+03		3.06	7.21E+02
1/3/2010	356.37	2.28	3.63E+02	Ice		2.28	3.63E+02
1/4/2010	356.35	2.26	3.55E+02	Ice		2.26	3.55E+02
1/5/2010	356.36	2.27	3.58E+02	Ice		2.27	3.58E+02
1/6/2010	362.16	8.07	5.85E+03	Ice		8.07	5.85E+03
1/7/2010	356.01	1.92	2.23E+02	Ice		1.92	2.23E+02
1/8/2010	355.92	1.83	1.99E+02	Ice		1.83	1.99E+02
1/9/2010	357.41	3.32	8.59E+02	Ice		3.32	8.59E+02
1/10/2010	355.75	1.66	1.58E+02	Ice		1.66	1.58E+02
1/11/2010	355.74	1.65	1.55E+02	Ice		1.65	1.55E+02
1/12/2010	355.60	1.51	1.29E+02	Ice		1.51	1.29E+02
1/13/2010	355.51	1.42	1.15E+02	Ice		1.42	1.15E+02
1/14/2010	355.51	1.42	1.14E+02	Ice		1.42	1.14E+02
1/15/2010	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
1/16/2010	355.48	1.39	1.09E+02	Ice		1.39	1.09E+02
1/17/2010	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
1/18/2010	356.43	2.34	3.94E+02	Ice		2.34	3.94E+02
1/19/2010	356.95	2.86	7.90E+02	Ice		2.86	7.90E+02
1/20/2010	356.43	2.34	3.94E+02	Ice		2.34	3.94E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/21/2010	356.04	1.95	2.33E+02	Ice		1.95	2.33E+02
1/22/2010	355.79	1.70	1.66E+02	Ice		1.70	1.66E+02
1/23/2010	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/24/2010	355.46	1.37	1.07E+02	Ice		1.37	1.07E+02
1/25/2010	356.83	2.74	6.71E+02	Ice		2.74	6.71E+02
1/26/2010	360.26	6.17	3.27E+03	5.53E+03		6.17	3.27E+03
1/27/2010	359.88	5.79	2.86E+03	3.66E+03		5.79	2.86E+03
1/28/2010	359.32	5.23	2.30E+03	2.87E+03		5.23	2.30E+03
1/29/2010	358.29	4.20	1.43E+03	2.12E+03		4.20	1.43E+03
1/30/2010	356.92	2.83	7.62E+02	1.35E+03		2.83	7.62E+02
1/31/2010	356.46	2.37	4.12E+02	Ice		2.37	4.12E+02
2/1/2010	355.94	1.85	2.04E+02	Ice		1.85	2.04E+02
2/2/2010	355.90	1.81	1.94E+02	Ice		1.81	1.94E+02
2/3/2010	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
2/4/2010	355.59	1.50	1.26E+02	Ice		1.50	1.26E+02
2/5/2010	355.51	1.42	1.14E+02	Ice		1.42	1.14E+02
2/6/2010	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/7/2010	355.25	1.16	8.01E+01	Ice		1.16	8.01E+01
2/8/2010	355.46	1.37	1.06E+02	Ice		1.37	1.06E+02
2/9/2010	355.27	1.18	8.30E+01	Ice		1.18	8.30E+01
2/10/2010	355.16	1.07	7.16E+01	Ice		1.07	7.16E+01
2/11/2010	355.19	1.10	7.39E+01	Ice		1.10	7.39E+01
2/12/2010	355.21	1.12	7.58E+01	Ice		1.12	7.58E+01
2/13/2010	355.18	1.09	7.28E+01	Ice		1.09	7.28E+01
2/14/2010	355.14	1.05	6.97E+01	Ice		1.05	6.97E+01
2/15/2010	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/16/2010	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/17/2010	355.10	1.01	6.61E+01	Ice		1.01	6.61E+01
2/18/2010	355.10	1.01	6.56E+01	Ice		1.01	6.56E+01
2/19/2010	355.02	0.93	5.93E+01	Ice		0.93	5.93E+01
2/20/2010	355.02	0.93	5.91E+01	Ice		0.93	5.91E+01
2/21/2010	355.13	1.04	6.83E+01	Ice		1.04	6.83E+01
2/22/2010	355.18	1.09	7.28E+01	Ice		1.09	7.28E+01
2/23/2010	355.22	1.13	7.76E+01			1.13	7.76E+01
2/24/2010	355.47	1.38	1.08E+02			1.38	1.08E+02
2/25/2010	356.20	2.11	2.88E+02			2.11	2.88E+02
2/26/2010	355.74	1.65	1.56E+02	Ice		1.65	1.56E+02
2/27/2010	356.32	2.23	3.37E+02	Ice		2.23	3.37E+02
2/28/2010	356.27	2.18	3.19E+02	Ice		2.18	3.19E+02
3/1/2010	356.11	2.02	2.56E+02	Ice		2.02	2.56E+02
3/2/2010	356.49	2.40	4.24E+02	Ice		2.40	4.24E+02
3/3/2010	356.93	2.84	7.69E+02	Ice		2.84	7.69E+02
3/4/2010	357.40	3.31	8.53E+02	Ice		3.31	8.53E+02
3/5/2010	357.68	3.59	1.02E+03	Ice		3.59	1.02E+03
3/6/2010	357.64	3.55	9.90E+02	Ice		3.55	9.90E+02
3/7/2010	357.96	3.87	1.19E+03	2.66E+03		3.87	1.19E+03

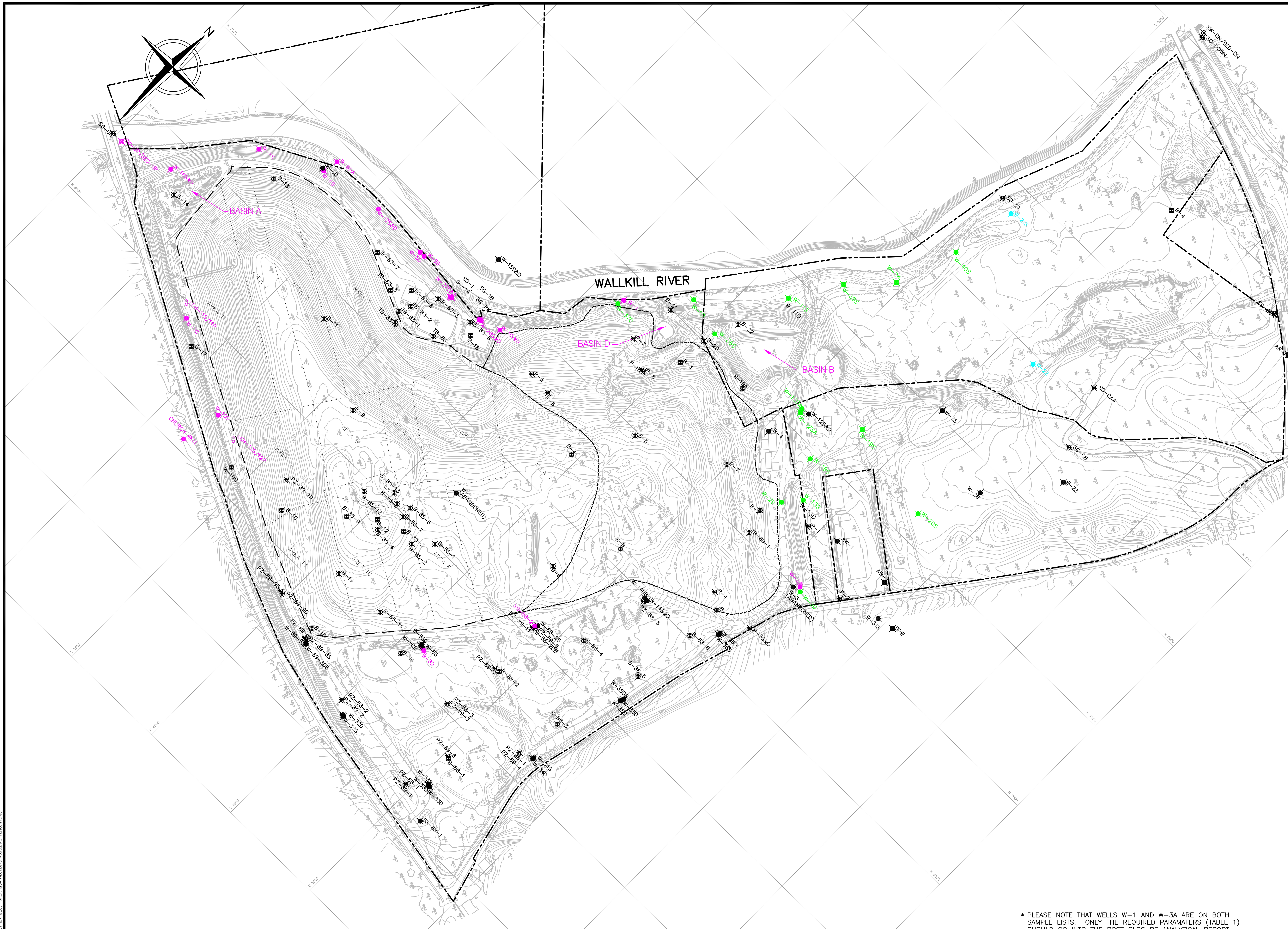
AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/8/2010	358.67	4.58	1.72E+03	3.32E+03		4.58	1.72E+03
3/9/2010	359.39	5.30	2.36E+03	4.02E+03		5.30	2.36E+03
3/10/2010	359.58	5.49	2.55E+03	4.16E+03		5.49	2.55E+03
3/11/2010	359.42	5.33	2.39E+03	3.86E+03		5.33	2.39E+03
3/12/2010	359.76	5.67	2.73E+03	3.98E+03		5.67	2.73E+03
3/13/2010	360.82	6.73	3.95E+03	5.70E+03		6.73	3.95E+03
3/14/2010	364.02	9.93	9.16E+03	1.24E+04		9.93	9.16E+03
3/15/2010	364.45	10.36	1.00E+04	1.04E+04		10.36	1.00E+04
3/16/2010	365.16	11.07	1.16E+04	8.95E+03	8.95E+03	11.07	8.95E+03
3/17/2010	365.17	11.08	1.16E+04	8.57E+03	8.57E+03	11.08	8.57E+03
3/18/2010	364.63	10.54	1.04E+04	8.05E+03	8.05E+03	10.54	8.05E+03
3/19/2010	363.60	9.51	8.34E+03	7.14E+03	7.14E+03	9.51	7.14E+03
3/20/2010	362.10	8.01	5.77E+03	5.91E+03		8.01	5.77E+03
3/21/2010	360.19	6.10	3.19E+03	4.35E+03		6.10	3.19E+03
3/22/2010	358.82	4.73	1.85E+03	3.13E+03		4.73	1.85E+03
3/23/2010	362.42	8.33	6.27E+03	1.02E+04		8.33	6.27E+03
3/24/2010	362.52	8.43	6.43E+03	7.70E+03		8.43	6.43E+03
3/25/2010	362.13	8.04	5.81E+03	5.93E+03		8.04	5.81E+03
3/26/2010	361.58	7.49	4.98E+03	5.53E+03		7.49	4.98E+03
3/27/2010	360.52	6.43	3.59E+03	4.55E+03		6.43	3.59E+03
3/28/2010	359.33	5.24	2.30E+03	3.44E+03		5.24	2.30E+03
3/29/2010	360.13	6.04	3.13E+03	6.31E+03		6.04	3.13E+03
3/30/2010	361.53	7.44	4.91E+03	6.96E+03		7.44	4.91E+03
3/31/2010	363.07	8.98	7.37E+03	8.50E+03		8.98	7.37E+03
4/1/2010	363.13	9.04	7.48E+03	7.10E+03	7.10E+03	9.04	7.10E+03
4/2/2010	363.02	8.93	7.28E+03	6.39E+03	6.39E+03	8.93	6.39E+03
4/3/2010	362.24	8.15	5.99E+03	5.75E+03	5.75E+03	8.15	5.75E+03
4/4/2010	360.76	6.67	3.88E+03	4.64E+03		6.67	3.88E+03
4/5/2010	359.29	5.20	2.26E+03	3.34E+03		5.20	2.26E+03
4/6/2010	358.38	4.29	1.49E+03	2.48E+03		4.29	1.49E+03
4/7/2010	357.82	3.73	1.11E+03	2.08E+03		3.73	1.11E+03
4/8/2010	357.33	3.24	8.13E+02	1.75E+03		3.24	8.13E+02
4/9/2010	357.22	3.13	7.55E+02	1.73E+03		3.13	7.55E+02
4/10/2010	357.18	3.09	7.37E+02	1.67E+03		3.09	7.37E+02
4/11/2010	356.82	2.73	6.61E+02	1.45E+03		2.73	6.61E+02
4/12/2010	356.47	2.38	4.15E+02	1.27E+03		2.38	4.15E+02
4/13/2010	356.16	2.07	2.74E+02	1.11E+03		2.07	2.74E+02
4/14/2010	355.99	1.90	2.18E+02	1.00E+03		1.90	2.18E+02
4/15/2010	355.83	1.74	1.75E+02	9.25E+02		1.74	1.75E+02
4/16/2010	355.73	1.64	1.53E+02	8.78E+02		1.64	1.53E+02
4/17/2010	355.79	1.70	1.66E+02	9.22E+02		1.70	1.66E+02
4/18/2010	355.81	1.72	1.71E+02	9.52E+02		1.72	1.71E+02
4/19/2010	355.62	1.53	1.32E+02	8.87E+02		1.53	1.32E+02
4/20/2010	355.48	1.39	1.09E+02	7.68E+02		1.39	1.09E+02
4/21/2010	355.38	1.29	9.61E+01	7.41E+02		1.29	9.61E+01
4/22/2010	355.30	1.21	8.61E+01	6.95E+02		1.21	8.61E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/23/2010	355.20	1.11	7.52E+01	6.34E+02		1.11	7.52E+01
4/24/2010	355.10	1.01	6.58E+01	5.83E+02		1.01	6.58E+01
4/25/2010	355.60	1.51	1.29E+02	6.99E+02		1.51	1.29E+02
4/26/2010	357.12	3.03	7.06E+02	1.49E+03		3.03	7.06E+02
4/27/2010	358.86	4.77	1.88E+03	3.13E+03		4.77	1.88E+03
4/28/2010	358.15	4.06	1.33E+03	2.64E+03		4.06	1.33E+03
4/29/2010	357.36	3.27	8.29E+02	1.87E+03		3.27	8.29E+02
4/30/2010	356.62	2.53	5.10E+02	1.41E+03		2.53	5.10E+02
5/1/2010	356.18	2.09	2.80E+02	1.15E+03		2.09	2.80E+02
5/2/2010	355.89	1.80	1.89E+02	9.80E+02		1.80	1.89E+02
5/3/2010	355.98	1.89	2.15E+02	9.13E+02		1.89	2.15E+02
5/4/2010	356.38	2.29	3.66E+02	1.08E+03		2.29	3.66E+02
5/5/2010	356.21	2.12	2.93E+02	1.06E+03		2.12	2.93E+02
5/6/2010	355.89	1.80	1.89E+02	9.45E+02		1.80	1.89E+02
5/7/2010	355.56	1.47	1.22E+02	8.07E+02		1.47	1.22E+02
5/8/2010	355.38	1.29	9.54E+01	7.30E+02		1.29	9.54E+01
5/9/2010	355.25	1.16	8.01E+01	6.76E+02		1.16	8.01E+01
5/10/2010	355.13	1.04	6.85E+01	5.74E+02		1.04	6.85E+01
5/11/2010	355.03	0.94	5.99E+01	5.20E+02		0.94	5.99E+01
5/12/2010	355.15	1.06	7.03E+01	6.40E+02		1.06	7.03E+01
5/13/2010	355.52	1.43	1.15E+02	8.61E+02		1.43	1.15E+02
5/14/2010	355.37	1.28	9.42E+01	8.27E+02		1.28	9.42E+01
5/15/2010	355.25	1.16	8.07E+01	7.19E+02		1.16	8.07E+01
5/16/2010	355.09	1.00	6.49E+01	6.33E+02		1.00	6.49E+01
5/17/2010	354.95	0.86	5.34E+01	5.46E+02		0.86	5.34E+01
5/18/2010	354.94	0.85	5.32E+01	5.49E+02		0.85	5.32E+01
5/19/2010	356.03	1.94	2.30E+02	1.08E+03		1.94	2.30E+02
5/20/2010	356.01	1.92	2.23E+02	1.14E+03		1.92	2.23E+02
5/21/2010	355.52	1.43	1.16E+02	8.98E+02		1.43	1.16E+02
5/22/2010	355.20	1.11	7.47E+01	6.99E+02		1.11	7.47E+01
5/23/2010	355.05	0.96	6.11E+01	5.74E+02		0.96	6.11E+01
5/24/2010	354.98	0.89	5.60E+01	5.12E+02		0.89	5.60E+01
5/25/2010	354.90	0.81	5.03E+01	4.75E+02		0.81	5.03E+01
5/26/2010	354.80	0.71	4.39E+01	4.54E+02		0.71	4.39E+01
5/27/2010	354.72	0.63	3.95E+01	3.72E+02		0.63	3.95E+01
5/28/2010	354.91	0.82	5.08E+01	4.03E+02		0.82	5.08E+01
5/29/2010	354.84	0.75	4.65E+01	4.33E+02		0.75	4.65E+01
5/30/2010	354.71	0.62	3.88E+01	3.87E+02		0.62	3.88E+01
5/31/2010	354.62	0.53	3.43E+01	3.43E+02		0.53	3.43E+01
6/1/2010	354.57	0.48	3.22E+01	3.62E+02		0.48	3.22E+01
6/2/2010	354.59	0.50	3.30E+01	4.33E+02		0.50	3.30E+01
6/3/2010	354.50	0.41	2.92E+01	3.52E+02		0.41	2.92E+01
6/4/2010	354.45	0.36	2.74E+01	3.11E+02		0.36	2.74E+01
6/5/2010	354.38	0.29	2.50E+01	2.72E+02		0.29	2.50E+01
6/6/2010	354.45	0.36	2.73E+01	2.95E+02		0.36	2.73E+01
6/7/2010	354.45	0.36	2.74E+01	3.28E+02		0.36	2.74E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/8/2010	354.35	0.26	2.40E+01	2.94E+02		0.26	2.40E+01
6/9/2010	354.26	0.17	2.12E+01	2.43E+02		0.17	2.12E+01
6/10/2010	354.68	0.59	3.75E+01	4.15E+02		0.59	3.75E+01
6/11/2010	354.72	0.63	3.92E+01	4.61E+02		0.63	3.92E+01
6/12/2010	354.48	0.39	2.85E+01	3.93E+02		0.39	2.85E+01
6/13/2010	354.37	0.28	2.47E+01	8.02E+02		0.28	2.47E+01
6/14/2010	354.63	0.54	3.50E+01	6.10E+02		0.54	3.50E+01
6/15/2010	354.80	0.71	4.39E+01	5.19E+02		0.71	4.39E+01
6/16/2010	354.56	0.47	3.16E+01	4.40E+02		0.47	3.16E+01
6/17/2010	354.51	0.42	2.95E+01	3.72E+02		0.42	2.95E+01
6/18/2010	354.73	0.64	4.00E+01	2.97E+02		0.64	4.00E+01
6/19/2010	354.48	0.39	2.86E+01	3.33E+02		0.39	2.86E+01
6/20/2010	354.32	0.23	2.31E+01	2.92E+02		0.23	2.31E+01
6/21/2010	354.27	0.18	2.14E+01	2.33E+02		0.18	2.14E+01
6/22/2010	354.23	0.14	2.04E+01	1.91E+02		0.14	2.04E+01
6/23/2010	354.25	0.16	2.11E+01	3.08E+02		0.16	2.11E+01
6/24/2010	354.27	0.18	2.16E+01	2.86E+02		0.18	2.16E+01
6/25/2010	354.23	0.14	2.04E+01	2.30E+02		0.14	2.04E+01
6/26/2010	354.21	0.12	1.98E+01	2.06E+02		0.12	1.98E+01
6/27/2010	354.22	0.13	2.00E+01	1.70E+02		0.13	2.00E+01
6/28/2010	354.21	0.12	1.98E+01	1.54E+02		0.12	1.98E+01
6/29/2010	354.20	0.11	1.96E+01	1.68E+02		0.11	1.96E+01
6/30/2010	354.19	0.10	1.93E+01	1.27E+02		0.10	1.93E+01
7/1/2010	354.17	0.08	1.87E+01	1.28E+02		0.08	1.87E+01
7/2/2010	354.17	0.08	1.87E+01	1.20E+02		0.08	1.87E+01
7/3/2010	354.16	0.07	1.86E+01	1.13E+02		0.07	1.86E+01
7/4/2010	354.17	0.08	1.88E+01	1.06E+02		0.08	1.88E+01
7/5/2010	354.17	0.08	1.88E+01	1.00E+02		0.08	1.88E+01
7/6/2010	354.17	0.08	1.88E+01	9.70E+01		0.08	1.88E+01
7/7/2010	354.16	0.07	1.87E+01	9.40E+01		0.07	1.87E+01
7/8/2010	354.14	0.05	1.82E+01	8.80E+01		0.05	1.82E+01
7/9/2010	354.13	0.04	1.78E+01	9.10E+01		0.04	1.78E+01
7/10/2010	354.52	0.43	3.02E+01	9.80E+01		0.43	3.02E+01
7/11/2010	355.31	1.22	8.70E+01	6.56E+02		1.22	8.70E+01
7/12/2010	354.88	0.79	4.91E+01	4.63E+02		0.79	4.91E+01
7/13/2010	354.46	0.37	2.79E+01	3.17E+02		0.37	2.79E+01
7/14/2010	354.33	0.24	2.34E+01	2.36E+02		0.24	2.34E+01
7/15/2010	354.39	0.30	2.53E+01	2.20E+02		0.30	2.53E+01
7/16/2010	354.33	0.24	2.34E+01	2.18E+02		0.24	2.34E+01
7/17/2010	354.24	0.15	2.08E+01	1.91E+02		0.15	2.08E+01
7/18/2010	354.22	0.13	2.00E+01	1.56E+02		0.13	2.00E+01
7/19/2010	354.19	0.10	1.94E+01	1.17E+02		0.10	1.94E+01
7/20/2010	354.19	0.10	1.93E+01	3.51E+02		0.10	1.93E+01
7/21/2010	354.20	0.11	1.96E+01	2.28E+02		0.11	1.96E+01
7/22/2010	354.27	0.18	2.14E+01	1.80E+02		0.18	2.14E+01
7/23/2010	354.22	0.13	2.00E+01	2.44E+02		0.13	2.00E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/24/2010	354.26	0.17	2.12E+01	2.27E+02		0.17	2.12E+01
7/25/2010	354.29	0.20	2.22E+01	2.35E+02		0.20	2.22E+01
7/26/2010	354.23	0.14	2.05E+01	2.31E+02		0.14	2.05E+01
7/27/2010	354.23	0.14	2.03E+01	1.78E+02		0.14	2.03E+01
7/28/2010	354.21	0.12	1.97E+01	1.49E+02		0.12	1.97E+01
7/29/2010	354.18	0.09	1.90E+01	1.35E+02		0.09	1.90E+01
7/30/2010	354.16	0.07	1.85E+01	1.18E+02		0.07	1.85E+01
7/31/2010	354.14	0.05	1.81E+01	1.03E+02		0.05	1.81E+01
8/1/2010	354.14	0.05	1.80E+01	9.20E+01		0.05	1.80E+01
8/2/2010	354.16	0.07	1.86E+01	8.80E+01		0.07	1.86E+01
8/3/2010	354.18	0.09	1.90E+01	9.10E+01		0.09	1.90E+01
8/4/2010	354.15	0.06	1.82E+01	9.50E+01		0.06	1.82E+01
8/5/2010	354.13	0.04	1.77E+01	1.03E+02		0.04	1.77E+01
8/6/2010	354.11	0.02	1.73E+01	9.60E+01		0.02	1.73E+01
8/7/2010	354.10	0.01	1.72E+01	8.30E+01		0.01	1.72E+01
8/8/2010	354.10	0.01	1.72E+01	7.40E+01		0.01	1.72E+01
8/9/2010	354.10	0.01	1.71E+01	6.70E+01		0.01	1.71E+01
8/10/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
8/11/2010	354.10	0.01	1.71E+01	6.10E+01		0.01	1.71E+01
8/12/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
8/13/2010	354.10	0.01	1.71E+01	5.70E+01		0.01	1.71E+01
8/14/2010	354.11	0.02	1.73E+01	4.60E+01		0.02	1.73E+01
8/15/2010	354.10	0.01	1.71E+01	4.80E+01		0.01	1.71E+01
8/16/2010	354.12	0.03	1.75E+01	7.20E+01		0.03	1.75E+01
8/17/2010	354.15	0.06	1.82E+01	9.10E+01		0.06	1.82E+01
8/18/2010	354.15	0.06	1.83E+01	9.30E+01		0.06	1.83E+01
8/19/2010	354.11	0.02	1.74E+01	8.20E+01		0.02	1.74E+01
8/20/2010	354.10	0.01	1.71E+01	7.30E+01		0.01	1.71E+01
8/21/2010	354.10	0.01	1.71E+01	6.60E+01		0.01	1.71E+01
8/22/2010	354.11	0.02	1.74E+01	1.31E+02		0.02	1.74E+01
8/23/2010	354.58	0.49	3.26E+01	5.04E+02		0.49	3.26E+01
8/24/2010	355.33	1.24	8.92E+01	7.19E+02		1.24	8.92E+01
8/25/2010	355.00	0.91	5.71E+01	5.36E+02		0.91	5.71E+01
8/26/2010	355.49	1.40	1.11E+02	5.05E+02		1.40	1.11E+02
8/27/2010	355.27	1.18	8.25E+01	5.82E+02		1.18	8.25E+01
8/28/2010	354.82	0.73	4.48E+01	4.10E+02		0.73	4.48E+01
8/29/2010	354.54	0.45	3.10E+01	2.97E+02		0.45	3.10E+01
8/30/2010	354.38	0.29	2.50E+01	2.07E+02		0.29	2.50E+01
8/31/2010	354.31	0.22	2.26E+01	1.56E+02		0.22	2.26E+01
9/1/2010	354.28	0.19	2.17E+01	1.52E+02		0.19	2.17E+01
9/2/2010	354.25	0.16	2.08E+01	1.33E+02		0.16	2.08E+01
9/3/2010	354.22	0.13	2.01E+01	1.23E+02		0.13	2.01E+01
9/4/2010	354.20	0.11	1.95E+01	1.17E+02		0.11	1.95E+01
9/5/2010	354.17	0.08	1.88E+01	1.06E+02		0.08	1.88E+01
9/6/2010	354.15	0.06	1.82E+01	9.70E+01		0.06	1.82E+01
9/7/2010	354.13	0.04	1.79E+01	9.00E+01		0.04	1.79E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/8/2010	354.12	0.03	1.75E+01	8.80E+01		0.03	1.75E+01
9/9/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
9/10/2010	354.10	0.01	1.71E+01	4.80E+01		0.01	1.71E+01
9/11/2010	354.10	0.01	1.71E+01	5.10E+01		0.01	1.71E+01
9/12/2010	354.10	0.01	1.71E+01	5.40E+01		0.01	1.71E+01
9/13/2010	354.10	0.01	1.71E+01	6.00E+01		0.01	1.71E+01
9/14/2010	354.11	0.02	1.73E+01	5.90E+01		0.02	1.73E+01
9/15/2010	354.17	0.08	1.88E+01	5.90E+01		0.08	1.88E+01
9/16/2010	354.14	0.05	1.80E+01	6.20E+01		0.05	1.80E+01
9/17/2010	354.12	0.03	1.76E+01	9.00E+01		0.03	1.76E+01
9/18/2010	354.11	0.02	1.73E+01	9.30E+01		0.02	1.73E+01
9/19/2010	354.12	0.03	1.76E+01	5.90E+01		0.03	1.76E+01
9/20/2010	354.12	0.03	1.75E+01	4.90E+01		0.03	1.75E+01
9/21/2010	354.11	0.02	1.73E+01	5.50E+01		0.02	1.73E+01
9/22/2010	354.11	0.02	1.73E+01	5.60E+01		0.02	1.73E+01
9/23/2010	354.10	0.01	1.71E+01	5.90E+01		0.01	1.71E+01
9/24/2010	354.11	0.02	1.74E+01	5.60E+01		0.02	1.74E+01
9/25/2010	354.12	0.03	1.76E+01	5.20E+01		0.03	1.76E+01
9/26/2010	354.11	0.02	1.74E+01	4.80E+01		0.02	1.74E+01
9/27/2010	354.11	0.02	1.74E+01	5.40E+01		0.02	1.74E+01
9/28/2010	354.17	0.08	1.89E+01	6.20E+01		0.08	1.89E+01
9/29/2010	354.23	0.14	2.05E+01	7.10E+01		0.14	2.05E+01
9/30/2010	354.32	0.23	2.29E+01	2.37E+02		0.23	2.29E+01
10/1/2010	358.06	3.97	1.26E+03	4.01E+03		3.97	1.26E+03
10/2/2010	359.60	5.51	2.56E+03	4.06E+03		5.51	2.56E+03
10/3/2010	359.02	4.93	2.02E+03	2.71E+03		4.93	2.02E+03



LEGEND:

- EXISTING MONITORING WELL
- WELLS INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM
- WELLS INCLUDED AS PART OF THE POST CLOSURE MONITORING PROGRAM
- WATER LEVELS ONLY
- BORING/TEST BORING LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM

NOTES:

1. BASE PLAN TAKEN FROM "WELL LOCATION PLAN", DRAWING NO. 1, PREPARED BY EMCON, DATED 7/99 AND GROUND WATER INVESTIGATIONS, INC. (GWI) ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ACCURACY OF SAME.
2. EXISTING TOPOGRAPHIC MAP COMPILED PHOTO-GRAMMETRICALLY FROM AERIAL PHOTOGRAPHY DATED DECEMBER 2, 1998 BY ATLANTIS AERIAL OF BUDD LAKE NEW JERSEY.
3. PROPERTY LINE SHOWN FROM SURVEY MAP PREPARED BY WEHRAN- NEW YORK, INC. FOR TICOR TITLE GUARANTEE CO. DATED JUNE 23, 1988.
4. THE GRID DEPICTED ON THIS PLAN WAS DEVELOPED FOR MAPPING OF THE PROJECT SITE. THE COORDINTES SHOWN ARE NOT PART OF THE STATE PLANE COORDINATE SYSTEM.
5. HIGHLIGHTED SYMBOLS AND/OR TEXT INDICATE GROUNDWATER, SURFACE WATER/SEDIMENT AND LEACHATE SAMPLE LOCATIONS INCLUDED IN OPERATIONAL MONITORING PROGRAM.

* PLEASE NOTE THAT WELLS W-1 AND W-3A ARE ON BOTH SAMPLE LISTS. ONLY THE REQUIRED PARAMATERS (TABLE 1) SHOULD GO INTO THE POST CLOSURE ANALYTICAL REPORT.

REVISION BLOCK

Rev. No.	By	Revision

GROUND WATER INVESTIGATIONS, INC.
Pine Bush, New York

Project No.:	256-00-00
Scale:	1"=200'
Date:	12/19/00
Designed By:	MAC
Checked By:	LFC
Drawn By:	KAH

SHEET 1 OF 1

WELL LOCATION PLAN

AL TURI LANDFILL, INC.
GROUNDWATER MONITORING PROGRAM

TOWN OF GOSHEN — NEW YORK

C:\GWI\256-00-00\TURI-WELLS-POST-CLOSURE.dwg LAST REV: 1/3/05 XREF: MOATWE01.DWG, MATB.DWG, T129601H.DWG

2011 SAMPLING YEAR
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – OPERATIONAL SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

May 2011

Prepared by

Ground Water Investigations
18 Bridge Street
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Project 256-00-00

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Diskette - Laboratory Analytical Data Pocket

1 INTRODUCTION

The water quality management program at the Al Turi Landfill, Goshen, New York, includes the semi-annual sampling and analysis of groundwater, surface water, contained leachate, and sediment samples from locations in and around the "Operational Landfill" and the evaluation of the data generated by these samples. The facility has completed closure and is now in the post-closure period. During the January 2011 sampling event, modified baseline sampling was performed in accordance with 6 NYCRR Part 360-2.17(a), the requirements of Special Condition Nos. 36-38 of the facility's expired September 1997 Landfill Operating Permit (Permit No. 3-3330-00002/21), and in accordance with the revised and approved July 2005 Environmental Monitoring Plan (EMP).

Water quality data generated in January 2011 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The environmental data collected from the Operational Landfill site has been presented and evaluated in this report.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

For the Operational Landfill, water quality data generated in 2011 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The trigger values were developed using a limited database that was established for the Al Turi Landfill prior to the promulgation of regulations governing the collection of such data. The values were developed from two or three sampling events for baseline parameters conducted in August through October 1983 for three overburden wells (W-5S, W-6S, and W-7S), and 2 bedrock wells (W-6D and W-8D). Well W-6D has since been replaced with well W-6DA. Additionally, trigger values for metals were calculated based on the dissolved fraction results from field-filtered analyses. The Department values, or Part 703 standards, whichever are higher, serve as the trigger values for contingency monitoring at the Al Turi Landfill. Due to the limited pre-operational database, and the presence of undetected values for many of the parameters, the results do not constitute a "normal distribution" as required under Part 360-2.11(c)(5)(i)(c). Therefore, these values should be applied with caution. Given the limited available data, the 1983 values represent the best available estimate of pre-operational water quality, and are suitable as a screening tool in the monitoring program.

Because the Al Turi Landfill began operation prior to the promulgation of the current regulations, certain aspects of the regulations cannot be strictly applied. Notable deviations are the absence of an adequate pre-operational database and the lack of expanded parameter data for many of the monitoring points.

Semi-annual monitoring at the Operational Landfill currently consists of modified baseline analysis. This sampling is conducted in January and July of each year. The analysis for each event includes 6NYCRR Part 360 Baseline parameters with the exception of the parameters BOD, COD, TKN, sulfate and bromide. Sediment samples from the Wallkill River are analyzed for the 6NYCRR Part 360 baseline metals and TOC. Under updated regulations, the presence of baseline parameters above trigger values requires initiation of contingency monitoring, in which expanded parameters are analyzed. A trigger value exceedance occurs when the groundwater analytical data exceeds either the NYSDEC developed trigger values and/or the Part 703 State standards, whichever is higher.

The 6 NYCRR Part 360 regulations allow for the modification of the expanded parameter list to correspond with contaminants detected at a given facility. The analyses apply to all media sampled at the facility (groundwater, surface water, sediment, and contained leachate). The former contingency parameter list that was utilized at the facility consisted of the baseline parameter list plus the expanded parameters sulfide, phenol, naphthalene, 2-methyl phenol, 3-methyl phenol, and 4-methyl phenol. However, because the above mentioned expanded parameters were not detected within contingency groundwater monitoring wells, the NYSDEC approved a revised contingency monitoring list on June 22, 1999 and again on May 14, 2002. Monitoring at the facility has since been modified and now includes the monitoring program established in the July 2005 EMP.

Semi-annual groundwater quality is monitored at 21 groundwater monitoring wells (shallow and deep wells) located within the boundaries of the facility's property. One well, W-8D, is designated as the upgradient background well for the facility. Drawing 1 (in pocket) provides a site map of the facility indicating the locations of the monitoring points. In addition, baseline groundwater sampling and analysis is performed quarterly at Jesus Christ Triumphant Church (representing a 22nd well) located along Route 17M just south of the facility. Surface water and sediment samples are collected at two locations in the Wallkill River, upstream and downstream of the facility, while Sediment Basins A, B and D are sampled for water quality only. In addition, leachate samples are collected semi-annually from the primary and secondary leachate collection systems, and analyzed for a modified expanded parameter list. Sampling procedures utilized are also identified in the July 2005 EMP.

2.1 Operational Water Quality - Overburden Water Quality

Fourteen overburden groundwater monitoring wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the January 2011 sampling event demonstrate that the following routine analytes were above their respective trigger values in the overburden monitoring wells: turbidity (14 wells); chloride (1 well); hardness (2 wells); ammonia (1 well); total dissolved solids (8 wells); TOC (1 well); calcium (2 wells); iron (12 wells); manganese (6 wells); and sodium (10 wells). Non-routine inorganic parameters detected above their respective trigger values in the overburden wells are limited to color (11 well); arsenic (5 wells); boron (1 well); and selenium (1 well). It should be noted that manganese and chloride were also detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the overburden groundwater monitoring are presented in Table 2-1.

A review of the January 2011 volatile organic data indicates that no volatile organic compounds were reported above groundwater standards during the sampling event. One exception was in well W-9S where unconfirmed detections of acetone and vinyl chloride were reported.

2.2 Deep Well Water Quality

Seven deep wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from January 2011 identified the following routine analytes as being above their respective trigger values in the deep water quality monitoring wells: turbidity (7 wells); alkalinity (3 wells); hardness (2 wells); total dissolved solids (2 wells); calcium (3 wells); iron (5 wells); manganese (3 wells); and sodium (2 wells).

In January 2011, no non-routine inorganic parameters were detected above established trigger limits in the deep water quality wells. A review of the January 2011 volatile organic data indicates that no volatile organic compounds were confirmed above groundwater standards.

It should be noted that chloride and manganese were detected in the field blank, although not above the trigger values developed for the Al Turi Landfill, suggesting that sources other than the landfill may be contributing to the concentration reported in the samples. Results of the deep well monitoring are presented in Table 2-2.

2.3 Contingency Monitoring

Wells that are analyzed as part of contingency monitoring at the Al Turi Landfill include: W-1, W-6S, W-9S, W-16D and W-17S. Contingency monitoring was performed for these wells due to the historical confirmation of baseline parameters at concentrations above established trigger values. The baseline parameters of concern include arsenic in the samples from wells W-6S, W-9S, W-16D and W-17S and benzene in W-1.

In January 2011, arsenic was reported above its established trigger value in wells W-5S, W-6S, W-9S, W-16D and W-28S. Arsenic was again below its established trigger value in well W-17S. Well W-5S will be considered as a contingency well due to the presence of arsenic above its established trigger value during the past three sampling events. As part of continued monitoring, arsenic will again be sampled for in all wells during the July 2011 sampling event.

A review of the volatile organic data, generated during the January 2011 sampling event, indicates that benzene was not observed above its detection limit (reported as non-detect) in well W-1.

The graphical representations for arsenic have been revised to reflect data that has been collected after the completion of landfill capping. Final cap certification for Sections 4, 5 and 6 and Sections 8, 9 and 10 occurred in September 2003 (Cornerstone 2010 Post-Closure Annual Report, Sheet 1). Arsenic data collected after September 2003 shows a decreasing trend in concentration changes for wells W-17S and to a lesser extent in well W-6S. There are no apparent trends for arsenic in wells W-5S, W-9S, W-16D or W-28S.

A graphical representation (after final capping) for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

2.4 Background Water Quality

Water quality data has been collected from groundwater monitoring wells which are installed in the meadow north of both the Al Turi Landfill and All-Waste Facility (Northern Recycling). These wells have been evaluated to assist in determining background water quality in the vicinity of the landfill. As part of the Remedial Investigation of the Old Al Turi Landfill, several wells have been shown to be clearly beyond the influence of groundwater moving toward the Wallkill River from beneath the landfill (Supplemental Remedial Investigation Report, Old Al Turi Landfill, Wehran, February 1994, Sheet 4 of 9) and are representative of background water quality. Additional historical data generated from the meadow wells indicates that several metals have been historically present in the local groundwater at concentrations above the New York State Groundwater Quality Standards (6 NYCRR Part 703).

The meadow wells have been re-developed to further help in the reduction of turbid conditions. However, several of the wells remained turbid throughout re-development, indicating that turbid conditions may also be reflective of local groundwater quality.

Based on the historical analytical results from these wells, it is clear that several analytes (iron and manganese) are present in the local groundwater at concentrations above the State standards, and at similar levels as those detected at the landfill. Data collected from the meadow wells are limited, when compared to the larger resource data base from the on-site operational monitoring wells, but the results do indicate that the exceedances observed in many of the on-site monitoring wells may be a function of local groundwater quality, and not a release from the landfill.

2.5 Church Well

Monitoring of the off-site residential well (church well) is performed quarterly, but sampling of the church well was not conducted in January 2011. Negotiations are currently underway with the NYSDEC to reduce the church monitoring frequency from quarterly to semi-annually. The most recent data collected from the church well are presented in Table 2-2.

3 SURFACE WATER/SEDIMENT QUALITY

Surface water and sediment samples are also collected semi-annually from the Wallkill River as part of continued monitoring at the Al Turi Landfill.

Surface water samples were collected with a stainless steel bucket at mid-stream locations from both the Route 17M Bridge (upstream) and Cheechunk Road Bridge (downstream). Field measurement readings obtained did not indicate the presence of river stratification at either location. Sediment samples collected at each location are collected from the bank of the river closest to the landfill.

The surface water samples collected from the Wallkill River upstream (WALL-UP) and downstream (WALL-DN) of the landfill found that iron was in exceedance of its Class C standards in both samples. A review of the VOC data shows that no VOCs were present in the Wallkill River samples.

A summary of the surface water data and sediment data collected from the Wallkill River is provided in Table 3-1 and Table 3-2, respectively. A review of the data indicates that conditions observed upstream of the facility are generally similar to conditions observed downstream of the facility.

Historically, water quality data from the river has detected a number of analytes at concentrations above the Class C standards in both the upstream and downstream samples. It has been determined that groundwater from beneath the landfill does discharge to the Wallkill River, and a comparison of the upstream and downstream surface water data continues to indicate that discharge of this groundwater has had no observable impact on the river's water quality.

In addition to the collection of surface water samples from the Wallkill River, sediment samples are collected from the upstream and downstream banks of the river. However, during the January 2011 sampling event, sediment samples could not be safely collected due to frozen river banks. Sediment samples will again be collected during the July 2011 sampling event.

During the January 2011 sampling event, water samples were not collected from the sediment basins due to frozen and/or dry conditions.

4 LEACHATE MONITORING

In accordance with Special Condition No. 36 of the expired Operating Permit, samples are obtained from the primary and secondary leachate collection system associated with Areas 11, 12, and 13 (includes Areas 9 and 10) of the landfill. Samples from the leachate collection system are collected semi-annually. Because leachate from Area 13 drains into Area 12, the common primary and secondary monitoring points for these areas is sampled. Additionally, leachate from Areas 9 and 10, which are underlain with single composite liners and are not equipped with a secondary collection system, drains to the primary collection system associated with Area 13 and then Area 12.

In January 2011, sampling of the leachate monitoring points was conducted. The analytical results from this sampling event have been provided in Table 4-1. Leachate collection system analytical results in the LCH-11S/11P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions in January 2011 included a slightly concentration of zinc in LCH-11S.

Additionally, leachate collection system analytical results in the LCH-12S/12P collection area have historically shown, for the most part, lower concentrations in the secondary collection system samples. During the January 2011 sampling event, LCH-12S was dry and no comparisons could be made.

In January 2011, no non-flagged detections of organic compounds were observed. Compounds flagged with a J (analytes detected below quantitation limits) include bis(2-ethylhexyl)phthalate in LCH-11S and LCH-12P. No PCBs or pesticides/herbicides were detected in any of the leachate samples. Additionally, no dioxins or furan were detected in the primary leachate samples. Leachate samples will be collected again during the July 2011 sampling event.

5 IRON FLOC EVALUATION

The Wallkill River has been identified as a groundwater discharge area for shallow groundwater flowing from the Al Turi Landfill site. Surface water and sediment sampling is performed at upgradient and downgradient locations on the River as shown on Drawing 1.

During periods of abnormally low flow conditions, seepage of shallow groundwater has been observed along the banks of the Wallkill River. Occasionally orange staining has been observed at some of these seepage points, which has proven to be characteristic of iron oxidation. Past sampling of these seeps has suggested that the seepage water reflects observed shallow groundwater quality and is not the result of direct leachate seepage from the landfill.

To date, iron floc sampling has not been conducted in 2011 due to river elevation levels above the identified seep area. The Al Turi Landfill will continue to monitor the river elevation and conduct iron floc sampling when the seep area is accessible.

6 CONCLUSIONS

Contingency monitoring will continue during the 2011 sampling year in 6 groundwater monitoring wells as a result of the confirmed presence of non-routine parameter exceedances of established trigger values that are utilized to evaluate groundwater quality. The contingency monitoring wells and their non-routine parameters of concern include: W-5S (arsenic); W-6S (arsenic); W-9S (arsenic); W-17S (arsenic); W-16D (arsenic) and well W-1 (benzene only. Additional determinations were made from the data obtained in January 2011:

- Many of the exceedances observed for parameters, such as iron and manganese, are likely due to the local groundwater quality rather than a landfill-related impact.

- Background historical groundwater quality data from the wells north of the site (the meadow wells) have indicated that a number of analytes are present in the local groundwater at similar concentrations to that observed in the on-site landfill monitoring wells. A number of parameters being detected in the background wells are at levels similar to those detected in the on-site landfill monitoring wells.

- A review of the volatile organic data, generated during the January 2011 sampling event, indicates that no volatile organics were detected above groundwater standards. Benzene was not detected above its detection limit during this sampling event.

- Arsenic detections observed above established trigger limits were limited to wells W-5S, W-6S, W-9S, W-16D and W-28S.

- The graphical representations for arsenic have been revised to reflect data that has been collected after the completion of landfill capping. Arsenic data collected after September 2003 shows a decreasing trend in concentration changes for wells W-17S and to a lesser extent in well W-6S. There are no apparent trends for arsenic in wells W-5S, W-9S, W-16D or W-28S.

- A graphical representation (after final capping) for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

- Although it has been demonstrated that groundwater from beneath the landfill does discharge to the Wallkill River, downstream surface water quality continues to demonstrate similar results to upstream surface water quality. Historical surface water data indicate that no significant change in water quality has occurred in the Wallkill River as a result of on-going landfill operations. Data collected in January 2010 continues to demonstrate that the landfill has had no observable impact on water quality in the River.

APPENDIX A

OPERATIONAL LANDFILL
LABORATORY ANALYTICAL DATA

TABLES

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS - JANUARY 2011
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-01	**7/21/09**	29.34	19.6	6.92	-37	2222	200	550	224	75	<0.010	608	<0.010	0.28	49.9	<0.005	830	24.8	<0.100
W-01	**1/14/10**	27.32	11.6	7.04	-31	4.21	31.4	770	509	500	<0.010	608	<0.010	<0.20	78.1	<0.005	1200	37.2	<0.100
W-01	**7/28/10**	33.43	19.4	6.76	-34	388	292	680	564	150	<0.010	629	<0.010	0.084	69	<0.005	1400	35.8	0.193
W-01	**1/25/11**	29.21	5.78	7.31	-67	352	248	480	504	450	<0.010	564	<0.020	0.281	74.8	0.006	1400	28.2	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-03A	**7/21/09**	12.58	13.8	7.39	179	228	87.1	210	10.8	7	<0.010	295	<0.010	<0.20	<0.50	<0.005	260	<3.0	1.6
W-03A	**1/13/10**	10.85	8.3	6.89	188	1688	6.17	200	11.4	<5.0	<0.010	251	<0.010	<0.20	<0.50	<0.005	200	<3.0	<0.100
W-03A	**7/28/10**	15.43	15.4	8.15	305	114	78.5	210	10.9	11	<0.010	272	<0.010	0.127	0.695	<0.005	290	<3.0	0.588
W-03A	**1/25/11**	9.89	4.6	7.87	48	454	33.7	140	16	35	<0.010	201	<0.010	0.155	<0.50	<0.005	280	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-05S	**7/21/09**	19.45	17.2	6.85	-37	900	14.2	480	83.2	30	<0.010	696	<0.010	<0.200	<0.500	<0.005	710	<3.0	<0.100
W-05S	**1/13/10**	18.61	12.1	5.78	258	204	17.5	540	64.4	7	<0.010	606	<0.010	<0.200	<0.500	<0.005	640	<3.0	<0.100
W-05S	**7/28/10**	20.97	21.2	7.25	-43	1733	65.1	490	64.1	50	<0.010	712	<0.010	0.137	<0.500	<0.005	920	<3.0	<0.100
W-05S	**1/25/11**	20.26	7.94	7.37	-52	1474	33.9	390	58.5	120	<0.010	585	<0.020	0.074	<0.500	<0.005	750	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-06S	**7/21/09**	28.18	17.1	7.25	189	441	32.6	500	5.08	35	<0.010	619	<0.010	<0.200	2.36	<0.005	760	7.4	4.54
W-06S	**1/13/10**	27.68	10.7	5.65	263	1636	136	540	7.71	15	<0.010	765	<0.010	<0.200	1.44	<0.005	450	6.9	7.02
W-06S	**7/28/10**	29.12	20.6	7.03	354	233	41.7	410	4.77	150	<0.010	678	<0.010	0.119	5.61	<0.005	460	10.2	8.27
W-06S	**1/25/11**	28.26	8.3	7.29	59	731	40.2	400	4.7	350	<0.010	443	<0.020	0.125	0.782	<0.005	500	5.1	0.233
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-07S	**7/21/09**	34.01	17.9	7.36	184	448	78.7	500	57.2	6	<0.010	842	<0.010	<0.200	<0.500	<0.005	1000	<3.0	0.402
W-07S	**1/13/10**	33.65	10.8	5.92	249	215	52.3	550	70	30	<0.010	727	<0.010	<0.200	<0.500	<0.005	820	<3.0	0.457
W-07S	**7/28/10**	35.91	20.8	6.94	367	563	37.7	500	77.8	125	<0.010	734	<0.010	0.086	<0.500	<0.005	1000	<3.0	0.284
W-07S	**1/25/11**	34.84	5.5	7.37	78	991	32.1	420	84.3	350	<0.010	710	<0.020	0.102	<0.500	<0.005	860	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-09S	**7/21/09**	46.03	21.2	6.82	-32	944	28.2	580	32.7	35	<0.010	751	<0.010	<0.200	<0.500	<0.005	670	<3.0	0.68
W-09S	**1/13/10**	45.03	12.7	5.80	257	1892	14.3	610	19.8	8	<0.010	640	<0.010	<0.200	<0.500	<0.005	540	<3.0	0.114
W-09S	**7/28/10**	47.28	22.6	6.65	-23	1590	76.5	550	34.2	150	<0.010	646	<0.010	0.051	<0.500	<0.005	670	<3.0	0.636
W-09S	**1/25/11**	46.93	8.28	6.67	-17	1553	57.2	440	48.8	120	<0.010	590	<0.020	0.098	<0.500	<0.005	700	<3.0	0.45
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16S	**7/21/09**	43.43	16.8	7.55	170	209	9.54	220	2.79	5	<0.010	221	<0.010	<0.20	<0.500	<0.005	270	<3.0	<0.100
W-16S	**1/13/10**	42.63	8.2	7.22	169	1223	18.7	270	2.93	15	<0.010	156	<0.010	<0.20	<0.500	<0.005	270	<3.0	<0.100
W-16S	**7/28/10**	44.75	18.2	8.85	284	144	41.6	200	3.26	12	<0.010	107	<0.010	0.059	<0.500	<0.005	300	<3.0	<0.100
W-16S	**1/25/11**	43.21	7.5	8.42	42	392	14.1	200	2.19	75	<0.010	196	<0.010	0.114	<0.500	<0.005	240	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS - JANUARY 2011
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-01	**7/21/09**	<0.030	<0.010	0.582	<0.003	0.616	0.0051	157	<0.010	<0.020	<0.010	55.5	<0.003	<0.030	52.4	3.91	<0.0002	<0.030	57.5
W-01	**1/14/10**	<0.030	<0.010	0.795	<0.003	0.923	<0.005	148	<0.010	<0.020	<0.010	45.7	<0.003	<0.030	57.6	4.46	<0.0002	<0.030	57.3
W-01	**7/28/10**	<0.050	0.0094	0.764	<0.003	0.708	0.0107	153	<0.010	<0.020	<0.010	54.6	<0.003	<0.030	59.7	4.26	<0.0002	<0.030	64.8
W-01	**1/25/11**	<0.005	0.0084	0.682	<0.003	1.24	0.00626	136	<0.010	<0.020	<0.010	48.4	<0.003	<0.030	54.4	4.12	<0.0002	<0.030	52.2
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-03A	**7/21/09**	<0.030	<0.010	0.0909	<0.003	<0.500	<0.005	82.4	<0.010	<0.020	<0.010	2.56	<0.003	<0.030	21.8	0.539	<0.0002	<0.030	1.37
W-03A	**1/13/10**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	78.4	<0.010	<0.020	<0.010	0.0672	<0.003	<0.030	13.5	0.153	<0.0002	<0.030	<5.0
W-03A	**7/28/10**	<0.005	<0.005	0.11	<0.003	<0.500	<0.005	75.7	<0.010	<0.020	<0.010	1.19	<0.003	<0.030	20.1	0.813	<0.0002	<0.030	<5.0
W-03A	**1/25/11**	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	60.2	<0.010	<0.020	<0.010	0.0671	<0.003	<0.030	12.4	0.111	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-05S	**7/21/09**	<0.030	0.0243	0.137	<0.003	<0.500	<0.005	227	<0.005	<0.020	<0.010	17.4	<0.003	<0.030	31.5	2.3	<0.0002	<0.030	2.85
W-05S	**1/13/10**	<0.030	0.0481	0.168	<0.003	<0.500	<0.005	198	<0.005	<0.020	<0.010	15.6	<0.003	<0.030	27.5	2.14	<0.0002	<0.030	2.85
W-05S	**7/28/10**	<0.005	0.033	0.162	<0.003	<0.500	<0.005	230	<0.010	<0.020	<0.010	13.4	<0.003	<0.030	33.5	2.14	<0.0002	<0.030	<5.0
W-05S	**1/25/11**	<0.005	0.032	0.137	<0.003	<0.500	<0.005	186	<0.010	<0.020	<0.010	11.9	<0.003	<0.030	29.4	1.91	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-06S	**7/21/09**	<0.030	<0.010	0.518	<0.003	<0.500	0.0080	197	0.03	<0.020	0.0155	73.2	<0.003	<0.030	30.8	2.82	<0.0002	<0.030	3.96
W-06S	**1/13/10**	<0.030	0.0324	0.578	<0.003	<0.500	<0.005	245	0.0841	<0.020	0.0417	87.7	0.0254	<0.030	37	4.07	<0.0002	0.0407	5.51
W-06S	**7/28/10**	<0.005	0.037	0.454	<0.003	<0.500	0.0168	217	0.0187	<0.020	0.0157	82	<0.003	<0.030	33.3	4.07	<0.0002	<0.030	<5.0
W-06S	**1/25/11**	<0.005	0.083	0.566	<0.003	<0.500	0.0062	135	<0.010	<0.020	<0.010	39.8	<0.003	<0.030	25.8	1.33	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-07S	**7/21/09**	<0.030	<0.010	0.090	<0.003	<0.500	<0.005	250	0.016	<0.020	0.0316	40.7	<0.003	<0.010	52.9	1.83	<0.0002	<0.030	5.18
W-07S	**1/13/10**	<0.030	0.0103	0.076	<0.003	<0.500	<0.005	217	0.0287	<0.020	0.0135	21.9	<0.003	<0.030	45	1.74	<0.0002	<0.030	<5.0
W-07S	**7/28/10**	<0.005	0.013	0.080	<0.003	<0.500	<0.005	215	<0.010	<0.020	0.0185	21.3	<0.003	<0.030	47.8	1.78	<0.0002	<0.030	<5.0
W-07S	**1/25/11**	<0.005	0.011	0.085	<0.003	<0.500	<0.005	204	<0.010	<0.020	0.0616	18.6	<0.003	<0.030	48.8	1.79	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-09S	**7/21/09**	<0.030	<0.010	0.982	<0.003	<0.500	<0.005	228	<0.010	<0.020	0.017	37	<0.003	<0.030	44.1	1.13	<0.0002	<0.030	3.04
W-09S	**1/13/10**	<0.030	0.0262	0.925	<0.003	<0.500	<0.005	197	<0.010	<0.020	<0.010	25.7	<0.003	<0.030	35.8	0.619	<0.0002	<0.030	<5.0
W-09S	**7/28/10**	<0.005	0.072	1.06	<0.003	<0.500	0.0061	205	<0.010	<0.020	<0.010	29.8	<0.003	<0.030	32.4	0.738	<0.0002	<0.030	<5.0
W-09S	**1/25/11**	<0.005	0.065	1.05	<0.003	<0.500	<0.005	187	<0.010	<0.020	<0.010	25.1	<0.003	<0.030	30.1	0.823	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16S	**7/21/09**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	57.8	<0.010	<0.020	<0.010	1.59	<0.003	<0.030	18.5	0.319	<0.0002	<0.030	4.72
W-16S	**1/13/10**	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	35	<0.010	<0.020	<0.010	2.03	<0.003	<0.030	16.6	0.184	<0.0002	<0.030	7.59
W-16S	**7/28/10**	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	17.4	<0.010	<0.020	<0.010	4.03	<0.003	<0.030	15.4	0.186	<0.0002	<0.030	5.37
W-16S	**1/25/11**	<0.005	<0.005	0.0575	<0.003	<0.500	<0.005	51.1	<0.010	<0.020	<0.010	1.81	<0.003	<0.030	16.7	0.386	<0.0002	<0.030	<5.0

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS - JANUARY 2011
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-01	**7/21/09**	<0.005	<0.010	215	<0.010	<0.010
W-01	**1/14/10**	<0.005	<0.010	389	<0.010	0.223
W-01	**7/28/10**	0.03	<0.010	351	<0.003	<0.010
W-01	**1/25/11**	0.02	<0.010	318	<0.003	0.0175
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-03A	**7/21/09**	<0.005	<0.010	17.8	<0.010	0.0503
W-03A	**1/13/10**	<0.005	<0.010	20.2	<0.010	0.0219
W-03A	**7/28/10**	<0.003	<0.010	15.2	<0.003	<0.010
W-03A	**1/25/11**	<0.003	<0.010	18.8	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-05S	**7/21/09**	<0.005	<0.010	41.5	<0.010	0.0618
W-05S	**1/13/10**	<0.005	<0.010	53	<0.010	0.3880
W-05S	**7/28/10**	<0.003	<0.010	38.3	<0.003	0.0284
W-05S	**1/25/11**	<0.003	<0.010	42.3	<0.003	0.0892
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-06S	**7/21/09**	<0.005	<0.010	5.51	<0.010	0.049
W-06S	**1/13/10**	<0.005	<0.010	5.94	<0.010	0.178
W-06S	**7/28/10**	<0.003	<0.010	<5.0	<0.003	0.131
W-06S	**1/25/11**	<0.003	<0.010	<5.0	<0.003	0.0275
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-07S	**7/21/09**	<0.005	<0.010	44.1	<0.010	0.0266
W-07S	**1/13/10**	<0.005	<0.010	45.9	<0.010	0.0842
W-07S	**7/28/10**	<0.003	<0.010	42.2	<0.003	0.0246
W-07S	**1/25/11**	<0.003	<0.010	50.2	<0.003	0.0633
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-09S	**7/21/09**	<0.005	<0.010	21	<0.010	0.063
W-09S	**1/13/10**	<0.005	<0.010	20.3	<0.010	0.0414
W-09S	**7/28/10**	<0.003	<0.010	23.3	<0.003	0.03
W-09S	**1/25/11**	<0.003	<0.010	39.3	<0.003	0.0478
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16S	**7/21/09**	<0.005	<0.010	20.1	<0.010	<0.010
W-16S	**1/13/10**	<0.005	<0.010	23.7	<0.010	0.0229
W-16S	**7/28/10**	<0.003	0.031	32.9	<0.003	<0.010
W-16S	**1/25/11**	<0.003	0.031	11.7	<0.003	<0.010

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS - JANUARY 2011
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16D	**7/21/09**	42.71	16.5	7.37	180	231	29.3	260	2.77	5	<0.010	306	<0.010	<0.200	<0.500	<0.005	300	<3.0	0.737
W-16D	**1/13/10**	42.06	8.5	7.32	164	1071	22.2	290	4.59	15	<0.010	287	<0.010	<0.20	<0.500	<0.005	290	<3.0	0.559
W-16D	**7/28/10**	44.32	19.1	8.09	309	155	46.2	260	3.24	30	<0.010	285	<0.010	0.071	<0.500	<0.005	310	<3.0	0.158
W-16D	**1/25/11**	42.72	8.2	8.17	62	486	26.9	250	4.27	50	<0.010	280	<0.010	0.1	<0.500	<0.005	310	<3.0	0.532
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17S	**7/21/09**	21.12	22	6.82	-50	795	562	490	47.1	7	<0.010	685	<0.010	<0.20	<0.500	<0.005	850	3.1	1.09
W-17S	**1/14/10**	20.1	13.2	5.92	252	1765	72.6	570	36.3	15	<0.010	604	<0.010	<0.200	<0.500	<0.005	440	3.9	0.414
W-17S	**7/27/10**	22.4	18	7.09	-45	1616	44.3	490	74.1	75	<0.010	657	<0.010	0.113	<0.500	<0.005	770	<3.0	0.279
W-17S	**1/25/11**	21.7	7.33	7.17	-49	1521	35.6	400	99.3	75	<0.010	622	<0.020	0.22	<0.500	<0.005	720	<3.0	0.336
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17D	**7/21/09**	21.15	18	6.72	-48	888	219	450	104	5	<0.010	749	<0.010	<0.20	<0.500	<0.005	870	<3.0	0.379
W-17D	**1/14/10**	19.15	12.4	7.57	-22	1584	25.1	470	105	20	<0.010	641	<0.010	<0.200	<0.500	<0.005	660	<3.0	<0.100
W-17D	**7/27/10**	21.47	18.2	7.35	-50	1698	25.9	460	105	7	<0.010	690	<0.010	0.078	<0.500	<0.005	770	<3.0	<0.10
W-17D	**1/25/11**	20.99	8.5	7.56	-21	1511	19.1	390	101	15	<0.010	649	<0.010	0.062	<0.500	<0.005	770	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27S	**7/21/09**	39.62	21	6.83	-24	932	60.6	600	60.7	35	<0.010	792	<0.010	<0.20	0.903	<0.005	790	<3.0	4.65
W-27S	**1/13/10**	36.73	13.9	5.51	279	224	43.1	620	58.6	7	<0.010	546	<0.010	<0.20	0.798	<0.005	690	<3.0	0.721
W-27S	**7/27/10**	41.2	21.2	6.83	-47	1722	26.3	490	108	35	<0.010	591	<0.010	0.086	0.726	<0.005	750	4.4	0.247
W-27S	**1/25/11**	40.6	7.83	7.46	-59	1643	66.8	420	78.4	450	<0.010	596	<0.02	0.061	<0.500	<0.005	770	<3.0	0.253
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27D	**7/21/09**	39.02	18.2	7.64	98	312	98.6	160	2.7	7	<0.010	120	<0.010	0.309	<0.500	<0.005	210	<3.0	0.299
W-27D	**1/13/10**	37.45	13.4	8.17	17	522	12.2	180	2.08	10	<0.010	93.8	<0.010	<0.20	<0.500	<0.005	270	<3.0	<0.10
W-27D	**7/26/10**	40.18	19.9	7.84	-72	556	13.2	160	2.19	15	<0.010	102	<0.010	0.192	<0.500	0.018	210	<3.0	<0.100
W-27D	**1/25/11**	39.22	9.11	8.04	-85	557	122	170	1.96	6	<0.010	102	<0.010	0.059	<0.500	<0.005	270	<3.0	0.658
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28S	**7/21/09**	43.81	18.1	7.31	187	457	9.7	600	51.2	25	<0.010	804	<0.010	<0.200	<0.500	<0.005	840	3.7	<0.100
W-28S	**1/13/10**	43.41	12.7	5.91	252	1887	16.7	600	46.1	50	<0.010	704	<0.010	<0.200	<0.500	<0.005	620	3.4	0.236
W-28S	**7/28/10**	45.66	18.9	7.12	161	1396	17.9	310	50.3	125	<0.010	607	<0.010	0.164	<0.500	<0.005	710	<3.0	0.129
W-28S	**1/25/11**	45.08	8.39	6.75	11	1652	55.7	420	31.2	65	<0.010	696	<0.010	0.168	<0.500	<0.005	820	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28D	**7/21/09**	46.03	17.2	7.87	-16	264	22.6	130	8.34	5	<0.010	115	<0.010	<0.20	<0.50	<0.005	190	<3.0	<0.100
W-28D	**1/13/10**	43.05	15	8.09	-11	460	10.2	150	15.2	5	<0.010	105	<0.010	<0.20	<0.50	<0.005	160	<3.0	<0.100
W-28D	**7/27/10**	45.35	18.7	8.51	130	488	32.2	150	9.38	7	<0.010	107	<0.010	0.177	<0.50	<0.005	200	<3.0	<0.100
W-28D	**1/25/11**	45.91	9.94	7.99	-47	549	8.49	130	11.4	8	<0.010	103	<0.010	0.156	<0.50	<0.005	210	<3.0	<0.100

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS - JANUARY 2011
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16D	**7/21/09**	<0.030	<0.010	0.137	<0.003	<0.500	<0.005	91.5	<0.010	<0.020	<0.010	2.41	<0.003	<0.030	18.9	0.87	<0.0002	<0.030	1.84
W-16D	**1/13/10**	<0.003	0.0164	0.143	<0.003	<0.005	<0.005	86	<0.010	<0.020	<0.010	2.8	<0.003	<0.030	17.5	1.06	<0.0002	<0.030	<5.0
W-16D	**7/28/10**	<0.005	0.048	0.149	<0.003	<0.500	<0.005	85.6	<0.010	<0.020	<0.010	4.92	<0.003	<0.030	17.4	0.984	<0.0002	<0.030	<5.0
W-16D	**1/25/11**	<0.005	0.037	0.141	<0.003	<0.500	<0.005	81.4	<0.010	<0.020	<0.010	5.63	<0.003	<0.030	18.7	1.1	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17S	**7/21/09**	<0.003	<0.010	0.431	<0.003	<0.500	<0.005	194	<0.010	<0.020	0.0128	24.8	<0.003	<0.030	48.5	0.567	<0.0002	<0.010	2.19
W-17S	**1/14/10**	<0.030	<0.010	0.438	<0.003	<0.500	<0.005	173	<0.010	<0.020	<0.010	20.9	<0.003	<0.030	41.5	0.346	<0.0002	<0.030	<5.0
W-17S	**7/27/10**	<0.005	0.018	0.442	<0.003	<0.500	<0.005	192	<0.010	<0.020	<0.010	21.5	<0.003	<0.030	43.2	0.614	<0.0002	<0.030	<5.0
W-17S	**1/25/11**	<0.005	0.011	0.438	<0.003	<0.500	<0.005	174	<0.010	<0.020	<0.010	18.5	<0.003	<0.030	45.5	0.4	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17D	**7/21/09**	<0.030	<0.010	0.169	<0.003	<0.500	<0.005	234	<0.010	<0.020	<0.010	1.48	<0.003	<0.030	40.1	1.44	<0.0002	<0.030	4.17
W-17D	**1/14/10**	<0.030	<0.010	0.116	<0.003	<0.500	<0.005	203	<0.010	<0.020	<0.010	1.12	<0.003	<0.030	32.6	1.14	<0.0002	<0.030	<5.0
W-17D	**7/27/10**	<0.005	<0.005	0.127	<0.003	<0.500	<0.005	214	<0.010	<0.020	<0.010	0.452	<0.003	<0.030	37.7	1.6	<0.0002	<0.030	<5.0
W-17D	**1/25/11**	<0.005	<0.005	0.113	<0.003	<0.500	<0.005	200	<0.010	<0.020	<0.010	0.491	<0.003	<0.030	36.2	1.26	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27S	**7/21/09**	<0.030	<0.010	0.297	<0.003	<0.500	<0.005	254	<0.010	<0.020	0.159	36.2	0.0291	<0.030	38.4	2.22	<0.0002	<0.030	6.89
W-27S	**1/13/10**	<0.030	<0.010	0.24	<0.003	<0.500	<0.005	177	<0.010	<0.020	<0.010	22.7	<0.003	<0.030	25	1.52	<0.0002	<0.030	5.55
W-27S	**7/27/10**	<0.005	<0.005	0.425	<0.003	<0.500	<0.005	191	<0.010	<0.020	<0.010	30	<0.003	<0.030	27.8	0.984	<0.0002	<0.030	5.92
W-27S	**1/25/11**	<0.005	<0.005	0.243	<0.003	<0.500	<0.005	194	<0.010	<0.020	<0.010	20.6	0.0044	<0.030	27.2	1.83	<0.0002	<0.030	6.26
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27D	**7/21/09**	<0.030	<0.010	0.0638	<0.003	<0.050	<0.005	29	<0.010	<0.020	0.0122	0.979	<0.003	<0.030	11.6	0.162	<0.0002	<0.030	1.57
W-27D	**1/13/10**	<0.030	<0.010	0.0506	<0.003	<0.050	<0.005	22.1	<0.010	<0.020	<0.010	0.237	<0.003	<0.030	9.4	0.136	<0.0002	<0.030	<5.0
W-27D	**7/26/10**	<0.005	<0.005	0.0545	<0.003	<0.500	<0.005	23.8	<0.010	<0.020	<0.010	0.194	<0.003	<0.030	10.4	0.0421	<0.0002	<0.030	<5.0
W-27D	**1/25/11**	<0.005	<0.005	0.06	<0.003	<0.500	<0.005	23.7	<0.010	<0.020	<0.010	1.19	<0.003	<0.030	10.5	0.253	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28S	**7/21/09**	<0.030	<0.010	0.0985	<0.003	<0.500	<0.005	251	<0.010	<0.020	<0.010	2.86	<0.003	<0.030	43.3	1.38	<0.0002	<0.030	3.9
W-28S	**1/13/10**	<0.030	0.018	0.16	<0.003	<0.500	<0.005	219	<0.010	<0.020	<0.010	3.9	<0.003	<0.030	38	0.66	<0.0002	<0.030	<5.0
W-28S	**7/28/10**	<0.005	0.033	0.11	<0.003	<0.500	<0.005	189	<0.010	<0.020	<0.010	4.98	<0.003	<0.030	32.5	0.614	<0.0002	<0.030	<5.0
W-28S	**1/25/11**	<0.005	0.031	0.169	<0.003	<0.500	<0.005	213	<0.010	<0.020	<0.010	4.9	<0.003	<0.030	39.6	0.493	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28D	**7/21/09**	<0.030	<0.010	0.0538	<0.003	<0.500	<0.005	29.5	<0.010	<0.020	<0.010	0.255	<0.003	<0.030	10.1	0.129	<0.0002	<0.030	1.73
W-28D	**1/13/10**	<0.030	<0.010	0.0575	<0.003	<0.500	<0.005	26.6	<0.010	<0.020	<0.010	0.162	<0.003	<0.030	9.36	0.176	<0.0002	<0.030	<5.0
W-28D	**7/27/10**	<0.005	<0.005	0.0592	<0.003	<0.500	<0.005	27.1	<0.010	<0.020	<0.010	0.0923	<0.003	<0.030	9.48	0.0558	<0.0002	<0.030	<5.0
W-28D	**1/25/11**	<0.005	<0.005	0.0528	<0.003	<0.500	<0.005	26.1	<0.010	<0.020	<0.010	0.0879	<0.003	<0.030	9.15	0.171	<0.0002	<0.030	<5.0

TABLE 2-1
AL TURI SANITARY LANDFILL - GOSHEN NEW YORK
GROUNDWATER MONITORING ANALYTICAL RESULTS
OVERBURDEN WELLS - JANUARY 2011
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16D	**7/21/09**	<0.005	<0.010	3.97	<0.010	0.0249
W-16D	**1/13/10**	<0.005	<0.010	<5.0	<0.010	0.047
W-16D	**7/28/10**	<0.003	<0.010	<5.0	<0.003	0.0364
W-16D	**1/25/11**	<0.003	<0.010	<5.0	<0.003	0.0463
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17S	**7/21/09**	<0.005	<0.010	14.8	<0.010	0.0204
W-17S	**1/14/10**	<0.005	<0.010	9.66	<0.010	0.0292
W-17S	**7/27/10**	<0.003	<0.010	18.3	<0.003	0.0318
W-17S	**1/25/11**	<0.003	<0.010	23.2	<0.003	0.03
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17D	**7/21/09**	<0.005	<0.010	55.8	<0.010	0.0159
W-17D	**1/14/10**	<0.005	<0.010	25	<0.010	0.0374
W-17D	**7/27/10**	<0.003	<0.010	29.8	<0.003	0.0248
W-17D	**1/25/11**	<0.003	<0.010	30.7	<0.003	0.0128
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27S	**7/21/09**	<0.005	<0.010	42.6	<0.010	0.19
W-27S	**1/13/10**	<0.005	<0.010	38.1	<0.010	0.0567
W-27S	**7/27/10**	0.004	<0.010	5.92	<0.003	0.0151
W-27S	**1/25/11**	<0.003	<0.010	48.7	<0.003	0.029
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27D	**7/21/09**	<0.030	<0.010	56.3	<0.030	0.0246
W-27D	**1/13/10**	<0.005	<0.010	49	<0.010	0.0346
W-27D	**7/26/10**	<0.003	<0.010	52	<0.003	<0.010
W-27D	**1/25/11**	<0.003	<0.010	56.8	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28S	**7/21/09**	<0.005	<0.010	31.9	<0.010	<0.010
W-28S	**1/13/10**	<0.005	<0.010	28.4	<0.010	0.0448
W-28S	**7/28/10**	<0.003	<0.010	28.7	<0.003	0.0295
W-28S	**1/25/11**	<0.003	<0.010	31.4	<0.003	0.0152
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28D	**7/21/09**	<0.005	<0.010	39.3	<0.010	<0.010
W-28D	**1/13/10**	<0.005	<0.010	39.2	<0.010	0.0274
W-28D	**7/27/10**	<0.003	<0.010	38	<0.003	<0.010
W-28D	**1/25/11**	<0.003	<0.010	48.2	<0.003	<0.010

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JANUARY 2011
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-05D	**7/22/09**	19.35	18	8.25	-26	249	13.5	110	3.48	5	<0.010	139	<0.010	<0.20	<0.500	<0.005	180	<3.0
W-05D	**1/14/10**	18.35	11.3	8.38	-19	370	>1,000	130	2.59	22	<0.010	256	<0.010	<0.200	<0.500	<0.005	240	<3.0
W-05D	**7/27/10**	20.79	20.1	8.99	68	389	18	110	3.92	12	<0.010	120	<0.010	0.118	<0.500	<0.005	220	<3.0
W-05D	**1/25/11**	20.27	8.67	8.41	-48	368	16.3	99	3.45	6	<0.010	102	<0.010	0.139	<0.500	<0.005	180	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-06DA	**7/22/09**	18.62	17.2	7.62	90	309	24.1	140	3.97	5	<0.010	237	<0.010	<0.200	0.602	<0.005	280	<3.0
W-06DA	**1/14/10**	17.70	11	8.36	26	501	58.3	180	10.6	10	<0.010	197	<0.010	<0.200	<0.500	<0.005	290	<3.0
W-06DA	**7/27/10**	20.22	16.9	8.53	113	595	33.7	120	4.02	7	<0.010	207	<0.010	0.112	<0.500	<0.005	300	<3.0
W-06DA	**1/25/11**	21.51	7.17	8.17	-54	587	24.7	130	4.22	10	<0.010	198	<0.010	0.173	<0.500	<0.005	290	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-08D*	**7/22/09**	76.97	15.8	7.34	184	223	42	180	3.92	25	<0.010	283	<0.010	0.549	<0.500	<0.005	280	<3.0
W-08D*	**1/14/10**	74.75	11	7.19	175	991	52.1	220	3.51	15	<0.010	263	<0.010	<0.200	<0.500	<0.005	220	<3.0
W-08D*	**7/28/10**	78.32	18.6	7.40	323	151	48.3	180	17.8	85	<0.010	239	<0.010	0.218	<0.500	<0.005	440	<3.0
W-08D*	**1/25/11**	75.39	8.1	7.91	91	433	48.9	180	8.65	7	<0.010	228	<0.010	0.197	<0.500	<0.005	330	<3.0

*** BACKGROUND WELL**

TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-09D	**7/22/09**	43.63	17.6	7.80	-21	528	7.62	130	133	7	<0.010	206	<0.010	<0.20	<0.500	<0.005	530	<3.0
W-09D	**1/14/10**	42.95	12.2	8.17	-17	1154	19.5	140	127	10	<0.010	174	<0.010	<0.20	<0.500	<0.005	480	<3.0
W-09D	**7/28/10**	44.81	21.3	7.96	78	1232	18.5	130	129	12	<0.010	171	<0.010	0.218	<0.500	<0.005	480	<3.0
W-09D	**1/25/11**	43.66	11.2	7.37	-53	1187	22.8	110	126	13	<0.010	165	<0.010	0.138	<0.500	<0.005	480	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-10D	**7/22/09**	57.30	16.1	6.74	217	426	8.1	480	21.7	5	<0.010	766	<0.010	<0.200	<0.500	<0.005	780	<3.0
W-10D	**1/14/10**	58.37	11.7	6.36	241	1817	17.5	530	13.7	15	<0.010	664	<0.010	<0.20	<0.500	<0.005	700	<3.0
W-10D	**7/28/10**	59.94	17.9	7.05	360	464	43.6	460	30.3	7	<0.010	765	<0.010	0.196	<0.500	<0.005	990	<3.0
W-10D	**1/25/11**	59.93	9	7.43	50	995	43.8	420	22.9	45	<0.010	660	<0.010	0.065	<0.500	<0.005	850	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JANUARY 2011
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-05D	**7/22/09**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	38.5	<0.005	<0.020	<0.010	0.149	<0.003	<0.030	10.3	0.0947	<0.0002	<0.030
W-05D	**1/14/10**	19.2	<0.030	<0.010	0.155	<0.003	<0.500	<0.005	60.4	0.0552	<0.020	0.0302	29.2	0.00775	<0.030	25.6	0.579	<0.0002	0.036
W-05D	**7/27/10**	0.104	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	31.3	<0.010	<0.020	<0.010	0.354	<0.003	<0.030	10	0.0317	<0.0002	<0.030
W-05D	**1/25/11**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	24.8	<0.010	<0.020	<0.010	0.0636	<0.003	<0.030	9.66	0.0184	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-06DA	**7/22/09**	0.15	<0.030	<0.010	0.0747	<0.003	<0.500	<0.005	75.7	<0.010	<0.020	0.0139	0.465	<0.003	<0.030	11.7	0.0399	<0.0002	<0.030
W-06DA	**1/14/10**	0.199	<0.030	<0.010	0.0653	<0.003	<0.500	<0.005	63.1	<0.010	<0.020	<0.010	0.423	<0.003	<0.030	9.66	0.200	<0.0002	<0.030
W-06DA	**7/27/10**	0.118	<0.005	<0.005	0.063	<0.003	<0.500	<0.005	66.1	<0.010	<0.020	<0.010	0.273	<0.003	<0.030	10.2	0.064	<0.0002	<0.030
W-06DA	**1/25/11**	<0.100	<0.005	<0.005	0.0701	<0.003	<0.500	<0.005	62	<0.010	<0.020	<0.010	0.149	<0.003	<0.030	10.6	0.158	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-08D*	**7/22/09**	1.42	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	85.6	<0.010	<0.020	<0.010	1.97	<0.003	<0.030	16.8	0.0595	<0.0002	<0.030
W-08D*	**1/14/10**	2.77	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	78.6	<0.010	<0.020	<0.010	3.56	<0.003	<0.030	16.3	0.069	<0.0002	<0.030
W-08D*	**7/28/10**	2.6	<0.005	<0.005	0.0735	<0.003	<0.500	<0.005	71.4	<0.010	<0.020	<0.010	3.91	<0.003	<0.030	14.7	0.0786	<0.0002	<0.030
W-08D*	**1/25/11**	2.33	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	65.1	<0.010	<0.010	<0.010	3.22	<0.003	<0.030	15.8	0.0668	<0.0002	<0.030

*** BACKGROUND WELL**

TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-09D	**7/22/09**	0.215	<0.030	<0.010	0.0755	<0.003	<0.500	<0.005	42.6	0.0353	<0.020	0.0282	1.69	<0.003	<0.030	24.3	0.529	<0.0002	<0.030
W-09D	**1/14/10**	<0.100	<0.030	<0.010	0.0577	<0.003	<0.500	<0.005	34.4	0.0143	<0.020	<0.010	0.670	<0.003	<0.030	21.5	0.693	<0.0002	<0.030
W-09D	**7/28/10**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	34	<0.010	<0.020	<0.010	0.362	<0.003	<0.030	21	0.219	<0.0002	<0.030
W-09D	**1/25/11**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	31.7	<0.010	<0.020	<0.010	0.35	<0.003	<0.030	20.8	0.33	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-10D	**7/22/09**	0.129	<0.030	<0.010	0.0764	<0.003	<0.500	<0.005	231	<0.010	<0.020	<0.010	0.685	<0.003	<0.030	45.8	2.15	<0.0002	<0.030
W-10D	**1/14/10**	0.131	<0.030	<0.010	0.0698	<0.003	<0.500	<0.005	202	<0.010	<0.020	<0.010	0.665	<0.003	<0.030	38.4	2.46	<0.0002	<0.030
W-10D	**7/28/10**	0.186	<0.005	0.013	0.0884	<0.003	<0.500	<0.005	216	<0.010	<0.020	<0.010	1.06	<0.003	<0.030	54.7	2.56	<0.0002	<0.030
W-10D	**1/25/11**	0.158	<0.005	0.011	0.0765	<0.003	<0.500	<0.005	184	<0.010	<0.020	<0.010	1	<0.003	<0.030	48.8	2.31	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JANUARY 2011
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-05D	**7/22/09**	2.55	<0.005	<0.010	6.66	<0.010	<0.010
W-05D	**1/14/10**	6.32	<0.005	<0.010	6.51	<0.010	0.0981
W-05D	**7/27/10**	7.12	<0.003	<0.010	8.45	<0.010	0.0169
W-05D	**1/25/11**	9.6	<0.003	<0.010	10	<0.010	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-06DA	**7/22/09**	1.68	<0.005	0.021	11.9	<0.010	<0.010
W-06DA	**1/14/10**	<5.0	<0.005	<0.010	10.7	<0.010	0.0184
W-06DA	**7/27/10**	<5.0	<0.003	<0.010	12.8	<0.003	0.0102
W-06DA	**1/25/11**	<5.0	<0.003	<0.010	12.7	<0.003	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-08D*	**7/22/09**	1.05	<0.005	<0.010	6.84	<0.010	0.0275
W-08D*	**1/14/10**	<5.0	<0.005	<0.010	6.09	<0.010	0.0248
W-08D*	**7/28/10**	<5.0	<0.003	<0.010	6.4	<0.003	0.0157
W-08D*	**1/25/11**	<5.0	<0.003	<0.010	6.66	<0.003	0.017

*** BACKGROUND WELL**

TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-09D	**7/22/09**	4.31	<0.005	<0.010	146	<0.010	0.0457
W-09D	**1/14/10**	<5.0	<0.005	<0.010	138	<0.010	0.0879
W-09D	**7/28/10**	<5.0	0.0073	<0.010	132	<0.003	<0.010
W-09D	**1/25/11**	<5.0	0.0055	<0.010	142	<0.003	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-10D	**7/22/09**	2.7	<0.005	<0.010	20.2	<0.010	0.0124
W-10D	**1/14/10**	<5.0	<0.005	<0.010	15.9	<0.010	0.0387
W-10D	**7/28/10**	<5.0	<0.003	<0.010	27.2	<0.003	0.0571
W-10D	**1/25/11**	<5.0	<0.003	<0.010	23.1	<0.003	0.0224

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JANUARY 2011
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-30	**7/22/09**	49.61	16.6	7.20	141	892	33.5	420	139	5	<0.010	944	<0.010	<0.20	<0.500	<0.005	1200	<3.0
W-30	**1/14/10**	50.02	11.0	6.11	237	231	15	480	127	7	<0.010	807	<0.010	<0.20	<0.500	<0.005	1100	<3.0
W-30	**7/27/10**	51.87	16.1	7.47	169	215	15.1	430	122	7	<0.010	874	<0.010	0.131	<0.500	<0.005	1200	<3.0
W-30	**1/25/11**	51.95	10.2	7.45	-8	1760	34.5	380	110	15	<0.010	748	<0.010	0.17	<0.500	<0.005	1000	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
SS882	**7/22/09**	33.03	15.6	7.81	156	257	8.88	260	4.64	5	<0.010	339	<0.010	<0.20	<0.50	<0.005	400	<3.0
SS882	**1/14/10**	33.63	10.8	7.29	169	1269	14.2	260	4.29	15	<0.010	293	<0.010	<0.20	<0.50	<0.005	280	<3.0
SS882	**7/27/10**	35.86	19.4	7.71	335	185	41.1	290	7.24	7	<0.010	360	<0.010	0.076	<0.50	<0.005	480	<3.0
SS882	**1/25/11**	32.57	7.8	7.87	54	539	10.7	270	10.1	35	<0.010	335	<0.010	0.062	<0.50	<0.005	370	<3.0

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JANUARY 2011
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-30	**7/22/09**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	211	<0.010	<0.020	0.01	0.707	<0.003	<0.030	101	0.0515	<0.0002	<0.030
W-30	**1/14/10**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	185	<0.010	<0.020	<0.010	0.18	<0.003	<0.030	83.8	0.0174	<0.0002	<0.030
W-30	**7/27/10**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	192	<0.010	<0.020	<0.010	0.124	<0.003	<0.030	95.6	0.0107	<0.0002	<0.030
W-30	**1/25/11**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	158	<0.010	<0.020	<0.010	0.387	<0.003	<0.030	86.1	0.0279	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
SS882	**7/22/09**	<0.100	<0.030	<0.010	0.099	<0.003	<0.500	<0.005	99	<0.010	<0.020	<0.010	1.04	<0.003	<0.030	22.2	0.841	<0.0002	<0.030
SS882	**1/14/10**	<0.100	<0.030	<0.010	0.0811	<0.003	<0.500	<0.005	83.5	<0.010	<0.020	<0.010	1.16	<0.003	<0.030	20.6	0.666	<0.0002	<0.030
SS882	**7/27/10**	0.116	<0.005	0.016	0.131	<0.003	<0.500	<0.005	102	<0.010	<0.020	0.0184	4.56	<0.003	<0.030	25.6	2.32	<0.0002	<0.030
SS882	**1/25/11**	0.116	<0.005	<0.005	1.42	<0.003	<0.500	<0.005	91.7	<0.010	<0.020	<0.010	1.27	<0.003	<0.030	25.6	0.987	<0.0002	<0.030

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
DEEP WELLS - JANUARY 2011
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-30	**7/22/09**	5.88	<0.005	<0.010	69.7	<0.010	0.0155
W-30	**1/14/10**	5.47	<0.005	<0.010	64.9	<0.010	0.0712
W-30	**7/27/10**	5.72	<0.003	<0.010	66.9	<0.003	0.0132
W-30	**1/25/11**	<5.0	<0.003	<0.010	65.8	<0.003	0.0176
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
SS882	**7/22/09**	2.22	<0.005	<0.010	16.9	<0.010	<0.010
SS882	**1/14/10**	<5.0	<0.005	<0.010	18.7	<0.010	0.0233
SS882	**7/27/10**	<5.0	<0.003	<0.010	17.3	<0.003	0.0181
SS882	**1/25/11**	<5.0	<0.003	<0.010	18.3	<0.003	<0.010

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS JANUARY 2011
(all units are in mg/l)

		Dis O2	SC	eH	pH	Temp	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols
CLASS C STD:		**<4**			**6.5-8.5**						**9**		**0.011**		**2**	
WALL-UP	**7/20/09**	-	504	88	7.20	25	35.9	130	62.5	9	<0.010	198	<0.010	0.612	<0.500	<0.005
WALL-UP	**1/12/10**	-	720	95	8.86	1.7	16.1	140	60.1	30	<0.010	162	<0.010	0.908	<0.500	<0.005
WALL-UP	**7/28/10**	-	821	75	7.92	27.3	95.3	150	79.3	55	<0.010	216	<0.010	0.973	<0.500	<0.005
WALL-UP	**1/26/11**	-	798	17	8.52	4.72	13.7	94	80.1	40	<0.010	174	<0.010	0.901	<0.500	<0.005
WALL-DN	**7/20/09**	-	1609	74	7.62	25	32.6	140	64.6	6	<0.010	199	<0.010	0.637	<0.500	<0.005
WALL-DN	**1/12/10**	-	716	86	8.48	1.3	19.7	140	59.5	30	<0.010	162	<0.010	0.987	<0.500	<0.005
WALL-DN	**7/28/10**	-	836	111	8.31	28.1	85.7	140	79.6	50	<0.010	215	<0.010	0.746	<0.500	<0.005
WALL-DN	**1/26/11**	-	812	0	8.84	1.72	16.2	98	96.6	45	<0.010	169	<0.010	1.580	<0.500	<0.005
Basin A	**7/20/09**	8.83	324	107	7.82	30	54	170	2.06	9	<0.010	204	<0.010	<0.20	<0.500	<0.005
Basin A	**1/12/10**	Frozen														
Basin A	**7/28/10**	4.14	470	7	8.13	31.3	140	87	6.54	30	<10.0	114	<0.010	0.053	<0.500	<0.005
Basin A	**1/24/11**	Frozen														
Basin B	**7/20/09**	4.51	326	67	7.91	32.0	157	170	3	9	<0.010	220	<0.010	<0.200	<0.500	<0.005
Basin B	**1/12/10**	Dry														
Basin B	**7/28/10**	Dry														
Basin B	**1/24/11**	Dry														
Basin D	**7/20/09**	4.76	363	83	8.27	28.2	22.6	210	1.95	9	<0.010	258	<0.010	<0.200	<0.500	<0.005
Basin D	**1/12/10**	Dry														
Basin D	**7/28/10**	Dry														

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS JANUARY 2011
(all units are in mg/l)

		TDS	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
CLASS C STD:		**500**		**0.1**				**1.1**	**10**				**0.005**		**0.3**		**0.014**	
WALL-UP	**7/20/09**	280	5.1	0.402	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	52	<0.005	<0.020	<0.010	0.7	<0.003	<0.030	16.6
WALL-UP	**1/12/10**	250	4.6	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	40.7	<0.005	<0.020	<0.010	0.346	<0.003	<0.030	14.7
WALL-UP	**7/28/10**	370	6.4	0.524	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	56	<0.010	<0.020	<0.010	1.09	<0.003	<0.030	18.5
WALL-UP	**1/26/11**	300	3.1	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	45.4	<0.010	<0.020	<0.010	0.373	<0.003	<0.030	14.6
WALL-DN	**7/20/09**	290	7.0	0.396	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	52.1	<0.005	<0.020	<0.010	0.68	<0.003	<0.030	16.7
WALL-DN	**1/12/10**	270	3.9	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	40.4	<0.005	<0.020	0.0182	0.32	<0.003	<0.030	14.8
WALL-DN	**7/28/10**	470	6.6	0.804	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	55.7	<0.010	<0.020	<0.010	1.53	<0.003	<0.030	18.4
WALL-DN	**1/26/11**	360	3.2	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	45.6	<0.010	<0.020	<0.010	0.31	<0.003	<0.030	13.3
Basin A	**7/20/09**	180	7.6	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	61.4	<0.010	<0.020	0.0189	0.398	<0.003	<0.030	12.3
Basin A	**1/12/10**																	
Basin A	**7/28/10**	200	8.6	1.22	<0.005	0.0054	<0.050	<0.003	<0.500	<0.005	33.6	<0.010	<0.020	<0.010	2.95	<0.003	<0.030	7.23
Basin A	**1/24/11**																	
Basin B	**7/20/09**	210	8.4	1.91	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	74.3	<0.010	<0.020	0.0109	2.9	<0.003	<0.030	8.46
Basin B	**1/12/10**																	
Basin B	**7/28/10**																	
Basin B	**1/24/11**																	
Basin D	**7/20/09**	260	8	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	89.9	<0.010	<0.020	<0.010	0.969	<0.003	<0.030	8.25
Basin D	**1/12/10**																	
Basin D	**7/28/10**																	

TABLE 3-1
AL TURI SANITARY LANDFILL
SURFACE WATER MONITORING ANALYTICAL RESULTS JANUARY 2011
(all units are in mg/l)

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
CLASS C STD:									**0.008**	
WALL-UP	**7/20/09**	0.103	<0.0002	<0.030	2.35	<0.005	<0.010	34.7	<0.010	0.0609
WALL-UP	**1/12/10**	0.0792	<0.0002	<0.030	<5.0	<0.005	<0.010	34.5	<0.010	0.064
WALL-UP	**7/28/10**	0.183	<0.0002	<0.030	<5.00	<0.003	<0.010	39.9	<0.003	0.0175
WALL-UP	**1/26/11**	0.0969	<0.0002	<0.030	<5.00	<0.003	<0.010	49.5	<0.003	0.132
WALL-DN	**7/20/09**	0.105	<0.0002	<0.030	3.35	<0.005	<0.010	35.7	<0.010	0.14
WALL-DN	**1/12/10**	0.0761	<0.0002	<0.030	<5.0	<0.005	<0.010	33.5	<0.010	0.035
WALL-DN	**7/28/10**	0.197	<0.0002	<0.030	<5.00	<0.003	<0.010	39.6	<0.003	0.0143
WALL-DN	**1/26/11**	0.0855	<0.0002	<0.030	<5.00	<0.003	<0.010	68.2	<0.003	0.179
Basin A	**7/20/09**	0.0551	<0.0002	<0.030	2.15	<0.005	<0.010	2.43	<0.010	0.0222
Basin A	**1/12/10**									
Basin A	**7/28/10**	0.746	<0.0002	<0.030	<0.030	<0.003	<0.010	<5.00	<0.003	0.228
Basin A	**1/24/11**									
Basin B	**7/20/09**	0.109	<0.0002	<0.030	5.31	<0.005	<0.010	1.63	<0.010	0.0153
Basin B	**1/12/10**									
Basin B	**7/28/10**									
Basin B	**1/24/11**									
Basin D	**7/20/09**	0.167	<0.0002	<0.030	3.52	<0.005	<0.010	1.46	<0.010	<0.010
Basin D	**1/12/10**									
Basin D	**7/28/10**									

TABLE 3-2
AL TURI SANITARY LANDFILL
SEDIMENT / FLOC MONITORING ANALYTICAL RESULTS
JANUARY 2011
(all units are in mg/kg)

		% Moisture	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
Sed UP	**7/20/09**	33.1	22000	7720	<4.49	<2.99	124	<0.897	<150	5.87	53800	37.3	15.6	47	125000	433	17.5	6060
Sed UP	**1/12/10**	16.3	23300	6350	<3.58	<2.39	31.4	<0.717	<119	<1.19	9080	9.35	5.69	13.7	13700	7.56	10.3	6750
Sed UP	**7/27/10**	41.3	29500	8740	<17.0	19.6	66.9	<1.02	<170	<1.70	12200	18.8	9.34	38.6	32.6	70	15.4	6730
Sed UP	**1/24/11**	Frozen																
Sed DN	**7/20/09**	30.2	5510	5510	<4.30	<2.87	35.2	<0.860	<143	<1.43	6780	8.23	5.73	15	12900	9.14	<8.60	4080
Sed DN	**1/12/10**	28	19200	9970	<4.17	<2.78	32.4	<0.833	<139	<1.39	6260	13.8	8.29	26.8	22700	8.4	16.5	6430
Sed DN	**7/27/10**	39.6	18000	10800	<16.5	31.2	51.9	<0.993	<0.165	<1.65	8920	17.4	14.2	34.9	25800	98.4	16.8	7480
Sed DN	**1/24/11**	Frozen																

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
Sed UP	**7/20/09**	2670	<0.0748	60.4	922	<1.50	<2.99	342	<2.99	137
Sed UP	**1/12/10**	367	<0.0597	10.8	737	<1.19	<2.39	<239	<2.39	59.2
Sed UP	**7/27/10**	1120	<0.0852	16.9	674	1.37	<3.41	465	<10.2	134
Sed UP	**1/24/11**	Frozen								
Sed DN	**7/20/09**	770	<0.0717	12	511	<1.43	<2.87	<287	<2.87	74.6
Sed DN	**1/12/10**	458	<0.0695	29.5	862	<1.39	<2.78	287	<2.78	68
Sed DN	**7/27/10**	1030	0.102	23	946	<9.93	<3.31	<331	<9.93	97.4
Sed DN	**1/24/11**	Frozen								

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2010
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Cr +6	Nitrate
NYS LIMIT:				**6.5-8.5**			**5.0**				**250.0**		**15.0**	**0.2**		**0.05**	**10.0**
CAS NO.																18540-29-9	
TRIG. VALUE:								**258**			**14.4**		**40**		**354**	**0.05**	**0.48**
CHURCH	**1/13/10**	-	8.8	8.20	-6	571	2.29	170	<4.0	<0.2	9.44	<20.0	<5.0	<0.010	180	<0.010	<0.20
CHURCH	**4/26/10**	-	11	6.68	-47.6	391	1.05	170	<4.0	<0.8	7.48	<20.0	<5.0	<0.010	183	<0.010	0.11
CHURCH	**7/27/10**	-	18.8	8.25	128	610	3.59	170	<4.0	<0.8	7.66	<20.0	6	<0.010	205	<0.010	0.111
CHURCH	**11/10/10**	-	14.2	8.03	-46.8	344	2.01	170	<4.0	<0.8	7.2	<20.0	9	<0.010	187	<0.010	0.13

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2010
(all units are in mg/l)

		NH4	TKN	Phenol	TDS	TOC	Sulfate	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe
NYS LIMIT:		**2.0**		**0.001**	**500**				**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**
CAS NO.		7664-41-7		108-95-2									7440-42-8						
TRIG. VALUE:		**0.6**		**0.014**	**488**	**30**		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**
CHURCH	**1/13/10**	<0.50	<0.50	<0.005	180	<3.0	60.7	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	49.3	<0.010	<0.020	0.0125	<0.060
CHURCH	**4/26/10**	<0.50	<0.50	<0.005	300	<3.0	40.3	<0.100	<0.015	<0.010	<0.050	<0.003	<0.500	<0.005	51.6	<0.010	<0.020	<0.010	0.118
CHURCH	**7/27/10**	<0.50	<0.50	<0.005	280	<3.0	43.8	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	57.9	<0.010	<0.020	0.0213	0.12
CHURCH	**11/10/10**	<0.50	<0.50	<0.005	680	<3.0	43.5	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	51.3	<0.010	<0.020	0.0142	0.139

TABLE 2-2
AL TURI SANITARY LANDFILL
GROUNDWATER MONITORING ANALYTICAL RESULTS
CHURCH WELL - 2010
(all units are in mg/l)

		Pb	V	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.025**			**0.3**	**0.0007**	**0.1**		**0.01**	**0.05**	**20**		
CAS NO.													
TRIG. VALUE:		**0.025**			**0.3**	**0.002**			**0.0014**	**0.05**	**20**		**0.3**
CHURCH	**1/13/10**	<0.003	<0.030	13.8	<0.010	<0.0002	<0.030	<5.0	<0.005	<0.010	14.7	<0.010	0.0935
CHURCH	**4/26/10**	<0.003	<0.030	13.2	<0.010	<0.0002	<0.030	<5.0	<0.005	<0.010	14.4	<0.010	<0.010
CHURCH	**7/27/10**	0.0057	<0.030	14.8	<0.018	<0.0002	<0.030	<5.00	<0.003	<0.010	15.4	<0.003	0.0318
CHURCH	**11/10/10**	<0.003	<0.030	14.4	0.327	<0.0002	<0.030	<5.00	<0.005	<0.010	17.3	<0.003	0.0278

TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
JANUARY 2011
(all units are in mg/l)

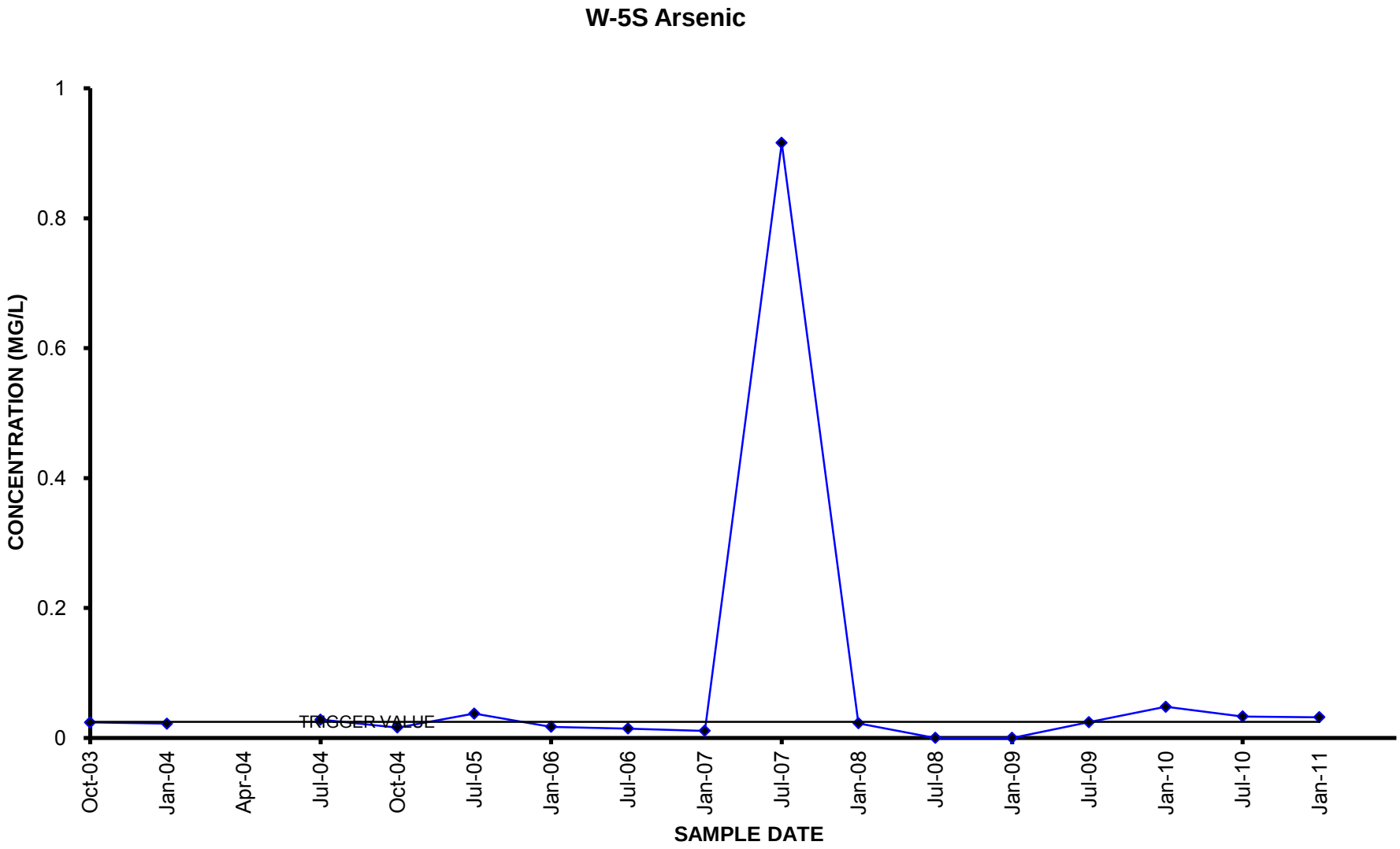
		SC	eH	pH	Temp	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Nitrate	NH4	TKN
LCH-11P	**7/22/09**	1813	-49	7.24	17.8	25.5	1700	11	63	6150	364	60	<0.010	3840	<0.20	209	209
LCH-11P	**1/14/10**	1425	4	7.29	10.2	62.9	1400	28	<20.0	2250	250	250	<0.010	1340	1.53	233	249
LCH-11P	**7/28/10**	>10,000	13	7.11	20.7	64.2	1800	7	20	8390	200	100	<0.010	3700	1.55	201	229
LCH-11P	**1/26/11**	1407	20	7.04	8.06	71	1200	13	<80.0	5300	120	130	<0.010	3210	1.18	224	187
LCH-11S	**7/22/09**	491	181	6.85	13.6	41.4	120	<8.0	<0.200	30.5	<20.0	5	<0.010	258	1.08	<0.500	<0.500
LCH-11S	**1/14/10**	919	-7	8.22	10.4	5.28	150	<8.0	<0.200	30.8	<20.0	12	<0.010	240	0.719	5.02	<0.500
LCH-11S	**7/28/10**	623	75	8.27	18.4	11.6	88	<4.0	<1.6	25.7	<20.0	30	<0.010	160	0.933	<0.500	<0.500
LCH-11S	**1/26/11**	947	27	8.41	7.39	6.25	150	<4.0	<0.80	39.1	<20.0	12	<0.010	284	0.884	<0.500	<0.500
LCH-12P	**7/22/09**	1184	114	6.92	19.2	109	360	<8.0	<20.0	137	<20.0	5	<0.010	822	27.8	<0.500	<0.500
LCH-12P	**1/14/10**	518	22	7.92	18.6	20.7	1200	29	<20.0	549	153	70	<0.010	568	12.5	149	181
LCH-12P	**7/28/10**	1075	13	7.66	26.9	83.9	2200	66	<8.00	1420	490	300	<0.010	568	5.84	456	529
LCH-12P	**1/26/11**	1659	41	7.77	11.1	14.7	410	<4.0	<0.8	114	28	40	<0.010	419	2.09	28.3	26.7
LCH-12S	**7/22/09**	1082	100	6.80	20	52.6	320	<8.0	<0.20	118	26	5	<0.010	710	20.9	<0.500	<0.500
LCH-12S	**1/14/10**	210	45	7.51	10	18.9	280	<8.0	<2.0	120	<20.0	7	<0.010	637	25.6	<0.500	<0.500
LCH-12S	**7/28/10**	DRY															
LCH-12S	**1/26/11**	DRY															

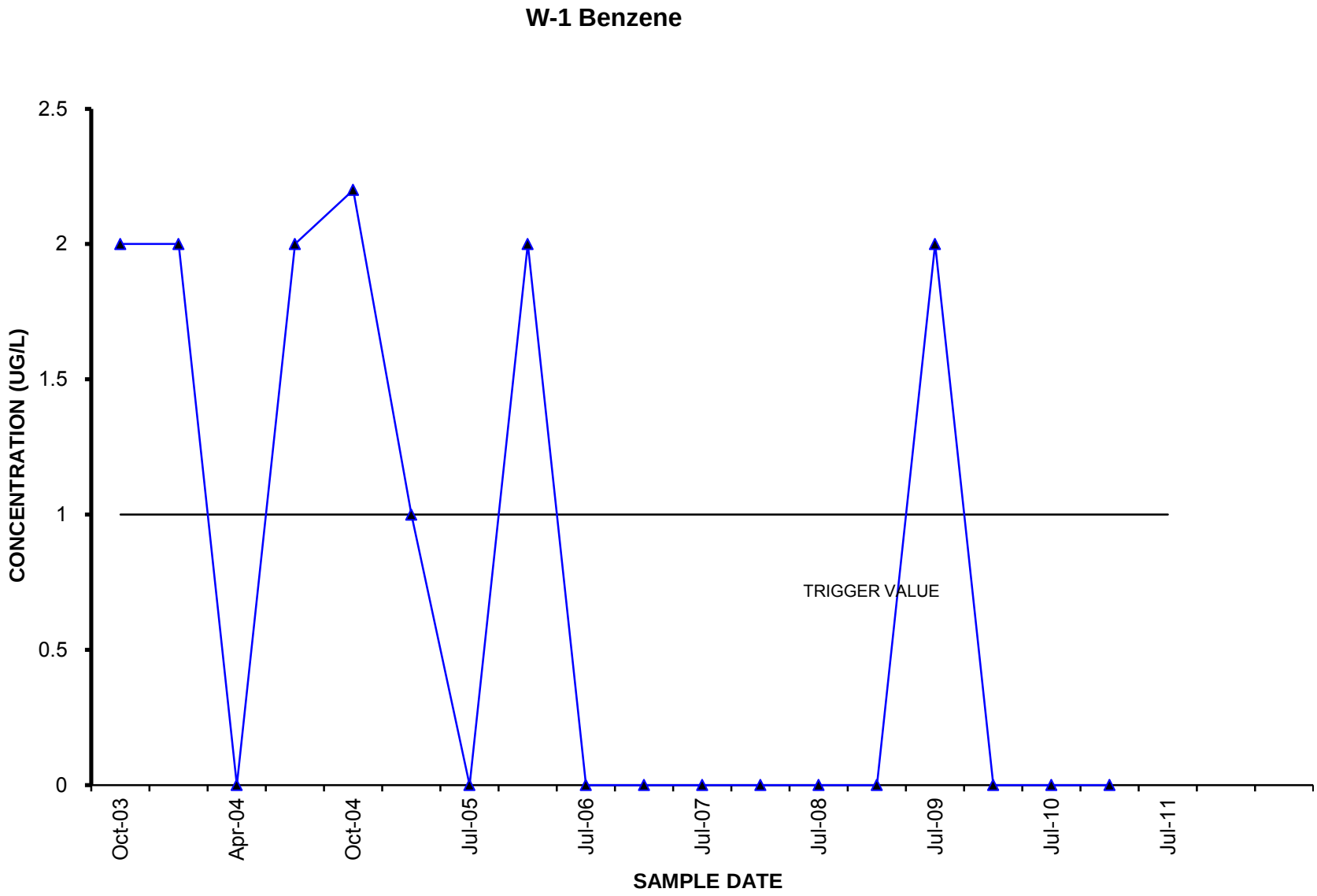
TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
JANUARY 2011
(all units are in mg/l)

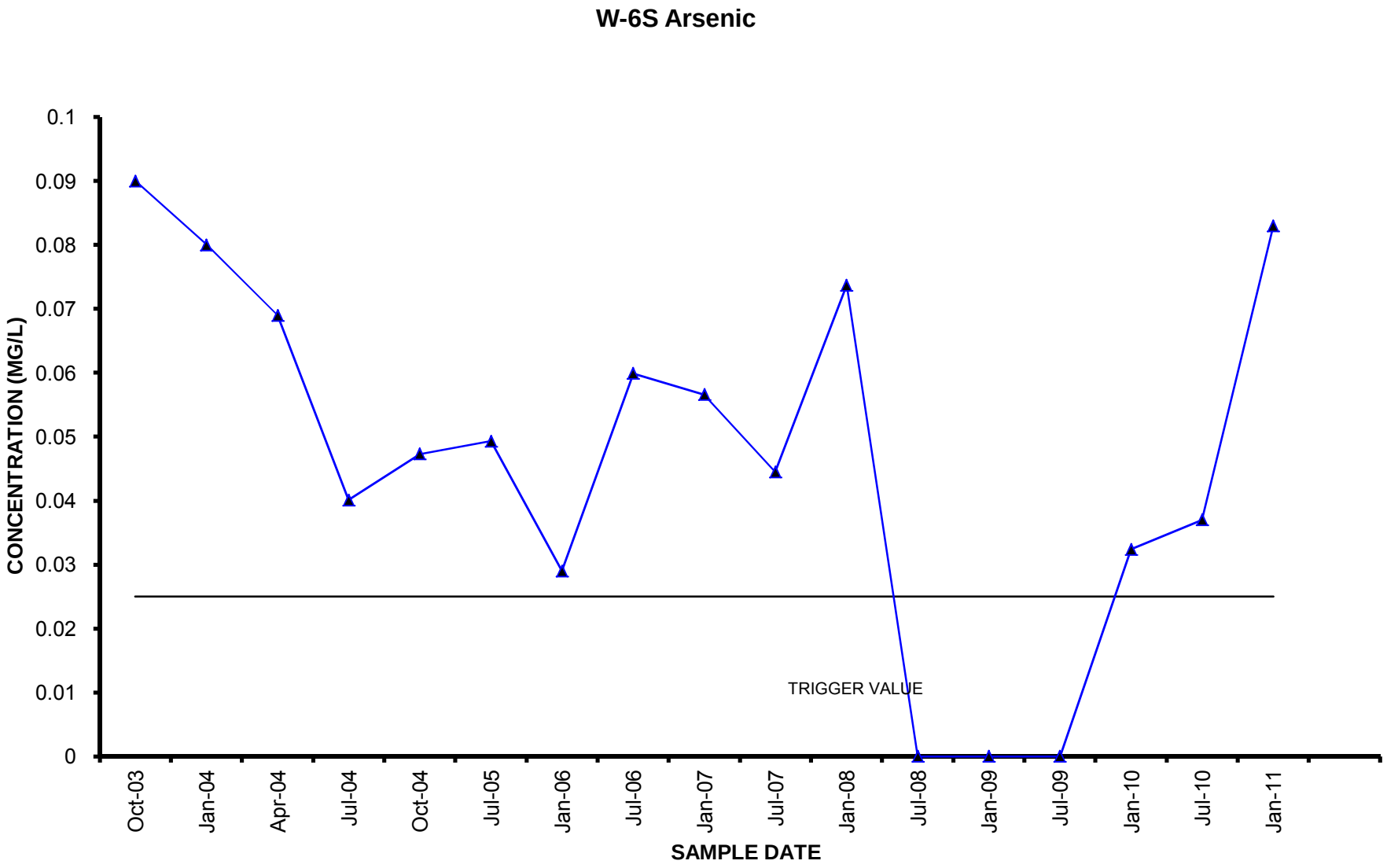
		Phenols	TDS	Sulfate	Sulfide	Cr +6	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
LCH-11P	**7/22/09**	<0.005	14000	1390	<0.100	<0.010	<75.0	<0.100	<0.030	<0.010	0.154	<0.003	16.8	<0.005	543	<0.010	<0.020
LCH-11P	**1/14/10**	4.26	5900	1170	<0.100	<0.010	69.2	<0.100	<0.030	0.056	0.09	<0.003	5.68	<0.005	190	<0.010	<0.020
LCH-11P	**7/28/10**	<0.025	17000	2150	<0.100	<0.010	46.8	0.149	<0.050	0.044	0.135	<0.003	20.1	<0.005	489	<0.010	<0.020
LCH-11P	**1/26/11**	0.009	14000	2240	<0.100	<0.020	39.6	<0.100	<0.050	0.1	0.0972	<0.003	16.5	<0.005	433	<0.010	<0.020
LCH-11S	**7/22/09**	<0.005	510	101	<0.100	<0.010	<3.0	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	73.9	<0.010	<0.020
LCH-11S	**1/14/10**	<0.005	400	157	<0.100	<0.010	<3.0	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	66.9	<0.010	<0.020
LCH-11S	**7/28/10**	0.046	460	83.9	<0.100	<0.010	3.9	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	46.5	<0.010	<0.020
LCH-11S	**1/26/11**	<0.005	460	137	<0.100	<0.010	<3.0	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	79.7	<0.010	<0.020
LCH-12P	**7/22/09**	<0.005	1100	325	<0.100	<0.010	4.7	0.552	<0.030	<0.010	0.0748	<0.003	<0.500	<0.005	253	<0.010	<0.020
LCH-12P	**1/14/10**	<0.050	1600	66.6	<0.100	<0.010	64.5	0.12	<0.030	0.016	0.135	<0.003	1.72	<0.005	158	<0.010	<0.020
LCH-12P	**7/28/10**	<0.050	3600	70.2	<0.100	<0.010	165	0.409	<0.030	0.056	0.218	<0.003	4.7	<0.005	125	0.0174	0.0201
LCH-12P	**1/26/11**	<0.005	690	45.9	<0.100	<0.010	10	0.146	<0.005	0.007	0.0539	<0.003	<0.500	<0.005	138	<0.010	<0.020
LCH-12S	**7/22/09**	<0.005	960	196	<0.100	<0.010	4.8	0.304	<0.030	<0.010	0.0637	<0.003	<0.500	<0.005	217	<0.010	<0.020
LCH-12S	**1/14/10**	<0.005	890	299	<0.100	<0.010	4	0.33	<0.030	<0.010	0.0724	<0.003	<0.500	<0.005	191	<0.010	<0.020
LCH-12S	**7/28/10**																
LCH-12S	**1/26/11**																

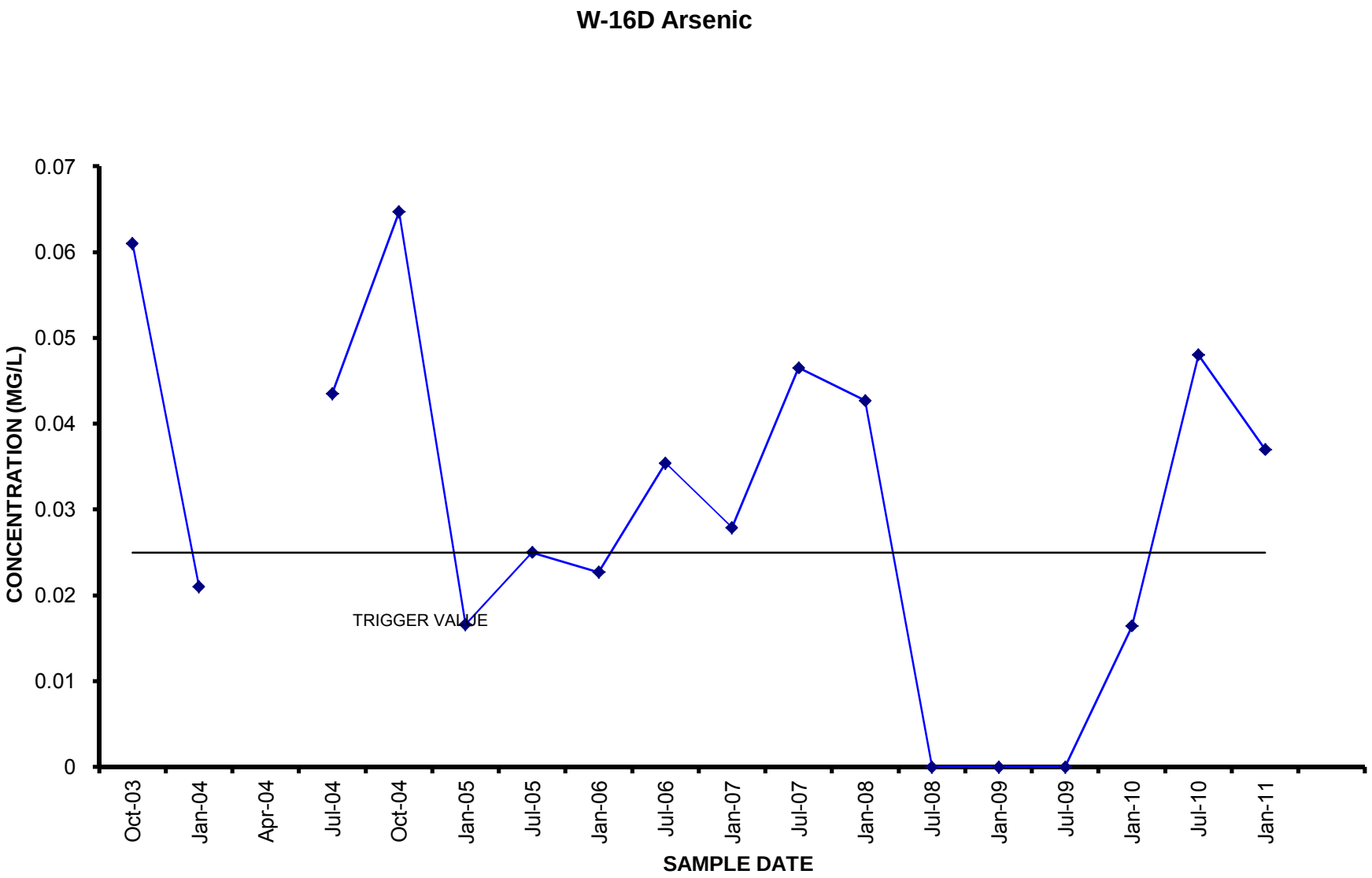
TABLE 4-1
ALTURI SANITARY LANDFILL
LEACHATE MONITORING ANALYTICAL RESULTS
JANUARY 2011
(all units are in mg/l)

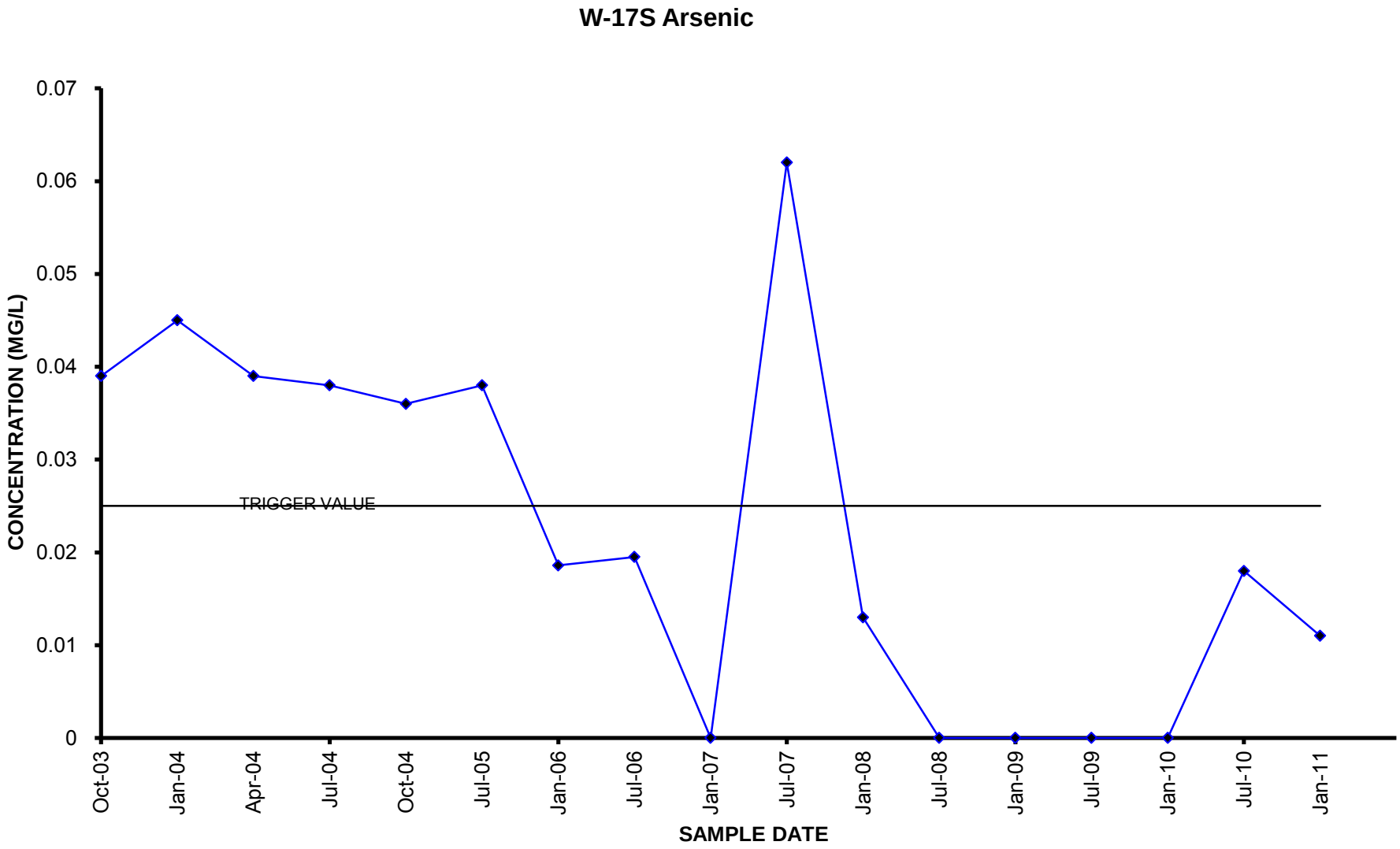
		Cu	Fe	K	Pb	V	Mg	Mn	Hg	Ni	Se	Ag	Na	Sn	Th	Zn
LCH-11P	**7/22/09**	0.0141	22.8	<1.00	<0.003	<0.030	602	5.16	<0.0002	0.0591	<0.005	<0.010	3380	<0.300	<0.010	0.0975
LCH-11P	**1/14/10**	<0.010	3.75	297	0.0088	<0.030	209	1.84	<0.0002	0.0433	0.17	<0.010	1430	<0.300	<0.010	1.05
LCH-11P	**7/28/10**	<0.010	3.43	813	<0.003	<0.030	603	4.63	<0.0002	0.0525	<0.075	0.0178	4390	1.26	<0.003	<0.010
LCH-11P	**1/26/11**	<0.010	2.43	639	<0.003	<0.030	517	3.58	<0.0002	0.0743	0.36	<0.010	4540	<0.300	<0.003	0.0592
LCH-11S	**7/22/09**	0.0116	<0.060	9.21	<0.003	<0.030	17.9	0.0825	<0.0002	<0.030	<0.005	<0.010	33.5	<0.300	<0.010	0.25
LCH-11S	**1/14/10**	<0.010	<0.060	9.36	<0.003	<0.030	17.7	0.0221	<0.0002	<0.030	<0.005	0.38	40.9	<0.300	<0.010	0.344
LCH-11S	**7/28/10**	<0.010	<0.060	7.38	<0.003	<0.030	10.7	<0.010	<0.0002	<0.030	<0.030	<0.010	21.7	<0.300	<0.003	0.216
LCH-11S	**1/26/11**	<0.010	<0.060	9.66	<0.003	<0.030	20.6	<0.010	<0.0002	<0.030	<0.030	<0.010	49.6	<0.300	<0.003	0.615
LCH-12P	**7/22/09**	0.0147	2.36	19.7	<0.003	<0.030	46.2	0.161	<0.0002	<0.030	<0.005	<0.010	107	<0.300	<0.010	0.169
LCH-12P	**1/14/10**	<0.010	0.776	129	<0.003	<0.030	42.3	0.675	<0.0002	0.0453	0.0237	<0.010	514	<0.300	<0.010	0.374
LCH-12P	**7/28/10**	<0.010	2.36	304	<0.030	<0.030	61.9	0.471	<0.0002	0.0992	0.11	<0.010	953	<0.300	<0.030	<0.010
LCH-12P	**1/26/11**	<0.010	0.397	22.9	<0.003	<0.030	17.8	1.23	<0.0002	<0.030	0.0094	<0.010	93.4	<0.300	<0.003	0.394
LCH-12S	**7/22/09**	0.0123	0.644	17.8	<0.003	<0.030	40.8	0.272	<0.0002	<0.030	<0.005	<0.010	93.3	<0.300	<0.010	0.127
LCH-12S	**1/14/10**	<0.010	0.559	16.5	<0.003	<0.030	39.1	0.642	<0.0002	<0.030	<0.005	<0.010	93.2	<0.300	<0.010	0.131
LCH-12S	**7/28/10**															
LCH-12S	**1/26/11**															

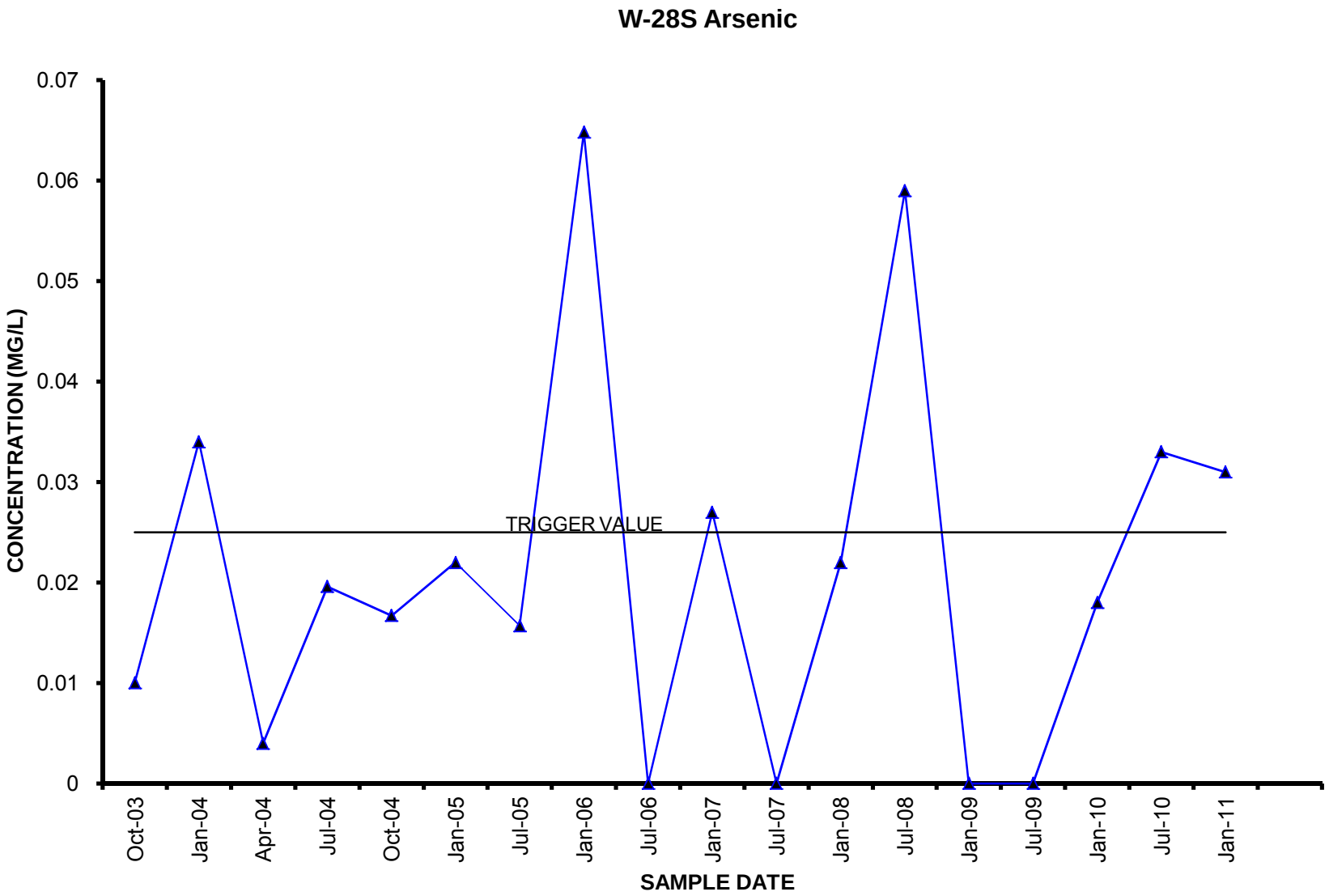

W-5S Arsenic
CONCENTRATION (MG/L)
1
0.8
0.6
0.4
0.2
0
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
SAMPLE DATE


W-1 Benzene
2.5
2
1.5
1
0.5
0
CONCENTRATION (UG/L)
TRIGGER VALUE
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
SAMPLE DATE


W-6S Arsenic
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
CONCENTRATION (MG/L)
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
SAMPLE DATE


W-16D Arsenic
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
CONCENTRATION (MG/L)
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
SAMPLE DATE


W-17S Arsenic
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
CONCENTRATION (MG/L)
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
SAMPLE DATE


W-28S Arsenic
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
CONCENTRATION (MG/L)
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
SAMPLE DATE

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-1
Lab Order:	U1101399	**Collection Date:**	1/24/2011 1:50:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-001	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Vinyl chloride	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Bromomethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Chloroethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Acetone	ND	10		µg/L	1	1/28/2011 9:16:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Iodomethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Carbon disulfide	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Methylene chloride	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Acrylonitrile	ND	100		µg/L	1	1/28/2011 9:16:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Vinyl acetate	ND	50		µg/L	1	1/28/2011 9:16:00 PM
2-Butanone	ND	10		µg/L	1	1/28/2011 9:16:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Chloroform	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Bromochloromethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Benzene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Trichloroethene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Dibromomethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/28/2011 9:16:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Toluene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
2-Hexanone	ND	10		µg/L	1	1/28/2011 9:16:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Chlorobenzene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Ethylbenzene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
m,p-Xylene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-1
Lab Order:	U1101399	**Collection Date:**	1/24/2011 1:50:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-001	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Styrene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
Bromoform	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/28/2011 9:16:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 9:16:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/28/2011 9:16:00 PM
TIC: Ethyl ether	3.5	0		µg/L	1	1/28/2011 9:16:00 PM
TIC: Silane, fluorotrimethyl-	7.8	0		µg/L	1	1/28/2011 9:16:00 PM
TIC: Silanol, trimethyl-	3.6	0		µg/L	1	1/28/2011 9:16:00 PM

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-1
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:00:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-002	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	352	1.0		umhos/cm		1/25/2011 10:00:00 AM
Eh	-67	-300		mV		1/25/2011 10:00:00 AM
pH	7.31	2-12.5		SU		1/25/2011 10:00:00 AM
SWL	29.21			ft		1/25/2011 10:00:00 AM
Temperature	5.78			degC		1/25/2011 10:00:00 AM
Turbidity	248	5.0		NTU		1/25/2011 10:00:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 12:38:14 PM
Barium	682	50.0		µg/L	1	2/15/2011 12:38:14 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 12:38:14 PM
Boron	1240	500		µg/L	1	2/15/2011 8:46:01 AM
Cadmium	6.26	5.00		µg/L	1	2/15/2011 12:38:14 PM
Calcium	136000	5000		µg/L	1	2/15/2011 12:38:14 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 12:38:14 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 12:38:14 PM
Copper	ND	10.0		µg/L	1	2/15/2011 12:38:14 PM
Iron	48400	60.0		µg/L	1	2/15/2011 12:38:14 PM
Magnesium	54400	5000		µg/L	1	2/15/2011 12:38:14 PM
Manganese	4120	10.0		µg/L	1	2/15/2011 12:38:14 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 12:38:14 PM
Potassium	52200	25000		µg/L	5	2/22/2011 10:09:21 AM
Silver	ND	10.0		µg/L	1	2/18/2011 4:33:35 PM
Sodium	318000	5000		µg/L	1	2/15/2011 12:38:14 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 12:38:14 PM
Zinc	17.5	10.0		µg/L	1	2/15/2011 12:38:14 PM
Hardness, Total(CaCO3)	564000	7000		µg/L	1	2/15/2011 12:38:14 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	8.4	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	20	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	480	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-1
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:00:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-002	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	504	10.0		mg/L	10	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	450	250		UNITS	50	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.020		mg/L	2	1/26/2011 12:45:00 PM
NOTES: The reporting limits were raised due to matrix interference.						
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	74.8	5.00		mg/L	10	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.281	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	0.006	0.005		mg/L	1	2/17/2011 4:55:00 PM
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	1400	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	28.2	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-9S
Lab Order: U1101399
Collection Date: 1/24/2011 2:39:00 PM
Project: Operational Wells
Lab ID: U1101399-003
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Vinyl chloride	3	5.0	J	µg/L	1	1/28/2011 9:57:00 PM
Bromomethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Chloroethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Acetone	74	10		µg/L	1	1/28/2011 9:57:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Iodomethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Carbon disulfide	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Methylene chloride	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Acrylonitrile	ND	100		µg/L	1	1/28/2011 9:57:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Vinyl acetate	ND	50		µg/L	1	1/28/2011 9:57:00 PM
2-Butanone	ND	10		µg/L	1	1/28/2011 9:57:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Chloroform	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Bromochloromethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Benzene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Trichloroethene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Dibromomethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/28/2011 9:57:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Toluene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
2-Hexanone	ND	10		µg/L	1	1/28/2011 9:57:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Chlorobenzene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Ethylbenzene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
m,p-Xylene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-9S
Lab Order:	U1101399	**Collection Date:**	1/24/2011 2:39:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-003	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Styrene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
Bromoform	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/28/2011 9:57:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 9:57:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/28/2011 9:57:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-9S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:15:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-004	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1553	1.0		umhos/cm		1/25/2011 10:15:00 AM
Eh	-17	-300		mV		1/25/2011 10:15:00 AM
pH	6.67	2-12.5		SU		1/25/2011 10:15:00 AM
SWL	46.93			ft		1/25/2011 10:15:00 AM
Temperature	8.28			degC		1/25/2011 10:15:00 AM
Turbidity	57.2	5.0		NTU		1/25/2011 10:15:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	450	100		µg/L	1	2/15/2011 12:43:07 PM
Barium	1050	50.0		µg/L	1	2/15/2011 12:43:07 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 12:43:07 PM
Boron	ND	500		µg/L	1	2/15/2011 8:50:10 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 12:43:07 PM
Calcium	187000	5000		µg/L	1	2/15/2011 12:43:07 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 12:43:07 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 12:43:07 PM
Copper	ND	10.0		µg/L	1	2/15/2011 12:43:07 PM
Iron	25100	60.0		µg/L	1	2/15/2011 12:43:07 PM
Magnesium	30100	5000		µg/L	1	2/15/2011 12:43:07 PM
Manganese	823	10.0		µg/L	1	2/15/2011 12:43:07 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 12:43:07 PM
Potassium	ND	5000		µg/L	1	2/15/2011 12:43:07 PM
Silver	ND	10.0		µg/L	1	2/18/2011 4:39:08 PM
Sodium	39300	5000		µg/L	1	2/15/2011 12:43:07 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 12:43:07 PM
Zinc	47.8	10.0		µg/L	1	2/15/2011 12:43:07 PM
Hardness, Total(CaCO3)	590000	7000		µg/L	1	2/15/2011 12:43:07 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	65	10		µg/L	2	2/15/2011 8:42:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	440	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-9S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:15:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-004	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	48.8	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	120	50.0		UNITS	10	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.020		mg/L	2	1/26/2011 12:45:00 PM
NOTES: The reporting limits were raised due to matrix interference.						
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.098	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	700	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-9D
Lab Order: U1101399
Collection Date: 1/24/2011 3:15:00 PM
Project: Operational Wells
Lab ID: U1101399-005
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Vinyl chloride	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Bromomethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Chloroethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Acetone	ND	10		µg/L	1	1/28/2011 10:37:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Iodomethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Carbon disulfide	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Methylene chloride	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Acrylonitrile	ND	100		µg/L	1	1/28/2011 10:37:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Vinyl acetate	ND	50		µg/L	1	1/28/2011 10:37:00 PM
2-Butanone	ND	10		µg/L	1	1/28/2011 10:37:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Chloroform	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Bromochloromethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Benzene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Trichloroethene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Dibromomethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/28/2011 10:37:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Toluene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
2-Hexanone	ND	10		µg/L	1	1/28/2011 10:37:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Chlorobenzene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Ethylbenzene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
m,p-Xylene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-9D
Lab Order:	U1101399	**Collection Date:**	1/24/2011 3:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-005	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Styrene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
Bromoform	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/28/2011 10:37:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 10:37:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/28/2011 10:37:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-9D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:26:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-006	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1187	1.0		umhos/cm		1/25/2011 10:26:00 AM
Eh	-53	-300		mV		1/25/2011 10:26:00 AM
pH	7.37	2-12.5		SU		1/25/2011 10:26:00 AM
SWL	43.66			ft		1/25/2011 10:26:00 AM
Temperature	11.2			degC		1/25/2011 10:26:00 AM
Turbidity	22.8	5.0		NTU		1/25/2011 10:26:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 12:47:58 PM
Barium	ND	50.0		µg/L	1	2/15/2011 12:47:58 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 12:47:58 PM
Boron	ND	500		µg/L	1	2/15/2011 8:54:18 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 12:47:58 PM
Calcium	31700	5000		µg/L	1	2/15/2011 12:47:58 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 12:47:58 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 12:47:58 PM
Copper	ND	10.0		µg/L	1	2/15/2011 12:47:58 PM
Iron	350	60.0		µg/L	1	2/15/2011 12:47:58 PM
Magnesium	20800	5000		µg/L	1	2/15/2011 12:47:58 PM
Manganese	330	10.0		µg/L	1	2/15/2011 12:47:58 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 12:47:58 PM
Potassium	ND	5000		µg/L	1	2/15/2011 12:47:58 PM
Silver	ND	10.0		µg/L	1	2/18/2011 4:43:57 PM
Sodium	142000	5000		µg/L	1	2/15/2011 12:47:58 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 12:47:58 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 12:47:58 PM
Hardness, Total(CaCO3)	165000	7000		µg/L	1	2/15/2011 12:47:58 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	5.5	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	110	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-9D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:26:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-006	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	126	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	13.0	5.00		UNITS	1	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.138	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	480	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-28S
Lab Order:	U1101399	**Collection Date:**	1/24/2011 3:12:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-007	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Vinyl chloride	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Bromomethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Chloroethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Acetone	ND	10		µg/L	1	1/28/2011 11:17:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Iodomethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Carbon disulfide	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Methylene chloride	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Acrylonitrile	ND	100		µg/L	1	1/28/2011 11:17:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Vinyl acetate	ND	50		µg/L	1	1/28/2011 11:17:00 PM
2-Butanone	ND	10		µg/L	1	1/28/2011 11:17:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Chloroform	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Bromochloromethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Benzene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Trichloroethene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Dibromomethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/28/2011 11:17:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Toluene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
2-Hexanone	ND	10		µg/L	1	1/28/2011 11:17:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Chlorobenzene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Ethylbenzene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
m,p-Xylene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-28S
Lab Order:	U1101399	**Collection Date:**	1/24/2011 3:12:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-007	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Styrene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
Bromoform	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/28/2011 11:17:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 11:17:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/28/2011 11:17:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-28S
Lab Order: U1101399
Collection Date: 1/25/2011 10:38:00 AM
Project: Operational Wells
Lab ID: U1101399-008
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1652	1.0		umhos/cm		1/25/2011 10:38:00 AM
Eh	11	-300		mV		1/25/2011 10:38:00 AM
pH	6.75	2-12.5		SU		1/25/2011 10:38:00 AM
SWL	45.08			ft		1/25/2011 10:38:00 AM
Temperature	8.39			degC		1/25/2011 10:38:00 AM
Turbidity	55.7	5.0		NTU		1/25/2011 10:38:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 12:53:19 PM
Barium	169	50.0		µg/L	1	2/15/2011 12:53:19 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 12:53:19 PM
Boron	ND	500		µg/L	1	2/15/2011 8:58:25 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 12:53:19 PM
Calcium	213000	5000		µg/L	1	2/15/2011 12:53:19 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 12:53:19 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 12:53:19 PM
Copper	ND	10.0		µg/L	1	2/15/2011 12:53:19 PM
Iron	4900	60.0		µg/L	1	2/15/2011 12:53:19 PM
Magnesium	39600	5000		µg/L	1	2/15/2011 12:53:19 PM
Manganese	493	10.0		µg/L	1	2/15/2011 12:53:19 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 12:53:19 PM
Potassium	ND	5000		µg/L	1	2/15/2011 12:53:19 PM
Silver	ND	10.0		µg/L	1	2/18/2011 4:49:18 PM
Sodium	31400	5000		µg/L	1	2/15/2011 12:53:19 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 12:53:19 PM
Zinc	15.2	10.0		µg/L	1	2/15/2011 12:53:19 PM
Hardness, Total(CaCO3)	696000	7000		µg/L	1	2/15/2011 12:53:19 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	31	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	420	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-28S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:38:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-008	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	31.2	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	65.0	25.0		UNITS	5	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.168	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	820	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-28D
Lab Order:	U1101399	**Collection Date:**	1/24/2011 4:05:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-009	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Vinyl chloride	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Bromomethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Chloroethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Acetone	ND	10		µg/L	1	1/28/2011 11:58:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Iodomethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Carbon disulfide	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Methylene chloride	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Acrylonitrile	ND	100		µg/L	1	1/28/2011 11:58:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Vinyl acetate	ND	50		µg/L	1	1/28/2011 11:58:00 PM
2-Butanone	ND	10		µg/L	1	1/28/2011 11:58:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Chloroform	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Bromochloromethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Benzene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Trichloroethene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Dibromomethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/28/2011 11:58:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Toluene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
2-Hexanone	ND	10		µg/L	1	1/28/2011 11:58:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Chlorobenzene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Ethylbenzene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
m,p-Xylene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-28D
Lab Order:	U1101399	**Collection Date:**	1/24/2011 4:05:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-009	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Styrene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
Bromoform	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/28/2011 11:58:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/28/2011 11:58:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/28/2011 11:58:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-28D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:43:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-010	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	549	1.0		umhos/cm		1/25/2011 10:43:00 AM
Eh	-47	-300		mV		1/25/2011 10:43:00 AM
pH	7.99	2-12.5		SU		1/25/2011 10:43:00 AM
SWL	45.91			ft		1/25/2011 10:43:00 AM
Temperature	9.94			degC		1/25/2011 10:43:00 AM
Turbidity	8.49	5.0		NTU		1/25/2011 10:43:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 12:58:10 PM
Barium	52.8	50.0		µg/L	1	2/15/2011 12:58:10 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 12:58:10 PM
Boron	ND	500		µg/L	1	2/15/2011 9:02:34 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 12:58:10 PM
Calcium	26100	5000		µg/L	1	2/15/2011 12:58:10 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 12:58:10 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 12:58:10 PM
Copper	ND	10.0		µg/L	1	2/15/2011 12:58:10 PM
Iron	87.9	60.0		µg/L	1	2/15/2011 12:58:10 PM
Magnesium	9150	5000		µg/L	1	2/15/2011 12:58:10 PM
Manganese	171	10.0		µg/L	1	2/15/2011 12:58:10 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 12:58:10 PM
Potassium	ND	5000		µg/L	1	2/15/2011 12:58:10 PM
Silver	ND	10.0		µg/L	1	2/18/2011 4:54:37 PM
Sodium	48200	5000		µg/L	1	2/15/2011 12:58:10 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 12:58:10 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 12:58:10 PM
Hardness, Total(CaCO3)	103000	7000		µg/L	1	2/15/2011 12:58:10 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	130	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-28D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:43:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-010	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	11.4	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	8.00	5.00		UNITS	1	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.156	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	210	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-3A
Lab Order: U1101399
Collection Date: 1/24/2011 1:59:00 PM
Project: Operational Wells
Lab ID: U1101399-011
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Vinyl chloride	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Bromomethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Chloroethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Acetone	ND	10		µg/L	1	1/29/2011 12:38:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Iodomethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Carbon disulfide	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Methylene chloride	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Acrylonitrile	ND	100		µg/L	1	1/29/2011 12:38:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Vinyl acetate	ND	50		µg/L	1	1/29/2011 12:38:00 AM
2-Butanone	ND	10		µg/L	1	1/29/2011 12:38:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Chloroform	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Bromochloromethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Benzene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Trichloroethene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Dibromomethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/29/2011 12:38:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Toluene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
2-Hexanone	ND	10		µg/L	1	1/29/2011 12:38:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Chlorobenzene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Ethylbenzene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
m,p-Xylene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-3A
Lab Order:	U1101399	**Collection Date:**	1/24/2011 1:59:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-011	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Styrene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
Bromoform	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/29/2011 12:38:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 12:38:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/29/2011 12:38:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-3A
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:10:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-012	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	454	1.0		umhos/cm		1/25/2011 10:10:00 AM
Eh	48	-300		mV		1/25/2011 10:10:00 AM
pH	7.87	2-12.5		SU		1/25/2011 10:10:00 AM
SWL	9.89			ft		1/25/2011 10:10:00 AM
Temperature	4.6			degC		1/25/2011 10:10:00 AM
Turbidity	33.7	5.0		NTU		1/25/2011 10:10:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 1:03:29 PM
Barium	ND	50.0		µg/L	1	2/15/2011 1:03:29 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:03:29 PM
Boron	ND	500		µg/L	1	2/15/2011 9:06:43 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 1:03:29 PM
Calcium	60200	5000		µg/L	1	2/15/2011 1:03:29 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:03:29 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:03:29 PM
Copper	ND	10.0		µg/L	1	2/15/2011 1:03:29 PM
Iron	67.1	60.0		µg/L	1	2/15/2011 1:03:29 PM
Magnesium	12400	5000		µg/L	1	2/15/2011 1:03:29 PM
Manganese	111	10.0		µg/L	1	2/15/2011 1:03:29 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:03:29 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:03:29 PM
Silver	ND	10.0		µg/L	1	2/18/2011 4:59:56 PM
Sodium	18800	5000		µg/L	1	2/15/2011 1:03:29 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:03:29 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 1:03:29 PM
Hardness, Total(CaCO3)	201000	7000		µg/L	1	2/15/2011 1:03:29 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	140	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-3A
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:10:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-012	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	16.0	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	35.0	25.0		UNITS	5	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.155	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	280	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: SS-88-2
Lab Order: U1101399
Collection Date: 1/24/2011 5:00:00 PM
Project: Operational Wells
Lab ID: U1101399-013
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Vinyl chloride	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Bromomethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Chloroethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Acetone	ND	10		µg/L	1	1/29/2011 1:18:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Iodomethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Carbon disulfide	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Methylene chloride	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Acrylonitrile	ND	100		µg/L	1	1/29/2011 1:18:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Vinyl acetate	ND	50		µg/L	1	1/29/2011 1:18:00 AM
2-Butanone	ND	10		µg/L	1	1/29/2011 1:18:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Chloroform	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Bromochloromethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Benzene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Trichloroethene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Dibromomethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/29/2011 1:18:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Toluene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
2-Hexanone	ND	10		µg/L	1	1/29/2011 1:18:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Chlorobenzene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Ethylbenzene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
m,p-Xylene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	SS-88-2
Lab Order:	U1101399	**Collection Date:**	1/24/2011 5:00:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-013	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Styrene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
Bromoform	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/29/2011 1:18:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 1:18:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/29/2011 1:18:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	SS-88-2
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:42:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-014	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	539	1.0		umhos/cm		1/25/2011 10:42:00 AM
Eh	54	-300		mV		1/25/2011 10:42:00 AM
pH	7.87	2-12.5		SU		1/25/2011 10:42:00 AM
SWL	32.57			ft		1/25/2011 10:42:00 AM
Temperature	7.8			degC		1/25/2011 10:42:00 AM
Turbidity	10.7	5.0		NTU		1/25/2011 10:42:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 1:08:49 PM
Barium	1420	50.0		µg/L	1	2/15/2011 1:08:49 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:08:49 PM
Boron	ND	500		µg/L	1	2/15/2011 9:10:52 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 1:08:49 PM
Calcium	91700	5000		µg/L	1	2/15/2011 1:08:49 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:08:49 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:08:49 PM
Copper	ND	10.0		µg/L	1	2/15/2011 1:08:49 PM
Iron	1270	60.0		µg/L	1	2/15/2011 1:08:49 PM
Magnesium	25600	5000		µg/L	1	2/15/2011 1:08:49 PM
Manganese	987	10.0		µg/L	1	2/15/2011 1:08:49 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:08:49 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:08:49 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:05:25 PM
Sodium	18300	5000		µg/L	1	2/15/2011 1:08:49 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:08:49 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 1:08:49 PM
Hardness, Total(CaCO3)	335000	7000		µg/L	1	2/15/2011 1:08:49 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	270	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	SS-88-2
Lab Order:	U1101399	**Collection Date:**	1/25/2011 10:42:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-014	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	10.1	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	35.0	25.0		UNITS	5	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.062	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	370	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank 1
Lab Order:	U1101399	**Collection Date:**	1/24/2011
Project:	Operational Wells		
Lab ID:	U1101399-015	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Vinyl chloride	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Bromomethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Chloroethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Acetone	ND	10		µg/L	1	1/29/2011 1:58:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Iodomethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Carbon disulfide	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Methylene chloride	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Acrylonitrile	ND	100		µg/L	1	1/29/2011 1:58:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Vinyl acetate	ND	50		µg/L	1	1/29/2011 1:58:00 AM
2-Butanone	ND	10		µg/L	1	1/29/2011 1:58:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Chloroform	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Bromochloromethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Benzene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Trichloroethene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Dibromomethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/29/2011 1:58:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Toluene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
2-Hexanone	ND	10		µg/L	1	1/29/2011 1:58:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Chlorobenzene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Ethylbenzene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
m,p-Xylene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank 1
Lab Order:	U1101399	**Collection Date:**	1/24/2011
Project:	Operational Wells		
Lab ID:	U1101399-015	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Styrene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
Bromoform	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/29/2011 1:58:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 1:58:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/29/2011 1:58:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-8D
Lab Order: U1101399
Collection Date: 1/24/2011 4:55:00 PM
Project: Operational Wells
Lab ID: U1101399-016
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Vinyl chloride	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Bromomethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Chloroethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Acetone	ND	10		µg/L	1	1/29/2011 2:38:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Iodomethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Carbon disulfide	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Methylene chloride	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Acrylonitrile	ND	100		µg/L	1	1/29/2011 2:38:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Vinyl acetate	ND	50		µg/L	1	1/29/2011 2:38:00 AM
2-Butanone	ND	10		µg/L	1	1/29/2011 2:38:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Chloroform	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Bromochloromethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Benzene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Trichloroethene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Dibromomethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/29/2011 2:38:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Toluene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
2-Hexanone	ND	10		µg/L	1	1/29/2011 2:38:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Chlorobenzene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Ethylbenzene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
m,p-Xylene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-8D
Lab Order:	U1101399	**Collection Date:**	1/24/2011 4:55:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-016	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Styrene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
Bromoform	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/29/2011 2:38:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 2:38:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/29/2011 2:38:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-8D
Lab Order: U1101399
Collection Date: 1/25/2011 11:03:00 AM
Project: Operational Wells
Lab ID: U1101399-017
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	433	1.0		umhos/cm		1/25/2011 11:03:00 AM
Eh	91	-300		mV		1/25/2011 11:03:00 AM
pH	7.91	2-12.5		SU		1/25/2011 11:03:00 AM
SWL	75.39			ft		1/25/2011 11:03:00 AM
Temperature	8.1			degC		1/25/2011 11:03:00 AM
Turbidity	48.9	5.0		NTU		1/25/2011 11:03:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	2330	100		µg/L	1	2/15/2011 1:14:10 PM
Barium	ND	50.0		µg/L	1	2/15/2011 1:14:10 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:14:10 PM
Boron	ND	500		µg/L	1	2/15/2011 9:15:01 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 1:14:10 PM
Calcium	65100	5000		µg/L	1	2/15/2011 1:14:10 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:14:10 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:14:10 PM
Copper	ND	10.0		µg/L	1	2/15/2011 1:14:10 PM
Iron	3220	60.0		µg/L	1	2/15/2011 1:14:10 PM
Magnesium	15800	5000		µg/L	1	2/15/2011 1:14:10 PM
Manganese	66.8	10.0		µg/L	1	2/15/2011 1:14:10 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:14:10 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:14:10 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:10:45 PM
Sodium	6660	5000		µg/L	1	2/15/2011 1:14:10 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:14:10 PM
Zinc	17.0	10.0		µg/L	1	2/15/2011 1:14:10 PM
Hardness, Total(CaCO3)	228000	7000		µg/L	1	2/15/2011 1:14:10 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	180	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-8D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 11:03:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-017	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	8.65	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	7.00	5.00		UNITS	1	1/26/2011 10:01:00 AM
NOTES: Sample was filtered due to turbidity. Reporting true color.						
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.197	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	330	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-10D
Lab Order: U1101399
Collection Date: 1/24/2011 5:20:00 PM
Project: Operational Wells
Lab ID: U1101399-018
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Vinyl chloride	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Bromomethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Chloroethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Acetone	ND	10		µg/L	1	1/29/2011 3:18:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Iodomethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Carbon disulfide	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Methylene chloride	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Acrylonitrile	ND	100		µg/L	1	1/29/2011 3:18:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Vinyl acetate	ND	50		µg/L	1	1/29/2011 3:18:00 AM
2-Butanone	ND	10		µg/L	1	1/29/2011 3:18:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Chloroform	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Bromochloromethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Benzene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Trichloroethene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Dibromomethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/29/2011 3:18:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Toluene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
2-Hexanone	ND	10		µg/L	1	1/29/2011 3:18:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Chlorobenzene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Ethylbenzene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
m,p-Xylene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-10D
Lab Order:	U1101399	**Collection Date:**	1/24/2011 5:20:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-018	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Styrene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
Bromoform	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/29/2011 3:18:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 3:18:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/29/2011 3:18:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-10D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 11:20:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-019	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	995	1.0		umhos/cm		1/25/2011 11:20:00 AM
Eh	50	-300		mV		1/25/2011 11:20:00 AM
pH	7.43	2-12.5		SU		1/25/2011 11:20:00 AM
SWL	59.93			ft		1/25/2011 11:20:00 AM
Temperature	9			degC		1/25/2011 11:20:00 AM
Turbidity	43.8	5.0		NTU		1/25/2011 11:20:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	158	100		µg/L	1	2/15/2011 1:19:31 PM
Barium	76.5	50.0		µg/L	1	2/15/2011 1:19:31 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:19:31 PM
Boron	ND	500		µg/L	1	2/15/2011 9:19:10 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 1:19:31 PM
Calcium	184000	5000		µg/L	1	2/15/2011 1:19:31 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:19:31 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:19:31 PM
Copper	ND	10.0		µg/L	1	2/15/2011 1:19:31 PM
Iron	1000	60.0		µg/L	1	2/15/2011 1:19:31 PM
Magnesium	48800	5000		µg/L	1	2/15/2011 1:19:31 PM
Manganese	2310	10.0		µg/L	1	2/15/2011 1:19:31 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:19:31 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:19:31 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:16:06 PM
Sodium	23100	5000		µg/L	1	2/15/2011 1:19:31 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:19:31 PM
Zinc	22.4	10.0		µg/L	1	2/15/2011 1:19:31 PM
Hardness, Total(CaCO3)	660000	7000		µg/L	1	2/15/2011 1:19:31 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	11	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	420	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-10D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 11:20:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-019	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	22.9	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	45.0	25.0		UNITS	5	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.065	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	850	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-16S
Lab Order: U1101399
Collection Date: 1/24/2011 5:33:00 PM
Project: Operational Wells
Lab ID: U1101399-020
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Vinyl chloride	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Bromomethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Chloroethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Acetone	ND	10		µg/L	1	1/29/2011 3:59:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Iodomethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Carbon disulfide	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Methylene chloride	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Acrylonitrile	ND	100		µg/L	1	1/29/2011 3:59:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Vinyl acetate	ND	50		µg/L	1	1/29/2011 3:59:00 AM
2-Butanone	ND	10		µg/L	1	1/29/2011 3:59:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Chloroform	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Bromochloromethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Benzene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Trichloroethene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Dibromomethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/29/2011 3:59:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Toluene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
2-Hexanone	ND	10		µg/L	1	1/29/2011 3:59:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Chlorobenzene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Ethylbenzene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
m,p-Xylene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-16S
Lab Order:	U1101399	**Collection Date:**	1/24/2011 5:33:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-020	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Styrene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
Bromoform	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/29/2011 3:59:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 3:59:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/29/2011 3:59:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-16S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 11:37:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-021	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	392	1.0		umhos/cm		1/25/2011 11:37:00 AM
Eh	42	-300		mV		1/25/2011 11:37:00 AM
pH	8.42	2-12.5		SU		1/25/2011 11:37:00 AM
SWL	43.21			ft		1/25/2011 11:37:00 AM
Temperature	7.5			degC		1/25/2011 11:37:00 AM
Turbidity	14.1	5.0		NTU		1/25/2011 11:37:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 1:24:25 PM
Barium	57.5	50.0		µg/L	1	2/15/2011 1:24:25 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:24:25 PM
Boron	ND	500		µg/L	1	2/15/2011 9:23:20 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 1:24:25 PM
Calcium	51100	5000		µg/L	1	2/15/2011 1:24:25 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:24:25 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:24:25 PM
Copper	ND	10.0		µg/L	1	2/15/2011 1:24:25 PM
Iron	1810	60.0		µg/L	1	2/15/2011 1:24:25 PM
Magnesium	16700	5000		µg/L	1	2/15/2011 1:24:25 PM
Manganese	386	10.0		µg/L	1	2/15/2011 1:24:25 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:24:25 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:24:25 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:21:31 PM
Sodium	11700	5000		µg/L	1	2/15/2011 1:24:25 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:24:25 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 1:24:25 PM
Hardness, Total(CaCO3)	196000	7000		µg/L	1	2/15/2011 1:24:25 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	200	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-16S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 11:37:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-021	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	2.19	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**	**(E335.4)**		Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	75.0	25.0		UNITS	5	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.114	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**	**(E420.4)**		Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	240	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-16D
Lab Order: U1101399
Collection Date: 1/24/2011 6:05:00 PM
Project: Operational Wells
Lab ID: U1101399-022
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Vinyl chloride	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Bromomethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Chloroethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Acetone	ND	10		µg/L	1	1/29/2011 4:39:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Iodomethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Carbon disulfide	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Methylene chloride	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Acrylonitrile	ND	100		µg/L	1	1/29/2011 4:39:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Vinyl acetate	ND	50		µg/L	1	1/29/2011 4:39:00 AM
2-Butanone	ND	10		µg/L	1	1/29/2011 4:39:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Chloroform	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Bromochloromethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Benzene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Trichloroethene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Dibromomethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/29/2011 4:39:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Toluene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
2-Hexanone	ND	10		µg/L	1	1/29/2011 4:39:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Chlorobenzene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Ethylbenzene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
m,p-Xylene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-16D
Lab Order:	U1101399	**Collection Date:**	1/24/2011 6:05:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-022	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Styrene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
Bromoform	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/29/2011 4:39:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 4:39:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/29/2011 4:39:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-16D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 11:59:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-023	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	486	1.0		umhos/cm		1/25/2011 11:59:00 AM
Eh	62	-300		mV		1/25/2011 11:59:00 AM
pH	8.17	2-12.5		SU		1/25/2011 11:59:00 AM
SWL	42.72			ft		1/25/2011 11:59:00 AM
Temperature	8.2			degC		1/25/2011 11:59:00 AM
Turbidity	26.9	5.0		NTU		1/25/2011 11:59:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	532	100		µg/L	1	2/15/2011 1:40:13 PM
Barium	141	50.0		µg/L	1	2/15/2011 1:40:13 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:40:13 PM
Boron	ND	500		µg/L	1	2/15/2011 9:35:43 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 1:40:13 PM
Calcium	81400	5000		µg/L	1	2/15/2011 1:40:13 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:40:13 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:40:13 PM
Copper	ND	10.0		µg/L	1	2/15/2011 1:40:13 PM
Iron	5630	60.0		µg/L	1	2/15/2011 1:40:13 PM
Magnesium	18700	5000		µg/L	1	2/15/2011 1:40:13 PM
Manganese	1100	10.0		µg/L	1	2/15/2011 1:40:13 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:40:13 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:40:13 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:37:08 PM
Sodium	ND	5000		µg/L	1	2/15/2011 1:40:13 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:40:13 PM
Zinc	46.3	10.0		µg/L	1	2/15/2011 1:40:13 PM
Hardness, Total(CaCO3)	280000	7000		µg/L	1	2/15/2011 1:40:13 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	37	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	250	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-16D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 11:59:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-023	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	4.27	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**	**(E335.4)**		Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	50.0	25.0		UNITS	5	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.100	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**	**(E420.4)**		Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	310	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-6S
Lab Order:	U1101399	**Collection Date:**	1/24/2011 6:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-024	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Vinyl chloride	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Bromomethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Chloroethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Acetone	ND	10		µg/L	1	1/29/2011 5:19:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Iodomethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Carbon disulfide	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Methylene chloride	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Acrylonitrile	ND	100		µg/L	1	1/29/2011 5:19:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Vinyl acetate	ND	50		µg/L	1	1/29/2011 5:19:00 AM
2-Butanone	ND	10		µg/L	1	1/29/2011 5:19:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Chloroform	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Bromochloromethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Benzene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Trichloroethene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Dibromomethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/29/2011 5:19:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Toluene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
2-Hexanone	ND	10		µg/L	1	1/29/2011 5:19:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Chlorobenzene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Ethylbenzene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
m,p-Xylene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-6S
Lab Order:	U1101399	**Collection Date:**	1/24/2011 6:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-024	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Styrene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
Bromoform	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/29/2011 5:19:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/29/2011 5:19:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/29/2011 5:19:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: _____ **Date:** _____

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-6S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:33:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-025	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	731	1.0		umhos/cm		1/25/2011 12:33:00 PM
Eh	59	-300		mV		1/25/2011 12:33:00 PM
pH	7.29	2-12.5		SU		1/25/2011 12:33:00 PM
SWL	28.46			ft		1/25/2011 12:33:00 PM
Temperature	8.3			degC		1/25/2011 12:33:00 PM
Turbidity	40.2	5.0		NTU		1/25/2011 12:33:00 PM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	233	100		µg/L	1	2/15/2011 1:45:37 PM
Barium	566	50.0		µg/L	1	2/15/2011 1:45:37 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:45:37 PM
Boron	ND	500		µg/L	1	2/15/2011 9:39:56 AM
Cadmium	6.22	5.00		µg/L	1	2/15/2011 1:45:37 PM
Calcium	135000	5000		µg/L	1	2/15/2011 1:45:37 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:45:37 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:45:37 PM
Copper	ND	10.0		µg/L	1	2/15/2011 1:45:37 PM
Iron	39800	60.0		µg/L	1	2/15/2011 1:45:37 PM
Magnesium	25800	5000		µg/L	1	2/15/2011 1:45:37 PM
Manganese	1330	10.0		µg/L	1	2/15/2011 1:45:37 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:45:37 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:45:37 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:42:30 PM
Sodium	ND	5000		µg/L	1	2/15/2011 1:45:37 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:45:37 PM
Zinc	27.5	10.0		µg/L	1	2/15/2011 1:45:37 PM
Hardness, Total(CaCO3)	443000	7000		µg/L	1	2/15/2011 1:45:37 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	83	10		µg/L	2	2/15/2011 8:42:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	400	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-6S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:33:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-025	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	4.70	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	350	250		UNITS	50	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.020		mg/L	2	1/26/2011 12:45:00 PM
NOTES: The reporting limits were raised due to matrix interference.						
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	0.782	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.125	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	500	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	5.1	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-7S
Lab Order:	U1101399	**Collection Date:**	1/24/2011 6:10:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-026	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Vinyl chloride	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Bromomethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Chloroethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Acetone	ND	10		µg/L	1	1/31/2011 11:39:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Iodomethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Carbon disulfide	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Methylene chloride	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Acrylonitrile	ND	100		µg/L	1	1/31/2011 11:39:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Vinyl acetate	ND	50		µg/L	1	1/31/2011 11:39:00 PM
2-Butanone	ND	10		µg/L	1	1/31/2011 11:39:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Chloroform	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Bromochloromethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Benzene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Trichloroethene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Dibromomethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/31/2011 11:39:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Toluene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
2-Hexanone	ND	10		µg/L	1	1/31/2011 11:39:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Chlorobenzene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Ethylbenzene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
m,p-Xylene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-7S
Lab Order:	U1101399	**Collection Date:**	1/24/2011 6:10:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-026	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Styrene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
Bromoform	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/31/2011 11:39:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/31/2011 11:39:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/31/2011 11:39:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-7S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:16:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-027	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	991	1.0		umhos/cm		1/25/2011 12:16:00 PM
Eh	78	-300		mV		1/25/2011 12:16:00 PM
pH	7.37	2-12.5		SU		1/25/2011 12:16:00 PM
SWL	34.84			ft		1/25/2011 12:16:00 PM
Temperature	5.5			degC		1/25/2011 12:16:00 PM
Turbidity	32.1	5.0		NTU		1/25/2011 12:16:00 PM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 1:50:32 PM
Barium	84.8	50.0		µg/L	1	2/15/2011 1:50:32 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:50:32 PM
Boron	ND	500		µg/L	1	2/15/2011 9:44:09 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 1:50:32 PM
Calcium	204000	5000		µg/L	1	2/15/2011 1:50:32 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:50:32 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:50:32 PM
Copper	61.6	10.0		µg/L	1	2/15/2011 1:50:32 PM
Iron	18600	60.0		µg/L	1	2/15/2011 1:50:32 PM
Magnesium	48800	5000		µg/L	1	2/15/2011 1:50:32 PM
Manganese	1790	10.0		µg/L	1	2/15/2011 1:50:32 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:50:32 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:50:32 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:47:56 PM
Sodium	50200	5000		µg/L	1	2/15/2011 1:50:32 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:50:32 PM
Zinc	63.3	10.0		µg/L	1	2/15/2011 1:50:32 PM
Hardness, Total(CaCO3)	710000	7000		µg/L	1	2/15/2011 1:50:32 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	11	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	420	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-7S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:16:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-027	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	84.3	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	350	250		UNITS	50	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.020		mg/L	2	1/26/2011 12:45:00 PM
NOTES: The reporting limits were raised due to matrix interference.						
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	0.102	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	860	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	FBlank-01
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:30:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-028	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS, TOTAL BY NYSDEC ASP 2005			**200.7WTASP**		**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 1:55:27 PM
Barium	ND	50.0		µg/L	1	2/15/2011 1:55:27 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 1:55:27 PM
Boron	ND	500		µg/L	1	2/15/2011 9:48:22 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 1:55:27 PM
Calcium	ND	5000		µg/L	1	2/15/2011 1:55:27 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 1:55:27 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 1:55:27 PM
Copper	ND	10.0		µg/L	1	2/22/2011 10:14:43 AM
Iron	ND	60.0		µg/L	1	2/15/2011 1:55:27 PM
Magnesium	ND	5000		µg/L	1	2/15/2011 1:55:27 PM
Manganese	13.0	10.0		µg/L	1	2/15/2011 1:55:27 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 1:55:27 PM
Potassium	ND	5000		µg/L	1	2/15/2011 1:55:27 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:53:22 PM
Sodium	ND	5000		µg/L	1	2/15/2011 1:55:27 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 1:55:27 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 1:55:27 PM
Hardness, Total(CaCO3)	ND	7000		µg/L	1	2/15/2011 1:55:27 PM
ASP TOTAL METALS BY ICP-MS			**200.8ASP**		**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP			**245.2WTASP**		**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B			**8260ASP_A1_W**			Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Acetone	ND	10		µg/L	1	2/1/2011 12:19:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	FBlank-01
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:30:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-028	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 12:19:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 12:19:00 AM
2-Butanone	ND	10		µg/L	1	2/1/2011 12:19:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Chloroform	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Benzene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 12:19:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Toluene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
2-Hexanone	ND	10		µg/L	1	2/1/2011 12:19:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
o-Xylene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Styrene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
Bromoform	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 12:19:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 12:19:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	FBlank-01
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:30:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-028	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B			**8260ASP_A1_W**			Analyst: **LEF**
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 12:19:00 AM
NOTES: TICS: No compounds were detected.						
ALKALINITY BY EPA 310.2			**ALK_W_AUTO**			Analyst: **GWL**
Alkalinity, Total (As CaCO3)	ND	10		mg/L	1	2/6/2011
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	1.05	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	ND	5.00		UNITS	1	1/26/2011 10:01:00 AM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/26/2011 12:45:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **GWL**
Nitrogen, Nitrate (as N)	ND	0.050		mg/L	1	1/26/2011 9:17:00 AM
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	ND	25		mg/L	1	1/27/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank 2
Lab Order:	U1101399	**Collection Date:**	1/25/2011
Project:	Operational Wells		
Lab ID:	U1101399-029	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Acetone	ND	10		µg/L	1	2/1/2011 12:59:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 12:59:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 12:59:00 AM
2-Butanone	ND	10		µg/L	1	2/1/2011 12:59:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Chloroform	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Benzene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 12:59:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Toluene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
2-Hexanone	ND	10		µg/L	1	2/1/2011 12:59:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank 2
Lab Order:	U1101399	**Collection Date:**	1/25/2011
Project:	Operational Wells		
Lab ID:	U1101399-029	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Styrene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
Bromoform	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 12:59:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 12:59:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 12:59:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank 3
Lab Order:	U1101399	**Collection Date:**	1/25/2011
Project:	Operational Wells		
Lab ID:	U1101399-030	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Acetone	ND	10		µg/L	1	2/1/2011 1:39:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 1:39:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 1:39:00 AM
2-Butanone	ND	10		µg/L	1	2/1/2011 1:39:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Chloroform	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Benzene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 1:39:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Toluene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
2-Hexanone	ND	10		µg/L	1	2/1/2011 1:39:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank 3
Lab Order:	U1101399	**Collection Date:**	1/25/2011
Project:	Operational Wells		
Lab ID:	U1101399-030	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Styrene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
Bromoform	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 1:39:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 1:39:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 1:39:00 AM

NOTES:
Possible contamination from field or laboratory.

Approved By: _____ **Date:** _____

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Holding Blank
Lab Order:	U1101399	**Collection Date:**	1/26/2011 11:50:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-031	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Acetone	ND	10		µg/L	1	2/1/2011 2:19:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 2:19:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 2:19:00 AM
2-Butanone	ND	10		µg/L	1	2/1/2011 2:19:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Chloroform	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Benzene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 2:19:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Toluene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
2-Hexanone	ND	10		µg/L	1	2/1/2011 2:19:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Holding Blank
Lab Order:	U1101399	**Collection Date:**	1/26/2011 11:50:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-031	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Styrene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
Bromoform	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 2:19:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 2:19:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 2:19:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-27S
Lab Order: U1101399
Collection Date: 1/25/2011 11:56:00 AM
Project: Operational Wells
Lab ID: U1101399-032
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Acetone	ND	10		µg/L	1	2/1/2011 2:59:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 2:59:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 2:59:00 AM
2-Butanone	ND	10		µg/L	1	2/1/2011 2:59:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Chloroform	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Benzene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 2:59:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Toluene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
2-Hexanone	ND	10		µg/L	1	2/1/2011 2:59:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-27S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 11:56:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-032	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Styrene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
Bromoform	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 2:59:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 2:59:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 2:59:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-27S
Lab Order:	U1101399	**Collection Date:**	1/26/2011 8:45:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-033	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1643	1.0		umhos/cm		1/26/2011 8:45:00 AM
Eh	-59	-300		mV		1/26/2011 8:45:00 AM
pH	7.46	2-12.5		SU		1/26/2011 8:45:00 AM
SWL	40.6			ft		1/26/2011 8:45:00 AM
Temperature	7.83			degC		1/26/2011 8:45:00 AM
Turbidity	66.8	5.0		NTU		1/26/2011 8:45:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	253	100		µg/L	1	2/15/2011 2:00:50 PM
Barium	243	50.0		µg/L	1	2/15/2011 2:00:50 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 2:00:50 PM
Boron	ND	500		µg/L	1	2/15/2011 9:52:35 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 2:00:50 PM
Calcium	194000	5000		µg/L	1	2/15/2011 2:00:50 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 2:00:50 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 2:00:50 PM
Copper	ND	10.0		µg/L	1	2/15/2011 2:00:50 PM
Iron	20600	60.0		µg/L	1	2/15/2011 2:00:50 PM
Magnesium	27200	5000		µg/L	1	2/15/2011 2:00:50 PM
Manganese	1830	10.0		µg/L	1	2/15/2011 2:00:50 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 2:00:50 PM
Potassium	6260	5000		µg/L	1	2/15/2011 2:00:50 PM
Silver	ND	10.0		µg/L	1	2/18/2011 5:58:44 PM
Sodium	48700	5000		µg/L	1	2/15/2011 2:00:50 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 2:00:50 PM
Zinc	29.0	10.0		µg/L	1	2/15/2011 2:00:50 PM
Hardness, Total(CaCO3)	596000	7000		µg/L	1	2/15/2011 2:00:50 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	4.4	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	420	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-27S
Lab Order:	U1101399	**Collection Date:**	1/26/2011 8:45:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-033	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A				**CL_W_AUTO**		Analyst: **GWL**
Chloride	78.4	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005				**CN_W_ASP**	**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)				**COLOR**		Analyst: **DMP**
Color	450	250		UNITS	50	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005				**CR6_W**		Analyst: **CAC**
Chromium, Hexavalent	ND	0.020		mg/L	2	1/27/2011 2:17:00 PM
NOTES: The reporting limits were raised due to matrix interference.						
NH3 BY LACHAT 10-107-06-1-B				**NH3_W_AUTO**		Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A				**NO3_W**		Analyst: **BY**
Nitrogen, Nitrate (as N)	0.061	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A				**PHENOL_W**	**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/17/2011 4:55:00 PM
TDS BY SM 18-21 2540C (97)				**TDS**		Analyst: **DMP**
Residue, Dissolved (TDS)	770	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)				**TOC_W**		Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-27D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 1:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-034	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Acetone	ND	10		µg/L	1	2/1/2011 3:39:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 3:39:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 3:39:00 AM
2-Butanone	ND	10		µg/L	1	2/1/2011 3:39:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Chloroform	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Benzene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 3:39:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Toluene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
2-Hexanone	ND	10		µg/L	1	2/1/2011 3:39:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-27D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 1:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-034	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Styrene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
Bromoform	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 3:39:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 3:39:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 3:39:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: _____ **Date:** _____

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-27D
Lab Order:	U1101399	**Collection Date:**	1/26/2011 8:50:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-035	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	557	1.0		umhos/cm		1/26/2011 8:50:00 AM
Eh	-85	-300		mV		1/26/2011 8:50:00 AM
pH	8.04	2-12.5		SU		1/26/2011 8:50:00 AM
SWL	39.22			ft		1/26/2011 8:50:00 AM
Temperature	9.11			degC		1/26/2011 8:50:00 AM
Turbidity	122	5.0		NTU		1/26/2011 8:50:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	658	100		µg/L	1	2/15/2011 2:05:46 PM
Barium	60.0	50.0		µg/L	1	2/15/2011 2:05:46 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 2:05:46 PM
Boron	ND	500		µg/L	1	2/15/2011 9:56:53 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 2:05:46 PM
Calcium	23700	5000		µg/L	1	2/15/2011 2:05:46 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 2:05:46 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 2:05:46 PM
Copper	ND	10.0		µg/L	1	2/15/2011 2:05:46 PM
Iron	1190	60.0		µg/L	1	2/15/2011 2:05:46 PM
Magnesium	10500	5000		µg/L	1	2/15/2011 2:05:46 PM
Manganese	253	10.0		µg/L	1	2/15/2011 2:05:46 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 2:05:46 PM
Potassium	ND	5000		µg/L	1	2/15/2011 2:05:46 PM
Silver	ND	10.0		µg/L	1	2/18/2011 6:04:11 PM
Sodium	56800	5000		µg/L	1	2/15/2011 2:05:46 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 2:05:46 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 2:05:46 PM
Hardness, Total(CaCO3)	102000	7000		µg/L	1	2/15/2011 2:05:46 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/15/2011 8:42:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/15/2011 8:42:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	170	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-27D
Lab Order:	U1101399	**Collection Date:**	1/26/2011 8:50:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-035	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A				**CL_W_AUTO**		Analyst: **GWL**
Chloride	1.96	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005				**CN_W_ASP**	**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)				**COLOR**		Analyst: **DMP**
Color	6.00	5.00		UNITS	1	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005				**CR6_W**		Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B				**NH3_W_AUTO**		Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A				**NO3_W**		Analyst: **BY**
Nitrogen, Nitrate (as N)	0.059	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A				**PHENOL_W**	**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)				**TDS**		Analyst: **DMP**
Residue, Dissolved (TDS)	270	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)				**TOC_W**		Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-5S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-036	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Acetone	ND	10		µg/L	1	2/1/2011 4:19:00 AM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 4:19:00 AM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 4:19:00 AM
2-Butanone	ND	10		µg/L	1	2/1/2011 4:19:00 AM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Chloroform	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Benzene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 4:19:00 AM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Toluene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
2-Hexanone	ND	10		µg/L	1	2/1/2011 4:19:00 AM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-5S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 12:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-036	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Styrene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
Bromoform	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 4:19:00 AM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 4:19:00 AM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 4:19:00 AM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-5S
Lab Order: U1101399
Collection Date: 1/26/2011 9:15:00 AM
Project: Operational Wells
Lab ID: U1101399-037
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1474	1.0		umhos/cm		1/26/2011 9:15:00 AM
Eh	-52	-300		mV		1/26/2011 9:15:00 AM
pH	7.37	2-12.5		SU		1/26/2011 9:15:00 AM
SWL	20.26			ft		1/26/2011 9:15:00 AM
Temperature	7.94			degC		1/26/2011 9:15:00 AM
Turbidity	33.9	5.0		NTU		1/26/2011 9:15:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 2:11:10 PM
Barium	137	50.0		µg/L	1	2/15/2011 2:11:10 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 2:11:10 PM
Boron	ND	500		µg/L	1	2/15/2011 10:01:00 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 2:11:10 PM
Calcium	186000	5000		µg/L	1	2/15/2011 2:11:10 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 2:11:10 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 2:11:10 PM
Copper	ND	10.0		µg/L	1	2/15/2011 2:11:10 PM
Iron	11900	60.0		µg/L	1	2/15/2011 2:11:10 PM
Magnesium	29400	5000		µg/L	1	2/15/2011 2:11:10 PM
Manganese	1910	10.0		µg/L	1	2/15/2011 2:11:10 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 2:11:10 PM
Potassium	ND	5000		µg/L	1	2/15/2011 2:11:10 PM
Silver	ND	10.0		µg/L	1	2/18/2011 6:09:29 PM
Sodium	42300	5000		µg/L	1	2/15/2011 2:11:10 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 2:11:10 PM
Zinc	89.2	10.0		µg/L	1	2/15/2011 2:11:10 PM
Hardness, Total(CaCO3)	585000	7000		µg/L	1	2/15/2011 2:11:10 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	32	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	390	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-5S
Lab Order:	U1101399	**Collection Date:**	1/26/2011 9:15:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-037	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	58.5	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	120	50.0		UNITS	10	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.020		mg/L	2	1/27/2011 2:17:00 PM
NOTES: The reporting limits were raised due to matrix interference.						
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **BY**
Nitrogen, Nitrate (as N)	0.074	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	750	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-5D
Lab Order: U1101399
Collection Date: 1/25/2011 1:10:00 PM
Project: Operational Wells
Lab ID: U1101399-038
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Vinyl chloride	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Bromomethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Chloroethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Acetone	ND	10		µg/L	1	1/31/2011 9:00:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Iodomethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Carbon disulfide	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Methylene chloride	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Acrylonitrile	ND	100		µg/L	1	1/31/2011 9:00:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Vinyl acetate	ND	50		µg/L	1	1/31/2011 9:00:00 PM
2-Butanone	ND	10		µg/L	1	1/31/2011 9:00:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Chloroform	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Bromochloromethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Benzene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Trichloroethene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Dibromomethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	1/31/2011 9:00:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Toluene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
2-Hexanone	ND	10		µg/L	1	1/31/2011 9:00:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Chlorobenzene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Ethylbenzene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
m,p-Xylene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-5D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 1:10:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-038	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Styrene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
Bromoform	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	1/31/2011 9:00:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	1/31/2011 9:00:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	1/31/2011 9:00:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-5D
Lab Order:	U1101399	**Collection Date:**	1/26/2011 9:20:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-039	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	368	1.0		umhos/cm		1/26/2011 9:20:00 AM
Eh	-48	-300		mV		1/26/2011 9:20:00 AM
pH	8.41	2-12.5		SU		1/26/2011 9:20:00 AM
SWL	20.27			ft		1/26/2011 9:20:00 AM
Temperature	8.67			degC		1/26/2011 9:20:00 AM
Turbidity	16.3	5.0		NTU		1/26/2011 9:20:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 2:16:00 PM
Barium	ND	50.0		µg/L	1	2/15/2011 2:16:00 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 2:16:00 PM
Boron	ND	500		µg/L	1	2/15/2011 10:05:08 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 2:16:00 PM
Calcium	24800	5000		µg/L	1	2/15/2011 2:16:00 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 2:16:00 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 2:16:00 PM
Copper	ND	10.0		µg/L	1	2/15/2011 2:16:00 PM
Iron	63.6	60.0		µg/L	1	2/15/2011 2:16:00 PM
Magnesium	9660	5000		µg/L	1	2/15/2011 2:16:00 PM
Manganese	18.4	10.0		µg/L	1	2/15/2011 2:16:00 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 2:16:00 PM
Potassium	9600	5000		µg/L	1	2/15/2011 2:16:00 PM
Silver	ND	10.0		µg/L	1	2/18/2011 6:14:22 PM
Sodium	10000	5000		µg/L	1	2/15/2011 2:16:00 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 2:16:00 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 2:16:00 PM
Hardness, Total(CaCO3)	102000	7000		µg/L	1	2/15/2011 2:16:00 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	99	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-5D
Lab Order:	U1101399	**Collection Date:**	1/26/2011 9:20:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-039	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A				**CL_W_AUTO**		Analyst: **GWL**
Chloride	3.45	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005				**CN_W_ASP**	**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)				**COLOR**		Analyst: **DMP**
Color	6.00	5.00		UNITS	1	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005				**CR6_W**		Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B				**NH3_W_AUTO**		Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A				**NO3_W**		Analyst: **BY**
Nitrogen, Nitrate (as N)	0.139	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A				**PHENOL_W**	**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)				**TDS**		Analyst: **DMP**
Residue, Dissolved (TDS)	180	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)				**TOC_W**		Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-17D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 3:17:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-040	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Bromomethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 5:27:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 5:27:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 5:27:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 5:27:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 5:27:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 5:27:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-17D
Lab Order:	U1101399	**Collection Date:**	1/25/2011 3:17:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-040	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
Bromoform	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 5:27:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 5:27:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 5:27:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-17D
Lab Order: U1101399
Collection Date: 1/26/2011 9:40:00 AM
Project: Operational Wells
Lab ID: U1101399-041
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1511	1.0		umhos/cm		1/26/2011 9:40:00 AM
Eh	-21	-300		mV		1/26/2011 9:40:00 AM
pH	7.56	2-12.5		SU		1/26/2011 9:40:00 AM
SWL	20.99			ft		1/26/2011 9:40:00 AM
Temperature	8.5			degC		1/26/2011 9:40:00 AM
Turbidity	19.1	5.0		NTU		1/26/2011 9:40:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 2:41:48 PM
Barium	113	50.0		µg/L	1	2/15/2011 2:41:48 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 2:41:48 PM
Boron	ND	500		µg/L	1	2/15/2011 10:25:36 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 2:41:48 PM
Calcium	200000	5000		µg/L	1	2/15/2011 2:41:48 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 2:41:48 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 2:41:48 PM
Copper	ND	10.0		µg/L	1	2/15/2011 2:41:48 PM
Iron	491	60.0		µg/L	1	2/15/2011 2:41:48 PM
Magnesium	36200	5000		µg/L	1	2/15/2011 2:41:48 PM
Manganese	1260	10.0		µg/L	1	2/15/2011 2:41:48 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 2:41:48 PM
Potassium	ND	5000		µg/L	1	2/15/2011 2:41:48 PM
Silver	ND	10.0		µg/L	1	2/18/2011 6:40:08 PM
Sodium	30700	5000		µg/L	1	2/15/2011 2:41:48 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 2:41:48 PM
Zinc	12.8	10.0		µg/L	1	2/15/2011 2:41:48 PM
Hardness, Total(CaCO3)	649000	7000		µg/L	1	2/15/2011 2:41:48 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	390	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-17D
Lab Order:	U1101399	**Collection Date:**	1/26/2011 9:40:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-041	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	101	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/21/2011
NOTES: Sample reanalyzed over the holding time; original analysis was within the holding time.						
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	15.0	5.00		UNITS	1	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **BY**
Nitrogen, Nitrate (as N)	0.062	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	770	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-17S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 2:47:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-042	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Bromomethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 6:07:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 6:07:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 6:07:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 6:07:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 6:07:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 6:07:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-17S
Lab Order:	U1101399	**Collection Date:**	1/25/2011 2:47:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-042	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
Bromoform	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 6:07:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 6:07:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 6:07:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-17S
Lab Order:	U1101399	**Collection Date:**	1/26/2011 9:45:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-043	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1521	1.0		umhos/cm		1/26/2011 9:45:00 AM
Eh	-49	-300		mV		1/26/2011 9:45:00 AM
pH	7.17	2-12.5		SU		1/26/2011 9:45:00 AM
SWL	21.7			ft		1/26/2011 9:45:00 AM
Temperature	7.33			degC		1/26/2011 9:45:00 AM
Turbidity	35.6	5.0		NTU		1/26/2011 9:45:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	336	100		µg/L	1	2/15/2011 2:46:38 PM
Barium	438	50.0		µg/L	1	2/15/2011 2:46:38 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 2:46:38 PM
Boron	ND	500		µg/L	1	2/15/2011 10:29:47 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 2:46:38 PM
Calcium	174000	5000		µg/L	1	2/15/2011 2:46:38 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 2:46:38 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 2:46:38 PM
Copper	ND	10.0		µg/L	1	2/15/2011 2:46:38 PM
Iron	18500	60.0		µg/L	1	2/15/2011 2:46:38 PM
Magnesium	45500	5000		µg/L	1	2/15/2011 2:46:38 PM
Manganese	400	10.0		µg/L	1	2/15/2011 2:46:38 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 2:46:38 PM
Potassium	ND	5000		µg/L	1	2/15/2011 2:46:38 PM
Silver	ND	10.0		µg/L	1	2/18/2011 6:45:29 PM
Sodium	23200	5000		µg/L	1	2/15/2011 2:46:38 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 2:46:38 PM
Zinc	30.0	10.0		µg/L	1	2/15/2011 2:46:38 PM
Hardness, Total(CaCO3)	622000	7000		µg/L	1	2/15/2011 2:46:38 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/15/2011 8:42:00 AM
Arsenic	11	10		µg/L	2	2/15/2011 8:42:00 AM
Lead	ND	3.0		µg/L	1	2/15/2011 8:42:00 AM
Selenium	ND	3.0		µg/L	1	2/15/2011 8:42:00 AM
Thallium	ND	3.0		µg/L	1	2/15/2011 8:42:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	400	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-17S
Lab Order:	U1101399	**Collection Date:**	1/26/2011 9:45:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-043	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A				**CL_W_AUTO**		Analyst: **GWL**
Chloride	99.3	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005				**CN_W_ASP**	**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)				**COLOR**		Analyst: **DMP**
Color	75.0	25.0		UNITS	5	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005				**CR6_W**		Analyst: **CAC**
Chromium, Hexavalent	ND	0.020		mg/L	2	1/27/2011 2:17:00 PM
NOTES: The reporting limits were raised due to matrix interference.						
NH3 BY LACHAT 10-107-06-1-B				**NH3_W_AUTO**		Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A				**NO3_W**		Analyst: **BY**
Nitrogen, Nitrate (as N)	0.220	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A				**PHENOL_W**	**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)				**TDS**		Analyst: **DMP**
Residue, Dissolved (TDS)	720	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)				**TOC_W**		Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: W-6DA
Lab Order: U1101399
Collection Date: 1/25/2011 3:15:00 PM
Project: Operational Wells
Lab ID: U1101399-044
Matrix: GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Bromomethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 6:47:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 6:47:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 6:47:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 6:47:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 6:47:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 6:47:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-6DA
Lab Order:	U1101399	**Collection Date:**	1/25/2011 3:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-044	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
Bromoform	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 6:47:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 6:47:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 6:47:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-6DA
Lab Order:	U1101399	**Collection Date:**	1/26/2011 10:15:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-045	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	587	1.0		umhos/cm		1/26/2011 10:15:00 AM
Eh	-54	-300		mV		1/26/2011 10:15:00 AM
pH	8.17	2-12.5		SU		1/26/2011 10:15:00 AM
SWL	21.51			ft		1/26/2011 10:15:00 AM
Temperature	7.17			degC		1/26/2011 10:15:00 AM
Turbidity	24.7	5.0		NTU		1/26/2011 10:15:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 3:12:41 PM
Barium	70.1	50.0		µg/L	1	2/15/2011 3:12:41 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 3:12:41 PM
Boron	ND	500		µg/L	1	2/15/2011 10:50:30 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 3:12:41 PM
Calcium	62000	5000		µg/L	1	2/15/2011 3:12:41 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 3:12:41 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 3:12:41 PM
Copper	ND	10.0		µg/L	1	2/15/2011 3:12:41 PM
Iron	149	60.0		µg/L	1	2/15/2011 3:12:41 PM
Magnesium	10600	5000		µg/L	1	2/15/2011 3:12:41 PM
Manganese	158	10.0		µg/L	1	2/15/2011 3:12:41 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 3:12:41 PM
Potassium	ND	5000		µg/L	1	2/15/2011 3:12:41 PM
Silver	ND	10.0		µg/L	1	2/18/2011 7:12:04 PM
Sodium	12700	5000		µg/L	1	2/15/2011 3:12:41 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 3:12:41 PM
Zinc	ND	10.0		µg/L	1	2/15/2011 3:12:41 PM
Hardness, Total(CaCO3)	198000	7000		µg/L	1	2/15/2011 3:12:41 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	130	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-6DA
Lab Order:	U1101399	**Collection Date:**	1/26/2011 10:15:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-045	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A				**CL_W_AUTO**		Analyst: **GWL**
Chloride	4.22	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005				**CN_W_ASP**	**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)				**COLOR**		Analyst: **DMP**
Color	10.0	5.00		UNITS	1	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005				**CR6_W**		Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B				**NH3_W_AUTO**		Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A				**NO3_W**		Analyst: **BY**
Nitrogen, Nitrate (as N)	0.173	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A				**PHENOL_W**	**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)				**TDS**		Analyst: **DMP**
Residue, Dissolved (TDS)	290	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)				**TOC_W**		Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-30
Lab Order:	U1101399	**Collection Date:**	1/25/2011 3:53:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-046	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Bromomethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 7:27:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 7:27:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 7:27:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 7:27:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 7:27:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 7:27:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-30
Lab Order:	U1101399	**Collection Date:**	1/25/2011 3:53:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-046	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
Bromoform	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 7:27:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 7:27:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 7:27:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-30
Lab Order:	U1101399	**Collection Date:**	1/26/2011 10:30:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-047	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1760	1.0		umhos/cm		1/26/2011 10:30:00 AM
Eh	-8	-300		mV		1/26/2011 10:30:00 AM
pH	7.45	2-12.5		SU		1/26/2011 10:30:00 AM
SWL	51.95			ft		1/26/2011 10:30:00 AM
Temperature	10.2			degC		1/26/2011 10:30:00 AM
Turbidity	34.5	5.0		NTU		1/26/2011 10:30:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/15/2011 3:18:06 PM
Barium	ND	50.0		µg/L	1	2/15/2011 3:18:06 PM
Beryllium	ND	3.00		µg/L	1	2/15/2011 3:18:06 PM
Boron	ND	500		µg/L	1	2/15/2011 10:54:42 AM
Cadmium	ND	5.00		µg/L	1	2/15/2011 3:18:06 PM
Calcium	158000	5000		µg/L	1	2/15/2011 3:18:06 PM
Chromium	ND	10.0		µg/L	1	2/15/2011 3:18:06 PM
Cobalt	ND	20.0		µg/L	1	2/15/2011 3:18:06 PM
Copper	ND	10.0		µg/L	1	2/15/2011 3:18:06 PM
Iron	387	60.0		µg/L	1	2/15/2011 3:18:06 PM
Magnesium	86100	5000		µg/L	1	2/15/2011 3:18:06 PM
Manganese	27.9	10.0		µg/L	1	2/15/2011 3:18:06 PM
Nickel	ND	30.0		µg/L	1	2/15/2011 3:18:06 PM
Potassium	ND	5000		µg/L	1	2/15/2011 3:18:06 PM
Silver	ND	10.0		µg/L	1	2/18/2011 7:17:29 PM
Sodium	65800	5000		µg/L	1	2/15/2011 3:18:06 PM
Vanadium	ND	30.0		µg/L	1	2/15/2011 3:18:06 PM
Zinc	17.6	10.0		µg/L	1	2/15/2011 3:18:06 PM
Hardness, Total(CaCO3)	748000	7000		µg/L	1	2/15/2011 3:18:06 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Arsenic	ND	5.0		µg/L	1	2/14/2011 8:59:00 AM
Lead	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Selenium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
Thallium	ND	3.0		µg/L	1	2/14/2011 8:59:00 AM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ALKALINITY BY EPA 310.2				**ALK_W_AUTO**		Analyst: **GWL**
Alkalinity, Total (As CaCO3)	380	10		mg/L	1	2/6/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	W-30
Lab Order:	U1101399	**Collection Date:**	1/26/2011 10:30:00 AM
Project:	Operational Wells		
Lab ID:	U1101399-047	**Matrix:**	GROUNDWATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORIDE WATERS BY LACHAT 10-117-07-1 A				**CL_W_AUTO**		Analyst: **GWL**
Chloride	110	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005				**CN_W_ASP**	**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)				**COLOR**		Analyst: **DMP**
Color	15.0	5.00		UNITS	1	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005				**CR6_W**		Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B				**NH3_W_AUTO**		Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A				**NO3_W**		Analyst: **BY**
Nitrogen, Nitrate (as N)	0.170	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A				**PHENOL_W**	**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)				**TDS**		Analyst: **DMP**
Residue, Dissolved (TDS)	1000	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)				**TOC_W**		Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Holding Blank
Lab Order:	U1101399	**Collection Date:**	1/27/2011 2:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-049	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Bromomethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 8:07:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 8:07:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 8:07:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 8:07:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 8:07:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 8:07:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *22-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Holding Blank
Lab Order:	U1101399	**Collection Date:**	1/27/2011 2:15:00 PM
Project:	Operational Wells		
Lab ID:	U1101399-049	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
Bromoform	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 8:07:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 8:07:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 8:07:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Wall-Up
Lab Order:	U1101421	**Collection Date:**	1/26/2011 11:19:00 AM
Project:	Operational Wells (River)		
Lab ID:	U1101421-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	798	1.0		umhos/cm		1/26/2011 11:19:00 AM
Eh	17	-300		mV		1/26/2011 11:19:00 AM
pH	8.52	2-12.5		SU		1/26/2011 11:19:00 AM
SWL	40.56			ft		1/26/2011 11:19:00 AM
Temperature	4.72			degC		1/26/2011 11:19:00 AM
Turbidity	13.7	5.0		NTU		1/26/2011 11:19:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/10/2011 1:23:09 PM
Barium	ND	50.0		µg/L	1	2/10/2011 1:23:09 PM
Beryllium	ND	3.00		µg/L	1	2/10/2011 1:23:09 PM
Boron	ND	500		µg/L	1	2/14/2011 3:14:12 PM
Cadmium	ND	5.00		µg/L	1	2/10/2011 1:23:09 PM
Calcium	45400	5000		µg/L	1	2/10/2011 1:23:09 PM
Chromium	ND	10.0		µg/L	1	2/10/2011 1:23:09 PM
Cobalt	ND	20.0		µg/L	1	2/10/2011 1:23:09 PM
Copper	ND	10.0		µg/L	1	2/10/2011 1:23:09 PM
Iron	373	60.0		µg/L	1	2/10/2011 1:23:09 PM
Magnesium	14600	5000		µg/L	1	2/10/2011 1:23:09 PM
Manganese	96.9	10.0		µg/L	1	2/10/2011 1:23:09 PM
Nickel	ND	30.0		µg/L	1	2/10/2011 1:23:09 PM
Potassium	ND	5000		µg/L	1	2/10/2011 1:23:09 PM
Silver	ND	10.0		µg/L	1	2/10/2011 1:23:09 PM
Sodium	49500	5000		µg/L	1	2/10/2011 1:23:09 PM
Vanadium	ND	30.0		µg/L	1	2/10/2011 1:23:09 PM
Zinc	132	10.0		µg/L	1	2/10/2011 1:23:09 PM
Hardness, Total(CaCO3)	174000	7000		µg/L	1	2/10/2011 1:23:09 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/10/2011 2:44:00 PM
Arsenic	ND	5.0		µg/L	1	2/10/2011 2:44:00 PM
Lead	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
Selenium	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
Thallium	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B				**8260ASP_A1_W**		Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Wall-Up
Lab Order:	U1101421	**Collection Date:**	1/26/2011 11:19:00 AM
Project:	Operational Wells (River)		
Lab ID:	U1101421-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Bromomethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 8:48:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 8:48:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 8:48:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 8:48:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 8:48:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 8:48:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
o-Xylene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Wall-Up
Lab Order:	U1101421	**Collection Date:**	1/26/2011 11:19:00 AM
Project:	Operational Wells (River)		
Lab ID:	U1101421-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B			**8260ASP_A1_W**			Analyst: **LEF**
Bromoform	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 8:48:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 8:48:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 8:48:00 PM
NOTES: TICS: No compounds were detected.						
ALKALINITY BY EPA 310.2			**ALK_W_AUTO**			Analyst: **GWL**
Alkalinity, Total (As CaCO3)	94	10		mg/L	1	2/6/2011
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	80.1	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	40.0	25.0		UNITS	5	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **BY**
Nitrogen, Nitrate (as N)	0.901	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	300	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	3.1	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Wall-Down
Lab Order:	U1101421	**Collection Date:**	1/26/2011 11:05:00 AM
Project:	Operational Wells (River)		
Lab ID:	U1101421-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	812	1.0		umhos/cm		1/26/2011 11:05:00 AM
Eh	0	-300		mV		1/26/2011 11:05:00 AM
pH	8.84	2-12.5		SU		1/26/2011 11:05:00 AM
SWL	24.71			ft		1/26/2011 11:05:00 AM
Temperature	1.72			degC		1/26/2011 11:05:00 AM
Turbidity	16.2	5.0		NTU		1/26/2011 11:05:00 AM
ICP METALS, TOTAL BY NYSDEC ASP 2005				**200.7WTASP**	**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/10/2011 1:27:57 PM
Barium	ND	50.0		µg/L	1	2/10/2011 1:27:57 PM
Beryllium	ND	3.00		µg/L	1	2/10/2011 1:27:57 PM
Boron	ND	500		µg/L	1	2/14/2011 3:18:22 PM
Cadmium	ND	5.00		µg/L	1	2/10/2011 1:27:57 PM
Calcium	45600	5000		µg/L	1	2/10/2011 1:27:57 PM
Chromium	ND	10.0		µg/L	1	2/10/2011 1:27:57 PM
Cobalt	ND	20.0		µg/L	1	2/10/2011 1:27:57 PM
Copper	ND	10.0		µg/L	1	2/10/2011 1:27:57 PM
Iron	310	60.0		µg/L	1	2/10/2011 1:27:57 PM
Magnesium	13300	5000		µg/L	1	2/10/2011 1:27:57 PM
Manganese	85.5	10.0		µg/L	1	2/10/2011 1:27:57 PM
Nickel	ND	30.0		µg/L	1	2/10/2011 1:27:57 PM
Potassium	ND	5000		µg/L	1	2/10/2011 1:27:57 PM
Silver	ND	10.0		µg/L	1	2/10/2011 1:27:57 PM
Sodium	68200	5000		µg/L	1	2/10/2011 1:27:57 PM
Vanadium	ND	30.0		µg/L	1	2/10/2011 1:27:57 PM
Zinc	179	10.0		µg/L	1	2/10/2011 1:27:57 PM
Hardness, Total(CaCO3)	169000	7000		µg/L	1	2/10/2011 1:27:57 PM
ASP TOTAL METALS BY ICP-MS				**200.8ASP**	**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/10/2011 2:44:00 PM
Arsenic	ND	5.0		µg/L	1	2/10/2011 2:44:00 PM
Lead	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
Selenium	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
Thallium	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
TOTAL MERCURY WATERS ASP				**245.2WTASP**	**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B				**8260ASP_A1_W**		Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Wall-Down
Lab Order:	U1101421	**Collection Date:**	1/26/2011 11:05:00 AM
Project:	Operational Wells (River)		
Lab ID:	U1101421-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Bromomethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 9:27:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 9:27:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 9:27:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 9:27:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 9:27:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 9:27:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
o-Xylene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: Wall-Down
Lab Order: U1101421
Collection Date: 1/26/2011 11:05:00 AM
Project: Operational Wells (River)
Lab ID: U1101421-002
Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B			**8260ASP_A1_W**			Analyst: **LEF**
Bromoform	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 9:27:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 9:27:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 9:27:00 PM
NOTES: TICS: No compounds were detected.						
ALKALINITY BY EPA 310.2			**ALK_W_AUTO**			Analyst: **GWL**
Alkalinity, Total (As CaCO3)	98	10		mg/L	1	2/6/2011
CHLORIDE WATERS BY LACHAT 10-117-07-1 A			**CL_W_AUTO**			Analyst: **GWL**
Chloride	96.6	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**		**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	45.0	25.0		UNITS	5	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **BY**
Nitrogen, Nitrate (as N)	1.58	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**		**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	360	25		mg/L	1	1/31/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	3.2	3.0		mg/L	1	2/12/2011

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank
Lab Order:	U1101421	**Collection Date:**	1/26/2011
Project:	Operational Wells (River)		
Lab ID:	U1101421-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Bromomethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 10:08:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 10:08:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 10:08:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 10:08:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 10:08:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 10:08:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank
Lab Order:	U1101421	**Collection Date:**	1/26/2011
Project:	Operational Wells (River)		
Lab ID:	U1101421-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
Bromoform	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 10:08:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 10:08:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 10:08:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Holding Blank
Lab Order:	U1101421	**Collection Date:**	1/27/2011 2:00:00 PM
Project:	Operational Wells (River)		
Lab ID:	U1101421-004	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
Chloromethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Bromomethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Chloroethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Acetone	ND	10		µg/L	1	2/3/2011 10:48:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Iodomethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Acrylonitrile	ND	100		µg/L	1	2/3/2011 10:48:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Vinyl acetate	ND	50		µg/L	1	2/3/2011 10:48:00 PM
2-Butanone	ND	10		µg/L	1	2/3/2011 10:48:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Chloroform	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Benzene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/3/2011 10:48:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Toluene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
2-Hexanone	ND	10		µg/L	1	2/3/2011 10:48:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *16-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Holding Blank
Lab Order:	U1101421	**Collection Date:**	1/27/2011 2:00:00 PM
Project:	Operational Wells (River)		
Lab ID:	U1101421-004	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX I WATERS (BASELINE) BY 8260B		**8260ASP_A1_W**				Analyst: **LEF**
o-Xylene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Styrene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
Bromoform	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/3/2011 10:48:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/3/2011 10:48:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/3/2011 10:48:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: **Date:**

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 1:00:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1407	1.0		umhos/cm		1/26/2011 1:00:00 PM
Eh	20	-300		mV		1/26/2011 1:00:00 PM
pH	7.04	2-12.5		SU		1/26/2011 1:00:00 PM
Temperature	8.06			degC		1/26/2011 1:00:00 PM
Turbidity	71	5.0		NTU		1/26/2011 1:00:00 PM
ASP PEST/PCB WATERS BY EPA 8081A/8082				**8081A/8082_ASPW**	**(SW3510B)**	Analyst: **EA**
4,4´-DDD	ND	1.0		µg/L	10	2/2/2011
4,4´-DDE	ND	1.0		µg/L	10	2/2/2011
4,4´-DDT	ND	1.0		µg/L	10	2/2/2011
Aldrin	ND	0.50		µg/L	10	2/2/2011
alpha-BHC	ND	0.50		µg/L	10	2/2/2011
alpha-Chlordane	ND	0.50		µg/L	10	2/2/2011
Aroclor 1016	ND	10		µg/L	10	2/2/2011
Aroclor 1221	ND	10		µg/L	10	2/2/2011
Aroclor 1232	ND	10		µg/L	10	2/2/2011
Aroclor 1242	ND	10		µg/L	10	2/2/2011
Aroclor 1248	ND	10		µg/L	10	2/2/2011
Aroclor 1254	ND	10		µg/L	10	2/2/2011
Aroclor 1260	ND	10		µg/L	10	2/2/2011
beta-BHC	ND	0.50		µg/L	10	2/2/2011
delta-BHC	ND	0.50		µg/L	10	2/2/2011
Dieldrin	ND	1.0		µg/L	10	2/2/2011
Endosulfan I	ND	0.50		µg/L	10	2/2/2011
Endosulfan II	ND	1.0		µg/L	10	2/2/2011
Endosulfan sulfate	ND	1.0		µg/L	10	2/2/2011
Endrin	ND	1.0		µg/L	10	2/2/2011
Endrin aldehyde	ND	1.0		µg/L	10	2/2/2011
Endrin ketone	ND	1.0		µg/L	10	2/2/2011
gamma-BHC	ND	0.50		µg/L	10	2/2/2011
gamma-Chlordane	ND	0.50		µg/L	10	2/2/2011
Heptachlor	ND	0.50		µg/L	10	2/2/2011
Heptachlor epoxide	ND	0.50		µg/L	10	2/2/2011
Methoxychlor	ND	5.0		µg/L	10	2/2/2011
Toxaphene	ND	50		µg/L	10	2/2/2011

NOTES:
The reporting limits were raised due to matrix interference.

CHLORINATED HERBICIDES BY EPA 8151A				**8151A_ASPW**	**(SW3510B)**	Analyst: **EA**
2,4,5-T	ND	1.0		µg/L	1	2/2/2011

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 1:00:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORINATED HERBICIDES BY EPA 8151A			**8151A_ASPW**		**(SW3510B)**	Analyst: **EA**
2,4,5-TP (Silvex)	ND	1.0		µg/L	1	2/2/2011
2,4-D	ND	1.0		µg/L	1	2/2/2011
Dinoseb	ND	1.0		µg/L	1	2/2/2011
BROMIDE BY SM 18-21 4110B (00)			**BROMIDE_W**			Analyst: **LD**
Bromide	ND	80		mg/L	100	2/10/2011
NOTES: The reporting limits were raised due to matrix interference.						
ICP METALS, TOTAL BY NYSDEC ASP 2005			**200.7WTASP**		**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/10/2011 1:48:29 PM
Barium	97.2	50.0		µg/L	1	2/10/2011 1:48:29 PM
Beryllium	ND	3.00		µg/L	1	2/10/2011 1:48:29 PM
Boron	16500	500		µg/L	1	2/14/2011 3:35:00 PM
Cadmium	ND	5.00		µg/L	1	2/10/2011 1:48:29 PM
Calcium	433000	5000		µg/L	1	2/10/2011 1:48:29 PM
Chromium	ND	10.0		µg/L	1	2/10/2011 1:48:29 PM
Cobalt	ND	20.0		µg/L	1	2/10/2011 1:48:29 PM
Copper	ND	10.0		µg/L	1	2/10/2011 1:48:29 PM
Iron	2430	60.0		µg/L	1	2/10/2011 1:48:29 PM
Magnesium	517000	5000		µg/L	1	2/10/2011 1:48:29 PM
Manganese	3580	10.0		µg/L	1	2/10/2011 1:48:29 PM
Molybdenum	ND	300		µg/L	1	2/14/2011 1:59:47 PM
Nickel	74.3	30.0		µg/L	1	2/10/2011 1:48:29 PM
Potassium	639000	125000		µg/L	25	2/14/2011 9:30:38 AM
Silver	ND	10.0		µg/L	1	2/10/2011 1:48:29 PM
Sodium	4540000	125000		µg/L	25	2/14/2011 9:30:38 AM
Tin	ND	300		µg/L	1	2/14/2011 11:06:38 AM
Vanadium	ND	30.0		µg/L	1	2/10/2011 1:48:29 PM
Zinc	59.2	10.0		µg/L	1	2/10/2011 1:48:29 PM
Hardness, Total(CaCO3)	3210000	7000		µg/L	1	2/10/2011 1:48:29 PM
ASP TOTAL METALS BY ICP-MS			**200.8ASP**		**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/10/2011 2:44:00 PM
Arsenic	100	50		µg/L	10	2/14/2011 3:19:00 PM
Lead	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
Selenium	360	75		µg/L	25	2/14/2011 1:19:00 PM
Thallium	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
NOTES: The reporting limits were raised due to matrix interference.						

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 1:00:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL MERCURY WATERS ASP			**245.2WTASP**		**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005			**8270_ASPEXP_W**		**(SW3520)**	Analyst: **LD**
(3+4)-Methylphenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
1,2,4,5-Tetrachlorobenzene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
1,2,4-Trichlorobenzene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
1,3,5-Trinitrobenzene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
1,3-Dinitrobenzene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
1,4-Napthoquinone	ND	100		µg/L	10	2/8/2011 9:10:00 PM
1-Naphthylamine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2,3,4,6-Tetrachlorophenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2,4,5-Trichlorophenol	ND	250		µg/L	10	2/8/2011 9:10:00 PM
2,4,6-Trichlorophenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2,4-Dichlorophenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2,4-Dimethylphenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2,4-Dinitrophenol	ND	250		µg/L	10	2/8/2011 9:10:00 PM
2,4-Dinitrotoluene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2,6-Dichlorophenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2,6-Dinitrotoluene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2-Acetylaminofluorene (#)	ND	200		µg/L	10	2/8/2011 9:10:00 PM
2-Chloronaphthalene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2-Chlorophenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2-Methylnaphthalene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2-Methylphenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2-Naphthylamine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
2-Nitroaniline	ND	250		µg/L	10	2/8/2011 9:10:00 PM
2-Nitrophenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
3,3´-Dichlorobenzidine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
3,3´-Dimethylbenzidine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
3-Methylcholanthrene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
3-Nitroaniline	ND	250		µg/L	10	2/8/2011 9:10:00 PM
4,6-Dinitro-2-methylphenol	ND	250		µg/L	10	2/8/2011 9:10:00 PM
4-Aminobiphenyl	ND	200		µg/L	10	2/8/2011 9:10:00 PM
4-Bromophenyl phenyl ether	ND	100		µg/L	10	2/8/2011 9:10:00 PM
4-Chloro-3-methylphenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
4-Chloroaniline	ND	100		µg/L	10	2/8/2011 9:10:00 PM
4-Chlorophenyl phenyl ether	ND	100		µg/L	10	2/8/2011 9:10:00 PM
4-Nitroaniline	ND	250		µg/L	10	2/8/2011 9:10:00 PM
4-Nitrophenol	ND	250		µg/L	10	2/8/2011 9:10:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 1:00:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005		**8270_ASPEXP_W**		**(SW3520)**		Analyst: **LD**
5-Nitro-o-toluidine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
7,12-Dimethylbenz(a)anthracene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Acenaphthene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Acenaphthylene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Acetophenone	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Anthracene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Benzo(a)pyrene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Benzo(b)fluoranthene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Benzo(g,h,i)perylene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Benzo(k)fluoranthene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Benzyl alcohol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Bis(2-chloroethoxy)methane	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Bis(2-chloroethyl)ether	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Bis(2-chloroisopropyl)ether	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Bis(2-ethylhexyl)phthalate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Butyl benzyl phthalate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Chlorobenzilate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Chrysene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Di-n-butyl phthalate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Di-n-octyl phthalate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Diallate	ND	200		µg/L	10	2/8/2011 9:10:00 PM
Dibenz(a,h)anthracene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Dibenzofuran	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Diethyl phthalate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Dimethoate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Dimethyl phthalate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Diphenylamine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Disulfoton	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Ethyl methanesulfonate	ND	200		µg/L	10	2/8/2011 9:10:00 PM
Famphur	ND	200		µg/L	10	2/8/2011 9:10:00 PM
Fluoranthene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Fluorene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Hexachlorobenzene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Hexachlorobutadiene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Hexachlorocyclopentadiene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Hexachloroethane	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Hexachloropropene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Indeno(1,2,3-cd)pyrene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Isodrin	ND	200		µg/L	10	2/8/2011 9:10:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: Leachate 11P
Lab Order: U1101422
Collection Date: 1/26/2011 1:00:00 PM
Project: Operational Wells (Leachate)
Lab ID: U1101422-001
Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005		**8270_ASPEXP_W**		**(SW3520)**		Analyst: **LD**
Isophorone	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Isosafrole	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Kepone	ND	250		µg/L	10	2/8/2011 9:10:00 PM
Methapyrilene	ND	1000		µg/L	10	2/8/2011 9:10:00 PM
Methyl methanesulfonate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Methyl parathion	ND	100		µg/L	10	2/8/2011 9:10:00 PM
N-Nitroso-di-n-butylamine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
N-Nitrosodi-n-propylamine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
N-Nitrosodiethylamine	ND	200		µg/L	10	2/8/2011 9:10:00 PM
N-Nitrosodimethylamine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
N-Nitrosodiphenylamine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
N-Nitrosomethylethylamine (#)	ND	100		µg/L	10	2/8/2011 9:10:00 PM
N-Nitrosopiperidine	ND	200		µg/L	10	2/8/2011 9:10:00 PM
N-Nitrosopyrrolidine	ND	400		µg/L	10	2/8/2011 9:10:00 PM
Naphthalene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Nitrobenzene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
O,O,O-Triethylphosphorothioate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
o-Toluidine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
p-Dimethylaminoazobenzene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
p-Phenylenediamine	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Pentachlorobenzene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Pentachloronitrobenzene	ND	200		µg/L	10	2/8/2011 9:10:00 PM
Pentachlorophenol	ND	250		µg/L	10	2/8/2011 9:10:00 PM
Phenacetin	ND	200		µg/L	10	2/8/2011 9:10:00 PM
Phenanthrene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Phenol	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Phorate	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Pronamide	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Pyrene	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Safrole	ND	100		µg/L	10	2/8/2011 9:10:00 PM
Thionazin (#)	ND	200		µg/L	10	2/8/2011 9:10:00 PM
TIC: 7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6,	29	0		µg/L	10	2/8/2011 9:10:00 PM

NOTES:
The reporting limits were raised due to matrix interference.

ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Dichlorodifluoromethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Chloromethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM

Approved By: **Date:**

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 1:00:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Vinyl chloride	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Bromomethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Chloroethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Trichlorofluoromethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Acrolein	ND	1000		µg/L	10	2/1/2011 8:49:00 PM
Acetone	ND	100		µg/L	10	2/1/2011 8:49:00 PM
1,1-Dichloroethene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Acetonitrile	ND	1000		µg/L	10	2/1/2011 8:49:00 PM
Iodomethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Allyl chloride	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Carbon disulfide	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Methylene chloride	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Acrylonitrile	ND	1000		µg/L	10	2/1/2011 8:49:00 PM
trans-1,2-Dichloroethene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,1-Dichloroethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Vinyl acetate	ND	500		µg/L	10	2/1/2011 8:49:00 PM
Chloroprene (#)	ND	100		µg/L	10	2/1/2011 8:49:00 PM
2-Butanone	ND	100		µg/L	10	2/1/2011 8:49:00 PM
Propionitrile (#)	ND	1000		µg/L	10	2/1/2011 8:49:00 PM
2,2-Dichloropropane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
cis-1,2-Dichloroethene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Methacrylonitrile	ND	100		µg/L	10	2/1/2011 8:49:00 PM
Chloroform	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Bromochloromethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Isobutyl Alcohol	ND	10000		µg/L	10	2/1/2011 8:49:00 PM
1,1,1-Trichloroethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,1-Dichloropropene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Carbon tetrachloride	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Benzene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,2-Dichloroethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Trichloroethene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,2-Dichloropropane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Methyl Methacrylate	ND	100		µg/L	10	2/1/2011 8:49:00 PM
Bromodichloromethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Dibromomethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
4-Methyl-2-pentanone	ND	100		µg/L	10	2/1/2011 8:49:00 PM
cis-1,3-Dichloropropene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Toluene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
trans-1,3-Dichloropropene	ND	50		µg/L	10	2/1/2011 8:49:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 1:00:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-001	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Ethyl Methacrylate	ND	100		µg/L	10	2/1/2011 8:49:00 PM
1,1,2-Trichloroethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
2-Hexanone	ND	100		µg/L	10	2/1/2011 8:49:00 PM
1,3-Dichloropropane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Tetrachloroethene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Dibromochloromethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,2-Dibromoethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Chlorobenzene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,1,1,2-Tetrachloroethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Ethylbenzene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
m,p-Xylene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
o-Xylene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Styrene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
Bromoform	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,1,2,2-Tetrachloroethane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,2,3-Trichloropropane	ND	50		µg/L	10	2/1/2011 8:49:00 PM
trans-1,4-Dichloro-2-butene	ND	100		µg/L	10	2/1/2011 8:49:00 PM
1,3-Dichlorobenzene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,4-Dichlorobenzene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,2-Dichlorobenzene	ND	50		µg/L	10	2/1/2011 8:49:00 PM
1,2-Dibromo-3-chloropropane	ND	100		µg/L	10	2/1/2011 8:49:00 PM

NOTES:
The reporting limits were raised due to matrix interference.
TICS: No compounds were detected.
Sample foamed during purging procedure.

DIOXINS/FURANS		**8290**				Analyst: **Sub**
Dioxins/Furans	See Attached	0		pg/L	1	2/22/2011

NOTES:
Subcontracted to NYSDOH ELAP Lab ID#11777

ALKALINITY BY EPA 310.2		**ALK_W_AUTO**				Analyst: **GWL**
Alkalinity, Total (As CaCO3)	1200	250		mg/L	25	2/6/2011
BOD, 5 DAY BY SM 18-20 5210B (01)		**BOD**				Analyst: **KLS**
Biochemical Oxygen Demand	13	4.0		mg/L	1	1/28/2011
CHLORIDE WATERS BY LACHAT 10-117-07-1 A		**CL_W_AUTO**				Analyst: **GWL**
Chloride	5300	250		mg/L	250	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005		**CN_W_ASP**		**(E335.4)**		Analyst: **BS**

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT: Al Turi Landfill, Inc.
Client Sample ID: Leachate 11P
Lab Order: U1101422
Collection Date: 1/26/2011 1:00:00 PM
Project: Operational Wells (Leachate)
Lab ID: U1101422-001
Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005			**CN_W_ASP**	**(E335.4)**		Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/21/2011
NOTES: Sample reanalyzed over the holding time; original analysis was within the holding time.						
COD BY EPA 410.4 REV. 2.0			**COD**			Analyst: **CAC**
Chemical Oxygen Demand	120	40		mg/L	2	2/7/2011
COLOR BY SM 18-21 2120B (01)			**COLOR**			Analyst: **DMP**
Color	130	50.0		UNITS	10	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005			**CR6_W**			Analyst: **CAC**
Chromium, Hexavalent	ND	0.020		mg/L	2	1/27/2011 2:17:00 PM
NOTES: The reporting limits were raised due to matrix interference.						
NH3 BY LACHAT 10-107-06-1-B			**NH3_W_AUTO**			Analyst: **GWL**
Nitrogen, Ammonia (As N)	224	12.5		mg/L	25	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A			**NO3_W**			Analyst: **BY**
Nitrogen, Nitrate (as N)	1.18	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A			**PHENOL_W**	**(E420.4)**		Analyst: **BY**
Phenolics, Total Recoverable	0.009	0.005		mg/L	1	2/12/2011
SULFATE BY ASTM D516-90, 02 & 07			**SULFATE_W**			Analyst: **KLS**
Sulfate	2240	500		mg/L	100	2/3/2011
SULFIDE, WATERS BY EPA 376.2			**SULFIDE_W**			Analyst: **GWL**
Sulfide	ND	0.100		mg/L	1	1/31/2011
TDS BY SM 18-21 2540C (97)			**TDS**			Analyst: **DMP**
Residue, Dissolved (TDS)	14000	25		mg/L	1	1/31/2011
TKN BY LACHAT 10-107-06-2			**TKN_W_AUTO**	**(E351.2)**		Analyst: **BS**
Nitrogen, Kjeldahl, Total	187	5.00		mg/L	10	2/14/2011
TOC BY SM 18-21 5310B (00)			**TOC_W**			Analyst: **BY**
Organic Carbon, Total	39.6	3.0		mg/L	1	2/12/2011
TURBIDITY BY SM 18-21 2130 B (01)			**TURBIDITY**			Analyst: **KLS**
Turbidity	35.8	0.030		NTU	1	1/27/2011 2:25:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11S
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:50:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	947	1.0		umhos/cm		1/26/2011 12:50:00 PM
Eh	27	-300		mV		1/26/2011 12:50:00 PM
pH	8.41	2-12.5		SU		1/26/2011 12:50:00 PM
Temperature	7.39			degC		1/26/2011 12:50:00 PM
Turbidity	6.25	5.0		NTU		1/26/2011 12:50:00 PM
ASP PEST/PCB WATERS BY EPA 8081A/8082				**8081A/8082_ASPW**	**(SW3510B)**	Analyst: **EA**
4,4´-DDD	ND	1.0		µg/L	10	2/2/2011
4,4´-DDE	ND	1.0		µg/L	10	2/2/2011
4,4´-DDT	ND	1.0		µg/L	10	2/2/2011
Aldrin	ND	0.50		µg/L	10	2/2/2011
alpha-BHC	ND	0.50		µg/L	10	2/2/2011
alpha-Chlordane	ND	0.50		µg/L	10	2/2/2011
Aroclor 1016	ND	10		µg/L	10	2/2/2011
Aroclor 1221	ND	10		µg/L	10	2/2/2011
Aroclor 1232	ND	10		µg/L	10	2/2/2011
Aroclor 1242	ND	10		µg/L	10	2/2/2011
Aroclor 1248	ND	10		µg/L	10	2/2/2011
Aroclor 1254	ND	10		µg/L	10	2/2/2011
Aroclor 1260	ND	10		µg/L	10	2/2/2011
beta-BHC	ND	0.50		µg/L	10	2/2/2011
delta-BHC	ND	0.50		µg/L	10	2/2/2011
Dieldrin	ND	1.0		µg/L	10	2/2/2011
Endosulfan I	ND	0.50		µg/L	10	2/2/2011
Endosulfan II	ND	1.0		µg/L	10	2/2/2011
Endosulfan sulfate	ND	1.0		µg/L	10	2/2/2011
Endrin	ND	1.0		µg/L	10	2/2/2011
Endrin aldehyde	ND	1.0		µg/L	10	2/2/2011
Endrin ketone	ND	1.0		µg/L	10	2/2/2011
gamma-BHC	ND	0.50		µg/L	10	2/2/2011
gamma-Chlordane	ND	0.50		µg/L	10	2/2/2011
Heptachlor	ND	0.50		µg/L	10	2/2/2011
Heptachlor epoxide	ND	0.50		µg/L	10	2/2/2011
Methoxychlor	ND	5.0		µg/L	10	2/2/2011
Toxaphene	ND	50		µg/L	10	2/2/2011

NOTES:
The reporting limits were raised due to matrix interference.

CHLORINATED HERBICIDES BY EPA 8151A				**8151A_ASPW**	**(SW3510B)**	Analyst: **EA**
2,4,5-T	ND	1.0		µg/L	1	2/2/2011

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11S
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:50:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORINATED HERBICIDES BY EPA 8151A			**8151A_ASPW**		**(SW3510B)**	Analyst: **EA**
2,4,5-TP (Silvex)	ND	1.0		µg/L	1	2/2/2011
2,4-D	ND	1.0		µg/L	1	2/2/2011
Dinoseb	ND	1.0		µg/L	1	2/2/2011
BROMIDE BY SM 18-21 4110B (00)			**BROMIDE_W**			Analyst: **LD**
Bromide	ND	0.8		mg/L	1	2/10/2011
ICP METALS, TOTAL BY NYSDEC ASP 2005			**200.7WTASP**		**(E200.7)**	Analyst: **LJ**
Aluminum	ND	100		µg/L	1	2/10/2011 1:53:49 PM
Barium	ND	50.0		µg/L	1	2/10/2011 1:53:49 PM
Beryllium	ND	3.00		µg/L	1	2/10/2011 1:53:49 PM
Boron	ND	500		µg/L	1	2/14/2011 3:39:44 PM
Cadmium	ND	5.00		µg/L	1	2/10/2011 1:53:49 PM
Calcium	79700	5000		µg/L	1	2/10/2011 1:53:49 PM
Chromium	ND	10.0		µg/L	1	2/10/2011 1:53:49 PM
Cobalt	ND	20.0		µg/L	1	2/10/2011 1:53:49 PM
Copper	ND	10.0		µg/L	1	2/18/2011 12:11:01 PM
Iron	ND	60.0		µg/L	1	2/10/2011 1:53:49 PM
Magnesium	20600	5000		µg/L	1	2/10/2011 1:53:49 PM
Manganese	129	10.0		µg/L	1	2/10/2011 1:53:49 PM
Molybdenum	ND	300		µg/L	1	2/14/2011 2:03:12 PM
Nickel	ND	30.0		µg/L	1	2/10/2011 1:53:49 PM
Potassium	9660	5000		µg/L	1	2/10/2011 1:53:49 PM
Silver	ND	10.0		µg/L	1	2/10/2011 1:53:49 PM
Sodium	49600	5000		µg/L	1	2/10/2011 1:53:49 PM
Tin	ND	300		µg/L	1	2/14/2011 11:10:48 AM
Vanadium	ND	30.0		µg/L	1	2/10/2011 1:53:49 PM
Zinc	615	10.0		µg/L	1	2/10/2011 1:53:49 PM
Hardness, Total(CaCO3)	284000	7000		µg/L	1	2/10/2011 1:53:49 PM
ASP TOTAL METALS BY ICP-MS			**200.8ASP**		**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/10/2011 2:44:00 PM
Arsenic	ND	5.0		µg/L	1	2/10/2011 2:44:00 PM
Lead	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
Selenium	ND	3.0		µg/L	1	2/14/2011 1:19:00 PM
Thallium	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
TOTAL MERCURY WATERS ASP			**245.2WTASP**		**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005			**8270_ASPEXP_W**		**(SW3520)**	Analyst: **LD**

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11S
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:50:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005		**8270_ASPEXP_W**			**(SW3520)**	Analyst: **LD**
(3+4)-Methylphenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
1,2,4,5-Tetrachlorobenzene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
1,3,5-Trinitrobenzene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
1,3-Dinitrobenzene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
1,4-Napthoquinone	ND	10		µg/L	1	2/8/2011 9:54:00 PM
1-Naphthylamine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2,3,4,6-Tetrachlorophenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2,4,5-Trichlorophenol	ND	25		µg/L	1	2/8/2011 9:54:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2,4-Dinitrophenol	ND	25		µg/L	1	2/8/2011 9:54:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2,6-Dichlorophenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2-Acetylaminofluorene (#)	ND	20		µg/L	1	2/8/2011 9:54:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2-Chlorophenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2-Methylphenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2-Naphthylamine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
2-Nitroaniline	ND	25		µg/L	1	2/8/2011 9:54:00 PM
2-Nitrophenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
3,3´-Dichlorobenzidine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
3,3´-Dimethylbenzidine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
3-Methylcholanthrene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
3-Nitroaniline	ND	25		µg/L	1	2/8/2011 9:54:00 PM
4,6-Dinitro-2-methylphenol	ND	25		µg/L	1	2/8/2011 9:54:00 PM
4-Aminobiphenyl	ND	20		µg/L	1	2/8/2011 9:54:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	2/8/2011 9:54:00 PM
4-Chloro-3-methylphenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
4-Chloroaniline	ND	10		µg/L	1	2/8/2011 9:54:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	2/8/2011 9:54:00 PM
4-Nitroaniline	ND	25		µg/L	1	2/8/2011 9:54:00 PM
4-Nitrophenol	ND	25		µg/L	1	2/8/2011 9:54:00 PM
5-Nitro-o-toluidine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
7,12-Dimethylbenz(a)anthracene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Acenaphthene	ND	10		µg/L	1	2/8/2011 9:54:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11S
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:50:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005		**8270_ASPEXP_W**		**(SW3520)**		Analyst: **LD**
Acenaphthylene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Acetophenone	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Anthracene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Benzyl alcohol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Bis(2-ethylhexyl)phthalate	2	10	J	µg/L	1	2/8/2011 9:54:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Chlorobenzilate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Chrysene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Diallate	ND	20		µg/L	1	2/8/2011 9:54:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Dibenzofuran	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Diethyl phthalate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Dimethoate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Dimethyl phthalate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Diphenylamine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Disulfoton	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Ethyl methanesulfonate	ND	20		µg/L	1	2/8/2011 9:54:00 PM
Famphur	ND	20		µg/L	1	2/8/2011 9:54:00 PM
Fluoranthene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Fluorene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Hexachlorobenzene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Hexachloroethane	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Hexachloropropene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Isodrin	ND	20		µg/L	1	2/8/2011 9:54:00 PM
Isophorone	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Isosafrole	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Kepone	ND	25		µg/L	1	2/8/2011 9:54:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11S
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:50:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005		**8270_ASPEXP_W**			**(SW3520)**	Analyst: **LD**
Methapyrilene	ND	100		µg/L	1	2/8/2011 9:54:00 PM
Methyl methanesulfonate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Methyl parathion	ND	10		µg/L	1	2/8/2011 9:54:00 PM
N-Nitroso-di-n-butylamine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
N-Nitrosodiethylamine	ND	20		µg/L	1	2/8/2011 9:54:00 PM
N-Nitrosodimethylamine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
N-Nitrosomethylethylamine (#)	ND	10		µg/L	1	2/8/2011 9:54:00 PM
N-Nitrosopiperidine	ND	20		µg/L	1	2/8/2011 9:54:00 PM
N-Nitrosopyrrolidine	ND	40		µg/L	1	2/8/2011 9:54:00 PM
Naphthalene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Nitrobenzene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
O,O,O-Triethylphosphorothioate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
o-Toluidine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
p-Dimethylaminoazobenzene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
p-Phenylenediamine	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Pentachlorobenzene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Pentachloronitrobenzene	ND	20		µg/L	1	2/8/2011 9:54:00 PM
Pentachlorophenol	ND	25		µg/L	1	2/8/2011 9:54:00 PM
Phenacetin	ND	20		µg/L	1	2/8/2011 9:54:00 PM
Phenanthrene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Phenol	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Phorate	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Pronamide	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Pyrene	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Safrole	ND	10		µg/L	1	2/8/2011 9:54:00 PM
Thionazin (#)	ND	20		µg/L	1	2/8/2011 9:54:00 PM
TIC: 2,5-Cyclohexadiene-1,4-dione, 2,6-bis(1,	4.1	0		µg/L	1	2/8/2011 9:54:00 PM
TIC: unknown	5.1	0		µg/L	1	2/8/2011 9:54:00 PM
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Dichlorodifluoromethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Chloromethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11S
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:50:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Acrolein	ND	100		µg/L	1	2/1/2011 9:29:00 PM
Acetone	ND	10		µg/L	1	2/1/2011 9:29:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Acetonitrile	ND	100		µg/L	1	2/1/2011 9:29:00 PM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Allyl chloride	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 9:29:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 9:29:00 PM
Chloroprene (#)	ND	10		µg/L	1	2/1/2011 9:29:00 PM
2-Butanone	ND	10		µg/L	1	2/1/2011 9:29:00 PM
Propionitrile (#)	ND	100		µg/L	1	2/1/2011 9:29:00 PM
2,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Methacrylonitrile	ND	10		µg/L	1	2/1/2011 9:29:00 PM
Chloroform	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Isobutyl Alcohol	ND	1000		µg/L	1	2/1/2011 9:29:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,1-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Benzene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Methyl Methacrylate	ND	10		µg/L	1	2/1/2011 9:29:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 9:29:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Toluene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Ethyl Methacrylate	ND	10		µg/L	1	2/1/2011 9:29:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
2-Hexanone	ND	10		µg/L	1	2/1/2011 9:29:00 PM
1,3-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11S
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:50:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
o-Xylene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Styrene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
Bromoform	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 9:29:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 9:29:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 9:29:00 PM
NOTES: TICS: No compounds were detected.						
ALKALINITY BY EPA 310.2		**ALK_W_AUTO**				Analyst: **GWL**
Alkalinity, Total (As CaCO3)	150	10		mg/L	1	2/6/2011
BOD, 5 DAY BY SM 18-20 5210B (01)		**BOD**				Analyst: **KLS**
Biochemical Oxygen Demand	ND	4.0		mg/L	1	1/28/2011
CHLORIDE WATERS BY LACHAT 10-117-07-1 A		**CL_W_AUTO**				Analyst: **GWL**
Chloride	39.1	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005		**CN_W_ASP**			**(E335.4)**	Analyst: **BS**
Cyanide	ND	10.0	Q	µg/L	1	2/9/2011
COD BY EPA 410.4 REV. 2.0		**COD**				Analyst: **CAC**
Chemical Oxygen Demand	ND	20		mg/L	1	2/4/2011
COLOR BY SM 18-21 2120B (01)		**COLOR**				Analyst: **DMP**
Color	12.0	5.00		UNITS	1	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005		**CR6_W**				Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B		**NH3_W_AUTO**				Analyst: **GWL**
Nitrogen, Ammonia (As N)	ND	0.500		mg/L	1	2/14/2011

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 11S
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:50:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-002	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A				**NO3_W**		Analyst: **BY**
Nitrogen, Nitrate (as N)	0.884	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A				**PHENOL_W**	**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
SULFATE BY ASTM D516-90, 02 & 07				**SULFATE_W**		Analyst: **KLS**
Sulfate	137	20.0		mg/L	4	1/28/2011
SULFIDE, WATERS BY EPA 376.2				**SULFIDE_W**		Analyst: **GWL**
Sulfide	ND	0.100		mg/L	1	1/31/2011
TDS BY SM 18-21 2540C (97)				**TDS**		Analyst: **DMP**
Residue, Dissolved (TDS)	460	25		mg/L	1	1/31/2011
TKN BY LACHAT 10-107-06-2				**TKN_W_AUTO**	**(E351.2)**	Analyst: **BS**
Nitrogen, Kjeldahl, Total	ND	0.500		mg/L	1	2/14/2011
TOC BY SM 18-21 5310B (00)				**TOC_W**		Analyst: **BY**
Organic Carbon, Total	ND	3.0		mg/L	1	2/12/2011
TURBIDITY BY SM 18-21 2130 B (01)				**TURBIDITY**		Analyst: **KLS**
Turbidity	1.18	0.030		NTU	1	1/27/2011 2:25:00 PM

Approved By: _____ **Date:** _____

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 12P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:40:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS				**FIELD**		Analyst:
Conductivity	1659	1.0		umhos/cm		1/26/2011 12:40:00 PM
Eh	41	-300		mV		1/26/2011 12:40:00 PM
pH	7.77	2-12.5		SU		1/26/2011 12:40:00 PM
Temperature	11.1			degC		1/26/2011 12:40:00 PM
Turbidity	14.7	5.0		NTU		1/26/2011 12:40:00 PM
ASP PEST/PCB WATERS BY EPA 8081A/8082				**8081A/8082_ASPW**	**(SW3510B)**	Analyst: **EA**
4,4´-DDD	ND	1.0		µg/L	10	2/2/2011
4,4´-DDE	ND	1.0		µg/L	10	2/2/2011
4,4´-DDT	ND	1.0		µg/L	10	2/2/2011
Aldrin	ND	0.50		µg/L	10	2/2/2011
alpha-BHC	ND	0.50		µg/L	10	2/2/2011
alpha-Chlordane	ND	0.50		µg/L	10	2/2/2011
Aroclor 1016	ND	10		µg/L	10	2/2/2011
Aroclor 1221	ND	10		µg/L	10	2/2/2011
Aroclor 1232	ND	10		µg/L	10	2/2/2011
Aroclor 1242	ND	10		µg/L	10	2/2/2011
Aroclor 1248	ND	10		µg/L	10	2/2/2011
Aroclor 1254	ND	10		µg/L	10	2/2/2011
Aroclor 1260	ND	10		µg/L	10	2/2/2011
beta-BHC	ND	0.50		µg/L	10	2/2/2011
delta-BHC	ND	0.50		µg/L	10	2/2/2011
Dieldrin	ND	1.0		µg/L	10	2/2/2011
Endosulfan I	ND	0.50		µg/L	10	2/2/2011
Endosulfan II	ND	1.0		µg/L	10	2/2/2011
Endosulfan sulfate	ND	1.0		µg/L	10	2/2/2011
Endrin	ND	1.0		µg/L	10	2/2/2011
Endrin aldehyde	ND	1.0		µg/L	10	2/2/2011
Endrin ketone	ND	1.0		µg/L	10	2/2/2011
gamma-BHC	ND	0.50		µg/L	10	2/2/2011
gamma-Chlordane	ND	0.50		µg/L	10	2/2/2011
Heptachlor	ND	0.50		µg/L	10	2/2/2011
Heptachlor epoxide	ND	0.50		µg/L	10	2/2/2011
Methoxychlor	ND	5.0		µg/L	10	2/2/2011
Toxaphene	ND	50		µg/L	10	2/2/2011
NOTES:						
The reporting limits were raised due to matrix interference.						
CHLORINATED HERBICIDES BY EPA 8151A				**8151A_ASPW**	**(SW3510B)**	Analyst: **EA**
2,4,5-T	ND	1.0		µg/L	1	2/2/2011

Approved By: _____ **Date:** _____

Qualifiers:

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Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 12P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:40:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CHLORINATED HERBICIDES BY EPA 8151A			**8151A_ASPW**		**(SW3510B)**	Analyst: **EA**
2,4,5-TP (Silvex)	ND	1.0		µg/L	1	2/2/2011
2,4-D	ND	1.0		µg/L	1	2/2/2011
Dinoseb	ND	1.0		µg/L	1	2/2/2011
BROMIDE BY SM 18-21 4110B (00)			**BROMIDE_W**			Analyst: **LD**
Bromide	ND	0.8		mg/L	1	2/10/2011
ICP METALS, TOTAL BY NYSDEC ASP 2005			**200.7WTASP**		**(E200.7)**	Analyst: **LJ**
Aluminum	146	100		µg/L	1	2/10/2011 1:58:42 PM
Barium	53.9	50.0		µg/L	1	2/10/2011 1:58:42 PM
Beryllium	ND	3.00		µg/L	1	2/10/2011 1:58:42 PM
Boron	ND	500		µg/L	1	2/14/2011 3:43:55 PM
Cadmium	ND	5.00		µg/L	1	2/10/2011 1:58:42 PM
Calcium	138000	5000		µg/L	1	2/10/2011 1:58:42 PM
Chromium	ND	10.0		µg/L	1	2/10/2011 1:58:42 PM
Cobalt	ND	20.0		µg/L	1	2/10/2011 1:58:42 PM
Copper	ND	10.0		µg/L	1	2/10/2011 1:58:42 PM
Iron	397	60.0		µg/L	1	2/10/2011 1:58:42 PM
Magnesium	17800	5000		µg/L	1	2/10/2011 1:58:42 PM
Manganese	1230	10.0		µg/L	1	2/10/2011 1:58:42 PM
Molybdenum	ND	300		µg/L	1	2/14/2011 2:06:37 PM
Nickel	ND	30.0		µg/L	1	2/10/2011 1:58:42 PM
Potassium	22900	5000		µg/L	1	2/10/2011 1:58:42 PM
Silver	ND	10.0		µg/L	1	2/10/2011 1:58:42 PM
Sodium	93400	5000		µg/L	1	2/10/2011 1:58:42 PM
Tin	ND	300		µg/L	1	2/14/2011 11:15:29 AM
Vanadium	ND	30.0		µg/L	1	2/10/2011 1:58:42 PM
Zinc	394	10.0		µg/L	1	2/10/2011 1:58:42 PM
Hardness, Total(CaCO3)	419000	7000		µg/L	1	2/10/2011 1:58:42 PM
ASP TOTAL METALS BY ICP-MS			**200.8ASP**		**(E200.8)**	Analyst: **LJ**
Antimony	ND	5.0		µg/L	1	2/10/2011 2:44:00 PM
Arsenic	7.0	5.0		µg/L	1	2/10/2011 2:44:00 PM
Lead	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
Selenium	9.4	3.0		µg/L	1	2/10/2011 2:44:00 PM
Thallium	ND	3.0		µg/L	1	2/10/2011 2:44:00 PM
TOTAL MERCURY WATERS ASP			**245.2WTASP**		**(E245.2)**	Analyst: **ALW**
Mercury	ND	0.200		µg/L	1	2/3/2011 1:11:00 PM
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005			**8270_ASPEXP_W**		**(SW3520)**	Analyst: **LD**

Approved By: _____ **Date:** _____

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Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 12P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:40:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005		**8270_ASPEXP_W**			**(SW3520)**	Analyst: **LD**
(3+4)-Methylphenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
1,2,4,5-Tetrachlorobenzene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
1,3,5-Trinitrobenzene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
1,3-Dinitrobenzene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
1,4-Napthoquinone	ND	10		µg/L	1	2/8/2011 10:38:00 PM
1-Naphthylamine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2,3,4,6-Tetrachlorophenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2,4,5-Trichlorophenol	ND	25		µg/L	1	2/8/2011 10:38:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2,4-Dinitrophenol	ND	25		µg/L	1	2/8/2011 10:38:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2,6-Dichlorophenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2-Acetylaminofluorene (#)	ND	20		µg/L	1	2/8/2011 10:38:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2-Chlorophenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2-Methylphenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2-Naphthylamine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
2-Nitroaniline	ND	25		µg/L	1	2/8/2011 10:38:00 PM
2-Nitrophenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
3,3´-Dichlorobenzidine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
3,3´-Dimethylbenzidine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
3-Methylcholanthrene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
3-Nitroaniline	ND	25		µg/L	1	2/8/2011 10:38:00 PM
4,6-Dinitro-2-methylphenol	ND	25		µg/L	1	2/8/2011 10:38:00 PM
4-Aminobiphenyl	ND	20		µg/L	1	2/8/2011 10:38:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	2/8/2011 10:38:00 PM
4-Chloro-3-methylphenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
4-Chloroaniline	ND	10		µg/L	1	2/8/2011 10:38:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	2/8/2011 10:38:00 PM
4-Nitroaniline	ND	25		µg/L	1	2/8/2011 10:38:00 PM
4-Nitrophenol	ND	25		µg/L	1	2/8/2011 10:38:00 PM
5-Nitro-o-toluidine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
7,12-Dimethylbenz(a)anthracene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Acenaphthene	ND	10		µg/L	1	2/8/2011 10:38:00 PM

Approved By: _____ **Date:** _____

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Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 12P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:40:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005		**8270_ASPEXP_W**			**(SW3520)**	Analyst: **LD**
Acenaphthylene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Acetophenone	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Anthracene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Benzyl alcohol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Bis(2-ethylhexyl)phthalate	2	10	J	µg/L	1	2/8/2011 10:38:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Chlorobenzilate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Chrysene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Diallate	ND	20		µg/L	1	2/8/2011 10:38:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Dibenzofuran	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Diethyl phthalate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Dimethoate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Dimethyl phthalate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Diphenylamine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Disulfoton	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Ethyl methanesulfonate	ND	20		µg/L	1	2/8/2011 10:38:00 PM
Famphur	ND	20		µg/L	1	2/8/2011 10:38:00 PM
Fluoranthene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Fluorene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Hexachlorobenzene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Hexachloroethane	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Hexachloropropene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Isodrin	ND	20		µg/L	1	2/8/2011 10:38:00 PM
Isophorone	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Isosafrole	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Kepone	ND	25		µg/L	1	2/8/2011 10:38:00 PM

Approved By: _____ **Date:** _____

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Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 12P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:40:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EXPANDED SEMIVOLATILES BY NYSDEC ASP 2005		**8270_ASPEXP_W**		**(SW3520)**		Analyst: **LD**
Methapyrilene	ND	100		µg/L	1	2/8/2011 10:38:00 PM
Methyl methanesulfonate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Methyl parathion	ND	10		µg/L	1	2/8/2011 10:38:00 PM
N-Nitroso-di-n-butylamine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
N-Nitrosodiethylamine	ND	20		µg/L	1	2/8/2011 10:38:00 PM
N-Nitrosodimethylamine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
N-Nitrosomethylethylamine (#)	ND	10		µg/L	1	2/8/2011 10:38:00 PM
N-Nitrosopiperidine	ND	20		µg/L	1	2/8/2011 10:38:00 PM
N-Nitrosopyrrolidine	ND	40		µg/L	1	2/8/2011 10:38:00 PM
Naphthalene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Nitrobenzene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
O,O,O-Triethylphosphorothioate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
o-Toluidine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
p-Dimethylaminoazobenzene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
p-Phenylenediamine	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Pentachlorobenzene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Pentachloronitrobenzene	ND	20		µg/L	1	2/8/2011 10:38:00 PM
Pentachlorophenol	ND	25		µg/L	1	2/8/2011 10:38:00 PM
Phenacetin	ND	20		µg/L	1	2/8/2011 10:38:00 PM
Phenanthrene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Phenol	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Phorate	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Pronamide	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Pyrene	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Safrole	ND	10		µg/L	1	2/8/2011 10:38:00 PM
Thionazin (#)	ND	20		µg/L	1	2/8/2011 10:38:00 PM
TIC: 7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6,	4.3	0		µg/L	1	2/8/2011 10:38:00 PM
TIC: unknown (13.29)	20	0		µg/L	1	2/8/2011 10:38:00 PM
TIC: unknown (21.89)	2.7	0		µg/L	1	2/8/2011 10:38:00 PM
TIC: unknown (22.43)	5.3	0		µg/L	1	2/8/2011 10:38:00 PM
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Dichlorodifluoromethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Chloromethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Vinyl chloride	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Bromomethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM

Approved By: _____ **Date:** _____

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Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 12P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:40:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Chloroethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Trichlorofluoromethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Acrolein	ND	500		µg/L	5	2/1/2011 10:09:00 PM
Acetone	ND	50		µg/L	5	2/1/2011 10:09:00 PM
1,1-Dichloroethene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Acetonitrile	ND	500		µg/L	5	2/1/2011 10:09:00 PM
Iodomethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Allyl chloride	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Carbon disulfide	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Methylene chloride	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Acrylonitrile	ND	500		µg/L	5	2/1/2011 10:09:00 PM
trans-1,2-Dichloroethene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,1-Dichloroethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Vinyl acetate	ND	250		µg/L	5	2/1/2011 10:09:00 PM
Chloroprene (#)	ND	50		µg/L	5	2/1/2011 10:09:00 PM
2-Butanone	ND	50		µg/L	5	2/1/2011 10:09:00 PM
Propionitrile (#)	ND	500		µg/L	5	2/1/2011 10:09:00 PM
2,2-Dichloropropane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
cis-1,2-Dichloroethene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Methacrylonitrile	ND	50		µg/L	5	2/1/2011 10:09:00 PM
Chloroform	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Bromochloromethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Isobutyl Alcohol	ND	5000		µg/L	5	2/1/2011 10:09:00 PM
1,1,1-Trichloroethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,1-Dichloropropene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Carbon tetrachloride	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Benzene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,2-Dichloroethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Trichloroethene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,2-Dichloropropane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Methyl Methacrylate	ND	50		µg/L	5	2/1/2011 10:09:00 PM
Bromodichloromethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Dibromomethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
4-Methyl-2-pentanone	ND	50		µg/L	5	2/1/2011 10:09:00 PM
cis-1,3-Dichloropropene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Toluene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
trans-1,3-Dichloropropene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Ethyl Methacrylate	ND	50		µg/L	5	2/1/2011 10:09:00 PM
1,1,2-Trichloroethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 12P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:40:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
2-Hexanone	ND	50		µg/L	5	2/1/2011 10:09:00 PM
1,3-Dichloropropane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Tetrachloroethene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Dibromochloromethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,2-Dibromoethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Chlorobenzene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Ethylbenzene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
m,p-Xylene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
o-Xylene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Styrene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
Bromoform	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,2,3-Trichloropropane	ND	25		µg/L	5	2/1/2011 10:09:00 PM
trans-1,4-Dichloro-2-butene	ND	50		µg/L	5	2/1/2011 10:09:00 PM
1,3-Dichlorobenzene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,4-Dichlorobenzene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,2-Dichlorobenzene	ND	25		µg/L	5	2/1/2011 10:09:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/L	5	2/1/2011 10:09:00 PM

NOTES:
The reporting limits were raised due to matrix interference.
TICS: No compounds were detected.
Sample foamed during purging procedure.

DIOXINS/FURANS		**8290**				Analyst: **Sub**
Dioxins/Furans	See Attached	0		pg/L	1	2/19/2011

NOTES:
Subcontracted to NYSDOH ELAP Lab ID#11777

ALKALINITY BY EPA 310.2		**ALK_W_AUTO**				Analyst: **GWL**
Alkalinity, Total (As CaCO3)	410	10		mg/L	1	2/6/2011
BOD, 5 DAY BY SM 18-20 5210B (01)		**BOD**				Analyst: **KLS**
Biochemical Oxygen Demand	ND	4.0		mg/L	1	1/28/2011
CHLORIDE WATERS BY LACHAT 10-117-07-1 A		**CL_W_AUTO**				Analyst: **GWL**
Chloride	114	1.00		mg/L	1	2/6/2011
CYANIDE, TOTAL WATERS BY NYSDEC ASP 2005		**CN_W_ASP**		**(E335.4)**		Analyst: **BS**
Cyanide	ND	10.0		µg/L	1	2/21/2011

NOTES:
Sample reanalyzed over the holding time; original analysis was within the holding time.

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Leachate 12P
Lab Order:	U1101422	**Collection Date:**	1/26/2011 12:40:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-003	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
COD BY EPA 410.4 REV. 2.0				**COD**		Analyst: **CAC**
Chemical Oxygen Demand	28	20		mg/L	1	2/4/2011
COLOR BY SM 18-21 2120B (01)				**COLOR**		Analyst: **DMP**
Color	40.0	25.0		UNITS	5	1/27/2011 2:44:00 PM
HEXAVALENT CHROMIUM BY NYSDEC ASP 2005				**CR6_W**		Analyst: **CAC**
Chromium, Hexavalent	ND	0.010		mg/L	1	1/27/2011 2:17:00 PM
NH3 BY LACHAT 10-107-06-1-B				**NH3_W_AUTO**		Analyst: **GWL**
Nitrogen, Ammonia (As N)	28.3	5.00		mg/L	10	2/14/2011
NITROGEN, NITRATE (AS N) BY LACHAT 10-107-04-1A				**NO3_W**		Analyst: **BY**
Nitrogen, Nitrate (as N)	2.09	0.050		mg/L	1	1/28/2011
PHENOLICS, TOTAL BY LACHAT 10-210-00-1A				**PHENOL_W**	**(E420.4)**	Analyst: **BY**
Phenolics, Total Recoverable	ND	0.005		mg/L	1	2/12/2011
SULFATE BY ASTM D516-90, 02 & 07				**SULFATE_W**		Analyst: **KLS**
Sulfate	45.9	5.00		mg/L	1	1/28/2011
SULFIDE, WATERS BY EPA 376.2				**SULFIDE_W**		Analyst: **GWL**
Sulfide	ND	0.100		mg/L	1	1/31/2011
TDS BY SM 18-21 2540C (97)				**TDS**		Analyst: **DMP**
Residue, Dissolved (TDS)	690	25		mg/L	1	1/31/2011
TKN BY LACHAT 10-107-06-2				**TKN_W_AUTO**	**(E351.2)**	Analyst: **BS**
Nitrogen, Kjeldahl, Total	26.7	0.500		mg/L	1	2/14/2011
TOC BY SM 18-21 5310B (00)				**TOC_W**		Analyst: **BY**
Organic Carbon, Total	10	3.0		mg/L	1	2/12/2011
TURBIDITY BY SM 18-21 2130 B (01)				**TURBIDITY**		Analyst: **KLS**
Turbidity	2.19	0.030		NTU	1	1/27/2011 2:25:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

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**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank
Lab Order:	U1101422	**Collection Date:**	1/26/2011
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-004	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Dichlorodifluoromethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Chloromethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Acrolein	ND	100		µg/L	1	2/1/2011 10:50:00 PM
Acetone	ND	10		µg/L	1	2/1/2011 10:50:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Acetonitrile	ND	100		µg/L	1	2/1/2011 10:50:00 PM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Allyl chloride	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 10:50:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 10:50:00 PM
Chloroprene (#)	ND	10		µg/L	1	2/1/2011 10:50:00 PM
2-Butanone	ND	10		µg/L	1	2/1/2011 10:50:00 PM
Propionitrile (#)	ND	100		µg/L	1	2/1/2011 10:50:00 PM
2,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Methacrylonitrile	ND	10		µg/L	1	2/1/2011 10:50:00 PM
Chloroform	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Isobutyl Alcohol	ND	1000		µg/L	1	2/1/2011 10:50:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,1-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Benzene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Methyl Methacrylate	ND	10		µg/L	1	2/1/2011 10:50:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 10:50:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	ULI Trip Blank
Lab Order:	U1101422	**Collection Date:**	1/26/2011
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-004	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Toluene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Ethyl Methacrylate	ND	10		µg/L	1	2/1/2011 10:50:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
2-Hexanone	ND	10		µg/L	1	2/1/2011 10:50:00 PM
1,3-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
o-Xylene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Styrene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
Bromoform	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 10:50:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 10:50:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 10:50:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: _____ **Date:** _____

Qualifiers:	#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
	**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Holding Blank
Lab Order:	U1101422	**Collection Date:**	1/27/2011 2:45:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-005	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Dichlorodifluoromethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Chloromethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Vinyl chloride	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Bromomethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Chloroethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Acrolein	ND	100		µg/L	1	2/1/2011 11:30:00 PM
Acetone	ND	10		µg/L	1	2/1/2011 11:30:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Acetonitrile	ND	100		µg/L	1	2/1/2011 11:30:00 PM
Iodomethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Allyl chloride	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Carbon disulfide	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Methylene chloride	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Acrylonitrile	ND	100		µg/L	1	2/1/2011 11:30:00 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Vinyl acetate	ND	50		µg/L	1	2/1/2011 11:30:00 PM
Chloroprene (#)	ND	10		µg/L	1	2/1/2011 11:30:00 PM
2-Butanone	ND	10		µg/L	1	2/1/2011 11:30:00 PM
Propionitrile (#)	ND	100		µg/L	1	2/1/2011 11:30:00 PM
2,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Methacrylonitrile	ND	10		µg/L	1	2/1/2011 11:30:00 PM
Chloroform	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Bromochloromethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Isobutyl Alcohol	ND	1000		µg/L	1	2/1/2011 11:30:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,1-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Carbon tetrachloride	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Benzene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Trichloroethene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Methyl Methacrylate	ND	10		µg/L	1	2/1/2011 11:30:00 PM
Bromodichloromethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Dibromomethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/1/2011 11:30:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Analytical Report

Date: *23-Feb-11*

CLIENT:	Al Turi Landfill, Inc.	**Client Sample ID:**	Holding Blank
Lab Order:	U1101422	**Collection Date:**	1/27/2011 2:45:00 PM
Project:	Operational Wells (Leachate)		
Lab ID:	U1101422-005	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ASP/CLP APPENDIX II WATERS(EXP.) BY 8260B		**8260ASP_A2_W**				Analyst: **LEF**
Toluene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Ethyl Methacrylate	ND	10		µg/L	1	2/1/2011 11:30:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
2-Hexanone	ND	10		µg/L	1	2/1/2011 11:30:00 PM
1,3-Dichloropropane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Tetrachloroethene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Dibromochloromethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Chlorobenzene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Ethylbenzene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
m,p-Xylene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
o-Xylene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Styrene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
Bromoform	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	2/1/2011 11:30:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	2/1/2011 11:30:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	1	2/1/2011 11:30:00 PM

NOTES:
TICS: No compounds were detected.

Approved By: _____ **Date:** _____

Qualifiers:

#	Accreditation not offered by NYS DOH for this parameter	*	Low Level
**	Value exceeds Maximum Contaminant Value	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
Q	Outlying QC recoveries were associated with this parameter	S	Spike Recovery outside accepted recovery limits

CLASS II SITE
SEMI-ANNUAL REPORT

JANUARY 2011
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – FORMER CLASS II SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

April 2011

Prepared by

Ground Water Investigations
18 Bridge Street
Montgomery, New York 12549

Project 256-00-00

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Attachments

Drawing No. 1 - Well Location Plan	Pocket
Diskette - Laboratory Analytical Data	Pocket

1 INTRODUCTION

The water quality management program developed for post closure monitoring of the Al Turi Landfill – former Class II site, located in Goshen, New York, includes the semi-annual groundwater sampling and analysis of select parameters from monitoring wells downgradient of the former Class II landfill facility and the evaluation of the data generated by these samples. This program was developed to monitor historical constituents of concern within groundwater, and to identify any changes in the concentration of these constituents that may warrant further evaluation. The identification of conditions warranting further evaluation is based primarily on the comparison of detected concentrations with groundwater trigger levels (GWTLs). The Constituents of Concern and their GWTLs were presented to the Department in December 2001 in the Post-Closure Contingency Monitoring Plan, prepared by ENVIRON International Corporation of Princeton, New Jersey. The Constituents of Concern are listed on Table 1-1.

Semi-Annual groundwater quality is monitored at 17 groundwater monitoring wells (overburden and bedrock wells) located within the boundaries of the Al Turi Landfill property. The 17 monitoring wells are divided into two types: "Type 1" wells and "Type 2" wells. Type 1 wells are wells that are located adjacent (within 150 feet) to the Wallkill River while Type 2 wells are located beyond 150 feet from the river. The location of each well in relation to the Wallkill River was a factor when considering GWTLs for each well. Drawing 1 (in pocket) provides a site map of the area indicating the locations of the Type 1 and Type 2 groundwater monitoring wells.

Of the 17 groundwater monitoring wells, two wells (W-1 and W-3A), are monitored semi-annually as part of the post closure monitoring of the adjacent Al Turi Landfill. Monitoring of these wells consists of a modified Part 360 semi-annual analysis. As part of this sampling event, the Part 360 landfill data collected for well W-1 and well W-3A were utilized. In addition, the Wallkill River, which is located along the western portion of the site, is monitored semi-annually both upgradient and downgradient of the Al Turi property.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

2.1 Type 1 Groundwater Quality

Eight Type 1 groundwater monitoring wells are currently sampled at the former Class II Al Turi landfill site as part of post-closure monitoring requirements. Of the eight Type 1 groundwater monitoring wells, six wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-38S was dry.

Analytical results collected from the Type 1 groundwater monitoring wells are presented in Table 2-1, as are established GWTL values for each well. A review of the inorganic analyses collected during the January 2011 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 1 groundwater monitoring wells. In addition, a review of the Type 1 volatile organic data collected during the January 2011 sampling event indicates that no volatile organic compounds (VOC's) were present above established GWTLs.

The Type 1 groundwater monitoring wells will be sampled again in July 2011 as part of continued semi-annual groundwater monitoring for the former Class II Al Turi Landfill.

2.2 Type 2 Groundwater Quality

Nine Type 2 groundwater monitoring wells are currently sampled at the former Class II Al Turi Landfill as part of post closure monitoring at the facility.

Of the nine Type 2 groundwater monitoring wells, seven wells monitor the overburden groundwater aquifer and two well monitor the bedrock aquifer. It was noted during this sampling event that well W-13S was frozen and wells W-20 and W-29 were dry.

Analytical results collected from the Type 2 groundwater monitoring wells are presented in Table 2-2, as are established GWTL values for each well. A review of the inorganic analyses collected during the January 2011 sampling event demonstrate that no

Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 2 groundwater monitoring wells. In addition, a review of the Type 2 volatile organic data collected during the January 2011 sampling event indicates that no volatile organic compounds (VOC's) were present above established GWTLs.

The Type 2 groundwater monitoring wells will be sampled again in July 2011 as part of continued semi-annual groundwater monitoring for the former Class II Al Turi Landfill.

3 ASSESSMENT OF CUMULATIVE EFFECTS

In addition to the direct comparison of measured groundwater concentrations from individual monitoring wells to the appropriate GWTLs, the cumulative effects of ground water discharges to the Wallkill River from the former Class II Landfill site are evaluated as part of routine post-closure monitoring. The cumulative mass loading to the river is approximated, as follows:

1. The estimated total mass loading to the river for each Type 1 well is calculated by multiplying the measured concentration with the discharge rate calculated using ground water elevations observed during the same monitoring event (the ground water elevations from the January 2011 event are provided on Table 3-1):

$$M_i = C_i \bullet (Ki \bullet i_i \bullet w_i \bullet d) \bullet CF$$

where:

M_i	=	mass loading rate for well i (kg/day);
C_i	=	measured ground water concentration in well i (mg/L);
K_i	=	hydraulic conductivity for discharge zone segment associated with well i (ft/day);
i_i	=	calculated ground water gradient of for well i (ft/ft);
w_i	=	width of discharge zone segment associated with well i (ft);
d	=	aquifer thickness (ft); and
CF	=	conversion factor 28.32 L/ft^3 * 10^{-6} kg/mg

2. The mass loading rate from each Type 1 well is then summed to estimate the cumulative mass loading to the river, ($M_c = \Sigma M_i$) for each constituent.

3. The estimated river concentration is then calculated by dividing the cumulative mass loading M_c by the measured river flow rate. On January 25, 2011 the average gauge height was 1.14 (river elevation 355.022 ft msl), which represents an estimated river flow of 78.7 cfs.

The estimated river concentrations are then compared to the lower of the aquatic criteria and human health benchmarks for surface water presented in the December 2001 Post-Closure Monitoring Plan.

The results for the estimated cumulative effects assessment are presented on Table 3-2. As indicated on Table 3-2, the estimated in-stream concentrations resulting from the discharge of groundwater to the Wallkill River based on the observed flow conditions in the river at the time of sampling are all below the lower of the surface water benchmarks. A copy of the updated Al Turi Landfill Stream Gauge Hydrograph Record is included in Appendix A.

4 CONCLUSION

A review of the January 2011 groundwater data shows that no Constituents of Concern were observed above GWTLs in any of the groundwater monitoring wells. Because there are no Constituents of Concern observed above any of the established GWTLs, and the assessment of cumulative effects did not identify a potential for unacceptable impacts on the river as a result of groundwater discharges, the routine post-closure monitoring program will continue as specified in the Post-Closure Monitoring Plan for the Class II Al Turi Landfill.

Semi-annual monitoring of 17 groundwater monitoring wells for the identified constituents of concern will continue in July 2011 at the Class II Al Turi Landfill as part of continued post closure monitoring.

APPENDIX A

AL TURI LANDFILL HYDROGRAPH RECORD

TABLE 1-1

AL TURI LANDFILL - CLASS II SITE
CONSTITUENTS OF CONCERN
JANUARY 2011 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

Volatile Organic Compounds	***Metals***
Chloromethane	Antimony
Vinyl Chloride	Arsenic
Trichlorofluoromethane	Barium
Dichlorodifluoromethane	Chromium, hexavalent
1,1-Dichloroethene	Chromium
1,1-Dichloroethane	Copper
cis-1,2-Dichloroethene	Lead
Benzene	Magnesium
Trichloroethene	Sodium
	Zinc

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JANUARY 2011 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2011 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	**W-1**		**W-11S**		**W-24S**		**W-38S**	
	25-Jan-11		**25-Jan-11**		**25-Jan-11**		**25-Jan-11**	
Compounds of Concern	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**
Volatile Organic Compounds (VOCs) By Method 8260 (Results in mg/l)								
Chloromethane	ND	35	ND	35	ND	35	DRY	35
Vinyl Chloride	ND	27.6	ND	27.6	ND	27.6	DRY	27.6
Trichlorofluoromethane	ND	11	ND	11	ND	11	DRY	11
Dichlorodifluoromethane	ND	2.8	0.0069	2.8	ND	2.8	DRY	2.8
1,1-Dichloroethene	ND	3.59	ND	6.12	ND	5.07	DRY	5.32
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	50.6	DRY	50.6
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	17.5	DRY	17.5
Benzene	ND	2.21	ND	3.78	ND	3.13	DRY	3.28
Trichloroethene	ND	11	ND	11	ND	11	DRY	11
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***
Antimony	ND	8,828	ND	15,074	ND	12,478	DRY	13,097
Arsenic	0.0084	0.81	ND	1.38	ND	1.14	DRY	1.2
Barium	0.682	***	ND	***	ND	***	DRY	***
Chromium, hexavalent	ND	4.54	ND	7.76	ND	6.42	DRY	6.74
Chromium	ND	38	ND	65	0.054	54	DRY	57
Copper	ND	4.65	ND	7.94	0.0159	6.57	DRY	6.9
Lead	ND	1.85	ND	3.16	ND	2.61	DRY	2.74
Magnesium	54.4	***	24.9	***	20.2	***	DRY	***
Sodium	318	103,222	ND	176,259	19.5	145,911	DRY	153,146
Zinc	0.0175	42.86	ND	73.19	ND	60.59	DRY	63.6

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JANUARY 2011 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2011 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	**W-39S**		**W-40S**		**W-1D**	**W-37D**	**FB-01**	**TB-01**
	25-Jan-11		**25-Jan-11**		**25-Jan-11**	**25-Jan-11**	**25-Jan-11**	**24-Jan-11**
Compounds of Concern	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**Result**	**Result**	**Result**
Volatile Organic Compounds (VOCs) By Method 8260 (Results in ug/l)								
Chloromethane	BLOCKED	35	ND	35	ND	ND	ND	ND
Vinyl Chloride	BLOCKED	27.6	ND	27.6	ND	ND	ND	ND
Trichlorofluoromethane	BLOCKED	11	ND	11	ND	ND	ND	ND
Dichlorodifluoromethane	BLOCKED	2.8	ND	2.8	ND	ND	-	ND
1,1-Dichloroethene	BLOCKED	5.71	ND	17.05	ND	ND	ND	ND
1,1-Dichloroethane	BLOCKED	50.6	ND	50.6	ND	ND	ND	ND
cis-1,2-Dichloroethene	BLOCKED	17.5	ND	17.5	ND	ND	ND	ND
Benzene	BLOCKED	3.53	ND	10.53	ND	ND	ND	ND
Trichloroethene	BLOCKED	11	ND	11	ND	ND	ND	ND
Total Metals (Results in mg/l)								
	Result	**GWTL**	**Result**	**GWTL**	**Result**	**Result**	**Result**	**Result**
Antimony	BLOCKED	14,072	ND	41,986	ND	ND	ND	-
Arsenic	BLOCKED	1.29	ND	3.85	ND	0.021	ND	-
Barium	BLOCKED	***	0.063	***	ND	0.63	ND	-
Chromium, hexavalent	BLOCKED	7.24	ND	21.6	ND	ND	ND	-
Chromium	BLOCKED	61	ND	181	ND	ND	ND	-
Copper	BLOCKED	7.41	ND	22.12	ND	ND	ND	-
Lead	BLOCKED	2.95	ND	8.79	ND	ND	ND	-
Magnesium	BLOCKED	***	18.5	***	5.4	28.4	ND	-
Sodium	BLOCKED	164,544	29.1	490,952	99.5	167	ND	-
Zinc	BLOCKED	68.33	ND	203.87	ND	ND	ND	-

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-2

AL TURI LANDFILL - CLASS II SITE
TYPE 2 GROUNDWATER MONITORING WELLS
JANUARY 2011 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2011 SAMPLING EVENT

		Laboratory Analytical Results										
Sample ID		**W-3A**	**W-12SA**	**W-13S**	**W-18S**	**W-19S**	**W-20**	**W-29**	**W-3D****	**W-12DA****	**FB-01**	**TB-01**
Sample Date		**24-Jan-11**	**24-Jan-11**	**24-Jan-11**	**24-Jan-11**	**24-Jan-11**	**25-Jan-11**	**25-Jan-11**	**25-Jan-11**	**25-Jan-11**	**25-Jan-11**	**25-Jan-11**
Compounds of Concern	**GWTL**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Volatile Organic Compounds (VOCs) (Results in mg/l)												
Chloromethane	35	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	ND
Vinyl Chloride	27.6	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	ND
Trichlorofluoromethane	11	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	ND
Dichlorodifluoromethane	2.8	ND	ND	Frozen	ND	0.004 J	Dry	Dry	ND	ND	-	-
1,1-Dichloroethene	17.05	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	ND
1,1-Dichloroethane	50.6	ND	0.002 J	Frozen	0.0056	ND	Dry	Dry	0.002 J	ND	ND	ND
cis-1,2-Dichloroethene	17.5	ND	ND	Frozen	0.017	ND	Dry	Dry	0.002 J	ND	ND	ND
Benzene	10.53	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	ND
Trichloroethene	11	ND	ND	Frozen	0.003 J	ND	Dry	Dry	ND	ND	ND	ND
Total Metals (Results in mg/l)												
Antimony	41,986	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	-
Arsenic	3.85	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	-
Barium	***	ND	0.0599	Frozen	0.0768	ND	Dry	Dry	0.0651	ND	ND	-
Chromium, hexavalent	21.6	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	-
Chromium	181	ND	ND	Frozen	ND	ND	Dry	Dry	ND	ND	ND	-
Copper	22.1	ND	ND	Frozen	ND	0.0162	Dry	Dry	ND	ND	ND	-
Lead	8.79	ND	ND	Frozen	ND	0.0054	Dry	Dry	ND	ND	ND	-
Magnesium	***	12.4	14.2	Frozen	26.9	19.6	Dry	Dry	25.9	ND	ND	-
Sodium	490,952	18.8	ND	Frozen	ND	ND	Dry	Dry	19.7	46	ND	-
Zinc	203.87	ND	ND	Frozen	ND	0.0161	Dry	Dry	ND	ND	ND	-

Notes:

** - Groundwater Trigger Levels Not Applicable to These Wells.

*** - Groundwater Trigger Level is Greater Than $1X10^{b}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

TABLE 3-1
AL TURI LANDFILL - CLASS II SITE
SUMMARY OF WATER-LEVEL ELEVATIONS
JANUARY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

	Top of Casing	Well Bottom	Depth to Water (ft)	Water Level Elevation *
Type 1 Wells - Overburden				
W-1	383.5	342.05	29.21	354.29
W-11S	376.2	346.18	18.12	358.08
W-24	377.18	352.23	19.56	357.62
W-38S	429.45	342.82	> 86.63	342.82
W-39S	379.32	349.32	Blocked	349.32
W-40	381.81	349.81	23.96	357.85
Type 1 Wells - Bedrock				
W-1D	376.5	247.5	19.48	357.02
W-37D	385.91	301.66	28.85	357.06
Type 2 Wells - Overburden				
W-3A	424.62	393.62	9.89	414.73
W-12SA	421.08	380.71	35.25	385.83
W-13S	407.78	354.47	>53.31	354.47
W-18S	411.04	362.04	46.21	364.83
W-19S	413.43	353.28	50.76	362.67
W-20S	386.32	361.24	> 25.50	361.65
W-29	425.5	365.65	> 59.85	365.65
Type 2 Wells - Bedrock				
W-3D	423.99	350.99	4.70	419.29
W-12DA	NA	NA	82.04	NA
River Gauge				355.22

Notes:

* Reference elevation in feet, MSL

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Vinyl Chloride		Dichlorodifluoromethane		1,1-Dichloroethane		cis-1,2-D
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	2.60E+03	3.01E-02	0.002	1.47E+02	0.002	1.47E+02	0.002	1.47E+02	0.002
W-38S	294.31	60	1.00	0.0371	6.54E+02	7.57E-03	0.002	3.71E+01	0.002	3.71E+01	0.002	3.71E+01	0.002
W-11S	243.15	60	2.11	0.0481	1.48E+03	1.72E-02	0.002	8.40E+01	0.0069	2.90E+02	0.002	8.40E+01	0.002
W-39S	255.39	60	3.40	0.0382	1.99E+03	2.31E-02	0.002	1.13E+02	0.002	1.13E+02	0.002	1.13E+02	0.002
W-24	194.99	60	15.08	0.0127	2.25E+03	2.60E-02	0.002	1.27E+02	0.002	1.27E+02	0.002	1.27E+02	0.002
W-40	239.24	60	3.40	0.0124	6.07E+02	7.02E-03	0.002	3.44E+01	0.002	3.44E+01	0.002	3.44E+01	0.002
				Total Mass Loading (mg/d) =			**5.43E+02**		**7.49E+02**		**5.34E+02**		**5**
		Estimated In-Stream Concentration (mg/L)[5] =					**2.82E-06**		**3.89E-06**		**2.82E-06**		**1**
		Surface Water Quality Benchmark (mg/L)[6] =					**2.00E-03**		**1.00E+01**		**9.86E+00**		**1**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2010

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 26, 2010.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

)ichloroethene
Mass Loading (mg/d)
1.47E+02
3.71E+01
8.40E+01
1.13E+02
1.27E+02
3.44E+01
.34E+02
.06E-05
.00E+00

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Trichloroethene		Antimony		Arsenic		Barium		Chromiu
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	2.60E+03	3.01E-02	0.002	1.47E+02	0.005	3.68E+02	0.0084	6.19E+02	0.682	5.02E+04	0.002
W-38S	294.31	60	1.00	0.0371	6.54E+02	7.57E-03	0.002	3.71E+01	0.005	9.27E+01	0.005	9.27E+01	0.025	4.63E+02	0.002
W-11S	243.15	60	2.11	0.0481	1.48E+03	1.72E-02	0.002	8.40E+01	0.005	2.10E+02	0.005	2.10E+02	0.025	1.05E+03	0.002
W-39S	255.39	60	3.40	0.0382	1.99E+03	2.31E-02	0.002	1.13E+02	0.005	2.82E+02	0.005	2.82E+02	0.025	1.41E+03	0.002
W-24	194.99	60	15.08	0.0127	2.25E+03	2.60E-02	0.002	1.27E+02	0.005	3.18E+02	0.005	3.18E+02	0.025	1.59E+03	0.054
W-40	239.24	60	3.40	0.0124	6.07E+02	7.02E-03	0.002	3.44E+01	0.005	8.59E+01	0.005	8.59E+01	0.063	1.08E+03	0.002
				Total Mass Loading (mg/d) =			**5.43E+02**		**1.36E+03**		**1.61E+03**		**5.58E+04**		**3.85E**
			Estimated In-Stream Concentration (mg/L)[5] =				**2.82E-06**		**7.05E-06**		**7.05E-06**		**2.90E-04**		**2.00**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.00E-02**		**5.00E-01**		**5.00E-05**		**2.48E+03**		**9.20**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2010

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 26, 2010.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

m (total)
Mass Loading (mg/d)
1.47E+02
3.71E+01
8.40E+01
1.13E+02
3.43E+03
3.44E+01
E+03
E-05
E-02

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Copper		Lead		Magnesium		Sodium		Zi
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	3.17E+03	3.01E-02	0.005	3.68E+02	0.005	3.68E+02	54.4	4.01E+06	318	2.34E+07	0.0175
W-38S	294.31	60	1.00	0.0371	6.86E+02	7.57E-03	0.005	9.27E+01	0.005	9.27E+01	0.005	9.27E+01	0.005	9.27E+01	0.005
W-11S	243.15	60	2.11	0.0481	1.53E+03	1.72E-02	0.005	2.10E+02	0.005	2.10E+02	24.9	1.05E+06	0.005	2.10E+02	0.005
W-39S	255.39	60	3.40	0.0382	1.71E+03	2.31E-02	0.005	2.82E+02	0.005	2.82E+02	0.005	2.82E+02	0.005	2.82E+02	0.005
W-24	194.99	60	15.08	0.0127	1.83E+03	2.60E-02	0.0159	1.01E+03	0.005	3.18E+02	20.2	1.28E+06	19.5	1.24E+06	0.005
W-40	239.24	60	3.40	0.0124	4.89E+02	7.02E-03	0.005	8.59E+01	0.005	8.59E+01	18.5	3.18E+05	29.1	5.00E+05	0.005
				Total Mass Loading (mg/d) =			**2.05E+03**		**1.36E+03**		**6.66E+06**		**2.52E+07**		**2.28**
			Estimated In-Stream Concentration (mg/L)[5] =				**1.06E-05**		**7.05E-06**		**3.46E+02**		**1.31E-01**		**1.18**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.10E-02**		**4.00E-03**		**3.44E+05**		**2.50E+02**		**1.04**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2010

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 26, 2010.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

nc
Mass Loading (mg/d)
1.29E+03
9.27E+01
2.10E+02
2.82E+02
3.18E+02
8.59E+01
E+03
E-05
E-01

ESTIMATED WALLKILL RIVER FLOW AT THE AL TURI LANDFILL SITE

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/04							
10/12/04							
10/13/04							
10/14/04							
10/15/04							
10/16/04							
10/17/04							
10/18/04	356.00	2.71	6.47E+02			2.71	6.47E+02
10/19/04	355.00	2.51	4.95E+02			2.51	4.95E+02
10/20/04							
10/21/04	356.00	4.34	1.53E+03			4.34	1.53E+03
10/22/04	357.00	3.74	1.11E+03			3.74	1.11E+03
10/23/04	355.80	3.19	7.88E+02			3.19	7.88E+02
10/24/04	356.17	2.82	7.49E+02			2.82	7.49E+02
10/25/04	356.00	2.64	5.91E+02			2.64	5.91E+02
10/26/04	356.00	2.55	5.20E+02			2.55	5.20E+02
10/27/04	356.00	2.47	4.66E+02			2.47	4.66E+02
10/28/04	356.00	2.39	4.19E+02			2.39	4.19E+02
10/29/04	356.00	2.32	3.82E+02			2.32	3.82E+02
10/30/04	356.00	2.26	3.52E+02			2.26	3.52E+02
10/31/04	356.00	2.23	3.40E+02	5.20E+02		2.23	3.40E+02
11/01/04	356.00	2.20	3.27E+02	5.01E+02		2.20	3.27E+02
11/02/04	356.00	2.14	2.99E+02	4.77E+02		2.14	2.99E+02
11/03/04	356.00	2.15	3.06E+02	4.74E+02		2.15	3.06E+02
11/04/04	356.00	2.05	2.66E+02	4.60E+02		2.05	2.66E+02
11/05/04	356.00	2.15	3.06E+02	7.67E+02		2.15	3.06E+02
11/06/04	356.00	2.55	5.23E+02	7.32E+02		2.55	5.23E+02
11/07/04	356.00	2.43	4.42E+02	6.48E+02		2.43	4.42E+02
11/08/04	356.00	2.26	3.55E+02	5.60E+02		2.26	3.55E+02
11/09/04	356.00	2.16	3.08E+02	5.04E+02		2.16	3.08E+02
11/10/04	356.00	2.09	2.79E+02	4.51E+02		2.09	2.79E+02
11/11/04	356.00	2.03	2.58E+02	4.35E+02		2.03	2.58E+02
11/12/04	356.00	2.01	2.51E+02	4.66E+02		2.01	2.51E+02
11/13/04	356.00	2.12	2.93E+02	4.99E+02		2.12	2.93E+02
11/14/04	356.00	2.37	4.08E+02	5.94E+02		2.37	4.08E+02
11/15/04	356.00	2.37	4.11E+02	5.64E+02		2.37	4.11E+02
11/16/04	356.00	2.25	3.49E+02	5.65E+02		2.25	3.49E+02
11/17/04	356.00	2.20	3.25E+02	5.20E+02		2.20	3.25E+02
11/18/04	356.00	2.12	2.94E+02	4.93E+02		2.12	2.94E+02
11/19/04	356.00	2.06	2.68E+02	4.49E+02		2.06	2.68E+02
11/20/04	356.00	2.03	2.59E+02	4.56E+02		2.03	2.59E+02
11/21/04	356.00	2.05	2.66E+02	5.43E+02		2.05	2.66E+02
11/22/04	356.00	2.25	3.50E+02	5.83E+02		2.25	3.50E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/23/04	356.00	2.21	3.29E+02	5.29E+02		2.21	3.29E+02
11/24/04	356.00	2.09	2.80E+02	5.41E+02		2.09	2.80E+02
11/25/04	356.00	2.15	3.03E+02	1.00E+03		2.15	3.03E+02
11/26/04	356.00	2.75	6.82E+02	1.06E+03		2.75	6.82E+02
11/27/04	356.00	2.71	6.43E+02	8.65E+02		2.71	6.43E+02
11/28/04	356.00	2.50	4.86E+02	2.16E+03		2.50	4.86E+02
11/29/04	359.33	5.69	2.75E+03	4.35E+03		5.69	2.75E+03
11/30/04	359.83	6.05	3.14E+03	3.22E+03		6.05	3.14E+03
12/01/04	359.00	5.81	2.87E+03	4.31E+03		5.81	2.87E+03
12/02/04	360.50	6.80	4.05E+03	4.52E+03		6.80	4.05E+03
12/03/04	360.00	6.19	3.30E+03	3.29E+03	3.29E+03	6.19	3.29E+03
12/04/04	359.00	5.69	2.75E+03	2.60E+03	2.60E+03	5.69	2.60E+03
12/05/04	359.00	5.14	2.21E+03	2.11E+03	2.11E+03	5.14	2.11E+03
12/06/04	358.00	4.60	1.74E+03	1.73E+03	1.73E+03	4.60	1.73E+03
12/07/04	358.00	4.19	1.42E+03	1.81E+03		4.19	1.42E+03
12/08/04	358.33	4.65	1.78E+03	2.91E+03		4.65	1.78E+03
12/09/04	358.67	4.99	2.07E+03	2.32E+03		4.99	2.07E+03
12/10/04	358.33	4.93	2.01E+03	3.38E+03		4.93	2.01E+03
12/11/04	359.50	5.92	2.99E+03	4.32E+03		5.92	2.99E+03
12/12/04	359.67	5.94	3.02E+03	3.32E+03		5.94	3.02E+03
12/13/04	359.00	5.41	2.47E+03	2.56E+03		5.41	2.47E+03
12/14/04	358.50	4.94	2.03E+03	2.12E+03		4.94	2.03E+03
12/15/04	358.00	4.42	1.59E+03	1.68E+03		4.42	1.59E+03
12/16/04	357.67	3.98	1.27E+03	1.38E+03		3.98	1.27E+03
12/17/04	357.00	3.63	1.04E+03	1.22E+03		3.63	1.04E+03
12/18/04	357.00	3.43	9.20E+02	1.10E+03		3.43	9.20E+02
12/19/04	357.00	3.24	8.17E+02	1.02E+03		3.24	8.17E+02
12/20/04	356.00	3.18	7.82E+02	9.20E+02		3.18	7.82E+02
12/21/04	354.00			5.82E+02	5.82E+02		5.82E+02
12/22/04				7.49E+02	7.49E+02		7.49E+02
12/23/04	355.67	2.77	7.00E+02	1.47E+03		2.77	7.00E+02
12/24/04	357.83	4.39	1.57E+03	4.00E+03		4.39	1.57E+03
12/25/04	359.00	5.35	2.41E+03	2.57E+03		5.35	2.41E+03
12/26/04	356.67	4.78	1.88E+03	1.71E+03	1.71E+03	4.78	1.71E+03
12/27/04				1.43E+03	1.43E+03		1.43E+03
12/28/04				9.37E+02	9.37E+02		9.37E+02
12/29/04				1.05E+03	1.05E+03		1.05E+03
12/30/04	356.00	3.38	8.93E+02	1.21E+03		3.38	8.93E+02
12/31/04	357.00	3.22	8.04E+02	1.09E+03		3.22	8.04E+02
01/01/05	357.00	3.21	7.98E+02	1.12E+03		3.21	7.98E+02
01/02/05	357.00	3.32	8.60E+02	1.10E+03		3.32	8.60E+02
01/03/05	357.00	3.14	7.64E+02	1.16E+03		3.14	7.64E+02
01/04/05	357.50	3.85	1.18E+03	3.35E+03		3.85	1.18E+03
01/05/05	359.00	5.39	2.44E+03	2.96E+03		5.39	2.44E+03
01/06/05	358.50	4.90	1.99E+03	2.35E+03		4.90	1.99E+03
01/07/05	358.50	4.87	1.97E+03	2.41E+03		4.87	1.97E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/08/05	358.67	4.93	2.02E+03	2.76E+03		4.93	2.02E+03
01/09/05	359.67	5.79	2.85E+03	3.67E+03		5.79	2.85E+03
01/10/05	359.17	5.71	2.78E+03	3.01E+03		5.71	2.78E+03
01/11/05	359.00	5.50	2.56E+03	2.84E+03		5.50	2.56E+03
01/12/05	359.00	5.22	2.28E+03	2.63E+03		5.22	2.28E+03
01/13/05	359.00	5.10	2.17E+03	2.85E+03		5.10	2.17E+03
01/14/05	359.67	5.95	3.03E+03	9.11E+03		5.95	3.03E+03
01/15/05	363.83	10.02	9.34E+03	9.80E+03		10.02	9.34E+03
01/16/05	361.50	9.49	8.32E+03	6.85E+03	6.85E+03	9.49	6.85E+03
01/17/05	354.00			5.59E+03	5.59E+03		5.59E+03
01/18/05	354.00			4.37E+03	4.37E+03		4.37E+03
01/19/05	354.00			3.17E+03	3.17E+03		3.17E+03
01/20/05				2.39E+03	2.39E+03		2.39E+03
01/21/05				1.82E+03	1.82E+03		1.82E+03
01/22/05				2.72E+03	2.72E+03		2.72E+03
01/23/05				9.92E+03	9.92E+03		9.92E+03
01/24/05				1.12E+04	1.12E+04		1.12E+04
01/25/05				1.09E+04	1.09E+04		1.09E+04
01/26/05				1.03E+04	1.03E+04		1.03E+04
01/27/05				9.64E+03	9.64E+03		9.64E+03
01/28/05				8.88E+03	8.88E+03		8.88E+03
01/29/05				8.27E+03	8.27E+03		8.27E+03
01/30/05				7.84E+03	7.84E+03		7.84E+03
01/31/05				7.26E+03	7.26E+03		7.26E+03
02/01/05	354.00			6.75E+03	6.75E+03		6.75E+03
02/02/05	354.00			6.47E+03	6.47E+03		6.47E+03
02/03/05	354.00			5.76E+03	5.76E+03		5.76E+03
02/04/05	354.33	2.63	5.81E+02	5.41E+03		2.63	5.81E+02
02/05/05	356.00	2.61	5.66E+02	5.21E+03		2.61	5.66E+02
02/06/05	356.00	2.63	5.81E+02	4.86E+03		2.63	5.81E+02
02/07/05	356.00	2.65	5.93E+02	4.72E+03		2.65	5.93E+02
02/08/05	356.00	2.70	6.37E+02	4.52E+03		2.70	6.37E+02
02/09/05	356.00	2.80	7.26E+02	4.59E+03		2.80	7.26E+02
02/10/05	356.83	3.17	7.78E+02	7.65E+03		3.17	7.78E+02
02/11/05	358.00	4.45	1.62E+03	8.58E+03		4.45	1.62E+03
02/12/05	358.00	4.16	1.40E+03	6.68E+03		4.16	1.40E+03
02/13/05	357.00	3.64	1.05E+03	4.98E+03		3.64	1.05E+03
02/14/05	357.00	3.32	8.59E+02	3.90E+03		3.32	8.59E+02
02/15/05	357.33	3.58	1.01E+03	9.76E+03		3.58	1.01E+03
02/16/05	359.67	5.91	2.98E+03	5.74E+03		5.91	2.98E+03
02/17/05	360.00	6.33	3.46E+03	4.01E+03		6.33	3.46E+03
02/18/05	359.50	5.91	2.99E+03	2.92E+03	2.92E+03	5.91	2.92E+03
02/19/05	358.00	5.11	2.18E+03	1.97E+03	1.97E+03	5.11	1.97E+03
02/20/05	356.67	4.37	1.56E+03	1.61E+03		4.37	1.56E+03
02/21/05	357.50	3.90	1.22E+03	1.35E+03		3.90	1.22E+03
02/22/05	357.00	3.72	1.10E+03	1.36E+03		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/23/05	357.00	3.65	1.06E+03	1.29E+03		3.65	1.06E+03
02/24/05	357.00	3.52	9.75E+02	1.17E+03		3.52	9.75E+02
02/25/05	357.00	3.32	8.61E+02	1.09E+03		3.32	8.61E+02
02/26/05	357.00	3.18	7.83E+02	9.65E+02		3.18	7.83E+02
02/27/05	356.00	3.03	7.04E+02	9.07E+02		3.03	7.04E+02
02/28/05	356.83	2.93	8.64E+02	8.67E+02		2.93	8.64E+02
03/01/05	356.00	2.82	7.49E+02	8.45E+02		2.82	7.49E+02
03/02/05	356.67	2.91	8.45E+02	8.83E+02		2.91	8.45E+02
03/03/05	356.67	2.93	8.70E+02	8.48E+02	8.48E+02	2.93	8.48E+02
03/04/05	356.00	2.75	6.80E+02	7.68E+02		2.75	6.80E+02
03/05/05	356.00	2.71	6.43E+02	7.41E+02		2.71	6.43E+02
03/06/05	356.00	2.67	6.09E+02	7.37E+02		2.67	6.09E+02
03/07/05	356.00	2.66	6.07E+02	8.00E+02		2.66	6.07E+02
03/08/05	356.67	3.23	8.09E+02	1.73E+03		3.23	8.09E+02
03/09/05	357.33	4.30	1.51E+03	1.84E+03		4.30	1.51E+03
03/10/05	356.75	3.96	1.26E+03	1.48E+03		3.96	1.26E+03
03/11/05	355.20	3.82	1.16E+03	1.30E+03		3.82	1.16E+03
03/12/05	354.60	3.24	8.15E+02	1.12E+03		3.24	8.15E+02
03/13/05	357.00	3.27	8.34E+02	1.11E+03		3.27	8.34E+02
03/14/05	357.00	3.41	9.11E+02	1.20E+03		3.41	9.11E+02
03/15/05	357.00	3.41	9.11E+02	1.22E+03		3.41	9.11E+02
03/16/05	357.00	3.37	8.87E+02	1.28E+03		3.37	8.87E+02
03/17/05	357.00	3.37	8.85E+02	1.26E+03		3.37	8.85E+02
03/18/05	357.00	3.37	8.85E+02	1.36E+03		3.37	8.85E+02
03/19/05	357.00	3.43	9.22E+02	1.42E+03		3.43	9.22E+02
03/20/05	357.00	3.43	9.24E+02	1.41E+03		3.43	9.24E+02
03/21/05	357.00	3.56	9.98E+02	1.50E+03		3.56	9.98E+02
03/22/05	357.33	3.86	1.19E+03	1.66E+03		3.86	1.19E+03
03/23/05	357.17	3.88	1.20E+03	1.74E+03		3.88	1.20E+03
03/24/05	357.17	3.86	1.19E+03	1.63E+03		3.86	1.19E+03
03/25/05	358.00	4.27	1.48E+03	2.01E+03		4.27	1.48E+03
03/26/05	358.00	4.72	1.84E+03	2.34E+03		4.72	1.84E+03
03/27/05	358.00	4.66	1.78E+03	2.17E+03		4.66	1.78E+03
03/28/05	358.17	4.66	1.79E+03	4.34E+03		4.66	1.79E+03
03/29/05	362.17	8.60	6.71E+03	1.16E+04		8.60	6.71E+03
03/30/05	364.00	10.10	9.51E+03	8.78E+03	8.78E+03	10.10	8.78E+03
03/31/05	364.00	9.96	9.22E+03	6.80E+03	6.80E+03	9.96	6.80E+03
04/01/05	362.83	9.34	8.03E+03	5.86E+03	5.86E+03	9.34	5.86E+03
04/02/05	361.67	8.12	5.93E+03	9.07E+03		8.12	5.93E+03
04/03/05	364.00	10.37	1.01E+04	1.68E+04		10.37	1.01E+04
04/04/05	364.00	10.68	1.07E+04	1.10E+04		10.68	1.07E+04
04/05/05	365.00	11.23	1.19E+04	8.69E+03	8.69E+03	11.23	8.69E+03
04/06/05	364.83	11.11	1.17E+04	7.95E+03	7.95E+03	11.11	7.95E+03
04/07/05	364.00	10.44	1.02E+04	6.97E+03	6.97E+03	10.44	6.97E+03
04/08/05	362.67	9.20	7.76E+03	5.86E+03	5.86E+03	9.20	5.86E+03
04/09/05	361.00	7.39	4.84E+03	4.42E+03	4.42E+03	7.39	4.42E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/10/05	359.33	5.82	2.89E+03	3.11E+03		5.82	2.89E+03
04/11/05	358.33	4.72	1.84E+03	2.40E+03		4.72	1.84E+03
04/12/05	357.50	3.91	1.22E+03	1.82E+03		3.91	1.22E+03
04/13/05	357.00	3.50	9.63E+02			3.50	9.63E+02
04/14/05	356.83	3.04	7.10E+02	1.36E+03		3.04	7.10E+02
04/15/05	356.00	2.74	6.69E+02	1.20E+03		2.74	6.69E+02
04/16/05	356.00	2.47	4.68E+02	1.06E+03		2.47	4.68E+02
04/17/05	356.00	2.29	3.70E+02	9.95E+02		2.29	3.70E+02
04/18/05	356.00	2.13	2.97E+02	9.04E+02		2.13	2.97E+02
04/19/05	355.20	2.00	2.50E+02	8.45E+02		2.00	2.50E+02
04/20/05	354.83	1.89	2.13E+02	7.94E+02		1.89	2.13E+02
04/21/05	355.00	1.76	1.81E+02	7.32E+02		1.76	1.81E+02
04/22/05	355.00	1.70	1.66E+02	6.92E+02		1.70	1.66E+02
04/23/05	354.83	1.60	1.46E+02	7.66E+02		1.60	1.46E+02
04/24/05	354.67	1.91	2.21E+02	1.75E+03		1.91	2.21E+02
04/25/05	355.00	2.63	5.81E+02	1.54E+03		2.63	5.81E+02
04/26/05	355.33	2.36	4.06E+02	1.14E+03		2.36	4.06E+02
04/27/05	355.33	2.01	2.52E+02	1.23E+03		2.01	2.52E+02
04/28/05	355.50	2.34	3.94E+02	1.87E+03		2.34	3.94E+02
04/29/05	356.17	2.88	8.16E+02	1.43E+03		2.88	8.16E+02
04/30/05	355.67	2.38	4.14E+02	1.16E+03		2.38	4.14E+02
05/01/05	354.67	2.10	2.83E+02	1.28E+03		2.10	2.83E+02
05/02/05	355.67	2.46	4.62E+02	1.21E+03		2.46	4.62E+02
05/03/05	356.00	2.17	3.11E+02	1.05E+03		2.17	3.11E+02
05/04/05	356.00	2.00	2.49E+02	9.44E+02		2.00	2.49E+02
05/05/05	355.17	1.83	1.98E+02	8.44E+02		1.83	1.98E+02
05/06/05	355.00	1.65	1.56E+02	7.66E+02		1.65	1.56E+02
05/07/05	354.83	1.55	1.35E+02	7.04E+02		1.55	1.35E+02
05/08/05	355.00	1.47	1.22E+02	6.77E+02		1.47	1.22E+02
05/09/05	354.83	1.38	1.08E+02	6.18E+02		1.38	1.08E+02
05/10/05	354.83	1.30	9.69E+01	5.90E+02		1.30	9.69E+01
05/11/05	354.67	1.28	9.43E+01	5.23E+02		1.28	9.43E+01
05/12/05	354.83	1.19	8.42E+01	5.41E+02		1.19	8.42E+01
05/13/05	354.67	1.16	8.07E+01	4.61E+02		1.16	8.07E+01
05/14/05	354.67	1.06	6.99E+01	4.67E+02		1.06	6.99E+01
05/15/05	354.50	1.01	6.61E+01	4.63E+02		1.01	6.61E+01
05/16/05	354.33	1.11	7.52E+01	5.31E+02		1.11	7.52E+01
05/17/05	354.50	1.26	9.25E+01	5.43E+02		1.26	9.25E+01
05/18/05	354.50	1.16	8.08E+01	4.54E+02		1.16	8.08E+01
05/19/05	354.50	1.05	6.91E+01	4.44E+02		1.05	6.91E+01
05/20/05	354.83	0.94	6.00E+01	4.16E+02		0.94	6.00E+01
05/21/05	354.00	0.88	5.50E+01	3.85E+02		0.88	5.50E+01
05/22/05	354.00	0.85	5.27E+01	3.97E+02		0.85	5.27E+01
05/23/05	354.00	0.86	5.36E+01	4.34E+02		0.86	5.36E+01
05/24/05	355.00	0.97	6.19E+01	4.52E+02		0.97	6.19E+01
05/25/05	354.67	0.95	6.05E+01	4.51E+02		0.95	6.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/26/05	354.67	0.98	6.27E+01	4.54E+02		0.98	6.27E+01
05/27/05	354.67	1.01	6.58E+01	4.65E+02		1.01	6.58E+01
05/28/05	354.67	0.97	6.25E+01	4.46E+02		0.97	6.25E+01
05/29/05	354.33	0.90	5.70E+01	5.59E+02		0.90	5.70E+01
05/30/05	354.67	1.15	7.97E+01	5.24E+02		1.15	7.97E+01
05/31/05	354.83	1.00	6.49E+01	4.79E+02		1.00	6.49E+01
06/01/05	354.00	0.85	5.30E+01	3.60E+02		0.85	5.30E+01
06/02/05	354.00	0.78	4.85E+01	3.67E+02		0.78	4.85E+01
06/03/05	354.00	0.70	4.31E+01	3.11E+02		0.70	4.31E+01
06/04/05	354.00	0.67	4.14E+01	2.96E+02		0.67	4.14E+01
06/05/05	354.00	0.73	4.50E+01	3.15E+02		0.73	4.50E+01
06/06/05	354.00	0.80	4.93E+01	3.47E+02		0.80	4.93E+01
06/07/05	354.00	0.74	4.57E+01	3.32E+02		0.74	4.57E+01
06/08/05	354.50	0.97	6.25E+01	3.49E+02		0.97	6.25E+01
06/09/05	354.33	1.02	6.62E+01	3.67E+02		1.02	6.62E+01
06/10/05	354.00	0.69	4.27E+01	3.34E+02		0.69	4.27E+01
06/11/05	354.00	0.65	4.05E+01	3.00E+02		0.65	4.05E+01
06/12/05	354.00			3.46E+02	3.46E+02		3.46E+02
06/13/05	354.00	0.58	3.70E+01	3.16E+02		0.58	3.70E+01
06/14/05	354.00	0.55	3.54E+01	2.59E+02		0.55	3.54E+01
06/15/05	354.00	0.47	3.16E+01	2.23E+02		0.47	3.16E+01
06/16/05	354.00	0.45	3.10E+01	2.19E+02		0.45	3.10E+01
06/17/05	354.00	0.41	2.93E+01	2.66E+02		0.41	2.93E+01
06/18/05	354.00	0.84	5.26E+01	2.86E+02		0.84	5.26E+01
06/19/05	354.00	0.87	5.41E+01	3.10E+02		0.87	5.41E+01
06/20/05	354.00	0.74	4.58E+01	2.86E+02		0.74	4.58E+01
06/21/05	354.00	0.61	3.82E+01	2.40E+02		0.61	3.82E+01
06/22/05	354.00	0.59	3.74E+01	2.10E+02		0.59	3.74E+01
06/23/05	354.00	0.58	3.71E+01	2.06E+02		0.58	3.71E+01
06/24/05	354.50	0.90	5.66E+01	2.98E+02		0.90	5.66E+01
06/25/05	354.00	0.67	4.18E+01	2.61E+02		0.67	4.18E+01
06/26/05	354.00	0.56	3.58E+01	2.08E+02		0.56	3.58E+01
06/27/05	354.00	0.51	3.36E+01	1.61E+02		0.51	3.36E+01
06/28/05	354.00	0.49	3.26E+01	1.65E+02		0.49	3.26E+01
06/29/05	354.00	0.52	3.41E+01	2.35E+02		0.52	3.41E+01
06/30/05	354.33	0.91	5.71E+01	2.60E+02		0.91	5.71E+01
07/01/05	355.00	1.82	1.96E+02	5.36E+02		1.82	1.96E+02
07/02/05	354.33	1.69	1.63E+02	6.48E+02		1.69	1.63E+02
07/03/05	355.00	1.24	8.98E+01	4.29E+02		1.24	8.98E+01
07/04/05	354.33	0.84	5.22E+01	2.91E+02		0.84	5.22E+01
07/05/05	354.00	0.65	4.05E+01	2.41E+02		0.65	4.05E+01
07/06/05	354.00	0.58	3.68E+01	1.97E+02		0.58	3.68E+01
07/07/05	354.00	0.62	3.90E+01	1.67E+02		0.62	3.90E+01
07/08/05	354.00	0.68	4.21E+01	2.69E+02		0.68	4.21E+01
07/09/05	354.50	1.11	7.47E+01	4.95E+02		1.11	7.47E+01
07/10/05	356.00	2.07	2.72E+02	6.46E+02		2.07	2.72E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/11/05	354.83	1.75	1.78E+02	4.99E+02		1.75	1.78E+02
07/12/05	354.00			3.63E+02	3.63E+02		3.63E+02
07/13/05	354.33	0.90	5.67E+01	3.52E+02		0.90	5.67E+01
07/14/05	354.00	0.71	4.41E+01	2.48E+02		0.71	4.41E+01
07/15/05	354.00	0.63	3.96E+01	1.85E+02		0.63	3.96E+01
07/16/05	354.00	0.63	3.94E+01	1.57E+02		0.63	3.94E+01
07/17/05	354.00	0.77	4.76E+01	2.13E+02		0.77	4.76E+01
07/18/05	354.00	0.68	4.23E+01	3.81E+02		0.68	4.23E+01
07/19/05	354.00	0.61	3.83E+01	3.81E+02		0.61	3.83E+01
07/20/05	354.50	0.88	5.52E+01	3.16E+02		0.88	5.52E+01
07/21/05	354.83	0.94	6.00E+01	2.80E+02		0.94	6.00E+01
07/22/05	354.00	0.71	4.39E+01	2.14E+02		0.71	4.39E+01
07/23/05	354.00	0.55	3.55E+01	1.73E+02		0.55	3.55E+01
07/24/05	354.00	0.47	3.20E+01	1.25E+02		0.47	3.20E+01
07/25/05	354.00	0.49	3.27E+01	1.20E+02		0.49	3.27E+01
07/26/05	354.00	0.43	2.99E+01	1.16E+02		0.43	2.99E+01
07/27/05	354.00	0.42	2.98E+01	1.04E+02		0.42	2.98E+01
07/28/05	354.00	0.42	2.96E+01	1.02E+02		0.42	2.96E+01
07/29/05	354.00	0.44	3.06E+01	9.00E+01		0.44	3.06E+01
07/30/05	354.00	0.44	3.03E+01	9.30E+01		0.44	3.03E+01
07/31/05	354.00			8.70E+01	8.70E+01		8.70E+01
08/01/05	354.00	0.40	2.88E+01	7.90E+01		0.40	2.88E+01
08/02/05	354.00	0.36	2.75E+01	7.80E+01		0.36	2.75E+01
08/03/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/04/05	354.00	0.34	2.66E+01	7.00E+01		0.34	2.66E+01
08/05/05	354.00	0.34	2.65E+01	6.60E+01		0.34	2.65E+01
08/06/05	354.00	0.34	2.66E+01	6.30E+01		0.34	2.66E+01
08/07/05	354.00	0.35	2.71E+01	5.90E+01		0.35	2.71E+01
08/08/05	354.00	0.34	2.67E+01	5.90E+01		0.34	2.67E+01
08/09/05	354.00	0.32	2.59E+01	6.00E+01		0.32	2.59E+01
08/10/05	354.00	0.33	2.64E+01	5.80E+01		0.33	2.64E+01
08/11/05	354.00	0.35	2.71E+01	5.40E+01		0.35	2.71E+01
08/12/05	354.00	0.31	2.57E+01	5.40E+01		0.31	2.57E+01
08/13/05	354.00			5.50E+01	5.50E+01		5.50E+01
08/14/05	354.00	0.36	2.73E+01	6.30E+01		0.36	2.73E+01
08/15/05	354.00	0.36	2.75E+01	7.40E+01		0.36	2.75E+01
08/16/05	354.00	0.44	3.06E+01	7.40E+01		0.44	3.06E+01
08/17/05	354.00	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
08/18/05	354.00	0.38	2.82E+01	8.70E+01		0.38	2.82E+01
08/19/05	354.00	0.36	2.76E+01	7.80E+01		0.36	2.76E+01
08/20/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/21/05	354.00	0.35	2.70E+01	7.20E+01		0.35	2.70E+01
08/22/05	354.00	0.37	2.78E+01	6.70E+01		0.37	2.78E+01
08/23/05	354.00	0.34	2.68E+01	6.30E+01		0.34	2.68E+01
08/24/05	354.00	0.32	2.61E+01	6.10E+01		0.32	2.61E+01
08/25/05	354.00	0.18	2.15E+01	5.30E+01		0.18	2.15E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/26/05	354.00	0.16	2.09E+01	4.90E+01		0.16	2.09E+01
08/27/05	354.00	0.14	2.04E+01	4.70E+01		0.14	2.04E+01
08/28/05	354.00	0.15	2.05E+01	4.80E+01		0.15	2.05E+01
08/29/05	354.00	0.21	2.23E+01	5.20E+01		0.21	2.23E+01
08/30/05	354.00	0.28	2.47E+01	5.20E+01		0.28	2.47E+01
08/31/05	354.00	0.32	2.58E+01			0.32	2.58E+01
09/01/05	354.00	0.28	2.47E+01	6.00E+01		0.28	2.47E+01
09/02/05	354.00	0.25	2.38E+01	7.20E+01		0.25	2.38E+01
09/03/05	354.00	0.24	2.34E+01	6.70E+01		0.24	2.34E+01
09/04/05	354.00	0.20	2.22E+01	5.60E+01		0.20	2.22E+01
09/05/05	354.00	0.19	2.19E+01	4.90E+01		0.19	2.19E+01
09/06/05	354.00	0.15	2.07E+01	4.70E+01		0.15	2.07E+01
09/07/05	354.00	0.11	1.96E+01	4.50E+01		0.11	1.96E+01
09/08/05	354.00	0.09	1.90E+01	4.30E+01		0.09	1.90E+01
09/09/05	354.00	0.06	1.84E+01	4.20E+01		0.06	1.84E+01
09/10/05	354.00	0.04	1.79E+01	4.00E+01		0.04	1.79E+01
09/11/05	354.00	0.02	1.74E+01	4.00E+01		0.02	1.74E+01
09/12/05	354.00	0.04	1.78E+01	3.70E+01		0.04	1.78E+01
09/13/05	354.00	0.07	1.87E+01	3.60E+01		0.07	1.87E+01
09/14/05	354.00	0.06	1.83E+01	3.50E+01		0.06	1.83E+01
09/15/05	354.00	0.06	1.83E+01	4.00E+01		0.06	1.83E+01
09/16/05	354.00	0.14	2.05E+01	3.90E+01		0.14	2.05E+01
09/17/05	354.00	0.20	2.21E+01	3.90E+01		0.20	2.21E+01
09/18/05	354.00	0.27	2.42E+01	3.80E+01		0.27	2.42E+01
09/19/05	354.00	0.28	2.46E+01	4.00E+01		0.28	2.46E+01
09/20/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/21/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/22/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
09/23/05	354.00	0.19	2.18E+01	4.10E+01		0.19	2.18E+01
09/24/05	354.00	0.16	2.10E+01	4.00E+01		0.16	2.10E+01
09/25/05	354.00	0.15	2.06E+01	3.90E+01		0.15	2.06E+01
09/26/05	354.00	0.17	2.12E+01	4.10E+01		0.17	2.12E+01
09/27/05	354.00	0.17	2.12E+01	4.30E+01		0.17	2.12E+01
09/28/05	354.00	0.17	2.12E+01	4.50E+01		0.17	2.12E+01
09/29/05	354.00	0.19	2.19E+01	4.40E+01		0.19	2.19E+01
09/30/05	354.00	0.21	2.25E+01	4.30E+01		0.21	2.25E+01
10/01/05	354.00	0.23	2.30E+01	4.00E+01		0.23	2.30E+01
10/02/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/03/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
10/04/05	354.00	0.25	2.35E+01	4.10E+01		0.25	2.35E+01
10/05/05	354.00	0.23	2.30E+01	4.10E+01		0.23	2.30E+01
10/06/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/07/05	354.00	0.20	2.21E+01	4.00E+01		0.20	2.21E+01
10/08/05	354.00	0.28	2.46E+01	2.89E+03		0.28	2.46E+01
10/09/05	359.40	5.56	2.61E+03	1.20E+04		5.56	2.61E+03
10/10/05				6.98E+03	6.98E+03		6.98E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/05	361.00	7.57	5.10E+03	4.95E+03	4.95E+03	7.57	4.95E+03
10/12/05				5,830	5.83E+03		5.83E+03
10/13/05				14,700	1.47E+04		1.47E+04
10/14/05				12,700	1.27E+04		1.27E+04
10/15/05				13,200	1.32E+04		1.32E+04
10/16/05				9,720	9.72E+03		9.72E+03
10/17/05				8,130	8.13E+03		8.13E+03
10/18/05				7,120	7.12E+03		7.12E+03
10/19/05				6,000	6.00E+03		6.00E+03
10/20/05				4,700	4.70E+03		4.70E+03
10/21/05				3,050	3.05E+03		3.05E+03
10/22/05				1,880	1.88E+03		1.88E+03
10/23/05				3,630	3.63E+03		3.63E+03
10/24/05				3,220	3.22E+03		3.22E+03
10/25/05				4,140	4.14E+03		4.14E+03
10/26/05				4,770	4.77E+03		4.77E+03
10/27/05				4,090	4.09E+03		4.09E+03
10/28/05				3,410	3.41E+03		3.41E+03
10/29/05				2,820	2.82E+03		2.82E+03
10/30/05				2,240	2.24E+03		2.24E+03
10/31/05				1,780	1.78E+03		1.78E+03
11/01/05				1,480	1.48E+03		1.48E+03
11/02/05				1,280	1.28E+03		1.28E+03
11/03/05				1,120	1.12E+03		1.12E+03
11/04/05				993	9.93E+02		9.93E+02
11/05/05				926	9.26E+02		9.26E+02
11/06/05				842	8.42E+02		8.42E+02
11/07/05				807	8.07E+02		8.07E+02
11/08/05				729	7.29E+02		7.29E+02
11/09/05				735	7.35E+02		7.35E+02
11/10/05				1,040	1.04E+03		1.04E+03
11/11/05				1,050	1.05E+03		1.05E+03
11/12/05				891	8.91E+02		8.91E+02
11/13/05				772	7.72E+02		7.72E+02
11/14/05				688	6.88E+02		6.88E+02
11/15/05				672	6.72E+02		6.72E+02
11/16/05				724	7.24E+02		7.24E+02
11/17/05				1,730	1.73E+03		1.73E+03
11/18/05				1,740	1.74E+03		1.74E+03
11/19/05				1,390	1.39E+03		1.39E+03
11/20/05				1,110	1.11E+03		1.11E+03
11/21/05				953	9.53E+02		9.53E+02
11/22/05				1,510	1.51E+03		1.51E+03
11/23/05				2,310	2.31E+03		2.31E+03
11/24/05				1,780	1.78E+03		1.78E+03
11/25/05				1,490	1.49E+03		1.49E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/26/05				1,210	1.21E+03		1.21E+03
11/27/05				1,050	1.05E+03		1.05E+03
11/28/05				998	9.98E+02		9.98E+02
11/29/05				973	9.73E+02		9.73E+02
11/30/05				6,390	6.39E+03		6.39E+03
12/01/05				4,570	4.57E+03		4.57E+03
12/02/05				3,310	3.31E+03		3.31E+03
12/03/05				2,570	2.57E+03		2.57E+03
12/04/05				2,000	2.00E+03		2.00E+03
12/05/05				1,630	1.63E+03		1.63E+03
12/06/05				1,420	1.42E+03		1.42E+03
12/07/05				1,250	1.25E+03		1.25E+03
12/08/05				1,060	1.06E+03		1.06E+03
12/09/05				960	9.60E+02		9.60E+02
12/10/05				972	9.72E+02		9.72E+02
12/11/05				983	9.83E+02		9.83E+02
12/12/05				992	9.92E+02		9.92E+02
12/13/05				848	8.48E+02		8.48E+02
12/14/05				Ice			
12/15/05				Ice			
12/16/05				Ice			
12/17/05				Ice			
12/18/05				Ice			
12/19/05				Ice			
12/20/05				Ice			
12/21/05				Ice			
12/22/05				Ice			
12/23/05				Ice			
12/24/05				Ice			
12/25/05				Ice			
12/26/05				Ice			
12/27/05				Ice			
12/28/05				Ice			
12/29/05				Ice			
12/30/05				Ice			
12/31/05				Ice			
01/01/06	358.32	4.23	1.45E+03	ice		4.23	1.45E+03
01/02/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/03/06	358.42	4.33	1.53E+03	ice		4.33	1.53E+03
01/04/06	359.32	5.23	2.29E+03	ice		5.23	2.29E+03
01/05/06	359.35	5.26	2.32E+03	ice		5.26	2.32E+03
01/06/06	359.38	5.29	2.35E+03	ice		5.29	2.35E+03
01/07/06	358.91	4.82	1.92E+03	ice		4.82	1.92E+03
01/08/06	358.29	4.20	1.43E+03	ice		4.20	1.43E+03
01/09/06	357.87	3.78	1.14E+03	ice		3.78	1.14E+03
01/10/06	357.81	3.72	1.10E+03	ice		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/11/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/12/06	358.79	4.70	1.82E+03	3.01E+03		4.70	1.82E+03
01/13/06	359.00	4.91	2.00E+03	3.11E+03		4.91	2.00E+03
01/14/06	359.05	4.96	2.05E+03	3.55E+03		4.96	2.05E+03
01/15/06	359.77	5.68	2.74E+03	4.66E+03		5.68	2.74E+03
01/16/06	359.24	5.15	2.22E+03	3.17E+03		5.15	2.22E+03
01/17/06	360.20	6.11	3.21E+03	2.62E+03	2.62E+03	6.11	2.62E+03
01/18/06	359.83	5.74	2.80E+03	5.40E+03		5.74	2.80E+03
01/19/06	362.07	7.98	5.72E+03	7.34E+03		7.98	5.72E+03
01/20/06	361.87	7.78	5.41E+03	5.47E+03		7.78	5.41E+03
01/21/06	361.37	7.28	4.68E+03	4.71E+03		7.28	4.68E+03
01/22/06	360.65	6.56	3.74E+03	4.01E+03		6.56	3.74E+03
01/23/06	359.69	5.60	2.66E+03	3.25E+03		5.60	2.66E+03
01/24/06	359.35	5.26	2.32E+03	2.82E+03		5.26	2.32E+03
01/25/06	359.06	4.97	2.05E+03	2.62E+03		4.97	2.05E+03
01/26/06	358.64	4.55	1.70E+03	2.32E+03		4.55	1.70E+03
01/27/06	358.04	3.95	1.25E+03	1.87E+03		3.95	1.25E+03
01/28/06	357.59	3.50	9.65E+02	1.63E+03		3.50	9.65E+02
01/29/06	357.48	3.39	8.96E+02	1.64E+03		3.39	8.96E+02
01/30/06	357.70	3.61	1.03E+03	1.97E+03		3.61	1.03E+03
01/31/06	358.11	4.02	1.30E+03	2.53E+03		4.02	1.30E+03
02/01/06	358.24	4.15	1.39E+03	2.41E+03		4.15	1.39E+03
02/02/06	357.86	3.77	1.13E+03	1.97E+03		3.77	1.13E+03
02/03/06	357.92	3.83	1.17E+03	2.82E+03		3.83	1.17E+03
02/04/06	358.99	4.90	2.00E+03	3.46E+03		4.90	2.00E+03
02/05/06	359.50	5.45	2.51E+03	4.35E+03		5.45	2.51E+03
02/06/06	359.31	5.22	2.28E+03			5.22	2.28E+03
02/07/06	358.69	4.60	1.74E+03			4.60	1.74E+03
02/08/06	358.16	4.07	1.33E+03			4.07	1.33E+03
02/09/06	357.65	3.56	1.00E+03			3.56	1.00E+03
02/10/06	357.29	3.20	7.92E+02			3.20	7.92E+02
02/11/06	357.04	2.95	8.94E+02			2.95	8.94E+02
02/12/06	356.87	2.78	7.14E+02			2.78	7.14E+02
02/13/06	356.71	2.62	5.76E+02			2.62	5.76E+02
02/14/06	356.72	2.63	5.79E+02			2.63	5.79E+02
02/15/06	356.65	2.56	5.27E+02			2.56	5.27E+02
02/16/06	356.77	2.68	6.20E+02			2.68	6.20E+02
02/17/06	357.01	2.92	8.63E+02			2.92	8.63E+02
02/18/06	357.02	2.93	8.72E+02			2.93	8.72E+02
02/19/06	356.53	2.44	4.48E+02			2.44	4.48E+02
02/20/06	356.23	2.14	3.01E+02			2.14	3.01E+02
02/21/06	356.14	2.05	2.67E+02			2.05	2.67E+02
02/22/06	356.04	1.95	2.31E+02			1.95	2.31E+02
02/23/06	355.97	1.88	2.11E+02			1.88	2.11E+02
02/24/06	355.97	1.88	2.12E+02			1.88	2.12E+02
02/25/06	355.86	1.77	1.84E+02			1.77	1.84E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/26/06	355.79	1.70	1.66E+02			1.70	1.66E+02
02/27/06	355.60	1.51	1.29E+02			1.51	1.29E+02
02/28/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/01/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/02/06	355.53	1.44	1.17E+02			1.44	1.17E+02
03/03/06	355.44	1.35	1.04E+02			1.35	1.04E+02
03/04/06	355.52	1.43	1.16E+02			1.43	1.16E+02
03/05/06	355.57	1.48	1.24E+02			1.48	1.24E+02
03/06/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/07/06	355.58	1.49	1.26E+02			1.49	1.26E+02
03/08/06	355.57	1.48	1.23E+02			1.48	1.23E+02
03/09/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/10/06	355.66	1.57	1.39E+02			1.57	1.39E+02
03/11/06	355.90	1.81	1.92E+02			1.81	1.92E+02
03/12/06	355.85	1.76	1.80E+02			1.76	1.80E+02
03/13/06	355.96	1.87	2.08E+02			1.87	2.08E+02
03/14/06	356.56	2.47	4.71E+02			2.47	4.71E+02
03/15/06	356.47	2.38	4.16E+02			2.38	4.16E+02
03/16/06	355.98	1.89	2.16E+02			1.89	2.16E+02
03/17/06	355.75	1.66	1.57E+02			1.66	1.57E+02
03/18/06	355.64	1.55	1.36E+02			1.55	1.36E+02
03/19/06	355.53	1.44	1.18E+02			1.44	1.18E+02
03/20/06	355.48	1.39	1.10E+02			1.39	1.10E+02
03/21/06	355.41	1.32	9.91E+01			1.32	9.91E+01
03/22/06	355.37	1.28	9.39E+01			1.28	9.39E+01
03/23/06	355.34	1.25	9.10E+01			1.25	9.10E+01
03/24/06	355.29	1.20	8.51E+01			1.20	8.51E+01
03/25/06	355.27	1.18	8.29E+01			1.18	8.29E+01
03/26/06	355.29	1.20	8.49E+01			1.20	8.49E+01
03/27/06	355.33	1.24	8.94E+01			1.24	8.94E+01
03/28/06	355.27	1.18	8.23E+01			1.18	8.23E+01
03/29/06	355.23	1.14	7.83E+01			1.14	7.83E+01
03/30/06	355.20	1.11	7.56E+01			1.11	7.56E+01
03/31/06	355.15	1.06	7.03E+01			1.06	7.03E+01
04/01/06	355.11	1.02	6.70E+01			1.02	6.70E+01
04/02/06	355.14	1.05	6.94E+01			1.05	6.94E+01
04/03/06							
04/04/06							
04/05/06							
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04/10/06							
04/11/06							
04/12/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/13/06							
04/14/06							
04/15/06							
04/16/06							
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05/28/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/29/06							
05/30/06							
05/31/06							
06/01/06	355.38	1.29	9.59E+01			1.29	9.59E+01
06/02/06	355.81	1.72	1.72E+02			1.72	1.72E+02
06/03/06	356.27	2.18	3.18E+02			2.18	3.18E+02
06/04/06	356.86	2.77	7.00E+02			2.77	7.00E+02
06/05/06	356.82	2.73	6.61E+02			2.73	6.61E+02
06/06/06	356.43	2.34	3.91E+02			2.34	3.91E+02
06/07/06	356.27	2.18	3.17E+02			2.18	3.17E+02
06/08/06	358.87	4.78	1.89E+03			4.78	1.89E+03
06/09/06	358.96	4.87	1.96E+03			4.87	1.96E+03
06/10/06	358.58	4.49	1.65E+03			4.49	1.65E+03
06/11/06	357.98	3.89	1.21E+03			3.89	1.21E+03
06/12/06	357.26	3.17	7.78E+02			3.17	7.78E+02
06/13/06	356.79	2.70	6.34E+02			2.70	6.34E+02
06/14/06	356.40	2.31	3.75E+02			2.31	3.75E+02
06/15/06	356.25	2.16	3.09E+02			2.16	3.09E+02
06/16/06	356.14	2.05	2.65E+02			2.05	2.65E+02
06/17/06	355.83	1.74	1.76E+02			1.74	1.76E+02
06/18/06	355.61	1.52	1.31E+02			1.52	1.31E+02
06/19/06	355.47	1.38	1.07E+02			1.38	1.07E+02
06/20/06	355.43	1.34	1.02E+02			1.34	1.02E+02
06/21/06	355.44	1.35	1.03E+02			1.35	1.03E+02
06/22/06	355.29	1.20	8.53E+01			1.20	8.53E+01
06/23/06	355.20	1.11	7.47E+01			1.11	7.47E+01
06/24/06	355.60	1.51	1.29E+02			1.51	1.29E+02
06/25/06	356.30	2.21	3.30E+02			2.21	3.30E+02
06/26/06	357.75	3.66	1.06E+03			3.66	1.06E+03
06/27/06	359.71	5.62	2.68E+03			5.62	2.68E+03
06/28/06	360.97	6.88	4.15E+03			6.88	4.15E+03
06/29/06	362.39	8.30	6.22E+03			8.30	6.22E+03
06/30/06	362.14	8.05	5.82E+03			8.05	5.82E+03
07/01/06	361.52	7.43	4.89E+03			7.43	4.89E+03
07/02/06	360.70	6.61	3.80E+03			6.61	3.80E+03
07/03/06	359.75	5.66	2.72E+03			5.66	2.72E+03
07/04/06	358.74	4.65	1.78E+03			4.65	1.78E+03
07/05/06	357.91	3.82	1.16E+03			3.82	1.16E+03
07/06/06	357.21	3.12	7.52E+02			3.12	7.52E+02
07/07/06	356.77	2.68	6.23E+02			2.68	6.23E+02
07/08/06	356.35	2.26	3.53E+02			2.26	3.53E+02
07/09/06	356.03	1.94	2.30E+02			1.94	2.30E+02
07/10/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/11/06	355.62	1.53	1.32E+02			1.53	1.32E+02
07/12/06	355.79	1.70	1.67E+02			1.70	1.67E+02
07/13/06	356.18	2.09	2.81E+02			2.09	2.81E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/14/06	356.25	2.16	3.07E+02			2.16	3.07E+02
07/15/06	355.85	1.76	1.81E+02			1.76	1.81E+02
07/16/06	355.61	1.52	1.31E+02			1.52	1.31E+02
07/17/06	355.45	1.36	1.05E+02			1.36	1.05E+02
07/18/06	355.31	1.22	8.72E+01			1.22	8.72E+01
07/19/06	355.22	1.13	7.68E+01			1.13	7.68E+01
07/20/06	355.11	1.02	6.65E+01			1.02	6.65E+01
07/21/06	355.05	0.96	6.11E+01			0.96	6.11E+01
07/22/06	355.44	1.35	1.04E+02			1.35	1.04E+02
07/23/06	355.92	1.83	1.99E+02			1.83	1.99E+02
07/24/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/25/06	355.35	1.26	9.21E+01			1.26	9.21E+01
07/26/06	355.14	1.05	6.94E+01			1.05	6.94E+01
07/27/06	355.00	0.91	5.78E+01			0.91	5.78E+01
07/28/06	355.10	1.01	6.56E+01			1.01	6.56E+01
07/29/06	355.48	1.39	1.10E+02			1.39	1.10E+02
07/30/06	355.34	1.25	9.04E+01			1.25	9.04E+01
07/31/06	355.08	0.99	6.39E+01			0.99	6.39E+01
08/01/06	354.90	0.81	5.04E+01			0.81	5.04E+01
08/02/06	354.79	0.70	4.33E+01			0.70	4.33E+01
08/03/06	354.71	0.62	3.89E+01			0.62	3.89E+01
08/04/06	354.78	0.69	4.25E+01			0.69	4.25E+01
08/05/06	354.86	0.77	4.73E+01			0.77	4.73E+01
08/06/06	354.72	0.63	3.92E+01			0.63	3.92E+01
08/07/06	354.60	0.51	3.35E+01			0.51	3.35E+01
08/08/06	354.60	0.51	3.36E+01			0.51	3.36E+01
08/09/06	354.61	0.52	3.40E+01			0.52	3.40E+01
08/10/06	354.51	0.42	2.97E+01			0.42	2.97E+01
08/11/06	354.65	0.56	3.58E+01			0.56	3.58E+01
08/12/06	354.78	0.69	4.26E+01			0.69	4.26E+01
08/13/06	354.62	0.53	3.43E+01			0.53	3.43E+01
08/14/06	354.51	0.42	2.95E+01			0.42	2.95E+01
08/15/06	354.51	0.42	2.99E+01			0.42	2.99E+01
08/16/06	354.70	0.61	3.81E+01			0.61	3.81E+01
08/17/06	354.66	0.57	3.62E+01			0.57	3.62E+01
08/18/06	354.52	0.43	3.01E+01			0.43	3.01E+01
08/19/06	354.46	0.37	2.79E+01			0.37	2.79E+01
08/20/06	354.47	0.38	2.80E+01			0.38	2.80E+01
08/21/06	354.45	0.36	2.73E+01			0.36	2.73E+01
08/22/06	354.43	0.34	2.66E+01			0.34	2.66E+01
08/23/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/24/06	354.39	0.30	2.53E+01			0.30	2.53E+01
08/25/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/26/06	354.50	0.41	2.91E+01			0.41	2.91E+01
08/27/06	354.69	0.60	3.76E+01			0.60	3.76E+01
08/28/06	356.32	2.23	3.41E+02			2.23	3.41E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/29/06	357.24	3.15	7.65E+02			3.15	7.65E+02
08/30/06	358.44	4.35	1.54E+03			4.35	1.54E+03
08/31/06	358.08	3.99	1.27E+03			3.99	1.27E+03
09/01/06	357.40	3.31	8.52E+02			3.31	8.52E+02
09/02/06	356.56	2.47	4.71E+02			2.47	4.71E+02
09/03/06	357.74	3.65	1.05E+03			3.65	1.05E+03
09/04/06	357.96	3.87	1.20E+03			3.87	1.20E+03
09/05/06	357.51	3.42	9.14E+02			3.42	9.14E+02
09/06/06	357.03	2.94	8.76E+02			2.94	8.76E+02
09/07/06	356.62	2.53	5.10E+02			2.53	5.10E+02
09/08/06	356.20	2.11	2.88E+02			2.11	2.88E+02
09/09/06	355.83	1.74	1.76E+02			1.74	1.76E+02
09/10/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/11/06	355.44	1.35	1.03E+02			1.35	1.03E+02
09/12/06	355.27	1.18	8.30E+01			1.18	8.30E+01
09/13/06	355.17	1.08	7.21E+01			1.08	7.21E+01
09/14/06	355.17	1.08	7.19E+01			1.08	7.19E+01
09/15/06	357.75	3.66	1.06E+03			3.66	1.06E+03
09/16/06	359.53	5.44	2.49E+03			5.44	2.49E+03
09/17/06	358.76	4.67	1.80E+03			4.67	1.80E+03
09/18/06	357.91	3.82	1.16E+03			3.82	1.16E+03
09/19/06	357.09	3.00	9.52E+02			3.00	9.52E+02
09/20/06	356.53	2.44	4.50E+02			2.44	4.50E+02
09/21/06	356.10	2.01	2.51E+02			2.01	2.51E+02
09/22/06	355.81	1.72	1.70E+02			1.72	1.70E+02
09/23/06	355.63	1.54	1.33E+02			1.54	1.33E+02
09/24/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/25/06	355.49	1.40	1.11E+02			1.40	1.11E+02
09/26/06	355.41	1.32	9.98E+01			1.32	9.98E+01
09/27/06	355.34	1.25	9.10E+01			1.25	9.10E+01
09/28/06	355.26	1.17	8.10E+01			1.17	8.10E+01
09/29/06	355.31	1.22	8.67E+01			1.22	8.67E+01
09/30/06	355.53	1.44	1.17E+02			1.44	1.17E+02
10/01/06	355.57	1.48	1.24E+02			1.48	1.24E+02
10/02/06	355.79	1.70	1.65E+02			1.70	1.65E+02
10/03/06	355.60	1.51	1.29E+02			1.51	1.29E+02
10/04/06	355.44	1.35	1.03E+02			1.35	1.03E+02
10/05/06	355.42	1.33	1.01E+02			1.33	1.01E+02
10/06/06	355.62	1.53	1.32E+02			1.53	1.32E+02
10/07/06	355.43	1.34	1.03E+02			1.34	1.03E+02
10/08/06	355.32	1.23	8.84E+01			1.23	8.84E+01
10/09/06	355.22	1.13	7.71E+01			1.13	7.71E+01
10/10/06	355.14	1.05	6.93E+01			1.05	6.93E+01
10/11/06	355.08	0.99	6.37E+01			0.99	6.37E+01
10/12/06							
10/13/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/14/06							
10/15/06							
10/16/06	354.09						
10/17/2006	355.45	1.36	1.06E+02	5.32E+02		1.36	1.06E+02
10/18/2006	356.23	2.14	2.99E+02	1.63E+03		2.14	2.99E+02
10/19/2006	356.67	2.58	5.45E+02	1.33E+03		2.58	5.45E+02
10/20/2006	356.52	2.43	4.46E+02	1.33E+03		2.43	4.46E+02
10/21/2006	357.01	2.92	8.63E+02	1.59E+03		2.92	8.63E+02
10/22/2006	356.70	2.61	5.65E+02	1.28E+03		2.61	5.65E+02
10/23/2006	356.30	2.21	3.32E+02	1.05E+03		2.21	3.32E+02
10/24/2006	356.14	2.05	2.66E+02	8.85E+02		2.05	2.66E+02
10/25/2006	355.92	1.83	1.98E+02	7.67E+02		1.83	1.98E+02
10/26/2006	355.77	1.68	1.61E+02	6.73E+02		1.68	1.61E+02
10/27/2006	355.66	1.57	1.39E+02	5.96E+02		1.57	1.39E+02
10/28/2006	357.61	3.52	9.77E+02	5.70E+03		3.52	9.77E+02
10/29/2006	360.71	6.62	3.82E+03	6.47E+03		6.62	3.82E+03
10/30/2006	359.82	5.73	2.80E+03	3.99E+03		5.73	2.80E+03
10/31/2006	359.03	4.94	2.03E+03	2.77E+03		4.94	2.03E+03
11/1/2006	358.17	4.08	1.34E+03	2.12E+03		4.08	1.34E+03
11/2/2006	357.60	3.51	9.71E+02	1.97E+03		3.51	9.71E+02
11/3/2006	357.55	3.46	9.41E+02	1.86E+03		3.46	9.41E+02
11/4/2006	357.11	3.02	7.00E+02	1.48E+03		3.02	7.00E+02
11/5/2006	356.72	2.63	5.77E+02	1.24E+03		2.63	5.77E+02
11/6/2006	356.46	2.37	4.07E+02	1.02E+03		2.37	4.07E+02
11/7/2006	356.31	2.22	3.36E+02	9.51E+02		2.22	3.36E+02
11/8/2006	356.88	2.79	7.16E+02	2.52E+03		2.79	7.16E+02
11/9/2006	360.90	6.81	4.06E+03	6.68E+03		6.81	4.06E+03
11/10/2006	360.37	6.28	3.40E+03	4.65E+03		6.28	3.40E+03
11/11/2006	359.81	5.72	2.78E+03	3.40E+03		5.72	2.78E+03
11/12/2006	359.19	5.10	2.17E+03	2.74E+03		5.10	2.17E+03
11/13/2006	358.51	4.42	1.60E+03	2.42E+03		4.42	1.60E+03
11/14/2006	358.17	4.08	1.34E+03	2.16E+03		4.08	1.34E+03
11/15/2006	357.92	3.83	1.17E+03	1.97E+03		3.83	1.17E+03
11/16/2006	357.62	3.53	9.81E+02	1.81E+03		3.53	9.81E+02
11/17/2006	359.24	5.15	2.21E+03	3.58E+03		5.15	2.21E+03
11/18/2006	359.22	5.13	2.20E+03	3.05E+03		5.13	2.20E+03
11/19/2006	358.83	4.74	1.85E+03	2.44E+03		4.74	1.85E+03
11/20/2006	358.32	4.23	1.45E+03	2.06E+03		4.23	1.45E+03
11/21/2006	357.79	3.70	1.09E+03	1.70E+03		3.70	1.09E+03
11/22/2006	357.37	3.28	8.36E+02	1.46E+03		3.28	8.36E+02
11/23/2006	357.74	3.65	1.05E+03	1.64E+03		3.65	1.05E+03
11/24/2006	359.61	5.52	2.57E+03	3.14E+03		5.52	2.57E+03
11/25/2006	359.14	5.05	2.12E+03	2.67E+03		5.05	2.12E+03
11/26/2006	358.71	4.62	1.75E+03	2.22E+03		4.62	1.75E+03
11/27/2006	358.16	4.07	1.33E+03	1.86E+03		4.07	1.33E+03
11/28/2006	357.76	3.67	1.07E+03	1.61E+03		3.67	1.07E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/29/2006	357.48	3.39	8.96E+02	1.45E+03		3.39	8.96E+02
11/30/2006	357.21	3.12	7.51E+02	1.34E+03		3.12	7.51E+02
12/1/2006	357.12	3.03	7.04E+02	1.42E+03		3.03	7.04E+02
12/2/2006	358.39	4.30	1.50E+03	2.27E+03		4.30	1.50E+03
12/3/2006	357.92	3.83	1.17E+03	1.88E+03		3.83	1.17E+03
12/4/2006	357.41	3.32	8.57E+02	1.50E+03		3.32	8.57E+02
12/5/2006	356.98	2.89	8.21E+02	1.27E+03		2.89	8.21E+02
12/6/2006	356.68	2.59	5.51E+02	1.10E+03		2.59	5.51E+02
12/7/2006	356.52	2.43	4.46E+02	1.02E+03		2.43	4.46E+02
12/8/2006	356.42	2.33	3.87E+02	9.61E+02		2.33	3.87E+02
12/9/2006	356.14	2.05	2.65E+02	7.94E+02		2.05	2.65E+02
12/10/2006	356.04	1.95	2.31E+02	7.39E+02		1.95	2.31E+02
12/11/2006	356.05	1.96	2.37E+02	7.31E+02		1.96	2.37E+02
12/12/2006	356.00	1.91	2.21E+02	7.47E+02		1.91	2.21E+02
12/13/2006	355.97	1.88	2.13E+02	7.46E+02		1.88	2.13E+02
12/14/2006	356.15	2.06	2.68E+02	8.45E+02		2.06	2.68E+02
12/15/2006	356.10	2.01	2.51E+02	8.26E+02		2.01	2.51E+02
12/16/2006	355.94	1.85	2.05E+02	7.61E+02		1.85	2.05E+02
12/17/2006	355.84	1.75	1.77E+02	6.99E+02		1.75	1.77E+02
12/18/2006	355.76	1.67	1.59E+02	6.40E+02		1.67	1.59E+02
12/19/2006	355.70	1.61	1.47E+02	6.01E+02		1.61	1.47E+02
12/20/2006	355.68	1.59	1.44E+02	5.66E+02		1.59	1.44E+02
12/21/2006	355.63	1.54	1.34E+02	5.30E+02		1.54	1.34E+02
12/22/2006	355.56	1.47	1.22E+02	5.23E+02		1.47	1.22E+02
12/23/2006	356.14	2.05	2.66E+02	1.18E+03		2.05	2.66E+02
12/24/2006	356.97	2.88	8.17E+02	1.46E+03		2.88	8.17E+02
12/25/2006	356.50	2.41	4.31E+02	1.14E+03		2.41	4.31E+02
12/26/2006	356.42	2.33	3.86E+02	1.38E+03		2.33	3.86E+02
12/27/2006	356.60	2.51	4.92E+02	1.28E+03		2.51	4.92E+02
12/28/2006	356.30	2.21	3.30E+02	1.06E+03		2.21	3.30E+02
12/29/2006	356.08	1.99	2.45E+02	8.53E+02		1.99	2.45E+02
12/30/2006	355.93	1.84	2.00E+02	7.77E+02		1.84	2.00E+02
12/31/2006	355.87	1.78	1.86E+02	7.31E+02		1.78	1.86E+02
1/1/2007	356.56	2.47	4.67E+02	1.57E+03		2.47	4.67E+02
1/2/2007	357.98	3.89	1.21E+03	2.29E+03		3.89	1.21E+03
1/3/2007	357.38	3.29	8.43E+02	1.68E+03		3.29	8.43E+02
1/4/2007	356.85	2.76	6.94E+02	1.33E+03		2.76	6.94E+02
1/5/2007	356.60	2.51	4.97E+02	1.18E+03		2.51	4.97E+02
1/6/2007	356.88	2.79	7.23E+02	1.69E+03		2.79	7.23E+02
1/7/2007	357.08	2.99	9.46E+02	1.67E+03		2.99	9.46E+02
1/8/2007	358.04	3.95	1.25E+03	3.56E+03		3.95	1.25E+03
1/9/2007	359.21	5.12	2.19E+03	3.70E+03		5.12	2.19E+03
1/10/2007	358.48	4.39	1.57E+03	2.59E+03		4.39	1.57E+03
1/11/2007	357.71	3.62	1.04E+03	1.90E+03		3.62	1.04E+03
1/12/2007	357.12	3.03	7.06E+02	1.50E+03		3.03	7.06E+02
1/13/2007	356.97	2.88	8.17E+02	1.38E+03		2.88	8.17E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/14/2007	357.13	3.04	7.12E+02	1.48E+03		3.04	7.12E+02
1/15/2007	357.40	3.31	8.55E+02	2.14E+03		3.31	8.55E+02
1/16/2007	357.68	3.59	1.02E+03	2.25E+03		3.59	1.02E+03
1/17/2007	357.17	3.08	7.28E+02	1.63E+03		3.08	7.28E+02
1/18/2007	356.58	2.49	4.78E+02	1.21E+03		2.49	4.78E+02
1/19/2007	356.46	2.37	4.10E+02	1.05E+03		2.37	4.10E+02
1/20/2007	356.42	2.33	3.88E+02	1.02E+03		2.33	3.88E+02
1/21/2007	361.31	7.22	4.60E+03	8.01E+02	8.01E+02	7.22	8.01E+02
1/22/2007	356.09	2.00	2.47E+02	8.16E+02		2.00	2.47E+02
1/23/2007	355.96	1.87	2.08E+02	7.72E+02		1.87	2.08E+02
1/24/2007	355.91	1.82	1.96E+02	7.39E+02		1.82	1.96E+02
1/25/2007	355.83	1.74	1.76E+02	6.85E+02		1.74	1.76E+02
1/26/2007	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/27/2007	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/28/2007	355.65	1.56	1.38E+02	Ice		1.56	1.38E+02
1/29/2007	355.67	1.58	1.41E+02	Ice		1.58	1.41E+02
1/30/2007	355.66	1.57	1.40E+02	Ice		1.57	1.40E+02
1/31/2007	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
2/1/2007	355.45	1.36	1.05E+02	Ice		1.36	1.05E+02
2/2/2007	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
2/3/2007	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/4/2007	355.31	1.22	8.72E+01	Ice		1.22	8.72E+01
2/5/2007	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
2/6/2007	355.35	1.26	9.23E+01	Ice		1.26	9.23E+01
2/7/2007	355.15	1.06	7.03E+01	Ice		1.06	7.03E+01
2/8/2007	355.07	0.98	6.29E+01	Ice		0.98	6.29E+01
2/9/2007	355.01	0.92	5.81E+01	Ice		0.92	5.81E+01
2/10/2007	354.98	0.89	5.60E+01	Ice		0.89	5.60E+01
2/11/2007	354.95	0.86	5.35E+01	Ice		0.86	5.35E+01
2/12/2007	354.94	0.85	5.27E+01	Ice		0.85	5.27E+01
2/13/2007	354.94	0.85	5.28E+01	Ice		0.85	5.28E+01
2/14/2007	355.04	0.95	6.08E+01	Ice		0.95	6.08E+01
2/15/2007	354.97	0.88	5.49E+01	Ice		0.88	5.49E+01
2/16/2007	355.21	1.12	7.61E+01	Ice		1.12	7.61E+01
2/17/2007	355.14	1.05	6.93E+01	Ice		1.05	6.93E+01
2/18/2007	355.07	0.98	6.33E+01	Ice		0.98	6.33E+01
2/19/2007	355.02	0.93	5.87E+01	Ice		0.93	5.87E+01
2/20/2007	354.99	0.90	5.67E+01	Ice		0.90	5.67E+01
2/21/2007	355.03	0.94	5.97E+01	Ice		0.94	5.97E+01
2/22/2007	355.12	1.03	6.77E+01	Ice		1.03	6.77E+01
2/23/2007	355.21	1.12	7.66E+01	Ice		1.12	7.66E+01
2/24/2007	355.22	1.13	7.73E+01	Ice		1.13	7.73E+01
2/25/2007	355.18	1.09	7.32E+01	Ice		1.09	7.32E+01
2/26/2007	355.12	1.03	6.74E+01	Ice		1.03	6.74E+01
2/27/2007	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/28/2007	355.11	1.02	6.70E+01	Ice [P]		1.02	6.70E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/1/2007	355.19	1.10	7.41E+01	Ice [P]		1.10	7.41E+01
3/2/2007	356.90	2.81	7.36E+02	Ice [P]		2.81	7.36E+02
3/3/2007	360.30	6.21	3.32E+03	Ice [P]		6.21	3.32E+03
3/4/2007	360.08	5.99	3.07E+03	Ice [P]		5.99	3.07E+03
3/5/2007	359.12	5.03	2.11E+03	Ice [P]		5.03	2.11E+03
3/6/2007	357.61	3.52	9.74E+02	Ice [P]		3.52	9.74E+02
3/7/2007	356.47	2.38	4.17E+02	Ice		2.38	4.17E+02
3/8/2007	370.57	16.48	2.74E+04	Ice		16.48	3.56E+02
3/9/2007	356.21	2.12	2.94E+02	Ice		2.12	2.94E+02
3/10/2007	355.99	1.90	2.19E+02	Ice		1.90	2.19E+02
3/11/2007	356.16	2.07	2.72E+02	Ice		2.07	2.72E+02
3/12/2007	357.34	3.25	8.21E+02	Ice		3.25	8.21E+02
3/13/2007	357.71	3.62	1.03E+03	Ice		3.62	1.03E+03
3/14/2007	358.30	4.21	1.43E+03	3.33E+03		4.21	1.43E+03
3/15/2007	359.18	5.09	2.16E+03	4.37E+03		5.09	2.16E+03
3/16/2007	358.97	4.88	1.98E+03	3.53E+03		4.88	1.98E+03
3/17/2007	357.48	3.39	9.01E+02	1.96E+03		3.39	9.01E+02
3/18/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/19/2007	357.42	3.33	8.67E+02	1.78E+03		3.33	8.67E+02
3/20/2007	357.14	3.05	7.13E+02	1.59E+03		3.05	7.13E+02
3/21/2007	357.32	3.23	8.08E+02	1.59E+03		3.23	8.08E+02
3/22/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/23/2007	360.47	6.38	3.52E+03	5.04E+03		6.38	3.52E+03
3/24/2007	360.55	6.46	3.62E+03	5.40E+03		6.46	3.62E+03
3/25/2007	360.57	6.48	3.65E+03	5.54E+03		6.48	3.65E+03
3/26/2007	360.16	6.07	3.17E+03	4.58E+03		6.07	3.17E+03
3/27/2007	359.69	5.60	2.65E+03	3.99E+03		5.60	2.65E+03
3/28/2007	359.27	5.18	2.25E+03	3.48E+03		5.18	2.25E+03
3/29/2007	358.58	4.49	1.65E+03	2.73E+03		4.49	1.65E+03
3/30/2007	357.98	3.89	1.21E+03	2.15E+03		3.89	1.21E+03
3/31/2007	357.53	3.44	9.27E+02	1.78E+03		3.44	9.27E+02
4/1/2007	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
4/2/2007	357.18	3.09	7.37E+02	1.55E+03		3.09	7.37E+02
4/3/2007	357.20	3.11	7.45E+02	1.59E+03		3.11	7.45E+02
4/4/2007	357.13	3.04	7.10E+02	1.75E+03		3.04	7.10E+02
4/5/2007	358.07	3.98	1.27E+03	2.55E+03		3.98	1.27E+03
4/6/2007	357.73	3.64	1.05E+03	1.99E+03		3.64	1.05E+03
4/7/2007	357.22	3.13	7.55E+02	1.62E+03		3.13	7.55E+02
4/8/2007	356.82	2.73	6.65E+02	1.36E+03		2.73	6.65E+02
4/9/2007	356.58	2.49	4.84E+02	1.18E+03		2.49	4.84E+02
4/10/2007	356.39	2.30	3.71E+02	1.04E+03		2.30	3.71E+02
4/11/2007	356.24	2.15	3.04E+02	9.02E+02		2.15	3.04E+02
4/12/2007	356.61	2.52	5.00E+02			2.52	5.00E+02
4/13/2007	357.94	3.85	1.18E+03			3.85	1.18E+03
4/14/2007	357.49	3.40	9.02E+02	1.75E+03		3.40	9.02E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/15/2007	359.26	5.17	2.24E+03	5.67E+03		5.17	2.24E+03
4/16/2007	365.42	11.33	1.22E+04	1.97E+04		11.33	1.22E+04
4/17/2007	365.86	11.77	1.32E+04	1.54E+04		11.77	1.32E+04
4/18/2007	366.70	12.61	1.54E+04	1.10E+04	1.10E+04	12.61	1.10E+04
4/19/2007	366.56	12.47	1.50E+04	1.01E+04	1.01E+04	12.47	1.01E+04
4/20/2007	365.68	11.59	1.28E+04	9.03E+03	9.03E+03	11.59	9.03E+03
4/21/2007	364.43	10.34	1.00E+04	7.64E+03	7.64E+03	10.34	7.64E+03
4/22/2007	362.63	8.54	6.61E+03	5.99E+03	5.99E+03	8.54	5.99E+03
4/23/2007	360.23	6.14	3.25E+03	4.06E+03		6.14	3.25E+03
4/24/2007	358.68	4.59	1.73E+03	2.48E+03		4.59	1.73E+03
4/25/2007	357.97	3.88	1.20E+03	1.85E+03		3.88	1.20E+03
4/26/2007	357.87	3.78	1.13E+03	1.84E+03		3.78	1.13E+03
4/27/2007	358.03	3.94	1.24E+03	1.99E+03		3.94	1.24E+03
4/28/2007	358.15	4.06	1.32E+03	2.11E+03		4.06	1.32E+03
4/29/2007	357.85	3.76	1.12E+03	1.83E+03		3.76	1.12E+03
4/30/2007	357.45	3.36	8.83E+02	1.57E+03		3.36	8.83E+02
5/1/2007	357.03	2.94	8.84E+02	1.35E+03		2.94	8.84E+02
5/2/2007	356.78	2.69	6.30E+02	1.22E+03		2.69	6.30E+02
5/3/2007	356.66	2.57	5.39E+02	1.18E+03		2.57	5.39E+02
5/4/2007	356.39	2.30	3.73E+02	9.31E+02		2.30	3.73E+02
5/5/2007	356.23	2.14	3.02E+02	8.60E+02		2.14	3.02E+02
5/6/2007	356.06	1.97	2.38E+02	8.32E+02		1.97	2.38E+02
5/7/2007	355.89	1.80	1.91E+02	7.33E+02		1.80	1.91E+02
5/8/2007	355.73	1.64	1.53E+02	6.95E+02		1.64	1.53E+02
5/9/2007	355.66	1.57	1.40E+02	6.64E+02		1.57	1.40E+02
5/10/2007	355.60	1.51	1.29E+02	5.98E+02		1.51	1.29E+02
5/11/2007	355.57	1.48	1.24E+02	6.00E+02		1.48	1.24E+02
5/12/2007	355.48	1.39	1.09E+02	5.63E+02		1.39	1.09E+02
5/13/2007	355.40	1.31	9.85E+01	5.52E+02		1.31	9.85E+01
5/14/2007	355.35	1.26	9.19E+01	4.99E+02		1.26	9.19E+01
5/15/2007	355.24	1.15	7.94E+01	4.59E+02		1.15	7.94E+01
5/16/2007	355.17	1.08	7.19E+01	4.44E+02		1.08	7.19E+01
5/17/2007	355.24	1.15	7.94E+01	4.53E+02		1.15	7.94E+01
5/18/2007	355.26	1.17	8.19E+01	4.53E+02		1.17	8.19E+01
5/19/2007	355.27	1.18	8.29E+01	4.57E+02		1.18	8.29E+01
5/20/2007	355.24	1.15	7.92E+01	4.62E+02		1.15	7.92E+01
5/21/2007	355.25	1.16	8.03E+01	4.68E+02		1.16	8.03E+01
5/22/2007	355.14	1.05	6.93E+01	4.40E+02		1.05	6.93E+01
5/23/2007	355.04	0.95	6.09E+01	3.69E+02		0.95	6.09E+01
5/24/2007	355.01	0.92	5.80E+01	3.43E+02		0.92	5.80E+01
5/25/2007	354.96	0.87	5.47E+01	3.20E+02		0.87	5.47E+01
5/26/2007	354.91	0.82	5.09E+01	2.84E+02		0.82	5.09E+01
5/27/2007	354.87	0.78	4.83E+01	2.51E+02		0.78	4.83E+01
5/28/2007	354.86	0.77	4.75E+01	2.52E+02		0.77	4.75E+01
5/29/2007	354.79	0.70	4.32E+01	2.50E+02		0.70	4.32E+01
5/30/2007	354.70	0.61	3.84E+01	2.36E+02		0.61	3.84E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
5/31/2007	354.65	0.56	3.57E+01	2.22E+02		0.56	3.57E+01
6/1/2007	354.61	0.52	3.39E+01	2.03E+02		0.52	3.39E+01
6/2/2007	354.59	0.50	3.31E+01	1.91E+02		0.50	3.31E+01
6/3/2007	354.65	0.56	3.60E+01	2.65E+02		0.56	3.60E+01
6/4/2007	355.00	0.91	5.78E+01	5.13E+02		0.91	5.78E+01
6/5/2007	355.37	1.28	9.44E+01	6.19E+02		1.28	9.44E+01
6/6/2007	355.19	1.10	7.42E+01	5.21E+02		1.10	7.42E+01
6/7/2007	354.97	0.88	5.49E+01	4.04E+02		0.88	5.49E+01
6/8/2007	354.78	0.69	4.25E+01	3.05E+02		0.69	4.25E+01
6/9/2007	354.68	0.59	3.76E+01	2.43E+02		0.59	3.76E+01
6/10/2007	354.64	0.55	3.55E+01	2.19E+02		0.55	3.55E+01
6/11/2007	354.60	0.51	3.36E+01	1.76E+02		0.51	3.36E+01
6/12/2007	354.54	0.45	3.10E+01	1.85E+02		0.45	3.10E+01
6/13/2007	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
6/14/2007	354.46	0.37	2.79E+01	1.59E+02		0.37	2.79E+01
6/15/2007	354.48	0.39	2.86E+01	1.39E+02		0.39	2.86E+01
6/16/2007	354.48	0.39	2.86E+01	1.47E+02		0.39	2.86E+01
6/17/2007	354.50	0.41	2.93E+01	1.50E+02		0.41	2.93E+01
6/18/2007	354.50	0.41	2.95E+01	1.71E+02		0.41	2.95E+01
6/19/2007	354.49	0.40	2.91E+01	1.57E+02		0.40	2.91E+01
6/20/2007	354.49	0.40	2.90E+01	1.79E+02		0.40	2.90E+01
6/21/2007	354.63	0.54	3.48E+01	2.40E+02		0.54	3.48E+01
6/22/2007	354.56	0.47	3.18E+01	2.13E+02		0.47	3.18E+01
6/23/2007	354.55	0.46	3.15E+01	1.85E+02		0.46	3.15E+01
6/24/2007	354.46	0.37	2.78E+01	1.55E+02		0.37	2.78E+01
6/25/2007	354.46	0.37	2.79E+01	1.26E+02		0.37	2.79E+01
6/26/2007	354.46	0.37	2.79E+01	1.24E+02		0.37	2.79E+01
6/27/2007	354.45	0.36	2.74E+01	1.19E+02		0.36	2.74E+01
6/28/2007	354.58	0.49	3.25E+01	1.21E+02		0.49	3.25E+01
6/29/2007	355.29	1.20	8.51E+01	1.92E+02		1.20	8.51E+01
6/30/2007	355.59	1.50	1.27E+02	4.10E+02		1.50	1.27E+02
7/1/2007	355.01	0.92	5.79E+01	4.07E+02		0.92	5.79E+01
7/2/2007	354.63	0.54	3.47E+01	2.52E+02		0.54	3.47E+01
7/3/2007	354.48	0.39	2.85E+01	1.66E+02		0.39	2.85E+01
7/4/2007	354.44	0.35	2.72E+01	1.54E+02		0.35	2.72E+01
7/5/2007	354.50	0.41	2.95E+01	2.81E+02		0.41	2.95E+01
7/6/2007	354.59	0.50	3.31E+01	8.12E+02		0.50	3.31E+01
7/7/2007	354.52	0.43	3.01E+01	4.44E+02		0.43	3.01E+01
7/8/2007	354.47	0.38	2.80E+01	2.43E+02		0.38	2.80E+01
7/9/2007	354.47	0.38	2.80E+01	1.72E+02		0.38	2.80E+01
7/10/2007	354.45	0.36	2.74E+01	1.47E+02		0.36	2.74E+01
7/11/2007	354.45	0.36	2.74E+01	1.40E+02		0.36	2.74E+01
7/12/2007	354.45	0.36	2.74E+01	1.68E+02		0.36	2.74E+01
7/13/2007	354.44	0.35	2.71E+01	1.77E+02		0.35	2.71E+01
7/14/2007	354.44	0.35	2.70E+01	1.43E+02		0.35	2.70E+01
7/15/2007	354.43	0.34	2.67E+01	1.28E+02		0.34	2.67E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/16/2007	354.45	0.36	2.73E+01	1.53E+02		0.36	2.73E+01
7/17/2007	354.44	0.35	2.69E+01	1.49E+02		0.35	2.69E+01
7/18/2007	354.43	0.34	2.68E+01	1.27E+02		0.34	2.68E+01
7/19/2007	354.57	0.48	3.20E+01	1.40E+02		0.48	3.20E+01
7/20/2007	354.74	0.65	4.04E+01	2.05E+02		0.65	4.04E+01
7/21/2007	354.50	0.41	2.93E+01	2.37E+02		0.41	2.93E+01
7/22/2007	354.45	0.36	2.75E+01	1.46E+02		0.36	2.75E+01
7/23/2007	354.52	0.43	2.99E+01	1.54E+02		0.43	2.99E+01
7/24/2007	355.76	1.67	1.59E+02	4.40E+02		1.67	1.59E+02
7/25/2007	355.64	1.55	1.35E+02	6.59E+02		1.55	1.35E+02
7/26/2007	355.11	1.02	6.70E+01	4.84E+02		1.02	6.70E+01
7/27/2007	354.72	0.63	3.95E+01	2.82E+02		0.63	3.95E+01
7/28/2007	354.73	0.64	4.00E+01	2.87E+02		0.64	4.00E+01
7/29/2007	354.96	0.87	5.45E+01	3.02E+02		0.87	5.45E+01
7/30/2007	354.81	0.72	4.47E+01	3.18E+02		0.72	4.47E+01
7/31/2007	354.65	0.56	3.61E+01	3.12E+02		0.56	3.61E+01
8/1/2007	354.54	0.45	3.08E+01	2.24E+02		0.45	3.08E+01
8/2/2007	354.44	0.35	2.72E+01	1.51E+02		0.35	2.72E+01
8/3/2007	354.43	0.34	2.68E+01	1.46E+02		0.34	2.68E+01
8/4/2007	354.44	0.35	2.71E+01	1.34E+02		0.35	2.71E+01
8/5/2007	354.43	0.34	2.68E+01	1.16E+02		0.34	2.68E+01
8/6/2007	354.44	0.35	2.69E+01	1.07E+02		0.35	2.69E+01
8/7/2007	354.44	0.35	2.69E+01	1.01E+02		0.35	2.69E+01
8/8/2007	354.73	0.64	4.00E+01	1.38E+02		0.64	4.00E+01
8/9/2007	355.69	1.60	1.46E+02	3.94E+02		1.60	1.46E+02
8/10/2007	356.03	1.94	2.30E+02	9.23E+02		1.94	2.30E+02
8/11/2007	356.97	2.88	8.10E+02	1.48E+03		2.88	8.10E+02
8/12/2007	356.22	2.13	2.95E+02	1.01E+03		2.13	2.95E+02
8/13/2007	355.42	1.33	1.01E+02	6.43E+02		1.33	1.01E+02
8/14/2007	355.01	0.92	5.85E+01	4.42E+02		0.92	5.85E+01
8/15/2007	354.80	0.71	4.39E+01	2.83E+02		0.71	4.39E+01
8/16/2007	354.64	0.55	3.53E+01	2.41E+02		0.55	3.53E+01
8/17/2007	354.54	0.45	3.09E+01	2.27E+02		0.45	3.09E+01
8/18/2007	354.49	0.40	2.89E+01	2.38E+02		0.40	2.89E+01
8/19/2007	354.46	0.37	2.79E+01	2.12E+02		0.37	2.79E+01
8/20/2007	354.45	0.36	2.74E+01	1.63E+02		0.36	2.74E+01
8/21/2007	354.54	0.45	3.08E+01	1.65E+02		0.45	3.08E+01
8/22/2007	355.45	1.36	1.05E+02	4.84E+02		1.36	1.05E+02
8/23/2007	355.34	1.25	9.04E+01	5.80E+02		1.25	9.04E+01
8/24/2007	355.02	0.93	5.92E+01	4.32E+02		0.93	5.92E+01
8/25/2007	354.86	0.77	4.78E+01	3.39E+02		0.77	4.78E+01
8/26/2007	354.76	0.67	4.14E+01	2.73E+02		0.67	4.14E+01
8/27/2007	354.78	0.69	4.26E+01	2.35E+02		0.69	4.26E+01
8/28/2007	354.73	0.64	3.98E+01	2.27E+02		0.64	3.98E+01
8/29/2007	354.66	0.57	3.65E+01	2.07E+02		0.57	3.65E+01
8/30/2007	354.64	0.55	3.54E+01	1.75E+02		0.55	3.54E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
8/31/2007	354.62	0.53	3.45E+01	1.47E+02		0.53	3.45E+01
9/1/2007	354.61	0.52	3.38E+01	1.42E+02		0.52	3.38E+01
9/2/2007	354.58	0.49	3.25E+01	1.31E+02		0.49	3.25E+01
9/3/2007	354.58	0.49	3.25E+01	1.19E+02		0.49	3.25E+01
9/4/2007	354.56	0.47	3.17E+01	1.09E+02		0.47	3.17E+01
9/5/2007	354.56	0.47	3.19E+01	1.05E+02		0.47	3.19E+01
9/6/2007	354.56	0.47	3.16E+01	9.50E+01		0.47	3.16E+01
9/7/2007	354.56	0.47	3.17E+01	8.50E+01		0.47	3.17E+01
9/8/2007	354.55	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
9/9/2007	354.55	0.46	3.15E+01	9.40E+01		0.46	3.15E+01
9/10/2007	354.56	0.47	3.17E+01	1.15E+02		0.47	3.17E+01
9/11/2007	354.56	0.47	3.16E+01	1.21E+02		0.47	3.16E+01
9/12/2007	354.58	0.49	3.26E+01	1.46E+02		0.49	3.26E+01
9/13/2007	354.58	0.49	3.28E+01	1.42E+02		0.49	3.28E+01
9/14/2007	354.57	0.48	3.23E+01	1.24E+02		0.48	3.23E+01
9/15/2007	354.56	0.47	3.17E+01	1.07E+02		0.47	3.17E+01
9/16/2007	354.53	0.44	3.06E+01	8.90E+01		0.44	3.06E+01
9/17/2007	354.53	0.44	3.06E+01	8.10E+01		0.44	3.06E+01
9/18/2007	354.54	0.45	3.11E+01	7.50E+01		0.45	3.11E+01
9/19/2007	354.53	0.44	3.03E+01	9.00E+01		0.44	3.03E+01
9/20/2007	354.51	0.42	2.96E+01	7.70E+01		0.42	2.96E+01
9/21/2007	354.51	0.42	2.97E+01	7.00E+01		0.42	2.97E+01
9/22/2007	354.50	0.41	2.95E+01	6.30E+01		0.41	2.95E+01
9/23/2007	354.51	0.42	2.97E+01	6.10E+01		0.42	2.97E+01
9/24/2007	354.51	0.42	2.96E+01	6.00E+01		0.42	2.96E+01
9/25/2007	354.51	0.42	2.98E+01	5.60E+01		0.42	2.98E+01
9/26/2007	354.52	0.43	3.02E+01	5.40E+01		0.43	3.02E+01
9/27/2007	354.53	0.44	3.06E+01	5.10E+01		0.44	3.06E+01
9/28/2007	354.53	0.44	3.05E+01	5.00E+01		0.44	3.05E+01
9/29/2007	354.53	0.44	3.03E+01	5.30E+01		0.44	3.03E+01
9/30/2007	354.53	0.44	3.04E+01	5.00E+01		0.44	3.04E+01
10/1/2007	354.54	0.45	3.10E+01	4.90E+01		0.45	3.10E+01
10/2/2007	354.53	0.44	3.07E+01	4.70E+01		0.44	3.07E+01
10/3/2007	354.54	0.45	3.08E+01	4.80E+01		0.45	3.08E+01
10/4/2007	354.55	0.46	3.12E+01	4.90E+01		0.46	3.12E+01
10/5/2007	354.54	0.45	3.11E+01	4.80E+01		0.45	3.11E+01
10/6/2007	354.54	0.45	3.08E+01	4.60E+01		0.45	3.08E+01
10/7/2007	354.54	0.45	3.10E+01	4.60E+01		0.45	3.10E+01
10/8/2007	354.57	0.48	3.23E+01	4.60E+01		0.48	3.23E+01
10/9/2007	354.59	0.50	3.30E+01	4.80E+01		0.50	3.30E+01
10/10/2007	354.72	0.63	3.93E+01	7.40E+01		0.63	3.93E+01
10/11/2007	354.88	0.79	4.91E+01	1.95E+02		0.79	4.91E+01
10/12/2007	355.38	1.29	9.54E+01	2.44E+02		1.29	9.54E+01
10/13/2007	356.34	2.25	3.47E+02	5.70E+02		2.25	3.47E+02
10/14/2007	355.94	1.85	2.03E+02	6.20E+02		1.85	2.03E+02
10/15/2007	355.29	1.20	8.53E+01	4.50E+02		1.20	8.53E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/16/2007	354.96	0.87	5.42E+01	3.03E+02		0.87	5.42E+01
10/17/2007	354.78	0.69	4.29E+01	2.19E+02		0.69	4.29E+01
10/18/2007	354.67	0.58	3.71E+01	1.60E+02		0.58	3.71E+01
10/19/2007	354.63	0.54	3.50E+01	1.75E+02		0.54	3.50E+01
10/20/2007	355.33	1.24	8.90E+01	2.44E+02		1.24	8.90E+01
10/21/2007	356.00	1.91	2.19E+02	5.50E+02		1.91	2.19E+02
10/22/2007	355.59	1.50	1.27E+02	5.34E+02		1.50	1.27E+02
10/23/2007	355.18	1.09	7.28E+01	3.95E+02		1.09	7.28E+01
10/24/2007	355.03	0.94	5.97E+01	3.22E+02		0.94	5.97E+01
10/25/2007	355.03	0.94	5.99E+01	2.75E+02		0.94	5.99E+01
10/26/2007	355.01	0.92	5.79E+01	2.86E+02		0.92	5.79E+01
10/27/2007	356.42	2.33	3.89E+02	1.36E+03		2.33	3.89E+02
10/28/2007	359.10	5.01	2.09E+03	3.05E+03		5.01	2.09E+03
10/29/2007	358.60	4.51	1.67E+03	2.16E+03		4.51	1.67E+03
10/30/2007	357.95	3.86	1.19E+03	1.59E+03		3.86	1.19E+03
10/31/2007	356.85	2.76	6.92E+02	1.17E+03		2.76	6.92E+02
11/1/2007	356.05	1.96	2.34E+02	7.92E+02		1.96	2.34E+02
11/2/2007	355.68	1.59	1.43E+02	6.10E+02		1.59	1.43E+02
11/3/2007	355.47	1.38	1.08E+02	5.00E+02		1.38	1.08E+02
11/4/2007	355.34	1.25	9.08E+01	4.50E+02		1.25	9.08E+01
11/5/2007	355.22	1.13	7.73E+01	4.08E+02		1.13	7.73E+01
11/6/2007	355.15	1.06	7.02E+01	3.67E+02		1.06	7.02E+01
11/7/2007	355.23	1.14	7.87E+01	4.03E+02		1.14	7.87E+01
11/8/2007	355.20	1.11	7.52E+01	4.02E+02		1.11	7.52E+01
11/9/2007	355.07	0.98	6.32E+01	3.55E+02		0.98	6.32E+01
11/10/2007	355.12	1.03	6.79E+01	3.64E+02		1.03	6.79E+01
11/11/2007	355.40	1.31	9.87E+01	4.31E+02		1.31	9.87E+01
11/12/2007	355.35	1.26	9.21E+01	4.77E+02		1.26	9.21E+01
11/13/2007	355.26	1.17	8.14E+01	4.41E+02		1.17	8.14E+01
11/14/2007	355.35	1.26	9.25E+01	4.61E+02		1.26	9.25E+01
11/15/2007	355.55	1.46	1.20E+02	8.62E+02		1.46	1.20E+02
11/16/2007	357.14	3.05	7.14E+02	1.55E+03		3.05	7.14E+02
11/17/2007	356.84	2.75	6.83E+02	1.29E+03		2.75	6.83E+02
11/18/2007	356.21	2.12	2.92E+02	9.67E+02		2.12	2.92E+02
11/19/2007	355.80	1.71	1.69E+02	7.55E+02		1.71	1.69E+02
11/20/2007	355.83	1.74	1.75E+02	6.98E+02		1.74	1.75E+02
11/21/2007	356.28	2.19	3.22E+02	8.49E+02		2.19	3.22E+02
11/22/2007	356.17	2.08	2.76E+02	8.46E+02		2.08	2.76E+02
11/23/2007	355.91	1.82	1.94E+02	7.37E+02		1.82	1.94E+02
11/24/2007	355.62	1.53	1.33E+02	6.15E+02		1.53	1.33E+02
11/25/2007	355.48	1.39	1.10E+02	5.44E+02		1.39	1.10E+02
11/26/2007	356.25	2.16	3.08E+02	9.78E+02		2.16	3.08E+02
11/27/2007	358.81	4.72	1.83E+03	3.10E+03		4.72	1.83E+03
11/28/2007	358.49	4.40	1.58E+03	2.43E+03		4.40	1.58E+03
11/29/2007	357.65	3.56	1.00E+03	1.74E+03		3.56	1.00E+03
11/30/2007	357.17	3.08	7.28E+02	1.41E+03		3.08	7.28E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/1/2007	356.67	2.58	5.41E+02	1.16E+03		2.58	5.41E+02
12/2/2007	356.29	2.20	3.26E+02	9.33E+02		2.20	3.26E+02
12/3/2007	356.27	2.18	3.17E+02	1.16E+03		2.18	3.17E+02
12/4/2007	356.79	2.70	6.37E+02	1.43E+03		2.70	6.37E+02
12/5/2007	356.56	2.47	4.66E+02	1.20E+03		2.47	4.66E+02
12/6/2007	356.17	2.08	2.76E+02	9.39E+02		2.08	2.76E+02
12/7/2007	355.88	1.79	1.88E+02	7.73E+02		1.79	1.88E+02
12/8/2007	355.82	1.73	1.73E+02	7.22E+02		1.73	1.73E+02
12/9/2007	355.73	1.64	1.53E+02	7.06E+02		1.64	1.53E+02
12/10/2007	356.03	1.94	2.30E+02	8.36E+02		1.94	2.30E+02
12/11/2007	356.48	2.39	4.18E+02	1.11E+03		2.39	4.18E+02
12/12/2007	356.60	2.51	4.95E+02	1.28E+03		2.51	4.95E+02
12/13/2007	356.73	2.64	5.89E+02	1.28E+03		2.64	5.89E+02
12/14/2007	356.46	2.37	4.12E+02	1.16E+03		2.37	4.12E+02
12/15/2007	356.44	2.35	3.97E+02	1.10E+03		2.35	3.97E+02
12/16/2007	355.99	1.90	2.16E+02	9.44E+02		1.90	2.16E+02
12/17/2007	356.20	2.11	2.88E+02	8.63E+02		2.11	2.88E+02
12/18/2007	356.34	2.25	3.50E+02	1.10E+03		2.25	3.50E+02
12/19/2007	356.12	2.03	2.59E+02	1.06E+03		2.03	2.59E+02
12/20/2007	355.96	1.87	2.10E+02	8.76E+02		1.87	2.10E+02
12/21/2007	355.93	1.84	2.01E+02	8.25E+02		1.84	2.01E+02
12/22/2007	355.90	1.81	1.92E+02	7.83E+02		1.81	1.92E+02
12/23/2007	356.00	1.91	2.20E+02	1.08E+03		1.91	2.20E+02
12/24/2007	360.17	6.08	3.17E+03	6.03E+03		6.08	3.17E+03
12/25/2007	361.03	6.94	4.22E+03	4.80E+03		6.94	4.22E+03
12/26/2007	360.43	6.34	3.48E+03	3.95E+03		6.34	3.48E+03
12/27/2007	359.69	5.60	2.66E+03	3.28E+03		5.60	2.66E+03
12/28/2007	359.06	4.97	2.05E+03	2.90E+03		4.97	2.05E+03
12/29/2007	359.35	5.26	2.32E+03	3.49E+03		5.26	2.32E+03
12/30/2007	359.66	5.57	2.62E+03	3.80E+03		5.57	2.62E+03
12/31/2007	359.62	5.53	2.58E+03	3.37E+03		5.53	2.58E+03
1/1/2008	359.62	5.53	2.58E+03	3.36E+03		5.53	2.58E+03
1/2/2008	359.42	5.33	2.39E+03	2.95E+03		5.33	2.39E+03
1/3/2008	358.65	4.56	1.71E+03	2.21E+03		4.56	1.71E+03
1/4/2008	357.91	3.82	1.16E+03	1.72E+03		3.82	1.16E+03
1/5/2008	357.65	3.56	9.97E+02	1.62E+03		3.56	9.97E+02
1/6/2008	357.33	3.24	8.17E+02	1.54E+03		3.24	8.17E+02
1/7/2008	357.49	3.40	9.04E+02	1.78E+03		3.40	9.04E+02
1/8/2008	357.96	3.87	1.20E+03	2.58E+03		3.87	1.20E+03
1/9/2008	358.22	4.13	1.38E+03	3.52E+03		4.13	1.38E+03
1/10/2008	358.13	4.04	1.31E+03	3.19E+03		4.04	1.31E+03
1/11/2008	357.74	3.65	1.05E+03	2.67E+03		3.65	1.05E+03
1/12/2008	357.86	3.77	1.13E+03	2.61E+03		3.77	1.13E+03
1/13/2008	357.52	3.43	9.23E+02	2.07E+03		3.43	9.23E+02
1/14/2008	357.29	3.20	7.94E+02	1.85E+03		3.20	7.94E+02
1/15/2008	357.46	3.37	8.85E+02	1.90E+03		3.37	8.85E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/16/2008	357.17	3.08	7.30E+02	1.66E+03		3.08	7.30E+02
1/17/2008	356.73	2.64	5.87E+02	1.36E+03		2.64	5.87E+02
1/18/2008	356.62	2.53	5.08E+02	1.32E+03		2.53	5.08E+02
1/19/2008	357.07	2.98	9.25E+02	1.53E+03		2.98	9.25E+02
1/20/2008	356.80	2.71	6.47E+02	1.33E+03		2.71	6.47E+02
1/21/2008	356.08	1.99	2.46E+02	9.35E+02		1.99	2.46E+02
1/22/2008	356.19	2.10	2.83E+02	7.59E+02		2.10	2.83E+02
1/23/2008	355.98	1.89	2.14E+02	9.01E+02		1.89	2.14E+02
1/24/2008	355.85	1.76	1.80E+02	8.14E+02		1.76	1.80E+02
1/25/2008	355.88	1.79	1.87E+02	6.30E+02		1.79	1.87E+02
1/26/2008	355.85	1.76	1.81E+02	6.36E+02		1.76	1.81E+02
1/27/2008	355.58	1.49	1.26E+02	6.55E+02		1.49	1.26E+02
1/28/2008	355.51	1.42	1.14E+02	5.89E+02		1.42	1.14E+02
1/29/2008	355.49	1.40	1.10E+02	5.74E+02		1.40	1.10E+02
1/30/2008	355.55	1.46	1.20E+02	6.30E+02		1.46	1.20E+02
1/31/2008	355.77	1.68	1.62E+02	7.05E+02		1.68	1.62E+02
2/1/2008	355.65	1.56	1.37E+02	7.49E+02		1.56	1.37E+02
2/2/2008	357.23	3.14	7.60E+02	2.12E+03		3.14	7.60E+02
2/3/2008	357.80	3.71	1.09E+03	2.24E+03		3.71	1.09E+03
2/4/2008	357.55	3.46	9.37E+02	1.95E+03		3.46	9.37E+02
2/5/2008	357.18	3.09	7.38E+02	2.12E+03		3.09	7.38E+02
2/6/2008	358.70	4.61	1.75E+03	4.28E+03		4.61	1.75E+03
2/7/2008	359.89	5.80	2.86E+03	6.61E+03		5.80	2.86E+03
2/8/2008	359.59	5.50	2.56E+03	4.28E+03		5.50	2.56E+03
2/9/2008	358.72	4.63	1.77E+03	2.98E+03		4.63	1.77E+03
2/10/2008	358.09	4.00	1.29E+03	2.38E+03		4.00	1.29E+03
2/11/2008	357.41	3.32	8.57E+02	1.76E+03		3.32	8.57E+02
2/12/2008	357.35	3.26	8.24E+02	1.35E+03		3.26	8.24E+02
2/13/2008	358.31	4.22	1.44E+03	3.84E+03		4.22	1.44E+03
2/14/2008	362.30	8.21	6.08E+03	8.45E+03		8.21	6.08E+03
2/15/2008	362.42	8.33	6.27E+03	7.21E+03		8.33	6.27E+03
2/16/2008	362.10	8.01	5.77E+03	6.01E+03		8.01	5.77E+03
2/17/2008	361.46	7.37	4.81E+03	5.03E+03		7.37	4.81E+03
2/18/2008	362.13	8.04	5.81E+03	7.66E+03		8.04	5.81E+03
2/19/2008	363.14	9.05	7.49E+03	9.19E+03		9.05	7.49E+03
2/20/2008	362.63	8.54	6.61E+03	6.75E+03		8.54	6.61E+03
2/21/2008	361.89	7.80	5.43E+03	5.35E+03	5.35E+03	7.80	5.35E+03
2/22/2008	360.77	6.68	3.89E+03	4.24E+03		6.68	3.89E+03
2/23/2008	359.57	5.48	2.54E+03	3.32E+03		5.48	2.54E+03
2/24/2008	358.67	4.58	1.72E+03	2.56E+03		4.58	1.72E+03
2/25/2008	358.18	4.09	1.35E+03	2.04E+03		4.09	1.35E+03
2/26/2008	357.87	3.78	1.14E+03	1.96E+03		3.78	1.14E+03
2/27/2008	358.76	4.67	1.80E+03	2.59E+03		4.67	1.80E+03
2/28/2008	358.49	4.40	1.58E+03	2.49E+03		4.40	1.58E+03
2/29/2008	357.91	3.82	1.16E+03	1.84E+03		3.82	1.16E+03
3/1/2008	357.48	3.39	8.97E+02	1.72E+03		3.39	8.97E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/2/2008	357.29	3.20	7.92E+02	1.58E+03		3.20	7.92E+02
3/3/2008	357.25	3.16	7.73E+02	1.50E+03		3.16	7.73E+02
3/4/2008	358.06	3.97	1.26E+03	2.07E+03		3.97	1.26E+03
3/5/2008	362.44	8.35	6.31E+03	1.24E+04		8.35	6.31E+03
3/6/2008	363.23	9.14	7.66E+03	1.10E+04		9.14	7.66E+03
3/7/2008	362.92	8.83	7.11E+03	8.02E+03		8.83	7.11E+03
3/8/2008	363.68	9.59	8.49E+03	1.30E+04		9.59	8.49E+03
3/9/2008	364.87	10.78	1.09E+04	1.67E+04		10.78	1.09E+04
3/10/2008	364.48	10.39	1.01E+04	9.74E+03	9.74E+03	10.39	9.74E+03
3/11/2008	364.22	10.13	9.57E+03	7.98E+03	7.98E+03	10.13	7.98E+03
3/12/2008	363.61	9.52	8.36E+03	7.19E+03	7.19E+03	9.52	7.19E+03
3/13/2008	362.28	8.19	6.04E+03	6.09E+03		8.19	6.04E+03
3/14/2008	360.59	6.50	3.67E+03	4.63E+03		6.50	3.67E+03
3/15/2008	359.74	5.65	2.71E+03	4.06E+03		5.65	2.71E+03
3/16/2008	359.35	5.26	2.32E+03	3.71E+03		5.26	2.32E+03
3/17/2008	358.90	4.81	1.91E+03	3.12E+03		4.81	1.91E+03
3/18/2008	358.33	4.24	1.46E+03	2.48E+03		4.24	1.46E+03
3/19/2008	358.64	4.55	1.70E+03	3.13E+03		4.55	1.70E+03
3/20/2008	360.86	6.77	4.00E+03	5.85E+03		6.77	4.00E+03
3/21/2008	360.29	6.20	3.31E+03	4.51E+03		6.20	3.31E+03
3/22/2008	359.63	5.54	2.59E+03	3.44E+03		5.54	2.59E+03
3/23/2008	358.96	4.87	1.96E+03	2.81E+03		4.87	1.96E+03
3/24/2008	358.33	4.24	1.46E+03	2.30E+03		4.24	1.46E+03
3/25/2008	357.85	3.76	1.13E+03	1.94E+03		3.76	1.13E+03
3/26/2008	357.50	3.41	9.11E+02	1.69E+03		3.41	9.11E+02
3/27/2008	357.21	3.12	7.49E+02	1.50E+03		3.12	7.49E+02
3/28/2008	357.04	2.95	8.98E+02	1.47E+03		2.95	8.98E+02
3/29/2008	356.97	2.88	8.17E+02	1.44E+03		2.88	8.17E+02
3/30/2008	356.73	2.64	5.88E+02	1.27E+03		2.64	5.88E+02
3/31/2008	356.52	2.43	4.41E+02	1.20E+03		2.43	4.41E+02
4/1/2008	356.76	2.67	6.16E+02	1.43E+03		2.67	6.16E+02
4/2/2008	357.15	3.06	7.19E+02	1.75E+03		3.06	7.19E+02
4/3/2008	356.94	2.85	7.80E+02	1.50E+03		2.85	7.80E+02
4/4/2008	356.89	2.80	7.26E+02	2.03E+03		2.80	7.26E+02
4/5/2008	357.65	3.56	9.98E+02	2.58E+03		3.56	9.98E+02
4/6/2008	357.31	3.22	8.04E+02	1.93E+03		3.22	8.04E+02
4/7/2008	356.90	2.81	7.41E+02	1.56E+03		2.81	7.41E+02
4/8/2008	356.65	2.56	5.28E+02	1.32E+03		2.56	5.28E+02
4/9/2008	356.43	2.34	3.94E+02	1.13E+03		2.34	3.94E+02
4/10/2008	356.27	2.18	3.17E+02	1.09E+03		2.18	3.17E+02
4/11/2008	356.15	2.06	2.71E+02	1.01E+03		2.06	2.71E+02
4/12/2008	356.40	2.31	3.77E+02	1.30E+03		2.31	3.77E+02
4/13/2008	356.71	2.62	5.71E+02	1.41E+03		2.62	5.71E+02
4/14/2008	356.39	2.30	3.75E+02	1.19E+03		2.30	3.75E+02
4/15/2008	356.12	2.03	2.59E+02	1.01E+03		2.03	2.59E+02
4/16/2008	355.95	1.86	2.06E+02	8.69E+02		1.86	2.06E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/17/2008	355.81	1.72	1.71E+02	8.16E+02		1.72	1.71E+02
4/18/2008	355.72	1.63	1.51E+02	7.53E+02		1.63	1.51E+02
4/19/2008	355.64	1.55	1.36E+02	7.11E+02		1.55	1.36E+02
4/20/2008	355.52	1.43	1.16E+02	6.67E+02		1.43	1.16E+02
4/21/2008	355.47	1.38	1.07E+02	6.27E+02		1.38	1.07E+02
4/22/2008	355.43	1.34	1.03E+02	6.07E+02		1.34	1.03E+02
4/23/2008	355.34	1.25	9.06E+01	5.40E+02		1.25	9.06E+01
4/24/2008	355.29	1.20	8.44E+01	5.25E+02		1.20	8.44E+01
4/25/2008	355.24	1.15	7.90E+01	5.15E+02		1.15	7.90E+01
4/26/2008	355.17	1.08	7.26E+01	4.84E+02		1.08	7.26E+01
4/27/2008	355.16	1.07	7.10E+01	4.64E+02		1.07	7.10E+01
4/28/2008	355.26	1.17	8.14E+01	8.26E+02		1.17	8.14E+01
4/29/2008	357.81	3.72	1.10E+03	3.29E+03		3.72	1.10E+03
4/30/2008	357.64	3.55	9.91E+02	2.24E+03		3.55	9.91E+02
5/1/2008	356.68	2.59	5.47E+02	1.50E+03		2.59	5.47E+02
5/2/2008	356.35	2.26	3.53E+02	1.12E+03		2.26	3.53E+02
5/3/2008	356.35	2.26	3.55E+02	1.12E+03		2.26	3.55E+02
5/4/2008	356.39	2.30	3.74E+02	1.26E+03		2.30	3.74E+02
5/5/2008	356.46	2.37	4.07E+02	1.25E+03		2.37	4.07E+02
5/6/2008	356.08	1.99	2.46E+02	1.02E+03		1.99	2.46E+02
5/7/2008	355.80	1.71	1.68E+02	8.37E+02		1.71	1.68E+02
5/8/2008	355.63	1.54	1.34E+02	7.24E+02		1.54	1.34E+02
5/9/2008	355.65	1.56	1.38E+02	7.50E+02		1.56	1.38E+02
5/10/2008	356.68	2.59	5.51E+02	1.23E+03		2.59	5.51E+02
5/11/2008	356.64	2.55	5.23E+02	1.23E+03		2.55	5.23E+02
5/12/2008	356.15	2.06	2.71E+02	9.64E+02		2.06	2.71E+02
5/13/2008	355.86	1.77	1.84E+02	7.72E+02		1.77	1.84E+02
5/14/2008	355.64	1.55	1.36E+02	6.72E+02		1.55	1.36E+02
5/15/2008	355.51	1.42	1.14E+02	6.17E+02		1.42	1.14E+02
5/16/2008	355.59	1.50	1.27E+02	6.60E+02		1.50	1.27E+02
5/17/2008	357.36	3.27	8.29E+02	1.82E+03		3.27	8.29E+02
5/18/2008	357.53	3.44	9.26E+02	1.76E+03		3.44	9.26E+02
5/19/2008	357.23	3.14	7.62E+02	1.51E+03		3.14	7.62E+02
5/20/2008	356.85	2.76	6.88E+02	1.23E+03		2.76	6.88E+02
5/21/2008	356.67	2.58	5.40E+02	1.07E+03		2.58	5.40E+02
5/22/2008	356.57	2.48	4.77E+02	1.01E+03		2.48	4.77E+02
5/23/2008	356.41	2.32	3.83E+02	9.27E+02		2.32	3.83E+02
5/24/2008	356.10	2.01	2.52E+02	8.05E+02		2.01	2.52E+02
5/25/2008	355.86	1.77	1.83E+02	6.69E+02		1.77	1.83E+02
5/26/2008	355.63	1.54	1.34E+02	5.91E+02		1.54	1.34E+02
5/27/2008	355.49	1.40	1.11E+02	5.33E+02		1.40	1.11E+02
5/28/2008	356.15	2.06	2.69E+02	5.76E+02		2.06	2.69E+02
5/29/2008	356.18	2.09	2.79E+02	7.19E+02		2.09	2.79E+02
5/30/2008	355.81	1.72	1.70E+02	6.30E+02		1.72	1.70E+02
5/31/2008	355.47	1.38	1.08E+02	4.93E+02		1.38	1.08E+02
6/1/2008	355.52	1.43	1.15E+02	5.07E+02		1.43	1.15E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/2/2008	355.50	1.41	1.13E+02	4.94E+02		1.41	1.13E+02
6/3/2008	355.23	1.14	7.82E+01	4.35E+02		1.14	7.82E+01
6/4/2008	355.15	1.06	7.07E+01	3.78E+02		1.06	7.07E+01
6/5/2008	355.31	1.22	8.67E+01	4.06E+02		1.22	8.67E+01
6/6/2008	355.23	1.14	7.78E+01	4.77E+02		1.14	7.78E+01
6/7/2008	355.14	1.05	6.89E+01	4.44E+02		1.05	6.89E+01
6/8/2008	355.08	0.99	6.37E+01	3.69E+02		0.99	6.37E+01
6/9/2008	355.07	0.98	6.27E+01	3.43E+02		0.98	6.27E+01
6/10/2008	355.01	0.92	5.81E+01	3.46E+02		0.92	5.81E+01
6/11/2008	355.01	0.92	5.79E+01	3.00E+02		0.92	5.79E+01
6/12/2008	355.04	0.95	6.03E+01	2.83E+02		0.95	6.03E+01
6/13/2008	354.92	0.83	5.14E+01	2.80E+02		0.83	5.14E+01
6/14/2008	354.79	0.70	4.35E+01	2.50E+02		0.70	4.35E+01
6/15/2008	354.77	0.68	4.24E+01	2.08E+02		0.68	4.24E+01
6/16/2008	354.80	0.71	4.39E+01	2.04E+02		0.71	4.39E+01
6/17/2008	354.76	0.67	4.14E+01	2.15E+02		0.67	4.14E+01
6/18/2008	354.70	0.61	3.85E+01	2.08E+02		0.61	3.85E+01
6/19/2008	354.82	0.73	4.51E+01	2.59E+02		0.73	4.51E+01
6/20/2008	354.87	0.78	4.84E+01	2.47E+02		0.78	4.84E+01
6/21/2008	354.79	0.70	4.35E+01	2.31E+02		0.70	4.35E+01
6/22/2008	354.82	0.73	4.48E+01	2.05E+02		0.73	4.48E+01
6/23/2008	354.77	0.68	4.20E+01	2.85E+02		0.68	4.20E+01
6/24/2008	354.71	0.62	3.90E+01	2.48E+02		0.62	3.90E+01
6/25/2008	354.62	0.53	3.46E+01	1.96E+02		0.53	3.46E+01
6/26/2008	354.55	0.46	3.12E+01	1.86E+02		0.46	3.12E+01
6/27/2008	354.51	0.42	2.99E+01	1.33E+02		0.42	2.99E+01
6/28/2008	354.53	0.44	3.03E+01	1.24E+02		0.44	3.03E+01
6/29/2008	354.50	0.41	2.94E+01	1.35E+02		0.41	2.94E+01
6/30/2008	354.52	0.43	3.01E+01	1.57E+02		0.43	3.01E+01
7/1/2008	354.50	0.41	2.93E+01	2.15E+02		0.41	2.93E+01
7/2/2008	354.45	0.36	2.73E+01	1.92E+02		0.36	2.73E+01
7/3/2008	354.43	0.34	2.67E+01	1.91E+02		0.34	2.67E+01
7/4/2008	354.43	0.34	2.67E+01	1.97E+02		0.34	2.67E+01
7/5/2008	354.49	0.40	2.88E+01	1.97E+02		0.40	2.88E+01
7/6/2008	354.49	0.40	2.90E+01	1.96E+02		0.40	2.90E+01
7/7/2008	354.50	0.41	2.93E+01	1.92E+02		0.41	2.93E+01
7/8/2008	354.45	0.36	2.74E+01	1.79E+02		0.36	2.74E+01
7/9/2008	354.44	0.35	2.70E+01	1.71E+02		0.35	2.70E+01
7/10/2008	354.44	0.35	2.69E+01	1.82E+02		0.35	2.69E+01
7/11/2008	354.43	0.34	2.65E+01	1.69E+02		0.34	2.65E+01
7/12/2008	354.45	0.36	2.73E+01	1.41E+02		0.36	2.73E+01
7/13/2008	354.46	0.37	2.79E+01	1.32E+02		0.37	2.79E+01
7/14/2008	354.48	0.39	2.87E+01	1.48E+02		0.39	2.87E+01
7/15/2008	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
7/16/2008	354.45	0.36	2.76E+01	1.63E+02		0.36	2.76E+01
7/17/2008	354.45	0.36	2.73E+01	1.45E+02		0.36	2.73E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/18/2008	354.47	0.38	2.83E+01	1.35E+02		0.38	2.83E+01
7/19/2008	354.48	0.39	2.86E+01	1.09E+02		0.39	2.86E+01
7/20/2008	354.49	0.40	2.88E+01	1.05E+02		0.40	2.88E+01
7/21/2008	354.48	0.39	2.87E+01	1.00E+02		0.39	2.87E+01
7/22/2008	354.48	0.39	2.86E+01	9.00E+01		0.39	2.86E+01
7/23/2008	354.49	0.40	2.90E+01	9.50E+01		0.40	2.90E+01
7/24/2008	354.59	0.50	3.32E+01	2.86E+02		0.50	3.32E+01
7/25/2008	355.23	1.14	7.83E+01	5.35E+02		1.14	7.83E+01
7/26/2008	354.86	0.77	4.73E+01	4.18E+02		0.77	4.73E+01
7/27/2008	354.48	0.39	2.85E+01	3.10E+02		0.39	2.85E+01
7/28/2008	354.40	0.31	2.58E+01	2.00E+02		0.31	2.58E+01
7/29/2008	354.40	0.31	2.56E+01	2.13E+02		0.31	2.56E+01
7/30/2008	354.43	0.34	2.66E+01	1.77E+02		0.34	2.66E+01
7/31/2008	354.46	0.37	2.76E+01	1.62E+02		0.37	2.76E+01
8/1/2008	354.45	0.36	2.74E+01	9.60E+01		0.36	2.74E+01
8/2/2008	354.45	0.36	2.76E+01	1.18E+02		0.36	2.76E+01
8/3/2008	354.61	0.52	3.41E+01	1.36E+02		0.52	3.41E+01
8/4/2008	354.67	0.58	3.70E+01	2.14E+02		0.58	3.70E+01
8/5/2008	354.58	0.49	3.28E+01	1.93E+02		0.49	3.28E+01
8/6/2008	354.59	0.50	3.33E+01	1.80E+02		0.50	3.33E+01
8/7/2008	355.38	1.29	9.61E+01	2.48E+02		1.29	9.61E+01
8/8/2008	354.98	0.89	5.61E+01	3.95E+02		0.89	5.61E+01
8/9/2008	354.63	0.54	3.50E+01	2.86E+02		0.54	3.50E+01
8/10/2008	354.46	0.37	2.76E+01	2.24E+02		0.37	2.76E+01
8/11/2008	354.48	0.39	2.86E+01	1.73E+02		0.39	2.86E+01
8/12/2008	355.06	0.97	6.23E+01	2.33E+02		0.97	6.23E+01
8/13/2008	355.00	0.91	5.71E+01	3.48E+02		0.91	5.71E+01
8/14/2008	354.73	0.64	3.99E+01	3.90E+02		0.64	3.99E+01
8/15/2008	354.58	0.49	3.26E+01	3.22E+02		0.49	3.26E+01
8/16/2008	354.73	0.64	3.99E+01	2.66E+02		0.64	3.99E+01
8/17/2008	354.79	0.70	4.31E+01	2.39E+02		0.70	4.31E+01
8/18/2008	354.65	0.56	3.57E+01	2.29E+02		0.56	3.57E+01
8/19/2008	354.54	0.45	3.08E+01	1.82E+02		0.45	3.08E+01
8/20/2008	354.47	0.38	2.81E+01	1.68E+02		0.38	2.81E+01
8/21/2008	354.45	0.36	2.73E+01	1.51E+02		0.36	2.73E+01
8/22/2008	354.44	0.35	2.69E+01	1.08E+02		0.35	2.69E+01
8/23/2008	354.42	0.33	2.62E+01	7.80E+01		0.33	2.62E+01
8/24/2008	354.42	0.33	2.62E+01	8.40E+01		0.33	2.62E+01
8/25/2008	354.40	0.31	2.56E+01	8.70E+01		0.31	2.56E+01
8/26/2008	354.38	0.29	2.49E+01	8.90E+01		0.29	2.49E+01
8/27/2008	354.36	0.27	2.43E+01	8.40E+01		0.27	2.43E+01
8/28/2008	354.35	0.26	2.40E+01	7.90E+01		0.26	2.40E+01
8/29/2008	354.35	0.26	2.41E+01	7.60E+01		0.26	2.41E+01
8/30/2008	354.38	0.29	2.48E+01	7.90E+01		0.29	2.48E+01
8/31/2008	354.38	0.29	2.48E+01	7.70E+01		0.29	2.48E+01
9/1/2008	354.36	0.27	2.43E+01	7.90E+01		0.27	2.43E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/2/2008	354.35	0.26	2.40E+01	7.80E+01		0.26	2.40E+01
9/3/2008	354.32	0.23	2.31E+01	7.50E+01		0.23	2.31E+01
9/4/2008	354.32	0.23	2.31E+01	7.20E+01		0.23	2.31E+01
9/5/2008	354.34	0.25	2.37E+01	6.80E+01		0.25	2.37E+01
9/6/2008	354.47	0.38	2.80E+01	1.04E+02		0.38	2.80E+01
9/7/2008	356.71	2.62	5.70E+02	6.35E+02		2.62	5.70E+02
9/8/2008	356.32	2.23	3.39E+02	8.42E+02		2.23	3.39E+02
9/9/2008	355.75	1.66	1.58E+02	7.02E+02		1.66	1.58E+02
9/10/2008	356.61	2.52	5.02E+02	1.03E+03		2.52	5.02E+02
9/11/2008	356.06	1.97	2.40E+02	7.76E+02		1.97	2.40E+02
9/12/2008	355.40	1.31	9.82E+01	4.85E+02		1.31	9.82E+01
9/13/2008	355.28	1.19	8.32E+01	4.26E+02		1.19	8.32E+01
9/14/2008	355.21	1.12	7.63E+01	4.80E+02		1.12	7.63E+01
9/15/2008	355.05	0.96	6.11E+01	3.97E+02		0.96	6.11E+01
9/16/2008	354.89	0.80	4.93E+01	2.66E+02		0.80	4.93E+01
9/17/2008	354.74	0.65	4.06E+01	2.08E+02		0.65	4.06E+01
9/18/2008	354.64	0.55	3.52E+01	1.84E+02		0.55	3.52E+01
9/19/2008	354.56	0.47	3.20E+01	1.50E+02		0.47	3.20E+01
9/20/2008	354.49	0.40	2.89E+01	1.08E+02		0.40	2.89E+01
9/21/2008	354.45	0.36	2.74E+01	1.13E+02		0.36	2.74E+01
9/22/2008	354.44	0.35	2.70E+01	1.07E+02		0.35	2.70E+01
9/23/2008	354.42	0.33	2.65E+01	1.16E+02		0.33	2.65E+01
9/24/2008	354.42	0.33	2.62E+01	7.10E+01		0.33	2.62E+01
9/25/2008	354.41	0.32	2.61E+01	1.00E+02		0.32	2.61E+01
9/26/2008	354.55	0.46	3.12E+01	1.36E+02		0.46	3.12E+01
9/27/2008	355.53	1.44	1.17E+02	3.58E+02		1.44	1.17E+02
9/28/2008	355.33	1.24	9.00E+01	4.60E+02		1.24	9.00E+01
9/29/2008	355.41	1.32	9.96E+01	4.97E+02		1.32	9.96E+01
9/30/2008	355.57	1.48	1.23E+02	5.43E+02		1.48	1.23E+02
10/1/2008	355.29	1.20	8.51E+01	4.58E+02		1.20	8.51E+01
10/2/2008	355.22	1.13	7.69E+01	3.73E+02		1.13	7.69E+01
10/3/2008	355.08	0.99	6.40E+01	3.07E+02		0.99	6.40E+01
10/4/2008	354.94	0.85	5.27E+01	2.56E+02		0.85	5.27E+01
10/5/2008	354.84	0.75	4.63E+01	2.19E+02		0.75	4.63E+01
10/6/2008	354.87	0.78	4.85E+01	2.02E+02		0.78	4.85E+01
10/7/2008	354.82	0.73	4.49E+01	1.98E+02		0.73	4.49E+01
10/8/2008	354.74	0.65	4.07E+01	1.71E+02		0.65	4.07E+01
10/9/2008	354.70	0.61	3.85E+01	1.77E+02		0.61	3.85E+01
10/10/2008	354.66	0.57	3.63E+01	1.68E+02		0.57	3.63E+01
10/11/2008	354.63	0.54	3.48E+01	1.26E+02		0.54	3.48E+01
10/12/2008	354.60	0.51	3.34E+01	1.31E+02		0.51	3.34E+01
10/13/2008	354.58	0.49	3.25E+01	1.34E+02		0.49	3.25E+01
10/14/2008	354.57	0.48	3.20E+01	1.20E+02		0.48	3.20E+01
10/15/2008	354.55	0.46	3.13E+01	1.21E+02		0.46	3.13E+01
10/16/2008	354.53	0.44	3.06E+01	1.12E+02		0.44	3.06E+01
10/17/2008	354.53	0.44	3.05E+01	1.03E+02		0.44	3.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/18/2008	354.62	0.53	3.43E+01	1.03E+02		0.53	3.43E+01
10/19/2008	354.66	0.57	3.64E+01	1.09E+02		0.57	3.64E+01
10/20/2008	354.66	0.57	3.63E+01	1.17E+02		0.57	3.63E+01
10/21/2008				1.35E+02	1.35E+02		1.35E+02
10/22/2008				1.16E+02	1.16E+02		1.16E+02
10/23/2008				1.16E+02	1.16E+02		1.16E+02
10/24/2008				1.21E+02	1.21E+02		1.21E+02
10/25/2008				2.00E+02	2.00E+02		2.00E+02
10/26/2008				1.71E+03	1.71E+03		1.71E+03
10/27/2008				1.39E+03	1.39E+03		1.39E+03
10/28/2008				2.05E+03	2.05E+03		2.05E+03
10/29/2008				4.20E+03	4.20E+03		4.20E+03
10/30/2008				2.97E+03	2.97E+03		2.97E+03
10/31/2008				2.17E+03	2.17E+03		2.17E+03
11/1/2008				1.61E+03	1.61E+03		1.61E+03
11/2/2008				1.18E+03	1.18E+03		1.18E+03
11/3/2008				9.61E+02	9.61E+02		9.61E+02
11/4/2008				7.99E+02	7.99E+02		7.99E+02
11/5/2008				6.54E+02	6.54E+02		6.54E+02
11/6/2008				6.44E+02	6.44E+02		6.44E+02
11/7/2008				7.06E+02	7.06E+02		7.06E+02
11/8/2008				7.13E+02	7.13E+02		7.13E+02
11/9/2008				6.50E+02	6.50E+02		6.50E+02
11/10/2008				6.02E+02	6.02E+02		6.02E+02
11/11/2008	355.47	1.38	1.08E+02	5.35E+02		1.38	1.08E+02
11/12/2008	355.37	1.28	9.46E+01	4.82E+02		1.28	9.46E+01
11/13/2008	355.28	1.19	8.38E+01	4.46E+02		1.19	8.38E+01
11/14/2008	355.54	1.45	1.18E+02	6.33E+02		1.45	1.18E+02
11/15/2008	355.91	1.82	1.95E+02	9.10E+02		1.82	1.95E+02
11/16/2008	357.60	3.51	9.71E+02	2.26E+03		3.51	9.71E+02
11/17/2008	357.62	3.53	9.83E+02	1.94E+03		3.53	9.83E+02
11/18/2008	356.98	2.89	8.19E+02	1.42E+03		2.89	8.19E+02
11/19/2008	356.47	2.38	4.13E+02	1.10E+03		2.38	4.13E+02
11/20/2008	356.12	2.03	2.60E+02	9.01E+02		2.03	2.60E+02
11/21/2008	355.95	1.86	2.06E+02	7.91E+02		1.86	2.06E+02
11/22/2008	355.76	1.67	1.60E+02	6.92E+02		1.67	1.60E+02
11/23/2008	355.57	1.48	1.24E+02	5.90E+02		1.48	1.24E+02
11/24/2008	355.47	1.38	1.09E+02	5.44E+02		1.38	1.09E+02
11/25/2008	355.65	1.56	1.38E+02	6.82E+02		1.56	1.38E+02
11/26/2008	356.23	2.14	2.99E+02	9.48E+02		2.14	2.99E+02
11/27/2008	356.04	1.95	2.32E+02	9.12E+02		1.95	2.32E+02
11/28/2008	355.80	1.71	1.68E+02	7.63E+02		1.71	1.68E+02
11/29/2008	355.64	1.55	1.37E+02	6.68E+02		1.55	1.37E+02
11/30/2008	355.55	1.46	1.21E+02	6.40E+02		1.46	1.21E+02
12/1/2008	356.83	2.74	6.76E+02	1.58E+03		2.74	6.76E+02
12/2/2008	357.48	3.39	8.98E+02	1.82E+03		3.39	8.98E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/3/2008	356.87	2.78	7.13E+02	1.38E+03		2.78	7.13E+02
12/4/2008	356.37	2.28	3.62E+02	1.08E+03		2.28	3.62E+02
12/5/2008	356.21	2.12	2.93E+02	9.50E+02		2.12	2.93E+02
12/6/2008	356.08	1.99	2.44E+02	8.44E+02		1.99	2.44E+02
12/7/2008	355.88	1.79	1.89E+02	7.70E+02		1.79	1.89E+02
12/8/2008	355.66	1.57	1.39E+02	6.44E+02		1.57	1.39E+02
12/9/2008	355.56	1.47	1.22E+02	6.00E+02		1.47	1.22E+02
12/10/2008	355.78	1.69	1.63E+02	9.53E+02		1.69	1.63E+02
12/11/2008	357.39	3.30	8.45E+02	2.12E+03		3.30	8.45E+02
12/12/2008	362.58	8.49	6.53E+03	1.19E+04		8.49	6.53E+03
12/13/2008	362.91	8.82	7.09E+03	9.01E+03		8.82	7.09E+03
12/14/2008	362.28	8.19	6.04E+03	6.22E+03		8.19	6.04E+03
12/15/2008	361.54	7.45	4.92E+03	5.03E+03		7.45	4.92E+03
12/16/2008	360.68	6.59	3.78E+03	4.30E+03		6.59	3.78E+03
12/17/2008	359.61	5.52	2.58E+03	3.43E+03		5.52	2.58E+03
12/18/2008	358.87	4.78	1.89E+03	2.84E+03		4.78	1.89E+03
12/19/2008	358.26	4.17	1.40E+03	2.28E+03		4.17	1.40E+03
12/20/2008	357.74	3.65	1.06E+03	1.85E+03		3.65	1.06E+03
12/21/2008	357.58	3.49	9.56E+02	1.69E+03		3.49	9.56E+02
12/22/2008	358.25	4.16	1.40E+03	1.49E+03		4.16	1.40E+03
12/23/2008	356.83	2.74	6.74E+02	1.28E+03		2.74	6.74E+02
12/24/2008	357.05	2.96	9.06E+02	1.69E+03		2.96	9.06E+02
12/25/2008	359.35	5.26	2.33E+03	4.78E+03		5.26	2.33E+03
12/26/2008	359.84	5.75	2.81E+03	4.49E+03		5.75	2.81E+03
12/27/2008	359.31	5.22	2.28E+03	3.33E+03		5.22	2.28E+03
12/28/2008	359.46	5.37	2.43E+03	3.84E+03		5.37	2.43E+03
12/29/2008	359.60	5.51	2.56E+03	4.40E+03		5.51	2.56E+03
12/30/2008	358.97	4.88	1.98E+03	3.20E+03		4.88	1.98E+03
12/31/2008	358.42	4.33	1.52E+03	2.48E+03		4.33	1.52E+03
1/1/2009	358.33	4.24	1.46E+03	1.81E+03		4.24	1.46E+03
1/2/2009	365.20	11.11	1.17E+04	1.54E+03	1.54E+03	11.11	1.54E+03
1/3/2009	367.79	13.70	1.84E+04	1.52E+03	1.52E+03	13.70	1.52E+03
1/4/2009	356.73	2.64	5.85E+02	1.32E+03		2.64	5.85E+02
1/5/2009	356.59	2.50	4.90E+02	1.25E+03		2.50	4.90E+02
1/6/2009	356.54	2.45	4.58E+02	1.18E+03		2.45	4.58E+02
1/7/2009	356.56	2.47	4.71E+02	1.19E+03		2.47	4.71E+02
1/8/2009	357.43	3.34	8.68E+02	1.59E+03		3.34	8.68E+02
1/9/2009	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
1/10/2009	356.59	2.50	4.86E+02	1.19E+03		2.50	4.86E+02
1/11/2009	356.15	2.06	2.69E+02	9.23E+02		2.06	2.69E+02
1/12/2009	359.05	4.96	2.05E+03	9.90E+02	9.90E+02	4.96	9.90E+02
1/13/2009	356.37	2.28	3.65E+02	9.41E+02		2.28	3.65E+02
1/14/2009	361.44	7.35	4.79E+03	9.32E+02	9.32E+02	7.35	9.32E+02
1/15/2009	355.75	1.66	1.57E+02	3.63E+03		1.66	1.57E+02
1/16/2009	356.33	2.24	3.44E+02	Ice		2.24	3.44E+02
1/17/2009	355.75	1.66	1.57E+02	Ice		1.66	1.57E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/18/2009	355.57	1.48	1.24E+02	Ice		1.48	1.24E+02
1/19/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
1/20/2009	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/21/2009	355.55	1.46	1.21E+02	Ice		1.46	1.21E+02
1/22/2009	355.49	1.40	1.11E+02	Ice		1.40	1.11E+02
1/23/2009	355.37	1.28	9.48E+01	Ice		1.28	9.48E+01
1/24/2009	355.38	1.29	9.54E+01	Ice		1.29	9.54E+01
1/25/2009	366.23	12.14	1.41E+04	Ice		12.14	1.41E+04
1/26/2009	355.25	1.16	7.99E+01	Ice		1.16	7.99E+01
1/27/2009	355.18	1.09	7.29E+01	Ice		1.09	7.29E+01
1/28/2009	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
1/29/2009	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
1/30/2009	355.60	1.51	1.29E+02	Ice		1.51	1.29E+02
1/31/2009	355.47	1.38	1.09E+02	Ice		1.38	1.09E+02
2/1/2009	355.37	1.28	9.39E+01	Ice		1.28	9.39E+01
2/2/2009	355.32	1.23	8.86E+01	Ice		1.23	8.86E+01
2/3/2009	355.40	1.31	9.80E+01	Ice		1.31	9.80E+01
2/4/2009	355.40	1.31	9.89E+01	Ice		1.31	9.89E+01
2/5/2009	355.35	1.26	9.25E+01	Ice		1.26	9.25E+01
2/6/2009	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
2/7/2009	355.25	1.16	8.01E+01	Ice		1.16	8.01E+01
2/8/2009	355.34	1.25	9.08E+01	Ice		1.25	9.08E+01
2/9/2009	356.17	2.08	2.78E+02	Ice		2.08	2.78E+02
2/10/2009	356.37	2.28	3.64E+02	Ice		2.28	3.64E+02
2/11/2009	356.42	2.33	3.86E+02	Ice		2.33	3.86E+02
2/12/2009	358.15	4.06	1.32E+03	Ice		4.06	1.32E+03
2/13/2009	359.11	5.02	2.10E+03	Ice		5.02	2.10E+03
2/14/2009	358.20	4.11	1.36E+03	Ice		4.11	1.36E+03
2/15/2009	357.35	3.26	8.28E+02	Ice		3.26	8.28E+02
2/16/2009	356.83	2.74	6.71E+02	Ice		2.74	6.71E+02
2/17/2009	356.54	2.45	4.53E+02	Ice		2.45	4.53E+02
2/18/2009	356.32	2.23	3.39E+02	Ice		2.23	3.39E+02
2/19/2009	356.33	2.24	3.46E+02	Ice		2.24	3.46E+02
2/20/2009	356.50	2.41	4.30E+02	Ice		2.41	4.30E+02
2/21/2009	356.17	2.08	2.77E+02	Ice		2.08	2.77E+02
2/22/2009	356.05	1.96	2.35E+02	Ice		1.96	2.35E+02
2/23/2009	355.94	1.85	2.04E+02	Ice		1.85	2.04E+02
2/24/2009	355.71	1.62	1.49E+02	Ice		1.62	1.49E+02
2/25/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
2/26/2009				Ice			
2/27/2009				Ice			
2/28/2009				Ice			
3/1/2009				Ice			
3/2/2009				Ice			
3/3/2009				Ice			
3/4/2009				Ice			

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/5/2009				Ice			
3/6/2009				Ice			
3/7/2009				Ice			
3/8/2009				Ice			
3/9/2009				Ice			
3/10/2009				2.71E+03	2.71E+03		2.71E+03
3/11/2009				2.28E+03	2.28E+03		2.28E+03
3/12/2009				1.71E+03	1.71E+03		1.71E+03
3/13/2009				1.33E+03	1.33E+03		1.33E+03
3/14/2009				1.12E+03	1.12E+03		1.12E+03
3/15/2009				1.01E+03	1.01E+03		1.01E+03
3/16/2009				9.32E+02	9.32E+02		9.32E+02
3/17/2009				8.64E+02	8.64E+02		8.64E+02
3/18/2009				8.03E+02	8.03E+02		8.03E+02
3/19/2009				7.96E+02	7.96E+02		7.96E+02
3/20/2009				9.03E+02	9.03E+02		9.03E+02
3/21/2009				8.44E+02	8.44E+02		8.44E+02
3/22/2009				7.49E+02	7.49E+02		7.49E+02
3/23/2009				6.54E+02	6.54E+02		6.54E+02
3/24/2009				6.12E+02	6.12E+02		6.12E+02
3/25/2009				5.81E+02	5.81E+02		5.81E+02
3/26/2009				5.76E+02	5.76E+02		5.76E+02
3/27/2009				6.69E+02	6.69E+02		6.69E+02
3/28/2009				7.57E+02	7.57E+02		7.57E+02
3/29/2009				8.13E+02	8.13E+02		8.13E+02
3/30/2009				1.83E+03	1.83E+03		1.83E+03
3/31/2009				1.51E+03	1.51E+03		1.51E+03
4/1/2009				1.10E+03	1.10E+03		1.10E+03
4/2/2009				1.24E+03	1.24E+03		1.24E+03
4/3/2009				1.52E+03	1.52E+03		1.52E+03
4/4/2009				2.16E+03	2.16E+03		2.16E+03
4/5/2009				1.73E+03	1.73E+03		1.73E+03
4/6/2009				1.46E+03	1.46E+03		1.46E+03
4/7/2009				1.82E+03	1.82E+03		1.82E+03
4/8/2009				1.52E+03	1.52E+03		1.52E+03
4/9/2009				1.23E+03	1.23E+03		1.23E+03
4/10/2009				1.02E+03	1.02E+03		1.02E+03
4/11/2009				1.03E+03	1.03E+03		1.03E+03
4/12/2009				9.98E+02	9.98E+02		9.98E+02
4/13/2009				8.63E+02	8.63E+02		8.63E+02
4/14/2009				7.91E+02	7.91E+02		7.91E+02
4/15/2009				7.55E+02	7.55E+02		7.55E+02
4/16/2009				7.78E+02	7.78E+02		7.78E+02
4/17/2009				7.24E+02	7.24E+02		7.24E+02
4/18/2009				6.72E+02	6.72E+02		6.72E+02
4/19/2009				5.94E+02	5.94E+02		5.94E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/20/2009				5.87E+02	5.87E+02		5.87E+02
4/21/2009				1.15E+03	1.15E+03		1.15E+03
4/22/2009				1.74E+03	1.74E+03		1.74E+03
4/23/2009				1.54E+03	1.54E+03		1.54E+03
4/24/2009				1.15E+03	1.15E+03		1.15E+03
4/25/2009				9.48E+02	9.48E+02		9.48E+02
4/26/2009				8.25E+02	8.25E+02		8.25E+02
4/27/2009				7.30E+02	7.30E+02		7.30E+02
4/28/2009				6.35E+02	6.35E+02		6.35E+02
4/29/2009				5.62E+02	5.62E+02		5.62E+02
4/30/2009				5.17E+02	5.17E+02		5.17E+02
5/1/2009				4.89E+02	4.89E+02		4.89E+02
5/2/2009				4.96E+02	4.96E+02		4.96E+02
5/3/2009				5.25E+02	5.25E+02		5.25E+02
5/4/2009				5.19E+02	5.19E+02		5.19E+02
5/5/2009				5.16E+02	5.16E+02		5.16E+02
5/6/2009				6.43E+02	6.43E+02		6.43E+02
5/7/2009				2.06E+03	2.06E+03		2.06E+03
5/8/2009				2.15E+03	2.15E+03		2.15E+03
5/9/2009				1.74E+03	1.74E+03		1.74E+03
5/10/2009				1.31E+03	1.31E+03		1.31E+03
5/11/2009				1.01E+03	1.01E+03		1.01E+03
5/12/2009				8.07E+02	8.07E+02		8.07E+02
5/13/2009				6.91E+02	6.91E+02		6.91E+02
5/14/2009				6.78E+02	6.78E+02		6.78E+02
5/15/2009				1.32E+03	1.32E+03		1.32E+03
5/16/2009				1.14E+03	1.14E+03		1.14E+03
5/17/2009				3.25E+03	3.25E+03		3.25E+03
5/18/2009				1.93E+03	1.93E+03		1.93E+03
5/19/2009				1.34E+03	1.34E+03		1.34E+03
5/20/2009				9.68E+02	9.68E+02		9.68E+02
5/21/2009				7.98E+02	7.98E+02		7.98E+02
5/22/2009				6.66E+02	6.66E+02		6.66E+02
5/23/2009				5.36E+02	5.36E+02		5.36E+02
5/24/2009				4.94E+02	4.94E+02		4.94E+02
5/25/2009				5.08E+02	5.08E+02		5.08E+02
5/26/2009				4.90E+02	4.90E+02		4.90E+02
5/27/2009				4.34E+02	4.34E+02		4.34E+02
5/28/2009				4.51E+02	4.51E+02		4.51E+02
5/29/2009				4.69E+02	4.69E+02		4.69E+02
5/30/2009				5.06E+02	5.06E+02		5.06E+02
5/31/2009				4.56E+02	4.56E+02		4.56E+02
6/1/2009				3.95E+02	3.95E+02		3.95E+02
6/2/2009				3.25E+02	3.25E+02		3.25E+02
6/3/2009				2.86E+02	2.86E+02		2.86E+02
6/4/2009				2.88E+02	2.88E+02		2.88E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/5/2009				3.13E+02	3.13E+02		3.13E+02
6/6/2009				3.44E+02	3.44E+02		3.44E+02
6/7/2009				3.36E+02	3.36E+02		3.36E+02
6/8/2009				3.01E+02	3.01E+02		3.01E+02
6/9/2009				6.45E+02	6.45E+02		6.45E+02
6/10/2009				1.18E+03	1.18E+03		1.18E+03
6/11/2009				9.59E+02	9.59E+02		9.59E+02
6/12/2009				4.72E+03	4.72E+03		4.72E+03
6/13/2009				3.87E+03	3.87E+03		3.87E+03
6/14/2009				3.39E+03	3.39E+03		3.39E+03
6/15/2009				3.65E+03	3.65E+03		3.65E+03
6/16/2009				2.58E+03	2.58E+03		2.58E+03
6/17/2009				1.72E+03	1.72E+03		1.72E+03
6/18/2009				5.99E+03	5.99E+03		5.99E+03
6/19/2009				7.58E+03	7.58E+03		7.58E+03
6/20/2009				4.97E+03	4.97E+03		4.97E+03
6/21/2009				7.47E+03	7.47E+03		7.47E+03
6/22/2009				5.16E+03	5.16E+03		5.16E+03
6/23/2009				3.28E+03	3.28E+03		3.28E+03
6/24/2009				2.36E+03	2.36E+03		2.36E+03
6/25/2009				1.94E+03	1.94E+03		1.94E+03
6/26/2009				1.96E+03	1.96E+03		1.96E+03
6/27/2009				5.23E+03	5.23E+03		5.23E+03
6/28/2009				3.13E+03	3.13E+03		3.13E+03
6/29/2009				1.94E+03	1.94E+03		1.94E+03
6/30/2009				1.96E+03	1.96E+03		1.96E+03
7/1/2009	357.34	3.25	8.23E+02	3.61E+03		3.25	8.23E+02
7/2/2009	357.60	3.51	9.71E+02	2.66E+03		3.51	9.71E+02
7/3/2009	358.09	4.00	1.28E+03	2.69E+03		4.00	1.28E+03
7/4/2009	357.63	3.54	9.88E+02	2.14E+03		3.54	9.88E+02
7/5/2009	357.11	3.02	6.98E+02	1.65E+03		3.02	6.98E+02
7/6/2009	356.58	2.49	4.80E+02	1.29E+03		2.49	4.80E+02
7/7/2009	356.19	2.10	2.83E+02			2.10	2.83E+02
7/8/2009	356.56	2.47	4.68E+02	1.20E+03		2.47	4.68E+02
7/9/2009	356.38	2.29	3.67E+02	1.16E+03		2.29	3.67E+02
7/10/2009	355.92	1.83	1.98E+02	9.19E+02		1.83	1.98E+02
7/11/2009	355.65	1.56	1.38E+02	8.33E+02		1.56	1.38E+02
7/12/2009	355.66	1.57	1.39E+02	8.66E+02		1.57	1.39E+02
7/13/2009	355.59	1.50	1.27E+02	8.07E+02		1.50	1.27E+02
7/14/2009	355.30	1.21	8.59E+01	6.71E+02		1.21	8.59E+01
7/15/2009	355.16	1.07	7.16E+01	5.54E+02		1.07	7.16E+01
7/16/2009	355.13	1.04	6.86E+01	5.20E+02		1.04	6.86E+01
7/17/2009	355.06	0.97	6.22E+01	5.35E+02		0.97	6.22E+01
7/18/2009	355.22	1.13	7.76E+01	6.85E+02		1.13	7.76E+01
7/19/2009	355.25	1.16	8.03E+01	6.76E+02		1.16	8.03E+01
7/20/2009	355.02	0.93	5.89E+01	5.24E+02		0.93	5.89E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/21/2009	354.93	0.84	5.24E+01	4.99E+02		0.84	5.24E+01
7/22/2009	355.09	1.00	6.46E+01	6.67E+02		1.00	6.46E+01
7/23/2009	355.12	1.03	6.76E+01	5.95E+02		1.03	6.76E+01
7/24/2009	354.98	0.89	5.58E+01	5.51E+02		0.89	5.58E+01
7/25/2009	354.92	0.83	5.19E+01	1.12E+03		0.83	5.19E+01
7/26/2009	357.56	3.47	9.46E+02	1.54E+03		3.47	9.46E+02
7/27/2009	357.16	3.07	7.26E+02	1.70E+03		3.07	7.26E+02
7/28/2009	356.15	2.06	2.68E+02	1.35E+03		2.06	2.68E+02
7/29/2009	355.54	1.45	1.18E+02	9.66E+02		1.45	1.18E+02
7/30/2009	356.14	2.05	2.66E+02	2.83E+03		2.05	2.66E+02
7/31/2009	356.08	1.99	2.45E+02	1.62E+03		1.99	2.45E+02
8/1/2009	356.10	2.01	2.51E+02	1.50E+03		2.01	2.51E+02
8/2/2009	356.07	1.98	2.41E+02	1.32E+03		1.98	2.41E+02
8/3/2009	357.61	3.52	9.74E+02	2.01E+03		3.52	9.74E+02
8/4/2009	356.86	2.77	6.97E+02	1.58E+03		2.77	6.97E+02
8/5/2009	356.01	1.92	2.24E+02	1.11E+03		1.92	2.24E+02
8/6/2009	355.73	1.64	1.53E+02	8.22E+02		1.64	1.53E+02
8/7/2009	355.54	1.45	1.19E+02	7.19E+02		1.45	1.19E+02
8/8/2009	355.25	1.16	8.01E+01	5.97E+02		1.16	8.01E+01
8/9/2009	355.07	0.98	6.27E+01	5.14E+02		0.98	6.27E+01
8/10/2009	355.50	1.41	1.12E+02	1.14E+03		1.41	1.12E+02
8/11/2009	356.70	2.61	5.66E+02	1.58E+03		2.61	5.66E+02
8/12/2009	356.11	2.02	2.57E+02	1.32E+03		2.02	2.57E+02
8/13/2009	356.95	2.86	7.94E+02	1.46E+03		2.86	7.94E+02
8/14/2009	356.81	2.72	6.53E+02	1.40E+03		2.72	6.53E+02
8/15/2009	356.46	2.37	4.10E+02	1.13E+03		2.37	4.10E+02
8/16/2009	355.95	1.86	2.06E+02	9.61E+02		1.86	2.06E+02
8/17/2009	355.53	1.44	1.18E+02	7.05E+02		1.44	1.18E+02
8/18/2009	355.29	1.20	8.53E+01	5.66E+02		1.20	8.53E+01
8/19/2009	355.15	1.06	7.00E+01	5.05E+02		1.06	7.00E+01
8/20/2009	355.07	0.98	6.35E+01	4.43E+02		0.98	6.35E+01
8/21/2009	355.07	0.98	6.27E+01	4.04E+02		0.98	6.27E+01
8/22/2009	355.57	1.48	1.24E+02	6.02E+02		1.48	1.24E+02
8/23/2009	357.16	3.07	7.25E+02	2.02E+03		3.07	7.25E+02
8/24/2009	356.91	2.82	7.52E+02	1.69E+03		2.82	7.52E+02
8/25/2009	356.18	2.09	2.82E+02	1.13E+03		2.09	2.82E+02
8/26/2009	355.70	1.61	1.48E+02	8.01E+02		1.61	1.48E+02
8/27/2009	355.42	1.33	1.01E+02	6.62E+02		1.33	1.01E+02
8/28/2009	355.30	1.21	8.55E+01	5.79E+02		1.21	8.55E+01
8/29/2009	356.41	2.32	3.85E+02	1.24E+03		2.32	3.85E+02
8/30/2009	356.68	2.59	5.50E+02	1.55E+03		2.59	5.50E+02
8/31/2009	355.99	1.90	2.18E+02	1.08E+03		1.90	2.18E+02
9/1/2009	355.54	1.45	1.19E+02	7.45E+02		1.45	1.19E+02
9/2/2009	355.30	1.21	8.65E+01	6.26E+02		1.21	8.65E+01
9/3/2009	355.17	1.08	7.24E+01	5.28E+02		1.08	7.24E+01
9/4/2009	355.04	0.95	6.08E+01	4.62E+02		0.95	6.08E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/5/2009	354.96	0.87	5.47E+01	4.10E+02		0.87	5.47E+01
9/6/2009	354.91	0.82	5.11E+01	3.81E+02		0.82	5.11E+01
9/7/2009	354.84	0.75	4.65E+01	3.35E+02		0.75	4.65E+01
9/8/2009	354.80	0.71	4.41E+01	3.36E+02		0.71	4.41E+01
9/9/2009	354.78	0.69	4.28E+01	2.74E+02		0.69	4.28E+01
9/10/2009	354.76	0.67	4.15E+01	2.86E+02		0.67	4.15E+01
9/11/2009	354.73	0.64	4.02E+01	2.83E+02		0.64	4.02E+01
9/12/2009	355.11	1.02	6.67E+01	2.75E+02		1.02	6.67E+01
9/13/2009	355.32	1.23	8.84E+01	4.14E+02		1.23	8.84E+01
9/14/2009	355.15	1.06	6.99E+01	4.23E+02		1.06	6.99E+01
9/15/2009	354.97	0.88	5.51E+01	3.55E+02		0.88	5.51E+01
9/16/2009	354.90	0.81	4.99E+01	3.08E+02		0.81	4.99E+01
9/17/2009	355.04	0.95	6.09E+01	3.40E+02		0.95	6.09E+01
9/18/2009	355.07	0.98	6.35E+01	4.22E+02		0.98	6.35E+01
9/19/2009	355.01	0.92	5.85E+01	3.48E+02		0.92	5.85E+01
9/20/2009	354.92	0.83	5.17E+01	3.26E+02		0.83	5.17E+01
9/21/2009	354.88	0.79	4.91E+01	3.00E+02		0.79	4.91E+01
9/22/2009	354.83	0.74	4.56E+01	2.76E+02		0.74	4.56E+01
9/23/2009	354.82	0.73	4.50E+01	2.34E+02		0.73	4.50E+01
9/24/2009	354.82	0.73	4.48E+01	2.41E+02		0.73	4.48E+01
9/25/2009	354.80	0.71	4.39E+01	2.38E+02		0.71	4.39E+01
9/26/2009	354.78	0.69	4.27E+01	2.25E+02		0.69	4.27E+01
9/27/2009	354.91	0.82	5.06E+01	3.19E+02		0.82	5.06E+01
9/28/2009	355.16	1.07	7.08E+01	5.64E+02		1.07	7.08E+01
9/29/2009				4.78E+02	4.78E+02		4.78E+02
9/30/2009				3.87E+02	3.87E+02		3.87E+02
10/1/2009				2.81E+02	2.81E+02		2.81E+02
10/2/2009				2.86E+02	2.86E+02		2.86E+02
10/3/2009				2.73E+02	2.73E+02		2.73E+02
10/4/2009				3.26E+02	3.26E+02		3.26E+02
10/5/2009				3.13E+02	3.13E+02		3.13E+02
10/6/2009				2.83E+02	2.83E+02		2.83E+02
10/7/2009				2.87E+02	2.87E+02		2.87E+02
10/8/2009				2.76E+02	2.76E+02		2.76E+02
10/9/2009				2.64E+02	2.64E+02		2.64E+02
10/10/2009				3.77E+02	3.77E+02		3.77E+02
10/11/2009				4.05E+02	4.05E+02		4.05E+02
10/12/2009				3.42E+02	3.42E+02		3.42E+02
10/13/2009				2.96E+02	2.96E+02		2.96E+02
10/14/2009				2.66E+02	2.66E+02		2.66E+02
10/15/2009				2.61E+02	2.61E+02		2.61E+02
10/16/2009				2.80E+02	2.80E+02		2.80E+02
10/17/2009				3.04E+02	3.04E+02		3.04E+02
10/18/2009				3.16E+02	3.16E+02		3.16E+02
10/19/2009				2.97E+02	2.97E+02		2.97E+02
10/20/2009				2.80E+02	2.80E+02		2.80E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/21/2009				2.64E+02	2.64E+02		2.64E+02
10/22/2009				2.59E+02	2.59E+02		2.59E+02
10/23/2009				2.63E+02	2.63E+02		2.63E+02
10/24/2009				7.50E+02	7.50E+02		7.50E+02
10/25/2009				2.43E+03	2.43E+03		2.43E+03
10/26/2009				1.72E+03	1.72E+03		1.72E+03
10/27/2009				1.13E+03	1.13E+03		1.13E+03
10/28/2009				2.74E+03	2.74E+03		2.74E+03
10/29/2009				4.59E+03	4.59E+03		4.59E+03
10/30/2009				2.73E+03	2.73E+03		2.73E+03
10/31/2009				1.89E+03	1.89E+03		1.89E+03
11/1/2009				1.42E+03	1.42E+03		1.42E+03
11/2/2009				1.15E+03	1.15E+03		1.15E+03
11/3/2009				9.48E+02	9.48E+02		9.48E+02
11/4/2009				8.42E+02	8.42E+02		8.42E+02
11/5/2009				7.50E+02	7.50E+02		7.50E+02
11/6/2009				6.98E+02	6.98E+02		6.98E+02
11/7/2009				6.40E+02	6.40E+02		6.40E+02
11/8/2009				5.87E+02	5.87E+02		5.87E+02
11/9/2009				5.51E+02	5.51E+02		5.51E+02
11/10/2009				5.18E+02	5.18E+02		5.18E+02
11/11/2009				4.93E+02	4.93E+02		4.93E+02
11/12/2009				4.75E+02	4.75E+02		4.75E+02
11/13/2009				4.54E+02	4.54E+02		4.54E+02
11/14/2009				4.43E+02	4.43E+02		4.43E+02
11/15/2009				5.73E+02	5.73E+02		5.73E+02
11/16/2009				6.32E+02	6.32E+02		6.32E+02
11/17/2009				5.79E+02	5.79E+02		5.79E+02
11/18/2009				5.23E+02	5.23E+02		5.23E+02
11/19/2009				4.81E+02	4.81E+02		4.81E+02
11/20/2009				7.98E+02	7.98E+02		7.98E+02
11/21/2009				1.10E+03	1.10E+03		1.10E+03
11/22/2009				9.35E+02	9.35E+02		9.35E+02
11/23/2009				7.65E+02	7.65E+02		7.65E+02
11/24/2009				6.73E+02	6.73E+02		6.73E+02
11/25/2009				6.30E+02	6.30E+02		6.30E+02
11/26/2009				6.23E+02	6.23E+02		6.23E+02
11/27/2009				6.34E+02	6.34E+02		6.34E+02
11/28/2009				5.93E+02	5.93E+02		5.93E+02
11/29/2009				5.32E+02	5.32E+02		5.32E+02
11/30/2009	355.28	1.19	8.40E+01	5.06E+02		1.19	8.40E+01
12/1/2009	355.34	1.25	9.10E+01	4.89E+02		1.25	9.10E+01
12/2/2009	355.35	1.26	9.23E+01	5.19E+02		1.26	9.23E+01
12/3/2009	357.36	3.27	8.30E+02	2.90E+03		3.27	8.30E+02
12/4/2009	358.91	4.82	1.92E+03	3.15E+03		4.82	1.92E+03
12/5/2009	358.11	4.02	1.30E+03	2.26E+03		4.02	1.30E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/6/2009	357.52	3.43	9.22E+02	1.87E+03		3.43	9.22E+02
12/7/2009	357.09	3.00	6.91E+02	1.54E+03		3.00	6.91E+02
12/8/2009	356.73	2.64	5.92E+02	1.29E+03		2.64	5.92E+02
12/9/2009	356.97	2.88	8.08E+02	1.36E+03		2.88	8.08E+02
12/10/2009	358.80	4.71	1.83E+03	2.62E+03		4.71	1.83E+03
12/11/2009	358.43	4.34	1.53E+03	2.43E+03		4.34	1.53E+03
12/12/2009	357.82	3.73	1.10E+03	1.79E+03		3.73	1.10E+03
12/13/2009	357.24	3.15	7.65E+02	1.52E+03		3.15	7.65E+02
12/14/2009	358.53	4.44	1.61E+03	2.70E+03		4.44	1.61E+03
12/15/2009	358.89	4.80	1.90E+03	2.96E+03		4.80	1.90E+03
12/16/2009	359.01	4.92	2.01E+03	3.02E+03		4.92	2.01E+03
12/17/2009	358.39	4.30	1.50E+03	2.36E+03		4.30	1.50E+03
12/18/2009	357.68	3.59	1.02E+03	1.71E+03		3.59	1.02E+03
12/19/2009	382.41	28.32	8.81E+04	1.33E+03	1.33E+03	28.32	1.33E+03
12/20/2009	378.98	24.89	6.67E+04	1.32E+03	1.32E+03	24.89	1.32E+03
12/21/2009	368.53	14.44	2.06E+04	1.14E+03	1.14E+03	14.44	1.14E+03
12/22/2009	357.05	2.96	9.04E+02	1.13E+03		2.96	9.04E+02
12/23/2009	356.41	2.32	3.81E+02	9.24E+02		2.32	3.81E+02
12/24/2009	385.20	31.11	1.08E+05	8.68E+02	8.68E+02	31.11	8.68E+02
12/25/2009	356.15	2.06	2.71E+02	9.49E+02		2.06	2.71E+02
12/26/2009	356.20	2.11	2.88E+02	9.66E+02		2.11	2.88E+02
12/27/2009	359.63	5.54	2.60E+03	5.28E+03		5.54	2.60E+03
12/28/2009	360.40	6.31	3.44E+03	5.04E+03		6.31	3.44E+03
12/29/2009	359.60	5.51	2.57E+03	3.34E+03		5.51	2.57E+03
12/30/2009	358.44	4.35	1.54E+03	2.22E+03		4.35	1.54E+03
12/31/2009	357.97	3.88	1.20E+03	1.92E+03		3.88	1.20E+03
1/1/2010	357.40	3.31	8.55E+02	1.62E+03		3.31	8.55E+02
1/2/2010	357.15	3.06	7.21E+02	1.43E+03		3.06	7.21E+02
1/3/2010	356.37	2.28	3.63E+02	Ice		2.28	3.63E+02
1/4/2010	356.35	2.26	3.55E+02	Ice		2.26	3.55E+02
1/5/2010	356.36	2.27	3.58E+02	Ice		2.27	3.58E+02
1/6/2010	362.16	8.07	5.85E+03	Ice		8.07	5.85E+03
1/7/2010	356.01	1.92	2.23E+02	Ice		1.92	2.23E+02
1/8/2010	355.92	1.83	1.99E+02	Ice		1.83	1.99E+02
1/9/2010	357.41	3.32	8.59E+02	Ice		3.32	8.59E+02
1/10/2010	355.75	1.66	1.58E+02	Ice		1.66	1.58E+02
1/11/2010	355.74	1.65	1.55E+02	Ice		1.65	1.55E+02
1/12/2010	355.60	1.51	1.29E+02	Ice		1.51	1.29E+02
1/13/2010	355.51	1.42	1.15E+02	Ice		1.42	1.15E+02
1/14/2010	355.51	1.42	1.14E+02	Ice		1.42	1.14E+02
1/15/2010	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
1/16/2010	355.48	1.39	1.09E+02	Ice		1.39	1.09E+02
1/17/2010	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
1/18/2010	356.43	2.34	3.94E+02	Ice		2.34	3.94E+02
1/19/2010	356.95	2.86	7.90E+02	Ice		2.86	7.90E+02
1/20/2010	356.43	2.34	3.94E+02	Ice		2.34	3.94E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/21/2010	356.04	1.95	2.33E+02	Ice		1.95	2.33E+02
1/22/2010	355.79	1.70	1.66E+02	Ice		1.70	1.66E+02
1/23/2010	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/24/2010	355.46	1.37	1.07E+02	Ice		1.37	1.07E+02
1/25/2010	356.83	2.74	6.71E+02	Ice		2.74	6.71E+02
1/26/2010	360.26	6.17	3.27E+03	5.53E+03		6.17	3.27E+03
1/27/2010	359.88	5.79	2.86E+03	3.66E+03		5.79	2.86E+03
1/28/2010	359.32	5.23	2.30E+03	2.87E+03		5.23	2.30E+03
1/29/2010	358.29	4.20	1.43E+03	2.12E+03		4.20	1.43E+03
1/30/2010	356.92	2.83	7.62E+02	1.35E+03		2.83	7.62E+02
1/31/2010	356.46	2.37	4.12E+02	Ice		2.37	4.12E+02
2/1/2010	355.94	1.85	2.04E+02	Ice		1.85	2.04E+02
2/2/2010	355.90	1.81	1.94E+02	Ice		1.81	1.94E+02
2/3/2010	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
2/4/2010	355.59	1.50	1.26E+02	Ice		1.50	1.26E+02
2/5/2010	355.51	1.42	1.14E+02	Ice		1.42	1.14E+02
2/6/2010	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/7/2010	355.25	1.16	8.01E+01	Ice		1.16	8.01E+01
2/8/2010	355.46	1.37	1.06E+02	Ice		1.37	1.06E+02
2/9/2010	355.27	1.18	8.30E+01	Ice		1.18	8.30E+01
2/10/2010	355.16	1.07	7.16E+01	Ice		1.07	7.16E+01
2/11/2010	355.19	1.10	7.39E+01	Ice		1.10	7.39E+01
2/12/2010	355.21	1.12	7.58E+01	Ice		1.12	7.58E+01
2/13/2010	355.18	1.09	7.28E+01	Ice		1.09	7.28E+01
2/14/2010	355.14	1.05	6.97E+01	Ice		1.05	6.97E+01
2/15/2010	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/16/2010	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/17/2010	355.10	1.01	6.61E+01	Ice		1.01	6.61E+01
2/18/2010	355.10	1.01	6.56E+01	Ice		1.01	6.56E+01
2/19/2010	355.02	0.93	5.93E+01	Ice		0.93	5.93E+01
2/20/2010	355.02	0.93	5.91E+01	Ice		0.93	5.91E+01
2/21/2010	355.13	1.04	6.83E+01	Ice		1.04	6.83E+01
2/22/2010	355.18	1.09	7.28E+01	Ice		1.09	7.28E+01
2/23/2010	355.22	1.13	7.76E+01			1.13	7.76E+01
2/24/2010	355.47	1.38	1.08E+02			1.38	1.08E+02
2/25/2010	356.20	2.11	2.88E+02			2.11	2.88E+02
2/26/2010	355.74	1.65	1.56E+02	Ice		1.65	1.56E+02
2/27/2010	356.32	2.23	3.37E+02	Ice		2.23	3.37E+02
2/28/2010	356.27	2.18	3.19E+02	Ice		2.18	3.19E+02
3/1/2010	356.11	2.02	2.56E+02	Ice		2.02	2.56E+02
3/2/2010	356.49	2.40	4.24E+02	Ice		2.40	4.24E+02
3/3/2010	356.93	2.84	7.69E+02	Ice		2.84	7.69E+02
3/4/2010	357.40	3.31	8.53E+02	Ice		3.31	8.53E+02
3/5/2010	357.68	3.59	1.02E+03	Ice		3.59	1.02E+03
3/6/2010	357.64	3.55	9.90E+02	Ice		3.55	9.90E+02
3/7/2010	357.96	3.87	1.19E+03	2.66E+03		3.87	1.19E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/8/2010	358.67	4.58	1.72E+03	3.32E+03		4.58	1.72E+03
3/9/2010	359.39	5.30	2.36E+03	4.02E+03		5.30	2.36E+03
3/10/2010	359.58	5.49	2.55E+03	4.16E+03		5.49	2.55E+03
3/11/2010	359.42	5.33	2.39E+03	3.86E+03		5.33	2.39E+03
3/12/2010	359.76	5.67	2.73E+03	3.98E+03		5.67	2.73E+03
3/13/2010	360.82	6.73	3.95E+03	5.70E+03		6.73	3.95E+03
3/14/2010	364.02	9.93	9.16E+03	1.24E+04		9.93	9.16E+03
3/15/2010	364.45	10.36	1.00E+04	1.04E+04		10.36	1.00E+04
3/16/2010	365.16	11.07	1.16E+04	8.95E+03	8.95E+03	11.07	8.95E+03
3/17/2010	365.17	11.08	1.16E+04	8.57E+03	8.57E+03	11.08	8.57E+03
3/18/2010	364.63	10.54	1.04E+04	8.05E+03	8.05E+03	10.54	8.05E+03
3/19/2010	363.60	9.51	8.34E+03	7.14E+03	7.14E+03	9.51	7.14E+03
3/20/2010	362.10	8.01	5.77E+03	5.91E+03		8.01	5.77E+03
3/21/2010	360.19	6.10	3.19E+03	4.35E+03		6.10	3.19E+03
3/22/2010	358.82	4.73	1.85E+03	3.13E+03		4.73	1.85E+03
3/23/2010	362.42	8.33	6.27E+03	1.02E+04		8.33	6.27E+03
3/24/2010	362.52	8.43	6.43E+03	7.70E+03		8.43	6.43E+03
3/25/2010	362.13	8.04	5.81E+03	5.93E+03		8.04	5.81E+03
3/26/2010	361.58	7.49	4.98E+03	5.53E+03		7.49	4.98E+03
3/27/2010	360.52	6.43	3.59E+03	4.55E+03		6.43	3.59E+03
3/28/2010	359.33	5.24	2.30E+03	3.44E+03		5.24	2.30E+03
3/29/2010	360.13	6.04	3.13E+03	6.31E+03		6.04	3.13E+03
3/30/2010	361.53	7.44	4.91E+03	6.96E+03		7.44	4.91E+03
3/31/2010	363.07	8.98	7.37E+03	8.50E+03		8.98	7.37E+03
4/1/2010	363.13	9.04	7.48E+03	7.10E+03	7.10E+03	9.04	7.10E+03
4/2/2010	363.02	8.93	7.28E+03	6.39E+03	6.39E+03	8.93	6.39E+03
4/3/2010	362.24	8.15	5.99E+03	5.75E+03	5.75E+03	8.15	5.75E+03
4/4/2010	360.76	6.67	3.88E+03	4.64E+03		6.67	3.88E+03
4/5/2010	359.29	5.20	2.26E+03	3.34E+03		5.20	2.26E+03
4/6/2010	358.38	4.29	1.49E+03	2.48E+03		4.29	1.49E+03
4/7/2010	357.82	3.73	1.11E+03	2.08E+03		3.73	1.11E+03
4/8/2010	357.33	3.24	8.13E+02	1.75E+03		3.24	8.13E+02
4/9/2010	357.22	3.13	7.55E+02	1.73E+03		3.13	7.55E+02
4/10/2010	357.18	3.09	7.37E+02	1.67E+03		3.09	7.37E+02
4/11/2010	356.82	2.73	6.61E+02	1.45E+03		2.73	6.61E+02
4/12/2010	356.47	2.38	4.15E+02	1.27E+03		2.38	4.15E+02
4/13/2010	356.16	2.07	2.74E+02	1.11E+03		2.07	2.74E+02
4/14/2010	355.99	1.90	2.18E+02	1.00E+03		1.90	2.18E+02
4/15/2010	355.83	1.74	1.75E+02	9.25E+02		1.74	1.75E+02
4/16/2010	355.73	1.64	1.53E+02	8.78E+02		1.64	1.53E+02
4/17/2010	355.79	1.70	1.66E+02	9.22E+02		1.70	1.66E+02
4/18/2010	355.81	1.72	1.71E+02	9.52E+02		1.72	1.71E+02
4/19/2010	355.62	1.53	1.32E+02	8.87E+02		1.53	1.32E+02
4/20/2010	355.48	1.39	1.09E+02	7.68E+02		1.39	1.09E+02
4/21/2010	355.38	1.29	9.61E+01	7.41E+02		1.29	9.61E+01
4/22/2010	355.30	1.21	8.61E+01	6.95E+02		1.21	8.61E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/23/2010	355.20	1.11	7.52E+01	6.34E+02		1.11	7.52E+01
4/24/2010	355.10	1.01	6.58E+01	5.83E+02		1.01	6.58E+01
4/25/2010	355.60	1.51	1.29E+02	6.99E+02		1.51	1.29E+02
4/26/2010	357.12	3.03	7.06E+02	1.49E+03		3.03	7.06E+02
4/27/2010	358.86	4.77	1.88E+03	3.13E+03		4.77	1.88E+03
4/28/2010	358.15	4.06	1.33E+03	2.64E+03		4.06	1.33E+03
4/29/2010	357.36	3.27	8.29E+02	1.87E+03		3.27	8.29E+02
4/30/2010	356.62	2.53	5.10E+02	1.41E+03		2.53	5.10E+02
5/1/2010	356.18	2.09	2.80E+02	1.15E+03		2.09	2.80E+02
5/2/2010	355.89	1.80	1.89E+02	9.80E+02		1.80	1.89E+02
5/3/2010	355.98	1.89	2.15E+02	9.13E+02		1.89	2.15E+02
5/4/2010	356.38	2.29	3.66E+02	1.08E+03		2.29	3.66E+02
5/5/2010	356.21	2.12	2.93E+02	1.06E+03		2.12	2.93E+02
5/6/2010	355.89	1.80	1.89E+02	9.45E+02		1.80	1.89E+02
5/7/2010	355.56	1.47	1.22E+02	8.07E+02		1.47	1.22E+02
5/8/2010	355.38	1.29	9.54E+01	7.30E+02		1.29	9.54E+01
5/9/2010	355.25	1.16	8.01E+01	6.76E+02		1.16	8.01E+01
5/10/2010	355.13	1.04	6.85E+01	5.74E+02		1.04	6.85E+01
5/11/2010	355.03	0.94	5.99E+01	5.20E+02		0.94	5.99E+01
5/12/2010	355.15	1.06	7.03E+01	6.40E+02		1.06	7.03E+01
5/13/2010	355.52	1.43	1.15E+02	8.61E+02		1.43	1.15E+02
5/14/2010	355.37	1.28	9.42E+01	8.27E+02		1.28	9.42E+01
5/15/2010	355.25	1.16	8.07E+01	7.19E+02		1.16	8.07E+01
5/16/2010	355.09	1.00	6.49E+01	6.33E+02		1.00	6.49E+01
5/17/2010	354.95	0.86	5.34E+01	5.46E+02		0.86	5.34E+01
5/18/2010	354.94	0.85	5.32E+01	5.49E+02		0.85	5.32E+01
5/19/2010	356.03	1.94	2.30E+02	1.08E+03		1.94	2.30E+02
5/20/2010	356.01	1.92	2.23E+02	1.14E+03		1.92	2.23E+02
5/21/2010	355.52	1.43	1.16E+02	8.98E+02		1.43	1.16E+02
5/22/2010	355.20	1.11	7.47E+01	6.99E+02		1.11	7.47E+01
5/23/2010	355.05	0.96	6.11E+01	5.74E+02		0.96	6.11E+01
5/24/2010	354.98	0.89	5.60E+01	5.12E+02		0.89	5.60E+01
5/25/2010	354.90	0.81	5.03E+01	4.75E+02		0.81	5.03E+01
5/26/2010	354.80	0.71	4.39E+01	4.54E+02		0.71	4.39E+01
5/27/2010	354.72	0.63	3.95E+01	3.72E+02		0.63	3.95E+01
5/28/2010	354.91	0.82	5.08E+01	4.03E+02		0.82	5.08E+01
5/29/2010	354.84	0.75	4.65E+01	4.33E+02		0.75	4.65E+01
5/30/2010	354.71	0.62	3.88E+01	3.87E+02		0.62	3.88E+01
5/31/2010	354.62	0.53	3.43E+01	3.43E+02		0.53	3.43E+01
6/1/2010	354.57	0.48	3.22E+01	3.62E+02		0.48	3.22E+01
6/2/2010	354.59	0.50	3.30E+01	4.33E+02		0.50	3.30E+01
6/3/2010	354.50	0.41	2.92E+01	3.52E+02		0.41	2.92E+01
6/4/2010	354.45	0.36	2.74E+01	3.11E+02		0.36	2.74E+01
6/5/2010	354.38	0.29	2.50E+01	2.72E+02		0.29	2.50E+01
6/6/2010	354.45	0.36	2.73E+01	2.95E+02		0.36	2.73E+01
6/7/2010	354.45	0.36	2.74E+01	3.28E+02		0.36	2.74E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/8/2010	354.35	0.26	2.40E+01	2.94E+02		0.26	2.40E+01
6/9/2010	354.26	0.17	2.12E+01	2.43E+02		0.17	2.12E+01
6/10/2010	354.68	0.59	3.75E+01	4.15E+02		0.59	3.75E+01
6/11/2010	354.72	0.63	3.92E+01	4.61E+02		0.63	3.92E+01
6/12/2010	354.48	0.39	2.85E+01	3.93E+02		0.39	2.85E+01
6/13/2010	354.37	0.28	2.47E+01	8.02E+02		0.28	2.47E+01
6/14/2010	354.63	0.54	3.50E+01	6.10E+02		0.54	3.50E+01
6/15/2010	354.80	0.71	4.39E+01	5.19E+02		0.71	4.39E+01
6/16/2010	354.56	0.47	3.16E+01	4.40E+02		0.47	3.16E+01
6/17/2010	354.51	0.42	2.95E+01	3.72E+02		0.42	2.95E+01
6/18/2010	354.73	0.64	4.00E+01	2.97E+02		0.64	4.00E+01
6/19/2010	354.48	0.39	2.86E+01	3.33E+02		0.39	2.86E+01
6/20/2010	354.32	0.23	2.31E+01	2.92E+02		0.23	2.31E+01
6/21/2010	354.27	0.18	2.14E+01	2.33E+02		0.18	2.14E+01
6/22/2010	354.23	0.14	2.04E+01	1.91E+02		0.14	2.04E+01
6/23/2010	354.25	0.16	2.11E+01	3.08E+02		0.16	2.11E+01
6/24/2010	354.27	0.18	2.16E+01	2.86E+02		0.18	2.16E+01
6/25/2010	354.23	0.14	2.04E+01	2.30E+02		0.14	2.04E+01
6/26/2010	354.21	0.12	1.98E+01	2.06E+02		0.12	1.98E+01
6/27/2010	354.22	0.13	2.00E+01	1.70E+02		0.13	2.00E+01
6/28/2010	354.21	0.12	1.98E+01	1.54E+02		0.12	1.98E+01
6/29/2010	354.20	0.11	1.96E+01	1.68E+02		0.11	1.96E+01
6/30/2010	354.19	0.10	1.93E+01	1.27E+02		0.10	1.93E+01
7/1/2010	354.17	0.08	1.87E+01	1.28E+02		0.08	1.87E+01
7/2/2010	354.17	0.08	1.87E+01	1.20E+02		0.08	1.87E+01
7/3/2010	354.16	0.07	1.86E+01	1.13E+02		0.07	1.86E+01
7/4/2010	354.17	0.08	1.88E+01	1.06E+02		0.08	1.88E+01
7/5/2010	354.17	0.08	1.88E+01	1.00E+02		0.08	1.88E+01
7/6/2010	354.17	0.08	1.88E+01	9.70E+01		0.08	1.88E+01
7/7/2010	354.16	0.07	1.87E+01	9.40E+01		0.07	1.87E+01
7/8/2010	354.14	0.05	1.82E+01	8.80E+01		0.05	1.82E+01
7/9/2010	354.13	0.04	1.78E+01	9.10E+01		0.04	1.78E+01
7/10/2010	354.52	0.43	3.02E+01	9.80E+01		0.43	3.02E+01
7/11/2010	355.31	1.22	8.70E+01	6.56E+02		1.22	8.70E+01
7/12/2010	354.88	0.79	4.91E+01	4.63E+02		0.79	4.91E+01
7/13/2010	354.46	0.37	2.79E+01	3.17E+02		0.37	2.79E+01
7/14/2010	354.33	0.24	2.34E+01	2.36E+02		0.24	2.34E+01
7/15/2010	354.39	0.30	2.53E+01	2.20E+02		0.30	2.53E+01
7/16/2010	354.33	0.24	2.34E+01	2.18E+02		0.24	2.34E+01
7/17/2010	354.24	0.15	2.08E+01	1.91E+02		0.15	2.08E+01
7/18/2010	354.22	0.13	2.00E+01	1.56E+02		0.13	2.00E+01
7/19/2010	354.19	0.10	1.94E+01	1.17E+02		0.10	1.94E+01
7/20/2010	354.19	0.10	1.93E+01	3.51E+02		0.10	1.93E+01
7/21/2010	354.20	0.11	1.96E+01	2.28E+02		0.11	1.96E+01
7/22/2010	354.27	0.18	2.14E+01	1.80E+02		0.18	2.14E+01
7/23/2010	354.22	0.13	2.00E+01	2.44E+02		0.13	2.00E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/24/2010	354.26	0.17	2.12E+01	2.27E+02		0.17	2.12E+01
7/25/2010	354.29	0.20	2.22E+01	2.35E+02		0.20	2.22E+01
7/26/2010	354.23	0.14	2.05E+01	2.31E+02		0.14	2.05E+01
7/27/2010	354.23	0.14	2.03E+01	1.78E+02		0.14	2.03E+01
7/28/2010	354.21	0.12	1.97E+01	1.49E+02		0.12	1.97E+01
7/29/2010	354.18	0.09	1.90E+01	1.35E+02		0.09	1.90E+01
7/30/2010	354.16	0.07	1.85E+01	1.18E+02		0.07	1.85E+01
7/31/2010	354.14	0.05	1.81E+01	1.03E+02		0.05	1.81E+01
8/1/2010	354.14	0.05	1.80E+01	9.20E+01		0.05	1.80E+01
8/2/2010	354.16	0.07	1.86E+01	8.80E+01		0.07	1.86E+01
8/3/2010	354.18	0.09	1.90E+01	9.10E+01		0.09	1.90E+01
8/4/2010	354.15	0.06	1.82E+01	9.50E+01		0.06	1.82E+01
8/5/2010	354.13	0.04	1.77E+01	1.03E+02		0.04	1.77E+01
8/6/2010	354.11	0.02	1.73E+01	9.60E+01		0.02	1.73E+01
8/7/2010	354.10	0.01	1.72E+01	8.30E+01		0.01	1.72E+01
8/8/2010	354.10	0.01	1.72E+01	7.40E+01		0.01	1.72E+01
8/9/2010	354.10	0.01	1.71E+01	6.70E+01		0.01	1.71E+01
8/10/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
8/11/2010	354.10	0.01	1.71E+01	6.10E+01		0.01	1.71E+01
8/12/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
8/13/2010	354.10	0.01	1.71E+01	5.70E+01		0.01	1.71E+01
8/14/2010	354.11	0.02	1.73E+01	4.60E+01		0.02	1.73E+01
8/15/2010	354.10	0.01	1.71E+01	4.80E+01		0.01	1.71E+01
8/16/2010	354.12	0.03	1.75E+01	7.20E+01		0.03	1.75E+01
8/17/2010	354.15	0.06	1.82E+01	9.10E+01		0.06	1.82E+01
8/18/2010	354.15	0.06	1.83E+01	9.30E+01		0.06	1.83E+01
8/19/2010	354.11	0.02	1.74E+01	8.20E+01		0.02	1.74E+01
8/20/2010	354.10	0.01	1.71E+01	7.30E+01		0.01	1.71E+01
8/21/2010	354.10	0.01	1.71E+01	6.60E+01		0.01	1.71E+01
8/22/2010	354.11	0.02	1.74E+01	1.31E+02		0.02	1.74E+01
8/23/2010	354.58	0.49	3.26E+01	5.04E+02		0.49	3.26E+01
8/24/2010	355.33	1.24	8.92E+01	7.19E+02		1.24	8.92E+01
8/25/2010	355.00	0.91	5.71E+01	5.36E+02		0.91	5.71E+01
8/26/2010	355.49	1.40	1.11E+02	5.05E+02		1.40	1.11E+02
8/27/2010	355.27	1.18	8.25E+01	5.82E+02		1.18	8.25E+01
8/28/2010	354.82	0.73	4.48E+01	4.10E+02		0.73	4.48E+01
8/29/2010	354.54	0.45	3.10E+01	2.97E+02		0.45	3.10E+01
8/30/2010	354.38	0.29	2.50E+01	2.07E+02		0.29	2.50E+01
8/31/2010	354.31	0.22	2.26E+01	1.56E+02		0.22	2.26E+01
9/1/2010	354.28	0.19	2.17E+01	1.52E+02		0.19	2.17E+01
9/2/2010	354.25	0.16	2.08E+01	1.33E+02		0.16	2.08E+01
9/3/2010	354.22	0.13	2.01E+01	1.23E+02		0.13	2.01E+01
9/4/2010	354.20	0.11	1.95E+01	1.17E+02		0.11	1.95E+01
9/5/2010	354.17	0.08	1.88E+01	1.06E+02		0.08	1.88E+01
9/6/2010	354.15	0.06	1.82E+01	9.70E+01		0.06	1.82E+01
9/7/2010	354.13	0.04	1.79E+01	9.00E+01		0.04	1.79E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/8/2010	354.12	0.03	1.75E+01	8.80E+01		0.03	1.75E+01
9/9/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
9/10/2010	354.10	0.01	1.71E+01	4.80E+01		0.01	1.71E+01
9/11/2010	354.10	0.01	1.71E+01	5.10E+01		0.01	1.71E+01
9/12/2010	354.10	0.01	1.71E+01	5.40E+01		0.01	1.71E+01
9/13/2010	354.10	0.01	1.71E+01	6.00E+01		0.01	1.71E+01
9/14/2010	354.11	0.02	1.73E+01	5.90E+01		0.02	1.73E+01
9/15/2010	354.17	0.08	1.88E+01	5.90E+01		0.08	1.88E+01
9/16/2010	354.14	0.05	1.80E+01	6.20E+01		0.05	1.80E+01
9/17/2010	354.12	0.03	1.76E+01	9.00E+01		0.03	1.76E+01
9/18/2010	354.11	0.02	1.73E+01	9.30E+01		0.02	1.73E+01
9/19/2010	354.12	0.03	1.76E+01	5.90E+01		0.03	1.76E+01
9/20/2010	354.12	0.03	1.75E+01	4.90E+01		0.03	1.75E+01
9/21/2010	354.11	0.02	1.73E+01	5.50E+01		0.02	1.73E+01
9/22/2010	354.11	0.02	1.73E+01	5.60E+01		0.02	1.73E+01
9/23/2010	354.10	0.01	1.71E+01	5.90E+01		0.01	1.71E+01
9/24/2010	354.11	0.02	1.74E+01	5.60E+01		0.02	1.74E+01
9/25/2010	354.12	0.03	1.76E+01	5.20E+01		0.03	1.76E+01
9/26/2010	354.11	0.02	1.74E+01	4.80E+01		0.02	1.74E+01
9/27/2010	354.11	0.02	1.74E+01	5.40E+01		0.02	1.74E+01
9/28/2010	354.17	0.08	1.89E+01	6.20E+01		0.08	1.89E+01
9/29/2010	354.23	0.14	2.05E+01	7.10E+01		0.14	2.05E+01
9/30/2010	354.32	0.23	2.29E+01	2.37E+02		0.23	2.29E+01
10/1/2010	358.06	3.97	1.26E+03	4.01E+03		3.97	1.26E+03
10/2/2010	359.60	5.51	2.56E+03	4.06E+03		5.51	2.56E+03
10/3/2010	359.02	4.93	2.02E+03	2.71E+03		4.93	2.02E+03
10/4/2010	358.36	4.27	1.48E+03	2.08E+03		4.27	1.48E+03
10/5/2010	357.39	3.30	8.46E+02	1.57E+03		3.30	8.46E+02
10/6/2010	357.01	2.92	8.59E+02	1.30E+03		2.92	8.59E+02
10/7/2010	356.54	2.45	4.57E+02	1.08E+03		2.45	4.57E+02
10/8/2010	356.05	1.96	2.36E+02	8.55E+02		1.96	2.36E+02
10/9/2010	355.63	1.54	1.34E+02	6.71E+02		1.54	1.34E+02
10/10/2010	355.30	1.21	8.65E+01	5.27E+02		1.21	8.65E+01
10/11/2010	355.10	1.01	6.59E+01	4.30E+02		1.01	6.59E+01
10/12/2010	355.07	0.98	6.29E+01	3.99E+02		0.98	6.29E+01
10/13/2010	355.19	1.10	7.41E+01	4.38E+02		1.10	7.41E+01
10/14/2010	355.05	0.96	6.12E+01	4.08E+02		0.96	6.12E+01
10/15/2010	355.33	1.24	8.94E+01	5.65E+02		1.24	8.94E+01
10/16/2010	355.69	1.60	1.44E+02	6.76E+02		1.60	1.44E+02
10/17/2010	355.50	1.41	1.12E+02	6.40E+02		1.41	1.12E+02
10/18/2010	355.30	1.21	8.59E+01	5.38E+02		1.21	8.59E+01
10/19/2010	355.17	1.08	7.19E+01	4.70E+02		1.08	7.19E+01
10/20/2010	355.06	0.97	6.20E+01	4.18E+02		0.97	6.20E+01
10/21/2010	355.04	0.95	6.07E+01	3.75E+02		0.95	6.07E+01
10/22/2010	355.00	0.91	5.72E+01	3.71E+02		0.91	5.72E+01
10/23/2010	354.91	0.82	5.12E+01	3.56E+02		0.82	5.12E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/24/2010	354.83	0.74	4.58E+01	3.25E+02		0.74	4.58E+01
10/25/2010	354.80	0.71	4.40E+01	3.19E+02		0.71	4.40E+01
10/26/2010	354.78	0.69	4.28E+01	2.97E+02		0.69	4.28E+01
10/27/2010	355.02	0.93	5.92E+01	5.90E+02		0.93	5.92E+01
10/28/2010	355.56	1.76	1.81E+02	1.08E+03		1.76	1.81E+02
10/29/2010	354.09			8.66E+02	8.66E+02		8.66E+02
10/30/2010	355.20	1.11	7.56E+01	6.66E+02		1.11	7.56E+01
10/31/2010	355.01	0.92	5.85E+01	5.43E+02		0.92	5.85E+01
11/1/2010	354.86	0.77	4.73E+01	4.57E+02		0.77	4.73E+01
11/2/2010	354.74	0.65	4.03E+01	3.96E+02		0.65	4.03E+01
11/3/2010	354.66	0.57	3.66E+01	3.21E+02		0.57	3.66E+01
11/4/2010	354.83	0.74	4.56E+01	4.29E+02		0.74	4.56E+01
11/5/2010	356.65	2.56	5.28E+02	1.34E+03		2.56	5.28E+02
11/6/2010	356.67	2.58	5.43E+02	1.48E+03		2.58	5.43E+02
11/7/2010	356.02	1.93	2.25E+02	1.08E+03		1.93	2.25E+02
11/8/2010	355.67	1.58	1.41E+02	8.49E+02		1.58	1.41E+02
11/9/2010	355.58	1.49	1.25E+02	8.00E+02		1.49	1.25E+02
11/10/2010	355.54	1.45	1.18E+02	7.25E+02		1.45	1.18E+02
11/11/2010	355.37	1.28	9.39E+01	6.44E+02		1.28	9.39E+01
11/12/2010	355.22	1.13	7.71E+01	5.64E+02		1.13	7.71E+01
11/13/2010	355.14	1.05	6.89E+01	5.17E+02		1.05	6.89E+01
11/14/2010	355.07	0.98	6.29E+01	4.86E+02		0.98	6.29E+01
11/15/2010	355.04	0.95	6.08E+01	4.64E+02		0.95	6.08E+01
11/16/2010	355.02	0.93	5.87E+01	4.58E+02		0.93	5.87E+01
11/17/2010	355.45	1.36	1.05E+02	9.66E+02		1.36	1.05E+02
11/18/2010	356.30	2.21	3.32E+02	1.28E+03		2.21	3.32E+02
11/19/2010	355.94	1.85	2.02E+02	1.06E+03		1.85	2.02E+02
11/20/2010	355.70	1.61	1.46E+02	8.42E+02		1.61	1.46E+02
11/21/2010	355.49	1.40	1.12E+02	7.16E+02		1.40	1.12E+02
11/22/2010	355.37	1.28	9.48E+01	6.40E+02		1.28	9.48E+01
11/23/2010	355.30	1.21	8.59E+01	5.86E+02		1.21	8.59E+01
11/24/2010	355.25	1.16	8.05E+01	5.59E+02		1.16	8.05E+01
11/25/2010	355.19	1.10	7.41E+01	5.26E+02		1.10	7.41E+01
11/26/2010	355.25	1.16	7.99E+01	6.11E+02		1.16	7.99E+01
11/27/2010	355.39	1.30	9.72E+01	7.69E+02		1.30	9.72E+01
11/28/2010	355.30	1.21	8.57E+01	6.78E+02		1.21	8.57E+01
11/29/2010	355.18	1.09	7.32E+01	5.81E+02		1.09	7.32E+01
11/30/2010	355.14	1.05	6.94E+01	5.42E+02		1.05	6.94E+01
12/1/2010	356.06	1.97	2.40E+02	1.93E+03		1.97	2.40E+02
12/2/2010	359.36	5.27	2.33E+03	4.56E+03		5.27	2.33E+03
12/3/2010	359.30	5.21	2.27E+03	3.21E+03		5.21	2.27E+03
12/4/2010	358.71	4.62	1.76E+03	2.64E+03		4.62	1.76E+03
12/5/2010	357.89	3.80	1.15E+03	2.08E+03		3.80	1.15E+03
12/6/2010	357.20	3.11	7.48E+02	1.62E+03		3.11	7.48E+02
12/7/2010	356.74	2.65	5.94E+02	1.33E+03		2.65	5.94E+02
12/8/2010	356.32	2.23	3.41E+02	1.11E+03		2.23	3.41E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/9/2010	355.91	1.82	1.95E+02	8.90E+02		1.82	1.95E+02
12/10/2010	355.91	1.82	1.96E+02	6.60E+02		1.82	1.96E+02
12/11/2010	355.60	1.51	1.29E+02	7.29E+02		1.51	1.29E+02
12/12/2010	355.82	1.73	1.74E+02	1.09E+03		1.73	1.74E+02
12/13/2010	357.87	3.78	1.13E+03	3.24E+03		3.78	1.13E+03
12/14/2010	357.91	3.82	1.16E+03	2.53E+03		3.82	1.16E+03
12/15/2010	357.16	3.07	7.27E+02	1.67E+03		3.07	7.27E+02
12/16/2010	357.65	3.56	9.99E+02	1.29E+03		3.56	9.99E+02
12/17/2010	360.27	6.18	3.29E+03	1.14E+03	1.14E+03	6.18	1.14E+03
12/18/2010	356.21	2.12	2.93E+02	9.88E+02		2.12	2.93E+02
12/19/2010	355.96	1.87	2.08E+02	8.34E+02		1.87	2.08E+02
12/20/2010	355.83	1.74	1.75E+02	7.26E+02		1.74	1.75E+02
12/21/2010	358.70	4.61	1.75E+03	6.99E+02	6.99E+02	4.61	6.99E+02
12/22/2010	358.71	4.62	1.76E+03	6.73E+02	6.73E+02	4.62	6.73E+02
12/23/2010	355.43	1.34	1.02E+02	6.42E+02		1.34	1.02E+02
12/24/2010	355.35	1.26	9.25E+01	5.88E+02		1.26	9.25E+01
12/25/2010	355.29	1.20	8.53E+01	5.50E+02		1.20	8.53E+01
12/26/2010	355.18	1.09	7.29E+01	4.92E+02		1.09	7.29E+01
12/27/2010	354.96	0.87	5.47E+01	1.02E+03		0.87	5.47E+01
12/28/2010	355.50	1.41	1.12E+02	1.34E+03		1.41	1.12E+02
12/29/2010	355.39	1.30	9.74E+01	1.56E+03		1.30	9.74E+01
12/30/2010	355.46	1.37	1.07E+02	1.30E+03		1.37	1.07E+02
12/31/2010	355.26	1.17	8.16E+01	1.10E+03		1.17	8.16E+01
1/1/2011	355.24	1.15	7.94E+01	8.26E+02		1.15	7.94E+01
1/2/2011	355.44	1.35	1.03E+02	7.33E+02		1.35	1.03E+02
1/3/2011	361.52	7.43	4.90E+03	1.10E+03	1.10E+03	7.43	1.10E+03
1/4/2011	355.90	1.81	1.92E+02	1.14E+03		1.81	1.92E+02
1/5/2011	355.69	1.60	1.45E+02	9.42E+02		1.60	1.45E+02
1/6/2011	355.58	1.49	1.25E+02	Ice		1.49	1.25E+02
1/7/2011	355.37	1.28	9.39E+01	Ice		1.28	9.39E+01
1/8/2011	355.46	1.37	1.07E+02	Ice		1.37	1.07E+02
1/9/2011	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
1/10/2011	359.64	5.55	2.61E+03	Ice		5.55	2.61E+03
1/11/2011	355.34	1.25	9.12E+01	Ice		1.25	9.12E+01
1/12/2011	355.18	1.09	7.31E+01	Ice		1.09	7.31E+01
1/13/2011	355.24	1.15	7.94E+01	Ice		1.15	7.94E+01
1/14/2011	355.33	1.24	8.94E+01	Ice		1.24	8.94E+01
1/15/2011	355.23	1.14	7.78E+01	Ice		1.14	7.78E+01
1/16/2011	355.10	1.01	6.59E+01	Ice		1.01	6.59E+01
1/17/2011	355.04	0.95	6.05E+01	Ice		0.95	6.05E+01
1/18/2011	355.03	0.94	5.96E+01	Ice		0.94	5.96E+01
1/19/2011	355.35	1.26	9.17E+01	Ice		1.26	9.17E+01
1/20/2011	355.76	1.67	1.59E+02	Ice		1.67	1.59E+02
1/21/2011	355.69	1.60	1.46E+02	Ice		1.60	1.46E+02
1/22/2011	355.64	1.55	1.36E+02	Ice		1.55	1.36E+02
1/23/2011	355.63	1.54	1.35E+02	Ice		1.54	1.35E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/24/2011	355.44	1.35	1.03E+02	Ice		1.35	1.03E+02
1/25/2011	355.23	1.14	7.87E+01	Ice		1.14	7.87E+01
1/26/2011	355.23	1.14	7.80E+01	Ice		1.14	7.80E+01
1/27/2011	355.25	1.16	8.07E+01	Ice		1.16	8.07E+01
1/28/2011	355.30	1.21	8.55E+01	Ice		1.21	8.55E+01
1/29/2011	355.28	1.19	8.42E+01	Ice		1.19	8.42E+01
1/30/2011	355.23	1.14	7.87E+01	Ice		1.14	7.87E+01
1/31/2011	355.16	1.07	7.13E+01	Ice		1.07	7.13E+01
2/1/2011	355.15	1.06	7.05E+01	Ice		1.06	7.05E+01
2/2/2011	355.19	1.10	7.41E+01	Ice		1.10	7.41E+01
2/3/2011	355.33	1.24	8.96E+01	Ice		1.24	8.96E+01
2/4/2011	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
2/5/2011	355.29	1.20	8.51E+01	Ice		1.20	8.51E+01
2/6/2011	355.44	1.35	1.04E+02	Ice		1.35	1.04E+02
2/7/2011	355.72	1.63	1.51E+02	Ice		1.63	1.51E+02
2/8/2011	355.78	1.69	1.64E+02	Ice		1.69	1.64E+02
2/9/2011	355.76	1.67	1.60E+02	Ice		1.67	1.60E+02
2/10/2011	355.75	1.66	1.57E+02	Ice		1.66	1.57E+02
2/11/2011	355.52	1.43	1.16E+02	Ice		1.43	1.16E+02
2/12/2011	355.44	1.35	1.04E+02	Ice		1.35	1.04E+02
2/13/2011	355.38	1.29	9.54E+01	Ice		1.29	9.54E+01
2/14/2011	355.38	1.29	9.61E+01	Ice		1.29	9.61E+01
2/15/2011	355.91	1.82	1.95E+02	Ice		1.82	1.95E+02
2/16/2011	356.00	1.91	2.20E+02	Ice		1.91	2.20E+02
2/17/2011	355.93	1.84	2.01E+02	Ice		1.84	2.01E+02
2/18/2011	356.57	2.48	4.74E+02	Ice		2.48	4.74E+02
2/19/2011	358.65	4.56	1.70E+03	Ice		4.56	1.70E+03
2/20/2011	358.39	4.30	1.50E+03	Ice		4.30	1.50E+03
2/21/2011	357.93	3.84	1.18E+03	Ice		3.84	1.18E+03
2/22/2011	357.46	3.37	8.88E+02	Ice		3.37	8.88E+02
2/23/2011	356.99	2.90	8.30E+02	Ice		2.90	8.30E+02
2/24/2011	356.78	2.69	6.27E+02	Ice		2.69	6.27E+02
2/25/2011	357.81	3.72	1.10E+03	Ice		3.72	1.10E+03
2/26/2011	359.86	5.77	2.84E+03	Ice		5.77	2.84E+03
2/27/2011	359.71	5.62	2.68E+03	Ice		5.62	2.68E+03
2/28/2011	360.28	6.19	3.30E+03	Ice		6.19	3.30E+03
3/1/2011	361.50	7.41	4.86E+03	Ice		7.41	4.86E+03
3/2/2011	361.03	6.94	4.23E+03	Ice		6.94	4.23E+03
3/3/2011	360.39	6.30	3.43E+03	Ice		6.30	3.43E+03
3/4/2011	359.47	5.38	2.44E+03	Ice		5.38	2.44E+03
3/5/2011	358.92	4.83	1.93E+03	3.11E+03		4.83	1.93E+03
3/6/2011	359.93	5.84	2.91E+03	6.26E+03		5.84	2.91E+03
3/7/2011	364.12	10.03	9.37E+03	1.66E+04		10.03	9.37E+03
3/8/2011	363.93	9.84	8.99E+03	1.13E+04		9.84	8.99E+03
3/9/2011	363.88	9.79	8.88E+03	8.16E+03	8.16E+03	9.79	8.16E+03
3/10/2011	363.68	9.59	8.49E+03	8.70E+03		9.59	8.49E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/11/2011	364.51	10.42	1.02E+04	1.53E+04		10.42	1.02E+04
3/12/2011	364.47	10.38	1.01E+04	1.14E+04		10.38	1.01E+04
3/13/2011	364.58	10.49	1.03E+04	8.66E+03	8.66E+03	10.49	8.66E+03
3/14/2011	364.37	10.28	9.88E+03	7.79E+03	7.79E+03	10.28	7.79E+03

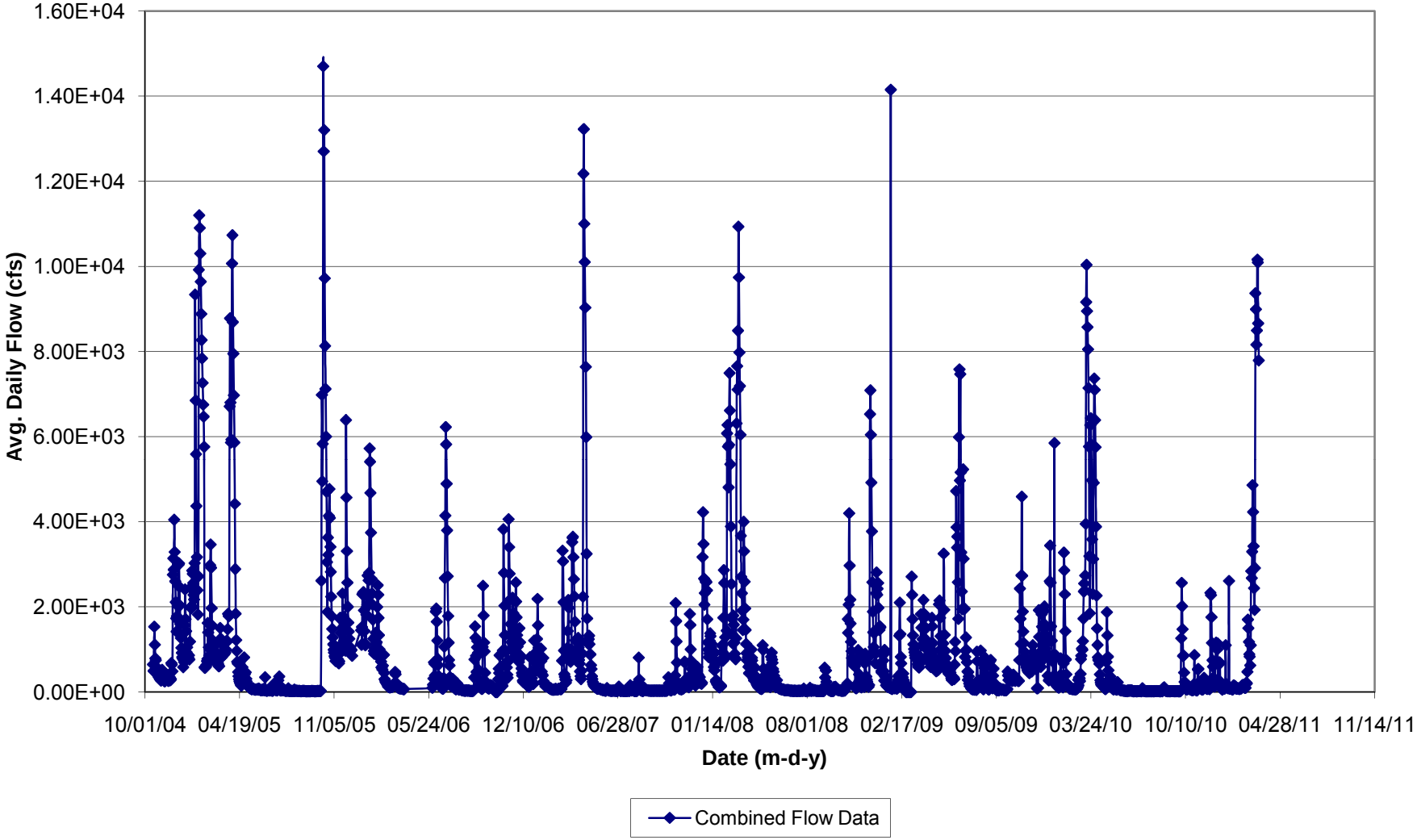
Notes:

1. Al Turi Estimated Average Daily Flows are based on stream gauge rating curve provided with the Contingency Monitoring Plan (ENVIRON 2001). The USGS flows are based on records for the USGS gauge located downstream of the Al Turi Landfill Site at Gardiner, New York (Gauge No. 01371500).

2. The Al Turi Landfill gauge hydrograph is based on Wallkill River flows estimated using the Al Turi Estimated Avg Daily Flows, except when the estimated flows exceed the recorded USGS flow at Gardiner, NY. In these cases, the USGS data are used to represent the flow conditions.

Al Turi Landfill Stream Gauge - Hydrograph Record

(see notes)



DATE: 10/04/2010 to 03/14/2011

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110314,1200,"-----","-----","-----","-----"
110314,1600,"-----","-----","-----","-----"
110314,2000,"-----","-----","-----","-----"

LEGEND:

- EXISTING MONITORING WELL
- WELLS INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM
- WELLS INCLUDED AS PART OF THE POST CLOSURE MONITORING PROGRAM
- WATER LEVELS ONLY
- BORING/TEST BORING LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM

NOTES:

1. BASE PLAN TAKEN FROM "WELL LOCATION PLAN", DRAWING NO. 1, PREPARED BY EMCON, DATED 7/99 AND GROUND WATER INVESTIGATIONS, INC. (GWI) ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ACCURACY OF SAME.
2. EXISTING TOPOGRAPHIC MAP COMPILED PHOTO-GRAMMETRICALLY FROM AERIAL PHOTOGRAPHY DATED DECEMBER 2, 1998 BY ATLANTIS AERIAL OF BUDD LAKE NEW JERSEY.
3. PROPERTY LINE SHOWN FROM SURVEY MAP PREPARED BY WEHRAN- NEW YORK, INC. FOR TICOR TITLE GUARANTEE CO. DATED JUNE 23, 1988.
4. THE GRID DEPICTED ON THIS PLAN WAS DEVELOPED FOR MAPPING OF THE PROJECT SITE. THE COORDINTES SHOWN ARE NOT PART OF THE STATE PLANE COORDINATE SYSTEM.
5. HIGHLIGHTED SYMBOLS AND/OR TEXT INDICATE GROUNDWATER, SURFACE WATER/SEDIMENT AND LEACHATE SAMPLE LOCATIONS INCLUDED IN OPERATIONAL MONITORING PROGRAM.

• PLEASE NOTE THAT WELLS W-1 AND W-3A ARE ON BOTH SAMPLE LISTS. ONLY THE REQUIRED PARAMATERS (TABLE 1) SHOULD GO INTO THE POST CLOSURE ANALYTICAL REPORT.

200 0 200

SCALE IN FEET

REVISION BLOCK

Rev. No.	By	Revision

GROUND WATER INVESTIGATIONS, INC.
Pine Bush, New York

Project No.:	256-00-00
Scale:	1"=200'
Date:	12/19/00
Designed By:	MAC
Checked By:	LFC
Drawn By:	KAH

SHEET 1 OF 1

WELL LOCATION PLAN

AL TURI LANDFILL, INC.
GROUNDWATER MONITORING PROGRAM

TOWN OF GOSHEN

NEW YORK

JULY 2011 SAMPLING YEAR
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – OPERATIONAL SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

October 2011

Prepared by

Ground Water Investigations
18 Bridge Street
Montgomery, New York 12549

Project 256-00-00

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1 INTRODUCTION

The water quality management program at the Al Turi Landfill, Goshen, New York, includes the semi-annual sampling and analysis of groundwater, surface water, contained leachate, and sediment samples from locations in and around the "Operational Landfill" and the evaluation of the data generated by these samples. The facility has completed closure and is now in the post-closure period. During the July 2011 sampling event, modified baseline sampling was performed in accordance with 6 NYCRR Part 360-2.17(a), the requirements of Special Condition Nos. 36-38 of the facility's expired September 1997 Landfill Operating Permit (Permit No. 3-3330-00002/21), and in accordance with the revised and approved July 2005 Environmental Monitoring Plan (EMP).

Water quality data generated in July 2011 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The environmental data collected from the Operational Landfill site has been presented and evaluated in this report.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

For the Operational Landfill, water quality data generated in July 2011 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The trigger values were developed using a limited database that was established for the Al Turi Landfill prior to the promulgation of regulations governing the collection of such data. The values were developed from two or three sampling events for baseline parameters conducted in August through October 1983 for three overburden wells (W-5S, W-6S, and W-7S), and 2 bedrock wells (W-6D and W-8D). Well W-6D has since been replaced with well W-6DA. Additionally, trigger values for metals were calculated based on the dissolved fraction results from field-filtered analyses. The Department values, or Part 703 standards, whichever are higher, serve as the trigger values for contingency monitoring at the Al Turi Landfill. Due to the limited pre-operational database, and the presence of undetected values for many of the parameters, the results do not constitute a "normal distribution" as required under Part 360-2.11(c)(5)(i)(c). Therefore, these values should be applied with caution. Given the limited available data, the 1983 values represent the best available estimate of pre-operational water quality, and are suitable as a screening tool in the monitoring program.

Because the Al Turi Landfill began operation prior to the promulgation of the current regulations, certain aspects of the regulations cannot be strictly applied. Notable deviations are the absence of an adequate pre-operational database and the lack of expanded parameter data for many of the monitoring points.

Semi-annual monitoring at the Operational Landfill currently consists of modified baseline analysis. This sampling is conducted in January and July of each year. The analysis for each event includes 6NYCRR Part 360 Baseline parameters with the exception of the parameters BOD, COD, TKN, sulfate and bromide. Sediment samples from the Wallkill River are analyzed for the 6NYCRR Part 360 baseline metals and TOC. Under updated regulations, the presence of baseline parameters above trigger values requires initiation of contingency monitoring, in which expanded parameters are analyzed. A trigger value exceedance occurs when the groundwater analytical data exceeds either the NYSDEC developed trigger values and/or the Part 703 State standards, whichever is higher.

The 6 NYCRR Part 360 regulations allow for the modification of the expanded parameter list to correspond with contaminants detected at a given facility. The analyses apply to all media sampled at the facility (groundwater, surface water, sediment, and contained leachate). The former contingency parameter list that was utilized at the facility consisted of the baseline parameter list plus the expanded parameters sulfide, phenol, naphthalene, 2-methyl phenol, 3-methyl phenol, and 4-methyl phenol. However, because the above mentioned expanded parameters were not detected within contingency groundwater monitoring wells, the NYSDEC approved a revised contingency monitoring list on June 22, 1999 and again on May 14, 2002. Monitoring at the facility has since been modified and now includes the monitoring program established in the July 2005 EMP.

Semi-annual groundwater quality is monitored at 21 groundwater monitoring wells (shallow and deep wells) located within the boundaries of the facility's property. One well, W-8D, is designated as the upgradient background well for the facility. Drawing 1 (in pocket) provides a site map of the facility indicating the locations of the monitoring points. In addition, baseline groundwater sampling and analysis is performed quarterly at Jesus Christ Triumphant Church (representing a 22nd well) located along Route 17M just south of the facility. Surface water and sediment samples are collected at two locations in the Wallkill River, upstream and downstream of the facility, while Sediment Basins A, B and D are sampled for water quality only. In addition, leachate samples are collected semi-annually from the primary and secondary leachate collection systems, and analyzed for a modified expanded parameter list. Sampling procedures utilized are also identified in the July 2005 EMP.

2.1 Operational Water Quality - Overburden Water Quality

Fourteen overburden groundwater monitoring wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the July 2011 sampling event demonstrate that the following routine analytes were above their respective trigger values in the overburden monitoring wells: turbidity (14 wells); alkalinity (6 wells); chloride (1 well); hardness (1 well); ammonia (1 well); total dissolved solids (8 wells); calcium (4 wells); iron (13 wells); manganese (5 wells); and sodium (10 wells). Non-routine inorganic parameters detected above their respective trigger values in the overburden wells are limited to color (8 well); arsenic (2 wells); and selenium (1 well). Results of the overburden groundwater monitoring are presented in Table 2-1.

A review of the July 2011 volatile organic data indicates that cis-1,2-dichloroethene (5.7 ug/l) was detected in well W-3A above its groundwater standard (5 ug/l). No other volatile organic compounds were reported above groundwater standards during the sampling event.

2.2 Deep Well Water Quality

Seven deep wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from July 2011 identified the following routine analytes as being above their respective trigger values in the deep water quality monitoring wells: turbidity (7 wells); alkalinity (3 wells); hardness (2 wells); total dissolved solids (3 wells); calcium (3 wells); iron (6 wells); manganese (2 wells); and sodium (4 wells).

In July 2011, non-routine inorganic parameters detected above established trigger limits in the deep water quality wells was limited to aluminum in well W-8D. A review of the July 2011 volatile organic data indicates that no volatile organic compounds were confirmed above groundwater standards.

Results of the deep well monitoring are presented in Table 2-2.

2.3 Contingency Monitoring

Wells that are analyzed as part of contingency monitoring at the Al Turi Landfill include: W-1, W-6S, W-9S, W-16D and W-17S. Contingency monitoring was performed for these wells due to the historical confirmation of baseline parameters at concentrations above established trigger values. The baseline parameters of concern include arsenic in the samples from wells W-6S, W-9S, W-16D and W-17S and benzene in W-1.

In July 2011, arsenic was reported above its established trigger value in wells W-5S and 9S only. Arsenic was again below its established trigger value in well W-17S. Well W-5S will be considered as a contingency well due to the presence of arsenic above its established trigger value during the past four sampling events. As part of continued monitoring, arsenic will again be sampled for in all wells during the January 2012 sampling event.

A review of the volatile organic data, generated during the July 2011 sampling event, indicates that benzene was not observed above its detection limit (reported as non-detect) in well W-1.

The graphical representations for arsenic have been revised to reflect data that has been collected after the completion of landfill capping. Final cap certification for Sections 4, 5 and 6 and Sections 8, 9 and 10 occurred in September 2003 (Cornerstone 2010 Post-Closure Annual Report, Sheet 1). Arsenic data collected after September 2003 shows a decreasing trend in concentration changes for wells W-17S and to a lesser extent in well W-6S. There are no apparent trends for arsenic in wells W-9S or W-16D.

A graphical representation (after final capping) for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

2.4 Background Water Quality

Water quality data has been collected from groundwater monitoring wells which are installed in the meadow north of both the Al Turi Landfill and All-Waste Facility (Northern Recycling). These wells have been evaluated to assist in determining background water quality in the vicinity of the landfill. As part of the Remedial Investigation of the Old Al Turi Landfill, several wells have been shown to be clearly beyond the influence of groundwater moving toward the Wallkill River from beneath the landfill (Supplemental Remedial Investigation Report, Old Al Turi Landfill, Wehran, February 1994, Sheet 4 of 9) and are representative of background water quality. Additional historical data generated from the meadow wells indicates that several metals have been historically present in the local groundwater at concentrations above the New York State Groundwater Quality Standards (6 NYCRR Part 703).

The meadow wells have been re-developed to further help in the reduction of turbid conditions. However, several of the wells remained turbid throughout re-development, indicating that turbid conditions may also be reflective of local groundwater quality.

Based on the historical analytical results from these wells, it is clear that several analytes (iron and manganese) are present in the local groundwater at concentrations above the State standards, and at similar levels as those detected at the landfill. Data collected from the meadow wells are limited, when compared to the larger resource data base from the on-site operational monitoring wells, but the results do indicate that the exceedances observed in many of the on-site monitoring wells may be a function of local groundwater quality, and not a release from the landfill.

2.5 Church Well

Monitoring of the off-site residential well (church well) is performed quarterly, but sampling of the church well was not conducted in July 2011. Negotiations are currently underway with the NYSDEC to reduce the church monitoring frequency from quarterly to semi-annually. The most recent data collected from the church well are presented in Table 2-2.

3 SURFACE WATER/SEDIMENT QUALITY

Surface water and sediment samples are also collected semi-annually from the Wallkill River as part of continued monitoring at the Al Turi Landfill.

Surface water samples were collected with a stainless steel bucket at mid-stream locations from both the Route 17M Bridge (upstream) and Cheechunk Road Bridge (downstream). Field measurement readings obtained did not indicate the presence of river stratification at either location. Sediment samples collected at each location are collected from the bank of the river closest to the landfill.

The surface water samples collected from the Wallkill River upstream (WALL-UP) and downstream (WALL-DN) of the landfill found that aluminum and iron were in exceedance of their Class C standards in both samples. The field parameter pH was above its limit in the upstream sample. A review of the VOC data shows that no VOCs were present in the Wallkill River samples.

A summary of the surface water data and sediment data collected from the Wallkill River is provided in Table 3-1 and Table 3-2, respectively. A review of the data indicates that conditions observed upstream of the facility are generally similar to conditions observed downstream of the facility.

Historically, water quality data from the river has detected a number of analytes at concentrations above the Class C standards in both the upstream and downstream samples. It has been determined that groundwater from beneath the landfill does discharge to the Wallkill River, and a comparison of the upstream and downstream surface water data continues to indicate that discharge of this groundwater has had no observable impact on the river's water quality.

In addition to the collection of surface water samples from the Wallkill River, sediment samples are collected from the upstream and downstream surface water sampling locations. A review of the data indicates that there is no parameter consistency when comparing concentrations between upstream and down stream samples.

During the 2011 sampling year, efforts were made to collect water samples from Sediment Basins A, B and D. However, in 2011, Basins A was frozen and basins B and D were dry in January. A review of the July data for the basins shows that aluminum and iron were above their Class C standards. The field parameter pH was also above its limit

in each basin. A summary of the previously collected sediment basin sampling data is provided in Table 3-1.

4 LEACHATE MONITORING

In accordance with Special Condition No. 36 of the expired Operating Permit, samples are obtained from the primary and secondary leachate collection system associated with Areas 11, 12, and 13 (includes Areas 9 and 10) of the landfill. Samples from the leachate collection system are collected semi-annually. Because leachate from Area 13 drains into Area 12, the common primary and secondary monitoring points for these areas is sampled. Additionally, leachate from Areas 9 and 10, which are underlain with single composite liners and are not equipped with a secondary collection system, drains to the primary collection system associated with Area 13 and then Area 12.

In July 2011, sampling of the leachate monitoring points was conducted. The analytical results from this sampling event have been provided in Table 4-1. Leachate collection system analytical results in the LCH-11S/11P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions in July 2011 included slightly higher concentrations of phenols and zinc in LCH-11S.

Additionally, leachate collection system analytical results in the LCH-12S/12P collection area have historically shown, for the most part, lower concentrations in the secondary collection system samples. Exceptions in July 2011 included a slightly higher concentration of sulfate in LCH-12S.

In July 2011, no non-flagged detections of organic compounds were observed. Compounds flagged with a J (analytes detected below quantitation limits) include bis(2-ethylhexyl)phthalate and di-n-buty phthalate in LCH-11P, LCH-11S and LCH-12S. No PCBs or pesticides/herbicides were detected in any of the leachate samples. Leachate samples will be collected again during the January 2012 sampling event.

5 IRON FLOC EVALUATION

The Wallkill River has been identified as a groundwater discharge area for shallow groundwater flowing from the Al Turi Landfill site. Surface water and sediment sampling is performed at upgradient and downgradient locations on the River as shown on Drawing 1.

During periods of abnormally low flow conditions, seepage of shallow groundwater has been observed along the banks of the Wallkill River. Occasionally orange staining has been observed at some of these seepage points, which has proven to be characteristic of iron oxidation. Past sampling of these seeps has suggested that the seepage water reflects observed shallow groundwater quality and is not the result of direct leachate seepage from the landfill.

To date, iron floc sampling has not been conducted in 2011 due to river elevation levels above the identified seep area. The Al Turi Landfill will continue to monitor the river elevation and conduct iron floc sampling when the seep area is accessible.

6 CONCLUSIONS

Contingency monitoring was conducted during the July 2011 sampling year in 6 groundwater monitoring wells as a result of the confirmed presence of non-routine parameter exceedances of established trigger values that are utilized to evaluate groundwater quality. The contingency monitoring wells and their non-routine parameters of concern include: W-5S (arsenic); W-6S (arsenic); W-9S (arsenic); W-17S (arsenic); W-16D (arsenic) and well W-1 (benzene only. Additional determinations were made from the data obtained in July 2011:

- Many of the exceedances observed for parameters, such as iron and manganese, are likely due to the local groundwater quality rather than a landfill-related impact.

- Background historical groundwater quality data from the wells north of the site (the meadow wells) have indicated that a number of analytes are present in the local groundwater at similar concentrations to that observed in the on-site landfill monitoring wells. A number of parameters being detected in the background wells are at levels similar to those detected in the on-site landfill monitoring wells.

- A review of the volatile organic data, generated during the July 2011 sampling event, indicates that cis-1,2-dichloroethene (5.7 ug/l) was detected in well W-3A above its groundwater standard (5 ug/l). Benzene was not detected above its detection limit during this sampling event.

- Arsenic detections observed above established trigger limits were limited to wells W-5Sand W-9S.

- The graphical representations for arsenic have been revised to reflect data that has been collected after the completion of landfill capping. Arsenic data collected after September 2003 shows a decreasing trend in concentration changes for wells W-17S and to a lesser extent in well W-6S. There are no apparent trends for arsenic in wells W-5S, W-9S, W-16D or W-28S.

- A graphical representation (after final capping) for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

- Although it has been demonstrated that groundwater from beneath the landfill does discharge to the Wallkill River, downstream surface water quality continues to demonstrate similar results to upstream surface water quality. Historical surface water data indicate that no significant change in water quality has occurred in the Wallkill River as a result of on-going landfill operations. Data collected in July 2011 continues to demonstrate that the landfill has had no observable impact on water quality in the River.

APPENDIX A

OPERATIONAL LANDFILL
LABORATORY ANALYTICAL DATA

TABLES

TABLE 2-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-01	**1/25/11**	29.21	5.78	7.31	-67	352	248	480	504	450	<0.010	564	<0.020	0.281	74.8	0.006	1400	28.2	<0.10
W-01	**7/25/11**	29.3	16.4	6.92	-79	347	143	680	472	300	<0.010	583	<0.040	0.078	65.6	<0.005	1400	27.5	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-03A	**1/25/11**	9.89	4.6	7.87	48	454	33.7	140	16	35	<0.010	201	<0.010	0.155	<0.50	<0.005	280	<3.0	<0.100
W-03A	**7/25/11**	13.89	20.6	7.56	12	479	6.71	200	14.2	25	<0.010	265	<0.010	0.293	<0.50	<0.005	300	<3.0	0.454
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-05S	**1/25/11**	20.26	7.94	7.37	-52	1474	33.9	390	58.5	120	<0.010	585	<0.020	0.074	<0.500	<0.005	750	<3.0	<0.100
W-05S	**7/25/11**	20.28	19.4	7.77	-102	1390	16.7	130	3.12	75	<0.010	608	<0.010	0.172	<0.50	<0.005	660	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-06S	**1/25/11**	28.26	8.3	7.29	59	731	40.2	400	4.7	350	<0.010	443	<0.020	0.125	0.782	<0.005	500	5.1	0.233
W-06S	**7/25/11**	28.20	19.9	6.91	-106	869	59.8	450	5.49	280	<0.010	457	<0.040	0.097	1.56	<0.005	460	6.6	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-07S	**1/25/11**	34.84	5.5	7.37	78	991	32.1	420	84.3	350	<0.010	710	<0.020	0.102	<0.500	<0.005	860	<3.0	<0.100
W-07S	**7/25/11**	34.37	23.4	7.29	-62	1313	37.3	530	69.6	75	<0.010	761	<0.010	0.279	<0.50	<0.005	860	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-09S	**1/25/11**	46.93	8.28	6.67	-17	1553	57.2	440	48.8	120	<0.010	590	<0.020	0.098	<0.500	<0.005	700	<3.0	0.45
W-09S	**7/25/11**	46.5	23.7	7.15	-69	1410	76.2	600	28.3	50	<0.010	655	<0.010	0.114	<0.50	<0.005	650	<3.0	0.1
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16S	**1/25/11**	43.21	7.5	8.42	42	392	14.1	200	2.19	75	<0.010	196	<0.010	0.114	<0.500	<0.005	240	<3.0	<0.100
W-16S	**7/25/11**	43.99	20.9	7.86	109	423	6.62	240	2.09	30	<0.010	193	<0.010	0.068	<0.50	<0.005	260	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16D	**1/25/11**	42.72	8.2	8.17	62	486	26.9	250	4.27	50	<0.010	280	<0.010	0.1	<0.500	<0.005	310	<3.0	0.532
W-16D	**7/25/11**	43.43	21.1	7.76	129	526	30.7	270	2.17	15	<0.010	267	<0.010	0.114	<0.50	<0.005	270	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17S	**1/25/11**	21.7	7.33	7.17	-49	1521	35.6	400	99.3	75	<0.010	622	<0.020	0.22	<0.500	<0.005	720	<3.0	0.336
W-17S	**7/25/11**	21.7	16.1	7.84	-74	1470	80.3	520	76.8	150	<0.010	662	<0.020	0.069	<0.50	<0.005	660	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17D	**1/25/11**	20.99	8.5	7.56	-21	1511	19.1	390	101	15	<0.010	649	<0.010	0.062	<0.500	<0.005	770	<3.0	<0.10
W-17D	**7/25/11**	20.62	16.9	8.15	-10	1497	15.8	480	93.1	6	<0.010	705	<0.010	0.053	<0.50	<0.005	730	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27S	**1/25/11**	40.6	7.83	7.46	-59	1643	66.8	420	78.4	450	<0.010	596	<0.02	0.061	<0.500	<0.005	770	<3.0	0.253
W-27S	**7/25/11**	40.4	20.4	7.40	-80	1381	19.5	560	65	75	<0.010	587	<0.020	0.082	<0.50	<0.005	620	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27D	**1/25/11**	39.22	9.11	8.04	-85	557	122	170	1.96	6	<0.010	102	<0.010	0.059	<0.500	<0.005	270	<3.0	0.658
W-27D	**7/25/11**	42.12	20.2	8.42	-118	521	27.9	190	1.93	12	<0.010	102	<0.010	<0.050	<0.50	<0.005	200	<3.0	<0.10

TABLE 2-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-01	**1/25/11**	<0.005	0.0084	0.682	<0.003	1.24	0.00626	136	<0.010	<0.020	<0.010	48.4	<0.003	<0.030	54.4	4.12	<0.0002	<0.030	52.2
W-01	**7/25/11**	<0.005	0.0068	0.638	<0.003	0.959	<0.005	144	<0.010	<0.020	<0.010	50.6	<0.003	<0.030	54.4	3.83	<0.0002	<0.030	54.7
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-03A	**1/25/11**	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	60.2	<0.010	<0.020	<0.010	0.0671	<0.003	<0.030	12.4	0.111	<0.0002	<0.030	<5.0
W-03A	**7/25/11**	<0.005	<0.005	0.0802	<0.003	<0.500	<0.005	81.6	<0.010	<0.020	<0.010	0.888	<0.003	<0.030	14.9	0.412	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-05S	**1/25/11**	<0.005	0.032	0.137	<0.003	<0.500	<0.005	186	<0.010	<0.020	<0.010	11.9	<0.003	<0.030	29.4	1.91	<0.0002	<0.030	<5.0
W-05S	**7/25/11**	<0.005	0.027	0.127	<0.003	<0.500	<0.005	190	<0.010	<0.020	<0.010	11.9	<0.003	<0.030	32.6	1.59	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-06S	**1/25/11**	<0.005	0.083	0.566	<0.003	<0.500	0.0062	135	<0.010	<0.020	<0.010	39.8	<0.003	<0.030	25.8	1.33	<0.0002	<0.030	<5.0
W-06S	**7/25/11**	<0.005	0.021	0.393	<0.003	<0.500	<0.005	146	<0.010	<0.020	0.0115	51.4	<0.003	<0.030	22.3	2.31	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-07S	**1/25/11**	<0.005	0.011	0.085	<0.003	<0.500	<0.005	204	<0.010	<0.020	0.0616	18.6	<0.003	<0.030	48.8	1.79	<0.0002	<0.030	<5.0
W-07S	**7/25/11**	<0.005	0.023	0.108	<0.003	<0.500	<0.005	228	<0.010	<0.020	0.0439	36.4	<0.003	<0.030	46.6	1.8	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-09S	**1/25/11**	<0.005	0.065	1.05	<0.003	<0.500	<0.005	187	<0.010	<0.020	<0.010	25.1	<0.003	<0.030	30.1	0.823	<0.0002	<0.030	<5.0
W-09S	**7/25/11**	<0.005	0.043	0.963	<0.003	<0.500	<0.005	210	<0.010	<0.020	<0.010	25	<0.003	<0.030	31.7	0.565	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16S	**1/25/11**	<0.005	<0.005	0.0575	<0.003	<0.500	<0.005	51.1	<0.010	<0.020	<0.010	1.81	<0.003	<0.030	16.7	0.386	<0.0002	<0.030	<5.0
W-16S	**7/25/11**	<0.005	<0.005	<0.05	<0.003	<0.500	<0.005	43.6	<0.010	<0.020	<0.010	2.07	<0.003	<0.030	20.3	0.35	<0.0002	<0.030	5.87
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16D	**1/25/11**	<0.005	0.037	0.141	<0.003	<0.500	<0.005	81.4	<0.010	<0.020	<0.010	5.63	<0.003	<0.030	18.7	1.1	<0.0002	<0.030	<5.0
W-16D	**7/25/11**	<0.005	0.023	0.13	<0.003	<0.500	<0.005	82.5	<0.010	<0.020	<0.010	3.11	<0.003	<0.030	14.9	0.925	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17S	**1/25/11**	<0.005	0.011	0.438	<0.003	<0.500	<0.005	174	<0.010	<0.020	<0.010	18.5	<0.003	<0.030	45.5	0.4	<0.0002	<0.030	<5.0
W-17S	**7/25/11**	<0.005	0.01	0.4	<0.003	<0.500	<0.005	200	<0.010	<0.020	<0.010	21.9	<0.003	<0.030	36	1.08	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17D	**1/25/11**	<0.005	<0.005	0.113	<0.003	<0.500	<0.005	200	<0.010	<0.020	<0.010	0.491	<0.003	<0.030	36.2	1.26	<0.0002	<0.030	<5.0
W-17D	**7/25/11**	<0.005	<0.005	0.11	<0.003	<0.500	<0.005	223	<0.010	<0.020	<0.010	0.414	<0.003	<0.030	39.6	0.639	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27S	**1/25/11**	<0.005	<0.005	0.243	<0.003	<0.500	<0.005	194	<0.010	<0.020	<0.010	20.6	0.0044	<0.030	27.2	1.83	<0.0002	<0.030	6.26
W-27S	**7/25/11**	<0.005	<0.005	0.516	<0.003	<0.500	<0.005	192	<0.010	<0.020	<0.010	14.9	<0.003	<0.030	26.3	2.04	<0.0002	<0.030	5.47
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27D	**1/25/11**	<0.005	<0.005	0.06	<0.003	<0.500	<0.005	23.7	<0.010	<0.020	<0.010	1.19	<0.003	<0.030	10.5	0.253	<0.0002	<0.030	<5.0
W-27D	**7/25/11**	<0.005	<0.005	0.0546	<0.003	<0.500	<0.005	23.3	<0.010	<0.020	<0.010	0.337	<0.003	<0.030	10.6	0.256	<0.0002	<0.030	<5.0

TABLE 2-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-01	**1/25/11**	0.02	<0.010	318	<0.003	0.0175
W-01	**7/25/11**	0.031	<0.010	304	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-03A	**1/25/11**	<0.003	<0.010	18.8	<0.003	<0.010
W-03A	**7/25/11**	<0.003	<0.010	17.4	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-05S	**1/25/11**	<0.003	<0.010	42.3	<0.003	0.0892
W-05S	**7/25/11**	<0.003	<0.010	37.1	<0.003	0.0322
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-06S	**1/25/11**	<0.003	<0.010	<5.0	<0.003	0.0275
W-06S	**7/25/11**	<0.003	<0.010	<5.0	<0.003	0.0155
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-07S	**1/25/11**	<0.003	<0.010	50.2	<0.003	0.0633
W-07S	**7/25/11**	<0.003	<0.010	41.3	<0.003	0.0357
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-09S	**1/25/11**	<0.003	<0.010	39.3	<0.003	0.0478
W-09S	**7/25/11**	<0.003	<0.010	23.7	<0.003	0.0228
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16S	**1/25/11**	<0.003	0.031	11.7	<0.003	<0.010
W-16S	**7/25/11**	<0.003	<0.010	21.5	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16D	**1/25/11**	<0.003	<0.010	<5.0	<0.003	0.0463
W-16D	**7/25/11**	<0.003	<0.010	<5.0	<0.003	0.0403
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17S	**1/25/11**	<0.003	<0.010	23.2	<0.003	0.03
W-17S	**7/25/11**	<0.003	<0.010	30.1	<0.003	0.0109
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17D	**1/25/11**	<0.003	<0.010	30.7	<0.003	0.0128
W-17D	**7/25/11**	<0.003	<0.010	19.9	<0.003	0.0161
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27S	**1/25/11**	<0.003	<0.010	48.7	<0.003	0.029
W-27S	**7/25/11**	<0.003	<0.010	37.2	<0.003	0.0263
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27D	**1/25/11**	<0.003	<0.010	56.8	<0.003	<0.010
W-27D	**7/25/11**	<0.003	<0.010	52.7	<0.003	0.0101

TABLE 2-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28S	**1/25/11**	45.08	8.39	6.75	11	1652	55.7	420	31.2	65	<0.010	696	<0.010	0.168	<0.500	<0.005	820	<3.0	<0.100
W-28S	**7/25/11**	44.99	17.3	6.95	-22	1491	13.4	600	46	50	<0.010	783	<0.010	0.09	<0.50	<0.005	680	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28D	**1/25/11**	45.91	9.94	7.99	-47	549	8.49	130	11.4	8	<0.010	103	<0.010	0.156	<0.50	<0.005	210	<3.0	<0.100
W-28D	**7/25/11**	46.75	17.7	8.61	2	536	14.3	160	14.8	5	<0.010	113	<0.010	0.089	<0.50	<0.005	160	<3.0	<0.100

TABLE 2-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28S	**1/25/11**	<0.005	0.031	0.169	<0.003	<0.500	<0.005	213	<0.010	<0.020	<0.010	4.9	<0.003	<0.030	39.6	0.493	<0.0002	<0.030	<5.0
W-28S	**7/25/11**	<0.005	0.0081	0.128	<0.003	<0.500	<0.005	246	<0.010	<0.020	<0.010	3	<0.003	<0.030	40.9	0.863	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28D	**1/25/11**	<0.005	<0.005	0.0528	<0.003	<0.500	<0.005	26.1	<0.010	<0.020	<0.010	0.0879	<0.003	<0.030	9.15	0.171	<0.0002	<0.030	<5.0
W-28D	**7/25/11**	<0.005	<0.005	0.0504	<0.003	<0.500	<0.005	29.3	<0.010	<0.020	<0.010	0.0968	<0.003	<0.030	9.7	0.0337	<0.0002	<0.030	<5.0

TABLE 2-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28S	**1/25/11**	<0.003	<0.010	31.4	<0.003	0.0152
W-28S	**7/25/11**	<0.003	<0.010	33.7	<0.003	<0.010
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28D	**1/25/11**	<0.003	<0.010	48.2	<0.003	<0.010
W-28D	**7/25/11**	<0.003	<0.010	49.2	<0.003	<0.010

TABLE 2-2
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Deep Wells
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-05D	**1/25/11**	20.27	8.67	8.41	-48	368	16.3	99	3.45	6	<0.010	102	<0.010	0.139	<0.500	<0.005	180	<3.0
W-05D	**7/25/11**	22.5	19.1	8.83	-82	364	34.4	120	3.08	12	<0.010	125	<0.010	0.056	<0.500	<0.005	170	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-06DA	**1/25/11**	21.51	7.17	8.17	-54	587	24.7	130	4.22	10	<0.010	198	<0.010	0.173	<0.500	<0.005	290	<3.0
W-06DA	**7/25/11**	18.84	18.6	7.34	-81	432	12.3	150	3.73	5	<0.010	212	<0.010	0.109	<0.500	<0.005	240	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-08D*	**1/25/11**	75.39	8.1	7.91	91	433	48.9	180	8.65	7	<0.010	228	<0.010	0.197	<0.500	<0.005	330	<3.0
W-08D*	**7/25/11**	75.11	20.6	7.79	226	506	57.2	220	20.9	40	<0.010	289	<0.010	0.262	<0.500	<0.005	350	<3.0

*** BACKGROUND WELL**

TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-09D	**1/25/11**	43.66	11.2	7.37	-53	1187	22.8	110	126	13	<0.010	165	<0.010	0.138	<0.500	<0.005	480	<3.0
W-09D	**7/25/11**	78.11	22.8	8.05	-87	1108	14.2	150	115	15	<0.010	175	<0.010	0.178	<0.500	<0.005	1000	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-10D	**1/25/11**	59.93	9	7.43	50	995	43.8	420	22.9	45	<0.010	660	<0.010	0.065	<0.500	<0.005	850	<3.0
W-10D	**7/25/11**	57.98	19.4	6.98	26	1210	19.6	570	26.4	12	<0.010	723	<0.010	0.061	<0.500	<0.005	830	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-30	**1/25/11**	51.95	10.2	7.45	-8	1760	34.5	380	110	15	<0.010	748	<0.010	0.17	<0.500	<0.005	1000	<3.0
W-30	**7/25/11**	48.20	24.1	7.62	134	1492	2.62	460	107	7	<0.010	771	<0.010	0.142	<0.500	0.008	970	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
SS882	**1/25/11**	32.57	7.8	7.87	54	539	10.7	270	10.1	35	<0.010	335	<0.010	0.062	<0.50	<0.005	370	<3.0
SS882	**7/25/11**	32.44	20.6	7.81	213	607	11.7	270	19.1	8	<0.010	315	<0.010	<0.05	<0.500	<0.005	340	<3.0

TABLE 2-2
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Deep Wells
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-05D	**1/25/11**	<0.100	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	24.8	<0.010	<0.020	<0.010	0.0636	<0.003	<0.030	9.66	0.0184	<0.0002	<0.030
W-05D	**7/25/11**	0.134	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	32.8	<0.010	<0.020	<0.010	0.281	<0.003	<0.030	10.5	0.0583	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-06DA	**1/25/11**	<0.100	<0.005	<0.005	0.0701	<0.003	<0.500	<0.005	62	<0.010	<0.020	<0.010	0.149	<0.003	<0.030	10.6	0.158	<0.0002	<0.030
W-06DA	**7/25/11**	<0.100	<0.005	<0.005	0.0676	<0.003	<0.500	<0.005	67	<0.010	<0.020	<0.010	0.663	<0.003	<0.030	10.8	0.0263	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-08D*	**1/25/11**	2.33	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	65.1	<0.010	<0.010	<0.010	3.22	<0.003	<0.030	15.8	0.0668	<0.0002	<0.030
W-08D*	**7/25/11**	5.17	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	85.7	0.0109	<0.010	<0.010	7.09	<0.003	<0.030	18.2	0.154	<0.0002	<0.030

*** BACKGROUND WELL**

TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-09D	**1/25/11**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	31.7	<0.010	<0.020	<0.010	0.35	<0.003	<0.030	20.8	0.33	<0.0002	<0.030
W-09D	**7/25/11**	<0.100	<0.005	<0.005	51.9	<0.003	<0.500	<0.005	34.8	<0.010	<0.020	<0.010	0.307	<0.003	0.0107	21.5	0.229	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-10D	**1/25/11**	0.158	<0.005	0.011	0.0765	<0.003	<0.500	<0.005	184	<0.010	<0.020	<0.010	1	<0.003	<0.030	48.8	2.31	<0.0002	<0.030
W-10D	**7/25/11**	0.135	<0.005	<0.005	0.0786	<0.003	<0.500	<0.005	223	<0.010	<0.020	<0.010	1.7	0.0041	<0.030	40.6	3.31	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-30	**1/25/11**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	158	<0.010	<0.020	<0.010	0.387	<0.003	<0.030	86.1	0.0279	<0.0002	<0.030
W-30	**7/25/11**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	0.75	<0.010	<0.020	<0.010	0.352	<0.003	<0.030	81.3	0.0209	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
SS882	**1/25/11**	0.116	<0.005	<0.005	1.42	<0.003	<0.500	<0.005	91.7	<0.010	<0.020	<0.010	1.27	<0.003	<0.030	25.6	0.987	<0.0002	<0.030
SS882	**7/25/11**	<0.100	<0.005	<0.005	0.0927	<0.003	<0.500	<0.005	89.6	<0.010	<0.020	<0.010	1.29	<0.003	<0.030	22.1	0.732	<0.0002	<0.030

TABLE 2-2
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Groundwater Monitoring Data - Deep Wells
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-05D	**1/25/11**	9.6	<0.003	<0.010	10	<0.010	<0.010
W-05D	**7/25/11**	7.49	<0.003	<0.010	8.93	<0.010	0.0153
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-06DA	**1/25/11**	<5.0	<0.003	<0.010	12.7	<0.003	<0.010
W-06DA	**7/25/11**	<5.0	<0.003	<0.010	11.6	<0.003	<0.010
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-08D*	**1/25/11**	<5.0	<0.003	<0.010	6.66	<0.003	0.017
W-08D*	**7/25/11**	<5.0	<0.003	<0.010	7.18	<0.003	0.0287

*** BACKGROUND WELL**

TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-09D	**1/25/11**	<5.0	0.0055	<0.010	142	<0.003	<0.010
W-09D	**7/25/11**	<5.0	<0.003	<0.010	142	<0.003	0.0107
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-10D	**1/25/11**	<5.0	<0.003	<0.010	23.1	<0.003	0.0224
W-10D	**7/25/11**	<5.0	<0.003	<0.010	36.6	<0.003	0.0185
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-30	**1/25/11**	<5.0	<0.003	<0.010	65.8	<0.003	0.0176
W-30	**7/25/11**	0.507	<0.003	<0.010	57	<0.003	0.0113
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
SS882	**1/25/11**	<5.0	<0.003	<0.010	18.3	<0.003	<0.010
SS882	**7/25/11**	<5.0	<0.003	<0.010	24.5	<0.003	<0.010

TABLE 3-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Surface Water Monitoring Data
(all units are in mg/l)

		Dis O2	SC	eH	pH	Temp	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols
CLASS C STD:		**<4**			**6.5-8.5**						**9**		**0.011**		**2**	
WALL-UP	**1/26/11**	-	798	17	8.52	4.72	13.7	94	80.1	40	<0.010	174	<0.010	0.901	<0.500	<0.005
WALL-UP	**7/25/11**	4.97	718	55	8.56	28.1	67.1	170	64.3	75	<0.010	215	<0.010	0.866	<0.500	<0.005
WALL-DN	**1/26/11**	-	812	0	8.84	1.72	16.2	98	96.6	45	<0.010	169	<0.010	1.580	<0.500	<0.005
WALL-DN	**7/25/11**	4.4	743	-9	8.31	29.1	59.3	170	66.5	50	<0.010	202	<0.010	1.450	<0.500	<0.005
Basin A	**1/24/11**	Frozen														
Basin A	**7/25/11**	5.39	287	28	8.92	33.2	63.5	110	1.92	30	<0.010	106	<0.010	0.072	<0.500	<0.005
Basin B	**1/24/11**	Dry														
Basin B	**7/25/11**	3.83	350	-25	9.71	37.7	412	35	2.13	150	<0.010	114	<0.04	0.094	<0.500	<0.005
Basin D	**1/24/11**	Dry														
Basin D	**7/25/11**	7.57	341	15	9.28	35.5	178	94	1.68	150	<0.010	120	<0.010	0.09	<0.500	<0.005

TABLE 3-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Surface Water Monitoring Data
(all units are in mg/l)

		TDS	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
CLASS C STD:		**500**		**0.1**				**1.1**	**10**				**0.005**		**0.3**		**0.014**	
WALL-UP	**1/26/11**	300	3.1	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	45.4	<0.010	<0.020	<0.010	0.373	<0.003	<0.030	14.6
WALL-UP	**7/25/11**	270	5.9	0.811	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	54	<0.010	<0.020	<0.010	1.47	<0.003	<0.030	19.4
WALL-DN	**1/26/11**	360	3.2	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	45.6	<0.010	<0.020	<0.010	0.31	<0.003	<0.030	13.3
WALL-DN	**7/25/11**	300	4.2	0.259	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	52.1	<0.010	<0.020	<0.010	0.56	<0.003	<0.030	17.6
Basin A	**1/24/11**																	
Basin A	**7/25/11**	120	3.9	1.01	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	28.2	<0.010	<0.020	<0.010	2.04	<0.003	<0.030	8.73
Basin B	**1/24/11**																	
Basin B	**7/25/11**	190	5.8	5.11	<0.005	<0.005	0.0692	<0.003	<0.500	<0.005	45.7	<0.010	<0.020	0.0144	6.12	<0.003	<0.030	<5.0
Basin D	**1/24/11**																	
Basin D	**7/25/11**	140	4.1	0.907	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	48.1	<0.010	<0.020	<0.010	2.02	<0.003	<0.030	<5.0

TABLE 3-1
Al Turi Landfill, Inc. July 2011 Semi-Annual Report
Surface Water Monitoring Data
(all units are in mg/l)

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
CLASS C STD:									**0.008**	
WALL-UP	**1/26/11**	0.0969	<0.0002	<0.030	<5.00	<0.003	<0.010	49.5	<0.003	0.132
WALL-UP	**7/25/11**	0.176	<0.0002	<0.030	<5.00	<0.003	<0.010	40.1	<0.003	0.377
WALL-DN	**1/26/11**	0.0855	<0.0002	<0.030	<5.00	<0.003	<0.010	68.2	<0.003	0.179
WALL-DN	**7/25/11**	0.105	<0.0002	<0.030	<5.00	<0.003	<0.010	46.3	<0.003	0.0173
Basin A	**1/24/11**									
Basin A	**7/25/11**	0.119	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0163
Basin B	**1/24/11**									
Basin B	**7/25/11**	0.404	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0324
Basin D	**1/24/11**									
Basin D	**7/25/11**	0.467	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0191

TABLE 4-1
Al Turi Landfill, Inc. 2011 Semi-Annual Report
Leachate Monitoring Data
(all units are in mg/l)

		SC	eH	pH	Temp	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Nitrate	NH4	TKN
LCH-11P	**1/26/11**	1407	20	7.04	8.06	71	1200	13	<80.0	5300	120	130	<0.010	3210	1.18	224	187
LCH-11P	**7/26/11**	1327	-85	7.88	19.1	133	1800	26	<0.008	1910	120	300	<0.010	3410	4.74	128	159
LCH-11S	**1/26/11**	947	27	8.41	7.39	6.25	150	<4.0	<0.80	39.1	<20.0	12	<0.010	284	0.884	<0.500	<0.500
LCH-11S	**7/26/11**	649	-49	9.02	16.6	14.3	130	<8.0	<8.0	29.8	<20.0	30	<0.010	202	0.883	<0.500	0.681
LCH-12P	**7/26/11**	1659	41	7.77	11.1	14.7	410	<4.0	<0.8	114	28	40	<0.010	419	2.09	28.3	26.7
LCH-12P	**7/26/11**	567	-28	8.38	24.9	18.2	1700	37	<80.0	777	270	300	36.8	484	3.82	234	273
LCH-12S	**1/26/11**	DRY															
LCH-12S	**7/26/11**	777	-65	9.41	17.5	17.1	160	<8.0	<8.0	27.1	<20.0	20	<0.01	214	1.09	<0.5	1.45

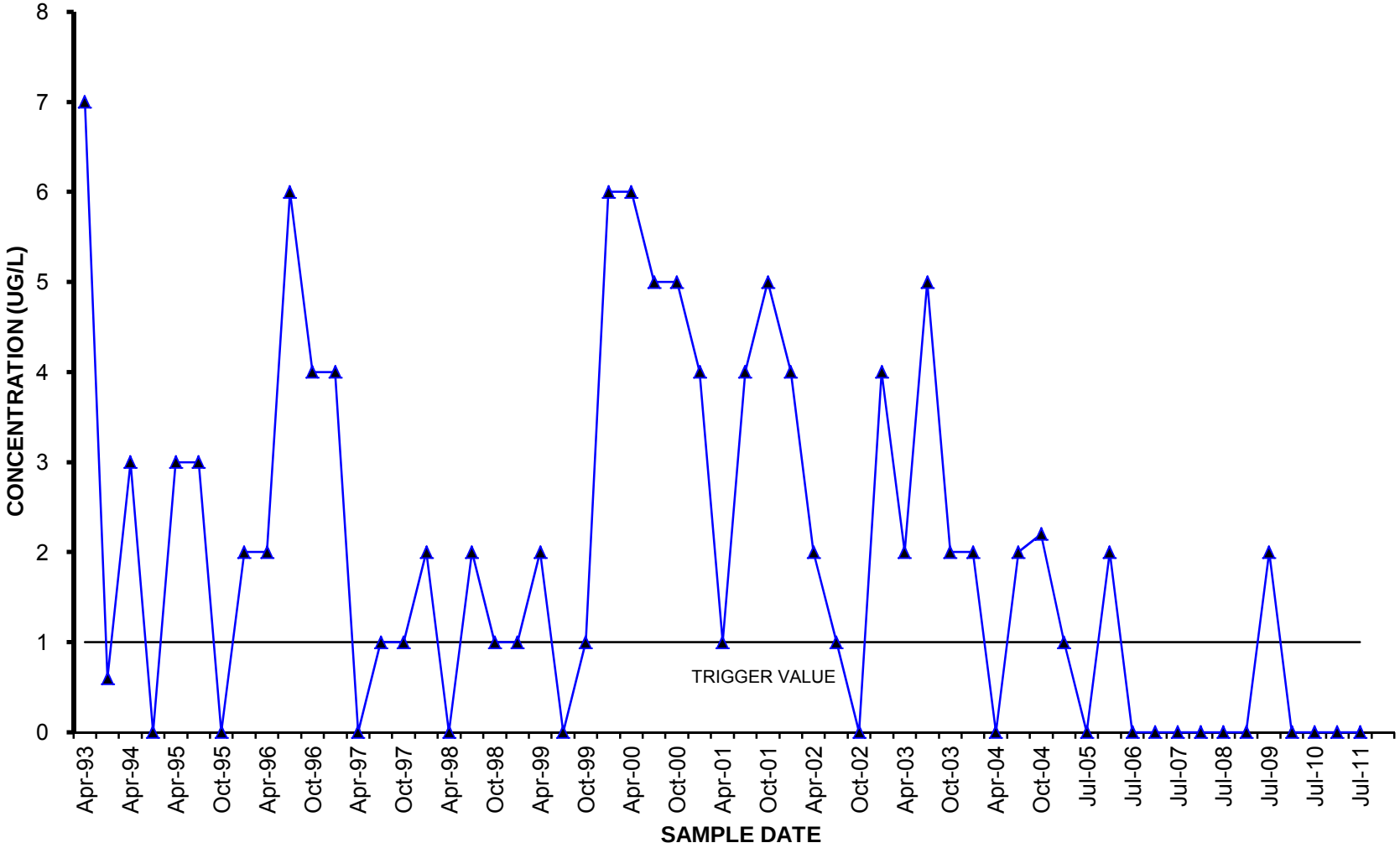
TABLE 4-1
Al Turi Landfill, Inc. 2011 Semi-Annual Report
Leachate Monitoring Data
(all units are in mg/l)

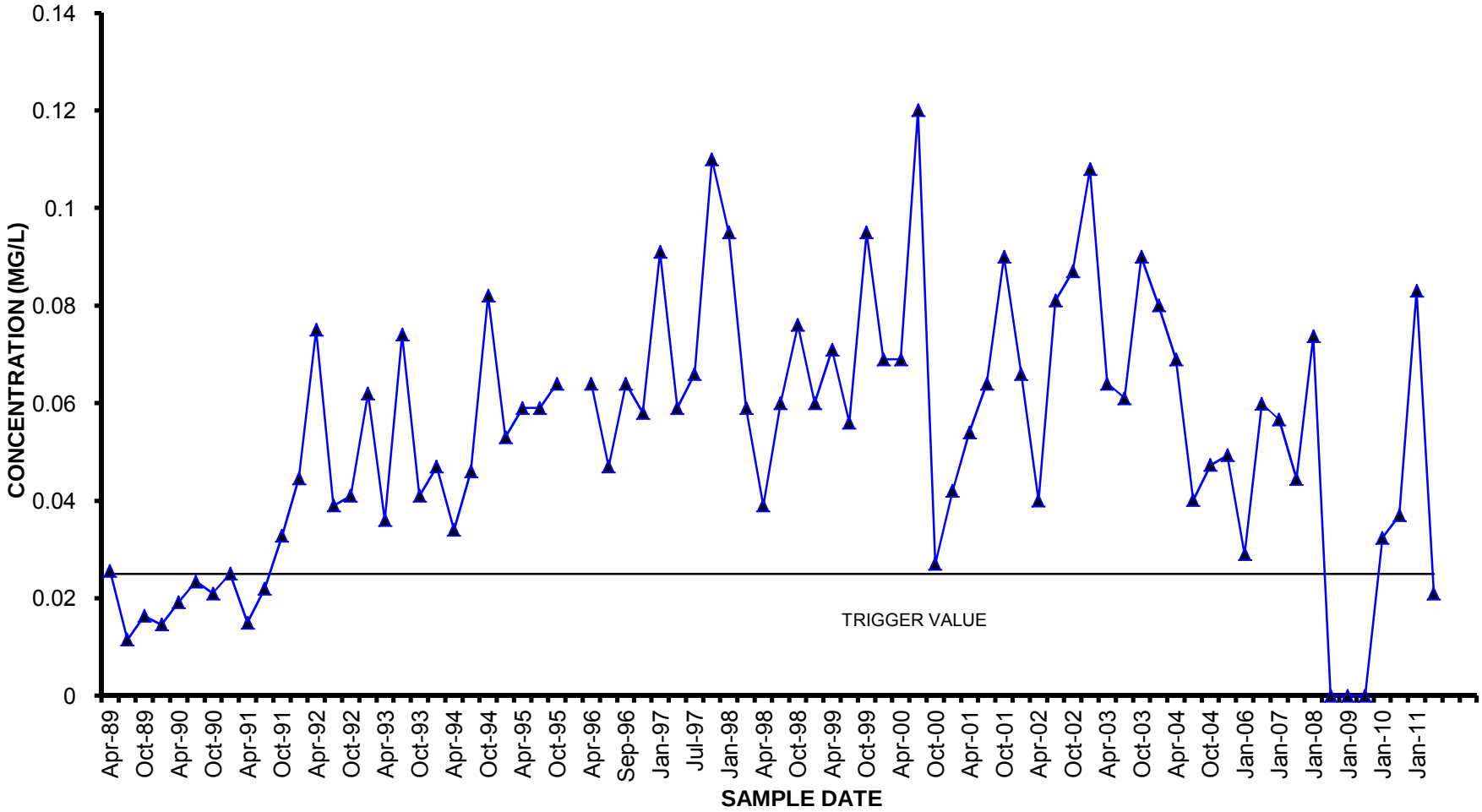
		Phenols	TDS	Sulfate	Sulfide	Cr +6	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
LCH-11P	**1/26/11**	0.009	14000	2240	<0.100	<0.020	39.6	<0.100	<0.050	0.1	0.0972	<0.003	16.5	<0.005	433	<0.010	<0.020
LCH-11P	**7/26/11**	0.025	12000	2540	<0.100	<0.020	17.3	1.28	<0.005	0.11	0.147	<0.003	16.6	<0.005	418	<0.010	<0.020
LCH-11S	**1/26/11**	<0.005	460	137	<0.100	<0.010	<3.0	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	79.7	<0.010	<0.020
LCH-11S	**7/26/11**	0.075	680	109	<0.100	<0.010	<3.0	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	56.4	<0.010	<0.020
LCH-12P	**7/26/11**	<0.005	690	45.9	<0.100	<0.010	10	0.146	<0.005	0.007	0.0539	<0.003	<0.500	<0.005	138	<0.010	<0.020
LCH-12P	**7/26/11**	<0.125	2300	40.9	<0.100	<0.04	86.2	<0.001	<0.005	0.05	0.188	<0.003	3.19	<0.005	118	0.107	<0.020
LCH-12S	**1/26/11**																
LCH-12S	**7/26/11**	<0.05	370	86.1	<0.100	<0.01	<3.0	<0.001	<0.005	<0.005	0.0507	<0.003	<0.5	<0.005	64.9	<0.01	<0.020

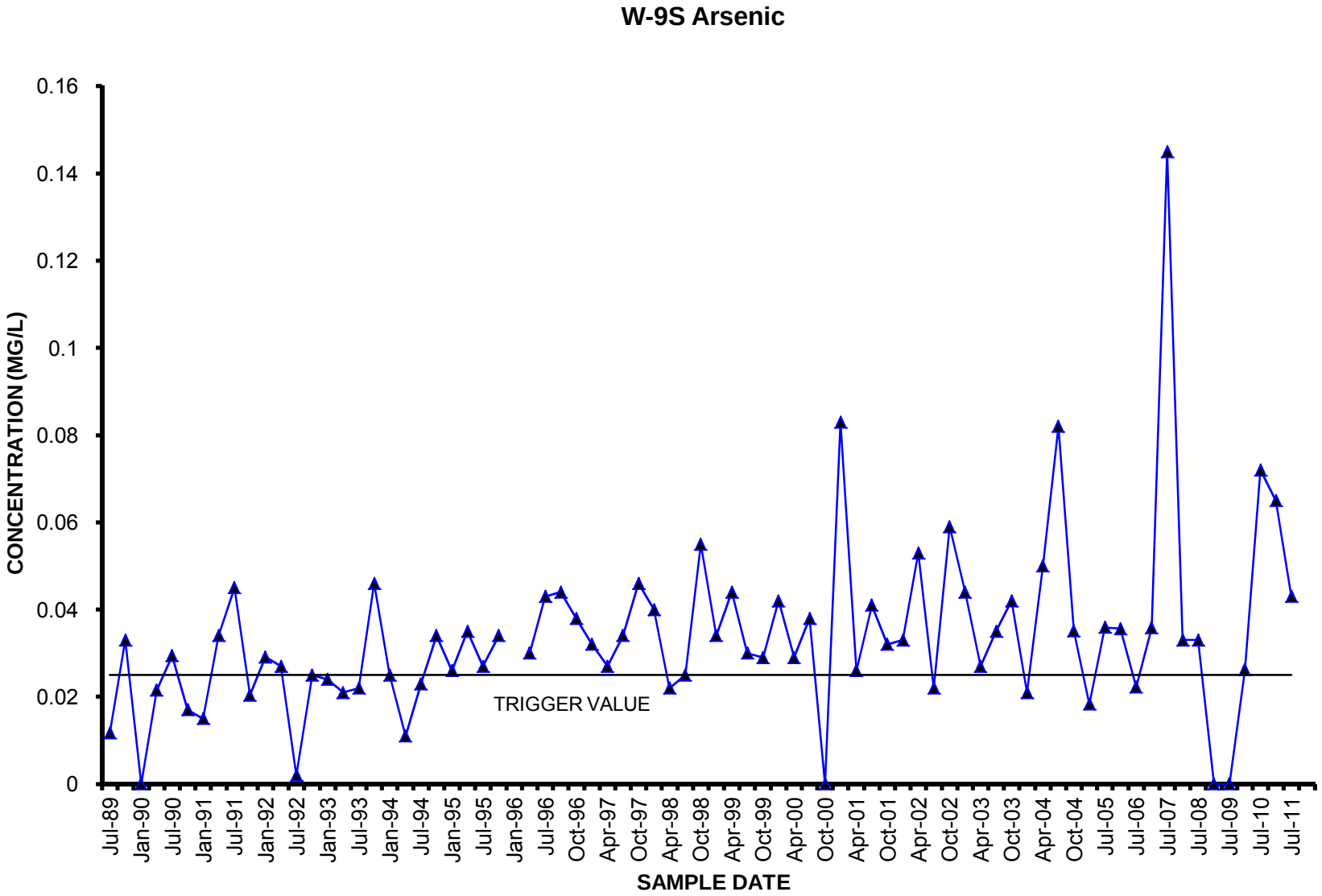
TABLE 4-1
Al Turi Landfill, Inc. 2011 Semi-Annual Report
Leachate Monitoring Data
(all units are in mg/l)

		Cu	Fe	K	Pb	V	Mg	Mn	Hg	Ni	Se	Ag	Na	Sn	Th	Zn
LCH-11P	**1/26/11**	<0.010	2.43	639	<0.003	<0.030	517	3.58	<0.0002	0.0743	0.36	<0.010	4540	<0.300	<0.003	0.0592
LCH-11P	**7/26/11**	<0.010	1.01	640	<0.003	<0.030	575	3.98	<0.0002	0.0495	0.43	<0.010	3580	<0.300	<0.003	0.146
LCH-11S	**1/26/11**	<0.010	<0.060	9.66	<0.003	<0.030	20.6	<0.010	<0.0002	<0.030	<0.030	<0.010	49.6	<0.300	<0.003	0.615
LCH-11S	**7/26/11**	<0.010	<0.060	7.23	<0.003	<0.030	15	0.123	<0.0002	<0.030	<0.030	<0.010	30.8	<0.300	<0.003	0.36
LCH-12P	**7/26/11**	<0.010	0.397	22.9	<0.003	<0.030	17.8	1.23	<0.0002	<0.030	0.0094	<0.010	93.4	<0.300	<0.003	0.394
LCH-12P	**7/26/11**	<0.010	1.05	185	<0.003	<0.030	45.9	0.371	<0.0002	0.0641	<0.041	<0.010	613	<0.300	<0.003	0.956
LCH-12S	**1/26/11**															
LCH-12S	**7/26/11**	<0.010	0.0781	12.2	<0.003	<0.030	12.8	0.0213	<0.0002	<0.03	<0.03	<0.010	28.5	<0.300	<0.003	0.168

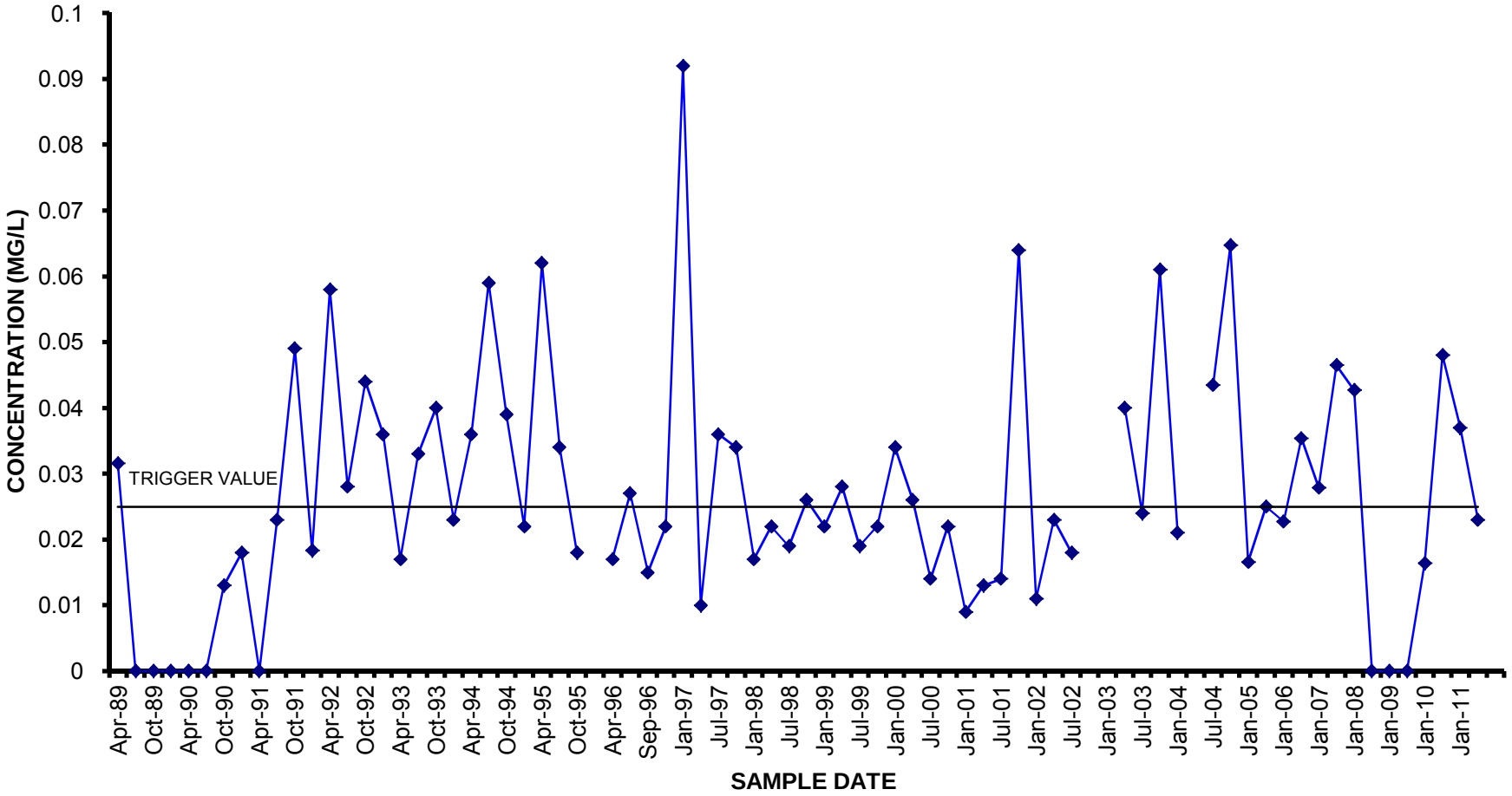
W-1 Benzene

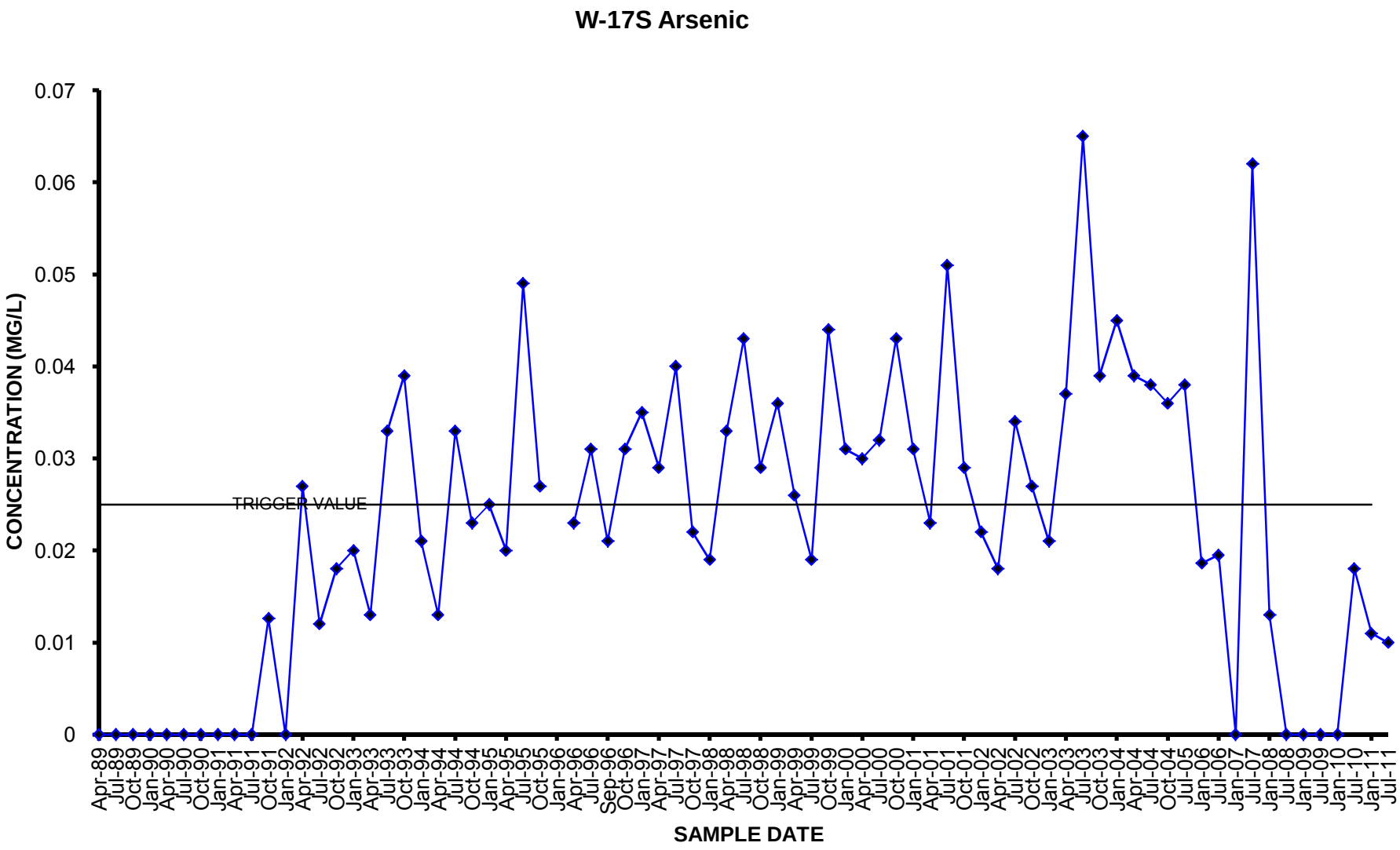

CONCENTRATION (UG/L)
0
1
2
3
4
5
6
7
8
TRIGGER VALUE
Apr-93
Apr-94
Apr-95
Oct-95
Apr-96
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
SAMPLE DATE


W-6S Arsenic
CONCENTRATION (MG/L)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Apr-89
Oct-89
Apr-90
Oct-90
Apr-91
Oct-91
Apr-92
Oct-92
Apr-93
Oct-93
Apr-94
Oct-94
Apr-95
Oct-95
Apr-96
Sep-96
Jan-97
Jul-97
Jan-98
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
SAMPLE DATE


W-9S Arsenic
CONCENTRATION (MG/L)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Jul-89
Jan-90
Jul-90
Jan-91
Jul-91
Jan-92
Jul-92
Jan-93
Jul-93
Jan-94
Jul-94
Jan-95
Jul-95
Jan-96
Jul-96
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
SAMPLE DATE

W-16D Arsenic




W-17S Arsenic
CONCENTRATION (MG/L)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
TRIGGER VALUE
Apr-89
Jul-89
Oct-89
Jan-90
Apr-90
Jul-90
Oct-90
Jan-91
Apr-91
Jul-91
Oct-91
Jan-92
Apr-92
Jul-92
Oct-92
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Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
SAMPLE DATE

CLASS II SITE
SEMI-ANNUAL REPORT

JULY 2011
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – FORMER CLASS II SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

October 2011

Prepared by

Ground Water Investigations
18 Bridge Street
Montgomery, New York 12549

Project 256-00-00

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Attachments

Drawing No. 1 - Well Location Plan	Pocket
Diskette - Laboratory Analytical Data	Pocket

1 INTRODUCTION

The water quality management program developed for post closure monitoring of the Al Turi Landfill – former Class II site, located in Goshen, New York, includes the semi-annual groundwater sampling and analysis of select parameters from monitoring wells downgradient of the former Class II landfill facility and the evaluation of the data generated by these samples. This program was developed to monitor historical constituents of concern within groundwater, and to identify any changes in the concentration of these constituents that may warrant further evaluation. The identification of conditions warranting further evaluation is based primarily on the comparison of detected concentrations with groundwater trigger levels (GWTLs). The Constituents of Concern and their GWTLs were presented to the Department in December 2001 in the Post-Closure Contingency Monitoring Plan, prepared by ENVIRON International Corporation of Princeton, New Jersey. The Constituents of Concern are listed on Table 1-1.

Semi-Annual groundwater quality is monitored at 17 groundwater monitoring wells (overburden and bedrock wells) located within the boundaries of the Al Turi Landfill property. The 17 monitoring wells are divided into two types: "Type 1" wells and "Type 2" wells. Type 1 wells are wells that are located adjacent (within 150 feet) to the Wallkill River while Type 2 wells are located beyond 150 feet from the river. The location of each well in relation to the Wallkill River was a factor when considering GWTLs for each well. Drawing 1 (in pocket) provides a site map of the area indicating the locations of the Type 1 and Type 2 groundwater monitoring wells.

Of the 17 groundwater monitoring wells, two wells (W-1 and W-3A), are monitored semi-annually as part of the post closure monitoring of the adjacent Al Turi Landfill. Monitoring of these wells consists of a modified Part 360 semi-annual analysis. As part of this sampling event, the Part 360 landfill data collected for well W-1 and well W-3A were utilized. In addition, the Wallkill River, which is located along the western portion of the site, is monitored semi-annually both upgradient and downgradient of the Al Turi property.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

2.1 Type 1 Groundwater Quality

Eight Type 1 groundwater monitoring wells are currently sampled at the former Class II Al Turi landfill site as part of post-closure monitoring requirements. Of the eight Type 1 groundwater monitoring wells, six wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-38S was dry.

Analytical results collected from the Type 1 groundwater monitoring wells are presented in Table 2-1, as are established GWTL values for each well. A review of the inorganic analyses collected during the July 2011 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 1 groundwater monitoring wells. In addition, a review of the Type 1 volatile organic data collected during the July 2011 sampling event indicates that no volatile organic compounds (VOC's) were present above established GWTLs.

The Type 1 groundwater monitoring wells will be sampled again in January 2012 as part of continued semi-annual groundwater monitoring for the former Class II Al Turi Landfill.

2.2 Type 2 Groundwater Quality

Nine Type 2 groundwater monitoring wells are currently sampled at the former Class II Al Turi Landfill as part of post closure monitoring at the facility.

Of the nine Type 2 groundwater monitoring wells, seven wells monitor the overburden groundwater aquifer and two well monitor the bedrock aquifer. It was noted during this sampling event that well W-20 was dry.

Analytical results collected from the Type 2 groundwater monitoring wells are presented in Table 2-2, as are established GWTL values for each well. A review of the inorganic

analyses collected during the July 2011 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 2 groundwater monitoring wells. In addition, a review of the Type 2 volatile organic data collected during the July 2011 sampling event indicates that no volatile organic compounds (VOC's) were present above established GWTLs.

The Type 2 groundwater monitoring wells will be sampled again in January 2012 as part of continued semi-annual groundwater monitoring for the former Class II Al Turi Landfill.

3 ASSESSMENT OF CUMULATIVE EFFECTS

In addition to the direct comparison of measured groundwater concentrations from individual monitoring wells to the appropriate GWTLs, the cumulative effects of ground water discharges to the Wallkill River from the former Class II Landfill site are evaluated as part of routine post-closure monitoring. The cumulative mass loading to the river is approximated, as follows:

1. The estimated total mass loading to the river for each Type 1 well is calculated by multiplying the measured concentration with the discharge rate calculated using ground water elevations observed during the same monitoring event (the ground water elevations from the July 2011 event are provided on Table 3-1):

$$M_i = C_i \bullet (Ki \bullet i_i \bullet w_i \bullet d) \bullet CF$$

where:

M_i	=	mass loading rate for well i (kg/day);
C_i	=	measured ground water concentration in well i (mg/L);
K_i	=	hydraulic conductivity for discharge zone segment associated with well i (ft/day);
i_i	=	calculated ground water gradient of for well i (ft/ft);
w_i	=	width of discharge zone segment associated with well i (ft);
d	=	aquifer thickness (ft); and
CF	=	conversion factor 28.32 L/ft^3 * 10^{-6} kg/mg

2. The mass loading rate from each Type 1 well is then summed to estimate the cumulative mass loading to the river, ($M_c = \Sigma M_i$) for each constituent.

3. The estimated river concentration is then calculated by dividing the cumulative mass loading M_c by the measured river flow rate. On July 25, 2011 the average gauge height was 0.14 (river elevation 355.022 ft msl), which represents an estimated river flow of 20.5 cfs.

The estimated river concentrations are then compared to the lower of the aquatic criteria and human health benchmarks for surface water presented in the December 2001 Post-Closure Monitoring Plan.

The results for the estimated cumulative effects assessment are presented on Table 3-2. As indicated on Table 3-2, the estimated in-stream concentrations resulting from the discharge of groundwater to the Wallkill River based on the observed flow conditions in the river at the time of sampling are all below the lower of the surface water benchmarks. A copy of the updated Al Turi Landfill Stream Gauge Hydrograph Record is included in Appendix A.

4 CONCLUSION

A review of the July 2011 groundwater data shows that no Constituents of Concern were observed above GWTLs in any of the groundwater monitoring wells. Because there are no Constituents of Concern observed above any of the established GWTLs, and the assessment of cumulative effects did not identify a potential for unacceptable impacts on the river as a result of groundwater discharges, the routine post-closure monitoring program will continue as specified in the Post-Closure Monitoring Plan for the Class II Al Turi Landfill.

Semi-annual monitoring of 17 groundwater monitoring wells for the identified constituents of concern will continue in January 20121 at the Class II Al Turi Landfill as part of continued post closure monitoring.

APPENDIX A

AL TURI LANDFILL HYDROGRAPH RECORD

TABLE 1-1

AL TURI LANDFILL - CLASS II SITE
CONSTITUENTS OF CONCERN
JULY 2011 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

Volatile Organic Compounds	***Metals***
Chloromethane	Antimony
Vinyl Chloride	Arsenic
Trichlorofluoromethane	Barium
Dichlorodifluoromethane	Chromium, hexavalent
1,1-Dichloroethene	Chromium
1,1-Dichloroethane	Copper
cis-1,2-Dichloroethene	Lead
Benzene	Magnesium
Trichloroethene	Sodium
	Zinc

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2011 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2011 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	**W-1**		**W-11S**		**W-24S**		**W-38S**	
	25-Jul-11		**25-Jul-11**		**25-Jul-11**		**25-Jul-11**	
Compounds of Concern	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**	**Result**	**GWTL**
Volatile Organic Compounds (VOCs) By Method 8260 (Results in mg/l)								
Chloromethane	ND	35	ND	35	ND	35	DRY	35
Vinyl Chloride	ND	27.6	ND	27.6	ND	27.6	DRY	27.6
Trichlorofluoromethane	ND	11	ND	11	ND	11	DRY	11
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	2.8	DRY	2.8
1,1-Dichloroethene	ND	3.59	ND	6.12	ND	5.07	DRY	5.32
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	50.6	DRY	50.6
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	17.5	DRY	17.5
Benzene	ND	2.21	ND	3.78	ND	3.13	DRY	3.28
Trichloroethene	ND	11	ND	11	ND	11	DRY	11
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***
Antimony	ND	8,828	ND	15,074	ND	12,478	DRY	13,097
Arsenic	0.0068	0.81	ND	1.38	ND	1.14	DRY	1.2
Barium	0.638	***	0.0529	***	0.0763	***	DRY	***
Chromium, hexavalent	ND	4.54	ND	7.76	ND	6.42	DRY	6.74
Chromium	ND	38	ND	65	0.0112	54	DRY	57
Copper	ND	4.65	ND	7.94	ND	6.57	DRY	6.9
Lead	ND	1.85	ND	3.16	ND	2.61	DRY	2.74
Magnesium	54.4	***	22.2	***	19.4	***	DRY	***
Sodium	304	103,222	ND	176,259	ND	145,911	DRY	153,146
Zinc	ND	42.86	0.0159	73.19	ND	60.59	DRY	63.6

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JULY 2011 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2011 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	***W-39S***		***W-40S***		***W-1D***	***W-37D***	***FB-01***	***TB-01***
	25-Jul-11		***25-Jul-11***		***25-Jul-11***	***25-Jul-11***	***27-Jul-11***	***25-Jul-11***
Compounds of Concern	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) By Method 8260 (Results in ug/l)								
Chloromethane	ND	35	ND	35	ND	ND	ND	ND
Vinyl Chloride	ND	27.6	ND	27.6	ND	ND	ND	ND
Trichlorofluoromethane	ND	11	ND	11	ND	ND	ND	ND
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	ND	-	ND
1,1-Dichloroethene	ND	5.71	ND	17.05	ND	ND	ND	ND
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	ND	ND	ND
Benzene	ND	3.53	ND	10.53	ND	ND	ND	ND
Trichloroethene	ND	11	ND	11	ND	ND	ND	ND
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Antimony	ND	14,072	ND	41,986	ND	ND	ND	-
Arsenic	ND	1.29	ND	3.85	ND	ND	ND	-
Barium	0.0692	***	0.0653	***	ND	0.514	ND	-
Chromium, hexavalent	ND	7.24	ND	21.6	ND	ND	ND	-
Chromium	ND	61	ND	181	ND	ND	ND	-
Copper	0.0118	7.41	ND	22.12	ND	ND	ND	-
Lead	ND	2.95	ND	8.79	ND	ND	ND	-
Magnesium	19.2	***	18.8	***	6.03	25.6	ND	-
Sodium	11	164,544	25.5	490,952	106	132	ND	-
Zinc	ND	68.33	0.0204	203.87	ND	ND	ND	-

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-2

AL TURI LANDFILL - CLASS II SITE
TYPE 2 GROUNDWATER MONITORING WELLS
JULY 2011 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JULY 2011 SAMPLING EVENT

		Laboratory Analytical Results										
Sample ID		W-3A	W-12SA	W-13S	W-18S	W-19S	W-20	W-29	W-3D**	W-12DA**	FB-01	TB-01
Sample Date		25-Jul-11	25-Jul-11	25-Jul-11	25-Jul-11	25-Jul-11	25-Jul-11	25-Jul-11	25-Jul-11	25-Jul-11	27-Jul-11	25-Jul-11
Compounds of Concern	**GWTL**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Volatile Organic Compounds (VOCs) (Results in mg/l)												
Chloromethane	35	ND	ND	ND	ND	ND	Dry	ND	ND	ND	ND	ND
Vinyl Chloride	27.6	ND	ND	ND	ND	ND	Dry	ND	ND	ND	ND	ND
Trichlorofluoromethane	11	ND	ND	ND	ND	ND	Dry	ND	ND	ND	ND	ND
Dichlorodifluoromethane	2.8	ND	ND	ND	ND	0.003 J	Dry	ND	ND	ND	-	ND
1,1-Dichloroethene	17.05	ND	ND	ND	ND	ND	Dry	ND	ND	ND	ND	ND
1,1-Dichloroethane	50.6	0.004 J	ND	ND	ND	ND	Dry	ND	0.0055	ND	ND	ND
cis-1,2-Dichloroethene	17.5	0.0057	ND	ND	0.013	ND	Dry	ND	0.0088	ND	ND	ND
Benzene	10.53	ND	ND	ND	ND	ND	Dry	ND	ND	ND	ND	ND
Trichloroethene	11	ND	ND	ND	0.0088	ND	Dry	ND	ND	ND	ND	ND
Total Metals (Results in mg/l)												
Antimony	41,986	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Arsenic	3.85	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Barium	***	0.0802	ND	Dry	ND	ND	Dry	0.0718	0.0786	ND	ND	-
Chromium, hexavalent	21.6	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Chromium	181	ND	ND	Dry	ND	ND	Dry	ND	ND	ND	ND	-
Copper	22.1	ND	0.0136	Dry	0.0144	0.0135	Dry	0.0233	ND	ND	ND	-
Lead	8.79	ND	ND	Dry	ND	0.0041	Dry	0.0078	ND	ND	ND	-
Magnesium	***	14.9	14.3	Dry	20.5	22.9	Dry	103	28.5	ND	ND	-
Sodium	490,952	17.4	ND	Dry	ND	ND	Dry	11	20.5	51.3	ND	-
Zinc	203.87	ND	0.0163	Dry	0.015	0.0197	Dry	0.0262	0.0101	ND	ND	-

Notes:

** - Groundwater Trigger Levels Not Applicable to These Wells.

*** - Groundwater Trigger Level is Greater Than $1X10^{p}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

No recovery on W-13S

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Vinyl Chloride		Dichlorodifluoromethane		1,1-Dichloroethane		cis-1,2-D
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	2.60E+03	3.01E-02	0.002	1.47E+02	0.002	1.47E+02	0.002	1.47E+02	0.002
W-38S	294.31	60	1.00	0.0371	6.54E+02	7.57E-03	0.002	3.71E+01	0.002	3.71E+01	0.002	3.71E+01	0.002
W-11S	243.15	60	2.11	0.0481	1.48E+03	1.72E-02	0.002	8.40E+01	0.002	2.90E+02	0.002	8.40E+01	0.002
W-39S	255.39	60	3.40	0.0382	1.99E+03	2.31E-02	0.002	1.13E+02	0.002	1.13E+02	0.002	1.13E+02	0.002
W-24	194.99	60	15.08	0.0127	2.25E+03	2.60E-02	0.002	1.27E+02	0.002	1.27E+02	0.002	1.27E+02	0.002
W-40	239.24	60	3.40	0.0124	6.07E+02	7.02E-03	0.002	3.44E+01	0.002	3.44E+01	0.002	3.44E+01	0.002
				Total Mass Loading (mg/d) =			**5.43E+02**		**7.49E+02**		**5.34E+02**		**5**
		Estimated In-Stream Concentration (mg/L)[5] =					**2.82E-06**		**3.89E-06**		**2.82E-06**		**1**
		Surface Water Quality Benchmark (mg/L)[6] =					**2.00E-03**		**1.00E+01**		**9.86E+00**		**1**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2011.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 25, 2011.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

)ichloroethene
Mass Loading (mg/d)
1.47E+02
3.71E+01
8.40E+01
1.13E+02
1.27E+02
3.44E+01
.34E+02
.06E-05
.00E+00

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Trichloroethene		Antimony		Arsenic		Barium		Chromiu
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	2.60E+03	3.01E-02	0.002	1.47E+02	0.002	3.68E+02	0.0068	6.19E+02	0.638	5.02E+04	0.005
W-38S	294.31	60	1.00	0.0371	6.54E+02	7.57E-03	0.002	3.71E+01	0.002	9.27E+01	0.002	9.27E+01	0.025	4.63E+02	0.005
W-11S	243.15	60	2.11	0.0481	1.48E+03	1.72E-02	0.002	8.40E+01	0.002	2.10E+02	0.002	2.10E+02	0.0529	1.05E+03	0.005
W-39S	255.39	60	3.40	0.0382	1.99E+03	2.31E-02	0.002	1.13E+02	0.002	2.82E+02	0.002	2.82E+02	0.0692	1.41E+03	0.005
W-24	194.99	60	15.08	0.0127	2.25E+03	2.60E-02	0.002	1.27E+02	0.002	3.18E+02	0.002	3.18E+02	0.025	1.59E+03	0.0112
W-40	239.24	60	3.40	0.0124	6.07E+02	7.02E-03	0.002	3.44E+01	0.002	8.59E+01	0.002	8.59E+01	0.0653	1.08E+03	0.005
				Total Mass Loading (mg/d) =			**5.43E+02**		**1.36E+03**		**1.61E+03**		**5.58E+04**		**3.85E**
			Estimated In-Stream Concentration (mg/L)[5] =				**2.82E-06**		**7.05E-06**		**7.05E-06**		**2.90E-04**		**2.00E**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.00E-02**		**5.00E-01**		**5.00E-05**		**2.48E+03**		**9.20E**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2011.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 25, 2011.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

m (total)
Mass Loading (mg/d)
1.47E+02
3.71E+01
8.40E+01
1.13E+02
3.43E+03
3.44E+01
E+03
E-05
E-02

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Copper		Lead		Magnesium		Sodium		Zi
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	3.17E+03	3.01E-02	0.005	3.68E+02	0.001	3.68E+02	54.4	4.01E+06	30.4	2.34E+07	0.005
W-38S	294.31	60	1.00	0.0371	6.86E+02	7.57E-03	0.005	9.27E+01	0.001	9.27E+01	2.5	9.27E+01	2.5	9.27E+01	0.005
W-11S	243.15	60	2.11	0.0481	1.53E+03	1.72E-02	0.005	2.10E+02	0.001	2.10E+02	22.2	1.05E+06	2.5	2.10E+02	0.0159
W-39S	255.39	60	3.40	0.0382	1.71E+03	2.31E-02	0.0118	2.82E+02	0.001	2.82E+02	19.2	2.82E+02	11	2.82E+02	0.005
W-24	194.99	60	15.08	0.0127	1.83E+03	2.60E-02	0.005	1.01E+03	0.001	3.18E+02	19.4	1.28E+06	2.5	1.24E+06	0.005
W-40	239.24	60	3.40	0.0124	4.89E+02	7.02E-03	0.005	8.59E+01	0.001	8.59E+01	18.8	3.18E+05	25.5	5.00E+05	20.4
				Total Mass Loading (mg/d) =			**2.05E+03**		**1.36E+03**		**6.66E+06**		**2.52E+07**		**2.28**
			Estimated In-Stream Concentration (mg/L)[5] =				**1.06E-05**		**7.05E-06**		**3.46E+02**		**1.31E-01**		**1.18**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.10E-02**		**4.00E-03**		**3.44E+05**		**2.50E+02**		**1.04**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in July 2011.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 20.5 cfs which is based on an average measured river gauge height of 0.14 feet on July 25, 2011.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JULY 2011 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

nc
Mass Loading (mg/d)
1.29E+03
9.27E+01
2.10E+02
2.82E+02
3.18E+02
8.59E+01
E+03
E-05
E-01

ESTIMATED WALLKILL RIVER FLOW AT THE AL TURI LANDFILL SITE

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/04							
10/12/04							
10/13/04							
10/14/04							
10/15/04							
10/16/04							
10/17/04							
10/18/04	356.00	2.71	6.47E+02			2.71	6.47E+02
10/19/04	355.00	2.51	4.95E+02			2.51	4.95E+02
10/20/04							
10/21/04	356.00	4.34	1.53E+03			4.34	1.53E+03
10/22/04	357.00	3.74	1.11E+03			3.74	1.11E+03
10/23/04	355.80	3.19	7.88E+02			3.19	7.88E+02
10/24/04	356.17	2.82	7.49E+02			2.82	7.49E+02
10/25/04	356.00	2.64	5.91E+02			2.64	5.91E+02
10/26/04	356.00	2.55	5.20E+02			2.55	5.20E+02
10/27/04	356.00	2.47	4.66E+02			2.47	4.66E+02
10/28/04	356.00	2.39	4.19E+02			2.39	4.19E+02
10/29/04	356.00	2.32	3.82E+02			2.32	3.82E+02
10/30/04	356.00	2.26	3.52E+02			2.26	3.52E+02
10/31/04	356.00	2.23	3.40E+02	5.20E+02		2.23	3.40E+02
11/01/04	356.00	2.20	3.27E+02	5.01E+02		2.20	3.27E+02
11/02/04	356.00	2.14	2.99E+02	4.77E+02		2.14	2.99E+02
11/03/04	356.00	2.15	3.06E+02	4.74E+02		2.15	3.06E+02
11/04/04	356.00	2.05	2.66E+02	4.60E+02		2.05	2.66E+02
11/05/04	356.00	2.15	3.06E+02	7.67E+02		2.15	3.06E+02
11/06/04	356.00	2.55	5.23E+02	7.32E+02		2.55	5.23E+02
11/07/04	356.00	2.43	4.42E+02	6.48E+02		2.43	4.42E+02
11/08/04	356.00	2.26	3.55E+02	5.60E+02		2.26	3.55E+02
11/09/04	356.00	2.16	3.08E+02	5.04E+02		2.16	3.08E+02
11/10/04	356.00	2.09	2.79E+02	4.51E+02		2.09	2.79E+02
11/11/04	356.00	2.03	2.58E+02	4.35E+02		2.03	2.58E+02
11/12/04	356.00	2.01	2.51E+02	4.66E+02		2.01	2.51E+02
11/13/04	356.00	2.12	2.93E+02	4.99E+02		2.12	2.93E+02
11/14/04	356.00	2.37	4.08E+02	5.94E+02		2.37	4.08E+02
11/15/04	356.00	2.37	4.11E+02	5.64E+02		2.37	4.11E+02
11/16/04	356.00	2.25	3.49E+02	5.65E+02		2.25	3.49E+02
11/17/04	356.00	2.20	3.25E+02	5.20E+02		2.20	3.25E+02
11/18/04	356.00	2.12	2.94E+02	4.93E+02		2.12	2.94E+02
11/19/04	356.00	2.06	2.68E+02	4.49E+02		2.06	2.68E+02
11/20/04	356.00	2.03	2.59E+02	4.56E+02		2.03	2.59E+02
11/21/04	356.00	2.05	2.66E+02	5.43E+02		2.05	2.66E+02
11/22/04	356.00	2.25	3.50E+02	5.83E+02		2.25	3.50E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/23/04	356.00	2.21	3.29E+02	5.29E+02		2.21	3.29E+02
11/24/04	356.00	2.09	2.80E+02	5.41E+02		2.09	2.80E+02
11/25/04	356.00	2.15	3.03E+02	1.00E+03		2.15	3.03E+02
11/26/04	356.00	2.75	6.82E+02	1.06E+03		2.75	6.82E+02
11/27/04	356.00	2.71	6.43E+02	8.65E+02		2.71	6.43E+02
11/28/04	356.00	2.50	4.86E+02	2.16E+03		2.50	4.86E+02
11/29/04	359.33	5.69	2.75E+03	4.35E+03		5.69	2.75E+03
11/30/04	359.83	6.05	3.14E+03	3.22E+03		6.05	3.14E+03
12/01/04	359.00	5.81	2.87E+03	4.31E+03		5.81	2.87E+03
12/02/04	360.50	6.80	4.05E+03	4.52E+03		6.80	4.05E+03
12/03/04	360.00	6.19	3.30E+03	3.29E+03	3.29E+03	6.19	3.29E+03
12/04/04	359.00	5.69	2.75E+03	2.60E+03	2.60E+03	5.69	2.60E+03
12/05/04	359.00	5.14	2.21E+03	2.11E+03	2.11E+03	5.14	2.11E+03
12/06/04	358.00	4.60	1.74E+03	1.73E+03	1.73E+03	4.60	1.73E+03
12/07/04	358.00	4.19	1.42E+03	1.81E+03		4.19	1.42E+03
12/08/04	358.33	4.65	1.78E+03	2.91E+03		4.65	1.78E+03
12/09/04	358.67	4.99	2.07E+03	2.32E+03		4.99	2.07E+03
12/10/04	358.33	4.93	2.01E+03	3.38E+03		4.93	2.01E+03
12/11/04	359.50	5.92	2.99E+03	4.32E+03		5.92	2.99E+03
12/12/04	359.67	5.94	3.02E+03	3.32E+03		5.94	3.02E+03
12/13/04	359.00	5.41	2.47E+03	2.56E+03		5.41	2.47E+03
12/14/04	358.50	4.94	2.03E+03	2.12E+03		4.94	2.03E+03
12/15/04	358.00	4.42	1.59E+03	1.68E+03		4.42	1.59E+03
12/16/04	357.67	3.98	1.27E+03	1.38E+03		3.98	1.27E+03
12/17/04	357.00	3.63	1.04E+03	1.22E+03		3.63	1.04E+03
12/18/04	357.00	3.43	9.20E+02	1.10E+03		3.43	9.20E+02
12/19/04	357.00	3.24	8.17E+02	1.02E+03		3.24	8.17E+02
12/20/04	356.00	3.18	7.82E+02	9.20E+02		3.18	7.82E+02
12/21/04	354.00			5.82E+02	5.82E+02		5.82E+02
12/22/04				7.49E+02	7.49E+02		7.49E+02
12/23/04	355.67	2.77	7.00E+02	1.47E+03		2.77	7.00E+02
12/24/04	357.83	4.39	1.57E+03	4.00E+03		4.39	1.57E+03
12/25/04	359.00	5.35	2.41E+03	2.57E+03		5.35	2.41E+03
12/26/04	356.67	4.78	1.88E+03	1.71E+03	1.71E+03	4.78	1.71E+03
12/27/04				1.43E+03	1.43E+03		1.43E+03
12/28/04				9.37E+02	9.37E+02		9.37E+02
12/29/04				1.05E+03	1.05E+03		1.05E+03
12/30/04	356.00	3.38	8.93E+02	1.21E+03		3.38	8.93E+02
12/31/04	357.00	3.22	8.04E+02	1.09E+03		3.22	8.04E+02
01/01/05	357.00	3.21	7.98E+02	1.12E+03		3.21	7.98E+02
01/02/05	357.00	3.32	8.60E+02	1.10E+03		3.32	8.60E+02
01/03/05	357.00	3.14	7.64E+02	1.16E+03		3.14	7.64E+02
01/04/05	357.50	3.85	1.18E+03	3.35E+03		3.85	1.18E+03
01/05/05	359.00	5.39	2.44E+03	2.96E+03		5.39	2.44E+03
01/06/05	358.50	4.90	1.99E+03	2.35E+03		4.90	1.99E+03
01/07/05	358.50	4.87	1.97E+03	2.41E+03		4.87	1.97E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/08/05	358.67	4.93	2.02E+03	2.76E+03		4.93	2.02E+03
01/09/05	359.67	5.79	2.85E+03	3.67E+03		5.79	2.85E+03
01/10/05	359.17	5.71	2.78E+03	3.01E+03		5.71	2.78E+03
01/11/05	359.00	5.50	2.56E+03	2.84E+03		5.50	2.56E+03
01/12/05	359.00	5.22	2.28E+03	2.63E+03		5.22	2.28E+03
01/13/05	359.00	5.10	2.17E+03	2.85E+03		5.10	2.17E+03
01/14/05	359.67	5.95	3.03E+03	9.11E+03		5.95	3.03E+03
01/15/05	363.83	10.02	9.34E+03	9.80E+03		10.02	9.34E+03
01/16/05	361.50	9.49	8.32E+03	6.85E+03	6.85E+03	9.49	6.85E+03
01/17/05	354.00			5.59E+03	5.59E+03		5.59E+03
01/18/05	354.00			4.37E+03	4.37E+03		4.37E+03
01/19/05	354.00			3.17E+03	3.17E+03		3.17E+03
01/20/05				2.39E+03	2.39E+03		2.39E+03
01/21/05				1.82E+03	1.82E+03		1.82E+03
01/22/05				2.72E+03	2.72E+03		2.72E+03
01/23/05				9.92E+03	9.92E+03		9.92E+03
01/24/05				1.12E+04	1.12E+04		1.12E+04
01/25/05				1.09E+04	1.09E+04		1.09E+04
01/26/05				1.03E+04	1.03E+04		1.03E+04
01/27/05				9.64E+03	9.64E+03		9.64E+03
01/28/05				8.88E+03	8.88E+03		8.88E+03
01/29/05				8.27E+03	8.27E+03		8.27E+03
01/30/05				7.84E+03	7.84E+03		7.84E+03
01/31/05				7.26E+03	7.26E+03		7.26E+03
02/01/05	354.00			6.75E+03	6.75E+03		6.75E+03
02/02/05	354.00			6.47E+03	6.47E+03		6.47E+03
02/03/05	354.00			5.76E+03	5.76E+03		5.76E+03
02/04/05	354.33	2.63	5.81E+02	5.41E+03		2.63	5.81E+02
02/05/05	356.00	2.61	5.66E+02	5.21E+03		2.61	5.66E+02
02/06/05	356.00	2.63	5.81E+02	4.86E+03		2.63	5.81E+02
02/07/05	356.00	2.65	5.93E+02	4.72E+03		2.65	5.93E+02
02/08/05	356.00	2.70	6.37E+02	4.52E+03		2.70	6.37E+02
02/09/05	356.00	2.80	7.26E+02	4.59E+03		2.80	7.26E+02
02/10/05	356.83	3.17	7.78E+02	7.65E+03		3.17	7.78E+02
02/11/05	358.00	4.45	1.62E+03	8.58E+03		4.45	1.62E+03
02/12/05	358.00	4.16	1.40E+03	6.68E+03		4.16	1.40E+03
02/13/05	357.00	3.64	1.05E+03	4.98E+03		3.64	1.05E+03
02/14/05	357.00	3.32	8.59E+02	3.90E+03		3.32	8.59E+02
02/15/05	357.33	3.58	1.01E+03	9.76E+03		3.58	1.01E+03
02/16/05	359.67	5.91	2.98E+03	5.74E+03		5.91	2.98E+03
02/17/05	360.00	6.33	3.46E+03	4.01E+03		6.33	3.46E+03
02/18/05	359.50	5.91	2.99E+03	2.92E+03	2.92E+03	5.91	2.92E+03
02/19/05	358.00	5.11	2.18E+03	1.97E+03	1.97E+03	5.11	1.97E+03
02/20/05	356.67	4.37	1.56E+03	1.61E+03		4.37	1.56E+03
02/21/05	357.50	3.90	1.22E+03	1.35E+03		3.90	1.22E+03
02/22/05	357.00	3.72	1.10E+03	1.36E+03		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/23/05	357.00	3.65	1.06E+03	1.29E+03		3.65	1.06E+03
02/24/05	357.00	3.52	9.75E+02	1.17E+03		3.52	9.75E+02
02/25/05	357.00	3.32	8.61E+02	1.09E+03		3.32	8.61E+02
02/26/05	357.00	3.18	7.83E+02	9.65E+02		3.18	7.83E+02
02/27/05	356.00	3.03	7.04E+02	9.07E+02		3.03	7.04E+02
02/28/05	356.83	2.93	8.64E+02	8.67E+02		2.93	8.64E+02
03/01/05	356.00	2.82	7.49E+02	8.45E+02		2.82	7.49E+02
03/02/05	356.67	2.91	8.45E+02	8.83E+02		2.91	8.45E+02
03/03/05	356.67	2.93	8.70E+02	8.48E+02	8.48E+02	2.93	8.48E+02
03/04/05	356.00	2.75	6.80E+02	7.68E+02		2.75	6.80E+02
03/05/05	356.00	2.71	6.43E+02	7.41E+02		2.71	6.43E+02
03/06/05	356.00	2.67	6.09E+02	7.37E+02		2.67	6.09E+02
03/07/05	356.00	2.66	6.07E+02	8.00E+02		2.66	6.07E+02
03/08/05	356.67	3.23	8.09E+02	1.73E+03		3.23	8.09E+02
03/09/05	357.33	4.30	1.51E+03	1.84E+03		4.30	1.51E+03
03/10/05	356.75	3.96	1.26E+03	1.48E+03		3.96	1.26E+03
03/11/05	355.20	3.82	1.16E+03	1.30E+03		3.82	1.16E+03
03/12/05	354.60	3.24	8.15E+02	1.12E+03		3.24	8.15E+02
03/13/05	357.00	3.27	8.34E+02	1.11E+03		3.27	8.34E+02
03/14/05	357.00	3.41	9.11E+02	1.20E+03		3.41	9.11E+02
03/15/05	357.00	3.41	9.11E+02	1.22E+03		3.41	9.11E+02
03/16/05	357.00	3.37	8.87E+02	1.28E+03		3.37	8.87E+02
03/17/05	357.00	3.37	8.85E+02	1.26E+03		3.37	8.85E+02
03/18/05	357.00	3.37	8.85E+02	1.36E+03		3.37	8.85E+02
03/19/05	357.00	3.43	9.22E+02	1.42E+03		3.43	9.22E+02
03/20/05	357.00	3.43	9.24E+02	1.41E+03		3.43	9.24E+02
03/21/05	357.00	3.56	9.98E+02	1.50E+03		3.56	9.98E+02
03/22/05	357.33	3.86	1.19E+03	1.66E+03		3.86	1.19E+03
03/23/05	357.17	3.88	1.20E+03	1.74E+03		3.88	1.20E+03
03/24/05	357.17	3.86	1.19E+03	1.63E+03		3.86	1.19E+03
03/25/05	358.00	4.27	1.48E+03	2.01E+03		4.27	1.48E+03
03/26/05	358.00	4.72	1.84E+03	2.34E+03		4.72	1.84E+03
03/27/05	358.00	4.66	1.78E+03	2.17E+03		4.66	1.78E+03
03/28/05	358.17	4.66	1.79E+03	4.34E+03		4.66	1.79E+03
03/29/05	362.17	8.60	6.71E+03	1.16E+04		8.60	6.71E+03
03/30/05	364.00	10.10	9.51E+03	8.78E+03	8.78E+03	10.10	8.78E+03
03/31/05	364.00	9.96	9.22E+03	6.80E+03	6.80E+03	9.96	6.80E+03
04/01/05	362.83	9.34	8.03E+03	5.86E+03	5.86E+03	9.34	5.86E+03
04/02/05	361.67	8.12	5.93E+03	9.07E+03		8.12	5.93E+03
04/03/05	364.00	10.37	1.01E+04	1.68E+04		10.37	1.01E+04
04/04/05	364.00	10.68	1.07E+04	1.10E+04		10.68	1.07E+04
04/05/05	365.00	11.23	1.19E+04	8.69E+03	8.69E+03	11.23	8.69E+03
04/06/05	364.83	11.11	1.17E+04	7.95E+03	7.95E+03	11.11	7.95E+03
04/07/05	364.00	10.44	1.02E+04	6.97E+03	6.97E+03	10.44	6.97E+03
04/08/05	362.67	9.20	7.76E+03	5.86E+03	5.86E+03	9.20	5.86E+03
04/09/05	361.00	7.39	4.84E+03	4.42E+03	4.42E+03	7.39	4.42E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/10/05	359.33	5.82	2.89E+03	3.11E+03		5.82	2.89E+03
04/11/05	358.33	4.72	1.84E+03	2.40E+03		4.72	1.84E+03
04/12/05	357.50	3.91	1.22E+03	1.82E+03		3.91	1.22E+03
04/13/05	357.00	3.50	9.63E+02			3.50	9.63E+02
04/14/05	356.83	3.04	7.10E+02	1.36E+03		3.04	7.10E+02
04/15/05	356.00	2.74	6.69E+02	1.20E+03		2.74	6.69E+02
04/16/05	356.00	2.47	4.68E+02	1.06E+03		2.47	4.68E+02
04/17/05	356.00	2.29	3.70E+02	9.95E+02		2.29	3.70E+02
04/18/05	356.00	2.13	2.97E+02	9.04E+02		2.13	2.97E+02
04/19/05	355.20	2.00	2.50E+02	8.45E+02		2.00	2.50E+02
04/20/05	354.83	1.89	2.13E+02	7.94E+02		1.89	2.13E+02
04/21/05	355.00	1.76	1.81E+02	7.32E+02		1.76	1.81E+02
04/22/05	355.00	1.70	1.66E+02	6.92E+02		1.70	1.66E+02
04/23/05	354.83	1.60	1.46E+02	7.66E+02		1.60	1.46E+02
04/24/05	354.67	1.91	2.21E+02	1.75E+03		1.91	2.21E+02
04/25/05	355.00	2.63	5.81E+02	1.54E+03		2.63	5.81E+02
04/26/05	355.33	2.36	4.06E+02	1.14E+03		2.36	4.06E+02
04/27/05	355.33	2.01	2.52E+02	1.23E+03		2.01	2.52E+02
04/28/05	355.50	2.34	3.94E+02	1.87E+03		2.34	3.94E+02
04/29/05	356.17	2.88	8.16E+02	1.43E+03		2.88	8.16E+02
04/30/05	355.67	2.38	4.14E+02	1.16E+03		2.38	4.14E+02
05/01/05	354.67	2.10	2.83E+02	1.28E+03		2.10	2.83E+02
05/02/05	355.67	2.46	4.62E+02	1.21E+03		2.46	4.62E+02
05/03/05	356.00	2.17	3.11E+02	1.05E+03		2.17	3.11E+02
05/04/05	356.00	2.00	2.49E+02	9.44E+02		2.00	2.49E+02
05/05/05	355.17	1.83	1.98E+02	8.44E+02		1.83	1.98E+02
05/06/05	355.00	1.65	1.56E+02	7.66E+02		1.65	1.56E+02
05/07/05	354.83	1.55	1.35E+02	7.04E+02		1.55	1.35E+02
05/08/05	355.00	1.47	1.22E+02	6.77E+02		1.47	1.22E+02
05/09/05	354.83	1.38	1.08E+02	6.18E+02		1.38	1.08E+02
05/10/05	354.83	1.30	9.69E+01	5.90E+02		1.30	9.69E+01
05/11/05	354.67	1.28	9.43E+01	5.23E+02		1.28	9.43E+01
05/12/05	354.83	1.19	8.42E+01	5.41E+02		1.19	8.42E+01
05/13/05	354.67	1.16	8.07E+01	4.61E+02		1.16	8.07E+01
05/14/05	354.67	1.06	6.99E+01	4.67E+02		1.06	6.99E+01
05/15/05	354.50	1.01	6.61E+01	4.63E+02		1.01	6.61E+01
05/16/05	354.33	1.11	7.52E+01	5.31E+02		1.11	7.52E+01
05/17/05	354.50	1.26	9.25E+01	5.43E+02		1.26	9.25E+01
05/18/05	354.50	1.16	8.08E+01	4.54E+02		1.16	8.08E+01
05/19/05	354.50	1.05	6.91E+01	4.44E+02		1.05	6.91E+01
05/20/05	354.83	0.94	6.00E+01	4.16E+02		0.94	6.00E+01
05/21/05	354.00	0.88	5.50E+01	3.85E+02		0.88	5.50E+01
05/22/05	354.00	0.85	5.27E+01	3.97E+02		0.85	5.27E+01
05/23/05	354.00	0.86	5.36E+01	4.34E+02		0.86	5.36E+01
05/24/05	355.00	0.97	6.19E+01	4.52E+02		0.97	6.19E+01
05/25/05	354.67	0.95	6.05E+01	4.51E+02		0.95	6.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/26/05	354.67	0.98	6.27E+01	4.54E+02		0.98	6.27E+01
05/27/05	354.67	1.01	6.58E+01	4.65E+02		1.01	6.58E+01
05/28/05	354.67	0.97	6.25E+01	4.46E+02		0.97	6.25E+01
05/29/05	354.33	0.90	5.70E+01	5.59E+02		0.90	5.70E+01
05/30/05	354.67	1.15	7.97E+01	5.24E+02		1.15	7.97E+01
05/31/05	354.83	1.00	6.49E+01	4.79E+02		1.00	6.49E+01
06/01/05	354.00	0.85	5.30E+01	3.60E+02		0.85	5.30E+01
06/02/05	354.00	0.78	4.85E+01	3.67E+02		0.78	4.85E+01
06/03/05	354.00	0.70	4.31E+01	3.11E+02		0.70	4.31E+01
06/04/05	354.00	0.67	4.14E+01	2.96E+02		0.67	4.14E+01
06/05/05	354.00	0.73	4.50E+01	3.15E+02		0.73	4.50E+01
06/06/05	354.00	0.80	4.93E+01	3.47E+02		0.80	4.93E+01
06/07/05	354.00	0.74	4.57E+01	3.32E+02		0.74	4.57E+01
06/08/05	354.50	0.97	6.25E+01	3.49E+02		0.97	6.25E+01
06/09/05	354.33	1.02	6.62E+01	3.67E+02		1.02	6.62E+01
06/10/05	354.00	0.69	4.27E+01	3.34E+02		0.69	4.27E+01
06/11/05	354.00	0.65	4.05E+01	3.00E+02		0.65	4.05E+01
06/12/05	354.00			3.46E+02	3.46E+02		3.46E+02
06/13/05	354.00	0.58	3.70E+01	3.16E+02		0.58	3.70E+01
06/14/05	354.00	0.55	3.54E+01	2.59E+02		0.55	3.54E+01
06/15/05	354.00	0.47	3.16E+01	2.23E+02		0.47	3.16E+01
06/16/05	354.00	0.45	3.10E+01	2.19E+02		0.45	3.10E+01
06/17/05	354.00	0.41	2.93E+01	2.66E+02		0.41	2.93E+01
06/18/05	354.00	0.84	5.26E+01	2.86E+02		0.84	5.26E+01
06/19/05	354.00	0.87	5.41E+01	3.10E+02		0.87	5.41E+01
06/20/05	354.00	0.74	4.58E+01	2.86E+02		0.74	4.58E+01
06/21/05	354.00	0.61	3.82E+01	2.40E+02		0.61	3.82E+01
06/22/05	354.00	0.59	3.74E+01	2.10E+02		0.59	3.74E+01
06/23/05	354.00	0.58	3.71E+01	2.06E+02		0.58	3.71E+01
06/24/05	354.50	0.90	5.66E+01	2.98E+02		0.90	5.66E+01
06/25/05	354.00	0.67	4.18E+01	2.61E+02		0.67	4.18E+01
06/26/05	354.00	0.56	3.58E+01	2.08E+02		0.56	3.58E+01
06/27/05	354.00	0.51	3.36E+01	1.61E+02		0.51	3.36E+01
06/28/05	354.00	0.49	3.26E+01	1.65E+02		0.49	3.26E+01
06/29/05	354.00	0.52	3.41E+01	2.35E+02		0.52	3.41E+01
06/30/05	354.33	0.91	5.71E+01	2.60E+02		0.91	5.71E+01
07/01/05	355.00	1.82	1.96E+02	5.36E+02		1.82	1.96E+02
07/02/05	354.33	1.69	1.63E+02	6.48E+02		1.69	1.63E+02
07/03/05	355.00	1.24	8.98E+01	4.29E+02		1.24	8.98E+01
07/04/05	354.33	0.84	5.22E+01	2.91E+02		0.84	5.22E+01
07/05/05	354.00	0.65	4.05E+01	2.41E+02		0.65	4.05E+01
07/06/05	354.00	0.58	3.68E+01	1.97E+02		0.58	3.68E+01
07/07/05	354.00	0.62	3.90E+01	1.67E+02		0.62	3.90E+01
07/08/05	354.00	0.68	4.21E+01	2.69E+02		0.68	4.21E+01
07/09/05	354.50	1.11	7.47E+01	4.95E+02		1.11	7.47E+01
07/10/05	356.00	2.07	2.72E+02	6.46E+02		2.07	2.72E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/11/05	354.83	1.75	1.78E+02	4.99E+02		1.75	1.78E+02
07/12/05	354.00			3.63E+02	3.63E+02		3.63E+02
07/13/05	354.33	0.90	5.67E+01	3.52E+02		0.90	5.67E+01
07/14/05	354.00	0.71	4.41E+01	2.48E+02		0.71	4.41E+01
07/15/05	354.00	0.63	3.96E+01	1.85E+02		0.63	3.96E+01
07/16/05	354.00	0.63	3.94E+01	1.57E+02		0.63	3.94E+01
07/17/05	354.00	0.77	4.76E+01	2.13E+02		0.77	4.76E+01
07/18/05	354.00	0.68	4.23E+01	3.81E+02		0.68	4.23E+01
07/19/05	354.00	0.61	3.83E+01	3.81E+02		0.61	3.83E+01
07/20/05	354.50	0.88	5.52E+01	3.16E+02		0.88	5.52E+01
07/21/05	354.83	0.94	6.00E+01	2.80E+02		0.94	6.00E+01
07/22/05	354.00	0.71	4.39E+01	2.14E+02		0.71	4.39E+01
07/23/05	354.00	0.55	3.55E+01	1.73E+02		0.55	3.55E+01
07/24/05	354.00	0.47	3.20E+01	1.25E+02		0.47	3.20E+01
07/25/05	354.00	0.49	3.27E+01	1.20E+02		0.49	3.27E+01
07/26/05	354.00	0.43	2.99E+01	1.16E+02		0.43	2.99E+01
07/27/05	354.00	0.42	2.98E+01	1.04E+02		0.42	2.98E+01
07/28/05	354.00	0.42	2.96E+01	1.02E+02		0.42	2.96E+01
07/29/05	354.00	0.44	3.06E+01	9.00E+01		0.44	3.06E+01
07/30/05	354.00	0.44	3.03E+01	9.30E+01		0.44	3.03E+01
07/31/05	354.00			8.70E+01	8.70E+01		8.70E+01
08/01/05	354.00	0.40	2.88E+01	7.90E+01		0.40	2.88E+01
08/02/05	354.00	0.36	2.75E+01	7.80E+01		0.36	2.75E+01
08/03/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/04/05	354.00	0.34	2.66E+01	7.00E+01		0.34	2.66E+01
08/05/05	354.00	0.34	2.65E+01	6.60E+01		0.34	2.65E+01
08/06/05	354.00	0.34	2.66E+01	6.30E+01		0.34	2.66E+01
08/07/05	354.00	0.35	2.71E+01	5.90E+01		0.35	2.71E+01
08/08/05	354.00	0.34	2.67E+01	5.90E+01		0.34	2.67E+01
08/09/05	354.00	0.32	2.59E+01	6.00E+01		0.32	2.59E+01
08/10/05	354.00	0.33	2.64E+01	5.80E+01		0.33	2.64E+01
08/11/05	354.00	0.35	2.71E+01	5.40E+01		0.35	2.71E+01
08/12/05	354.00	0.31	2.57E+01	5.40E+01		0.31	2.57E+01
08/13/05	354.00			5.50E+01	5.50E+01		5.50E+01
08/14/05	354.00	0.36	2.73E+01	6.30E+01		0.36	2.73E+01
08/15/05	354.00	0.36	2.75E+01	7.40E+01		0.36	2.75E+01
08/16/05	354.00	0.44	3.06E+01	7.40E+01		0.44	3.06E+01
08/17/05	354.00	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
08/18/05	354.00	0.38	2.82E+01	8.70E+01		0.38	2.82E+01
08/19/05	354.00	0.36	2.76E+01	7.80E+01		0.36	2.76E+01
08/20/05	354.00	0.35	2.69E+01	7.50E+01		0.35	2.69E+01
08/21/05	354.00	0.35	2.70E+01	7.20E+01		0.35	2.70E+01
08/22/05	354.00	0.37	2.78E+01	6.70E+01		0.37	2.78E+01
08/23/05	354.00	0.34	2.68E+01	6.30E+01		0.34	2.68E+01
08/24/05	354.00	0.32	2.61E+01	6.10E+01		0.32	2.61E+01
08/25/05	354.00	0.18	2.15E+01	5.30E+01		0.18	2.15E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/26/05	354.00	0.16	2.09E+01	4.90E+01		0.16	2.09E+01
08/27/05	354.00	0.14	2.04E+01	4.70E+01		0.14	2.04E+01
08/28/05	354.00	0.15	2.05E+01	4.80E+01		0.15	2.05E+01
08/29/05	354.00	0.21	2.23E+01	5.20E+01		0.21	2.23E+01
08/30/05	354.00	0.28	2.47E+01	5.20E+01		0.28	2.47E+01
08/31/05	354.00	0.32	2.58E+01			0.32	2.58E+01
09/01/05	354.00	0.28	2.47E+01	6.00E+01		0.28	2.47E+01
09/02/05	354.00	0.25	2.38E+01	7.20E+01		0.25	2.38E+01
09/03/05	354.00	0.24	2.34E+01	6.70E+01		0.24	2.34E+01
09/04/05	354.00	0.20	2.22E+01	5.60E+01		0.20	2.22E+01
09/05/05	354.00	0.19	2.19E+01	4.90E+01		0.19	2.19E+01
09/06/05	354.00	0.15	2.07E+01	4.70E+01		0.15	2.07E+01
09/07/05	354.00	0.11	1.96E+01	4.50E+01		0.11	1.96E+01
09/08/05	354.00	0.09	1.90E+01	4.30E+01		0.09	1.90E+01
09/09/05	354.00	0.06	1.84E+01	4.20E+01		0.06	1.84E+01
09/10/05	354.00	0.04	1.79E+01	4.00E+01		0.04	1.79E+01
09/11/05	354.00	0.02	1.74E+01	4.00E+01		0.02	1.74E+01
09/12/05	354.00	0.04	1.78E+01	3.70E+01		0.04	1.78E+01
09/13/05	354.00	0.07	1.87E+01	3.60E+01		0.07	1.87E+01
09/14/05	354.00	0.06	1.83E+01	3.50E+01		0.06	1.83E+01
09/15/05	354.00	0.06	1.83E+01	4.00E+01		0.06	1.83E+01
09/16/05	354.00	0.14	2.05E+01	3.90E+01		0.14	2.05E+01
09/17/05	354.00	0.20	2.21E+01	3.90E+01		0.20	2.21E+01
09/18/05	354.00	0.27	2.42E+01	3.80E+01		0.27	2.42E+01
09/19/05	354.00	0.28	2.46E+01	4.00E+01		0.28	2.46E+01
09/20/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/21/05	354.00	0.26	2.40E+01	4.00E+01		0.26	2.40E+01
09/22/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
09/23/05	354.00	0.19	2.18E+01	4.10E+01		0.19	2.18E+01
09/24/05	354.00	0.16	2.10E+01	4.00E+01		0.16	2.10E+01
09/25/05	354.00	0.15	2.06E+01	3.90E+01		0.15	2.06E+01
09/26/05	354.00	0.17	2.12E+01	4.10E+01		0.17	2.12E+01
09/27/05	354.00	0.17	2.12E+01	4.30E+01		0.17	2.12E+01
09/28/05	354.00	0.17	2.12E+01	4.50E+01		0.17	2.12E+01
09/29/05	354.00	0.19	2.19E+01	4.40E+01		0.19	2.19E+01
09/30/05	354.00	0.21	2.25E+01	4.30E+01		0.21	2.25E+01
10/01/05	354.00	0.23	2.30E+01	4.00E+01		0.23	2.30E+01
10/02/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/03/05	354.00	0.22	2.27E+01	4.10E+01		0.22	2.27E+01
10/04/05	354.00	0.25	2.35E+01	4.10E+01		0.25	2.35E+01
10/05/05	354.00	0.23	2.30E+01	4.10E+01		0.23	2.30E+01
10/06/05	354.00	0.20	2.20E+01	4.00E+01		0.20	2.20E+01
10/07/05	354.00	0.20	2.21E+01	4.00E+01		0.20	2.21E+01
10/08/05	354.00	0.28	2.46E+01	2.89E+03		0.28	2.46E+01
10/09/05	359.40	5.56	2.61E+03	1.20E+04		5.56	2.61E+03
10/10/05				6.98E+03	6.98E+03		6.98E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/11/05	361.00	7.57	5.10E+03	4.95E+03	4.95E+03	7.57	4.95E+03
10/12/05				5,830	5.83E+03		5.83E+03
10/13/05				14,700	1.47E+04		1.47E+04
10/14/05				12,700	1.27E+04		1.27E+04
10/15/05				13,200	1.32E+04		1.32E+04
10/16/05				9,720	9.72E+03		9.72E+03
10/17/05				8,130	8.13E+03		8.13E+03
10/18/05				7,120	7.12E+03		7.12E+03
10/19/05				6,000	6.00E+03		6.00E+03
10/20/05				4,700	4.70E+03		4.70E+03
10/21/05				3,050	3.05E+03		3.05E+03
10/22/05				1,880	1.88E+03		1.88E+03
10/23/05				3,630	3.63E+03		3.63E+03
10/24/05				3,220	3.22E+03		3.22E+03
10/25/05				4,140	4.14E+03		4.14E+03
10/26/05				4,770	4.77E+03		4.77E+03
10/27/05				4,090	4.09E+03		4.09E+03
10/28/05				3,410	3.41E+03		3.41E+03
10/29/05				2,820	2.82E+03		2.82E+03
10/30/05				2,240	2.24E+03		2.24E+03
10/31/05				1,780	1.78E+03		1.78E+03
11/01/05				1,480	1.48E+03		1.48E+03
11/02/05				1,280	1.28E+03		1.28E+03
11/03/05				1,120	1.12E+03		1.12E+03
11/04/05				993	9.93E+02		9.93E+02
11/05/05				926	9.26E+02		9.26E+02
11/06/05				842	8.42E+02		8.42E+02
11/07/05				807	8.07E+02		8.07E+02
11/08/05				729	7.29E+02		7.29E+02
11/09/05				735	7.35E+02		7.35E+02
11/10/05				1,040	1.04E+03		1.04E+03
11/11/05				1,050	1.05E+03		1.05E+03
11/12/05				891	8.91E+02		8.91E+02
11/13/05				772	7.72E+02		7.72E+02
11/14/05				688	6.88E+02		6.88E+02
11/15/05				672	6.72E+02		6.72E+02
11/16/05				724	7.24E+02		7.24E+02
11/17/05				1,730	1.73E+03		1.73E+03
11/18/05				1,740	1.74E+03		1.74E+03
11/19/05				1,390	1.39E+03		1.39E+03
11/20/05				1,110	1.11E+03		1.11E+03
11/21/05				953	9.53E+02		9.53E+02
11/22/05				1,510	1.51E+03		1.51E+03
11/23/05				2,310	2.31E+03		2.31E+03
11/24/05				1,780	1.78E+03		1.78E+03
11/25/05				1,490	1.49E+03		1.49E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/26/05				1,210	1.21E+03		1.21E+03
11/27/05				1,050	1.05E+03		1.05E+03
11/28/05				998	9.98E+02		9.98E+02
11/29/05				973	9.73E+02		9.73E+02
11/30/05				6,390	6.39E+03		6.39E+03
12/01/05				4,570	4.57E+03		4.57E+03
12/02/05				3,310	3.31E+03		3.31E+03
12/03/05				2,570	2.57E+03		2.57E+03
12/04/05				2,000	2.00E+03		2.00E+03
12/05/05				1,630	1.63E+03		1.63E+03
12/06/05				1,420	1.42E+03		1.42E+03
12/07/05				1,250	1.25E+03		1.25E+03
12/08/05				1,060	1.06E+03		1.06E+03
12/09/05				960	9.60E+02		9.60E+02
12/10/05				972	9.72E+02		9.72E+02
12/11/05				983	9.83E+02		9.83E+02
12/12/05				992	9.92E+02		9.92E+02
12/13/05				848	8.48E+02		8.48E+02
12/14/05				Ice			
12/15/05				Ice			
12/16/05				Ice			
12/17/05				Ice			
12/18/05				Ice			
12/19/05				Ice			
12/20/05				Ice			
12/21/05				Ice			
12/22/05				Ice			
12/23/05				Ice			
12/24/05				Ice			
12/25/05				Ice			
12/26/05				Ice			
12/27/05				Ice			
12/28/05				Ice			
12/29/05				Ice			
12/30/05				Ice			
12/31/05				Ice			
01/01/06	358.32	4.23	1.45E+03	ice		4.23	1.45E+03
01/02/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/03/06	358.42	4.33	1.53E+03	ice		4.33	1.53E+03
01/04/06	359.32	5.23	2.29E+03	ice		5.23	2.29E+03
01/05/06	359.35	5.26	2.32E+03	ice		5.26	2.32E+03
01/06/06	359.38	5.29	2.35E+03	ice		5.29	2.35E+03
01/07/06	358.91	4.82	1.92E+03	ice		4.82	1.92E+03
01/08/06	358.29	4.20	1.43E+03	ice		4.20	1.43E+03
01/09/06	357.87	3.78	1.14E+03	ice		3.78	1.14E+03
01/10/06	357.81	3.72	1.10E+03	ice		3.72	1.10E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
01/11/06	357.83	3.74	1.11E+03	ice		3.74	1.11E+03
01/12/06	358.79	4.70	1.82E+03	3.01E+03		4.70	1.82E+03
01/13/06	359.00	4.91	2.00E+03	3.11E+03		4.91	2.00E+03
01/14/06	359.05	4.96	2.05E+03	3.55E+03		4.96	2.05E+03
01/15/06	359.77	5.68	2.74E+03	4.66E+03		5.68	2.74E+03
01/16/06	359.24	5.15	2.22E+03	3.17E+03		5.15	2.22E+03
01/17/06	360.20	6.11	3.21E+03	2.62E+03	2.62E+03	6.11	2.62E+03
01/18/06	359.83	5.74	2.80E+03	5.40E+03		5.74	2.80E+03
01/19/06	362.07	7.98	5.72E+03	7.34E+03		7.98	5.72E+03
01/20/06	361.87	7.78	5.41E+03	5.47E+03		7.78	5.41E+03
01/21/06	361.37	7.28	4.68E+03	4.71E+03		7.28	4.68E+03
01/22/06	360.65	6.56	3.74E+03	4.01E+03		6.56	3.74E+03
01/23/06	359.69	5.60	2.66E+03	3.25E+03		5.60	2.66E+03
01/24/06	359.35	5.26	2.32E+03	2.82E+03		5.26	2.32E+03
01/25/06	359.06	4.97	2.05E+03	2.62E+03		4.97	2.05E+03
01/26/06	358.64	4.55	1.70E+03	2.32E+03		4.55	1.70E+03
01/27/06	358.04	3.95	1.25E+03	1.87E+03		3.95	1.25E+03
01/28/06	357.59	3.50	9.65E+02	1.63E+03		3.50	9.65E+02
01/29/06	357.48	3.39	8.96E+02	1.64E+03		3.39	8.96E+02
01/30/06	357.70	3.61	1.03E+03	1.97E+03		3.61	1.03E+03
01/31/06	358.11	4.02	1.30E+03	2.53E+03		4.02	1.30E+03
02/01/06	358.24	4.15	1.39E+03	2.41E+03		4.15	1.39E+03
02/02/06	357.86	3.77	1.13E+03	1.97E+03		3.77	1.13E+03
02/03/06	357.92	3.83	1.17E+03	2.82E+03		3.83	1.17E+03
02/04/06	358.99	4.90	2.00E+03	3.46E+03		4.90	2.00E+03
02/05/06	359.50	5.45	2.51E+03	4.35E+03		5.45	2.51E+03
02/06/06	359.31	5.22	2.28E+03			5.22	2.28E+03
02/07/06	358.69	4.60	1.74E+03			4.60	1.74E+03
02/08/06	358.16	4.07	1.33E+03			4.07	1.33E+03
02/09/06	357.65	3.56	1.00E+03			3.56	1.00E+03
02/10/06	357.29	3.20	7.92E+02			3.20	7.92E+02
02/11/06	357.04	2.95	8.94E+02			2.95	8.94E+02
02/12/06	356.87	2.78	7.14E+02			2.78	7.14E+02
02/13/06	356.71	2.62	5.76E+02			2.62	5.76E+02
02/14/06	356.72	2.63	5.79E+02			2.63	5.79E+02
02/15/06	356.65	2.56	5.27E+02			2.56	5.27E+02
02/16/06	356.77	2.68	6.20E+02			2.68	6.20E+02
02/17/06	357.01	2.92	8.63E+02			2.92	8.63E+02
02/18/06	357.02	2.93	8.72E+02			2.93	8.72E+02
02/19/06	356.53	2.44	4.48E+02			2.44	4.48E+02
02/20/06	356.23	2.14	3.01E+02			2.14	3.01E+02
02/21/06	356.14	2.05	2.67E+02			2.05	2.67E+02
02/22/06	356.04	1.95	2.31E+02			1.95	2.31E+02
02/23/06	355.97	1.88	2.11E+02			1.88	2.11E+02
02/24/06	355.97	1.88	2.12E+02			1.88	2.12E+02
02/25/06	355.86	1.77	1.84E+02			1.77	1.84E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
02/26/06	355.79	1.70	1.66E+02			1.70	1.66E+02
02/27/06	355.60	1.51	1.29E+02			1.51	1.29E+02
02/28/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/01/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/02/06	355.53	1.44	1.17E+02			1.44	1.17E+02
03/03/06	355.44	1.35	1.04E+02			1.35	1.04E+02
03/04/06	355.52	1.43	1.16E+02			1.43	1.16E+02
03/05/06	355.57	1.48	1.24E+02			1.48	1.24E+02
03/06/06	355.56	1.47	1.22E+02			1.47	1.22E+02
03/07/06	355.58	1.49	1.26E+02			1.49	1.26E+02
03/08/06	355.57	1.48	1.23E+02			1.48	1.23E+02
03/09/06	355.58	1.49	1.25E+02			1.49	1.25E+02
03/10/06	355.66	1.57	1.39E+02			1.57	1.39E+02
03/11/06	355.90	1.81	1.92E+02			1.81	1.92E+02
03/12/06	355.85	1.76	1.80E+02			1.76	1.80E+02
03/13/06	355.96	1.87	2.08E+02			1.87	2.08E+02
03/14/06	356.56	2.47	4.71E+02			2.47	4.71E+02
03/15/06	356.47	2.38	4.16E+02			2.38	4.16E+02
03/16/06	355.98	1.89	2.16E+02			1.89	2.16E+02
03/17/06	355.75	1.66	1.57E+02			1.66	1.57E+02
03/18/06	355.64	1.55	1.36E+02			1.55	1.36E+02
03/19/06	355.53	1.44	1.18E+02			1.44	1.18E+02
03/20/06	355.48	1.39	1.10E+02			1.39	1.10E+02
03/21/06	355.41	1.32	9.91E+01			1.32	9.91E+01
03/22/06	355.37	1.28	9.39E+01			1.28	9.39E+01
03/23/06	355.34	1.25	9.10E+01			1.25	9.10E+01
03/24/06	355.29	1.20	8.51E+01			1.20	8.51E+01
03/25/06	355.27	1.18	8.29E+01			1.18	8.29E+01
03/26/06	355.29	1.20	8.49E+01			1.20	8.49E+01
03/27/06	355.33	1.24	8.94E+01			1.24	8.94E+01
03/28/06	355.27	1.18	8.23E+01			1.18	8.23E+01
03/29/06	355.23	1.14	7.83E+01			1.14	7.83E+01
03/30/06	355.20	1.11	7.56E+01			1.11	7.56E+01
03/31/06	355.15	1.06	7.03E+01			1.06	7.03E+01
04/01/06	355.11	1.02	6.70E+01			1.02	6.70E+01
04/02/06	355.14	1.05	6.94E+01			1.05	6.94E+01
04/03/06							
04/04/06							
04/05/06							
04/06/06							
04/07/06							
04/08/06							
04/09/06							
04/10/06							
04/11/06							
04/12/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
04/13/06							
04/14/06							
04/15/06							
04/16/06							
04/17/06							
04/18/06							
04/19/06							
04/20/06							
04/21/06							
04/22/06							
04/23/06							
04/24/06							
04/25/06							
04/26/06							
04/27/06							
04/28/06							
04/29/06							
04/30/06							
05/01/06							
05/02/06							
05/03/06							
05/04/06							
05/05/06							
05/06/06							
05/07/06							
05/08/06							
05/09/06							
05/10/06							
05/11/06							
05/12/06							
05/13/06							
05/14/06							
05/15/06							
05/16/06							
05/17/06							
05/18/06							
05/19/06							
05/20/06							
05/21/06							
05/22/06							
05/23/06							
05/24/06							
05/25/06							
05/26/06							
05/27/06							
05/28/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
05/29/06							
05/30/06							
05/31/06							
06/01/06	355.38	1.29	9.59E+01			1.29	9.59E+01
06/02/06	355.81	1.72	1.72E+02			1.72	1.72E+02
06/03/06	356.27	2.18	3.18E+02			2.18	3.18E+02
06/04/06	356.86	2.77	7.00E+02			2.77	7.00E+02
06/05/06	356.82	2.73	6.61E+02			2.73	6.61E+02
06/06/06	356.43	2.34	3.91E+02			2.34	3.91E+02
06/07/06	356.27	2.18	3.17E+02			2.18	3.17E+02
06/08/06	358.87	4.78	1.89E+03			4.78	1.89E+03
06/09/06	358.96	4.87	1.96E+03			4.87	1.96E+03
06/10/06	358.58	4.49	1.65E+03			4.49	1.65E+03
06/11/06	357.98	3.89	1.21E+03			3.89	1.21E+03
06/12/06	357.26	3.17	7.78E+02			3.17	7.78E+02
06/13/06	356.79	2.70	6.34E+02			2.70	6.34E+02
06/14/06	356.40	2.31	3.75E+02			2.31	3.75E+02
06/15/06	356.25	2.16	3.09E+02			2.16	3.09E+02
06/16/06	356.14	2.05	2.65E+02			2.05	2.65E+02
06/17/06	355.83	1.74	1.76E+02			1.74	1.76E+02
06/18/06	355.61	1.52	1.31E+02			1.52	1.31E+02
06/19/06	355.47	1.38	1.07E+02			1.38	1.07E+02
06/20/06	355.43	1.34	1.02E+02			1.34	1.02E+02
06/21/06	355.44	1.35	1.03E+02			1.35	1.03E+02
06/22/06	355.29	1.20	8.53E+01			1.20	8.53E+01
06/23/06	355.20	1.11	7.47E+01			1.11	7.47E+01
06/24/06	355.60	1.51	1.29E+02			1.51	1.29E+02
06/25/06	356.30	2.21	3.30E+02			2.21	3.30E+02
06/26/06	357.75	3.66	1.06E+03			3.66	1.06E+03
06/27/06	359.71	5.62	2.68E+03			5.62	2.68E+03
06/28/06	360.97	6.88	4.15E+03			6.88	4.15E+03
06/29/06	362.39	8.30	6.22E+03			8.30	6.22E+03
06/30/06	362.14	8.05	5.82E+03			8.05	5.82E+03
07/01/06	361.52	7.43	4.89E+03			7.43	4.89E+03
07/02/06	360.70	6.61	3.80E+03			6.61	3.80E+03
07/03/06	359.75	5.66	2.72E+03			5.66	2.72E+03
07/04/06	358.74	4.65	1.78E+03			4.65	1.78E+03
07/05/06	357.91	3.82	1.16E+03			3.82	1.16E+03
07/06/06	357.21	3.12	7.52E+02			3.12	7.52E+02
07/07/06	356.77	2.68	6.23E+02			2.68	6.23E+02
07/08/06	356.35	2.26	3.53E+02			2.26	3.53E+02
07/09/06	356.03	1.94	2.30E+02			1.94	2.30E+02
07/10/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/11/06	355.62	1.53	1.32E+02			1.53	1.32E+02
07/12/06	355.79	1.70	1.67E+02			1.70	1.67E+02
07/13/06	356.18	2.09	2.81E+02			2.09	2.81E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
07/14/06	356.25	2.16	3.07E+02			2.16	3.07E+02
07/15/06	355.85	1.76	1.81E+02			1.76	1.81E+02
07/16/06	355.61	1.52	1.31E+02			1.52	1.31E+02
07/17/06	355.45	1.36	1.05E+02			1.36	1.05E+02
07/18/06	355.31	1.22	8.72E+01			1.22	8.72E+01
07/19/06	355.22	1.13	7.68E+01			1.13	7.68E+01
07/20/06	355.11	1.02	6.65E+01			1.02	6.65E+01
07/21/06	355.05	0.96	6.11E+01			0.96	6.11E+01
07/22/06	355.44	1.35	1.04E+02			1.35	1.04E+02
07/23/06	355.92	1.83	1.99E+02			1.83	1.99E+02
07/24/06	355.75	1.66	1.58E+02			1.66	1.58E+02
07/25/06	355.35	1.26	9.21E+01			1.26	9.21E+01
07/26/06	355.14	1.05	6.94E+01			1.05	6.94E+01
07/27/06	355.00	0.91	5.78E+01			0.91	5.78E+01
07/28/06	355.10	1.01	6.56E+01			1.01	6.56E+01
07/29/06	355.48	1.39	1.10E+02			1.39	1.10E+02
07/30/06	355.34	1.25	9.04E+01			1.25	9.04E+01
07/31/06	355.08	0.99	6.39E+01			0.99	6.39E+01
08/01/06	354.90	0.81	5.04E+01			0.81	5.04E+01
08/02/06	354.79	0.70	4.33E+01			0.70	4.33E+01
08/03/06	354.71	0.62	3.89E+01			0.62	3.89E+01
08/04/06	354.78	0.69	4.25E+01			0.69	4.25E+01
08/05/06	354.86	0.77	4.73E+01			0.77	4.73E+01
08/06/06	354.72	0.63	3.92E+01			0.63	3.92E+01
08/07/06	354.60	0.51	3.35E+01			0.51	3.35E+01
08/08/06	354.60	0.51	3.36E+01			0.51	3.36E+01
08/09/06	354.61	0.52	3.40E+01			0.52	3.40E+01
08/10/06	354.51	0.42	2.97E+01			0.42	2.97E+01
08/11/06	354.65	0.56	3.58E+01			0.56	3.58E+01
08/12/06	354.78	0.69	4.26E+01			0.69	4.26E+01
08/13/06	354.62	0.53	3.43E+01			0.53	3.43E+01
08/14/06	354.51	0.42	2.95E+01			0.42	2.95E+01
08/15/06	354.51	0.42	2.99E+01			0.42	2.99E+01
08/16/06	354.70	0.61	3.81E+01			0.61	3.81E+01
08/17/06	354.66	0.57	3.62E+01			0.57	3.62E+01
08/18/06	354.52	0.43	3.01E+01			0.43	3.01E+01
08/19/06	354.46	0.37	2.79E+01			0.37	2.79E+01
08/20/06	354.47	0.38	2.80E+01			0.38	2.80E+01
08/21/06	354.45	0.36	2.73E+01			0.36	2.73E+01
08/22/06	354.43	0.34	2.66E+01			0.34	2.66E+01
08/23/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/24/06	354.39	0.30	2.53E+01			0.30	2.53E+01
08/25/06	354.41	0.32	2.59E+01			0.32	2.59E+01
08/26/06	354.50	0.41	2.91E+01			0.41	2.91E+01
08/27/06	354.69	0.60	3.76E+01			0.60	3.76E+01
08/28/06	356.32	2.23	3.41E+02			2.23	3.41E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
08/29/06	357.24	3.15	7.65E+02			3.15	7.65E+02
08/30/06	358.44	4.35	1.54E+03			4.35	1.54E+03
08/31/06	358.08	3.99	1.27E+03			3.99	1.27E+03
09/01/06	357.40	3.31	8.52E+02			3.31	8.52E+02
09/02/06	356.56	2.47	4.71E+02			2.47	4.71E+02
09/03/06	357.74	3.65	1.05E+03			3.65	1.05E+03
09/04/06	357.96	3.87	1.20E+03			3.87	1.20E+03
09/05/06	357.51	3.42	9.14E+02			3.42	9.14E+02
09/06/06	357.03	2.94	8.76E+02			2.94	8.76E+02
09/07/06	356.62	2.53	5.10E+02			2.53	5.10E+02
09/08/06	356.20	2.11	2.88E+02			2.11	2.88E+02
09/09/06	355.83	1.74	1.76E+02			1.74	1.76E+02
09/10/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/11/06	355.44	1.35	1.03E+02			1.35	1.03E+02
09/12/06	355.27	1.18	8.30E+01			1.18	8.30E+01
09/13/06	355.17	1.08	7.21E+01			1.08	7.21E+01
09/14/06	355.17	1.08	7.19E+01			1.08	7.19E+01
09/15/06	357.75	3.66	1.06E+03			3.66	1.06E+03
09/16/06	359.53	5.44	2.49E+03			5.44	2.49E+03
09/17/06	358.76	4.67	1.80E+03			4.67	1.80E+03
09/18/06	357.91	3.82	1.16E+03			3.82	1.16E+03
09/19/06	357.09	3.00	9.52E+02			3.00	9.52E+02
09/20/06	356.53	2.44	4.50E+02			2.44	4.50E+02
09/21/06	356.10	2.01	2.51E+02			2.01	2.51E+02
09/22/06	355.81	1.72	1.70E+02			1.72	1.70E+02
09/23/06	355.63	1.54	1.33E+02			1.54	1.33E+02
09/24/06	355.58	1.49	1.25E+02			1.49	1.25E+02
09/25/06	355.49	1.40	1.11E+02			1.40	1.11E+02
09/26/06	355.41	1.32	9.98E+01			1.32	9.98E+01
09/27/06	355.34	1.25	9.10E+01			1.25	9.10E+01
09/28/06	355.26	1.17	8.10E+01			1.17	8.10E+01
09/29/06	355.31	1.22	8.67E+01			1.22	8.67E+01
09/30/06	355.53	1.44	1.17E+02			1.44	1.17E+02
10/01/06	355.57	1.48	1.24E+02			1.48	1.24E+02
10/02/06	355.79	1.70	1.65E+02			1.70	1.65E+02
10/03/06	355.60	1.51	1.29E+02			1.51	1.29E+02
10/04/06	355.44	1.35	1.03E+02			1.35	1.03E+02
10/05/06	355.42	1.33	1.01E+02			1.33	1.01E+02
10/06/06	355.62	1.53	1.32E+02			1.53	1.32E+02
10/07/06	355.43	1.34	1.03E+02			1.34	1.03E+02
10/08/06	355.32	1.23	8.84E+01			1.23	8.84E+01
10/09/06	355.22	1.13	7.71E+01			1.13	7.71E+01
10/10/06	355.14	1.05	6.93E+01			1.05	6.93E+01
10/11/06	355.08	0.99	6.37E+01			0.99	6.37E+01
10/12/06							
10/13/06							

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/14/06							
10/15/06							
10/16/06	354.09						
10/17/2006	355.45	1.36	1.06E+02	5.32E+02		1.36	1.06E+02
10/18/2006	356.23	2.14	2.99E+02	1.63E+03		2.14	2.99E+02
10/19/2006	356.67	2.58	5.45E+02	1.33E+03		2.58	5.45E+02
10/20/2006	356.52	2.43	4.46E+02	1.33E+03		2.43	4.46E+02
10/21/2006	357.01	2.92	8.63E+02	1.59E+03		2.92	8.63E+02
10/22/2006	356.70	2.61	5.65E+02	1.28E+03		2.61	5.65E+02
10/23/2006	356.30	2.21	3.32E+02	1.05E+03		2.21	3.32E+02
10/24/2006	356.14	2.05	2.66E+02	8.85E+02		2.05	2.66E+02
10/25/2006	355.92	1.83	1.98E+02	7.67E+02		1.83	1.98E+02
10/26/2006	355.77	1.68	1.61E+02	6.73E+02		1.68	1.61E+02
10/27/2006	355.66	1.57	1.39E+02	5.96E+02		1.57	1.39E+02
10/28/2006	357.61	3.52	9.77E+02	5.70E+03		3.52	9.77E+02
10/29/2006	360.71	6.62	3.82E+03	6.47E+03		6.62	3.82E+03
10/30/2006	359.82	5.73	2.80E+03	3.99E+03		5.73	2.80E+03
10/31/2006	359.03	4.94	2.03E+03	2.77E+03		4.94	2.03E+03
11/1/2006	358.17	4.08	1.34E+03	2.12E+03		4.08	1.34E+03
11/2/2006	357.60	3.51	9.71E+02	1.97E+03		3.51	9.71E+02
11/3/2006	357.55	3.46	9.41E+02	1.86E+03		3.46	9.41E+02
11/4/2006	357.11	3.02	7.00E+02	1.48E+03		3.02	7.00E+02
11/5/2006	356.72	2.63	5.77E+02	1.24E+03		2.63	5.77E+02
11/6/2006	356.46	2.37	4.07E+02	1.02E+03		2.37	4.07E+02
11/7/2006	356.31	2.22	3.36E+02	9.51E+02		2.22	3.36E+02
11/8/2006	356.88	2.79	7.16E+02	2.52E+03		2.79	7.16E+02
11/9/2006	360.90	6.81	4.06E+03	6.68E+03		6.81	4.06E+03
11/10/2006	360.37	6.28	3.40E+03	4.65E+03		6.28	3.40E+03
11/11/2006	359.81	5.72	2.78E+03	3.40E+03		5.72	2.78E+03
11/12/2006	359.19	5.10	2.17E+03	2.74E+03		5.10	2.17E+03
11/13/2006	358.51	4.42	1.60E+03	2.42E+03		4.42	1.60E+03
11/14/2006	358.17	4.08	1.34E+03	2.16E+03		4.08	1.34E+03
11/15/2006	357.92	3.83	1.17E+03	1.97E+03		3.83	1.17E+03
11/16/2006	357.62	3.53	9.81E+02	1.81E+03		3.53	9.81E+02
11/17/2006	359.24	5.15	2.21E+03	3.58E+03		5.15	2.21E+03
11/18/2006	359.22	5.13	2.20E+03	3.05E+03		5.13	2.20E+03
11/19/2006	358.83	4.74	1.85E+03	2.44E+03		4.74	1.85E+03
11/20/2006	358.32	4.23	1.45E+03	2.06E+03		4.23	1.45E+03
11/21/2006	357.79	3.70	1.09E+03	1.70E+03		3.70	1.09E+03
11/22/2006	357.37	3.28	8.36E+02	1.46E+03		3.28	8.36E+02
11/23/2006	357.74	3.65	1.05E+03	1.64E+03		3.65	1.05E+03
11/24/2006	359.61	5.52	2.57E+03	3.14E+03		5.52	2.57E+03
11/25/2006	359.14	5.05	2.12E+03	2.67E+03		5.05	2.12E+03
11/26/2006	358.71	4.62	1.75E+03	2.22E+03		4.62	1.75E+03
11/27/2006	358.16	4.07	1.33E+03	1.86E+03		4.07	1.33E+03
11/28/2006	357.76	3.67	1.07E+03	1.61E+03		3.67	1.07E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
11/29/2006	357.48	3.39	8.96E+02	1.45E+03		3.39	8.96E+02
11/30/2006	357.21	3.12	7.51E+02	1.34E+03		3.12	7.51E+02
12/1/2006	357.12	3.03	7.04E+02	1.42E+03		3.03	7.04E+02
12/2/2006	358.39	4.30	1.50E+03	2.27E+03		4.30	1.50E+03
12/3/2006	357.92	3.83	1.17E+03	1.88E+03		3.83	1.17E+03
12/4/2006	357.41	3.32	8.57E+02	1.50E+03		3.32	8.57E+02
12/5/2006	356.98	2.89	8.21E+02	1.27E+03		2.89	8.21E+02
12/6/2006	356.68	2.59	5.51E+02	1.10E+03		2.59	5.51E+02
12/7/2006	356.52	2.43	4.46E+02	1.02E+03		2.43	4.46E+02
12/8/2006	356.42	2.33	3.87E+02	9.61E+02		2.33	3.87E+02
12/9/2006	356.14	2.05	2.65E+02	7.94E+02		2.05	2.65E+02
12/10/2006	356.04	1.95	2.31E+02	7.39E+02		1.95	2.31E+02
12/11/2006	356.05	1.96	2.37E+02	7.31E+02		1.96	2.37E+02
12/12/2006	356.00	1.91	2.21E+02	7.47E+02		1.91	2.21E+02
12/13/2006	355.97	1.88	2.13E+02	7.46E+02		1.88	2.13E+02
12/14/2006	356.15	2.06	2.68E+02	8.45E+02		2.06	2.68E+02
12/15/2006	356.10	2.01	2.51E+02	8.26E+02		2.01	2.51E+02
12/16/2006	355.94	1.85	2.05E+02	7.61E+02		1.85	2.05E+02
12/17/2006	355.84	1.75	1.77E+02	6.99E+02		1.75	1.77E+02
12/18/2006	355.76	1.67	1.59E+02	6.40E+02		1.67	1.59E+02
12/19/2006	355.70	1.61	1.47E+02	6.01E+02		1.61	1.47E+02
12/20/2006	355.68	1.59	1.44E+02	5.66E+02		1.59	1.44E+02
12/21/2006	355.63	1.54	1.34E+02	5.30E+02		1.54	1.34E+02
12/22/2006	355.56	1.47	1.22E+02	5.23E+02		1.47	1.22E+02
12/23/2006	356.14	2.05	2.66E+02	1.18E+03		2.05	2.66E+02
12/24/2006	356.97	2.88	8.17E+02	1.46E+03		2.88	8.17E+02
12/25/2006	356.50	2.41	4.31E+02	1.14E+03		2.41	4.31E+02
12/26/2006	356.42	2.33	3.86E+02	1.38E+03		2.33	3.86E+02
12/27/2006	356.60	2.51	4.92E+02	1.28E+03		2.51	4.92E+02
12/28/2006	356.30	2.21	3.30E+02	1.06E+03		2.21	3.30E+02
12/29/2006	356.08	1.99	2.45E+02	8.53E+02		1.99	2.45E+02
12/30/2006	355.93	1.84	2.00E+02	7.77E+02		1.84	2.00E+02
12/31/2006	355.87	1.78	1.86E+02	7.31E+02		1.78	1.86E+02
1/1/2007	356.56	2.47	4.67E+02	1.57E+03		2.47	4.67E+02
1/2/2007	357.98	3.89	1.21E+03	2.29E+03		3.89	1.21E+03
1/3/2007	357.38	3.29	8.43E+02	1.68E+03		3.29	8.43E+02
1/4/2007	356.85	2.76	6.94E+02	1.33E+03		2.76	6.94E+02
1/5/2007	356.60	2.51	4.97E+02	1.18E+03		2.51	4.97E+02
1/6/2007	356.88	2.79	7.23E+02	1.69E+03		2.79	7.23E+02
1/7/2007	357.08	2.99	9.46E+02	1.67E+03		2.99	9.46E+02
1/8/2007	358.04	3.95	1.25E+03	3.56E+03		3.95	1.25E+03
1/9/2007	359.21	5.12	2.19E+03	3.70E+03		5.12	2.19E+03
1/10/2007	358.48	4.39	1.57E+03	2.59E+03		4.39	1.57E+03
1/11/2007	357.71	3.62	1.04E+03	1.90E+03		3.62	1.04E+03
1/12/2007	357.12	3.03	7.06E+02	1.50E+03		3.03	7.06E+02
1/13/2007	356.97	2.88	8.17E+02	1.38E+03		2.88	8.17E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/14/2007	357.13	3.04	7.12E+02	1.48E+03		3.04	7.12E+02
1/15/2007	357.40	3.31	8.55E+02	2.14E+03		3.31	8.55E+02
1/16/2007	357.68	3.59	1.02E+03	2.25E+03		3.59	1.02E+03
1/17/2007	357.17	3.08	7.28E+02	1.63E+03		3.08	7.28E+02
1/18/2007	356.58	2.49	4.78E+02	1.21E+03		2.49	4.78E+02
1/19/2007	356.46	2.37	4.10E+02	1.05E+03		2.37	4.10E+02
1/20/2007	356.42	2.33	3.88E+02	1.02E+03		2.33	3.88E+02
1/21/2007	361.31	7.22	4.60E+03	8.01E+02	8.01E+02	7.22	8.01E+02
1/22/2007	356.09	2.00	2.47E+02	8.16E+02		2.00	2.47E+02
1/23/2007	355.96	1.87	2.08E+02	7.72E+02		1.87	2.08E+02
1/24/2007	355.91	1.82	1.96E+02	7.39E+02		1.82	1.96E+02
1/25/2007	355.83	1.74	1.76E+02	6.85E+02		1.74	1.76E+02
1/26/2007	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/27/2007	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/28/2007	355.65	1.56	1.38E+02	Ice		1.56	1.38E+02
1/29/2007	355.67	1.58	1.41E+02	Ice		1.58	1.41E+02
1/30/2007	355.66	1.57	1.40E+02	Ice		1.57	1.40E+02
1/31/2007	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
2/1/2007	355.45	1.36	1.05E+02	Ice		1.36	1.05E+02
2/2/2007	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
2/3/2007	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/4/2007	355.31	1.22	8.72E+01	Ice		1.22	8.72E+01
2/5/2007	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
2/6/2007	355.35	1.26	9.23E+01	Ice		1.26	9.23E+01
2/7/2007	355.15	1.06	7.03E+01	Ice		1.06	7.03E+01
2/8/2007	355.07	0.98	6.29E+01	Ice		0.98	6.29E+01
2/9/2007	355.01	0.92	5.81E+01	Ice		0.92	5.81E+01
2/10/2007	354.98	0.89	5.60E+01	Ice		0.89	5.60E+01
2/11/2007	354.95	0.86	5.35E+01	Ice		0.86	5.35E+01
2/12/2007	354.94	0.85	5.27E+01	Ice		0.85	5.27E+01
2/13/2007	354.94	0.85	5.28E+01	Ice		0.85	5.28E+01
2/14/2007	355.04	0.95	6.08E+01	Ice		0.95	6.08E+01
2/15/2007	354.97	0.88	5.49E+01	Ice		0.88	5.49E+01
2/16/2007	355.21	1.12	7.61E+01	Ice		1.12	7.61E+01
2/17/2007	355.14	1.05	6.93E+01	Ice		1.05	6.93E+01
2/18/2007	355.07	0.98	6.33E+01	Ice		0.98	6.33E+01
2/19/2007	355.02	0.93	5.87E+01	Ice		0.93	5.87E+01
2/20/2007	354.99	0.90	5.67E+01	Ice		0.90	5.67E+01
2/21/2007	355.03	0.94	5.97E+01	Ice		0.94	5.97E+01
2/22/2007	355.12	1.03	6.77E+01	Ice		1.03	6.77E+01
2/23/2007	355.21	1.12	7.66E+01	Ice		1.12	7.66E+01
2/24/2007	355.22	1.13	7.73E+01	Ice		1.13	7.73E+01
2/25/2007	355.18	1.09	7.32E+01	Ice		1.09	7.32E+01
2/26/2007	355.12	1.03	6.74E+01	Ice		1.03	6.74E+01
2/27/2007	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/28/2007	355.11	1.02	6.70E+01	Ice [P]		1.02	6.70E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/1/2007	355.19	1.10	7.41E+01	Ice [P]		1.10	7.41E+01
3/2/2007	356.90	2.81	7.36E+02	Ice [P]		2.81	7.36E+02
3/3/2007	360.30	6.21	3.32E+03	Ice [P]		6.21	3.32E+03
3/4/2007	360.08	5.99	3.07E+03	Ice [P]		5.99	3.07E+03
3/5/2007	359.12	5.03	2.11E+03	Ice [P]		5.03	2.11E+03
3/6/2007	357.61	3.52	9.74E+02	Ice [P]		3.52	9.74E+02
3/7/2007	356.47	2.38	4.17E+02	Ice		2.38	4.17E+02
3/8/2007	370.57	16.48	2.74E+04	Ice		16.48	3.56E+02
3/9/2007	356.21	2.12	2.94E+02	Ice		2.12	2.94E+02
3/10/2007	355.99	1.90	2.19E+02	Ice		1.90	2.19E+02
3/11/2007	356.16	2.07	2.72E+02	Ice		2.07	2.72E+02
3/12/2007	357.34	3.25	8.21E+02	Ice		3.25	8.21E+02
3/13/2007	357.71	3.62	1.03E+03	Ice		3.62	1.03E+03
3/14/2007	358.30	4.21	1.43E+03	3.33E+03		4.21	1.43E+03
3/15/2007	359.18	5.09	2.16E+03	4.37E+03		5.09	2.16E+03
3/16/2007	358.97	4.88	1.98E+03	3.53E+03		4.88	1.98E+03
3/17/2007	357.48	3.39	9.01E+02	1.96E+03		3.39	9.01E+02
3/18/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/19/2007	357.42	3.33	8.67E+02	1.78E+03		3.33	8.67E+02
3/20/2007	357.14	3.05	7.13E+02	1.59E+03		3.05	7.13E+02
3/21/2007	357.32	3.23	8.08E+02	1.59E+03		3.23	8.08E+02
3/22/2007	357.65	3.56	9.96E+02	1.92E+03		3.56	9.96E+02
3/23/2007	360.47	6.38	3.52E+03	5.04E+03		6.38	3.52E+03
3/24/2007	360.55	6.46	3.62E+03	5.40E+03		6.46	3.62E+03
3/25/2007	360.57	6.48	3.65E+03	5.54E+03		6.48	3.65E+03
3/26/2007	360.16	6.07	3.17E+03	4.58E+03		6.07	3.17E+03
3/27/2007	359.69	5.60	2.65E+03	3.99E+03		5.60	2.65E+03
3/28/2007	359.27	5.18	2.25E+03	3.48E+03		5.18	2.25E+03
3/29/2007	358.58	4.49	1.65E+03	2.73E+03		4.49	1.65E+03
3/30/2007	357.98	3.89	1.21E+03	2.15E+03		3.89	1.21E+03
3/31/2007	357.53	3.44	9.27E+02	1.78E+03		3.44	9.27E+02
4/1/2007	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
4/2/2007	357.18	3.09	7.37E+02	1.55E+03		3.09	7.37E+02
4/3/2007	357.20	3.11	7.45E+02	1.59E+03		3.11	7.45E+02
4/4/2007	357.13	3.04	7.10E+02	1.75E+03		3.04	7.10E+02
4/5/2007	358.07	3.98	1.27E+03	2.55E+03		3.98	1.27E+03
4/6/2007	357.73	3.64	1.05E+03	1.99E+03		3.64	1.05E+03
4/7/2007	357.22	3.13	7.55E+02	1.62E+03		3.13	7.55E+02
4/8/2007	356.82	2.73	6.65E+02	1.36E+03		2.73	6.65E+02
4/9/2007	356.58	2.49	4.84E+02	1.18E+03		2.49	4.84E+02
4/10/2007	356.39	2.30	3.71E+02	1.04E+03		2.30	3.71E+02
4/11/2007	356.24	2.15	3.04E+02	9.02E+02		2.15	3.04E+02
4/12/2007	356.61	2.52	5.00E+02			2.52	5.00E+02
4/13/2007	357.94	3.85	1.18E+03			3.85	1.18E+03
4/14/2007	357.49	3.40	9.02E+02	1.75E+03		3.40	9.02E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/15/2007	359.26	5.17	2.24E+03	5.67E+03		5.17	2.24E+03
4/16/2007	365.42	11.33	1.22E+04	1.97E+04		11.33	1.22E+04
4/17/2007	365.86	11.77	1.32E+04	1.54E+04		11.77	1.32E+04
4/18/2007	366.70	12.61	1.54E+04	1.10E+04	1.10E+04	12.61	1.10E+04
4/19/2007	366.56	12.47	1.50E+04	1.01E+04	1.01E+04	12.47	1.01E+04
4/20/2007	365.68	11.59	1.28E+04	9.03E+03	9.03E+03	11.59	9.03E+03
4/21/2007	364.43	10.34	1.00E+04	7.64E+03	7.64E+03	10.34	7.64E+03
4/22/2007	362.63	8.54	6.61E+03	5.99E+03	5.99E+03	8.54	5.99E+03
4/23/2007	360.23	6.14	3.25E+03	4.06E+03		6.14	3.25E+03
4/24/2007	358.68	4.59	1.73E+03	2.48E+03		4.59	1.73E+03
4/25/2007	357.97	3.88	1.20E+03	1.85E+03		3.88	1.20E+03
4/26/2007	357.87	3.78	1.13E+03	1.84E+03		3.78	1.13E+03
4/27/2007	358.03	3.94	1.24E+03	1.99E+03		3.94	1.24E+03
4/28/2007	358.15	4.06	1.32E+03	2.11E+03		4.06	1.32E+03
4/29/2007	357.85	3.76	1.12E+03	1.83E+03		3.76	1.12E+03
4/30/2007	357.45	3.36	8.83E+02	1.57E+03		3.36	8.83E+02
5/1/2007	357.03	2.94	8.84E+02	1.35E+03		2.94	8.84E+02
5/2/2007	356.78	2.69	6.30E+02	1.22E+03		2.69	6.30E+02
5/3/2007	356.66	2.57	5.39E+02	1.18E+03		2.57	5.39E+02
5/4/2007	356.39	2.30	3.73E+02	9.31E+02		2.30	3.73E+02
5/5/2007	356.23	2.14	3.02E+02	8.60E+02		2.14	3.02E+02
5/6/2007	356.06	1.97	2.38E+02	8.32E+02		1.97	2.38E+02
5/7/2007	355.89	1.80	1.91E+02	7.33E+02		1.80	1.91E+02
5/8/2007	355.73	1.64	1.53E+02	6.95E+02		1.64	1.53E+02
5/9/2007	355.66	1.57	1.40E+02	6.64E+02		1.57	1.40E+02
5/10/2007	355.60	1.51	1.29E+02	5.98E+02		1.51	1.29E+02
5/11/2007	355.57	1.48	1.24E+02	6.00E+02		1.48	1.24E+02
5/12/2007	355.48	1.39	1.09E+02	5.63E+02		1.39	1.09E+02
5/13/2007	355.40	1.31	9.85E+01	5.52E+02		1.31	9.85E+01
5/14/2007	355.35	1.26	9.19E+01	4.99E+02		1.26	9.19E+01
5/15/2007	355.24	1.15	7.94E+01	4.59E+02		1.15	7.94E+01
5/16/2007	355.17	1.08	7.19E+01	4.44E+02		1.08	7.19E+01
5/17/2007	355.24	1.15	7.94E+01	4.53E+02		1.15	7.94E+01
5/18/2007	355.26	1.17	8.19E+01	4.53E+02		1.17	8.19E+01
5/19/2007	355.27	1.18	8.29E+01	4.57E+02		1.18	8.29E+01
5/20/2007	355.24	1.15	7.92E+01	4.62E+02		1.15	7.92E+01
5/21/2007	355.25	1.16	8.03E+01	4.68E+02		1.16	8.03E+01
5/22/2007	355.14	1.05	6.93E+01	4.40E+02		1.05	6.93E+01
5/23/2007	355.04	0.95	6.09E+01	3.69E+02		0.95	6.09E+01
5/24/2007	355.01	0.92	5.80E+01	3.43E+02		0.92	5.80E+01
5/25/2007	354.96	0.87	5.47E+01	3.20E+02		0.87	5.47E+01
5/26/2007	354.91	0.82	5.09E+01	2.84E+02		0.82	5.09E+01
5/27/2007	354.87	0.78	4.83E+01	2.51E+02		0.78	4.83E+01
5/28/2007	354.86	0.77	4.75E+01	2.52E+02		0.77	4.75E+01
5/29/2007	354.79	0.70	4.32E+01	2.50E+02		0.70	4.32E+01
5/30/2007	354.70	0.61	3.84E+01	2.36E+02		0.61	3.84E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
5/31/2007	354.65	0.56	3.57E+01	2.22E+02		0.56	3.57E+01
6/1/2007	354.61	0.52	3.39E+01	2.03E+02		0.52	3.39E+01
6/2/2007	354.59	0.50	3.31E+01	1.91E+02		0.50	3.31E+01
6/3/2007	354.65	0.56	3.60E+01	2.65E+02		0.56	3.60E+01
6/4/2007	355.00	0.91	5.78E+01	5.13E+02		0.91	5.78E+01
6/5/2007	355.37	1.28	9.44E+01	6.19E+02		1.28	9.44E+01
6/6/2007	355.19	1.10	7.42E+01	5.21E+02		1.10	7.42E+01
6/7/2007	354.97	0.88	5.49E+01	4.04E+02		0.88	5.49E+01
6/8/2007	354.78	0.69	4.25E+01	3.05E+02		0.69	4.25E+01
6/9/2007	354.68	0.59	3.76E+01	2.43E+02		0.59	3.76E+01
6/10/2007	354.64	0.55	3.55E+01	2.19E+02		0.55	3.55E+01
6/11/2007	354.60	0.51	3.36E+01	1.76E+02		0.51	3.36E+01
6/12/2007	354.54	0.45	3.10E+01	1.85E+02		0.45	3.10E+01
6/13/2007	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
6/14/2007	354.46	0.37	2.79E+01	1.59E+02		0.37	2.79E+01
6/15/2007	354.48	0.39	2.86E+01	1.39E+02		0.39	2.86E+01
6/16/2007	354.48	0.39	2.86E+01	1.47E+02		0.39	2.86E+01
6/17/2007	354.50	0.41	2.93E+01	1.50E+02		0.41	2.93E+01
6/18/2007	354.50	0.41	2.95E+01	1.71E+02		0.41	2.95E+01
6/19/2007	354.49	0.40	2.91E+01	1.57E+02		0.40	2.91E+01
6/20/2007	354.49	0.40	2.90E+01	1.79E+02		0.40	2.90E+01
6/21/2007	354.63	0.54	3.48E+01	2.40E+02		0.54	3.48E+01
6/22/2007	354.56	0.47	3.18E+01	2.13E+02		0.47	3.18E+01
6/23/2007	354.55	0.46	3.15E+01	1.85E+02		0.46	3.15E+01
6/24/2007	354.46	0.37	2.78E+01	1.55E+02		0.37	2.78E+01
6/25/2007	354.46	0.37	2.79E+01	1.26E+02		0.37	2.79E+01
6/26/2007	354.46	0.37	2.79E+01	1.24E+02		0.37	2.79E+01
6/27/2007	354.45	0.36	2.74E+01	1.19E+02		0.36	2.74E+01
6/28/2007	354.58	0.49	3.25E+01	1.21E+02		0.49	3.25E+01
6/29/2007	355.29	1.20	8.51E+01	1.92E+02		1.20	8.51E+01
6/30/2007	355.59	1.50	1.27E+02	4.10E+02		1.50	1.27E+02
7/1/2007	355.01	0.92	5.79E+01	4.07E+02		0.92	5.79E+01
7/2/2007	354.63	0.54	3.47E+01	2.52E+02		0.54	3.47E+01
7/3/2007	354.48	0.39	2.85E+01	1.66E+02		0.39	2.85E+01
7/4/2007	354.44	0.35	2.72E+01	1.54E+02		0.35	2.72E+01
7/5/2007	354.50	0.41	2.95E+01	2.81E+02		0.41	2.95E+01
7/6/2007	354.59	0.50	3.31E+01	8.12E+02		0.50	3.31E+01
7/7/2007	354.52	0.43	3.01E+01	4.44E+02		0.43	3.01E+01
7/8/2007	354.47	0.38	2.80E+01	2.43E+02		0.38	2.80E+01
7/9/2007	354.47	0.38	2.80E+01	1.72E+02		0.38	2.80E+01
7/10/2007	354.45	0.36	2.74E+01	1.47E+02		0.36	2.74E+01
7/11/2007	354.45	0.36	2.74E+01	1.40E+02		0.36	2.74E+01
7/12/2007	354.45	0.36	2.74E+01	1.68E+02		0.36	2.74E+01
7/13/2007	354.44	0.35	2.71E+01	1.77E+02		0.35	2.71E+01
7/14/2007	354.44	0.35	2.70E+01	1.43E+02		0.35	2.70E+01
7/15/2007	354.43	0.34	2.67E+01	1.28E+02		0.34	2.67E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/16/2007	354.45	0.36	2.73E+01	1.53E+02		0.36	2.73E+01
7/17/2007	354.44	0.35	2.69E+01	1.49E+02		0.35	2.69E+01
7/18/2007	354.43	0.34	2.68E+01	1.27E+02		0.34	2.68E+01
7/19/2007	354.57	0.48	3.20E+01	1.40E+02		0.48	3.20E+01
7/20/2007	354.74	0.65	4.04E+01	2.05E+02		0.65	4.04E+01
7/21/2007	354.50	0.41	2.93E+01	2.37E+02		0.41	2.93E+01
7/22/2007	354.45	0.36	2.75E+01	1.46E+02		0.36	2.75E+01
7/23/2007	354.52	0.43	2.99E+01	1.54E+02		0.43	2.99E+01
7/24/2007	355.76	1.67	1.59E+02	4.40E+02		1.67	1.59E+02
7/25/2007	355.64	1.55	1.35E+02	6.59E+02		1.55	1.35E+02
7/26/2007	355.11	1.02	6.70E+01	4.84E+02		1.02	6.70E+01
7/27/2007	354.72	0.63	3.95E+01	2.82E+02		0.63	3.95E+01
7/28/2007	354.73	0.64	4.00E+01	2.87E+02		0.64	4.00E+01
7/29/2007	354.96	0.87	5.45E+01	3.02E+02		0.87	5.45E+01
7/30/2007	354.81	0.72	4.47E+01	3.18E+02		0.72	4.47E+01
7/31/2007	354.65	0.56	3.61E+01	3.12E+02		0.56	3.61E+01
8/1/2007	354.54	0.45	3.08E+01	2.24E+02		0.45	3.08E+01
8/2/2007	354.44	0.35	2.72E+01	1.51E+02		0.35	2.72E+01
8/3/2007	354.43	0.34	2.68E+01	1.46E+02		0.34	2.68E+01
8/4/2007	354.44	0.35	2.71E+01	1.34E+02		0.35	2.71E+01
8/5/2007	354.43	0.34	2.68E+01	1.16E+02		0.34	2.68E+01
8/6/2007	354.44	0.35	2.69E+01	1.07E+02		0.35	2.69E+01
8/7/2007	354.44	0.35	2.69E+01	1.01E+02		0.35	2.69E+01
8/8/2007	354.73	0.64	4.00E+01	1.38E+02		0.64	4.00E+01
8/9/2007	355.69	1.60	1.46E+02	3.94E+02		1.60	1.46E+02
8/10/2007	356.03	1.94	2.30E+02	9.23E+02		1.94	2.30E+02
8/11/2007	356.97	2.88	8.10E+02	1.48E+03		2.88	8.10E+02
8/12/2007	356.22	2.13	2.95E+02	1.01E+03		2.13	2.95E+02
8/13/2007	355.42	1.33	1.01E+02	6.43E+02		1.33	1.01E+02
8/14/2007	355.01	0.92	5.85E+01	4.42E+02		0.92	5.85E+01
8/15/2007	354.80	0.71	4.39E+01	2.83E+02		0.71	4.39E+01
8/16/2007	354.64	0.55	3.53E+01	2.41E+02		0.55	3.53E+01
8/17/2007	354.54	0.45	3.09E+01	2.27E+02		0.45	3.09E+01
8/18/2007	354.49	0.40	2.89E+01	2.38E+02		0.40	2.89E+01
8/19/2007	354.46	0.37	2.79E+01	2.12E+02		0.37	2.79E+01
8/20/2007	354.45	0.36	2.74E+01	1.63E+02		0.36	2.74E+01
8/21/2007	354.54	0.45	3.08E+01	1.65E+02		0.45	3.08E+01
8/22/2007	355.45	1.36	1.05E+02	4.84E+02		1.36	1.05E+02
8/23/2007	355.34	1.25	9.04E+01	5.80E+02		1.25	9.04E+01
8/24/2007	355.02	0.93	5.92E+01	4.32E+02		0.93	5.92E+01
8/25/2007	354.86	0.77	4.78E+01	3.39E+02		0.77	4.78E+01
8/26/2007	354.76	0.67	4.14E+01	2.73E+02		0.67	4.14E+01
8/27/2007	354.78	0.69	4.26E+01	2.35E+02		0.69	4.26E+01
8/28/2007	354.73	0.64	3.98E+01	2.27E+02		0.64	3.98E+01
8/29/2007	354.66	0.57	3.65E+01	2.07E+02		0.57	3.65E+01
8/30/2007	354.64	0.55	3.54E+01	1.75E+02		0.55	3.54E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
8/31/2007	354.62	0.53	3.45E+01	1.47E+02		0.53	3.45E+01
9/1/2007	354.61	0.52	3.38E+01	1.42E+02		0.52	3.38E+01
9/2/2007	354.58	0.49	3.25E+01	1.31E+02		0.49	3.25E+01
9/3/2007	354.58	0.49	3.25E+01	1.19E+02		0.49	3.25E+01
9/4/2007	354.56	0.47	3.17E+01	1.09E+02		0.47	3.17E+01
9/5/2007	354.56	0.47	3.19E+01	1.05E+02		0.47	3.19E+01
9/6/2007	354.56	0.47	3.16E+01	9.50E+01		0.47	3.16E+01
9/7/2007	354.56	0.47	3.17E+01	8.50E+01		0.47	3.17E+01
9/8/2007	354.55	0.46	3.15E+01	8.00E+01		0.46	3.15E+01
9/9/2007	354.55	0.46	3.15E+01	9.40E+01		0.46	3.15E+01
9/10/2007	354.56	0.47	3.17E+01	1.15E+02		0.47	3.17E+01
9/11/2007	354.56	0.47	3.16E+01	1.21E+02		0.47	3.16E+01
9/12/2007	354.58	0.49	3.26E+01	1.46E+02		0.49	3.26E+01
9/13/2007	354.58	0.49	3.28E+01	1.42E+02		0.49	3.28E+01
9/14/2007	354.57	0.48	3.23E+01	1.24E+02		0.48	3.23E+01
9/15/2007	354.56	0.47	3.17E+01	1.07E+02		0.47	3.17E+01
9/16/2007	354.53	0.44	3.06E+01	8.90E+01		0.44	3.06E+01
9/17/2007	354.53	0.44	3.06E+01	8.10E+01		0.44	3.06E+01
9/18/2007	354.54	0.45	3.11E+01	7.50E+01		0.45	3.11E+01
9/19/2007	354.53	0.44	3.03E+01	9.00E+01		0.44	3.03E+01
9/20/2007	354.51	0.42	2.96E+01	7.70E+01		0.42	2.96E+01
9/21/2007	354.51	0.42	2.97E+01	7.00E+01		0.42	2.97E+01
9/22/2007	354.50	0.41	2.95E+01	6.30E+01		0.41	2.95E+01
9/23/2007	354.51	0.42	2.97E+01	6.10E+01		0.42	2.97E+01
9/24/2007	354.51	0.42	2.96E+01	6.00E+01		0.42	2.96E+01
9/25/2007	354.51	0.42	2.98E+01	5.60E+01		0.42	2.98E+01
9/26/2007	354.52	0.43	3.02E+01	5.40E+01		0.43	3.02E+01
9/27/2007	354.53	0.44	3.06E+01	5.10E+01		0.44	3.06E+01
9/28/2007	354.53	0.44	3.05E+01	5.00E+01		0.44	3.05E+01
9/29/2007	354.53	0.44	3.03E+01	5.30E+01		0.44	3.03E+01
9/30/2007	354.53	0.44	3.04E+01	5.00E+01		0.44	3.04E+01
10/1/2007	354.54	0.45	3.10E+01	4.90E+01		0.45	3.10E+01
10/2/2007	354.53	0.44	3.07E+01	4.70E+01		0.44	3.07E+01
10/3/2007	354.54	0.45	3.08E+01	4.80E+01		0.45	3.08E+01
10/4/2007	354.55	0.46	3.12E+01	4.90E+01		0.46	3.12E+01
10/5/2007	354.54	0.45	3.11E+01	4.80E+01		0.45	3.11E+01
10/6/2007	354.54	0.45	3.08E+01	4.60E+01		0.45	3.08E+01
10/7/2007	354.54	0.45	3.10E+01	4.60E+01		0.45	3.10E+01
10/8/2007	354.57	0.48	3.23E+01	4.60E+01		0.48	3.23E+01
10/9/2007	354.59	0.50	3.30E+01	4.80E+01		0.50	3.30E+01
10/10/2007	354.72	0.63	3.93E+01	7.40E+01		0.63	3.93E+01
10/11/2007	354.88	0.79	4.91E+01	1.95E+02		0.79	4.91E+01
10/12/2007	355.38	1.29	9.54E+01	2.44E+02		1.29	9.54E+01
10/13/2007	356.34	2.25	3.47E+02	5.70E+02		2.25	3.47E+02
10/14/2007	355.94	1.85	2.03E+02	6.20E+02		1.85	2.03E+02
10/15/2007	355.29	1.20	8.53E+01	4.50E+02		1.20	8.53E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/16/2007	354.96	0.87	5.42E+01	3.03E+02		0.87	5.42E+01
10/17/2007	354.78	0.69	4.29E+01	2.19E+02		0.69	4.29E+01
10/18/2007	354.67	0.58	3.71E+01	1.60E+02		0.58	3.71E+01
10/19/2007	354.63	0.54	3.50E+01	1.75E+02		0.54	3.50E+01
10/20/2007	355.33	1.24	8.90E+01	2.44E+02		1.24	8.90E+01
10/21/2007	356.00	1.91	2.19E+02	5.50E+02		1.91	2.19E+02
10/22/2007	355.59	1.50	1.27E+02	5.34E+02		1.50	1.27E+02
10/23/2007	355.18	1.09	7.28E+01	3.95E+02		1.09	7.28E+01
10/24/2007	355.03	0.94	5.97E+01	3.22E+02		0.94	5.97E+01
10/25/2007	355.03	0.94	5.99E+01	2.75E+02		0.94	5.99E+01
10/26/2007	355.01	0.92	5.79E+01	2.86E+02		0.92	5.79E+01
10/27/2007	356.42	2.33	3.89E+02	1.36E+03		2.33	3.89E+02
10/28/2007	359.10	5.01	2.09E+03	3.05E+03		5.01	2.09E+03
10/29/2007	358.60	4.51	1.67E+03	2.16E+03		4.51	1.67E+03
10/30/2007	357.95	3.86	1.19E+03	1.59E+03		3.86	1.19E+03
10/31/2007	356.85	2.76	6.92E+02	1.17E+03		2.76	6.92E+02
11/1/2007	356.05	1.96	2.34E+02	7.92E+02		1.96	2.34E+02
11/2/2007	355.68	1.59	1.43E+02	6.10E+02		1.59	1.43E+02
11/3/2007	355.47	1.38	1.08E+02	5.00E+02		1.38	1.08E+02
11/4/2007	355.34	1.25	9.08E+01	4.50E+02		1.25	9.08E+01
11/5/2007	355.22	1.13	7.73E+01	4.08E+02		1.13	7.73E+01
11/6/2007	355.15	1.06	7.02E+01	3.67E+02		1.06	7.02E+01
11/7/2007	355.23	1.14	7.87E+01	4.03E+02		1.14	7.87E+01
11/8/2007	355.20	1.11	7.52E+01	4.02E+02		1.11	7.52E+01
11/9/2007	355.07	0.98	6.32E+01	3.55E+02		0.98	6.32E+01
11/10/2007	355.12	1.03	6.79E+01	3.64E+02		1.03	6.79E+01
11/11/2007	355.40	1.31	9.87E+01	4.31E+02		1.31	9.87E+01
11/12/2007	355.35	1.26	9.21E+01	4.77E+02		1.26	9.21E+01
11/13/2007	355.26	1.17	8.14E+01	4.41E+02		1.17	8.14E+01
11/14/2007	355.35	1.26	9.25E+01	4.61E+02		1.26	9.25E+01
11/15/2007	355.55	1.46	1.20E+02	8.62E+02		1.46	1.20E+02
11/16/2007	357.14	3.05	7.14E+02	1.55E+03		3.05	7.14E+02
11/17/2007	356.84	2.75	6.83E+02	1.29E+03		2.75	6.83E+02
11/18/2007	356.21	2.12	2.92E+02	9.67E+02		2.12	2.92E+02
11/19/2007	355.80	1.71	1.69E+02	7.55E+02		1.71	1.69E+02
11/20/2007	355.83	1.74	1.75E+02	6.98E+02		1.74	1.75E+02
11/21/2007	356.28	2.19	3.22E+02	8.49E+02		2.19	3.22E+02
11/22/2007	356.17	2.08	2.76E+02	8.46E+02		2.08	2.76E+02
11/23/2007	355.91	1.82	1.94E+02	7.37E+02		1.82	1.94E+02
11/24/2007	355.62	1.53	1.33E+02	6.15E+02		1.53	1.33E+02
11/25/2007	355.48	1.39	1.10E+02	5.44E+02		1.39	1.10E+02
11/26/2007	356.25	2.16	3.08E+02	9.78E+02		2.16	3.08E+02
11/27/2007	358.81	4.72	1.83E+03	3.10E+03		4.72	1.83E+03
11/28/2007	358.49	4.40	1.58E+03	2.43E+03		4.40	1.58E+03
11/29/2007	357.65	3.56	1.00E+03	1.74E+03		3.56	1.00E+03
11/30/2007	357.17	3.08	7.28E+02	1.41E+03		3.08	7.28E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/1/2007	356.67	2.58	5.41E+02	1.16E+03		2.58	5.41E+02
12/2/2007	356.29	2.20	3.26E+02	9.33E+02		2.20	3.26E+02
12/3/2007	356.27	2.18	3.17E+02	1.16E+03		2.18	3.17E+02
12/4/2007	356.79	2.70	6.37E+02	1.43E+03		2.70	6.37E+02
12/5/2007	356.56	2.47	4.66E+02	1.20E+03		2.47	4.66E+02
12/6/2007	356.17	2.08	2.76E+02	9.39E+02		2.08	2.76E+02
12/7/2007	355.88	1.79	1.88E+02	7.73E+02		1.79	1.88E+02
12/8/2007	355.82	1.73	1.73E+02	7.22E+02		1.73	1.73E+02
12/9/2007	355.73	1.64	1.53E+02	7.06E+02		1.64	1.53E+02
12/10/2007	356.03	1.94	2.30E+02	8.36E+02		1.94	2.30E+02
12/11/2007	356.48	2.39	4.18E+02	1.11E+03		2.39	4.18E+02
12/12/2007	356.60	2.51	4.95E+02	1.28E+03		2.51	4.95E+02
12/13/2007	356.73	2.64	5.89E+02	1.28E+03		2.64	5.89E+02
12/14/2007	356.46	2.37	4.12E+02	1.16E+03		2.37	4.12E+02
12/15/2007	356.44	2.35	3.97E+02	1.10E+03		2.35	3.97E+02
12/16/2007	355.99	1.90	2.16E+02	9.44E+02		1.90	2.16E+02
12/17/2007	356.20	2.11	2.88E+02	8.63E+02		2.11	2.88E+02
12/18/2007	356.34	2.25	3.50E+02	1.10E+03		2.25	3.50E+02
12/19/2007	356.12	2.03	2.59E+02	1.06E+03		2.03	2.59E+02
12/20/2007	355.96	1.87	2.10E+02	8.76E+02		1.87	2.10E+02
12/21/2007	355.93	1.84	2.01E+02	8.25E+02		1.84	2.01E+02
12/22/2007	355.90	1.81	1.92E+02	7.83E+02		1.81	1.92E+02
12/23/2007	356.00	1.91	2.20E+02	1.08E+03		1.91	2.20E+02
12/24/2007	360.17	6.08	3.17E+03	6.03E+03		6.08	3.17E+03
12/25/2007	361.03	6.94	4.22E+03	4.80E+03		6.94	4.22E+03
12/26/2007	360.43	6.34	3.48E+03	3.95E+03		6.34	3.48E+03
12/27/2007	359.69	5.60	2.66E+03	3.28E+03		5.60	2.66E+03
12/28/2007	359.06	4.97	2.05E+03	2.90E+03		4.97	2.05E+03
12/29/2007	359.35	5.26	2.32E+03	3.49E+03		5.26	2.32E+03
12/30/2007	359.66	5.57	2.62E+03	3.80E+03		5.57	2.62E+03
12/31/2007	359.62	5.53	2.58E+03	3.37E+03		5.53	2.58E+03
1/1/2008	359.62	5.53	2.58E+03	3.36E+03		5.53	2.58E+03
1/2/2008	359.42	5.33	2.39E+03	2.95E+03		5.33	2.39E+03
1/3/2008	358.65	4.56	1.71E+03	2.21E+03		4.56	1.71E+03
1/4/2008	357.91	3.82	1.16E+03	1.72E+03		3.82	1.16E+03
1/5/2008	357.65	3.56	9.97E+02	1.62E+03		3.56	9.97E+02
1/6/2008	357.33	3.24	8.17E+02	1.54E+03		3.24	8.17E+02
1/7/2008	357.49	3.40	9.04E+02	1.78E+03		3.40	9.04E+02
1/8/2008	357.96	3.87	1.20E+03	2.58E+03		3.87	1.20E+03
1/9/2008	358.22	4.13	1.38E+03	3.52E+03		4.13	1.38E+03
1/10/2008	358.13	4.04	1.31E+03	3.19E+03		4.04	1.31E+03
1/11/2008	357.74	3.65	1.05E+03	2.67E+03		3.65	1.05E+03
1/12/2008	357.86	3.77	1.13E+03	2.61E+03		3.77	1.13E+03
1/13/2008	357.52	3.43	9.23E+02	2.07E+03		3.43	9.23E+02
1/14/2008	357.29	3.20	7.94E+02	1.85E+03		3.20	7.94E+02
1/15/2008	357.46	3.37	8.85E+02	1.90E+03		3.37	8.85E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/16/2008	357.17	3.08	7.30E+02	1.66E+03		3.08	7.30E+02
1/17/2008	356.73	2.64	5.87E+02	1.36E+03		2.64	5.87E+02
1/18/2008	356.62	2.53	5.08E+02	1.32E+03		2.53	5.08E+02
1/19/2008	357.07	2.98	9.25E+02	1.53E+03		2.98	9.25E+02
1/20/2008	356.80	2.71	6.47E+02	1.33E+03		2.71	6.47E+02
1/21/2008	356.08	1.99	2.46E+02	9.35E+02		1.99	2.46E+02
1/22/2008	356.19	2.10	2.83E+02	7.59E+02		2.10	2.83E+02
1/23/2008	355.98	1.89	2.14E+02	9.01E+02		1.89	2.14E+02
1/24/2008	355.85	1.76	1.80E+02	8.14E+02		1.76	1.80E+02
1/25/2008	355.88	1.79	1.87E+02	6.30E+02		1.79	1.87E+02
1/26/2008	355.85	1.76	1.81E+02	6.36E+02		1.76	1.81E+02
1/27/2008	355.58	1.49	1.26E+02	6.55E+02		1.49	1.26E+02
1/28/2008	355.51	1.42	1.14E+02	5.89E+02		1.42	1.14E+02
1/29/2008	355.49	1.40	1.10E+02	5.74E+02		1.40	1.10E+02
1/30/2008	355.55	1.46	1.20E+02	6.30E+02		1.46	1.20E+02
1/31/2008	355.77	1.68	1.62E+02	7.05E+02		1.68	1.62E+02
2/1/2008	355.65	1.56	1.37E+02	7.49E+02		1.56	1.37E+02
2/2/2008	357.23	3.14	7.60E+02	2.12E+03		3.14	7.60E+02
2/3/2008	357.80	3.71	1.09E+03	2.24E+03		3.71	1.09E+03
2/4/2008	357.55	3.46	9.37E+02	1.95E+03		3.46	9.37E+02
2/5/2008	357.18	3.09	7.38E+02	2.12E+03		3.09	7.38E+02
2/6/2008	358.70	4.61	1.75E+03	4.28E+03		4.61	1.75E+03
2/7/2008	359.89	5.80	2.86E+03	6.61E+03		5.80	2.86E+03
2/8/2008	359.59	5.50	2.56E+03	4.28E+03		5.50	2.56E+03
2/9/2008	358.72	4.63	1.77E+03	2.98E+03		4.63	1.77E+03
2/10/2008	358.09	4.00	1.29E+03	2.38E+03		4.00	1.29E+03
2/11/2008	357.41	3.32	8.57E+02	1.76E+03		3.32	8.57E+02
2/12/2008	357.35	3.26	8.24E+02	1.35E+03		3.26	8.24E+02
2/13/2008	358.31	4.22	1.44E+03	3.84E+03		4.22	1.44E+03
2/14/2008	362.30	8.21	6.08E+03	8.45E+03		8.21	6.08E+03
2/15/2008	362.42	8.33	6.27E+03	7.21E+03		8.33	6.27E+03
2/16/2008	362.10	8.01	5.77E+03	6.01E+03		8.01	5.77E+03
2/17/2008	361.46	7.37	4.81E+03	5.03E+03		7.37	4.81E+03
2/18/2008	362.13	8.04	5.81E+03	7.66E+03		8.04	5.81E+03
2/19/2008	363.14	9.05	7.49E+03	9.19E+03		9.05	7.49E+03
2/20/2008	362.63	8.54	6.61E+03	6.75E+03		8.54	6.61E+03
2/21/2008	361.89	7.80	5.43E+03	5.35E+03	5.35E+03	7.80	5.35E+03
2/22/2008	360.77	6.68	3.89E+03	4.24E+03		6.68	3.89E+03
2/23/2008	359.57	5.48	2.54E+03	3.32E+03		5.48	2.54E+03
2/24/2008	358.67	4.58	1.72E+03	2.56E+03		4.58	1.72E+03
2/25/2008	358.18	4.09	1.35E+03	2.04E+03		4.09	1.35E+03
2/26/2008	357.87	3.78	1.14E+03	1.96E+03		3.78	1.14E+03
2/27/2008	358.76	4.67	1.80E+03	2.59E+03		4.67	1.80E+03
2/28/2008	358.49	4.40	1.58E+03	2.49E+03		4.40	1.58E+03
2/29/2008	357.91	3.82	1.16E+03	1.84E+03		3.82	1.16E+03
3/1/2008	357.48	3.39	8.97E+02	1.72E+03		3.39	8.97E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/2/2008	357.29	3.20	7.92E+02	1.58E+03		3.20	7.92E+02
3/3/2008	357.25	3.16	7.73E+02	1.50E+03		3.16	7.73E+02
3/4/2008	358.06	3.97	1.26E+03	2.07E+03		3.97	1.26E+03
3/5/2008	362.44	8.35	6.31E+03	1.24E+04		8.35	6.31E+03
3/6/2008	363.23	9.14	7.66E+03	1.10E+04		9.14	7.66E+03
3/7/2008	362.92	8.83	7.11E+03	8.02E+03		8.83	7.11E+03
3/8/2008	363.68	9.59	8.49E+03	1.30E+04		9.59	8.49E+03
3/9/2008	364.87	10.78	1.09E+04	1.67E+04		10.78	1.09E+04
3/10/2008	364.48	10.39	1.01E+04	9.74E+03	9.74E+03	10.39	9.74E+03
3/11/2008	364.22	10.13	9.57E+03	7.98E+03	7.98E+03	10.13	7.98E+03
3/12/2008	363.61	9.52	8.36E+03	7.19E+03	7.19E+03	9.52	7.19E+03
3/13/2008	362.28	8.19	6.04E+03	6.09E+03		8.19	6.04E+03
3/14/2008	360.59	6.50	3.67E+03	4.63E+03		6.50	3.67E+03
3/15/2008	359.74	5.65	2.71E+03	4.06E+03		5.65	2.71E+03
3/16/2008	359.35	5.26	2.32E+03	3.71E+03		5.26	2.32E+03
3/17/2008	358.90	4.81	1.91E+03	3.12E+03		4.81	1.91E+03
3/18/2008	358.33	4.24	1.46E+03	2.48E+03		4.24	1.46E+03
3/19/2008	358.64	4.55	1.70E+03	3.13E+03		4.55	1.70E+03
3/20/2008	360.86	6.77	4.00E+03	5.85E+03		6.77	4.00E+03
3/21/2008	360.29	6.20	3.31E+03	4.51E+03		6.20	3.31E+03
3/22/2008	359.63	5.54	2.59E+03	3.44E+03		5.54	2.59E+03
3/23/2008	358.96	4.87	1.96E+03	2.81E+03		4.87	1.96E+03
3/24/2008	358.33	4.24	1.46E+03	2.30E+03		4.24	1.46E+03
3/25/2008	357.85	3.76	1.13E+03	1.94E+03		3.76	1.13E+03
3/26/2008	357.50	3.41	9.11E+02	1.69E+03		3.41	9.11E+02
3/27/2008	357.21	3.12	7.49E+02	1.50E+03		3.12	7.49E+02
3/28/2008	357.04	2.95	8.98E+02	1.47E+03		2.95	8.98E+02
3/29/2008	356.97	2.88	8.17E+02	1.44E+03		2.88	8.17E+02
3/30/2008	356.73	2.64	5.88E+02	1.27E+03		2.64	5.88E+02
3/31/2008	356.52	2.43	4.41E+02	1.20E+03		2.43	4.41E+02
4/1/2008	356.76	2.67	6.16E+02	1.43E+03		2.67	6.16E+02
4/2/2008	357.15	3.06	7.19E+02	1.75E+03		3.06	7.19E+02
4/3/2008	356.94	2.85	7.80E+02	1.50E+03		2.85	7.80E+02
4/4/2008	356.89	2.80	7.26E+02	2.03E+03		2.80	7.26E+02
4/5/2008	357.65	3.56	9.98E+02	2.58E+03		3.56	9.98E+02
4/6/2008	357.31	3.22	8.04E+02	1.93E+03		3.22	8.04E+02
4/7/2008	356.90	2.81	7.41E+02	1.56E+03		2.81	7.41E+02
4/8/2008	356.65	2.56	5.28E+02	1.32E+03		2.56	5.28E+02
4/9/2008	356.43	2.34	3.94E+02	1.13E+03		2.34	3.94E+02
4/10/2008	356.27	2.18	3.17E+02	1.09E+03		2.18	3.17E+02
4/11/2008	356.15	2.06	2.71E+02	1.01E+03		2.06	2.71E+02
4/12/2008	356.40	2.31	3.77E+02	1.30E+03		2.31	3.77E+02
4/13/2008	356.71	2.62	5.71E+02	1.41E+03		2.62	5.71E+02
4/14/2008	356.39	2.30	3.75E+02	1.19E+03		2.30	3.75E+02
4/15/2008	356.12	2.03	2.59E+02	1.01E+03		2.03	2.59E+02
4/16/2008	355.95	1.86	2.06E+02	8.69E+02		1.86	2.06E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/17/2008	355.81	1.72	1.71E+02	8.16E+02		1.72	1.71E+02
4/18/2008	355.72	1.63	1.51E+02	7.53E+02		1.63	1.51E+02
4/19/2008	355.64	1.55	1.36E+02	7.11E+02		1.55	1.36E+02
4/20/2008	355.52	1.43	1.16E+02	6.67E+02		1.43	1.16E+02
4/21/2008	355.47	1.38	1.07E+02	6.27E+02		1.38	1.07E+02
4/22/2008	355.43	1.34	1.03E+02	6.07E+02		1.34	1.03E+02
4/23/2008	355.34	1.25	9.06E+01	5.40E+02		1.25	9.06E+01
4/24/2008	355.29	1.20	8.44E+01	5.25E+02		1.20	8.44E+01
4/25/2008	355.24	1.15	7.90E+01	5.15E+02		1.15	7.90E+01
4/26/2008	355.17	1.08	7.26E+01	4.84E+02		1.08	7.26E+01
4/27/2008	355.16	1.07	7.10E+01	4.64E+02		1.07	7.10E+01
4/28/2008	355.26	1.17	8.14E+01	8.26E+02		1.17	8.14E+01
4/29/2008	357.81	3.72	1.10E+03	3.29E+03		3.72	1.10E+03
4/30/2008	357.64	3.55	9.91E+02	2.24E+03		3.55	9.91E+02
5/1/2008	356.68	2.59	5.47E+02	1.50E+03		2.59	5.47E+02
5/2/2008	356.35	2.26	3.53E+02	1.12E+03		2.26	3.53E+02
5/3/2008	356.35	2.26	3.55E+02	1.12E+03		2.26	3.55E+02
5/4/2008	356.39	2.30	3.74E+02	1.26E+03		2.30	3.74E+02
5/5/2008	356.46	2.37	4.07E+02	1.25E+03		2.37	4.07E+02
5/6/2008	356.08	1.99	2.46E+02	1.02E+03		1.99	2.46E+02
5/7/2008	355.80	1.71	1.68E+02	8.37E+02		1.71	1.68E+02
5/8/2008	355.63	1.54	1.34E+02	7.24E+02		1.54	1.34E+02
5/9/2008	355.65	1.56	1.38E+02	7.50E+02		1.56	1.38E+02
5/10/2008	356.68	2.59	5.51E+02	1.23E+03		2.59	5.51E+02
5/11/2008	356.64	2.55	5.23E+02	1.23E+03		2.55	5.23E+02
5/12/2008	356.15	2.06	2.71E+02	9.64E+02		2.06	2.71E+02
5/13/2008	355.86	1.77	1.84E+02	7.72E+02		1.77	1.84E+02
5/14/2008	355.64	1.55	1.36E+02	6.72E+02		1.55	1.36E+02
5/15/2008	355.51	1.42	1.14E+02	6.17E+02		1.42	1.14E+02
5/16/2008	355.59	1.50	1.27E+02	6.60E+02		1.50	1.27E+02
5/17/2008	357.36	3.27	8.29E+02	1.82E+03		3.27	8.29E+02
5/18/2008	357.53	3.44	9.26E+02	1.76E+03		3.44	9.26E+02
5/19/2008	357.23	3.14	7.62E+02	1.51E+03		3.14	7.62E+02
5/20/2008	356.85	2.76	6.88E+02	1.23E+03		2.76	6.88E+02
5/21/2008	356.67	2.58	5.40E+02	1.07E+03		2.58	5.40E+02
5/22/2008	356.57	2.48	4.77E+02	1.01E+03		2.48	4.77E+02
5/23/2008	356.41	2.32	3.83E+02	9.27E+02		2.32	3.83E+02
5/24/2008	356.10	2.01	2.52E+02	8.05E+02		2.01	2.52E+02
5/25/2008	355.86	1.77	1.83E+02	6.69E+02		1.77	1.83E+02
5/26/2008	355.63	1.54	1.34E+02	5.91E+02		1.54	1.34E+02
5/27/2008	355.49	1.40	1.11E+02	5.33E+02		1.40	1.11E+02
5/28/2008	356.15	2.06	2.69E+02	5.76E+02		2.06	2.69E+02
5/29/2008	356.18	2.09	2.79E+02	7.19E+02		2.09	2.79E+02
5/30/2008	355.81	1.72	1.70E+02	6.30E+02		1.72	1.70E+02
5/31/2008	355.47	1.38	1.08E+02	4.93E+02		1.38	1.08E+02
6/1/2008	355.52	1.43	1.15E+02	5.07E+02		1.43	1.15E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/2/2008	355.50	1.41	1.13E+02	4.94E+02		1.41	1.13E+02
6/3/2008	355.23	1.14	7.82E+01	4.35E+02		1.14	7.82E+01
6/4/2008	355.15	1.06	7.07E+01	3.78E+02		1.06	7.07E+01
6/5/2008	355.31	1.22	8.67E+01	4.06E+02		1.22	8.67E+01
6/6/2008	355.23	1.14	7.78E+01	4.77E+02		1.14	7.78E+01
6/7/2008	355.14	1.05	6.89E+01	4.44E+02		1.05	6.89E+01
6/8/2008	355.08	0.99	6.37E+01	3.69E+02		0.99	6.37E+01
6/9/2008	355.07	0.98	6.27E+01	3.43E+02		0.98	6.27E+01
6/10/2008	355.01	0.92	5.81E+01	3.46E+02		0.92	5.81E+01
6/11/2008	355.01	0.92	5.79E+01	3.00E+02		0.92	5.79E+01
6/12/2008	355.04	0.95	6.03E+01	2.83E+02		0.95	6.03E+01
6/13/2008	354.92	0.83	5.14E+01	2.80E+02		0.83	5.14E+01
6/14/2008	354.79	0.70	4.35E+01	2.50E+02		0.70	4.35E+01
6/15/2008	354.77	0.68	4.24E+01	2.08E+02		0.68	4.24E+01
6/16/2008	354.80	0.71	4.39E+01	2.04E+02		0.71	4.39E+01
6/17/2008	354.76	0.67	4.14E+01	2.15E+02		0.67	4.14E+01
6/18/2008	354.70	0.61	3.85E+01	2.08E+02		0.61	3.85E+01
6/19/2008	354.82	0.73	4.51E+01	2.59E+02		0.73	4.51E+01
6/20/2008	354.87	0.78	4.84E+01	2.47E+02		0.78	4.84E+01
6/21/2008	354.79	0.70	4.35E+01	2.31E+02		0.70	4.35E+01
6/22/2008	354.82	0.73	4.48E+01	2.05E+02		0.73	4.48E+01
6/23/2008	354.77	0.68	4.20E+01	2.85E+02		0.68	4.20E+01
6/24/2008	354.71	0.62	3.90E+01	2.48E+02		0.62	3.90E+01
6/25/2008	354.62	0.53	3.46E+01	1.96E+02		0.53	3.46E+01
6/26/2008	354.55	0.46	3.12E+01	1.86E+02		0.46	3.12E+01
6/27/2008	354.51	0.42	2.99E+01	1.33E+02		0.42	2.99E+01
6/28/2008	354.53	0.44	3.03E+01	1.24E+02		0.44	3.03E+01
6/29/2008	354.50	0.41	2.94E+01	1.35E+02		0.41	2.94E+01
6/30/2008	354.52	0.43	3.01E+01	1.57E+02		0.43	3.01E+01
7/1/2008	354.50	0.41	2.93E+01	2.15E+02		0.41	2.93E+01
7/2/2008	354.45	0.36	2.73E+01	1.92E+02		0.36	2.73E+01
7/3/2008	354.43	0.34	2.67E+01	1.91E+02		0.34	2.67E+01
7/4/2008	354.43	0.34	2.67E+01	1.97E+02		0.34	2.67E+01
7/5/2008	354.49	0.40	2.88E+01	1.97E+02		0.40	2.88E+01
7/6/2008	354.49	0.40	2.90E+01	1.96E+02		0.40	2.90E+01
7/7/2008	354.50	0.41	2.93E+01	1.92E+02		0.41	2.93E+01
7/8/2008	354.45	0.36	2.74E+01	1.79E+02		0.36	2.74E+01
7/9/2008	354.44	0.35	2.70E+01	1.71E+02		0.35	2.70E+01
7/10/2008	354.44	0.35	2.69E+01	1.82E+02		0.35	2.69E+01
7/11/2008	354.43	0.34	2.65E+01	1.69E+02		0.34	2.65E+01
7/12/2008	354.45	0.36	2.73E+01	1.41E+02		0.36	2.73E+01
7/13/2008	354.46	0.37	2.79E+01	1.32E+02		0.37	2.79E+01
7/14/2008	354.48	0.39	2.87E+01	1.48E+02		0.39	2.87E+01
7/15/2008	354.49	0.40	2.90E+01	1.72E+02		0.40	2.90E+01
7/16/2008	354.45	0.36	2.76E+01	1.63E+02		0.36	2.76E+01
7/17/2008	354.45	0.36	2.73E+01	1.45E+02		0.36	2.73E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/18/2008	354.47	0.38	2.83E+01	1.35E+02		0.38	2.83E+01
7/19/2008	354.48	0.39	2.86E+01	1.09E+02		0.39	2.86E+01
7/20/2008	354.49	0.40	2.88E+01	1.05E+02		0.40	2.88E+01
7/21/2008	354.48	0.39	2.87E+01	1.00E+02		0.39	2.87E+01
7/22/2008	354.48	0.39	2.86E+01	9.00E+01		0.39	2.86E+01
7/23/2008	354.49	0.40	2.90E+01	9.50E+01		0.40	2.90E+01
7/24/2008	354.59	0.50	3.32E+01	2.86E+02		0.50	3.32E+01
7/25/2008	355.23	1.14	7.83E+01	5.35E+02		1.14	7.83E+01
7/26/2008	354.86	0.77	4.73E+01	4.18E+02		0.77	4.73E+01
7/27/2008	354.48	0.39	2.85E+01	3.10E+02		0.39	2.85E+01
7/28/2008	354.40	0.31	2.58E+01	2.00E+02		0.31	2.58E+01
7/29/2008	354.40	0.31	2.56E+01	2.13E+02		0.31	2.56E+01
7/30/2008	354.43	0.34	2.66E+01	1.77E+02		0.34	2.66E+01
7/31/2008	354.46	0.37	2.76E+01	1.62E+02		0.37	2.76E+01
8/1/2008	354.45	0.36	2.74E+01	9.60E+01		0.36	2.74E+01
8/2/2008	354.45	0.36	2.76E+01	1.18E+02		0.36	2.76E+01
8/3/2008	354.61	0.52	3.41E+01	1.36E+02		0.52	3.41E+01
8/4/2008	354.67	0.58	3.70E+01	2.14E+02		0.58	3.70E+01
8/5/2008	354.58	0.49	3.28E+01	1.93E+02		0.49	3.28E+01
8/6/2008	354.59	0.50	3.33E+01	1.80E+02		0.50	3.33E+01
8/7/2008	355.38	1.29	9.61E+01	2.48E+02		1.29	9.61E+01
8/8/2008	354.98	0.89	5.61E+01	3.95E+02		0.89	5.61E+01
8/9/2008	354.63	0.54	3.50E+01	2.86E+02		0.54	3.50E+01
8/10/2008	354.46	0.37	2.76E+01	2.24E+02		0.37	2.76E+01
8/11/2008	354.48	0.39	2.86E+01	1.73E+02		0.39	2.86E+01
8/12/2008	355.06	0.97	6.23E+01	2.33E+02		0.97	6.23E+01
8/13/2008	355.00	0.91	5.71E+01	3.48E+02		0.91	5.71E+01
8/14/2008	354.73	0.64	3.99E+01	3.90E+02		0.64	3.99E+01
8/15/2008	354.58	0.49	3.26E+01	3.22E+02		0.49	3.26E+01
8/16/2008	354.73	0.64	3.99E+01	2.66E+02		0.64	3.99E+01
8/17/2008	354.79	0.70	4.31E+01	2.39E+02		0.70	4.31E+01
8/18/2008	354.65	0.56	3.57E+01	2.29E+02		0.56	3.57E+01
8/19/2008	354.54	0.45	3.08E+01	1.82E+02		0.45	3.08E+01
8/20/2008	354.47	0.38	2.81E+01	1.68E+02		0.38	2.81E+01
8/21/2008	354.45	0.36	2.73E+01	1.51E+02		0.36	2.73E+01
8/22/2008	354.44	0.35	2.69E+01	1.08E+02		0.35	2.69E+01
8/23/2008	354.42	0.33	2.62E+01	7.80E+01		0.33	2.62E+01
8/24/2008	354.42	0.33	2.62E+01	8.40E+01		0.33	2.62E+01
8/25/2008	354.40	0.31	2.56E+01	8.70E+01		0.31	2.56E+01
8/26/2008	354.38	0.29	2.49E+01	8.90E+01		0.29	2.49E+01
8/27/2008	354.36	0.27	2.43E+01	8.40E+01		0.27	2.43E+01
8/28/2008	354.35	0.26	2.40E+01	7.90E+01		0.26	2.40E+01
8/29/2008	354.35	0.26	2.41E+01	7.60E+01		0.26	2.41E+01
8/30/2008	354.38	0.29	2.48E+01	7.90E+01		0.29	2.48E+01
8/31/2008	354.38	0.29	2.48E+01	7.70E+01		0.29	2.48E+01
9/1/2008	354.36	0.27	2.43E+01	7.90E+01		0.27	2.43E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/2/2008	354.35	0.26	2.40E+01	7.80E+01		0.26	2.40E+01
9/3/2008	354.32	0.23	2.31E+01	7.50E+01		0.23	2.31E+01
9/4/2008	354.32	0.23	2.31E+01	7.20E+01		0.23	2.31E+01
9/5/2008	354.34	0.25	2.37E+01	6.80E+01		0.25	2.37E+01
9/6/2008	354.47	0.38	2.80E+01	1.04E+02		0.38	2.80E+01
9/7/2008	356.71	2.62	5.70E+02	6.35E+02		2.62	5.70E+02
9/8/2008	356.32	2.23	3.39E+02	8.42E+02		2.23	3.39E+02
9/9/2008	355.75	1.66	1.58E+02	7.02E+02		1.66	1.58E+02
9/10/2008	356.61	2.52	5.02E+02	1.03E+03		2.52	5.02E+02
9/11/2008	356.06	1.97	2.40E+02	7.76E+02		1.97	2.40E+02
9/12/2008	355.40	1.31	9.82E+01	4.85E+02		1.31	9.82E+01
9/13/2008	355.28	1.19	8.32E+01	4.26E+02		1.19	8.32E+01
9/14/2008	355.21	1.12	7.63E+01	4.80E+02		1.12	7.63E+01
9/15/2008	355.05	0.96	6.11E+01	3.97E+02		0.96	6.11E+01
9/16/2008	354.89	0.80	4.93E+01	2.66E+02		0.80	4.93E+01
9/17/2008	354.74	0.65	4.06E+01	2.08E+02		0.65	4.06E+01
9/18/2008	354.64	0.55	3.52E+01	1.84E+02		0.55	3.52E+01
9/19/2008	354.56	0.47	3.20E+01	1.50E+02		0.47	3.20E+01
9/20/2008	354.49	0.40	2.89E+01	1.08E+02		0.40	2.89E+01
9/21/2008	354.45	0.36	2.74E+01	1.13E+02		0.36	2.74E+01
9/22/2008	354.44	0.35	2.70E+01	1.07E+02		0.35	2.70E+01
9/23/2008	354.42	0.33	2.65E+01	1.16E+02		0.33	2.65E+01
9/24/2008	354.42	0.33	2.62E+01	7.10E+01		0.33	2.62E+01
9/25/2008	354.41	0.32	2.61E+01	1.00E+02		0.32	2.61E+01
9/26/2008	354.55	0.46	3.12E+01	1.36E+02		0.46	3.12E+01
9/27/2008	355.53	1.44	1.17E+02	3.58E+02		1.44	1.17E+02
9/28/2008	355.33	1.24	9.00E+01	4.60E+02		1.24	9.00E+01
9/29/2008	355.41	1.32	9.96E+01	4.97E+02		1.32	9.96E+01
9/30/2008	355.57	1.48	1.23E+02	5.43E+02		1.48	1.23E+02
10/1/2008	355.29	1.20	8.51E+01	4.58E+02		1.20	8.51E+01
10/2/2008	355.22	1.13	7.69E+01	3.73E+02		1.13	7.69E+01
10/3/2008	355.08	0.99	6.40E+01	3.07E+02		0.99	6.40E+01
10/4/2008	354.94	0.85	5.27E+01	2.56E+02		0.85	5.27E+01
10/5/2008	354.84	0.75	4.63E+01	2.19E+02		0.75	4.63E+01
10/6/2008	354.87	0.78	4.85E+01	2.02E+02		0.78	4.85E+01
10/7/2008	354.82	0.73	4.49E+01	1.98E+02		0.73	4.49E+01
10/8/2008	354.74	0.65	4.07E+01	1.71E+02		0.65	4.07E+01
10/9/2008	354.70	0.61	3.85E+01	1.77E+02		0.61	3.85E+01
10/10/2008	354.66	0.57	3.63E+01	1.68E+02		0.57	3.63E+01
10/11/2008	354.63	0.54	3.48E+01	1.26E+02		0.54	3.48E+01
10/12/2008	354.60	0.51	3.34E+01	1.31E+02		0.51	3.34E+01
10/13/2008	354.58	0.49	3.25E+01	1.34E+02		0.49	3.25E+01
10/14/2008	354.57	0.48	3.20E+01	1.20E+02		0.48	3.20E+01
10/15/2008	354.55	0.46	3.13E+01	1.21E+02		0.46	3.13E+01
10/16/2008	354.53	0.44	3.06E+01	1.12E+02		0.44	3.06E+01
10/17/2008	354.53	0.44	3.05E+01	1.03E+02		0.44	3.05E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/18/2008	354.62	0.53	3.43E+01	1.03E+02		0.53	3.43E+01
10/19/2008	354.66	0.57	3.64E+01	1.09E+02		0.57	3.64E+01
10/20/2008	354.66	0.57	3.63E+01	1.17E+02		0.57	3.63E+01
10/21/2008				1.35E+02	1.35E+02		1.35E+02
10/22/2008				1.16E+02	1.16E+02		1.16E+02
10/23/2008				1.16E+02	1.16E+02		1.16E+02
10/24/2008				1.21E+02	1.21E+02		1.21E+02
10/25/2008				2.00E+02	2.00E+02		2.00E+02
10/26/2008				1.71E+03	1.71E+03		1.71E+03
10/27/2008				1.39E+03	1.39E+03		1.39E+03
10/28/2008				2.05E+03	2.05E+03		2.05E+03
10/29/2008				4.20E+03	4.20E+03		4.20E+03
10/30/2008				2.97E+03	2.97E+03		2.97E+03
10/31/2008				2.17E+03	2.17E+03		2.17E+03
11/1/2008				1.61E+03	1.61E+03		1.61E+03
11/2/2008				1.18E+03	1.18E+03		1.18E+03
11/3/2008				9.61E+02	9.61E+02		9.61E+02
11/4/2008				7.99E+02	7.99E+02		7.99E+02
11/5/2008				6.54E+02	6.54E+02		6.54E+02
11/6/2008				6.44E+02	6.44E+02		6.44E+02
11/7/2008				7.06E+02	7.06E+02		7.06E+02
11/8/2008				7.13E+02	7.13E+02		7.13E+02
11/9/2008				6.50E+02	6.50E+02		6.50E+02
11/10/2008				6.02E+02	6.02E+02		6.02E+02
11/11/2008	355.47	1.38	1.08E+02	5.35E+02		1.38	1.08E+02
11/12/2008	355.37	1.28	9.46E+01	4.82E+02		1.28	9.46E+01
11/13/2008	355.28	1.19	8.38E+01	4.46E+02		1.19	8.38E+01
11/14/2008	355.54	1.45	1.18E+02	6.33E+02		1.45	1.18E+02
11/15/2008	355.91	1.82	1.95E+02	9.10E+02		1.82	1.95E+02
11/16/2008	357.60	3.51	9.71E+02	2.26E+03		3.51	9.71E+02
11/17/2008	357.62	3.53	9.83E+02	1.94E+03		3.53	9.83E+02
11/18/2008	356.98	2.89	8.19E+02	1.42E+03		2.89	8.19E+02
11/19/2008	356.47	2.38	4.13E+02	1.10E+03		2.38	4.13E+02
11/20/2008	356.12	2.03	2.60E+02	9.01E+02		2.03	2.60E+02
11/21/2008	355.95	1.86	2.06E+02	7.91E+02		1.86	2.06E+02
11/22/2008	355.76	1.67	1.60E+02	6.92E+02		1.67	1.60E+02
11/23/2008	355.57	1.48	1.24E+02	5.90E+02		1.48	1.24E+02
11/24/2008	355.47	1.38	1.09E+02	5.44E+02		1.38	1.09E+02
11/25/2008	355.65	1.56	1.38E+02	6.82E+02		1.56	1.38E+02
11/26/2008	356.23	2.14	2.99E+02	9.48E+02		2.14	2.99E+02
11/27/2008	356.04	1.95	2.32E+02	9.12E+02		1.95	2.32E+02
11/28/2008	355.80	1.71	1.68E+02	7.63E+02		1.71	1.68E+02
11/29/2008	355.64	1.55	1.37E+02	6.68E+02		1.55	1.37E+02
11/30/2008	355.55	1.46	1.21E+02	6.40E+02		1.46	1.21E+02
12/1/2008	356.83	2.74	6.76E+02	1.58E+03		2.74	6.76E+02
12/2/2008	357.48	3.39	8.98E+02	1.82E+03		3.39	8.98E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/3/2008	356.87	2.78	7.13E+02	1.38E+03		2.78	7.13E+02
12/4/2008	356.37	2.28	3.62E+02	1.08E+03		2.28	3.62E+02
12/5/2008	356.21	2.12	2.93E+02	9.50E+02		2.12	2.93E+02
12/6/2008	356.08	1.99	2.44E+02	8.44E+02		1.99	2.44E+02
12/7/2008	355.88	1.79	1.89E+02	7.70E+02		1.79	1.89E+02
12/8/2008	355.66	1.57	1.39E+02	6.44E+02		1.57	1.39E+02
12/9/2008	355.56	1.47	1.22E+02	6.00E+02		1.47	1.22E+02
12/10/2008	355.78	1.69	1.63E+02	9.53E+02		1.69	1.63E+02
12/11/2008	357.39	3.30	8.45E+02	2.12E+03		3.30	8.45E+02
12/12/2008	362.58	8.49	6.53E+03	1.19E+04		8.49	6.53E+03
12/13/2008	362.91	8.82	7.09E+03	9.01E+03		8.82	7.09E+03
12/14/2008	362.28	8.19	6.04E+03	6.22E+03		8.19	6.04E+03
12/15/2008	361.54	7.45	4.92E+03	5.03E+03		7.45	4.92E+03
12/16/2008	360.68	6.59	3.78E+03	4.30E+03		6.59	3.78E+03
12/17/2008	359.61	5.52	2.58E+03	3.43E+03		5.52	2.58E+03
12/18/2008	358.87	4.78	1.89E+03	2.84E+03		4.78	1.89E+03
12/19/2008	358.26	4.17	1.40E+03	2.28E+03		4.17	1.40E+03
12/20/2008	357.74	3.65	1.06E+03	1.85E+03		3.65	1.06E+03
12/21/2008	357.58	3.49	9.56E+02	1.69E+03		3.49	9.56E+02
12/22/2008	358.25	4.16	1.40E+03	1.49E+03		4.16	1.40E+03
12/23/2008	356.83	2.74	6.74E+02	1.28E+03		2.74	6.74E+02
12/24/2008	357.05	2.96	9.06E+02	1.69E+03		2.96	9.06E+02
12/25/2008	359.35	5.26	2.33E+03	4.78E+03		5.26	2.33E+03
12/26/2008	359.84	5.75	2.81E+03	4.49E+03		5.75	2.81E+03
12/27/2008	359.31	5.22	2.28E+03	3.33E+03		5.22	2.28E+03
12/28/2008	359.46	5.37	2.43E+03	3.84E+03		5.37	2.43E+03
12/29/2008	359.60	5.51	2.56E+03	4.40E+03		5.51	2.56E+03
12/30/2008	358.97	4.88	1.98E+03	3.20E+03		4.88	1.98E+03
12/31/2008	358.42	4.33	1.52E+03	2.48E+03		4.33	1.52E+03
1/1/2009	358.33	4.24	1.46E+03	1.81E+03		4.24	1.46E+03
1/2/2009	365.20	11.11	1.17E+04	1.54E+03	1.54E+03	11.11	1.54E+03
1/3/2009	367.79	13.70	1.84E+04	1.52E+03	1.52E+03	13.70	1.52E+03
1/4/2009	356.73	2.64	5.85E+02	1.32E+03		2.64	5.85E+02
1/5/2009	356.59	2.50	4.90E+02	1.25E+03		2.50	4.90E+02
1/6/2009	356.54	2.45	4.58E+02	1.18E+03		2.45	4.58E+02
1/7/2009	356.56	2.47	4.71E+02	1.19E+03		2.47	4.71E+02
1/8/2009	357.43	3.34	8.68E+02	1.59E+03		3.34	8.68E+02
1/9/2009	357.19	3.10	7.43E+02	1.54E+03		3.10	7.43E+02
1/10/2009	356.59	2.50	4.86E+02	1.19E+03		2.50	4.86E+02
1/11/2009	356.15	2.06	2.69E+02	9.23E+02		2.06	2.69E+02
1/12/2009	359.05	4.96	2.05E+03	9.90E+02	9.90E+02	4.96	9.90E+02
1/13/2009	356.37	2.28	3.65E+02	9.41E+02		2.28	3.65E+02
1/14/2009	361.44	7.35	4.79E+03	9.32E+02	9.32E+02	7.35	9.32E+02
1/15/2009	355.75	1.66	1.57E+02	3.63E+03		1.66	1.57E+02
1/16/2009	356.33	2.24	3.44E+02	Ice		2.24	3.44E+02
1/17/2009	355.75	1.66	1.57E+02	Ice		1.66	1.57E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/18/2009	355.57	1.48	1.24E+02	Ice		1.48	1.24E+02
1/19/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
1/20/2009	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
1/21/2009	355.55	1.46	1.21E+02	Ice		1.46	1.21E+02
1/22/2009	355.49	1.40	1.11E+02	Ice		1.40	1.11E+02
1/23/2009	355.37	1.28	9.48E+01	Ice		1.28	9.48E+01
1/24/2009	355.38	1.29	9.54E+01	Ice		1.29	9.54E+01
1/25/2009	366.23	12.14	1.41E+04	Ice		12.14	1.41E+04
1/26/2009	355.25	1.16	7.99E+01	Ice		1.16	7.99E+01
1/27/2009	355.18	1.09	7.29E+01	Ice		1.09	7.29E+01
1/28/2009	355.18	1.09	7.36E+01	Ice		1.09	7.36E+01
1/29/2009	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
1/30/2009	355.60	1.51	1.29E+02	Ice		1.51	1.29E+02
1/31/2009	355.47	1.38	1.09E+02	Ice		1.38	1.09E+02
2/1/2009	355.37	1.28	9.39E+01	Ice		1.28	9.39E+01
2/2/2009	355.32	1.23	8.86E+01	Ice		1.23	8.86E+01
2/3/2009	355.40	1.31	9.80E+01	Ice		1.31	9.80E+01
2/4/2009	355.40	1.31	9.89E+01	Ice		1.31	9.89E+01
2/5/2009	355.35	1.26	9.25E+01	Ice		1.26	9.25E+01
2/6/2009	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
2/7/2009	355.25	1.16	8.01E+01	Ice		1.16	8.01E+01
2/8/2009	355.34	1.25	9.08E+01	Ice		1.25	9.08E+01
2/9/2009	356.17	2.08	2.78E+02	Ice		2.08	2.78E+02
2/10/2009	356.37	2.28	3.64E+02	Ice		2.28	3.64E+02
2/11/2009	356.42	2.33	3.86E+02	Ice		2.33	3.86E+02
2/12/2009	358.15	4.06	1.32E+03	Ice		4.06	1.32E+03
2/13/2009	359.11	5.02	2.10E+03	Ice		5.02	2.10E+03
2/14/2009	358.20	4.11	1.36E+03	Ice		4.11	1.36E+03
2/15/2009	357.35	3.26	8.28E+02	Ice		3.26	8.28E+02
2/16/2009	356.83	2.74	6.71E+02	Ice		2.74	6.71E+02
2/17/2009	356.54	2.45	4.53E+02	Ice		2.45	4.53E+02
2/18/2009	356.32	2.23	3.39E+02	Ice		2.23	3.39E+02
2/19/2009	356.33	2.24	3.46E+02	Ice		2.24	3.46E+02
2/20/2009	356.50	2.41	4.30E+02	Ice		2.41	4.30E+02
2/21/2009	356.17	2.08	2.77E+02	Ice		2.08	2.77E+02
2/22/2009	356.05	1.96	2.35E+02	Ice		1.96	2.35E+02
2/23/2009	355.94	1.85	2.04E+02	Ice		1.85	2.04E+02
2/24/2009	355.71	1.62	1.49E+02	Ice		1.62	1.49E+02
2/25/2009	355.61	1.52	1.30E+02	Ice		1.52	1.30E+02
2/26/2009				Ice			
2/27/2009				Ice			
2/28/2009				Ice			
3/1/2009				Ice			
3/2/2009				Ice			
3/3/2009				Ice			
3/4/2009				Ice			

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/5/2009				Ice			
3/6/2009				Ice			
3/7/2009				Ice			
3/8/2009				Ice			
3/9/2009				Ice			
3/10/2009				2.71E+03	2.71E+03		2.71E+03
3/11/2009				2.28E+03	2.28E+03		2.28E+03
3/12/2009				1.71E+03	1.71E+03		1.71E+03
3/13/2009				1.33E+03	1.33E+03		1.33E+03
3/14/2009				1.12E+03	1.12E+03		1.12E+03
3/15/2009				1.01E+03	1.01E+03		1.01E+03
3/16/2009				9.32E+02	9.32E+02		9.32E+02
3/17/2009				8.64E+02	8.64E+02		8.64E+02
3/18/2009				8.03E+02	8.03E+02		8.03E+02
3/19/2009				7.96E+02	7.96E+02		7.96E+02
3/20/2009				9.03E+02	9.03E+02		9.03E+02
3/21/2009				8.44E+02	8.44E+02		8.44E+02
3/22/2009				7.49E+02	7.49E+02		7.49E+02
3/23/2009				6.54E+02	6.54E+02		6.54E+02
3/24/2009				6.12E+02	6.12E+02		6.12E+02
3/25/2009				5.81E+02	5.81E+02		5.81E+02
3/26/2009				5.76E+02	5.76E+02		5.76E+02
3/27/2009				6.69E+02	6.69E+02		6.69E+02
3/28/2009				7.57E+02	7.57E+02		7.57E+02
3/29/2009				8.13E+02	8.13E+02		8.13E+02
3/30/2009				1.83E+03	1.83E+03		1.83E+03
3/31/2009				1.51E+03	1.51E+03		1.51E+03
4/1/2009				1.10E+03	1.10E+03		1.10E+03
4/2/2009				1.24E+03	1.24E+03		1.24E+03
4/3/2009				1.52E+03	1.52E+03		1.52E+03
4/4/2009				2.16E+03	2.16E+03		2.16E+03
4/5/2009				1.73E+03	1.73E+03		1.73E+03
4/6/2009				1.46E+03	1.46E+03		1.46E+03
4/7/2009				1.82E+03	1.82E+03		1.82E+03
4/8/2009				1.52E+03	1.52E+03		1.52E+03
4/9/2009				1.23E+03	1.23E+03		1.23E+03
4/10/2009				1.02E+03	1.02E+03		1.02E+03
4/11/2009				1.03E+03	1.03E+03		1.03E+03
4/12/2009				9.98E+02	9.98E+02		9.98E+02
4/13/2009				8.63E+02	8.63E+02		8.63E+02
4/14/2009				7.91E+02	7.91E+02		7.91E+02
4/15/2009				7.55E+02	7.55E+02		7.55E+02
4/16/2009				7.78E+02	7.78E+02		7.78E+02
4/17/2009				7.24E+02	7.24E+02		7.24E+02
4/18/2009				6.72E+02	6.72E+02		6.72E+02
4/19/2009				5.94E+02	5.94E+02		5.94E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/20/2009				5.87E+02	5.87E+02		5.87E+02
4/21/2009				1.15E+03	1.15E+03		1.15E+03
4/22/2009				1.74E+03	1.74E+03		1.74E+03
4/23/2009				1.54E+03	1.54E+03		1.54E+03
4/24/2009				1.15E+03	1.15E+03		1.15E+03
4/25/2009				9.48E+02	9.48E+02		9.48E+02
4/26/2009				8.25E+02	8.25E+02		8.25E+02
4/27/2009				7.30E+02	7.30E+02		7.30E+02
4/28/2009				6.35E+02	6.35E+02		6.35E+02
4/29/2009				5.62E+02	5.62E+02		5.62E+02
4/30/2009				5.17E+02	5.17E+02		5.17E+02
5/1/2009				4.89E+02	4.89E+02		4.89E+02
5/2/2009				4.96E+02	4.96E+02		4.96E+02
5/3/2009				5.25E+02	5.25E+02		5.25E+02
5/4/2009				5.19E+02	5.19E+02		5.19E+02
5/5/2009				5.16E+02	5.16E+02		5.16E+02
5/6/2009				6.43E+02	6.43E+02		6.43E+02
5/7/2009				2.06E+03	2.06E+03		2.06E+03
5/8/2009				2.15E+03	2.15E+03		2.15E+03
5/9/2009				1.74E+03	1.74E+03		1.74E+03
5/10/2009				1.31E+03	1.31E+03		1.31E+03
5/11/2009				1.01E+03	1.01E+03		1.01E+03
5/12/2009				8.07E+02	8.07E+02		8.07E+02
5/13/2009				6.91E+02	6.91E+02		6.91E+02
5/14/2009				6.78E+02	6.78E+02		6.78E+02
5/15/2009				1.32E+03	1.32E+03		1.32E+03
5/16/2009				1.14E+03	1.14E+03		1.14E+03
5/17/2009				3.25E+03	3.25E+03		3.25E+03
5/18/2009				1.93E+03	1.93E+03		1.93E+03
5/19/2009				1.34E+03	1.34E+03		1.34E+03
5/20/2009				9.68E+02	9.68E+02		9.68E+02
5/21/2009				7.98E+02	7.98E+02		7.98E+02
5/22/2009				6.66E+02	6.66E+02		6.66E+02
5/23/2009				5.36E+02	5.36E+02		5.36E+02
5/24/2009				4.94E+02	4.94E+02		4.94E+02
5/25/2009				5.08E+02	5.08E+02		5.08E+02
5/26/2009				4.90E+02	4.90E+02		4.90E+02
5/27/2009				4.34E+02	4.34E+02		4.34E+02
5/28/2009				4.51E+02	4.51E+02		4.51E+02
5/29/2009				4.69E+02	4.69E+02		4.69E+02
5/30/2009				5.06E+02	5.06E+02		5.06E+02
5/31/2009				4.56E+02	4.56E+02		4.56E+02
6/1/2009				3.95E+02	3.95E+02		3.95E+02
6/2/2009				3.25E+02	3.25E+02		3.25E+02
6/3/2009				2.86E+02	2.86E+02		2.86E+02
6/4/2009				2.88E+02	2.88E+02		2.88E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/5/2009				3.13E+02	3.13E+02		3.13E+02
6/6/2009				3.44E+02	3.44E+02		3.44E+02
6/7/2009				3.36E+02	3.36E+02		3.36E+02
6/8/2009				3.01E+02	3.01E+02		3.01E+02
6/9/2009				6.45E+02	6.45E+02		6.45E+02
6/10/2009				1.18E+03	1.18E+03		1.18E+03
6/11/2009				9.59E+02	9.59E+02		9.59E+02
6/12/2009				4.72E+03	4.72E+03		4.72E+03
6/13/2009				3.87E+03	3.87E+03		3.87E+03
6/14/2009				3.39E+03	3.39E+03		3.39E+03
6/15/2009				3.65E+03	3.65E+03		3.65E+03
6/16/2009				2.58E+03	2.58E+03		2.58E+03
6/17/2009				1.72E+03	1.72E+03		1.72E+03
6/18/2009				5.99E+03	5.99E+03		5.99E+03
6/19/2009				7.58E+03	7.58E+03		7.58E+03
6/20/2009				4.97E+03	4.97E+03		4.97E+03
6/21/2009				7.47E+03	7.47E+03		7.47E+03
6/22/2009				5.16E+03	5.16E+03		5.16E+03
6/23/2009				3.28E+03	3.28E+03		3.28E+03
6/24/2009				2.36E+03	2.36E+03		2.36E+03
6/25/2009				1.94E+03	1.94E+03		1.94E+03
6/26/2009				1.96E+03	1.96E+03		1.96E+03
6/27/2009				5.23E+03	5.23E+03		5.23E+03
6/28/2009				3.13E+03	3.13E+03		3.13E+03
6/29/2009				1.94E+03	1.94E+03		1.94E+03
6/30/2009				1.96E+03	1.96E+03		1.96E+03
7/1/2009	357.34	3.25	8.23E+02	3.61E+03		3.25	8.23E+02
7/2/2009	357.60	3.51	9.71E+02	2.66E+03		3.51	9.71E+02
7/3/2009	358.09	4.00	1.28E+03	2.69E+03		4.00	1.28E+03
7/4/2009	357.63	3.54	9.88E+02	2.14E+03		3.54	9.88E+02
7/5/2009	357.11	3.02	6.98E+02	1.65E+03		3.02	6.98E+02
7/6/2009	356.58	2.49	4.80E+02	1.29E+03		2.49	4.80E+02
7/7/2009	356.19	2.10	2.83E+02			2.10	2.83E+02
7/8/2009	356.56	2.47	4.68E+02	1.20E+03		2.47	4.68E+02
7/9/2009	356.38	2.29	3.67E+02	1.16E+03		2.29	3.67E+02
7/10/2009	355.92	1.83	1.98E+02	9.19E+02		1.83	1.98E+02
7/11/2009	355.65	1.56	1.38E+02	8.33E+02		1.56	1.38E+02
7/12/2009	355.66	1.57	1.39E+02	8.66E+02		1.57	1.39E+02
7/13/2009	355.59	1.50	1.27E+02	8.07E+02		1.50	1.27E+02
7/14/2009	355.30	1.21	8.59E+01	6.71E+02		1.21	8.59E+01
7/15/2009	355.16	1.07	7.16E+01	5.54E+02		1.07	7.16E+01
7/16/2009	355.13	1.04	6.86E+01	5.20E+02		1.04	6.86E+01
7/17/2009	355.06	0.97	6.22E+01	5.35E+02		0.97	6.22E+01
7/18/2009	355.22	1.13	7.76E+01	6.85E+02		1.13	7.76E+01
7/19/2009	355.25	1.16	8.03E+01	6.76E+02		1.16	8.03E+01
7/20/2009	355.02	0.93	5.89E+01	5.24E+02		0.93	5.89E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/21/2009	354.93	0.84	5.24E+01	4.99E+02		0.84	5.24E+01
7/22/2009	355.09	1.00	6.46E+01	6.67E+02		1.00	6.46E+01
7/23/2009	355.12	1.03	6.76E+01	5.95E+02		1.03	6.76E+01
7/24/2009	354.98	0.89	5.58E+01	5.51E+02		0.89	5.58E+01
7/25/2009	354.92	0.83	5.19E+01	1.12E+03		0.83	5.19E+01
7/26/2009	357.56	3.47	9.46E+02	1.54E+03		3.47	9.46E+02
7/27/2009	357.16	3.07	7.26E+02	1.70E+03		3.07	7.26E+02
7/28/2009	356.15	2.06	2.68E+02	1.35E+03		2.06	2.68E+02
7/29/2009	355.54	1.45	1.18E+02	9.66E+02		1.45	1.18E+02
7/30/2009	356.14	2.05	2.66E+02	2.83E+03		2.05	2.66E+02
7/31/2009	356.08	1.99	2.45E+02	1.62E+03		1.99	2.45E+02
8/1/2009	356.10	2.01	2.51E+02	1.50E+03		2.01	2.51E+02
8/2/2009	356.07	1.98	2.41E+02	1.32E+03		1.98	2.41E+02
8/3/2009	357.61	3.52	9.74E+02	2.01E+03		3.52	9.74E+02
8/4/2009	356.86	2.77	6.97E+02	1.58E+03		2.77	6.97E+02
8/5/2009	356.01	1.92	2.24E+02	1.11E+03		1.92	2.24E+02
8/6/2009	355.73	1.64	1.53E+02	8.22E+02		1.64	1.53E+02
8/7/2009	355.54	1.45	1.19E+02	7.19E+02		1.45	1.19E+02
8/8/2009	355.25	1.16	8.01E+01	5.97E+02		1.16	8.01E+01
8/9/2009	355.07	0.98	6.27E+01	5.14E+02		0.98	6.27E+01
8/10/2009	355.50	1.41	1.12E+02	1.14E+03		1.41	1.12E+02
8/11/2009	356.70	2.61	5.66E+02	1.58E+03		2.61	5.66E+02
8/12/2009	356.11	2.02	2.57E+02	1.32E+03		2.02	2.57E+02
8/13/2009	356.95	2.86	7.94E+02	1.46E+03		2.86	7.94E+02
8/14/2009	356.81	2.72	6.53E+02	1.40E+03		2.72	6.53E+02
8/15/2009	356.46	2.37	4.10E+02	1.13E+03		2.37	4.10E+02
8/16/2009	355.95	1.86	2.06E+02	9.61E+02		1.86	2.06E+02
8/17/2009	355.53	1.44	1.18E+02	7.05E+02		1.44	1.18E+02
8/18/2009	355.29	1.20	8.53E+01	5.66E+02		1.20	8.53E+01
8/19/2009	355.15	1.06	7.00E+01	5.05E+02		1.06	7.00E+01
8/20/2009	355.07	0.98	6.35E+01	4.43E+02		0.98	6.35E+01
8/21/2009	355.07	0.98	6.27E+01	4.04E+02		0.98	6.27E+01
8/22/2009	355.57	1.48	1.24E+02	6.02E+02		1.48	1.24E+02
8/23/2009	357.16	3.07	7.25E+02	2.02E+03		3.07	7.25E+02
8/24/2009	356.91	2.82	7.52E+02	1.69E+03		2.82	7.52E+02
8/25/2009	356.18	2.09	2.82E+02	1.13E+03		2.09	2.82E+02
8/26/2009	355.70	1.61	1.48E+02	8.01E+02		1.61	1.48E+02
8/27/2009	355.42	1.33	1.01E+02	6.62E+02		1.33	1.01E+02
8/28/2009	355.30	1.21	8.55E+01	5.79E+02		1.21	8.55E+01
8/29/2009	356.41	2.32	3.85E+02	1.24E+03		2.32	3.85E+02
8/30/2009	356.68	2.59	5.50E+02	1.55E+03		2.59	5.50E+02
8/31/2009	355.99	1.90	2.18E+02	1.08E+03		1.90	2.18E+02
9/1/2009	355.54	1.45	1.19E+02	7.45E+02		1.45	1.19E+02
9/2/2009	355.30	1.21	8.65E+01	6.26E+02		1.21	8.65E+01
9/3/2009	355.17	1.08	7.24E+01	5.28E+02		1.08	7.24E+01
9/4/2009	355.04	0.95	6.08E+01	4.62E+02		0.95	6.08E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/5/2009	354.96	0.87	5.47E+01	4.10E+02		0.87	5.47E+01
9/6/2009	354.91	0.82	5.11E+01	3.81E+02		0.82	5.11E+01
9/7/2009	354.84	0.75	4.65E+01	3.35E+02		0.75	4.65E+01
9/8/2009	354.80	0.71	4.41E+01	3.36E+02		0.71	4.41E+01
9/9/2009	354.78	0.69	4.28E+01	2.74E+02		0.69	4.28E+01
9/10/2009	354.76	0.67	4.15E+01	2.86E+02		0.67	4.15E+01
9/11/2009	354.73	0.64	4.02E+01	2.83E+02		0.64	4.02E+01
9/12/2009	355.11	1.02	6.67E+01	2.75E+02		1.02	6.67E+01
9/13/2009	355.32	1.23	8.84E+01	4.14E+02		1.23	8.84E+01
9/14/2009	355.15	1.06	6.99E+01	4.23E+02		1.06	6.99E+01
9/15/2009	354.97	0.88	5.51E+01	3.55E+02		0.88	5.51E+01
9/16/2009	354.90	0.81	4.99E+01	3.08E+02		0.81	4.99E+01
9/17/2009	355.04	0.95	6.09E+01	3.40E+02		0.95	6.09E+01
9/18/2009	355.07	0.98	6.35E+01	4.22E+02		0.98	6.35E+01
9/19/2009	355.01	0.92	5.85E+01	3.48E+02		0.92	5.85E+01
9/20/2009	354.92	0.83	5.17E+01	3.26E+02		0.83	5.17E+01
9/21/2009	354.88	0.79	4.91E+01	3.00E+02		0.79	4.91E+01
9/22/2009	354.83	0.74	4.56E+01	2.76E+02		0.74	4.56E+01
9/23/2009	354.82	0.73	4.50E+01	2.34E+02		0.73	4.50E+01
9/24/2009	354.82	0.73	4.48E+01	2.41E+02		0.73	4.48E+01
9/25/2009	354.80	0.71	4.39E+01	2.38E+02		0.71	4.39E+01
9/26/2009	354.78	0.69	4.27E+01	2.25E+02		0.69	4.27E+01
9/27/2009	354.91	0.82	5.06E+01	3.19E+02		0.82	5.06E+01
9/28/2009	355.16	1.07	7.08E+01	5.64E+02		1.07	7.08E+01
9/29/2009				4.78E+02	4.78E+02		4.78E+02
9/30/2009				3.87E+02	3.87E+02		3.87E+02
10/1/2009				2.81E+02	2.81E+02		2.81E+02
10/2/2009				2.86E+02	2.86E+02		2.86E+02
10/3/2009				2.73E+02	2.73E+02		2.73E+02
10/4/2009				3.26E+02	3.26E+02		3.26E+02
10/5/2009				3.13E+02	3.13E+02		3.13E+02
10/6/2009				2.83E+02	2.83E+02		2.83E+02
10/7/2009				2.87E+02	2.87E+02		2.87E+02
10/8/2009				2.76E+02	2.76E+02		2.76E+02
10/9/2009				2.64E+02	2.64E+02		2.64E+02
10/10/2009				3.77E+02	3.77E+02		3.77E+02
10/11/2009				4.05E+02	4.05E+02		4.05E+02
10/12/2009				3.42E+02	3.42E+02		3.42E+02
10/13/2009				2.96E+02	2.96E+02		2.96E+02
10/14/2009				2.66E+02	2.66E+02		2.66E+02
10/15/2009				2.61E+02	2.61E+02		2.61E+02
10/16/2009				2.80E+02	2.80E+02		2.80E+02
10/17/2009				3.04E+02	3.04E+02		3.04E+02
10/18/2009				3.16E+02	3.16E+02		3.16E+02
10/19/2009				2.97E+02	2.97E+02		2.97E+02
10/20/2009				2.80E+02	2.80E+02		2.80E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/21/2009				2.64E+02	2.64E+02		2.64E+02
10/22/2009				2.59E+02	2.59E+02		2.59E+02
10/23/2009				2.63E+02	2.63E+02		2.63E+02
10/24/2009				7.50E+02	7.50E+02		7.50E+02
10/25/2009				2.43E+03	2.43E+03		2.43E+03
10/26/2009				1.72E+03	1.72E+03		1.72E+03
10/27/2009				1.13E+03	1.13E+03		1.13E+03
10/28/2009				2.74E+03	2.74E+03		2.74E+03
10/29/2009				4.59E+03	4.59E+03		4.59E+03
10/30/2009				2.73E+03	2.73E+03		2.73E+03
10/31/2009				1.89E+03	1.89E+03		1.89E+03
11/1/2009				1.42E+03	1.42E+03		1.42E+03
11/2/2009				1.15E+03	1.15E+03		1.15E+03
11/3/2009				9.48E+02	9.48E+02		9.48E+02
11/4/2009				8.42E+02	8.42E+02		8.42E+02
11/5/2009				7.50E+02	7.50E+02		7.50E+02
11/6/2009				6.98E+02	6.98E+02		6.98E+02
11/7/2009				6.40E+02	6.40E+02		6.40E+02
11/8/2009				5.87E+02	5.87E+02		5.87E+02
11/9/2009				5.51E+02	5.51E+02		5.51E+02
11/10/2009				5.18E+02	5.18E+02		5.18E+02
11/11/2009				4.93E+02	4.93E+02		4.93E+02
11/12/2009				4.75E+02	4.75E+02		4.75E+02
11/13/2009				4.54E+02	4.54E+02		4.54E+02
11/14/2009				4.43E+02	4.43E+02		4.43E+02
11/15/2009				5.73E+02	5.73E+02		5.73E+02
11/16/2009				6.32E+02	6.32E+02		6.32E+02
11/17/2009				5.79E+02	5.79E+02		5.79E+02
11/18/2009				5.23E+02	5.23E+02		5.23E+02
11/19/2009				4.81E+02	4.81E+02		4.81E+02
11/20/2009				7.98E+02	7.98E+02		7.98E+02
11/21/2009				1.10E+03	1.10E+03		1.10E+03
11/22/2009				9.35E+02	9.35E+02		9.35E+02
11/23/2009				7.65E+02	7.65E+02		7.65E+02
11/24/2009				6.73E+02	6.73E+02		6.73E+02
11/25/2009				6.30E+02	6.30E+02		6.30E+02
11/26/2009				6.23E+02	6.23E+02		6.23E+02
11/27/2009				6.34E+02	6.34E+02		6.34E+02
11/28/2009				5.93E+02	5.93E+02		5.93E+02
11/29/2009				5.32E+02	5.32E+02		5.32E+02
11/30/2009	355.28	1.19	8.40E+01	5.06E+02		1.19	8.40E+01
12/1/2009	355.34	1.25	9.10E+01	4.89E+02		1.25	9.10E+01
12/2/2009	355.35	1.26	9.23E+01	5.19E+02		1.26	9.23E+01
12/3/2009	357.36	3.27	8.30E+02	2.90E+03		3.27	8.30E+02
12/4/2009	358.91	4.82	1.92E+03	3.15E+03		4.82	1.92E+03
12/5/2009	358.11	4.02	1.30E+03	2.26E+03		4.02	1.30E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/6/2009	357.52	3.43	9.22E+02	1.87E+03		3.43	9.22E+02
12/7/2009	357.09	3.00	6.91E+02	1.54E+03		3.00	6.91E+02
12/8/2009	356.73	2.64	5.92E+02	1.29E+03		2.64	5.92E+02
12/9/2009	356.97	2.88	8.08E+02	1.36E+03		2.88	8.08E+02
12/10/2009	358.80	4.71	1.83E+03	2.62E+03		4.71	1.83E+03
12/11/2009	358.43	4.34	1.53E+03	2.43E+03		4.34	1.53E+03
12/12/2009	357.82	3.73	1.10E+03	1.79E+03		3.73	1.10E+03
12/13/2009	357.24	3.15	7.65E+02	1.52E+03		3.15	7.65E+02
12/14/2009	358.53	4.44	1.61E+03	2.70E+03		4.44	1.61E+03
12/15/2009	358.89	4.80	1.90E+03	2.96E+03		4.80	1.90E+03
12/16/2009	359.01	4.92	2.01E+03	3.02E+03		4.92	2.01E+03
12/17/2009	358.39	4.30	1.50E+03	2.36E+03		4.30	1.50E+03
12/18/2009	357.68	3.59	1.02E+03	1.71E+03		3.59	1.02E+03
12/19/2009	382.41	28.32	8.81E+04	1.33E+03	1.33E+03	28.32	1.33E+03
12/20/2009	378.98	24.89	6.67E+04	1.32E+03	1.32E+03	24.89	1.32E+03
12/21/2009	368.53	14.44	2.06E+04	1.14E+03	1.14E+03	14.44	1.14E+03
12/22/2009	357.05	2.96	9.04E+02	1.13E+03		2.96	9.04E+02
12/23/2009	356.41	2.32	3.81E+02	9.24E+02		2.32	3.81E+02
12/24/2009	385.20	31.11	1.08E+05	8.68E+02	8.68E+02	31.11	8.68E+02
12/25/2009	356.15	2.06	2.71E+02	9.49E+02		2.06	2.71E+02
12/26/2009	356.20	2.11	2.88E+02	9.66E+02		2.11	2.88E+02
12/27/2009	359.63	5.54	2.60E+03	5.28E+03		5.54	2.60E+03
12/28/2009	360.40	6.31	3.44E+03	5.04E+03		6.31	3.44E+03
12/29/2009	359.60	5.51	2.57E+03	3.34E+03		5.51	2.57E+03
12/30/2009	358.44	4.35	1.54E+03	2.22E+03		4.35	1.54E+03
12/31/2009	357.97	3.88	1.20E+03	1.92E+03		3.88	1.20E+03
1/1/2010	357.40	3.31	8.55E+02	1.62E+03		3.31	8.55E+02
1/2/2010	357.15	3.06	7.21E+02	1.43E+03		3.06	7.21E+02
1/3/2010	356.37	2.28	3.63E+02	Ice		2.28	3.63E+02
1/4/2010	356.35	2.26	3.55E+02	Ice		2.26	3.55E+02
1/5/2010	356.36	2.27	3.58E+02	Ice		2.27	3.58E+02
1/6/2010	362.16	8.07	5.85E+03	Ice		8.07	5.85E+03
1/7/2010	356.01	1.92	2.23E+02	Ice		1.92	2.23E+02
1/8/2010	355.92	1.83	1.99E+02	Ice		1.83	1.99E+02
1/9/2010	357.41	3.32	8.59E+02	Ice		3.32	8.59E+02
1/10/2010	355.75	1.66	1.58E+02	Ice		1.66	1.58E+02
1/11/2010	355.74	1.65	1.55E+02	Ice		1.65	1.55E+02
1/12/2010	355.60	1.51	1.29E+02	Ice		1.51	1.29E+02
1/13/2010	355.51	1.42	1.15E+02	Ice		1.42	1.15E+02
1/14/2010	355.51	1.42	1.14E+02	Ice		1.42	1.14E+02
1/15/2010	355.43	1.34	1.03E+02	Ice		1.34	1.03E+02
1/16/2010	355.48	1.39	1.09E+02	Ice		1.39	1.09E+02
1/17/2010	355.56	1.47	1.22E+02	Ice		1.47	1.22E+02
1/18/2010	356.43	2.34	3.94E+02	Ice		2.34	3.94E+02
1/19/2010	356.95	2.86	7.90E+02	Ice		2.86	7.90E+02
1/20/2010	356.43	2.34	3.94E+02	Ice		2.34	3.94E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/21/2010	356.04	1.95	2.33E+02	Ice		1.95	2.33E+02
1/22/2010	355.79	1.70	1.66E+02	Ice		1.70	1.66E+02
1/23/2010	355.62	1.53	1.31E+02	Ice		1.53	1.31E+02
1/24/2010	355.46	1.37	1.07E+02	Ice		1.37	1.07E+02
1/25/2010	356.83	2.74	6.71E+02	Ice		2.74	6.71E+02
1/26/2010	360.26	6.17	3.27E+03	5.53E+03		6.17	3.27E+03
1/27/2010	359.88	5.79	2.86E+03	3.66E+03		5.79	2.86E+03
1/28/2010	359.32	5.23	2.30E+03	2.87E+03		5.23	2.30E+03
1/29/2010	358.29	4.20	1.43E+03	2.12E+03		4.20	1.43E+03
1/30/2010	356.92	2.83	7.62E+02	1.35E+03		2.83	7.62E+02
1/31/2010	356.46	2.37	4.12E+02	Ice		2.37	4.12E+02
2/1/2010	355.94	1.85	2.04E+02	Ice		1.85	2.04E+02
2/2/2010	355.90	1.81	1.94E+02	Ice		1.81	1.94E+02
2/3/2010	355.65	1.56	1.37E+02	Ice		1.56	1.37E+02
2/4/2010	355.59	1.50	1.26E+02	Ice		1.50	1.26E+02
2/5/2010	355.51	1.42	1.14E+02	Ice		1.42	1.14E+02
2/6/2010	355.42	1.33	1.01E+02	Ice		1.33	1.01E+02
2/7/2010	355.25	1.16	8.01E+01	Ice		1.16	8.01E+01
2/8/2010	355.46	1.37	1.06E+02	Ice		1.37	1.06E+02
2/9/2010	355.27	1.18	8.30E+01	Ice		1.18	8.30E+01
2/10/2010	355.16	1.07	7.16E+01	Ice		1.07	7.16E+01
2/11/2010	355.19	1.10	7.39E+01	Ice		1.10	7.39E+01
2/12/2010	355.21	1.12	7.58E+01	Ice		1.12	7.58E+01
2/13/2010	355.18	1.09	7.28E+01	Ice		1.09	7.28E+01
2/14/2010	355.14	1.05	6.97E+01	Ice		1.05	6.97E+01
2/15/2010	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/16/2010	355.11	1.02	6.70E+01	Ice		1.02	6.70E+01
2/17/2010	355.10	1.01	6.61E+01	Ice		1.01	6.61E+01
2/18/2010	355.10	1.01	6.56E+01	Ice		1.01	6.56E+01
2/19/2010	355.02	0.93	5.93E+01	Ice		0.93	5.93E+01
2/20/2010	355.02	0.93	5.91E+01	Ice		0.93	5.91E+01
2/21/2010	355.13	1.04	6.83E+01	Ice		1.04	6.83E+01
2/22/2010	355.18	1.09	7.28E+01	Ice		1.09	7.28E+01
2/23/2010	355.22	1.13	7.76E+01			1.13	7.76E+01
2/24/2010	355.47	1.38	1.08E+02			1.38	1.08E+02
2/25/2010	356.20	2.11	2.88E+02			2.11	2.88E+02
2/26/2010	355.74	1.65	1.56E+02	Ice		1.65	1.56E+02
2/27/2010	356.32	2.23	3.37E+02	Ice		2.23	3.37E+02
2/28/2010	356.27	2.18	3.19E+02	Ice		2.18	3.19E+02
3/1/2010	356.11	2.02	2.56E+02	Ice		2.02	2.56E+02
3/2/2010	356.49	2.40	4.24E+02	Ice		2.40	4.24E+02
3/3/2010	356.93	2.84	7.69E+02	Ice		2.84	7.69E+02
3/4/2010	357.40	3.31	8.53E+02	Ice		3.31	8.53E+02
3/5/2010	357.68	3.59	1.02E+03	Ice		3.59	1.02E+03
3/6/2010	357.64	3.55	9.90E+02	Ice		3.55	9.90E+02
3/7/2010	357.96	3.87	1.19E+03	2.66E+03		3.87	1.19E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/8/2010	358.67	4.58	1.72E+03	3.32E+03		4.58	1.72E+03
3/9/2010	359.39	5.30	2.36E+03	4.02E+03		5.30	2.36E+03
3/10/2010	359.58	5.49	2.55E+03	4.16E+03		5.49	2.55E+03
3/11/2010	359.42	5.33	2.39E+03	3.86E+03		5.33	2.39E+03
3/12/2010	359.76	5.67	2.73E+03	3.98E+03		5.67	2.73E+03
3/13/2010	360.82	6.73	3.95E+03	5.70E+03		6.73	3.95E+03
3/14/2010	364.02	9.93	9.16E+03	1.24E+04		9.93	9.16E+03
3/15/2010	364.45	10.36	1.00E+04	1.04E+04		10.36	1.00E+04
3/16/2010	365.16	11.07	1.16E+04	8.95E+03	8.95E+03	11.07	8.95E+03
3/17/2010	365.17	11.08	1.16E+04	8.57E+03	8.57E+03	11.08	8.57E+03
3/18/2010	364.63	10.54	1.04E+04	8.05E+03	8.05E+03	10.54	8.05E+03
3/19/2010	363.60	9.51	8.34E+03	7.14E+03	7.14E+03	9.51	7.14E+03
3/20/2010	362.10	8.01	5.77E+03	5.91E+03		8.01	5.77E+03
3/21/2010	360.19	6.10	3.19E+03	4.35E+03		6.10	3.19E+03
3/22/2010	358.82	4.73	1.85E+03	3.13E+03		4.73	1.85E+03
3/23/2010	362.42	8.33	6.27E+03	1.02E+04		8.33	6.27E+03
3/24/2010	362.52	8.43	6.43E+03	7.70E+03		8.43	6.43E+03
3/25/2010	362.13	8.04	5.81E+03	5.93E+03		8.04	5.81E+03
3/26/2010	361.58	7.49	4.98E+03	5.53E+03		7.49	4.98E+03
3/27/2010	360.52	6.43	3.59E+03	4.55E+03		6.43	3.59E+03
3/28/2010	359.33	5.24	2.30E+03	3.44E+03		5.24	2.30E+03
3/29/2010	360.13	6.04	3.13E+03	6.31E+03		6.04	3.13E+03
3/30/2010	361.53	7.44	4.91E+03	6.96E+03		7.44	4.91E+03
3/31/2010	363.07	8.98	7.37E+03	8.50E+03		8.98	7.37E+03
4/1/2010	363.13	9.04	7.48E+03	7.10E+03	7.10E+03	9.04	7.10E+03
4/2/2010	363.02	8.93	7.28E+03	6.39E+03	6.39E+03	8.93	6.39E+03
4/3/2010	362.24	8.15	5.99E+03	5.75E+03	5.75E+03	8.15	5.75E+03
4/4/2010	360.76	6.67	3.88E+03	4.64E+03		6.67	3.88E+03
4/5/2010	359.29	5.20	2.26E+03	3.34E+03		5.20	2.26E+03
4/6/2010	358.38	4.29	1.49E+03	2.48E+03		4.29	1.49E+03
4/7/2010	357.82	3.73	1.11E+03	2.08E+03		3.73	1.11E+03
4/8/2010	357.33	3.24	8.13E+02	1.75E+03		3.24	8.13E+02
4/9/2010	357.22	3.13	7.55E+02	1.73E+03		3.13	7.55E+02
4/10/2010	357.18	3.09	7.37E+02	1.67E+03		3.09	7.37E+02
4/11/2010	356.82	2.73	6.61E+02	1.45E+03		2.73	6.61E+02
4/12/2010	356.47	2.38	4.15E+02	1.27E+03		2.38	4.15E+02
4/13/2010	356.16	2.07	2.74E+02	1.11E+03		2.07	2.74E+02
4/14/2010	355.99	1.90	2.18E+02	1.00E+03		1.90	2.18E+02
4/15/2010	355.83	1.74	1.75E+02	9.25E+02		1.74	1.75E+02
4/16/2010	355.73	1.64	1.53E+02	8.78E+02		1.64	1.53E+02
4/17/2010	355.79	1.70	1.66E+02	9.22E+02		1.70	1.66E+02
4/18/2010	355.81	1.72	1.71E+02	9.52E+02		1.72	1.71E+02
4/19/2010	355.62	1.53	1.32E+02	8.87E+02		1.53	1.32E+02
4/20/2010	355.48	1.39	1.09E+02	7.68E+02		1.39	1.09E+02
4/21/2010	355.38	1.29	9.61E+01	7.41E+02		1.29	9.61E+01
4/22/2010	355.30	1.21	8.61E+01	6.95E+02		1.21	8.61E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
4/23/2010	355.20	1.11	7.52E+01	6.34E+02		1.11	7.52E+01
4/24/2010	355.10	1.01	6.58E+01	5.83E+02		1.01	6.58E+01
4/25/2010	355.60	1.51	1.29E+02	6.99E+02		1.51	1.29E+02
4/26/2010	357.12	3.03	7.06E+02	1.49E+03		3.03	7.06E+02
4/27/2010	358.86	4.77	1.88E+03	3.13E+03		4.77	1.88E+03
4/28/2010	358.15	4.06	1.33E+03	2.64E+03		4.06	1.33E+03
4/29/2010	357.36	3.27	8.29E+02	1.87E+03		3.27	8.29E+02
4/30/2010	356.62	2.53	5.10E+02	1.41E+03		2.53	5.10E+02
5/1/2010	356.18	2.09	2.80E+02	1.15E+03		2.09	2.80E+02
5/2/2010	355.89	1.80	1.89E+02	9.80E+02		1.80	1.89E+02
5/3/2010	355.98	1.89	2.15E+02	9.13E+02		1.89	2.15E+02
5/4/2010	356.38	2.29	3.66E+02	1.08E+03		2.29	3.66E+02
5/5/2010	356.21	2.12	2.93E+02	1.06E+03		2.12	2.93E+02
5/6/2010	355.89	1.80	1.89E+02	9.45E+02		1.80	1.89E+02
5/7/2010	355.56	1.47	1.22E+02	8.07E+02		1.47	1.22E+02
5/8/2010	355.38	1.29	9.54E+01	7.30E+02		1.29	9.54E+01
5/9/2010	355.25	1.16	8.01E+01	6.76E+02		1.16	8.01E+01
5/10/2010	355.13	1.04	6.85E+01	5.74E+02		1.04	6.85E+01
5/11/2010	355.03	0.94	5.99E+01	5.20E+02		0.94	5.99E+01
5/12/2010	355.15	1.06	7.03E+01	6.40E+02		1.06	7.03E+01
5/13/2010	355.52	1.43	1.15E+02	8.61E+02		1.43	1.15E+02
5/14/2010	355.37	1.28	9.42E+01	8.27E+02		1.28	9.42E+01
5/15/2010	355.25	1.16	8.07E+01	7.19E+02		1.16	8.07E+01
5/16/2010	355.09	1.00	6.49E+01	6.33E+02		1.00	6.49E+01
5/17/2010	354.95	0.86	5.34E+01	5.46E+02		0.86	5.34E+01
5/18/2010	354.94	0.85	5.32E+01	5.49E+02		0.85	5.32E+01
5/19/2010	356.03	1.94	2.30E+02	1.08E+03		1.94	2.30E+02
5/20/2010	356.01	1.92	2.23E+02	1.14E+03		1.92	2.23E+02
5/21/2010	355.52	1.43	1.16E+02	8.98E+02		1.43	1.16E+02
5/22/2010	355.20	1.11	7.47E+01	6.99E+02		1.11	7.47E+01
5/23/2010	355.05	0.96	6.11E+01	5.74E+02		0.96	6.11E+01
5/24/2010	354.98	0.89	5.60E+01	5.12E+02		0.89	5.60E+01
5/25/2010	354.90	0.81	5.03E+01	4.75E+02		0.81	5.03E+01
5/26/2010	354.80	0.71	4.39E+01	4.54E+02		0.71	4.39E+01
5/27/2010	354.72	0.63	3.95E+01	3.72E+02		0.63	3.95E+01
5/28/2010	354.91	0.82	5.08E+01	4.03E+02		0.82	5.08E+01
5/29/2010	354.84	0.75	4.65E+01	4.33E+02		0.75	4.65E+01
5/30/2010	354.71	0.62	3.88E+01	3.87E+02		0.62	3.88E+01
5/31/2010	354.62	0.53	3.43E+01	3.43E+02		0.53	3.43E+01
6/1/2010	354.57	0.48	3.22E+01	3.62E+02		0.48	3.22E+01
6/2/2010	354.59	0.50	3.30E+01	4.33E+02		0.50	3.30E+01
6/3/2010	354.50	0.41	2.92E+01	3.52E+02		0.41	2.92E+01
6/4/2010	354.45	0.36	2.74E+01	3.11E+02		0.36	2.74E+01
6/5/2010	354.38	0.29	2.50E+01	2.72E+02		0.29	2.50E+01
6/6/2010	354.45	0.36	2.73E+01	2.95E+02		0.36	2.73E+01
6/7/2010	354.45	0.36	2.74E+01	3.28E+02		0.36	2.74E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
6/8/2010	354.35	0.26	2.40E+01	2.94E+02		0.26	2.40E+01
6/9/2010	354.26	0.17	2.12E+01	2.43E+02		0.17	2.12E+01
6/10/2010	354.68	0.59	3.75E+01	4.15E+02		0.59	3.75E+01
6/11/2010	354.72	0.63	3.92E+01	4.61E+02		0.63	3.92E+01
6/12/2010	354.48	0.39	2.85E+01	3.93E+02		0.39	2.85E+01
6/13/2010	354.37	0.28	2.47E+01	8.02E+02		0.28	2.47E+01
6/14/2010	354.63	0.54	3.50E+01	6.10E+02		0.54	3.50E+01
6/15/2010	354.80	0.71	4.39E+01	5.19E+02		0.71	4.39E+01
6/16/2010	354.56	0.47	3.16E+01	4.40E+02		0.47	3.16E+01
6/17/2010	354.51	0.42	2.95E+01	3.72E+02		0.42	2.95E+01
6/18/2010	354.73	0.64	4.00E+01	2.97E+02		0.64	4.00E+01
6/19/2010	354.48	0.39	2.86E+01	3.33E+02		0.39	2.86E+01
6/20/2010	354.32	0.23	2.31E+01	2.92E+02		0.23	2.31E+01
6/21/2010	354.27	0.18	2.14E+01	2.33E+02		0.18	2.14E+01
6/22/2010	354.23	0.14	2.04E+01	1.91E+02		0.14	2.04E+01
6/23/2010	354.25	0.16	2.11E+01	3.08E+02		0.16	2.11E+01
6/24/2010	354.27	0.18	2.16E+01	2.86E+02		0.18	2.16E+01
6/25/2010	354.23	0.14	2.04E+01	2.30E+02		0.14	2.04E+01
6/26/2010	354.21	0.12	1.98E+01	2.06E+02		0.12	1.98E+01
6/27/2010	354.22	0.13	2.00E+01	1.70E+02		0.13	2.00E+01
6/28/2010	354.21	0.12	1.98E+01	1.54E+02		0.12	1.98E+01
6/29/2010	354.20	0.11	1.96E+01	1.68E+02		0.11	1.96E+01
6/30/2010	354.19	0.10	1.93E+01	1.27E+02		0.10	1.93E+01
7/1/2010	354.17	0.08	1.87E+01	1.28E+02		0.08	1.87E+01
7/2/2010	354.17	0.08	1.87E+01	1.20E+02		0.08	1.87E+01
7/3/2010	354.16	0.07	1.86E+01	1.13E+02		0.07	1.86E+01
7/4/2010	354.17	0.08	1.88E+01	1.06E+02		0.08	1.88E+01
7/5/2010	354.17	0.08	1.88E+01	1.00E+02		0.08	1.88E+01
7/6/2010	354.17	0.08	1.88E+01	9.70E+01		0.08	1.88E+01
7/7/2010	354.16	0.07	1.87E+01	9.40E+01		0.07	1.87E+01
7/8/2010	354.14	0.05	1.82E+01	8.80E+01		0.05	1.82E+01
7/9/2010	354.13	0.04	1.78E+01	9.10E+01		0.04	1.78E+01
7/10/2010	354.52	0.43	3.02E+01	9.80E+01		0.43	3.02E+01
7/11/2010	355.31	1.22	8.70E+01	6.56E+02		1.22	8.70E+01
7/12/2010	354.88	0.79	4.91E+01	4.63E+02		0.79	4.91E+01
7/13/2010	354.46	0.37	2.79E+01	3.17E+02		0.37	2.79E+01
7/14/2010	354.33	0.24	2.34E+01	2.36E+02		0.24	2.34E+01
7/15/2010	354.39	0.30	2.53E+01	2.20E+02		0.30	2.53E+01
7/16/2010	354.33	0.24	2.34E+01	2.18E+02		0.24	2.34E+01
7/17/2010	354.24	0.15	2.08E+01	1.91E+02		0.15	2.08E+01
7/18/2010	354.22	0.13	2.00E+01	1.56E+02		0.13	2.00E+01
7/19/2010	354.19	0.10	1.94E+01	1.17E+02		0.10	1.94E+01
7/20/2010	354.19	0.10	1.93E+01	3.51E+02		0.10	1.93E+01
7/21/2010	354.20	0.11	1.96E+01	2.28E+02		0.11	1.96E+01
7/22/2010	354.27	0.18	2.14E+01	1.80E+02		0.18	2.14E+01
7/23/2010	354.22	0.13	2.00E+01	2.44E+02		0.13	2.00E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
7/24/2010	354.26	0.17	2.12E+01	2.27E+02		0.17	2.12E+01
7/25/2010	354.29	0.20	2.22E+01	2.35E+02		0.20	2.22E+01
7/26/2010	354.23	0.14	2.05E+01	2.31E+02		0.14	2.05E+01
7/27/2010	354.23	0.14	2.03E+01	1.78E+02		0.14	2.03E+01
7/28/2010	354.21	0.12	1.97E+01	1.49E+02		0.12	1.97E+01
7/29/2010	354.18	0.09	1.90E+01	1.35E+02		0.09	1.90E+01
7/30/2010	354.16	0.07	1.85E+01	1.18E+02		0.07	1.85E+01
7/31/2010	354.14	0.05	1.81E+01	1.03E+02		0.05	1.81E+01
8/1/2010	354.14	0.05	1.80E+01	9.20E+01		0.05	1.80E+01
8/2/2010	354.16	0.07	1.86E+01	8.80E+01		0.07	1.86E+01
8/3/2010	354.18	0.09	1.90E+01	9.10E+01		0.09	1.90E+01
8/4/2010	354.15	0.06	1.82E+01	9.50E+01		0.06	1.82E+01
8/5/2010	354.13	0.04	1.77E+01	1.03E+02		0.04	1.77E+01
8/6/2010	354.11	0.02	1.73E+01	9.60E+01		0.02	1.73E+01
8/7/2010	354.10	0.01	1.72E+01	8.30E+01		0.01	1.72E+01
8/8/2010	354.10	0.01	1.72E+01	7.40E+01		0.01	1.72E+01
8/9/2010	354.10	0.01	1.71E+01	6.70E+01		0.01	1.71E+01
8/10/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
8/11/2010	354.10	0.01	1.71E+01	6.10E+01		0.01	1.71E+01
8/12/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
8/13/2010	354.10	0.01	1.71E+01	5.70E+01		0.01	1.71E+01
8/14/2010	354.11	0.02	1.73E+01	4.60E+01		0.02	1.73E+01
8/15/2010	354.10	0.01	1.71E+01	4.80E+01		0.01	1.71E+01
8/16/2010	354.12	0.03	1.75E+01	7.20E+01		0.03	1.75E+01
8/17/2010	354.15	0.06	1.82E+01	9.10E+01		0.06	1.82E+01
8/18/2010	354.15	0.06	1.83E+01	9.30E+01		0.06	1.83E+01
8/19/2010	354.11	0.02	1.74E+01	8.20E+01		0.02	1.74E+01
8/20/2010	354.10	0.01	1.71E+01	7.30E+01		0.01	1.71E+01
8/21/2010	354.10	0.01	1.71E+01	6.60E+01		0.01	1.71E+01
8/22/2010	354.11	0.02	1.74E+01	1.31E+02		0.02	1.74E+01
8/23/2010	354.58	0.49	3.26E+01	5.04E+02		0.49	3.26E+01
8/24/2010	355.33	1.24	8.92E+01	7.19E+02		1.24	8.92E+01
8/25/2010	355.00	0.91	5.71E+01	5.36E+02		0.91	5.71E+01
8/26/2010	355.49	1.40	1.11E+02	5.05E+02		1.40	1.11E+02
8/27/2010	355.27	1.18	8.25E+01	5.82E+02		1.18	8.25E+01
8/28/2010	354.82	0.73	4.48E+01	4.10E+02		0.73	4.48E+01
8/29/2010	354.54	0.45	3.10E+01	2.97E+02		0.45	3.10E+01
8/30/2010	354.38	0.29	2.50E+01	2.07E+02		0.29	2.50E+01
8/31/2010	354.31	0.22	2.26E+01	1.56E+02		0.22	2.26E+01
9/1/2010	354.28	0.19	2.17E+01	1.52E+02		0.19	2.17E+01
9/2/2010	354.25	0.16	2.08E+01	1.33E+02		0.16	2.08E+01
9/3/2010	354.22	0.13	2.01E+01	1.23E+02		0.13	2.01E+01
9/4/2010	354.20	0.11	1.95E+01	1.17E+02		0.11	1.95E+01
9/5/2010	354.17	0.08	1.88E+01	1.06E+02		0.08	1.88E+01
9/6/2010	354.15	0.06	1.82E+01	9.70E+01		0.06	1.82E+01
9/7/2010	354.13	0.04	1.79E+01	9.00E+01		0.04	1.79E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
9/8/2010	354.12	0.03	1.75E+01	8.80E+01		0.03	1.75E+01
9/9/2010	354.10	0.01	1.71E+01	6.50E+01		0.01	1.71E+01
9/10/2010	354.10	0.01	1.71E+01	4.80E+01		0.01	1.71E+01
9/11/2010	354.10	0.01	1.71E+01	5.10E+01		0.01	1.71E+01
9/12/2010	354.10	0.01	1.71E+01	5.40E+01		0.01	1.71E+01
9/13/2010	354.10	0.01	1.71E+01	6.00E+01		0.01	1.71E+01
9/14/2010	354.11	0.02	1.73E+01	5.90E+01		0.02	1.73E+01
9/15/2010	354.17	0.08	1.88E+01	5.90E+01		0.08	1.88E+01
9/16/2010	354.14	0.05	1.80E+01	6.20E+01		0.05	1.80E+01
9/17/2010	354.12	0.03	1.76E+01	9.00E+01		0.03	1.76E+01
9/18/2010	354.11	0.02	1.73E+01	9.30E+01		0.02	1.73E+01
9/19/2010	354.12	0.03	1.76E+01	5.90E+01		0.03	1.76E+01
9/20/2010	354.12	0.03	1.75E+01	4.90E+01		0.03	1.75E+01
9/21/2010	354.11	0.02	1.73E+01	5.50E+01		0.02	1.73E+01
9/22/2010	354.11	0.02	1.73E+01	5.60E+01		0.02	1.73E+01
9/23/2010	354.10	0.01	1.71E+01	5.90E+01		0.01	1.71E+01
9/24/2010	354.11	0.02	1.74E+01	5.60E+01		0.02	1.74E+01
9/25/2010	354.12	0.03	1.76E+01	5.20E+01		0.03	1.76E+01
9/26/2010	354.11	0.02	1.74E+01	4.80E+01		0.02	1.74E+01
9/27/2010	354.11	0.02	1.74E+01	5.40E+01		0.02	1.74E+01
9/28/2010	354.17	0.08	1.89E+01	6.20E+01		0.08	1.89E+01
9/29/2010	354.23	0.14	2.05E+01	7.10E+01		0.14	2.05E+01
9/30/2010	354.32	0.23	2.29E+01	2.37E+02		0.23	2.29E+01
10/1/2010	358.06	3.97	1.26E+03	4.01E+03		3.97	1.26E+03
10/2/2010	359.60	5.51	2.56E+03	4.06E+03		5.51	2.56E+03
10/3/2010	359.02	4.93	2.02E+03	2.71E+03		4.93	2.02E+03
10/4/2010	358.36	4.27	1.48E+03	2.08E+03		4.27	1.48E+03
10/5/2010	357.39	3.30	8.46E+02	1.57E+03		3.30	8.46E+02
10/6/2010	357.01	2.92	8.59E+02	1.30E+03		2.92	8.59E+02
10/7/2010	356.54	2.45	4.57E+02	1.08E+03		2.45	4.57E+02
10/8/2010	356.05	1.96	2.36E+02	8.55E+02		1.96	2.36E+02
10/9/2010	355.63	1.54	1.34E+02	6.71E+02		1.54	1.34E+02
10/10/2010	355.30	1.21	8.65E+01	5.27E+02		1.21	8.65E+01
10/11/2010	355.10	1.01	6.59E+01	4.30E+02		1.01	6.59E+01
10/12/2010	355.07	0.98	6.29E+01	3.99E+02		0.98	6.29E+01
10/13/2010	355.19	1.10	7.41E+01	4.38E+02		1.10	7.41E+01
10/14/2010	355.05	0.96	6.12E+01	4.08E+02		0.96	6.12E+01
10/15/2010	355.33	1.24	8.94E+01	5.65E+02		1.24	8.94E+01
10/16/2010	355.69	1.60	1.44E+02	6.76E+02		1.60	1.44E+02
10/17/2010	355.50	1.41	1.12E+02	6.40E+02		1.41	1.12E+02
10/18/2010	355.30	1.21	8.59E+01	5.38E+02		1.21	8.59E+01
10/19/2010	355.17	1.08	7.19E+01	4.70E+02		1.08	7.19E+01
10/20/2010	355.06	0.97	6.20E+01	4.18E+02		0.97	6.20E+01
10/21/2010	355.04	0.95	6.07E+01	3.75E+02		0.95	6.07E+01
10/22/2010	355.00	0.91	5.72E+01	3.71E+02		0.91	5.72E+01
10/23/2010	354.91	0.82	5.12E+01	3.56E+02		0.82	5.12E+01

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
10/24/2010	354.83	0.74	4.58E+01	3.25E+02		0.74	4.58E+01
10/25/2010	354.80	0.71	4.40E+01	3.19E+02		0.71	4.40E+01
10/26/2010	354.78	0.69	4.28E+01	2.97E+02		0.69	4.28E+01
10/27/2010	355.02	0.93	5.92E+01	5.90E+02		0.93	5.92E+01
10/28/2010	355.56	1.76	1.81E+02	1.08E+03		1.76	1.81E+02
10/29/2010	354.09			8.66E+02	8.66E+02		8.66E+02
10/30/2010	355.20	1.11	7.56E+01	6.66E+02		1.11	7.56E+01
10/31/2010	355.01	0.92	5.85E+01	5.43E+02		0.92	5.85E+01
11/1/2010	354.86	0.77	4.73E+01	4.57E+02		0.77	4.73E+01
11/2/2010	354.74	0.65	4.03E+01	3.96E+02		0.65	4.03E+01
11/3/2010	354.66	0.57	3.66E+01	3.21E+02		0.57	3.66E+01
11/4/2010	354.83	0.74	4.56E+01	4.29E+02		0.74	4.56E+01
11/5/2010	356.65	2.56	5.28E+02	1.34E+03		2.56	5.28E+02
11/6/2010	356.67	2.58	5.43E+02	1.48E+03		2.58	5.43E+02
11/7/2010	356.02	1.93	2.25E+02	1.08E+03		1.93	2.25E+02
11/8/2010	355.67	1.58	1.41E+02	8.49E+02		1.58	1.41E+02
11/9/2010	355.58	1.49	1.25E+02	8.00E+02		1.49	1.25E+02
11/10/2010	355.54	1.45	1.18E+02	7.25E+02		1.45	1.18E+02
11/11/2010	355.37	1.28	9.39E+01	6.44E+02		1.28	9.39E+01
11/12/2010	355.22	1.13	7.71E+01	5.64E+02		1.13	7.71E+01
11/13/2010	355.14	1.05	6.89E+01	5.17E+02		1.05	6.89E+01
11/14/2010	355.07	0.98	6.29E+01	4.86E+02		0.98	6.29E+01
11/15/2010	355.04	0.95	6.08E+01	4.64E+02		0.95	6.08E+01
11/16/2010	355.02	0.93	5.87E+01	4.58E+02		0.93	5.87E+01
11/17/2010	355.45	1.36	1.05E+02	9.66E+02		1.36	1.05E+02
11/18/2010	356.30	2.21	3.32E+02	1.28E+03		2.21	3.32E+02
11/19/2010	355.94	1.85	2.02E+02	1.06E+03		1.85	2.02E+02
11/20/2010	355.70	1.61	1.46E+02	8.42E+02		1.61	1.46E+02
11/21/2010	355.49	1.40	1.12E+02	7.16E+02		1.40	1.12E+02
11/22/2010	355.37	1.28	9.48E+01	6.40E+02		1.28	9.48E+01
11/23/2010	355.30	1.21	8.59E+01	5.86E+02		1.21	8.59E+01
11/24/2010	355.25	1.16	8.05E+01	5.59E+02		1.16	8.05E+01
11/25/2010	355.19	1.10	7.41E+01	5.26E+02		1.10	7.41E+01
11/26/2010	355.25	1.16	7.99E+01	6.11E+02		1.16	7.99E+01
11/27/2010	355.39	1.30	9.72E+01	7.69E+02		1.30	9.72E+01
11/28/2010	355.30	1.21	8.57E+01	6.78E+02		1.21	8.57E+01
11/29/2010	355.18	1.09	7.32E+01	5.81E+02		1.09	7.32E+01
11/30/2010	355.14	1.05	6.94E+01	5.42E+02		1.05	6.94E+01
12/1/2010	356.06	1.97	2.40E+02	1.93E+03		1.97	2.40E+02
12/2/2010	359.36	5.27	2.33E+03	4.56E+03		5.27	2.33E+03
12/3/2010	359.30	5.21	2.27E+03	3.21E+03		5.21	2.27E+03
12/4/2010	358.71	4.62	1.76E+03	2.64E+03		4.62	1.76E+03
12/5/2010	357.89	3.80	1.15E+03	2.08E+03		3.80	1.15E+03
12/6/2010	357.20	3.11	7.48E+02	1.62E+03		3.11	7.48E+02
12/7/2010	356.74	2.65	5.94E+02	1.33E+03		2.65	5.94E+02
12/8/2010	356.32	2.23	3.41E+02	1.11E+03		2.23	3.41E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
12/9/2010	355.91	1.82	1.95E+02	8.90E+02		1.82	1.95E+02
12/10/2010	355.91	1.82	1.96E+02	6.60E+02		1.82	1.96E+02
12/11/2010	355.60	1.51	1.29E+02	7.29E+02		1.51	1.29E+02
12/12/2010	355.82	1.73	1.74E+02	1.09E+03		1.73	1.74E+02
12/13/2010	357.87	3.78	1.13E+03	3.24E+03		3.78	1.13E+03
12/14/2010	357.91	3.82	1.16E+03	2.53E+03		3.82	1.16E+03
12/15/2010	357.16	3.07	7.27E+02	1.67E+03		3.07	7.27E+02
12/16/2010	357.65	3.56	9.99E+02	1.29E+03		3.56	9.99E+02
12/17/2010	360.27	6.18	3.29E+03	1.14E+03	1.14E+03	6.18	1.14E+03
12/18/2010	356.21	2.12	2.93E+02	9.88E+02		2.12	2.93E+02
12/19/2010	355.96	1.87	2.08E+02	8.34E+02		1.87	2.08E+02
12/20/2010	355.83	1.74	1.75E+02	7.26E+02		1.74	1.75E+02
12/21/2010	358.70	4.61	1.75E+03	6.99E+02	6.99E+02	4.61	6.99E+02
12/22/2010	358.71	4.62	1.76E+03	6.73E+02	6.73E+02	4.62	6.73E+02
12/23/2010	355.43	1.34	1.02E+02	6.42E+02		1.34	1.02E+02
12/24/2010	355.35	1.26	9.25E+01	5.88E+02		1.26	9.25E+01
12/25/2010	355.29	1.20	8.53E+01	5.50E+02		1.20	8.53E+01
12/26/2010	355.18	1.09	7.29E+01	4.92E+02		1.09	7.29E+01
12/27/2010	354.96	0.87	5.47E+01	1.02E+03		0.87	5.47E+01
12/28/2010	355.50	1.41	1.12E+02	1.34E+03		1.41	1.12E+02
12/29/2010	355.39	1.30	9.74E+01	1.56E+03		1.30	9.74E+01
12/30/2010	355.46	1.37	1.07E+02	1.30E+03		1.37	1.07E+02
12/31/2010	355.26	1.17	8.16E+01	1.10E+03		1.17	8.16E+01
1/1/2011	355.24	1.15	7.94E+01	8.26E+02		1.15	7.94E+01
1/2/2011	355.44	1.35	1.03E+02	7.33E+02		1.35	1.03E+02
1/3/2011	361.52	7.43	4.90E+03	1.10E+03	1.10E+03	7.43	1.10E+03
1/4/2011	355.90	1.81	1.92E+02	1.14E+03		1.81	1.92E+02
1/5/2011	355.69	1.60	1.45E+02	9.42E+02		1.60	1.45E+02
1/6/2011	355.58	1.49	1.25E+02	Ice		1.49	1.25E+02
1/7/2011	355.37	1.28	9.39E+01	Ice		1.28	9.39E+01
1/8/2011	355.46	1.37	1.07E+02	Ice		1.37	1.07E+02
1/9/2011	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
1/10/2011	359.64	5.55	2.61E+03	Ice		5.55	2.61E+03
1/11/2011	355.34	1.25	9.12E+01	Ice		1.25	9.12E+01
1/12/2011	355.18	1.09	7.31E+01	Ice		1.09	7.31E+01
1/13/2011	355.24	1.15	7.94E+01	Ice		1.15	7.94E+01
1/14/2011	355.33	1.24	8.94E+01	Ice		1.24	8.94E+01
1/15/2011	355.23	1.14	7.78E+01	Ice		1.14	7.78E+01
1/16/2011	355.10	1.01	6.59E+01	Ice		1.01	6.59E+01
1/17/2011	355.04	0.95	6.05E+01	Ice		0.95	6.05E+01
1/18/2011	355.03	0.94	5.96E+01	Ice		0.94	5.96E+01
1/19/2011	355.35	1.26	9.17E+01	Ice		1.26	9.17E+01
1/20/2011	355.76	1.67	1.59E+02	Ice		1.67	1.59E+02
1/21/2011	355.69	1.60	1.46E+02	Ice		1.60	1.46E+02
1/22/2011	355.64	1.55	1.36E+02	Ice		1.55	1.36E+02
1/23/2011	355.63	1.54	1.35E+02	Ice		1.54	1.35E+02

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
1/24/2011	355.44	1.35	1.03E+02	Ice		1.35	1.03E+02
1/25/2011	355.23	1.14	7.87E+01	Ice		1.14	7.87E+01
1/26/2011	355.23	1.14	7.80E+01	Ice		1.14	7.80E+01
1/27/2011	355.25	1.16	8.07E+01	Ice		1.16	8.07E+01
1/28/2011	355.30	1.21	8.55E+01	Ice		1.21	8.55E+01
1/29/2011	355.28	1.19	8.42E+01	Ice		1.19	8.42E+01
1/30/2011	355.23	1.14	7.87E+01	Ice		1.14	7.87E+01
1/31/2011	355.16	1.07	7.13E+01	Ice		1.07	7.13E+01
2/1/2011	355.15	1.06	7.05E+01	Ice		1.06	7.05E+01
2/2/2011	355.19	1.10	7.41E+01	Ice		1.10	7.41E+01
2/3/2011	355.33	1.24	8.96E+01	Ice		1.24	8.96E+01
2/4/2011	355.32	1.23	8.82E+01	Ice		1.23	8.82E+01
2/5/2011	355.29	1.20	8.51E+01	Ice		1.20	8.51E+01
2/6/2011	355.44	1.35	1.04E+02	Ice		1.35	1.04E+02
2/7/2011	355.72	1.63	1.51E+02	Ice		1.63	1.51E+02
2/8/2011	355.78	1.69	1.64E+02	Ice		1.69	1.64E+02
2/9/2011	355.76	1.67	1.60E+02	Ice		1.67	1.60E+02
2/10/2011	355.75	1.66	1.57E+02	Ice		1.66	1.57E+02
2/11/2011	355.52	1.43	1.16E+02	Ice		1.43	1.16E+02
2/12/2011	355.44	1.35	1.04E+02	Ice		1.35	1.04E+02
2/13/2011	355.38	1.29	9.54E+01	Ice		1.29	9.54E+01
2/14/2011	355.38	1.29	9.61E+01	Ice		1.29	9.61E+01
2/15/2011	355.91	1.82	1.95E+02	Ice		1.82	1.95E+02
2/16/2011	356.00	1.91	2.20E+02	Ice		1.91	2.20E+02
2/17/2011	355.93	1.84	2.01E+02	Ice		1.84	2.01E+02
2/18/2011	356.57	2.48	4.74E+02	Ice		2.48	4.74E+02
2/19/2011	358.65	4.56	1.70E+03	Ice		4.56	1.70E+03
2/20/2011	358.39	4.30	1.50E+03	Ice		4.30	1.50E+03
2/21/2011	357.93	3.84	1.18E+03	Ice		3.84	1.18E+03
2/22/2011	357.46	3.37	8.88E+02	Ice		3.37	8.88E+02
2/23/2011	356.99	2.90	8.30E+02	Ice		2.90	8.30E+02
2/24/2011	356.78	2.69	6.27E+02	Ice		2.69	6.27E+02
2/25/2011	357.81	3.72	1.10E+03	Ice		3.72	1.10E+03
2/26/2011	359.86	5.77	2.84E+03	Ice		5.77	2.84E+03
2/27/2011	359.71	5.62	2.68E+03	Ice		5.62	2.68E+03
2/28/2011	360.28	6.19	3.30E+03	Ice		6.19	3.30E+03
3/1/2011	361.50	7.41	4.86E+03	Ice		7.41	4.86E+03
3/2/2011	361.03	6.94	4.23E+03	Ice		6.94	4.23E+03
3/3/2011	360.39	6.30	3.43E+03	Ice		6.30	3.43E+03
3/4/2011	359.47	5.38	2.44E+03	Ice		5.38	2.44E+03
3/5/2011	358.92	4.83	1.93E+03	3.11E+03		4.83	1.93E+03
3/6/2011	359.93	5.84	2.91E+03	6.26E+03		5.84	2.91E+03
3/7/2011	364.12	10.03	9.37E+03	1.66E+04		10.03	9.37E+03
3/8/2011	363.93	9.84	8.99E+03	1.13E+04		9.84	8.99E+03
3/9/2011	363.88	9.79	8.88E+03	8.16E+03	8.16E+03	9.79	8.16E+03
3/10/2011	363.68	9.59	8.49E+03	8.70E+03		9.59	8.49E+03

AL TURI GAUGE Daily Average Elevation and Gauge Level Measurements			River Flow Estimates (see note 1)			Combined Data for Hydrograph (see note 2)	
Measurement Date	Avg Of Elevation	Avg Of LEVEL	Al Turi Estimated Avg Daily Flow (cfs)	USGS Avg Daily Flow @ Gardiner, NY (cfs)	USGS Flow Data < Avg. Daily Flow (cfs)	Avg Daily Gauge Height	Combined Flow (cfs)
3/11/2011	364.51	10.42	1.02E+04	1.53E+04		10.42	1.02E+04
3/12/2011	364.47	10.38	1.01E+04	1.14E+04		10.38	1.01E+04
3/13/2011	364.58	10.49	1.03E+04	8.66E+03	8.66E+03	10.49	8.66E+03
3/14/2011	364.37	10.28	9.88E+03	7.79E+03	7.79E+03	10.28	7.79E+03

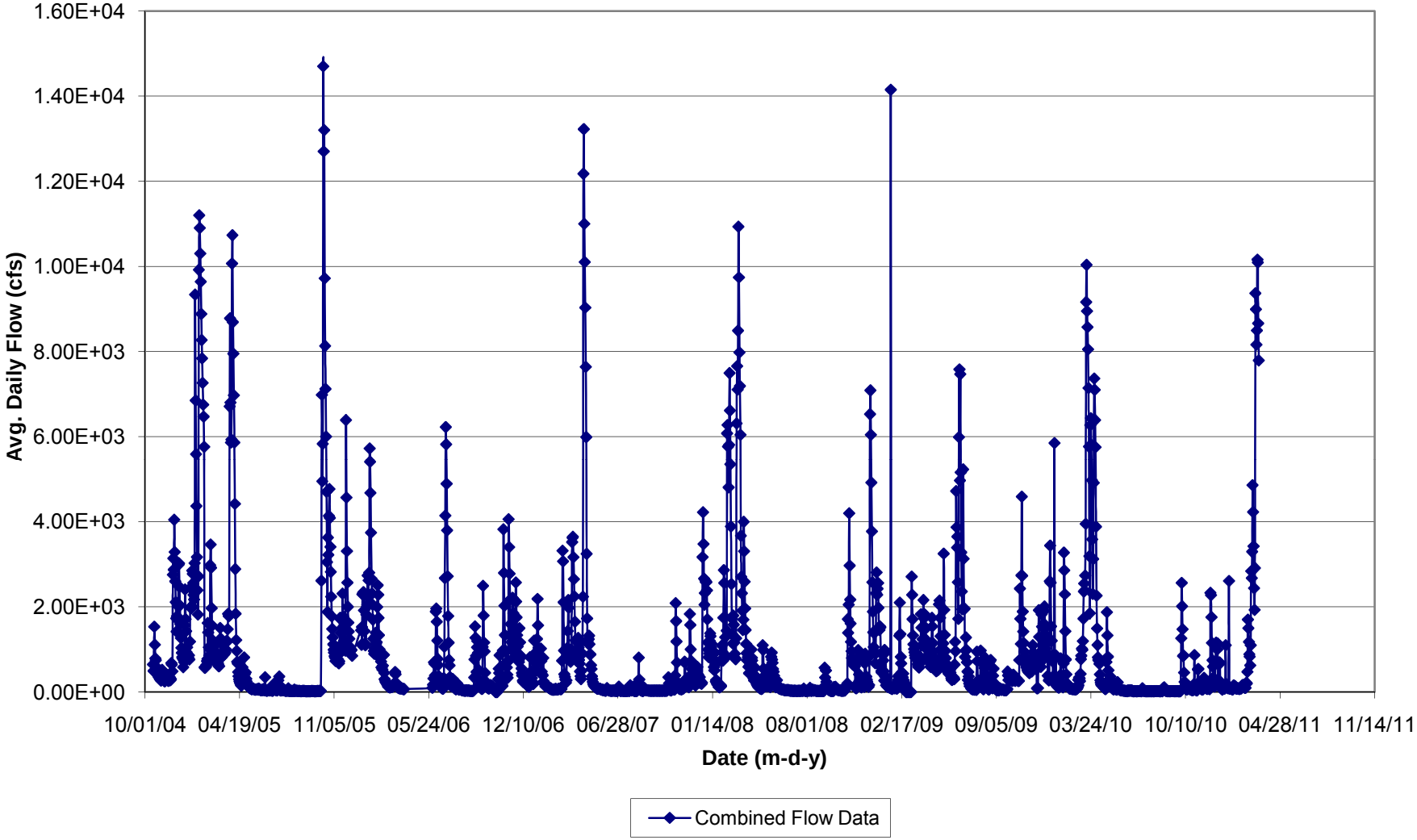
Notes:

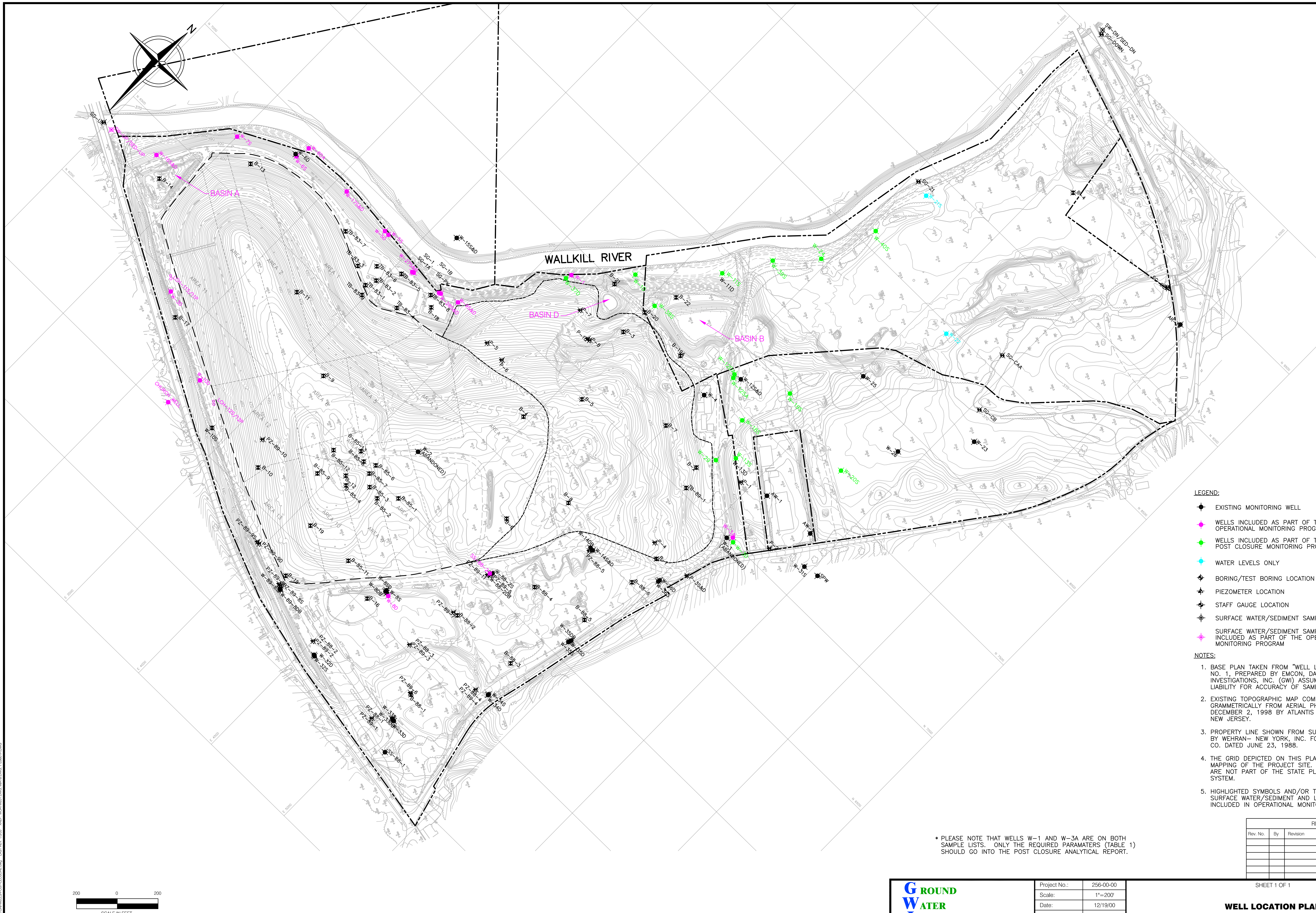
1. Al Turi Estimated Average Daily Flows are based on stream gauge rating curve provided with the Contingency Monitoring Plan (ENVIRON 2001). The USGS flows are based on records for the USGS gauge located downstream of the Al Turi Landfill Site at Gardiner, New York (Gauge No. 01371500).

2. The Al Turi Landfill gauge hydrograph is based on Wallkill River flows estimated using the Al Turi Estimated Avg Daily Flows, except when the estimated flows exceed the recorded USGS flow at Gardiner, NY. In these cases, the USGS data are used to represent the flow conditions.

Al Turi Landfill Stream Gauge - Hydrograph Record

(see notes)





LEGEND:

- EXISTING MONITORING WELL
- WELLS INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM
- WELLS INCLUDED AS PART OF THE POST CLOSURE MONITORING PROGRAM
- WATER LEVELS ONLY
- BORING/TEST BORING LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM

NOTES:

1. BASE PLAN TAKEN FROM "WELL LOCATION PLAN", DRAWING NO. 1, PREPARED BY EMCON, DATED 7/99 AND GROUND WATER INVESTIGATIONS, INC. (GWI) ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ACCURACY OF SAME.
2. EXISTING TOPOGRAPHIC MAP COMPILED PHOTO-GRAMMETRICALLY FROM AERIAL PHOTOGRAPHY DATED DECEMBER 2, 1998 BY ATLANTIS AERIAL OF BUDD LAKE NEW JERSEY.
3. PROPERTY LINE SHOWN FROM SURVEY MAP PREPARED BY WEHRAN- NEW YORK, INC. FOR TICOR TITLE GUARANTEE CO. DATED JUNE 23, 1988.
4. THE GRID DEPICTED ON THIS PLAN WAS DEVELOPED FOR MAPPING OF THE PROJECT SITE. THE COORDINTES SHOWN ARE NOT PART OF THE STATE PLANE COORDINATE SYSTEM.
5. HIGHLIGHTED SYMBOLS AND/OR TEXT INDICATE GROUNDWATER, SURFACE WATER/SEDIMENT AND LEACHATE SAMPLE LOCATIONS INCLUDED IN OPERATIONAL MONITORING PROGRAM.

* PLEASE NOTE THAT WELLS W-1 AND W-3A ARE ON BOTH SAMPLE LISTS. ONLY THE REQUIRED PARAMATERS (TABLE 1) SHOULD GO INTO THE POST CLOSURE ANALYTICAL REPORT.

REVISION BLOCK		
Rev. No.	By	Revision

GROUND WATER INVESTIGATIONS, INC.
Pine Bush, New York

Project No.:	256-00-00
Scale:	1"=200'
Date:	12/19/00
Designed By:	MAC
Checked By:	LFC
Drawn By:	KAH

SHEET 1 OF 1

WELL LOCATION PLAN

AL TURI LANDFILL, INC.
GROUNDWATER MONITORING PROGRAM

TOWN OF GOSHEN NEW YORK

JANUARY 2012 SAMPLING YEAR
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – OPERATIONAL SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

May 2012

Prepared by

Ground Water Investigations
18 Bridge Street
Montgomery, New York 12549

Project 256-00-00

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1 INTRODUCTION

The water quality management program at the Al Turi Landfill, Goshen, New York, includes the semi-annual sampling and analysis of groundwater, surface water, contained leachate, and sediment samples from locations in and around the "Operational Landfill" and the evaluation of the data generated by these samples. The facility has completed closure and is now in the post-closure period. During the July 2011 sampling event, modified baseline sampling was performed in accordance with 6 NYCRR Part 360-2.17(a), the requirements of Special Condition Nos. 36-38 of the facility's expired September 1997 Landfill Operating Permit (Permit No. 3-3330-00002/21), and in accordance with the revised and approved July 2005 Environmental Monitoring Plan (EMP).

Water quality data generated in January 2012 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The environmental data collected from the Operational Landfill site has been presented and evaluated in this report.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

For the Operational Landfill, water quality data generated in January 2012 have been compared with trigger values developed by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Part 360-2.11(c)(5)(ii), and applicable water quality standards (6 NYCRR Part 703).

The trigger values were developed using a limited database that was established for the Al Turi Landfill prior to the promulgation of regulations governing the collection of such data. The values were developed from two or three sampling events for baseline parameters conducted in August through October 1983 for three overburden wells (W-5S, W-6S, and W-7S), and 2 bedrock wells (W-6D and W-8D). Well W-6D has since been replaced with well W-6DA. Additionally, trigger values for metals were calculated based on the dissolved fraction results from field-filtered analyses. The Department values, or Part 703 standards, whichever are higher, serve as the trigger values for contingency monitoring at the Al Turi Landfill. Due to the limited pre-operational database, and the presence of undetected values for many of the parameters, the results do not constitute a "normal distribution" as required under Part 360-2.11(c)(5)(i)(c). Therefore, these values should be applied with caution. Given the limited available data, the 1983 values represent the best available estimate of pre-operational water quality, and are suitable as a screening tool in the monitoring program.

Because the Al Turi Landfill began operation prior to the promulgation of the current regulations, certain aspects of the regulations cannot be strictly applied. Notable deviations are the absence of an adequate pre-operational database and the lack of expanded parameter data for many of the monitoring points.

Semi-annual monitoring at the Operational Landfill currently consists of modified baseline analysis. This sampling is conducted in January and July of each year. The analysis for each event includes 6NYCRR Part 360 Baseline parameters with the exception of the parameters BOD, COD, TKN, sulfate and bromide. Sediment samples from the Wallkill River are analyzed for the 6NYCRR Part 360 baseline metals and TOC. Under updated regulations, the presence of baseline parameters above trigger values requires initiation of contingency monitoring, in which expanded parameters are analyzed. A trigger value exceedance occurs when the groundwater analytical data exceeds either the NYSDEC developed trigger values and/or the Part 703 State standards, whichever is higher.

The 6 NYCRR Part 360 regulations allow for the modification of the expanded parameter list to correspond with contaminants detected at a given facility. The analyses apply to all media sampled at the facility (groundwater, surface water, sediment, and contained leachate). The former contingency parameter list that was utilized at the facility consisted of the baseline parameter list plus the expanded parameters sulfide, phenol, naphthalene, 2-methyl phenol, 3-methyl phenol, and 4-methyl phenol. However, because the above mentioned expanded parameters were not detected within contingency groundwater monitoring wells, the NYSDEC approved a revised contingency monitoring list on June 22, 1999 and again on May 14, 2002. Monitoring at the facility has since been modified and now includes the monitoring program established in the July 2005 EMP.

Semi-annual groundwater quality is monitored at 21 groundwater monitoring wells (shallow and deep wells) located within the boundaries of the facility's property. One well, W-8D, is designated as the upgradient background well for the facility. Drawing 1 (in pocket) provides a site map of the facility indicating the locations of the monitoring points. In addition, baseline groundwater sampling and analysis is performed quarterly at Jesus Christ Triumphant Church (representing a 22nd well) located along Route 17M just south of the facility. Surface water and sediment samples are collected at two locations in the Wallkill River, upstream and downstream of the facility, while Sediment Basins A, B and D are sampled for water quality only. In addition, leachate samples are collected semi-annually from the primary and secondary leachate collection systems, and analyzed for a modified expanded parameter list. Sampling procedures utilized are also identified in the July 2005 EMP.

2.1 Operational Water Quality - Overburden Water Quality

Fourteen overburden groundwater monitoring wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from the January 2012 sampling event demonstrate that the following routine analytes were above their respective trigger values in the overburden monitoring wells: turbidity (14 wells); alkalinity (5 wells); chloride (1 well); hardness (4 well); ammonia (1 well); total dissolved solids (6 wells); calcium (5 wells); iron (12 wells); manganese (5 wells); and sodium (10 wells). Non-routine inorganic parameters detected above their respective trigger values in the overburden wells are limited to color (8 well) and arsenic (2 wells). Results of the overburden groundwater monitoring are presented in Table 2-1.

A review of the January 2012 volatile organic data indicates that vinyl chloride (flagged) (3.0 J ug/l) was detected in well W-9S above its groundwater standard (2 ug/l). No other volatile organic compounds were reported above groundwater standards during the sampling event.

2.2 Deep Well Water Quality

Seven deep wells are currently sampled at the Al Turi Landfill as part of semi-annual monitoring at the facility.

Analyses from January 2012 identified the following routine analytes as being above their respective trigger values in the deep water quality monitoring wells: turbidity (6 wells); alkalinity (3 wells); hardness (2 wells); total dissolved solids (4 wells); calcium (3 wells); iron (5 wells); manganese (2 wells); and sodium (4 wells).

In January 2012, no non-routine inorganic parameters were detected above established trigger limits in the deep water quality wells. A review of the January 2012 volatile organic data indicates that no volatile organic compounds were observed above groundwater standards.

Results of the deep well monitoring are presented in Table 2-2.

2.3 Contingency Monitoring

Wells that are analyzed as part of contingency monitoring at the Al Turi Landfill include: W-1, W-6S, W-9S, W-16D and W-17S. Contingency monitoring was performed for these wells due to the historical confirmation of baseline parameters at concentrations above established trigger values. The baseline parameters of concern include arsenic in the samples from wells W-6S, W-9S, W-16D and W-17S and benzene in W-1.

In January 2012, arsenic was reported above its established trigger value in wells W-5S and 9S only. Arsenic was again below its established trigger value in well W-17S. Well W-5S will be considered as a contingency well due to the presence of arsenic above its established trigger value during the past four sampling events. As part of continued monitoring, arsenic will again be sampled for in all wells during the July 2012 sampling event.

A review of the volatile organic data, generated during the January 2012 sampling event, indicates that benzene was not observed above its detection limit (reported as non-detect) in well W-1.

The graphical representations for arsenic have been revised to reflect data that has been collected after the completion of landfill capping. Final cap certification for Sections 4, 5 and 6 and Sections 8, 9 and 10 occurred in September 2003 (Cornerstone 2010 Post-Closure Annual Report, Sheet 1). Arsenic data collected after September 2003 shows a decreasing trend in concentration changes for wells W-6S, W-16D and W-17S. There is no apparent trend for arsenic in well W-9S.

A graphical representation (after final capping) for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

2.4 Background Water Quality

Water quality data has been collected from groundwater monitoring wells which are installed in the meadow north of both the Al Turi Landfill and All-Waste Facility (Northern Recycling). These wells have been evaluated to assist in determining background water quality in the vicinity of the landfill. As part of the Remedial Investigation of the Old Al Turi Landfill, several wells have been shown to be clearly beyond the influence of groundwater moving toward the Wallkill River from beneath the landfill (Supplemental Remedial Investigation Report, Old Al Turi Landfill, Wehran, February 1994, Sheet 4 of 9) and are representative of background water quality. Additional historical data generated from the meadow wells indicates that several metals have been historically present in the local groundwater at concentrations above the New York State Groundwater Quality Standards (6 NYCRR Part 703).

The meadow wells have been re-developed to further help in the reduction of turbid conditions. However, several of the wells remained turbid throughout re-development, indicating that turbid conditions may also be reflective of local groundwater quality.

Based on the historical analytical results from these wells, it is clear that several analytes (iron and manganese) are present in the local groundwater at concentrations above the State standards, and at similar levels as those detected at the landfill. Data collected from the meadow wells are limited, when compared to the larger resource data base from the on-site operational monitoring wells, but the results do indicate that the exceedances observed in many of the on-site monitoring wells may be a function of local groundwater quality, and not a release from the landfill.

2.5 Church Well

Monitoring of the off-site residential well (church well) is performed quarterly, but sampling of the church well was not conducted in January 2012. Negotiations are currently underway with the NYSDEC to reduce the church monitoring frequency from quarterly to semi-annually.

3 SURFACE WATER/SEDIMENT QUALITY

Surface water and sediment samples are also collected semi-annually from the Wallkill River as part of continued monitoring at the Al Turi Landfill.

Surface water samples were collected with a stainless steel bucket at mid-stream locations from both the Route 17M Bridge (upstream) and Cheechunk Road Bridge (downstream). Field measurement readings obtained did not indicate the presence of river stratification at either location. Sediment samples collected at each location are collected from the bank of the river closest to the landfill.

The surface water samples collected from the Wallkill River upstream (WALL-UP) and downstream (WALL-DN) of the landfill found that both aluminum and iron were in exceedance of their Class C standards in both samples. A review of the VOC data shows that no VOCs were present in the Wallkill River samples.

A summary of the surface water data and sediment data collected from the Wallkill River is provided in Table 3-1 and Table 3-2, respectively. A review of the data indicates that conditions observed upstream of the facility are generally similar to conditions observed downstream of the facility.

Historically, water quality data from the river has detected a number of analytes at concentrations above the Class C standards in both the upstream and downstream samples. It has been determined that groundwater from beneath the landfill does discharge to the Wallkill River, and a comparison of the upstream and downstream surface water data continues to indicate that discharge of this groundwater has had no observable impact on the river's water quality.

In addition to the collection of surface water samples from the Wallkill River, sediment samples are collected from both upstream and downstream sampling locations. A review of the data shows that conditions downstream of the landfill are generally similar to conditions observed upstream of the landfill. A historical review of the data indicates that there is no parameter consistency when comparing concentrations between upstream and down stream samples.

During the January 2012 sampling event, water samples were collected from Sediment Basins A, B and D. A review of the January 2012 data shows that aluminum and iron

were above their Class C standards in each sample. A summary of the previously collected sediment basin sampling data is provided in Table 3-1.

4 LEACHATE MONITORING

In accordance with Special Condition No. 36 of the expired Operating Permit, samples are obtained from the primary and secondary leachate collection system associated with Areas 11, 12, and 13 (includes Areas 9 and 10) of the landfill. Samples from the leachate collection system are collected semi-annually. Because leachate from Area 13 drains into Area 12, the common primary and secondary monitoring points for these areas is sampled. Additionally, leachate from Areas 9 and 10, which are underlain with single composite liners and are not equipped with a secondary collection system, drains to the primary collection system associated with Area 13 and then Area 12.

In January 2012, sampling of the leachate monitoring points was conducted. The analytical results from this sampling event have been provided in Table 4-1. Leachate collection system analytical results in the LCH-11S/11P collection area continue to show, for the most part, lower concentrations in the secondary collection system samples. Exceptions in January 2012 included slightly higher concentrations of hardness, TDS, sulfate, magnesium and zinc in LCH-11S.

Additionally, leachate collection system analytical results in the LCH-12S/12P collection area have historically shown, for the most part, lower concentrations in the secondary collection system samples. Exceptions in January 2012 included a slightly higher concentration of sulfate in LCH-12S.

In January 2012, non-flagged detections of organic compounds were limited to 3+4 methylphenol, acetone, 2-butanone and phenol in LCH 11P, and bis(2-ethylhexyl)phthalate in LCH-12P. Compounds flagged with a J (analytes detected below quantitation limits) include bis(2-ethylhexyl)phthalate, di-n-buty phthalate, diethyl phthalate and 4-methyl-2-pentanone in LCH-11P, and bis(2-ethylhexyl)phthalate in LCH-11S and LCH-12S. No PCBs or pesticides/herbicides were detected in any of the leachate samples. Additionally dioxins and furans were not detected in either sample. Leachate samples will be collected again during the July 2012 sampling event.

5 IRON FLOC EVALUATION

The Wallkill River has been identified as a groundwater discharge area for shallow groundwater flowing from the Al Turi Landfill site. Surface water and sediment sampling is performed at upgradient and downgradient locations on the River as shown on Drawing 1.

During periods of abnormally low flow conditions, seepage of shallow groundwater has been observed along the banks of the Wallkill River. Occasionally orange staining has been observed at some of these seepage points, which has proven to be characteristic of iron oxidation. Past sampling of these seeps has suggested that the seepage water reflects observed shallow groundwater quality and is not the result of direct leachate seepage from the landfill.

To date, iron floc sampling has not been conducted in 2012 due to river elevation levels above the identified seep area. The Al Turi Landfill will continue to monitor the river elevation and conduct iron floc sampling when the seep area is accessible.

6 CONCLUSIONS

Contingency monitoring was conducted during the January 2012 sampling year in 6 groundwater monitoring wells as a result of the confirmed presence of non-routine parameter exceedances of established trigger values that are utilized to evaluate groundwater quality. The contingency monitoring wells and their non-routine parameters of concern include: W-5S (arsenic); W-6S (arsenic); W-9S (arsenic); W-17S (arsenic); W-16D (arsenic) and well W-1 (benzene only. Additional determinations were made from the data obtained in January 2012:

- Many of the exceedances observed for parameters, such as iron and manganese, are likely due to the local groundwater quality rather than a landfill-related impact.

- Background historical groundwater quality data from the wells north of the site (the meadow wells) have indicated that a number of analytes are present in the local groundwater at similar concentrations to that observed in the on-site landfill monitoring wells. A number of parameters being detected in the background wells are at levels similar to those detected in the on-site landfill monitoring wells.

- A review of the volatile organic data, generated during the January 2012 sampling event, indicates that vinyl chloride (flagged) (3.0 J ug/l) was detected in well W-9S above its groundwater standard (2 ug/l). No other volatile organic compounds were reported above groundwater standards during this sampling event. Benzene was not detected in well MW-1 above its detection limit during this sampling event.

- Arsenic detections observed above established trigger limits were limited to wells W-5Sand W-9S.

- Arsenic data collected after September 2003 shows a decreasing trend in concentration changes for wells W-6S, W-16D and W-17S. There is no apparent trend for arsenic in well W-9S.

- A graphical representation (after final capping) for the concentrations of benzene in well W-1 is also included. No trend in the concentration of benzene is apparent based on its graphical representation.

- Although it has been demonstrated that groundwater from beneath the landfill does discharge to the Wallkill River, downstream surface water quality continues to demonstrate similar results to upstream surface water quality. Historical surface water data indicate that no significant change in water quality has occurred in the Wallkill River as a result of on-going landfill operations. Data collected in January 2012 continues to demonstrate that the landfill has had no observable impact on water quality in the River.

TABLES

TABLE 2-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-01	**7/25/11**	29.3	16.4	6.92	-79	347	143	680	472	300	<0.010	583	<0.040	0.078	65.6	<0.005	1400	27.5	<0.100
W-01	**1/23/12**	27.75	11.1	6.82	-87	337	76.7	640	446	1350	<0.010	586	<0.010	0.535	65.9	<0.005	260	35.4	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-03A	**7/25/11**	13.89	20.6	7.56	12	479	6.71	200	14.2	25	<0.010	265	<0.010	0.293	<0.50	<0.005	300	<3.0	0.454
W-03A	**1/23/12**	11.80	13.3	7.63	188	491	26.5	220	9.49	12	<0.010	253	<0.010	0.201	<0.50	<0.005	290	<3.0	0.795
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-05S	**7/25/11**	20.28	19.4	7.77	-102	1390	16.7	130	3.12	75	<0.010	608	<0.010	0.172	<0.50	<0.005	660	<3.0	<0.100
W-05S	**1/23/12**	18.54	13.1	7.45	-90	1447	26.9	500	74.5	250	<0.010	604	<0.010	0.016	<0.50	<0.005	320	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-06S	**7/25/11**	28.20	19.9	6.91	-106	869	59.8	450	5.49	280	<0.010	457	<0.040	0.097	1.56	<0.005	460	6.6	<0.100
W-06S	**1/23/12**	28.17	12.2	7.21	-105	971	98.6	380	10.4	600	<0.10	436	<0.010	0.251	1.72	<0.005	400	6.7	0.313
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-07S	**7/25/11**	34.37	23.4	7.29	-62	1313	37.3	530	69.6	75	<0.010	761	<0.010	0.279	<0.50	<0.005	860	<3.0	<0.100
W-07S	**1/23/12**	32.87	13.7	7.19	5	1344	27.06	420	84	230	<0.010	936	<0.010	7.49	<0.500	<0.005	920	<3.0	0.164
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-09S	**7/25/11**	46.5	23.7	7.15	-69	1410	76.2	600	28.3	50	<0.010	655	<0.010	0.114	<0.50	<0.005	650	<3.0	0.1
W-09S	**1/23/12**	44.94	15.1	6.75	-87	1543	24.2	650	30.2	110	<0.010	687	<0.010	0.204	<0.50	<0.005	670	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16S	**7/25/11**	43.99	20.9	7.86	109	423	6.62	240	2.09	30	<0.010	193	<0.010	0.068	<0.50	<0.005	260	<3.0	<0.100
W-16S	**1/23/12**	41.50	10.9	8.01	99	452	23.11	250	3.03	26	<0.010	191	<0.010	0.072	<0.050	<0.005	240	5.1	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-16D	**7/25/11**	43.43	21.1	7.76	129	526	30.7	270	2.17	15	<0.010	267	<0.010	0.114	<0.50	<0.005	270	<3.0	<0.10
W-16D	**1/23/12**	41.16	10.2	8.05	99	572	10.56	290	2.2	19	<0.010	263	<0.010	0.15	<0.50	<0.005	310	<3.0	0.188
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17S	**7/25/11**	21.7	16.1	7.84	-74	1470	80.3	520	76.8	150	<0.010	662	<0.020	0.069	<0.50	<0.005	660	<3.0	<0.10
W-17S	**1/23/12**	20.00	11.9	7.27	-83	1421	63.2	470	118	145	<0.010	731	<0.010	0.239	<0.500	<0.005	790	3.9	0.691
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-17D	**7/25/11**	20.62	16.9	8.15	-10	1497	15.8	480	93.1	6	<0.010	705	<0.010	0.053	<0.50	<0.005	730	<3.0	<0.10
W-17D	**1/23/12**	19.01	11.4	7.77	-81	1451	30.1	440	107	17	<0.010	678	<0.010	0.211	<0.500	<0.005	770	<3.0	<0.100
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27S	**7/25/11**	40.4	20.4	7.40	-80	1381	19.5	560	65	75	<0.010	587	<0.020	0.082	<0.50	<0.005	620	<3.0	<0.10
W-27S	**1/23/12**	38.85	15.4	6.97	-82	1491	17.3	550	82.6	125	<0.010	651	<0.020	0.108	0.698	<0.005	730	4.6	0.166

TABLE 2-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-01	**7/25/11**	<0.005	0.0068	0.638	<0.003	0.959	<0.005	144	<0.010	<0.020	<0.010	50.6	<0.003	<0.030	54.4	3.83	<0.0002	<0.030	54.7
W-01	**1/23/12**	<0.05	<0.05	0.554	<0.003	1.07	0.00704	133	<0.010	<0.020	<0.010	70.7	<0.030	<0.030	61.7	3.79	<0.0002	<0.030	49.7
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-03A	**7/25/11**	<0.005	<0.005	0.0802	<0.003	<0.500	<0.005	81.6	<0.010	<0.020	<0.010	0.888	<0.003	<0.030	14.9	0.412	<0.0002	<0.030	<5.0
W-03A	**1/23/12**	<0.005	<0.005	0.058	<0.003	<0.500	<0.005	73.9	<0.010	<0.020	<0.010	1.18	<0.003	<0.030	16.7	0.809	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-05S	**7/25/11**	<0.005	0.027	0.127	<0.003	<0.500	<0.005	190	<0.010	<0.020	<0.010	11.9	<0.003	<0.030	32.6	1.59	<0.0002	<0.030	<5.0
W-05S	**1/23/12**	<0.005	0.0274	0.196	<0.003	<0.500	<0.005	192	<0.010	<0.020	<0.010	11.2	<0.003	<0.030	30	1.65	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-06S	**7/25/11**	<0.005	0.021	0.393	<0.003	<0.500	<0.005	146	<0.010	<0.020	0.0115	51.4	<0.003	<0.030	22.3	2.31	<0.0002	<0.030	<5.0
W-06S	**1/23/12**	<0.005	<0.005	0.379	<0.003	<0.500	0.00641	135	<0.010	<0.020	0.0105	46.6	<0.003	<0.030	24.2	2.16	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-07S	**7/25/11**	<0.005	0.023	0.108	<0.003	<0.500	<0.005	228	<0.010	<0.020	0.0439	36.4	<0.003	<0.030	46.6	1.8	<0.0002	<0.030	<5.0
W-07S	**1/23/12**	<0.005	0.00926	0.101	<0.003	<0.500	<0.005	276	<0.010	<0.020	0.0406	21.9	<0.003	<0.030	60.2	2.09	<0.0002	<0.030	6.03
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-09S	**7/25/11**	<0.005	0.043	0.963	<0.003	<0.500	<0.005	210	<0.010	<0.020	<0.010	25	<0.003	<0.030	31.7	0.565	<0.0002	<0.030	<5.0
W-09S	**1/23/12**	<0.005	0.042	0.801	<0.003	<0.500	<0.005	210	<0.010	<0.020	<0.010	20.8	<0.003	<0.030	39.3	0.557	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16S	**7/25/11**	<0.005	<0.005	<0.05	<0.003	<0.500	<0.005	43.6	<0.010	<0.020	<0.010	2.07	<0.003	<0.030	20.3	0.35	<0.0002	<0.030	5.87
W-16S	**1/23/12**	<0.005	0.00589	0.169	<0.003	<0.500	<0.005	53	<0.010	<0.020	<0.010	2.16	0.0033	<0.030	14.3	0.427	<0.0002	<0.030	10.8
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-16D	**7/25/11**	<0.005	0.023	0.13	<0.003	<0.500	<0.005	82.5	<0.010	<0.020	<0.010	3.11	<0.003	<0.030	14.9	0.925	<0.0002	<0.030	<5.0
W-16D	**1/23/12**	<0.005	0.0155	0.131	<0.003	<0.500	<0.005	79.3	<0.010	<0.020	<0.010	1.23	<0.003	<0.030	15.8	0.884	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17S	**7/25/11**	<0.005	0.01	0.4	<0.003	<0.500	<0.005	200	<0.010	<0.020	<0.010	21.9	<0.003	<0.030	36	1.08	<0.0002	<0.030	<5.0
W-17S	**1/23/12**	<0.005	0.0142	0.375	<0.003	<0.500	<0.005	222	<0.010	<0.020	<0.010	25.3	<0.003	<0.030	43	1.12	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-17D	**7/25/11**	<0.005	<0.005	0.11	<0.003	<0.500	<0.005	223	<0.010	<0.020	<0.010	0.414	<0.003	<0.030	39.6	0.639	<0.0002	<0.030	<5.0
W-17D	**1/23/12**	<0.005	<0.005	0.0962	<0.003	<0.500	<0.005	211	<0.010	<0.020	<0.010	0.74	<0.003	<0.030	36.9	0.333	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27S	**7/25/11**	<0.005	<0.005	0.516	<0.003	<0.500	<0.005	192	<0.010	<0.020	<0.010	14.9	<0.003	<0.030	26.3	2.04	<0.0002	<0.030	5.47
W-27S	**1/23/12**	<0.005	0.00908	0.181	<0.003	<0.500	<0.005	195	<0.010	<0.020	0.013	6.74	<0.003	<0.030	39.6	4.35	<0.0002	<0.030	6.19

TABLE 2-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-01	**7/25/11**	0.031	<0.010	304	<0.003	<0.010
W-01	**1/23/12**	<0.030	<0.010	384	<0.030	0.0342
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-03A	**7/25/11**	<0.003	<0.010	17.4	<0.003	<0.010
W-03A	**1/23/12**	<0.003	<0.010	21.2	<0.003	0.0405
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-05S	**7/25/11**	<0.003	<0.010	37.1	<0.003	0.0322
W-05S	**1/23/12**	<0.003	<0.010	51.9	<0.003	0.0699
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-06S	**7/25/11**	<0.003	<0.010	<5.0	<0.003	0.0155
W-06S	**1/23/12**	<0.003	<0.010	7.11	<0.003	0.0482
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-07S	**7/25/11**	<0.003	<0.010	41.3	<0.003	0.0357
W-07S	**1/23/12**	<0.003	<0.010	55.5	<0.003	0.0448
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-09S	**7/25/11**	<0.003	<0.010	23.7	<0.003	0.0228
W-09S	**1/23/12**	<0.003	<0.010	30.6	<0.003	0.018
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16S	**7/25/11**	<0.003	<0.010	21.5	<0.003	<0.010
W-16S	**1/23/12**	<0.003	<0.010	11.4	<0.003	0.0346
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-16D	**7/25/11**	<0.003	<0.010	<5.0	<0.003	0.0403
W-16D	**1/23/12**	<0.003	<0.010	<5.0	<0.003	0.0267
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17S	**7/25/11**	<0.003	<0.010	30.1	<0.003	0.0109
W-17S	**1/23/12**	<0.003	<0.010	14.6	<0.003	0.0222
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-17D	**7/25/11**	<0.003	<0.010	19.9	<0.003	0.0161
W-17D	**1/23/12**	<0.003	<0.010	33.4	<0.003	0.0482
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27S	**7/25/11**	<0.003	<0.010	37.2	<0.003	0.0263
W-27S	**1/23/12**	<0.003	<0.010	40.4	<0.003	0.0248

TABLE 2-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols	TDS	TOC	Al
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**		
CAS NO.													18540-29-9		7664-41-7	108-95-2			
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-27D	**7/25/11**	42.12	20.2	8.42	-118	521	27.9	190	1.93	12	<0.010	102	<0.010	<0.050	<0.50	<0.005	200	<3.0	<0.10
W-27D	**1/23/12**	38.23	14.8	8.19	-130	550	15.4	190	3.53	17	<0.010	110	<0.010	0.257	<0.50	<0.005	240	<3.0	<0.10
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28S	**7/25/11**	44.99	17.3	6.95	-22	1491	13.4	600	46	50	<0.010	783	<0.010	0.09	<0.50	<0.005	680	<3.0	<0.100
W-28S	**1/23/12**	43.45	13	6.79	-82	1478	11.1	600	44.2	70	<0.010	656	<0.010	0.14	<0.50	<0.005	720	4.8	0.568
TRIG. VALUE:								**493**	**33.3**	**33**		**666**	**0.05**	**10.0**	**2.0**	**0.0243**	**603**	**27.5**	**3.83**
W-28D	**7/25/11**	46.75	17.7	8.61	2	536	14.3	160	14.8	5	<0.010	113	<0.010	0.089	<0.50	<0.005	160	<3.0	<0.100
W-28D	**1/23/12**	44.85	14.2	7.89	-137	558	6.71	160	15.8	6	<0.010	98.7	<0.010	0.205	<0.50	<0.005	270	<3.0	<0.100

TABLE 2-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni	K
NYS LIMIT:		**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**	
CAS NO.						7440-42-8													
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-27D	**7/25/11**	<0.005	<0.005	0.0546	<0.003	<0.500	<0.005	23.3	<0.010	<0.020	<0.010	0.337	<0.003	<0.030	10.6	0.256	<0.0002	<0.030	<5.0
W-27D	**1/23/12**	<0.005	<0.005	0.0559	<0.003	<0.500	<0.005	25.4	<0.010	<0.020	<0.010	0.213	<0.003	<0.030	11.4	0.236	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28S	**7/25/11**	<0.005	0.0081	0.128	<0.003	<0.500	<0.005	246	<0.010	<0.020	<0.010	3	<0.003	<0.030	40.9	0.863	<0.0002	<0.030	<5.0
W-28S	**1/23/12**	<0.005	<0.005	0.187	<0.003	<0.500	<0.005	208	<0.010	<0.020	<0.010	16.2	<0.003	<0.030	33.1	0.759	<0.0002	<0.030	<5.0
TRIG. VALUE:			**0.025**			**1.0**	**0.01**	**203**	**0.05**		**0.0983**	**0.3**	**0.025**			**1.23**	**0.002**		
W-28D	**7/25/11**	<0.005	<0.005	0.0504	<0.003	<0.500	<0.005	29.3	<0.010	<0.020	<0.010	0.0968	<0.003	<0.030	9.7	0.0337	<0.0002	<0.030	<5.0
W-28D	**1/23/12**	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	25.5	<0.010	<0.020	<0.010	0.109	<0.003	<0.030	8.5	0.0214	<0.0002	<0.030	<5.0

TABLE 2-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Overburden Wells
(all units are in mg/l)

		Se	Ag	Na	Tl	Zn
NYS LIMIT:		**0.01**	**0.05**	**20**		
CAS NO.						
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-27D	**7/25/11**	<0.003	<0.010	52.7	<0.003	0.0101
W-27D	**1/23/12**	<0.003	<0.010	61.3	<0.003	0.0207
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28S	**7/25/11**	<0.003	<0.010	33.7	<0.003	<0.010
W-28S	**1/23/12**	<0.003	<0.010	34.6	<0.003	0.0276
TRIG. VALUE:		**0.0057**	**0.05**	**20**		**0.3**
W-28D	**7/25/11**	<0.003	<0.010	49.2	<0.003	<0.010
W-28D	**1/23/12**	<0.003	<0.010	45.7	<0.003	0.0155

TABLE 2-2
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Deep Wells
(all units are in mg/l)

		DTW	Temp	pH	Eh	SC	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenol	TDS	TOC
NYS LIMIT:				**6.5-8.5**			**5.0**		**250.0**	**15.0**	**0.2**		**0.05**	**10.0**	**2.0**	**0.001**	**500**	
CAS NO.													18540-29-9		7664-41-7	108-95-2		
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-05D	**7/25/11**	22.5	19.1	8.83	-82	364	34.4	120	3.08	12	<0.010	125	<0.010	0.056	<0.500	<0.005	170	<3.0
W-05D	**1/25/12**	19.65	13.1	8.23	16	424	68.7	130	3.76	55	<0.010	132	<0.010	0.165	<0.500	<0.005	740	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-06DA	**7/25/11**	18.84	18.6	7.34	-81	432	12.3	150	3.73	5	<0.010	212	<0.010	0.109	<0.500	<0.005	240	<3.0
W-06DA	**1/25/12**	17.45	10.6	7.96	-116	624	17.4	150	4.08	6	<0.010	205	<0.010	0.177	<0.500	<0.005	480	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-08D*	**7/25/11**	75.11	20.6	7.79	226	506	57.2	220	20.9	40	<0.010	289	<0.010	0.262	<0.500	<0.005	350	<3.0
W-08D*	**1/25/12**	73.41	10.3	8.16	135	499	68.19	240	10.2	<5.0	<0.010	253	<0.010	0.223	<0.500	<0.005	320	<3.0

*** BACKGROUND WELL**

TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-09D	**7/25/11**	78.11	22.8	8.05	-87	1108	14.2	150	115	15	<0.010	175	<0.010	0.178	<0.500	<0.005	1000	<3.0
W-09D	**1/25/12**	46.45	16.4	7.68	-126	1178	7.03	160	130	18	<0.010	167	<0.010	0.254	<0.500	<0.005	510	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-10D	**7/25/11**	57.98	19.4	6.98	26	1210	19.6	570	26.4	12	<0.010	723	<0.010	0.061	<0.500	<0.005	830	<3.0
W-10D	**1/25/12**	57.02	11.5	7.28	129	1005	5.96	480	29.6	28	<0.010	512	<0.010	0.139	<0.500	<0.005	610	<3.0
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
W-30	**7/25/11**	48.20	24.1	7.62	134	1492	2.62	460	107	7	<0.010	771	<0.010	0.142	<0.500	0.008	970	<3.0
W-30	**1/25/12**	47.56	11.2	7.28	86	1509	3.7	440	138	14	<0.010	815	<0.010	0.248	<0.500	<0.005	1200	4.5
TRIG. VALUE:								**258**	**14.4**	**40**		**354**	**0.05**	**0.48**	**0.6**	**0.014**	**488**	**30**
SS882	**7/25/11**	32.44	20.6	7.81	213	607	11.7	270	19.1	8	<0.010	315	<0.010	<0.05	<0.500	<0.005	340	<3.0
SS882	**1/25/12**	31.90	9.6	8.27	147	580	32.4	290	11.9	24	<0.010	276	<0.010	0.111	<0.500	<0.005	360	<3.0

TABLE 2-2
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Deep Wells
(all units are in mg/l)

		Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg	Mn	Hg	Ni
NYS LIMIT:			**0.003**	**0.025**	**1.0**		**1.0**	**0.005**		**0.05**		**0.2**	**0.3**	**0.025**			**0.3**	**0.0007**	**0.1**
CAS NO.							7440-42-8												
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-05D	**7/25/11**	0.134	<0.030	<0.010	<0.050	<0.003	<0.500	<0.005	32.8	<0.010	<0.020	<0.010	0.281	<0.003	<0.030	10.5	0.0583	<0.0002	<0.030
W-05D	**1/25/12**	1.43	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	35.9	<0.010	<0.020	<0.010	2.6	<0.003	<0.030	10.3	0.100	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-06DA	**7/25/11**	<0.100	<0.005	<0.005	0.0676	<0.003	<0.500	<0.005	67	<0.010	<0.020	<0.010	0.663	<0.003	<0.030	10.8	0.0263	<0.0002	<0.030
W-06DA	**1/25/12**	0.145	<0.005	<0.005	0.0653	<0.003	<0.500	<0.005	64.8	<0.010	<0.020	<0.010	0.317	<0.003	<0.030	10.6	0.0755	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-08D*	**7/25/11**	5.17	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	85.7	0.0109	<0.010	<0.010	7.09	<0.003	<0.030	18.2	0.154	<0.0002	<0.030
W-08D*	**1/25/12**	2.42	<0.025	<0.025	<0.050	0.0046	<0.500	0.0061	73.9	<0.010	<0.010	0.0119	3.13	<0.015	<0.030	16.7	0.169	<0.0002	<0.030

*** BACKGROUND WELL**

TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-09D	**7/25/11**	<0.100	<0.005	<0.005	51.9	<0.003	<0.500	<0.005	34.8	<0.010	<0.020	<0.010	0.307	<0.003	0.0107	21.5	0.229	<0.0002	<0.030
W-09D	**1/25/12**	<0.100	<0.005	<0.005	0.104	<0.003	<0.500	<0.005	33	<0.010	<0.020	<0.010	0.146	<0.003	<0.03	20.5	0.163	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-10D	**7/25/11**	0.135	<0.005	<0.005	0.0786	<0.003	<0.500	<0.005	223	<0.010	<0.020	<0.010	1.7	0.0041	<0.030	40.6	3.31	<0.0002	<0.030
W-10D	**1/25/12**	<0.100	<0.005	0.00752	0.0655	<0.003	<0.500	<0.005	167	<0.010	<0.020	<0.010	1.21	<0.003	<0.030	23.2	2.84	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
W-30	**7/25/11**	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	0.75	<0.010	<0.020	<0.010	0.352	<0.003	<0.030	81.3	0.0209	<0.0002	<0.030
W-30	**1/25/12**	<0.100	<0.005	<0.005	0.0607	<0.003	<0.500	<0.005	185	<0.010	<0.020	<0.010	0.115	<0.003	<0.030	85.6	0.0228	<0.0002	<0.030
TRIG. VALUE:		**2.45**		**0.01**			**4.1**	**0.01**	**76.5**	**0.05**		**0.08**	**0.27**	**0.025**			**0.3**	**0.002**	
SS882	**7/25/11**	<0.100	<0.005	<0.005	0.0927	<0.003	<0.500	<0.005	89.6	<0.010	<0.020	<0.010	1.29	<0.003	<0.030	22.1	0.732	<0.0002	<0.030
SS882	**1/25/12**	0.111	<0.005	0.0184	0.113	<0.003	<0.500	<0.005	76.7	0.0365	<0.020	<0.010	3.26	<0.003	<0.030	20.6	1.64	<0.0002	<0.030

TABLE 2-2
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Groundwater Monitoring Data - Deep Wells
(all units are in mg/l)

		K	Se	Ag	Na	Tl	Zn
NYS LIMIT:			**0.01**	**0.05**	**20**		
CAS NO.							
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-05D	**7/25/11**	7.49	<0.003	<0.010	8.93	<0.010	0.0153
W-05D	**1/25/12**	<5.0	<0.003	<0.010	6.74	<0.003	0.0297
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-06DA	**7/25/11**	<5.0	<0.003	<0.010	11.6	<0.003	<0.010
W-06DA	**1/25/12**	<5.0	<0.003	<0.010	12.8	<0.003	0.0255
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-08D*	**7/25/11**	<5.0	<0.003	<0.010	7.18	<0.003	0.0287
W-08D*	**1/25/12**	<5.0	<0.003	<0.010	8.76	<0.003	0.0253

*** BACKGROUND WELL**

TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-09D	**7/25/11**	<5.0	<0.003	<0.010	142	<0.003	0.0107
W-09D	**1/25/12**	<5.0	<0.003	<0.010	141	<0.003	0.0234
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-10D	**7/25/11**	<5.0	<0.003	<0.010	36.6	<0.003	0.0185
W-10D	**1/25/12**	<5.0	<0.003	<0.010	60.3	<0.003	0.0172
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
W-30	**7/25/11**	0.507	<0.003	<0.010	57	<0.003	0.0113
W-30	**1/25/12**	5.14	<0.003	<0.010	71	<0.003	0.0258
TRIG. VALUE:			**0.0014**	**0.05**	**20**		**0.3**
SS882	**7/25/11**	<5.0	<0.003	<0.010	24.5	<0.003	<0.010
SS882	**1/25/12**	<5.0	<0.003	<0.010	30.4	<0.003	0.0148

TABLE 3-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Surface Water Monitoring Data
(all units are in mg/l)

		Dis O2	SC	eH	pH	Temp	Turbidity	Alkalinity	Chloride	Color	Cyanide	Hardness	Cr +6	Nitrate	NH4	Phenols
CLASS C STD:		**<4**			**6.5-8.5**						**9**		**0.011**		**2**	
WALL-UP	**7/25/11**	4.97	718	55	8.56	28.1	67.1	170	64.3	75	<0.010	215	<0.010	0.866	<0.500	<0.005
WALL-UP	**1/24/12**	10.57	635	-85	8.18	4.8	28.7	130	48.4	28	0.0109	138	<0.010	0.846	<0.500	<0.005
WALL-DN	**7/25/11**	4.4	743	-9	8.31	29.1	59.3	170	66.5	50	<0.010	202	<0.010	1.450	<0.500	<0.005
WALL-DN	**1/24/12**	11.32	695	9	8.35	4.8	37.2	130	68.2	54	<0.010	137	<0.010	1.36	<0.500	<0.005
Basin A	**7/25/11**	5.39	287	28	8.92	33.2	63.5	110	1.92	30	<0.010	106	<0.010	0.072	<0.500	<0.005
Basin A	**1/24/12**	10.72	482	13	8.49	2.4	16.2	180	2.21	23	<0.010	183	<0.010	0.184	<0.500	<0.005
Basin B	**7/25/11**	3.83	350	-25	9.71	37.7	412	35	2.13	150	<0.010	114	<0.04	0.094	<0.500	<0.005
Basin B	**1/24/12**	10.36	151	-7	8.42	2.4	30.7	19	3.09	56	0.0125	32.4	<0.010	1.710	<0.500	<0.005
Basin D	**7/25/11**	7.57	341	15	9.28	35.5	178	94	1.68	150	<0.010	120	<0.010	0.09	<0.500	<0.005
Basin D	**1/24/12**	11.36	137	-12	8.47	2.8	51.4	28	2.36	58	<0.010	36.8	<0.010	0.346	<0.500	<0.005

TABLE 3-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Surface Water Monitoring Data
(all units are in mg/l)

		TDS	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
CLASS C STD:		**500**		**0.1**				**1.1**	**10**				**0.005**		**0.3**		**0.014**	
WALL-UP	**7/25/11**	270	5.9	0.811	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	54	<0.010	<0.020	<0.010	1.47	<0.003	<0.030	19.4
WALL-UP	**1/24/12**	38	3.4	0.624	<0.025	<0.025	<0.050	<0.003	<0.500	<0.005	36.2	<0.010	<0.020	<0.010	1.37	<0.003	<0.030	11.6
WALL-DN	**7/25/11**	300	4.2	0.259	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	52.1	<0.010	<0.020	<0.010	0.56	<0.003	<0.030	17.6
WALL-DN	**1/24/12**	<25.0	3.8	0.791	<0.025	<0.025	<0.050	<0.003	<0.500	<0.005	36.7	<0.010	<0.020	<0.010	1.6	<0.003	<0.030	11.1
Basin A	**7/25/11**	120	3.9	1.01	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	28.2	<0.010	<0.020	<0.010	2.04	<0.003	<0.030	8.73
Basin A	**1/24/12**	<25.0	<3.0	0.277	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	57.7	<0.010	<0.020	<0.010	0.443	<0.003	<0.030	9.48
Basin B	**7/25/11**	190	5.8	5.11	<0.005	<0.005	0.0692	<0.003	<0.500	<0.005	45.7	<0.010	<0.020	0.0144	6.12	<0.003	<0.030	<5.0
Basin B	**1/24/12**	<25.0	3.8	0.514	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	13	<0.010	<0.020	<0.010	0.667	<0.003	<0.030	<5.0
Basin D	**7/25/11**	140	4.1	0.907	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	48.1	<0.010	<0.020	<0.010	2.02	<0.003	<0.030	<5.0
Basin D	**1/24/12**	<25.0	4.6	0.874	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	14.7	<0.010	<0.020	<0.010	1.44	<0.003	<0.030	<5.0

TABLE 3-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Surface Water Monitoring Data
(all units are in mg/l)

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
CLASS C STD:									**0.008**	
WALL-UP	**7/25/11**	0.176	<0.0002	<0.030	<5.00	<0.003	<0.010	40.1	<0.003	0.377
WALL-UP	**1/24/12**	0.115	<0.0002	<0.030	<5.00	<0.003	<0.010	25.9	<0.015	0.0126
WALL-DN	**7/25/11**	0.105	<0.0002	<0.030	<5.00	<0.003	<0.010	46.3	<0.003	0.0173
WALL-DN	**1/24/12**	0.118	<0.0002	<0.030	<5.00	<0.003	<0.010	36.1	<0.015	0.0517
Basin A	**7/25/11**	0.119	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0163
Basin A	**1/24/12**	0.0293	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0276
Basin B	**7/25/11**	0.404	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0324
Basin B	**1/24/12**	0.105	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0116
Basin D	**7/25/11**	0.467	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0191
Basin D	**1/24/12**	0.064	<0.0002	<0.030	<5.00	<0.003	<0.010	<5.0	<0.003	0.0113

TABLE 3-2
AL TURI SANITARY LANDFILL
SEDIMENT / FLOC MONITORING ANALYTICAL RESULTS
JANUARY 2012
(all units are in mg/kg)

		% Moisture	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	V	Mg
Sed UP	**7/26/11**	52	57000	9010	<20.8	<20.8	93.5	<1.25	<208	<2.08	16600	39.8	11.3	80.4	25500	265	12.6	8230
Sed UP	**1/24/12**	41.3	29500	8740	<17.0	19.6	66.9	<1.02	<170	<1.70	12200	18.8	9.34	38.6	32.6	70	15.4	6730
Sed DN	**7/26/11**	44.7	97000	6530	<18.1	<18.1	39.4	<1.09	<181	<1.81	9460	11.1	<7.24	20	14600	11.1	<10.9	6710
Sed DN	**1/24/12**	27.6	13000	10400	<13.8	<13.8	60.4	<0.828	148	2.07	7440	16.7	12.5	38	21200	28.8	16.2	6130

		Mn	Hg	Ni	K	Se	Ag	Na	Th	Zn
Sed UP	**7/26/11**	764	<0.104	25.4	766	<12.5	<4.16	670	<12.5	455
Sed UP	**1/24/12**	1120	<0.0852	16.9	674	1.37	<3.41	465	<10.2	134
Sed DN	**7/26/11**	361	<0.0904	15.3	566	<10.9	<3.62	<362	<10.9	78.5
Sed DN	**1/24/12**	895	0.118	27.2	1480	<8.28	<2.76	856	<8.28	86.5

TABLE 4-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Leachate Monitoring Data
(all units are in mg/l)

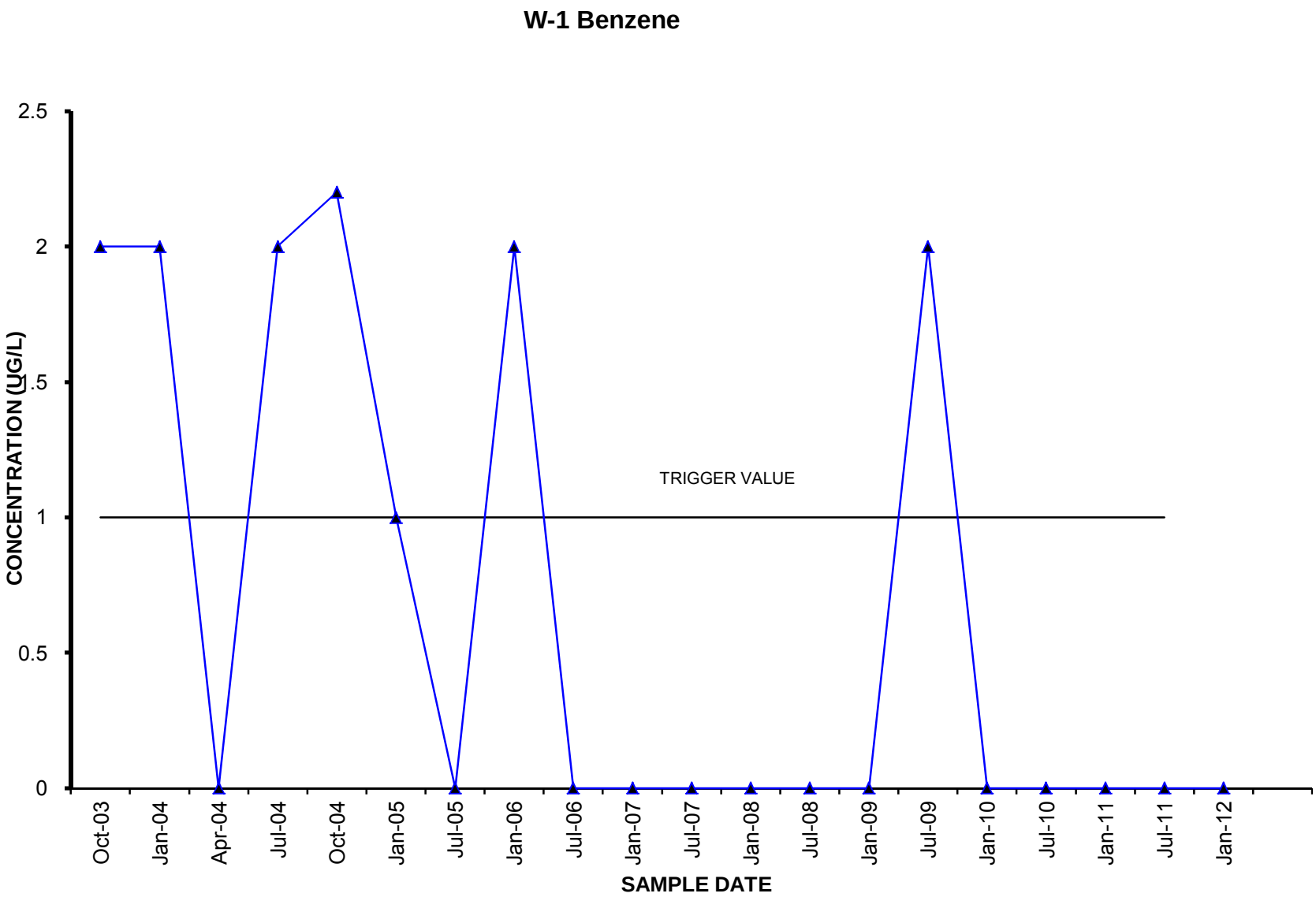
		SC	eH	pH	Temp	Turbidity	Alkalinity	BOD	Bromide	Chloride	COD	Color	Cyanide	Hardness	Nitrate	NH4	TKN
LCH-11P	**7/26/11**	1327	-85	7.88	19.1	133	1800	26	<0.008	1910	120	300	<0.010	3410	4.74	128	159
LCH-11P	**1/26/12**	1071	-52	7.40	9	92.5	190	14	<0.008	69.2	84	145	<0.010	247	1.34	15.2	15.7
LCH-11S	**7/26/11**	649	-49	9.02	16.6	14.3	130	<8.0	<8.0	29.8	<20.0	30	<0.010	202	0.883	<0.500	0.681
LCH-11S	**1/26/12**	926	-53	7.42	10.3	11.4	190	<4.0	<0.80	31.3	22	22	<0.010	268	0.714	<0.500	0.584
LCH-12P	**7/26/11**	567	-28	8.38	24.9	18.2	1700	37	<80.0	777	270	300	36.8	484	3.82	234	273
LCH-12P	**1/26/12**	408	-72	7.74	13.9	11.3	1200	4	<8.0	458	250	130	<0.010	428	1.65	157	171
LCH-12S	**7/26/11**	777	-65	9.41	17.5	17.1	160	<8.0	<8.0	27.1	<20.0	20	<0.01	214	1.09	<0.5	1.45
LCH-12S	**1/26/12**	785	-78	7.83	7.1	6.3	190	<4.0	<0.80	22.4	23	21	<0.010	213	1.19	<0.50	<0.50

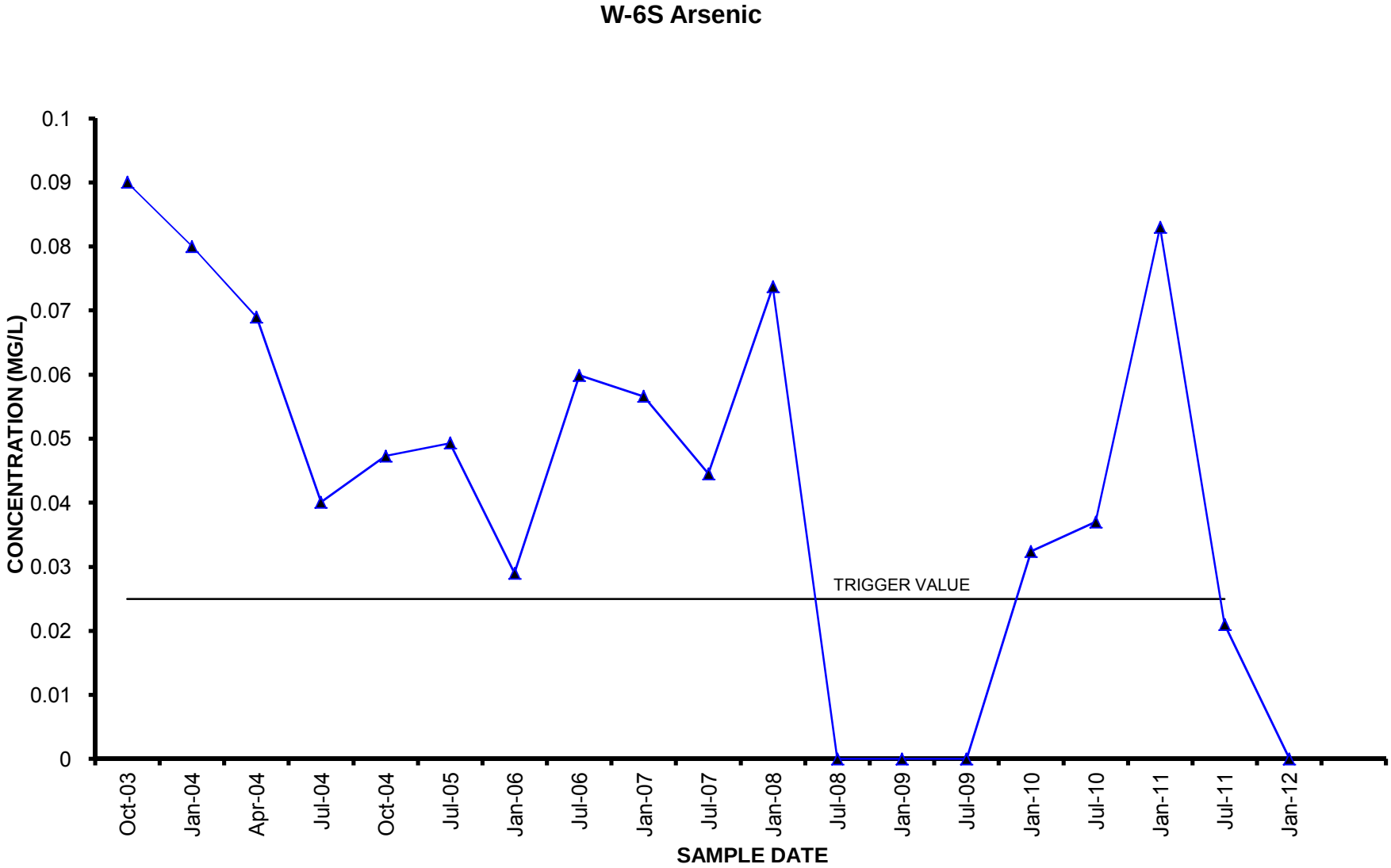
TABLE 4-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Leachate Monitoring Data
(all units are in mg/l)

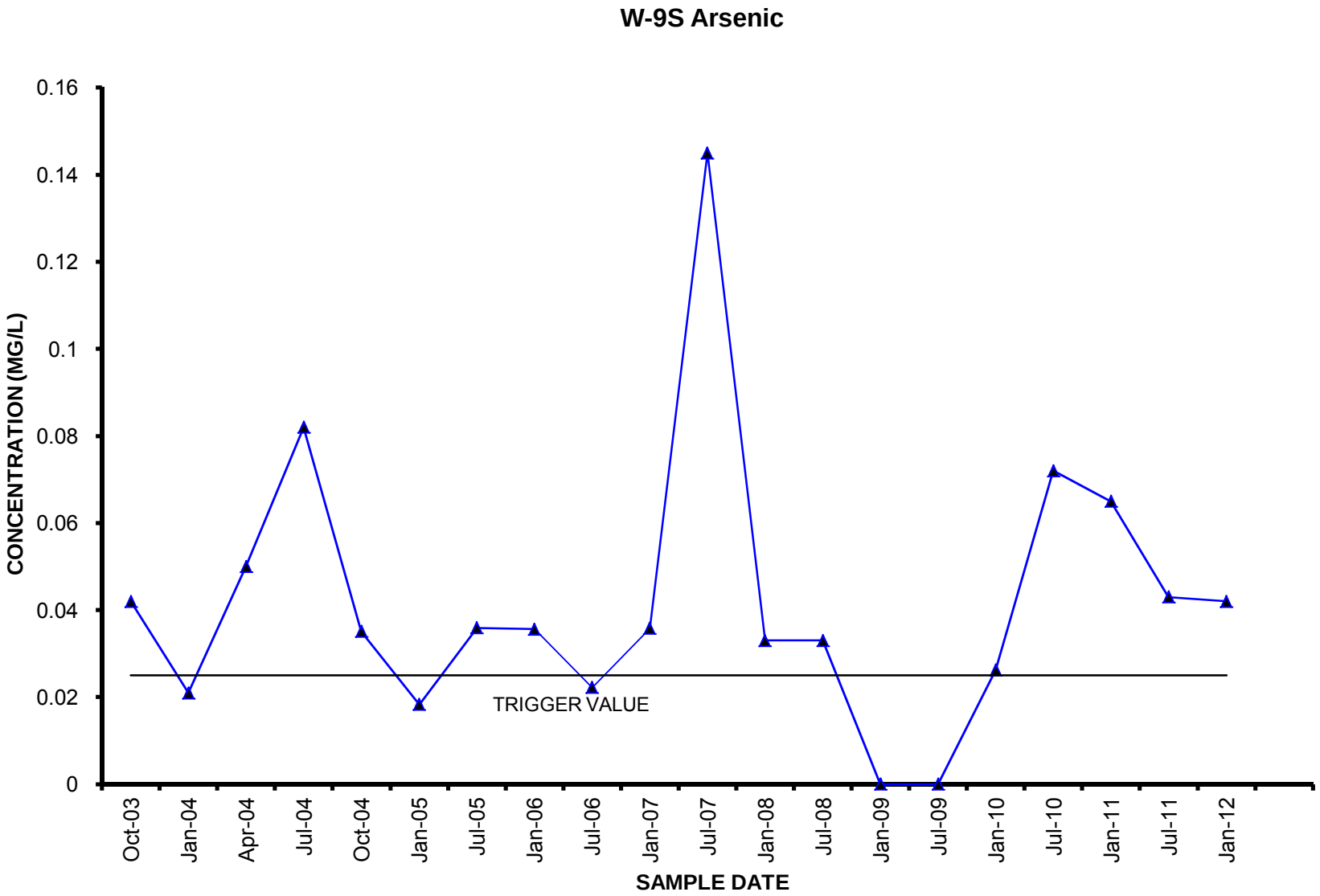
		Phenols	TDS	Sulfate	Sulfide	Cr +6	TOC	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co
LCH-11P	**7/26/11**	0.025	12000	2540	<0.100	<0.020	17.3	1.28	<0.005	0.11	0.147	<0.003	16.6	<0.005	418	<0.010	<0.020
LCH-11P	**1/26/12**	0.53	<25	129	<0.100	<0.010	14.1	<0.100	<0.050	0.125	<0.050	<0.003	<0.500	<0.005	74.5	<0.010	<0.020
LCH-11S	**7/26/11**	0.075	680	109	<0.100	<0.010	<3.0	<0.100	<0.005	<0.005	<0.050	<0.003	<0.500	<0.005	56.4	<0.010	<0.020
LCH-11S	**1/26/12**	<0.005	260	175	<0.100	<0.010	<3.0	<0.100	<0.050	<0.050	<0.050	<0.003	<0.500	<0.005	74	<0.010	<0.020
LCH-12P	**7/26/11**	<0.125	2300	40.9	<0.100	<0.04	86.2	<0.001	<0.005	0.05	0.188	<0.003	3.19	<0.005	118	0.107	<0.020
LCH-12P	**1/26/12**	<0.005	1300	55.2	<0.100	<0.010	48.6	0.288	<0.050	<0.050	0.121	<0.003	1.85	<0.005	114	<0.010	<0.020
LCH-12S	**7/26/11**	<0.05	370	86.1	<0.100	<0.01	<3.0	<0.001	<0.005	<0.005	0.0507	<0.003	<0.5	<0.005	64.9	<0.01	<0.020
LCH-12S	**1/26/12**	<0.005	240	93	<0.100	<0.010	3	<0.001	<0.050	<0.050	<0.050	<0.003	<0.5	<0.005	61.2	<0.01	<0.020

TABLE 4-1
Al Turi Landfill, Inc. January 2012 Semi-Annual Report
Leachate Monitoring Data
(all units are in mg/l)

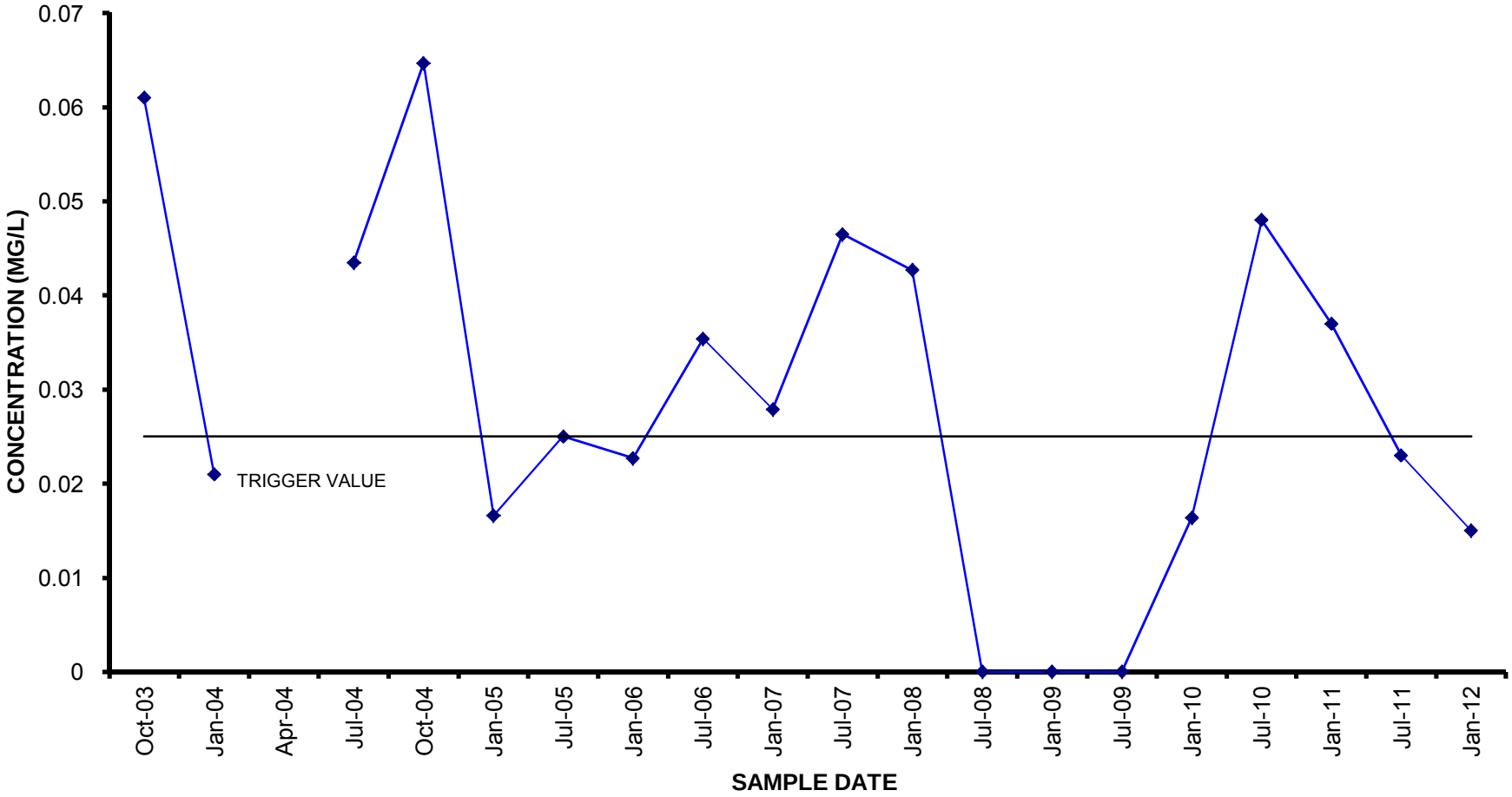
		Cu	Fe	K	Pb	V	Mg	Mn	Hg	Ni	Se	Ag	Na	Sn	Th	Zn
LCH-11P	**7/26/11**	<0.010	1.01	640	<0.003	<0.030	575	3.98	<0.0002	0.0495	0.43	<0.010	3580	<0.300	<0.003	0.146
LCH-11P	**1/26/12**	<0.010	9.94	9.79	<0.030	<0.030	14.9	0.375	<0.0002	<0.030	<0.030	<0.010	44.8	<0.300	<0.003	0.0652
LCH-11S	**7/26/11**	<0.010	<0.060	7.23	<0.003	<0.030	15	0.123	<0.0002	<0.030	<0.030	<0.010	30.8	<0.300	<0.003	0.36
LCH-11S	**1/26/12**	<0.010	0.0959	8.38	<0.030	<0.030	20.2	0.263	<0.0002	<0.030	<0.030	<0.010	39.4	<0.300	<0.003	0.46
LCH-12P	**7/26/11**	<0.010	1.05	185	<0.003	<0.030	45.9	0.371	<0.0002	0.0641	<0.041	<0.010	613	<0.300	<0.003	0.956
LCH-12P	**1/26/12**	<0.010	3.18	110	<0.030	<0.030	34.4	0.309	<0.0002	0.0417	<0.030	<0.010	473	<0.300	<0.030	0.197
LCH-12S	**7/26/11**	<0.010	0.0781	12.2	<0.003	<0.030	12.8	0.0213	<0.0002	<0.03	<0.03	<0.010	28.5	<0.300	<0.003	0.168
LCH-12S	**1/26/12**	<0.010	<0.060	13.6	<0.030	<0.030	14.6	0.0293	<0.0002	<0.03	<0.03	<0.010	23.8	<0.300	<0.003	0.168

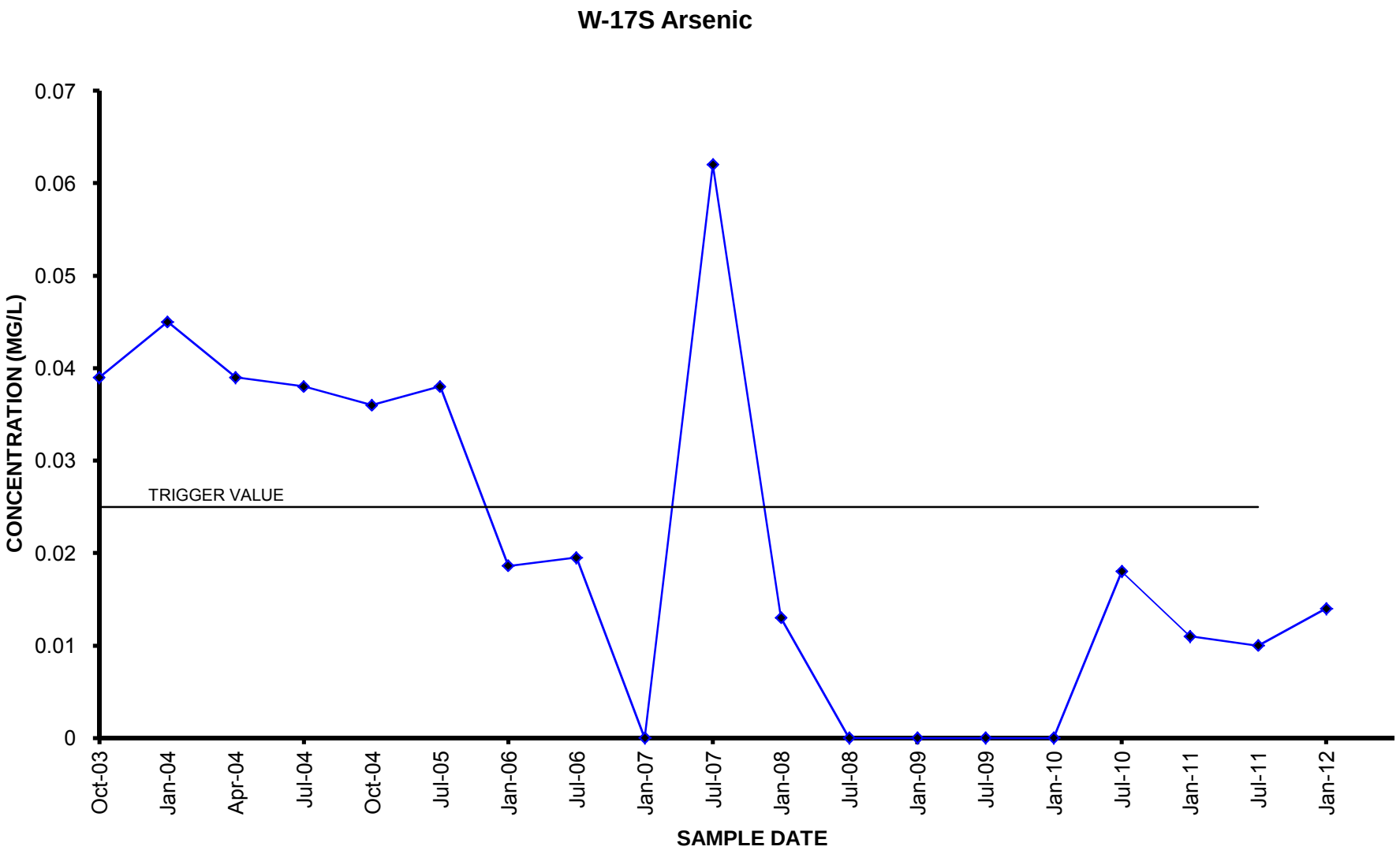

W-1 Benzene
2.5
2
1.5
1
0.5
0
CONCENTRATION (UG/L)
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
SAMPLE DATE


W-6S Arsenic
CONCENTRATION (MG/L)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
SAMPLE DATE


W-9S Arsenic
CONCENTRATION (MG/L)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
SAMPLE DATE

W-16D Arsenic




W-17S Arsenic
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
CONCENTRATION (MG/L)
TRIGGER VALUE
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
SAMPLE DATE

CLASS II SITE
SEMI-ANNUAL REPORT

JANUARY 2012
SEMI-ANNUAL GROUNDWATER QUALITY MONITORING REPORT

AL TURI LANDFILL – FORMER CLASS II SITE

GOSHEN, NEW YORK

Prepared for

Al Turi Landfill, Inc.
Goshen, New York

June 2012

Prepared by

Ground Water Investigations
18 Bridge Street
Montgomery, New York 12549

Project 256-00-00

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Attachments

Drawing No. 1 - Well Location Plan	Pocket
Diskette - Laboratory Analytical Data	Pocket

1 INTRODUCTION

The water quality management program developed for post closure monitoring of the Al Turi Landfill – former Class II site, located in Goshen, New York, includes the semi-annual groundwater sampling and analysis of select parameters from monitoring wells downgradient of the former Class II landfill facility and the evaluation of the data generated by these samples. This program was developed to monitor historical constituents of concern within groundwater, and to identify any changes in the concentration of these constituents that may warrant further evaluation. The identification of conditions warranting further evaluation is based primarily on the comparison of detected concentrations with groundwater trigger levels (GWTLs). The Constituents of Concern and their GWTLs were presented to the Department in December 2001 in the Post-Closure Contingency Monitoring Plan, prepared by ENVIRON International Corporation of Princeton, New Jersey. The Constituents of Concern are listed on Table 1-1.

Semi-Annual groundwater quality is monitored at 17 groundwater monitoring wells (overburden and bedrock wells) located within the boundaries of the Al Turi Landfill property. The 17 monitoring wells are divided into two types: “Type 1” wells and “Type 2” wells. Type 1 wells are wells that are located adjacent (within 150 feet) to the Wallkill River while Type 2 wells are located beyond 150 feet from the river. The location of each well in relation to the Wallkill River was a factor when considering GWTLs for each well. Drawing 1 (in pocket) provides a site map of the area indicating the locations of the Type 1 and Type 2 groundwater monitoring wells.

Of the 17 groundwater monitoring wells, two wells (W-1 and W-3A), are monitored semi-annually as part of the post closure monitoring of the adjacent Al Turi Landfill. Monitoring of these wells consists of a modified Part 360 semi-annual analysis. As part of this sampling event, the Part 360 landfill data collected for well W-1 and well W-3A were utilized. In addition, the Wallkill River, which is located along the western portion of the site, is monitored semi-annually both upgradient and downgradient of the Al Turi property.

2 SUMMARY OF GROUNDWATER QUALITY MONITORING

2.1 Type 1 Groundwater Quality

Eight Type 1 groundwater monitoring wells are currently sampled at the former Class II Al Turi landfill site as part of post-closure monitoring requirements. Of the eight Type 1 groundwater monitoring wells, six wells monitor the overburden groundwater aquifer and two wells monitor the bedrock aquifer. It was noted during this sampling event that well W-38S was dry.

Analytical results collected from the Type 1 groundwater monitoring wells are presented in Table 2-1, as are established GWTL values for each well. A review of the inorganic analyses collected during the July 2011 sampling event demonstrate that no Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 1 groundwater monitoring wells. In addition, a review of the Type 1 volatile organic data collected during the January 2012 sampling event indicates that no volatile organic compounds (VOC's) were present above established GWTLs.

The Type 1 groundwater monitoring wells will be sampled again in July 2012 as part of continued semi-annual groundwater monitoring for the former Class II Al Turi Landfill.

2.2 Type 2 Groundwater Quality

Nine Type 2 groundwater monitoring wells are currently sampled at the former Class II Al Turi Landfill as part of post closure monitoring at the facility.

Of the nine Type 2 groundwater monitoring wells, seven wells monitor the overburden groundwater aquifer and two well monitor the bedrock aquifer. It was noted during this sampling event that well W-20 was dry.

Analytical results collected from the Type 2 groundwater monitoring wells are presented in Table 2-2, as are established GWTL values for each well. A review of the inorganic analyses collected during the January 2012 sampling event demonstrate that no

Constituents of Concern were present at concentrations above any of the established GWTLs in the Type 2 groundwater monitoring wells. In addition, a review of the Type 2 volatile organic data collected during the January 2012 sampling event indicates that no volatile organic compounds (VOC's) were present above established GWTLs.

The Type 2 groundwater monitoring wells will be sampled again in July 2012 as part of continued semi-annual groundwater monitoring for the former Class II Al Turi Landfill.

3 ASSESSMENT OF CUMULATIVE EFFECTS

In addition to the direct comparison of measured groundwater concentrations from individual monitoring wells to the appropriate GWTLs, the cumulative effects of ground water discharges to the Wallkill River from the former Class II Landfill site are evaluated as part of routine post-closure monitoring. The cumulative mass loading to the river is approximated, as follows:

1. The estimated total mass loading to the river for each Type 1 well is calculated by multiplying the measured concentration with the discharge rate calculated using ground water elevations observed during the same monitoring event (the ground water elevations from the January 2012 event are provided on Table 3-1):

$$M_i = C_i \bullet (Ki \bullet i_i \bullet w_i \bullet d) \bullet CF$$

where:

M_i	=	mass loading rate for well i (kg/day);
C_i	=	measured ground water concentration in well i (mg/L);
K_i	=	hydraulic conductivity for discharge zone segment associated with well i (ft/day);
i_i	=	calculated ground water gradient of for well i (ft/ft);
w_i	=	width of discharge zone segment associated with well i (ft);
d	=	aquifer thickness (ft); and
CF	=	conversion factor 28.32 L/ft^3 * 10^{-6} kg/mg

2. The mass loading rate from each Type 1 well is then summed to estimate the cumulative mass loading to the river, ($M_c = \Sigma M_i$) for each constituent.

3. The estimated river concentration is then calculated by dividing the cumulative mass loading M_c by the measured river flow rate. On January 23, 2012 the average gauge height was 2.34 (river elevation 356.043 ft msl), which represents an estimated river flow of 47.4 cfs.

The estimated river concentrations are then compared to the lower of the aquatic criteria and human health benchmarks for surface water presented in the December 2001 Post-Closure Monitoring Plan.

The results for the estimated cumulative effects assessment are presented on Table 3-2. As indicated on Table 3-2, the estimated in-stream concentrations resulting from the discharge of groundwater to the Wallkill River based on the observed flow conditions in the river at the time of sampling are all below the lower of the surface water benchmarks. A copy of the updated Al Turi Landfill Stream Gauge Hydrograph Record is included in Appendix A.

4 CONCLUSION

A review of the January 2012 groundwater data shows that no Constituents of Concern were observed above GWTLs in any of the groundwater monitoring wells. Because there are no Constituents of Concern observed above any of the established GWTLs, and the assessment of cumulative effects did not identify a potential for unacceptable impacts on the river as a result of groundwater discharges, the routine post-closure monitoring program will continue as specified in the Post-Closure Monitoring Plan for the Class II Al Turi Landfill.

Semi-annual monitoring of 17 groundwater monitoring wells for the identified constituents of concern will continue in July 2012 at the Class II Al Turi Landfill as part of continued post closure monitoring.

APPENDIX A

AL TURI LANDFILL HYDROGRAPH RECORD

TABLE 1-1

AL TURI LANDFILL - CLASS II SITE
CONSTITUENTS OF CONCERN
JANUARY 2012 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

Volatile Organic Compounds	***Metals***
Chloromethane	Antimony
Vinyl Chloride	Arsenic
Trichlorofluoromethane	Barium
Dichlorodifluoromethane	Chromium, hexavalent
1,1-Dichloroethene	Chromium
1,1-Dichloroethane	Copper
cis-1,2-Dichloroethene	Lead
Benzene	Magnesium
Trichloroethene	Sodium
	Zinc

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JANUARY 2012 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2012 SAMPLING EVENT

	Laboratory Analytical Results							
`	***W-1***		***W-11S***		***W-24S***		***W-38S***	
	23-Jan-12		***23-Jan-12***		***23-Jan-12***		***23-Jan-12***	
Compounds of Concern	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***
Volatile Organic Compounds (VOCs) By Method 8260 (Results in mg/l)								
Chloromethane	ND	35	ND	35	ND	35	DRY	35
Vinyl Chloride	ND	27.6	ND	27.6	ND	27.6	DRY	27.6
Trichlorofluoromethane	ND	11	ND	11	ND	11	DRY	11
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	2.8	DRY	2.8
1,1-Dichloroethene	ND	3.59	ND	6.12	ND	5.07	DRY	5.32
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	50.6	DRY	50.6
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	17.5	DRY	17.5
Benzene	ND	2.21	ND	3.78	ND	3.13	DRY	3.28
Trichloroethene	ND	11	ND	11	ND	11	DRY	11
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***GWTL***
Antimony	ND	8,828	ND	15,074	ND	12,478	DRY	13,097
Arsenic	ND	0.81	ND	1.38	ND	1.14	DRY	1.2
Barium	0.554	***	0.0739	***	0.0846	***	DRY	***
Chromium, Hexavalent	ND	4.54	ND	7.76	ND	6.42	DRY	6.74
Chromium	ND	38	ND	65	0.0115	54	DRY	57
Copper	ND	4.65	0.0124	7.94	ND	6.57	DRY	6.9
Lead	ND	1.85	ND	3.16	ND	2.61	DRY	2.74
Magnesium	61.7	***	19.1	***	20	***	DRY	***
Sodium	384	103,222	ND	176,259	ND	145,911	DRY	153,146
Zinc	0.0342	42.86	0.0211	73.19	ND	60.59	DRY	63.6

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-1

AL TURI LANDFILL CLASS II SITE
TYPE 1 GROUNDWATER MONITORING WELLS
JANUARY 2012 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2012 SAMPLING EVENT

	Laboratory Analytical Results							
Sample ID	***W-39S***		***W-40S***		***W-1D***	***W-37D***	***FB-01***	***TB-01***
	23-Jan-12		***23-Jan-12***		***23-Jan-12***	***23-Jan-12***	***25-Jan-12***	***23-Jan-12***
Compounds of Concern	***Result***	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) By Method 8260 (Results in ug/l)								
Chloromethane	ND	35	ND	35	ND	ND	ND	ND
Vinyl Chloride	ND	27.6	ND	27.6	ND	ND	ND	ND
Trichlorofluoromethane	ND	11	ND	11	ND	ND	ND	ND
Dichlorodifluoromethane	ND	2.8	ND	2.8	ND	ND	-	ND
1,1-Dichloroethene	ND	5.71	ND	17.05	ND	ND	ND	ND
1,1-Dichloroethane	ND	50.6	ND	50.6	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	17.5	ND	17.5	ND	ND	ND	ND
Benzene	ND	3.53	ND	10.53	ND	ND	ND	ND
Trichloroethene	ND	11	ND	11	ND	ND	ND	ND
Total Metals (Results in mg/l)								
	Result	***GWTL***	***Result***	***GWTL***	***Result***	***Result***	***Result***	***Result***
Antimony	ND	14,072	ND	41,986	ND	ND	ND	-
Arsenic	ND	1.29	ND	3.85	ND	ND	ND	-
Barium	0.144	***	0.144	***	0.0501	0.327	ND	-
Chromium, hexavalent	ND	7.24	ND	21.6	ND	ND	ND	-
Chromium	0.0147	61	0.0136	181	ND	ND	ND	-
Copper	0.0462	7.41	0.06	22.12	ND	ND	ND	-
Lead	0.0136	2.95	0.018	8.79	ND	ND	ND	-
Magnesium	26.5	***	23.1	***	5.87	20.2	ND	-
Sodium	17.5	164,544	25.9	490,952	91.2	101	ND	-
Zinc	0.0684	68.33	0.119	203.87	0.012	0.0283	0.0125	-

Notes:

*** - Groundwater Protection Trigger Limit is Greater Than $1X10^{6}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

J - Analyte detected below quantitative limits.

TABLE 2-2

AL TURI LANDFILL - CLASS II SITE
TYPE 2 GROUNDWATER MONITORING WELLS
JANUARY 2012 SEMI-ANNUAL POST-CLOSURE MONITORING REPORT

SUMMARY OF ANALYTICAL RESULTS FOR JANUARY 2012 SAMPLING EVENT

		Laboratory Analytical Results										
Sample ID		***W-3A***	***W-12SA***	***W-13S***	***W-18S***	***W-19S***	***W-20***	***W-29***	***W-3D*****	***W-12DA*****	***FB-01***	***TB-01***
Sample Date		***23-Jan-12***	***23-Jan-12***	***23-Jan-12***	***23-Jan-12***	***23-Jan-12***	***23-Jan-12***	***23-Jan-12***	***23-Jan-12***	***23-Jan-12***	***23-Jan-12***	***23-Jan-12***
Compounds of Concern	***GWTL***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***	***Result***
Volatile Organic Compounds (VOCs) (Results in mg/l)												
Chloromethane	35	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	ND
Vinyl Chloride	27.6	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	ND
Trichlorofluoromethane	11	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	ND
Dichlorodifluoromethane	2.8	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	-	ND
1,1-Dichloroethene	17.05	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	ND
1,1-Dichloroethane	50.6	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	17.5	ND	ND	Blocked	0.0066	ND	Dry	ND	0.0041 J	ND	ND	ND
Benzene	10.53	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	ND
Trichloroethene	11	ND	ND	Blocked	0.0063	ND	Dry	ND	ND	ND	ND	ND
Total Metals (Results in mg/l)												
Antimony	41,986	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	-
Arsenic	3.85	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	-
Barium	***	0.058	ND	Blocked	0.0535	0.136	Dry	0.12	0.0726	ND	ND	-
Chromium, hexavalent	21.6	ND	ND	Blocked	ND	ND	Dry	ND	ND	ND	ND	-
Chromium	181	ND	ND	Blocked	ND	0.0357	Dry	0.0108	ND	ND	ND	-
Copper	22.1	ND	ND	Blocked	0.0115	0.0719	Dry	0.0229	ND	ND	ND	-
Lead	8.79	ND	ND	Blocked	ND	0.0267	Dry	0.0698	ND	ND	ND	-
Magnesium	***	16.7	11.2	Blocked	16.3	32.8	Dry	75	26.2	ND	ND	-
Sodium	490,952	21.2	ND	Blocked	ND	7.78	Dry	8.39	20.8	43.5	ND	-
Zinc	203.87	0.0405	ND	Blocked	0.0138	0.12	Dry	0.0403	0.0178	ND	0.0125	-

Notes:

** - Groundwater Trigger Levels Not Applicable to These Wells.

*** - Groundwater Trigger Level is Greater Than $1X10^{0}$.

- "Dash" Indicates Sample Not Analyzed for This Parameter.

ND - Analyte Not Detected at the Reporting Limit.

mg/l - Milligrams per Liter or Parts per Million (ppm).

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2012 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Vinyl Chloride		Dichlorodifluoromethane		1,1-Dichloroethane		cis-1,2-D
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	2.60E+03	3.01E-02	0.002	1.47E+02	0.002	1.47E+02	0.002	1.47E+02	0.002
W-38S	294.31	60	1.00	0.0371	6.54E+02	7.57E-03	0.002	3.71E+01	0.002	3.71E+01	0.002	3.71E+01	0.002
W-11S	243.15	60	2.11	0.0481	1.48E+03	1.72E-02	0.002	8.40E+01	0.002	2.90E+02	0.002	8.40E+01	0.002
W-39S	255.39	60	3.40	0.0382	1.99E+03	2.31E-02	0.002	1.13E+02	0.002	1.13E+02	0.002	1.13E+02	0.002
W-24	194.99	60	15.08	0.0127	2.25E+03	2.60E-02	0.002	1.27E+02	0.002	1.27E+02	0.002	1.27E+02	0.002
W-40	239.24	60	3.40	0.0124	6.07E+02	7.02E-03	0.002	3.44E+01	0.002	3.44E+01	0.002	3.44E+01	0.002
				Total Mass Loading (mg/d) =			**5.43E+02**		**7.49E+02**		**5.34E+02**		**5**
		Estimated In-Stream Concentration (mg/L)[5] =					**2.82E-06**		**3.89E-06**		**2.82E-06**		**1**
		Surface Water Quality Benchmark (mg/L)[6] =					**2.00E-03**		**1.00E+01**		**9.86E+00**		**1**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in January 2012.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 47.4 cfs which is based on an average measured river gauge height of 2.34 feet on January 25, 2012.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2012 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

)ichloroethene
Mass Loading (mg/d)
1.47E+02
3.71E+01
8.40E+01
1.13E+02
1.27E+02
3.44E+01
.34E+02
.06E-05
.00E+00

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2012 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Trichloroethene		Antimony		Arsenic		Barium		Chromiu
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	2.60E+03	3.01E-02	0.002	1.47E+02	0.025	3.68E+02	0.025	6.19E+02	0.554	5.02E+04	0.005
W-38S	294.31	60	1.00	0.0371	6.54E+02	7.57E-03	0.002	3.71E+01	0.025	9.27E+01	0.005	9.27E+01	0.025	4.63E+02	0.005
W-11S	243.15	60	2.11	0.0481	1.48E+03	1.72E-02	0.002	8.40E+01	0.025	2.10E+02	0.005	2.10E+02	0.0739	1.05E+03	0.005
W-39S	255.39	60	3.40	0.0382	1.99E+03	2.31E-02	0.002	1.13E+02	0.025	2.82E+02	0.025	2.82E+02	0.144	1.41E+03	0.0147
W-24	194.99	60	15.08	0.0127	2.25E+03	2.60E-02	0.002	1.27E+02	0.025	3.18E+02	0.025	3.18E+02	0.025	1.59E+03	0.0115
W-40	239.24	60	3.40	0.0124	6.07E+02	7.02E-03	0.002	3.44E+01	0.025	8.59E+01	0.025	8.59E+01	0.144	1.08E+03	0.0136
				Total Mass Loading (mg/d) =			**5.43E+02**		**1.36E+03**		**1.61E+03**		**5.58E+04**		**3.85E**
			Estimated In-Stream Concentration (mg/L)[5] =				**2.82E-06**		**7.05E-06**		**7.05E-06**		**2.90E-04**		**2.00E**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.00E-02**		**5.00E-01**		**5.00E-05**		**2.48E+03**		**9.20E**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in January 2012.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 47.4 cfs which is based on an average measured river gauge height of 2.34 feet on January 25, 2012.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2012 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

m (total)
Mass Loading (mg/d)
1.47E+02
3.71E+01
8.40E+01
1.13E+02
3.43E+03
3.44E+01
E+03
E-05
E-02

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2012 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

Well	W[1] (ft)	T[2] (ft)	K[3] (ft/d)	i[4] (ft/ft)	GW Dis (ft^3/d)	GW Dis (ft^3/sec)	Copper		Lead		Magnesium		Sodium		Zi
							Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)	Mass Loading (mg/d)	Conc (mg/L)
W-1	818.18	60	3.40	0.0156	3.17E+03	3.01E-02	0.005	3.68E+02	0.001	3.68E+02	61.7	4.01E+06	384	2.34E+07	0.0342
W-38S	294.31	60	1.00	0.0371	6.86E+02	7.57E-03	0.005	9.27E+01	0.001	9.27E+01	2.5	9.27E+01	2.5	9.27E+01	0.005
W-11S	243.15	60	2.11	0.0481	1.53E+03	1.72E-02	0.0124	2.10E+02	0.001	2.10E+02	19.1	1.05E+06	2.5	2.10E+02	0.0211
W-39S	255.39	60	3.40	0.0382	1.71E+03	2.31E-02	0.0462	2.82E+02	0.0136	2.82E+02	26.5	2.82E+02	17.5	2.82E+02	0.0684
W-24	194.99	60	15.08	0.0127	1.83E+03	2.60E-02	0.005	1.01E+03	0.001	3.18E+02	20	1.28E+06	2.5	1.24E+06	0.005
W-40	239.24	60	3.40	0.0124	4.89E+02	7.02E-03	0.06	8.59E+01	0.0183	8.59E+01	23.1	3.18E+05	25.9	5.00E+05	0.119
				Total Mass Loading (mg/d) =			**2.05E+03**		**1.36E+03**		**6.66E+06**		**2.52E+07**		**2.28**
			Estimated In-Stream Concentration (mg/L)[5] =				**1.06E-05**		**7.05E-06**		**3.46E+02**		**1.31E-01**		**1.18**
			Surface Water Quality Benchmark (mg/L)[6] =				**1.10E-02**		**4.00E-03**		**3.44E+05**		**2.50E+02**		**1.04**

Notes:

1. Width of discharge zone segment Type 1 well.

2. Average thickness of unconsolidated aquifer in Type 1 well.

3. Hydraulic Conductivity values for wells W-11S and W-24 based on direct measurement.

4. Gradients computed using the average of the gradients observed in each discharge zone in January 2012.

5. In-stream concentration is estimated using the calculated mass loading rate and the river flow rate of 47.4 cfs which is based on an average measured river gauge height of 2.34 feet on January 25, 2012.

6. Surface water benchmark specified in the Post-Closure Contingency Monitoring Plan, Table 3 (ENVIRON 2001).

7. Shaded cells indicate constituent was not detected. The value presented equals one-half the detection limit.

8. Well W-38S was dry during this sampling event. The value presented equals one-half the detection limit.

TABLE 3-2
AL TURI LANDFILL - CLASS II SITE
GOSHEN, NEW YORK
ESTIMATED CUMULATIVE MASS LOADING TO THE WALLKILL RIVER
JANUARY 2012 SEMI-ANNUAL POST CLOSURE MONITORING REPORT

nc
Mass Loading (mg/d)
1.29E+03
9.27E+01
2.10E+02
2.82E+02
3.18E+02
8.59E+01
E+03
E-05
E-01

200 0 200
SCALE IN FEET

LEGEND:

- EXISTING MONITORING WELL
- WELLS INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM
- WELLS INCLUDED AS PART OF THE POST CLOSURE MONITORING PROGRAM
- WATER LEVELS ONLY
- BORING/TEST BORING LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION INCLUDED AS PART OF THE OPERATIONAL MONITORING PROGRAM

NOTES:

1. BASE PLAN TAKEN FROM "WELL LOCATION PLAN", DRAWING NO. 1, PREPARED BY EMCON, DATED 7/99 AND GROUND WATER INVESTIGATIONS, INC. (GWI) ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ACCURACY OF SAME.
2. EXISTING TOPOGRAPHIC MAP COMPILED PHOTO-GRAMMETRICALLY FROM AERIAL PHOTOGRAPHY DATED DECEMBER 2, 1998 BY ATLANTIS AERIAL OF BUDD LAKE NEW JERSEY.
3. PROPERTY LINE SHOWN FROM SURVEY MAP PREPARED BY WEHRAN- NEW YORK, INC. FOR TICOR TITLE GUARANTEE CO. DATED JUNE 23, 1988.
4. THE GRID DEPICTED ON THIS PLAN WAS DEVELOPED FOR MAPPING OF THE PROJECT SITE. THE COORDINTES SHOWN ARE NOT PART OF THE STATE PLANE COORDINATE SYSTEM.
5. HIGHLIGHTED SYMBOLS AND/OR TEXT INDICATE GROUNDWATER, SURFACE WATER/SEDIMENT AND LEACHATE SAMPLE LOCATIONS INCLUDED IN OPERATIONAL MONITORING PROGRAM.

* PLEASE NOTE THAT WELLS W-1 AND W-3A ARE ON BOTH SAMPLE LISTS. ONLY THE REQUIRED PARAMATERS (TABLE 1) SHOULD GO INTO THE POST CLOSURE ANALYTICAL REPORT.

REVISION BLOCK

Rev. No.	By	Revision

GROUND WATER INVESTIGATIONS, INC.
Pine Bush, New York

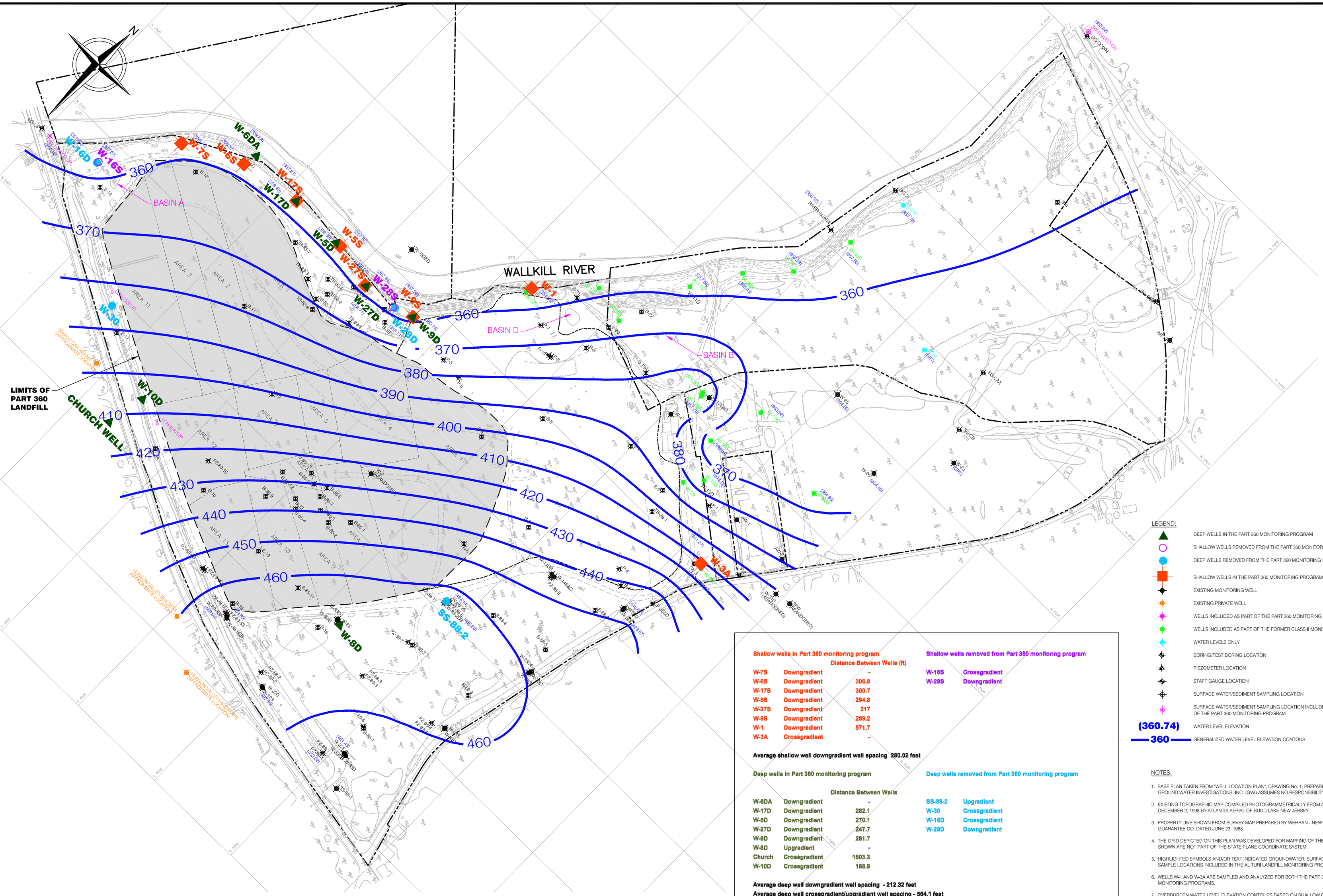
Project No.:	256-00-00
Scale:	1"=200'
Date:	12/19/00
Designed By:	MAC
Checked By:	LFC
Drawn By:	KAH

SHEET 1 OF 1

WELL LOCATION PLAN

AL TURI LANDFILL, INC.
GROUNDWATER MONITORING PROGRAM

TOWN OF GOSHEN NEW YORK



LEGEND:

- DEEP WELLS IN THE PART 360 MONITORING PROGRAM
- SHALLOW WELLS REMOVED FROM THE PART 360 MONITORING PROGRAM
- DEEP WELLS REMOVED FROM THE PART 360 MONITORING PROGRAM
- SHALLOW WELLS IN THE PART 360 MONITORING PROGRAM
- EXISTING MONITORING WELL
- EXISTING PRIVATE WELL
- WELLS INCLUDED AS PART OF THE PART 360 MONITORING PROGRAM
- WELLS INCLUDED AS PART OF THE FORMER CLASS II MONITORING PROGRAM
- WATER LEVELS ONLY
- BORING/TEST BORING LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION INCLUDED AS PART OF THE PART 360 MONITORING PROGRAM
- (360.74) WATER LEVEL ELEVATION
- 360 GENERALIZED WATER LEVEL ELEVATION CONTOUR

Shallow wells in Part 360 monitoring program		Distance Between Wells (ft)	Shallow wells removed from Part 360 monitoring program	
W-7S	Downgradient	-	W-16S	Crossgradient
W-6S	Downgradient	306.8	W-28S	Downgradient
W-17S	Downgradient	300.7		
W-5S	Downgradient	294.8		
W-27S	Downgradient	217		
W-9S	Downgradient	269.2		
W-1	Downgradient	571.7		
W-3A	Crossgradient	-		

Average shallow well downgradient well spacing 280.02 feet

Deep wells in Part 360 monitoring program		Distance Between Wells	Deep wells removed from Part 360 monitoring program	
W-6DA	Downgradient	-	SS-88-2	Upgradient
W-17D	Downgradient	282.1	W-30	Crossgradient
W-5D	Downgradient	270.1	W-16D	Crossgradient
W-27D	Downgradient	247.7	W-28D	Downgradient
W-9D	Downgradient	261.7		
W-8D	Upgradient	-		
Church	Crossgradient	1503.3		
W-10D	Crossgradient	188.9		

Average deep well downgradient well spacing - 212.32 feet
Average deep well crossgradient/upgradient well spacing - 564.1 feet

NOTES:

1. BASE PLAN TAKEN FROM "WELL LOCATION PLAN", DRAWING No. 1, PREPARED BY EMCON, DATED 7/99 AND GROUND WATER INVESTIGATIONS, INC. (GWI) ASSUMES NO RESPONSIBILITY OR LIABILITY OF SAME.
2. EXISTING TOPOGRAPHIC MAP COMPILED PHOTOGRAMMETRICALLY FROM AERIAL PHOTOGRAPHY DATED DECEMBER 2, 1998 BY ATLANTIS AERIAL OF BUDD LAKE NEW JERSEY.
3. PROPERTY LINE SHOWN FROM SURVEY MAP PREPARED BY WEHRAN - NEW YORK, INC. FOR TICOR TITLE GUARANTEE CO. DATED JUNE 23, 1988.
4. THE GRID DEPICTED ON THIS PLAN WAS DEVELOPED FOR MAPPING OF THE PROJECT SITE. THE COORDINATES SHOWN ARE NOT PART OF THE STATE PLANE COORDINATE SYSTEM.
5. HIGHLIGHTED SYMBOLS AND/OR TEXT INDICATED GROUNDWATER, SURFACE WATER/SEDIMENT AND LEACHATE SAMPLE LOCATIONS INCLUDED IN THE AL TURI LANDFILL MONITORING PROGRAM.
6. WELLS W-1 AND W-3A ARE SAMPLED AND ANALYZED FOR BOTH THE PART 360 AND THE FORMER CLASS II MONITORING PROGRAMS.
7. OVERBURDEN WATER LEVEL ELEVATION CONTOURS BASED ON SHALLOW OVERBURDEN MONITORING WELL/PIEZOMETER WATER LEVEL ELEVATION DATA. AT WELL CLUSTER LOCATIONS, WATER LEVEL ELEVATION DATA COLLECTED FROM THE SHALLOWEST MONITORING WELL/PIEZOMETER USED TO DETERMINE GENERALIZED WATER LEVEL ELEVATION CONTOURS.

GROUND WATER INVESTIGATIONS, INC.
Montgomery, New York

Project No.:	256-00-00
Scale:	1"=200'
Date:	5/24/11
Designed By:	MAC
Checked By:	LFC
Drawn By:	KAH

SHEET 1 OF 2

OVERBURDEN WATER LEVEL ELEVATION CONTOURS (ELEVATIONS COLLECTED ON APRIL 6, 2012)

AL TURI LANDFILL, INC.
GROUNDWATER MONITORING PROGRAM

TOWN OF GOSHEN NEW YORK

LEGEND:

- EXISTING MONITORING WELL
- EXISTING PRIVATE WELL
- WELLS INCLUDED AS PART OF THE PART 360 MONITORING PROGRAM
- WELLS INCLUDED AS PART OF THE FORMER CLASS II MONITORING PROGRAM
- WATER LEVELS ONLY
- BORING/TEST BORING LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION
- SURFACE WATER/SEDIMENT SAMPLING LOCATION INCLUDED AS PART OF THE PART 360 MONITORING PROGRAM
- (360.74) WATER LEVEL ELEVATION
- 360 GENERALIZED WATER LEVEL ELEVATION CONTOUR

NOTES:

1. BASE PLAN TAKEN FROM "WELL LOCATION PLAN", DRAWING No. 1, PREPARED BY EMCON, DATED 7/99 AND GROUND WATER INVESTIGATIONS, INC. (GWI) ASSUMES NO RESPONSIBILITY OR LIABILITY OF SAME.
2. EXISTING TOPOGRAPHIC MAP COMPILED PHOTOGRAMMETRICALLY FROM AERIAL PHOTOGRAPHY DATED DECEMBER 2, 1998 BY ATLANTIS AERIAL OF BUDD LAKE NEW JERSEY.
3. PROPERTY LINE SHOWN FROM SURVEY MAP PREPARED BY WEHRAN - NEW YORK, INC. FOR TICOR TITLE GUARANTEE CO. DATED JUNE 23, 1988.
4. THE GRID DEPICTED ON THIS PLAN WAS DEVELOPED FOR MAPPING OF THE PROJECT SITE. THE COORDINATES SHOWN ARE NOT PART OF THE STATE PLANE COORDINATE SYSTEM.
5. HIGHLIGHTED SYMBOLS AND/OR TEXT INDICATED GROUNDWATER, SURFACE WATER/SEDIMENT AND LEACHATE SAMPLE LOCATIONS INCLUDED IN THE AL TURI LANDFILL MONITORING PROGRAM.
6. WELLS W-1 AND W-3A ARE SAMPLED AND ANALYZED FOR BOTH THE PART 360 AND THE FORMER CLASS II MONITORING PROGRAMS.
7. BEDROCK WATER LEVEL ELEVATION CONTOURS BASED ON SHALLOW BEDROCK MONITORING WELL/PIEZOMETER WATER LEVEL ELEVATION DATA. AT WELL CLUSTER LOCATIONS, WATER LEVEL ELEVATION DATA COLLECTED FROM THE SHALLOWEST MONITORING WELL/PIEZOMETER WERE USED TO DETERMINE GENERALIZED WATER LEVEL ELEVATION CONTOURS.

GROUND WATER INVESTIGATIONS, INC.
Montgomery, New York

Project No.:	256-00-00
Scale:	1"=200'
Date:	5/24/11
Designed By:	MAC
Checked By:	LFC
Drawn By:	KAH

SHEET 2 OF 2

BEDROCK WATER LEVEL ELEVATION CONTOURS (ELEVATIONS COLLECTED ON APRIL 6, 2012)

AL TURI LANDFILL, INC.
GROUNDWATER MONITORING PROGRAM
TOWN OF GOSHEN NEW YORK

S:\Projects\256-00-00 (Turi)\Meadows Area (sale)\TURI-WL-BEDROCK.dwg LAST REV. 12/13/12 XREF: MIATB.DWG, T129801H.DWG

FILE COPY

TOWN OF GOSHEN
OFFICE OF THE
BUILDING AND ZONING INSPECTOR
TOWN HALL
P.O. Box 217
GOSHEN, NEW YORK 10924
TELEPHONE: 845 294-6430x 226

November 17, 2014

Ver Hage Industries, L.L.C.
455 West Main Street,
Wycoff, N.J. 07481

In re: moving the stream located on your property

Dear Mr. Ver Hage

It has been almost a week since it was first discovered that you had moved the stream on your property. As you were informed at that time this was in violation of at least three town laws. Those violations still persist and need to be addressed. You have had some time to determine your direction to pursue to your violations and need to make the Town and the other involved regulatory agencies. If it is your intention to try to get the approvals to leave the stream as you now have it you must apply for a flood plain development permit from my office and a clearing and grading permit from the Town of Goshen Planning Board.

I have included an application for the flood plain development permit and the clearing and grading permit. The flood plain application needs to be completed, and two copies returned to my office along with the application fee of $105 dollars plus $5.00 for every $1,000.00 of cost for the work completed and proposed to finish the job.

I have also included a clearing and grading permit application. It needs to be completed and 15 copies returned to my office along with the application fee of $1,000 plus $50.00 per 1000 square feet of land disturbance. Additionally you need to post $4,000 in escrow fees which will need to be maintained as it is spent until such time as the permit is approved or denied. The clearing and grading permit will require the Town have you do an environmental review and will probably involve a coordinated review with the other agencies. (USACOE, USF&WS, NYSHPO) and others as determined by the planning board.

If you have decided to change the stream back to its original channel and fill the new one you will still need to apply for the flood plain development permit but can probably avoid the clearing and grading permit, but that will be determined when you make the submission.

In any case you will need to comply with all other agencies with regulatory and/or oversight. It is strongly suggested that you not act without the concurrence of all of the involved agencies.

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

MAR 13 2015

Regulatory Branch

SUBJECT: Permit Application Number NAN-2014-01236-WOR
VerHage Industries LLC
Tax Map # 12-1-1.222
Town of Goshen, Orange County, New York

Richard VerHage
VerHage Industries LLC
455 West Main Street
Wyckoff, New Jersey 07481-1419

Dear Mr. VerHage:

By letter dated November 3, 2014 (enclosed) the New York District of the U.S. Army Corps of Engineers notified you that the 4,000 square feet of fill that you placed within waters of the United States and the resulting 1,000 linear feet of stream that was bypassed was in violation of the Clean Water Act.

In a letter dated January 29, 2015 (enclosed) in accordance with Title 33 of the Code of Federal Regulations, Section 326.3 (d), you and VerHage Industries LLC were ordered to remove the 4,000 square feet of fill from waters of the United States, and restore normal stream flows within the entire Cheechunk Creek meander that has been bypassed by the fill, as an initial corrective measure. In a meeting held at the New York District office on February 19, 2015, you stated that the amount of snow and ice cover in the area at that time would make restoration problematic.

In a letter dated March 6, 2015, you agreed to complete the restoration on or before March 31, 2015.

Therefore, in accordance with Title 33 of the Code of Federal Regulations, Section 326.3 (d), and to expedite the resolution of this enforcement matter, you and VerHage Industries LLC are **Ordered** to carry out the following course of action on or before March 31, 2015:

Remove the 4,000 square feet of fill from waters of the United States, specifically the stream known locally as Cheechunk Creek, beginning approximately 50 feet west of where it flows through the Hartley Road culvert, and restore normal stream flows within the entire Cheechunk Creek meander that has been bypassed by the fill.

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

JAN 2 9 2015

FILE COPY

Regulatory Branch

SUBJECT: Permit Application Number NAN-2014-01236-WOR
Verhage Industries LLC
Tax Map # 12-1-1.222
Town of Goshen, Orange County, New York

Richard VerHage
VerHage Industries LLC
455 West Main Street
Wyckoff, New Jersey 07481-1419

Dear Mr. VerHage:

By letter dated November 3, 2014 (enclosed) the New York District of the U.S. Army Corps of Engineers notified you that the 4,000 square feet of fill that you placed within waters of the United States and the resulting 1,000 linear feet of stream that was bypassed was in violation of the Clean Water Act. In that letter and in accordance with Title 33 of the Code of Federal Regulations, Section 326, you were specifically directed to submit to this office a completed Summary of Information form, detailing the work completed and a plan for resolving this violation.

Your completed form was received on December 11, 2014, but did not offer any remedy to the violation. As a result of our investigation and preliminary evaluation, we have determined that initial corrective measures are required, as serious jeopardy to wetlands and floodplains may be reasonably anticipated to occur during the period required for ultimate resolution of the violation. Therefore, in accordance with Title 33 of the Code of Federal Regulations, Section 326.3 (d), and to expedite the resolution of this enforcement matter, you and VerHage Industries LLC are **Ordered** to carry out the following course of action within 30 days of the date of this letter:

> Remove the 4,000 square feet of fill from waters of the United States, specifically the stream known locally as Cheechunk Creek, beginning approximately 50 feet west of where it flows through the Hartley Road culvert, and restore normal stream flows within the entire Cheechunk Creek meander that has been bypassed by the fill. The stream bypass channel that you constructed shall be filled in and stabilized appropriately.

Failure to comply with the requirements of this directive will result in further enforcement action by this office, including the possibility of substantial civil and criminal penalties. A copy of this letter is being sent to the office of the U.S. Attorney in order that they may be aware of this action.

NOV 3 - 2014

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

Regulatory Branch

SUBJECT: Permit Application Number NAN-2014-01236-WOR
Verhage Industries LLC
Tax Map # 12-1-1.222
Town of Goshen, Orange County, New York

Richard Verhage
Verhage Industries LLC
455 West Main Street
Wyckoff, New Jersey 07481-1419

Dear Mr. VerHage:

On October 28, 2014, a representative of the New York District of the U.S. Army Corps of Engineers conducted an inspection of the above referenced property located at 111 Hartley Road in the Town of Goshen, Orange County, New York. During the course of the inspection it was noted that approximately 4,000 square feet of fill had been placed into waters of the United States, resulting in approximately 1,000 linear feet of stream being bypassed, without prior authorization from this office. Such impacts are considered in violation of the statutes and regulations within the jurisdiction of this office.

These statutes and regulations include the Clean Water Act (specifically Title 33 of the United States Code, Section 1311, which prohibits unauthorized discharges into waters of the United States, and Section 1344, which sets out the manner in which such discharges of dredged or fill material may be authorized), and the regulations promulgated pursuant thereto (as set out in Title 33 of the Code of Federal Regulations, Sections 320 through 332).

Therefore, in accordance with Title 33 of the Code of Federal Regulations, Part 326.3 (c) (1), Verhage Industries LLC, is **Ordered** to immediately **Cease** and **Desist** any further work in waters of the United States. This order applies to you and all persons involved in the unauthorized activity, and applies to construction on all phases of the project. This order will remain in effect until rescinded in writing by this office.

You are also directed to complete the enclosed Summary of Information and return it to this office within fourteen calendar days of the date of this order.

Steven M. Neuhaus
County Executive

DEPARTMENT OF HEALTH

Eli N. Avila, MD, JD, MPH, FCLM
Commissioner of Health

124 Main Street
Goshen, New York 10924

Commissioner/Administration	(845) 291-2332
Nursing	(845) 291-2330
Environmental Health	(845) 291-2331
Early Intervention	(845) 360-6630

Fax: (845) 291-2341
www.orangecountygov.com

June 15, 2015

AKRF, Inc.
34 South Broadway
White Plains, NY 10601

Reference: Freedom of Information Request
Dated: June 11, 2015; Received: June 15, 2015
Project No.: 40525
73-121 Hartley Road, Goshen, NY - Tax ID 12-1-1.222 and 12-1-19.2
12 Echo Lake Road, Goshen, NY - Tax ID 12-1-1.41

Dear Ms. Matamoros:

This letter will acknowledge receipt of your request dated June 11, 2015, made pursuant to the Freedom of Information Law. Please be advised that it will take approximately twenty (20) business days to locate the records you seek if indeed they are available and subject to disclosure under N.Y. Public Officers Law Article VI.

Very truly yours,

Christopher Ericson
F.O.I.L. Officer
Department of Health

CE:mm

cc: E. H.

Steven M. Neuhaus
County Executive

DEPARTMENT OF HEALTH

Eli N. Avila, MD, JD, MPH, FCLM
Commissioner of Health

124 Main Street
Goshen, New York 10924-2199

Environmental Health (845) 291-2331
Fax: (845) 291-4078

June 18, 2015

AKRF, Inc.
34 South Broadway
White Plains, NY 10601

Attention: Elizabeth Matamoros

Re:
FOIL Request for
Project No. 40525
73-121Hartley Road Goshen, NY
12 Echo Lake Road Goshen NY

Dear Ms. Matamoros:

In response to your letter dated 6/11/15, this office has no environmental information, to the best of our knowledge, concerning the referenced properties.

We advise you to contact the local municipality and the New York State Department of Environmental Conservation for your continuing investigation.

Very truly yours,

Edwin L. Sims, P.E.
Acting Director of Env. Health/
Principal Public Health Engineer

ELS/ajc

cc: Christopher Ericson, Foil Officer
File

FILE COPY

TOWN OF GOSHEN
OFFICE OF THE
BUILDING AND ZONING INSPECTOR
TOWN HALL
P.O. Box 217
GOSHEN, NEW YORK 10924
TELEPHONE: 845 294-6430x 226

November 17, 2014

Ver Hage Industries, L.L.C.
455 West Main Street,
Wycoff, N.J. 07481

In re: moving the stream located on your property

Dear Mr. Ver Hage

It has been almost a week since it was first discovered that you had moved the stream on your property. As you were informed at that time this was in violation of at least three town laws. Those violations still persist and need to be addressed. You have had some time to determine your direction to pursue to your violations and need to make the Town and the other involved regulatory agencies. If it is your intention to try to get the approvals to leave the stream as you now have it you must apply for a flood plain development permit from my office and a clearing and grading permit from the Town of Goshen Planning Board.

I have included an application for the flood plain development permit and the clearing and grading permit. The flood plain application needs to be completed, and two copies returned to my office along with the application fee of $105 dollars plus $5.00 for every $1,000.00 of cost for the work completed and proposed to finish the job.

I have also included a clearing and grading permit application. It needs to be completed and 15 copies returned to my office along with the application fee of $1,000 plus $50.00 per 1000 square feet of land disturbance. Additionally you need to post $4,000 in escrow fees which will need to be maintained as it is spent until such time as the permit is approved or denied. The clearing and grading permit will require the Town have you do an environmental review and will probably involve a coordinated review with the other agencies. (USACOE, USF&WS, NYSHPO) and others as determined by the planning board.

If you have decided to change the stream back to its original channel and fill the new one you will still need to apply for the flood plain development permit but can probably avoid the clearing and grading permit, but that will be determined when you make the submission.

In any case you will need to comply with all other agencies with regulatory and/or oversight. It is strongly suggested that you not act without the concurrence of all of the involved agencies.

Please contact my office immediately to apprise us of your choice of a path to compliance. If we do not hear from you by December 1, we will take whatever actions the town determines is necessary to protect the integrity of the stream, the health and safety of the environment, and the health and welfare of those living downstream.

Respectfully submitted

Neal Halloran

Neal Halloran
Building and Zoning Inspector

Cc: Brian A. Orzel, Project Manager, U.S.A.C.E.
Noelle Rayman, U.S.F.W.S.

Encl: Floodplain Development Permit Application
Planning Board Application

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

MAR 13 2015

Regulatory Branch

SUBJECT: Permit Application Number NAN-2014-01236-WOR
VerHage Industries LLC
Tax Map # 12-1-1.222
Town of Goshen, Orange County, New York

Richard VerHage
VerHage Industries LLC
455 West Main Street
Wyckoff, New Jersey 07481-1419

Dear Mr. VerHage:

By letter dated November 3, 2014 (enclosed) the New York District of the U.S. Army Corps of Engineers notified you that the 4,000 square feet of fill that you placed within waters of the United States and the resulting 1,000 linear feet of stream that was bypassed was in violation of the Clean Water Act.

In a letter dated January 29, 2015 (enclosed) in accordance with Title 33 of the Code of Federal Regulations, Section 326.3 (d), you and VerHage Industries LLC were ordered to remove the 4,000 square feet of fill from waters of the United States, and restore normal stream flows within the entire Cheechunk Creek meander that has been bypassed by the fill, as an initial corrective measure. In a meeting held at the New York District office on February 19, 2015, you stated that the amount of snow and ice cover in the area at that time would make restoration problematic.

In a letter dated March 6, 2015, you agreed to complete the restoration on or before March 31, 2015.

Therefore, in accordance with Title 33 of the Code of Federal Regulations, Section 326.3 (d), and to expedite the resolution of this enforcement matter, you and VerHage Industries LLC are **Ordered** to carry out the following course of action on or before March 31, 2015:

Remove the 4,000 square feet of fill from waters of the United States, specifically the stream known locally as Cheechunk Creek, beginning approximately 50 feet west of where it flows through the Hartley Road culvert, and restore normal stream flows within the entire Cheechunk Creek meander that has been bypassed by the fill.

Subject: Permit Application Number NAN-2014-01236-WOR
Verhage Industries LLC
Tax Map # 12-1-1.222
Town of Goshen, Orange County, New York

Failure to comply with the requirements of this directive will result in further enforcement action by this office, including the possibility of substantial civil and criminal penalties. A copy of this letter is being sent to the office of the U.S. Attorney in order that they may be aware of this action.

If any questions should arise concerning this matter, please contact Mr. Brian A. Orzel of my staff, at (917) 790-8413.

Sincerely,

Christopher S. Mallery, Ph.D.
Chief, Western Section

Enclosure

cf: Town of Goshen
NYSDEC – Region 3
Office of the US Attorney
USEPA
USFWS
Riverkeeper

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

JAN 29 2015

FILE COPY

Regulatory Branch

SUBJECT: Permit Application Number NAN-2014-01236-WOR
Verhage Industries LLC
Tax Map # 12-1-1.222
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Your completed form was received on December 11, 2014, but did not offer any remedy to the violation. As a result of our investigation and preliminary evaluation, we have determined that initial corrective measures are required, as serious jeopardy to wetlands and floodplains may be reasonably anticipated to occur during the period required for ultimate resolution of the violation. Therefore, in accordance with Title 33 of the Code of Federal Regulations, Section 326.3 (d), and to expedite the resolution of this enforcement matter, you and VerHage Industries LLC are **Ordered** to carry out the following course of action within 30 days of the date of this letter:

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Subject: Permit Application Number NAN-2014-01236-WOR
Verhage Industries LLC
Tax Map # 12-1-1.222
Town of Goshen, Orange County, New York

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Sincerely,

Christopher S. Mallery, Ph.D.
Chief, Western Section

Enclosure

cf: Town of Goshen
NYSDEC – Region 3
Office of the US Attorney
USEPA
USFWS
Riverkeeper

NOV 3 - 2014

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

Regulatory Branch

SUBJECT: Permit Application Number NAN-2014-01236-WOR
Verhage Industries LLC
Tax Map # 12-1-1.222
Town of Goshen, Orange County, New York

Richard Verhage
Verhage Industries LLC
455 West Main Street
Wyckoff, New Jersey 07481-1419

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These statutes and regulations include the Clean Water Act (specifically Title 33 of the United States Code, Section 1311, which prohibits unauthorized discharges into waters of the United States, and Section 1344, which sets out the manner in which such discharges of dredged or fill material may be authorized), and the regulations promulgated pursuant thereto (as set out in Title 33 of the Code of Federal Regulations, Sections 320 through 332).

Therefore, in accordance with Title 33 of the Code of Federal Regulations, Part 326.3 (c) (1), Verhage Industries LLC, is **Ordered** to immediately **Cease** and **Desist** any further work in waters of the United States. This order applies to you and all persons involved in the unauthorized activity, and applies to construction on all phases of the project. This order will remain in effect until rescinded in writing by this office.

You are also directed to complete the enclosed Summary of Information and return it to this office within fourteen calendar days of the date of this order.

Subject: Permit Application Number NAN-2014-01236-WOR
Verhage Industries LLC
Tax Map # 12-1-1.222
Town of Goshen, Orange County, New York

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Sincerely,

Christopher S. Mallery, Ph.D.
Chief, Western Section

Enclosure

cf: Town of Goshen
NYSDEC – Region 3
Office of the US Attorney
USEPA
USFWS
Riverkeeper

T O W N OF G O S H E N
TOWN CLERK'S OFFICE

VALMA EISMA
TOWN CLERK

PRISCILLA GERSBECK
DEPUTY TOWN CLERK

Request for Access to Public Records

Freedom of Information Law (Section 89 - Public Officers Law)

Applicant's Name Elizabeth Matamoros Phone: 914-922-2397
Applicant's Address 34 South Broadway, #401, White Plains, NY 10601
Is Applicant applying on his/her own behalf? ____ yes X___ no
If NO, Organization/Principal's Name AKRF Inc. Phone: 914-922-2350
Organization/Principal's Address 34 South Broadway, #401, White Plains NY 10601

Please list the RECORDS which you wish to examine or have copied. **PHOTOCOPY CHARGE IS $0.25 PER PAGE.**
THIS AGENCY HAS 5 BUSINESS DAYS TO GRANT ACCESS TO RECORDS, DENY ACCESS IN WRITING, OR ACKNOWLEDGE THE RECEIPT OF A REQUEST & GIVE APPROXIMATE DATE RESPONSE CAN BE EXPECTED.

ITEM	Approximate DATE of Document	*CLERK* | ***Pick-up/Mailed*** | ***Date & Signature***
1. Please see attached letter		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

These documents will not be used for commercial or fund raising purposed (Section 88, Subdivision 3d).

_____ _____
Applicant's Signature Date signed

Clerk's Date Stamp:	Copy sent to Town Department(s) of:	Date Document Returned:	Documents Reviewed By:
	_____	_____	_____
	_____	_____	
	_____	_____	# of pages _____
	_____	_____	copy/postage fee $ _____
	_____	_____	date $ rec'd _____

Location: 41 Webster Avenue, Goshen, New York **Mail**: P.O. Box 217, Goshen, New York 10924 **Telephone**: 845-294-6250
FAX: 845-291-3673 **E-mail**: veisma@townofgoshen.org

Ver Hage Property

103-111 HARTLEY ROAD, GOSHEN, NEW YORK

Subsurface (Phase II) Investigation

AKRF Project Number: 40525

Prepared for:

Amy's Kitchen, Inc.
1650 Corporate Circle, Suite 200
Petaluma, CA 94955

Prepared by:

AKRF
34 South Broadway, Suite 401
White Plains, New York 10601
914-949-7336

DECEMBER 2015

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FIGURES

Figure 1 – Property Location Map
Figure 2 – Sampling Locations

APPENDICES

Appendix A – Soil Boring and Soil Vapor Sampling Logs
Appendix B – Photo Log
Appendix C – Laboratory Analytical Report

1.0 INTRODUCTION

AKRF, Inc. (AKRF) was retained by Amy's Kitchen Inc. to perform a Subsurface (Phase II) Investigation of an approximately 71.1-acre property located at 103-111 Hartley Road, Goshen, Orange County, New York (the Subject Property or the Property). The investigation was conducted on October 5 and 6, 2015.

The Town of Goshen identifies the Subject Property as Parcel Numbers 12-1-1.222 and 12-1-19.2. The Property is zoned by the Town of Goshen as Industrial (I). The Subject Property consists of vacant vegetated land, and is generally bounded by the Wallkill River to the west, the former Al Turi Landfills[1] to the south, the Orange County Heritage Trail followed by Echo Lake Road to the north, and Hartley Road to the east of the Property. The greater surrounding area is predominantly agricultural and residential, with some light industrial uses to the south and west. The future plan for the Property includes construction of an Amy's Kitchen production facility, two stormwater retention areas, a surface parking lot, and a wastewater treatment facility.

The objectives of this Phase II investigation were to further assess the RECs/CRECs/VECs, *de minimus* conditions and other environmental concerns identified during AKRF's Phase I ESA of the Property, as documented in the Phase I ESA report, dated December 2015. The scope of this Phase II investigation included a soil sampling program to characterize soil that would be disturbed during future development activities, and also included groundwater and soil gas sampling to assess potential issues associated with the future development, including whether vapor mitigation measures (e.g., a vapor barrier or sub-slab depressurization system) should be incorporated into the new building design. The Phase II scope included the drilling of 16 soil borings, and the collection of soil, soil vapor, and groundwater samples for field screening and laboratory analysis. This report describes methods and results of the Phase II investigation conducted by AKRF.

2.0 PREVIOUS INVESTIGATIONS

Preliminary Geotechnical Engineering Report, Amy's Kitchen – Ver Hage Site, AKRF Inc., June 26, 2015

The study included 10 geotechnical test borings in the vicinity and within the footprint of the planned project buildings, ranging from 32 to 52 feet below ground surface (bgs), and two groundwater observation wells. Samples were tested for particle size distribution. The groundwater level was measured between 14.5 and 19.7 feet bgs in the two observation wells installed on the southern portion of the parcel. The general conclusions of the study showed that the Property is typically underlain by glacial deposits of sand and gravel with localized discontinuous strata of silt and clay. Two glacial deposits were identified, consisting of an upper deposit characterized by brown sand and gravel, and a lower deposit characterized by gray sand and gravel. Six of the geotechnical test borings were located within the area identified during the Phase I ESA as having widespread disturbance indicating the potential for historic disposal and/or import of fill materials of unknown origin. No evidence of widespread fill or historic disposal was present in those test borings. The report also included recommendations for foundation and construction design.

[1] The Old Al Turi Landfill, an unlicensed landfill, currently listed as a Class 4 Inactive Hazardous Waste Disposal Site, and further to the south the closed Part 360 permitted Al Turi Landfill.

Phase I Environmental Site Assessment, Ver Hage Property, AKRF Inc., December 2015

AKRF conducted a Phase I ESA that was documented in a December 2015 report. A site inspection was completed as part a Phase I ESA in June 2015 and was used to confirm the boring locations for the Phase II ESA. The main objective of the Phase I ESA was to identify recognized environmental conditions (RECs) (including Controlled RECs [CRECs] and Historic RECs [HRECs]) and environmental concerns associated with the Subject Property resulting from past or current site usage and usage of neighboring properties. Potential vapor encroachment conditions (VECs) were also evaluated. Historical review indicated that the Property was not previously developed.

This Phase I ESA revealed the following RECs, CRECs and/or VECs associated with the Property:

On-Site REC/VEC

- The VOC trichloroethene (TCE) was detected in one on-site groundwater monitoring well at a concentration exceeding its NYSDEC Class GA Water Quality Standard, and the TCE degradation product cis 1,2-dichlorethene (cis 1,2-DCE) was detected in the same well at a concentration below its Class GA standard, as documented in the 2007 groundwater monitoring report for the south-adjacent Old Al Turi Landfill (however, more recent monitoring events for the Old Al Turi Landfill conducted between 2008 and 2013 indicated that groundwater concentrations were below the Class GA groundwater standards in monitoring wells on the Subject Property.)

Off-Site CRECs

- The south-adjacent parcel operated an unlined landfill (the Old Al Turi Landfill) from 1968 to 1983 and is listed as a New York State Inactive Hazardous Waste Disposal Site due to disposal of solvents and other materials in the landfill. TCE and cis 1,2-DCE detected in groundwater on the Subject Property are likely associated with this facility. In 2010, the NYSDEC changed the classification of the Inactive Hazardous Waste Site from Class 2 to 4[2] based on the remedy completed and results of on-going groundwater monitoring.
- A Part 360 permitted solid waste landfill (the Al Turi Landfill), which also operated at the south-adjacent parcel, further to the south of the Old Al Turi Landfill, has been capped and closed (with post-closure monitoring under NYSDEC oversight).

The Phase I ESA revealed the following HRECs, *de minimis* conditions and other environmental concerns:

Off-Site HREC

- Fourteen closed-status Spills (two tank failures and 12 miscellaneous/other causes) were reported at the south-adjacent property. Closed-status spills at this off-site property are considered HRECs.

De Minimis Conditions

- Areas of disturbance noted in the western portion of the Subject Property on the 1964 and 1991-1994 aerial photographs and discarded items (tires, piping, etc.) noted during the Property reconnaissance indicate the potential for historic disposal and/or import of fill materials of unknown origin. Evidence of widespread fill was not noted during a geotechnical investigation conducted in 2015 in connection with the proposed project.

[2] Class 4 sites are those considered properly closed, but requiring continued management.

- Apparent agricultural fields were noted throughout the Subject Property on the 1940 through 1975 aerial photographs. Residual pesticides from the former agricultural uses could be present in shallow or deeper soil at the Property.

Other Environmental Concerns

- A review of the New York State Department of Health database indicated that the average level of radon found in basements in the Town of Goshen is 5.23 picocuries/liter, above the USEPA recommended action level is 4.0 picocuries/liter.
- The US Army Corps of Engineers issued a violation to the current property owner associated with placement of approximately 4,000 square feet of fill into the Cheechunk Creek resulting in approximately 1,000 linear feet of stream being bypassed.

Based on the Phase I ESA findings, AKRF recommended conducting a subsurface (Phase II) investigation to further investigate the identified RECs/CRECs/VECs and other environmental concerns and to characterize soil, groundwater and soil vapor in areas of proposed subsurface disturbance.

3.0 FIELD ACTIVITIES

3.1 Soil Boring Advancement and Soil Sampling

On October 5 and 6, 2015, Zebra Technical Services LLC. (Zebra) of Lynbrook, New York advanced 16 soil borings at the Property, at the locations shown on Figure 2. The soil borings were advanced with a Geoprobe® direct push probe (DPP) unit to 10 feet below ground surface (bgs). The borings were located within the proposed site development areas, as follows:

- SB-1 through SB-8: in the location of the proposed Amy's Kitchen Production facility building.
- SB-9 through SB-13: in the location of the proposed surface parking area.
- SB-14: in the location of the proposed wastewater treatment facility.
- SB-15 and SB-16: in the location of the proposed storm water retention area.

Borings SB-10 through SB-16 were also located within the areas of historic disturbance noted on 1964 and 1991-1994 aerial photographs reviewed as part of the Phase I ESA. Continuous soil samples were collected from each boring using 5-foot long, 2-inch diameter, macrocore piston rod samplers fitted with acetate liners. Soil boring logs are provided in Appendix A. Each sample was split lengthwise by Zebra and logged by AKRF field personnel. Logging consisted of: describing the soil according to the modified Burmister Classification System; describing any evidence of contamination (e.g., staining, sheens, odors); and screening the soil for organic vapors using a photoionization detector (PID) in one-foot intervals. The PID was calibrated prior to on-site use using isobutylene gas in accordance with the manufacturer's instructions. One soil sample from each boring was selected for laboratory analysis based on PID response and visual indications of contamination. As no evidence of contamination (elevated PID readings, stains and/or odors) was observed at depth, the samples were collected at a shallow 2-foot interval (ranging between 0.5 and 4 feet bgs, where soil disturbance during future development is more likely) from all soil borings, except at SB-15, where a deeper sample was selected due to anticipated deeper grading required for the stormwater basin.

The soil samples (and depth below grade) were collected from each boring as follows:

SB-1 (1'-3')	SB-5 (1'-3')	SB-9 (0.5-2.5')	SB-13 (0.5'-2.5')
SB-2 (1'-3')	SB-6 (1'-3')	SB-10 (1'-3')	SB-14 (1'-3')
SB-3 (1'-3')	SB-7 (2'-4')	SB-11 (0.5'-2.5')	SB-15 (6'-8')
SB-4 (1'-3')	SB-8 (1'-3')	SB-12 (1'-3')	SB-16 (1'-3')

Samples designated for laboratory analysis were placed into laboratory-supplied containers and a chilled cooler with an appropriate chain of custody (COC) for transport to the laboratory. The samples were shipped via Federal Express for overnight delivery to TestAmerica Laboratories, Inc. (TestAmerica) located in Edison, New Jersey, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory. Soil samples were analyzed for VOCs by EPA Method 8260, semivolatile organic compounds (SVOCs) by EPA Method 8270, target analyte list (TAL) metals, polychlorinated biphenyls (PCBs) by EPA Method 8082, and pesticides by EPA Method 8081.

3.2 Soil Vapor Sampling

Soil vapor samples were collected at five locations (four co-located with soil borings) at the four corners and center of the proposed production facility building footprint, as shown on Figure 2. Soil vapor probes were installed at each location to facilitate the collection of the five soil vapor samples for laboratory analysis. Sample locations were established to provide coverage of the future occupied processing facility. The soil vapor sampling points were installed by Zebra by using a direct-push probe (i.e., Geoprobe) system to advance a 0.75-inch diameter hollow probe rod fitted with an expendable 6-inch long stainless steel screened drive point to depths of five feet bgs at soil vapor sample locations. Dedicated Teflon tubing with threaded fittings was connected to the screen point. The hollow probe rod was then removed and the boring was backfilled with clean silica sand to one foot above the screen. Hydrated bentonite was used to fill the remaining void around the sampling tubing to ground surface. Prior to sampling, each soil vapor point was purged using a peristaltic pump. During purging, an inverted one-gallon bucket was placed over the sampling point and helium gas was introduced through a small hole in the bucket to saturate the atmosphere around the sample port. The purged vapors were collected in a 1-liter Tedlar bag and monitored using a portable helium detector to check for short-circuiting of ambient air into the vapor sampling point and verify the adequacy of the bentonite seal. Helium concentrations of less than 10 percent were considered sufficient to verify a tight seal. Helium was not detected at any of the installed soil vapor points indicating that all of the points passed the seal integrity tests. Purged vapors were also field-screened for organic vapors using a calibrated PID. After purging, each probe was connected via Teflon tubing to a laboratory-supplied 6-liter SUMMA canister equipped with a 0.05 liter per minute (L/min) flow regulator. Soil vapor samples were collected for an approximately 2-hour sampling period.

The Summa canisters were properly labeled and delivered to TestAmerica-Burlington in South Burlington, Vermont (TestAmerica-Burlington) utilizing standard chain-of-custody procedures. TestAmerica-Burlington is a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory.

Methodologies used for soil vapor assessment conform to the NYS DOH Final Guidance on Soil Vapor Intrusion, October 2006 and ASTM E 2600-08 "Standard Practice for Assessment of Vapor Intrusion into Structures on Property Involved in Real Estate Transactions." Soil vapor sampling logs are included in Appendix A.

3.3 Groundwater Sampling

Groundwater samples were collected from temporary wells installed at five of the 16 boring locations:

- MW-1: installed at SB-1 (western corner of the proposed production facility).
- MW-2: installed at SB-2 (northern corner of the proposed production facility).
- MW-3: installed at SB-7 (southern corner of the proposed production facility).
- MW-4: installed at SB-9 (southwest portion of the proposed surface parking area).
- MW-5: installed at SB-15 (western corner of the proposed stormwater retention basin and northwest corner of the Subject Property).

The sampling locations are shown on Figure 2. The groundwater samples were collected from temporary wells installed by extending the corresponding soil borings to 30 feet bgs and setting 1-inch diameter PVC well screens at the bottom of the boring; no permanent monitoring wells were installed. Prior to sampling, the depth to water was measured in each temporary well, and a minimum of three well volumes was purged from each well with a peristaltic pump to remove sediments from the water column and establish a connection with the aquifer prior to sampling. Groundwater samples were collected from the peristaltic pump using laboratory supplied glassware, sealed, and placed in cooler with an appropriate COC and a trip blank for transport to the laboratory. The samples were shipped via Federal Express for overnight delivery to TestAmerica. The groundwater samples and trip blank were analyzed for VOCs by EPA Method 8260.

4.0 INVESTIGATION RESULTS

4.1 Field Observations

Soil encountered during this investigation was identified as glacial deposits that consisted of sand with varying amounts of silt, clay, and gravel. No evidence of fill material was encountered in any of the soil borings, including those located within the areas of historic disturbance. Field screening of the soil samples for VOCs yielded a PID reading of 0.1 parts per million (ppm) at approximately 4 feet bgs in SB-4, and a PID reading of 0.9 ppm at the bottom of boring (approximately 10 feet bgs) SB-14. No other PID detections were noted during field screening. Groundwater was encountered at depths ranging from approximately 14 to 23 feet bgs as measured from the temporary wells installed at the Property. The scope of work did not include surveying elevations for the temporary wells; therefore, the localized groundwater flow direction was not determined from the depth to water measurements. (Notwithstanding, based on records reviewed as part of the Phase I ESA, groundwater flow is expected to be predominantly to the west-northwest toward the Wallkill River, with a more north-northwesterly flow component in the southeastern portion of the Property.) No sheen or other evidence of contamination was observed during the groundwater sampling. Screening of the soil vapor samples for VOCs yielded PID readings ranging from 1.6 to 3.2 ppm. Complete soil boring and soil vapor collection logs are included in Appendix A.

4.2 Soil Analytical Results

Soil sample analytical results were compared to the NYSDEC Part 375-6.8 Soil Cleanup Objectives (SCOs) for Commercial Use, Unrestricted Use, and the Protection of Groundwater.

The Unrestricted Use SCOs were included for evaluating whether special soil handling protocols would be required during subsurface excavation for site development. A complete laboratory analytical report is included in Appendix C.

Volatile Organic Compounds (VOCs)

Soil analytical results for VOCs are presented in Table 1. Only one sample, SB-13 (0.5'-2.5'), had VOC detections, with concentrations of 56 micrograms per kilogram (µg/kg) of acetone, 6.9 µg/kg of methylene chloride, and an estimated concentration of 4 µg/kg of 2-butanone (MEK) reported. The acetone concentration slightly exceeds the Unrestricted Use and Groundwater Protection SCOs of 50 µg/kg. The detected methylene chloride and 2-butanone concentrations were below their respective SCOs, and no VOCs were detected in the remaining soil samples. Acetone, methylene chloride, and 2-butanone are known laboratory chemicals and their presence in the SB-13 soil sample is suspected to be associated with laboratory contamination; however, these compounds were not detected in the associated laboratory blanks.

Semivolatile Organic Compounds (SVOCs)

Soil analytical results for SVOCs are presented in Table 2. Between one and four SVOC compounds were detected in nine of the samples [SB-5 (1'-3'), SB-9 (0.5'-2.5'), SB-10 (1'-3'), SB-11 (0.5'-2.5'), SB-12 (1'-3'), SB-13 (0.5'-2.5'), SB-14 (1'-3'), SB-15 (6'-8') and SB-16 (1'-3')] at concentrations ranging from 11 µg/kg of 2-methylnaphthalene in SB-13 (0.5'-2.5') to 320 µg/kg of bis(2-ethylhexyl)phthalate in SB-9 (0.5'-2.5'). All detected SVOC concentrations were below their respective SCOs.

Metals

Soil analytical results for TAL (target analyte list) metals are presented in Table 3. Seventeen metals were detected in each sample at concentrations ranging from 0.021 milligram per kilogram (mg/kg) of mercury in SB-7 (2'-4') to 46,400 mg/kg of iron in SB-9 (0.5'-2.5'). Arsenic exceeded the Unrestricted Use SCO of 13 mg/kg in two samples [41.3 mg/kg in SB-9 (0.5'-2.5') and 14.3 mg/kg in SB-11 (0.5'-2.5')] and also exceeded the Groundwater Protection and Commercial Use SCOs of 16 mg/kg in SB-9 (0.5-2.5). Manganese exceeded the Unrestricted Use SCO of 1,600 mg/kg in one sample [4,020 mg/kg in SB-11 (0.5'-2.5')]. Nickel slightly exceeded the Unrestricted Use SCO of 30 mg/kg in two samples [31.4 mg/kg in SB-3 (1'-3') and 31.2 mg/kg in SB-9 (0.5'-2.5')].

PCBs

Soil analytical results for PCBs are presented in Table 4. PCBs were not detected above the laboratory reporting limits in any of the soil samples.

Pesticides

Soil analytical results for pesticides are presented in Table 4. Pesticides were not detected in any of the soil samples above the laboratory detection limits.

4.3 Groundwater Analytical Results

Groundwater sample analytical results were compared to the Class GA Ambient Water Quality Values (AWQVs), as listed in NYSDEC Division of Water Technical Operational and Guidance Series (TOGS) 1.1.1. A complete laboratory analytical report is included in Appendix C.

Volatile Organic Compounds (VOCs)

A summary of groundwater analytical results for VOCs is presented in Table 5. The groundwater sample from MW-3, located on the southern corner of the proposed production facility, close to Hartley Road and the Old Al Turi Landfill, had a total VOC concentration of 4.32 micrograms per liter (µg/L), including 1.0 µg/L of 1,1-dichloroethene, 2.5 µg/L of cis-1,2-dichloroethane, and estimated concentrations of 0.32 µg/l of dichlorodifluoromethane and 0.50 µg/l of trichlorofluoromethane. MW-1, located on the western corner of the proposed production facility, near the Old Al Turi Landfill, had a detection of an estimated concentration of 0.31 µg/l dichlorodifluoromethane. All detections were below the NYSDEC Class GA AWQVs. No VOCs were detected in other samples or in the trip blank.

4.4 Soil Vapor Sampling Results

Analytical results for soil vapor samples are presented in Table 6. Analytical results for soil vapor samples collected from the Property were compared to the NYSDOH Air Guideline Values (AGVs) of the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006, and the EPA Building Assessment and Survey Evaluation (BASE) 90th percentile values and the NYSDOH 2003 Upper Fence Values. The AGVs and background values are intended as a reference for indoor air quality and are not directly applicable to soil vapor sample results. A review of the soil vapor sample analytical results indicated that 32 of the 74 VOCs analyzed utilizing EPA Method TO-15 were detected in one or more of the samples. Acetone concentrations in the undiluted samples exceeded the calibration range, therefore, the samples were analyzed at a secondary dilution.

The NYSDOH has established AGVs for three of the VOCs analyzed [methylene chloride, tetrachloroethene (PCE), and trichloroethene (TCE)]. These compounds were not detected above the laboratory detection limits in any of the five of the soil vapor samples analyzed.

The following compounds were reported in one or more samples at concentrations above both the EPA 90th percentile and NYSDOH upper fence background levels:1,2,4,-trimethylbenzene, 1,3,5-trimethylbenzene, acetone, benzene, chloromethane, dichlorodifluoromethane, Freon TF, m,p-xylene, methyl ethyl ketone, methyl isobutyl ketone, styrene, trichlorofluoromethane, and o-xylene. Three of these compounds were detected at greater than 10 times the corresponding background levels (acetone in samples SV-3 and SV-5, and trichlorofluoromethane and Freon TF in sample SV-4.) All other detections were generally less than two times the corresponding background levels.

5.0 CONCLUSIONS AND RECOMMENDATIONS

On October 5 and 6, 2015, AKRF conducted Phase II Subsurface Investigation field work at the Ver Hage Property located at 103-111 Hartley Road in Goshen, New York (the Subject Property or the Property). The Phase II was conducted to further investigate the RECs/CRECs/VECs, *de minimus* conditions and other environmental concerns identified during our Phase I ESA of the Property, and to characterize soil, groundwater and soil vapor in areas of proposed subsurface disturbance. A summary of the data compiled during the investigation is included in this section.

Soil encountered during this investigation was observed to be apparent native material that consisted primarily of sand, with varying amounts of silt, clay, and gravel. Bedrock was not encountered during the investigation. Groundwater was encountered at depths ranging from approximately 14 to 23 feet below grade in the temporary wells. No evidence of fill material was noted in any of the soil borings, including those located within the areas of historic disturbance identified in our Phase I ESA.

Laboratory analysis of soil samples detected VOCs in only one sample [SB-13 (0.5'-2.5'], exceeding the Unrestricted Use and Groundwater Protection SCO for acetone. Acetone is a known laboratory chemical and its presence in this sample is suspected to be associated with laboratory contamination. Arsenic, manganese, and nickel were detected at concentrations exceeding the SCOs for Unrestricted Use in three samples, and arsenic was detected above the Groundwater Protection and Commercial use SCOs in one sample. No evidence of a release (e.g., odors or staining) or obvious source of metals contamination or fill material was noted in the soil borings; therefore, these metals are attributed to naturally occurring or background conditions and not a release or spill. PCBs and pesticides were not detected in the soil samples, and all detected SVOC concentrations were below their respective SCOs.

Laboratory results for VOCs in groundwater samples indicated low levels of 1,1-dichloroethane and cis-1,2-dichloroethene in MW-3, below the Class GA water quality standards and consistent with detections reported in historic data from nearby monitoring wells associated with post-closure monitoring of the Old Al Turi Landfill. The presence of these compounds (which are degradation products of the chlorinated solvents 1,1,1-trichlorethane and tetrachloroethene or trichloroethene, respectively) is attributed to degradation of low levels of chlorinated solvents associated with the Old Al Turi landfill, and is not indicative of a new release or an on-site source of contamination. Low level detections (below laboratory reporting limits and Class GA standards) of the chlorofluorocarbons (CFCs) dichlorodifluoromethane in MW-1 and MW-3 and trichlorofluoromethane in MW-1 are also attributed to known groundwater contamination associated with the landfill, and are consistent with ongoing monitoring of that CREC. No other VOCs were detected in any of the groundwater samples.

A review of the soil vapor sample analytical results indicated that 32 of the 74 VOCs analyzed utilizing EPA Method TO-15 were detected in one or more of the samples. Acetone, trichlorofluoromethane, and Freon TF were detected at concentrations greater than 10 times the corresponding EPA and NYSDOH background levels for indoor air. Acetone is a common laboratory contaminant, was not detected in groundwater samples collected during this investigation, and is not reported in available historical data for the Old Al Turi Landfill groundwater monitoring program; therefore, the acetone detected in the soil vapor samples is suspected to be associated with laboratory contamination. The elevated trichlorofluoromethane and Freon TF levels in two of the soil vapor samples could be attributable to historic disposal of refrigerants in the Old Al Turi Landfill. The three VOCs for which NYSDOH has established Air Guideline Values (methylene chloride, tetrachloroethene [PCE], and trichloroethene [TCE]), were not detected in any of the soil vapor samples analyzed. Based on these results, the TCE detected historically in groundwater at the Subject Property does not appear to represent a vapor intrusion concern.

The proposed project includes construction of a food processing facility, stormwater retention areas, a surface parking lot, and a wastewater treatment facility. Based on the proposed development plans and the findings of the Phase II investigation, AKRF recommends the following:

- As a precautionary measure, a vapor barrier should be incorporated in the design of the new food processing facility building to prevent potential radon and/or vapor intrusion (e.g., associated with a potential new release from the Old Al Turi Landfill).
- The engineering and institutional controls associated with the south-adjacent Old Al Turi Landfill, including the on-site monitoring wells, should be maintained at the Property as appropriate to ensure the efficacy of the remedy that was implemented for the landfill.
- A Construction-Phase Environmental Health and Safety Plan (CHASP) should be prepared and implemented to ensure that excavated soil intended for off-site disposal is properly managed during site development, and should include a contingency plan to address sources or areas of contamination, if any, encountered during future construction activities. Elements of the CHASP should include the following:
    - All soil intended for off-site disposal should be screened for visual and olfactory indications of contamination, and tested in accordance with the requirements of the intended receiving facility. Transportation of all material leaving the Property for off-site disposal should be in accordance with Federal, State and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc. If dewatering is required for construction, it should be conducted in accordance with all applicable regulations.
    - Although not anticipated based on results of the Phase II, contingency measures should be included for removal of fill material/construction debris, tanks, drums, or other sources of subsurface contamination discovered at the Property during excavation activities in accordance with all applicable regulations. Any associated soil and groundwater contamination should be mitigated in accordance with the state, county, and local requirements.

6.0 LIMITATIONS

The findings set forth in this report are strictly limited in scope and time to the date of the evaluation described herein. The conclusions and recommendations presented in the report are based solely on the services and any limitations described in this report.

This report may contain conclusions that are based on the analysis of data collected at the time and locations noted in the report through intrusive or non-intrusive sampling. However, further investigation might reveal additional data or variations of the current data, which may differ from our understanding of the conditions presented in this report and require the enclosed recommendations to be reevaluated or modified.

Chemical analyses may have been performed for specific parameters during the course of this investigation, as summarized in the text and tables. It should be noted that additional chemical constituents, not searched for during this investigation, may be present at the Subject Property. Due to the nature of the investigation and the limited data available, no warranty, expressed or implied, shall be construed with respect to undiscovered liabilities. The presence of biological hazards, radioactive materials, lead-based paint and asbestos-containing materials was not investigated, unless specified in the report.

Interpretations of the data, including comparison to regulatory standards, guidelines or background values, are not opinions that these comparisons are legally applicable. Furthermore, any conclusions or recommendations should not be construed as legal advice. For such advice, the client is recommended to seek appropriate legal counsel. Disturbance, handling, transportation, storage and disposal of known or potentially contaminated materials is subject to all applicable laws, which may or may not be fully described as part of this report.

The analytical data, conclusions, and/or recommendations provided in this report should not be construed in any way as a classification of waste that may be generated during future disturbance of the Subject Property. Waste(s) generated at the Property including excess fill may be considered regulated solid waste and potentially hazardous waste. Requirements for intended disposal facilities should be determined beforehand as the data provided in this report may be insufficient and could vary following additional sampling.

This report may be based solely or partially on data collected, conducted, and provided by, AKRF and/or others. No warranty is expressed or implied by usage of such data. Such data may be included in other investigation reports or documentation. In addition, these reports may have been based upon available previous reports, historical records, documentation from federal, state and local government agencies, personal interviews, and geological mapping. This report is subject, at a minimum, to the limitations of the previous reports, historical documents, availability and accuracy of collected documentation, and personal recollection of those persons interviewed. In certain instances, AKRF has been required to assume that the information provided is accurate with limited or no corroboratory evidence.

This report is intended for the use solely by Amy’s Kitchen, Inc. and its affiliates. Reliance by third parties on the information and opinions contained herein is strictly prohibited and requires the written consent of AKRF. AKRF accepts no responsibility for damages incurred by third parties for any decisions or actions taken based on this report. This report must be used, interpreted, and presented in its entirety.

TABLES

Table 1
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Volatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-1 (1'-3') 460-102242-6 10/5/2015 1	SB-2 (1'-3') 460-102242-7 10/5/2015 1	SB-3 (1'-3') 460-102242-8 10/5/2015 1	SB-4 (1'-3') 460-102242-2 10/5/2015 1	SB-5 (1'-3') 460-102242-1 10/5/2015 1	SB-6 (1'-3') 460-102242-3 10/5/2015 1	SB-7 (2'-4') 460-102242-5 10/5/2015 1	SB-8 (1'-3') 460-102242-4 10/5/2015 1
1,1,1-Trichloroethane	0.68	500	0.68	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,1,2,2-Tetrachloroethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,1,2-Trichloroethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,1-Dichloroethane	0.27	240	0.27	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,1-Dichloroethene	0.33	500	0.33	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,2,3-Trichlorobenzene	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,2,4-Trichlorobenzene	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dibromo-3-Chloropropane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dichlorobenzene	1.1	500	1.1	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dichloroethane	0.02	30	0.02	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,2-Dichloropropane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,3-Dichlorobenzene	2.4	280	2.4	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,4-Dichlorobenzene	1.8	130	1.8	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
1,4-Dioxane	0.1	130	0.1	0.023 U	0.021 U	0.022 U	0.023 U	0.029 U	0.025 U	0.025 U	0.025 U
2-Butanone (MEK)	0.12	500	0.12	0.0056 U	0.0052 U	0.0056 U	0.0057 U	0.0072 U	0.0061 U	0.0062 U	0.0061 U
2-Hexanone	NS	NS	NS	0.0056 U	0.0052 U	0.0056 U	0.0057 U	0.0072 U	0.0061 U	0.0062 U	0.0061 U
4-Methyl-2-pentanone (MIBK)	NS	NS	NS	0.0056 U	0.0052 U	0.0056 U	0.0057 U	0.0072 U	0.0061 U	0.0062 U	0.0061 U
Acetone	0.05	500	0.05	0.0056 U	0.0052 U	0.0056 U	0.0057 U	0.0072 U	0.0061 U	0.0062 U	0.0061 U
Acetonitrile	NS	NS	NS	0.011 U	0.01 U	0.011 U	0.011 U	0.014 U	0.012 U	0.012 U	0.012 U
Acrolein	NS	NS	NS	0.11 U	0.1 U	0.11 U	0.11 U	0.14 U	0.12 U	0.12 U	0.12 U
Benzene	0.06	44	0.06	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Bromoform	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Bromomethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Carbon disulfide	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Carbon tetrachloride	0.76	22	0.76	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Chlorobenzene	1.1	500	1.1	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Chlorobromomethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Chlorodibromomethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Chloroethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Chloroform	0.37	350	0.37	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Chloromethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
cis-1,2-Dichloroethene	0.25	500	0.25	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
cis-1,3-Dichloropropene	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Cyclohexane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Dichlorobromomethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Dichlorodifluoromethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Ethylbenzene	1	390	1	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Ethylene Dibromide	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Isopropylbenzene	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Methyl acetate	NS	#N/A	NS	0.0056 U	0.0052 U	0.0056 U	0.0057 U	0.0072 U	0.0061 U	0.0062 U	0.0061 U
Methyl tert-butyl ether	0.93	500	0.93	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Methylcyclohexane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Methylene Chloride	0.05	500	0.05	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
m-Xylene & p-Xylene	0.26 TS	500 TS	1.6 TS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
o-Xylene	0.26 TS	500 TS	1.6 TS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Styrene	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Tetrachloroethene	1.3	150	1.3	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Toluene	0.7	500	0.7	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
trans-1,2-Dichloroethene	0.19	500	0.19	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
trans-1,3-Dichloropropene	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Trichloroethene	0.47	200	0.47	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Trichlorofluoromethane	NS	NS	NS	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Vinyl chloride	0.02	13	0.02	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U
Total Conc	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA

Table 1
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Volatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-9 (.5'-2.5') 460-102327-1 10/6/2015 1	SB-10 (1'-3') 460-102327-2 10/6/2015 1	SB-11 (.5'-2.5') 460-102327-3 10/6/2015 1	SB-12 (1'-3') 460-102327-4 10/6/2015 1	SB-13 (.5'-2.5') 460-102327-5 10/6/2015 1	SB-14 (1-3) 460-102327-6 10/6/2015 1	SB-15 (6-8) 460-102327-8 10/6/2015 1	SB-16 (1-3) 460-102327-7 10/6/2015 1
1,1,1-Trichloroethane	0.68	500	0.68	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,1,2,2-Tetrachloroethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NS	NS	NS	0.0013 U *	0.0013 U *	0.0014 U *	0.0014 U *	0.0013 U *	0.0012 U *	0.0014 U *	0.0012 U *
1,1,2-Trichloroethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,1-Dichloroethane	0.27	240	0.27	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,1-Dichloroethene	0.33	500	0.33	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,2,3-Trichlorobenzene	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,2,4-Trichlorobenzene	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,2-Dibromo-3-Chloropropane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,2-Dichlorobenzene	1.1	500	1.1	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,2-Dichloroethane	0.02	30	0.02	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,2-Dichloropropane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,3-Dichlorobenzene	2.4	280	2.4	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,4-Dichlorobenzene	1.8	130	1.8	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
1,4-Dioxane	0.1	130	0.1	0.025 U	0.025 U	0.028 U	0.028 U	0.026 U	0.024 U	0.029 U	0.024 U
2-Butanone (MEK)	0.12	500	0.12	0.0063 U	0.0063 U	0.007 U	0.007 U	0.004 J	0.0061 U	0.0072 U	0.0059 U
2-Hexanone	NS	NS	NS	0.0063 U	0.0063 U	0.007 U	0.007 U	0.0064 U	0.0061 U	0.0072 U	0.0059 U
4-Methyl-2-pentanone (MIBK)	NS	NS	NS	0.0063 U	0.0063 U	0.007 U	0.007 U	0.0064 U	0.0061 U	0.0072 U	0.0059 U
Acetone	0.05	500	0.05	0.0063 U	0.0063 U	0.007 U	0.007 U	**0.056**	0.0061 U	0.0072 U	0.0059 U
Acetonitrile	NS	NS	NS	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.012 U	0.014 U	0.012 U
Acrolein	NS	NS	NS	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.12 U	0.14 U	0.12 U
Benzene	0.06	44	0.06	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Bromoform	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Bromomethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Carbon disulfide	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Carbon tetrachloride	0.76	22	0.76	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Chlorobenzene	1.1	500	1.1	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Chlorobromomethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Chlorodibromomethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Chloroethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Chloroform	0.37	350	0.37	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Chloromethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
cis-1,2-Dichloroethene	0.25	500	0.25	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
cis-1,3-Dichloropropene	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Cyclohexane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Dichlorobromomethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Dichlorodifluoromethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Ethylbenzene	1	390	1	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Ethylene Dibromide	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Isopropylbenzene	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Methyl acetate	NS	#N/A	NS	0.0063 U	0.0063 U	0.007 U	0.007 U	0.0064 U	0.0061 U	0.0072 U	0.0059 U
Methyl tert-butyl ether	0.93	500	0.93	0.0013 U *	0.0013 U *	0.0014 U *	0.0014 U *	0.0013 U *	0.0012 U *	0.0014 U *	0.0012 U *
Methylcyclohexane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Methylene Chloride	0.05	500	0.05	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0069	0.0012 U	0.0014 U	0.0012 U
m-Xylene & p-Xylene	0.26 TS	500 TS	1.6 TS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
o-Xylene	0.26 TS	500 TS	1.6 TS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Styrene	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Tetrachloroethene	1.3	150	1.3	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Toluene	0.7	500	0.7	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
trans-1,2-Dichloroethene	0.19	500	0.19	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
trans-1,3-Dichloropropene	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Trichloroethene	0.47	200	0.47	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Trichlorofluoromethane	NS	NS	NS	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Vinyl chloride	0.02	13	0.02	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0012 U	0.0014 U	0.0012 U
Total Conc	NS	NS	NS	NA	NA	NA	NA	0.0669	NA	NA	NA

Table 2
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Semivolatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-1 (1'-3') 460-102242-6 10/5/2015 1	SB-2 (1'-3') 460-102242-7 10/5/2015 1	SB-3 (1'-3') 460-102242-8 10/5/2015 1	SB-4 (1'-3') 460-102242-2 10/5/2015 1
1,1'-Biphenyl	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2,2'-oxybis[1-chloropropane]	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2,3,4,6-Tetrachlorophenol	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2,4,5-Trichlorophenol	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2,4,6-Trichlorophenol	NS	NS	NS	0.14 U	0.14 U	0.14 U	0.17 U
2,4-Dichlorophenol	NS	NS	NS	0.14 U	0.14 U	0.14 U	0.17 U
2,4-Dimethylphenol	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2,4-Dinitrophenol	NS	NS	NS	0.29 U	0.29 U	0.29 U	0.33 U
2,4-Dinitrotoluene	NS	NS	NS	0.073 U	0.073 U	0.072 U	0.084 U
2,6-Dinitrotoluene	NS	NS	NS	0.073 U	0.073 U	0.072 U	0.084 U
2-Chloronaphthalene	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2-Chlorophenol	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2-Methylnaphthalene	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2-Methylphenol	0.33	500	0.33	0.36 U	0.36 U	0.36 U	0.41 U
2-Nitroaniline	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
2-Nitrophenol	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
3,3'-Dichlorobenzidine	NS	NS	NS	0.14 U	0.14 U	0.14 U	0.17 U
3-Nitroaniline	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
4,6-Dinitro-2-methylphenol	NS	NS	NS	0.29 U	0.29 U	0.29 U	0.33 U
4-Bromophenyl phenyl ether	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
4-Chloro-3-methylphenol	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
4-Chloroaniline	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
4-Chlorophenyl phenyl ether	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
4-Methylphenol	0.33	500	0.33	0.36 U	0.36 U	0.36 U	0.41 U
4-Nitroaniline	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
4-Nitrophenol	NS	NS	NS	0.73 U	0.73 U	0.72 U	0.84 U
Acenaphthene	20	500	98	0.36 U	0.36 U	0.36 U	0.41 U
Acenaphthylene	100	500	107	0.36 U	0.36 U	0.36 U	0.41 U
Acetophenone	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Anthracene	100	500	1,000	0.36 U	0.36 U	0.36 U	0.41 U
Atrazine	NS	NS	NS	0.14 U	0.14 U	0.14 U	0.17 U
Benzaldehyde	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Benzo[a]anthracene	1	5.6	1	0.036 U	0.036 U	0.036 U	0.041 U
Benzo[a]pyrene	1	1	22	0.036 U	0.036 U	0.036 U	0.041 U
Benzo[b]fluoranthene	1	5.6	1.7	0.036 U	0.036 U	0.036 U	0.041 U
Benzo[g,h,i]perylene	100	500	1,000	0.36 U	0.36 U	0.36 U	0.41 U
Benzo[k]fluoranthene	0.8	56	1.7	0.036 U	0.036 U	0.036 U	0.041 U
Bis(2-chloroethoxy)methane	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Bis(2-chloroethyl)ether	NS	NS	NS	0.036 U	0.036 U	0.036 U	0.041 U
Bis(2-ethylhexyl) phthalate	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Butyl benzyl phthalate	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Caprolactam	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Carbazole	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Chrysene	1	56	1	0.36 U	0.36 U	0.36 U	0.41 U
Dibenz(a,h)anthracene	0.33	0.56	1,000	0.036 U	0.036 U	0.036 U	0.041 U
Dibenzofuran	7	350	210	0.36 U	0.36 U	0.36 U	0.41 U
Diethyl phthalate	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Dimethyl phthalate	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Di-n-butyl phthalate	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Di-n-octyl phthalate	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Fluoranthene	100	500	1,000	0.36 U	0.36 U	0.36 U	0.41 U
Fluorene	30	500	386	0.36 U	0.36 U	0.36 U	0.41 U
Hexachlorobenzene	0.33	6	3.2	0.036 U	0.036 U	0.036 U	0.041 U
Hexachlorobutadiene	NS	NS	NS	0.073 U	0.073 U	0.072 U	0.084 U
Hexachlorocyclopentadiene	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Hexachloroethane	NS	NS	NS	0.036 U	0.036 U	0.036 U	0.041 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	8.2	0.036 U	0.036 U	0.036 U	0.041 U
Isophorone	NS	NS	NS	0.14 U	0.14 U	0.14 U	0.17 U
Naphthalene	12	500	12	0.36 U	0.36 U	0.36 U	0.41 U
Nitrobenzene	NS	NS	NS	0.036 U	0.036 U	0.036 U	0.041 U
N-Nitrosodi-n-propylamine	NS	NS	NS	0.036 U	0.036 U	0.036 U	0.041 U
N-Nitrosodiphenylamine	NS	NS	NS	0.36 U	0.36 U	0.36 U	0.41 U
Pentachlorophenol	0.8	6.7	0.8	0.29 U	0.29 U	0.29 U	0.33 U
Phenanthrene	100	500	1,000	0.36 U	0.36 U	0.36 U	0.41 U
Phenol	0.33	500	0.33	0.36 U	0.36 U	0.36 U	0.41 U
Pyrene	100	500	1,000	0.36 U	0.36 U	0.36 U	0.41 U
Total Conc	NS	NS	NS	NA	NA	NA	NA

Table 2
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Semivolatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-5 (1'-3') 460-102242-1 10/5/2015 1	SB-6 (1'-3') 460-102242-3 10/5/2015 1	SB-7 (2'-4') 460-102242-5 10/5/2015 1	SB-8 (1'-3') 460-102242-4 10/5/2015 1
1,1'-Biphenyl	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2,2'-oxybis[1-chloropropane]	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2,3,4,6-Tetrachlorophenol	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2,4,5-Trichlorophenol	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2,4,6-Trichlorophenol	NS	NS	NS	0.17 U	0.17 U	0.16 U	0.14 U
2,4-Dichlorophenol	NS	NS	NS	0.17 U	0.17 U	0.16 U	0.14 U
2,4-Dimethylphenol	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2,4-Dinitrophenol	NS	NS	NS	0.34 U	0.34 U	0.33 U	0.29 U
2,4-Dinitrotoluene	NS	NS	NS	0.085 U	0.085 U	0.083 U	0.073 U
2,6-Dinitrotoluene	NS	NS	NS	0.085 U	0.085 U	0.083 U	0.073 U
2-Chloronaphthalene	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2-Chlorophenol	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2-Methylnaphthalene	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2-Methylphenol	0.33	500	0.33	0.42 U	0.42 U	0.41 U	0.36 U
2-Nitroaniline	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
2-Nitrophenol	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
3,3'-Dichlorobenzidine	NS	NS	NS	0.17 U	0.17 U	0.16 U	0.14 U
3-Nitroaniline	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
4,6-Dinitro-2-methylphenol	NS	NS	NS	0.34 U	0.34 U	0.33 U	0.29 U
4-Bromophenyl phenyl ether	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
4-Chloro-3-methylphenol	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
4-Chloroaniline	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
4-Chlorophenyl phenyl ether	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
4-Methylphenol	0.33	500	0.33	0.42 U	0.42 U	0.41 U	0.36 U
4-Nitroaniline	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
4-Nitrophenol	NS	NS	NS	0.85 U	0.85 U	0.83 U	0.73 U
Acenaphthene	20	500	98	0.42 U	0.42 U	0.41 U	0.36 U
Acenaphthylene	100	500	107	0.42 U	0.42 U	0.41 U	0.36 U
Acetophenone	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Anthracene	100	500	1,000	0.42 U	0.42 U	0.41 U	0.36 U
Atrazine	NS	NS	NS	0.17 U	0.17 U	0.16 U	0.14 U
Benzaldehyde	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Benzo[a]anthracene	1	5.6	1	0.042 U	0.042 U	0.041 U	0.036 U
Benzo[a]pyrene	1	1	22	0.042 U	0.042 U	0.041 U	0.036 U
Benzo[b]fluoranthene	1	5.6	1.7	0.042 U	0.042 U	0.041 U	0.036 U
Benzo[g,h,i]perylene	100	500	1,000	0.42 U	0.42 U	0.41 U	0.36 U
Benzo[k]fluoranthene	0.8	56	1.7	0.042 U	0.042 U	0.041 U	0.036 U
Bis(2-chloroethoxy)methane	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Bis(2-chloroethyl)ether	NS	NS	NS	0.042 U	0.042 U	0.041 U	0.036 U
Bis(2-ethylhexyl) phthalate	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Butyl benzyl phthalate	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Caprolactam	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Carbazole	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Chrysene	1	56	1	0.04 J	0.42 U	0.41 U	0.36 U
Dibenz(a,h)anthracene	0.33	0.56	1,000	0.042 U	0.042 U	0.041 U	0.036 U
Dibenzofuran	7	350	210	0.42 U	0.42 U	0.41 U	0.36 U
Diethyl phthalate	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Dimethyl phthalate	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Di-n-butyl phthalate	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Di-n-octyl phthalate	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Fluoranthene	100	500	1,000	0.076 J	0.42 U	0.41 U	0.36 U
Fluorene	30	500	386	0.42 U	0.42 U	0.41 U	0.36 U
Hexachlorobenzene	0.33	6	3.2	0.042 U	0.042 U	0.041 U	0.036 U
Hexachlorobutadiene	NS	NS	NS	0.085 U	0.085 U	0.083 U	0.073 U
Hexachlorocyclopentadiene	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Hexachloroethane	NS	NS	NS	0.042 U	0.042 U	0.041 U	0.036 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	8.2	0.042 U	0.042 U	0.041 U	0.036 U
Isophorone	NS	NS	NS	0.17 U	0.17 U	0.16 U	0.14 U
Naphthalene	12	500	12	0.42 U	0.42 U	0.41 U	0.36 U
Nitrobenzene	NS	NS	NS	0.042 U	0.042 U	0.041 U	0.036 U
N-Nitrosodi-n-propylamine	NS	NS	NS	0.042 U	0.042 U	0.041 U	0.036 U
N-Nitrosodiphenylamine	NS	NS	NS	0.42 U	0.42 U	0.41 U	0.36 U
Pentachlorophenol	0.8	6.7	0.8	0.34 U	0.34 U	0.33 U	0.29 U
Phenanthrene	100	500	1,000	0.028 J	0.42 U	0.41 U	0.36 U
Phenol	0.33	500	0.33	0.42 U	0.42 U	0.41 U	0.36 U
Pyrene	100	500	1,000	0.078 J	0.42 U	0.41 U	0.36 U
Total Conc	NS	NS	NS	0.222	NA	NA	NA

Table 2
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Semivolatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-9 (.5'-2.5') 460-102327-1 10/6/2015 1	SB-10 (1'-3') 460-102327-2 10/6/2015 1	SB-11 (.5'-2.5') 460-102327-3 10/6/2015 1	SB-12 (1'-3') 460-102327-4 10/6/2015 1
1,1'-Biphenyl	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
2,2'-oxybis[1-chloropropane]	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
2,3,4,6-Tetrachlorophenol	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
2,4,5-Trichlorophenol	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
2,4,6-Trichlorophenol	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.16 U
2,4-Dichlorophenol	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.16 U
2,4-Dimethylphenol	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
2,4-Dinitrophenol	NS	NS	NS	0.29 U	0.3 U	0.3 U	0.32 U
2,4-Dinitrotoluene	NS	NS	NS	0.074 U	0.075 U	0.075 U	0.079 U
2,6-Dinitrotoluene	NS	NS	NS	0.074 U	0.075 U	0.075 U	0.079 U
2-Chloronaphthalene	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
2-Chlorophenol	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
2-Methylnaphthalene	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.016 J
2-Methylphenol	0.33	500	0.33	0.36 U	0.37 U	0.37 U	0.39 U
2-Nitroaniline	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
2-Nitrophenol	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
3,3'-Dichlorobenzidine	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.16 U
3-Nitroaniline	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
4,6-Dinitro-2-methylphenol	NS	NS	NS	0.29 U	0.3 U	0.3 U	0.32 U
4-Bromophenyl phenyl ether	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
4-Chloro-3-methylphenol	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
4-Chloroaniline	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
4-Chlorophenyl phenyl ether	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
4-Methylphenol	0.33	500	0.33	0.36 U	0.37 U	0.37 U	0.028 J
4-Nitroaniline	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
4-Nitrophenol	NS	NS	NS	0.74 U	0.75 U	0.75 U	0.79 U
Acenaphthene	20	500	98	0.36 U	0.37 U	0.37 U	0.39 U
Acenaphthylene	100	500	107	0.36 U	0.37 U	0.37 U	0.39 U
Acetophenone	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Anthracene	100	500	1,000	0.36 U	0.37 U	0.37 U	0.39 U
Atrazine	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.16 U
Benzaldehyde	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Benzo[a]anthracene	1	5.6	1	0.036 U	0.037 U	0.037 U	0.039 U
Benzo[a]pyrene	1	1	22	0.036 U	0.037 U	0.037 U	0.039 U
Benzo[b]fluoranthene	1	5.6	1.7	0.036 U	0.037 U	0.037 U	0.039 U
Benzo[g,h,i]perylene	100	500	1,000	0.36 U	0.37 U	0.37 U	0.39 U
Benzo[k]fluoranthene	0.8	56	1.7	0.036 U	0.037 U	0.037 U	0.039 U
Bis(2-chloroethoxy)methane	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Bis(2-chloroethyl)ether	NS	NS	NS	0.036 U	0.037 U	0.037 U	0.039 U
Bis(2-ethylhexyl) phthalate	NS	NS	NS	0.32 J	0.079 J	0.082 J	0.25 J
Butyl benzyl phthalate	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Caprolactam	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Carbazole	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Chrysene	1	56	1	0.36 U	0.37 U	0.37 U	0.39 U
Dibenz(a,h)anthracene	0.33	0.56	1,000	0.036 U	0.037 U	0.037 U	0.039 U
Dibenzofuran	7	350	210	0.36 U	0.37 U	0.37 U	0.39 U
Diethyl phthalate	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Dimethyl phthalate	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Di-n-butyl phthalate	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Di-n-octyl phthalate	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Fluoranthene	100	500	1,000	0.36 U	0.37 U	0.37 U	0.39 U
Fluorene	30	500	386	0.36 U	0.37 U	0.37 U	0.39 U
Hexachlorobenzene	0.33	6	3.2	0.036 U	0.037 U	0.037 U	0.039 U
Hexachlorobutadiene	NS	NS	NS	0.074 U	0.075 U	0.075 U	0.079 U
Hexachlorocyclopentadiene	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Hexachloroethane	NS	NS	NS	0.036 U	0.037 U	0.037 U	0.039 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	8.2	0.036 U	0.037 U	0.037 U	0.039 U
Isophorone	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.16 U
Naphthalene	12	500	12	0.36 U	0.37 U	0.37 U	0.39 U
Nitrobenzene	NS	NS	NS	0.036 U	0.037 U	0.037 U	0.039 U
N-Nitrosodi-n-propylamine	NS	NS	NS	0.036 U	0.037 U	0.037 U	0.039 U
N-Nitrosodiphenylamine	NS	NS	NS	0.36 U	0.37 U	0.37 U	0.39 U
Pentachlorophenol	0.8	6.7	0.8	0.29 U	0.3 U	0.3 U	0.32 U
Phenanthrene	100	500	1,000	0.36 U	0.37 U	0.37 U	0.012 J
Phenol	0.33	500	0.33	0.36 U	0.37 U	0.37 U	0.39 U
Pyrene	100	500	1,000	0.36 U	0.37 U	0.37 U	0.39 U
Total Conc	NS	NS	NS	0.32	0.079	0.082	0.306

Table 2
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Semivolatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-13 (.5'-2.5') 460-102327-5 10/6/2015 1	SB-14 (1-3) 460-102327-6 10/6/2015 1	SB-15 (6-8) 460-102327-8 10/6/2015 1	SB-16 (1-3) 460-102327-7 10/6/2015 1
1,1'-Biphenyl	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
2,2'-oxybis[1-chloropropane]	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
2,3,4,6-Tetrachlorophenol	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
2,4,5-Trichlorophenol	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
2,4,6-Trichlorophenol	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.15 U
2,4-Dichlorophenol	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.15 U
2,4-Dimethylphenol	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
2,4-Dinitrophenol	NS	NS	NS	0.3 U	0.31 U	0.29 U	0.3 U
2,4-Dinitrotoluene	NS	NS	NS	0.075 U	0.077 U	0.074 U	0.076 U
2,6-Dinitrotoluene	NS	NS	NS	0.075 U	0.077 U	0.074 U	0.076 U
2-Chloronaphthalene	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
2-Chlorophenol	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
2-Methylnaphthalene	NS	NS	NS	0.011 J	0.38 U	0.36 U	0.37 U
2-Methylphenol	0.33	500	0.33	0.37 U	0.38 U	0.36 U	0.37 U
2-Nitroaniline	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
2-Nitrophenol	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
3,3'-Dichlorobenzidine	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.15 U
3-Nitroaniline	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
4,6-Dinitro-2-methylphenol	NS	NS	NS	0.3 U	0.31 U	0.29 U	0.3 U
4-Bromophenyl phenyl ether	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
4-Chloro-3-methylphenol	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
4-Chloroaniline	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
4-Chlorophenyl phenyl ether	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
4-Methylphenol	0.33	500	0.33	0.37 U	0.38 U	0.36 U	0.37 U
4-Nitroaniline	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
4-Nitrophenol	NS	NS	NS	0.75 U	0.77 U	0.74 U	0.76 U
Acenaphthene	20	500	98	0.37 U	0.38 U	0.36 U	0.37 U
Acenaphthylene	100	500	107	0.37 U	0.38 U	0.36 U	0.37 U
Acetophenone	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Anthracene	100	500	1,000	0.37 U	0.38 U	0.36 U	0.37 U
Atrazine	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.15 U
Benzaldehyde	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Benzo[a]anthracene	1	5.6	1	0.037 U	0.038 U	0.036 U	0.037 U
Benzo[a]pyrene	1	1	22	0.037 U	0.038 U	0.036 U	0.037 U
Benzo[b]fluoranthene	1	5.6	1.7	0.037 U	0.038 U	0.036 U	0.037 U
Benzo[g,h,i]perylene	100	500	1,000	0.37 U	0.38 U	0.36 U	0.37 U
Benzo[k]fluoranthene	0.8	56	1.7	0.037 U	0.038 U	0.036 U	0.037 U
Bis(2-chloroethoxy)methane	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Bis(2-chloroethyl)ether	NS	NS	NS	0.037 U	0.038 U	0.036 U	0.037 U
Bis(2-ethylhexyl) phthalate	NS	NS	NS	0.37 U	0.12 J	0.36 U	0.17 J
Butyl benzyl phthalate	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Caprolactam	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Carbazole	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Chrysene	1	56	1	0.37 U	0.38 U	0.36 U	0.37 U
Dibenz(a,h)anthracene	0.33	0.56	1,000	0.037 U	0.038 U	0.036 U	0.037 U
Dibenzofuran	7	350	210	0.37 U	0.38 U	0.36 U	0.37 U
Diethyl phthalate	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Dimethyl phthalate	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Di-n-butyl phthalate	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Di-n-octyl phthalate	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Fluoranthene	100	500	1,000	0.37 U	0.38 U	0.36 U	0.37 U
Fluorene	30	500	386	0.37 U	0.38 U	0.36 U	0.37 U
Hexachlorobenzene	0.33	6	3.2	0.037 U	0.038 U	0.036 U	0.037 U
Hexachlorobutadiene	NS	NS	NS	0.075 U	0.077 U	0.074 U	0.076 U
Hexachlorocyclopentadiene	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Hexachloroethane	NS	NS	NS	0.037 U	0.038 U	0.036 U	0.037 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	8.2	0.037 U	0.038 U	0.036 U	0.037 U
Isophorone	NS	NS	NS	0.15 U	0.15 U	0.15 U	0.15 U
Naphthalene	12	500	12	0.11 J	0.38 U	0.027 J	0.37 U
Nitrobenzene	NS	NS	NS	0.037 U	0.038 U	0.036 U	0.037 U
N-Nitrosodi-n-propylamine	NS	NS	NS	0.037 U	0.038 U	0.036 U	0.037 U
N-Nitrosodiphenylamine	NS	NS	NS	0.37 U	0.38 U	0.36 U	0.37 U
Pentachlorophenol	0.8	6.7	0.8	0.3 U	0.31 U	0.29 U	0.3 U
Phenanthrene	100	500	1,000	0.37 U	0.38 U	0.36 U	0.37 U
Phenol	0.33	500	0.33	0.37 U	0.38 U	0.36 U	0.37 U
Pyrene	100	500	1,000	0.37 U	0.38 U	0.36 U	0.37 U
Total Conc	NS	NS	NS	0.121	0.12	0.027	0.17

Table 3
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Metals

Client ID Lab Sample ID Date Sampled Dilution mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-1 (1'-3') 460-102242-6 10/5/2015 4/1*	SB-2 (1'-3') 460-102242-7 10/5/2015 4/1*	SB-3 (1'-3') 460-102242-8 10/5/2015 4/1*	SB-4 (1'-3') 460-102242-2 10/5/2015 4/1*	SB-5 (1'-3') 460-102242-1 10/5/2015 4/1*	SB-6 (1'-3') 460-102242-3 10/5/2015 4/1*	SB-7 (2'-4') 460-102242-5 10/5/2015 4/1*	SB-8 (1'-3') 460-102242-4 10/5/2015 4/1*
Aluminum	**NS**	**NS**	**NS**	9,380	11,900	12,600	13,100	13,300	15,000	14,200	11,400
Antimony	**NS**	**NS**	**NS**	3.9 U	3.8 U	3.7 U	4.3 U	4.9 U	4.9 U	4.2 U	3.8 U
Arsenic	**13**	**16**	**16**	6.4	7.6	8.5	6	4.4	8.6	6.5	5.8
Barium	**350**	**400**	**820**	30.8 J	34.2 J	61.8	59.7	81.1	70	31 J	27 J
Beryllium	**7**	**590**	**47**	0.5	0.59	0.7	0.6	0.66	0.74	0.65	0.5
Cadmium	**3**	**9**	**7.5**	0.78 U	0.76 U	0.73 U	0.87 U	0.97 U	0.97 U	0.85 U	0.76 U
Calcium	**NS**	**NS**	**NS**	5,360	5,990	10,200	689 J	1,020 J	1,830	560 J	1,150
Chromium	**30****	**1500****	**41****	15.1	19.3	19.8	15.8	15.7	18.8	18.3	16.5
Cobalt	**NS**	**NS**	**NS**	9.1 J	11.3	13.9	10 J	5 J	12.7	10.2 J	10.1
Copper	**50**	**270**	**1,720**	28.1	33.2	30.8	19.9	11.6	32.8	25.3	24.8
Iron	**NS**	**NS**	**NS**	24,100	29,200	29,900	23,400	19,800	28,800	27,800	24,000
Lead	**63**	**1,000**	**450**	11.5	12.8	16.5	12.4	11.8	22.4	12.1	14.1
Magnesium	**NS**	**NS**	**NS**	4,850	6,620	6,480	3,750	2,830	4,570	5,570	5,640
Manganese	**1,600**	**10,000**	**2,000**	635	761	824	823	451	919	630	704
Mercury	**0.18**	**3**	**0.73**	0.024	0.033	0.033	0.023	0.038	0.069	0.021	0.038
Nickel	**30**	**310**	**130**	23.6	26.9	**31.4**	18.6	14.6	24.6	25	23.4
Potassium	**NS**	**NS**	**NS**	619 J	687 J	832 J	534 J	644 J	756 J	686 J	504 J
Selenium	**3.9**	**1,500**	**4**	3.9 U	3.8 U	3.7 U	4.3 U	4.9 U	4.9 U	4.2 U	3.8 U
Silver	**2**	**1,500**	**8.3**	1.9 U	1.9 U	1.8 U	2.2 U	2.4 U	2.4 U	2.1 U	1.9 U
Sodium	**NS**	**NS**	**NS**	971 U	954 U	913 U	1,090 U	1,210 U	1,210 U	1,060 U	952 U
Thallium	**NS**	**NS**	**NS**	3.9 U	3.8 U	3.7 U	4.3 U	4.9 U	4.9 U	4.2 U	3.8 U
Vanadium	**NS**	**NS**	**NS**	13.7	16.5	18.5	17.9	19.7	20.1	18.2	15.4
Zinc	**109**	**10,000**	**2,480**	66.9	74.3	77.9	55.7	44.7	79.9	69.8	60.8

*** Dilution factor for Mercury = 1**

ˣ Dilution factor for Iron in sample SB-9 = 10

**** Reflects SCO for Chromium, trivalent.**

Table 3
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Metals

Client ID Lab Sample ID Date Sampled Dilution mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-9 (.5'-2.5') 460-102327-1 10/6/2015 4/1*/10^x	SB-10 (1'-3') 460-102327-2 10/6/2015 4/1*	SB-11 (.5'-2.5') 460-102327-3 10/6/2015 4/1*	SB-12 (1'-3') 460-102327-4 10/6/2015 4/1*	SB-13 (.5'-2.5') 460-102327-5 10/6/2015 4/1*	SB-14 (1-3) 460-102327-6 10/6/2015 4/1*	SB-15 (6-8) 460-102327-8 10/6/2015 4/1*	SB-16 (1-3) 460-102327-7 10/6/2015 4/1*
Aluminum	**NS**	**NS**	**NS**	13,000	12,500	10,600	12,100	13,000	12,100	11,700	8,990
Antimony	**NS**	**NS**	**NS**	4.1 U	4.3 U	3.9 U	4.2 U	4.2 U	4.4 U	4.2 U	4 U
Arsenic	**13**	**16**	**16**	***41.3***	9.4	**14.3**	7.2	6.9	7.4	9.2	6.9
Barium	**350**	**400**	**820**	54.2	87.1	183	64.8	56.2	62.5	28.5 J	31 J
Beryllium	**7**	**590**	**47**	0.65	0.68	0.55	0.64	0.69	0.6	0.55	0.45
Cadmium	**3**	**9**	**7.5**	0.82 U	0.85 U	0.79 U	0.83 U	0.84 U	0.88 U	0.84 U	0.79 U
Calcium	**NS**	**NS**	**NS**	2,250	3,900	2,560	3,790	2,950	5,860	28,700	16,900
Chromium	**30****	**1500****	**41****	21.3	20.6	17.8	18.7	18.7	18.1	18.6	14.1
Cobalt	**NS**	**NS**	**NS**	15.8	12.6	12.4	10.8	10.3 J	10.6 J	12.9	8.9 J
Copper	**50**	**270**	**1,720**	32.7	35.5	29.6	33.3	27.9	31.2	36.2	26.4
Iron	**NS**	**NS**	**NS**	46,400	31,800	33,500	25,400	27,000	24,700	30,500	22,600
Lead	**63**	**1,000**	**450**	18.7	17	12.9	16.6	19.3	17	17.2	11
Magnesium	**NS**	**NS**	**NS**	7,200	6,890	5,670	5,250	5,320	5,980	7,570	5,580
Manganese	**1,600**	**10,000**	**2,000**	679	1,170	**4,020**	986	697	1,050	880	658
Mercury	**0.18**	**3**	**0.73**	0.024	0.037	0.058	0.072	0.035	0.071	0.025	0.023
Nickel	**30**	**310**	**130**	**31.2**	29.8	26.5	25.6	24.6	23.4	29.5	21.6
Potassium	**NS**	**NS**	**NS**	960 J	831 J	725 J	840 J	793 J	831 J	780 J	664 J
Selenium	**3.9**	**1,500**	**4**	4.1 U	4.3 U	3.9 U	4.2 U	4.2 U	4.4 U	4.2 U	4 U
Silver	**2**	**1,500**	**8.3**	2 U	2.1 U	2 U	0.82 J	2.1 U	0.53 J	2.1 U	2 U
Sodium	**NS**	**NS**	**NS**	1,020 U	1,070 U	982 U	1,040 U	1,060 U	1,100 U	1,050 U	989 U
Thallium	**NS**	**NS**	**NS**	4.1 U	4.3 U	3.9 U	4.2 U	4.2 U	4.4 U	4.2 U	4 U
Vanadium	**NS**	**NS**	**NS**	19.3	18.7	14.6	17.6	19	17.8	17.7	13.6
Zinc	**109**	**10,000**	**2,480**	93	88.8	73	76.6	71.3	72.3	99	64.1

*** Dilution factor for Mercury = 1**

^x Dilution factor for Iron in sample SB-9 = 10

**** Reflects SCO for Chromium, trivalent.**

Table 4
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Pesticides & Polychlorinated Biphenyls

Client ID Lab Sample ID Date Sampled Dilution Pesticides - mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-1 (1'-3') 460-102242-6 10/5/2015 1	SB-2 (1'-3') 460-102242-7 10/5/2015 1	SB-3 (1'-3') 460-102242-8 10/5/2015 1	SB-4 (1'-3') 460-102242-2 10/5/2015 1	SB-5 (1'-3') 460-102242-1 10/5/2015 1	SB-6 (1'-3') 460-102242-3 10/5/2015 1	SB-7 (2'-4') 460-102242-5 10/5/2015 1	SB-8 (1'-3') 460-102242-4 10/5/2015 1
4,4'-DDD	0.0033	92	14	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
4,4'-DDE	0.0033	62	17	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
4,4'-DDT	0.0033	47	136	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Aldrin	0.005	0.68	0.19	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
alpha-BHC	0.02	3.4	0.02	0.0022 U	0.0022 U	0.0022 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0022 U
alpha-Chlordane	0.094	24	2.9	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
beta-BHC	0.036	3	0.09	0.0022 U	0.0022 U	0.0022 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0022 U
Chlordane (technical)	NS	NS	NS	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
delta-BHC	0.04	500	0.25	0.0022 U	0.0022 U	0.0022 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0022 U
Dieldrin	0.005	1.4	0.1	0.0022 U	0.0022 U	0.0022 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0022 U
Endosulfan I	2.4 TS	200* TS	102	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Endosulfan II	2.4 TS	200* TS	102	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Endosulfan sulfate	2.4 TS	200* TS	1000	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Endrin	0.014	89	0.06	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Endrin aldehyde	NS	NS	NS	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Endrin ketone	NS	NS	NS	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
gamma-BHC (Lindane)	0.1	9.2	0.1	0.0022 U	0.0022 U	0.0022 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0022 U
gamma-Chlordane	NS	NS	NS	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Heptachlor	0.042	15	0.38	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Heptachlor epoxide	NS	NS	NS	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Methoxychlor	NS	NS	NS	0.0073 U	0.0073 U	0.0072 U	0.0084 U	0.0085 U	0.0085 U	0.0083 U	0.0073 U
Toxaphene	NS	NS	NS	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U

Polychlorinated Biphenyls - mg/kg	mg/kg	mg/kg	mg/kg								
Aroclor 1016	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Aroclor 1221	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Aroclor 1232	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Aroclor 1242	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Aroclor 1248	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Aroclor 1254	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Aroclor 1260	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Aroclor 1268	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Aroclor-1262	See Total PCBs	See Total PCBs	See Total PCBs	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U
Total PCBs	0.1	1	3.2	0.073 U	0.073 U	0.072 U	0.084 U	0.085 U	0.085 U	0.083 U	0.073 U

Table 4
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Analytical Results
Pesticides & Polychlorinated Biphenyls

Client ID Lab Sample ID Date Sampled Dilution Pesticides - mg/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	Part 375 Commercial SCO mg/kg	NYSDEC Part 375 Protection of Groundwater SCO mg/kg	SB-9 (.5'-2.5') 460-102327-1 10/6/2015 1	SB-10 (1'-3') 460-102327-2 10/6/2015 1	SB-11 (.5'-2.5') 460-102327-3 10/6/2015 1	SB-12 (1'-3') 460-102327-4 10/6/2015 1	SB-13 (.5'-2.5') 460-102327-5 10/6/2015 1	SB-14 (1-3) 460-102327-6 10/6/2015 1	SB-15 (6-8) 460-102327-8 10/6/2015 1	SB-16 (1-3) 460-102327-7 10/6/2015 1
4,4'-DDD	0.0033	92	14	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
4,4'-DDE	0.0033	62	17	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
4,4'-DDT	0.0033	47	136	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Aldrin	0.005	0.68	0.19	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
alpha-BHC	0.02	3.4	0.02	0.0022 U	0.0022 U	0.0023 U	0.0024 U	0.0022 U	0.0023 U	0.0022 U	0.0023 U
alpha-Chlordane	0.094	24	2.9	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
beta-BHC	0.036	3	0.09	0.0022 U	0.0022 U	0.0023 U	0.0024 U	0.0022 U	0.0023 U	0.0022 U	0.0023 U
Chlordane (technical)	NS	NS	NS	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
delta-BHC	0.04	500	0.25	0.0022 U	0.0022 U	0.0023 U	0.0024 U	0.0022 U	0.0023 U	0.0022 U	0.0023 U
Dieldrin	0.005	1.4	0.1	0.0022 U	0.0022 U	0.0023 U	0.0024 U	0.0022 U	0.0023 U	0.0022 U	0.0023 U
Endosulfan I	2.4 TS	200* TS	102	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Endosulfan II	2.4 TS	200* TS	102	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Endosulfan sulfate	2.4 TS	200* TS	1000	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Endrin	0.014	89	0.06	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Endrin aldehyde	NS	NS	NS	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Endrin ketone	NS	NS	NS	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
gamma-BHC (Lindane)	0.1	9.2	0.1	0.0022 U	0.0022 U	0.0023 U	0.0024 U	0.0022 U	0.0023 U	0.0022 U	0.0023 U
gamma-Chlordane	NS	NS	NS	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Heptachlor	0.042	15	0.38	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Heptachlor epoxide	NS	NS	NS	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Methoxychlor	NS	NS	NS	0.0074 U	0.0075 U	0.0076 U	0.0079 U	0.0075 U	0.0077 U	0.0074 U	0.0076 U
Toxaphene	NS	NS	NS	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Polychlorinated Biphenyls - mg/kg	**mg/kg**	**mg/kg**	**mg/kg**								
Aroclor 1016	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Aroclor 1221	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Aroclor 1232	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Aroclor 1242	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Aroclor 1248	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Aroclor 1254	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Aroclor 1260	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Aroclor 1268	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Aroclor-1262	See Total PCBs	See Total PCBs	See Total PCBs	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U
Total PCBs	0.1	1	3.2	0.074 U	0.075 U	0.076 U	0.079 U	0.075 U	0.077 U	0.074 U	0.076 U

Table 5
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Groundwater Analytical Results
Volatile Organic Compounds

Client ID	NYSDEC	MW-1	MW-2	MW-3	MW-4	MW-5	Trip Blank
Lab Sample ID	Class GA	460-102327-9	460-102327-10	460-102327-11	460-102327-12	460-102327-13	460-102327-14
Date Sampled	Ambient	10/6/2015	10/6/2015	10/6/2015	10/6/2015	10/6/2015	10/6/2015
Dilution	Standard	1	1	1	1	1	1
µg/L	µg/L						
1,1,1-Trichloroethane	5	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	5	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	5	1 U	1 U	1	1 U	1 U	1 U
1,1-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	5	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	0.04	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	3	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	3	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	3	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	NS	50 U	50 U	50 U	50 U	50 U	50 U
2-Butanone (MEK)	50	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	50	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	NS	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	5 U	5 U	5 U	5 U	5 U	5 U
Acetonitrile	NS	10 U	10 U	10 U	10 U	10 U	10 U
Acrolein	5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Benzene	1	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	50	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	5	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	60	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	5	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobromomethane	5	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	50	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	5	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	5	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	5	1 U	1 U	2.5	1 U	1 U	1 U
cis-1,3-Dichloropropene	0.4 TS	1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorobromomethane	50	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	5	0.31 J	1 U	0.32 J	1 U	1 U	1 U
Ethylbenzene	5	1 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	0.0006	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	5	1 U	1 U	1 U	1 U	1 U	1 U
Methyl acetate	NS	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	10	1 U	1 U	1 U	1 U	1 U	1 U
Methylcyclohexane	NS	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	5	1 U	1 U	1 U	1 U	1 U	1 U
m-Xylene & p-Xylene	5	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	5	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	5	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	0.4 TS	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	5	1 U	1 U	0.5 J	1 U	1 U	1 U
Vinyl chloride	2	1 U	1 U	1 U	1 U	1 U	1 U
Total Conc	NS	0.31	0	4.32	0	0	0

Table 6
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Vapor Analytical Results
Volatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution µg/m³	EPA 2001 BASE 90th percentile Indoor µg/m³	NYSDOH 2003 Soil Vapor Indoor Upper Fence µg/m³	NYSDOH 2006 Soil Vapor Intrusion Air Guideline Value µg/m³	SV-1 200-30148-1 10/5/2015 1	SV-1_DL 200-30148-1 10/5/2015 4	SV-2 200-30148-2 10/5/2015 1	SV-2_DL 200-30148-2 10/5/2015 4	SV-3 200-30148-3 10/5/2015 3
1,1,1-Trichloroethane	20.6	2.5	NS	1.1 U	4.4 U	1.1 U	4.4 U	3.3 U
1,1,2,2-Tetrachloroethane	NS	0.4	NS	1.4 U	5.5 U	1.4 U	5.5 U	4.1 U
1,1,2-Trichloroethane	<1.5	0.4	NS	1.1 U	4.4 U	1.1 U	4.4 U	3.3 U
1,1-Dichloroethane	<0.7	0.4	NS	0.81 U	3.2 U	0.81 U	3.2 U	2.4 U
1,1-Dichloroethene	<1.4	0.4	NS	0.79 U	3.2 U	0.79 U	3.2 U	2.4 U
1,2,4-Trichlorobenzene	<6.8	0.5	NS	3.7 U	15 U	3.7 U	15 U	11 U
1,2,4-Trimethylbenzene	9.5	9.8	NS	7.8	7.3 D	5.9	5.1 D	**11**
1,2-Dibromoethane	<1.5	0.4	NS	1.5 U	6.1 U	1.5 U	6.1 U	4.6 U
1,2-Dichlorobenzene	<1.2	0.5	NS	1.2 U	4.8 U	1.2 U	4.8 U	3.6 U
1,2-Dichloroethane	<0.9	0.4	NS	0.81 U	3.2 U	0.81 U	3.2 U	2.4 U
1,2-Dichloroethene, Total	NS	NS	NS	1.6 U	6.3 U	1.6 U	6.3 U	4.8 U
1,2-Dichloropropane	<1.6	0.4	NS	0.92 U	3.7 U	0.92 U	3.7 U	2.8 U
1,2-Dichlorotetrafluoroethane	<6.8	0.4	NS	8.9	8.4 D	1.4 U	5.6 U	4.2 U
1,3,5-Trimethylbenzene	3.7	3.9	NS	2.5	3.9 U	1.9	3.9 U	**4.5**
1,3-Butadiene	<3.0	NS	NS	6.1	5.7 D	6.4	5.6 D	1.3 U
1,3-Dichlorobenzene	<2.4	0.5	NS	1.2 U	4.8 U	1.2 U	4.8 U	3.6 U
1,4-Dichlorobenzene	5.5	1.2	NS	1.2 U	4.8 U	1.2 U	4.8 U	3.6 U
1,4-Dioxane	NS	NS	NS	18 U	72 U	18 U	72 U	54 U
2,2,4-Trimethylpentane	NS	5	NS	0.93 U	3.7 U	1.2	3.7 U	2.8 U
2-Chlorotoluene	NS	NS	NS	1 U	4.1 U	1 U	4.1 U	3.1 U
3-Chloropropene	NS	NS	NS	1.6 U	6.3 U	1.6 U	6.3 U	4.7 U
4-Ethyltoluene	3.6	NS	NS	2.6	3.9 U	2.2	3.9 U	**9.2**
4-Isopropyltoluene	NS	NS	NS	2	4.4 U	1.8	4.4 U	3.3 U
Acetone	98.9	115	NS	**290 E**	**260 D**	**210 E**	**190 D**	**1,300 E**
Benzene	9.4	13	NS	2.9	2.8 D	**18**	**17 D**	1.9 U
Benzyl chloride	<6.8	NS	NS	1 U	4.1 U	1 U	4.1 U	3.1 U
Bromodichloromethane	NS	NS	NS	1.3 U	5.4 U	1.3 U	5.4 U	4 U
Bromoethene(Vinyl Bromide)	NS	NS	NS	0.87 U	3.5 U	0.87 U	3.5 U	2.6 U
Bromoform	NS	NS	NS	2.1 U	8.3 U	2.1 U	8.3 U	6.2 U
Bromomethane	<1.7	0.5	NS	0.78 U	3.1 U	0.78 U	3.1 U	2.3 U
Carbon disulfide	4.2	NS	NS	1.6 U	6.2 U	1.6 U	6.2 U	4.7 U
Carbon tetrachloride	<1.3	1.3	NS	1.3 U	5 U	1.3 U	5 U	3.8 U
Chlorobenzene	<0.9	0.4	NS	0.92 U	3.7 U	0.92 U	3.7 U	2.8 U
Chloroethane	<1.1	0.4	NS	1.3 U	5.3 U	1.7	5.3 U	4 U
Chloroform	1.1	1.2	NS	0.98 U	3.9 U	0.98 U	3.9 U	2.9 U
Chloromethane	3.7	4.2	NS	1 U	4.1 U	**17**	**16 D**	3.1 U
cis-1,2-Dichloroethene	<1.9	0.4	NS	0.79 U	3.2 U	0.79 U	3.2 U	2.4 U
cis-1,3-Dichloropropene	<2.3	0.4	NS	0.91 U	3.6 U	0.91 U	3.6 U	2.7 U
Cumene	NS	0.8	NS	0.98 U	3.9 U	0.98 U	3.9 U	2.9 U
Cyclohexane	NS	6.3	NS	0.93	2.8 U	1.8	2.8 U	2.1 U
Dibromochloromethane	NS	NS	NS	1.7 U	6.8 U	1.7 U	6.8 U	5.1 U
Dichlorodifluoromethane	16.5	10	NS	**30**	**27 D**	9.7	9.9 U	7.4 U
Ethylbenzene	5.7	6.4	NS	**6.4**	**6.1 D**	5.4	5.1 D	**5.9**
Freon 22	NS	NS	NS	1.8 U	7.1 U	1.8 U	7.1 U	5.3 U
Freon TF	3.5	2.5	NS	1.5 U	6.1 U	1.5 U	6.1 U	4.6 U
Hexachlorobutadiene	<6.8	0.5	NS	2.1 U	8.5 U	2.1 U	8.5 U	6.4 U
Isopropyl alcohol	250	NS	NS	12 U	49 U	12 U	49 U	37 U
m,p-Xylene	22.2	11	NS	21	20 D	17	16 D	22
Methyl Butyl Ketone (2-Hexanone)	NS	NS	NS	6.1	8.2 U	2.4	8.2 U	7.1
Methyl Ethyl Ketone	12	16	NS	**18**	**16 D**	12	11 D	**25**
Methyl isobutyl ketone	6	1.9	NS	**15**	**14 D**	**7.9**	**8.9 D**	**11**
Methyl methacrylate	NS	0.4	NS	2 U	8.2 U	6.8	8.2 U	6.1 U
Methyl tert-butyl ether	11.5	14	NS	0.72 U	2.9 U	0.72 U	2.9 U	2.2 U
Methylene Chloride	10	16	60	1.7 U	6.9 U	1.7 U	6.9 U	5.2 U
Naphthalene	5.1	NS	NS	2.6 U	10 U	2.6 U	10 U	7.9 U
n-Butane	NS	NS	NS	35	32 D	52	48 D	3.6 U
n-Butylbenzene	NS	1.1	NS	1.1 U	4.4 U	1.1 U	4.4 U	3.3 U
n-Heptane	NS	18	NS	7.1	6.1 D	7.6	7 D	8.2
n-Hexane	10.2	14	NS	4.2	4 D	5.1	4.8 D	2.7
n-Propylbenzene	NS	1.5	NS	1.9	3.9 U	1.4	3.9 U	2.9 U
sec-Butylbenzene	NS	1.2	NS	1.1 U	4.4 U	1.1 U	4.4 U	3.3 U
Styrene	1.9	1.4	NS	**3.1**	3.4 U	**2.4**	3.4 U	2.6 U
tert-Butyl alcohol	NS	NS	NS	22	61 U	18	61 U	45 U
tert-Butylbenzene	NS	1.3	NS	1.1 U	4.4 U	1.1 U	4.4 U	3.3 U
Tetrachloroethene	15.9	2.5	30	1.4 U	5.4 U	1.4 U	5.4 U	4.1 U
Tetrahydrofuran	NS	0.8	NS	15 U	59 U	15 U	59 U	44 U
Toluene	43	57	NS	17	16 D	17	16 D	17
trans-1,2-Dichloroethene	NS	NS	NS	0.79 U	3.2 U	0.79 U	3.2 U	2.4 U
trans-1,3-Dichloropropene	<1.3	NC	NS	0.91 U	3.6 U	0.91 U	3.6 U	2.7 U
Trichloroethene	4.2	0.5	2	1.1 U	4.3 U	1.1 U	4.3 U	3.2 U
Trichlorofluoromethane	18.1	12	NS	1.8	4.5 U	2.1	4.5 U	3.4 U
Vinyl chloride	<1.9	0.4	NS	0.51 U	2 U	2.6	2.4 D	1.5 U
Xylene (total)	NS	NS	NS	29	27 D	23	22 D	31
Xylene, o-	7.9	7.1	NS	7.6	7.2 D	6.4	6 D	**8.9**

Table 6
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Soil Vapor Analytical Results
Volatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution µg/m³	EPA 2001 BASE 90th percentile Indoor µg/m³	NYSDOH 2003 Soil Vapor Indoor Upper Fence µg/m³	SV-3_DL 200-30148-3 10/5/2015 30	SV-4 200-30148-4 10/5/2015 2	SV-4_DL 200-30148-4 10/5/2015 20	SV-5 200-30148-5 10/5/2015 3	SV-5_DL 200-30148-5 10/5/2015 30
1,1,1-Trichloroethane	20.6	2.5	33 U	3.7	22 U	3.3 U	33 U
1,1,2,2-Tetrachloroethane	NS	0.4	41 U	2.7 U	27 U	4.1 U	41 U
1,1,2-Trichloroethane	<1.5	0.4	33 U	2.2 U	22 U	3.3 U	33 U
1,1-Dichloroethane	<0.7	0.4	24 U	1.6 U	16 U	2.4 U	24 U
1,1-Dichloroethene	<1.4	0.4	24 U	1.6 U	16 U	2.4 U	24 U
1,2,4-Trichlorobenzene	<6.8	0.5	110 U	7.4 U	74 U	11 U	110 U
1,2,4-Trimethylbenzene	9.5	9.8	29 U	8.3	20 U	**11**	29 U
1,2-Dibromoethane	<1.5	0.4	46 U	3.1 U	31 U	4.6 U	46 U
1,2-Dichlorobenzene	<1.2	0.5	36 U	2.4 U	24 U	3.6 U	36 U
1,2-Dichloroethane	<0.9	0.4	24 U	1.6 U	16 U	2.4 U	24 U
1,2-Dichloroethene, Total	NS	NS	48 U	3.2 U	32 U	4.8 U	48 U
1,2-Dichloropropane	<1.6	0.4	28 U	1.8 U	18 U	2.8 U	28 U
1,2-Dichlorotetrafluoroethane	<6.8	0.4	42 U	9	28 U	4.2 U	42 U
1,3,5-Trimethylbenzene	3.7	3.9	29 U	3	20 U	**4.2**	29 U
1,3-Butadiene	<3.0	NS	13 U	0.88 U	8.8 U	3.1	13 U
1,3-Dichlorobenzene	<2.4	0.5	36 U	2.4 U	24 U	3.6 U	36 U
1,4-Dichlorobenzene	5.5	1.2	36 U	2.4 U	24 U	3.6 U	36 U
1,4-Dioxane	NS	NS	540 U	36 U	360 U	54 U	540 U
2,2,4-Trimethylpentane	NS	5	28 U	1.9 U	19 U	2.8 U	28 U
2-Chlorotoluene	NS	NS	31 U	2.1 U	21 U	3.1 U	31 U
3-Chloropropene	NS	NS	47 U	3.1 U	31 U	4.7 U	47 U
4-Ethyltoluene	3.6	NS	29 U	2.8	20 U	**4.6**	29 U
4-Isopropyltoluene	NS	NS	33 U	2.5	22 U	3.3 U	33 U
Acetone	98.9	115	**1,300 D**	**870 E**	**870 D**	**1,600 E**	**1,700 D**
Benzene	9.4	13	19 U	1.6	13 U	3.6	19 U
Benzyl chloride	<6.8	NS	31 U	2.1 U	21 U	3.1 U	31 U
Bromodichloromethane	NS	NS	40 U	2.7 U	27 U	4 U	40 U
Bromoethene(Vinyl Bromide)	NS	NS	26 U	1.7 U	17 U	2.6 U	26 U
Bromoform	NS	NS	62 U	4.1 U	41 U	6.2 U	62 U
Bromomethane	<1.7	0.5	23 U	1.6 U	16 U	2.3 U	23 U
Carbon disulfide	4.2	NS	47 U	3.1 U	31 U	4.7 U	47 U
Carbon tetrachloride	<1.3	1.3	38 U	2.5 U	25 U	3.8 U	38 U
Chlorobenzene	<0.9	0.4	28 U	1.8 U	18 U	2.8 U	28 U
Chloroethane	<1.1	0.4	40 U	2.6 U	26 U	4 U	40 U
Chloroform	1.1	1.2	29 U	2 U	20 U	2.9 U	29 U
Chloromethane	3.7	4.2	31 U	2.1 U	21 U	3.1 U	31 U
cis-1,2-Dichloroethene	<1.9	0.4	24 U	1.6 U	16 U	2.4 U	24 U
cis-1,3-Dichloropropene	<2.3	0.4	27 U	1.8 U	18 U	2.7 U	27 U
Cumene	NS	0.8	29 U	2 U	20 U	2.9 U	29 U
Cyclohexane	NS	6.3	21 U	1.4 U	14 U	2.1 U	21 U
Dibromochloromethane	NS	NS	51 U	3.4 U	34 U	5.1 U	51 U
Dichlorodifluoromethane	16.5	10	74 U	**56**	**56 D**	**28**	74 U
Ethylbenzene	5.7	6.4	26 U	**6.4**	17 U	**6.6**	26 U
Freon 22	NS	NS	53 U	3.5 U	35 U	5.3 U	53 U
Freon TF	3.5	2.5	46 U	**20**	31 U	4.6 U	46 U
Hexachlorobutadiene	<6.8	0.5	64 U	4.3 U	43 U	6.4 U	64 U
Isopropyl alcohol	250	NS	370 U	25 U	250 U	37 U	370 U
m,p-Xylene	22.2	11	65 U	22	43 U	**24**	65 U
Methyl Butyl Ketone (2-Hexanone)	NS	NS	61 U	5.8	41 U	6.9	61 U
Methyl Ethyl Ketone	12	16	44 U	**19**	29 U	**31**	44 U
Methyl isobutyl ketone	6	1.9	61 U	**8.4**	41 U	**8.7**	61 U
Methyl methacrylate	NS	0.4	61 U	4.1 U	41 U	6.1 U	61 U
Methyl tert-butyl ether	11.5	14	22 U	1.4 U	14 U	2.2 U	22 U
Methylene Chloride	10	16	52 U	3.5 U	35 U	5.2 U	52 U
Naphthalene	5.1	NS	79 U	5.2 U	52 U	7.9 U	79 U
n-Butane	NS	NS	36 U	7.1	24 U	16	36 U
n-Butylbenzene	NS	1.1	33 U	2.2 U	22 U	3.3 U	33 U
n-Heptane	NS	18	25 U	5.1	16 U	9.5	25 U
n-Hexane	10.2	14	21 U	1.9	14 U	4.3	21 U
n-Propylbenzene	NS	1.5	29 U	2.1	20 U	2.9 U	29 U
sec-Butylbenzene	NS	1.2	33 U	2.2 U	22 U	3.3 U	33 U
Styrene	1.9	1.4	26 U	**3.4**	17 U	2.6 U	26 U
tert-Butyl alcohol	NS	NS	450 U	49	300 U	45 U	450 U
tert-Butylbenzene	NS	1.3	33 U	2.2 U	22 U	3.3 U	33 U
Tetrachloroethene	15.9	2.5	41 U	2.7 U	27 U	4.1 U	41 U
Tetrahydrofuran	NS	0.8	440 U	29 U	290 U	44 U	440 U
Toluene	43	57	23 U	16	16 D	21	23 U
trans-1,2-Dichloroethene	NS	NS	24 U	1.6 U	16 U	2.4 U	24 U
trans-1,3-Dichloropropene	<1.3	NC	27 U	1.8 U	18 U	2.7 U	27 U
Trichloroethene	4.2	0.5	32 U	2.1 U	21 U	3.2 U	32 U
Trichlorofluoromethane	18.1	12	34 U	**190**	**180 D**	13	34 U
Vinyl chloride	<1.9	0.4	15 U	1 U	10 U	1.5 U	15 U
Xylene (total)	NS	NS	91 U	31	61 U	33	91 U
Xylene, o-	7.9	7.1	26 U	**9.2**	17 U	**9.7**	26 U

Tables 1-6
ver Hage Property
103-111 Hartley Road
Goshen, NY
Subsurface Analytical Results
Notes

GENERAL

NS : No soil cleanup objective listed.

NA : No information available / Not applicable.

U : The analyte was not detected at the indicated concentration.

U* : LCS or LCSD is outside acceptance limits.

D : Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

J : The concentration given is an estimated value. (For *metals* : Sample result is greater than the MDL but below the CRDL.)

E : Result exceeded calibration range.

N : Indicates the presumptive evidence of a compound.

SOIL

Part 375 Soil Cleanup Objectives : Soil Clean-up Objectives listed in NYSDEC (New York State Department of Environmental Conservation) "Part 375" Regulations (6 NYCRR Part 375).

Part 375 Protection of Groundwater : Groundwater Clean-up Objectives listed in NYSDEC (New York State Department of Environmental Conservation) "Part 375" Regulations (6 NYCRR Part 375).

mg/kg : milligrams per kilogram = parts per million (ppm)

Exceedences of the Unrestricted Part 375 Soil Cleanup Objectives are highlighted in bold.
Exceedences of the Industrial Part 375 Soil Cleanup Objectives are highlighted in italics.
Exceedences of the Commercial Part 375 Soil Cleanup Objectives are framed with a bold cell border.
Exceedences of the Protection of Groundwater Part 375 Soil Cleanup Objectives are shaded in gray.

GROUNDWATER

NYSDEC Class GA Ambient Standard : New York State Department of Environmental Conservation Technical and Operational Guidance Series (1.1.1): Class GA Ambient Water Quality Standards and Guidance Values.

µg/L : micrograms per Liter = parts per billion (ppb)

Exceedences of the NYSDEC Glass GA Ambient Standards are highlighted in bold font.

SOIL VAPOR

µg/m^3 : micrograms per cubic meter of air

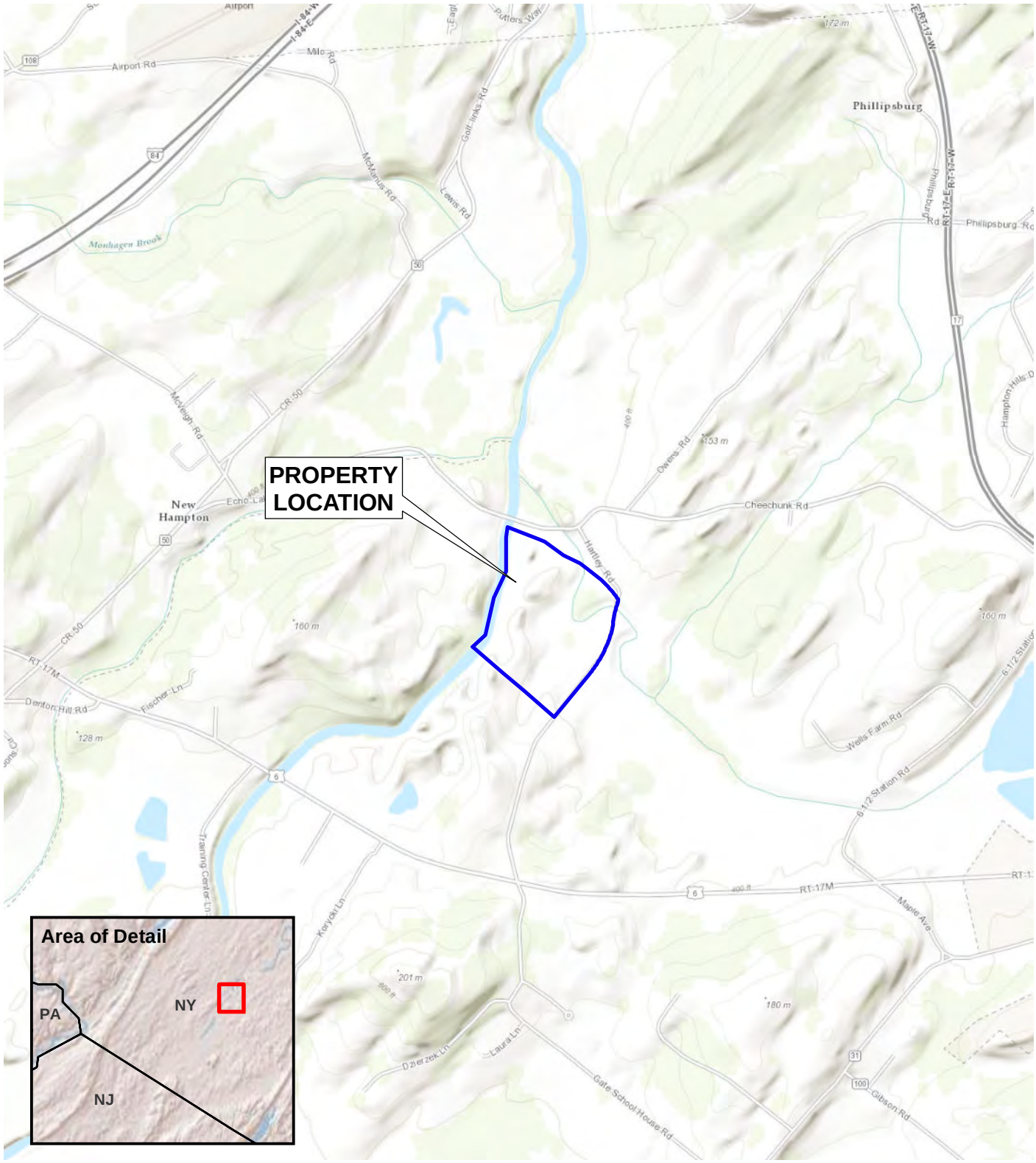
EPA 2001 BASE 90th percentile : 90th Percentile indoor air values from “Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method”, published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C” (October 2006).

NYSDOH 2003 Soil Vapor Indoor Upper Fence : Upper fence indoor air values from "Table C1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes", published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C” (October 2006).

NYSDOH Soil Vapor Intrusion Air Guidance Value : NYSDOH Air Guideline Values (AGVs) and Table 3.3 Matrix 1 and 2 Chemicals presented in the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 (“NYSDOH Vapor Intrusion Guidance Document”), updated September 2013 for change of AGV for PCE.

Exceedences of the EPA 2001 BASE 90th Percentile Indoor Values are highlighted in bold.
Exceedences of the NYSDOH 2003 Soil Vapor Indoor Upper Fence Values are shaded in gray.
Exceedences of the NYSDOH Soil Vapor Intrusion Air Guidance Values are framed with a cell border.

FIGURES



SOURCE
USGS 7.5 Minute Topographic Map
MIDDLETOWN and GOSHEN Quads 2011

0 1,000 2,000
Feet

Amy's Kitchen - Ver Hage Property
Goshen, New York

PROPERTY LOCATION

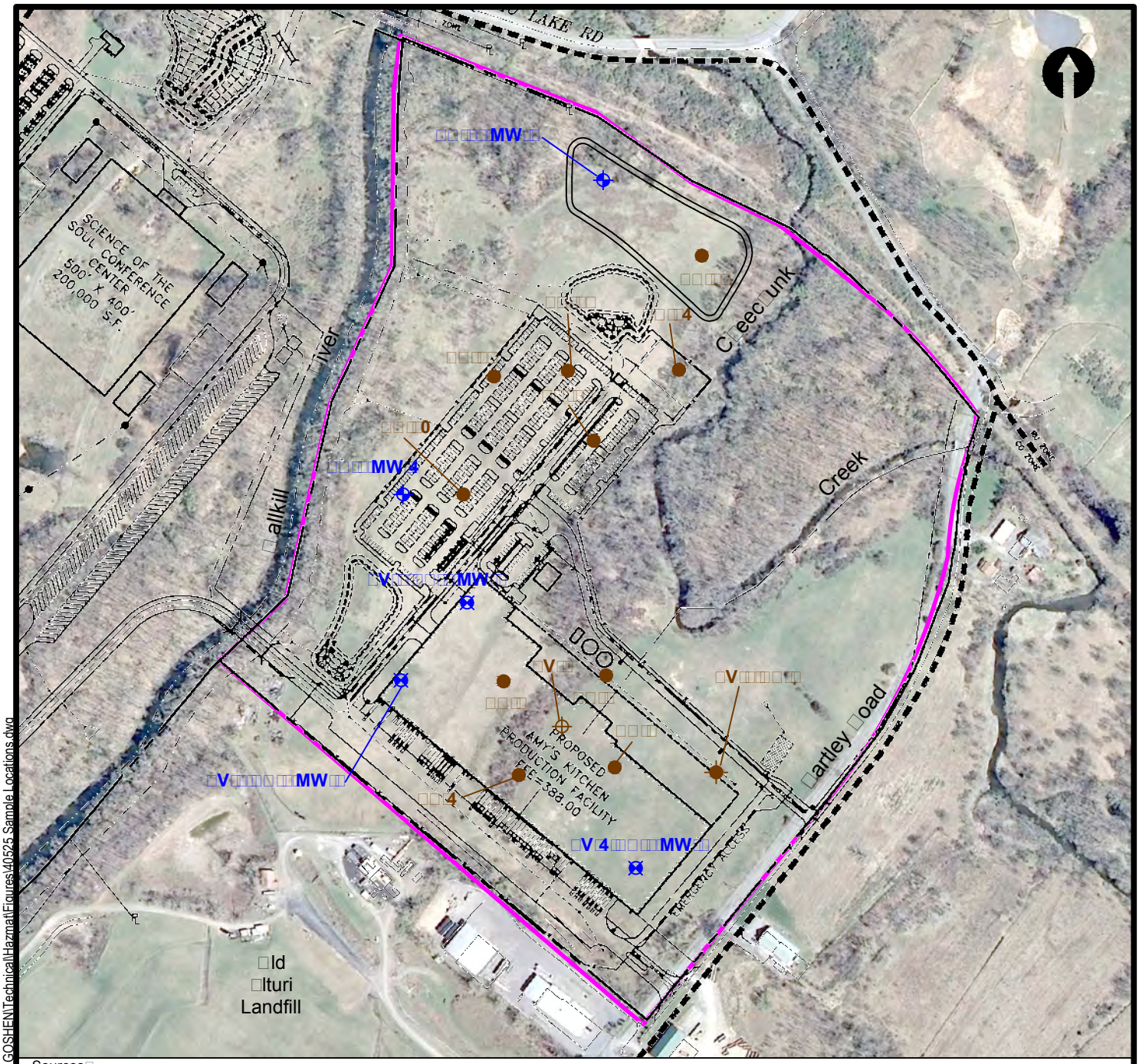
AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
10/30/2015

PROJECT No.
40525

FIGURE
1

©2014 AKRF, Inc. Environmental Consultants Q:\Projects\40525 - AMY'S KITCHEN GOSHEN\Technical\GIS and Graphics\Hazmat\40525 Fig 1 prop location Ver Hage.mxd



Amy's Kitchen Ver Hage Property

Goshen, New York

SAMPLING LOCATION

AKRF

Environmental Consultants

440 Park Avenue South, New York, N.Y. 10016

DATE
10/30/2015

PROJECT No.
40525

SCALE
as shown

FIGURE
2

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APPENDIX A

SOIL BORING AND SOIL VAPOR SAMPLING LOGS

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-1**

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY 10016
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	15:05	Finish	15:30
Time		Time	
Date	10/5/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	34"	Top 6": Topsoil, Brown SAND, some fine Gravel, Silt	ND	ND	ND	ND	SB-1 (1'-3') taken at 14:40
2		Next 20": Brown fine SAND,trace Silt	ND	ND	ND	ND	
3		Bottom 8": Gray dark-brown fine SAND	ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	30"	30": Gray dark-brown SAND, some fine Gravel, trace Silt	ND	ND	ND	ND	
7			ND	ND	ND	ND	
8			ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-2**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	15:40	**Finish**	16:10
Time		**Time**	
Date	10/5/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	32"	Top 2": Topsoil, Brown medium SAND, some fine Gravel, Silt	ND	YES	ND	ND	**SB-2 (1'-3')** taken at 16:05
2		Bottom 30" Gray SAND, some fine Gravel, little Silt	ND	ND	ND	ND	
3			ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	35"	Top 10" Gray/brown medium SAND	ND	YES	ND	ND	
7		Next 6": Brown fine SAND, some clay	ND	ND	ND	ND	
8		Bottom 29": Medium to coarse dark gray SAND	ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-3**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	16:25	**Finish**	16:35
Time		**Time**	
Date	10/5/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	28"	Top 10": Brown fine SAND with silt, some grass throughout	ND	ND	ND	ND	**SB-3 (1'-3')** taken at 16:50
2		Bottom 18" Brown-gray medium SAND with silt and some fine gravel	ND	ND	ND	ND	
3			ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	26"	Top 8" Gray/brown fine SAND, trace fine Gravel	ND	ND	ND	ND	
7		Next 10": Brown fine SAND, some Silt	ND	ND	ND	ND	
8		Bottom 8": White fine GRAVEL	ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-4**

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	11:40	Finish	11:50
Time		Time	
Date	10/5/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	32"	Top 2": Topsoil, Brown medium SAND, trace fine Gravel, Silt	ND	YES	ND	ND	**SB-4 (1'-3')** taken at 12:00
2		Next 22": Brown fine SAND with Silt, some fine Gravel	ND	ND	ND	ND	
3		Bottom 8" Brown fine SAND with Silt	ND	ND	ND	ND	
4			ND	ND	0.1	ND	
5			ND	ND	ND	ND	
6	30"	Top 24" Brown fine SAND	ND	ND	ND	ND	
7		Bottom 8": Brown fine SAND, some Silt	ND	ND	ND	ND	
8			ND	ND	ND	ND	
9			ND	YES	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-5**

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	11:00	Finish	11:15
Time		Time	
Date	10/5/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	40"	Top 10": Brown fine SAND with Silt, some grass	ND	YES	ND	ND	SB-5 (1'-3') taken a 11:20
2		Bottom 30": Gray-brown fine SAND	ND	ND	ND	ND	
3			ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	36"	Top 28" Brown fine SAND	ND	ND	ND	ND	
7		Bottom 8": Brown fine SAND, some Silt	ND	ND	ND	ND	
8			ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-6**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	12:00	**Finish**	12:10
Time		**Time**	
Date	10/5/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	44"	Top 30": Brown fine SAND, some Silt and Clay	ND	ND	ND	ND	**SB-6 (1'-3')** taken a 12:20
2		Bottom 14": Gray-brown fine SAND	ND	ND	ND	ND	
3			ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	40"	Top 24" Brown-gray medium SAND	ND	ND	ND	ND	
7		Bottom 18": Gray fine SAND, some Clay	ND	ND	ND	ND	
8			ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-7**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	13:30	**Finish**	13:40
Time		**Time**	
Date	10/5/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	18"	Top 9": Moist Brown fine SAND	ND	Moist	ND	ND	**SB-7 (2'-4')** taken a 13:45
2		Bottom 9": Dry Brown fine SAND	ND	Moist	ND	ND	
3			ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	30"	Top 2" Brown fine SAND	ND	ND	ND	ND	
7		Bottom 28": Gray-brown medium SAND	ND	ND	ND	ND	
8			ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-8**

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	12:15	Finish	12:25
Time		Time	
Date	10/5/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	19"	Top 5": Brown medium SAND, trace grass	ND	ND	ND	ND	**SB-8 (1'-3')** taken a12:45
2		Bottom 14": Brown medium-fine SAND, some fine Gravel	ND	ND	ND	ND	
3			ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	28"	28": Gray-brown medium SAND, fine Gravel	ND	ND	ND	ND	
7			ND	ND	ND	ND	
8			ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-9**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	12:50	**Finish**	13:05
Time		**Time**	
Date	10/6/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	18"	Top 2": Topsoil, Brown medium SAND, trace fine Gravel, Silt	ND	ND	ND	ND	**SB-9 (0.5'-2.5')** taken a12:45
2		Next 4" Orange-brown medium-fine SAND, some Silt	ND	ND	ND	ND	
3		Bottom 12": Dark brown medium-fine SAND, some Silt	ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	24"	Top 4": Dark gray coarse SAND	ND	ND	ND	ND	
7		Next 12" Gray fine SAND, some Silt and Clay	ND	ND	ND	ND	
8		Next 3": Gray brown medium SAND	ND	ND	ND	ND	
9		Bottom 5": Light gray fine SAND, some Silt	ND	Moist	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-10**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	12:30	**Finish**	12:40
Time		**Time**	
Date	10/6/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	27"	Top 10": Topsoil, Brown fine SAND, grass	ND	ND	ND	ND	**SB-10 (1'-3')** taken at 12:55
2		Next 3": Dark brown medium SAND	ND	ND	ND	ND	
3		Next 5": Dark brown fine SAND	ND	ND	ND	ND	
4		Next 2": Orange-brown medium SAND	ND	ND	ND	ND	
5		Bottom 7": Dark gray/brown fine SAND, some Silt	ND	ND	ND	ND	
6	19"	Top 10": Dark gray/brown fine SAND, some Silt, trace Gravel	ND	ND	ND	ND	
7		Next 2": Medium to fine white Gravel	ND	ND	ND	ND	
8		Bottom 7"" Dark gray/brown fine SAND, some Silt	ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-11**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	12:15	**Finish**	12:25
Time		**Time**	
Date	10/6/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	24"	Top 2": Topsoil, Brown fine SAND, grass Next 1": Crushed rock (shale) Next 2": Brown medium SAND	ND	ND	ND	ND	**SB-11 (0.5'-2.5')** taken at 12:35
2		Next 3": Crushed rock (shale) Next 3": Brown medium SAND	ND	ND	ND	ND	
3		Next 8": Orange-brown medium SAND Next 1": Crushed rock (shale)	ND	ND	ND	ND	
4		Bottom 4" Light brown medium to fine SAND	ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	18"	Top 6": Brown medium to fine SAND	ND	ND	ND	ND	
7		Next 3": Medium to fine GRAVEL	ND	ND	ND	ND	
8		Bottom 9": Light brown medium to fine SAND	ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-12**

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	11:55	Finish	12:05
Time		Time	
Date	10/6/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	26"	Top 10": Topsoil, Brown fine SAND, trace fine Gravel, grass	ND	ND	ND	ND	SB-12 (1'-3') taken at 12:25
2		Next 4": Brown medium SAND, trace fine Gravel	ND	ND	ND	ND	
3		Bottom 12": Dark gray fine SAND, some Silt	ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	38"	Top 6": Dark gray/brown fine SAND, some Silt, trace Gravel	ND	ND	ND	ND	
7		Next 20": Light gray/brown fine SAND, some Silt	ND	ND	ND	ND	
8		Bottom 12: White fine GRAVEL, some fine Sand	ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-13**

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	9:20	Finish	9:30
Time		Time	
Date	10/6/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	60"	Top 2": Topsoil, Brown fine SAND, trace fine Gravel, grass	ND	ND	ND	ND	**SB-13 (0.5'-2.5')** taken at 9:35
2		Next 28": Brown fine SAND, trace Gravel, some Silt	ND	ND	ND	ND	
3		Bottom 30: Dark brown/gray medium SAND, trace Gravel	ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	52"	Top 48": Dark gray fine SAND, some Silt	ND	ND	ND	ND	
7		Next 2: Dark gray medium SAND	ND	ND	ND	ND	
8		Next 1": Red medium GRAVEL	ND	ND	ND	ND	
9		Bottom 1": Dark gray medium SAND	ND	ND	ND	ND	
10			ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-14**

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	9:45	Finish	9:55
Time		Time	
Date	10/6/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	44"	Top 10": Moist brown fine SAND, trace fine Silt, grass	ND	ND	ND	ND	**SB-14 (1'-3')** taken at 9:55
2		Next 22": Brown fine SAND, some Silt and Clay	ND	ND	ND	ND	
3		Bottom 12": Gray fine SAND, some Silt	ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	18"	Gray fine SAND, some Silt	ND	ND	ND	ND	
7			ND	ND	ND	ND	
8			ND	ND	ND	ND	
9			ND	ND	ND	ND	
10			ND	ND	0.9	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-15**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	10:30	**Finish**	10:40
Time		**Time**	
Date	10/6/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	24"	Top 4" Brown medium SAND, trace fine Gravel	ND	ND	ND	ND	
2		Next 16": Light gray/brown SAND, some Silt	ND	ND	ND	ND	
3		Bottom 4": Orange/dark brown fine SAND	ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	38"	Top 4": Orange/brown fine SAND, some Silt	ND	ND	ND	ND	**SB-15 (6'-8')** taken at 11:45
7		Next 6" Gray fine SAND	ND	ND	ND	ND	
8		Next 16": Brown/dark gray medium SAND	ND	ND	ND	ND	
9		Next 4": Gray sine SAND	ND	ND	ND	ND	
10		Bottom 8": Brown/gray medium SAND	ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

ver Hage Property - Goshen, NY

AKRF Project Number: 40525-2002A8

Boring No. **SB-16**

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	70 °F, Clear
Sampler:	E. Matamoros

Drilling			
Start	10:03	Finish	10:09
Time		Time	
Date	10/6/2015		

Depth (feet)	Recovery (Inches)	Surface Condition: GRASS	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	28"	Top 6": Brown fine SAND, some Silt, grass	ND	ND	ND	ND	SB-16 (1'-3') taken at 10:15
2		Next 10": Dark brown medium SAND	ND	ND	ND	ND	
3		Bottom 12": Brown fine SAND	ND	ND	ND	ND	
4			ND	ND	ND	ND	
5			ND	ND	ND	ND	
6	25"	Top 6": Dark gray fine SAND, some Silt	ND	ND	ND	ND	
7		Next 3": White fine to medium GRAVEL	ND	ND	ND	ND	
8		Next 6": Dark gray medium SAND	ND	ND	ND	ND	
9		Next 2": White fine to medium GRAVEL	ND	ND	ND	ND	
10		Bottom 8": Dark gray fine SAND, some Silt	ND	ND	ND	ND	
11		End of boring at 10 feet below grade.					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes:

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081), and TAL metals (6000/7000).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	40525	**Client:**	Amy's Kitchen
Project Location:	Ver Hage Property - Goshen, NY	**Sampled By:**	E. Matamoros
Date:	10/5/2015		

Sample ID: SV-1

Canister ID: 4927

Flow Controller ID: 2581

Purging

Time Started: 15:20

Time Stopped: 15:30

Vol. Purged: 1 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	15:30	**Vacuum:**	-30 inHg
Time Stopped:	17:27	**Vacuum:**	-5 inHg

Field Sample

PID Calibration: 100 ppm

PID Reading: 2.3 ppm

He Reading 0.0 %

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	40525	**Client:**	Amy's Kitchen
Project Location:	Ver Hage Property - Goshen, NY	**Sampled By:**	E. Matamoros
Date:	10/5/2015		

Sample ID: SV-2

Canister ID: 2968

Flow Controller ID: 4754

Purging

Time Started: 15:45

Time Stopped: 15:55

Vol. Purged: 1 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	15:55	**Vacuum:**	-29 inHg
Time Stopped:	17:45	**Vacuum:**	-8 inHg

Field Sample

PID Calibration: 100 ppm

PID Reading: 1.6 ppm

He Reading 0.0 %

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	40525	**Client:**	Amy's Kitchen
Project Location:	Ver Hage Property - Goshen, NY	**Sampled By:**	E. Matamoros
Date:	10/5/2015		

Sample ID: SV-3

Canister ID: 3460

Flow Controller ID: 3993

Purging

Time Started: 11:30

Time Stopped: 11:40

Vol. Purged: 1 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	11:50	**Vacuum:**	-30 inHg
Time Stopped:	13:48	**Vacuum:**	-6 inHg

Field Sample

PID Calibration: 100 ppm

PID Reading: 1.8 ppm

He Reading 0.0 %

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	40525	**Client:**	Amy's Kitchen
Project Location:	Ver Hage Property - Goshen, NY	**Sampled By:**	E. Matamoros
Date:	10/5/2015		

Sample ID: SV-4

Canister ID: 3253

Flow Controller ID: 4185

Purging

Time Started: 13:05

Time Stopped: 13:15

Vol. Purged: 1 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	13:15	**Vacuum:**	-30 inHg
Time Stopped:	15:15	**Vacuum:**	-5 inHg

Field Sample

PID Calibration: 100 ppm

PID Reading: 2.6 ppm

He Reading 0.0 %

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	40525	**Client:**	Amy's Kitchen
Project Location:	Ver Hage Property - Goshen, NY	**Sampled By:**	E. Matamoros
Date:	10/5/2015		

Sample ID: SV-5

Canister ID: 4285

Flow Controller ID: 5207

Purging

Time Started: 12:22

Time Stopped: 12:32

Vol. Purged: 1 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	12:33	**Vacuum:**	-30 inHg
Time Stopped:	14:30	**Vacuum:**	-9 inHg

Field Sample

PID Calibration: 100 ppm

PID Reading: 3.2 ppm

He Reading 0.0 %

APPENDIX B
PHOTO LOG

Photograph 1. Installing soil boring SB-15 in proposed stormwater basin.

Photograph 2. Recovered material and field screening from soil boring.

Photograph 3. Decontamination of drilling material.

Photograph 4. Temporary well set at location GW-2.

APPENDIX C
LABORATORY ANALYTICAL DATA SHEETS

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 460-102242-1

Job Description: ver Hage Property

For:
AKRF Inc
440 Park Avenue South
7th Floor
New York, NY 10016

Attention: Becky Kinal

Approved for release.
Shalini Williams
Project Management Assistant II
10/13/2015 10:35 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
10/13/2015

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

CASE NARRATIVE

Client: AKRF Inc

Project: ver Hage Property

Report Number: 460-102242-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 10/6/2015 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.2º C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS
Samples SB-5 (1'-3') (460-102242-1), SB-4 (1'-3') (460-102242-2), SB-6 (1'-3') (460-102242-3), SB-8 (1'-3') (460-102242-4), SB-7 (2'-4') (460-102242-5), SB-1 (1'-3') (460-102242-6), SB-2 (1'-3') (460-102242-7) and SB-3 (1'-3') (460-102242-8) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were prepared on 10/06/2015 and analyzed on 10/07/2015 and 10/08/2015.

The continuing calibration verification (CCV) analyzed in batch 460-327312 was outside the method criteria for the following analyte: Acrolein. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

The continuing calibration verification (CCV) analyzed in batch 460-327361 was outside the method criteria for the following analytes: Acrolein and 1,1,2-Trichloro-1,2,2-trifluoroethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected laboratory prep blank and found to be acceptable. As indicated in the reference method, laboratory prep blank analysis may proceed; however, any detection for the affected analytes is considered estimated.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 460-327361 recovered outside control limits for the following analytes: Carbon disulfide and 1,1,2-Trichloro-1,2,2-trifluoroethane. These analytes were not detected in the associated laboratory prep blank; therefore, the data have been reported.

1,1,2-Trichloro-1,2,2-trifluoroethane failed the recovery criteria low for LCS 460-327361/3. 1,1,2-Trichloro-1,2,2-trifluoroethane and Carbon disulfide failed the recovery criteria low for LCSD 460-327361/4.

Methylene Chloride was detected in method blank LB3 460-326967/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Refer to the QC report for details.

No other difficulties were encountered during the Volatile organics analysis.

All other quality control parameters were within the acceptance limits.

PESTICIDES
Samples SB-5 (1'-3') (460-102242-1), SB-4 (1'-3') (460-102242-2), SB-6 (1'-3') (460-102242-3), SB-8 (1'-3') (460-102242-4), SB-7 (2'-4')

(460-102242-5), SB-1 (1'-3') (460-102242-6), SB-2 (1'-3') (460-102242-7) and SB-3 (1'-3') (460-102242-8) were analyzed for Pesticides in accordance with EPA SW-846 Methods 8081B. The samples were prepared and analyzed on 10/07/2015.

gamma-Chlordane failed the recovery criteria high for the MSD of sample 460-102235-1 in batch 460-327150. gamma-Chlordane exceeded the RPD limit.

Refer to the QC report for details.

No other difficulties were encountered during the Pesticides analysis.

All other quality control parameters were within the acceptance limits.

POLYCHLORINATED BIPHENYLS

Samples SB-5 (1'-3') (460-102242-1), SB-4 (1'-3') (460-102242-2), SB-6 (1'-3') (460-102242-3), SB-8 (1'-3') (460-102242-4), SB-7 (2'-4') (460-102242-5), SB-1 (1'-3') (460-102242-6), SB-2 (1'-3') (460-102242-7) and SB-3 (1'-3') (460-102242-8) were analyzed for polychlorinated biphenyls in accordance with EPA SW-846 Method 8082A. The samples were prepared and analyzed on 10/07/2015.

No difficulties were encountered during the PCBs analysis.

All quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS

Samples SB-5 (1'-3') (460-102242-1), SB-4 (1'-3') (460-102242-2), SB-6 (1'-3') (460-102242-3), SB-8 (1'-3') (460-102242-4), SB-7 (2'-4') (460-102242-5), SB-1 (1'-3') (460-102242-6), SB-2 (1'-3') (460-102242-7) and SB-3 (1'-3') (460-102242-8) were analyzed for Semivolatile organic compounds in accordance with EPA SW-846 Method 8270D. The samples were prepared on 10/07/2015 and analyzed on 10/09/2015 and 10/10/2015.

Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: SB-6 (1'-3') (460-102242-3). These results have been reported and qualified.

The continuing calibration verification (CCV) analyzed in batch 460-327862 was outside the method criteria for the following analyte(s): 3,3'-Dichlorobenzidine, Indeno[1,2,3-cd]pyrene, Benzo[b]fluoranthene, 4,6-Dinitro-2-methylphenol and Dibenz(a,h)anthracene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

2-Fluorobiphenyl failed the surrogate recovery criteria high for SB-6 (1'-3') (460-102242-3).

Several analytes failed the recovery criteria low for the MS/MSD of sample 460-102074-3 in batch 460-327457. 3,3'-Dichlorobenzidine and Benzaldehyde exceeded the RPD limit.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

METALS

Samples SB-5 (1'-3') (460-102242-1), SB-4 (1'-3') (460-102242-2), SB-6 (1'-3') (460-102242-3), SB-8 (1'-3') (460-102242-4), SB-7 (2'-4') (460-102242-5), SB-1 (1'-3') (460-102242-6), SB-2 (1'-3') (460-102242-7) and SB-3 (1'-3') (460-102242-8) were analyzed for Metals in accordance with EPA SW-846 6010C. The samples were prepared and analyzed on 10/08/2015.

Antimony, Copper, Iron and Lead failed the recovery criteria low for the MS of sample 460-102323-1 in batch 460-327514. Aluminum failed the recovery criteria high.

Iron, Potassium and Sodium exceeded the RPD limit for the duplicate of sample 460-102323-1.

Refer to the QC report for details.

Samples SB-5 (1'-3') (460-102242-1)[4X], SB-4 (1'-3') (460-102242-2)[4X], SB-6 (1'-3') (460-102242-3)[4X], SB-8 (1'-3') (460-102242-4)[4X], SB-7 (2'-4') (460-102242-5)[4X], SB-1 (1'-3') (460-102242-6)[4X], SB-2 (1'-3') (460-102242-7)[4X] and SB-3 (1'-3') (460-102242-8)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the Metals analysis.

All other quality control parameters were within the acceptance limits.

TOTAL MERCURY
Samples SB-5 (1'-3') (460-102242-1), SB-4 (1'-3') (460-102242-2), SB-6 (1'-3') (460-102242-3), SB-8 (1'-3') (460-102242-4), SB-7 (2'-4') (460-102242-5), SB-1 (1'-3') (460-102242-6), SB-2 (1'-3') (460-102242-7) and SB-3 (1'-3') (460-102242-8) were analyzed for total mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 10/09/2015.

No difficulties were encountered during the Hg analysis.

All quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE
Samples SB-5 (1'-3') (460-102242-1), SB-4 (1'-3') (460-102242-2), SB-6 (1'-3') (460-102242-3), SB-8 (1'-3') (460-102242-4), SB-7 (2'-4') (460-102242-5), SB-1 (1'-3') (460-102242-6), SB-2 (1'-3') (460-102242-7) and SB-3 (1'-3') (460-102242-8) were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D) Modified. The samples were analyzed on 10/06/2015.

No difficulties were encountered during the %solids/moisture analysis.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 460-102242-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102242-1	**SB-5 (1'-3')**					
Chrysene		40	J	420	ug/Kg	8270D
Fluoranthene		76	J	420	ug/Kg	8270D
Phenanthrene		28	J	420	ug/Kg	8270D
Pyrene		78	J	420	ug/Kg	8270D
Aluminum		13300		48.5	mg/Kg	6010C
Arsenic		4.4		3.6	mg/Kg	6010C
Barium		81.1		48.5	mg/Kg	6010C
Beryllium		0.66		0.49	mg/Kg	6010C
Calcium		1020	J	1210	mg/Kg	6010C
Cobalt		5.0	J	12.1	mg/Kg	6010C
Chromium		15.7		2.4	mg/Kg	6010C
Copper		11.6		6.1	mg/Kg	6010C
Iron		19800		36.4	mg/Kg	6010C
Potassium		644	J	1210	mg/Kg	6010C
Magnesium		2830		1210	mg/Kg	6010C
Manganese		451		3.6	mg/Kg	6010C
Nickel		14.6		9.7	mg/Kg	6010C
Lead		11.8		2.4	mg/Kg	6010C
Vanadium		19.7		12.1	mg/Kg	6010C
Zinc		44.7		7.3	mg/Kg	6010C
Mercury		0.038		0.021	mg/Kg	7471B
Percent Moisture		21.5		1.0	%	Moisture
Percent Solids		78.5		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc Job Number: 460-102242-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102242-2	**SB-4 (1'-3')**					
Aluminum		13100		43.4	mg/Kg	6010C
Arsenic		6.0		3.3	mg/Kg	6010C
Barium		59.7		43.4	mg/Kg	6010C
Beryllium		0.60		0.43	mg/Kg	6010C
Calcium		689	J	1090	mg/Kg	6010C
Cobalt		10	J	10.9	mg/Kg	6010C
Chromium		15.8		2.2	mg/Kg	6010C
Copper		19.9		5.4	mg/Kg	6010C
Iron		23400		32.6	mg/Kg	6010C
Potassium		534	J	1090	mg/Kg	6010C
Magnesium		3750		1090	mg/Kg	6010C
Manganese		823		3.3	mg/Kg	6010C
Nickel		18.6		8.7	mg/Kg	6010C
Lead		12.4		2.2	mg/Kg	6010C
Vanadium		17.9		10.9	mg/Kg	6010C
Zinc		55.7		6.5	mg/Kg	6010C
Mercury		0.023		0.021	mg/Kg	7471B
Percent Moisture		19.9		1.0	%	Moisture
Percent Solids		80.1		1.0	%	Moisture
460-102242-3	**SB-6 (1'-3')**					
Aluminum		15000		48.5	mg/Kg	6010C
Arsenic		8.6		3.6	mg/Kg	6010C
Barium		70.0		48.5	mg/Kg	6010C
Beryllium		0.74		0.49	mg/Kg	6010C
Calcium		1830		1210	mg/Kg	6010C
Cobalt		12.7		12.1	mg/Kg	6010C
Chromium		18.8		2.4	mg/Kg	6010C
Copper		32.8		6.1	mg/Kg	6010C
Iron		28800		36.4	mg/Kg	6010C
Potassium		756	J	1210	mg/Kg	6010C
Magnesium		4570		1210	mg/Kg	6010C
Manganese		919		3.6	mg/Kg	6010C
Nickel		24.6		9.7	mg/Kg	6010C
Lead		22.4		2.4	mg/Kg	6010C
Vanadium		20.1		12.1	mg/Kg	6010C
Zinc		79.9		7.3	mg/Kg	6010C
Mercury		0.069		0.020	mg/Kg	7471B
Percent Moisture		21.5		1.0	%	Moisture
Percent Solids		78.5		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc Job Number: 460-102242-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102242-4	**SB-8 (1'-3')**					
Aluminum		11400		38.1	mg/Kg	6010C
Arsenic		5.8		2.9	mg/Kg	6010C
Barium		27.0	J	38.1	mg/Kg	6010C
Beryllium		0.50		0.38	mg/Kg	6010C
Calcium		1150		952	mg/Kg	6010C
Cobalt		10.1		9.5	mg/Kg	6010C
Chromium		16.5		1.9	mg/Kg	6010C
Copper		24.8		4.8	mg/Kg	6010C
Iron		24000		28.6	mg/Kg	6010C
Potassium		504	J	952	mg/Kg	6010C
Magnesium		5640		952	mg/Kg	6010C
Manganese		704		2.9	mg/Kg	6010C
Nickel		23.4		7.6	mg/Kg	6010C
Lead		14.1		1.9	mg/Kg	6010C
Vanadium		15.4		9.5	mg/Kg	6010C
Zinc		60.8		5.7	mg/Kg	6010C
Mercury		0.038		0.017	mg/Kg	7471B
Percent Moisture		7.9		1.0	%	Moisture
Percent Solids		92.1		1.0	%	Moisture
460-102242-5	**SB-7 (2'-4')**					
Aluminum		14200		42.4	mg/Kg	6010C
Arsenic		6.5		3.2	mg/Kg	6010C
Barium		31.0	J	42.4	mg/Kg	6010C
Beryllium		0.65		0.42	mg/Kg	6010C
Calcium		560	J	1060	mg/Kg	6010C
Cobalt		10.2	J	10.6	mg/Kg	6010C
Chromium		18.3		2.1	mg/Kg	6010C
Copper		25.3		5.3	mg/Kg	6010C
Iron		27800		31.8	mg/Kg	6010C
Potassium		686	J	1060	mg/Kg	6010C
Magnesium		5570		1060	mg/Kg	6010C
Manganese		630		3.2	mg/Kg	6010C
Nickel		25.0		8.5	mg/Kg	6010C
Lead		12.1		2.1	mg/Kg	6010C
Vanadium		18.2		10.6	mg/Kg	6010C
Zinc		69.8		6.4	mg/Kg	6010C
Mercury		0.021		0.020	mg/Kg	7471B
Percent Moisture		19.4		1.0	%	Moisture
Percent Solids		80.6		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc Job Number: 460-102242-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102242-6	**SB-1 (1'-3')**					
Aluminum		9380		38.8	mg/Kg	6010C
Arsenic		6.4		2.9	mg/Kg	6010C
Barium		30.8	J	38.8	mg/Kg	6010C
Beryllium		0.50		0.39	mg/Kg	6010C
Calcium		5360		971	mg/Kg	6010C
Cobalt		9.1	J	9.7	mg/Kg	6010C
Chromium		15.1		1.9	mg/Kg	6010C
Copper		28.1		4.9	mg/Kg	6010C
Iron		24100		29.1	mg/Kg	6010C
Potassium		619	J	971	mg/Kg	6010C
Magnesium		4850		971	mg/Kg	6010C
Manganese		635		2.9	mg/Kg	6010C
Nickel		23.6		7.8	mg/Kg	6010C
Lead		11.5		1.9	mg/Kg	6010C
Vanadium		13.7		9.7	mg/Kg	6010C
Zinc		66.9		5.8	mg/Kg	6010C
Mercury		0.024		0.017	mg/Kg	7471B
Percent Moisture		8.1		1.0	%	Moisture
Percent Solids		91.9		1.0	%	Moisture
460-102242-7	**SB-2 (1'-3')**					
Aluminum		11900		38.1	mg/Kg	6010C
Arsenic		7.6		2.9	mg/Kg	6010C
Barium		34.2	J	38.1	mg/Kg	6010C
Beryllium		0.59		0.38	mg/Kg	6010C
Calcium		5990		954	mg/Kg	6010C
Cobalt		11.3		9.5	mg/Kg	6010C
Chromium		19.3		1.9	mg/Kg	6010C
Copper		33.2		4.8	mg/Kg	6010C
Iron		29200		28.6	mg/Kg	6010C
Potassium		687	J	954	mg/Kg	6010C
Magnesium		6620		954	mg/Kg	6010C
Manganese		761		2.9	mg/Kg	6010C
Nickel		26.9		7.6	mg/Kg	6010C
Lead		12.8		1.9	mg/Kg	6010C
Vanadium		16.5		9.5	mg/Kg	6010C
Zinc		74.3		5.7	mg/Kg	6010C
Mercury		0.033		0.018	mg/Kg	7471B
Percent Moisture		8.0		1.0	%	Moisture
Percent Solids		92.0		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc Job Number: 460-102242-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102242-8	**SB-3 (1'-3')**					
Aluminum		12600		36.5	mg/Kg	6010C
Arsenic		8.5		2.7	mg/Kg	6010C
Barium		61.8		36.5	mg/Kg	6010C
Beryllium		0.70		0.37	mg/Kg	6010C
Calcium		10200		913	mg/Kg	6010C
Cobalt		13.9		9.1	mg/Kg	6010C
Chromium		19.8		1.8	mg/Kg	6010C
Copper		30.8		4.6	mg/Kg	6010C
Iron		29900		27.4	mg/Kg	6010C
Potassium		832	J	913	mg/Kg	6010C
Magnesium		6480		913	mg/Kg	6010C
Manganese		824		2.7	mg/Kg	6010C
Nickel		31.4		7.3	mg/Kg	6010C
Lead		16.5		1.8	mg/Kg	6010C
Vanadium		18.5		9.1	mg/Kg	6010C
Zinc		77.9		5.5	mg/Kg	6010C
Mercury		0.033		0.016	mg/Kg	7471B
Percent Moisture		7.2		1.0	%	Moisture
Percent Solids		92.8		1.0	%	Moisture

METHOD SUMMARY

Client: AKRF Inc Job Number: 460-102242-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Closed System Purge and Trap	TAL EDI		SW846 5035
Semivolatile Organic Compounds (GC/MS)	TAL EDI	SW846 8270D	
Microwave Extraction	TAL EDI		SW846 3546
Organochlorine Pesticides (GC)	TAL EDI	SW846 8081B	
Microwave Extraction	TAL EDI		SW846 3546
Polychlorinated Biphenyls (PCBs) by Gas Chromatography	TAL EDI	SW846 8082A	
Microwave Extraction	TAL EDI		SW846 3546
Metals (ICP)	TAL EDI	SW846 6010C	
Preparation, Metals	TAL EDI		SW846 3050B
Mercury (CVAA)	TAL EDI	SW846 7471B	
Preparation, Mercury	TAL EDI		SW846 7471B
Percent Moisture	TAL EDI	EPA Moisture	

Lab References:

TAL EDI = TestAmerica Edison

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: AKRF Inc

Job Number: 460-102242-1

Method	Analyst	Analyst ID
SW846 8260C	Tupayachi, Audberto	AAT
SW846 8270D	Manlangit, Ferdie	FAM
SW846 8081B	Kapoor, Sita	SAK
SW846 8082A	Boykin, Carol B	CBB
SW846 6010C	Chang, Churn Der	CDC
SW846 7471B	Staib, Thomas	TJS
EPA Moisture	Armbruster, Chris	CJA

SAMPLE SUMMARY

Client: AKRF Inc

Job Number: 460-102242-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-102242-1	SB-5 (1'-3')	Solid	10/05/2015 1120	10/06/2015 0930
460-102242-2	SB-4 (1'-3')	Solid	10/05/2015 1200	10/06/2015 0930
460-102242-3	SB-6 (1'-3')	Solid	10/05/2015 1220	10/06/2015 0930
460-102242-4	SB-8 (1'-3')	Solid	10/05/2015 1245	10/06/2015 0930
460-102242-5	SB-7 (2'-4')	Solid	10/05/2015 1345	10/06/2015 0930
460-102242-6	SB-1 (1'-3')	Solid	10/05/2015 1440	10/06/2015 0930
460-102242-7	SB-2 (1'-3')	Solid	10/05/2015 1605	10/06/2015 0930
460-102242-8	SB-3 (1'-3')	Solid	10/05/2015 1650	10/06/2015 0930

SAMPLE RESULTS

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1 Date Sampled: 10/05/2015 1120
Client Matrix: Solid % Moisture: 21.5 Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C Analysis Batch: 460-327312 Instrument ID: CVOAMS4
Prep Method: 5035 Prep Batch: 460-326967 Lab File ID: D14881.D
Dilution: 1.0 Initial Weight/Volume: 4.44 g
Analysis Date: 10/07/2015 2337 Final Weight/Volume: 5 mL
Prep Date: 10/06/2015 1122

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.4	U	0.55	1.4
1,1,2,2-Tetrachloroethane		1.4	U	0.24	1.4
1,1,2-Trichloro-1,2,2-trifluoroethane		1.4	U	0.63	1.4
1,1,2-Trichloroethane		1.4	U	0.40	1.4
1,1-Dichloroethane		1.4	U	0.49	1.4
1,1-Dichloroethene		1.4	U	0.59	1.4
1,2,3-Trichlorobenzene		1.4	U	0.16	1.4
1,2,4-Trichlorobenzene		1.4	U	0.46	1.4
1,2-Dibromo-3-Chloropropane		1.4	U	0.67	1.4
1,2-Dichlorobenzene		1.4	U	0.20	1.4
1,2-Dichloroethane		1.4	U	0.16	1.4
1,2-Dichloropropane		1.4	U	0.24	1.4
1,3-Dichlorobenzene		1.4	U	0.17	1.4
1,4-Dichlorobenzene		1.4	U	0.19	1.4
1,4-Dioxane		29	U	9.2	29
2-Butanone (MEK)		7.2	U	1.1	7.2
2-Hexanone		7.2	U	1.3	7.2
4-Methyl-2-pentanone (MIBK)		7.2	U	3.2	7.2
Acetone		7.2	U	1.5	7.2
Acetonitrile		14	U	5.8	14
Acrolein		140	U	22	140
Benzene		1.4	U	0.29	1.4
Bromoform		1.4	U	0.19	1.4
Bromomethane		1.4	U	0.46	1.4
Carbon disulfide		1.4	U	0.62	1.4
Carbon tetrachloride		1.4	U	0.62	1.4
Chlorobenzene		1.4	U	0.20	1.4
Chlorobromomethane		1.4	U	0.24	1.4
Chlorodibromomethane		1.4	U	0.22	1.4
Chloroethane		1.4	U	0.50	1.4
Chloroform		1.4	U	0.30	1.4
Chloromethane		1.4	U	0.55	1.4
cis-1,2-Dichloroethene		1.4	U	0.32	1.4
cis-1,3-Dichloropropene		1.4	U	0.22	1.4
Cyclohexane		1.4	U	0.66	1.4
Dichlorobromomethane		1.4	U	0.55	1.4
Dichlorodifluoromethane		1.4	U	0.46	1.4
Ethylbenzene		1.4	U	0.26	1.4
Ethylene Dibromide		1.4	U	0.17	1.4
Isopropylbenzene		1.4	U	0.24	1.4
Methyl acetate		7.2	U	1.3	7.2
Methyl tert-butyl ether		1.4	U	0.24	1.4
Methylcyclohexane		1.4	U	0.72	1.4
Methylene Chloride		1.4	U	0.46	1.4
m-Xylene & p-Xylene		1.4	U	0.16	1.4
o-Xylene		1.4	U	0.23	1.4

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1
Client Matrix: Solid

% Moisture: 21.5

Date Sampled: 10/05/2015 1120
Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14881.D
Dilution:	1.0			Initial Weight/Volume:	4.44 g
Analysis Date:	10/07/2015 2337			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1122				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.4	U	0.22	1.4
Tetrachloroethene		1.4	U	0.40	1.4
Toluene		1.4	U	0.27	1.4
trans-1,2-Dichloroethene		1.4	U	0.56	1.4
trans-1,3-Dichloropropene		1.4	U	0.14	1.4
Trichloroethene		1.4	U	0.37	1.4
Trichlorofluoromethane		1.4	U	0.49	1.4
Vinyl chloride		1.4	U	0.56	1.4

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		78 - 135
4-Bromofluorobenzene	97		67 - 126
Dibromofluoromethane (Surr)	105		61 - 149
Toluene-d8 (Surr)	94		73 - 121

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-4 (1'-3')

Lab Sample ID: 460-102242-2
Client Matrix: Solid

% Moisture: 19.9

Date Sampled: 10/05/2015 1200
Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14882.D
Dilution:	1.0			Initial Weight/Volume:	5.49 g
Analysis Date:	10/08/2015 0002			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1123				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.1	U	0.43	1.1
1,1,2,2-Tetrachloroethane		1.1	U	0.19	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane		1.1	U	0.50	1.1
1,1,2-Trichloroethane		1.1	U	0.32	1.1
1,1-Dichloroethane		1.1	U	0.39	1.1
1,1-Dichloroethene		1.1	U	0.47	1.1
1,2,3-Trichlorobenzene		1.1	U	0.13	1.1
1,2,4-Trichlorobenzene		1.1	U	0.36	1.1
1,2-Dibromo-3-Chloropropane		1.1	U	0.53	1.1
1,2-Dichlorobenzene		1.1	U	0.16	1.1
1,2-Dichloroethane		1.1	U	0.13	1.1
1,2-Dichloropropane		1.1	U	0.19	1.1
1,3-Dichlorobenzene		1.1	U	0.14	1.1
1,4-Dichlorobenzene		1.1	U	0.15	1.1
1,4-Dioxane		23	U	7.3	23
2-Butanone (MEK)		5.7	U	0.88	5.7
2-Hexanone		5.7	U	1.1	5.7
4-Methyl-2-pentanone (MIBK)		5.7	U	2.5	5.7
Acetone		5.7	U	1.2	5.7
Acetonitrile		11	U	4.6	11
Acrolein		110	U	18	110
Benzene		1.1	U	0.23	1.1
Bromoform		1.1	U	0.15	1.1
Bromomethane		1.1	U	0.36	1.1
Carbon disulfide		1.1	U	0.49	1.1
Carbon tetrachloride		1.1	U	0.49	1.1
Chlorobenzene		1.1	U	0.16	1.1
Chlorobromomethane		1.1	U	0.19	1.1
Chlorodibromomethane		1.1	U	0.17	1.1
Chloroethane		1.1	U	0.40	1.1
Chloroform		1.1	U	0.24	1.1
Chloromethane		1.1	U	0.43	1.1
cis-1,2-Dichloroethene		1.1	U	0.25	1.1
cis-1,3-Dichloropropene		1.1	U	0.17	1.1
Cyclohexane		1.1	U	0.52	1.1
Dichlorobromomethane		1.1	U	0.43	1.1
Dichlorodifluoromethane		1.1	U	0.36	1.1
Ethylbenzene		1.1	U	0.20	1.1
Ethylene Dibromide		1.1	U	0.14	1.1
Isopropylbenzene		1.1	U	0.19	1.1
Methyl acetate		5.7	U	1.0	5.7
Methyl tert-butyl ether		1.1	U	0.19	1.1
Methylcyclohexane		1.1	U	0.57	1.1
Methylene Chloride		1.1	U	0.36	1.1
m-Xylene & p-Xylene		1.1	U	0.13	1.1
o-Xylene		1.1	U	0.18	1.1

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-4 (1'-3')

Lab Sample ID: 460-102242-2
Client Matrix: Solid

% Moisture: 19.9

Date Sampled: 10/05/2015 1200
Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14882.D
Dilution:	1.0			Initial Weight/Volume:	5.49 g
Analysis Date:	10/08/2015 0002			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1123				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.1	U	0.17	1.1
Tetrachloroethene		1.1	U	0.32	1.1
Toluene		1.1	U	0.22	1.1
trans-1,2-Dichloroethene		1.1	U	0.44	1.1
trans-1,3-Dichloropropene		1.1	U	0.11	1.1
Trichloroethene		1.1	U	0.30	1.1
Trichlorofluoromethane		1.1	U	0.39	1.1
Vinyl chloride		1.1	U	0.44	1.1

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		78 - 135
4-Bromofluorobenzene	89		67 - 126
Dibromofluoromethane (Surr)	102		61 - 149
Toluene-d8 (Surr)	90		73 - 121

Client Sample ID: SB-6 (1'-3')

Lab Sample ID: 460-102242-3 Date Sampled: 10/05/2015 1220
Client Matrix: Solid % Moisture: 21.5 Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14883.D
Dilution:	1.0			Initial Weight/Volume:	5.18 g
Analysis Date:	10/08/2015 0026			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1124				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.2	U	0.47	1.2
1,1,2,2-Tetrachloroethane		1.2	U	0.21	1.2
1,1,2-Trichloro-1,2,2-trifluoroethane		1.2	U	0.54	1.2
1,1,2-Trichloroethane		1.2	U	0.34	1.2
1,1-Dichloroethane		1.2	U	0.42	1.2
1,1-Dichloroethene		1.2	U	0.50	1.2
1,2,3-Trichlorobenzene		1.2	U	0.14	1.2
1,2,4-Trichlorobenzene		1.2	U	0.39	1.2
1,2-Dibromo-3-Chloropropane		1.2	U	0.58	1.2
1,2-Dichlorobenzene		1.2	U	0.17	1.2
1,2-Dichloroethane		1.2	U	0.14	1.2
1,2-Dichloropropane		1.2	U	0.21	1.2
1,3-Dichlorobenzene		1.2	U	0.15	1.2
1,4-Dichlorobenzene		1.2	U	0.16	1.2
1,4-Dioxane		25	U	7.9	25
2-Butanone (MEK)		6.1	U	0.95	6.1
2-Hexanone		6.1	U	1.2	6.1
4-Methyl-2-pentanone (MIBK)		6.1	U	2.7	6.1
Acetone		6.1	U	1.3	6.1
Acetonitrile		12	U	5.0	12
Acrolein		120	U	19	120
Benzene		1.2	U	0.25	1.2
Bromoform		1.2	U	0.16	1.2
Bromomethane		1.2	U	0.39	1.2
Carbon disulfide		1.2	U	0.53	1.2
Carbon tetrachloride		1.2	U	0.53	1.2
Chlorobenzene		1.2	U	0.17	1.2
Chlorobromomethane		1.2	U	0.21	1.2
Chlorodibromomethane		1.2	U	0.18	1.2
Chloroethane		1.2	U	0.43	1.2
Chloroform		1.2	U	0.26	1.2
Chloromethane		1.2	U	0.47	1.2
cis-1,2-Dichloroethene		1.2	U	0.27	1.2
cis-1,3-Dichloropropene		1.2	U	0.18	1.2
Cyclohexane		1.2	U	0.57	1.2
Dichlorobromomethane		1.2	U	0.47	1.2
Dichlorodifluoromethane		1.2	U	0.39	1.2
Ethylbenzene		1.2	U	0.22	1.2
Ethylene Dibromide		1.2	U	0.15	1.2
Isopropylbenzene		1.2	U	0.21	1.2
Methyl acetate		6.1	U	1.1	6.1
Methyl tert-butyl ether		1.2	U	0.21	1.2
Methylcyclohexane		1.2	U	0.61	1.2
Methylene Chloride		1.2	U	0.39	1.2
m-Xylene & p-Xylene		1.2	U	0.14	1.2
o-Xylene		1.2	U	0.20	1.2

Client: AKRF Inc Job Number: 460-102242-1

Client Sample ID: SB-6 (1'-3')

Lab Sample ID: 460-102242-3 Date Sampled: 10/05/2015 1220
Client Matrix: Solid % Moisture: 21.5 Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14883.D
Dilution:	1.0			Initial Weight/Volume:	5.18 g
Analysis Date:	10/08/2015 0026			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1124				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.2	U	0.18	1.2
Tetrachloroethene		1.2	U	0.34	1.2
Toluene		1.2	U	0.23	1.2
trans-1,2-Dichloroethene		1.2	U	0.48	1.2
trans-1,3-Dichloropropene		1.2	U	0.12	1.2
Trichloroethene		1.2	U	0.32	1.2
Trichlorofluoromethane		1.2	U	0.42	1.2
Vinyl chloride		1.2	U	0.48	1.2

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		78 - 135
4-Bromofluorobenzene	94		67 - 126
Dibromofluoromethane (Surr)	103		61 - 149
Toluene-d8 (Surr)	90		73 - 121

Client Sample ID: SB-8 (1'-3')

Lab Sample ID: 460-102242-4 Date Sampled: 10/05/2015 1245
Client Matrix: Solid % Moisture: 7.9 Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14884.D
Dilution:	1.0			Initial Weight/Volume:	4.43 g
Analysis Date:	10/08/2015 0051			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1125				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.2	U	0.47	1.2
1,1,2,2-Tetrachloroethane		1.2	U	0.21	1.2
1,1,2-Trichloro-1,2,2-trifluoroethane		1.2	U	0.54	1.2
1,1,2-Trichloroethane		1.2	U	0.34	1.2
1,1-Dichloroethane		1.2	U	0.42	1.2
1,1-Dichloroethene		1.2	U	0.50	1.2
1,2,3-Trichlorobenzene		1.2	U	0.13	1.2
1,2,4-Trichlorobenzene		1.2	U	0.39	1.2
1,2-Dibromo-3-Chloropropane		1.2	U	0.58	1.2
1,2-Dichlorobenzene		1.2	U	0.17	1.2
1,2-Dichloroethane		1.2	U	0.13	1.2
1,2-Dichloropropane		1.2	U	0.21	1.2
1,3-Dichlorobenzene		1.2	U	0.15	1.2
1,4-Dichlorobenzene		1.2	U	0.16	1.2
1,4-Dioxane		25	U	7.8	25
2-Butanone (MEK)		6.1	U	0.94	6.1
2-Hexanone		6.1	U	1.2	6.1
4-Methyl-2-pentanone (MIBK)		6.1	U	2.7	6.1
Acetone		6.1	U	1.3	6.1
Acetonitrile		12	U	5.0	12
Acrolein		120	U	19	120
Benzene		1.2	U	0.25	1.2
Bromoform		1.2	U	0.16	1.2
Bromomethane		1.2	U	0.39	1.2
Carbon disulfide		1.2	U	0.53	1.2
Carbon tetrachloride		1.2	U	0.53	1.2
Chlorobenzene		1.2	U	0.17	1.2
Chlorobromomethane		1.2	U	0.21	1.2
Chlorodibromomethane		1.2	U	0.18	1.2
Chloroethane		1.2	U	0.43	1.2
Chloroform		1.2	U	0.26	1.2
Chloromethane		1.2	U	0.47	1.2
cis-1,2-Dichloroethene		1.2	U	0.27	1.2
cis-1,3-Dichloropropene		1.2	U	0.18	1.2
Cyclohexane		1.2	U	0.56	1.2
Dichlorobromomethane		1.2	U	0.47	1.2
Dichlorodifluoromethane		1.2	U	0.39	1.2
Ethylbenzene		1.2	U	0.22	1.2
Ethylene Dibromide		1.2	U	0.15	1.2
Isopropylbenzene		1.2	U	0.21	1.2
Methyl acetate		6.1	U	1.1	6.1
Methyl tert-butyl ether		1.2	U	0.21	1.2
Methylcyclohexane		1.2	U	0.61	1.2
Methylene Chloride		1.2	U	0.39	1.2
m-Xylene & p-Xylene		1.2	U	0.13	1.2
o-Xylene		1.2	U	0.20	1.2

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: **SB-8 (1'-3')**

Lab Sample ID: 460-102242-4 | Date Sampled: 10/05/2015 1245
Client Matrix: Solid | % Moisture: 7.9 | Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14884.D
Dilution:	1.0			Initial Weight/Volume:	4.43 g
Analysis Date:	10/08/2015 0051			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1125				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.2	U	0.18	1.2
Tetrachloroethene		1.2	U	0.34	1.2
Toluene		1.2	U	0.23	1.2
trans-1,2-Dichloroethene		1.2	U	0.48	1.2
trans-1,3-Dichloropropene		1.2	U	0.12	1.2
Trichloroethene		1.2	U	0.32	1.2
Trichlorofluoromethane		1.2	U	0.42	1.2
Vinyl chloride		1.2	U	0.48	1.2

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		78 - 135
4-Bromofluorobenzene	94		67 - 126
Dibromofluoromethane (Surr)	104		61 - 149
Toluene-d8 (Surr)	96		73 - 121

Client Sample ID: SB-7 (2'-4')

Lab Sample ID: 460-102242-5 Date Sampled: 10/05/2015 1345
Client Matrix: Solid % Moisture: 19.4 Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14885.D
Dilution:	1.0			Initial Weight/Volume:	4.97 g
Analysis Date:	10/08/2015 0115			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1125				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.2	U	0.47	1.2
1,1,2,2-Tetrachloroethane		1.2	U	0.21	1.2
1,1,2-Trichloro-1,2,2-trifluoroethane		1.2	U	0.55	1.2
1,1,2-Trichloroethane		1.2	U	0.35	1.2
1,1-Dichloroethane		1.2	U	0.42	1.2
1,1-Dichloroethene		1.2	U	0.51	1.2
1,2,3-Trichlorobenzene		1.2	U	0.14	1.2
1,2,4-Trichlorobenzene		1.2	U	0.40	1.2
1,2-Dibromo-3-Chloropropane		1.2	U	0.59	1.2
1,2-Dichlorobenzene		1.2	U	0.17	1.2
1,2-Dichloroethane		1.2	U	0.14	1.2
1,2-Dichloropropane		1.2	U	0.21	1.2
1,3-Dichlorobenzene		1.2	U	0.15	1.2
1,4-Dichlorobenzene		1.2	U	0.16	1.2
1,4-Dioxane		25	U	8.0	25
2-Butanone (MEK)		6.2	U	0.96	6.2
2-Hexanone		6.2	U	1.2	6.2
4-Methyl-2-pentanone (MIBK)		6.2	U	2.8	6.2
Acetone		6.2	U	1.3	6.2
Acetonitrile		12	U	5.1	12
Acrolein		120	U	19	120
Benzene		1.2	U	0.25	1.2
Bromoform		1.2	U	0.16	1.2
Bromomethane		1.2	U	0.40	1.2
Carbon disulfide		1.2	U	0.54	1.2
Carbon tetrachloride		1.2	U	0.54	1.2
Chlorobenzene		1.2	U	0.17	1.2
Chlorobromomethane		1.2	U	0.21	1.2
Chlorodibromomethane		1.2	U	0.19	1.2
Chloroethane		1.2	U	0.44	1.2
Chloroform		1.2	U	0.26	1.2
Chloromethane		1.2	U	0.47	1.2
cis-1,2-Dichloroethene		1.2	U	0.27	1.2
cis-1,3-Dichloropropene		1.2	U	0.19	1.2
Cyclohexane		1.2	U	0.57	1.2
Dichlorobromomethane		1.2	U	0.47	1.2
Dichlorodifluoromethane		1.2	U	0.40	1.2
Ethylbenzene		1.2	U	0.22	1.2
Ethylene Dibromide		1.2	U	0.15	1.2
Isopropylbenzene		1.2	U	0.21	1.2
Methyl acetate		6.2	U	1.1	6.2
Methyl tert-butyl ether		1.2	U	0.21	1.2
Methylcyclohexane		1.2	U	0.62	1.2
Methylene Chloride		1.2	U	0.40	1.2
m-Xylene & p-Xylene		1.2	U	0.14	1.2
o-Xylene		1.2	U	0.20	1.2

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-7 (2'-4')

Lab Sample ID: 460-102242-5
Client Matrix: Solid

% Moisture: 19.4

Date Sampled: 10/05/2015 1345
Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14885.D
Dilution:	1.0			Initial Weight/Volume:	4.97 g
Analysis Date:	10/08/2015 0115			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1125				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.2	U	0.19	1.2
Tetrachloroethene		1.2	U	0.35	1.2
Toluene		1.2	U	0.24	1.2
trans-1,2-Dichloroethene		1.2	U	0.49	1.2
trans-1,3-Dichloropropene		1.2	U	0.12	1.2
Trichloroethene		1.2	U	0.32	1.2
Trichlorofluoromethane		1.2	U	0.42	1.2
Vinyl chloride		1.2	U	0.49	1.2

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		78 - 135
4-Bromofluorobenzene	98		67 - 126
Dibromofluoromethane (Surr)	107		61 - 149
Toluene-d8 (Surr)	98		73 - 121

Client Sample ID: SB-1 (1'-3')

Lab Sample ID: 460-102242-6 Date Sampled: 10/05/2015 1440
Client Matrix: Solid % Moisture: 8.1 Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C Analysis Batch: 460-327312 Instrument ID: CVOAMS4
Prep Method: 5035 Prep Batch: 460-326967 Lab File ID: D14886.D
Dilution: 1.0 Initial Weight/Volume: 4.82 g
Analysis Date: 10/08/2015 0140 Final Weight/Volume: 5 mL
Prep Date: 10/06/2015 1126

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.1	U	0.43	1.1
1,1,2,2-Tetrachloroethane		1.1	U	0.19	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane		1.1	U	0.50	1.1
1,1,2-Trichloroethane		1.1	U	0.32	1.1
1,1-Dichloroethane		1.1	U	0.38	1.1
1,1-Dichloroethene		1.1	U	0.46	1.1
1,2,3-Trichlorobenzene		1.1	U	0.12	1.1
1,2,4-Trichlorobenzene		1.1	U	0.36	1.1
1,2-Dibromo-3-Chloropropane		1.1	U	0.53	1.1
1,2-Dichlorobenzene		1.1	U	0.16	1.1
1,2-Dichloroethane		1.1	U	0.12	1.1
1,2-Dichloropropane		1.1	U	0.19	1.1
1,3-Dichlorobenzene		1.1	U	0.14	1.1
1,4-Dichlorobenzene		1.1	U	0.15	1.1
1,4-Dioxane		23	U	7.2	23
2-Butanone (MEK)		5.6	U	0.87	5.6
2-Hexanone		5.6	U	1.1	5.6
4-Methyl-2-pentanone (MIBK)		5.6	U	2.5	5.6
Acetone		5.6	U	1.2	5.6
Acetonitrile		11	U	4.6	11
Acrolein		110	U	18	110
Benzene		1.1	U	0.23	1.1
Bromoform		1.1	U	0.15	1.1
Bromomethane		1.1	U	0.36	1.1
Carbon disulfide		1.1	U	0.49	1.1
Carbon tetrachloride		1.1	U	0.49	1.1
Chlorobenzene		1.1	U	0.16	1.1
Chlorobromomethane		1.1	U	0.19	1.1
Chlorodibromomethane		1.1	U	0.17	1.1
Chloroethane		1.1	U	0.39	1.1
Chloroform		1.1	U	0.24	1.1
Chloromethane		1.1	U	0.43	1.1
cis-1,2-Dichloroethene		1.1	U	0.25	1.1
cis-1,3-Dichloropropene		1.1	U	0.17	1.1
Cyclohexane		1.1	U	0.52	1.1
Dichlorobromomethane		1.1	U	0.43	1.1
Dichlorodifluoromethane		1.1	U	0.36	1.1
Ethylbenzene		1.1	U	0.20	1.1
Ethylene Dibromide		1.1	U	0.14	1.1
Isopropylbenzene		1.1	U	0.19	1.1
Methyl acetate		5.6	U	1.0	5.6
Methyl tert-butyl ether		1.1	U	0.19	1.1
Methylcyclohexane		1.1	U	0.56	1.1
Methylene Chloride		1.1	U	0.36	1.1
m-Xylene & p-Xylene		1.1	U	0.12	1.1
o-Xylene		1.1	U	0.18	1.1

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-1 (1'-3')

Lab Sample ID: 460-102242-6 | Date Sampled: 10/05/2015 1440
Client Matrix: Solid | % Moisture: 8.1 | Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14886.D
Dilution:	1.0			Initial Weight/Volume:	4.82 g
Analysis Date:	10/08/2015 0140			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1126				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.1	U	0.17	1.1
Tetrachloroethene		1.1	U	0.32	1.1
Toluene		1.1	U	0.21	1.1
trans-1,2-Dichloroethene		1.1	U	0.44	1.1
trans-1,3-Dichloropropene		1.1	U	0.11	1.1
Trichloroethene		1.1	U	0.29	1.1
Trichlorofluoromethane		1.1	U	0.38	1.1
Vinyl chloride		1.1	U	0.44	1.1

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		78 - 135
4-Bromofluorobenzene	91		67 - 126
Dibromofluoromethane (Surr)	100		61 - 149
Toluene-d8 (Surr)	90		73 - 121

Client Sample ID: SB-2 (1'-3')

Lab Sample ID: 460-102242-7 Date Sampled: 10/05/2015 1605
Client Matrix: Solid % Moisture: 8.0 Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C Analysis Batch: 460-327312 Instrument ID: CVOAMS4
Prep Method: 5035 Prep Batch: 460-326967 Lab File ID: D14887.D
Dilution: 1.0 Initial Weight/Volume: 5.23 g
Analysis Date: 10/08/2015 0204 Final Weight/Volume: 5 mL
Prep Date: 10/06/2015 1127

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.0	U	0.39	1.0
1,1,2,2-Tetrachloroethane		1.0	U	0.18	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane		1.0	U	0.46	1.0
1,1,2-Trichloroethane		1.0	U	0.29	1.0
1,1-Dichloroethane		1.0	U	0.35	1.0
1,1-Dichloroethene		1.0	U	0.43	1.0
1,2,3-Trichlorobenzene		1.0	U	0.11	1.0
1,2,4-Trichlorobenzene		1.0	U	0.33	1.0
1,2-Dibromo-3-Chloropropane		1.0	U	0.49	1.0
1,2-Dichlorobenzene		1.0	U	0.15	1.0
1,2-Dichloroethane		1.0	U	0.11	1.0
1,2-Dichloropropane		1.0	U	0.18	1.0
1,3-Dichlorobenzene		1.0	U	0.12	1.0
1,4-Dichlorobenzene		1.0	U	0.14	1.0
1,4-Dioxane		21	U	6.6	21
2-Butanone (MEK)		5.2	U	0.80	5.2
2-Hexanone		5.2	U	0.98	5.2
4-Methyl-2-pentanone (MIBK)		5.2	U	2.3	5.2
Acetone		5.2	U	1.1	5.2
Acetonitrile		10	U	4.2	10
Acrolein		100	U	16	100
Benzene		1.0	U	0.21	1.0
Bromoform		1.0	U	0.14	1.0
Bromomethane		1.0	U	0.33	1.0
Carbon disulfide		1.0	U	0.45	1.0
Carbon tetrachloride		1.0	U	0.45	1.0
Chlorobenzene		1.0	U	0.15	1.0
Chlorobromomethane		1.0	U	0.18	1.0
Chlorodibromomethane		1.0	U	0.16	1.0
Chloroethane		1.0	U	0.36	1.0
Chloroform		1.0	U	0.22	1.0
Chloromethane		1.0	U	0.39	1.0
cis-1,2-Dichloroethene		1.0	U	0.23	1.0
cis-1,3-Dichloropropene		1.0	U	0.16	1.0
Cyclohexane		1.0	U	0.48	1.0
Dichlorobromomethane		1.0	U	0.39	1.0
Dichlorodifluoromethane		1.0	U	0.33	1.0
Ethylbenzene		1.0	U	0.19	1.0
Ethylene Dibromide		1.0	U	0.12	1.0
Isopropylbenzene		1.0	U	0.18	1.0
Methyl acetate		5.2	U	0.94	5.2
Methyl tert-butyl ether		1.0	U	0.18	1.0
Methylcyclohexane		1.0	U	0.52	1.0
Methylene Chloride		1.0	U	0.33	1.0
m-Xylene & p-Xylene		1.0	U	0.11	1.0
o-Xylene		1.0	U	0.17	1.0

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-2 (1'-3')

Lab Sample ID: 460-102242-7
Client Matrix: Solid

% Moisture: 8.0

Date Sampled: 10/05/2015 1605
Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14887.D
Dilution:	1.0			Initial Weight/Volume:	5.23 g
Analysis Date:	10/08/2015 0204			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1127				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.0	U	0.16	1.0
Tetrachloroethene		1.0	U	0.29	1.0
Toluene		1.0	U	0.20	1.0
trans-1,2-Dichloroethene		1.0	U	0.41	1.0
trans-1,3-Dichloropropene		1.0	U	0.10	1.0
Trichloroethene		1.0	U	0.27	1.0
Trichlorofluoromethane		1.0	U	0.35	1.0
Vinyl chloride		1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		78 - 135
4-Bromofluorobenzene	92		67 - 126
Dibromofluoromethane (Surr)	100		61 - 149
Toluene-d8 (Surr)	91		73 - 121

Client Sample ID: SB-3 (1'-3')

Lab Sample ID: 460-102242-8 Date Sampled: 10/05/2015 1650
Client Matrix: Solid % Moisture: 7.2 Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C Analysis Batch: 460-327312 Instrument ID: CVOAMS4
Prep Method: 5035 Prep Batch: 460-326967 Lab File ID: D14888.D
Dilution: 1.0 Initial Weight/Volume: 4.84 g
Analysis Date: 10/08/2015 0228 Final Weight/Volume: 5 mL
Prep Date: 10/06/2015 1128

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.1	U	0.42	1.1
1,1,2,2-Tetrachloroethane		1.1	U	0.19	1.1
1,1,2-Trichloro-1,2,2-trifluoroethane		1.1	U	0.49	1.1
1,1,2-Trichloroethane		1.1	U	0.31	1.1
1,1-Dichloroethane		1.1	U	0.38	1.1
1,1-Dichloroethene		1.1	U	0.46	1.1
1,2,3-Trichlorobenzene		1.1	U	0.12	1.1
1,2,4-Trichlorobenzene		1.1	U	0.36	1.1
1,2-Dibromo-3-Chloropropane		1.1	U	0.52	1.1
1,2-Dichlorobenzene		1.1	U	0.16	1.1
1,2-Dichloroethane		1.1	U	0.12	1.1
1,2-Dichloropropane		1.1	U	0.19	1.1
1,3-Dichlorobenzene		1.1	U	0.13	1.1
1,4-Dichlorobenzene		1.1	U	0.14	1.1
1,4-Dioxane		22	U	7.1	22
2-Butanone (MEK)		5.6	U	0.86	5.6
2-Hexanone		5.6	U	1.0	5.6
4-Methyl-2-pentanone (MIBK)		5.6	U	2.5	5.6
Acetone		5.6	U	1.2	5.6
Acetonitrile		11	U	4.5	11
Acrolein		110	U	17	110
Benzene		1.1	U	0.22	1.1
Bromoform		1.1	U	0.14	1.1
Bromomethane		1.1	U	0.36	1.1
Carbon disulfide		1.1	U	0.48	1.1
Carbon tetrachloride		1.1	U	0.48	1.1
Chlorobenzene		1.1	U	0.16	1.1
Chlorobromomethane		1.1	U	0.19	1.1
Chlorodibromomethane		1.1	U	0.17	1.1
Chloroethane		1.1	U	0.39	1.1
Chloroform		1.1	U	0.23	1.1
Chloromethane		1.1	U	0.42	1.1
cis-1,2-Dichloroethene		1.1	U	0.24	1.1
cis-1,3-Dichloropropene		1.1	U	0.17	1.1
Cyclohexane		1.1	U	0.51	1.1
Dichlorobromomethane		1.1	U	0.42	1.1
Dichlorodifluoromethane		1.1	U	0.36	1.1
Ethylbenzene		1.1	U	0.20	1.1
Ethylene Dibromide		1.1	U	0.13	1.1
Isopropylbenzene		1.1	U	0.19	1.1
Methyl acetate		5.6	U	1.0	5.6
Methyl tert-butyl ether		1.1	U	0.19	1.1
Methylcyclohexane		1.1	U	0.56	1.1
Methylene Chloride		1.1	U	0.36	1.1
m-Xylene & p-Xylene		1.1	U	0.12	1.1
o-Xylene		1.1	U	0.18	1.1

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-3 (1'-3')**

Lab Sample ID: 460-102242-8
Client Matrix: Solid
% Moisture: 7.2

Date Sampled: 10/05/2015 1650
Date Received: 10/06/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-326967	Lab File ID:	D14888.D
Dilution:	1.0			Initial Weight/Volume:	4.84 g
Analysis Date:	10/08/2015 0228			Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1128				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.1	U	0.17	1.1
Tetrachloroethene		1.1	U	0.31	1.1
Toluene		1.1	U	0.21	1.1
trans-1,2-Dichloroethene		1.1	U	0.43	1.1
trans-1,3-Dichloropropene		1.1	U	0.11	1.1
Trichloroethene		1.1	U	0.29	1.1
Trichlorofluoromethane		1.1	U	0.38	1.1
Vinyl chloride		1.1	U	0.43	1.1

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115		78 - 135
4-Bromofluorobenzene	103		67 - 126
Dibromofluoromethane (Surr)	116		61 - 149
Toluene-d8 (Surr)	103		73 - 121

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1 Date Sampled: 10/05/2015 1120
Client Matrix: Solid % Moisture: 21.5 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126629.D
Dilution:	1.0			Initial Weight/Volume:	15.0047 g
Analysis Date:	10/09/2015 2214			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		420	U	36	420
1,2,4,5-Tetrachlorobenzene		420	U	31	420
2,2'-oxybis[1-chloropropane]		420	U	17	420
2,3,4,6-Tetrachlorophenol		420	U	40	420
2,4,5-Trichlorophenol		420	U	42	420
2,4,6-Trichlorophenol		170	U	12	170
2,4-Dichlorophenol		170	U	9.9	170
2,4-Dimethylphenol		420	U	93	420
2,4-Dinitrophenol		340	U	320	340
2,4-Dinitrotoluene		85	U	17	85
2,6-Dinitrotoluene		85	U	22	85
2-Chloronaphthalene		420	U	9.5	420
2-Chlorophenol		420	U	11	420
2-Methylnaphthalene		420	U	9.3	420
2-Methylphenol		420	U	18	420
2-Nitroaniline		420	U	14	420
2-Nitrophenol		420	U	14	420
3,3'-Dichlorobenzidine		170	U	47	170
3-Nitroaniline		420	U	12	420
4,6-Dinitro-2-methylphenol		340	U	110	340
4-Bromophenyl phenyl ether		420	U	13	420
4-Chloro-3-methylphenol		420	U	18	420
4-Chloroaniline		420	U	11	420
4-Chlorophenyl phenyl ether		420	U	13	420
4-Methylphenol		420	U	11	420
4-Nitroaniline		420	U	16	420
4-Nitrophenol		850	U	200	850
Acenaphthene		420	U	10	420
Acenaphthylene		420	U	11	420
Acetophenone		420	U	9.2	420
Anthracene		420	U	40	420
Atrazine		170	U	19	170
Benzaldehyde		420	U	32	420
Benzo[a]anthracene		42	U	35	42
Benzo[a]pyrene		42	U	13	42
Benzo[b]fluoranthene		42	U	16	42
Benzo[g,h,i]perylene		420	U	24	420
Benzo[k]fluoranthene		42	U	18	42
Bis(2-chloroethoxy)methane		420	U	13	420
Bis(2-chloroethyl)ether		42	U	9.9	42
Bis(2-ethylhexyl) phthalate		420	U	16	420
Butyl benzyl phthalate		420	U	13	420
Caprolactam		420	U	30	420
Carbazole		420	U	10	420
Chrysene		40	J	11	420
Dibenz(a,h)anthracene		42	U	22	42

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1
Client Matrix: Solid

% Moisture: 21.5

Date Sampled: 10/05/2015 1120
Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126629.D
Dilution:	1.0			Initial Weight/Volume:	15.0047 g
Analysis Date:	10/09/2015 2214			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		420	U	13	420
Diethyl phthalate		420	U	12	420
Dimethyl phthalate		420	U	12	420
Di-n-butyl phthalate		420	U	13	420
Di-n-octyl phthalate		420	U	21	420
Fluoranthene		76	J	12	420
Fluorene		420	U	9.2	420
Hexachlorobenzene		42	U	17	42
Hexachlorobutadiene		85	U	12	85
Hexachlorocyclopentadiene		420	U	26	420
Hexachloroethane		42	U	15	42
Indeno[1,2,3-cd]pyrene		42	U	28	42
Isophorone		170	U	9.0	170
Naphthalene		420	U	11	420
Nitrobenzene		42	U	13	42
N-Nitrosodi-n-propylamine		42	U	14	42
N-Nitrosodiphenylamine		420	U	38	420
Pentachlorophenol		340	U	51	340
Phenanthrene		28	J	11	420
Phenol		420	U	14	420
Pyrene		78	J	19	420

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	47		10 - 95
2-Fluorobiphenyl	69		27 - 84
2-Fluorophenol (Surr)	59		21 - 84
Nitrobenzene-d5 (Surr)	67		28 - 92
Phenol-d5 (Surr)	65		22 - 88
Terphenyl-d14 (Surr)	90		16 - 114

Client Sample ID: SB-4 (1'-3')

Lab Sample ID: 460-102242-2 Date Sampled: 10/05/2015 1200
Client Matrix: Solid % Moisture: 19.9 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126630.D
Dilution:	1.0			Initial Weight/Volume:	15.0112 g
Analysis Date:	10/09/2015 2239			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		410	U	35	410
1,2,4,5-Tetrachlorobenzene		410	U	31	410
2,2'-oxybis[1-chloropropane]		410	U	17	410
2,3,4,6-Tetrachlorophenol		410	U	39	410
2,4,5-Trichlorophenol		410	U	41	410
2,4,6-Trichlorophenol		170	U	12	170
2,4-Dichlorophenol		170	U	9.7	170
2,4-Dimethylphenol		410	U	91	410
2,4-Dinitrophenol		330	U	310	330
2,4-Dinitrotoluene		84	U	16	84
2,6-Dinitrotoluene		84	U	22	84
2-Chloronaphthalene		410	U	9.4	410
2-Chlorophenol		410	U	10	410
2-Methylnaphthalene		410	U	9.1	410
2-Methylphenol		410	U	18	410
2-Nitroaniline		410	U	14	410
2-Nitrophenol		410	U	14	410
3,3'-Dichlorobenzidine		170	U	46	170
3-Nitroaniline		410	U	12	410
4,6-Dinitro-2-methylphenol		330	U	110	330
4-Bromophenyl phenyl ether		410	U	13	410
4-Chloro-3-methylphenol		410	U	18	410
4-Chloroaniline		410	U	11	410
4-Chlorophenyl phenyl ether		410	U	12	410
4-Methylphenol		410	U	11	410
4-Nitroaniline		410	U	16	410
4-Nitrophenol		840	U	200	840
Acenaphthene		410	U	10	410
Acenaphthylene		410	U	11	410
Acetophenone		410	U	9.0	410
Anthracene		410	U	39	410
Atrazine		170	U	18	170
Benzaldehyde		410	U	31	410
Benzo[a]anthracene		41	U	34	41
Benzo[a]pyrene		41	U	12	41
Benzo[b]fluoranthene		41	U	16	41
Benzo[g,h,i]perylene		410	U	24	410
Benzo[k]fluoranthene		41	U	18	41
Bis(2-chloroethoxy)methane		410	U	13	410
Bis(2-chloroethyl)ether		41	U	9.7	41
Bis(2-ethylhexyl) phthalate		410	U	16	410
Butyl benzyl phthalate		410	U	13	410
Caprolactam		410	U	30	410
Carbazole		410	U	10	410
Chrysene		410	U	11	410
Dibenz(a,h)anthracene		41	U	21	41

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-4 (1'-3')

Lab Sample ID: 460-102242-2 | Date Sampled: 10/05/2015 1200
Client Matrix: Solid | % Moisture: 19.9 | Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126630.D
Dilution:	1.0			Initial Weight/Volume:	15.0112 g
Analysis Date:	10/09/2015 2239			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		410	U	12	410
Diethyl phthalate		410	U	12	410
Dimethyl phthalate		410	U	12	410
Di-n-butyl phthalate		410	U	12	410
Di-n-octyl phthalate		410	U	21	410
Fluoranthene		410	U	12	410
Fluorene		410	U	9.0	410
Hexachlorobenzene		41	U	17	41
Hexachlorobutadiene		84	U	12	84
Hexachlorocyclopentadiene		410	U	26	410
Hexachloroethane		41	U	15	41
Indeno[1,2,3-cd]pyrene		41	U	27	41
Isophorone		170	U	8.9	170
Naphthalene		410	U	10	410
Nitrobenzene		41	U	13	41
N-Nitrosodi-n-propylamine		41	U	14	41
N-Nitrosodiphenylamine		410	U	37	410
Pentachlorophenol		330	U	50	330
Phenanthrene		410	U	11	410
Phenol		410	U	13	410
Pyrene		410	U	19	410

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	54		10 - 95
2-Fluorobiphenyl	72		27 - 84
2-Fluorophenol (Surr)	67		21 - 84
Nitrobenzene-d5 (Surr)	70		28 - 92
Phenol-d5 (Surr)	70		22 - 88
Terphenyl-d14 (Surr)	93		16 - 114

Client Sample ID: SB-6 (1'-3')

Lab Sample ID: 460-102242-3 Date Sampled: 10/05/2015 1220
Client Matrix: Solid % Moisture: 21.5 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126631.D
Dilution:	1.0			Initial Weight/Volume:	15.0335 g
Analysis Date:	10/09/2015 2305			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		420	U	36	420
1,2,4,5-Tetrachlorobenzene		420	U	31	420
2,2'-oxybis[1-chloropropane]		420	U	17	420
2,3,4,6-Tetrachlorophenol		420	U	40	420
2,4,5-Trichlorophenol		420	U	42	420
2,4,6-Trichlorophenol		170	U	12	170
2,4-Dichlorophenol		170	U	9.9	170
2,4-Dimethylphenol		420	U	92	420
2,4-Dinitrophenol		340	U	320	340
2,4-Dinitrotoluene		85	U	17	85
2,6-Dinitrotoluene		85	U	22	85
2-Chloronaphthalene		420	U	9.5	420
2-Chlorophenol		420	U	11	420
2-Methylnaphthalene		420	U	9.3	420
2-Methylphenol		420	U	18	420
2-Nitroaniline		420	U	14	420
2-Nitrophenol		420	U	14	420
3,3'-Dichlorobenzidine		170	U	47	170
3-Nitroaniline		420	U	12	420
4,6-Dinitro-2-methylphenol		340	U	110	340
4-Bromophenyl phenyl ether		420	U	13	420
4-Chloro-3-methylphenol		420	U	18	420
4-Chloroaniline		420	U	11	420
4-Chlorophenyl phenyl ether		420	U	13	420
4-Methylphenol		420	U	11	420
4-Nitroaniline		420	U	16	420
4-Nitrophenol		850	U	200	850
Acenaphthene		420	U	10	420
Acenaphthylene		420	U	11	420
Acetophenone		420	U	9.1	420
Anthracene		420	U	40	420
Atrazine		170	U	19	170
Benzaldehyde		420	U	32	420
Benzo[a]anthracene		42	U	35	42
Benzo[a]pyrene		42	U	13	42
Benzo[b]fluoranthene		42	U	16	42
Benzo[g,h,i]perylene		420	U	24	420
Benzo[k]fluoranthene		42	U	18	42
Bis(2-chloroethoxy)methane		420	U	13	420
Bis(2-chloroethyl)ether		42	U	9.9	42
Bis(2-ethylhexyl) phthalate		420	U	16	420
Butyl benzyl phthalate		420	U	13	420
Caprolactam		420	U	30	420
Carbazole		420	U	10	420
Chrysene		420	U	11	420
Dibenz(a,h)anthracene		42	U	22	42

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-6 (1'-3')

Lab Sample ID: 460-102242-3
Client Matrix: Solid

% Moisture: 21.5

Date Sampled: 10/05/2015 1220
Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126631.D
Dilution:	1.0			Initial Weight/Volume:	15.0335 g
Analysis Date:	10/09/2015 2305			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		420	U	13	420
Diethyl phthalate		420	U	12	420
Dimethyl phthalate		420	U	12	420
Di-n-butyl phthalate		420	U	13	420
Di-n-octyl phthalate		420	U	21	420
Fluoranthene		420	U	12	420
Fluorene		420	U	9.1	420
Hexachlorobenzene		42	U	17	42
Hexachlorobutadiene		85	U	12	85
Hexachlorocyclopentadiene		420	U	26	420
Hexachloroethane		42	U	15	42
Indeno[1,2,3-cd]pyrene		42	U	28	42
Isophorone		170	U	9.0	170
Naphthalene		420	U	11	420
Nitrobenzene		42	U	13	42
N-Nitrosodi-n-propylamine		42	U	14	42
N-Nitrosodiphenylamine		420	U	38	420
Pentachlorophenol		340	U	51	340
Phenanthrene		420	U	11	420
Phenol		420	U	14	420
Pyrene		420	U	19	420

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	60		10 - 95
2-Fluorobiphenyl	86	*	27 - 84
2-Fluorophenol (Surr)	74		21 - 84
Nitrobenzene-d5 (Surr)	83		28 - 92
Phenol-d5 (Surr)	78		22 - 88
Terphenyl-d14 (Surr)	99		16 - 114

Client Sample ID: SB-8 (1'-3')

Lab Sample ID: 460-102242-4 Date Sampled: 10/05/2015 1245
Client Matrix: Solid % Moisture: 7.9 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126632.D
Dilution:	1.0			Initial Weight/Volume:	15.0177 g
Analysis Date:	10/09/2015 2330			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		360	U	31	360
1,2,4,5-Tetrachlorobenzene		360	U	27	360
2,2'-oxybis[1-chloropropane]		360	U	15	360
2,3,4,6-Tetrachlorophenol		360	U	34	360
2,4,5-Trichlorophenol		360	U	36	360
2,4,6-Trichlorophenol		140	U	10	140
2,4-Dichlorophenol		140	U	8.5	140
2,4-Dimethylphenol		360	U	79	360
2,4-Dinitrophenol		290	U	270	290
2,4-Dinitrotoluene		73	U	14	73
2,6-Dinitrotoluene		73	U	19	73
2-Chloronaphthalene		360	U	8.1	360
2-Chlorophenol		360	U	9.1	360
2-Methylnaphthalene		360	U	7.9	360
2-Methylphenol		360	U	16	360
2-Nitroaniline		360	U	12	360
2-Nitrophenol		360	U	12	360
3,3'-Dichlorobenzidine		140	U	40	140
3-Nitroaniline		360	U	11	360
4,6-Dinitro-2-methylphenol		290	U	96	290
4-Bromophenyl phenyl ether		360	U	11	360
4-Chloro-3-methylphenol		360	U	15	360
4-Chloroaniline		360	U	9.2	360
4-Chlorophenyl phenyl ether		360	U	11	360
4-Methylphenol		360	U	9.8	360
4-Nitroaniline		360	U	14	360
4-Nitrophenol		730	U	170	730
Acenaphthene		360	U	8.7	360
Acenaphthylene		360	U	9.2	360
Acetophenone		360	U	7.8	360
Anthracene		360	U	34	360
Atrazine		140	U	16	140
Benzaldehyde		360	U	27	360
Benzo[a]anthracene		36	U	30	36
Benzo[a]pyrene		36	U	11	36
Benzo[b]fluoranthene		36	U	14	36
Benzo[g,h,i]perylene		360	U	21	360
Benzo[k]fluoranthene		36	U	16	36
Bis(2-chloroethoxy)methane		360	U	11	360
Bis(2-chloroethyl)ether		36	U	8.5	36
Bis(2-ethylhexyl) phthalate		360	U	14	360
Butyl benzyl phthalate		360	U	11	360
Caprolactam		360	U	26	360
Carbazole		360	U	8.9	360
Chrysene		360	U	9.8	360
Dibenz(a,h)anthracene		36	U	19	36

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-8 (1'-3')

Lab Sample ID: 460-102242-4
Client Matrix: Solid

% Moisture: 7.9

Date Sampled: 10/05/2015 1245
Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126632.D
Dilution:	1.0			Initial Weight/Volume:	15.0177 g
Analysis Date:	10/09/2015 2330			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		360	U	11	360
Diethyl phthalate		360	U	10	360
Dimethyl phthalate		360	U	10	360
Di-n-butyl phthalate		360	U	11	360
Di-n-octyl phthalate		360	U	18	360
Fluoranthene		360	U	11	360
Fluorene		360	U	7.8	360
Hexachlorobenzene		36	U	15	36
Hexachlorobutadiene		73	U	10	73
Hexachlorocyclopentadiene		360	U	22	360
Hexachloroethane		36	U	13	36
Indeno[1,2,3-cd]pyrene		36	U	24	36
Isophorone		140	U	7.7	140
Naphthalene		360	U	9.1	360
Nitrobenzene		36	U	11	36
N-Nitrosodi-n-propylamine		36	U	12	36
N-Nitrosodiphenylamine		360	U	33	360
Pentachlorophenol		290	U	43	290
Phenanthrene		360	U	9.5	360
Phenol		360	U	12	360
Pyrene		360	U	16	360

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	62		10 - 95
2-Fluorobiphenyl	75		27 - 84
2-Fluorophenol (Surr)	66		21 - 84
Nitrobenzene-d5 (Surr)	72		28 - 92
Phenol-d5 (Surr)	69		22 - 88
Terphenyl-d14 (Surr)	92		16 - 114

Client Sample ID: SB-7 (2'-4')

Lab Sample ID: 460-102242-5 Date Sampled: 10/05/2015 1345
Client Matrix: Solid % Moisture: 19.4 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126633.D
Dilution:	1.0			Initial Weight/Volume:	15.0124 g
Analysis Date:	10/09/2015 2356			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		410	U	35	410
1,2,4,5-Tetrachlorobenzene		410	U	30	410
2,2'-oxybis[1-chloropropane]		410	U	17	410
2,3,4,6-Tetrachlorophenol		410	U	39	410
2,4,5-Trichlorophenol		410	U	41	410
2,4,6-Trichlorophenol		160	U	12	160
2,4-Dichlorophenol		160	U	9.7	160
2,4-Dimethylphenol		410	U	90	410
2,4-Dinitrophenol		330	U	310	330
2,4-Dinitrotoluene		83	U	16	83
2,6-Dinitrotoluene		83	U	22	83
2-Chloronaphthalene		410	U	9.3	410
2-Chlorophenol		410	U	10	410
2-Methylnaphthalene		410	U	9.0	410
2-Methylphenol		410	U	18	410
2-Nitroaniline		410	U	14	410
2-Nitrophenol		410	U	14	410
3,3'-Dichlorobenzidine		160	U	46	160
3-Nitroaniline		410	U	12	410
4,6-Dinitro-2-methylphenol		330	U	110	330
4-Bromophenyl phenyl ether		410	U	13	410
4-Chloro-3-methylphenol		410	U	18	410
4-Chloroaniline		410	U	11	410
4-Chlorophenyl phenyl ether		410	U	12	410
4-Methylphenol		410	U	11	410
4-Nitroaniline		410	U	15	410
4-Nitrophenol		830	U	200	830
Acenaphthene		410	U	9.9	410
Acenaphthylene		410	U	11	410
Acetophenone		410	U	8.9	410
Anthracene		410	U	39	410
Atrazine		160	U	18	160
Benzaldehyde		410	U	31	410
Benzo[a]anthracene		41	U	34	41
Benzo[a]pyrene		41	U	12	41
Benzo[b]fluoranthene		41	U	16	41
Benzo[g,h,i]perylene		410	U	24	410
Benzo[k]fluoranthene		41	U	18	41
Bis(2-chloroethoxy)methane		410	U	13	410
Bis(2-chloroethyl)ether		41	U	9.7	41
Bis(2-ethylhexyl) phthalate		410	U	16	410
Butyl benzyl phthalate		410	U	13	410
Caprolactam		410	U	29	410
Carbazole		410	U	10	410
Chrysene		410	U	11	410
Dibenz(a,h)anthracene		41	U	21	41

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-7 (2'-4')

Lab Sample ID: 460-102242-5 | Date Sampled: 10/05/2015 1345
Client Matrix: Solid | % Moisture: 19.4 | Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126633.D
Dilution:	1.0			Initial Weight/Volume:	15.0124 g
Analysis Date:	10/09/2015 2356			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		410	U	12	410
Diethyl phthalate		410	U	12	410
Dimethyl phthalate		410	U	12	410
Di-n-butyl phthalate		410	U	12	410
Di-n-octyl phthalate		410	U	21	410
Fluoranthene		410	U	12	410
Fluorene		410	U	8.9	410
Hexachlorobenzene		41	U	17	41
Hexachlorobutadiene		83	U	12	83
Hexachlorocyclopentadiene		410	U	26	410
Hexachloroethane		41	U	15	41
Indeno[1,2,3-cd]pyrene		41	U	27	41
Isophorone		160	U	8.8	160
Naphthalene		410	U	10	410
Nitrobenzene		41	U	13	41
N-Nitrosodi-n-propylamine		41	U	14	41
N-Nitrosodiphenylamine		410	U	37	410
Pentachlorophenol		330	U	50	330
Phenanthrene		410	U	11	410
Phenol		410	U	13	410
Pyrene		410	U	19	410

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	52		10 - 95
2-Fluorobiphenyl	74		27 - 84
2-Fluorophenol (Surr)	68		21 - 84
Nitrobenzene-d5 (Surr)	72		28 - 92
Phenol-d5 (Surr)	71		22 - 88
Terphenyl-d14 (Surr)	91		16 - 114

Client Sample ID: SB-1 (1'-3')

Lab Sample ID: 460-102242-6 Date Sampled: 10/05/2015 1440
Client Matrix: Solid % Moisture: 8.1 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126634.D
Dilution:	1.0			Initial Weight/Volume:	15.0281 g
Analysis Date:	10/10/2015 0022			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		360	U	31	360
1,2,4,5-Tetrachlorobenzene		360	U	27	360
2,2'-oxybis[1-chloropropane]		360	U	15	360
2,3,4,6-Tetrachlorophenol		360	U	34	360
2,4,5-Trichlorophenol		360	U	36	360
2,4,6-Trichlorophenol		140	U	10	140
2,4-Dichlorophenol		140	U	8.5	140
2,4-Dimethylphenol		360	U	79	360
2,4-Dinitrophenol		290	U	270	290
2,4-Dinitrotoluene		73	U	14	73
2,6-Dinitrotoluene		73	U	19	73
2-Chloronaphthalene		360	U	8.1	360
2-Chlorophenol		360	U	9.1	360
2-Methylnaphthalene		360	U	7.9	360
2-Methylphenol		360	U	16	360
2-Nitroaniline		360	U	12	360
2-Nitrophenol		360	U	12	360
3,3'-Dichlorobenzidine		140	U	40	140
3-Nitroaniline		360	U	11	360
4,6-Dinitro-2-methylphenol		290	U	96	290
4-Bromophenyl phenyl ether		360	U	11	360
4-Chloro-3-methylphenol		360	U	15	360
4-Chloroaniline		360	U	9.2	360
4-Chlorophenyl phenyl ether		360	U	11	360
4-Methylphenol		360	U	9.8	360
4-Nitroaniline		360	U	14	360
4-Nitrophenol		730	U	170	730
Acenaphthene		360	U	8.7	360
Acenaphthylene		360	U	9.2	360
Acetophenone		360	U	7.8	360
Anthracene		360	U	34	360
Atrazine		140	U	16	140
Benzaldehyde		360	U	27	360
Benzo[a]anthracene		36	U	30	36
Benzo[a]pyrene		36	U	11	36
Benzo[b]fluoranthene		36	U	14	36
Benzo[g,h,i]perylene		360	U	21	360
Benzo[k]fluoranthene		36	U	16	36
Bis(2-chloroethoxy)methane		360	U	11	360
Bis(2-chloroethyl)ether		36	U	8.5	36
Bis(2-ethylhexyl) phthalate		360	U	14	360
Butyl benzyl phthalate		360	U	11	360
Caprolactam		360	U	26	360
Carbazole		360	U	8.9	360
Chrysene		360	U	9.8	360
Dibenz(a,h)anthracene		36	U	19	36

Client: AKRF Inc Job Number: 460-102242-1

Client Sample ID: SB-1 (1'-3')

Lab Sample ID: 460-102242-6 Date Sampled: 10/05/2015 1440
Client Matrix: Solid % Moisture: 8.1 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126634.D
Dilution:	1.0			Initial Weight/Volume:	15.0281 g
Analysis Date:	10/10/2015 0022			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		360	U	11	360
Diethyl phthalate		360	U	10	360
Dimethyl phthalate		360	U	10	360
Di-n-butyl phthalate		360	U	11	360
Di-n-octyl phthalate		360	U	18	360
Fluoranthene		360	U	11	360
Fluorene		360	U	7.8	360
Hexachlorobenzene		36	U	15	36
Hexachlorobutadiene		73	U	10	73
Hexachlorocyclopentadiene		360	U	22	360
Hexachloroethane		36	U	13	36
Indeno[1,2,3-cd]pyrene		36	U	24	36
Isophorone		140	U	7.7	140
Naphthalene		360	U	9.1	360
Nitrobenzene		36	U	11	36
N-Nitrosodi-n-propylamine		36	U	12	36
N-Nitrosodiphenylamine		360	U	33	360
Pentachlorophenol		290	U	43	290
Phenanthrene		360	U	9.6	360
Phenol		360	U	12	360
Pyrene		360	U	16	360

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	56		10 - 95
2-Fluorobiphenyl	74		27 - 84
2-Fluorophenol (Surr)	68		21 - 84
Nitrobenzene-d5 (Surr)	75		28 - 92
Phenol-d5 (Surr)	75		22 - 88
Terphenyl-d14 (Surr)	98		16 - 114

Client Sample ID: SB-2 (1'-3')

Lab Sample ID: 460-102242-7 Date Sampled: 10/05/2015 1605
Client Matrix: Solid % Moisture: 8.0 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126635.D
Dilution:	1.0			Initial Weight/Volume:	15.0564 g
Analysis Date:	10/10/2015 0048			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		360	U	31	360
1,2,4,5-Tetrachlorobenzene		360	U	27	360
2,2'-oxybis[1-chloropropane]		360	U	15	360
2,3,4,6-Tetrachlorophenol		360	U	34	360
2,4,5-Trichlorophenol		360	U	36	360
2,4,6-Trichlorophenol		140	U	10	140
2,4-Dichlorophenol		140	U	8.4	140
2,4-Dimethylphenol		360	U	79	360
2,4-Dinitrophenol		290	U	270	290
2,4-Dinitrotoluene		73	U	14	73
2,6-Dinitrotoluene		73	U	19	73
2-Chloronaphthalene		360	U	8.1	360
2-Chlorophenol		360	U	9.1	360
2-Methylnaphthalene		360	U	7.9	360
2-Methylphenol		360	U	16	360
2-Nitroaniline		360	U	12	360
2-Nitrophenol		360	U	12	360
3,3'-Dichlorobenzidine		140	U	40	140
3-Nitroaniline		360	U	11	360
4,6-Dinitro-2-methylphenol		290	U	96	290
4-Bromophenyl phenyl ether		360	U	11	360
4-Chloro-3-methylphenol		360	U	15	360
4-Chloroaniline		360	U	9.2	360
4-Chlorophenyl phenyl ether		360	U	11	360
4-Methylphenol		360	U	9.7	360
4-Nitroaniline		360	U	14	360
4-Nitrophenol		730	U	170	730
Acenaphthene		360	U	8.7	360
Acenaphthylene		360	U	9.2	360
Acetophenone		360	U	7.8	360
Anthracene		360	U	34	360
Atrazine		140	U	16	140
Benzaldehyde		360	U	27	360
Benzo[a]anthracene		36	U	30	36
Benzo[a]pyrene		36	U	11	36
Benzo[b]fluoranthene		36	U	14	36
Benzo[g,h,i]perylene		360	U	21	360
Benzo[k]fluoranthene		36	U	16	36
Bis(2-chloroethoxy)methane		360	U	11	360
Bis(2-chloroethyl)ether		36	U	8.4	36
Bis(2-ethylhexyl) phthalate		360	U	14	360
Butyl benzyl phthalate		360	U	11	360
Caprolactam		360	U	26	360
Carbazole		360	U	8.9	360
Chrysene		360	U	9.7	360
Dibenz(a,h)anthracene		36	U	19	36

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-2 (1'-3')

Lab Sample ID: 460-102242-7
Client Matrix: Solid

% Moisture: 8.0

Date Sampled: 10/05/2015 1605
Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126635.D
Dilution:	1.0			Initial Weight/Volume:	15.0564 g
Analysis Date:	10/10/2015 0048			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		360	U	11	360
Diethyl phthalate		360	U	10	360
Dimethyl phthalate		360	U	10	360
Di-n-butyl phthalate		360	U	11	360
Di-n-octyl phthalate		360	U	18	360
Fluoranthene		360	U	11	360
Fluorene		360	U	7.8	360
Hexachlorobenzene		36	U	15	36
Hexachlorobutadiene		73	U	10	73
Hexachlorocyclopentadiene		360	U	22	360
Hexachloroethane		36	U	13	36
Indeno[1,2,3-cd]pyrene		36	U	24	36
Isophorone		140	U	7.7	140
Naphthalene		360	U	9.1	360
Nitrobenzene		36	U	11	36
N-Nitrosodi-n-propylamine		36	U	12	36
N-Nitrosodiphenylamine		360	U	32	360
Pentachlorophenol		290	U	43	290
Phenanthrene		360	U	9.5	360
Phenol		360	U	12	360
Pyrene		360	U	16	360

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	54		10 - 95
2-Fluorobiphenyl	80		27 - 84
2-Fluorophenol (Surr)	68		21 - 84
Nitrobenzene-d5 (Surr)	74		28 - 92
Phenol-d5 (Surr)	75		22 - 88
Terphenyl-d14 (Surr)	104		16 - 114

Client Sample ID: SB-3 (1'-3')

Lab Sample ID: 460-102242-8 Date Sampled: 10/05/2015 1650
Client Matrix: Solid % Moisture: 7.2 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126636.D
Dilution:	1.0			Initial Weight/Volume:	15.0227 g
Analysis Date:	10/10/2015 0113			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		360	U	30	360
1,2,4,5-Tetrachlorobenzene		360	U	26	360
2,2'-oxybis[1-chloropropane]		360	U	15	360
2,3,4,6-Tetrachlorophenol		360	U	33	360
2,4,5-Trichlorophenol		360	U	35	360
2,4,6-Trichlorophenol		140	U	10	140
2,4-Dichlorophenol		140	U	8.4	140
2,4-Dimethylphenol		360	U	78	360
2,4-Dinitrophenol		290	U	270	290
2,4-Dinitrotoluene		72	U	14	72
2,6-Dinitrotoluene		72	U	19	72
2-Chloronaphthalene		360	U	8.1	360
2-Chlorophenol		360	U	9.0	360
2-Methylnaphthalene		360	U	7.9	360
2-Methylphenol		360	U	15	360
2-Nitroaniline		360	U	12	360
2-Nitrophenol		360	U	12	360
3,3'-Dichlorobenzidine		140	U	40	140
3-Nitroaniline		360	U	11	360
4,6-Dinitro-2-methylphenol		290	U	95	290
4-Bromophenyl phenyl ether		360	U	11	360
4-Chloro-3-methylphenol		360	U	15	360
4-Chloroaniline		360	U	9.1	360
4-Chlorophenyl phenyl ether		360	U	11	360
4-Methylphenol		360	U	9.7	360
4-Nitroaniline		360	U	13	360
4-Nitrophenol		720	U	170	720
Acenaphthene		360	U	8.6	360
Acenaphthylene		360	U	9.1	360
Acetophenone		360	U	7.7	360
Anthracene		360	U	34	360
Atrazine		140	U	16	140
Benzaldehyde		360	U	27	360
Benzo[a]anthracene		36	U	30	36
Benzo[a]pyrene		36	U	11	36
Benzo[b]fluoranthene		36	U	14	36
Benzo[g,h,i]perylene		360	U	20	360
Benzo[k]fluoranthene		36	U	15	36
Bis(2-chloroethoxy)methane		360	U	11	360
Bis(2-chloroethyl)ether		36	U	8.4	36
Bis(2-ethylhexyl) phthalate		360	U	14	360
Butyl benzyl phthalate		360	U	11	360
Caprolactam		360	U	26	360
Carbazole		360	U	8.8	360
Chrysene		360	U	9.7	360
Dibenz(a,h)anthracene		36	U	19	36

Client: AKRF Inc Job Number: 460-102242-1

Client Sample ID: SB-3 (1'-3')

Lab Sample ID: 460-102242-8 Date Sampled: 10/05/2015 1650
Client Matrix: Solid % Moisture: 7.2 Date Received: 10/06/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327862	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327244	Lab File ID:	L126636.D
Dilution:	1.0			Initial Weight/Volume:	15.0227 g
Analysis Date:	10/10/2015 0113			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		360	U	11	360
Diethyl phthalate		360	U	10	360
Dimethyl phthalate		360	U	10	360
Di-n-butyl phthalate		360	U	11	360
Di-n-octyl phthalate		360	U	18	360
Fluoranthene		360	U	11	360
Fluorene		360	U	7.7	360
Hexachlorobenzene		36	U	14	36
Hexachlorobutadiene		72	U	10	72
Hexachlorocyclopentadiene		360	U	22	360
Hexachloroethane		36	U	13	36
Indeno[1,2,3-cd]pyrene		36	U	24	36
Isophorone		140	U	7.6	140
Naphthalene		360	U	9.0	360
Nitrobenzene		36	U	11	36
N-Nitrosodi-n-propylamine		36	U	12	36
N-Nitrosodiphenylamine		360	U	32	360
Pentachlorophenol		290	U	43	290
Phenanthrene		360	U	9.5	360
Phenol		360	U	12	360
Pyrene		360	U	16	360

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	38		10 - 95
2-Fluorobiphenyl	81		27 - 84
2-Fluorophenol (Surr)	71		21 - 84
Nitrobenzene-d5 (Surr)	81		28 - 92
Phenol-d5 (Surr)	79		22 - 88
Terphenyl-d14 (Surr)	100		16 - 114

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1 | Date Sampled: 10/05/2015 1120
Client Matrix: Solid | % Moisture: 21.5 | Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0022 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1134			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		8.5	U	1.1	8.5
4,4'-DDE		8.5	U	1.2	8.5
4,4'-DDT		8.5	U	0.88	8.5
Aldrin		8.5	U	1.0	8.5
alpha-BHC		2.5	U	0.78	2.5
beta-BHC		2.5	U	0.83	2.5
Chlordane (technical)		85	U	38	85
delta-BHC		2.5	U	0.93	2.5
Dieldrin		2.5	U	1.1	2.5
Endosulfan I		8.5	U	1.2	8.5
Endosulfan II		8.5	U	1.3	8.5
Endosulfan sulfate		8.5	U	0.99	8.5
Endrin		8.5	U	1.1	8.5
Endrin aldehyde		8.5	U	1.1	8.5
Endrin ketone		8.5	U	1.2	8.5
gamma-BHC (Lindane)		2.5	U	0.76	2.5
Heptachlor		8.5	U	1.1	8.5
Heptachlor epoxide		8.5	U	1.7	8.5
Methoxychlor		8.5	U	1.8	8.5
gamma-Chlordane		8.5	U	1.8	8.5
Toxaphene		85	U	25	85
alpha-Chlordane		8.5	U	1.4	8.5

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	116		55 - 148
Tetrachloro-m-xylene	122		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-5 (1'-3')**

Lab Sample ID: 460-102242-1
Client Matrix: Solid
% Moisture: 21.5

Date Sampled: 10/05/2015 1120
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0022 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1134			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	114		55 - 148
Tetrachloro-m-xylene	120		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-4 (1'-3')**

Lab Sample ID: 460-102242-2
Client Matrix: Solid
% Moisture: 19.9

Date Sampled: 10/05/2015 1200
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0089 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1147			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		8.4	U	1.1	8.4
4,4'-DDE		8.4	U	1.2	8.4
4,4'-DDT		8.4	U	0.86	8.4
Aldrin		8.4	U	1.0	8.4
alpha-BHC		2.5	U	0.76	2.5
beta-BHC		2.5	U	0.81	2.5
Chlordane (technical)		84	U	37	84
delta-BHC		2.5	U	0.91	2.5
Dieldrin		2.5	U	1.1	2.5
Endosulfan I		8.4	U	1.2	8.4
Endosulfan II		8.4	U	1.3	8.4
Endosulfan sulfate		8.4	U	0.97	8.4
Endrin		8.4	U	1.1	8.4
Endrin aldehyde		8.4	U	1.0	8.4
Endrin ketone		8.4	U	1.2	8.4
gamma-BHC (Lindane)		2.5	U	0.75	2.5
Heptachlor		8.4	U	1.1	8.4
Heptachlor epoxide		8.4	U	1.6	8.4
Methoxychlor		8.4	U	1.8	8.4
gamma-Chlordane		8.4	U	1.8	8.4
Toxaphene		84	U	24	84
alpha-Chlordane		8.4	U	1.4	8.4

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	111		55 - 148
Tetrachloro-m-xylene	114		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-4 (1'-3')**

Lab Sample ID: 460-102242-2
Client Matrix: Solid
% Moisture: 19.9

Date Sampled: 10/05/2015 1200
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0089 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1147			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	109		55 - 148
Tetrachloro-m-xylene	114		55 - 139

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-6 (1'-3')

Lab Sample ID: 460-102242-3 | Date Sampled: 10/05/2015 1220
Client Matrix: Solid | % Moisture: 21.5 | Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0039 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1201			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		8.5	U	1.1	8.5
4,4'-DDE		8.5	U	1.2	8.5
4,4'-DDT		8.5	U	0.88	8.5
Aldrin		8.5	U	1.0	8.5
alpha-BHC		2.5	U	0.78	2.5
beta-BHC		2.5	U	0.83	2.5
Chlordane (technical)		85	U	38	85
delta-BHC		2.5	U	0.93	2.5
Dieldrin		2.5	U	1.1	2.5
Endosulfan I		8.5	U	1.2	8.5
Endosulfan II		8.5	U	1.3	8.5
Endosulfan sulfate		8.5	U	0.99	8.5
Endrin		8.5	U	1.1	8.5
Endrin aldehyde		8.5	U	1.1	8.5
Endrin ketone		8.5	U	1.2	8.5
gamma-BHC (Lindane)		2.5	U	0.76	2.5
Heptachlor		8.5	U	1.1	8.5
Heptachlor epoxide		8.5	U	1.7	8.5
Methoxychlor		8.5	U	1.8	8.5
gamma-Chlordane		8.5	U	1.8	8.5
Toxaphene		85	U	25	85
alpha-Chlordane		8.5	U	1.4	8.5

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	113		55 - 148
Tetrachloro-m-xylene	118		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-6 (1'-3')**

Lab Sample ID: 460-102242-3
Client Matrix: Solid
% Moisture: 21.5

Date Sampled: 10/05/2015 1220
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0039 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1201			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	112		55 - 148
Tetrachloro-m-xylene	115		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-8 (1'-3')

Lab Sample ID: 460-102242-4
Client Matrix: Solid

% Moisture: 7.9

Date Sampled: 10/05/2015 1245
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0074 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1214			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.3	U	0.96	7.3
4,4'-DDE		7.3	U	1.1	7.3
4,4'-DDT		7.3	U	0.75	7.3
Aldrin		7.3	U	0.88	7.3
alpha-BHC		2.2	U	0.66	2.2
beta-BHC		2.2	U	0.71	2.2
Chlordane (technical)		73	U	32	73
delta-BHC		2.2	U	0.79	2.2
Dieldrin		2.2	U	0.94	2.2
Endosulfan I		7.3	U	1.0	7.3
Endosulfan II		7.3	U	1.1	7.3
Endosulfan sulfate		7.3	U	0.85	7.3
Endrin		7.3	U	0.92	7.3
Endrin aldehyde		7.3	U	0.90	7.3
Endrin ketone		7.3	U	1.0	7.3
gamma-BHC (Lindane)		2.2	U	0.65	2.2
Heptachlor		7.3	U	0.93	7.3
Heptachlor epoxide		7.3	U	1.4	7.3
Methoxychlor		7.3	U	1.5	7.3
gamma-Chlordane		7.3	U	1.6	7.3
Toxaphene		73	U	21	73
alpha-Chlordane		7.3	U	1.2	7.3

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	104		55 - 148
Tetrachloro-m-xylene	105		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-8 (1'-3')**

Lab Sample ID: 460-102242-4
Client Matrix: Solid
% Moisture: 7.9

Date Sampled: 10/05/2015 1245
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0074 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1214			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	103		55 - 148
Tetrachloro-m-xylene	105		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-7 (2'-4')

Lab Sample ID: 460-102242-5
Client Matrix: Solid

% Moisture: 19.4

Date Sampled: 10/05/2015 1345
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0046 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1225			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		8.3	U	1.1	8.3
4,4'-DDE		8.3	U	1.2	8.3
4,4'-DDT		8.3	U	0.86	8.3
Aldrin		8.3	U	1.0	8.3
alpha-BHC		2.5	U	0.76	2.5
beta-BHC		2.5	U	0.81	2.5
Chlordane (technical)		83	U	37	83
delta-BHC		2.5	U	0.91	2.5
Dieldrin		2.5	U	1.1	2.5
Endosulfan I		8.3	U	1.2	8.3
Endosulfan II		8.3	U	1.3	8.3
Endosulfan sulfate		8.3	U	0.97	8.3
Endrin		8.3	U	1.1	8.3
Endrin aldehyde		8.3	U	1.0	8.3
Endrin ketone		8.3	U	1.2	8.3
gamma-BHC (Lindane)		2.5	U	0.74	2.5
Heptachlor		8.3	U	1.1	8.3
Heptachlor epoxide		8.3	U	1.6	8.3
Methoxychlor		8.3	U	1.8	8.3
gamma-Chlordane		8.3	U	1.8	8.3
Toxaphene		83	U	24	83
alpha-Chlordane		8.3	U	1.4	8.3

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	111		55 - 148
Tetrachloro-m-xylene	116		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-7 (2'-4')**

Lab Sample ID: 460-102242-5
Client Matrix: Solid
% Moisture: 19.4

Date Sampled: 10/05/2015 1345
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0046 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1225			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	110		55 - 148
Tetrachloro-m-xylene	115		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-1 (1'-3')

Lab Sample ID: 460-102242-6
Client Matrix: Solid

% Moisture: 8.1

Date Sampled: 10/05/2015 1440
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0079 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1238			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.3	U	0.96	7.3
4,4'-DDE		7.3	U	1.1	7.3
4,4'-DDT		7.3	U	0.75	7.3
Aldrin		7.3	U	0.88	7.3
alpha-BHC		2.2	U	0.66	2.2
beta-BHC		2.2	U	0.71	2.2
Chlordane (technical)		73	U	32	73
delta-BHC		2.2	U	0.79	2.2
Dieldrin		2.2	U	0.95	2.2
Endosulfan I		7.3	U	1.0	7.3
Endosulfan II		7.3	U	1.1	7.3
Endosulfan sulfate		7.3	U	0.85	7.3
Endrin		7.3	U	0.92	7.3
Endrin aldehyde		7.3	U	0.90	7.3
Endrin ketone		7.3	U	1.0	7.3
gamma-BHC (Lindane)		2.2	U	0.65	2.2
Heptachlor		7.3	U	0.93	7.3
Heptachlor epoxide		7.3	U	1.4	7.3
Methoxychlor		7.3	U	1.5	7.3
gamma-Chlordane		7.3	U	1.6	7.3
Toxaphene		73	U	21	73
alpha-Chlordane		7.3	U	1.2	7.3

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	105		55 - 148
Tetrachloro-m-xylene	106		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-1 (1'-3')**

Lab Sample ID: 460-102242-6
Client Matrix: Solid
% Moisture: 8.1

Date Sampled: 10/05/2015 1440
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0079 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1238			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	104		55 - 148
Tetrachloro-m-xylene	104		55 - 139

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-2 (1'-3')

Lab Sample ID: 460-102242-7 | Date Sampled: 10/05/2015 1605
Client Matrix: Solid | % Moisture: 8.0 | Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0033 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1251			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.3	U	0.96	7.3
4,4'-DDE		7.3	U	1.1	7.3
4,4'-DDT		7.3	U	0.75	7.3
Aldrin		7.3	U	0.88	7.3
alpha-BHC		2.2	U	0.66	2.2
beta-BHC		2.2	U	0.71	2.2
Chlordane (technical)		73	U	32	73
delta-BHC		2.2	U	0.79	2.2
Dieldrin		2.2	U	0.95	2.2
Endosulfan I		7.3	U	1.0	7.3
Endosulfan II		7.3	U	1.1	7.3
Endosulfan sulfate		7.3	U	0.85	7.3
Endrin		7.3	U	0.92	7.3
Endrin aldehyde		7.3	U	0.90	7.3
Endrin ketone		7.3	U	1.0	7.3
gamma-BHC (Lindane)		2.2	U	0.65	2.2
Heptachlor		7.3	U	0.93	7.3
Heptachlor epoxide		7.3	U	1.4	7.3
Methoxychlor		7.3	U	1.5	7.3
gamma-Chlordane		7.3	U	1.6	7.3
Toxaphene		73	U	21	73
alpha-Chlordane		7.3	U	1.2	7.3

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	113		55 - 148
Tetrachloro-m-xylene	116		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-2 (1'-3')**

Lab Sample ID: 460-102242-7
Client Matrix: Solid
% Moisture: 8.0

Date Sampled: 10/05/2015 1605
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0033 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1251			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	111		55 - 148
Tetrachloro-m-xylene	114		55 - 139

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-3 (1'-3')

Lab Sample ID: 460-102242-8 | Date Sampled: 10/05/2015 1650
Client Matrix: Solid | % Moisture: 7.2 | Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0080 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1304			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.2	U	0.95	7.2
4,4'-DDE		7.2	U	1.0	7.2
4,4'-DDT		7.2	U	0.74	7.2
Aldrin		7.2	U	0.87	7.2
alpha-BHC		2.2	U	0.66	2.2
beta-BHC		2.2	U	0.70	2.2
Chlordane (technical)		72	U	32	72
delta-BHC		2.2	U	0.79	2.2
Dieldrin		2.2	U	0.94	2.2
Endosulfan I		7.2	U	1.0	7.2
Endosulfan II		7.2	U	1.1	7.2
Endosulfan sulfate		7.2	U	0.84	7.2
Endrin		7.2	U	0.92	7.2
Endrin aldehyde		7.2	U	0.89	7.2
Endrin ketone		7.2	U	1.0	7.2
gamma-BHC (Lindane)		2.2	U	0.65	2.2
Heptachlor		7.2	U	0.93	7.2
Heptachlor epoxide		7.2	U	1.4	7.2
Methoxychlor		7.2	U	1.5	7.2
gamma-Chlordane		7.2	U	1.6	7.2
Toxaphene		72	U	21	72
alpha-Chlordane		7.2	U	1.2	7.2

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	110		55 - 148
Tetrachloro-m-xylene	111		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-3 (1'-3')**

Lab Sample ID: 460-102242-8
Client Matrix: Solid
% Moisture: 7.2

Date Sampled: 10/05/2015 1650
Date Received: 10/06/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Prep Method:	3546	Prep Batch:	460-327095	Initial Weight/Volume:	15.0080 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1304			Injection Volume:	1 uL
Prep Date:	10/07/2015 0115			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	109		55 - 148
Tetrachloro-m-xylene	110		55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1
Client Matrix: Solid
% Moisture: 21.5

Date Sampled: 10/05/2015 1120
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0022 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1154			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		85	U	11	85
Aroclor 1221		85	U	11	85
Aroclor 1232		85	U	11	85
Aroclor 1242		85	U	11	85
Aroclor 1248		85	U	11	85
Aroclor 1254		85	U	12	85
Aroclor 1260		85	U	12	85
Aroclor-1262		85	U	12	85
Aroclor 1268		85	U	12	85
Polychlorinated biphenyls, Total		85	U	12	85

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	105		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1
Client Matrix: Solid

% Moisture: 21.5

Date Sampled: 10/05/2015 1120
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0022 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1154			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	97		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-4 (1'-3')**

Lab Sample ID: 460-102242-2
Client Matrix: Solid
% Moisture: 19.9

Date Sampled: 10/05/2015 1200
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0089 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1344			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		84	U	11	84
Aroclor 1221		84	U	11	84
Aroclor 1232		84	U	11	84
Aroclor 1242		84	U	11	84
Aroclor 1248		84	U	11	84
Aroclor 1254		84	U	11	84
Aroclor 1260		84	U	11	84
Aroclor-1262		84	U	11	84
Aroclor 1268		84	U	11	84
Polychlorinated biphenyls, Total		84	U	11	84

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	107		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-4 (1'-3')**

Lab Sample ID: 460-102242-2
Client Matrix: Solid
% Moisture: 19.9

Date Sampled: 10/05/2015 1200
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0089 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1344			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	99		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-6 (1'-3')**

Lab Sample ID: 460-102242-3
Client Matrix: Solid
% Moisture: 21.5

Date Sampled: 10/05/2015 1220
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0039 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1400			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		85	U	11	85
Aroclor 1221		85	U	11	85
Aroclor 1232		85	U	11	85
Aroclor 1242		85	U	11	85
Aroclor 1248		85	U	11	85
Aroclor 1254		85	U	12	85
Aroclor 1260		85	U	12	85
Aroclor-1262		85	U	12	85
Aroclor 1268		85	U	12	85
Polychlorinated biphenyls, Total		85	U	12	85

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	100		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-6 (1'-3')**

Lab Sample ID: 460-102242-3
Client Matrix: Solid
% Moisture: 21.5

Date Sampled: 10/05/2015 1220
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0039 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1400			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	91		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-8 (1'-3')**

Lab Sample ID: 460-102242-4
Client Matrix: Solid
% Moisture: 7.9

Date Sampled: 10/05/2015 1245
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0074 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1415			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		73	U	9.7	73
Aroclor 1221		73	U	9.7	73
Aroclor 1232		73	U	9.7	73
Aroclor 1242		73	U	9.7	73
Aroclor 1248		73	U	9.7	73
Aroclor 1254		73	U	10	73
Aroclor 1260		73	U	10	73
Aroclor-1262		73	U	10	73
Aroclor 1268		73	U	10	73
Polychlorinated biphenyls, Total		73	U	10	73

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	109		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-8 (1'-3')

Lab Sample ID: 460-102242-4
Client Matrix: Solid

% Moisture: 7.9

Date Sampled: 10/05/2015 1245
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0074 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1415			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	101		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-7 (2'-4')**

Lab Sample ID: 460-102242-5
Client Matrix: Solid
% Moisture: 19.4

Date Sampled: 10/05/2015 1345
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0046 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1431			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		83	U	11	83
Aroclor 1221		83	U	11	83
Aroclor 1232		83	U	11	83
Aroclor 1242		83	U	11	83
Aroclor 1248		83	U	11	83
Aroclor 1254		83	U	11	83
Aroclor 1260		83	U	11	83
Aroclor-1262		83	U	11	83
Aroclor 1268		83	U	11	83
Polychlorinated biphenyls, Total		83	U	11	83

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	91		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-7 (2'-4')

Lab Sample ID: 460-102242-5
Client Matrix: Solid

% Moisture: 19.4

Date Sampled: 10/05/2015 1345
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0046 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1431			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	84		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-1 (1'-3')**

Lab Sample ID: 460-102242-6
Client Matrix: Solid
% Moisture: 8.1

Date Sampled: 10/05/2015 1440
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0079 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1447			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		73	U	9.7	73
Aroclor 1221		73	U	9.7	73
Aroclor 1232		73	U	9.7	73
Aroclor 1242		73	U	9.7	73
Aroclor 1248		73	U	9.7	73
Aroclor 1254		73	U	10	73
Aroclor 1260		73	U	10	73
Aroclor-1262		73	U	10	73
Aroclor 1268		73	U	10	73
Polychlorinated biphenyls, Total		73	U	10	73

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	96		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-1 (1'-3')

Lab Sample ID: 460-102242-6
Client Matrix: Solid

% Moisture: 8.1

Date Sampled: 10/05/2015 1440
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0079 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1447			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	90		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-2 (1'-3')

Lab Sample ID: 460-102242-7
Client Matrix: Solid
% Moisture: 8.0

Date Sampled: 10/05/2015 1605
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0033 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1503			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		73	U	9.7	73
Aroclor 1221		73	U	9.7	73
Aroclor 1232		73	U	9.7	73
Aroclor 1242		73	U	9.7	73
Aroclor 1248		73	U	9.7	73
Aroclor 1254		73	U	10	73
Aroclor 1260		73	U	10	73
Aroclor-1262		73	U	10	73
Aroclor 1268		73	U	10	73
Polychlorinated biphenyls, Total		73	U	10	73

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	106		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-2 (1'-3')**

Lab Sample ID: 460-102242-7
Client Matrix: Solid
% Moisture: 8.0

Date Sampled: 10/05/2015 1605
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0033 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1503			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	105		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-3 (1'-3')**

Lab Sample ID: 460-102242-8
Client Matrix: Solid
% Moisture: 7.2

Date Sampled: 10/05/2015 1650
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0080 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1518			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		72	U	9.6	72
Aroclor 1221		72	U	9.6	72
Aroclor 1232		72	U	9.6	72
Aroclor 1242		72	U	9.6	72
Aroclor 1248		72	U	9.6	72
Aroclor 1254		72	U	9.9	72
Aroclor 1260		72	U	9.9	72
Aroclor-1262		72	U	9.9	72
Aroclor 1268		72	U	9.9	72
Polychlorinated biphenyls, Total		72	U	9.9	72

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	111		47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-3 (1'-3')**

Lab Sample ID: 460-102242-8
Client Matrix: Solid
% Moisture: 7.2

Date Sampled: 10/05/2015 1650
Date Received: 10/06/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-327097	Initial Weight/Volume:	15.0080 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/07/2015 1518			Injection Volume:	1 uL
Prep Date:	10/07/2015 0129			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	93		47 - 150

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1 | Date Sampled: 10/05/2015 1120
Client Matrix: Solid | % Moisture: 21.5 | Date Received: 10/06/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.05 g
Analysis Date:	10/08/2015 1711			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.4	U	0.43	2.4
Aluminum		13300		25.0	48.5
Arsenic		4.4		1.2	3.6
Barium		81.1		1.7	48.5
Beryllium		0.66		0.41	0.49
Calcium		1020	J	71.8	1210
Cadmium		0.97	U	0.51	0.97
Cobalt		5.0	J	1.4	12.1
Chromium		15.7		1.2	2.4
Copper		11.6		1.6	6.1
Iron		19800		27.4	36.4
Potassium		644	J	36.8	1210
Magnesium		2830		60.5	1210
Manganese		451		1.3	3.6
Sodium		1210	U	82.1	1210
Nickel		14.6		1.8	9.7
Lead		11.8		0.95	2.4
Antimony		4.9	U	1.9	4.9
Selenium		4.9	U	1.7	4.9
Thallium		4.9	U	2.1	4.9
Vanadium		19.7		1.2	12.1
Zinc		44.7		1.8	7.3

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	10/09/2015 1007			Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.038		0.015	0.021

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-4 (1'-3')

Lab Sample ID: 460-102242-2
Client Matrix: Solid

% Moisture: 19.9

Date Sampled: 10/05/2015 1200
Date Received: 10/06/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.15 g
Analysis Date:	10/08/2015 1715			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.2	U	0.38	2.2
Aluminum		13100		22.4	43.4
Arsenic		6.0		1.1	3.3
Barium		59.7		1.6	43.4
Beryllium		0.60		0.37	0.43
Calcium		689	J	64.2	1090
Cadmium		0.87	U	0.45	0.87
Cobalt		10	J	1.2	10.9
Chromium		15.8		1.0	2.2
Copper		19.9		1.4	5.4
Iron		23400		24.5	32.6
Potassium		534	J	32.9	1090
Magnesium		3750		54.1	1090
Manganese		823		1.1	3.3
Sodium		1090	U	73.5	1090
Nickel		18.6		1.6	8.7
Lead		12.4		0.85	2.2
Antimony		4.3	U	1.7	4.3
Selenium		4.3	U	1.5	4.3
Thallium		4.3	U	1.9	4.3
Vanadium		17.9		1.1	10.9
Zinc		55.7		1.6	6.5

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	10/09/2015 1009			Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.023		0.015	0.021

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: **SB-6 (1'-3')**

Lab Sample ID: 460-102242-3 | Date Sampled: 10/05/2015 1220
Client Matrix: Solid | % Moisture: 21.5 | Date Received: 10/06/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.05 g
Analysis Date:	10/08/2015 1718			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.4	U	0.43	2.4
Aluminum		15000		25.0	48.5
Arsenic		8.6		1.2	3.6
Barium		70.0		1.7	48.5
Beryllium		0.74		0.41	0.49
Calcium		1830		71.8	1210
Cadmium		0.97	U	0.51	0.97
Cobalt		12.7		1.4	12.1
Chromium		18.8		1.2	2.4
Copper		32.8		1.6	6.1
Iron		28800		27.4	36.4
Potassium		756	J	36.7	1210
Magnesium		4570		60.5	1210
Manganese		919		1.3	3.6
Sodium		1210	U	82.1	1210
Nickel		24.6		1.8	9.7
Lead		22.4		0.95	2.4
Antimony		4.9	U	1.9	4.9
Selenium		4.9	U	1.7	4.9
Thallium		4.9	U	2.1	4.9
Vanadium		20.1		1.2	12.1
Zinc		79.9		1.8	7.3

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0			Initial Weight/Volume:	0.64 g
Analysis Date:	10/09/2015 1011			Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.069		0.014	0.020

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-8 (1'-3')

Lab Sample ID: 460-102242-4
Client Matrix: Solid

% Moisture: 7.9

Date Sampled: 10/05/2015 1245
Date Received: 10/06/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.14 g
Analysis Date:	10/08/2015 1722			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		1.9	U	0.34	1.9
Aluminum		11400		19.6	38.1
Arsenic		5.8		0.94	2.9
Barium		27.0	J	1.4	38.1
Beryllium		0.50		0.32	0.38
Calcium		1150		56.4	952
Cadmium		0.76	U	0.40	0.76
Cobalt		10.1		1.1	9.5
Chromium		16.5		0.92	1.9
Copper		24.8		1.2	4.8
Iron		24000		21.5	28.6
Potassium		504	J	28.9	952
Magnesium		5640		47.5	952
Manganese		704		1.0	2.9
Sodium		952	U	64.5	952
Nickel		23.4		1.4	7.6
Lead		14.1		0.75	1.9
Antimony		3.8	U	1.5	3.8
Selenium		3.8	U	1.3	3.8
Thallium		3.8	U	1.7	3.8
Vanadium		15.4		0.95	9.5
Zinc		60.8		1.4	5.7

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0			Initial Weight/Volume:	0.66 g
Analysis Date:	10/09/2015 1013			Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.038		0.012	0.017

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-7 (2'-4')

Lab Sample ID: 460-102242-5 | Date Sampled: 10/05/2015 1345
Client Matrix: Solid | % Moisture: 19.4 | Date Received: 10/06/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.17 g
Analysis Date:	10/08/2015 1725			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.1	U	0.37	2.1
Aluminum		14200		21.8	42.4
Arsenic		6.5		1.0	3.2
Barium		31.0	J	1.5	42.4
Beryllium		0.65		0.36	0.42
Calcium		560	J	62.8	1060
Cadmium		0.85	U	0.44	0.85
Cobalt		10.2	J	1.2	10.6
Chromium		18.3		1.0	2.1
Copper		25.3		1.4	5.3
Iron		27800		24.0	31.8
Potassium		686	J	32.1	1060
Magnesium		5570		52.9	1060
Manganese		630		1.1	3.2
Sodium		1060	U	71.8	1060
Nickel		25.0		1.5	8.5
Lead		12.1		0.83	2.1
Antimony		4.2	U	1.7	4.2
Selenium		4.2	U	1.5	4.2
Thallium		4.2	U	1.9	4.2
Vanadium		18.2		1.1	10.6
Zinc		69.8		1.5	6.4

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	10/09/2015 1015			Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.021		0.014	0.020

Client: AKRF Inc | Job Number: 460-102242-1

Client Sample ID: SB-1 (1'-3')

Lab Sample ID: 460-102242-6 | Date Sampled: 10/05/2015 1440
Client Matrix: Solid | % Moisture: 8.1 | Date Received: 10/06/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.12 g
Analysis Date:	10/08/2015 1729			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		1.9	U	0.34	1.9
Aluminum		9380		20.0	38.8
Arsenic		6.4		0.95	2.9
Barium		30.8	J	1.4	38.8
Beryllium		0.50		0.33	0.39
Calcium		5360		57.5	971
Cadmium		0.78	U	0.40	0.78
Cobalt		9.1	J	1.1	9.7
Chromium		15.1		0.94	1.9
Copper		28.1		1.3	4.9
Iron		24100		21.9	29.1
Potassium		619	J	29.4	971
Magnesium		4850		48.5	971
Manganese		635		1.0	2.9
Sodium		971	U	65.7	971
Nickel		23.6		1.4	7.8
Lead		11.5		0.76	1.9
Antimony		3.9	U	1.5	3.9
Selenium		3.9	U	1.3	3.9
Thallium		3.9	U	1.7	3.9
Vanadium		13.7		0.97	9.7
Zinc		66.9		1.4	5.8

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0			Initial Weight/Volume:	0.67 g
Analysis Date:	10/09/2015 1022			Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.024		0.012	0.017

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: SB-2 (1'-3')

Lab Sample ID: 460-102242-7
Client Matrix: Solid

% Moisture: 8.0

Date Sampled: 10/05/2015 1605
Date Received: 10/06/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.14 g
Analysis Date:	10/08/2015 1733			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		1.9	U	0.34	1.9
Aluminum		11900		19.6	38.1
Arsenic		7.6		0.94	2.9
Barium		34.2	J	1.4	38.1
Beryllium		0.59		0.32	0.38
Calcium		5990		56.5	954
Cadmium		0.76	U	0.40	0.76
Cobalt		11.3		1.1	9.5
Chromium		19.3		0.92	1.9
Copper		33.2		1.2	4.8
Iron		29200		21.6	28.6
Potassium		687	J	28.9	954
Magnesium		6620		47.6	954
Manganese		761		1.0	2.9
Sodium		954	U	64.6	954
Nickel		26.9		1.4	7.6
Lead		12.8		0.75	1.9
Antimony		3.8	U	1.5	3.8
Selenium		3.8	U	1.3	3.8
Thallium		3.8	U	1.7	3.8
Vanadium		16.5		0.95	9.5
Zinc		74.3		1.4	5.7

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	10/09/2015 1025			Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.033		0.013	0.018

Client: AKRF Inc

Job Number: 460-102242-1

Client Sample ID: **SB-3 (1'-3')**

Lab Sample ID: 460-102242-8
Client Matrix: Solid

% Moisture: 7.2

Date Sampled: 10/05/2015 1650
Date Received: 10/06/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.18 g
Analysis Date:	10/08/2015 1736			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		1.8	U	0.32	1.8
Aluminum		12600		18.8	36.5
Arsenic		8.5		0.90	2.7
Barium		61.8		1.3	36.5
Beryllium		0.70		0.31	0.37
Calcium		10200		54.1	913
Cadmium		0.73	U	0.38	0.73
Cobalt		13.9		1.1	9.1
Chromium		19.8		0.88	1.8
Copper		30.8		1.2	4.6
Iron		29900		20.6	27.4
Potassium		832	J	27.7	913
Magnesium		6480		45.6	913
Manganese		824		0.96	2.7
Sodium		913	U	61.8	913
Nickel		31.4		1.3	7.3
Lead		16.5		0.72	1.8
Antimony		3.7	U	1.4	3.7
Selenium		3.7	U	1.3	3.7
Thallium		3.7	U	1.6	3.7
Vanadium		18.5		0.91	9.1
Zinc		77.9		1.3	5.5

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0			Initial Weight/Volume:	0.67 g
Analysis Date:	10/09/2015 1027			Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.033		0.012	0.016

General Chemistry

Client Sample ID: SB-5 (1'-3')

Lab Sample ID: 460-102242-1 Date Sampled: 10/05/2015 1120
Client Matrix: Solid Date Received: 10/06/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	21.5		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N
Percent Solids	78.5		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB-4 (1'-3')**

Lab Sample ID: 460-102242-2 Date Sampled: 10/05/2015 1200
Client Matrix: Solid Date Received: 10/06/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	19.9		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N
Percent Solids	80.1		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB-6 (1'-3')**

Lab Sample ID: 460-102242-3 Date Sampled: 10/05/2015 1220
Client Matrix: Solid Date Received: 10/06/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	21.5		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N
Percent Solids	78.5		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB-8 (1'-3')**

Lab Sample ID: 460-102242-4 Date Sampled: 10/05/2015 1245
Client Matrix: Solid Date Received: 10/06/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.9		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N
Percent Solids	92.1		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB-7 (2'-4')**

Lab Sample ID: 460-102242-5 Date Sampled: 10/05/2015 1345
Client Matrix: Solid Date Received: 10/06/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	19.4		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N
Percent Solids	80.6		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB-1 (1'-3')**

Lab Sample ID: 460-102242-6 Date Sampled: 10/05/2015 1440
Client Matrix: Solid Date Received: 10/06/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	8.1		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N
Percent Solids	91.9		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB-2 (1'-3')**

Lab Sample ID: 460-102242-7 Date Sampled: 10/05/2015 1605
Client Matrix: Solid Date Received: 10/06/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	8.0		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N
Percent Solids	92.0		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327003	Analysis Date: 10/06/2015 1405						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB-3 (1'-3')**

Lab Sample ID: 460-102242-8 Date Sampled: 10/05/2015 1650
Client Matrix: Solid Date Received: 10/06/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.2		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327008	Analysis Date: 10/06/2015 1426						DryWt Corrected: N
Percent Solids	92.8		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327008	Analysis Date: 10/06/2015 1426						DryWt Corrected: N

DATA REPORTING QUALIFIERS

Client: AKRF Inc Job Number: 460-102242-1

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	LCS or LCSD is outside acceptance limits.
GC/MS Semi VOA		
	U	Analyzed for but not detected.
	*	Duplicate RPD exceeds control limits
	J	Indicates an estimated value.
	*	MS or MSD is outside acceptance limits.
	*	Surrogate is outside acceptance limits.
GC Semi VOA		
	U	Analyzed for but not detected.
	*	Duplicate RPD exceeds control limits
	*	MS or MSD is outside acceptance limits.
Metals		
	*	Duplicate analysis not within control limits.
	U	Indicates analyzed for but not detected.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	J	Sample result is greater than the MDL but below the CRDL
	N	Spiked sample recovery is not within control limits.

QUALITY CONTROL RESULTS

Client: AKRF Inc

Job Number: 460-102242-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Prep Batch: 460-326967					
LB3 460-326967/1-A	Neutral Leach or MeOH Extraction Blank	T	Solid	5035	
460-102242-1	SB-5 (1'-3')	T	Solid	5035	
460-102242-2	SB-4 (1'-3')	T	Solid	5035	
460-102242-3	SB-6 (1'-3')	T	Solid	5035	
460-102242-4	SB-8 (1'-3')	T	Solid	5035	
460-102242-5	SB-7 (2'-4')	T	Solid	5035	
460-102242-6	SB-1 (1'-3')	T	Solid	5035	
460-102242-7	SB-2 (1'-3')	T	Solid	5035	
460-102242-8	SB-3 (1'-3')	T	Solid	5035	
Analysis Batch:460-327312					
LCS 460-327312/3	Lab Control Sample	T	Solid	8260C	
LCSD 460-327312/4	Lab Control Sample Duplicate	T	Solid	8260C	
MB 460-327312/8	Method Blank	T	Solid	8260C	
460-102242-1	SB-5 (1'-3')	T	Solid	8260C	460-326967
460-102242-2	SB-4 (1'-3')	T	Solid	8260C	460-326967
460-102242-3	SB-6 (1'-3')	T	Solid	8260C	460-326967
460-102242-4	SB-8 (1'-3')	T	Solid	8260C	460-326967
460-102242-5	SB-7 (2'-4')	T	Solid	8260C	460-326967
460-102242-6	SB-1 (1'-3')	T	Solid	8260C	460-326967
460-102242-7	SB-2 (1'-3')	T	Solid	8260C	460-326967
460-102242-8	SB-3 (1'-3')	T	Solid	8260C	460-326967
Analysis Batch:460-327361					
LCS 460-327361/3	Lab Control Sample	T	Solid	8260C	
LCSD 460-327361/4	Lab Control Sample Duplicate	T	Solid	8260C	
MB 460-327361/7	Method Blank	T	Solid	8260C	
LB3 460-326967/1-A	Neutral Leach or MeOH Extraction Blank	T	Solid	8260C	460-326967

Report Basis
T = Total

Client: AKRF Inc

Job Number: 460-102242-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 460-327244					
LCS 460-327244/2-A	Lab Control Sample	T	Solid	3546	
LCS 460-327244/3-A	Lab Control Sample	T	Solid	3546	
MB 460-327244/1-A	Method Blank	T	Solid	3546	
460-102074-A-3-C MS	Matrix Spike	T	Solid	3546	
460-102074-A-3-D MSD	Matrix Spike Duplicate	T	Solid	3546	
460-102242-1	SB-5 (1'-3')	T	Solid	3546	
460-102242-2	SB-4 (1'-3')	T	Solid	3546	
460-102242-3	SB-6 (1'-3')	T	Solid	3546	
460-102242-4	SB-8 (1'-3')	T	Solid	3546	
460-102242-5	SB-7 (2'-4')	T	Solid	3546	
460-102242-6	SB-1 (1'-3')	T	Solid	3546	
460-102242-7	SB-2 (1'-3')	T	Solid	3546	
460-102242-8	SB-3 (1'-3')	T	Solid	3546	
Analysis Batch:460-327457					
LCS 460-327244/2-A	Lab Control Sample	T	Solid	8270D	460-327244
LCS 460-327244/3-A	Lab Control Sample	T	Solid	8270D	460-327244
MB 460-327244/1-A	Method Blank	T	Solid	8270D	460-327244
460-102074-A-3-C MS	Matrix Spike	T	Solid	8270D	460-327244
460-102074-A-3-D MSD	Matrix Spike Duplicate	T	Solid	8270D	460-327244
Analysis Batch:460-327862					
460-102242-1	SB-5 (1'-3')	T	Solid	8270D	460-327244
460-102242-2	SB-4 (1'-3')	T	Solid	8270D	460-327244
460-102242-3	SB-6 (1'-3')	T	Solid	8270D	460-327244
460-102242-4	SB-8 (1'-3')	T	Solid	8270D	460-327244
460-102242-5	SB-7 (2'-4')	T	Solid	8270D	460-327244
460-102242-6	SB-1 (1'-3')	T	Solid	8270D	460-327244
460-102242-7	SB-2 (1'-3')	T	Solid	8270D	460-327244
460-102242-8	SB-3 (1'-3')	T	Solid	8270D	460-327244

Report Basis
T = Total

Client: AKRF Inc

Job Number: 460-102242-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC Semi VOA					
Prep Batch: 460-327095					
LCS 460-327095/2-A	Lab Control Sample	T	Solid	3546	
MB 460-327095/1-A	Method Blank	T	Solid	3546	
460-102235-E-1-B MS	Matrix Spike	T	Solid	3546	
460-102235-E-1-C MSD	Matrix Spike Duplicate	T	Solid	3546	
460-102242-1	SB-5 (1'-3')	T	Solid	3546	
460-102242-2	SB-4 (1'-3')	T	Solid	3546	
460-102242-3	SB-6 (1'-3')	T	Solid	3546	
460-102242-4	SB-8 (1'-3')	T	Solid	3546	
460-102242-5	SB-7 (2'-4')	T	Solid	3546	
460-102242-6	SB-1 (1'-3')	T	Solid	3546	
460-102242-7	SB-2 (1'-3')	T	Solid	3546	
460-102242-8	SB-3 (1'-3')	T	Solid	3546	
Prep Batch: 460-327097					
LCS 460-327097/2-A	Lab Control Sample	T	Solid	3546	
MB 460-327097/1-A	Method Blank	T	Solid	3546	
460-102242-1	SB-5 (1'-3')	T	Solid	3546	
460-102242-1MS	Matrix Spike	T	Solid	3546	
460-102242-1MSD	Matrix Spike Duplicate	T	Solid	3546	
460-102242-2	SB-4 (1'-3')	T	Solid	3546	
460-102242-3	SB-6 (1'-3')	T	Solid	3546	
460-102242-4	SB-8 (1'-3')	T	Solid	3546	
460-102242-5	SB-7 (2'-4')	T	Solid	3546	
460-102242-6	SB-1 (1'-3')	T	Solid	3546	
460-102242-7	SB-2 (1'-3')	T	Solid	3546	
460-102242-8	SB-3 (1'-3')	T	Solid	3546	
Analysis Batch:460-327150					
LCS 460-327095/2-A	Lab Control Sample	T	Solid	8081B	460-327095
MB 460-327095/1-A	Method Blank	T	Solid	8081B	460-327095
460-102235-E-1-B MS	Matrix Spike	T	Solid	8081B	460-327095
460-102235-E-1-C MSD	Matrix Spike Duplicate	T	Solid	8081B	460-327095
460-102242-1	SB-5 (1'-3')	T	Solid	8081B	460-327095
460-102242-2	SB-4 (1'-3')	T	Solid	8081B	460-327095
460-102242-3	SB-6 (1'-3')	T	Solid	8081B	460-327095
460-102242-4	SB-8 (1'-3')	T	Solid	8081B	460-327095
460-102242-5	SB-7 (2'-4')	T	Solid	8081B	460-327095
460-102242-6	SB-1 (1'-3')	T	Solid	8081B	460-327095
460-102242-7	SB-2 (1'-3')	T	Solid	8081B	460-327095
460-102242-8	SB-3 (1'-3')	T	Solid	8081B	460-327095

Client: AKRF Inc

Job Number: 460-102242-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC Semi VOA					
Analysis Batch:460-327185					
LCS 460-327097/2-A	Lab Control Sample	T	Solid	8082A	460-327097
MB 460-327097/1-A	Method Blank	T	Solid	8082A	460-327097
460-102242-1	SB-5 (1'-3')	T	Solid	8082A	460-327097
460-102242-1MS	Matrix Spike	T	Solid	8082A	460-327097
460-102242-1MSD	Matrix Spike Duplicate	T	Solid	8082A	460-327097
460-102242-2	SB-4 (1'-3')	T	Solid	8082A	460-327097
460-102242-3	SB-6 (1'-3')	T	Solid	8082A	460-327097
460-102242-4	SB-8 (1'-3')	T	Solid	8082A	460-327097
460-102242-5	SB-7 (2'-4')	T	Solid	8082A	460-327097
460-102242-6	SB-1 (1'-3')	T	Solid	8082A	460-327097
460-102242-7	SB-2 (1'-3')	T	Solid	8082A	460-327097
460-102242-8	SB-3 (1'-3')	T	Solid	8082A	460-327097

Report Basis
T = Total

Client: AKRF Inc

Job Number: 460-102242-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-327399					
LCSSRM 460-327399/2-A ^4	LCS-Certified Reference Material	T	Solid	3050B	
MB 460-327399/1-A ^2	Method Blank	T	Solid	3050B	
460-102242-1	SB-5 (1'-3')	T	Solid	3050B	
460-102242-2	SB-4 (1'-3')	T	Solid	3050B	
460-102242-3	SB-6 (1'-3')	T	Solid	3050B	
460-102242-4	SB-8 (1'-3')	T	Solid	3050B	
460-102242-5	SB-7 (2'-4')	T	Solid	3050B	
460-102242-6	SB-1 (1'-3')	T	Solid	3050B	
460-102242-7	SB-2 (1'-3')	T	Solid	3050B	
460-102242-8	SB-3 (1'-3')	T	Solid	3050B	
460-102323-C-1-B DU ^4	Duplicate	T	Solid	3050B	
460-102323-C-1-C MS ^4	Matrix Spike	T	Solid	3050B	
Analysis Batch:460-327514					
LCSSRM 460-327399/2-A ^4	LCS-Certified Reference Material	T	Solid	6010C	460-327399
MB 460-327399/1-A ^2	Method Blank	T	Solid	6010C	460-327399
460-102242-1	SB-5 (1'-3')	T	Solid	6010C	460-327399
460-102242-2	SB-4 (1'-3')	T	Solid	6010C	460-327399
460-102242-3	SB-6 (1'-3')	T	Solid	6010C	460-327399
460-102242-4	SB-8 (1'-3')	T	Solid	6010C	460-327399
460-102242-5	SB-7 (2'-4')	T	Solid	6010C	460-327399
460-102242-6	SB-1 (1'-3')	T	Solid	6010C	460-327399
460-102242-7	SB-2 (1'-3')	T	Solid	6010C	460-327399
460-102242-8	SB-3 (1'-3')	T	Solid	6010C	460-327399
460-102323-C-1-B DU ^4	Duplicate	T	Solid	6010C	460-327399
460-102323-C-1-C MS ^4	Matrix Spike	T	Solid	6010C	460-327399
Prep Batch: 460-327642					
LCSSRM 460-327642/11-A ^2	LCS-Certified Reference Material	T	Solid	7471B	
MB 460-327642/10-A	Method Blank	T	Solid	7471B	
460-102242-1	SB-5 (1'-3')	T	Solid	7471B	
460-102242-2	SB-4 (1'-3')	T	Solid	7471B	
460-102242-3	SB-6 (1'-3')	T	Solid	7471B	
460-102242-4	SB-8 (1'-3')	T	Solid	7471B	
460-102242-5	SB-7 (2'-4')	T	Solid	7471B	
460-102242-6	SB-1 (1'-3')	T	Solid	7471B	
460-102242-7	SB-2 (1'-3')	T	Solid	7471B	
460-102242-8	SB-3 (1'-3')	T	Solid	7471B	
460-102279-E-2-J DU	Duplicate	T	Solid	7471B	
460-102279-E-2-K MS	Matrix Spike	T	Solid	7471B	

Client: AKRF Inc Job Number: 460-102242-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:460-327775					
LCSSRM 460-327642/11-A ^2	LCS-Certified Reference Material	T	Solid	7471B	460-327642
MB 460-327642/10-A	Method Blank	T	Solid	7471B	460-327642
460-102242-1	SB-5 (1'-3')	T	Solid	7471B	460-327642
460-102242-2	SB-4 (1'-3')	T	Solid	7471B	460-327642
460-102242-3	SB-6 (1'-3')	T	Solid	7471B	460-327642
460-102242-4	SB-8 (1'-3')	T	Solid	7471B	460-327642
460-102242-5	SB-7 (2'-4')	T	Solid	7471B	460-327642
460-102242-6	SB-1 (1'-3')	T	Solid	7471B	460-327642
460-102242-7	SB-2 (1'-3')	T	Solid	7471B	460-327642
460-102242-8	SB-3 (1'-3')	T	Solid	7471B	460-327642
460-102279-E-2-J DU	Duplicate	T	Solid	7471B	460-327642
460-102279-E-2-K MS	Matrix Spike	T	Solid	7471B	460-327642

Report Basis
T = Total

General Chemistry

Analysis Batch:460-327003					
460-102242-1	SB-5 (1'-3')	T	Solid	Moisture	
460-102242-2	SB-4 (1'-3')	T	Solid	Moisture	
460-102242-3	SB-6 (1'-3')	T	Solid	Moisture	
460-102242-4	SB-8 (1'-3')	T	Solid	Moisture	
460-102242-5	SB-7 (2'-4')	T	Solid	Moisture	
460-102242-6	SB-1 (1'-3')	T	Solid	Moisture	
460-102242-7	SB-2 (1'-3')	T	Solid	Moisture	
460-102242-7DU	Duplicate	T	Solid	Moisture	
Analysis Batch:460-327008					
460-100929-A-10 DU	Duplicate	T	Solid	Moisture	
460-102242-8	SB-3 (1'-3')	T	Solid	Moisture	

Report Basis
T = Total

Client: AKRF Inc

Job Number: 460-102242-1

Surrogate Recovery Report

8260C Volatile Organic Compounds by GC/MS

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
460-102242-1	SB-5 (1'-3')	109	97	105	94
460-102242-2	SB-4 (1'-3')	104	89	102	90
460-102242-3	SB-6 (1'-3')	106	94	103	90
460-102242-4	SB-8 (1'-3')	104	94	104	96
460-102242-5	SB-7 (2'-4')	109	98	107	98
460-102242-6	SB-1 (1'-3')	100	91	100	90
460-102242-7	SB-2 (1'-3')	103	92	100	91
460-102242-8	SB-3 (1'-3')	115	103	116	103
MB 460-327312/8		101	91	101	92
MB 460-327361/7		106	98	107	95
LB3 460-326967/1-A		113	103	111	102
LCS 460-327312/3		103	97	107	96
LCS 460-327361/3		102	99	110	97
LCSD 460-327312/4		100	97	108	96
LCSD 460-327361/4		102	99	109	96

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	78-135
BFB = 4-Bromofluorobenzene	67-126
DBFM = Dibromofluoromethane (Surr)	61-149
TOL = Toluene-d8 (Surr)	73-121

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	PHL %Rec	TPH %Rec
460-102242-1	SB-5 (1'-3')	47	69	59	67	65	90
460-102242-2	SB-4 (1'-3')	54	72	67	70	70	93
460-102242-3	SB-6 (1'-3')	60	86*	74	83	78	99
460-102242-4	SB-8 (1'-3')	62	75	66	72	69	92
460-102242-5	SB-7 (2'-4')	52	74	68	72	71	91
460-102242-6	SB-1 (1'-3')	56	74	68	75	75	98
460-102242-7	SB-2 (1'-3')	54	80	68	74	75	104
460-102242-8	SB-3 (1'-3')	38	81	71	81	79	100
MB 460-327244/1-A		74	71	73	75	77	83
LCS 460-327244/2-A		89	77	70	73	73	84
LCS 460-327244/3-A		81	75	78	79	80	89
460-102074-A-3-C MS		65	67	57	59	60	64
460-102074-A-3-D MSD		52	56	47	48	49	54

Surrogate	Acceptance Limits
TBP = 2,4,6-Tribromophenol (Surr)	10-95
FBP = 2-Fluorobiphenyl	27-84
2FP = 2-Fluorophenol (Surr)	21-84
NBZ = Nitrobenzene-d5 (Surr)	28-92
PHL = Phenol-d5 (Surr)	22-88
TPH = Terphenyl-d14 (Surr)	16-114

Surrogate Recovery Report

8081B Organochlorine Pesticides (GC)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCB1 %Rec	DCB2 %Rec	TCX1 %Rec	TCX2 %Rec
460-102242-1	SB-5 (1'-3')	116	114	120	122
460-102242-2	SB-4 (1'-3')	111	109	114	114
460-102242-3	SB-6 (1'-3')	113	112	115	118
460-102242-4	SB-8 (1'-3')	104	103	105	105
460-102242-5	SB-7 (2'-4')	111	110	115	116
460-102242-6	SB-1 (1'-3')	105	104	106	104
460-102242-7	SB-2 (1'-3')	113	111	114	116
460-102242-8	SB-3 (1'-3')	110	109	111	110
MB 460-327095/1-A		111	110	101	108
LCS 460-327095/2-A		108	106	112	116
460-102235-E-1-B MS		111	109	115	118
460-102235-E-1-C MSD		113	113	119	121

Surrogate	Acceptance Limits
DCB = DCB Decachlorobiphenyl	55-148
TCX = Tetrachloro-m-xylene	55-139

Client: AKRF Inc

Job Number: 460-102242-1

Surrogate Recovery Report

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCB1 %Rec	DCB2 %Rec
460-102242-1	SB-5 (1'-3')	105	97
460-102242-2	SB-4 (1'-3')	107	99
460-102242-3	SB-6 (1'-3')	100	91
460-102242-4	SB-8 (1'-3')	109	101
460-102242-5	SB-7 (2'-4')	91	84
460-102242-6	SB-1 (1'-3')	96	90
460-102242-7	SB-2 (1'-3')	106	105
460-102242-8	SB-3 (1'-3')	111	93
MB 460-327097/1-A		103	114
LCS 460-327097/2-A		120	87
460-102242-1 MS	SB-5 (1'-3') MS	97	94
460-102242-1 MSD	SB-5 (1'-3') MSD	100	99

Surrogate	Acceptance Limits
DCB = DCB Decachlorobiphenyl	47-150

Neutral Leach or MeOH Extraction Blank - Batch: 460-326967

Method: 8260C
Preparation: 5035

Lab Sample ID:	LB3 460-326967/1-A	Analysis Batch:	460-327361	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	460-326967	Lab File ID:	D14919.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	10/08/2015 1625	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1122				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.38	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.17	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.44	1.0
1,1,2-Trichloroethane	1.0	U	0.28	1.0
1,1-Dichloroethane	1.0	U	0.34	1.0
1,1-Dichloroethene	1.0	U	0.41	1.0
1,2,3-Trichlorobenzene	1.0	U	0.11	1.0
1,2,4-Trichlorobenzene	1.0	U	0.32	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.47	1.0
1,2-Dichlorobenzene	1.0	U	0.14	1.0
1,2-Dichloroethane	1.0	U	0.11	1.0
1,2-Dichloropropane	1.0	U	0.17	1.0
1,3-Dichlorobenzene	1.0	U	0.12	1.0
1,4-Dichlorobenzene	1.0	U	0.13	1.0
1,4-Dioxane	20	U	6.4	20
2-Butanone (MEK)	5.0	U	0.77	5.0
2-Hexanone	5.0	U	0.94	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	2.2	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	4.1	10
Acrolein	100	U	16	100
Benzene	1.0	U	0.20	1.0
Bromoform	1.0	U	0.13	1.0
Bromomethane	1.0	U	0.32	1.0
Carbon disulfide	1.0	U	0.43	1.0
Carbon tetrachloride	1.0	U	0.43	1.0
Chlorobenzene	1.0	U	0.14	1.0
Chlorobromomethane	1.0	U	0.17	1.0
Chlorodibromomethane	1.0	U	0.15	1.0
Chloroethane	1.0	U	0.35	1.0
Chloroform	1.0	U	0.21	1.0
Chloromethane	1.0	U	0.38	1.0
cis-1,2-Dichloroethene	1.0	U	0.22	1.0
cis-1,3-Dichloropropene	1.0	U	0.15	1.0
Cyclohexane	1.0	U	0.46	1.0
Dichlorobromomethane	1.0	U	0.38	1.0
Dichlorodifluoromethane	1.0	U	0.32	1.0
Ethylbenzene	1.0	U	0.18	1.0
Ethylene Dibromide	1.0	U	0.12	1.0
Isopropylbenzene	1.0	U	0.17	1.0
Methyl acetate	5.0	U	0.90	5.0
Methyl tert-butyl ether	1.0	U	0.17	1.0
Methylcyclohexane	1.0	U	0.50	1.0
Methylene Chloride	0.684	J	0.32	1.0
m-Xylene & p-Xylene	1.0	U	0.11	1.0

Neutral Leach or MeOH Extraction Blank - Batch: 460-326967

Method: 8260C
Preparation: 5035

Lab Sample ID:	LB3 460-326967/1-A	Analysis Batch:	460-327361	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	460-326967	Lab File ID:	D14919.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	10/08/2015 1625	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	10/06/2015 1122				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
o-Xylene	1.0	U	0.16	1.0
Styrene	1.0	U	0.15	1.0
Tetrachloroethene	1.0	U	0.28	1.0
Toluene	1.0	U	0.19	1.0
trans-1,2-Dichloroethene	1.0	U	0.39	1.0
trans-1,3-Dichloropropene	1.0	U	0.10	1.0
Trichloroethene	1.0	U	0.26	1.0
Trichlorofluoromethane	1.0	U	0.34	1.0
Vinyl chloride	1.0	U	0.39	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113	78 - 135
4-Bromofluorobenzene	103	67 - 126
Dibromofluoromethane (Surr)	111	61 - 149
Toluene-d8 (Surr)	102	73 - 121

Method Blank - Batch: 460-327312

Method: 8260C
Preparation: N/A

Lab Sample ID:	MB 460-327312/8	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14880.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/07/2015 2312	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.38	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.17	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.44	1.0
1,1,2-Trichloroethane	1.0	U	0.28	1.0
1,1-Dichloroethane	1.0	U	0.34	1.0
1,1-Dichloroethene	1.0	U	0.41	1.0
1,2,3-Trichlorobenzene	1.0	U	0.11	1.0
1,2,4-Trichlorobenzene	1.0	U	0.32	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.47	1.0
1,2-Dichlorobenzene	1.0	U	0.14	1.0
1,2-Dichloroethane	1.0	U	0.11	1.0
1,2-Dichloropropane	1.0	U	0.17	1.0
1,3-Dichlorobenzene	1.0	U	0.12	1.0
1,4-Dichlorobenzene	1.0	U	0.13	1.0
1,4-Dioxane	20	U	6.4	20
2-Butanone (MEK)	5.0	U	0.77	5.0
2-Hexanone	5.0	U	0.94	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	2.2	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	4.1	10
Acrolein	100	U	16	100
Benzene	1.0	U	0.20	1.0
Bromoform	1.0	U	0.13	1.0
Bromomethane	1.0	U	0.32	1.0
Carbon disulfide	1.0	U	0.43	1.0
Carbon tetrachloride	1.0	U	0.43	1.0
Chlorobenzene	1.0	U	0.14	1.0
Chlorobromomethane	1.0	U	0.17	1.0
Chlorodibromomethane	1.0	U	0.15	1.0
Chloroethane	1.0	U	0.35	1.0
Chloroform	1.0	U	0.21	1.0
Chloromethane	1.0	U	0.38	1.0
cis-1,2-Dichloroethene	1.0	U	0.22	1.0
cis-1,3-Dichloropropene	1.0	U	0.15	1.0
Cyclohexane	1.0	U	0.46	1.0
Dichlorobromomethane	1.0	U	0.38	1.0
Dichlorodifluoromethane	1.0	U	0.32	1.0
Ethylbenzene	1.0	U	0.18	1.0
Ethylene Dibromide	1.0	U	0.12	1.0
Isopropylbenzene	1.0	U	0.17	1.0
Methyl acetate	5.0	U	0.90	5.0
Methyl tert-butyl ether	1.0	U	0.17	1.0
Methylcyclohexane	1.0	U	0.50	1.0
Methylene Chloride	1.0	U	0.32	1.0
m-Xylene & p-Xylene	1.0	U	0.11	1.0

Client: AKRF Inc

Job Number: 460-102242-1

Method Blank - Batch: 460-327312

Method: 8260C
Preparation: N/A

Lab Sample ID:	MB 460-327312/8	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14880.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/07/2015 2312	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
o-Xylene	1.0	U	0.16	1.0
Styrene	1.0	U	0.15	1.0
Tetrachloroethene	1.0	U	0.28	1.0
Toluene	1.0	U	0.19	1.0
trans-1,2-Dichloroethene	1.0	U	0.39	1.0
trans-1,3-Dichloropropene	1.0	U	0.10	1.0
Trichloroethene	1.0	U	0.26	1.0
Trichlorofluoromethane	1.0	U	0.34	1.0
Vinyl chloride	1.0	U	0.39	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101	78 - 135
4-Bromofluorobenzene	91	67 - 126
Dibromofluoromethane (Surr)	101	61 - 149
Toluene-d8 (Surr)	92	73 - 121

Client: AKRF Inc

Job Number: 460-102242-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 460-327312

Method: 8260C
Preparation: N/A

LCS Lab Sample ID:	LCS 460-327312/3	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14875.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/07/2015 2103	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-327312/4	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14876.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/07/2015 2127	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1-Trichloroethane	102	100	78 - 139	2	30		
1,1,2,2-Tetrachloroethane	84	80	64 - 128	5	30		
1,1,2-Trichloro-1,2,2-trifluoroethane	94	94	83 - 136	0	30		
1,1,2-Trichloroethane	90	84	76 - 118	6	30		
1,1-Dichloroethane	98	95	83 - 131	3	30		
1,1-Dichloroethene	97	93	80 - 120	4	30		
1,2,3-Trichlorobenzene	94	90	77 - 116	4	30		
1,2,4-Trichlorobenzene	93	92	77 - 116	1	30		
1,2-Dibromo-3-Chloropropane	81	79	63 - 131	3	30		
1,2-Dichlorobenzene	93	91	80 - 120	2	30		
1,2-Dichloroethane	102	99	75 - 132	4	30		
1,2-Dichloropropane	95	91	77 - 124	4	30		
1,3-Dichlorobenzene	93	92	80 - 120	1	30		
1,4-Dichlorobenzene	94	92	80 - 120	2	30		
1,4-Dioxane	105	99	80 - 128	5	30		
2-Butanone (MEK)	108	102	58 - 150	5	30		
2-Hexanone	102	99	75 - 137	3	30		
4-Methyl-2-pentanone (MIBK)	102	99	81 - 121	3	30		
Acetone	113	107	66 - 150	6	30		
Acetonitrile	87	95	41 - 150	8	30		
Acrolein	29	28	26 - 141	4	30	J	J
Benzene	91	88	78 - 122	3	30		
Bromoform	86	82	47 - 150	5	30		
Bromomethane	109	113	74 - 125	4	30		
Carbon disulfide	84	83	82 - 127	2	30		
Carbon tetrachloride	104	102	62 - 150	2	30		
Chlorobenzene	95	92	80 - 120	3	30		
Chlorobromomethane	107	103	73 - 132	4	30		
Chlorodibromomethane	89	85	68 - 132	5	30		
Chloroethane	102	103	63 - 143	1	30		
Chloroform	106	102	80 - 120	4	30		
Chloromethane	99	103	73 - 130	3	30		
cis-1,2-Dichloroethene	104	101	80 - 120	3	30		
cis-1,3-Dichloropropene	87	81	75 - 118	7	30		
Cyclohexane	87	86	77 - 137	1	30		

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 460-327312

Method: 8260C
Preparation: N/A

LCS Lab Sample ID:	LCS 460-327312/3	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14875.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/07/2015 2103	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-327312/4	Analysis Batch:	460-327312	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14876.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/07/2015 2127	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

	% Rec.					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Dichlorobromomethane	95	91	76 - 130	4	30		
Dichlorodifluoromethane	95	97	73 - 122	3	30		
Ethylbenzene	96	95	80 - 120	1	30		
Ethylene Dibromide	92	87	80 - 120	5	30		
Isopropylbenzene	98	97	80 - 120	1	30		
Methyl acetate	86	83	66 - 150	4	30		
Methyl tert-butyl ether	96	97	80 - 120	1	30		
Methylcyclohexane	103	100	84 - 127	4	30		
Methylene Chloride	106	103	80 - 120	3	30		
m-Xylene & p-Xylene	94	94	80 - 120	0	30		
o-Xylene	97	95	80 - 120	1	30		
Styrene	98	97	80 - 120	1	30		
Tetrachloroethene	101	98	68 - 130	3	30		
Toluene	92	89	80 - 120	3	30		
trans-1,2-Dichloroethene	102	101	86 - 126	1	30		
trans-1,3-Dichloropropene	83	80	73 - 118	5	30		
Trichloroethene	103	98	80 - 120	5	30		
Trichlorofluoromethane	104	108	73 - 134	3	30		
Vinyl chloride	102	106	77 - 130	4	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103	100	78 - 135
4-Bromofluorobenzene	97	97	67 - 126
Dibromofluoromethane (Surr)	107	108	61 - 149
Toluene-d8 (Surr)	96	96	73 - 121

Method Blank - Batch: 460-327361

Method: 8260C
Preparation: N/A

Lab Sample ID:	MB 460-327361/7	Analysis Batch:	460-327361	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14905.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2015 1040	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.38	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.17	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.44	1.0
1,1,2-Trichloroethane	1.0	U	0.28	1.0
1,1-Dichloroethane	1.0	U	0.34	1.0
1,1-Dichloroethene	1.0	U	0.41	1.0
1,2,3-Trichlorobenzene	1.0	U	0.11	1.0
1,2,4-Trichlorobenzene	1.0	U	0.32	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.47	1.0
1,2-Dichlorobenzene	1.0	U	0.14	1.0
1,2-Dichloroethane	1.0	U	0.11	1.0
1,2-Dichloropropane	1.0	U	0.17	1.0
1,3-Dichlorobenzene	1.0	U	0.12	1.0
1,4-Dichlorobenzene	1.0	U	0.13	1.0
1,4-Dioxane	20	U	6.4	20
2-Butanone (MEK)	5.0	U	0.77	5.0
2-Hexanone	5.0	U	0.94	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	2.2	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	4.1	10
Acrolein	100	U	16	100
Benzene	1.0	U	0.20	1.0
Bromoform	1.0	U	0.13	1.0
Bromomethane	1.0	U	0.32	1.0
Carbon disulfide	1.0	U	0.43	1.0
Carbon tetrachloride	1.0	U	0.43	1.0
Chlorobenzene	1.0	U	0.14	1.0
Chlorobromomethane	1.0	U	0.17	1.0
Chlorodibromomethane	1.0	U	0.15	1.0
Chloroethane	1.0	U	0.35	1.0
Chloroform	1.0	U	0.21	1.0
Chloromethane	1.0	U	0.38	1.0
cis-1,2-Dichloroethene	1.0	U	0.22	1.0
cis-1,3-Dichloropropene	1.0	U	0.15	1.0
Cyclohexane	1.0	U	0.46	1.0
Dichlorobromomethane	1.0	U	0.38	1.0
Dichlorodifluoromethane	1.0	U	0.32	1.0
Ethylbenzene	1.0	U	0.18	1.0
Ethylene Dibromide	1.0	U	0.12	1.0
Isopropylbenzene	1.0	U	0.17	1.0
Methyl acetate	5.0	U	0.90	5.0
Methyl tert-butyl ether	1.0	U	0.17	1.0
Methylcyclohexane	1.0	U	0.50	1.0
Methylene Chloride	1.0	U	0.32	1.0
m-Xylene & p-Xylene	1.0	U	0.11	1.0

Client: AKRF Inc

Job Number: 460-102242-1

Method Blank - Batch: 460-327361

Method: 8260C
Preparation: N/A

Lab Sample ID:	MB 460-327361/7	Analysis Batch:	460-327361	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14905.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2015 1040	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
o-Xylene	1.0	U	0.16	1.0
Styrene	1.0	U	0.15	1.0
Tetrachloroethene	1.0	U	0.28	1.0
Toluene	1.0	U	0.19	1.0
trans-1,2-Dichloroethene	1.0	U	0.39	1.0
trans-1,3-Dichloropropene	1.0	U	0.10	1.0
Trichloroethene	1.0	U	0.26	1.0
Trichlorofluoromethane	1.0	U	0.34	1.0
Vinyl chloride	1.0	U	0.39	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106	78 - 135
4-Bromofluorobenzene	98	67 - 126
Dibromofluoromethane (Surr)	107	61 - 149
Toluene-d8 (Surr)	95	73 - 121

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 460-327361

Method: 8260C
Preparation: N/A

LCS Lab Sample ID:	LCS 460-327361/3	Analysis Batch:	460-327361	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14901.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2015 0849	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-327361/4	Analysis Batch:	460-327361	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14902.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2015 0913	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1-Trichloroethane	108	100	78 - 139	7	30		
1,1,2,2-Tetrachloroethane	82	81	64 - 128	1	30		
1,1,2-Trichloro-1,2,2-trifluoroethane	75	72	83 - 136	4	30	*	*
1,1,2-Trichloroethane	90	85	76 - 118	5	30		
1,1-Dichloroethane	105	98	83 - 131	7	30		
1,1-Dichloroethene	97	89	80 - 120	8	30		
1,2,3-Trichlorobenzene	97	93	77 - 116	5	30		
1,2,4-Trichlorobenzene	101	96	77 - 116	5	30		
1,2-Dibromo-3-Chloropropane	81	80	63 - 131	2	30		
1,2-Dichlorobenzene	96	92	80 - 120	4	30		
1,2-Dichloroethane	103	98	75 - 132	5	30		
1,2-Dichloropropane	97	91	77 - 124	7	30		
1,3-Dichlorobenzene	101	94	80 - 120	7	30		
1,4-Dichlorobenzene	102	94	80 - 120	8	30		
1,4-Dioxane	106	104	80 - 128	2	30		
2-Butanone (MEK)	98	107	58 - 150	9	30		
2-Hexanone	95	104	75 - 137	10	30		
4-Methyl-2-pentanone (MIBK)	102	101	81 - 121	1	30		
Acetone	86	112	66 - 150	26	30		
Acetonitrile	86	85	41 - 150	2	30		
Acrolein	28	27	26 - 141	4	30	J	J
Benzene	97	88	78 - 122	9	30		
Bromoform	88	82	47 - 150	6	30		
Bromomethane	107	105	74 - 125	2	30		
Carbon disulfide	82	76	82 - 127	8	30		*
Carbon tetrachloride	111	102	62 - 150	8	30		
Chlorobenzene	102	93	80 - 120	9	30		
Chlorobromomethane	107	104	73 - 132	4	30		
Chlorodibromomethane	91	85	68 - 132	6	30		
Chloroethane	99	100	63 - 143	0	30		
Chloroform	111	103	80 - 120	8	30		
Chloromethane	98	96	73 - 130	2	30		
cis-1,2-Dichloroethene	108	101	80 - 120	7	30		
cis-1,3-Dichloropropene	90	82	75 - 118	9	30		
Cyclohexane	87	80	77 - 137	9	30		

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 460-327361

Method: 8260C
Preparation: N/A

LCS Lab Sample ID:	LCS 460-327361/3	Analysis Batch:	460-327361	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14901.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2015 0849	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-327361/4	Analysis Batch:	460-327361	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D14902.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2015 0913	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

	% Rec.					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Dichlorobromomethane	98	92	76 - 130	6	30		
Dichlorodifluoromethane	90	88	73 - 122	2	30		
Ethylbenzene	106	96	80 - 120	10	30		
Ethylene Dibromide	93	89	80 - 120	5	30		
Isopropylbenzene	109	101	80 - 120	8	30		
Methyl acetate	85	85	66 - 150	0	30		
Methyl tert-butyl ether	90	86	80 - 120	4	30		
Methylcyclohexane	111	104	84 - 127	6	30		
Methylene Chloride	99	95	80 - 120	4	30		
m-Xylene & p-Xylene	104	96	80 - 120	8	30		
o-Xylene	103	97	80 - 120	7	30		
Styrene	105	98	80 - 120	7	30		
Tetrachloroethene	115	104	68 - 130	10	30		
Toluene	100	93	80 - 120	7	30		
trans-1,2-Dichloroethene	109	101	86 - 126	8	30		
trans-1,3-Dichloropropene	85	79	73 - 118	7	30		
Trichloroethene	112	102	80 - 120	9	30		
Trichlorofluoromethane	97	96	73 - 134	0	30		
Vinyl chloride	105	102	77 - 130	3	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102	102	78 - 135
4-Bromofluorobenzene	99	99	67 - 126
Dibromofluoromethane (Surr)	110	109	61 - 149
Toluene-d8 (Surr)	97	96	73 - 121

Method Blank - Batch: 460-327244

Method: 8270D
Preparation: 3546

Lab Sample ID:	MB 460-327244/1-A	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37258.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/08/2015 1230	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1'-Biphenyl	330	U	28	330
1,2,4,5-Tetrachlorobenzene	330	U	25	330
2,2'-oxybis[1-chloropropane]	330	U	14	330
2,3,4,6-Tetrachlorophenol	330	U	31	330
2,4,5-Trichlorophenol	330	U	33	330
2,4,6-Trichlorophenol	130	U	9.4	130
2,4-Dichlorophenol	130	U	7.8	130
2,4-Dimethylphenol	330	U	73	330
2,4-Dinitrophenol	270	U	250	270
2,4-Dinitrotoluene	67	U	13	67
2,6-Dinitrotoluene	67	U	18	67
2-Chloronaphthalene	330	U	7.5	330
2-Chlorophenol	330	U	8.4	330
2-Methylnaphthalene	330	U	7.3	330
2-Methylphenol	330	U	14	330
2-Nitroaniline	330	U	11	330
2-Nitrophenol	330	U	11	330
3,3'-Dichlorobenzidine	130	U	37	130
3-Nitroaniline	330	U	9.8	330
4,6-Dinitro-2-methylphenol	270	U	88	270
4-Bromophenyl phenyl ether	330	U	10	330
4-Chloro-3-methylphenol	330	U	14	330
4-Chloroaniline	330	U	8.5	330
4-Chlorophenyl phenyl ether	330	U	9.9	330
4-Methylphenol	330	U	9.0	330
4-Nitroaniline	330	U	13	330
4-Nitrophenol	670	U	160	670
Acenaphthene	330	U	8.0	330
Acenaphthylene	330	U	8.5	330
Acetophenone	330	U	7.2	330
Anthracene	330	U	31	330
Atrazine	130	U	15	130
Benzaldehyde	330	U	25	330
Benzo[a]anthracene	33	U	28	33
Benzo[a]pyrene	33	U	10	33
Benzo[b]fluoranthene	33	U	13	33
Benzo[g,h,i]perylene	330	U	19	330
Benzo[k]fluoranthene	33	U	14	33
Bis(2-chloroethoxy)methane	330	U	10	330
Bis(2-chloroethyl)ether	33	U	7.8	33
Bis(2-ethylhexyl) phthalate	330	U	13	330
Butyl benzyl phthalate	330	U	10	330
Caprolactam	330	U	24	330
Carbazole	330	U	8.2	330
Chrysene	330	U	9.0	330

Method Blank - Batch: 460-327244

Method: 8270D
Preparation: 3546

Lab Sample ID:	MB 460-327244/1-A	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37258.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/08/2015 1230	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Dibenz(a,h)anthracene	33	U	17	33
Dibenzofuran	330	U	10	330
Diethyl phthalate	330	U	9.4	330
Dimethyl phthalate	330	U	9.6	330
Di-n-butyl phthalate	330	U	9.9	330
Di-n-octyl phthalate	330	U	17	330
Fluoranthene	330	U	9.8	330
Fluorene	330	U	7.2	330
Hexachlorobenzene	33	U	13	33
Hexachlorobutadiene	67	U	9.3	67
Hexachlorocyclopentadiene	330	U	21	330
Hexachloroethane	33	U	12	33
Indeno[1,2,3-cd]pyrene	33	U	22	33
Isophorone	130	U	7.1	130
Naphthalene	330	U	8.4	330
Nitrobenzene	33	U	10	33
N-Nitrosodi-n-propylamine	33	U	11	33
N-Nitrosodiphenylamine	330	U	30	330
Pentachlorophenol	270	U	40	270
Phenanthrene	330	U	8.8	330
Phenol	330	U	11	330
Pyrene	330	U	15	330

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	74	10 - 95
2-Fluorobiphenyl	71	27 - 84
2-Fluorophenol (Surr)	73	21 - 84
Nitrobenzene-d5 (Surr)	75	28 - 92
Phenol-d5 (Surr)	77	22 - 88
Terphenyl-d14 (Surr)	83	16 - 114

Lab Control Sample - Batch: 460-327244

Method: 8270D
Preparation: 3546

Lab Sample ID:	LCS 460-327244/2-A	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37259.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/08/2015 1253	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1'-Biphenyl	3330	2540	76	64 - 103	
1,2,4,5-Tetrachlorobenzene	3330	2540	76	62 - 109	
2,2'-oxybis[1-chloropropane]	3330	2470	74	42 - 119	
2,3,4,6-Tetrachlorophenol	3330	2720	82	57 - 113	
2,4,5-Trichlorophenol	3330	2480	74	59 - 105	
2,4,6-Trichlorophenol	3330	2830	85	61 - 107	
2,4-Dichlorophenol	3330	2420	72	59 - 99	
2,4-Dimethylphenol	3330	2500	75	60 - 98	
2,4-Dinitrophenol	6670	5140	77	26 - 137	
2,4-Dinitrotoluene	3330	2830	85	61 - 118	
2,6-Dinitrotoluene	3330	2620	79	63 - 112	
2-Chloronaphthalene	3330	2510	75	63 - 102	
2-Chlorophenol	3330	2440	73	58 - 95	
2-Methylnaphthalene	3330	2510	75	64 - 102	
2-Methylphenol	3330	2470	74	56 - 99	
2-Nitroaniline	3330	2580	77	46 - 113	
2-Nitrophenol	3330	2490	75	63 - 103	
3,3'-Dichlorobenzidine	3330	1610	48	18 - 92	
3-Nitroaniline	3330	1960	59	23 - 89	
4,6-Dinitro-2-methylphenol	6670	5550	83	51 - 124	
4-Bromophenyl phenyl ether	3330	2680	80	65 - 114	
4-Chloro-3-methylphenol	3330	2560	77	58 - 108	
4-Chloroaniline	3330	1870	56	10 - 82	
4-Chlorophenyl phenyl ether	3330	2500	75	63 - 107	
4-Methylphenol	3330	2370	71	53 - 103	
4-Nitroaniline	3330	2450	73	44 - 109	
4-Nitrophenol	6670	5230	78	45 - 125	
Acenaphthene	3330	2480	74	59 - 102	
Acenaphthylene	3330	2660	80	63 - 102	
Acetophenone	3330	2400	72	56 - 107	
Anthracene	3330	2470	74	66 - 105	
Benzo[a]anthracene	3330	2660	80	65 - 106	
Benzo[a]pyrene	3330	2660	80	68 - 111	
Benzo[b]fluoranthene	3330	2610	78	67 - 116	
Benzo[g,h,i]perylene	3330	2600	78	49 - 124	
Benzo[k]fluoranthene	3330	2560	77	65 - 114	
Bis(2-chloroethoxy)methane	3330	2540	76	61 - 102	
Bis(2-chloroethyl)ether	3330	2430	73	58 - 102	
Bis(2-ethylhexyl) phthalate	3330	2420	73	60 - 125	
Butyl benzyl phthalate	3330	2670	80	62 - 123	
Carbazole	3330	2520	76	62 - 107	

Client: AKRF Inc

Job Number: 460-102242-1

Lab Control Sample - Batch: 460-327244

Method: 8270D
Preparation: 3546

Lab Sample ID:	LCS 460-327244/2-A	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37259.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/08/2015 1253	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chrysene	3330	2700	81	64 - 105	
Dibenz(a,h)anthracene	3330	2740	82	54 - 126	
Dibenzofuran	3330	2540	76	62 - 102	
Diethyl phthalate	3330	2710	81	61 - 110	
Dimethyl phthalate	3330	2710	81	64 - 108	
Di-n-butyl phthalate	3330	2580	78	62 - 114	
Di-n-octyl phthalate	3330	2420	73	52 - 137	
Fluoranthene	3330	2470	74	59 - 109	
Fluorene	3330	2480	74	65 - 108	
Hexachlorobenzene	3330	2670	80	65 - 117	
Hexachlorobutadiene	3330	2560	77	60 - 105	
Hexachlorocyclopentadiene	3330	2880	86	37 - 119	
Hexachloroethane	3330	2350	70	60 - 94	
Indeno[1,2,3-cd]pyrene	3330	2990	90	50 - 134	
Isophorone	3330	2620	79	60 - 102	
Naphthalene	3330	2450	73	64 - 99	
Nitrobenzene	3330	2340	70	59 - 102	
N-Nitrosodi-n-propylamine	3330	2480	75	56 - 112	
Pentachlorophenol	6670	5220	78	47 - 115	
Phenanthrene	3330	2540	76	66 - 105	
Phenol	3330	2400	72	55 - 99	
Pyrene	3330	2650	79	55 - 126	

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	89	10 - 95
2-Fluorobiphenyl	77	27 - 84
2-Fluorophenol (Surr)	70	21 - 84
Nitrobenzene-d5 (Surr)	73	28 - 92
Phenol-d5 (Surr)	73	22 - 88
Terphenyl-d14 (Surr)	84	16 - 114

Client: AKRF Inc

Job Number: 460-102242-1

Lab Control Sample - Batch: 460-327244

Method: 8270D
Preparation: 3546

Lab Sample ID:	LCS 460-327244/3-A	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37260.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/08/2015 1317	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Atrazine	6670	5430	81	41 - 116	
Benzaldehyde	6670	4140	62	55 - 116	
Caprolactam	6670	6080	91	44 - 129	

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	81	10 - 95
2-Fluorobiphenyl	75	27 - 84
2-Fluorophenol (Surr)	78	21 - 84
Nitrobenzene-d5 (Surr)	79	28 - 92
Phenol-d5 (Surr)	80	22 - 88
Terphenyl-d14 (Surr)	89	16 - 114

Client: AKRF Inc

Job Number: 460-102242-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327244

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102074-A-3-C MS	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37268.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0023 g
Analysis Date:	10/08/2015 1633			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102074-A-3-D MSD	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37269.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0045 g
Analysis Date:	10/08/2015 1656			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1'-Biphenyl	67	55	64 - 103	19	30		*
1,2,4,5-Tetrachlorobenzene	70	58	62 - 109	19	30		*
2,2'-oxybis[1-chloropropane]	62	48	42 - 119	24	30		
2,3,4,6-Tetrachlorophenol	66	54	57 - 113	21	30		*
2,4,5-Trichlorophenol	64	54	59 - 105	18	30		*
2,4,6-Trichlorophenol	66	55	61 - 107	18	30		*
2,4-Dichlorophenol	62	51	59 - 99	20	30		*
2,4-Dimethylphenol	62	53	60 - 98	16	30		*
2,4-Dinitrophenol	30	27	26 - 137	10	30		
2,4-Dinitrotoluene	75	66	61 - 118	12	30		
2,6-Dinitrotoluene	74	62	63 - 112	18	30		*
2-Chloronaphthalene	67	56	63 - 102	18	30		*
2-Chlorophenol	60	49	58 - 95	21	30		*
2-Methylnaphthalene	65	54	64 - 102	18	30		*
2-Methylphenol	62	52	56 - 99	19	30		*
2-Nitroaniline	67	57	46 - 113	16	30		
2-Nitrophenol	61	48	63 - 103	23	30	*	*
3,3'-Dichlorobenzidine	17	26	18 - 92	40	30	*	*
3-Nitroaniline	35	43	23 - 89	22	30		
4,6-Dinitro-2-methylphenol	49	48	51 - 124	3	30	*	*
4-Bromophenyl phenyl ether	78	63	65 - 114	22	30		*
4-Chloro-3-methylphenol	65	56	58 - 108	16	30		*
4-Chloroaniline	19	25	10 - 82	29	30		
4-Chlorophenyl phenyl ether	65	56	63 - 107	15	30		*
4-Methylphenol	60	51	53 - 103	16	30		*
4-Nitroaniline	49	46	44 - 109	7	30		
4-Nitrophenol	52	45	45 - 125	15	30		
Acenaphthene	65	55	59 - 102	17	30		*
Acenaphthylene	69	57	63 - 102	19	30		*
Acetophenone	65	52	56 - 107	21	30		*
Anthracene	66	54	66 - 105	20	30		*
Atrazine	63	57	41 - 116	9	30		

Client: AKRF Inc

Job Number: 460-102242-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327244

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102074-A-3-C MS	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37268.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0023 g
Analysis Date:	10/08/2015 1633			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102074-A-3-D MSD	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37269.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0045 g
Analysis Date:	10/08/2015 1656			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzaldehyde	43	31	55 - 116	34	30	*	*
Benzo[a]anthracene	67	56	65 - 106	18	30		*
Benzo[a]pyrene	69	58	68 - 111	17	30		*
Benzo[b]fluoranthene	67	55	67 - 116	19	30		*
Benzo[g,h,i]perylene	76	65	49 - 124	16	30		
Benzo[k]fluoranthene	63	54	65 - 114	15	30	*	*
Bis(2-chloroethoxy)methane	64	53	61 - 102	20	30		*
Bis(2-chloroethyl)ether	62	50	58 - 102	22	30		*
Bis(2-ethylhexyl) phthalate	60	50	60 - 125	17	30		*
Butyl benzyl phthalate	65	54	62 - 123	18	30		*
Caprolactam	30	35	44 - 129	15	30	*	*
Carbazole	64	53	62 - 107	20	30		*
Chrysene	66	56	64 - 105	17	30		*
Dibenz(a,h)anthracene	77	69	54 - 126	11	30		
Dibenzofuran	66	56	62 - 102	17	30		*
Diethyl phthalate	75	63	61 - 110	17	30		
Dimethyl phthalate	77	64	64 - 108	19	30		
Di-n-butyl phthalate	66	55	62 - 114	19	30		*
Di-n-octyl phthalate	57	48	52 - 137	17	30		*
Fluoranthene	66	52	59 - 109	22	30		*
Fluorene	65	56	65 - 108	14	30		*
Hexachlorobenzene	74	60	65 - 117	21	30		*
Hexachlorobutadiene	66	52	60 - 105	23	30		*
Hexachlorocyclopentadiene	58	48	37 - 119	19	30		
Hexachloroethane	57	46	60 - 94	23	30	*	*
Indeno[1,2,3-cd]pyrene	76	67	50 - 134	13	30		
Isophorone	67	53	60 - 102	23	30		*
Naphthalene	62	51	64 - 99	21	30	*	*
Nitrobenzene	57	45	59 - 102	23	30	*	*
N-Nitrosodi-n-propylamine	63	51	56 - 112	22	30		*
Pentachlorophenol	60	52	47 - 115	15	30		
Phenanthrene	68	56	66 - 105	20	30		*

Client: AKRF Inc

Job Number: 460-102242-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327244

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102074-A-3-C MS	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37268.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0023 g
Analysis Date:	10/08/2015 1633			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102074-A-3-D MSD	Analysis Batch:	460-327457	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327244	Lab File ID:	z37269.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0045 g
Analysis Date:	10/08/2015 1656			Final Weight/Volume:	1 mL
Prep Date:	10/07/2015 1243			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phenol	59	49	55 - 99	20	30		*
Pyrene	61	52	55 - 126	16	30		*

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	65	52	10 - 95
2-Fluorobiphenyl	67	56	27 - 84
2-Fluorophenol (Surr)	57	47	21 - 84
Nitrobenzene-d5 (Surr)	59	48	28 - 92
Phenol-d5 (Surr)	60	49	22 - 88
Terphenyl-d14 (Surr)	64	54	16 - 114

Client: AKRF Inc

Job Number: 460-102242-1

Method Blank - Batch: 460-327095

Method: 8081B
Preparation: 3546

Lab Sample ID:	MB 460-327095/1-A	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Client Matrix:	Solid	Prep Batch:	460-327095	Lab File ID:	P4015174.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/07/2015 0812	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0115			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
4,4'-DDD	6.7	U	0.88	6.7
4,4'-DDE	6.7	U	0.97	6.7
4,4'-DDT	6.7	U	0.69	6.7
Aldrin	6.7	U	0.81	6.7
alpha-BHC	2.0	U	0.61	2.0
beta-BHC	2.0	U	0.65	2.0
Chlordane (technical)	67	U	30	67
delta-BHC	2.0	U	0.73	2.0
Dieldrin	2.0	U	0.87	2.0
Endosulfan I	6.7	U	0.93	6.7
Endosulfan II	6.7	U	1.1	6.7
Endosulfan sulfate	6.7	U	0.78	6.7
Endrin	6.7	U	0.85	6.7
Endrin aldehyde	6.7	U	0.83	6.7
Endrin ketone	6.7	U	0.93	6.7
gamma-BHC (Lindane)	2.0	U	0.60	2.0
Heptachlor	6.7	U	0.86	6.7
Heptachlor epoxide	6.7	U	1.3	6.7
Methoxychlor	6.7	U	1.4	6.7
gamma-Chlordane	6.7	U	1.5	6.7
Toxaphene	67	U	20	67
alpha-Chlordane	6.7	U	1.1	6.7

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	111	55 - 148
Tetrachloro-m-xylene	108	55 - 139

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	110	55 - 148
Tetrachloro-m-xylene	101	55 - 139

Lab Control Sample - Batch: 460-327095

Method: 8081B
Preparation: 3546

Lab Sample ID:	LCS 460-327095/2-A	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Client Matrix:	Solid	Prep Batch:	460-327095	Lab File ID:	P4015175.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/07/2015 0825	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0115			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4,4'-DDD	133	139	104	61 - 140	
4,4'-DDE	133	137	103	61 - 135	
4,4'-DDT	133	137	103	59 - 133	
Aldrin	133	151	113	61 - 133	
alpha-BHC	133	149	112	61 - 137	
beta-BHC	133	140	105	59 - 136	
delta-BHC	133	153	114	60 - 139	
Dieldrin	133	144	108	61 - 137	
Endosulfan I	133	136	102	60 - 135	
Endosulfan II	133	135	101	61 - 130	
Endosulfan sulfate	133	130	98	60 - 129	
Endrin	133	135	102	59 - 133	
Endrin aldehyde	133	140	105	57 - 131	
Endrin ketone	133	132	99	57 - 138	
gamma-BHC (Lindane)	133	152	114	61 - 138	
Heptachlor	133	151	113	61 - 135	
Heptachlor epoxide	133	141	106	61 - 129	
Methoxychlor	133	124	93	60 - 129	
gamma-Chlordane	133	142	107	60 - 131	
alpha-Chlordane	133	136	102	57 - 136	

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	108	55 - 148
Tetrachloro-m-xylene	116	55 - 139

Lab Control Sample - Batch: 460-327095

Method: 8081B
Preparation: 3546

Lab Sample ID:	LCS 460-327095/2-A	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Client Matrix:	Solid	Prep Batch:	460-327095	Lab File ID:	P4015175.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/07/2015 0825	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0115			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4,4'-DDD	133	132	99	61 - 140	
4,4'-DDE	133	133	100	61 - 135	
4,4'-DDT	133	128	96	59 - 133	
Aldrin	133	135	101	61 - 133	

Client: AKRF Inc

Job Number: 460-102242-1

Lab Control Sample - Batch: 460-327095

Method: 8081B
Preparation: 3546

Lab Sample ID:	LCS 460-327095/2-A	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Client Matrix:	Solid	Prep Batch:	460-327095	Lab File ID:	P4015175.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/07/2015 0825	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0115			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
alpha-BHC	133	143	107	61 - 137	
beta-BHC	133	134	101	59 - 136	
delta-BHC	133	136	102	60 - 139	
Dieldrin	133	139	104	61 - 137	
Endosulfan I	133	132	99	60 - 135	
Endosulfan II	133	127	96	61 - 130	
Endosulfan sulfate	133	127	96	60 - 129	
Endrin	133	130	97	59 - 133	
Endrin aldehyde	133	129	97	57 - 131	
Endrin ketone	133	128	96	57 - 138	
gamma-BHC (Lindane)	133	142	106	61 - 138	
Heptachlor	133	139	104	61 - 135	
Heptachlor epoxide	133	135	101	61 - 129	
Methoxychlor	133	122	91	60 - 129	
gamma-Chlordane	133	127	95	60 - 131	
alpha-Chlordane	133	130	98	57 - 136	

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	106	55 - 148
Tetrachloro-m-xylene	112	55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327095

Method: 8081B
Preparation: 3546

MS Lab Sample ID:	460-102235-E-1-B MS	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Client Matrix:	Solid	Prep Batch:	460-327095	Lab File ID:	P4015178.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0025 g
Analysis Date:	10/07/2015 0906			Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0115			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	460-102235-E-1-C MSD	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Client Matrix:	Solid	Prep Batch:	460-327095	Lab File ID:	P4015179.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0061 g
Analysis Date:	10/07/2015 0919			Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0115			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4,4'-DDD	111	117	61 - 140	5	30		
4,4'-DDE	109	114	61 - 135	5	30		
4,4'-DDT	114	120	59 - 133	5	30		
Aldrin	115	124	61 - 133	8	30		
alpha-BHC	119	124	61 - 137	5	30		
beta-BHC	110	116	59 - 136	6	30		
delta-BHC	118	127	60 - 139	8	30		
Dieldrin	114	120	61 - 137	5	30		
Endosulfan I	107	113	60 - 135	5	30		
Endosulfan II	107	113	61 - 130	5	30		
Endosulfan sulfate	103	107	60 - 129	4	30		
Endrin	108	114	59 - 133	5	30		
Endrin aldehyde	111	117	57 - 131	5	30		
Endrin ketone	104	110	57 - 138	5	30		
gamma-BHC (Lindane)	120	127	61 - 138	5	30		
Heptachlor	115	126	61 - 135	9	30		
Heptachlor epoxide	111	117	61 - 129	5	30		
Methoxychlor	106	111	60 - 129	5	30		
gamma-Chlordane	112	153	60 - 131	31	30		*
alpha-Chlordane	108	113	57 - 136	5	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCB Decachlorobiphenyl	111	113	55 - 148
Tetrachloro-m-xylene	118	121	55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327095

Method: 8081B
Preparation: 3546

MS Lab Sample ID:	460-102235-E-1-B MS	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Client Matrix:	Solid	Prep Batch:	460-327095	Lab File ID:	P4015178.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0025 g
Analysis Date:	10/07/2015 0906			Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0115			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

MSD Lab Sample ID:	460-102235-E-1-C MSD	Analysis Batch:	460-327150	Instrument ID:	CPESTGC4
Client Matrix:	Solid	Prep Batch:	460-327095	Lab File ID:	P4015179.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0061 g
Analysis Date:	10/07/2015 0919			Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0115			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4,4'-DDD	106	111	61 - 140	5	30		
4,4'-DDE	105	111	61 - 135	5	30		
4,4'-DDT	107	112	59 - 133	5	30		
Aldrin	107	112	61 - 133	5	30		
alpha-BHC	112	118	61 - 137	6	30		
beta-BHC	106	110	59 - 136	4	30		
delta-BHC	108	113	60 - 139	5	30		
Dieldrin	109	115	61 - 137	5	30		
Endosulfan I	104	110	60 - 135	5	30		
Endosulfan II	101	106	61 - 130	5	30		
Endosulfan sulfate	101	107	60 - 129	5	30		
Endrin	103	109	59 - 133	5	30		
Endrin aldehyde	103	108	57 - 131	5	30		
Endrin ketone	102	107	57 - 138	5	30		
gamma-BHC (Lindane)	112	118	61 - 138	5	30		
Heptachlor	110	116	61 - 135	5	30		
Heptachlor epoxide	106	111	61 - 129	5	30		
Methoxychlor	104	110	60 - 129	6	30		
alpha-Chlordane	103	108	57 - 136	5	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCB Decachlorobiphenyl	109	113	55 - 148
Tetrachloro-m-xylene	115	119	55 - 139

Client: AKRF Inc

Job Number: 460-102242-1

Method Blank - Batch: 460-327097

Method: 8082A
Preparation: 3546

Lab Sample ID:	MB 460-327097/1-A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-327097	Lab File ID:	VR503468.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/07/2015 1122	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0129			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Aroclor 1016	67	U	8.9	67
Aroclor 1221	67	U	8.9	67
Aroclor 1232	67	U	8.9	67
Aroclor 1242	67	U	8.9	67
Aroclor 1248	67	U	8.9	67
Aroclor 1254	67	U	9.2	67
Aroclor 1260	67	U	9.2	67
Aroclor-1262	67	U	9.2	67
Aroclor 1268	67	U	9.2	67
Polychlorinated biphenyls, Total	67	U	9.2	67

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	114	47 - 150

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	103	47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Lab Control Sample - Batch: 460-327097

Method: 8082A
Preparation: 3546

Lab Sample ID:	LCS 460-327097/2-A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-327097	Lab File ID:	VR503469.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/07/2015 1138	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0129			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	333	389	117	70 - 149	
Aroclor 1260	333	417	125	71 - 150	

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	120	47 - 150

Lab Control Sample - Batch: 460-327097

Method: 8082A
Preparation: 3546

Lab Sample ID:	LCS 460-327097/2-A	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-327097	Lab File ID:	VR503469.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/07/2015 1138	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0129			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	333	284	85	70 - 149	
Aroclor 1260	333	310	93	71 - 150	

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	87	47 - 150

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327097

Method: 8082A
Preparation: 3546

MS Lab Sample ID:	460-102242-1	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-327097	Lab File ID:	VR503471.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0005 g
Analysis Date:	10/07/2015 1210			Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0129			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	460-102242-1	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-327097	Lab File ID:	VR503472.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0061 g
Analysis Date:	10/07/2015 1225			Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0129			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.					
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aroclor 1016	92	95	70 - 149	4	30		
Aroclor 1260	103	107	71 - 150	3	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCB Decachlorobiphenyl	97	100	47 - 150

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327097

Method: 8082A
Preparation: 3546

MS Lab Sample ID:	460-102242-1	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-327097	Lab File ID:	VR503471.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0005 g
Analysis Date:	10/07/2015 1210			Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0129			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

MSD Lab Sample ID:	460-102242-1	Analysis Batch:	460-327185	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-327097	Lab File ID:	VR503472.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0061 g
Analysis Date:	10/07/2015 1225			Final Weight/Volume:	10 mL
Prep Date:	10/07/2015 0129			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

	% Rec.					
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aroclor 1016	88	94	70 - 149	6	30		
Aroclor 1260	99	102	71 - 150	3	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCB Decachlorobiphenyl	94	99	47 - 150

Client: AKRF Inc

Job Number: 460-102242-1

Method Blank - Batch: 460-327399

Method: 6010C
Preparation: 3050B

Lab Sample ID:	MB 460-327399/1-A ^2	Analysis Batch:	460-327514	Instrument ID:	ICP5
Client Matrix:	Solid	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	2.0	Leach Batch:	N/A	Initial Weight/Volume:	1.00 g
Analysis Date:	10/08/2015 1949	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Silver	1.0	U	0.18	1.0
Aluminum	20.0	U	10.3	20.0
Arsenic	1.5	U	0.49	1.5
Barium	20.0	U	0.72	20.0
Beryllium	0.20	U	0.17	0.20
Calcium	500	U	29.6	500
Cadmium	0.40	U	0.21	0.40
Cobalt	5.0	U	0.58	5.0
Chromium	1.0	U	0.48	1.0
Copper	2.5	U	0.65	2.5
Iron	15.0	U	11.3	15.0
Potassium	500	U	15.2	500
Magnesium	500	U	25.0	500
Manganese	1.5	U	0.53	1.5
Sodium	500	U	33.9	500
Nickel	4.0	U	0.73	4.0
Lead	1.0	U	0.39	1.0
Antimony	2.0	U	0.79	2.0
Selenium	2.0	U	0.69	2.0
Thallium	2.0	U	0.89	2.0
Vanadium	5.0	U	0.50	5.0
Zinc	3.0	U	0.73	3.0

Client: AKRF Inc

Job Number: 460-102242-1

LCS-Certified Reference Material - Batch: 460-327399

Method: 6010C
Preparation: 3050B

Lab Sample ID:	LCSSRM 460-327399/2-A	Analysis Batch:	460-327514	Instrument ID:	ICP5
Client Matrix:	Solid	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0	Leach Batch:	N/A	Initial Weight/Volume:	1.05 g
Analysis Date:	10/08/2015 1609	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Silver	40.9	37.39	91.4	75.1 - 124.7	
Aluminum	7930	6307	79.5	50.2 - 150.1	
Arsenic	98.5	92.53	93.9	77.8 - 122.8	
Barium	308	299.6	97.3	82.5 - 117.5	
Beryllium	66.0	63.94	96.9	83.0 - 116.8	
Calcium	6610	6198	93.8	83.7 - 116.2	
Cadmium	146	144.4	98.9	82.9 - 117.8	
Cobalt	162	162.7	100.4	83.3 - 116.0	
Chromium	182	181.0	99.5	79.7 - 120.3	
Copper	106	101.8	96.0	81.5 - 118.9	
Iron	14400	13980	97.1	44.1 - 155.6	
Potassium	2550	2170	85.1	69.0 - 130.6	
Magnesium	2640	2305	87.3	75.8 - 124.6	
Manganese	410	399.6	97.5	81.2 - 119.0	
Sodium	2480	2434	98.2	70.6 - 129.0	
Nickel	149	153.6	103.1	82.6 - 117.4	
Lead	130	125.6	96.6	82.3 - 117.7	
Antimony	105	81.94	78.0	0.1 - 201.0	
Selenium	154	143.5	93.2	77.9 - 122.1	
Thallium	175	188.8	107.9	78.3 - 121.1	
Vanadium	96.7	94.93	98.2	77.2 - 123.1	
Zinc	191	188.3	98.6	83.2 - 116.8	

Client: AKRF Inc

Job Number: 460-102242-1

Matrix Spike - Batch: 460-327399

Method: 6010C
Preparation: 3050B

Lab Sample ID:	460-102323-C-1-C MS ^4	Analysis Batch:	460-327514	Instrument ID:	ICP5
Client Matrix:	Solid	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0	Leach Batch:	N/A	Initial Weight/Volume:	1.03 g
Analysis Date:	10/08/2015 1547	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Silver	2.0	U	5.34	4.31	81	75 - 125	
Aluminum	4480		214	5583	515	75 - 125	4
Arsenic	4.6		214	179.2	82	75 - 125	
Barium	38.1	J	214	227.8	89	75 - 125	
Beryllium	0.41	U	5.34	5.00	94	75 - 125	
Calcium	1880		2140	4184	108	75 - 125	
Cadmium	0.82	U	5.34	4.68	88	75 - 125	
Cobalt	4.2	J	53.4	52.22	90	75 - 125	
Chromium	12.3		21.4	32.14	93	75 - 125	
Copper	38.0		26.7	56.52	69	75 - 125	N
Iron	13400		107	13290	-107	75 - 125	4
Potassium	564	J	2140	2323	82	75 - 125	
Magnesium	1740		2140	3754	94	75 - 125	
Manganese	237		53.4	282.5	86	75 - 125	4
Sodium	123	J	2140	1974	87	75 - 125	
Nickel	10.5		53.4	58.97	91	75 - 125	
Lead	95.7		53.4	133.7	71	75 - 125	N
Antimony	4.1	U	53.4	34.08	64	75 - 125	N
Selenium	4.1	U	214	174.6	82	75 - 125	
Thallium	4.1	U	214	197.9	93	75 - 125	
Vanadium	15.7		53.4	65.06	92	75 - 125	
Zinc	92.2		53.4	137.3	84	75 - 125	

Client: AKRF Inc

Job Number: 460-102242-1

Duplicate - Batch: 460-327399

Method: 6010C
Preparation: 3050B

Lab Sample ID:	460-102323-C-1-B DU ^4	Analysis Batch:	460-327514	Instrument ID:	ICP5
Client Matrix:	Solid	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0	Leach Batch:	N/A	Initial Weight/Volume:	1.06 g
Analysis Date:	10/08/2015 1551	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Silver	2.0	U	2.1	NC	20	U
Aluminum	4480		5371	18	20	
Arsenic	4.6		5.22	13	20	
Barium	38.1	J	42.23	10	20	
Beryllium	0.41	U	0.42	NC	20	U
Calcium	1880		2259	18	20	
Cadmium	0.82	U	0.83	NC	20	U
Cobalt	4.2	J	5.01	18	20	J
Chromium	12.3		12.68	3	20	
Copper	38.0		37.64	0.9	20	
Iron	13400		17530	27	20	*
Potassium	564	J	729.4	25	20	J
Magnesium	1740		2294	27	20	
Manganese	237		281.5	17	20	
Sodium	123	J	177.1	36	20	J
Nickel	10.5		11.49	9	20	
Lead	95.7		85.50	11	20	
Antimony	4.1	U	4.2	NC	20	U
Selenium	4.1	U	4.2	NC	20	U
Thallium	4.1	U	4.2	NC	20	U
Vanadium	15.7		17.69	12	20	
Zinc	92.2		96.03	4	20	

Method Blank - Batch: 460-327642

Method: 7471B
Preparation: 7471B

Lab Sample ID:	MB 460-327642/10-A	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Client Matrix:	Solid	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	10/09/2015 0934	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.017	U	0.012	0.017

LCS-Certified Reference Material - Batch: 460-327642

Method: 7471B
Preparation: 7471B

Lab Sample ID:	LCSSRM 460-327642/11-	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Client Matrix:	Solid	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	20	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	10/09/2015 0936	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	7.10	7.02	98.8	73.7 - 126.3	

Matrix Spike - Batch: 460-327642

Method: 7471B
Preparation: 7471B

Lab Sample ID:	460-102279-E-2-K MS	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Client Matrix:	Solid	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.66 g
Analysis Date:	10/09/2015 0942	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.017	U	0.0825	0.0891	108	80 - 120	

Client: AKRF Inc

Job Number: 460-102242-1

Duplicate - Batch: 460-327642

Method: 7471B
Preparation: 7471B

Lab Sample ID:	460-102279-E-2-J DU	Analysis Batch:	460-327775	Instrument ID:	LEEMAN5
Client Matrix:	Solid	Prep Batch:	460-327642	Lab File ID:	327641HG1.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.66 g
Analysis Date:	10/09/2015 0940	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/09/2015 0450				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.017	U	0.017	NC	20	U

Client: AKRF Inc

Job Number: 460-102242-1

Duplicate - Batch: 460-327003

Method: Moisture
Preparation: N/A

Lab Sample ID:	460-102242-7	Analysis Batch:	460-327003	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/06/2015 1405	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	8.0	7.5	7	20	
Percent Solids	92.0	92.5	0.6	20	

Client: AKRF Inc

Job Number: 460-102242-1

Duplicate - Batch: 460-327008

Method: Moisture
Preparation: N/A

Lab Sample ID:	460-100929-A-10 DU	Analysis Batch:	460-327008	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/06/2015 1426	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	8.2	8.4	3	20	
Percent Solids	91.8	91.6	0.2	20	

TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

460-102242 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/13/2015

Client Information	Sampler: E. Matamoros	Lab PM: Haas, Melissa	COC No: 460-64155-39290.1
Client Contact: Steven Grens / Becky Kinal	Phone: 914 922 2317	E-Mail: melissa.haas@testamericainc.com	Page: Page 1 of 1
Company: AKRF Inc			Job #: 10 2242
Address: 34 South Broadway Suite 314	Due Date Requested:	Analysis Requested	Preservation Codes:
City: White Plains	TAT Requested (days): 5 days standard		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: NY, 10601			
Phone: 914-806-5650(Tel)	PO #: Project # 40525		
Email: sgrens@akrf.com / BKINAL@AKRF.COM	WO #:		Other:
Project Name: ver Hage Property	Project #: 46018761		
Site: 121 Hartley Rd, Goshen NY	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - TCL VOC	8270D - TCL SVOC	6010C/7471B - TAL Metals	8081B - Pesticides	8082A - PCBs	SHORT HOLD	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	A					
SB-5 (1'-3')	10/5/15	1120	G	S			X	X	X	X	X		5	1
SB-4 (1'-3')	10/5/15	1200	G	S			X	X	X	X	X		5	2
SB-6 (1'-3')	10/5/15	1220	G	S			X	X	X	X	X		5	3
SB-4 (1'-3')	10/5/15	1245	G	S			X	X	X	X	X		5	4
SB-7 (2'-4')	10/5/15	1345	G	S			X	X	X	X	X		5	5
SB-1 (1'-3')	10/5/15	1440	G	S			X	X	X	X	X		5	6
SB-2 (1'-3')	10/5/15	1605	G	S			X	X	X	X	X		5	7
SB-3 (1'-3')	10/5/15	1650	G	S			X	X	X	X	X		5	8

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:		Date/Time: 10/5/15	Company AKRF	Received by:		Date/Time: 10/6/15 9:30	Company
Relinquished by:		Date/Time: 10/6/15 9:30	Company TAL	Received by:		Date/Time: 10/6/15 9:30	Company TAL
Relinquished by:		Date/Time:	Company	Received by:		Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.2 / 6.2 .+6

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 10 2242

Number of Coolers: 1 / 1 IR Gun # 16

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	3.2 °C	6.2 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: BY Date: 10/6/15

10/13/2015

Login Sample Receipt Checklist

Client: AKRF Inc

Job Number: 460-102242-1

Login Number: 102242
List Number: 1
Creator: Meyers, Gary

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.2 ° C IR #5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

ANALYTICAL REPORT

Job Number: 460-102327-1

Job Description: ver Hage Property

For:
AKRF Inc
440 Park Avenue South
7th Floor
New York, NY 10016

Attention: Becky Kinal

Approved for release.
Melissa Haas
Project Manager I
10/15/2015 12:20 PM

Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
10/15/2015

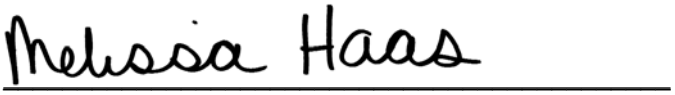
The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 460-102327-1

Job Description: ver Hage Property

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Approved for release.
Melissa Haas
Project Manager I
10/15/2015 12:20 PM

Melissa Haas

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CASE NARRATIVE

Client: AKRF Inc

Project: ver Hage Property

Report Number: 460-102327-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 10/7/2015 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6º C.

Receipt Exceptions

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). The client was notified.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS
Samples SB-9(.5'-2.5') (460-102327-1), SB-10(1'-3') (460-102327-2), SB-11(.5'-2.5') (460-102327-3), SB-12(1'-3') (460-102327-4), SB-13(.5'-2.5') (460-102327-5), SB-14(1-3) (460-102327-6), SB-16(1-3) (460-102327-7) and SB-15(6-8) (460-102327-8) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were prepared on 10/08/2015 and analyzed on 10/13/2015.

Samples MW-1 (460-102327-9), MW-2 (460-102327-10), MW-3 (460-102327-11), MW-4 (460-102327-12), MW-5 (460-102327-13) and Trip Blank (460-102327-14) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 10/12/2015.

Method(s) 8260C: The continuing calibration verification (CCV) analyzed in batch 460-328047 was outside the method criteria for the following analytes: Acrolein, 1,1,2,2-Tetrachloroethane, Freon TF and MTBE. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method(s) 8260C: The continuing calibration verification (CCV) analyzed in batch 460-328317 was outside the method criteria for the following analyte(s): Acrolein, 1,1,2-Trichloro-1,2,2-trifluoroethane and Methyl tert-butyl ether. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8260C: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 460-328317 recovered outside control limits for the following analyte: 1,1,2-Trichloro-1,2,2-trifluoroethane and Methyl tert-butyl ether. These analytes were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8260C: The continuing calibration verification (CCV) analyzed in batch 460-328322 was outside the method criteria for the following analyte(s): Bromomethane (biased low) and Methyl Acetate (biased high). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8260C: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch

460-328047 recovered outside control limits for the following analytes: Acrolein, Carbon Disulfide, MTBE, 1,1,2-Trichloro-1,2,2-trifluoroethane and Cyclohexane. These analytes were not detected in the laboratory prep blank (LB); therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PESTICIDES

Samples SB-9(.5'-2.5') (460-102327-1), SB-10(1'-3') (460-102327-2), SB-11(.5'-2.5') (460-102327-3), SB-12(1'-3') (460-102327-4), SB-13(.5'-2.5') (460-102327-5), SB-14(1-3) (460-102327-6), SB-16(1-3) (460-102327-7) and SB-15(6-8) (460-102327-8) were analyzed for Pesticides in accordance with EPA SW-846 Methods 8081B. The samples were prepared on 10/11/2015 and analyzed on 10/12/2015.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS

Samples SB-9(.5'-2.5') (460-102327-1), SB-10(1'-3') (460-102327-2), SB-11(.5'-2.5') (460-102327-3), SB-12(1'-3') (460-102327-4), SB-13(.5'-2.5') (460-102327-5), SB-14(1-3) (460-102327-6), SB-16(1-3) (460-102327-7) and SB-15(6-8) (460-102327-8) were analyzed for polychlorinated biphenyls in accordance with EPA SW-846 Method 8082A. The samples were prepared on 10/11/2015 and analyzed on 10/12/2015.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS

Samples SB-9(.5'-2.5') (460-102327-1), SB-10(1'-3') (460-102327-2), SB-11(.5'-2.5') (460-102327-3), SB-12(1'-3') (460-102327-4), SB-13(.5'-2.5') (460-102327-5), SB-14(1-3) (460-102327-6), SB-16(1-3) (460-102327-7) and SB-15(6-8) (460-102327-8) were analyzed for Semivolatile organic compounds in accordance with EPA SW-846 Method 8270D. The samples were prepared on 10/08/2015 and analyzed on 10/09/2015 and 10/10/2015.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 460-327959 was outside the method criteria for the following analyte(s): Bis(2-chloroethyl)ether, Phenol-d5 (Surr), 2,4,6-Tribromophenol (Surr), 2,2'-oxybis[1-chloropropane], Hexachlorobenzene, N-Nitrosodi-n-propylamine, Pentachlorophenol, Hexachlorocyclopentadiene and Hexachlorobutadiene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D: The following laboratory control sample (LCS) associated with batch 460-327468 contained one acid/base surrogate outside acceptance limits:(LCS 460-327468/2-A) and (LCS 460-327468/3-A). The laboratory's SOP allows one acid and/or one base surrogate to be outside acceptance limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8270D: The surrogate recovery for the blank associated with preparation batch 460-327468 and analytical batch 460-327819 was outside the upper control limits. All associated sample surrogates fell within acceptance criteria; therefore, the data have been reported.

Method(s) 8270D: Surrogate recovery for the following samples was outside the upper control limit: (LCS 460-327462/2-A) and (LCS 460-327462/3-A).

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 460-327961 was outside the method criteria for the following analyte(s): 3,3'-Dichlorobenzidine, 2,4-Dinitrophenol, Indeno[1,2,3-cd]pyrene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, 4,6-Dinitro-2-methylphenol, Benzo[a]pyrene and Di-n-octyl phthalate. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS

Samples SB-9(.5'-2.5') (460-102327-1), SB-10(1'-3') (460-102327-2), SB-11(.5'-2.5') (460-102327-3), SB-12(1'-3') (460-102327-4), SB-13(.5'-2.5') (460-102327-5), SB-14(1-3) (460-102327-6), SB-16(1-3) (460-102327-7) and SB-15(6-8) (460-102327-8) were analyzed for Metals in accordance with EPA SW-846 6010C. The samples were prepared and analyzed on 10/08/2015.

Samples SB-9(.5'-2.5') (460-102327-1)[10X], SB-9(.5'-2.5') (460-102327-1)[4X], SB-10(1'-3') (460-102327-2)[4X], SB-11(.5'-2.5') (460-102327-3)[10X], SB-11(.5'-2.5') (460-102327-3)[4X], SB-12(1'-3') (460-102327-4)[4X], SB-13(.5'-2.5') (460-102327-5)[4X], SB-14(1-3) (460-102327-6)[4X], SB-16(1-3) (460-102327-7)[4X] and SB-15(6-8) (460-102327-8)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

TOTAL MERCURY

Samples SB-9(.5'-2.5') (460-102327-1), SB-10(1'-3') (460-102327-2), SB-11(.5'-2.5') (460-102327-3), SB-12(1'-3') (460-102327-4), SB-13(.5'-2.5') (460-102327-5), SB-14(1-3) (460-102327-6), SB-16(1-3) (460-102327-7) and SB-15(6-8) (460-102327-8) were analyzed for total mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 10/10/2015.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

PERCENT SOLIDS/PERCENT MOISTURE

Samples SB-9(.5'-2.5') (460-102327-1), SB-10(1'-3') (460-102327-2), SB-11(.5'-2.5') (460-102327-3), SB-12(1'-3') (460-102327-4), SB-13(.5'-2.5') (460-102327-5), SB-14(1-3) (460-102327-6), SB-16(1-3) (460-102327-7) and SB-15(6-8) (460-102327-8) were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D) Modified. The samples were analyzed on 10/07/2015.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc Job Number: 460-102327-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102327-1	**SB-9(.5'-2.5')**					
Bis(2-ethylhexyl) phthalate		320	J	360	ug/Kg	8270D
Aluminum		13000		41.0	mg/Kg	6010C
Arsenic		41.3		3.1	mg/Kg	6010C
Barium		54.2		41.0	mg/Kg	6010C
Beryllium		0.65		0.41	mg/Kg	6010C
Calcium		2250		1020	mg/Kg	6010C
Cobalt		15.8		10.2	mg/Kg	6010C
Chromium		21.3		2.0	mg/Kg	6010C
Copper		32.7		5.1	mg/Kg	6010C
Iron		46400		76.8	mg/Kg	6010C
Potassium		960	J	1020	mg/Kg	6010C
Magnesium		7200		1020	mg/Kg	6010C
Manganese		679		3.1	mg/Kg	6010C
Nickel		31.2		8.2	mg/Kg	6010C
Lead		18.7		2.0	mg/Kg	6010C
Vanadium		19.3		10.2	mg/Kg	6010C
Zinc		93.0		6.1	mg/Kg	6010C
Mercury		0.024		0.018	mg/Kg	7471B
Percent Moisture		9.6		1.0	%	Moisture
Percent Solids		90.4		1.0	%	Moisture
460-102327-2	**SB-10(1'-3')**					
Bis(2-ethylhexyl) phthalate		79	J	370	ug/Kg	8270D
Aluminum		12500		42.6	mg/Kg	6010C
Arsenic		9.4		3.2	mg/Kg	6010C
Barium		87.1		42.6	mg/Kg	6010C
Beryllium		0.68		0.43	mg/Kg	6010C
Calcium		3900		1070	mg/Kg	6010C
Cobalt		12.6		10.7	mg/Kg	6010C
Chromium		20.6		2.1	mg/Kg	6010C
Copper		35.5		5.3	mg/Kg	6010C
Iron		31800		32.0	mg/Kg	6010C
Potassium		831	J	1070	mg/Kg	6010C
Magnesium		6890		1070	mg/Kg	6010C
Manganese		1170		3.2	mg/Kg	6010C
Nickel		29.8		8.5	mg/Kg	6010C
Lead		17.0		2.1	mg/Kg	6010C
Vanadium		18.7		10.7	mg/Kg	6010C
Zinc		88.8		6.4	mg/Kg	6010C
Mercury		0.037		0.018	mg/Kg	7471B
Percent Moisture		10.7		1.0	%	Moisture
Percent Solids		89.3		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc Job Number: 460-102327-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102327-3	**SB-11(.5'-2.5')**					
Bis(2-ethylhexyl) phthalate		82	J	370	ug/Kg	8270D
Aluminum		10600		39.3	mg/Kg	6010C
Arsenic		14.3		2.9	mg/Kg	6010C
Barium		183		39.3	mg/Kg	6010C
Beryllium		0.55		0.39	mg/Kg	6010C
Calcium		2560		982	mg/Kg	6010C
Cobalt		12.4		9.8	mg/Kg	6010C
Chromium		17.8		2.0	mg/Kg	6010C
Copper		29.6		4.9	mg/Kg	6010C
Iron		33500		29.4	mg/Kg	6010C
Potassium		725	J	982	mg/Kg	6010C
Magnesium		5670		982	mg/Kg	6010C
Manganese		4020		7.4	mg/Kg	6010C
Nickel		26.5		7.9	mg/Kg	6010C
Lead		12.9		2.0	mg/Kg	6010C
Vanadium		14.6		9.8	mg/Kg	6010C
Zinc		73.0		5.9	mg/Kg	6010C
Mercury		0.058		0.019	mg/Kg	7471B
Percent Moisture		11.4		1.0	%	Moisture
Percent Solids		88.6		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 460-102327-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102327-4	**SB-12(1'-3')**					
2-Methylnaphthalene		16	J	390	ug/Kg	8270D
4-Methylphenol		28	J	390	ug/Kg	8270D
Bis(2-ethylhexyl) phthalate		250	J	390	ug/Kg	8270D
Phenanthrene		12	J	390	ug/Kg	8270D
Silver		0.82	J	2.1	mg/Kg	6010C
Aluminum		12100		41.6	mg/Kg	6010C
Arsenic		7.2		3.1	mg/Kg	6010C
Barium		64.8		41.6	mg/Kg	6010C
Beryllium		0.64		0.42	mg/Kg	6010C
Calcium		3790		1040	mg/Kg	6010C
Cobalt		10.8		10.4	mg/Kg	6010C
Chromium		18.7		2.1	mg/Kg	6010C
Copper		33.3		5.2	mg/Kg	6010C
Iron		25400		31.2	mg/Kg	6010C
Potassium		840	J	1040	mg/Kg	6010C
Magnesium		5250		1040	mg/Kg	6010C
Manganese		986		3.1	mg/Kg	6010C
Nickel		25.6		8.3	mg/Kg	6010C
Lead		16.6		2.1	mg/Kg	6010C
Vanadium		17.6		10.4	mg/Kg	6010C
Zinc		76.6		6.2	mg/Kg	6010C
Mercury		0.072		0.019	mg/Kg	7471B
Percent Moisture		15.7		1.0	%	Moisture
Percent Solids		84.3		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 460-102327-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102327-5	**SB-13(.5'-2.5')**					
2-Butanone (MEK)		4.0	J	6.4	ug/Kg	8260C
Acetone		56		6.4	ug/Kg	8260C
Methylene Chloride		6.9		1.3	ug/Kg	8260C
2-Methylnaphthalene		11	J	370	ug/Kg	8270D
Naphthalene		110	J	370	ug/Kg	8270D
Aluminum		13000		42.2	mg/Kg	6010C
Arsenic		6.9		3.2	mg/Kg	6010C
Barium		56.2		42.2	mg/Kg	6010C
Beryllium		0.69		0.42	mg/Kg	6010C
Calcium		2950		1060	mg/Kg	6010C
Cobalt		10.3	J	10.6	mg/Kg	6010C
Chromium		18.7		2.1	mg/Kg	6010C
Copper		27.9		5.3	mg/Kg	6010C
Iron		27000		31.7	mg/Kg	6010C
Potassium		793	J	1060	mg/Kg	6010C
Magnesium		5320		1060	mg/Kg	6010C
Manganese		697		3.2	mg/Kg	6010C
Nickel		24.6		8.4	mg/Kg	6010C
Lead		19.3		2.1	mg/Kg	6010C
Vanadium		19.0		10.6	mg/Kg	6010C
Zinc		71.3		6.3	mg/Kg	6010C
Mercury		0.035		0.019	mg/Kg	7471B
Percent Moisture		10.7		1.0	%	Moisture
Percent Solids		89.3		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 460-102327-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102327-6	**SB-14(1-3)**					
Bis(2-ethylhexyl) phthalate		120	J	380	ug/Kg	8270D
Silver		0.53	J	2.2	mg/Kg	6010C
Aluminum		12100		44.0	mg/Kg	6010C
Arsenic		7.4		3.3	mg/Kg	6010C
Barium		62.5		44.0	mg/Kg	6010C
Beryllium		0.60		0.44	mg/Kg	6010C
Calcium		5860		1100	mg/Kg	6010C
Cobalt		10.6	J	11.0	mg/Kg	6010C
Chromium		18.1		2.2	mg/Kg	6010C
Copper		31.2		5.5	mg/Kg	6010C
Iron		24700		33.0	mg/Kg	6010C
Potassium		831	J	1100	mg/Kg	6010C
Magnesium		5980		1100	mg/Kg	6010C
Manganese		1050		3.3	mg/Kg	6010C
Nickel		23.4		8.8	mg/Kg	6010C
Lead		17.0		2.2	mg/Kg	6010C
Vanadium		17.8		11.0	mg/Kg	6010C
Zinc		72.3		6.6	mg/Kg	6010C
Mercury		0.071		0.019	mg/Kg	7471B
Percent Moisture		13.4		1.0	%	Moisture
Percent Solids		86.6		1.0	%	Moisture
460-102327-7	**SB-16(1-3)**					
Bis(2-ethylhexyl) phthalate		170	J	370	ug/Kg	8270D
Aluminum		8990		39.6	mg/Kg	6010C
Arsenic		6.9		3.0	mg/Kg	6010C
Barium		31.0	J	39.6	mg/Kg	6010C
Beryllium		0.45		0.40	mg/Kg	6010C
Calcium		16900		989	mg/Kg	6010C
Cobalt		8.9	J	9.9	mg/Kg	6010C
Chromium		14.1		2.0	mg/Kg	6010C
Copper		26.4		4.9	mg/Kg	6010C
Iron		22600		29.7	mg/Kg	6010C
Potassium		664	J	989	mg/Kg	6010C
Magnesium		5580		989	mg/Kg	6010C
Manganese		658		3.0	mg/Kg	6010C
Nickel		21.6		7.9	mg/Kg	6010C
Lead		11.0		2.0	mg/Kg	6010C
Vanadium		13.6		9.9	mg/Kg	6010C
Zinc		64.1		5.9	mg/Kg	6010C
Mercury		0.023		0.019	mg/Kg	7471B
Percent Moisture		12.1		1.0	%	Moisture
Percent Solids		87.9		1.0	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 460-102327-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-102327-8	**SB-15(6-8)**					
Naphthalene		27	J	360	ug/Kg	8270D
Aluminum		11700		41.8	mg/Kg	6010C
Arsenic		9.2		3.1	mg/Kg	6010C
Barium		28.5	J	41.8	mg/Kg	6010C
Beryllium		0.55		0.42	mg/Kg	6010C
Calcium		28700		1050	mg/Kg	6010C
Cobalt		12.9		10.5	mg/Kg	6010C
Chromium		18.6		2.1	mg/Kg	6010C
Copper		36.2		5.2	mg/Kg	6010C
Iron		30500		31.4	mg/Kg	6010C
Potassium		780	J	1050	mg/Kg	6010C
Magnesium		7570		1050	mg/Kg	6010C
Manganese		880		3.1	mg/Kg	6010C
Nickel		29.5		8.4	mg/Kg	6010C
Lead		17.2		2.1	mg/Kg	6010C
Vanadium		17.7		10.5	mg/Kg	6010C
Zinc		99.0		6.3	mg/Kg	6010C
Mercury		0.025		0.019	mg/Kg	7471B
Percent Moisture		9.8		1.0	%	Moisture
Percent Solids		90.2		1.0	%	Moisture
460-102327-9	**MW-1**					
Dichlorodifluoromethane		0.31	J	1.0	ug/L	8260C
460-102327-11	**MW-3**					
1,1-Dichloroethane		1.0		1.0	ug/L	8260C
cis-1,2-Dichloroethene		2.5		1.0	ug/L	8260C
Dichlorodifluoromethane		0.32	J	1.0	ug/L	8260C
Trichlorofluoromethane		0.50	J	1.0	ug/L	8260C

METHOD SUMMARY

Client: AKRF Inc

Job Number: 460-102327-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Closed System Purge and Trap	TAL EDI		SW846 5035
Semivolatile Organic Compounds (GC/MS)	TAL EDI	SW846 8270D	
Microwave Extraction	TAL EDI		SW846 3546
Organochlorine Pesticides (GC)	TAL EDI	SW846 8081B	
Microwave Extraction	TAL EDI		SW846 3546
Polychlorinated Biphenyls (PCBs) by Gas Chromatography	TAL EDI	SW846 8082A	
Microwave Extraction	TAL EDI		SW846 3546
Metals (ICP)	TAL EDI	SW846 6010C	
Preparation, Metals	TAL EDI		SW846 3050B
Mercury (CVAA)	TAL EDI	SW846 7471B	
Preparation, Mercury	TAL EDI		SW846 7471B
Percent Moisture	TAL EDI	EPA Moisture	
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C

Lab References:

TAL EDI = TestAmerica Edison

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: AKRF Inc

Job Number: 460-102327-1

Method	Analyst	Analyst ID
SW846 8260C	Martinez, Eddie	EMM
SW846 8260C	Starzec, Margaret	MZS
SW846 8260C	Tupayachi, Audberto	AAT
SW846 8270D	Bayoumi, Wahied	BAW
SW846 8270D	Kim, Ho	HJK
SW846 8081B	Kapoor, Sita	SAK
SW846 8082A	Patel, Jignesh	JHP
SW846 6010C	Chang, Churn Der	CDC
SW846 7471B	Patel, Purva H	PHP
EPA Moisture	Armbruster, Chris	CJA

SAMPLE SUMMARY

Client: AKRF Inc

Job Number: 460-102327-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-102327-1	SB-9(.5'-2.5')	Solid	10/06/2015 1310	10/07/2015 0930
460-102327-2	SB-10(1'-3')	Solid	10/06/2015 1255	10/07/2015 0930
460-102327-3	SB-11(.5'-2.5')	Solid	10/06/2015 1235	10/07/2015 0930
460-102327-4	SB-12(1'-3')	Solid	10/06/2015 1225	10/07/2015 0930
460-102327-5	SB-13(.5'-2.5')	Solid	10/06/2015 0940	10/07/2015 0930
460-102327-6	SB-14(1-3)	Solid	10/06/2015 0955	10/07/2015 0930
460-102327-7	SB-16(1-3)	Solid	10/06/2015 1015	10/07/2015 0930
460-102327-8	SB-15(6-8)	Solid	10/06/2015 1145	10/07/2015 0930
460-102327-9	MW-1	Water	10/06/2015 1148	10/07/2015 0930
460-102327-10	MW-2	Water	10/06/2015 1310	10/07/2015 0930
460-102327-11	MW-3	Water	10/06/2015 0940	10/07/2015 0930
460-102327-12	MW-4	Water	10/06/2015 1526	10/07/2015 0930
460-102327-13	MW-5	Water	10/06/2015 1422	10/07/2015 0930
460-102327-14TB	Trip Blank	Water	10/06/2015 1526	10/07/2015 0930

SAMPLE RESULTS

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: **SB-9(.5'-2.5')**

Lab Sample ID: 460-102327-1 | Date Sampled: 10/06/2015 1310
Client Matrix: Solid | % Moisture: 9.6 | Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15135.D
Dilution:	1.0			Initial Weight/Volume:	4.38 g
Analysis Date:	10/13/2015 0001			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 1001				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.3	U	0.48	1.3
1,1,2,2-Tetrachloroethane		1.3	U	0.21	1.3
1,1,2-Trichloro-1,2,2-trifluoroethane		1.3	U *	0.56	1.3
1,1,2-Trichloroethane		1.3	U	0.35	1.3
1,1-Dichloroethane		1.3	U	0.43	1.3
1,1-Dichloroethene		1.3	U	0.52	1.3
1,2,3-Trichlorobenzene		1.3	U	0.14	1.3
1,2,4-Trichlorobenzene		1.3	U	0.40	1.3
1,2-Dibromo-3-Chloropropane		1.3	U	0.59	1.3
1,2-Dichlorobenzene		1.3	U	0.18	1.3
1,2-Dichloroethane		1.3	U	0.14	1.3
1,2-Dichloropropane		1.3	U	0.21	1.3
1,3-Dichlorobenzene		1.3	U	0.15	1.3
1,4-Dichlorobenzene		1.3	U	0.16	1.3
1,4-Dioxane		25	U	8.1	25
2-Butanone (MEK)		6.3	U	0.97	6.3
2-Hexanone		6.3	U	1.2	6.3
4-Methyl-2-pentanone (MIBK)		6.3	U	2.8	6.3
Acetone		6.3	U	1.3	6.3
Acetonitrile		13	U	5.1	13
Acrolein		130	U	20	130
Benzene		1.3	U	0.25	1.3
Bromoform		1.3	U	0.16	1.3
Bromomethane		1.3	U	0.40	1.3
Carbon disulfide		1.3	U	0.54	1.3
Carbon tetrachloride		1.3	U	0.54	1.3
Chlorobenzene		1.3	U	0.18	1.3
Chlorobromomethane		1.3	U	0.21	1.3
Chlorodibromomethane		1.3	U	0.19	1.3
Chloroethane		1.3	U	0.44	1.3
Chloroform		1.3	U	0.27	1.3
Chloromethane		1.3	U	0.48	1.3
cis-1,2-Dichloroethene		1.3	U	0.28	1.3
cis-1,3-Dichloropropene		1.3	U	0.19	1.3
Cyclohexane		1.3	U	0.58	1.3
Dichlorobromomethane		1.3	U	0.48	1.3
Dichlorodifluoromethane		1.3	U	0.40	1.3
Ethylbenzene		1.3	U	0.23	1.3
Ethylene Dibromide		1.3	U	0.15	1.3
Isopropylbenzene		1.3	U	0.21	1.3
Methyl acetate		6.3	U	1.1	6.3
Methyl tert-butyl ether		1.3	U *	0.21	1.3
Methylcyclohexane		1.3	U	0.63	1.3
Methylene Chloride		1.3	U	0.40	1.3
m-Xylene & p-Xylene		1.3	U	0.14	1.3
o-Xylene		1.3	U	0.20	1.3

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-9(.5'-2.5')

Lab Sample ID: 460-102327-1
Client Matrix: Solid

% Moisture: 9.6

Date Sampled: 10/06/2015 1310
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15135.D
Dilution:	1.0			Initial Weight/Volume:	4.38 g
Analysis Date:	10/13/2015 0001			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 1001				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.3	U	0.19	1.3
Tetrachloroethene		1.3	U	0.35	1.3
Toluene		1.3	U	0.24	1.3
trans-1,2-Dichloroethene		1.3	U	0.49	1.3
trans-1,3-Dichloropropene		1.3	U	0.13	1.3
Trichloroethene		1.3	U	0.33	1.3
Trichlorofluoromethane		1.3	U	0.43	1.3
Vinyl chloride		1.3	U	0.49	1.3

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		78 - 135
4-Bromofluorobenzene	99		67 - 126
Dibromofluoromethane (Surr)	98		61 - 149
Toluene-d8 (Surr)	93		73 - 121

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-10(1'-3')**

Lab Sample ID: 460-102327-2
Client Matrix: Solid
% Moisture: 10.7

Date Sampled: 10/06/2015 1255
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15136.D
Dilution:	1.0			Initial Weight/Volume:	4.44 g
Analysis Date:	10/13/2015 0026			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 1003				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.3	U	0.48	1.3
1,1,2,2-Tetrachloroethane		1.3	U	0.21	1.3
1,1,2-Trichloro-1,2,2-trifluoroethane		1.3	U *	0.55	1.3
1,1,2-Trichloroethane		1.3	U	0.35	1.3
1,1-Dichloroethane		1.3	U	0.43	1.3
1,1-Dichloroethene		1.3	U	0.52	1.3
1,2,3-Trichlorobenzene		1.3	U	0.14	1.3
1,2,4-Trichlorobenzene		1.3	U	0.40	1.3
1,2-Dibromo-3-Chloropropane		1.3	U	0.59	1.3
1,2-Dichlorobenzene		1.3	U	0.18	1.3
1,2-Dichloroethane		1.3	U	0.14	1.3
1,2-Dichloropropane		1.3	U	0.21	1.3
1,3-Dichlorobenzene		1.3	U	0.15	1.3
1,4-Dichlorobenzene		1.3	U	0.16	1.3
1,4-Dioxane		25	U	8.1	25
2-Butanone (MEK)		6.3	U	0.97	6.3
2-Hexanone		6.3	U	1.2	6.3
4-Methyl-2-pentanone (MIBK)		6.3	U	2.8	6.3
Acetone		6.3	U	1.3	6.3
Acetonitrile		13	U	5.1	13
Acrolein		130	U	20	130
Benzene		1.3	U	0.25	1.3
Bromoform		1.3	U	0.16	1.3
Bromomethane		1.3	U	0.40	1.3
Carbon disulfide		1.3	U	0.54	1.3
Carbon tetrachloride		1.3	U	0.54	1.3
Chlorobenzene		1.3	U	0.18	1.3
Chlorobromomethane		1.3	U	0.21	1.3
Chlorodibromomethane		1.3	U	0.19	1.3
Chloroethane		1.3	U	0.44	1.3
Chloroform		1.3	U	0.26	1.3
Chloromethane		1.3	U	0.48	1.3
cis-1,2-Dichloroethene		1.3	U	0.28	1.3
cis-1,3-Dichloropropene		1.3	U	0.19	1.3
Cyclohexane		1.3	U	0.58	1.3
Dichlorobromomethane		1.3	U	0.48	1.3
Dichlorodifluoromethane		1.3	U	0.40	1.3
Ethylbenzene		1.3	U	0.23	1.3
Ethylene Dibromide		1.3	U	0.15	1.3
Isopropylbenzene		1.3	U	0.21	1.3
Methyl acetate		6.3	U	1.1	6.3
Methyl tert-butyl ether		1.3	U *	0.21	1.3
Methylcyclohexane		1.3	U	0.63	1.3
Methylene Chloride		1.3	U	0.40	1.3
m-Xylene & p-Xylene		1.3	U	0.14	1.3
o-Xylene		1.3	U	0.20	1.3

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-10(1'-3')

Lab Sample ID: 460-102327-2 Date Sampled: 10/06/2015 1255
Client Matrix: Solid % Moisture: 10.7 Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15136.D
Dilution:	1.0			Initial Weight/Volume:	4.44 g
Analysis Date:	10/13/2015 0026			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 1003				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.3	U	0.19	1.3
Tetrachloroethene		1.3	U	0.35	1.3
Toluene		1.3	U	0.24	1.3
trans-1,2-Dichloroethene		1.3	U	0.49	1.3
trans-1,3-Dichloropropene		1.3	U	0.13	1.3
Trichloroethene		1.3	U	0.33	1.3
Trichlorofluoromethane		1.3	U	0.43	1.3
Vinyl chloride		1.3	U	0.49	1.3

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		78 - 135
4-Bromofluorobenzene	93		67 - 126
Dibromofluoromethane (Surr)	94		61 - 149
Toluene-d8 (Surr)	90		73 - 121

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3
Client Matrix: Solid

% Moisture: 11.4

Date Sampled: 10/06/2015 1235
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15137.D
Dilution:	1.0			Initial Weight/Volume:	4.02 g
Analysis Date:	10/13/2015 0051			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 1005				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.4	U	0.53	1.4
1,1,2,2-Tetrachloroethane		1.4	U	0.24	1.4
1,1,2-Trichloro-1,2,2-trifluoroethane		1.4	U *	0.62	1.4
1,1,2-Trichloroethane		1.4	U	0.39	1.4
1,1-Dichloroethane		1.4	U	0.48	1.4
1,1-Dichloroethene		1.4	U	0.58	1.4
1,2,3-Trichlorobenzene		1.4	U	0.15	1.4
1,2,4-Trichlorobenzene		1.4	U	0.45	1.4
1,2-Dibromo-3-Chloropropane		1.4	U	0.66	1.4
1,2-Dichlorobenzene		1.4	U	0.20	1.4
1,2-Dichloroethane		1.4	U	0.15	1.4
1,2-Dichloropropane		1.4	U	0.24	1.4
1,3-Dichlorobenzene		1.4	U	0.17	1.4
1,4-Dichlorobenzene		1.4	U	0.18	1.4
1,4-Dioxane		28	U	9.0	28
2-Butanone (MEK)		7.0	U	1.1	7.0
2-Hexanone		7.0	U	1.3	7.0
4-Methyl-2-pentanone (MIBK)		7.0	U	3.1	7.0
Acetone		7.0	U	1.5	7.0
Acetonitrile		14	U	5.7	14
Acrolein		140	U	22	140
Benzene		1.4	U	0.28	1.4
Bromoform		1.4	U	0.18	1.4
Bromomethane		1.4	U	0.45	1.4
Carbon disulfide		1.4	U	0.60	1.4
Carbon tetrachloride		1.4	U	0.60	1.4
Chlorobenzene		1.4	U	0.20	1.4
Chlorobromomethane		1.4	U	0.24	1.4
Chlorodibromomethane		1.4	U	0.21	1.4
Chloroethane		1.4	U	0.49	1.4
Chloroform		1.4	U	0.29	1.4
Chloromethane		1.4	U	0.53	1.4
cis-1,2-Dichloroethene		1.4	U	0.31	1.4
cis-1,3-Dichloropropene		1.4	U	0.21	1.4
Cyclohexane		1.4	U	0.65	1.4
Dichlorobromomethane		1.4	U	0.53	1.4
Dichlorodifluoromethane		1.4	U	0.45	1.4
Ethylbenzene		1.4	U	0.25	1.4
Ethylene Dibromide		1.4	U	0.17	1.4
Isopropylbenzene		1.4	U	0.24	1.4
Methyl acetate		7.0	U	1.3	7.0
Methyl tert-butyl ether		1.4	U *	0.24	1.4
Methylcyclohexane		1.4	U	0.70	1.4
Methylene Chloride		1.4	U	0.45	1.4
m-Xylene & p-Xylene		1.4	U	0.15	1.4
o-Xylene		1.4	U	0.22	1.4

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3 Date Sampled: 10/06/2015 1235
Client Matrix: Solid % Moisture: 11.4 Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15137.D
Dilution:	1.0			Initial Weight/Volume:	4.02 g
Analysis Date:	10/13/2015 0051			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 1005				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.4	U	0.21	1.4
Tetrachloroethene		1.4	U	0.39	1.4
Toluene		1.4	U	0.27	1.4
trans-1,2-Dichloroethene		1.4	U	0.55	1.4
trans-1,3-Dichloropropene		1.4	U	0.14	1.4
Trichloroethene		1.4	U	0.37	1.4
Trichlorofluoromethane		1.4	U	0.48	1.4
Vinyl chloride		1.4	U	0.55	1.4

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		78 - 135
4-Bromofluorobenzene	94		67 - 126
Dibromofluoromethane (Surr)	97		61 - 149
Toluene-d8 (Surr)	90		73 - 121

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: **SB-12(1'-3')**

Lab Sample ID: 460-102327-4 | Date Sampled: 10/06/2015 1225
Client Matrix: Solid | % Moisture: 15.7 | Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15138.D
Dilution:	1.0			Initial Weight/Volume:	4.21 g
Analysis Date:	10/13/2015 0115			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 1007				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.4	U	0.54	1.4
1,1,2,2-Tetrachloroethane		1.4	U	0.24	1.4
1,1,2-Trichloro-1,2,2-trifluoroethane		1.4	U *	0.62	1.4
1,1,2-Trichloroethane		1.4	U	0.39	1.4
1,1-Dichloroethane		1.4	U	0.48	1.4
1,1-Dichloroethene		1.4	U	0.58	1.4
1,2,3-Trichlorobenzene		1.4	U	0.15	1.4
1,2,4-Trichlorobenzene		1.4	U	0.45	1.4
1,2-Dibromo-3-Chloropropane		1.4	U	0.66	1.4
1,2-Dichlorobenzene		1.4	U	0.20	1.4
1,2-Dichloroethane		1.4	U	0.15	1.4
1,2-Dichloropropane		1.4	U	0.24	1.4
1,3-Dichlorobenzene		1.4	U	0.17	1.4
1,4-Dichlorobenzene		1.4	U	0.18	1.4
1,4-Dioxane		28	U	9.0	28
2-Butanone (MEK)		7.0	U	1.1	7.0
2-Hexanone		7.0	U	1.3	7.0
4-Methyl-2-pentanone (MIBK)		7.0	U	3.1	7.0
Acetone		7.0	U	1.5	7.0
Acetonitrile		14	U	5.7	14
Acrolein		140	U	22	140
Benzene		1.4	U	0.28	1.4
Bromoform		1.4	U	0.18	1.4
Bromomethane		1.4	U	0.45	1.4
Carbon disulfide		1.4	U	0.61	1.4
Carbon tetrachloride		1.4	U	0.61	1.4
Chlorobenzene		1.4	U	0.20	1.4
Chlorobromomethane		1.4	U	0.24	1.4
Chlorodibromomethane		1.4	U	0.21	1.4
Chloroethane		1.4	U	0.49	1.4
Chloroform		1.4	U	0.30	1.4
Chloromethane		1.4	U	0.54	1.4
cis-1,2-Dichloroethene		1.4	U	0.31	1.4
cis-1,3-Dichloropropene		1.4	U	0.21	1.4
Cyclohexane		1.4	U	0.65	1.4
Dichlorobromomethane		1.4	U	0.54	1.4
Dichlorodifluoromethane		1.4	U	0.45	1.4
Ethylbenzene		1.4	U	0.25	1.4
Ethylene Dibromide		1.4	U	0.17	1.4
Isopropylbenzene		1.4	U	0.24	1.4
Methyl acetate		7.0	U	1.3	7.0
Methyl tert-butyl ether		1.4	U *	0.24	1.4
Methylcyclohexane		1.4	U	0.70	1.4
Methylene Chloride		1.4	U	0.45	1.4
m-Xylene & p-Xylene		1.4	U	0.15	1.4
o-Xylene		1.4	U	0.23	1.4

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: **SB-12(1'-3')**

Lab Sample ID: 460-102327-4 | Date Sampled: 10/06/2015 1225
Client Matrix: Solid | % Moisture: 15.7 | Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15138.D
Dilution:	1.0			Initial Weight/Volume:	4.21 g
Analysis Date:	10/13/2015 0115			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 1007				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.4	U	0.21	1.4
Tetrachloroethene		1.4	U	0.39	1.4
Toluene		1.4	U	0.27	1.4
trans-1,2-Dichloroethene		1.4	U	0.55	1.4
trans-1,3-Dichloropropene		1.4	U	0.14	1.4
Trichloroethene		1.4	U	0.37	1.4
Trichlorofluoromethane		1.4	U	0.48	1.4
Vinyl chloride		1.4	U	0.55	1.4

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	94		78 - 135
4-Bromofluorobenzene	91		67 - 126
Dibromofluoromethane (Surr)	93		61 - 149
Toluene-d8 (Surr)	85		73 - 121

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-13(.5'-2.5')

Lab Sample ID: 460-102327-5
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 0940
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15139.D
Dilution:	1.0			Initial Weight/Volume:	4.34 g
Analysis Date:	10/13/2015 0140			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0940				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.3	U	0.49	1.3
1,1,2,2-Tetrachloroethane		1.3	U	0.22	1.3
1,1,2-Trichloro-1,2,2-trifluoroethane		1.3	U *	0.57	1.3
1,1,2-Trichloroethane		1.3	U	0.36	1.3
1,1-Dichloroethane		1.3	U	0.44	1.3
1,1-Dichloroethene		1.3	U	0.53	1.3
1,2,3-Trichlorobenzene		1.3	U	0.14	1.3
1,2,4-Trichlorobenzene		1.3	U	0.41	1.3
1,2-Dibromo-3-Chloropropane		1.3	U	0.61	1.3
1,2-Dichlorobenzene		1.3	U	0.18	1.3
1,2-Dichloroethane		1.3	U	0.14	1.3
1,2-Dichloropropane		1.3	U	0.22	1.3
1,3-Dichlorobenzene		1.3	U	0.15	1.3
1,4-Dichlorobenzene		1.3	U	0.17	1.3
1,4-Dioxane		26	U	8.2	26
2-Butanone (MEK)		4.0	J	0.99	6.4
2-Hexanone		6.4	U	1.2	6.4
4-Methyl-2-pentanone (MIBK)		6.4	U	2.9	6.4
Acetone		56		1.4	6.4
Acetonitrile		13	U	5.2	13
Acrolein		130	U	20	130
Benzene		1.3	U	0.26	1.3
Bromoform		1.3	U	0.17	1.3
Bromomethane		1.3	U	0.41	1.3
Carbon disulfide		1.3	U	0.55	1.3
Carbon tetrachloride		1.3	U	0.55	1.3
Chlorobenzene		1.3	U	0.18	1.3
Chlorobromomethane		1.3	U	0.22	1.3
Chlorodibromomethane		1.3	U	0.19	1.3
Chloroethane		1.3	U	0.45	1.3
Chloroform		1.3	U	0.27	1.3
Chloromethane		1.3	U	0.49	1.3
cis-1,2-Dichloroethene		1.3	U	0.28	1.3
cis-1,3-Dichloropropene		1.3	U	0.19	1.3
Cyclohexane		1.3	U	0.59	1.3
Dichlorobromomethane		1.3	U	0.49	1.3
Dichlorodifluoromethane		1.3	U	0.41	1.3
Ethylbenzene		1.3	U	0.23	1.3
Ethylene Dibromide		1.3	U	0.15	1.3
Isopropylbenzene		1.3	U	0.22	1.3
Methyl acetate		6.4	U	1.2	6.4
Methyl tert-butyl ether		1.3	U *	0.22	1.3
Methylcyclohexane		1.3	U	0.64	1.3
Methylene Chloride		6.9		0.41	1.3
m-Xylene & p-Xylene		1.3	U	0.14	1.3
o-Xylene		1.3	U	0.21	1.3

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-13(.5'-2.5')

Lab Sample ID: 460-102327-5 Date Sampled: 10/06/2015 0940
Client Matrix: Solid % Moisture: 10.7 Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15139.D
Dilution:	1.0			Initial Weight/Volume:	4.34 g
Analysis Date:	10/13/2015 0140			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0940				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.3	U	0.19	1.3
Tetrachloroethene		1.3	U	0.36	1.3
Toluene		1.3	U	0.25	1.3
trans-1,2-Dichloroethene		1.3	U	0.50	1.3
trans-1,3-Dichloropropene		1.3	U	0.13	1.3
Trichloroethene		1.3	U	0.34	1.3
Trichlorofluoromethane		1.3	U	0.44	1.3
Vinyl chloride		1.3	U	0.50	1.3

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		78 - 135
4-Bromofluorobenzene	90		67 - 126
Dibromofluoromethane (Surr)	93		61 - 149
Toluene-d8 (Surr)	84		73 - 121

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: **SB-14(1-3)**

Lab Sample ID: 460-102327-6 | Date Sampled: 10/06/2015 0955
Client Matrix: Solid | % Moisture: 13.4 | Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15140.D
Dilution:	1.0			Initial Weight/Volume:	4.73 g
Analysis Date:	10/13/2015 0204			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0954				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.2	U	0.46	1.2
1,1,2,2-Tetrachloroethane		1.2	U	0.21	1.2
1,1,2-Trichloro-1,2,2-trifluoroethane		1.2	U *	0.54	1.2
1,1,2-Trichloroethane		1.2	U	0.34	1.2
1,1-Dichloroethane		1.2	U	0.42	1.2
1,1-Dichloroethene		1.2	U	0.50	1.2
1,2,3-Trichlorobenzene		1.2	U	0.13	1.2
1,2,4-Trichlorobenzene		1.2	U	0.39	1.2
1,2-Dibromo-3-Chloropropane		1.2	U	0.57	1.2
1,2-Dichlorobenzene		1.2	U	0.17	1.2
1,2-Dichloroethane		1.2	U	0.13	1.2
1,2-Dichloropropane		1.2	U	0.21	1.2
1,3-Dichlorobenzene		1.2	U	0.15	1.2
1,4-Dichlorobenzene		1.2	U	0.16	1.2
1,4-Dioxane		24	U	7.8	24
2-Butanone (MEK)		6.1	U	0.94	6.1
2-Hexanone		6.1	U	1.1	6.1
4-Methyl-2-pentanone (MIBK)		6.1	U	2.7	6.1
Acetone		6.1	U	1.3	6.1
Acetonitrile		12	U	5.0	12
Acrolein		120	U	19	120
Benzene		1.2	U	0.24	1.2
Bromoform		1.2	U	0.16	1.2
Bromomethane		1.2	U	0.39	1.2
Carbon disulfide		1.2	U	0.52	1.2
Carbon tetrachloride		1.2	U	0.52	1.2
Chlorobenzene		1.2	U	0.17	1.2
Chlorobromomethane		1.2	U	0.21	1.2
Chlorodibromomethane		1.2	U	0.18	1.2
Chloroethane		1.2	U	0.43	1.2
Chloroform		1.2	U	0.26	1.2
Chloromethane		1.2	U	0.46	1.2
cis-1,2-Dichloroethene		1.2	U	0.27	1.2
cis-1,3-Dichloropropene		1.2	U	0.18	1.2
Cyclohexane		1.2	U	0.56	1.2
Dichlorobromomethane		1.2	U	0.46	1.2
Dichlorodifluoromethane		1.2	U	0.39	1.2
Ethylbenzene		1.2	U	0.22	1.2
Ethylene Dibromide		1.2	U	0.15	1.2
Isopropylbenzene		1.2	U	0.21	1.2
Methyl acetate		6.1	U	1.1	6.1
Methyl tert-butyl ether		1.2	U *	0.21	1.2
Methylcyclohexane		1.2	U	0.61	1.2
Methylene Chloride		1.2	U	0.39	1.2
m-Xylene & p-Xylene		1.2	U	0.13	1.2
o-Xylene		1.2	U	0.20	1.2

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-14(1-3)

Lab Sample ID: 460-102327-6 Date Sampled: 10/06/2015 0955
Client Matrix: Solid % Moisture: 13.4 Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15140.D
Dilution:	1.0			Initial Weight/Volume:	4.73 g
Analysis Date:	10/13/2015 0204			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0954				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.2	U	0.18	1.2
Tetrachloroethene		1.2	U	0.34	1.2
Toluene		1.2	U	0.23	1.2
trans-1,2-Dichloroethene		1.2	U	0.48	1.2
trans-1,3-Dichloropropene		1.2	U	0.12	1.2
Trichloroethene		1.2	U	0.32	1.2
Trichlorofluoromethane		1.2	U	0.42	1.2
Vinyl chloride		1.2	U	0.48	1.2

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		78 - 135
4-Bromofluorobenzene	94		67 - 126
Dibromofluoromethane (Surr)	97		61 - 149
Toluene-d8 (Surr)	88		73 - 121

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-16(1-3)**

Lab Sample ID: 460-102327-7
Client Matrix: Solid
% Moisture: 12.1

Date Sampled: 10/06/2015 1015
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15141.D
Dilution:	1.0			Initial Weight/Volume:	4.83 g
Analysis Date:	10/13/2015 0229			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0957				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.2	U	0.45	1.2
1,1,2,2-Tetrachloroethane		1.2	U	0.20	1.2
1,1,2-Trichloro-1,2,2-trifluoroethane		1.2	U *	0.52	1.2
1,1,2-Trichloroethane		1.2	U	0.33	1.2
1,1-Dichloroethane		1.2	U	0.40	1.2
1,1-Dichloroethene		1.2	U	0.48	1.2
1,2,3-Trichlorobenzene		1.2	U	0.13	1.2
1,2,4-Trichlorobenzene		1.2	U	0.38	1.2
1,2-Dibromo-3-Chloropropane		1.2	U	0.55	1.2
1,2-Dichlorobenzene		1.2	U	0.16	1.2
1,2-Dichloroethane		1.2	U	0.13	1.2
1,2-Dichloropropane		1.2	U	0.20	1.2
1,3-Dichlorobenzene		1.2	U	0.14	1.2
1,4-Dichlorobenzene		1.2	U	0.15	1.2
1,4-Dioxane		24	U	7.5	24
2-Butanone (MEK)		5.9	U	0.91	5.9
2-Hexanone		5.9	U	1.1	5.9
4-Methyl-2-pentanone (MIBK)		5.9	U	2.6	5.9
Acetone		5.9	U	1.2	5.9
Acetonitrile		12	U	4.8	12
Acrolein		120	U	18	120
Benzene		1.2	U	0.24	1.2
Bromoform		1.2	U	0.15	1.2
Bromomethane		1.2	U	0.38	1.2
Carbon disulfide		1.2	U	0.51	1.2
Carbon tetrachloride		1.2	U	0.51	1.2
Chlorobenzene		1.2	U	0.16	1.2
Chlorobromomethane		1.2	U	0.20	1.2
Chlorodibromomethane		1.2	U	0.18	1.2
Chloroethane		1.2	U	0.41	1.2
Chloroform		1.2	U	0.25	1.2
Chloromethane		1.2	U	0.45	1.2
cis-1,2-Dichloroethene		1.2	U	0.26	1.2
cis-1,3-Dichloropropene		1.2	U	0.18	1.2
Cyclohexane		1.2	U	0.54	1.2
Dichlorobromomethane		1.2	U	0.45	1.2
Dichlorodifluoromethane		1.2	U	0.38	1.2
Ethylbenzene		1.2	U	0.21	1.2
Ethylene Dibromide		1.2	U	0.14	1.2
Isopropylbenzene		1.2	U	0.20	1.2
Methyl acetate		5.9	U	1.1	5.9
Methyl tert-butyl ether		1.2	U *	0.20	1.2
Methylcyclohexane		1.2	U	0.59	1.2
Methylene Chloride		1.2	U	0.38	1.2
m-Xylene & p-Xylene		1.2	U	0.13	1.2
o-Xylene		1.2	U	0.19	1.2

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-16(1-3)

Lab Sample ID: 460-102327-7 Date Sampled: 10/06/2015 1015
Client Matrix: Solid % Moisture: 12.1 Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15141.D
Dilution:	1.0			Initial Weight/Volume:	4.83 g
Analysis Date:	10/13/2015 0229			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0957				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.2	U	0.18	1.2
Tetrachloroethene		1.2	U	0.33	1.2
Toluene		1.2	U	0.22	1.2
trans-1,2-Dichloroethene		1.2	U	0.46	1.2
trans-1,3-Dichloropropene		1.2	U	0.12	1.2
Trichloroethene		1.2	U	0.31	1.2
Trichlorofluoromethane		1.2	U	0.40	1.2
Vinyl chloride		1.2	U	0.46	1.2

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		78 - 135
4-Bromofluorobenzene	94		67 - 126
Dibromofluoromethane (Surr)	97		61 - 149
Toluene-d8 (Surr)	91		73 - 121

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: **SB-15(6-8)**

Lab Sample ID: 460-102327-8 | Date Sampled: 10/06/2015 1145
Client Matrix: Solid | % Moisture: 9.8 | Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15142.D
Dilution:	1.0			Initial Weight/Volume:	3.83 g
Analysis Date:	10/13/2015 0253			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0959				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		1.4	U	0.55	1.4
1,1,2,2-Tetrachloroethane		1.4	U	0.25	1.4
1,1,2-Trichloro-1,2,2-trifluoroethane		1.4	U *	0.64	1.4
1,1,2-Trichloroethane		1.4	U	0.41	1.4
1,1-Dichloroethane		1.4	U	0.49	1.4
1,1-Dichloroethene		1.4	U	0.59	1.4
1,2,3-Trichlorobenzene		1.4	U	0.16	1.4
1,2,4-Trichlorobenzene		1.4	U	0.46	1.4
1,2-Dibromo-3-Chloropropane		1.4	U	0.68	1.4
1,2-Dichlorobenzene		1.4	U	0.20	1.4
1,2-Dichloroethane		1.4	U	0.16	1.4
1,2-Dichloropropane		1.4	U	0.25	1.4
1,3-Dichlorobenzene		1.4	U	0.17	1.4
1,4-Dichlorobenzene		1.4	U	0.19	1.4
1,4-Dioxane		29	U	9.3	29
2-Butanone (MEK)		7.2	U	1.1	7.2
2-Hexanone		7.2	U	1.4	7.2
4-Methyl-2-pentanone (MIBK)		7.2	U	3.2	7.2
Acetone		7.2	U	1.5	7.2
Acetonitrile		14	U	5.9	14
Acrolein		140	U	23	140
Benzene		1.4	U	0.29	1.4
Bromoform		1.4	U	0.19	1.4
Bromomethane		1.4	U	0.46	1.4
Carbon disulfide		1.4	U	0.62	1.4
Carbon tetrachloride		1.4	U	0.62	1.4
Chlorobenzene		1.4	U	0.20	1.4
Chlorobromomethane		1.4	U	0.25	1.4
Chlorodibromomethane		1.4	U	0.22	1.4
Chloroethane		1.4	U	0.51	1.4
Chloroform		1.4	U	0.30	1.4
Chloromethane		1.4	U	0.55	1.4
cis-1,2-Dichloroethene		1.4	U	0.32	1.4
cis-1,3-Dichloropropene		1.4	U	0.22	1.4
Cyclohexane		1.4	U	0.67	1.4
Dichlorobromomethane		1.4	U	0.55	1.4
Dichlorodifluoromethane		1.4	U	0.46	1.4
Ethylbenzene		1.4	U	0.26	1.4
Ethylene Dibromide		1.4	U	0.17	1.4
Isopropylbenzene		1.4	U	0.25	1.4
Methyl acetate		7.2	U	1.3	7.2
Methyl tert-butyl ether		1.4	U *	0.25	1.4
Methylcyclohexane		1.4	U	0.72	1.4
Methylene Chloride		1.4	U	0.46	1.4
m-Xylene & p-Xylene		1.4	U	0.16	1.4
o-Xylene		1.4	U	0.23	1.4

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-15(6-8)**

Lab Sample ID: 460-102327-8
Client Matrix: Solid
% Moisture: 9.8

Date Sampled: 10/06/2015 1145
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Prep Method:	5035	Prep Batch:	460-327442	Lab File ID:	D15142.D
Dilution:	1.0			Initial Weight/Volume:	3.83 g
Analysis Date:	10/13/2015 0253			Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0959				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Styrene		1.4	U	0.22	1.4
Tetrachloroethene		1.4	U	0.41	1.4
Toluene		1.4	U	0.28	1.4
trans-1,2-Dichloroethene		1.4	U	0.56	1.4
trans-1,3-Dichloropropene		1.4	U	0.14	1.4
Trichloroethene		1.4	U	0.38	1.4
Trichlorofluoromethane		1.4	U	0.49	1.4
Vinyl chloride		1.4	U	0.56	1.4

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95		78 - 135
4-Bromofluorobenzene	95		67 - 126
Dibromofluoromethane (Surr)	95		61 - 149
Toluene-d8 (Surr)	90		73 - 121

Client Sample ID: **MW-1**

Lab Sample ID: 460-102327-9 Date Sampled: 10/06/2015 1148
Client Matrix: Water Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46752.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1649			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1649				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.28	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.19	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.34	1.0
1,1,2-Trichloroethane	1.0	U	0.080	1.0
1,1-Dichloroethane	1.0	U	0.24	1.0
1,1-Dichloroethene	1.0	U	0.34	1.0
1,2,3-Trichlorobenzene	1.0	U	0.35	1.0
1,2,4-Trichlorobenzene	1.0	U	0.27	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.23	1.0
1,2-Dichlorobenzene	1.0	U	0.22	1.0
1,2-Dichloroethane	1.0	U	0.25	1.0
1,2-Dichloropropane	1.0	U	0.18	1.0
1,3-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dioxane	50	U	8.7	50
2-Butanone (MEK)	5.0	U	2.2	5.0
2-Hexanone	5.0	U	0.72	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	0.63	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	1.3	10
Acrolein	2.5	U	0.88	2.5
Benzene	1.0	U	0.090	1.0
Bromoform	1.0	U	0.18	1.0
Bromomethane	1.0	U	0.18	1.0
Carbon disulfide	1.0	U	0.22	1.0
Carbon tetrachloride	1.0	U	0.33	1.0
Chlorobenzene	1.0	U	0.24	1.0
Chlorobromomethane	1.0	U	0.30	1.0
Chlorodibromomethane	1.0	U	0.22	1.0
Chloroethane	1.0	U	0.37	1.0
Chloroform	1.0	U	0.22	1.0
Chloromethane	1.0	U	0.22	1.0
cis-1,2-Dichloroethene	1.0	U	0.26	1.0
cis-1,3-Dichloropropene	1.0	U	0.16	1.0
Cyclohexane	1.0	U	0.26	1.0
Dichlorobromomethane	1.0	U	0.15	1.0
Dichlorodifluoromethane	0.31	J	0.14	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.19	1.0
Isopropylbenzene	1.0	U	0.32	1.0
Methyl acetate	5.0	U	0.58	5.0
Methyl tert-butyl ether	1.0	U	0.13	1.0
Methylcyclohexane	1.0	U	0.22	1.0
Methylene Chloride	1.0	U	0.21	1.0
m-Xylene & p-Xylene	1.0	U	0.28	1.0
o-Xylene	1.0	U	0.32	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **MW-1**

Lab Sample ID: 460-102327-9
Client Matrix: Water

Date Sampled: 10/06/2015 1148
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46752.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1649			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1649				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	1.0	U	0.17	1.0
Tetrachloroethene	1.0	U	0.12	1.0
Toluene	1.0	U	0.25	1.0
trans-1,2-Dichloroethene	1.0	U	0.18	1.0
trans-1,3-Dichloropropene	1.0	U	0.19	1.0
Trichloroethene	1.0	U	0.22	1.0
Trichlorofluoromethane	1.0	U	0.15	1.0
Vinyl chloride	1.0	U	0.060	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	89		70 - 137
4-Bromofluorobenzene	89		70 - 131
Dibromofluoromethane (Surr)	93		72 - 136
Toluene-d8 (Surr)	88		74 - 120

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: MW-2

Lab Sample ID: 460-102327-10
Client Matrix: Water

Date Sampled: 10/06/2015 1310
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46753.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1716			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1716				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.28	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.19	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.34	1.0
1,1,2-Trichloroethane	1.0	U	0.080	1.0
1,1-Dichloroethane	1.0	U	0.24	1.0
1,1-Dichloroethene	1.0	U	0.34	1.0
1,2,3-Trichlorobenzene	1.0	U	0.35	1.0
1,2,4-Trichlorobenzene	1.0	U	0.27	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.23	1.0
1,2-Dichlorobenzene	1.0	U	0.22	1.0
1,2-Dichloroethane	1.0	U	0.25	1.0
1,2-Dichloropropane	1.0	U	0.18	1.0
1,3-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dioxane	50	U	8.7	50
2-Butanone (MEK)	5.0	U	2.2	5.0
2-Hexanone	5.0	U	0.72	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	0.63	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	1.3	10
Acrolein	2.5	U	0.88	2.5
Benzene	1.0	U	0.090	1.0
Bromoform	1.0	U	0.18	1.0
Bromomethane	1.0	U	0.18	1.0
Carbon disulfide	1.0	U	0.22	1.0
Carbon tetrachloride	1.0	U	0.33	1.0
Chlorobenzene	1.0	U	0.24	1.0
Chlorobromomethane	1.0	U	0.30	1.0
Chlorodibromomethane	1.0	U	0.22	1.0
Chloroethane	1.0	U	0.37	1.0
Chloroform	1.0	U	0.22	1.0
Chloromethane	1.0	U	0.22	1.0
cis-1,2-Dichloroethene	1.0	U	0.26	1.0
cis-1,3-Dichloropropene	1.0	U	0.16	1.0
Cyclohexane	1.0	U	0.26	1.0
Dichlorobromomethane	1.0	U	0.15	1.0
Dichlorodifluoromethane	1.0	U	0.14	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.19	1.0
Isopropylbenzene	1.0	U	0.32	1.0
Methyl acetate	5.0	U	0.58	5.0
Methyl tert-butyl ether	1.0	U	0.13	1.0
Methylcyclohexane	1.0	U	0.22	1.0
Methylene Chloride	1.0	U	0.21	1.0
m-Xylene & p-Xylene	1.0	U	0.28	1.0
o-Xylene	1.0	U	0.32	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: MW-2

Lab Sample ID: 460-102327-10
Client Matrix: Water

Date Sampled: 10/06/2015 1310
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46753.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1716			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1716				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	1.0	U	0.17	1.0
Tetrachloroethene	1.0	U	0.12	1.0
Toluene	1.0	U	0.25	1.0
trans-1,2-Dichloroethene	1.0	U	0.18	1.0
trans-1,3-Dichloropropene	1.0	U	0.19	1.0
Trichloroethene	1.0	U	0.22	1.0
Trichlorofluoromethane	1.0	U	0.15	1.0
Vinyl chloride	1.0	U	0.060	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 137
4-Bromofluorobenzene	96		70 - 131
Dibromofluoromethane (Surr)	103		72 - 136
Toluene-d8 (Surr)	95		74 - 120

Client Sample ID: **MW-3**

Lab Sample ID: 460-102327-11 Date Sampled: 10/06/2015 0940
Client Matrix: Water Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46763.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2144			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2144				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.28	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.19	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.34	1.0
1,1,2-Trichloroethane	1.0	U	0.080	1.0
1,1-Dichloroethane	1.0		0.24	1.0
1,1-Dichloroethene	1.0	U	0.34	1.0
1,2,3-Trichlorobenzene	1.0	U	0.35	1.0
1,2,4-Trichlorobenzene	1.0	U	0.27	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.23	1.0
1,2-Dichlorobenzene	1.0	U	0.22	1.0
1,2-Dichloroethane	1.0	U	0.25	1.0
1,2-Dichloropropane	1.0	U	0.18	1.0
1,3-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dioxane	50	U	8.7	50
2-Butanone (MEK)	5.0	U	2.2	5.0
2-Hexanone	5.0	U	0.72	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	0.63	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	1.3	10
Acrolein	2.5	U	0.88	2.5
Benzene	1.0	U	0.090	1.0
Bromoform	1.0	U	0.18	1.0
Bromomethane	1.0	U	0.18	1.0
Carbon disulfide	1.0	U	0.22	1.0
Carbon tetrachloride	1.0	U	0.33	1.0
Chlorobenzene	1.0	U	0.24	1.0
Chlorobromomethane	1.0	U	0.30	1.0
Chlorodibromomethane	1.0	U	0.22	1.0
Chloroethane	1.0	U	0.37	1.0
Chloroform	1.0	U	0.22	1.0
Chloromethane	1.0	U	0.22	1.0
cis-1,2-Dichloroethene	2.5		0.26	1.0
cis-1,3-Dichloropropene	1.0	U	0.16	1.0
Cyclohexane	1.0	U	0.26	1.0
Dichlorobromomethane	1.0	U	0.15	1.0
Dichlorodifluoromethane	0.32	J	0.14	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.19	1.0
Isopropylbenzene	1.0	U	0.32	1.0
Methyl acetate	5.0	U	0.58	5.0
Methyl tert-butyl ether	1.0	U	0.13	1.0
Methylcyclohexane	1.0	U	0.22	1.0
Methylene Chloride	1.0	U	0.21	1.0
m-Xylene & p-Xylene	1.0	U	0.28	1.0
o-Xylene	1.0	U	0.32	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **MW-3**

Lab Sample ID: 460-102327-11
Client Matrix: Water

Date Sampled: 10/06/2015 0940
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46763.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2144			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2144				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	1.0	U	0.17	1.0
Tetrachloroethene	1.0	U	0.12	1.0
Toluene	1.0	U	0.25	1.0
trans-1,2-Dichloroethene	1.0	U	0.18	1.0
trans-1,3-Dichloropropene	1.0	U	0.19	1.0
Trichloroethene	1.0	U	0.22	1.0
Trichlorofluoromethane	0.50	J	0.15	1.0
Vinyl chloride	1.0	U	0.060	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 137
4-Bromofluorobenzene	97		70 - 131
Dibromofluoromethane (Surr)	101		72 - 136
Toluene-d8 (Surr)	96		74 - 120

Client Sample ID: **MW-4**

Lab Sample ID: 460-102327-12 Date Sampled: 10/06/2015 1526
Client Matrix: Water Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46754.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1742			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1742				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.28	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.19	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.34	1.0
1,1,2-Trichloroethane	1.0	U	0.080	1.0
1,1-Dichloroethane	1.0	U	0.24	1.0
1,1-Dichloroethene	1.0	U	0.34	1.0
1,2,3-Trichlorobenzene	1.0	U	0.35	1.0
1,2,4-Trichlorobenzene	1.0	U	0.27	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.23	1.0
1,2-Dichlorobenzene	1.0	U	0.22	1.0
1,2-Dichloroethane	1.0	U	0.25	1.0
1,2-Dichloropropane	1.0	U	0.18	1.0
1,3-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dioxane	50	U	8.7	50
2-Butanone (MEK)	5.0	U	2.2	5.0
2-Hexanone	5.0	U	0.72	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	0.63	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	1.3	10
Acrolein	2.5	U	0.88	2.5
Benzene	1.0	U	0.090	1.0
Bromoform	1.0	U	0.18	1.0
Bromomethane	1.0	U	0.18	1.0
Carbon disulfide	1.0	U	0.22	1.0
Carbon tetrachloride	1.0	U	0.33	1.0
Chlorobenzene	1.0	U	0.24	1.0
Chlorobromomethane	1.0	U	0.30	1.0
Chlorodibromomethane	1.0	U	0.22	1.0
Chloroethane	1.0	U	0.37	1.0
Chloroform	1.0	U	0.22	1.0
Chloromethane	1.0	U	0.22	1.0
cis-1,2-Dichloroethene	1.0	U	0.26	1.0
cis-1,3-Dichloropropene	1.0	U	0.16	1.0
Cyclohexane	1.0	U	0.26	1.0
Dichlorobromomethane	1.0	U	0.15	1.0
Dichlorodifluoromethane	1.0	U	0.14	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.19	1.0
Isopropylbenzene	1.0	U	0.32	1.0
Methyl acetate	5.0	U	0.58	5.0
Methyl tert-butyl ether	1.0	U	0.13	1.0
Methylcyclohexane	1.0	U	0.22	1.0
Methylene Chloride	1.0	U	0.21	1.0
m-Xylene & p-Xylene	1.0	U	0.28	1.0
o-Xylene	1.0	U	0.32	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **MW-4**

Lab Sample ID: 460-102327-12
Client Matrix: Water

Date Sampled: 10/06/2015 1526
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46754.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1742			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1742				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	1.0	U	0.17	1.0
Tetrachloroethene	1.0	U	0.12	1.0
Toluene	1.0	U	0.25	1.0
trans-1,2-Dichloroethene	1.0	U	0.18	1.0
trans-1,3-Dichloropropene	1.0	U	0.19	1.0
Trichloroethene	1.0	U	0.22	1.0
Trichlorofluoromethane	1.0	U	0.15	1.0
Vinyl chloride	1.0	U	0.060	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 137
4-Bromofluorobenzene	97		70 - 131
Dibromofluoromethane (Surr)	101		72 - 136
Toluene-d8 (Surr)	98		74 - 120

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: MW-5

Lab Sample ID: 460-102327-13
Client Matrix: Water

Date Sampled: 10/06/2015 1422
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46762.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2117			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2117				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.28	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.19	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.34	1.0
1,1,2-Trichloroethane	1.0	U	0.080	1.0
1,1-Dichloroethane	1.0	U	0.24	1.0
1,1-Dichloroethene	1.0	U	0.34	1.0
1,2,3-Trichlorobenzene	1.0	U	0.35	1.0
1,2,4-Trichlorobenzene	1.0	U	0.27	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.23	1.0
1,2-Dichlorobenzene	1.0	U	0.22	1.0
1,2-Dichloroethane	1.0	U	0.25	1.0
1,2-Dichloropropane	1.0	U	0.18	1.0
1,3-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dioxane	50	U	8.7	50
2-Butanone (MEK)	5.0	U	2.2	5.0
2-Hexanone	5.0	U	0.72	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	0.63	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	1.3	10
Acrolein	2.5	U	0.88	2.5
Benzene	1.0	U	0.090	1.0
Bromoform	1.0	U	0.18	1.0
Bromomethane	1.0	U	0.18	1.0
Carbon disulfide	1.0	U	0.22	1.0
Carbon tetrachloride	1.0	U	0.33	1.0
Chlorobenzene	1.0	U	0.24	1.0
Chlorobromomethane	1.0	U	0.30	1.0
Chlorodibromomethane	1.0	U	0.22	1.0
Chloroethane	1.0	U	0.37	1.0
Chloroform	1.0	U	0.22	1.0
Chloromethane	1.0	U	0.22	1.0
cis-1,2-Dichloroethene	1.0	U	0.26	1.0
cis-1,3-Dichloropropene	1.0	U	0.16	1.0
Cyclohexane	1.0	U	0.26	1.0
Dichlorobromomethane	1.0	U	0.15	1.0
Dichlorodifluoromethane	1.0	U	0.14	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.19	1.0
Isopropylbenzene	1.0	U	0.32	1.0
Methyl acetate	5.0	U	0.58	5.0
Methyl tert-butyl ether	1.0	U	0.13	1.0
Methylcyclohexane	1.0	U	0.22	1.0
Methylene Chloride	1.0	U	0.21	1.0
m-Xylene & p-Xylene	1.0	U	0.28	1.0
o-Xylene	1.0	U	0.32	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **MW-5**

Lab Sample ID: 460-102327-13
Client Matrix: Water

Date Sampled: 10/06/2015 1422
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46762.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2117			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2117				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	1.0	U	0.17	1.0
Tetrachloroethene	1.0	U	0.12	1.0
Toluene	1.0	U	0.25	1.0
trans-1,2-Dichloroethene	1.0	U	0.18	1.0
trans-1,3-Dichloropropene	1.0	U	0.19	1.0
Trichloroethene	1.0	U	0.22	1.0
Trichlorofluoromethane	1.0	U	0.15	1.0
Vinyl chloride	1.0	U	0.060	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 137
4-Bromofluorobenzene	94		70 - 131
Dibromofluoromethane (Surr)	100		72 - 136
Toluene-d8 (Surr)	96		74 - 120

Client Sample ID: **Trip Blank**

Lab Sample ID: 460-102327-14TB
Client Matrix: Water

Date Sampled: 10/06/2015 1526
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46745.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1341			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1341				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.28	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.19	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.34	1.0
1,1,2-Trichloroethane	1.0	U	0.080	1.0
1,1-Dichloroethane	1.0	U	0.24	1.0
1,1-Dichloroethene	1.0	U	0.34	1.0
1,2,3-Trichlorobenzene	1.0	U	0.35	1.0
1,2,4-Trichlorobenzene	1.0	U	0.27	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.23	1.0
1,2-Dichlorobenzene	1.0	U	0.22	1.0
1,2-Dichloroethane	1.0	U	0.25	1.0
1,2-Dichloropropane	1.0	U	0.18	1.0
1,3-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dioxane	50	U	8.7	50
2-Butanone (MEK)	5.0	U	2.2	5.0
2-Hexanone	5.0	U	0.72	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	0.63	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	1.3	10
Acrolein	2.5	U	0.88	2.5
Benzene	1.0	U	0.090	1.0
Bromoform	1.0	U	0.18	1.0
Bromomethane	1.0	U	0.18	1.0
Carbon disulfide	1.0	U	0.22	1.0
Carbon tetrachloride	1.0	U	0.33	1.0
Chlorobenzene	1.0	U	0.24	1.0
Chlorobromomethane	1.0	U	0.30	1.0
Chlorodibromomethane	1.0	U	0.22	1.0
Chloroethane	1.0	U	0.37	1.0
Chloroform	1.0	U	0.22	1.0
Chloromethane	1.0	U	0.22	1.0
cis-1,2-Dichloroethene	1.0	U	0.26	1.0
cis-1,3-Dichloropropene	1.0	U	0.16	1.0
Cyclohexane	1.0	U	0.26	1.0
Dichlorobromomethane	1.0	U	0.15	1.0
Dichlorodifluoromethane	1.0	U	0.14	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.19	1.0
Isopropylbenzene	1.0	U	0.32	1.0
Methyl acetate	5.0	U	0.58	5.0
Methyl tert-butyl ether	1.0	U	0.13	1.0
Methylcyclohexane	1.0	U	0.22	1.0
Methylene Chloride	1.0	U	0.21	1.0
m-Xylene & p-Xylene	1.0	U	0.28	1.0
o-Xylene	1.0	U	0.32	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 460-102327-14TB
Client Matrix: Water

Date Sampled: 10/06/2015 1526
Date Received: 10/07/2015 0930

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E46745.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1341			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1341				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	1.0	U	0.17	1.0
Tetrachloroethene	1.0	U	0.12	1.0
Toluene	1.0	U	0.25	1.0
trans-1,2-Dichloroethene	1.0	U	0.18	1.0
trans-1,3-Dichloropropene	1.0	U	0.19	1.0
Trichloroethene	1.0	U	0.22	1.0
Trichlorofluoromethane	1.0	U	0.15	1.0
Vinyl chloride	1.0	U	0.060	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 137
4-Bromofluorobenzene	96		70 - 131
Dibromofluoromethane (Surr)	100		72 - 136
Toluene-d8 (Surr)	95		74 - 120

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: SB-9(.5'-2.5')

Lab Sample ID: 460-102327-1 | Date Sampled: 10/06/2015 1310
Client Matrix: Solid | % Moisture: 9.6 | Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327462	Lab File ID:	z37362.D
Dilution:	1.0			Initial Weight/Volume:	15.0224 g
Analysis Date:	10/10/2015 1737			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		360	U	31	360
1,2,4,5-Tetrachlorobenzene		360	U	27	360
2,2'-oxybis[1-chloropropane]		360	U	15	360
2,3,4,6-Tetrachlorophenol		360	U	34	360
2,4,5-Trichlorophenol		360	U	36	360
2,4,6-Trichlorophenol		150	U	10	150
2,4-Dichlorophenol		150	U	8.6	150
2,4-Dimethylphenol		360	U	80	360
2,4-Dinitrophenol		290	U	280	290
2,4-Dinitrotoluene		74	U	14	74
2,6-Dinitrotoluene		74	U	19	74
2-Chloronaphthalene		360	U	8.3	360
2-Chlorophenol		360	U	9.3	360
2-Methylnaphthalene		360	U	8.1	360
2-Methylphenol		360	U	16	360
2-Nitroaniline		360	U	12	360
2-Nitrophenol		360	U	12	360
3,3'-Dichlorobenzidine		150	U	41	150
3-Nitroaniline		360	U	11	360
4,6-Dinitro-2-methylphenol		290	U	97	290
4-Bromophenyl phenyl ether		360	U	11	360
4-Chloro-3-methylphenol		360	U	16	360
4-Chloroaniline		360	U	9.4	360
4-Chlorophenyl phenyl ether		360	U	11	360
4-Methylphenol		360	U	9.9	360
4-Nitroaniline		360	U	14	360
4-Nitrophenol		740	U	180	740
Acenaphthene		360	U	8.8	360
Acenaphthylene		360	U	9.4	360
Acetophenone		360	U	8.0	360
Anthracene		360	U	35	360
Atrazine		150	U	16	150
Benzaldehyde		360	U	28	360
Benzo[a]anthracene		36	U	30	36
Benzo[a]pyrene		36	U	11	36
Benzo[b]fluoranthene		36	U	14	36
Benzo[g,h,i]perylene		360	U	21	360
Benzo[k]fluoranthene		36	U	16	36
Bis(2-chloroethoxy)methane		360	U	11	360
Bis(2-chloroethyl)ether		36	U	8.6	36
Bis(2-ethylhexyl) phthalate		320	J	14	360
Butyl benzyl phthalate		360	U	11	360
Caprolactam		360	U	26	360
Carbazole		360	U	9.1	360
Chrysene		360	U	9.9	360
Dibenz(a,h)anthracene		36	U	19	36

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-9(.5'-2.5')

Lab Sample ID: 460-102327-1 Date Sampled: 10/06/2015 1310
Client Matrix: Solid % Moisture: 9.6 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327462	Lab File ID:	z37362.D
Dilution:	1.0			Initial Weight/Volume:	15.0224 g
Analysis Date:	10/10/2015 1737			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		360	U	11	360
Diethyl phthalate		360	U	10	360
Dimethyl phthalate		360	U	11	360
Di-n-butyl phthalate		360	U	11	360
Di-n-octyl phthalate		360	U	19	360
Fluoranthene		360	U	11	360
Fluorene		360	U	8.0	360
Hexachlorobenzene		36	U	15	36
Hexachlorobutadiene		74	U	10	74
Hexachlorocyclopentadiene		360	U	23	360
Hexachloroethane		36	U	13	36
Indeno[1,2,3-cd]pyrene		36	U	24	36
Isophorone		150	U	7.8	150
Naphthalene		360	U	9.3	360
Nitrobenzene		36	U	11	36
N-Nitrosodi-n-propylamine		36	U	12	36
N-Nitrosodiphenylamine		360	U	33	360
Pentachlorophenol		290	U	44	290
Phenanthrene		360	U	9.7	360
Phenol		360	U	12	360
Pyrene		360	U	17	360

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	58		10 - 95
2-Fluorobiphenyl	74		27 - 84
2-Fluorophenol (Surr)	53		21 - 84
Nitrobenzene-d5 (Surr)	69		28 - 92
Phenol-d5 (Surr)	58		22 - 88
Terphenyl-d14 (Surr)	89		16 - 114

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: **SB-10(1'-3')**

Lab Sample ID: 460-102327-2 | Date Sampled: 10/06/2015 1255
Client Matrix: Solid | % Moisture: 10.7 | Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327462	Lab File ID:	z37360.D
Dilution:	1.0			Initial Weight/Volume:	15.0342 g
Analysis Date:	10/10/2015 1650			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		370	U	31	370
1,2,4,5-Tetrachlorobenzene		370	U	27	370
2,2'-oxybis[1-chloropropane]		370	U	15	370
2,3,4,6-Tetrachlorophenol		370	U	35	370
2,4,5-Trichlorophenol		370	U	37	370
2,4,6-Trichlorophenol		150	U	10	150
2,4-Dichlorophenol		150	U	8.7	150
2,4-Dimethylphenol		370	U	81	370
2,4-Dinitrophenol		300	U	280	300
2,4-Dinitrotoluene		75	U	15	75
2,6-Dinitrotoluene		75	U	20	75
2-Chloronaphthalene		370	U	8.4	370
2-Chlorophenol		370	U	9.4	370
2-Methylnaphthalene		370	U	8.2	370
2-Methylphenol		370	U	16	370
2-Nitroaniline		370	U	12	370
2-Nitrophenol		370	U	12	370
3,3'-Dichlorobenzidine		150	U	41	150
3-Nitroaniline		370	U	11	370
4,6-Dinitro-2-methylphenol		300	U	99	300
4-Bromophenyl phenyl ether		370	U	12	370
4-Chloro-3-methylphenol		370	U	16	370
4-Chloroaniline		370	U	9.5	370
4-Chlorophenyl phenyl ether		370	U	11	370
4-Methylphenol		370	U	10	370
4-Nitroaniline		370	U	14	370
4-Nitrophenol		750	U	180	750
Acenaphthene		370	U	8.9	370
Acenaphthylene		370	U	9.5	370
Acetophenone		370	U	8.0	370
Anthracene		370	U	35	370
Atrazine		150	U	16	150
Benzaldehyde		370	U	28	370
Benzo[a]anthracene		37	U	31	37
Benzo[a]pyrene		37	U	11	37
Benzo[b]fluoranthene		37	U	14	37
Benzo[g,h,i]perylene		370	U	21	370
Benzo[k]fluoranthene		37	U	16	37
Bis(2-chloroethoxy)methane		370	U	12	370
Bis(2-chloroethyl)ether		37	U	8.7	37
Bis(2-ethylhexyl) phthalate		79	J	14	370
Butyl benzyl phthalate		370	U	11	370
Caprolactam		370	U	27	370
Carbazole		370	U	9.2	370
Chrysene		370	U	10	370
Dibenz(a,h)anthracene		37	U	19	37

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-10(1'-3')

Lab Sample ID: 460-102327-2 Date Sampled: 10/06/2015 1255
Client Matrix: Solid % Moisture: 10.7 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327462	Lab File ID:	z37360.D
Dilution:	1.0			Initial Weight/Volume:	15.0342 g
Analysis Date:	10/10/2015 1650			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		370	U	11	370
Diethyl phthalate		370	U	10	370
Dimethyl phthalate		370	U	11	370
Di-n-butyl phthalate		370	U	11	370
Di-n-octyl phthalate		370	U	19	370
Fluoranthene		370	U	11	370
Fluorene		370	U	8.0	370
Hexachlorobenzene		37	U	15	37
Hexachlorobutadiene		75	U	10	75
Hexachlorocyclopentadiene		370	U	23	370
Hexachloroethane		37	U	14	37
Indeno[1,2,3-cd]pyrene		37	U	25	37
Isophorone		150	U	7.9	150
Naphthalene		370	U	9.4	370
Nitrobenzene		37	U	12	37
N-Nitrosodi-n-propylamine		37	U	12	37
N-Nitrosodiphenylamine		370	U	34	370
Pentachlorophenol		300	U	45	300
Phenanthrene		370	U	9.8	370
Phenol		370	U	12	370
Pyrene		370	U	17	370

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	58		10 - 95
2-Fluorobiphenyl	66		27 - 84
2-Fluorophenol (Surr)	50		21 - 84
Nitrobenzene-d5 (Surr)	60		28 - 92
Phenol-d5 (Surr)	51		22 - 88
Terphenyl-d14 (Surr)	80		16 - 114

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3 Date Sampled: 10/06/2015 1235
Client Matrix: Solid % Moisture: 11.4 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327462	Lab File ID:	z37361.D
Dilution:	1.0			Initial Weight/Volume:	15.0375 g
Analysis Date:	10/10/2015 1714			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		370	U	32	370
1,2,4,5-Tetrachlorobenzene		370	U	28	370
2,2'-oxybis[1-chloropropane]		370	U	15	370
2,3,4,6-Tetrachlorophenol		370	U	35	370
2,4,5-Trichlorophenol		370	U	37	370
2,4,6-Trichlorophenol		150	U	11	150
2,4-Dichlorophenol		150	U	8.8	150
2,4-Dimethylphenol		370	U	82	370
2,4-Dinitrophenol		300	U	280	300
2,4-Dinitrotoluene		75	U	15	75
2,6-Dinitrotoluene		75	U	20	75
2-Chloronaphthalene		370	U	8.4	370
2-Chlorophenol		370	U	9.5	370
2-Methylnaphthalene		370	U	8.2	370
2-Methylphenol		370	U	16	370
2-Nitroaniline		370	U	12	370
2-Nitrophenol		370	U	12	370
3,3'-Dichlorobenzidine		150	U	42	150
3-Nitroaniline		370	U	11	370
4,6-Dinitro-2-methylphenol		300	U	99	300
4-Bromophenyl phenyl ether		370	U	12	370
4-Chloro-3-methylphenol		370	U	16	370
4-Chloroaniline		370	U	9.6	370
4-Chlorophenyl phenyl ether		370	U	11	370
4-Methylphenol		370	U	10	370
4-Nitroaniline		370	U	14	370
4-Nitrophenol		750	U	180	750
Acenaphthene		370	U	9.0	370
Acenaphthylene		370	U	9.6	370
Acetophenone		370	U	8.1	370
Anthracene		370	U	35	370
Atrazine		150	U	17	150
Benzaldehyde		370	U	28	370
Benzo[a]anthracene		37	U	31	37
Benzo[a]pyrene		37	U	11	37
Benzo[b]fluoranthene		37	U	15	37
Benzo[g,h,i]perylene		370	U	21	370
Benzo[k]fluoranthene		37	U	16	37
Bis(2-chloroethoxy)methane		370	U	12	370
Bis(2-chloroethyl)ether		37	U	8.8	37
Bis(2-ethylhexyl) phthalate		82	J	15	370
Butyl benzyl phthalate		370	U	11	370
Caprolactam		370	U	27	370
Carbazole		370	U	9.2	370
Chrysene		370	U	10	370
Dibenz(a,h)anthracene		37	U	19	37

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3 Date Sampled: 10/06/2015 1235
Client Matrix: Solid % Moisture: 11.4 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327462	Lab File ID:	z37361.D
Dilution:	1.0			Initial Weight/Volume:	15.0375 g
Analysis Date:	10/10/2015 1714			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		370	U	11	370
Diethyl phthalate		370	U	11	370
Dimethyl phthalate		370	U	11	370
Di-n-butyl phthalate		370	U	11	370
Di-n-octyl phthalate		370	U	19	370
Fluoranthene		370	U	11	370
Fluorene		370	U	8.1	370
Hexachlorobenzene		37	U	15	37
Hexachlorobutadiene		75	U	10	75
Hexachlorocyclopentadiene		370	U	23	370
Hexachloroethane		37	U	14	37
Indeno[1,2,3-cd]pyrene		37	U	25	37
Isophorone		150	U	8.0	150
Naphthalene		370	U	9.5	370
Nitrobenzene		37	U	12	37
N-Nitrosodi-n-propylamine		37	U	12	37
N-Nitrosodiphenylamine		370	U	34	370
Pentachlorophenol		300	U	45	300
Phenanthrene		370	U	9.9	370
Phenol		370	U	12	370
Pyrene		370	U	17	370

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	34		10 - 95
2-Fluorobiphenyl	73		27 - 84
2-Fluorophenol (Surr)	40		21 - 84
Nitrobenzene-d5 (Surr)	67		28 - 92
Phenol-d5 (Surr)	48		22 - 88
Terphenyl-d14 (Surr)	87		16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-12(1'-3')

Lab Sample ID: 460-102327-4
Client Matrix: Solid

% Moisture: 15.7

Date Sampled: 10/06/2015 1225
Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	z37333.D
Dilution:	1.0			Initial Weight/Volume:	15.0223 g
Analysis Date:	10/09/2015 2038			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		390	U	33	390
1,2,4,5-Tetrachlorobenzene		390	U	29	390
2,2'-oxybis[1-chloropropane]		390	U	16	390
2,3,4,6-Tetrachlorophenol		390	U	37	390
2,4,5-Trichlorophenol		390	U	39	390
2,4,6-Trichlorophenol		160	U	11	160
2,4-Dichlorophenol		160	U	9.2	160
2,4-Dimethylphenol		390	U	86	390
2,4-Dinitrophenol		320	U	300	320
2,4-Dinitrotoluene		79	U	16	79
2,6-Dinitrotoluene		79	U	21	79
2-Chloronaphthalene		390	U	8.9	390
2-Chlorophenol		390	U	9.9	390
2-Methylnaphthalene		16	J	8.6	390
2-Methylphenol		390	U	17	390
2-Nitroaniline		390	U	13	390
2-Nitrophenol		390	U	13	390
3,3'-Dichlorobenzidine		160	U	44	160
3-Nitroaniline		390	U	12	390
4,6-Dinitro-2-methylphenol		320	U	100	320
4-Bromophenyl phenyl ether		390	U	12	390
4-Chloro-3-methylphenol		390	U	17	390
4-Chloroaniline		390	U	10	390
4-Chlorophenyl phenyl ether		390	U	12	390
4-Methylphenol		28	J	11	390
4-Nitroaniline		390	U	15	390
4-Nitrophenol		790	U	190	790
Acenaphthene		390	U	9.5	390
Acenaphthylene		390	U	10	390
Acetophenone		390	U	8.5	390
Anthracene		390	U	37	390
Atrazine		160	U	17	160
Benzaldehyde		390	U	30	390
Benzo[a]anthracene		39	U	33	39
Benzo[a]pyrene		39	U	12	39
Benzo[b]fluoranthene		39	U	15	39
Benzo[g,h,i]perylene		390	U	23	390
Benzo[k]fluoranthene		39	U	17	39
Bis(2-chloroethoxy)methane		390	U	12	390
Bis(2-chloroethyl)ether		39	U	9.2	39
Bis(2-ethylhexyl) phthalate		250	J	15	390
Butyl benzyl phthalate		390	U	12	390
Caprolactam		390	U	28	390
Carbazole		390	U	9.7	390
Chrysene		390	U	11	390
Dibenz(a,h)anthracene		39	U	20	39

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-12(1'-3')

Lab Sample ID: 460-102327-4 Date Sampled: 10/06/2015 1225
Client Matrix: Solid % Moisture: 15.7 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	z37333.D
Dilution:	1.0			Initial Weight/Volume:	15.0223 g
Analysis Date:	10/09/2015 2038			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		390	U	12	390
Diethyl phthalate		390	U	11	390
Dimethyl phthalate		390	U	11	390
Di-n-butyl phthalate		390	U	12	390
Di-n-octyl phthalate		390	U	20	390
Fluoranthene		390	U	12	390
Fluorene		390	U	8.5	390
Hexachlorobenzene		39	U	16	39
Hexachlorobutadiene		79	U	11	79
Hexachlorocyclopentadiene		390	U	24	390
Hexachloroethane		39	U	14	39
Indeno[1,2,3-cd]pyrene		39	U	26	39
Isophorone		160	U	8.4	160
Naphthalene		390	U	9.9	390
Nitrobenzene		39	U	12	39
N-Nitrosodi-n-propylamine		39	U	13	39
N-Nitrosodiphenylamine		390	U	36	390
Pentachlorophenol		320	U	47	320
Phenanthrene		12	J	10	390
Phenol		390	U	13	390
Pyrene		390	U	18	390

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	68		10 - 95
2-Fluorobiphenyl	62		27 - 84
2-Fluorophenol (Surr)	59		21 - 84
Nitrobenzene-d5 (Surr)	60		28 - 92
Phenol-d5 (Surr)	60		22 - 88
Terphenyl-d14 (Surr)	70		16 - 114

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: **SB-13(.5'-2.5')**

Lab Sample ID: 460-102327-5 | Date Sampled: 10/06/2015 0940
Client Matrix: Solid | % Moisture: 10.7 | Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	z37368.D
Dilution:	1.0			Initial Weight/Volume:	15.0342 g
Analysis Date:	10/10/2015 1958			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		370	U	31	370
1,2,4,5-Tetrachlorobenzene		370	U	27	370
2,2'-oxybis[1-chloropropane]		370	U	15	370
2,3,4,6-Tetrachlorophenol		370	U	35	370
2,4,5-Trichlorophenol		370	U	37	370
2,4,6-Trichlorophenol		150	U	10	150
2,4-Dichlorophenol		150	U	8.7	150
2,4-Dimethylphenol		370	U	81	370
2,4-Dinitrophenol		300	U	280	300
2,4-Dinitrotoluene		75	U	15	75
2,6-Dinitrotoluene		75	U	20	75
2-Chloronaphthalene		370	U	8.4	370
2-Chlorophenol		370	U	9.4	370
2-Methylnaphthalene		11	J	8.2	370
2-Methylphenol		370	U	16	370
2-Nitroaniline		370	U	12	370
2-Nitrophenol		370	U	12	370
3,3'-Dichlorobenzidine		150	U	41	150
3-Nitroaniline		370	U	11	370
4,6-Dinitro-2-methylphenol		300	U	99	300
4-Bromophenyl phenyl ether		370	U	12	370
4-Chloro-3-methylphenol		370	U	16	370
4-Chloroaniline		370	U	9.5	370
4-Chlorophenyl phenyl ether		370	U	11	370
4-Methylphenol		370	U	10	370
4-Nitroaniline		370	U	14	370
4-Nitrophenol		750	U	180	750
Acenaphthene		370	U	8.9	370
Acenaphthylene		370	U	9.5	370
Acetophenone		370	U	8.0	370
Anthracene		370	U	35	370
Atrazine		150	U	16	150
Benzaldehyde		370	U	28	370
Benzo[a]anthracene		37	U	31	37
Benzo[a]pyrene		37	U	11	37
Benzo[b]fluoranthene		37	U	14	37
Benzo[g,h,i]perylene		370	U	21	370
Benzo[k]fluoranthene		37	U	16	37
Bis(2-chloroethoxy)methane		370	U	12	370
Bis(2-chloroethyl)ether		37	U	8.7	37
Bis(2-ethylhexyl) phthalate		370	U	14	370
Butyl benzyl phthalate		370	U	11	370
Caprolactam		370	U	27	370
Carbazole		370	U	9.2	370
Chrysene		370	U	10	370
Dibenz(a,h)anthracene		37	U	19	37

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-13(.5'-2.5')

Lab Sample ID: 460-102327-5
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 0940
Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	z37368.D
Dilution:	1.0			Initial Weight/Volume:	15.0342 g
Analysis Date:	10/10/2015 1958			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		370	U	11	370
Diethyl phthalate		370	U	10	370
Dimethyl phthalate		370	U	11	370
Di-n-butyl phthalate		370	U	11	370
Di-n-octyl phthalate		370	U	19	370
Fluoranthene		370	U	11	370
Fluorene		370	U	8.0	370
Hexachlorobenzene		37	U	15	37
Hexachlorobutadiene		75	U	10	75
Hexachlorocyclopentadiene		370	U	23	370
Hexachloroethane		37	U	14	37
Indeno[1,2,3-cd]pyrene		37	U	25	37
Isophorone		150	U	7.9	150
Naphthalene		110	J	9.4	370
Nitrobenzene		37	U	12	37
N-Nitrosodi-n-propylamine		37	U	12	37
N-Nitrosodiphenylamine		370	U	34	370
Pentachlorophenol		300	U	45	300
Phenanthrene		370	U	9.8	370
Phenol		370	U	12	370
Pyrene		370	U	17	370

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	77		10 - 95
2-Fluorobiphenyl	75		27 - 84
2-Fluorophenol (Surr)	54		21 - 84
Nitrobenzene-d5 (Surr)	67		28 - 92
Phenol-d5 (Surr)	53		22 - 88
Terphenyl-d14 (Surr)	80		16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-14(1-3)

Lab Sample ID: 460-102327-6
Client Matrix: Solid

% Moisture: 13.4

Date Sampled: 10/06/2015 0955
Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	z37369.D
Dilution:	1.0			Initial Weight/Volume:	15.0305 g
Analysis Date:	10/10/2015 2021			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		380	U	32	380
1,2,4,5-Tetrachlorobenzene		380	U	28	380
2,2'-oxybis[1-chloropropane]		380	U	16	380
2,3,4,6-Tetrachlorophenol		380	U	36	380
2,4,5-Trichlorophenol		380	U	38	380
2,4,6-Trichlorophenol		150	U	11	150
2,4-Dichlorophenol		150	U	9.0	150
2,4-Dimethylphenol		380	U	84	380
2,4-Dinitrophenol		310	U	290	310
2,4-Dinitrotoluene		77	U	15	77
2,6-Dinitrotoluene		77	U	20	77
2-Chloronaphthalene		380	U	8.6	380
2-Chlorophenol		380	U	9.7	380
2-Methylnaphthalene		380	U	8.4	380
2-Methylphenol		380	U	17	380
2-Nitroaniline		380	U	13	380
2-Nitrophenol		380	U	13	380
3,3'-Dichlorobenzidine		150	U	43	150
3-Nitroaniline		380	U	11	380
4,6-Dinitro-2-methylphenol		310	U	100	310
4-Bromophenyl phenyl ether		380	U	12	380
4-Chloro-3-methylphenol		380	U	16	380
4-Chloroaniline		380	U	9.8	380
4-Chlorophenyl phenyl ether		380	U	11	380
4-Methylphenol		380	U	10	380
4-Nitroaniline		380	U	14	380
4-Nitrophenol		770	U	180	770
Acenaphthene		380	U	9.2	380
Acenaphthylene		380	U	9.8	380
Acetophenone		380	U	8.3	380
Anthracene		380	U	36	380
Atrazine		150	U	17	150
Benzaldehyde		380	U	29	380
Benzo[a]anthracene		38	U	32	38
Benzo[a]pyrene		38	U	12	38
Benzo[b]fluoranthene		38	U	15	38
Benzo[g,h,i]perylene		380	U	22	380
Benzo[k]fluoranthene		38	U	17	38
Bis(2-chloroethoxy)methane		380	U	12	380
Bis(2-chloroethyl)ether		38	U	9.0	38
Bis(2-ethylhexyl) phthalate		120	J	15	380
Butyl benzyl phthalate		380	U	12	380
Caprolactam		380	U	27	380
Carbazole		380	U	9.5	380
Chrysene		380	U	10	380
Dibenz(a,h)anthracene		38	U	20	38

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-14(1-3)

Lab Sample ID: 460-102327-6 Date Sampled: 10/06/2015 0955
Client Matrix: Solid % Moisture: 13.4 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	z37369.D
Dilution:	1.0			Initial Weight/Volume:	15.0305 g
Analysis Date:	10/10/2015 2021			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		380	U	12	380
Diethyl phthalate		380	U	11	380
Dimethyl phthalate		380	U	11	380
Di-n-butyl phthalate		380	U	11	380
Di-n-octyl phthalate		380	U	19	380
Fluoranthene		380	U	11	380
Fluorene		380	U	8.3	380
Hexachlorobenzene		38	U	15	38
Hexachlorobutadiene		77	U	11	77
Hexachlorocyclopentadiene		380	U	24	380
Hexachloroethane		38	U	14	38
Indeno[1,2,3-cd]pyrene		38	U	25	38
Isophorone		150	U	8.2	150
Naphthalene		380	U	9.7	380
Nitrobenzene		38	U	12	38
N-Nitrosodi-n-propylamine		38	U	13	38
N-Nitrosodiphenylamine		380	U	35	380
Pentachlorophenol		310	U	46	310
Phenanthrene		380	U	10	380
Phenol		380	U	12	380
Pyrene		380	U	17	380

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	71		10 - 95
2-Fluorobiphenyl	72		27 - 84
2-Fluorophenol (Surr)	53		21 - 84
Nitrobenzene-d5 (Surr)	63		28 - 92
Phenol-d5 (Surr)	53		22 - 88
Terphenyl-d14 (Surr)	75		16 - 114

Client: AKRF Inc | Job Number: 460-102327-1

Client Sample ID: **SB-16(1-3)**

Lab Sample ID: 460-102327-7 | Date Sampled: 10/06/2015 1015
Client Matrix: Solid | % Moisture: 12.1 | Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	z37358.D
Dilution:	1.0			Initial Weight/Volume:	15.0342 g
Analysis Date:	10/10/2015 1604			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		370	U	32	370
1,2,4,5-Tetrachlorobenzene		370	U	28	370
2,2'-oxybis[1-chloropropane]		370	U	15	370
2,3,4,6-Tetrachlorophenol		370	U	35	370
2,4,5-Trichlorophenol		370	U	37	370
2,4,6-Trichlorophenol		150	U	11	150
2,4-Dichlorophenol		150	U	8.8	150
2,4-Dimethylphenol		370	U	82	370
2,4-Dinitrophenol		300	U	280	300
2,4-Dinitrotoluene		76	U	15	76
2,6-Dinitrotoluene		76	U	20	76
2-Chloronaphthalene		370	U	8.5	370
2-Chlorophenol		370	U	9.5	370
2-Methylnaphthalene		370	U	8.3	370
2-Methylphenol		370	U	16	370
2-Nitroaniline		370	U	12	370
2-Nitrophenol		370	U	13	370
3,3'-Dichlorobenzidine		150	U	42	150
3-Nitroaniline		370	U	11	370
4,6-Dinitro-2-methylphenol		300	U	100	300
4-Bromophenyl phenyl ether		370	U	12	370
4-Chloro-3-methylphenol		370	U	16	370
4-Chloroaniline		370	U	9.6	370
4-Chlorophenyl phenyl ether		370	U	11	370
4-Methylphenol		370	U	10	370
4-Nitroaniline		370	U	14	370
4-Nitrophenol		760	U	180	760
Acenaphthene		370	U	9.1	370
Acenaphthylene		370	U	9.6	370
Acetophenone		370	U	8.2	370
Anthracene		370	U	36	370
Atrazine		150	U	17	150
Benzaldehyde		370	U	29	370
Benzo[a]anthracene		37	U	31	37
Benzo[a]pyrene		37	U	11	37
Benzo[b]fluoranthene		37	U	15	37
Benzo[g,h,i]perylene		370	U	22	370
Benzo[k]fluoranthene		37	U	16	37
Bis(2-chloroethoxy)methane		370	U	12	370
Bis(2-chloroethyl)ether		37	U	8.8	37
Bis(2-ethylhexyl) phthalate		170	J	15	370
Butyl benzyl phthalate		370	U	12	370
Caprolactam		370	U	27	370
Carbazole		370	U	9.3	370
Chrysene		370	U	10	370
Dibenz(a,h)anthracene		37	U	20	37

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-16(1-3)

Lab Sample ID: 460-102327-7 Date Sampled: 10/06/2015 1015
Client Matrix: Solid % Moisture: 12.1 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	z37358.D
Dilution:	1.0			Initial Weight/Volume:	15.0342 g
Analysis Date:	10/10/2015 1604			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		370	U	11	370
Diethyl phthalate		370	U	11	370
Dimethyl phthalate		370	U	11	370
Di-n-butyl phthalate		370	U	11	370
Di-n-octyl phthalate		370	U	19	370
Fluoranthene		370	U	11	370
Fluorene		370	U	8.2	370
Hexachlorobenzene		37	U	15	37
Hexachlorobutadiene		76	U	11	76
Hexachlorocyclopentadiene		370	U	23	370
Hexachloroethane		37	U	14	37
Indeno[1,2,3-cd]pyrene		37	U	25	37
Isophorone		150	U	8.1	150
Naphthalene		370	U	9.5	370
Nitrobenzene		37	U	12	37
N-Nitrosodi-n-propylamine		37	U	13	37
N-Nitrosodiphenylamine		370	U	34	370
Pentachlorophenol		300	U	45	300
Phenanthrene		370	U	10	370
Phenol		370	U	12	370
Pyrene		370	U	17	370

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	48		10 - 95
2-Fluorobiphenyl	75		27 - 84
2-Fluorophenol (Surr)	57		21 - 84
Nitrobenzene-d5 (Surr)	69		28 - 92
Phenol-d5 (Surr)	59		22 - 88
Terphenyl-d14 (Surr)	88		16 - 114

Client Sample ID: SB-15(6-8)

Lab Sample ID: 460-102327-8 Date Sampled: 10/06/2015 1145
Client Matrix: Solid % Moisture: 9.8 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327961	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	L126668.D
Dilution:	1.0			Initial Weight/Volume:	15.0496 g
Analysis Date:	10/10/2015 1634			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1'-Biphenyl		360	U	31	360
1,2,4,5-Tetrachlorobenzene		360	U	27	360
2,2'-oxybis[1-chloropropane]		360	U	15	360
2,3,4,6-Tetrachlorophenol		360	U	34	360
2,4,5-Trichlorophenol		360	U	36	360
2,4,6-Trichlorophenol		150	U	10	150
2,4-Dichlorophenol		150	U	8.6	150
2,4-Dimethylphenol		360	U	80	360
2,4-Dinitrophenol		290	U	280	290
2,4-Dinitrotoluene		74	U	14	74
2,6-Dinitrotoluene		74	U	19	74
2-Chloronaphthalene		360	U	8.3	360
2-Chlorophenol		360	U	9.3	360
2-Methylnaphthalene		360	U	8.1	360
2-Methylphenol		360	U	16	360
2-Nitroaniline		360	U	12	360
2-Nitrophenol		360	U	12	360
3,3'-Dichlorobenzidine		150	U	41	150
3-Nitroaniline		360	U	11	360
4,6-Dinitro-2-methylphenol		290	U	97	290
4-Bromophenyl phenyl ether		360	U	11	360
4-Chloro-3-methylphenol		360	U	16	360
4-Chloroaniline		360	U	9.4	360
4-Chlorophenyl phenyl ether		360	U	11	360
4-Methylphenol		360	U	9.9	360
4-Nitroaniline		360	U	14	360
4-Nitrophenol		740	U	180	740
Acenaphthene		360	U	8.8	360
Acenaphthylene		360	U	9.4	360
Acetophenone		360	U	8.0	360
Anthracene		360	U	35	360
Atrazine		150	U	16	150
Benzaldehyde		360	U	28	360
Benzo[a]anthracene		36	U	31	36
Benzo[a]pyrene		36	U	11	36
Benzo[b]fluoranthene		36	U	14	36
Benzo[g,h,i]perylene		360	U	21	360
Benzo[k]fluoranthene		36	U	16	36
Bis(2-chloroethoxy)methane		360	U	11	360
Bis(2-chloroethyl)ether		36	U	8.6	36
Bis(2-ethylhexyl) phthalate		360	U	14	360
Butyl benzyl phthalate		360	U	11	360
Caprolactam		360	U	26	360
Carbazole		360	U	9.1	360
Chrysene		360	U	9.9	360
Dibenz(a,h)anthracene		36	U	19	36

Client: AKRF Inc Job Number: 460-102327-1

Client Sample ID: SB-15(6-8)

Lab Sample ID: 460-102327-8 Date Sampled: 10/06/2015 1145
Client Matrix: Solid % Moisture: 9.8 Date Received: 10/07/2015 0930

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	460-327961	Instrument ID:	CBNAMS12
Prep Method:	3546	Prep Batch:	460-327468	Lab File ID:	L126668.D
Dilution:	1.0			Initial Weight/Volume:	15.0496 g
Analysis Date:	10/10/2015 1634			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		360	U	11	360
Diethyl phthalate		360	U	10	360
Dimethyl phthalate		360	U	11	360
Di-n-butyl phthalate		360	U	11	360
Di-n-octyl phthalate		360	U	19	360
Fluoranthene		360	U	11	360
Fluorene		360	U	8.0	360
Hexachlorobenzene		36	U	15	36
Hexachlorobutadiene		74	U	10	74
Hexachlorocyclopentadiene		360	U	23	360
Hexachloroethane		36	U	13	36
Indeno[1,2,3-cd]pyrene		36	U	24	36
Isophorone		150	U	7.8	150
Naphthalene		27	J	9.3	360
Nitrobenzene		36	U	11	36
N-Nitrosodi-n-propylamine		36	U	12	36
N-Nitrosodiphenylamine		360	U	33	360
Pentachlorophenol		290	U	44	290
Phenanthrene		360	U	9.7	360
Phenol		360	U	12	360
Pyrene		360	U	17	360

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	35		10 - 95
2-Fluorobiphenyl	72		27 - 84
2-Fluorophenol (Surr)	56		21 - 84
Nitrobenzene-d5 (Surr)	68		28 - 92
Phenol-d5 (Surr)	59		22 - 88
Terphenyl-d14 (Surr)	74		16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-9(.5'-2.5')

Lab Sample ID: 460-102327-1
Client Matrix: Solid

% Moisture: 9.6

Date Sampled: 10/06/2015 1310
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0063 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1359			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.4	U	0.97	7.4
4,4'-DDE		7.4	U	1.1	7.4
4,4'-DDT		7.4	U	0.76	7.4
Aldrin		7.4	U	0.90	7.4
alpha-BHC		2.2	U	0.67	2.2
beta-BHC		2.2	U	0.72	2.2
Chlordane (technical)		74	U	33	74
delta-BHC		2.2	U	0.81	2.2
Dieldrin		2.2	U	0.96	2.2
Endosulfan I		7.4	U	1.0	7.4
Endosulfan II		7.4	U	1.2	7.4
Endosulfan sulfate		7.4	U	0.86	7.4
Endrin		7.4	U	0.94	7.4
Endrin aldehyde		7.4	U	0.92	7.4
Endrin ketone		7.4	U	1.0	7.4
gamma-BHC (Lindane)		2.2	U	0.66	2.2
Heptachlor		7.4	U	0.95	7.4
Heptachlor epoxide		7.4	U	1.4	7.4
Methoxychlor		7.4	U	1.6	7.4
gamma-Chlordane		7.4	U	1.6	7.4
Toxaphene		74	U	22	74
alpha-Chlordane		7.4	U	1.2	7.4

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	92		55 - 148
Tetrachloro-m-xylene	99		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-9(.5'-2.5')

Lab Sample ID: 460-102327-1
Client Matrix: Solid

% Moisture: 9.6

Date Sampled: 10/06/2015 1310
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0063 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1359			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	92		55 - 148
Tetrachloro-m-xylene	95		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-10(1'-3')**

Lab Sample ID: 460-102327-2
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 1255
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0069 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1412			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.5	U	0.98	7.5
4,4'-DDE		7.5	U	1.1	7.5
4,4'-DDT		7.5	U	0.77	7.5
Aldrin		7.5	U	0.91	7.5
alpha-BHC		2.2	U	0.68	2.2
beta-BHC		2.2	U	0.73	2.2
Chlordane (technical)		75	U	33	75
delta-BHC		2.2	U	0.82	2.2
Dieldrin		2.2	U	0.97	2.2
Endosulfan I		7.5	U	1.0	7.5
Endosulfan II		7.5	U	1.2	7.5
Endosulfan sulfate		7.5	U	0.87	7.5
Endrin		7.5	U	0.95	7.5
Endrin aldehyde		7.5	U	0.93	7.5
Endrin ketone		7.5	U	1.0	7.5
gamma-BHC (Lindane)		2.2	U	0.67	2.2
Heptachlor		7.5	U	0.96	7.5
Heptachlor epoxide		7.5	U	1.5	7.5
Methoxychlor		7.5	U	1.6	7.5
gamma-Chlordane		7.5	U	1.6	7.5
Toxaphene		75	U	22	75
alpha-Chlordane		7.5	U	1.2	7.5

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	97		55 - 148
Tetrachloro-m-xylene	103		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-10(1'-3')**

Lab Sample ID: 460-102327-2
Client Matrix: Solid
% Moisture: 10.7

Date Sampled: 10/06/2015 1255
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0069 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1412			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	96		55 - 148
Tetrachloro-m-xylene	98		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-11(.5'-2.5')**

Lab Sample ID: 460-102327-3
Client Matrix: Solid

% Moisture: 11.4

Date Sampled: 10/06/2015 1235
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0021 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1425			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.6	U	0.99	7.6
4,4'-DDE		7.6	U	1.1	7.6
4,4'-DDT		7.6	U	0.78	7.6
Aldrin		7.6	U	0.91	7.6
alpha-BHC		2.3	U	0.69	2.3
beta-BHC		2.3	U	0.73	2.3
Chlordane (technical)		76	U	33	76
delta-BHC		2.3	U	0.82	2.3
Dieldrin		2.3	U	0.98	2.3
Endosulfan I		7.6	U	1.0	7.6
Endosulfan II		7.6	U	1.2	7.6
Endosulfan sulfate		7.6	U	0.88	7.6
Endrin		7.6	U	0.96	7.6
Endrin aldehyde		7.6	U	0.94	7.6
Endrin ketone		7.6	U	1.0	7.6
gamma-BHC (Lindane)		2.3	U	0.68	2.3
Heptachlor		7.6	U	0.97	7.6
Heptachlor epoxide		7.6	U	1.5	7.6
Methoxychlor		7.6	U	1.6	7.6
gamma-Chlordane		7.6	U	1.6	7.6
Toxaphene		76	U	22	76
alpha-Chlordane		7.6	U	1.2	7.6

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	99		55 - 148
Tetrachloro-m-xylene	104		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3
Client Matrix: Solid

% Moisture: 11.4

Date Sampled: 10/06/2015 1235
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0021 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1425			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	98		55 - 148
Tetrachloro-m-xylene	100		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-12(1'-3')**

Lab Sample ID: 460-102327-4
Client Matrix: Solid
% Moisture: 15.7

Date Sampled: 10/06/2015 1225
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0050 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1438			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.9	U	1.0	7.9
4,4'-DDE		7.9	U	1.2	7.9
4,4'-DDT		7.9	U	0.82	7.9
Aldrin		7.9	U	0.96	7.9
alpha-BHC		2.4	U	0.72	2.4
beta-BHC		2.4	U	0.77	2.4
Chlordane (technical)		79	U	35	79
delta-BHC		2.4	U	0.87	2.4
Dieldrin		2.4	U	1.0	2.4
Endosulfan I		7.9	U	1.1	7.9
Endosulfan II		7.9	U	1.2	7.9
Endosulfan sulfate		7.9	U	0.92	7.9
Endrin		7.9	U	1.0	7.9
Endrin aldehyde		7.9	U	0.98	7.9
Endrin ketone		7.9	U	1.1	7.9
gamma-BHC (Lindane)		2.4	U	0.71	2.4
Heptachlor		7.9	U	1.0	7.9
Heptachlor epoxide		7.9	U	1.6	7.9
Methoxychlor		7.9	U	1.7	7.9
gamma-Chlordane		7.9	U	1.7	7.9
Toxaphene		79	U	23	79
alpha-Chlordane		7.9	U	1.3	7.9

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	95		55 - 148
Tetrachloro-m-xylene	101		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-12(1'-3')**

Lab Sample ID: 460-102327-4
Client Matrix: Solid
% Moisture: 15.7

Date Sampled: 10/06/2015 1225
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0050 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1438			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	95		55 - 148
Tetrachloro-m-xylene	95		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-13(.5'-2.5')**

Lab Sample ID: 460-102327-5
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 0940
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0082 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1451			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.5	U	0.98	7.5
4,4'-DDE		7.5	U	1.1	7.5
4,4'-DDT		7.5	U	0.77	7.5
Aldrin		7.5	U	0.91	7.5
alpha-BHC		2.2	U	0.68	2.2
beta-BHC		2.2	U	0.73	2.2
Chlordane (technical)		75	U	33	75
delta-BHC		2.2	U	0.82	2.2
Dieldrin		2.2	U	0.97	2.2
Endosulfan I		7.5	U	1.0	7.5
Endosulfan II		7.5	U	1.2	7.5
Endosulfan sulfate		7.5	U	0.87	7.5
Endrin		7.5	U	0.95	7.5
Endrin aldehyde		7.5	U	0.93	7.5
Endrin ketone		7.5	U	1.0	7.5
gamma-BHC (Lindane)		2.2	U	0.67	2.2
Heptachlor		7.5	U	0.96	7.5
Heptachlor epoxide		7.5	U	1.5	7.5
Methoxychlor		7.5	U	1.6	7.5
gamma-Chlordane		7.5	U	1.6	7.5
Toxaphene		75	U	22	75
alpha-Chlordane		7.5	U	1.2	7.5

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	101		55 - 148
Tetrachloro-m-xylene	106		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-13(.5'-2.5')

Lab Sample ID: 460-102327-5
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 0940
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0082 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1451			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	100		55 - 148
Tetrachloro-m-xylene	102		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-14(1-3)**

Lab Sample ID: 460-102327-6
Client Matrix: Solid
% Moisture: 13.4

Date Sampled: 10/06/2015 0955
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0087 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1505			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.7	U	1.0	7.7
4,4'-DDE		7.7	U	1.1	7.7
4,4'-DDT		7.7	U	0.80	7.7
Aldrin		7.7	U	0.93	7.7
alpha-BHC		2.3	U	0.70	2.3
beta-BHC		2.3	U	0.75	2.3
Chlordane (technical)		77	U	34	77
delta-BHC		2.3	U	0.84	2.3
Dieldrin		2.3	U	1.0	2.3
Endosulfan I		7.7	U	1.1	7.7
Endosulfan II		7.7	U	1.2	7.7
Endosulfan sulfate		7.7	U	0.90	7.7
Endrin		7.7	U	0.98	7.7
Endrin aldehyde		7.7	U	0.96	7.7
Endrin ketone		7.7	U	1.1	7.7
gamma-BHC (Lindane)		2.3	U	0.69	2.3
Heptachlor		7.7	U	0.99	7.7
Heptachlor epoxide		7.7	U	1.5	7.7
Methoxychlor		7.7	U	1.6	7.7
gamma-Chlordane		7.7	U	1.7	7.7
Toxaphene		77	U	23	77
alpha-Chlordane		7.7	U	1.3	7.7

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	106		55 - 148
Tetrachloro-m-xylene	112		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-14(1-3)**

Lab Sample ID: 460-102327-6
Client Matrix: Solid
% Moisture: 13.4

Date Sampled: 10/06/2015 0955
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0087 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1505			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	104		55 - 148
Tetrachloro-m-xylene	107		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-16(1-3)**

Lab Sample ID: 460-102327-7
Client Matrix: Solid
% Moisture: 12.1

Date Sampled: 10/06/2015 1015
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0049 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1518			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.6	U	1.0	7.6
4,4'-DDE		7.6	U	1.1	7.6
4,4'-DDT		7.6	U	0.78	7.6
Aldrin		7.6	U	0.92	7.6
alpha-BHC		2.3	U	0.69	2.3
beta-BHC		2.3	U	0.74	2.3
Chlordane (technical)		76	U	34	76
delta-BHC		2.3	U	0.83	2.3
Dieldrin		2.3	U	0.99	2.3
Endosulfan I		7.6	U	1.1	7.6
Endosulfan II		7.6	U	1.2	7.6
Endosulfan sulfate		7.6	U	0.89	7.6
Endrin		7.6	U	0.97	7.6
Endrin aldehyde		7.6	U	0.94	7.6
Endrin ketone		7.6	U	1.1	7.6
gamma-BHC (Lindane)		2.3	U	0.68	2.3
Heptachlor		7.6	U	0.98	7.6
Heptachlor epoxide		7.6	U	1.5	7.6
Methoxychlor		7.6	U	1.6	7.6
gamma-Chlordane		7.6	U	1.6	7.6
Toxaphene		76	U	22	76
alpha-Chlordane		7.6	U	1.2	7.6

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	106		55 - 148
Tetrachloro-m-xylene	112		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-16(1-3)**

Lab Sample ID: 460-102327-7
Client Matrix: Solid
% Moisture: 12.1

Date Sampled: 10/06/2015 1015
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0049 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1518			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	105		55 - 148
Tetrachloro-m-xylene	107		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-15(6-8)**

Lab Sample ID: 460-102327-8
Client Matrix: Solid
% Moisture: 9.8

Date Sampled: 10/06/2015 1145
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0015 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1531			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD		7.4	U	0.98	7.4
4,4'-DDE		7.4	U	1.1	7.4
4,4'-DDT		7.4	U	0.77	7.4
Aldrin		7.4	U	0.90	7.4
alpha-BHC		2.2	U	0.68	2.2
beta-BHC		2.2	U	0.72	2.2
Chlordane (technical)		74	U	33	74
delta-BHC		2.2	U	0.81	2.2
Dieldrin		2.2	U	0.96	2.2
Endosulfan I		7.4	U	1.0	7.4
Endosulfan II		7.4	U	1.2	7.4
Endosulfan sulfate		7.4	U	0.86	7.4
Endrin		7.4	U	0.94	7.4
Endrin aldehyde		7.4	U	0.92	7.4
Endrin ketone		7.4	U	1.0	7.4
gamma-BHC (Lindane)		2.2	U	0.67	2.2
Heptachlor		7.4	U	0.95	7.4
Heptachlor epoxide		7.4	U	1.5	7.4
Methoxychlor		7.4	U	1.6	7.4
gamma-Chlordane		7.4	U	1.6	7.4
Toxaphene		74	U	22	74
alpha-Chlordane		7.4	U	1.2	7.4

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	101		55 - 148
Tetrachloro-m-xylene	107		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-15(6-8)**

Lab Sample ID: 460-102327-8
Client Matrix: Solid
% Moisture: 9.8

Date Sampled: 10/06/2015 1145
Date Received: 10/07/2015 0930

8081B Organochlorine Pesticides (GC)

Analysis Method:	8081B	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Prep Method:	3546	Prep Batch:	460-328102	Initial Weight/Volume:	15.0015 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1531			Injection Volume:	1 uL
Prep Date:	10/11/2015 1441			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	101		55 - 148
Tetrachloro-m-xylene	104		55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-9(.5'-2.5')

Lab Sample ID: 460-102327-1
Client Matrix: Solid

% Moisture: 9.6

Date Sampled: 10/06/2015 1310
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0051 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1302			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		74	U	9.8	74
Aroclor 1221		74	U	9.8	74
Aroclor 1232		74	U	9.8	74
Aroclor 1242		74	U	9.8	74
Aroclor 1248		74	U	9.8	74
Aroclor 1254		74	U	10	74
Aroclor 1260		74	U	10	74
Aroclor-1262		74	U	10	74
Aroclor 1268		74	U	10	74
Polychlorinated biphenyls, Total		74	U	10	74

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	113		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-9(.5'-2.5')

Lab Sample ID: 460-102327-1
Client Matrix: Solid

% Moisture: 9.6

Date Sampled: 10/06/2015 1310
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0051 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1302			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	103		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-10(1'-3')

Lab Sample ID: 460-102327-2
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 1255
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0082 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1318			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		75	U	10	75
Aroclor 1221		75	U	10	75
Aroclor 1232		75	U	10	75
Aroclor 1242		75	U	10	75
Aroclor 1248		75	U	10	75
Aroclor 1254		75	U	10	75
Aroclor 1260		75	U	10	75
Aroclor-1262		75	U	10	75
Aroclor 1268		75	U	10	75
Polychlorinated biphenyls, Total		75	U	10	75

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	96		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-10(1'-3')**

Lab Sample ID: 460-102327-2
Client Matrix: Solid
% Moisture: 10.7

Date Sampled: 10/06/2015 1255
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0082 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1318			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	79		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3
Client Matrix: Solid

% Moisture: 11.4

Date Sampled: 10/06/2015 1235
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0063 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1334			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		76	U	10	76
Aroclor 1221		76	U	10	76
Aroclor 1232		76	U	10	76
Aroclor 1242		76	U	10	76
Aroclor 1248		76	U	10	76
Aroclor 1254		76	U	10	76
Aroclor 1260		76	U	10	76
Aroclor-1262		76	U	10	76
Aroclor 1268		76	U	10	76
Polychlorinated biphenyls, Total		76	U	10	76

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	117		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3
Client Matrix: Solid

% Moisture: 11.4

Date Sampled: 10/06/2015 1235
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0063 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1334			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	83		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-12(1'-3')

Lab Sample ID: 460-102327-4
Client Matrix: Solid

% Moisture: 15.7

Date Sampled: 10/06/2015 1225
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0069 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1350			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		79	U	11	79
Aroclor 1221		79	U	11	79
Aroclor 1232		79	U	11	79
Aroclor 1242		79	U	11	79
Aroclor 1248		79	U	11	79
Aroclor 1254		79	U	11	79
Aroclor 1260		79	U	11	79
Aroclor-1262		79	U	11	79
Aroclor 1268		79	U	11	79
Polychlorinated biphenyls, Total		79	U	11	79

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	96		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-12(1'-3')**

Lab Sample ID: 460-102327-4
Client Matrix: Solid
% Moisture: 15.7

Date Sampled: 10/06/2015 1225
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0069 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1350			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	83		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-13(.5'-2.5')

Lab Sample ID: 460-102327-5
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 0940
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0021 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1405			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		75	U	10	75
Aroclor 1221		75	U	10	75
Aroclor 1232		75	U	10	75
Aroclor 1242		75	U	10	75
Aroclor 1248		75	U	10	75
Aroclor 1254		75	U	10	75
Aroclor 1260		75	U	10	75
Aroclor-1262		75	U	10	75
Aroclor 1268		75	U	10	75
Polychlorinated biphenyls, Total		75	U	10	75

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	121		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-13(.5'-2.5')**

Lab Sample ID: 460-102327-5
Client Matrix: Solid
% Moisture: 10.7

Date Sampled: 10/06/2015 0940
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0021 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1405			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	86		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-14(1-3)**

Lab Sample ID: 460-102327-6
Client Matrix: Solid
% Moisture: 13.4

Date Sampled: 10/06/2015 0955
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0050 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1421			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		77	U	10	77
Aroclor 1221		77	U	10	77
Aroclor 1232		77	U	10	77
Aroclor 1242		77	U	10	77
Aroclor 1248		77	U	10	77
Aroclor 1254		77	U	11	77
Aroclor 1260		77	U	11	77
Aroclor-1262		77	U	11	77
Aroclor 1268		77	U	11	77
Polychlorinated biphenyls, Total		77	U	11	77

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	108		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-14(1-3)**

Lab Sample ID: 460-102327-6
Client Matrix: Solid
% Moisture: 13.4

Date Sampled: 10/06/2015 0955
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0050 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1421			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	77		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-16(1-3)**

Lab Sample ID: 460-102327-7
Client Matrix: Solid
% Moisture: 12.1

Date Sampled: 10/06/2015 1015
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0082 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1437			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		76	U	10	76
Aroclor 1221		76	U	10	76
Aroclor 1232		76	U	10	76
Aroclor 1242		76	U	10	76
Aroclor 1248		76	U	10	76
Aroclor 1254		76	U	10	76
Aroclor 1260		76	U	10	76
Aroclor-1262		76	U	10	76
Aroclor 1268		76	U	10	76
Polychlorinated biphenyls, Total		76	U	10	76

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	110		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-16(1-3)**

Lab Sample ID: 460-102327-7
Client Matrix: Solid
% Moisture: 12.1

Date Sampled: 10/06/2015 1015
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0082 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1437			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	95		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-15(6-8)

Lab Sample ID: 460-102327-8
Client Matrix: Solid

% Moisture: 9.8

Date Sampled: 10/06/2015 1145
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0087 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1453			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		74	U	9.9	74
Aroclor 1221		74	U	9.9	74
Aroclor 1232		74	U	9.9	74
Aroclor 1242		74	U	9.9	74
Aroclor 1248		74	U	9.9	74
Aroclor 1254		74	U	10	74
Aroclor 1260		74	U	10	74
Aroclor-1262		74	U	10	74
Aroclor 1268		74	U	10	74
Polychlorinated biphenyls, Total		74	U	10	74

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	100		47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-15(6-8)**

Lab Sample ID: 460-102327-8
Client Matrix: Solid
% Moisture: 9.8

Date Sampled: 10/06/2015 1145
Date Received: 10/07/2015 0930

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Prep Method:	3546	Prep Batch:	460-328104	Initial Weight/Volume:	15.0087 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	10/12/2015 1453			Injection Volume:	1 uL
Prep Date:	10/11/2015 1511			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	79		47 - 150

Client Sample ID: SB-9(.5'-2.5')

Lab Sample ID: 460-102327-1 Date Sampled: 10/06/2015 1310
Client Matrix: Solid % Moisture: 9.6 Date Received: 10/07/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.08 g
Analysis Date:	10/08/2015 1601			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.0	U	0.36	2.0
Aluminum		13000		21.1	41.0
Arsenic		41.3		1.0	3.1
Barium		54.2		1.5	41.0
Beryllium		0.65		0.35	0.41
Calcium		2250		60.6	1020
Cadmium		0.82	U	0.43	0.82
Cobalt		15.8		1.2	10.2
Chromium		21.3		0.99	2.0
Copper		32.7		1.3	5.1
Potassium		960	J	31.0	1020
Magnesium		7200		51.1	1020
Manganese		679		1.1	3.1
Sodium		1020	U	69.3	1020
Nickel		31.2		1.5	8.2
Lead		18.7		0.80	2.0
Antimony		4.1	U	1.6	4.1
Selenium		4.1	U	1.4	4.1
Thallium		4.1	U	1.8	4.1
Vanadium		19.3		1.0	10.2
Zinc		93.0		1.5	6.1

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	10			Initial Weight/Volume:	1.08 g
Analysis Date:	10/08/2015 1904			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Iron		46400		57.9	76.8

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	10/10/2015 1917			Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.024		0.013	0.018

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-10(1'-3')

Lab Sample ID: 460-102327-2
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 1255
Date Received: 10/07/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.05 g
Analysis Date:	10/08/2015 1605			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.1	U	0.38	2.1
Aluminum		12500		22.0	42.6
Arsenic		9.4		1.0	3.2
Barium		87.1		1.5	42.6
Beryllium		0.68		0.36	0.43
Calcium		3900		63.1	1070
Cadmium		0.85	U	0.44	0.85
Cobalt		12.6		1.2	10.7
Chromium		20.6		1.0	2.1
Copper		35.5		1.4	5.3
Iron		31800		24.1	32.0
Potassium		831	J	32.3	1070
Magnesium		6890		53.2	1070
Manganese		1170		1.1	3.2
Sodium		1070	U	72.2	1070
Nickel		29.8		1.6	8.5
Lead		17.0		0.84	2.1
Antimony		4.3	U	1.7	4.3
Selenium		4.3	U	1.5	4.3
Thallium		4.3	U	1.9	4.3
Vanadium		18.7		1.1	10.7
Zinc		88.8		1.6	6.4

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0			Initial Weight/Volume:	0.64 g
Analysis Date:	10/10/2015 1923			Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.037		0.013	0.018

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3 Date Sampled: 10/06/2015 1235
Client Matrix: Solid % Moisture: 11.4 Date Received: 10/07/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.15 g
Analysis Date:	10/08/2015 1627			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.0	U	0.35	2.0
Aluminum		10600		20.2	39.3
Arsenic		14.3		0.96	2.9
Barium		183		1.4	39.3
Beryllium		0.55		0.33	0.39
Calcium		2560		58.1	982
Cadmium		0.79	U	0.41	0.79
Cobalt		12.4		1.1	9.8
Chromium		17.8		0.95	2.0
Copper		29.6		1.3	4.9
Iron		33500		22.2	29.4
Potassium		725	J	29.7	982
Magnesium		5670		49.0	982
Sodium		982	U	66.5	982
Nickel		26.5		1.4	7.9
Lead		12.9		0.77	2.0
Antimony		3.9	U	1.6	3.9
Selenium		3.9	U	1.4	3.9
Thallium		3.9	U	1.7	3.9
Vanadium		14.6		0.98	9.8
Zinc		73.0		1.4	5.9

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	10			Initial Weight/Volume:	1.15 g
Analysis Date:	10/08/2015 1908			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Manganese		4020		2.6	7.4

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	10/10/2015 1925			Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.058		0.013	0.019

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-12(1'-3')

Lab Sample ID: 460-102327-4
Client Matrix: Solid

% Moisture: 15.7

Date Sampled: 10/06/2015 1225
Date Received: 10/07/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.14 g
Analysis Date:	10/08/2015 1631			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		0.82	J	0.37	2.1
Aluminum		12100		21.4	41.6
Arsenic		7.2		1.0	3.1
Barium		64.8		1.5	41.6
Beryllium		0.64		0.35	0.42
Calcium		3790		61.6	1040
Cadmium		0.83	U	0.43	0.83
Cobalt		10.8		1.2	10.4
Chromium		18.7		1.0	2.1
Copper		33.3		1.4	5.2
Iron		25400		23.5	31.2
Potassium		840	J	31.5	1040
Magnesium		5250		51.9	1040
Manganese		986		1.1	3.1
Sodium		1040	U	70.4	1040
Nickel		25.6		1.5	8.3
Lead		16.6		0.82	2.1
Antimony		4.2	U	1.6	4.2
Selenium		4.2	U	1.4	4.2
Thallium		4.2	U	1.8	4.2
Vanadium		17.6		1.0	10.4
Zinc		76.6		1.5	6.2

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	10/10/2015 1928			Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.072		0.014	0.019

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-13(.5'-2.5')

Lab Sample ID: 460-102327-5
Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 10/06/2015 0940
Date Received: 10/07/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.06 g
Analysis Date:	10/08/2015 1634			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.1	U	0.37	2.1
Aluminum		13000		21.8	42.2
Arsenic		6.9		1.0	3.2
Barium		56.2		1.5	42.2
Beryllium		0.69		0.36	0.42
Calcium		2950		62.5	1060
Cadmium		0.84	U	0.44	0.84
Cobalt		10.3	J	1.2	10.6
Chromium		18.7		1.0	2.1
Copper		27.9		1.4	5.3
Iron		27000		23.9	31.7
Potassium		793	J	32.0	1060
Magnesium		5320		52.7	1060
Manganese		697		1.1	3.2
Sodium		1060	U	71.5	1060
Nickel		24.6		1.5	8.4
Lead		19.3		0.83	2.1
Antimony		4.2	U	1.7	4.2
Selenium		4.2	U	1.5	4.2
Thallium		4.2	U	1.9	4.2
Vanadium		19.0		1.1	10.6
Zinc		71.3		1.5	6.3

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0			Initial Weight/Volume:	0.60 g
Analysis Date:	10/10/2015 1930			Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.035		0.013	0.019

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-14(1-3)

Lab Sample ID: 460-102327-6
Client Matrix: Solid

% Moisture: 13.4

Date Sampled: 10/06/2015 0955
Date Received: 10/07/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.05 g
Analysis Date:	10/08/2015 1638			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		0.53	J	0.39	2.2
Aluminum		12100		22.7	44.0
Arsenic		7.4		1.1	3.3
Barium		62.5		1.6	44.0
Beryllium		0.60		0.37	0.44
Calcium		5860		65.1	1100
Cadmium		0.88	U	0.46	0.88
Cobalt		10.6	J	1.3	11.0
Chromium		18.1		1.1	2.2
Copper		31.2		1.4	5.5
Iron		24700		24.9	33.0
Potassium		831	J	33.3	1100
Magnesium		5980		54.9	1100
Manganese		1050		1.2	3.3
Sodium		1100	U	74.5	1100
Nickel		23.4		1.6	8.8
Lead		17.0		0.86	2.2
Antimony		4.4	U	1.7	4.4
Selenium		4.4	U	1.5	4.4
Thallium		4.4	U	1.9	4.4
Vanadium		17.8		1.1	11.0
Zinc		72.3		1.6	6.6

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	10/10/2015 1933			Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.071		0.013	0.019

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: **SB-16(1-3)**

Lab Sample ID: 460-102327-7
Client Matrix: Solid

% Moisture: 12.1

Date Sampled: 10/06/2015 1015
Date Received: 10/07/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.15 g
Analysis Date:	10/08/2015 1642			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.0	U	0.35	2.0
Aluminum		8990		20.4	39.6
Arsenic		6.9		0.97	3.0
Barium		31.0	J	1.4	39.6
Beryllium		0.45		0.34	0.40
Calcium		16900		58.5	989
Cadmium		0.79	U	0.41	0.79
Cobalt		8.9	J	1.1	9.9
Chromium		14.1		0.96	2.0
Copper		26.4		1.3	4.9
Iron		22600		22.3	29.7
Potassium		664	J	30.0	989
Magnesium		5580		49.3	989
Manganese		658		1.0	3.0
Sodium		989	U	66.9	989
Nickel		21.6		1.4	7.9
Lead		11.0		0.78	2.0
Antimony		4.0	U	1.6	4.0
Selenium		4.0	U	1.4	4.0
Thallium		4.0	U	1.8	4.0
Vanadium		13.6		0.99	9.9
Zinc		64.1		1.4	5.9

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	10/10/2015 1934			Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.023		0.013	0.019

Client: AKRF Inc

Job Number: 460-102327-1

Client Sample ID: SB-15(6-8)

Lab Sample ID: 460-102327-8
Client Matrix: Solid

% Moisture: 9.8

Date Sampled: 10/06/2015 1145
Date Received: 10/07/2015 0930

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-327514	Instrument ID:	ICP5
Prep Method:	3050B	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0			Initial Weight/Volume:	1.06 g
Analysis Date:	10/08/2015 1645			Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Silver		2.1	U	0.37	2.1
Aluminum		11700		21.6	41.8
Arsenic		9.2		1.0	3.1
Barium		28.5	J	1.5	41.8
Beryllium		0.55		0.35	0.42
Calcium		28700		61.9	1050
Cadmium		0.84	U	0.44	0.84
Cobalt		12.9		1.2	10.5
Chromium		18.6		1.0	2.1
Copper		36.2		1.4	5.2
Iron		30500		23.6	31.4
Potassium		780	J	31.7	1050
Magnesium		7570		52.2	1050
Manganese		880		1.1	3.1
Sodium		1050	U	70.8	1050
Nickel		29.5		1.5	8.4
Lead		17.2		0.82	2.1
Antimony		4.2	U	1.7	4.2
Selenium		4.2	U	1.4	4.2
Thallium		4.2	U	1.9	4.2
Vanadium		17.7		1.0	10.5
Zinc		99.0		1.5	6.3

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Prep Method:	7471B	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0			Initial Weight/Volume:	0.60 g
Analysis Date:	10/10/2015 1936			Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.025		0.013	0.019

General Chemistry

Client Sample ID: **SB-9(.5'-2.5')**

Lab Sample ID: 460-102327-1 Date Sampled: 10/06/2015 1310
Client Matrix: Solid Date Received: 10/07/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	9.6		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N
Percent Solids	90.4		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-10(1'-3')

Lab Sample ID: 460-102327-2 Date Sampled: 10/06/2015 1255
Client Matrix: Solid Date Received: 10/07/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	10.7		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N
Percent Solids	89.3		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-11(.5'-2.5')

Lab Sample ID: 460-102327-3 Date Sampled: 10/06/2015 1235
Client Matrix: Solid Date Received: 10/07/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	11.4		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N
Percent Solids	88.6		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-12(1'-3')

Lab Sample ID: 460-102327-4 Date Sampled: 10/06/2015 1225
Client Matrix: Solid Date Received: 10/07/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	15.7		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N
Percent Solids	84.3		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-13(.5'-2.5')

Lab Sample ID: 460-102327-5 Date Sampled: 10/06/2015 0940
Client Matrix: Solid Date Received: 10/07/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	10.7		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N
Percent Solids	89.3		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-14(1-3)

Lab Sample ID: 460-102327-6 Date Sampled: 10/06/2015 0955
Client Matrix: Solid Date Received: 10/07/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	13.4		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N
Percent Solids	86.6		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327286	Analysis Date: 10/07/2015 1552						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-16(1-3)

Lab Sample ID: 460-102327-7 Date Sampled: 10/06/2015 1015
Client Matrix: Solid Date Received: 10/07/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	12.1		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327296	Analysis Date: 10/07/2015 1635						DryWt Corrected: N
Percent Solids	87.9		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327296	Analysis Date: 10/07/2015 1635						DryWt Corrected: N

General Chemistry

Client Sample ID: SB-15(6-8)

Lab Sample ID: 460-102327-8 Date Sampled: 10/06/2015 1145
Client Matrix: Solid Date Received: 10/07/2015 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	9.8		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327296	Analysis Date: 10/07/2015 1635						DryWt Corrected: N
Percent Solids	90.2		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-327296	Analysis Date: 10/07/2015 1635						DryWt Corrected: N

DATA REPORTING QUALIFIERS

Client: AKRF Inc Job Number: 460-102327-1

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	LCS or LCSD is outside acceptance limits.
GC/MS Semi VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	MS or MSD is outside acceptance limits.
	*	Surrogate is outside acceptance limits.
GC Semi VOA		
	U	Analyzed for but not detected.
	*	MS or MSD is outside acceptance limits.
	p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
Metals		
	*	Duplicate analysis not within control limits.
	U	Indicates analyzed for but not detected.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	J	Sample result is greater than the MDL but below the CRDL
	N	Spiked sample recovery is not within control limits.

QUALITY CONTROL RESULTS

Client: AKRF Inc

Job Number: 460-102327-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Prep Batch: 460-327442					
LB3 460-327442/1-A	Neutral Leach or MeOH Extraction Blank	T	Solid	5035	
460-102327-1	SB-9(.5'-2.5')	T	Solid	5035	
460-102327-2	SB-10(1'-3')	T	Solid	5035	
460-102327-3	SB-11(.5'-2.5')	T	Solid	5035	
460-102327-4	SB-12(1'-3')	T	Solid	5035	
460-102327-5	SB-13(.5'-2.5')	T	Solid	5035	
460-102327-6	SB-14(1-3)	T	Solid	5035	
460-102327-7	SB-16(1-3)	T	Solid	5035	
460-102327-8	SB-15(6-8)	T	Solid	5035	
Analysis Batch:460-328047					
LCS 460-328047/20	Lab Control Sample	T	Solid	8260C	
LCSD 460-328047/21	Lab Control Sample Duplicate	T	Solid	8260C	
MB 460-328047/7	Method Blank	T	Solid	8260C	
LB3 460-327442/1-A	Neutral Leach or MeOH Extraction Blank	T	Solid	8260C	460-327442
Analysis Batch:460-328165					
LCS 460-328165/3	Lab Control Sample	T	Water	8260C	
MB 460-328165/7	Method Blank	T	Water	8260C	
460-102059-E-2 MS	Matrix Spike	T	Water	8260C	
460-102059-E-2 MSD	Matrix Spike Duplicate	T	Water	8260C	
460-102327-9	MW-1	T	Water	8260C	
460-102327-10	MW-2	T	Water	8260C	
460-102327-12	MW-4	T	Water	8260C	
460-102327-14TB	Trip Blank	T	Water	8260C	
Analysis Batch:460-328317					
LCS 460-328317/3	Lab Control Sample	T	Solid	8260C	
LCSD 460-328317/4	Lab Control Sample Duplicate	T	Solid	8260C	
MB 460-328317/8	Method Blank	T	Solid	8260C	
460-102327-1	SB-9(.5'-2.5')	T	Solid	8260C	460-327442
460-102327-2	SB-10(1'-3')	T	Solid	8260C	460-327442
460-102327-3	SB-11(.5'-2.5')	T	Solid	8260C	460-327442
460-102327-4	SB-12(1'-3')	T	Solid	8260C	460-327442
460-102327-5	SB-13(.5'-2.5')	T	Solid	8260C	460-327442
460-102327-6	SB-14(1-3)	T	Solid	8260C	460-327442
460-102327-7	SB-16(1-3)	T	Solid	8260C	460-327442
460-102327-8	SB-15(6-8)	T	Solid	8260C	460-327442

Client: AKRF Inc

Job Number: 460-102327-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-328322					
LCS 460-328322/3	Lab Control Sample	T	Water	8260C	
MB 460-328322/7	Method Blank	T	Water	8260C	
460-102327-11	MW-3	T	Water	8260C	
460-102327-13	MW-5	T	Water	8260C	
460-102327-13MS	Matrix Spike	T	Water	8260C	
460-102327-13MSD	Matrix Spike Duplicate	T	Water	8260C	

Report Basis
T = Total

Client: AKRF Inc

Job Number: 460-102327-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 460-327462					
LCS 460-327462/2-A	Lab Control Sample	T	Solid	3546	
LCS 460-327462/3-A	Lab Control Sample	T	Solid	3546	
MB 460-327462/1-A	Method Blank	T	Solid	3546	
460-102313-D-1-H MS	Matrix Spike	T	Solid	3546	
460-102313-D-1-I MSD	Matrix Spike Duplicate	T	Solid	3546	
460-102327-1	SB-9(.5'-2.5')	T	Solid	3546	
460-102327-2	SB-10(1'-3')	T	Solid	3546	
460-102327-3	SB-11(.5'-2.5')	T	Solid	3546	
Prep Batch: 460-327468					
LCS 460-327468/2-A	Lab Control Sample	T	Solid	3546	
LCS 460-327468/3-A	Lab Control Sample	T	Solid	3546	
MB 460-327468/1-A	Method Blank	T	Solid	3546	
460-102327-4	SB-12(1'-3')	T	Solid	3546	
460-102327-4MS	Matrix Spike	T	Solid	3546	
460-102327-4MSD	Matrix Spike Duplicate	T	Solid	3546	
460-102327-5	SB-13(.5'-2.5')	T	Solid	3546	
460-102327-6	SB-14(1-3)	T	Solid	3546	
460-102327-7	SB-16(1-3)	T	Solid	3546	
460-102327-8	SB-15(6-8)	T	Solid	3546	
Analysis Batch:460-327617					
LCS 460-327462/2-A	Lab Control Sample	T	Solid	8270D	460-327462
LCS 460-327462/3-A	Lab Control Sample	T	Solid	8270D	460-327462
MB 460-327462/1-A	Method Blank	T	Solid	8270D	460-327462
460-102313-D-1-H MS	Matrix Spike	T	Solid	8270D	460-327462
460-102313-D-1-I MSD	Matrix Spike Duplicate	T	Solid	8270D	460-327462
Analysis Batch:460-327819					
LCS 460-327468/3-A	Lab Control Sample	T	Solid	8270D	460-327468
MB 460-327468/1-A	Method Blank	T	Solid	8270D	460-327468
460-102327-4	SB-12(1'-3')	T	Solid	8270D	460-327468
460-102327-4MS	Matrix Spike	T	Solid	8270D	460-327468
460-102327-4MSD	Matrix Spike Duplicate	T	Solid	8270D	460-327468
Analysis Batch:460-327959					
LCS 460-327468/2-A	Lab Control Sample	T	Solid	8270D	460-327468
460-102327-1	SB-9(.5'-2.5')	T	Solid	8270D	460-327462
460-102327-2	SB-10(1'-3')	T	Solid	8270D	460-327462
460-102327-3	SB-11(.5'-2.5')	T	Solid	8270D	460-327462
460-102327-5	SB-13(.5'-2.5')	T	Solid	8270D	460-327468
460-102327-6	SB-14(1-3)	T	Solid	8270D	460-327468
460-102327-7	SB-16(1-3)	T	Solid	8270D	460-327468

Client: AKRF Inc

Job Number: 460-102327-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Analysis Batch:460-327961					
460-102327-8	SB-15(6-8)	T	Solid	8270D	460-327468

Report Basis
T = Total

Client: AKRF Inc

Job Number: 460-102327-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC Semi VOA					
Prep Batch: 460-328102					
LCS 460-328102/2-A	Lab Control Sample	T	Solid	3546	
MB 460-328102/1-A	Method Blank	T	Solid	3546	
460-102318-A-6-E MS	Matrix Spike	T	Solid	3546	
460-102318-A-6-F MSD	Matrix Spike Duplicate	T	Solid	3546	
460-102327-1	SB-9(.5'-2.5')	T	Solid	3546	
460-102327-2	SB-10(1'-3')	T	Solid	3546	
460-102327-3	SB-11(.5'-2.5')	T	Solid	3546	
460-102327-4	SB-12(1'-3')	T	Solid	3546	
460-102327-5	SB-13(.5'-2.5')	T	Solid	3546	
460-102327-6	SB-14(1-3)	T	Solid	3546	
460-102327-7	SB-16(1-3)	T	Solid	3546	
460-102327-8	SB-15(6-8)	T	Solid	3546	
Prep Batch: 460-328104					
LCS 460-328104/2-A	Lab Control Sample	T	Solid	3546	
MB 460-328104/1-A	Method Blank	T	Solid	3546	
460-102318-A-6-H MS	Matrix Spike	T	Solid	3546	
460-102318-A-6-I MSD	Matrix Spike Duplicate	T	Solid	3546	
460-102327-1	SB-9(.5'-2.5')	T	Solid	3546	
460-102327-2	SB-10(1'-3')	T	Solid	3546	
460-102327-3	SB-11(.5'-2.5')	T	Solid	3546	
460-102327-4	SB-12(1'-3')	T	Solid	3546	
460-102327-5	SB-13(.5'-2.5')	T	Solid	3546	
460-102327-6	SB-14(1-3)	T	Solid	3546	
460-102327-7	SB-16(1-3)	T	Solid	3546	
460-102327-8	SB-15(6-8)	T	Solid	3546	
Analysis Batch:460-328252					
LCS 460-328104/2-A	Lab Control Sample	T	Solid	8082A	460-328104
MB 460-328104/1-A	Method Blank	T	Solid	8082A	460-328104
460-102318-A-6-H MS	Matrix Spike	T	Solid	8082A	460-328104
460-102318-A-6-I MSD	Matrix Spike Duplicate	T	Solid	8082A	460-328104
460-102327-1	SB-9(.5'-2.5')	T	Solid	8082A	460-328104
460-102327-2	SB-10(1'-3')	T	Solid	8082A	460-328104
460-102327-3	SB-11(.5'-2.5')	T	Solid	8082A	460-328104
460-102327-4	SB-12(1'-3')	T	Solid	8082A	460-328104
460-102327-5	SB-13(.5'-2.5')	T	Solid	8082A	460-328104
460-102327-6	SB-14(1-3)	T	Solid	8082A	460-328104
460-102327-7	SB-16(1-3)	T	Solid	8082A	460-328104
460-102327-8	SB-15(6-8)	T	Solid	8082A	460-328104

Client: AKRF Inc

Job Number: 460-102327-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC Semi VOA					
Analysis Batch:460-328266					
LCS 460-328102/2-A	Lab Control Sample	T	Solid	8081B	460-328102
MB 460-328102/1-A	Method Blank	T	Solid	8081B	460-328102
460-102318-A-6-E MS	Matrix Spike	T	Solid	8081B	460-328102
460-102318-A-6-F MSD	Matrix Spike Duplicate	T	Solid	8081B	460-328102
460-102327-1	SB-9(.5'-2.5')	T	Solid	8081B	460-328102
460-102327-2	SB-10(1'-3')	T	Solid	8081B	460-328102
460-102327-3	SB-11(.5'-2.5')	T	Solid	8081B	460-328102
460-102327-4	SB-12(1'-3')	T	Solid	8081B	460-328102
460-102327-5	SB-13(.5'-2.5')	T	Solid	8081B	460-328102
460-102327-6	SB-14(1-3)	T	Solid	8081B	460-328102
460-102327-7	SB-16(1-3)	T	Solid	8081B	460-328102
460-102327-8	SB-15(6-8)	T	Solid	8081B	460-328102

Report Basis
T = Total

Client: AKRF Inc Job Number: 460-102327-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-327399					
LCSSRM 460-327399/2-A ^4	LCS-Certified Reference Material	T	Solid	3050B	
MB 460-327399/1-A ^2	Method Blank	T	Solid	3050B	
460-102323-C-1-B DU ^4	Duplicate	T	Solid	3050B	
460-102323-C-1-C MS ^4	Matrix Spike	T	Solid	3050B	
460-102327-1	SB-9(.5'-2.5')	T	Solid	3050B	
460-102327-2	SB-10(1'-3')	T	Solid	3050B	
460-102327-3	SB-11(.5'-2.5')	T	Solid	3050B	
460-102327-4	SB-12(1'-3')	T	Solid	3050B	
460-102327-5	SB-13(.5'-2.5')	T	Solid	3050B	
460-102327-6	SB-14(1-3)	T	Solid	3050B	
460-102327-7	SB-16(1-3)	T	Solid	3050B	
460-102327-8	SB-15(6-8)	T	Solid	3050B	
Analysis Batch:460-327514					
LCSSRM 460-327399/2-A ^4	LCS-Certified Reference Material	T	Solid	6010C	460-327399
MB 460-327399/1-A ^2	Method Blank	T	Solid	6010C	460-327399
460-102323-C-1-B DU ^4	Duplicate	T	Solid	6010C	460-327399
460-102323-C-1-C MS ^4	Matrix Spike	T	Solid	6010C	460-327399
460-102327-1	SB-9(.5'-2.5')	T	Solid	6010C	460-327399
460-102327-2	SB-10(1'-3')	T	Solid	6010C	460-327399
460-102327-3	SB-11(.5'-2.5')	T	Solid	6010C	460-327399
460-102327-4	SB-12(1'-3')	T	Solid	6010C	460-327399
460-102327-5	SB-13(.5'-2.5')	T	Solid	6010C	460-327399
460-102327-6	SB-14(1-3)	T	Solid	6010C	460-327399
460-102327-7	SB-16(1-3)	T	Solid	6010C	460-327399
460-102327-8	SB-15(6-8)	T	Solid	6010C	460-327399
Prep Batch: 460-327989					
LCSSRM 460-327989/2-A ^20	LCS-Certified Reference Material	T	Solid	7471B	
MB 460-327989/1-A	Method Blank	T	Solid	7471B	
460-102327-1	SB-9(.5'-2.5')	T	Solid	7471B	
460-102327-2	SB-10(1'-3')	T	Solid	7471B	
460-102327-3	SB-11(.5'-2.5')	T	Solid	7471B	
460-102327-4	SB-12(1'-3')	T	Solid	7471B	
460-102327-5	SB-13(.5'-2.5')	T	Solid	7471B	
460-102327-6	SB-14(1-3)	T	Solid	7471B	
460-102327-7	SB-16(1-3)	T	Solid	7471B	
460-102327-8	SB-15(6-8)	T	Solid	7471B	
460-102343-E-8-F DU	Duplicate	T	Solid	7471B	
460-102343-E-8-G MS	Matrix Spike	T	Solid	7471B	

Client: AKRF Inc Job Number: 460-102327-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:460-328029					
LCSSRM 460-327989/2-A ^20	LCS-Certified Reference Material	T	Solid	7471B	460-327989
MB 460-327989/1-A	Method Blank	T	Solid	7471B	460-327989
460-102327-1	SB-9(.5'-2.5')	T	Solid	7471B	460-327989
460-102327-2	SB-10(1'-3')	T	Solid	7471B	460-327989
460-102327-3	SB-11(.5'-2.5')	T	Solid	7471B	460-327989
460-102327-4	SB-12(1'-3')	T	Solid	7471B	460-327989
460-102327-5	SB-13(.5'-2.5')	T	Solid	7471B	460-327989
460-102327-6	SB-14(1-3)	T	Solid	7471B	460-327989
460-102327-7	SB-16(1-3)	T	Solid	7471B	460-327989
460-102327-8	SB-15(6-8)	T	Solid	7471B	460-327989
460-102343-E-8-F DU	Duplicate	T	Solid	7471B	460-327989
460-102343-E-8-G MS	Matrix Spike	T	Solid	7471B	460-327989

Report Basis
T = Total

General Chemistry

Analysis Batch:460-327286					
460-102327-1	SB-9(.5'-2.5')	T	Solid	Moisture	
460-102327-2	SB-10(1'-3')	T	Solid	Moisture	
460-102327-3	SB-11(.5'-2.5')	T	Solid	Moisture	
460-102327-4	SB-12(1'-3')	T	Solid	Moisture	
460-102327-5	SB-13(.5'-2.5')	T	Solid	Moisture	
460-102327-6	SB-14(1-3)	T	Solid	Moisture	
460-102327-6DU	Duplicate	T	Solid	Moisture	
Analysis Batch:460-327296					
460-102321-A-4 DU	Duplicate	T	Solid	Moisture	
460-102327-7	SB-16(1-3)	T	Solid	Moisture	
460-102327-8	SB-15(6-8)	T	Solid	Moisture	

Report Basis
T = Total

Surrogate Recovery Report

8260C Volatile Organic Compounds by GC/MS

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
460-102327-1	SB-9(.5'-2.5')	100	99	98	93
460-102327-2	SB-10(1'-3')	100	93	94	90
460-102327-3	SB-11(.5'-2.5')	96	94	97	90
460-102327-4	SB-12(1'-3')	94	91	93	85
460-102327-5	SB-13(.5'-2.5')	96	90	93	84
460-102327-6	SB-14(1-3)	99	94	97	88
460-102327-7	SB-16(1-3)	96	94	97	91
460-102327-8	SB-15(6-8)	95	95	95	90
MB 460-328047/7		93	95	94	91
MB 460-328317/8		93	95	94	89
LB3 460-327442/1-A		89	90	91	86
LCS 460-328047/20		96	95	99	91
LCS 460-328317/3		91	92	94	88
LCSD 460-328047/21		91	94	98	90
LCSD 460-328317/4		95	97	99	92

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	78-135
BFB = 4-Bromofluorobenzene	67-126
DBFM = Dibromofluoromethane (Surr)	61-149
TOL = Toluene-d8 (Surr)	73-121

Client: AKRF Inc

Job Number: 460-102327-1

Surrogate Recovery Report

8260C Volatile Organic Compounds by GC/MS

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
460-102327-9	MW-1	89	89	93	88
460-102327-10	MW-2	97	96	103	95
460-102327-11	MW-3	97	97	101	96
460-102327-12	MW-4	98	97	101	98
460-102327-13	MW-5	96	94	100	96
460-102327-14	Trip Blank	95	96	100	95
MB 460-328165/7		95	95	99	96
MB 460-328322/7		83	80	85	82
LCS 460-328165/3		98	97	101	98
LCS 460-328322/3		93	98	100	97
460-102327-13 MS	MW-5 MS	93	97	99	95
460-102059-E-2 MS		95	99	100	97
460-102327-13 MSD	MW-5 MSD	95	98	99	96
460-102059-E-2 MSD		94	97	98	96

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-137
BFB = 4-Bromofluorobenzene	70-131
DBFM = Dibromofluoromethane (Surr)	72-136
TOL = Toluene-d8 (Surr)	74-120

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	PHL %Rec	TPH %Rec
460-102327-1	SB-9(.5'-2.5')	58	74	53	69	58	89
460-102327-2	SB-10(1'-3')	58	66	50	60	51	80
460-102327-3	SB-11(.5'-2.5')	34	73	40	67	48	87
460-102327-4	SB-12(1'-3')	68	62	59	60	60	70
460-102327-5	SB-13(.5'-2.5')	77	75	54	67	53	80
460-102327-6	SB-14(1-3)	71	72	53	63	53	75
460-102327-7	SB-16(1-3)	48	75	57	69	59	88
460-102327-8	SB-15(6-8)	35	72	56	68	59	74
MB 460-327462/1-A		68	70	68	67	68	72
MB 460-327468/1-A		100*	76	77	76	78	80
LCS 460-327462/2-A		106*	83	85*	86	87	92
LCS 460-327462/3-A		104*	85*	79	77	80	91
LCS 460-327468/2-A		135*	84	76	83	75	100
LCS 460-327468/3-A		108*	90*	83	80	83	94
460-102327-4 MS	SB-12(1'-3') MS	65	66	59	59	61	68
460-102313-D-1-H MS		53	56	49	50	48	49
460-102327-4 MSD	SB-12(1'-3') MSD	72	76	62	66	65	75
460-102313-D-1-I MSD		67	71	60	60	58	60

Surrogate	Acceptance Limits
TBP = 2,4,6-Tribromophenol (Surr)	10-95
FBP = 2-Fluorobiphenyl	27-84
2FP = 2-Fluorophenol (Surr)	21-84
NBZ = Nitrobenzene-d5 (Surr)	28-92
PHL = Phenol-d5 (Surr)	22-88
TPH = Terphenyl-d14 (Surr)	16-114

Client: AKRF Inc

Job Number: 460-102327-1

Surrogate Recovery Report

8081B Organochlorine Pesticides (GC)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCB1 %Rec	DCB2 %Rec	TCX1 %Rec	TCX2 %Rec
460-102327-1	SB-9(.5'-2.5')	92	92	95	99
460-102327-2	SB-10(1'-3')	96	97	98	103
460-102327-3	SB-11(.5'-2.5')	98	99	100	104
460-102327-4	SB-12(1'-3')	95	95	95	101
460-102327-5	SB-13(.5'-2.5')	100	101	102	106
460-102327-6	SB-14(1-3)	104	106	107	112
460-102327-7	SB-16(1-3)	105	106	107	112
460-102327-8	SB-15(6-8)	101	101	104	107
MB 460-328102/1-A		100	101	104	107
LCS 460-328102/2-A		93	95	103	97
460-102318-A-6-E MS		91	91	96	93
460-102318-A-6-F MSD		91	93	99	92

Surrogate	Acceptance Limits
DCB = DCB Decachlorobiphenyl	55-148
TCX = Tetrachloro-m-xylene	55-139

Client: AKRF Inc

Job Number: 460-102327-1

Surrogate Recovery Report

8082A Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCB1 %Rec	DCB2 %Rec
460-102327-1	SB-9(.5'-2.5')	103	113
460-102327-2	SB-10(1'-3')	96	79
460-102327-3	SB-11(.5'-2.5')	117	83
460-102327-4	SB-12(1'-3')	83	96
460-102327-5	SB-13(.5'-2.5')	121	86
460-102327-6	SB-14(1-3)	108	77
460-102327-7	SB-16(1-3)	110	95
460-102327-8	SB-15(6-8)	100	79
MB 460-328104/1-A		103	110
LCS 460-328104/2-A		107	87
460-102318-A-6-H MS		77	71
460-102318-A-6-I MSD		98	69

Surrogate	Acceptance Limits
DCB = DCB Decachlorobiphenyl	47-150

Neutral Leach or MeOH Extraction Blank - Batch: 460-327442

Method: 8260C
Preparation: 5035

Lab Sample ID:	LB3 460-327442/1-A	Analysis Batch:	460-328047	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	460-327442	Lab File ID:	D15048.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	10/11/2015 0237	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0935				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.38	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.17	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.44	1.0
1,1,2-Trichloroethane	1.0	U	0.28	1.0
1,1-Dichloroethane	1.0	U	0.34	1.0
1,1-Dichloroethene	1.0	U	0.41	1.0
1,2,3-Trichlorobenzene	1.0	U	0.11	1.0
1,2,4-Trichlorobenzene	1.0	U	0.32	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.47	1.0
1,2-Dichlorobenzene	1.0	U	0.14	1.0
1,2-Dichloroethane	1.0	U	0.11	1.0
1,2-Dichloropropane	1.0	U	0.17	1.0
1,3-Dichlorobenzene	1.0	U	0.12	1.0
1,4-Dichlorobenzene	1.0	U	0.13	1.0
1,4-Dioxane	20	U	6.4	20
2-Butanone (MEK)	5.0	U	0.77	5.0
2-Hexanone	5.0	U	0.94	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	2.2	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	4.1	10
Acrolein	100	U	16	100
Benzene	1.0	U	0.20	1.0
Bromoform	1.0	U	0.13	1.0
Bromomethane	1.0	U	0.32	1.0
Carbon disulfide	1.0	U	0.43	1.0
Carbon tetrachloride	1.0	U	0.43	1.0
Chlorobenzene	1.0	U	0.14	1.0
Chlorobromomethane	1.0	U	0.17	1.0
Chlorodibromomethane	1.0	U	0.15	1.0
Chloroethane	1.0	U	0.35	1.0
Chloroform	1.0	U	0.21	1.0
Chloromethane	1.0	U	0.38	1.0
cis-1,2-Dichloroethene	1.0	U	0.22	1.0
cis-1,3-Dichloropropene	1.0	U	0.15	1.0
Cyclohexane	1.0	U	0.46	1.0
Dichlorobromomethane	1.0	U	0.38	1.0
Dichlorodifluoromethane	1.0	U	0.32	1.0
Ethylbenzene	1.0	U	0.18	1.0
Ethylene Dibromide	1.0	U	0.12	1.0
Isopropylbenzene	1.0	U	0.17	1.0
Methyl acetate	5.0	U	0.90	5.0
Methyl tert-butyl ether	1.0	U	0.17	1.0
Methylcyclohexane	1.0	U	0.50	1.0
Methylene Chloride	1.0	U	0.32	1.0
m-Xylene & p-Xylene	1.0	U	0.11	1.0

Neutral Leach or MeOH Extraction Blank - Batch: 460-327442

Method: 8260C
Preparation: 5035

Lab Sample ID:	LB3 460-327442/1-A	Analysis Batch:	460-328047	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	460-327442	Lab File ID:	D15048.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	10/11/2015 0237	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	10/08/2015 0935				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
o-Xylene	1.0	U	0.16	1.0
Styrene	1.0	U	0.15	1.0
Tetrachloroethene	1.0	U	0.28	1.0
Toluene	1.0	U	0.19	1.0
trans-1,2-Dichloroethene	1.0	U	0.39	1.0
trans-1,3-Dichloropropene	1.0	U	0.10	1.0
Trichloroethene	1.0	U	0.26	1.0
Trichlorofluoromethane	1.0	U	0.34	1.0
Vinyl chloride	1.0	U	0.39	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	89	78 - 135
4-Bromofluorobenzene	90	67 - 126
Dibromofluoromethane (Surr)	91	61 - 149
Toluene-d8 (Surr)	86	73 - 121

Method Blank - Batch: 460-328047

Method: 8260C
Preparation: N/A

Lab Sample ID:	MB 460-328047/7	Analysis Batch:	460-328047	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15045.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2015 0123	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.38	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.17	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.44	1.0
1,1,2-Trichloroethane	1.0	U	0.28	1.0
1,1-Dichloroethane	1.0	U	0.34	1.0
1,1-Dichloroethene	1.0	U	0.41	1.0
1,2,3-Trichlorobenzene	1.0	U	0.11	1.0
1,2,4-Trichlorobenzene	1.0	U	0.32	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.47	1.0
1,2-Dichlorobenzene	1.0	U	0.14	1.0
1,2-Dichloroethane	1.0	U	0.11	1.0
1,2-Dichloropropane	1.0	U	0.17	1.0
1,3-Dichlorobenzene	1.0	U	0.12	1.0
1,4-Dichlorobenzene	1.0	U	0.13	1.0
1,4-Dioxane	20	U	6.4	20
2-Butanone (MEK)	5.0	U	0.77	5.0
2-Hexanone	5.0	U	0.94	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	2.2	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	4.1	10
Acrolein	100	U	16	100
Benzene	1.0	U	0.20	1.0
Bromoform	1.0	U	0.13	1.0
Bromomethane	1.0	U	0.32	1.0
Carbon disulfide	1.0	U	0.43	1.0
Carbon tetrachloride	1.0	U	0.43	1.0
Chlorobenzene	1.0	U	0.14	1.0
Chlorobromomethane	1.0	U	0.17	1.0
Chlorodibromomethane	1.0	U	0.15	1.0
Chloroethane	1.0	U	0.35	1.0
Chloroform	1.0	U	0.21	1.0
Chloromethane	1.0	U	0.38	1.0
cis-1,2-Dichloroethene	1.0	U	0.22	1.0
cis-1,3-Dichloropropene	1.0	U	0.15	1.0
Cyclohexane	1.0	U	0.46	1.0
Dichlorobromomethane	1.0	U	0.38	1.0
Dichlorodifluoromethane	1.0	U	0.32	1.0
Ethylbenzene	1.0	U	0.18	1.0
Ethylene Dibromide	1.0	U	0.12	1.0
Isopropylbenzene	1.0	U	0.17	1.0
Methyl acetate	5.0	U	0.90	5.0
Methyl tert-butyl ether	1.0	U	0.17	1.0
Methylcyclohexane	1.0	U	0.50	1.0
Methylene Chloride	1.0	U	0.32	1.0
m-Xylene & p-Xylene	1.0	U	0.11	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-328047

Method: 8260C
Preparation: N/A

Lab Sample ID:	MB 460-328047/7	Analysis Batch:	460-328047	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15045.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2015 0123	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
o-Xylene	1.0	U	0.16	1.0
Styrene	1.0	U	0.15	1.0
Tetrachloroethene	1.0	U	0.28	1.0
Toluene	1.0	U	0.19	1.0
trans-1,2-Dichloroethene	1.0	U	0.39	1.0
trans-1,3-Dichloropropene	1.0	U	0.10	1.0
Trichloroethene	1.0	U	0.26	1.0
Trichlorofluoromethane	1.0	U	0.34	1.0
Vinyl chloride	1.0	U	0.39	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93	78 - 135
4-Bromofluorobenzene	95	67 - 126
Dibromofluoromethane (Surr)	94	61 - 149
Toluene-d8 (Surr)	91	73 - 121

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 460-328047

Method: 8260C
Preparation: N/A

LCS Lab Sample ID:	LCS 460-328047/20	Analysis Batch:	460-328047	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15058.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2015 0642	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-328047/21	Analysis Batch:	460-328047	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15059.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2015 0706	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1-Trichloroethane	89	91	78 - 139	3	30		
1,1,2,2-Tetrachloroethane	84	81	64 - 128	4	30		
1,1,2-Trichloro-1,2,2-trifluoroethane	63	65	83 - 136	3	30	*	*
1,1,2-Trichloroethane	86	85	76 - 118	1	30		
1,1-Dichloroethane	89	88	83 - 131	0	30		
1,1-Dichloroethene	86	80	80 - 120	8	30		
1,2,3-Trichlorobenzene	94	95	77 - 116	1	30		
1,2,4-Trichlorobenzene	95	95	77 - 116	0	30		
1,2-Dibromo-3-Chloropropane	87	83	63 - 131	5	30		
1,2-Dichlorobenzene	92	92	80 - 120	1	30		
1,2-Dichloroethane	95	92	75 - 132	2	30		
1,2-Dichloropropane	83	83	77 - 124	1	30		
1,3-Dichlorobenzene	92	93	80 - 120	1	30		
1,4-Dichlorobenzene	93	91	80 - 120	2	30		
1,4-Dioxane	99	95	80 - 128	5	30		
2-Butanone (MEK)	101	113	58 - 150	11	30		
2-Hexanone	93	106	75 - 137	13	30		
4-Methyl-2-pentanone (MIBK)	91	93	81 - 121	2	30		
Acetone	95	122	66 - 150	25	30		
Acetonitrile	79	85	41 - 150	7	30		
Acrolein	23	29	26 - 141	21	30	J *	J
Benzene	86	88	78 - 122	2	30		
Bromoform	88	84	47 - 150	4	30		
Bromomethane	93	103	74 - 125	10	30		
Carbon disulfide	67	72	82 - 127	7	30	*	*
Carbon tetrachloride	93	95	62 - 150	2	30		
Chlorobenzene	92	91	80 - 120	0	30		
Chlorobromomethane	98	99	73 - 132	2	30		
Chlorodibromomethane	86	86	68 - 132	1	30		
Chloroethane	83	95	63 - 143	13	30		
Chloroform	97	97	80 - 120	1	30		
Chloromethane	82	90	73 - 130	9	30		
cis-1,2-Dichloroethene	94	94	80 - 120	0	30		
cis-1,3-Dichloropropene	81	81	75 - 118	1	30		
Cyclohexane	72	72	77 - 137	0	30	*	*

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 460-328047

Method: 8260C
Preparation: N/A

LCS Lab Sample ID:	LCS 460-328047/20	Analysis Batch:	460-328047	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15058.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2015 0642	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-328047/21	Analysis Batch:	460-328047	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15059.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2015 0706	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Dichlorobromomethane	87	86	76 - 130	0	30		
Dichlorodifluoromethane	82	90	73 - 122	10	30		
Ethylbenzene	93	94	80 - 120	1	30		
Ethylene Dibromide	92	89	80 - 120	3	30		
Isopropylbenzene	96	98	80 - 120	2	30		
Methyl acetate	85	79	66 - 150	7	30		
Methyl tert-butyl ether	78	74	80 - 120	5	30	*	*
Methylcyclohexane	92	94	84 - 127	3	30		
Methylene Chloride	85	85	80 - 120	0	30		
m-Xylene & p-Xylene	92	92	80 - 120	0	30		
o-Xylene	93	95	80 - 120	2	30		
Styrene	94	94	80 - 120	1	30		
Tetrachloroethene	98	100	68 - 130	2	30		
Toluene	88	90	80 - 120	2	30		
trans-1,2-Dichloroethene	93	96	86 - 126	3	30		
trans-1,3-Dichloropropene	81	79	73 - 118	2	30		
Trichloroethene	95	98	80 - 120	4	30		
Trichlorofluoromethane	77	90	73 - 134	15	30		
Vinyl chloride	86	97	77 - 130	11	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96	91	78 - 135
4-Bromofluorobenzene	95	94	67 - 126
Dibromofluoromethane (Surr)	99	98	61 - 149
Toluene-d8 (Surr)	91	90	73 - 121

Method Blank - Batch: 460-328165

Method: 8260C
Preparation: 5030C

Lab Sample ID:	MB 460-328165/7	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46734.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 0842	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 0842				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.28	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.19	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.34	1.0
1,1,2-Trichloroethane	1.0	U	0.080	1.0
1,1-Dichloroethane	1.0	U	0.24	1.0
1,1-Dichloroethene	1.0	U	0.34	1.0
1,2,3-Trichlorobenzene	1.0	U	0.35	1.0
1,2,4-Trichlorobenzene	1.0	U	0.27	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.23	1.0
1,2-Dichlorobenzene	1.0	U	0.22	1.0
1,2-Dichloroethane	1.0	U	0.25	1.0
1,2-Dichloropropane	1.0	U	0.18	1.0
1,3-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dioxane	50	U	8.7	50
2-Butanone (MEK)	5.0	U	2.2	5.0
2-Hexanone	5.0	U	0.72	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	0.63	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	1.3	10
Acrolein	2.5	U	0.88	2.5
Benzene	1.0	U	0.090	1.0
Bromoform	1.0	U	0.18	1.0
Bromomethane	1.0	U	0.18	1.0
Carbon disulfide	1.0	U	0.22	1.0
Carbon tetrachloride	1.0	U	0.33	1.0
Chlorobenzene	1.0	U	0.24	1.0
Chlorobromomethane	1.0	U	0.30	1.0
Chlorodibromomethane	1.0	U	0.22	1.0
Chloroethane	1.0	U	0.37	1.0
Chloroform	1.0	U	0.22	1.0
Chloromethane	1.0	U	0.22	1.0
cis-1,2-Dichloroethene	1.0	U	0.26	1.0
cis-1,3-Dichloropropene	1.0	U	0.16	1.0
Cyclohexane	1.0	U	0.26	1.0
Dichlorobromomethane	1.0	U	0.15	1.0
Dichlorodifluoromethane	1.0	U	0.14	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.19	1.0
Isopropylbenzene	1.0	U	0.32	1.0
Methyl acetate	5.0	U	0.58	5.0
Methyl tert-butyl ether	1.0	U	0.13	1.0
Methylcyclohexane	1.0	U	0.22	1.0
Methylene Chloride	1.0	U	0.21	1.0
m-Xylene & p-Xylene	1.0	U	0.28	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-328165

Method: 8260C
Preparation: 5030C

Lab Sample ID:	MB 460-328165/7	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46734.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 0842	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 0842				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
o-Xylene	1.0	U	0.32	1.0
Styrene	1.0	U	0.17	1.0
Tetrachloroethene	1.0	U	0.12	1.0
Toluene	1.0	U	0.25	1.0
trans-1,2-Dichloroethene	1.0	U	0.18	1.0
trans-1,3-Dichloropropene	1.0	U	0.19	1.0
Trichloroethene	1.0	U	0.22	1.0
Trichlorofluoromethane	1.0	U	0.15	1.0
Vinyl chloride	1.0	U	0.060	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95	70 - 137
4-Bromofluorobenzene	95	70 - 131
Dibromofluoromethane (Surr)	99	72 - 136
Toluene-d8 (Surr)	96	74 - 120

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-328165

Method: 8260C
Preparation: 5030C

Lab Sample ID:	LCS 460-328165/3	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46730.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 0654	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 0654				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1-Trichloroethane	20.0	21.2	106	76 - 131	
1,1,2,2-Tetrachloroethane	20.0	19.4	97	65 - 128	
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	20.2	101	53 - 149	
1,1,2-Trichloroethane	20.0	19.3	96	77 - 122	
1,1-Dichloroethane	20.0	21.2	106	77 - 129	
1,1-Dichloroethene	20.0	21.3	107	67 - 133	
1,2,3-Trichlorobenzene	20.0	23.2	116	64 - 142	
1,2,4-Trichlorobenzene	20.0	22.3	112	66 - 137	
1,2-Dibromo-3-Chloropropane	20.0	20.9	104	55 - 133	
1,2-Dichlorobenzene	20.0	20.2	101	80 - 121	
1,2-Dichloroethane	20.0	19.9	100	73 - 131	
1,2-Dichloropropane	20.0	20.7	104	75 - 129	
1,3-Dichlorobenzene	20.0	20.6	103	80 - 120	
1,4-Dichlorobenzene	20.0	19.9	99	79 - 120	
1,4-Dioxane	400	434	108	65 - 150	
2-Butanone (MEK)	100	101	101	56 - 150	
2-Hexanone	100	103	103	64 - 150	
4-Methyl-2-pentanone (MIBK)	100	94.9	95	77 - 130	
Acetone	100	122	122	19 - 150	
Acetonitrile	200	186	93	10 - 150	
Acrolein	40.0	41.9	105	10 - 150	
Benzene	20.0	20.5	102	76 - 125	
Bromoform	20.0	19.1	96	65 - 124	
Bromomethane	20.0	17.9	89	10 - 150	
Carbon disulfide	20.0	21.4	107	69 - 131	
Carbon tetrachloride	20.0	21.5	108	71 - 138	
Chlorobenzene	20.0	20.4	102	80 - 120	
Chlorobromomethane	20.0	20.8	104	71 - 137	
Chlorodibromomethane	20.0	19.9	99	78 - 120	
Chloroethane	20.0	21.8	109	40 - 150	
Chloroform	20.0	21.0	105	81 - 127	
Chloromethane	20.0	19.8	99	45 - 150	
cis-1,2-Dichloroethene	20.0	21.7	109	82 - 127	
cis-1,3-Dichloropropene	20.0	21.2	106	72 - 125	
Cyclohexane	20.0	25.3	126	51 - 147	
Dichlorobromomethane	20.0	20.2	101	78 - 127	
Dichlorodifluoromethane	20.0	18.2	91	32 - 150	
Ethylbenzene	20.0	20.9	104	80 - 120	
Ethylene Dibromide	20.0	20.0	100	80 - 120	
Isopropylbenzene	20.0	22.0	110	80 - 127	
Methyl acetate	100	89.7	90	63 - 150	

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-328165

Method: 8260C
Preparation: 5030C

Lab Sample ID:	LCS 460-328165/3	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46730.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 0654	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 0654				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Methyl tert-butyl ether	20.0	21.2	106	78 - 129	
Methylcyclohexane	20.0	21.7	108	52 - 142	
Methylene Chloride	20.0	22.3	111	80 - 126	
m-Xylene & p-Xylene	20.0	21.4	107	80 - 121	
o-Xylene	20.0	21.4	107	80 - 120	
Styrene	20.0	21.3	106	75 - 124	
Tetrachloroethene	20.0	20.8	104	71 - 132	
Toluene	20.0	20.9	105	80 - 120	
trans-1,2-Dichloroethene	20.0	20.9	104	78 - 127	
trans-1,3-Dichloropropene	20.0	20.8	104	69 - 125	
Trichloroethene	20.0	20.6	103	77 - 127	
Trichlorofluoromethane	20.0	18.7	93	50 - 150	
Vinyl chloride	20.0	20.9	104	53 - 142	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98	70 - 137
4-Bromofluorobenzene	97	70 - 131
Dibromofluoromethane (Surr)	101	72 - 136
Toluene-d8 (Surr)	98	74 - 120

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-328165

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	460-102059-E-2 MS	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46742.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1221			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1221				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102059-E-2 MSD	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46743.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1248			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1248				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1-Trichloroethane	104	105	76 - 131	1	30		
1,1,2,2-Tetrachloroethane	90	88	65 - 128	2	30		
1,1,2-Trichloro-1,2,2-trifluoroethane	102	101	53 - 149	1	30		
1,1,2-Trichloroethane	92	90	77 - 122	1	30		
1,1-Dichloroethane	99	99	77 - 129	1	30		
1,1-Dichloroethene	104	104	67 - 133	1	30		
1,2,3-Trichlorobenzene	101	102	64 - 142	1	30		
1,2,4-Trichlorobenzene	99	100	66 - 137	2	30		
1,2-Dibromo-3-Chloropropane	88	93	55 - 133	5	30		
1,2-Dichlorobenzene	94	94	80 - 121	0	30		
1,2-Dichloroethane	94	93	73 - 131	1	30		
1,2-Dichloropropane	95	94	75 - 129	2	30		
1,3-Dichlorobenzene	95	96	80 - 120	1	30		
1,4-Dichlorobenzene	91	92	79 - 120	1	30		
1,4-Dioxane	89	102	65 - 150	14	30		
2-Butanone (MEK)	88	86	56 - 150	2	30		
2-Hexanone	97	99	64 - 150	2	30		
4-Methyl-2-pentanone (MIBK)	93	94	77 - 130	1	30		
Acetone	78	79	19 - 150	1	30		
Acetonitrile	93	98	10 - 150	5	30		
Acrolein	102	113	10 - 150	10	30		
Benzene	97	97	76 - 125	0	30		
Bromoform	84	87	65 - 124	3	30		
Bromomethane	58	63	10 - 150	9	30		
Carbon disulfide	104	106	69 - 131	2	30		
Carbon tetrachloride	107	110	71 - 138	3	30		
Chlorobenzene	95	96	80 - 120	1	30		
Chlorobromomethane	101	101	71 - 137	0	30		
Chlorodibromomethane	90	93	78 - 120	2	30		
Chloroethane	100	97	40 - 150	3	30		
Chloroform	99	100	81 - 127	1	30		
Chloromethane	96	96	45 - 150	1	30		

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-328165

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	460-102059-E-2 MS	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46742.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1221			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1221				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102059-E-2 MSD	Analysis Batch:	460-328165	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46743.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1248			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1248				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
cis-1,2-Dichloroethene	105	104	82 - 127	1	30		
cis-1,3-Dichloropropene	89	89	72 - 125	1	30		
Cyclohexane	125	124	51 - 147	1	30		
Dichlorobromomethane	95	96	78 - 127	1	30		
Dichlorodifluoromethane	95	94	32 - 150	1	30		
Ethylbenzene	99	100	80 - 120	1	30		
Ethylene Dibromide	95	95	80 - 120	0	30		
Isopropylbenzene	104	104	80 - 127	1	30		
Methyl acetate	97	98	63 - 150	1	30		
Methyl tert-butyl ether	98	96	78 - 129	2	30		
Methylcyclohexane	106	105	52 - 142	1	30		
Methylene Chloride	105	101	80 - 126	4	30		
m-Xylene & p-Xylene	100	102	80 - 121	1	30		
o-Xylene	99	100	80 - 120	1	30		
Styrene	98	100	75 - 124	2	30		
Tetrachloroethene	100	103	71 - 132	2	30		
Toluene	98	98	80 - 120	0	30		
trans-1,2-Dichloroethene	98	100	78 - 127	2	30		
trans-1,3-Dichloropropene	85	85	69 - 125	1	30		
Trichloroethene	101	99	77 - 127	2	30		
Trichlorofluoromethane	116	117	50 - 150	1	30		
Vinyl chloride	104	104	53 - 142	1	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95	94	70 - 137
4-Bromofluorobenzene	99	97	70 - 131
Dibromofluoromethane (Surr)	100	98	72 - 136
Toluene-d8 (Surr)	97	96	74 - 120

Method Blank - Batch: 460-328317

Method: 8260C
Preparation: N/A

Lab Sample ID:	MB 460-328317/8	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15125.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1957	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.38	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.17	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.44	1.0
1,1,2-Trichloroethane	1.0	U	0.28	1.0
1,1-Dichloroethane	1.0	U	0.34	1.0
1,1-Dichloroethene	1.0	U	0.41	1.0
1,2,3-Trichlorobenzene	1.0	U	0.11	1.0
1,2,4-Trichlorobenzene	1.0	U	0.32	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.47	1.0
1,2-Dichlorobenzene	1.0	U	0.14	1.0
1,2-Dichloroethane	1.0	U	0.11	1.0
1,2-Dichloropropane	1.0	U	0.17	1.0
1,3-Dichlorobenzene	1.0	U	0.12	1.0
1,4-Dichlorobenzene	1.0	U	0.13	1.0
1,4-Dioxane	20	U	6.4	20
2-Butanone (MEK)	5.0	U	0.77	5.0
2-Hexanone	5.0	U	0.94	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	2.2	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	4.1	10
Acrolein	100	U	16	100
Benzene	1.0	U	0.20	1.0
Bromoform	1.0	U	0.13	1.0
Bromomethane	1.0	U	0.32	1.0
Carbon disulfide	1.0	U	0.43	1.0
Carbon tetrachloride	1.0	U	0.43	1.0
Chlorobenzene	1.0	U	0.14	1.0
Chlorobromomethane	1.0	U	0.17	1.0
Chlorodibromomethane	1.0	U	0.15	1.0
Chloroethane	1.0	U	0.35	1.0
Chloroform	1.0	U	0.21	1.0
Chloromethane	1.0	U	0.38	1.0
cis-1,2-Dichloroethene	1.0	U	0.22	1.0
cis-1,3-Dichloropropene	1.0	U	0.15	1.0
Cyclohexane	1.0	U	0.46	1.0
Dichlorobromomethane	1.0	U	0.38	1.0
Dichlorodifluoromethane	1.0	U	0.32	1.0
Ethylbenzene	1.0	U	0.18	1.0
Ethylene Dibromide	1.0	U	0.12	1.0
Isopropylbenzene	1.0	U	0.17	1.0
Methyl acetate	5.0	U	0.90	5.0
Methyl tert-butyl ether	1.0	U	0.17	1.0
Methylcyclohexane	1.0	U	0.50	1.0
Methylene Chloride	1.0	U	0.32	1.0
m-Xylene & p-Xylene	1.0	U	0.11	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-328317

Method: 8260C
Preparation: N/A

Lab Sample ID:	MB 460-328317/8	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15125.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1957	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
o-Xylene	1.0	U	0.16	1.0
Styrene	1.0	U	0.15	1.0
Tetrachloroethene	1.0	U	0.28	1.0
Toluene	1.0	U	0.19	1.0
trans-1,2-Dichloroethene	1.0	U	0.39	1.0
trans-1,3-Dichloropropene	1.0	U	0.10	1.0
Trichloroethene	1.0	U	0.26	1.0
Trichlorofluoromethane	1.0	U	0.34	1.0
Vinyl chloride	1.0	U	0.39	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93	78 - 135
4-Bromofluorobenzene	95	67 - 126
Dibromofluoromethane (Surr)	94	61 - 149
Toluene-d8 (Surr)	89	73 - 121

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 460-328317

Method: 8260C
Preparation: N/A

LCS Lab Sample ID:	LCS 460-328317/3	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15120.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1748	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-328317/4	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15121.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1813	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1-Trichloroethane	105	103	78 - 139	2	30		
1,1,2,2-Tetrachloroethane	87	83	64 - 128	5	30		
1,1,2-Trichloro-1,2,2-trifluoroethane	65	69	83 - 136	5	30	*	*
1,1,2-Trichloroethane	92	88	76 - 118	5	30		
1,1-Dichloroethane	102	99	83 - 131	2	30		
1,1-Dichloroethene	103	102	80 - 120	1	30		
1,2,3-Trichlorobenzene	100	101	77 - 116	1	30		
1,2,4-Trichlorobenzene	102	103	77 - 116	1	30		
1,2-Dibromo-3-Chloropropane	85	79	63 - 131	6	30		
1,2-Dichlorobenzene	100	100	80 - 120	0	30		
1,2-Dichloroethane	101	98	75 - 132	4	30		
1,2-Dichloropropane	94	93	77 - 124	1	30		
1,3-Dichlorobenzene	104	103	80 - 120	0	30		
1,4-Dichlorobenzene	104	103	80 - 120	1	30		
1,4-Dioxane	117	107	80 - 128	9	30		
2-Butanone (MEK)	110	109	58 - 150	1	30		
2-Hexanone	109	107	75 - 137	2	30		
4-Methyl-2-pentanone (MIBK)	102	100	81 - 121	2	30		
Acetone	116	113	66 - 150	2	30		
Acetonitrile	96	103	41 - 150	7	30		
Acrolein	31	28	26 - 141	9	30	J	J
Benzene	98	95	78 - 122	3	30		
Bromoform	88	87	47 - 150	1	30		
Bromomethane	110	109	74 - 125	1	30		
Carbon disulfide	85	82	82 - 127	4	30		
Carbon tetrachloride	109	108	62 - 150	1	30		
Chlorobenzene	102	101	80 - 120	1	30		
Chlorobromomethane	107	105	73 - 132	2	30		
Chlorodibromomethane	93	89	68 - 132	4	30		
Chloroethane	99	100	63 - 143	1	30		
Chloroform	108	106	80 - 120	2	30		
Chloromethane	101	101	73 - 130	0	30		
cis-1,2-Dichloroethene	107	103	80 - 120	3	30		
cis-1,3-Dichloropropene	91	88	75 - 118	4	30		
Cyclohexane	85	84	77 - 137	1	30		

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 460-328317

Method: 8260C
Preparation: N/A

LCS Lab Sample ID:	LCS 460-328317/3	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15120.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1748	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-328317/4	Analysis Batch:	460-328317	Instrument ID:	CVOAMS4
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	D15121.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1813	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				5 mL
Leach Date:	N/A				

	% Rec.					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Dichlorobromomethane	94	93	76 - 130	1	30		
Dichlorodifluoromethane	97	98	73 - 122	2	30		
Ethylbenzene	106	105	80 - 120	1	30		
Ethylene Dibromide	96	91	80 - 120	5	30		
Isopropylbenzene	109	109	80 - 120	0	30		
Methyl acetate	85	80	66 - 150	6	30		
Methyl tert-butyl ether	78	75	80 - 120	3	30	*	*
Methylcyclohexane	108	109	84 - 127	0	30		
Methylene Chloride	98	97	80 - 120	0	30		
m-Xylene & p-Xylene	105	104	80 - 120	1	30		
o-Xylene	105	105	80 - 120	1	30		
Styrene	106	104	80 - 120	2	30		
Tetrachloroethene	115	112	68 - 130	2	30		
Toluene	102	99	80 - 120	3	30		
trans-1,2-Dichloroethene	110	107	86 - 126	3	30		
trans-1,3-Dichloropropene	87	85	73 - 118	3	30		
Trichloroethene	109	106	80 - 120	2	30		
Trichlorofluoromethane	92	95	73 - 134	4	30		
Vinyl chloride	109	109	77 - 130	0	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	91	95	78 - 135
4-Bromofluorobenzene	92	97	67 - 126
Dibromofluoromethane (Surr)	94	99	61 - 149
Toluene-d8 (Surr)	88	92	73 - 121

Method Blank - Batch: 460-328322

Method: 8260C
Preparation: 5030C

Lab Sample ID:	MB 460-328322/7	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46761.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2050	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2050				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	1.0	U	0.28	1.0
1,1,2,2-Tetrachloroethane	1.0	U	0.19	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	0.34	1.0
1,1,2-Trichloroethane	1.0	U	0.080	1.0
1,1-Dichloroethane	1.0	U	0.24	1.0
1,1-Dichloroethene	1.0	U	0.34	1.0
1,2,3-Trichlorobenzene	1.0	U	0.35	1.0
1,2,4-Trichlorobenzene	1.0	U	0.27	1.0
1,2-Dibromo-3-Chloropropane	1.0	U	0.23	1.0
1,2-Dichlorobenzene	1.0	U	0.22	1.0
1,2-Dichloroethane	1.0	U	0.25	1.0
1,2-Dichloropropane	1.0	U	0.18	1.0
1,3-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dichlorobenzene	1.0	U	0.33	1.0
1,4-Dioxane	50	U	8.7	50
2-Butanone (MEK)	5.0	U	2.2	5.0
2-Hexanone	5.0	U	0.72	5.0
4-Methyl-2-pentanone (MIBK)	5.0	U	0.63	5.0
Acetone	5.0	U	1.1	5.0
Acetonitrile	10	U	1.3	10
Acrolein	2.5	U	0.88	2.5
Benzene	1.0	U	0.090	1.0
Bromoform	1.0	U	0.18	1.0
Bromomethane	1.0	U	0.18	1.0
Carbon disulfide	1.0	U	0.22	1.0
Carbon tetrachloride	1.0	U	0.33	1.0
Chlorobenzene	1.0	U	0.24	1.0
Chlorobromomethane	1.0	U	0.30	1.0
Chlorodibromomethane	1.0	U	0.22	1.0
Chloroethane	1.0	U	0.37	1.0
Chloroform	1.0	U	0.22	1.0
Chloromethane	1.0	U	0.22	1.0
cis-1,2-Dichloroethene	1.0	U	0.26	1.0
cis-1,3-Dichloropropene	1.0	U	0.16	1.0
Cyclohexane	1.0	U	0.26	1.0
Dichlorobromomethane	1.0	U	0.15	1.0
Dichlorodifluoromethane	1.0	U	0.14	1.0
Ethylbenzene	1.0	U	0.30	1.0
Ethylene Dibromide	1.0	U	0.19	1.0
Isopropylbenzene	1.0	U	0.32	1.0
Methyl acetate	5.0	U	0.58	5.0
Methyl tert-butyl ether	1.0	U	0.13	1.0
Methylcyclohexane	1.0	U	0.22	1.0
Methylene Chloride	1.0	U	0.21	1.0
m-Xylene & p-Xylene	1.0	U	0.28	1.0

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-328322

Method: 8260C
Preparation: 5030C

Lab Sample ID:	MB 460-328322/7	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46761.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2050	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2050				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
o-Xylene	1.0	U	0.32	1.0
Styrene	1.0	U	0.17	1.0
Tetrachloroethene	1.0	U	0.12	1.0
Toluene	1.0	U	0.25	1.0
trans-1,2-Dichloroethene	1.0	U	0.18	1.0
trans-1,3-Dichloropropene	1.0	U	0.19	1.0
Trichloroethene	1.0	U	0.22	1.0
Trichlorofluoromethane	1.0	U	0.15	1.0
Vinyl chloride	1.0	U	0.060	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	83	70 - 137
4-Bromofluorobenzene	80	70 - 131
Dibromofluoromethane (Surr)	85	72 - 136
Toluene-d8 (Surr)	82	74 - 120

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-328322

Method: 8260C
Preparation: 5030C

Lab Sample ID:	LCS 460-328322/3	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46757.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1903	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1903				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1-Trichloroethane	20.0	21.1	105	76 - 131	
1,1,2,2-Tetrachloroethane	20.0	18.0	90	65 - 128	
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	19.3	97	53 - 149	
1,1,2-Trichloroethane	20.0	18.7	93	77 - 122	
1,1-Dichloroethane	20.0	20.2	101	77 - 129	
1,1-Dichloroethene	20.0	20.9	104	67 - 133	
1,2,3-Trichlorobenzene	20.0	21.0	105	64 - 142	
1,2,4-Trichlorobenzene	20.0	21.2	106	66 - 137	
1,2-Dibromo-3-Chloropropane	20.0	18.3	91	55 - 133	
1,2-Dichlorobenzene	20.0	19.7	98	80 - 121	
1,2-Dichloroethane	20.0	19.4	97	73 - 131	
1,2-Dichloropropane	20.0	20.6	103	75 - 129	
1,3-Dichlorobenzene	20.0	20.3	102	80 - 120	
1,4-Dichlorobenzene	20.0	19.7	99	79 - 120	
1,4-Dioxane	400	440	110	65 - 150	
2-Butanone (MEK)	100	94.3	94	56 - 150	
2-Hexanone	100	99.8	100	64 - 150	
4-Methyl-2-pentanone (MIBK)	100	98.2	98	77 - 130	
Acetone	100	96.3	96	19 - 150	
Acetonitrile	200	216	108	10 - 150	
Acrolein	40.0	38.2	96	10 - 150	
Benzene	20.0	20.2	101	76 - 125	
Bromoform	20.0	18.5	93	65 - 124	
Bromomethane	20.0	12.3	61	10 - 150	
Carbon disulfide	20.0	21.0	105	69 - 131	
Carbon tetrachloride	20.0	22.0	110	71 - 138	
Chlorobenzene	20.0	19.9	99	80 - 120	
Chlorobromomethane	20.0	20.7	104	71 - 137	
Chlorodibromomethane	20.0	18.8	94	78 - 120	
Chloroethane	20.0	17.6	88	40 - 150	
Chloroform	20.0	20.5	102	81 - 127	
Chloromethane	20.0	17.6	88	45 - 150	
cis-1,2-Dichloroethene	20.0	21.6	108	82 - 127	
cis-1,3-Dichloropropene	20.0	19.7	98	72 - 125	
Cyclohexane	20.0	23.5	118	51 - 147	
Dichlorobromomethane	20.0	19.8	99	78 - 127	
Dichlorodifluoromethane	20.0	17.2	86	32 - 150	
Ethylbenzene	20.0	20.6	103	80 - 120	
Ethylene Dibromide	20.0	20.1	100	80 - 120	
Isopropylbenzene	20.0	21.6	108	80 - 127	
Methyl acetate	100	123	123	63 - 150	

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-328322

Method: 8260C
Preparation: 5030C

Lab Sample ID:	LCS 460-328322/3	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46757.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 1903	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 1903				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Methyl tert-butyl ether	20.0	19.7	99	78 - 129	
Methylcyclohexane	20.0	20.0	100	52 - 142	
Methylene Chloride	20.0	21.5	107	80 - 126	
m-Xylene & p-Xylene	20.0	21.0	105	80 - 121	
o-Xylene	20.0	20.3	101	80 - 120	
Styrene	20.0	20.6	103	75 - 124	
Tetrachloroethene	20.0	20.6	103	71 - 132	
Toluene	20.0	20.3	102	80 - 120	
trans-1,2-Dichloroethene	20.0	20.6	103	78 - 127	
trans-1,3-Dichloropropene	20.0	18.3	92	69 - 125	
Trichloroethene	20.0	20.6	103	77 - 127	
Trichlorofluoromethane	20.0	22.0	110	50 - 150	
Vinyl chloride	20.0	20.0	100	53 - 142	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93	70 - 137
4-Bromofluorobenzene	98	70 - 131
Dibromofluoromethane (Surr)	100	72 - 136
Toluene-d8 (Surr)	97	74 - 120

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-328322

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	460-102327-13	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46764.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2211			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2211				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102327-13	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46765.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2237			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2237				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1-Trichloroethane	106	106	76 - 131	0	30		
1,1,2,2-Tetrachloroethane	87	91	65 - 128	4	30		
1,1,2-Trichloro-1,2,2-trifluoroethane	104	104	53 - 149	0	30		
1,1,2-Trichloroethane	91	93	77 - 122	1	30		
1,1-Dichloroethane	100	102	77 - 129	2	30		
1,1-Dichloroethene	105	106	67 - 133	2	30		
1,2,3-Trichlorobenzene	99	105	64 - 142	6	30		
1,2,4-Trichlorobenzene	101	107	66 - 137	6	30		
1,2-Dibromo-3-Chloropropane	85	91	55 - 133	7	30		
1,2-Dichlorobenzene	96	98	80 - 121	2	30		
1,2-Dichloroethane	98	98	73 - 131	0	30		
1,2-Dichloropropane	103	101	75 - 129	1	30		
1,3-Dichlorobenzene	98	100	80 - 120	2	30		
1,4-Dichlorobenzene	96	99	79 - 120	3	30		
1,4-Dioxane	90	110	65 - 150	20	30		
2-Butanone (MEK)	89	89	56 - 150	0	30		
2-Hexanone	94	97	64 - 150	3	30		
4-Methyl-2-pentanone (MIBK)	96	98	77 - 130	3	30		
Acetone	85	84	19 - 150	1	30		
Acetonitrile	108	109	10 - 150	1	30		
Acrolein	94	102	10 - 150	8	30		
Benzene	101	100	76 - 125	1	30		
Bromoform	91	92	65 - 124	1	30		
Bromomethane	58	65	10 - 150	11	30		
Carbon disulfide	107	108	69 - 131	1	30		
Carbon tetrachloride	111	110	71 - 138	1	30		
Chlorobenzene	99	99	80 - 120	0	30		
Chlorobromomethane	106	108	71 - 137	2	30		
Chlorodibromomethane	93	95	78 - 120	2	30		
Chloroethane	112	118	40 - 150	5	30		
Chloroform	103	103	81 - 127	1	30		
Chloromethane	89	89	45 - 150	0	30		

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-328322

Method: 8260C
Preparation: 5030C

MS Lab Sample ID:	460-102327-13	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46764.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2211			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2211				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102327-13	Analysis Batch:	460-328322	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E46765.D
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2015 2237			Final Weight/Volume:	5 mL
Prep Date:	10/12/2015 2237				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
cis-1,2-Dichloroethene	105	106	82 - 127	1	30		
cis-1,3-Dichloropropene	99	99	72 - 125	0	30		
Cyclohexane	127	124	51 - 147	3	30		
Dichlorobromomethane	100	100	78 - 127	1	30		
Dichlorodifluoromethane	82	83	32 - 150	1	30		
Ethylbenzene	103	103	80 - 120	0	30		
Ethylene Dibromide	99	100	80 - 120	0	30		
Isopropylbenzene	108	107	80 - 127	1	30		
Methyl acetate	121	121	63 - 150	0	30		
Methyl tert-butyl ether	98	101	78 - 129	3	30		
Methylcyclohexane	108	107	52 - 142	1	30		
Methylene Chloride	109	109	80 - 126	1	30		
m-Xylene & p-Xylene	104	104	80 - 121	0	30		
o-Xylene	100	100	80 - 120	0	30		
Styrene	102	102	75 - 124	0	30		
Tetrachloroethene	102	102	71 - 132	0	30		
Toluene	100	101	80 - 120	1	30		
trans-1,2-Dichloroethene	105	105	78 - 127	0	30		
trans-1,3-Dichloropropene	92	93	69 - 125	2	30		
Trichloroethene	104	103	77 - 127	1	30		
Trichlorofluoromethane	108	108	50 - 150	0	30		
Vinyl chloride	97	98	53 - 142	0	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93	95	70 - 137
4-Bromofluorobenzene	97	98	70 - 131
Dibromofluoromethane (Surr)	99	99	72 - 136
Toluene-d8 (Surr)	95	96	74 - 120

Method Blank - Batch: 460-327462

Method: 8270D
Preparation: 3546

Lab Sample ID:	MB 460-327462/1-A	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37301.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 0839	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1'-Biphenyl	330	U	28	330
1,2,4,5-Tetrachlorobenzene	330	U	25	330
2,2'-oxybis[1-chloropropane]	330	U	14	330
2,3,4,6-Tetrachlorophenol	330	U	31	330
2,4,5-Trichlorophenol	330	U	33	330
2,4,6-Trichlorophenol	130	U	9.4	130
2,4-Dichlorophenol	130	U	7.8	130
2,4-Dimethylphenol	330	U	73	330
2,4-Dinitrophenol	270	U	250	270
2,4-Dinitrotoluene	67	U	13	67
2,6-Dinitrotoluene	67	U	18	67
2-Chloronaphthalene	330	U	7.5	330
2-Chlorophenol	330	U	8.4	330
2-Methylnaphthalene	330	U	7.3	330
2-Methylphenol	330	U	14	330
2-Nitroaniline	330	U	11	330
2-Nitrophenol	330	U	11	330
3,3'-Dichlorobenzidine	130	U	37	130
3-Nitroaniline	330	U	9.8	330
4,6-Dinitro-2-methylphenol	270	U	88	270
4-Bromophenyl phenyl ether	330	U	10	330
4-Chloro-3-methylphenol	330	U	14	330
4-Chloroaniline	330	U	8.5	330
4-Chlorophenyl phenyl ether	330	U	9.9	330
4-Methylphenol	330	U	9.0	330
4-Nitroaniline	330	U	13	330
4-Nitrophenol	670	U	160	670
Acenaphthene	330	U	8.0	330
Acenaphthylene	330	U	8.5	330
Acetophenone	330	U	7.2	330
Anthracene	330	U	31	330
Atrazine	130	U	15	130
Benzaldehyde	330	U	25	330
Benzo[a]anthracene	33	U	28	33
Benzo[a]pyrene	33	U	10	33
Benzo[b]fluoranthene	33	U	13	33
Benzo[g,h,i]perylene	330	U	19	330
Benzo[k]fluoranthene	33	U	14	33
Bis(2-chloroethoxy)methane	330	U	10	330
Bis(2-chloroethyl)ether	33	U	7.8	33
Bis(2-ethylhexyl) phthalate	330	U	13	330
Butyl benzyl phthalate	330	U	10	330
Caprolactam	330	U	24	330
Carbazole	330	U	8.2	330
Chrysene	330	U	9.0	330

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-327462

Method: 8270D
Preparation: 3546

Lab Sample ID:	MB 460-327462/1-A	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37301.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 0839	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Dibenz(a,h)anthracene	33	U	17	33
Dibenzofuran	330	U	10	330
Diethyl phthalate	330	U	9.4	330
Dimethyl phthalate	330	U	9.6	330
Di-n-butyl phthalate	330	U	9.9	330
Di-n-octyl phthalate	330	U	17	330
Fluoranthene	330	U	9.8	330
Fluorene	330	U	7.2	330
Hexachlorobenzene	33	U	13	33
Hexachlorobutadiene	67	U	9.3	67
Hexachlorocyclopentadiene	330	U	21	330
Hexachloroethane	33	U	12	33
Indeno[1,2,3-cd]pyrene	33	U	22	33
Isophorone	130	U	7.1	130
Naphthalene	330	U	8.4	330
Nitrobenzene	33	U	10	33
N-Nitrosodi-n-propylamine	33	U	11	33
N-Nitrosodiphenylamine	330	U	30	330
Pentachlorophenol	270	U	40	270
Phenanthrene	330	U	8.8	330
Phenol	330	U	11	330
Pyrene	330	U	15	330

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	68	10 - 95
2-Fluorobiphenyl	70	27 - 84
2-Fluorophenol (Surr)	68	21 - 84
Nitrobenzene-d5 (Surr)	67	28 - 92
Phenol-d5 (Surr)	68	22 - 88
Terphenyl-d14 (Surr)	72	16 - 114

Lab Control Sample - Batch: 460-327462 **Method: 8270D**
Preparation: 3546

Lab Sample ID:	LCS 460-327462/2-A	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37294.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 0555	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Atrazine	6670	6330	95	41 - 116	
Benzaldehyde	6670	5420	81	55 - 116	
Caprolactam	6670	6920	104	44 - 129	

Surrogate	% Rec		Acceptance Limits
2,4,6-Tribromophenol (Surr)	106	*	10 - 95
2-Fluorobiphenyl	83		27 - 84
2-Fluorophenol (Surr)	85	*	21 - 84
Nitrobenzene-d5 (Surr)	86		28 - 92
Phenol-d5 (Surr)	87		22 - 88
Terphenyl-d14 (Surr)	92		16 - 114

Lab Control Sample - Batch: 460-327462 **Method: 8270D**
Preparation: 3546

Lab Sample ID:	LCS 460-327462/3-A	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37295.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 0618	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1'-Biphenyl	3330	2670	80	64 - 103	
1,2,4,5-Tetrachlorobenzene	3330	2880	86	62 - 109	
2,2'-oxybis[1-chloropropane]	3330	2720	82	42 - 119	
2,3,4,6-Tetrachlorophenol	3330	3020	91	57 - 113	
2,4,5-Trichlorophenol	3330	2930	88	59 - 105	
2,4,6-Trichlorophenol	3330	2950	89	61 - 107	
2,4-Dichlorophenol	3330	2880	86	59 - 99	
2,4-Dimethylphenol	3330	2670	80	60 - 98	
2,4-Dinitrophenol	6670	5150	77	26 - 137	
2,4-Dinitrotoluene	3330	3030	91	61 - 118	
2,6-Dinitrotoluene	3330	2950	88	63 - 112	
2-Chloronaphthalene	3330	2790	84	63 - 102	
2-Chlorophenol	3330	2740	82	58 - 95	
2-Methylnaphthalene	3330	2860	86	64 - 102	
2-Methylphenol	3330	2890	87	56 - 99	
2-Nitroaniline	3330	2700	81	46 - 113	
2-Nitrophenol	3330	2900	87	63 - 103	

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-327462

Method: 8270D
Preparation: 3546

Lab Sample ID:	LCS 460-327462/3-A	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37295.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 0618	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
3,3'-Dichlorobenzidine	3330	1360	41	18 - 92	
3-Nitroaniline	3330	1880	56	23 - 89	
4,6-Dinitro-2-methylphenol	6670	6130	92	51 - 124	
4-Bromophenyl phenyl ether	3330	3110	93	65 - 114	
4-Chloro-3-methylphenol	3330	2980	89	58 - 108	
4-Chloroaniline	3330	1650	50	10 - 82	
4-Chlorophenyl phenyl ether	3330	2840	85	63 - 107	
4-Methylphenol	3330	2710	81	53 - 103	
4-Nitroaniline	3330	2600	78	44 - 109	
4-Nitrophenol	6670	5270	79	45 - 125	
Acenaphthene	3330	2600	78	59 - 102	
Acenaphthylene	3330	2920	88	63 - 102	
Acetophenone	3330	2740	82	56 - 107	
Anthracene	3330	2790	84	66 - 105	
Benzo[a]anthracene	3330	2860	86	65 - 106	
Benzo[a]pyrene	3330	2870	86	68 - 111	
Benzo[b]fluoranthene	3330	2730	82	67 - 116	
Benzo[g,h,i]perylene	3330	2880	86	49 - 124	
Benzo[k]fluoranthene	3330	2810	84	65 - 114	
Bis(2-chloroethoxy)methane	3330	2760	83	61 - 102	
Bis(2-chloroethyl)ether	3330	2730	82	58 - 102	
Bis(2-ethylhexyl) phthalate	3330	2660	80	60 - 125	
Butyl benzyl phthalate	3330	2710	81	62 - 123	
Carbazole	3330	2760	83	62 - 107	
Chrysene	3330	2870	86	64 - 105	
Dibenz(a,h)anthracene	3330	3160	95	54 - 126	
Dibenzofuran	3330	2870	86	62 - 102	
Diethyl phthalate	3330	2920	87	61 - 110	
Dimethyl phthalate	3330	3030	91	64 - 108	
Di-n-butyl phthalate	3330	2770	83	62 - 114	
Di-n-octyl phthalate	3330	2550	76	52 - 137	
Fluoranthene	3330	2640	79	59 - 109	
Fluorene	3330	2700	81	65 - 108	
Hexachlorobenzene	3330	3150	94	65 - 117	
Hexachlorobutadiene	3330	3190	96	60 - 105	
Hexachlorocyclopentadiene	3330	3460	104	37 - 119	
Hexachloroethane	3330	2610	78	60 - 94	
Indeno[1,2,3-cd]pyrene	3330	3230	97	50 - 134	
Isophorone	3330	2970	89	60 - 102	
Naphthalene	3330	2820	84	64 - 99	
Nitrobenzene	3330	2660	80	59 - 102	

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-327462

Method: 8270D
Preparation: 3546

Lab Sample ID:	LCS 460-327462/3-A	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37295.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 0618	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
N-Nitrosodi-n-propylamine	3330	2770	83	56 - 112	
Pentachlorophenol	6670	6220	93	47 - 115	
Phenanthrene	3330	2770	83	66 - 105	
Phenol	3330	2760	83	55 - 99	
Pyrene	3330	2980	89	55 - 126	

Surrogate	% Rec		Acceptance Limits
2,4,6-Tribromophenol (Surr)	104	*	10 - 95
2-Fluorobiphenyl	85	*	27 - 84
2-Fluorophenol (Surr)	79		21 - 84
Nitrobenzene-d5 (Surr)	77		28 - 92
Phenol-d5 (Surr)	80		22 - 88
Terphenyl-d14 (Surr)	91		16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327462

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102313-D-1-H MS	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37304.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0322 g
Analysis Date:	10/09/2015 0949			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102313-D-1-I MSD	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37305.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0453 g
Analysis Date:	10/09/2015 1013			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1'-Biphenyl	53	64	64 - 103	20	30	*	
1,2,4,5-Tetrachlorobenzene	58	71	62 - 109	21	30	*	
2,2'-oxybis[1-chloropropane]	50	58	42 - 119	14	30		
2,3,4,6-Tetrachlorophenol	48	58	57 - 113	19	30	*	
2,4,5-Trichlorophenol	49	57	59 - 105	16	30	*	*
2,4,6-Trichlorophenol	51	63	61 - 107	21	30	*	
2,4-Dichlorophenol	48	59	59 - 99	21	30	*	
2,4-Dimethylphenol	29	37	60 - 98	25	30	*	*
2,4-Dinitrophenol	39	46	26 - 137	17	30		
2,4-Dinitrotoluene	54	65	61 - 118	18	30	*	
2,6-Dinitrotoluene	56	70	63 - 112	22	30	*	
2-Chloronaphthalene	52	64	63 - 102	19	30	*	
2-Chlorophenol	48	57	58 - 95	18	30	*	*
2-Methylnaphthalene	51	60	64 - 102	17	30	*	*
2-Methylphenol	44	53	56 - 99	19	30	*	*
2-Nitroaniline	49	58	46 - 113	18	30		
2-Nitrophenol	53	63	63 - 103	18	30	*	
3,3'-Dichlorobenzidine	0	0	18 - 92	NC	30	U *	U *
3-Nitroaniline	26	31	23 - 89	19	30		
4,6-Dinitro-2-methylphenol	55	67	51 - 124	19	30		
4-Bromophenyl phenyl ether	61	75	65 - 114	19	30	*	
4-Chloro-3-methylphenol	46	55	58 - 108	18	30	*	*
4-Chloroaniline	8	10	10 - 82	19	30	J *	J
4-Chlorophenyl phenyl ether	52	63	63 - 107	19	30	*	
4-Methylphenol	42	51	53 - 103	18	30	*	*
4-Nitroaniline	30	34	44 - 109	13	30	*	*
4-Nitrophenol	43	48	45 - 125	12	30	*	
Acenaphthene	51	62	59 - 102	18	30	*	
Acenaphthylene	53	64	63 - 102	19	30	*	
Acetophenone	56	65	56 - 107	15	30		
Anthracene	47	58	66 - 105	20	30	*	*
Atrazine	50	63	41 - 116	23	30		

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327462

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102313-D-1-H MS	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37304.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0322 g
Analysis Date:	10/09/2015 0949			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102313-D-1-I MSD	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37305.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0453 g
Analysis Date:	10/09/2015 1013			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzaldehyde	46	53	55 - 116	14	30	*	*
Benzo[a]anthracene	49	61	65 - 106	21	30	*	*
Benzo[a]pyrene	46	59	68 - 111	23	30	*	*
Benzo[b]fluoranthene	44	56	67 - 116	24	30	*	*
Benzo[g,h,i]perylene	57	69	49 - 124	18	30		
Benzo[k]fluoranthene	46	53	65 - 114	14	30	*	*
Bis(2-chloroethoxy)methane	51	61	61 - 102	19	30	*	
Bis(2-chloroethyl)ether	50	58	58 - 102	15	30	*	
Bis(2-ethylhexyl) phthalate	45	57	60 - 125	23	30	*	*
Butyl benzyl phthalate	48	59	62 - 123	19	30	*	*
Caprolactam	33	38	44 - 129	13	30	*	*
Carbazole	47	57	62 - 107	19	30	*	*
Chrysene	50	63	64 - 105	22	30	*	*
Dibenz(a,h)anthracene	60	78	54 - 126	26	30		
Dibenzofuran	51	63	62 - 102	20	30	*	
Diethyl phthalate	58	69	61 - 110	18	30	*	
Dimethyl phthalate	59	72	64 - 108	19	30	*	
Di-n-butyl phthalate	54	65	62 - 114	19	30	*	
Di-n-octyl phthalate	37	46	52 - 137	21	30	*	*
Fluoranthene	46	55	59 - 109	16	30	*	*
Fluorene	49	58	65 - 108	18	30	*	*
Hexachlorobenzene	58	76	65 - 117	27	30	*	
Hexachlorobutadiene	60	73	60 - 105	20	30		
Hexachlorocyclopentadiene	55	65	37 - 119	16	30		
Hexachloroethane	48	58	60 - 94	18	30	*	*
Indeno[1,2,3-cd]pyrene	60	76	50 - 134	23	30		
Isophorone	53	65	60 - 102	20	30	*	
Naphthalene	50	62	64 - 99	19	30	*	*
Nitrobenzene	38	46	59 - 102	18	30	*	*
N-Nitrosodi-n-propylamine	52	60	56 - 112	16	30	*	
Pentachlorophenol	53	64	47 - 115	19	30		
Phenanthrene	49	59	66 - 105	16	30	*	*

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327462

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102313-D-1-H MS	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37304.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0322 g
Analysis Date:	10/09/2015 0949			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102313-D-1-I MSD	Analysis Batch:	460-327617	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327462	Lab File ID:	z37305.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0453 g
Analysis Date:	10/09/2015 1013			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1020			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phenol	48	56	55 - 99	16	30	*	
Pyrene	45	52	55 - 126	14	30	*	*

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	53	67	10 - 95
2-Fluorobiphenyl	56	71	27 - 84
2-Fluorophenol (Surr)	49	60	21 - 84
Nitrobenzene-d5 (Surr)	50	60	28 - 92
Phenol-d5 (Surr)	48	58	22 - 88
Terphenyl-d14 (Surr)	49	60	16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-327468

Method: 8270D
Preparation: 3546

Lab Sample ID:	MB 460-327468/1-A	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37326.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 1754	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1'-Biphenyl	330	U	28	330
1,2,4,5-Tetrachlorobenzene	330	U	25	330
2,2'-oxybis[1-chloropropane]	330	U	14	330
2,3,4,6-Tetrachlorophenol	330	U	31	330
2,4,5-Trichlorophenol	330	U	33	330
2,4,6-Trichlorophenol	130	U	9.4	130
2,4-Dichlorophenol	130	U	7.8	130
2,4-Dimethylphenol	330	U	73	330
2,4-Dinitrophenol	270	U	250	270
2,4-Dinitrotoluene	67	U	13	67
2,6-Dinitrotoluene	67	U	18	67
2-Chloronaphthalene	330	U	7.5	330
2-Chlorophenol	330	U	8.4	330
2-Methylnaphthalene	330	U	7.3	330
2-Methylphenol	330	U	14	330
2-Nitroaniline	330	U	11	330
2-Nitrophenol	330	U	11	330
3,3'-Dichlorobenzidine	130	U	37	130
3-Nitroaniline	330	U	9.8	330
4,6-Dinitro-2-methylphenol	270	U	88	270
4-Bromophenyl phenyl ether	330	U	10	330
4-Chloro-3-methylphenol	330	U	14	330
4-Chloroaniline	330	U	8.5	330
4-Chlorophenyl phenyl ether	330	U	9.9	330
4-Methylphenol	330	U	9.0	330
4-Nitroaniline	330	U	13	330
4-Nitrophenol	670	U	160	670
Acenaphthene	330	U	8.0	330
Acenaphthylene	330	U	8.5	330
Acetophenone	330	U	7.2	330
Anthracene	330	U	31	330
Atrazine	130	U	15	130
Benzaldehyde	330	U	25	330
Benzo[a]anthracene	33	U	28	33
Benzo[a]pyrene	33	U	10	33
Benzo[b]fluoranthene	33	U	13	33
Benzo[g,h,i]perylene	330	U	19	330
Benzo[k]fluoranthene	33	U	14	33
Bis(2-chloroethoxy)methane	330	U	10	330
Bis(2-chloroethyl)ether	33	U	7.8	33
Bis(2-ethylhexyl) phthalate	330	U	13	330
Butyl benzyl phthalate	330	U	10	330
Caprolactam	330	U	24	330
Carbazole	330	U	8.2	330
Chrysene	330	U	9.0	330

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-327468

Method: 8270D
Preparation: 3546

Lab Sample ID:	MB 460-327468/1-A	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37326.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 1754	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Dibenz(a,h)anthracene	33	U	17	33
Dibenzofuran	330	U	10	330
Diethyl phthalate	330	U	9.4	330
Dimethyl phthalate	330	U	9.6	330
Di-n-butyl phthalate	330	U	9.9	330
Di-n-octyl phthalate	330	U	17	330
Fluoranthene	330	U	9.8	330
Fluorene	330	U	7.2	330
Hexachlorobenzene	33	U	13	33
Hexachlorobutadiene	67	U	9.3	67
Hexachlorocyclopentadiene	330	U	21	330
Hexachloroethane	33	U	12	33
Indeno[1,2,3-cd]pyrene	33	U	22	33
Isophorone	130	U	7.1	130
Naphthalene	330	U	8.4	330
Nitrobenzene	33	U	10	33
N-Nitrosodi-n-propylamine	33	U	11	33
N-Nitrosodiphenylamine	330	U	30	330
Pentachlorophenol	270	U	40	270
Phenanthrene	330	U	8.8	330
Phenol	330	U	11	330
Pyrene	330	U	15	330

Surrogate	% Rec		Acceptance Limits
2,4,6-Tribromophenol (Surr)	100	*	10 - 95
2-Fluorobiphenyl	76		27 - 84
2-Fluorophenol (Surr)	77		21 - 84
Nitrobenzene-d5 (Surr)	76		28 - 92
Phenol-d5 (Surr)	78		22 - 88
Terphenyl-d14 (Surr)	80		16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-327468

Method: 8270D
Preparation: 3546

Lab Sample ID:	LCS 460-327468/3-A	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37325.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 1730	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1'-Biphenyl	3330	2800	84	64 - 103	
1,2,4,5-Tetrachlorobenzene	3330	2980	89	62 - 109	
2,2'-oxybis[1-chloropropane]	3330	2660	80	42 - 119	
2,3,4,6-Tetrachlorophenol	3330	3230	97	57 - 113	
2,4,5-Trichlorophenol	3330	2870	86	59 - 105	
2,4,6-Trichlorophenol	3330	3130	94	61 - 107	
2,4-Dichlorophenol	3330	2880	86	59 - 99	
2,4-Dimethylphenol	3330	2780	83	60 - 98	
2,4-Dinitrophenol	6670	5860	88	26 - 137	
2,4-Dinitrotoluene	3330	3200	96	61 - 118	
2,6-Dinitrotoluene	3330	3030	91	63 - 112	
2-Chloronaphthalene	3330	2900	87	63 - 102	
2-Chlorophenol	3330	2770	83	58 - 95	
2-Methylnaphthalene	3330	2870	86	64 - 102	
2-Methylphenol	3330	2890	87	56 - 99	
2-Nitroaniline	3330	2760	83	46 - 113	
2-Nitrophenol	3330	2940	88	63 - 103	
3,3'-Dichlorobenzidine	3330	1550	46	18 - 92	
3-Nitroaniline	3330	1880	56	23 - 89	
4,6-Dinitro-2-methylphenol	6670	6590	99	51 - 124	
4-Bromophenyl phenyl ether	3330	3210	96	65 - 114	
4-Chloro-3-methylphenol	3330	2980	89	58 - 108	
4-Chloroaniline	3330	1660	50	10 - 82	
4-Chlorophenyl phenyl ether	3330	3030	91	63 - 107	
4-Methylphenol	3330	2760	83	53 - 103	
4-Nitroaniline	3330	2770	83	44 - 109	
4-Nitrophenol	6670	5620	84	45 - 125	
Acenaphthene	3330	2680	81	59 - 102	
Acenaphthylene	3330	3060	92	63 - 102	
Acetophenone	3330	2750	83	56 - 107	
Anthracene	3330	2850	86	66 - 105	
Benzo[a]anthracene	3330	3080	92	65 - 106	
Benzo[a]pyrene	3330	3090	93	68 - 111	
Benzo[b]fluoranthene	3330	3040	91	67 - 116	
Benzo[g,h,i]perylene	3330	3140	94	49 - 124	
Benzo[k]fluoranthene	3330	2870	86	65 - 114	
Bis(2-chloroethoxy)methane	3330	2760	83	61 - 102	
Bis(2-chloroethyl)ether	3330	2750	83	58 - 102	
Bis(2-ethylhexyl) phthalate	3330	2860	86	60 - 125	
Butyl benzyl phthalate	3330	2900	87	62 - 123	
Carbazole	3330	2910	87	62 - 107	

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-327468

Method: 8270D
Preparation: 3546

Lab Sample ID:	LCS 460-327468/3-A	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37325.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/09/2015 1730	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chrysene	3330	3050	92	64 - 105	
Dibenz(a,h)anthracene	3330	3330	100	54 - 126	
Dibenzofuran	3330	3050	92	62 - 102	
Diethyl phthalate	3330	3080	92	61 - 110	
Dimethyl phthalate	3330	3140	94	64 - 108	
Di-n-butyl phthalate	3330	3010	90	62 - 114	
Di-n-octyl phthalate	3330	2810	84	52 - 137	
Fluoranthene	3330	2950	88	59 - 109	
Fluorene	3330	2850	85	65 - 108	
Hexachlorobenzene	3330	3330	100	65 - 117	
Hexachlorobutadiene	3330	3240	97	60 - 105	
Hexachlorocyclopentadiene	3330	3630	109	37 - 119	
Hexachloroethane	3330	2670	80	60 - 94	
Indeno[1,2,3-cd]pyrene	3330	3300	99	50 - 134	
Isophorone	3330	2880	86	60 - 102	
Naphthalene	3330	2850	86	64 - 99	
Nitrobenzene	3330	2690	81	59 - 102	
N-Nitrosodi-n-propylamine	3330	2720	82	56 - 112	
Pentachlorophenol	6670	6570	98	47 - 115	
Phenanthrene	3330	2890	87	66 - 105	
Phenol	3330	2800	84	55 - 99	
Pyrene	3330	2890	87	55 - 126	

Surrogate	% Rec		Acceptance Limits
2,4,6-Tribromophenol (Surr)	108	*	10 - 95
2-Fluorobiphenyl	90	*	27 - 84
2-Fluorophenol (Surr)	83		21 - 84
Nitrobenzene-d5 (Surr)	80		28 - 92
Phenol-d5 (Surr)	83		22 - 88
Terphenyl-d14 (Surr)	94		16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-327468

Method: 8270D
Preparation: 3546

Lab Sample ID:	LCS 460-327468/2-A	Analysis Batch:	460-327959	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37356.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/10/2015 1513	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Atrazine	6670	6690	100	41 - 116	
Benzaldehyde	6670	5100	76	55 - 116	
Caprolactam	6670	6090	91	44 - 129	

Surrogate	% Rec		Acceptance Limits
2,4,6-Tribromophenol (Surr)	135	*	10 - 95
2-Fluorobiphenyl	84		27 - 84
2-Fluorophenol (Surr)	76		21 - 84
Nitrobenzene-d5 (Surr)	83		28 - 92
Phenol-d5 (Surr)	75		22 - 88
Terphenyl-d14 (Surr)	100		16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327468

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102327-4	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37336.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0136 g
Analysis Date:	10/09/2015 2149			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102327-4	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37337.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0328 g
Analysis Date:	10/09/2015 2212			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1'-Biphenyl	63	71	64 - 103	11	30	*	
1,2,4,5-Tetrachlorobenzene	72	78	62 - 109	7	30		
2,2'-oxybis[1-chloropropane]	61	63	42 - 119	3	30		
2,3,4,6-Tetrachlorophenol	47	52	57 - 113	10	30	*	*
2,4,5-Trichlorophenol	51	55	59 - 105	6	30	*	*
2,4,6-Trichlorophenol	59	65	61 - 107	9	30	*	
2,4-Dichlorophenol	60	66	59 - 99	10	30		
2,4-Dimethylphenol	46	54	60 - 98	15	30	*	*
2,4-Dinitrophenol	5	5	26 - 137	9	30	*	*
2,4-Dinitrotoluene	73	83	61 - 118	13	30		
2,6-Dinitrotoluene	71	79	63 - 112	11	30		
2-Chloronaphthalene	63	71	63 - 102	11	30		
2-Chlorophenol	60	62	58 - 95	3	30		
2-Methylnaphthalene	66	73	64 - 102	10	30		
2-Methylphenol	60	63	56 - 99	4	30		
2-Nitroaniline	61	69	46 - 113	12	30		
2-Nitrophenol	61	67	63 - 103	9	30	*	
3,3'-Dichlorobenzidine	30	32	18 - 92	6	30		
3-Nitroaniline	52	57	23 - 89	9	30		
4,6-Dinitro-2-methylphenol	14	15	51 - 124	4	30	*	*
4-Bromophenyl phenyl ether	71	81	65 - 114	13	30		
4-Chloro-3-methylphenol	64	72	58 - 108	11	30		
4-Chloroaniline	32	36	10 - 82	11	30		
4-Chlorophenyl phenyl ether	68	76	63 - 107	11	30		
4-Methylphenol	60	63	53 - 103	4	30		
4-Nitroaniline	53	56	44 - 109	5	30		
4-Nitrophenol	49	52	45 - 125	7	30		
Acenaphthene	59	65	59 - 102	10	30		
Acenaphthylene	68	74	63 - 102	8	30		
Acetophenone	69	71	56 - 107	3	30		
Anthracene	65	73	66 - 105	13	30	*	
Atrazine	70	78	41 - 116	10	30		

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327468

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102327-4	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37336.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0136 g
Analysis Date:	10/09/2015 2149			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102327-4	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37337.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0328 g
Analysis Date:	10/09/2015 2212			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzaldehyde	54	58	55 - 116	6	30	*	
Benzo[a]anthracene	65	73	65 - 106	10	30		
Benzo[a]pyrene	64	74	68 - 111	14	30	*	
Benzo[b]fluoranthene	67	75	67 - 116	12	30		
Benzo[g,h,i]perylene	67	83	49 - 124	20	30		
Benzo[k]fluoranthene	58	67	65 - 114	14	30	*	
Bis(2-chloroethoxy)methane	62	69	61 - 102	10	30		
Bis(2-chloroethyl)ether	63	66	58 - 102	5	30		
Bis(2-ethylhexyl) phthalate	56	61	60 - 125	7	30	*	
Butyl benzyl phthalate	65	71	62 - 123	9	30		
Caprolactam	40	45	44 - 129	12	30	*	
Carbazole	62	66	62 - 107	6	30		
Chrysene	65	71	64 - 105	8	30		
Dibenz(a,h)anthracene	73	86	54 - 126	16	30		
Dibenzofuran	68	74	62 - 102	8	30		
Diethyl phthalate	72	80	61 - 110	10	30		
Dimethyl phthalate	73	82	64 - 108	12	30		
Di-n-butyl phthalate	67	76	62 - 114	12	30		
Di-n-octyl phthalate	56	61	52 - 137	8	30		
Fluoranthene	65	70	59 - 109	8	30		
Fluorene	65	71	65 - 108	8	30		
Hexachlorobenzene	74	85	65 - 117	13	30		
Hexachlorobutadiene	73	84	60 - 105	14	30		
Hexachlorocyclopentadiene	18	20	37 - 119	7	30	*	*
Hexachloroethane	60	61	60 - 94	3	30		
Indeno[1,2,3-cd]pyrene	75	87	50 - 134	14	30		
Isophorone	66	73	60 - 102	11	30		
Naphthalene	66	73	64 - 99	10	30		
Nitrobenzene	55	63	59 - 102	13	30	*	
N-Nitrosodi-n-propylamine	62	66	56 - 112	6	30		
Pentachlorophenol	25	28	47 - 115	10	30	*	*
Phenanthrene	66	73	66 - 105	11	30		

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-327468

Method: 8270D
Preparation: 3546

MS Lab Sample ID:	460-102327-4	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37336.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0136 g
Analysis Date:	10/09/2015 2149			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	460-102327-4	Analysis Batch:	460-327819	Instrument ID:	CBNAMS11
Client Matrix:	Solid	Prep Batch:	460-327468	Lab File ID:	z37337.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0328 g
Analysis Date:	10/09/2015 2212			Final Weight/Volume:	1 mL
Prep Date:	10/08/2015 1025			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phenol	61	64	55 - 99	4	30		
Pyrene	65	71	55 - 126	8	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2,4,6-Tribromophenol (Surr)	65	72	10 - 95
2-Fluorobiphenyl	66	76	27 - 84
2-Fluorophenol (Surr)	59	62	21 - 84
Nitrobenzene-d5 (Surr)	59	66	28 - 92
Phenol-d5 (Surr)	61	65	22 - 88
Terphenyl-d14 (Surr)	68	75	16 - 114

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-328102

Method: 8081B
Preparation: 3546

Lab Sample ID:	MB 460-328102/1-A	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Client Matrix:	Solid	Prep Batch:	460-328102	Lab File ID:	PR238875.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/12/2015 1252	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1441			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
4,4'-DDD	6.7	U	0.88	6.7
4,4'-DDE	6.7	U	0.97	6.7
4,4'-DDT	6.7	U	0.69	6.7
Aldrin	6.7	U	0.81	6.7
alpha-BHC	2.0	U	0.61	2.0
beta-BHC	2.0	U	0.65	2.0
Chlordane (technical)	67	U	30	67
delta-BHC	2.0	U	0.73	2.0
Dieldrin	2.0	U	0.87	2.0
Endosulfan I	6.7	U	0.93	6.7
Endosulfan II	6.7	U	1.1	6.7
Endosulfan sulfate	6.7	U	0.78	6.7
Endrin	6.7	U	0.85	6.7
Endrin aldehyde	6.7	U	0.83	6.7
Endrin ketone	6.7	U	0.93	6.7
gamma-BHC (Lindane)	2.0	U	0.60	2.0
Heptachlor	6.7	U	0.86	6.7
Heptachlor epoxide	6.7	U	1.3	6.7
Methoxychlor	6.7	U	1.4	6.7
gamma-Chlordane	6.7	U	1.5	6.7
Toxaphene	67	U	20	67
alpha-Chlordane	6.7	U	1.1	6.7

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	101	55 - 148
Tetrachloro-m-xylene	107	55 - 139

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	100	55 - 148
Tetrachloro-m-xylene	104	55 - 139

Lab Control Sample - Batch: 460-328102 **Method: 8081B**
Preparation: 3546

Lab Sample ID:	LCS 460-328102/2-A	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Client Matrix:	Solid	Prep Batch:	460-328102	Lab File ID:	PR238876.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/12/2015 1306	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1441			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4,4'-DDD	133	129	97	61 - 140	
4,4'-DDE	133	131	98	61 - 135	
4,4'-DDT	133	132	99	59 - 133	
Aldrin	133	135	101	61 - 133	
alpha-BHC	133	137	103	61 - 137	
beta-BHC	133	119	89	59 - 136	
delta-BHC	133	134	101	60 - 139	
Dieldrin	133	134	100	61 - 137	
Endosulfan I	133	129	96	60 - 135	
Endosulfan II	133	128	96	61 - 130	
Endosulfan sulfate	133	125	93	60 - 129	
Endrin	133	129	97	59 - 133	
Endrin aldehyde	133	129	97	57 - 131	
Endrin ketone	133	116	87	57 - 138	
gamma-BHC (Lindane)	133	141	106	61 - 138	
Heptachlor	133	137	103	61 - 135	
Heptachlor epoxide	133	130	98	61 - 129	
Methoxychlor	133	123	92	60 - 129	
gamma-Chlordane	133	130	97	60 - 131	
alpha-Chlordane	133	129	97	57 - 136	

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	95	55 - 148
Tetrachloro-m-xylene	103	55 - 139

Lab Control Sample - Batch: 460-328102 **Method: 8081B**
Preparation: 3546

Lab Sample ID:	LCS 460-328102/2-A	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Client Matrix:	Solid	Prep Batch:	460-328102	Lab File ID:	PR238876.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/12/2015 1306	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1441			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4,4'-DDD	133	125	94	61 - 140	
4,4'-DDE	133	128	96	61 - 135	
4,4'-DDT	133	127	95	59 - 133	
Aldrin	133	125	94	61 - 133	

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-328102

Method: 8081B
Preparation: 3546

Lab Sample ID:	LCS 460-328102/2-A	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Client Matrix:	Solid	Prep Batch:	460-328102	Lab File ID:	PR238876.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/12/2015 1306	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1441			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
alpha-BHC	133	131	98	61 - 137	
beta-BHC	133	116	87	59 - 136	
delta-BHC	133	130	97	60 - 139	
Dieldrin	133	131	98	61 - 137	
Endosulfan I	133	127	95	60 - 135	
Endosulfan II	133	124	93	61 - 130	
Endosulfan sulfate	133	123	92	60 - 129	
Endrin	133	126	95	59 - 133	
Endrin aldehyde	133	126	94	57 - 131	
Endrin ketone	133	114	85	57 - 138	
gamma-BHC (Lindane)	133	133	99	61 - 138	
Heptachlor	133	131	98	61 - 135	
Heptachlor epoxide	133	128	96	61 - 129	
Methoxychlor	133	123	92	60 - 129	
gamma-Chlordane	133	127	95	60 - 131	
alpha-Chlordane	133	126	95	57 - 136	

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	93	55 - 148
Tetrachloro-m-xylene	97	55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-328102

Method: 8081B
Preparation: 3546

MS Lab Sample ID:	460-102318-A-6-E MS	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Client Matrix:	Solid	Prep Batch:	460-328102	Lab File ID:	PR238877.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0032 g
Analysis Date:	10/12/2015 1319			Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1441			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	460-102318-A-6-F MSD	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Client Matrix:	Solid	Prep Batch:	460-328102	Lab File ID:	PR238878.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0484 g
Analysis Date:	10/12/2015 1332			Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1441			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4,4'-DDD	94	93	61 - 140	1	30		
4,4'-DDE	94	94	61 - 135	1	30		
4,4'-DDT	95	94	59 - 133	1	30		
Aldrin	96	96	61 - 133	0	30		
alpha-BHC	97	95	61 - 137	2	30		
beta-BHC	87	86	59 - 136	1	30		
delta-BHC	96	93	60 - 139	3	30		
Dieldrin	96	96	61 - 137	1	30		
Endosulfan I	92	92	60 - 135	0	30		
Endosulfan II	92	92	61 - 130	1	30		
Endosulfan sulfate	91	88	60 - 129	4	30		
Endrin	93	92	59 - 133	2	30		
Endrin aldehyde	92	92	57 - 131	1	30		
Endrin ketone	84	80	57 - 138	5	30		
gamma-BHC (Lindane)	98	95	61 - 138	3	30		
Heptachlor	97	96	61 - 135	2	30		
Heptachlor epoxide	93	93	61 - 129	0	30		
Methoxychlor	89	88	60 - 129	1	30		
gamma-Chlordane	93	93	60 - 131	0	30		
alpha-Chlordane	92	92	57 - 136	0	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCB Decachlorobiphenyl	91	93	55 - 148
Tetrachloro-m-xylene	96	99	55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-328102

Method: 8081B
Preparation: 3546

MS Lab Sample ID:	460-102318-A-6-E MS	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Client Matrix:	Solid	Prep Batch:	460-328102	Lab File ID:	PR238877.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0032 g
Analysis Date:	10/12/2015 1319			Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1441			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

MSD Lab Sample ID:	460-102318-A-6-F MSD	Analysis Batch:	460-328266	Instrument ID:	CPESTGC5
Client Matrix:	Solid	Prep Batch:	460-328102	Lab File ID:	PR238878.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0484 g
Analysis Date:	10/12/2015 1332			Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1441			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4,4'-DDD	91	90	61 - 140	1	30		
4,4'-DDE	92	92	61 - 135	1	30		
4,4'-DDT	92	91	59 - 133	2	30		
Aldrin	90	89	61 - 133	2	30		
alpha-BHC	94	91	61 - 137	3	30		
beta-BHC	86	86	59 - 136	1	30		
delta-BHC	94	90	60 - 139	5	30		
Dieldrin	94	94	61 - 137	1	30		
Endosulfan I	92	91	60 - 135	2	30		
Endosulfan II	90	89	61 - 130	1	30		
Endosulfan sulfate	89	87	60 - 129	3	30		
Endrin	91	90	59 - 133	2	30		
Endrin aldehyde	90	89	57 - 131	1	30		
Endrin ketone	83	79	57 - 138	4	30		
gamma-BHC (Lindane)	95	92	61 - 138	4	30		
Heptachlor	94	91	61 - 135	3	30		
Heptachlor epoxide	92	91	61 - 129	2	30		
Methoxychlor	89	87	60 - 129	2	30		
gamma-Chlordane	92	91	60 - 131	1	30		
alpha-Chlordane	91	90	57 - 136	1	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCB Decachlorobiphenyl	91	91	55 - 148
Tetrachloro-m-xylene	93	92	55 - 139

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-328104

Method: 8082A
Preparation: 3546

Lab Sample ID:	MB 460-328104/1-A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-328104	Lab File ID:	VR503704.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/12/2015 1055	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1511			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Aroclor 1016	67	U	8.9	67
Aroclor 1221	67	U	8.9	67
Aroclor 1232	67	U	8.9	67
Aroclor 1242	67	U	8.9	67
Aroclor 1248	67	U	8.9	67
Aroclor 1254	67	U	9.2	67
Aroclor 1260	67	U	9.2	67
Aroclor-1262	67	U	9.2	67
Aroclor 1268	67	U	9.2	67
Polychlorinated biphenyls, Total	67	U	9.2	67

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	110	47 - 150

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	103	47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Lab Control Sample - Batch: 460-328104

Method: 8082A
Preparation: 3546

Lab Sample ID:	LCS 460-328104/2-A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-328104	Lab File ID:	VR503705.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/12/2015 1110	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1511			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	333	326	98	70 - 149	
Aroclor 1260	333	380	114	71 - 150	

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	107	47 - 150

Lab Control Sample - Batch: 460-328104

Method: 8082A
Preparation: 3546

Lab Sample ID:	LCS 460-328104/2-A	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-328104	Lab File ID:	VR503705.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0000 g
Analysis Date:	10/12/2015 1110	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1511			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	333	277	83	70 - 149	
Aroclor 1260	333	297	89	71 - 150	

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	87	47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-328104

Method: 8082A
Preparation: 3546

MS Lab Sample ID:	460-102318-A-6-H MS	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-328104	Lab File ID:	VR503706.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0051 g
Analysis Date:	10/12/2015 1126			Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1511			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	460-102318-A-6-I MSD	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-328104	Lab File ID:	VR503707.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0322 g
Analysis Date:	10/12/2015 1142			Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1511			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aroclor 1016	72	87	70 - 149	20	30		
Aroclor 1260	84	102	71 - 150	20	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCB Decachlorobiphenyl	77	98	47 - 150

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 460-328104

Method: 8082A
Preparation: 3546

MS Lab Sample ID:	460-102318-A-6-H MS	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-328104	Lab File ID:	VR503706.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0051 g
Analysis Date:	10/12/2015 1126			Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1511			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

MSD Lab Sample ID:	460-102318-A-6-I MSD	Analysis Batch:	460-328252	Instrument ID:	CPESTGC9
Client Matrix:	Solid	Prep Batch:	460-328104	Lab File ID:	VR503707.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	15.0322 g
Analysis Date:	10/12/2015 1142			Final Weight/Volume:	10 mL
Prep Date:	10/11/2015 1511			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	SECONDARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aroclor 1016	58	66	70 - 149	13	30	*	*
Aroclor 1260	74	72	71 - 150	3	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCB Decachlorobiphenyl	71	69	47 - 150

Client: AKRF Inc

Job Number: 460-102327-1

Method Blank - Batch: 460-327399

Method: 6010C
Preparation: 3050B

Lab Sample ID:	MB 460-327399/1-A ^2	Analysis Batch:	460-327514	Instrument ID:	ICP5
Client Matrix:	Solid	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	2.0	Leach Batch:	N/A	Initial Weight/Volume:	1.00 g
Analysis Date:	10/08/2015 1949	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Silver	1.0	U	0.18	1.0
Aluminum	20.0	U	10.3	20.0
Arsenic	1.5	U	0.49	1.5
Barium	20.0	U	0.72	20.0
Beryllium	0.20	U	0.17	0.20
Calcium	500	U	29.6	500
Cadmium	0.40	U	0.21	0.40
Cobalt	5.0	U	0.58	5.0
Chromium	1.0	U	0.48	1.0
Copper	2.5	U	0.65	2.5
Iron	15.0	U	11.3	15.0
Potassium	500	U	15.2	500
Magnesium	500	U	25.0	500
Manganese	1.5	U	0.53	1.5
Sodium	500	U	33.9	500
Nickel	4.0	U	0.73	4.0
Lead	1.0	U	0.39	1.0
Antimony	2.0	U	0.79	2.0
Selenium	2.0	U	0.69	2.0
Thallium	2.0	U	0.89	2.0
Vanadium	5.0	U	0.50	5.0
Zinc	3.0	U	0.73	3.0

Client: AKRF Inc

Job Number: 460-102327-1

LCS-Certified Reference Material - Batch: 460-327399

Method: 6010C
Preparation: 3050B

Lab Sample ID:	LCSSRM 460-327399/2-A	Analysis Batch:	460-327514	Instrument ID:	ICP5
Client Matrix:	Solid	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0	Leach Batch:	N/A	Initial Weight/Volume:	1.05 g
Analysis Date:	10/08/2015 1609	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Silver	40.9	37.39	91.4	75.1 - 124.7	
Aluminum	7930	6307	79.5	50.2 - 150.1	
Arsenic	98.5	92.53	93.9	77.8 - 122.8	
Barium	308	299.6	97.3	82.5 - 117.5	
Beryllium	66.0	63.94	96.9	83.0 - 116.8	
Calcium	6610	6198	93.8	83.7 - 116.2	
Cadmium	146	144.4	98.9	82.9 - 117.8	
Cobalt	162	162.7	100.4	83.3 - 116.0	
Chromium	182	181.0	99.5	79.7 - 120.3	
Copper	106	101.8	96.0	81.5 - 118.9	
Iron	14400	13980	97.1	44.1 - 155.6	
Potassium	2550	2170	85.1	69.0 - 130.6	
Magnesium	2640	2305	87.3	75.8 - 124.6	
Manganese	410	399.6	97.5	81.2 - 119.0	
Sodium	2480	2434	98.2	70.6 - 129.0	
Nickel	149	153.6	103.1	82.6 - 117.4	
Lead	130	125.6	96.6	82.3 - 117.7	
Antimony	105	81.94	78.0	0.1 - 201.0	
Selenium	154	143.5	93.2	77.9 - 122.1	
Thallium	175	188.8	107.9	78.3 - 121.1	
Vanadium	96.7	94.93	98.2	77.2 - 123.1	
Zinc	191	188.3	98.6	83.2 - 116.8	

Client: AKRF Inc

Job Number: 460-102327-1

Matrix Spike - Batch: 460-327399

Method: 6010C
Preparation: 3050B

Lab Sample ID:	460-102323-C-1-C MS ^4	Analysis Batch:	460-327514	Instrument ID:	ICP5
Client Matrix:	Solid	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0	Leach Batch:	N/A	Initial Weight/Volume:	1.03 g
Analysis Date:	10/08/2015 1547	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Silver	2.0	U	5.34	4.31	81	75 - 125	
Aluminum	4480		214	5583	515	75 - 125	4
Arsenic	4.6		214	179.2	82	75 - 125	
Barium	38.1	J	214	227.8	89	75 - 125	
Beryllium	0.41	U	5.34	5.00	94	75 - 125	
Calcium	1880		2140	4184	108	75 - 125	
Cadmium	0.82	U	5.34	4.68	88	75 - 125	
Cobalt	4.2	J	53.4	52.22	90	75 - 125	
Chromium	12.3		21.4	32.14	93	75 - 125	
Copper	38.0		26.7	56.52	69	75 - 125	N
Iron	13400		107	13290	-107	75 - 125	4
Potassium	564	J	2140	2323	82	75 - 125	
Magnesium	1740		2140	3754	94	75 - 125	
Manganese	237		53.4	282.5	86	75 - 125	4
Sodium	123	J	2140	1974	87	75 - 125	
Nickel	10.5		53.4	58.97	91	75 - 125	
Lead	95.7		53.4	133.7	71	75 - 125	N
Antimony	4.1	U	53.4	34.08	64	75 - 125	N
Selenium	4.1	U	214	174.6	82	75 - 125	
Thallium	4.1	U	214	197.9	93	75 - 125	
Vanadium	15.7		53.4	65.06	92	75 - 125	
Zinc	92.2		53.4	137.3	84	75 - 125	

Client: AKRF Inc

Job Number: 460-102327-1

Duplicate - Batch: 460-327399

Method: 6010C
Preparation: 3050B

Lab Sample ID:	460-102323-C-1-B DU ^4	Analysis Batch:	460-327514	Instrument ID:	ICP5
Client Matrix:	Solid	Prep Batch:	460-327399	Lab File ID:	10082015.asc
Dilution:	4.0	Leach Batch:	N/A	Initial Weight/Volume:	1.06 g
Analysis Date:	10/08/2015 1551	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/08/2015 0742				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Silver	2.0	U	2.1	NC	20	U
Aluminum	4480		5371	18	20	
Arsenic	4.6		5.22	13	20	
Barium	38.1	J	42.23	10	20	
Beryllium	0.41	U	0.42	NC	20	U
Calcium	1880		2259	18	20	
Cadmium	0.82	U	0.83	NC	20	U
Cobalt	4.2	J	5.01	18	20	J
Chromium	12.3		12.68	3	20	
Copper	38.0		37.64	0.9	20	
Iron	13400		17530	27	20	*
Potassium	564	J	729.4	25	20	J
Magnesium	1740		2294	27	20	
Manganese	237		281.5	17	20	
Sodium	123	J	177.1	36	20	J
Nickel	10.5		11.49	9	20	
Lead	95.7		85.50	11	20	
Antimony	4.1	U	4.2	NC	20	U
Selenium	4.1	U	4.2	NC	20	U
Thallium	4.1	U	4.2	NC	20	U
Vanadium	15.7		17.69	12	20	
Zinc	92.2		96.03	4	20	

Method Blank - Batch: 460-327989

Method: 7471B
Preparation: 7471B

Lab Sample ID:	MB 460-327989/1-A	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Client Matrix:	Solid	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	10/10/2015 1859	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.017	U	0.012	0.017

LCS-Certified Reference Material - Batch: 460-327989

Method: 7471B
Preparation: 7471B

Lab Sample ID:	LCSSRM 460-327989/2-A	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Client Matrix:	Solid	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	20	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	10/10/2015 1902	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	7.10	6.55	92.3	73.7 - 126.3	

Matrix Spike - Batch: 460-327989

Method: 7471B
Preparation: 7471B

Lab Sample ID:	460-102343-E-8-G MS	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Client Matrix:	Solid	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	10/10/2015 1909	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.019	U	0.0913	0.0871	95	80 - 120	

Client: AKRF Inc

Job Number: 460-102327-1

Duplicate - Batch: 460-327989

Method: 7471B
Preparation: 7471B

Lab Sample ID:	460-102343-E-8-F DU	Analysis Batch:	460-328029	Instrument ID:	LEEMAN5
Client Matrix:	Solid	Prep Batch:	460-327989	Lab File ID:	327988.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	10/10/2015 1906	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	10/10/2015 1231				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.019	U	0.019	NC	20	U

Client: AKRF Inc

Job Number: 460-102327-1

Duplicate - Batch: 460-327286

Method: Moisture
Preparation: N/A

Lab Sample ID:	460-102327-6	Analysis Batch:	460-327286	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/07/2015 1552	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	13.4	13.5	0.5	20	
Percent Solids	86.6	86.5	0.07	20	

Client: AKRF Inc

Job Number: 460-102327-1

Duplicate - Batch: 460-327296

Method: Moisture
Preparation: N/A

Lab Sample ID:	460-102321-A-4 DU	Analysis Batch:	460-327296	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/07/2015 1635	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	12.1	11.0	9	20	
Percent Solids	87.9	89.0	1	20	

TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: EMatamoros / CRuoplo	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-64155-39290.1
Client Contact: Steven Grens / Becky Kinal	Phone: 914 922 2397	E-Mail: melissa.haas@testamericainc.com		Page: Page of
Company: AKRF Inc				Job #: 102327
Address: 34 South Broadway Suite 314	Due Date Requested:	Analysis Requested		Preservation Codes:
City: White Plains	TAT Requested (days): 5 days standard			A - HCL, B - NaOH, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: NY, 10601				
Phone: 914-806-5650(Tel)	PO #: Project # 40525 -2002AB			
Email: sgrens@akrf.com / RKINAL@AKRF.COM	WO #:			Other:
Project Name: ver Hage Property / Amys Kitchen	Project #: 46018761			
Site: 121 Hartley Rd.	SSOW#:			

460-102327 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - TCL VOC	8270D - TCL SVOC	6010C/7471B - TAL Metals	8081B - Pesticides	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	A				
SB-9 (.5'-2.5')	10/6/15	1310	G	S			X	X	X	X	X	5	-1
SB-10 (1'-3')	10/6/15	1255	G	S			X	X	X	X	X	5	-2
SB-11 (.5'-2.5')	10/6/15	~~0945~~ 1335	G	S			X	X	X	X	X	5	-3
SB-12 (1'-3')	10/6/15	1225	G	S			X	X	X	X	X	5	-4
SB-13 (0.5'-2.5')	10/6/15	940	G	S			X	X	X	X	X	5	-5
SB-14 (1-3)	10/6/15	955	G	S			X	X	X	X	X	5	-6
~~SB-15 (0.5-2.5)~~	~~10/6/15~~	1050	G	S			X	X	X	X	X	5	
SB-16 (1-3)	10/6/15	1015	G	S			X	X	X	X	X	5	-7
SB-15 (6-8)	10/6/15	1145	G	S			X	X	X	X	X	5	-8

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Mon

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

SHORT HOLD

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/6/15 16:55	AKRF			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/7/15 09:30			10/7/15 09:30	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.6 / 3.6 - LG

TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: C Puglio / E Matamoros	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-64155-39290.1
Client Contact: Steven Grens / Becky Kinal	Phone: 914 922 2397	E-Mail: melissa.haas@testamericainc.com		Page: Page 2 of 2
Company: AKRF Inc				Job #: 10252?1
Address: 34 South Broadway Suite 314	Due Date Requested:	Analysis Requested		
City: White Plains	TAT Requested (days): 5 days standard			
State, Zip: NY, 10601				
Phone: 914-806-5650(Tel)	PO #: Project # 40525			
Email: sgrens@akrf.com / BKINAL@AKRF.com	WO #:			
Project Name: ver Hage Property	Project #: 46018761			
Site: 121 Hartley Rd, Goshen NY	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - TCL VOC	8270D - TCL SVOC	6010C/7471B - TAL Metals	8081B - Pesticides	8082A - PCBs	Total Number of containers	Special Instructions/Note:
Preservation Code:							N	N	A				
MW-1	10/6/15	1148	G	W			X					3	-9
MW-2	10/6/15	1310	G	W			X					3	-10
MW-3	10/6/15	0940	G	W			X					3	-11
MW-4	10/6/15	1526	G	W			X					3	-12
MW-5	10/6/15	1422	G	W			X					3	-13
												3	-14

5-Day RUSH

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/6/15 16:55	AKRF	fedex		
2	fedex	10/7/15 09:30			10/7/15 9:30	TAS
3						

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.6/36 - AS

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 102527

Number of Coolers: 1 IR Gun # 5

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.4 °C	3.6 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: KR Date: 10/1/15

Login Sample Receipt Checklist

Client: AKRF Inc

Job Number: 460-102327-1

Login Number: 102327
List Number: 1
Creator: Rivera, Kenneth

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6°C, IR #5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	See NCM
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

ANALYTICAL REPORT

Job Number: 200-30148-1

SDG Number: 200-30148

Job Description: ver Hage Property

For:
AKRF Inc
34 South Broadway
Suite 314
White Plains, NY 10601

Attention: Becky Kinal

Approved for release.
Stephanie D Sanders
Project Manager I
10/15/2015 9:35 AM

Stephanie D Sanders, Project Manager I
30 Community Drive, South Burlington, VT, 05403
(303)736-0196
stephanie.sanders@testamericainc.com
10/15/2015

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

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CASE NARRATIVE

Client: AKRF Inc

Project: ver Hage Property

Report Number: 200-30148-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 10/09/2015; the samples arrived in good condition.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The COC lists the flow controller asset ID in the canister ID column and the canister asset ID in the in the flow controller ID column for sample SV-4.

For sample SV-5 the COC lists the flow controller ID as 5027 the actual flow controller ID is 5207.

VOLATILE ORGANIC COMPOUNDS

Samples SV-1, SV-2, SV-3, SV-4 and SV-5 were analyzed for Volatile Organic Compounds in accordance with EPA Method TO-15. The samples were analyzed on 10/13/2015 and 10/14/2015.

Samples SV-1[4X], SV-2[4X], SV-3[3X], SV-3[30X], SV-4[2X], SV-4[20X], SV-5[3X] and SV-5[30X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AIR - GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Instrument ID: CHX.i Analysis Batch Number: 92823

Lab Sample ID: IC 200-92823/4 Client Sample ID:

Date Analyzed: 08/17/15 18:04 Lab File ID: 15313_04.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	3.81	Baseline	daiglep	08/18/15 09:13
1,1-Dichloroethane	8.71	Baseline	daiglep	08/18/15 09:13
Trichloroethene	12.74	Baseline	daiglep	08/18/15 09:13
Tetrachloroethene	16.58	Baseline	daiglep	08/18/15 09:13

Lab Sample ID: IC 200-92823/5 Client Sample ID:

Date Analyzed: 08/17/15 18:54 Lab File ID: 15313_05.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Chloropropene	7.12	Baseline	daiglep	08/18/15 09:17
Acetonitrile	7.28	Baseline	daiglep	08/18/15 09:17
tert-Butyl alcohol	7.70	Baseline	daiglep	08/18/15 09:17
Acrylonitrile	8.01	Baseline	daiglep	08/18/15 09:17
cis-1,2-Dichloroethene	9.81	Baseline	daiglep	08/18/15 09:17
Cyclohexane	10.65	Baseline	daiglep	08/18/15 09:17
1,1,1-Trichloroethane	10.69	Baseline	daiglep	08/18/15 09:17
1,2-Dichloroethane	11.60	Baseline	daiglep	08/18/15 09:17
n-Heptane	11.74	Baseline	daiglep	08/18/15 09:17
n-Butanol	12.72	Baseline	daiglep	08/18/15 09:17
1,2-Dichloropropane	13.33	Baseline	daiglep	08/18/15 09:17
Bromodichloromethane	13.90	Baseline	daiglep	08/18/15 09:17
Toluene	15.48	Baseline	daiglep	08/18/15 09:17
n-Octane	15.51	Baseline	daiglep	08/18/15 09:17
trans-1,3-Dichloropropene	16.10	Baseline	daiglep	08/18/15 09:17

AIR - GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Instrument ID: CHX.i Analysis Batch Number: 92823

Lab Sample ID: IC 200-92823/6 Client Sample ID:

Date Analyzed: 08/17/15 19:44 Lab File ID: 15313_06.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Cyclohexane	10.65	Baseline	daiglep	08/18/15 09:20
1,2-Dichloropropane	13.33	Baseline	daiglep	08/18/15 09:20

Lab Sample ID: IC 200-92823/7 Client Sample ID:

Date Analyzed: 08/17/15 20:33 Lab File ID: 15313_07.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,4-Trichlorobenzene	25.69	Baseline	daiglep	08/18/15 09:29
Hexachlorobutadiene	25.87	Baseline	daiglep	08/18/15 09:29
Naphthalene	26.22	Baseline	daiglep	08/18/15 09:29

AIR - GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Instrument ID: CHX.i Analysis Batch Number: 95422

Lab Sample ID: CCVIS 200-95422/3 Client Sample ID:

Date Analyzed: 10/13/15 10:38 Lab File ID: 16229_03.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Ethanol	5.92	Baseline	desjardin sb	10/13/15 11:51

Lab Sample ID: 200-30148-1 Client Sample ID: SV-1

Date Analyzed: 10/13/15 17:23 Lab File ID: 16229_11.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chloromethane	3.57	Baseline	desjardin sb	10/14/15 07:41
Methylene Chloride	7.43	Baseline	desjardin sb	10/14/15 07:41
Cyclohexane	10.65	Baseline	desjardin sb	10/14/15 07:41

Lab Sample ID: 200-30148-2 Client Sample ID: SV-2

Date Analyzed: 10/13/15 19:01 Lab File ID: 16229_13.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Cyclohexane	10.65	Baseline	desjardin sb	10/14/15 07:47
Trichloroethene	12.75	Baseline	desjardin sb	10/14/15 07:47

AIR - GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Instrument ID: CHX.i Analysis Batch Number: 95422

Lab Sample ID: 200-30148-3 Client Sample ID: SV-3

Date Analyzed: 10/13/15 20:40 Lab File ID: 16229_15.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Trichlorofluoromethane	5.25	Baseline	desjardin sb	10/14/15 07:54
Cyclohexane	10.64	Baseline	desjardin sb	10/14/15 07:54

Lab Sample ID: 200-30148-3 DL Client Sample ID: SV-3 DL

Date Analyzed: 10/13/15 21:29 Lab File ID: 16229_16.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
n-Heptane	11.77	Baseline	desjardin sb	10/14/15 07:56

Lab Sample ID: 200-30148-4 Client Sample ID: SV-4

Date Analyzed: 10/13/15 22:18 Lab File ID: 16229_17.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Cyclohexane	10.66	Baseline	desjardin sb	10/14/15 08:00
Tetrachloroethene	16.57	Baseline	desjardin sb	10/14/15 08:00

Lab Sample ID: 200-30148-4 DL Client Sample ID: SV-4 DL

Date Analyzed: 10/13/15 23:08 Lab File ID: 16229_18.D GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
n-Heptane	11.76	Baseline	desjardin sb	10/14/15 08:02

SAMPLE SUMMARY

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
200-30148-1	SV-1	Air	10/05/2015 1727	10/09/2015 1015
200-30148-2	SV-2	Air	10/05/2015 1742	10/09/2015 1015
200-30148-3	SV-3	Air	10/05/2015 1348	10/09/2015 1015
200-30148-4	SV-4	Air	10/05/2015 1515	10/09/2015 1015
200-30148-5	SV-5	Air	10/05/2015 1428	10/09/2015 1015

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-30148-1	**SV-1**					
Dichlorodifluoromethane		6.2		0.50	ppb v/v	TO-15
Dichlorodifluoromethane		30		2.5	ug/m3	TO-15
1,2-Dichlorotetrafluoroethane		1.3		0.20	ppb v/v	TO-15
1,2-Dichlorotetrafluoroethane		8.9		1.4	ug/m3	TO-15
n-Butane		15		0.50	ppb v/v	TO-15
n-Butane		35		1.2	ug/m3	TO-15
1,3-Butadiene		2.7		0.20	ppb v/v	TO-15
1,3-Butadiene		6.1		0.44	ug/m3	TO-15
Trichlorofluoromethane		0.32		0.20	ppb v/v	TO-15
Trichlorofluoromethane		1.8		1.1	ug/m3	TO-15
Acetone		110	D	20	ppb v/v	TO-15
Acetone		260	D	48	ug/m3	TO-15
tert-Butyl alcohol		7.4		5.0	ppb v/v	TO-15
tert-Butyl alcohol		22		15	ug/m3	TO-15
n-Hexane		1.2		0.20	ppb v/v	TO-15
n-Hexane		4.2		0.70	ug/m3	TO-15
Methyl Ethyl Ketone		6.0		0.50	ppb v/v	TO-15
Methyl Ethyl Ketone		18		1.5	ug/m3	TO-15
Cyclohexane		0.27		0.20	ppb v/v	TO-15
Cyclohexane		0.93		0.69	ug/m3	TO-15
Benzene		0.91		0.20	ppb v/v	TO-15
Benzene		2.9		0.64	ug/m3	TO-15
n-Heptane		1.7		0.20	ppb v/v	TO-15
n-Heptane		7.1		0.82	ug/m3	TO-15
methyl isobutyl ketone		3.7		0.50	ppb v/v	TO-15
methyl isobutyl ketone		15		2.0	ug/m3	TO-15
Toluene		4.5		0.20	ppb v/v	TO-15
Toluene		17		0.75	ug/m3	TO-15
Methyl Butyl Ketone (2-Hexanone)		1.5		0.50	ppb v/v	TO-15
Methyl Butyl Ketone (2-Hexanone)		6.1		2.0	ug/m3	TO-15
Ethylbenzene		1.5		0.20	ppb v/v	TO-15
Ethylbenzene		6.4		0.87	ug/m3	TO-15
m,p-Xylene		4.8		0.50	ppb v/v	TO-15
m,p-Xylene		21		2.2	ug/m3	TO-15
Xylene, o-		1.8		0.20	ppb v/v	TO-15
Xylene, o-		7.6		0.87	ug/m3	TO-15
Xylene (total)		6.6		0.70	ppb v/v	TO-15
Xylene (total)		29		3.0	ug/m3	TO-15
Styrene		0.74		0.20	ppb v/v	TO-15
Styrene		3.1		0.85	ug/m3	TO-15
n-Propylbenzene		0.38		0.20	ppb v/v	TO-15
n-Propylbenzene		1.9		0.98	ug/m3	TO-15
4-Ethyltoluene		0.54		0.20	ppb v/v	TO-15
4-Ethyltoluene		2.6		0.98	ug/m3	TO-15
1,3,5-Trimethylbenzene		0.52		0.20	ppb v/v	TO-15
1,3,5-Trimethylbenzene		2.5		0.98	ug/m3	TO-15

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
1,2,4-Trimethylbenzene		1.6		0.20	ppb v/v	TO-15
1,2,4-Trimethylbenzene		7.8		0.98	ug/m3	TO-15
4-Isopropyltoluene		0.37		0.20	ppb v/v	TO-15
4-Isopropyltoluene		2.0		1.1	ug/m3	TO-15

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-30148-2	**SV-2**					
Dichlorodifluoromethane		2.0		0.50	ppb v/v	TO-15
Dichlorodifluoromethane		9.7		2.5	ug/m3	TO-15
Chloromethane		8.2		0.50	ppb v/v	TO-15
Chloromethane		17		1.0	ug/m3	TO-15
n-Butane		22		0.50	ppb v/v	TO-15
n-Butane		52		1.2	ug/m3	TO-15
Vinyl chloride		1.0		0.20	ppb v/v	TO-15
Vinyl chloride		2.6		0.51	ug/m3	TO-15
1,3-Butadiene		2.9		0.20	ppb v/v	TO-15
1,3-Butadiene		6.4		0.44	ug/m3	TO-15
Chloroethane		0.65		0.50	ppb v/v	TO-15
Chloroethane		1.7		1.3	ug/m3	TO-15
Trichlorofluoromethane		0.37		0.20	ppb v/v	TO-15
Trichlorofluoromethane		2.1		1.1	ug/m3	TO-15
Acetone		81	D	20	ppb v/v	TO-15
Acetone		190	D	48	ug/m3	TO-15
tert-Butyl alcohol		5.9		5.0	ppb v/v	TO-15
tert-Butyl alcohol		18		15	ug/m3	TO-15
n-Hexane		1.5		0.20	ppb v/v	TO-15
n-Hexane		5.1		0.70	ug/m3	TO-15
Methyl Ethyl Ketone		4.1		0.50	ppb v/v	TO-15
Methyl Ethyl Ketone		12		1.5	ug/m3	TO-15
Cyclohexane		0.51		0.20	ppb v/v	TO-15
Cyclohexane		1.8		0.69	ug/m3	TO-15
2,2,4-Trimethylpentane		0.26		0.20	ppb v/v	TO-15
2,2,4-Trimethylpentane		1.2		0.93	ug/m3	TO-15
Benzene		5.7		0.20	ppb v/v	TO-15
Benzene		18		0.64	ug/m3	TO-15
n-Heptane		1.9		0.20	ppb v/v	TO-15
n-Heptane		7.6		0.82	ug/m3	TO-15
Methyl methacrylate		1.7		0.50	ppb v/v	TO-15
Methyl methacrylate		6.8		2.0	ug/m3	TO-15
methyl isobutyl ketone		1.9		0.50	ppb v/v	TO-15
methyl isobutyl ketone		7.9		2.0	ug/m3	TO-15
Toluene		4.5		0.20	ppb v/v	TO-15
Toluene		17		0.75	ug/m3	TO-15
Methyl Butyl Ketone (2-Hexanone)		0.59		0.50	ppb v/v	TO-15
Methyl Butyl Ketone (2-Hexanone)		2.4		2.0	ug/m3	TO-15
Ethylbenzene		1.2		0.20	ppb v/v	TO-15
Ethylbenzene		5.4		0.87	ug/m3	TO-15
m,p-Xylene		3.9		0.50	ppb v/v	TO-15
m,p-Xylene		17		2.2	ug/m3	TO-15
Xylene, o-		1.5		0.20	ppb v/v	TO-15
Xylene, o-		6.4		0.87	ug/m3	TO-15
Xylene (total)		5.4		0.70	ppb v/v	TO-15
Xylene (total)		23		3.0	ug/m3	TO-15

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
Styrene		0.55		0.20	ppb v/v	TO-15
Styrene		2.4		0.85	ug/m3	TO-15
n-Propylbenzene		0.29		0.20	ppb v/v	TO-15
n-Propylbenzene		1.4		0.98	ug/m3	TO-15
4-Ethyltoluene		0.44		0.20	ppb v/v	TO-15
4-Ethyltoluene		2.2		0.98	ug/m3	TO-15
1,3,5-Trimethylbenzene		0.39		0.20	ppb v/v	TO-15
1,3,5-Trimethylbenzene		1.9		0.98	ug/m3	TO-15
1,2,4-Trimethylbenzene		1.2		0.20	ppb v/v	TO-15
1,2,4-Trimethylbenzene		5.9		0.98	ug/m3	TO-15
4-Isopropyltoluene		0.33		0.20	ppb v/v	TO-15
4-Isopropyltoluene		1.8		1.1	ug/m3	TO-15
200-30148-3	**SV-3**					
Acetone		540	D	150	ppb v/v	TO-15
Acetone		1300	D	360	ug/m3	TO-15
n-Hexane		0.77		0.60	ppb v/v	TO-15
n-Hexane		2.7		2.1	ug/m3	TO-15
Methyl Ethyl Ketone		8.5		1.5	ppb v/v	TO-15
Methyl Ethyl Ketone		25		4.4	ug/m3	TO-15
n-Heptane		2.0		0.60	ppb v/v	TO-15
n-Heptane		8.2		2.5	ug/m3	TO-15
methyl isobutyl ketone		2.8		1.5	ppb v/v	TO-15
methyl isobutyl ketone		11		6.1	ug/m3	TO-15
Toluene		4.6		0.60	ppb v/v	TO-15
Toluene		17		2.3	ug/m3	TO-15
Methyl Butyl Ketone (2-Hexanone)		1.7		1.5	ppb v/v	TO-15
Methyl Butyl Ketone (2-Hexanone)		7.1		6.1	ug/m3	TO-15
Ethylbenzene		1.4		0.60	ppb v/v	TO-15
Ethylbenzene		5.9		2.6	ug/m3	TO-15
m,p-Xylene		5.1		1.5	ppb v/v	TO-15
m,p-Xylene		22		6.5	ug/m3	TO-15
Xylene, o-		2.0		0.60	ppb v/v	TO-15
Xylene, o-		8.9		2.6	ug/m3	TO-15
Xylene (total)		7.1		2.1	ppb v/v	TO-15
Xylene (total)		31		9.1	ug/m3	TO-15
4-Ethyltoluene		1.9		0.60	ppb v/v	TO-15
4-Ethyltoluene		9.2		2.9	ug/m3	TO-15
1,3,5-Trimethylbenzene		0.92		0.60	ppb v/v	TO-15
1,3,5-Trimethylbenzene		4.5		2.9	ug/m3	TO-15
1,2,4-Trimethylbenzene		2.3		0.60	ppb v/v	TO-15
1,2,4-Trimethylbenzene		11		2.9	ug/m3	TO-15

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-30148-4	**SV-4**					
Dichlorodifluoromethane		11		1.0	ppb v/v	TO-15
Dichlorodifluoromethane		56		4.9	ug/m3	TO-15
1,2-Dichlorotetrafluoroethane		1.3		0.40	ppb v/v	TO-15
1,2-Dichlorotetrafluoroethane		9.0		2.8	ug/m3	TO-15
n-Butane		3.0		1.0	ppb v/v	TO-15
n-Butane		7.1		2.4	ug/m3	TO-15
Trichlorofluoromethane		33		0.40	ppb v/v	TO-15
Trichlorofluoromethane		190		2.2	ug/m3	TO-15
Freon TF		2.6		0.40	ppb v/v	TO-15
Freon TF		20		3.1	ug/m3	TO-15
Acetone		370	D	100	ppb v/v	TO-15
Acetone		870	D	240	ug/m3	TO-15
tert-Butyl alcohol		16		10	ppb v/v	TO-15
tert-Butyl alcohol		49		30	ug/m3	TO-15
n-Hexane		0.54		0.40	ppb v/v	TO-15
n-Hexane		1.9		1.4	ug/m3	TO-15
Methyl Ethyl Ketone		6.5		1.0	ppb v/v	TO-15
Methyl Ethyl Ketone		19		2.9	ug/m3	TO-15
1,1,1-Trichloroethane		0.67		0.40	ppb v/v	TO-15
1,1,1-Trichloroethane		3.7		2.2	ug/m3	TO-15
Benzene		0.51		0.40	ppb v/v	TO-15
Benzene		1.6		1.3	ug/m3	TO-15
n-Heptane		1.2		0.40	ppb v/v	TO-15
n-Heptane		5.1		1.6	ug/m3	TO-15
methyl isobutyl ketone		2.1		1.0	ppb v/v	TO-15
methyl isobutyl ketone		8.4		4.1	ug/m3	TO-15
Toluene		4.4		0.40	ppb v/v	TO-15
Toluene		16		1.5	ug/m3	TO-15
Methyl Butyl Ketone (2-Hexanone)		1.4		1.0	ppb v/v	TO-15
Methyl Butyl Ketone (2-Hexanone)		5.8		4.1	ug/m3	TO-15
Ethylbenzene		1.5		0.40	ppb v/v	TO-15
Ethylbenzene		6.4		1.7	ug/m3	TO-15
m,p-Xylene		5.1		1.0	ppb v/v	TO-15
m,p-Xylene		22		4.3	ug/m3	TO-15
Xylene, o-		2.1		0.40	ppb v/v	TO-15
Xylene, o-		9.2		1.7	ug/m3	TO-15
Xylene (total)		7.2		1.4	ppb v/v	TO-15
Xylene (total)		31		6.1	ug/m3	TO-15
Styrene		0.80		0.40	ppb v/v	TO-15
Styrene		3.4		1.7	ug/m3	TO-15
n-Propylbenzene		0.42		0.40	ppb v/v	TO-15
n-Propylbenzene		2.1		2.0	ug/m3	TO-15
4-Ethyltoluene		0.57		0.40	ppb v/v	TO-15
4-Ethyltoluene		2.8		2.0	ug/m3	TO-15
1,3,5-Trimethylbenzene		0.61		0.40	ppb v/v	TO-15
1,3,5-Trimethylbenzene		3.0		2.0	ug/m3	TO-15

EXECUTIVE SUMMARY - Detections

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
1,2,4-Trimethylbenzene		1.7		0.40	ppb v/v	TO-15
1,2,4-Trimethylbenzene		8.3		2.0	ug/m3	TO-15
4-Isopropyltoluene		0.46		0.40	ppb v/v	TO-15
4-Isopropyltoluene		2.5		2.2	ug/m3	TO-15
200-30148-5	**SV-5**					
Dichlorodifluoromethane		5.7		1.5	ppb v/v	TO-15
Dichlorodifluoromethane		28		7.4	ug/m3	TO-15
n-Butane		6.8		1.5	ppb v/v	TO-15
n-Butane		16		3.6	ug/m3	TO-15
1,3-Butadiene		1.4		0.60	ppb v/v	TO-15
1,3-Butadiene		3.1		1.3	ug/m3	TO-15
Trichlorofluoromethane		2.4		0.60	ppb v/v	TO-15
Trichlorofluoromethane		13		3.4	ug/m3	TO-15
Acetone		700	D	150	ppb v/v	TO-15
Acetone		1700	D	360	ug/m3	TO-15
n-Hexane		1.2		0.60	ppb v/v	TO-15
n-Hexane		4.3		2.1	ug/m3	TO-15
Methyl Ethyl Ketone		10		1.5	ppb v/v	TO-15
Methyl Ethyl Ketone		31		4.4	ug/m3	TO-15
Benzene		1.1		0.60	ppb v/v	TO-15
Benzene		3.6		1.9	ug/m3	TO-15
n-Heptane		2.3		0.60	ppb v/v	TO-15
n-Heptane		9.5		2.5	ug/m3	TO-15
methyl isobutyl ketone		2.1		1.5	ppb v/v	TO-15
methyl isobutyl ketone		8.7		6.1	ug/m3	TO-15
Toluene		5.5		0.60	ppb v/v	TO-15
Toluene		21		2.3	ug/m3	TO-15
Methyl Butyl Ketone (2-Hexanone)		1.7		1.5	ppb v/v	TO-15
Methyl Butyl Ketone (2-Hexanone)		6.9		6.1	ug/m3	TO-15
Ethylbenzene		1.5		0.60	ppb v/v	TO-15
Ethylbenzene		6.6		2.6	ug/m3	TO-15
m,p-Xylene		5.5		1.5	ppb v/v	TO-15
m,p-Xylene		24		6.5	ug/m3	TO-15
Xylene, o-		2.2		0.60	ppb v/v	TO-15
Xylene, o-		9.7		2.6	ug/m3	TO-15
Xylene (total)		7.7		2.1	ppb v/v	TO-15
Xylene (total)		33		9.1	ug/m3	TO-15
4-Ethyltoluene		0.93		0.60	ppb v/v	TO-15
4-Ethyltoluene		4.6		2.9	ug/m3	TO-15
1,3,5-Trimethylbenzene		0.85		0.60	ppb v/v	TO-15
1,3,5-Trimethylbenzene		4.2		2.9	ug/m3	TO-15
1,2,4-Trimethylbenzene		2.3		0.60	ppb v/v	TO-15
1,2,4-Trimethylbenzene		11		2.9	ug/m3	TO-15

METHOD SUMMARY

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Description	Lab Location	Method	Preparation Method
Matrix: Air			
Volatile Organic Compounds in Ambient Air	TAL BUR	EPA TO-15	
Collection via Summa Canister	TAL BUR		Summa Canister

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

EPA = US Environmental Protection Agency

METHOD / ANALYST SUMMARY

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Method	Analyst	Analyst ID
EPA TO-15	Desjardins, William R	WRD

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_11.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1723			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1723			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	6.2		0.50
Freon 22	0.50	U	0.50
1,2-Dichlorotetrafluoroethane	1.3		0.20
Chloromethane	0.50	U	0.50
n-Butane	15		0.50
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	2.7		0.20
Bromomethane	0.20	U	0.20
Chloroethane	0.50	U	0.50
Bromoethene(Vinyl Bromide)	0.20	U	0.20
Trichlorofluoromethane	0.32		0.20
Freon TF	0.20	U	0.20
1,1-Dichloroethene	0.20	U	0.20
Acetone	120	E	5.0
Isopropyl alcohol	5.0	U	5.0
Carbon disulfide	0.50	U	0.50
3-Chloropropene	0.50	U	0.50
Methylene Chloride	0.50	U	0.50
tert-Butyl alcohol	7.4		5.0
Methyl tert-butyl ether	0.20	U	0.20
trans-1,2-Dichloroethene	0.20	U	0.20
n-Hexane	1.2		0.20
1,1-Dichloroethane	0.20	U	0.20
Methyl Ethyl Ketone	6.0		0.50
cis-1,2-Dichloroethene	0.20	U	0.20
1,2-Dichloroethene, Total	0.40	U	0.40
Chloroform	0.20	U	0.20
Tetrahydrofuran	5.0	U	5.0
1,1,1-Trichloroethane	0.20	U	0.20
Cyclohexane	0.27		0.20
Carbon tetrachloride	0.20	U	0.20
2,2,4-Trimethylpentane	0.20	U	0.20
Benzene	0.91		0.20
1,2-Dichloroethane	0.20	U	0.20
n-Heptane	1.7		0.20
Trichloroethene	0.20	U	0.20
Methyl methacrylate	0.50	U	0.50
1,2-Dichloropropane	0.20	U	0.20
1,4-Dioxane	5.0	U	5.0
Bromodichloromethane	0.20	U	0.20
cis-1,3-Dichloropropene	0.20	U	0.20
methyl isobutyl ketone	3.7		0.50
Toluene	4.5		0.20
trans-1,3-Dichloropropene	0.20	U	0.20
1,1,2-Trichloroethane	0.20	U	0.20
Tetrachloroethene	0.20	U	0.20

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_11.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1723			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1723			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	1.5		0.50
Dibromochloromethane	0.20	U	0.20
1,2-Dibromoethane	0.20	U	0.20
Chlorobenzene	0.20	U	0.20
Ethylbenzene	1.5		0.20
m,p-Xylene	4.8		0.50
Xylene, o-	1.8		0.20
Xylene (total)	6.6		0.70
Styrene	0.74		0.20
Bromoform	0.20	U	0.20
Cumene	0.20	U	0.20
1,1,2,2-Tetrachloroethane	0.20	U	0.20
n-Propylbenzene	0.38		0.20
4-Ethyltoluene	0.54		0.20
1,3,5-Trimethylbenzene	0.52		0.20
2-Chlorotoluene	0.20	U	0.20
tert-Butylbenzene	0.20	U	0.20
1,2,4-Trimethylbenzene	1.6		0.20
sec-Butylbenzene	0.20	U	0.20
4-Isopropyltoluene	0.37		0.20
1,3-Dichlorobenzene	0.20	U	0.20
1,4-Dichlorobenzene	0.20	U	0.20
Benzyl chloride	0.20	U	0.20
n-Butylbenzene	0.20	U	0.20
1,2-Dichlorobenzene	0.20	U	0.20
1,2,4-Trichlorobenzene	0.50	U	0.50
Hexachlorobutadiene	0.20	U	0.20
Naphthalene	0.50	U	0.50

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	30		2.5
Freon 22	1.8	U	1.8
1,2-Dichlorotetrafluoroethane	8.9		1.4
Chloromethane	1.0	U	1.0
n-Butane	35		1.2
Vinyl chloride	0.51	U	0.51
1,3-Butadiene	6.1		0.44
Bromomethane	0.78	U	0.78
Chloroethane	1.3	U	1.3
Bromoethene(Vinyl Bromide)	0.87	U	0.87
Trichlorofluoromethane	1.8		1.1
Freon TF	1.5	U	1.5
1,1-Dichloroethene	0.79	U	0.79
Acetone	290	E	12
Isopropyl alcohol	12	U	12
Carbon disulfide	1.6	U	1.6

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_11.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1723			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1723			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	1.6	U	1.6
Methylene Chloride	1.7	U	1.7
tert-Butyl alcohol	22		15
Methyl tert-butyl ether	0.72	U	0.72
trans-1,2-Dichloroethene	0.79	U	0.79
n-Hexane	4.2		0.70
1,1-Dichloroethane	0.81	U	0.81
Methyl Ethyl Ketone	18		1.5
cis-1,2-Dichloroethene	0.79	U	0.79
1,2-Dichloroethene, Total	1.6	U	1.6
Chloroform	0.98	U	0.98
Tetrahydrofuran	15	U	15
1,1,1-Trichloroethane	1.1	U	1.1
Cyclohexane	0.93		0.69
Carbon tetrachloride	1.3	U	1.3
2,2,4-Trimethylpentane	0.93	U	0.93
Benzene	2.9		0.64
1,2-Dichloroethane	0.81	U	0.81
n-Heptane	7.1		0.82
Trichloroethene	1.1	U	1.1
Methyl methacrylate	2.0	U	2.0
1,2-Dichloropropane	0.92	U	0.92
1,4-Dioxane	18	U	18
Bromodichloromethane	1.3	U	1.3
cis-1,3-Dichloropropene	0.91	U	0.91
methyl isobutyl ketone	15		2.0
Toluene	17		0.75
trans-1,3-Dichloropropene	0.91	U	0.91
1,1,2-Trichloroethane	1.1	U	1.1
Tetrachloroethene	1.4	U	1.4
Methyl Butyl Ketone (2-Hexanone)	6.1		2.0
Dibromochloromethane	1.7	U	1.7
1,2-Dibromoethane	1.5	U	1.5
Chlorobenzene	0.92	U	0.92
Ethylbenzene	6.4		0.87
m,p-Xylene	21		2.2
Xylene, o-	7.6		0.87
Xylene (total)	29		3.0
Styrene	3.1		0.85
Bromoform	2.1	U	2.1
Cumene	0.98	U	0.98
1,1,2,2-Tetrachloroethane	1.4	U	1.4
n-Propylbenzene	1.9		0.98
4-Ethyltoluene	2.6		0.98
1,3,5-Trimethylbenzene	2.5		0.98
2-Chlorotoluene	1.0	U	1.0

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_11.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1723			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1723			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	1.1	U	1.1
1,2,4-Trimethylbenzene	7.8		0.98
sec-Butylbenzene	1.1	U	1.1
4-Isopropyltoluene	2.0		1.1
1,3-Dichlorobenzene	1.2	U	1.2
1,4-Dichlorobenzene	1.2	U	1.2
Benzyl chloride	1.0	U	1.0
n-Butylbenzene	1.1	U	1.1
1,2-Dichlorobenzene	1.2	U	1.2
1,2,4-Trichlorobenzene	3.7	U	3.7
Hexachlorobutadiene	2.1	U	2.1
Naphthalene	2.6	U	2.6

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: **SV-1**

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_11.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1723			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1723			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 10**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
115-07-1	Propene	3.11	17	J N
	Unknown	4.14	9.6	J
541-05-9	Cyclotrisiloxane, hexamethyl-	16.07	9.8	J N
66-25-1	Hexanal	17.15	3.8	J N
110-43-0	2-Heptanone	19.99	2.2	J N
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	2.9	J N
620-14-4	Benzene, 1-ethyl-3-methyl-	21.18	2.1	J N
5989-27-5	D-Limonene	22.20	3.6	J N
1120-21-4	Undecane	22.89	2.2	J N
124-19-6	Nonanal	23.90	2.4	J N

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_12.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1812	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1812			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	5.5	D	2.0
Freon 22	2.0	U	2.0
1,2-Dichlorotetrafluoroethane	1.2	D	0.80
Chloromethane	2.0	U	2.0
n-Butane	13	D	2.0
Vinyl chloride	0.80	U	0.80
1,3-Butadiene	2.6	D	0.80
Bromomethane	0.80	U	0.80
Chloroethane	2.0	U	2.0
Bromoethene(Vinyl Bromide)	0.80	U	0.80
Trichlorofluoromethane	0.80	U	0.80
Freon TF	0.80	U	0.80
1,1-Dichloroethene	0.80	U	0.80
Acetone	110	D	20
Isopropyl alcohol	20	U	20
Carbon disulfide	2.0	U	2.0
3-Chloropropene	2.0	U	2.0
Methylene Chloride	2.0	U	2.0
tert-Butyl alcohol	20	U	20
Methyl tert-butyl ether	0.80	U	0.80
trans-1,2-Dichloroethene	0.80	U	0.80
n-Hexane	1.1	D	0.80
1,1-Dichloroethane	0.80	U	0.80
Methyl Ethyl Ketone	5.4	D	2.0
cis-1,2-Dichloroethene	0.80	U	0.80
1,2-Dichloroethene, Total	1.6	U	1.6
Chloroform	0.80	U	0.80
Tetrahydrofuran	20	U	20
1,1,1-Trichloroethane	0.80	U	0.80
Cyclohexane	0.80	U	0.80
Carbon tetrachloride	0.80	U	0.80
2,2,4-Trimethylpentane	0.80	U	0.80
Benzene	0.86	D	0.80
1,2-Dichloroethane	0.80	U	0.80
n-Heptane	1.5	D	0.80
Trichloroethene	0.80	U	0.80
Methyl methacrylate	2.0	U	2.0
1,2-Dichloropropane	0.80	U	0.80
1,4-Dioxane	20	U	20
Bromodichloromethane	0.80	U	0.80
cis-1,3-Dichloropropene	0.80	U	0.80
methyl isobutyl ketone	3.3	D	2.0
Toluene	4.4	D	0.80
trans-1,3-Dichloropropene	0.80	U	0.80
1,1,2-Trichloroethane	0.80	U	0.80
Tetrachloroethene	0.80	U	0.80

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_12.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1812	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1812			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	2.0	U	2.0
Dibromochloromethane	0.80	U	0.80
1,2-Dibromoethane	0.80	U	0.80
Chlorobenzene	0.80	U	0.80
Ethylbenzene	1.4	D	0.80
m,p-Xylene	4.6	D	2.0
Xylene, o-	1.6	D	0.80
Xylene (total)	6.2	D	2.8
Styrene	0.80	U	0.80
Bromoform	0.80	U	0.80
Cumene	0.80	U	0.80
1,1,2,2-Tetrachloroethane	0.80	U	0.80
n-Propylbenzene	0.80	U	0.80
4-Ethyltoluene	0.80	U	0.80
1,3,5-Trimethylbenzene	0.80	U	0.80
2-Chlorotoluene	0.80	U	0.80
tert-Butylbenzene	0.80	U	0.80
1,2,4-Trimethylbenzene	1.5	D	0.80
sec-Butylbenzene	0.80	U	0.80
4-Isopropyltoluene	0.80	U	0.80
1,3-Dichlorobenzene	0.80	U	0.80
1,4-Dichlorobenzene	0.80	U	0.80
Benzyl chloride	0.80	U	0.80
n-Butylbenzene	0.80	U	0.80
1,2-Dichlorobenzene	0.80	U	0.80
1,2,4-Trichlorobenzene	2.0	U	2.0
Hexachlorobutadiene	0.80	U	0.80
Naphthalene	2.0	U	2.0

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	27	D	9.9
Freon 22	7.1	U	7.1
1,2-Dichlorotetrafluoroethane	8.4	D	5.6
Chloromethane	4.1	U	4.1
n-Butane	32	D	4.8
Vinyl chloride	2.0	U	2.0
1,3-Butadiene	5.7	D	1.8
Bromomethane	3.1	U	3.1
Chloroethane	5.3	U	5.3
Bromoethene(Vinyl Bromide)	3.5	U	3.5
Trichlorofluoromethane	4.5	U	4.5
Freon TF	6.1	U	6.1
1,1-Dichloroethene	3.2	U	3.2
Acetone	260	D	48
Isopropyl alcohol	49	U	49
Carbon disulfide	6.2	U	6.2

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_12.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1812	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1812			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	6.3	U	6.3
Methylene Chloride	6.9	U	6.9
tert-Butyl alcohol	61	U	61
Methyl tert-butyl ether	2.9	U	2.9
trans-1,2-Dichloroethene	3.2	U	3.2
n-Hexane	4.0	D	2.8
1,1-Dichloroethane	3.2	U	3.2
Methyl Ethyl Ketone	16	D	5.9
cis-1,2-Dichloroethene	3.2	U	3.2
1,2-Dichloroethene, Total	6.3	U	6.3
Chloroform	3.9	U	3.9
Tetrahydrofuran	59	U	59
1,1,1-Trichloroethane	4.4	U	4.4
Cyclohexane	2.8	U	2.8
Carbon tetrachloride	5.0	U	5.0
2,2,4-Trimethylpentane	3.7	U	3.7
Benzene	2.8	D	2.6
1,2-Dichloroethane	3.2	U	3.2
n-Heptane	6.1	D	3.3
Trichloroethene	4.3	U	4.3
Methyl methacrylate	8.2	U	8.2
1,2-Dichloropropane	3.7	U	3.7
1,4-Dioxane	72	U	72
Bromodichloromethane	5.4	U	5.4
cis-1,3-Dichloropropene	3.6	U	3.6
methyl isobutyl ketone	14	D	8.2
Toluene	16	D	3.0
trans-1,3-Dichloropropene	3.6	U	3.6
1,1,2-Trichloroethane	4.4	U	4.4
Tetrachloroethene	5.4	U	5.4
Methyl Butyl Ketone (2-Hexanone)	8.2	U	8.2
Dibromochloromethane	6.8	U	6.8
1,2-Dibromoethane	6.1	U	6.1
Chlorobenzene	3.7	U	3.7
Ethylbenzene	6.1	D	3.5
m,p-Xylene	20	D	8.7
Xylene, o-	7.2	D	3.5
Xylene (total)	27	D	12
Styrene	3.4	U	3.4
Bromoform	8.3	U	8.3
Cumene	3.9	U	3.9
1,1,2,2-Tetrachloroethane	5.5	U	5.5
n-Propylbenzene	3.9	U	3.9
4-Ethyltoluene	3.9	U	3.9
1,3,5-Trimethylbenzene	3.9	U	3.9
2-Chlorotoluene	4.1	U	4.1

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_12.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1812	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1812			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	4.4	U	4.4
1,2,4-Trimethylbenzene	7.3	D	3.9
sec-Butylbenzene	4.4	U	4.4
4-Isopropyltoluene	4.4	U	4.4
1,3-Dichlorobenzene	4.8	U	4.8
1,4-Dichlorobenzene	4.8	U	4.8
Benzyl chloride	4.1	U	4.1
n-Butylbenzene	4.4	U	4.4
1,2-Dichlorobenzene	4.8	U	4.8
1,2,4-Trichlorobenzene	15	U	15
Hexachlorobutadiene	8.5	U	8.5
Naphthalene	10	U	10

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-1

Lab Sample ID: 200-30148-1
Client Matrix: Air

Date Sampled: 10/05/2015 1727
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_12.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1812	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1812			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 2**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
115-07-1	Propene	3.10	19	D J N
541-05-9	Cyclotrisiloxane, hexamethyl-	16.09	10	D J N

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_13.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1901			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1901			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	2.0		0.50
Freon 22	0.50	U	0.50
1,2-Dichlorotetrafluoroethane	0.20	U	0.20
Chloromethane	8.2		0.50
n-Butane	22		0.50
Vinyl chloride	1.0		0.20
1,3-Butadiene	2.9		0.20
Bromomethane	0.20	U	0.20
Chloroethane	0.65		0.50
Bromoethene(Vinyl Bromide)	0.20	U	0.20
Trichlorofluoromethane	0.37		0.20
Freon TF	0.20	U	0.20
1,1-Dichloroethene	0.20	U	0.20
Acetone	87	E	5.0
Isopropyl alcohol	5.0	U	5.0
Carbon disulfide	0.50	U	0.50
3-Chloropropene	0.50	U	0.50
Methylene Chloride	0.50	U	0.50
tert-Butyl alcohol	5.9		5.0
Methyl tert-butyl ether	0.20	U	0.20
trans-1,2-Dichloroethene	0.20	U	0.20
n-Hexane	1.5		0.20
1,1-Dichloroethane	0.20	U	0.20
Methyl Ethyl Ketone	4.1		0.50
cis-1,2-Dichloroethene	0.20	U	0.20
1,2-Dichloroethene, Total	0.40	U	0.40
Chloroform	0.20	U	0.20
Tetrahydrofuran	5.0	U	5.0
1,1,1-Trichloroethane	0.20	U	0.20
Cyclohexane	0.51		0.20
Carbon tetrachloride	0.20	U	0.20
2,2,4-Trimethylpentane	0.26		0.20
Benzene	5.7		0.20
1,2-Dichloroethane	0.20	U	0.20
n-Heptane	1.9		0.20
Trichloroethene	0.20	U	0.20
Methyl methacrylate	1.7		0.50
1,2-Dichloropropane	0.20	U	0.20
1,4-Dioxane	5.0	U	5.0
Bromodichloromethane	0.20	U	0.20
cis-1,3-Dichloropropene	0.20	U	0.20
methyl isobutyl ketone	1.9		0.50
Toluene	4.5		0.20
trans-1,3-Dichloropropene	0.20	U	0.20
1,1,2-Trichloroethane	0.20	U	0.20
Tetrachloroethene	0.20	U	0.20

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_13.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1901			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1901			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	0.59		0.50
Dibromochloromethane	0.20	U	0.20
1,2-Dibromoethane	0.20	U	0.20
Chlorobenzene	0.20	U	0.20
Ethylbenzene	1.2		0.20
m,p-Xylene	3.9		0.50
Xylene, o-	1.5		0.20
Xylene (total)	5.4		0.70
Styrene	0.55		0.20
Bromoform	0.20	U	0.20
Cumene	0.20	U	0.20
1,1,2,2-Tetrachloroethane	0.20	U	0.20
n-Propylbenzene	0.29		0.20
4-Ethyltoluene	0.44		0.20
1,3,5-Trimethylbenzene	0.39		0.20
2-Chlorotoluene	0.20	U	0.20
tert-Butylbenzene	0.20	U	0.20
1,2,4-Trimethylbenzene	1.2		0.20
sec-Butylbenzene	0.20	U	0.20
4-Isopropyltoluene	0.33		0.20
1,3-Dichlorobenzene	0.20	U	0.20
1,4-Dichlorobenzene	0.20	U	0.20
Benzyl chloride	0.20	U	0.20
n-Butylbenzene	0.20	U	0.20
1,2-Dichlorobenzene	0.20	U	0.20
1,2,4-Trichlorobenzene	0.50	U	0.50
Hexachlorobutadiene	0.20	U	0.20
Naphthalene	0.50	U	0.50

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	9.7		2.5
Freon 22	1.8	U	1.8
1,2-Dichlorotetrafluoroethane	1.4	U	1.4
Chloromethane	17		1.0
n-Butane	52		1.2
Vinyl chloride	2.6		0.51
1,3-Butadiene	6.4		0.44
Bromomethane	0.78	U	0.78
Chloroethane	1.7		1.3
Bromoethene(Vinyl Bromide)	0.87	U	0.87
Trichlorofluoromethane	2.1		1.1
Freon TF	1.5	U	1.5
1,1-Dichloroethene	0.79	U	0.79
Acetone	210	E	12
Isopropyl alcohol	12	U	12
Carbon disulfide	1.6	U	1.6

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_13.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1901			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1901			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	1.6	U	1.6
Methylene Chloride	1.7	U	1.7
tert-Butyl alcohol	18		15
Methyl tert-butyl ether	0.72	U	0.72
trans-1,2-Dichloroethene	0.79	U	0.79
n-Hexane	5.1		0.70
1,1-Dichloroethane	0.81	U	0.81
Methyl Ethyl Ketone	12		1.5
cis-1,2-Dichloroethene	0.79	U	0.79
1,2-Dichloroethene, Total	1.6	U	1.6
Chloroform	0.98	U	0.98
Tetrahydrofuran	15	U	15
1,1,1-Trichloroethane	1.1	U	1.1
Cyclohexane	1.8		0.69
Carbon tetrachloride	1.3	U	1.3
2,2,4-Trimethylpentane	1.2		0.93
Benzene	18		0.64
1,2-Dichloroethane	0.81	U	0.81
n-Heptane	7.6		0.82
Trichloroethene	1.1	U	1.1
Methyl methacrylate	6.8		2.0
1,2-Dichloropropane	0.92	U	0.92
1,4-Dioxane	18	U	18
Bromodichloromethane	1.3	U	1.3
cis-1,3-Dichloropropene	0.91	U	0.91
methyl isobutyl ketone	7.9		2.0
Toluene	17		0.75
trans-1,3-Dichloropropene	0.91	U	0.91
1,1,2-Trichloroethane	1.1	U	1.1
Tetrachloroethene	1.4	U	1.4
Methyl Butyl Ketone (2-Hexanone)	2.4		2.0
Dibromochloromethane	1.7	U	1.7
1,2-Dibromoethane	1.5	U	1.5
Chlorobenzene	0.92	U	0.92
Ethylbenzene	5.4		0.87
m,p-Xylene	17		2.2
Xylene, o-	6.4		0.87
Xylene (total)	23		3.0
Styrene	2.4		0.85
Bromoform	2.1	U	2.1
Cumene	0.98	U	0.98
1,1,2,2-Tetrachloroethane	1.4	U	1.4
n-Propylbenzene	1.4		0.98
4-Ethyltoluene	2.2		0.98
1,3,5-Trimethylbenzene	1.9		0.98
2-Chlorotoluene	1.0	U	1.0

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_13.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1901			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1901			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	1.1	U	1.1
1,2,4-Trimethylbenzene	5.9		0.98
sec-Butylbenzene	1.1	U	1.1
4-Isopropyltoluene	1.8		1.1
1,3-Dichlorobenzene	1.2	U	1.2
1,4-Dichlorobenzene	1.2	U	1.2
Benzyl chloride	1.0	U	1.0
n-Butylbenzene	1.1	U	1.1
1,2-Dichlorobenzene	1.2	U	1.2
1,2,4-Trichlorobenzene	3.7	U	3.7
Hexachlorobutadiene	2.1	U	2.1
Naphthalene	2.6	U	2.6

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_13.D
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1901			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1901			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 10**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	3.10	9.8	J
	Unknown	4.13	6.4	J
	Unknown	17.15	2.0	J
110-43-0	2-Heptanone	19.99	1.1	J N
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	5.7	J N
	Unknown	22.04	1.5	J
5989-27-5	D-Limonene	22.21	2.0	J N
	Unknown	22.39	1.2	J
1120-21-4	Undecane	22.89	1.7	J N
112-40-3	Dodecane	24.53	1.5	J N

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_14.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1951	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1951			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	2.0	U	2.0
Freon 22	2.0	U	2.0
1,2-Dichlorotetrafluoroethane	0.80	U	0.80
Chloromethane	7.5	D	2.0
n-Butane	20	D	2.0
Vinyl chloride	0.92	D	0.80
1,3-Butadiene	2.5	D	0.80
Bromomethane	0.80	U	0.80
Chloroethane	2.0	U	2.0
Bromoethene(Vinyl Bromide)	0.80	U	0.80
Trichlorofluoromethane	0.80	U	0.80
Freon TF	0.80	U	0.80
1,1-Dichloroethene	0.80	U	0.80
Acetone	81	D	20
Isopropyl alcohol	20	U	20
Carbon disulfide	2.0	U	2.0
3-Chloropropene	2.0	U	2.0
Methylene Chloride	2.0	U	2.0
tert-Butyl alcohol	20	U	20
Methyl tert-butyl ether	0.80	U	0.80
trans-1,2-Dichloroethene	0.80	U	0.80
n-Hexane	1.4	D	0.80
1,1-Dichloroethane	0.80	U	0.80
Methyl Ethyl Ketone	3.6	D	2.0
cis-1,2-Dichloroethene	0.80	U	0.80
1,2-Dichloroethene, Total	1.6	U	1.6
Chloroform	0.80	U	0.80
Tetrahydrofuran	20	U	20
1,1,1-Trichloroethane	0.80	U	0.80
Cyclohexane	0.80	U	0.80
Carbon tetrachloride	0.80	U	0.80
2,2,4-Trimethylpentane	0.80	U	0.80
Benzene	5.3	D	0.80
1,2-Dichloroethane	0.80	U	0.80
n-Heptane	1.7	D	0.80
Trichloroethene	0.80	U	0.80
Methyl methacrylate	2.0	U	2.0
1,2-Dichloropropane	0.80	U	0.80
1,4-Dioxane	20	U	20
Bromodichloromethane	0.80	U	0.80
cis-1,3-Dichloropropene	0.80	U	0.80
methyl isobutyl ketone	2.2	D	2.0
Toluene	4.2	D	0.80
trans-1,3-Dichloropropene	0.80	U	0.80
1,1,2-Trichloroethane	0.80	U	0.80
Tetrachloroethene	0.80	U	0.80

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_14.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1951	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1951			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	2.0	U	2.0
Dibromochloromethane	0.80	U	0.80
1,2-Dibromoethane	0.80	U	0.80
Chlorobenzene	0.80	U	0.80
Ethylbenzene	1.2	D	0.80
m,p-Xylene	3.7	D	2.0
Xylene, o-	1.4	D	0.80
Xylene (total)	5.1	D	2.8
Styrene	0.80	U	0.80
Bromoform	0.80	U	0.80
Cumene	0.80	U	0.80
1,1,2,2-Tetrachloroethane	0.80	U	0.80
n-Propylbenzene	0.80	U	0.80
4-Ethyltoluene	0.80	U	0.80
1,3,5-Trimethylbenzene	0.80	U	0.80
2-Chlorotoluene	0.80	U	0.80
tert-Butylbenzene	0.80	U	0.80
1,2,4-Trimethylbenzene	1.0	D	0.80
sec-Butylbenzene	0.80	U	0.80
4-Isopropyltoluene	0.80	U	0.80
1,3-Dichlorobenzene	0.80	U	0.80
1,4-Dichlorobenzene	0.80	U	0.80
Benzyl chloride	0.80	U	0.80
n-Butylbenzene	0.80	U	0.80
1,2-Dichlorobenzene	0.80	U	0.80
1,2,4-Trichlorobenzene	2.0	U	2.0
Hexachlorobutadiene	0.80	U	0.80
Naphthalene	2.0	U	2.0

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	9.9	U	9.9
Freon 22	7.1	U	7.1
1,2-Dichlorotetrafluoroethane	5.6	U	5.6
Chloromethane	16	D	4.1
n-Butane	48	D	4.8
Vinyl chloride	2.4	D	2.0
1,3-Butadiene	5.6	D	1.8
Bromomethane	3.1	U	3.1
Chloroethane	5.3	U	5.3
Bromoethene(Vinyl Bromide)	3.5	U	3.5
Trichlorofluoromethane	4.5	U	4.5
Freon TF	6.1	U	6.1
1,1-Dichloroethene	3.2	U	3.2
Acetone	190	D	48
Isopropyl alcohol	49	U	49
Carbon disulfide	6.2	U	6.2

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_14.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1951	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1951			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	6.3	U	6.3
Methylene Chloride	6.9	U	6.9
tert-Butyl alcohol	61	U	61
Methyl tert-butyl ether	2.9	U	2.9
trans-1,2-Dichloroethene	3.2	U	3.2
n-Hexane	4.8	D	2.8
1,1-Dichloroethane	3.2	U	3.2
Methyl Ethyl Ketone	11	D	5.9
cis-1,2-Dichloroethene	3.2	U	3.2
1,2-Dichloroethene, Total	6.3	U	6.3
Chloroform	3.9	U	3.9
Tetrahydrofuran	59	U	59
1,1,1-Trichloroethane	4.4	U	4.4
Cyclohexane	2.8	U	2.8
Carbon tetrachloride	5.0	U	5.0
2,2,4-Trimethylpentane	3.7	U	3.7
Benzene	17	D	2.6
1,2-Dichloroethane	3.2	U	3.2
n-Heptane	7.0	D	3.3
Trichloroethene	4.3	U	4.3
Methyl methacrylate	8.2	U	8.2
1,2-Dichloropropane	3.7	U	3.7
1,4-Dioxane	72	U	72
Bromodichloromethane	5.4	U	5.4
cis-1,3-Dichloropropene	3.6	U	3.6
methyl isobutyl ketone	8.9	D	8.2
Toluene	16	D	3.0
trans-1,3-Dichloropropene	3.6	U	3.6
1,1,2-Trichloroethane	4.4	U	4.4
Tetrachloroethene	5.4	U	5.4
Methyl Butyl Ketone (2-Hexanone)	8.2	U	8.2
Dibromochloromethane	6.8	U	6.8
1,2-Dibromoethane	6.1	U	6.1
Chlorobenzene	3.7	U	3.7
Ethylbenzene	5.1	D	3.5
m,p-Xylene	16	D	8.7
Xylene, o-	6.0	D	3.5
Xylene (total)	22	D	12
Styrene	3.4	U	3.4
Bromoform	8.3	U	8.3
Cumene	3.9	U	3.9
1,1,2,2-Tetrachloroethane	5.5	U	5.5
n-Propylbenzene	3.9	U	3.9
4-Ethyltoluene	3.9	U	3.9
1,3,5-Trimethylbenzene	3.9	U	3.9
2-Chlorotoluene	4.1	U	4.1

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-2

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_14.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1951	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1951			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	4.4	U	4.4
1,2,4-Trimethylbenzene	5.1	D	3.9
sec-Butylbenzene	4.4	U	4.4
4-Isopropyltoluene	4.4	U	4.4
1,3-Dichlorobenzene	4.8	U	4.8
1,4-Dichlorobenzene	4.8	U	4.8
Benzyl chloride	4.1	U	4.1
n-Butylbenzene	4.4	U	4.4
1,2-Dichlorobenzene	4.8	U	4.8
1,2,4-Trichlorobenzene	15	U	15
Hexachlorobutadiene	8.5	U	8.5
Naphthalene	10	U	10

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: **SV-2**

Lab Sample ID: 200-30148-2
Client Matrix: Air

Date Sampled: 10/05/2015 1742
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_14.D
Dilution:	4.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/13/2015 1951	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1951			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 1**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	5.7	D J N

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-3

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_15.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2040			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2040			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	1.5	U	1.5
Freon 22	1.5	U	1.5
1,2-Dichlorotetrafluoroethane	0.60	U	0.60
Chloromethane	1.5	U	1.5
n-Butane	1.5	U	1.5
Vinyl chloride	0.60	U	0.60
1,3-Butadiene	0.60	U	0.60
Bromomethane	0.60	U	0.60
Chloroethane	1.5	U	1.5
Bromoethene(Vinyl Bromide)	0.60	U	0.60
Trichlorofluoromethane	0.60	U	0.60
Freon TF	0.60	U	0.60
1,1-Dichloroethene	0.60	U	0.60
Acetone	530	E	15
Isopropyl alcohol	15	U	15
Carbon disulfide	1.5	U	1.5
3-Chloropropene	1.5	U	1.5
Methylene Chloride	1.5	U	1.5
tert-Butyl alcohol	15	U	15
Methyl tert-butyl ether	0.60	U	0.60
trans-1,2-Dichloroethene	0.60	U	0.60
n-Hexane	0.77		0.60
1,1-Dichloroethane	0.60	U	0.60
Methyl Ethyl Ketone	8.5		1.5
cis-1,2-Dichloroethene	0.60	U	0.60
1,2-Dichloroethene, Total	1.2	U	1.2
Chloroform	0.60	U	0.60
Tetrahydrofuran	15	U	15
1,1,1-Trichloroethane	0.60	U	0.60
Cyclohexane	0.60	U	0.60
Carbon tetrachloride	0.60	U	0.60
2,2,4-Trimethylpentane	0.60	U	0.60
Benzene	0.60	U	0.60
1,2-Dichloroethane	0.60	U	0.60
n-Heptane	2.0		0.60
Trichloroethene	0.60	U	0.60
Methyl methacrylate	1.5	U	1.5
1,2-Dichloropropane	0.60	U	0.60
1,4-Dioxane	15	U	15
Bromodichloromethane	0.60	U	0.60
cis-1,3-Dichloropropene	0.60	U	0.60
methyl isobutyl ketone	2.8		1.5
Toluene	4.6		0.60
trans-1,3-Dichloropropene	0.60	U	0.60
1,1,2-Trichloroethane	0.60	U	0.60
Tetrachloroethene	0.60	U	0.60

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-3

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_15.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2040			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2040			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	1.7		1.5
Dibromochloromethane	0.60	U	0.60
1,2-Dibromoethane	0.60	U	0.60
Chlorobenzene	0.60	U	0.60
Ethylbenzene	1.4		0.60
m,p-Xylene	5.1		1.5
Xylene, o-	2.0		0.60
Xylene (total)	7.1		2.1
Styrene	0.60	U	0.60
Bromoform	0.60	U	0.60
Cumene	0.60	U	0.60
1,1,2,2-Tetrachloroethane	0.60	U	0.60
n-Propylbenzene	0.60	U	0.60
4-Ethyltoluene	1.9		0.60
1,3,5-Trimethylbenzene	0.92		0.60
2-Chlorotoluene	0.60	U	0.60
tert-Butylbenzene	0.60	U	0.60
1,2,4-Trimethylbenzene	2.3		0.60
sec-Butylbenzene	0.60	U	0.60
4-Isopropyltoluene	0.60	U	0.60
1,3-Dichlorobenzene	0.60	U	0.60
1,4-Dichlorobenzene	0.60	U	0.60
Benzyl chloride	0.60	U	0.60
n-Butylbenzene	0.60	U	0.60
1,2-Dichlorobenzene	0.60	U	0.60
1,2,4-Trichlorobenzene	1.5	U	1.5
Hexachlorobutadiene	0.60	U	0.60
Naphthalene	1.5	U	1.5

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	7.4	U	7.4
Freon 22	5.3	U	5.3
1,2-Dichlorotetrafluoroethane	4.2	U	4.2
Chloromethane	3.1	U	3.1
n-Butane	3.6	U	3.6
Vinyl chloride	1.5	U	1.5
1,3-Butadiene	1.3	U	1.3
Bromomethane	2.3	U	2.3
Chloroethane	4.0	U	4.0
Bromoethene(Vinyl Bromide)	2.6	U	2.6
Trichlorofluoromethane	3.4	U	3.4
Freon TF	4.6	U	4.6
1,1-Dichloroethene	2.4	U	2.4
Acetone	1300	E	36
Isopropyl alcohol	37	U	37
Carbon disulfide	4.7	U	4.7

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-3

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_15.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2040			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2040			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	4.7	U	4.7
Methylene Chloride	5.2	U	5.2
tert-Butyl alcohol	45	U	45
Methyl tert-butyl ether	2.2	U	2.2
trans-1,2-Dichloroethene	2.4	U	2.4
n-Hexane	2.7		2.1
1,1-Dichloroethane	2.4	U	2.4
Methyl Ethyl Ketone	25		4.4
cis-1,2-Dichloroethene	2.4	U	2.4
1,2-Dichloroethene, Total	4.8	U	4.8
Chloroform	2.9	U	2.9
Tetrahydrofuran	44	U	44
1,1,1-Trichloroethane	3.3	U	3.3
Cyclohexane	2.1	U	2.1
Carbon tetrachloride	3.8	U	3.8
2,2,4-Trimethylpentane	2.8	U	2.8
Benzene	1.9	U	1.9
1,2-Dichloroethane	2.4	U	2.4
n-Heptane	8.2		2.5
Trichloroethene	3.2	U	3.2
Methyl methacrylate	6.1	U	6.1
1,2-Dichloropropane	2.8	U	2.8
1,4-Dioxane	54	U	54
Bromodichloromethane	4.0	U	4.0
cis-1,3-Dichloropropene	2.7	U	2.7
methyl isobutyl ketone	11		6.1
Toluene	17		2.3
trans-1,3-Dichloropropene	2.7	U	2.7
1,1,2-Trichloroethane	3.3	U	3.3
Tetrachloroethene	4.1	U	4.1
Methyl Butyl Ketone (2-Hexanone)	7.1		6.1
Dibromochloromethane	5.1	U	5.1
1,2-Dibromoethane	4.6	U	4.6
Chlorobenzene	2.8	U	2.8
Ethylbenzene	5.9		2.6
m,p-Xylene	22		6.5
Xylene, o-	8.9		2.6
Xylene (total)	31		9.1
Styrene	2.6	U	2.6
Bromoform	6.2	U	6.2
Cumene	2.9	U	2.9
1,1,2,2-Tetrachloroethane	4.1	U	4.1
n-Propylbenzene	2.9	U	2.9
4-Ethyltoluene	9.2		2.9
1,3,5-Trimethylbenzene	4.5		2.9
2-Chlorotoluene	3.1	U	3.1

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-3

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_15.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2040			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2040			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	3.3	U	3.3
1,2,4-Trimethylbenzene	11		2.9
sec-Butylbenzene	3.3	U	3.3
4-Isopropyltoluene	3.3	U	3.3
1,3-Dichlorobenzene	3.6	U	3.6
1,4-Dichlorobenzene	3.6	U	3.6
Benzyl chloride	3.1	U	3.1
n-Butylbenzene	3.3	U	3.3
1,2-Dichlorobenzene	3.6	U	3.6
1,2,4-Trichlorobenzene	11	U	11
Hexachlorobutadiene	6.4	U	6.4
Naphthalene	7.9	U	7.9

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-3

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_15.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2040			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2040			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 10**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
115-11-7	1-Propene, 2-methyl-	3.74	25	J N
	Unknown	4.12	27	J
541-05-9	Cyclotrisiloxane, hexamethyl-	16.07	9.8	J N
7785-70-8	(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	11	J N
	Unknown	21.52	9.3	J
1072-05-5	Heptane, 2,6-dimethyl-	22.25	10	J N
	Unknown	22.47	11	J
	Unknown	22.82	9.4	J
	Unknown	22.91	11	J
17312-53-7	Decane, 3,6-dimethyl-	23.27	8.5	J N

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-3

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_16.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2129	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2129			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	15	U	15
Freon 22	15	U	15
1,2-Dichlorotetrafluoroethane	6.0	U	6.0
Chloromethane	15	U	15
n-Butane	15	U	15
Vinyl chloride	6.0	U	6.0
1,3-Butadiene	6.0	U	6.0
Bromomethane	6.0	U	6.0
Chloroethane	15	U	15
Bromoethene(Vinyl Bromide)	6.0	U	6.0
Trichlorofluoromethane	6.0	U	6.0
Freon TF	6.0	U	6.0
1,1-Dichloroethene	6.0	U	6.0
Acetone	540	D	150
Isopropyl alcohol	150	U	150
Carbon disulfide	15	U	15
3-Chloropropene	15	U	15
Methylene Chloride	15	U	15
tert-Butyl alcohol	150	U	150
Methyl tert-butyl ether	6.0	U	6.0
trans-1,2-Dichloroethene	6.0	U	6.0
n-Hexane	6.0	U	6.0
1,1-Dichloroethane	6.0	U	6.0
Methyl Ethyl Ketone	15	U	15
cis-1,2-Dichloroethene	6.0	U	6.0
1,2-Dichloroethene, Total	12	U	12
Chloroform	6.0	U	6.0
Tetrahydrofuran	150	U	150
1,1,1-Trichloroethane	6.0	U	6.0
Cyclohexane	6.0	U	6.0
Carbon tetrachloride	6.0	U	6.0
2,2,4-Trimethylpentane	6.0	U	6.0
Benzene	6.0	U	6.0
1,2-Dichloroethane	6.0	U	6.0
n-Heptane	6.0	U	6.0
Trichloroethene	6.0	U	6.0
Methyl methacrylate	15	U	15
1,2-Dichloropropane	6.0	U	6.0
1,4-Dioxane	150	U	150
Bromodichloromethane	6.0	U	6.0
cis-1,3-Dichloropropene	6.0	U	6.0
methyl isobutyl ketone	15	U	15
Toluene	6.0	U	6.0
trans-1,3-Dichloropropene	6.0	U	6.0
1,1,2-Trichloroethane	6.0	U	6.0
Tetrachloroethene	6.0	U	6.0

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-3

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_16.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2129	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2129			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	15	U	15
Dibromochloromethane	6.0	U	6.0
1,2-Dibromoethane	6.0	U	6.0
Chlorobenzene	6.0	U	6.0
Ethylbenzene	6.0	U	6.0
m,p-Xylene	15	U	15
Xylene, o-	6.0	U	6.0
Xylene (total)	21	U	21
Styrene	6.0	U	6.0
Bromoform	6.0	U	6.0
Cumene	6.0	U	6.0
1,1,2,2-Tetrachloroethane	6.0	U	6.0
n-Propylbenzene	6.0	U	6.0
4-Ethyltoluene	6.0	U	6.0
1,3,5-Trimethylbenzene	6.0	U	6.0
2-Chlorotoluene	6.0	U	6.0
tert-Butylbenzene	6.0	U	6.0
1,2,4-Trimethylbenzene	6.0	U	6.0
sec-Butylbenzene	6.0	U	6.0
4-Isopropyltoluene	6.0	U	6.0
1,3-Dichlorobenzene	6.0	U	6.0
1,4-Dichlorobenzene	6.0	U	6.0
Benzyl chloride	6.0	U	6.0
n-Butylbenzene	6.0	U	6.0
1,2-Dichlorobenzene	6.0	U	6.0
1,2,4-Trichlorobenzene	15	U	15
Hexachlorobutadiene	6.0	U	6.0
Naphthalene	15	U	15

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	74	U	74
Freon 22	53	U	53
1,2-Dichlorotetrafluoroethane	42	U	42
Chloromethane	31	U	31
n-Butane	36	U	36
Vinyl chloride	15	U	15
1,3-Butadiene	13	U	13
Bromomethane	23	U	23
Chloroethane	40	U	40
Bromoethene(Vinyl Bromide)	26	U	26
Trichlorofluoromethane	34	U	34
Freon TF	46	U	46
1,1-Dichloroethene	24	U	24
Acetone	1300	D	360
Isopropyl alcohol	370	U	370
Carbon disulfide	47	U	47

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-3

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_16.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2129	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2129			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	47	U	47
Methylene Chloride	52	U	52
tert-Butyl alcohol	450	U	450
Methyl tert-butyl ether	22	U	22
trans-1,2-Dichloroethene	24	U	24
n-Hexane	21	U	21
1,1-Dichloroethane	24	U	24
Methyl Ethyl Ketone	44	U	44
cis-1,2-Dichloroethene	24	U	24
1,2-Dichloroethene, Total	48	U	48
Chloroform	29	U	29
Tetrahydrofuran	440	U	440
1,1,1-Trichloroethane	33	U	33
Cyclohexane	21	U	21
Carbon tetrachloride	38	U	38
2,2,4-Trimethylpentane	28	U	28
Benzene	19	U	19
1,2-Dichloroethane	24	U	24
n-Heptane	25	U	25
Trichloroethene	32	U	32
Methyl methacrylate	61	U	61
1,2-Dichloropropane	28	U	28
1,4-Dioxane	540	U	540
Bromodichloromethane	40	U	40
cis-1,3-Dichloropropene	27	U	27
methyl isobutyl ketone	61	U	61
Toluene	23	U	23
trans-1,3-Dichloropropene	27	U	27
1,1,2-Trichloroethane	33	U	33
Tetrachloroethene	41	U	41
Methyl Butyl Ketone (2-Hexanone)	61	U	61
Dibromochloromethane	51	U	51
1,2-Dibromoethane	46	U	46
Chlorobenzene	28	U	28
Ethylbenzene	26	U	26
m,p-Xylene	65	U	65
Xylene, o-	26	U	26
Xylene (total)	91	U	91
Styrene	26	U	26
Bromoform	62	U	62
Cumene	29	U	29
1,1,2,2-Tetrachloroethane	41	U	41
n-Propylbenzene	29	U	29
4-Ethyltoluene	29	U	29
1,3,5-Trimethylbenzene	29	U	29
2-Chlorotoluene	31	U	31

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: **SV-3**

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_16.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2129	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2129			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	33	U	33
1,2,4-Trimethylbenzene	29	U	29
sec-Butylbenzene	33	U	33
4-Isopropyltoluene	33	U	33
1,3-Dichlorobenzene	36	U	36
1,4-Dichlorobenzene	36	U	36
Benzyl chloride	31	U	31
n-Butylbenzene	33	U	33
1,2-Dichlorobenzene	36	U	36
1,2,4-Trichlorobenzene	110	U	110
Hexachlorobutadiene	64	U	64
Naphthalene	79	U	79

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: **SV-3**

Lab Sample ID: 200-30148-3
Client Matrix: Air

Date Sampled: 10/05/2015 1348
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_16.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2129	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2129			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 2**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
3387-41-5	Bicyclo[3.1.0]hexane, 4-methylene-1-(1-m	21.24	50	D J N
127-91-3	.beta.-Pinene	21.38	69	D J N

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-4

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_17.D
Dilution:	2.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2218			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2218			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	11		1.0
Freon 22	1.0	U	1.0
1,2-Dichlorotetrafluoroethane	1.3		0.40
Chloromethane	1.0	U	1.0
n-Butane	3.0		1.0
Vinyl chloride	0.40	U	0.40
1,3-Butadiene	0.40	U	0.40
Bromomethane	0.40	U	0.40
Chloroethane	1.0	U	1.0
Bromoethene(Vinyl Bromide)	0.40	U	0.40
Trichlorofluoromethane	33		0.40
Freon TF	2.6		0.40
1,1-Dichloroethene	0.40	U	0.40
Acetone	370	E	10
Isopropyl alcohol	10	U	10
Carbon disulfide	1.0	U	1.0
3-Chloropropene	1.0	U	1.0
Methylene Chloride	1.0	U	1.0
tert-Butyl alcohol	16		10
Methyl tert-butyl ether	0.40	U	0.40
trans-1,2-Dichloroethene	0.40	U	0.40
n-Hexane	0.54		0.40
1,1-Dichloroethane	0.40	U	0.40
Methyl Ethyl Ketone	6.5		1.0
cis-1,2-Dichloroethene	0.40	U	0.40
1,2-Dichloroethene, Total	0.80	U	0.80
Chloroform	0.40	U	0.40
Tetrahydrofuran	10	U	10
1,1,1-Trichloroethane	0.67		0.40
Cyclohexane	0.40	U	0.40
Carbon tetrachloride	0.40	U	0.40
2,2,4-Trimethylpentane	0.40	U	0.40
Benzene	0.51		0.40
1,2-Dichloroethane	0.40	U	0.40
n-Heptane	1.2		0.40
Trichloroethene	0.40	U	0.40
Methyl methacrylate	1.0	U	1.0
1,2-Dichloropropane	0.40	U	0.40
1,4-Dioxane	10	U	10
Bromodichloromethane	0.40	U	0.40
cis-1,3-Dichloropropene	0.40	U	0.40
methyl isobutyl ketone	2.1		1.0
Toluene	4.4		0.40
trans-1,3-Dichloropropene	0.40	U	0.40
1,1,2-Trichloroethane	0.40	U	0.40
Tetrachloroethene	0.40	U	0.40

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-4

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_17.D
Dilution:	2.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2218			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2218			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	1.4		1.0
Dibromochloromethane	0.40	U	0.40
1,2-Dibromoethane	0.40	U	0.40
Chlorobenzene	0.40	U	0.40
Ethylbenzene	1.5		0.40
m,p-Xylene	5.1		1.0
Xylene, o-	2.1		0.40
Xylene (total)	7.2		1.4
Styrene	0.80		0.40
Bromoform	0.40	U	0.40
Cumene	0.40	U	0.40
1,1,2,2-Tetrachloroethane	0.40	U	0.40
n-Propylbenzene	0.42		0.40
4-Ethyltoluene	0.57		0.40
1,3,5-Trimethylbenzene	0.61		0.40
2-Chlorotoluene	0.40	U	0.40
tert-Butylbenzene	0.40	U	0.40
1,2,4-Trimethylbenzene	1.7		0.40
sec-Butylbenzene	0.40	U	0.40
4-Isopropyltoluene	0.46		0.40
1,3-Dichlorobenzene	0.40	U	0.40
1,4-Dichlorobenzene	0.40	U	0.40
Benzyl chloride	0.40	U	0.40
n-Butylbenzene	0.40	U	0.40
1,2-Dichlorobenzene	0.40	U	0.40
1,2,4-Trichlorobenzene	1.0	U	1.0
Hexachlorobutadiene	0.40	U	0.40
Naphthalene	1.0	U	1.0

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	56		4.9
Freon 22	3.5	U	3.5
1,2-Dichlorotetrafluoroethane	9.0		2.8
Chloromethane	2.1	U	2.1
n-Butane	7.1		2.4
Vinyl chloride	1.0	U	1.0
1,3-Butadiene	0.88	U	0.88
Bromomethane	1.6	U	1.6
Chloroethane	2.6	U	2.6
Bromoethene(Vinyl Bromide)	1.7	U	1.7
Trichlorofluoromethane	190		2.2
Freon TF	20		3.1
1,1-Dichloroethene	1.6	U	1.6
Acetone	870	E	24
Isopropyl alcohol	25	U	25
Carbon disulfide	3.1	U	3.1

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-4

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_17.D
Dilution:	2.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2218			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2218			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	3.1	U	3.1
Methylene Chloride	3.5	U	3.5
tert-Butyl alcohol	49		30
Methyl tert-butyl ether	1.4	U	1.4
trans-1,2-Dichloroethene	1.6	U	1.6
n-Hexane	1.9		1.4
1,1-Dichloroethane	1.6	U	1.6
Methyl Ethyl Ketone	19		2.9
cis-1,2-Dichloroethene	1.6	U	1.6
1,2-Dichloroethene, Total	3.2	U	3.2
Chloroform	2.0	U	2.0
Tetrahydrofuran	29	U	29
1,1,1-Trichloroethane	3.7		2.2
Cyclohexane	1.4	U	1.4
Carbon tetrachloride	2.5	U	2.5
2,2,4-Trimethylpentane	1.9	U	1.9
Benzene	1.6		1.3
1,2-Dichloroethane	1.6	U	1.6
n-Heptane	5.1		1.6
Trichloroethene	2.1	U	2.1
Methyl methacrylate	4.1	U	4.1
1,2-Dichloropropane	1.8	U	1.8
1,4-Dioxane	36	U	36
Bromodichloromethane	2.7	U	2.7
cis-1,3-Dichloropropene	1.8	U	1.8
methyl isobutyl ketone	8.4		4.1
Toluene	16		1.5
trans-1,3-Dichloropropene	1.8	U	1.8
1,1,2-Trichloroethane	2.2	U	2.2
Tetrachloroethene	2.7	U	2.7
Methyl Butyl Ketone (2-Hexanone)	5.8		4.1
Dibromochloromethane	3.4	U	3.4
1,2-Dibromoethane	3.1	U	3.1
Chlorobenzene	1.8	U	1.8
Ethylbenzene	6.4		1.7
m,p-Xylene	22		4.3
Xylene, o-	9.2		1.7
Xylene (total)	31		6.1
Styrene	3.4		1.7
Bromoform	4.1	U	4.1
Cumene	2.0	U	2.0
1,1,2,2-Tetrachloroethane	2.7	U	2.7
n-Propylbenzene	2.1		2.0
4-Ethyltoluene	2.8		2.0
1,3,5-Trimethylbenzene	3.0		2.0
2-Chlorotoluene	2.1	U	2.1

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-4

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_17.D
Dilution:	2.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2218			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2218			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	2.2	U	2.2
1,2,4-Trimethylbenzene	8.3		2.0
sec-Butylbenzene	2.2	U	2.2
4-Isopropyltoluene	2.5		2.2
1,3-Dichlorobenzene	2.4	U	2.4
1,4-Dichlorobenzene	2.4	U	2.4
Benzyl chloride	2.1	U	2.1
n-Butylbenzene	2.2	U	2.2
1,2-Dichlorobenzene	2.4	U	2.4
1,2,4-Trichlorobenzene	7.4	U	7.4
Hexachlorobutadiene	4.3	U	4.3
Naphthalene	5.2	U	5.2

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: **SV-4**

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_17.D
Dilution:	2.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2218			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2218			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 10**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	4.14	21	J
541-05-9	Cyclotrisiloxane, hexamethyl-	16.07	8.7	J N
	Unknown	17.16	3.9	J
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	9.3	J N
	Unknown	21.52	8.0	J
	Unknown	22.48	5.9	J
	Unknown	22.67	4.0	J
	Unknown	22.82	4.9	J
	Unknown	22.90	4.6	J
	Unknown	23.27	5.5	J

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-4

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_18.D
Dilution:	20			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2308	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2308			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	11	D	10
Freon 22	10	U	10
1,2-Dichlorotetrafluoroethane	4.0	U	4.0
Chloromethane	10	U	10
n-Butane	10	U	10
Vinyl chloride	4.0	U	4.0
1,3-Butadiene	4.0	U	4.0
Bromomethane	4.0	U	4.0
Chloroethane	10	U	10
Bromoethene(Vinyl Bromide)	4.0	U	4.0
Trichlorofluoromethane	32	D	4.0
Freon TF	4.0	U	4.0
1,1-Dichloroethene	4.0	U	4.0
Acetone	370	D	100
Isopropyl alcohol	100	U	100
Carbon disulfide	10	U	10
3-Chloropropene	10	U	10
Methylene Chloride	10	U	10
tert-Butyl alcohol	100	U	100
Methyl tert-butyl ether	4.0	U	4.0
trans-1,2-Dichloroethene	4.0	U	4.0
n-Hexane	4.0	U	4.0
1,1-Dichloroethane	4.0	U	4.0
Methyl Ethyl Ketone	10	U	10
cis-1,2-Dichloroethene	4.0	U	4.0
1,2-Dichloroethene, Total	8.0	U	8.0
Chloroform	4.0	U	4.0
Tetrahydrofuran	100	U	100
1,1,1-Trichloroethane	4.0	U	4.0
Cyclohexane	4.0	U	4.0
Carbon tetrachloride	4.0	U	4.0
2,2,4-Trimethylpentane	4.0	U	4.0
Benzene	4.0	U	4.0
1,2-Dichloroethane	4.0	U	4.0
n-Heptane	4.0	U	4.0
Trichloroethene	4.0	U	4.0
Methyl methacrylate	10	U	10
1,2-Dichloropropane	4.0	U	4.0
1,4-Dioxane	100	U	100
Bromodichloromethane	4.0	U	4.0
cis-1,3-Dichloropropene	4.0	U	4.0
methyl isobutyl ketone	10	U	10
Toluene	4.3	D	4.0
trans-1,3-Dichloropropene	4.0	U	4.0
1,1,2-Trichloroethane	4.0	U	4.0
Tetrachloroethene	4.0	U	4.0

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-4

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_18.D
Dilution:	20			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2308	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2308			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	10	U	10
Dibromochloromethane	4.0	U	4.0
1,2-Dibromoethane	4.0	U	4.0
Chlorobenzene	4.0	U	4.0
Ethylbenzene	4.0	U	4.0
m,p-Xylene	10	U	10
Xylene, o-	4.0	U	4.0
Xylene (total)	14	U	14
Styrene	4.0	U	4.0
Bromoform	4.0	U	4.0
Cumene	4.0	U	4.0
1,1,2,2-Tetrachloroethane	4.0	U	4.0
n-Propylbenzene	4.0	U	4.0
4-Ethyltoluene	4.0	U	4.0
1,3,5-Trimethylbenzene	4.0	U	4.0
2-Chlorotoluene	4.0	U	4.0
tert-Butylbenzene	4.0	U	4.0
1,2,4-Trimethylbenzene	4.0	U	4.0
sec-Butylbenzene	4.0	U	4.0
4-Isopropyltoluene	4.0	U	4.0
1,3-Dichlorobenzene	4.0	U	4.0
1,4-Dichlorobenzene	4.0	U	4.0
Benzyl chloride	4.0	U	4.0
n-Butylbenzene	4.0	U	4.0
1,2-Dichlorobenzene	4.0	U	4.0
1,2,4-Trichlorobenzene	10	U	10
Hexachlorobutadiene	4.0	U	4.0
Naphthalene	10	U	10

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	56	D	49
Freon 22	35	U	35
1,2-Dichlorotetrafluoroethane	28	U	28
Chloromethane	21	U	21
n-Butane	24	U	24
Vinyl chloride	10	U	10
1,3-Butadiene	8.8	U	8.8
Bromomethane	16	U	16
Chloroethane	26	U	26
Bromoethene(Vinyl Bromide)	17	U	17
Trichlorofluoromethane	180	D	22
Freon TF	31	U	31
1,1-Dichloroethene	16	U	16
Acetone	870	D	240
Isopropyl alcohol	250	U	250
Carbon disulfide	31	U	31

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-4

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_18.D
Dilution:	20			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2308	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2308			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	31	U	31
Methylene Chloride	35	U	35
tert-Butyl alcohol	300	U	300
Methyl tert-butyl ether	14	U	14
trans-1,2-Dichloroethene	16	U	16
n-Hexane	14	U	14
1,1-Dichloroethane	16	U	16
Methyl Ethyl Ketone	29	U	29
cis-1,2-Dichloroethene	16	U	16
1,2-Dichloroethene, Total	32	U	32
Chloroform	20	U	20
Tetrahydrofuran	290	U	290
1,1,1-Trichloroethane	22	U	22
Cyclohexane	14	U	14
Carbon tetrachloride	25	U	25
2,2,4-Trimethylpentane	19	U	19
Benzene	13	U	13
1,2-Dichloroethane	16	U	16
n-Heptane	16	U	16
Trichloroethene	21	U	21
Methyl methacrylate	41	U	41
1,2-Dichloropropane	18	U	18
1,4-Dioxane	360	U	360
Bromodichloromethane	27	U	27
cis-1,3-Dichloropropene	18	U	18
methyl isobutyl ketone	41	U	41
Toluene	16	D	15
trans-1,3-Dichloropropene	18	U	18
1,1,2-Trichloroethane	22	U	22
Tetrachloroethene	27	U	27
Methyl Butyl Ketone (2-Hexanone)	41	U	41
Dibromochloromethane	34	U	34
1,2-Dibromoethane	31	U	31
Chlorobenzene	18	U	18
Ethylbenzene	17	U	17
m,p-Xylene	43	U	43
Xylene, o-	17	U	17
Xylene (total)	61	U	61
Styrene	17	U	17
Bromoform	41	U	41
Cumene	20	U	20
1,1,2,2-Tetrachloroethane	27	U	27
n-Propylbenzene	20	U	20
4-Ethyltoluene	20	U	20
1,3,5-Trimethylbenzene	20	U	20
2-Chlorotoluene	21	U	21

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-4

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_18.D
Dilution:	20			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2308	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2308			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	22	U	22
1,2,4-Trimethylbenzene	20	U	20
sec-Butylbenzene	22	U	22
4-Isopropyltoluene	22	U	22
1,3-Dichlorobenzene	24	U	24
1,4-Dichlorobenzene	24	U	24
Benzyl chloride	21	U	21
n-Butylbenzene	22	U	22
1,2-Dichlorobenzene	24	U	24
1,2,4-Trichlorobenzene	74	U	74
Hexachlorobutadiene	43	U	43
Naphthalene	52	U	52

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: **SV-4**

Lab Sample ID: 200-30148-4
Client Matrix: Air

Date Sampled: 10/05/2015 1515
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_18.D
Dilution:	20			Initial Weight/Volume:	20 mL
Analysis Date:	10/13/2015 2308	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2308			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 0**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Tentatively Identified Compound		None	

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_19.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2357			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2357			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	5.7		1.5
Freon 22	1.5	U	1.5
1,2-Dichlorotetrafluoroethane	0.60	U	0.60
Chloromethane	1.5	U	1.5
n-Butane	6.8		1.5
Vinyl chloride	0.60	U	0.60
1,3-Butadiene	1.4		0.60
Bromomethane	0.60	U	0.60
Chloroethane	1.5	U	1.5
Bromoethene(Vinyl Bromide)	0.60	U	0.60
Trichlorofluoromethane	2.4		0.60
Freon TF	0.60	U	0.60
1,1-Dichloroethene	0.60	U	0.60
Acetone	660	E	15
Isopropyl alcohol	15	U	15
Carbon disulfide	1.5	U	1.5
3-Chloropropene	1.5	U	1.5
Methylene Chloride	1.5	U	1.5
tert-Butyl alcohol	15	U	15
Methyl tert-butyl ether	0.60	U	0.60
trans-1,2-Dichloroethene	0.60	U	0.60
n-Hexane	1.2		0.60
1,1-Dichloroethane	0.60	U	0.60
Methyl Ethyl Ketone	10		1.5
cis-1,2-Dichloroethene	0.60	U	0.60
1,2-Dichloroethene, Total	1.2	U	1.2
Chloroform	0.60	U	0.60
Tetrahydrofuran	15	U	15
1,1,1-Trichloroethane	0.60	U	0.60
Cyclohexane	0.60	U	0.60
Carbon tetrachloride	0.60	U	0.60
2,2,4-Trimethylpentane	0.60	U	0.60
Benzene	1.1		0.60
1,2-Dichloroethane	0.60	U	0.60
n-Heptane	2.3		0.60
Trichloroethene	0.60	U	0.60
Methyl methacrylate	1.5	U	1.5
1,2-Dichloropropane	0.60	U	0.60
1,4-Dioxane	15	U	15
Bromodichloromethane	0.60	U	0.60
cis-1,3-Dichloropropene	0.60	U	0.60
methyl isobutyl ketone	2.1		1.5
Toluene	5.5		0.60
trans-1,3-Dichloropropene	0.60	U	0.60
1,1,2-Trichloroethane	0.60	U	0.60
Tetrachloroethene	0.60	U	0.60

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_19.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2357			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2357			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	1.7		1.5
Dibromochloromethane	0.60	U	0.60
1,2-Dibromoethane	0.60	U	0.60
Chlorobenzene	0.60	U	0.60
Ethylbenzene	1.5		0.60
m,p-Xylene	5.5		1.5
Xylene, o-	2.2		0.60
Xylene (total)	7.7		2.1
Styrene	0.60	U	0.60
Bromoform	0.60	U	0.60
Cumene	0.60	U	0.60
1,1,2,2-Tetrachloroethane	0.60	U	0.60
n-Propylbenzene	0.60	U	0.60
4-Ethyltoluene	0.93		0.60
1,3,5-Trimethylbenzene	0.85		0.60
2-Chlorotoluene	0.60	U	0.60
tert-Butylbenzene	0.60	U	0.60
1,2,4-Trimethylbenzene	2.3		0.60
sec-Butylbenzene	0.60	U	0.60
4-Isopropyltoluene	0.60	U	0.60
1,3-Dichlorobenzene	0.60	U	0.60
1,4-Dichlorobenzene	0.60	U	0.60
Benzyl chloride	0.60	U	0.60
n-Butylbenzene	0.60	U	0.60
1,2-Dichlorobenzene	0.60	U	0.60
1,2,4-Trichlorobenzene	1.5	U	1.5
Hexachlorobutadiene	0.60	U	0.60
Naphthalene	1.5	U	1.5

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	28		7.4
Freon 22	5.3	U	5.3
1,2-Dichlorotetrafluoroethane	4.2	U	4.2
Chloromethane	3.1	U	3.1
n-Butane	16		3.6
Vinyl chloride	1.5	U	1.5
1,3-Butadiene	3.1		1.3
Bromomethane	2.3	U	2.3
Chloroethane	4.0	U	4.0
Bromoethene(Vinyl Bromide)	2.6	U	2.6
Trichlorofluoromethane	13		3.4
Freon TF	4.6	U	4.6
1,1-Dichloroethene	2.4	U	2.4
Acetone	1600	E	36
Isopropyl alcohol	37	U	37
Carbon disulfide	4.7	U	4.7

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_19.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2357			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2357			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	4.7	U	4.7
Methylene Chloride	5.2	U	5.2
tert-Butyl alcohol	45	U	45
Methyl tert-butyl ether	2.2	U	2.2
trans-1,2-Dichloroethene	2.4	U	2.4
n-Hexane	4.3		2.1
1,1-Dichloroethane	2.4	U	2.4
Methyl Ethyl Ketone	31		4.4
cis-1,2-Dichloroethene	2.4	U	2.4
1,2-Dichloroethene, Total	4.8	U	4.8
Chloroform	2.9	U	2.9
Tetrahydrofuran	44	U	44
1,1,1-Trichloroethane	3.3	U	3.3
Cyclohexane	2.1	U	2.1
Carbon tetrachloride	3.8	U	3.8
2,2,4-Trimethylpentane	2.8	U	2.8
Benzene	3.6		1.9
1,2-Dichloroethane	2.4	U	2.4
n-Heptane	9.5		2.5
Trichloroethene	3.2	U	3.2
Methyl methacrylate	6.1	U	6.1
1,2-Dichloropropane	2.8	U	2.8
1,4-Dioxane	54	U	54
Bromodichloromethane	4.0	U	4.0
cis-1,3-Dichloropropene	2.7	U	2.7
methyl isobutyl ketone	8.7		6.1
Toluene	21		2.3
trans-1,3-Dichloropropene	2.7	U	2.7
1,1,2-Trichloroethane	3.3	U	3.3
Tetrachloroethene	4.1	U	4.1
Methyl Butyl Ketone (2-Hexanone)	6.9		6.1
Dibromochloromethane	5.1	U	5.1
1,2-Dibromoethane	4.6	U	4.6
Chlorobenzene	2.8	U	2.8
Ethylbenzene	6.6		2.6
m,p-Xylene	24		6.5
Xylene, o-	9.7		2.6
Xylene (total)	33		9.1
Styrene	2.6	U	2.6
Bromoform	6.2	U	6.2
Cumene	2.9	U	2.9
1,1,2,2-Tetrachloroethane	4.1	U	4.1
n-Propylbenzene	2.9	U	2.9
4-Ethyltoluene	4.6		2.9
1,3,5-Trimethylbenzene	4.2		2.9
2-Chlorotoluene	3.1	U	3.1

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_19.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2357			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2357			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	3.3	U	3.3
1,2,4-Trimethylbenzene	11		2.9
sec-Butylbenzene	3.3	U	3.3
4-Isopropyltoluene	3.3	U	3.3
1,3-Dichlorobenzene	3.6	U	3.6
1,4-Dichlorobenzene	3.6	U	3.6
Benzyl chloride	3.1	U	3.1
n-Butylbenzene	3.3	U	3.3
1,2-Dichlorobenzene	3.6	U	3.6
1,2,4-Trichlorobenzene	11	U	11
Hexachlorobutadiene	6.4	U	6.4
Naphthalene	7.9	U	7.9

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_19.D
Dilution:	3.0			Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 2357			Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 2357			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 10**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	4.13	34	J
541-05-9	Cyclotrisiloxane, hexamethyl-	16.08	10	J N
62016-14-2	Octane, 2,5,6-trimethyl-	21.52	17	J N
	Unknown	22.27	11	J
	Unknown	22.47	15	J
2213-23-2	Heptane, 2,4-dimethyl-	22.67	11	J N
	Unknown	22.82	13	J
	Unknown	22.91	16	J
	Unknown	23.00	11	J
112-40-3	Dodecane	23.27	14	J N

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_20.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/14/2015 0046	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/14/2015 0046			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	15	U	15
Freon 22	15	U	15
1,2-Dichlorotetrafluoroethane	6.0	U	6.0
Chloromethane	15	U	15
n-Butane	15	U	15
Vinyl chloride	6.0	U	6.0
1,3-Butadiene	6.0	U	6.0
Bromomethane	6.0	U	6.0
Chloroethane	15	U	15
Bromoethene(Vinyl Bromide)	6.0	U	6.0
Trichlorofluoromethane	6.0	U	6.0
Freon TF	6.0	U	6.0
1,1-Dichloroethene	6.0	U	6.0
Acetone	700	D	150
Isopropyl alcohol	150	U	150
Carbon disulfide	15	U	15
3-Chloropropene	15	U	15
Methylene Chloride	15	U	15
tert-Butyl alcohol	150	U	150
Methyl tert-butyl ether	6.0	U	6.0
trans-1,2-Dichloroethene	6.0	U	6.0
n-Hexane	6.0	U	6.0
1,1-Dichloroethane	6.0	U	6.0
Methyl Ethyl Ketone	15	U	15
cis-1,2-Dichloroethene	6.0	U	6.0
1,2-Dichloroethene, Total	12	U	12
Chloroform	6.0	U	6.0
Tetrahydrofuran	150	U	150
1,1,1-Trichloroethane	6.0	U	6.0
Cyclohexane	6.0	U	6.0
Carbon tetrachloride	6.0	U	6.0
2,2,4-Trimethylpentane	6.0	U	6.0
Benzene	6.0	U	6.0
1,2-Dichloroethane	6.0	U	6.0
n-Heptane	6.0	U	6.0
Trichloroethene	6.0	U	6.0
Methyl methacrylate	15	U	15
1,2-Dichloropropane	6.0	U	6.0
1,4-Dioxane	150	U	150
Bromodichloromethane	6.0	U	6.0
cis-1,3-Dichloropropene	6.0	U	6.0
methyl isobutyl ketone	15	U	15
Toluene	6.0	U	6.0
trans-1,3-Dichloropropene	6.0	U	6.0
1,1,2-Trichloroethane	6.0	U	6.0
Tetrachloroethene	6.0	U	6.0

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_20.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/14/2015 0046	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/14/2015 0046			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	15	U	15
Dibromochloromethane	6.0	U	6.0
1,2-Dibromoethane	6.0	U	6.0
Chlorobenzene	6.0	U	6.0
Ethylbenzene	6.0	U	6.0
m,p-Xylene	15	U	15
Xylene, o-	6.0	U	6.0
Xylene (total)	21	U	21
Styrene	6.0	U	6.0
Bromoform	6.0	U	6.0
Cumene	6.0	U	6.0
1,1,2,2-Tetrachloroethane	6.0	U	6.0
n-Propylbenzene	6.0	U	6.0
4-Ethyltoluene	6.0	U	6.0
1,3,5-Trimethylbenzene	6.0	U	6.0
2-Chlorotoluene	6.0	U	6.0
tert-Butylbenzene	6.0	U	6.0
1,2,4-Trimethylbenzene	6.0	U	6.0
sec-Butylbenzene	6.0	U	6.0
4-Isopropyltoluene	6.0	U	6.0
1,3-Dichlorobenzene	6.0	U	6.0
1,4-Dichlorobenzene	6.0	U	6.0
Benzyl chloride	6.0	U	6.0
n-Butylbenzene	6.0	U	6.0
1,2-Dichlorobenzene	6.0	U	6.0
1,2,4-Trichlorobenzene	15	U	15
Hexachlorobutadiene	6.0	U	6.0
Naphthalene	15	U	15

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	74	U	74
Freon 22	53	U	53
1,2-Dichlorotetrafluoroethane	42	U	42
Chloromethane	31	U	31
n-Butane	36	U	36
Vinyl chloride	15	U	15
1,3-Butadiene	13	U	13
Bromomethane	23	U	23
Chloroethane	40	U	40
Bromoethene(Vinyl Bromide)	26	U	26
Trichlorofluoromethane	34	U	34
Freon TF	46	U	46
1,1-Dichloroethene	24	U	24
Acetone	1700	D	360
Isopropyl alcohol	370	U	370
Carbon disulfide	47	U	47

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_20.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/14/2015 0046	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/14/2015 0046			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	47	U	47
Methylene Chloride	52	U	52
tert-Butyl alcohol	450	U	450
Methyl tert-butyl ether	22	U	22
trans-1,2-Dichloroethene	24	U	24
n-Hexane	21	U	21
1,1-Dichloroethane	24	U	24
Methyl Ethyl Ketone	44	U	44
cis-1,2-Dichloroethene	24	U	24
1,2-Dichloroethene, Total	48	U	48
Chloroform	29	U	29
Tetrahydrofuran	440	U	440
1,1,1-Trichloroethane	33	U	33
Cyclohexane	21	U	21
Carbon tetrachloride	38	U	38
2,2,4-Trimethylpentane	28	U	28
Benzene	19	U	19
1,2-Dichloroethane	24	U	24
n-Heptane	25	U	25
Trichloroethene	32	U	32
Methyl methacrylate	61	U	61
1,2-Dichloropropane	28	U	28
1,4-Dioxane	540	U	540
Bromodichloromethane	40	U	40
cis-1,3-Dichloropropene	27	U	27
methyl isobutyl ketone	61	U	61
Toluene	23	U	23
trans-1,3-Dichloropropene	27	U	27
1,1,2-Trichloroethane	33	U	33
Tetrachloroethene	41	U	41
Methyl Butyl Ketone (2-Hexanone)	61	U	61
Dibromochloromethane	51	U	51
1,2-Dibromoethane	46	U	46
Chlorobenzene	28	U	28
Ethylbenzene	26	U	26
m,p-Xylene	65	U	65
Xylene, o-	26	U	26
Xylene (total)	91	U	91
Styrene	26	U	26
Bromoform	62	U	62
Cumene	29	U	29
1,1,2,2-Tetrachloroethane	41	U	41
n-Propylbenzene	29	U	29
4-Ethyltoluene	29	U	29
1,3,5-Trimethylbenzene	29	U	29
2-Chlorotoluene	31	U	31

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: SV-5

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_20.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/14/2015 0046	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/14/2015 0046			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	33	U	33
1,2,4-Trimethylbenzene	29	U	29
sec-Butylbenzene	33	U	33
4-Isopropyltoluene	33	U	33
1,3-Dichlorobenzene	36	U	36
1,4-Dichlorobenzene	36	U	36
Benzyl chloride	31	U	31
n-Butylbenzene	33	U	33
1,2-Dichlorobenzene	36	U	36
1,2,4-Trichlorobenzene	110	U	110
Hexachlorobutadiene	64	U	64
Naphthalene	79	U	79

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Client Sample ID: **SV-5**

Lab Sample ID: 200-30148-5
Client Matrix: Air

Date Sampled: 10/05/2015 1428
Date Received: 10/09/2015 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	16229_20.D
Dilution:	30			Initial Weight/Volume:	20 mL
Analysis Date:	10/14/2015 0046	Run Type:	DL	Final Weight/Volume:	200 mL
Prep Date:	10/14/2015 0046			Injection Volume:	200 mL

Tentatively Identified Compounds **Number TIC's Found: 1**

Cas Number	Analyte	RT	Est. Result (ppb v/v)	Qualifier
	Unknown	23.27	39	D J

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Method Blank - Batch: 200-95422

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	MB 200-95422/5	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	16229_05.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1218	Units:	ppb v/v	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1218			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Dichlorodifluoromethane	0.50	U	0.50
Freon 22	0.50	U	0.50
1,2-Dichlorotetrafluoroethane	0.20	U	0.20
Chloromethane	0.50	U	0.50
n-Butane	0.50	U	0.50
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	0.20	U	0.20
Bromomethane	0.20	U	0.20
Chloroethane	0.50	U	0.50
Bromoethene(Vinyl Bromide)	0.20	U	0.20
Trichlorofluoromethane	0.20	U	0.20
Freon TF	0.20	U	0.20
1,1-Dichloroethene	0.20	U	0.20
Acetone	5.0	U	5.0
Isopropyl alcohol	5.0	U	5.0
Carbon disulfide	0.50	U	0.50
3-Chloropropene	0.50	U	0.50
Methylene Chloride	0.50	U	0.50
tert-Butyl alcohol	5.0	U	5.0
Methyl tert-butyl ether	0.20	U	0.20
trans-1,2-Dichloroethene	0.20	U	0.20
n-Hexane	0.20	U	0.20
1,1-Dichloroethane	0.20	U	0.20
Methyl Ethyl Ketone	0.50	U	0.50
cis-1,2-Dichloroethene	0.20	U	0.20
1,2-Dichloroethene, Total	0.40	U	0.40
Chloroform	0.20	U	0.20
Tetrahydrofuran	5.0	U	5.0
1,1,1-Trichloroethane	0.20	U	0.20
Cyclohexane	0.20	U	0.20
Carbon tetrachloride	0.20	U	0.20
2,2,4-Trimethylpentane	0.20	U	0.20
Benzene	0.20	U	0.20
1,2-Dichloroethane	0.20	U	0.20
n-Heptane	0.20	U	0.20
Trichloroethene	0.20	U	0.20
Methyl methacrylate	0.50	U	0.50
1,2-Dichloropropane	0.20	U	0.20
1,4-Dioxane	5.0	U	5.0
Bromodichloromethane	0.20	U	0.20
cis-1,3-Dichloropropene	0.20	U	0.20
methyl isobutyl ketone	0.50	U	0.50
Toluene	0.20	U	0.20
trans-1,3-Dichloropropene	0.20	U	0.20
1,1,2-Trichloroethane	0.20	U	0.20

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Method Blank - Batch: 200-95422

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	MB 200-95422/5	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	16229_05.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1218	Units:	ppb v/v	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1218			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Tetrachloroethene	0.20	U	0.20
Methyl Butyl Ketone (2-Hexanone)	0.50	U	0.50
Dibromochloromethane	0.20	U	0.20
1,2-Dibromoethane	0.20	U	0.20
Chlorobenzene	0.20	U	0.20
Ethylbenzene	0.20	U	0.20
m,p-Xylene	0.50	U	0.50
Xylene, o-	0.20	U	0.20
Xylene (total)	0.70	U	0.70
Styrene	0.20	U	0.20
Bromoform	0.20	U	0.20
Cumene	0.20	U	0.20
1,1,2,2-Tetrachloroethane	0.20	U	0.20
n-Propylbenzene	0.20	U	0.20
4-Ethyltoluene	0.20	U	0.20
1,3,5-Trimethylbenzene	0.20	U	0.20
2-Chlorotoluene	0.20	U	0.20
tert-Butylbenzene	0.20	U	0.20
1,2,4-Trimethylbenzene	0.20	U	0.20
sec-Butylbenzene	0.20	U	0.20
4-Isopropyltoluene	0.20	U	0.20
1,3-Dichlorobenzene	0.20	U	0.20
1,4-Dichlorobenzene	0.20	U	0.20
Benzyl chloride	0.20	U	0.20
n-Butylbenzene	0.20	U	0.20
1,2-Dichlorobenzene	0.20	U	0.20
1,2,4-Trichlorobenzene	0.50	U	0.50
Hexachlorobutadiene	0.20	U	0.20
Naphthalene	0.50	U	0.50

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Method Blank - Batch: 200-95422

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	MB 200-95422/5	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	16229_05.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1218	Units:	ug/m3	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1218			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Dichlorodifluoromethane	2.5	U	2.5
Freon 22	1.8	U	1.8
1,2-Dichlorotetrafluoroethane	1.4	U	1.4
Chloromethane	1.0	U	1.0
n-Butane	1.2	U	1.2
Vinyl chloride	0.51	U	0.51
1,3-Butadiene	0.44	U	0.44
Bromomethane	0.78	U	0.78
Chloroethane	1.3	U	1.3
Bromoethene(Vinyl Bromide)	0.87	U	0.87
Trichlorofluoromethane	1.1	U	1.1
Freon TF	1.5	U	1.5
1,1-Dichloroethene	0.79	U	0.79
Acetone	12	U	12
Isopropyl alcohol	12	U	12
Carbon disulfide	1.6	U	1.6
3-Chloropropene	1.6	U	1.6
Methylene Chloride	1.7	U	1.7
tert-Butyl alcohol	15	U	15
Methyl tert-butyl ether	0.72	U	0.72
trans-1,2-Dichloroethene	0.79	U	0.79
n-Hexane	0.70	U	0.70
1,1-Dichloroethane	0.81	U	0.81
Methyl Ethyl Ketone	1.5	U	1.5
cis-1,2-Dichloroethene	0.79	U	0.79
1,2-Dichloroethene, Total	1.6	U	1.6
Chloroform	0.98	U	0.98
Tetrahydrofuran	15	U	15
1,1,1-Trichloroethane	1.1	U	1.1
Cyclohexane	0.69	U	0.69
Carbon tetrachloride	1.3	U	1.3
2,2,4-Trimethylpentane	0.93	U	0.93
Benzene	0.64	U	0.64
1,2-Dichloroethane	0.81	U	0.81
n-Heptane	0.82	U	0.82
Trichloroethene	1.1	U	1.1
Methyl methacrylate	2.0	U	2.0
1,2-Dichloropropane	0.92	U	0.92
1,4-Dioxane	18	U	18
Bromodichloromethane	1.3	U	1.3
cis-1,3-Dichloropropene	0.91	U	0.91
methyl isobutyl ketone	2.0	U	2.0
Toluene	0.75	U	0.75
trans-1,3-Dichloropropene	0.91	U	0.91
1,1,2-Trichloroethane	1.1	U	1.1

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Method Blank - Batch: 200-95422

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	MB 200-95422/5	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	16229_05.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1218	Units:	ug/m3	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1218			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Tetrachloroethene	1.4	U	1.4
Methyl Butyl Ketone (2-Hexanone)	2.0	U	2.0
Dibromochloromethane	1.7	U	1.7
1,2-Dibromoethane	1.5	U	1.5
Chlorobenzene	0.92	U	0.92
Ethylbenzene	0.87	U	0.87
m,p-Xylene	2.2	U	2.2
Xylene, o-	0.87	U	0.87
Xylene (total)	3.0	U	3.0
Styrene	0.85	U	0.85
Bromoform	2.1	U	2.1
Cumene	0.98	U	0.98
1,1,2,2-Tetrachloroethane	1.4	U	1.4
n-Propylbenzene	0.98	U	0.98
4-Ethyltoluene	0.98	U	0.98
1,3,5-Trimethylbenzene	0.98	U	0.98
2-Chlorotoluene	1.0	U	1.0
tert-Butylbenzene	1.1	U	1.1
1,2,4-Trimethylbenzene	0.98	U	0.98
sec-Butylbenzene	1.1	U	1.1
4-Isopropyltoluene	1.1	U	1.1
1,3-Dichlorobenzene	1.2	U	1.2
1,4-Dichlorobenzene	1.2	U	1.2
Benzyl chloride	1.0	U	1.0
n-Butylbenzene	1.1	U	1.1
1,2-Dichlorobenzene	1.2	U	1.2
1,2,4-Trichlorobenzene	3.7	U	3.7
Hexachlorobutadiene	2.1	U	2.1
Naphthalene	2.6	U	2.6

Method Blank TICs- Batch: 200-95422

Cas Number	Analyte	RT	Est. Result (ppl	Qual
	Tentatively Identified Compound		None	

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Control Sample - Batch: 200-95422

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	LCS 200-95422/4	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	16229_04.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1128	Units:	ppb v/v	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1128			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dichlorodifluoromethane	10.0	9.78	98	70 - 130	
Freon 22	10.0	9.52	95	70 - 130	
1,2-Dichlorotetrafluoroethane	10.0	10.6	106	70 - 130	
Chloromethane	10.0	8.79	88	70 - 130	
n-Butane	10.0	8.89	89	70 - 130	
Vinyl chloride	10.0	9.35	94	70 - 130	
1,3-Butadiene	10.0	9.01	90	70 - 130	
Bromomethane	10.0	9.54	95	70 - 130	
Chloroethane	10.0	9.23	92	70 - 130	
Bromoethene(Vinyl Bromide)	10.0	9.41	94	70 - 130	
Trichlorofluoromethane	10.0	9.72	97	70 - 130	
Freon TF	10.0	9.49	95	70 - 130	
1,1-Dichloroethene	10.0	9.45	95	70 - 130	
Acetone	10.0	9.73	97	70 - 130	
Isopropyl alcohol	10.0	8.23	82	70 - 130	
Carbon disulfide	10.0	10.9	109	70 - 130	
3-Chloropropene	10.0	8.55	85	70 - 130	
Methylene Chloride	10.0	8.64	86	70 - 130	
tert-Butyl alcohol	10.0	8.80	88	70 - 130	
Methyl tert-butyl ether	10.0	9.32	93	70 - 130	
trans-1,2-Dichloroethene	10.0	9.83	98	70 - 130	
n-Hexane	10.0	9.31	93	70 - 130	
1,1-Dichloroethane	10.0	9.27	93	70 - 130	
Methyl Ethyl Ketone	10.0	8.60	86	70 - 130	
cis-1,2-Dichloroethene	10.0	9.54	95	70 - 130	
Chloroform	10.0	9.88	99	70 - 130	
Tetrahydrofuran	10.0	9.21	92	70 - 130	
1,1,1-Trichloroethane	10.0	9.88	99	70 - 130	
Cyclohexane	10.0	9.34	93	70 - 130	
Carbon tetrachloride	10.0	10.6	106	70 - 130	
2,2,4-Trimethylpentane	10.0	9.11	91	70 - 130	
Benzene	10.0	9.41	94	70 - 130	
1,2-Dichloroethane	10.0	9.84	98	70 - 130	
n-Heptane	10.0	9.09	91	70 - 130	
Trichloroethene	10.0	9.32	93	70 - 130	
Methyl methacrylate	10.0	10.0	100	70 - 130	
1,2-Dichloropropane	10.0	9.84	98	70 - 130	
1,4-Dioxane	10.0	9.36	94	70 - 130	
Bromodichloromethane	10.0	10.2	102	70 - 130	
cis-1,3-Dichloropropene	10.0	10.1	101	70 - 130	
methyl isobutyl ketone	10.0	9.70	97	70 - 130	
Toluene	10.0	9.63	96	70 - 130	
trans-1,3-Dichloropropene	10.0	9.75	98	70 - 130	
1,1,2-Trichloroethane	10.0	9.76	98	70 - 130	
Tetrachloroethene	10.0	10.3	103	70 - 130	
Methyl Butyl Ketone (2-Hexanone)	10.0	8.75	87	70 - 130	

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Control Sample - Batch: 200-95422

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	LCS 200-95422/4	Analysis Batch:	200-95422	Instrument ID:	CHX.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	16229_04.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	10/13/2015 1128	Units:	ppb v/v	Final Weight/Volume:	200 mL
Prep Date:	10/13/2015 1128			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dibromochloromethane	10.0	10.4	104	70 - 130	
1,2-Dibromoethane	10.0	9.99	100	70 - 130	
Chlorobenzene	10.0	9.91	99	70 - 130	
Ethylbenzene	10.0	9.75	98	70 - 130	
m,p-Xylene	20.0	19.4	97	70 - 130	
Xylene, o-	10.0	9.63	96	70 - 130	
Styrene	10.0	9.69	97	70 - 130	
Bromoform	10.0	12.4	124	70 - 130	
Cumene	10.0	9.59	96	70 - 130	
1,1,2,2-Tetrachloroethane	10.0	10.2	102	70 - 130	
n-Propylbenzene	10.0	9.66	97	70 - 130	
4-Ethyltoluene	10.0	9.68	97	70 - 130	
1,3,5-Trimethylbenzene	10.0	8.12	81	70 - 130	
2-Chlorotoluene	10.0	9.62	96	70 - 130	
tert-Butylbenzene	10.0	7.90	79	70 - 130	
1,2,4-Trimethylbenzene	10.0	8.58	86	70 - 130	
sec-Butylbenzene	10.0	9.25	92	70 - 130	
4-Isopropyltoluene	10.0	9.90	99	70 - 130	
1,3-Dichlorobenzene	10.0	8.54	85	70 - 130	
1,4-Dichlorobenzene	10.0	8.77	88	70 - 130	
Benzyl chloride	10.0	9.56	96	70 - 130	
n-Butylbenzene	10.0	10.1	101	70 - 130	
1,2-Dichlorobenzene	10.0	9.94	99	70 - 130	
1,2,4-Trichlorobenzene	10.0	9.93	99	70 - 130	
Hexachlorobutadiene	10.0	10.4	104	70 - 130	
Naphthalene	10.0	8.88	89	70 - 130	

DATA REPORTING QUALIFIERS

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

Lab Section	Qualifier	Description
Air - GC/MS VOA		
	J	Indicates an Estimated Value for TICs
	U	Indicates the analyte was analyzed for but not detected.
	E	Result exceeded calibration range.
	D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
	N	This flag indicates the presumptive evidence of a compound.

Client: AKRF Inc

Job Number: 200-30148-1
Sdg Number: 200-30148

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Air - GC/MS VOA					
Analysis Batch:200-95422					
LCS 200-95422/4	Lab Control Sample	T	Air	TO-15	
MB 200-95422/5	Method Blank	T	Air	TO-15	
200-30148-1	SV-1	T	Air	TO-15	
200-30148-1DL	SV-1	T	Air	TO-15	
200-30148-2	SV-2	T	Air	TO-15	
200-30148-2DL	SV-2	T	Air	TO-15	
200-30148-3	SV-3	T	Air	TO-15	
200-30148-3DL	SV-3	T	Air	TO-15	
200-30148-4	SV-4	T	Air	TO-15	
200-30148-4DL	SV-4	T	Air	TO-15	
200-30148-5	SV-5	T	Air	TO-15	
200-30148-5DL	SV-5	T	Air	TO-15	

Report Basis
T = Total

Client: AKRF Inc

Job Number: 200-30148-1
SDG: 200-30148

Laboratory Chronicle

Lab ID: 200-30148-1 **Client ID: SV-1**

Sample Date/Time: 10/05/2015 17:27 Received Date/Time: 10/09/2015 10:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	200-30148-A-1		200-95422		10/13/2015 17:23	1	TAL BUR	WRD
A:TO-15	200-30148-A-1		200-95422		10/13/2015 17:23	1	TAL BUR	WRD
P:Summa Canister	200-30148-A-1	DL	200-95422		10/13/2015 18:12	4	TAL BUR	WRD
A:TO-15	200-30148-A-1	DL	200-95422		10/13/2015 18:12	4	TAL BUR	WRD

Lab ID: 200-30148-2 **Client ID: SV-2**

Sample Date/Time: 10/05/2015 17:42 Received Date/Time: 10/09/2015 10:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	200-30148-A-2		200-95422		10/13/2015 19:01	1	TAL BUR	WRD
A:TO-15	200-30148-A-2		200-95422		10/13/2015 19:01	1	TAL BUR	WRD
P:Summa Canister	200-30148-A-2	DL	200-95422		10/13/2015 19:51	4	TAL BUR	WRD
A:TO-15	200-30148-A-2	DL	200-95422		10/13/2015 19:51	4	TAL BUR	WRD

Lab ID: 200-30148-3 **Client ID: SV-3**

Sample Date/Time: 10/05/2015 13:48 Received Date/Time: 10/09/2015 10:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	200-30148-A-3		200-95422		10/13/2015 20:40	3	TAL BUR	WRD
A:TO-15	200-30148-A-3		200-95422		10/13/2015 20:40	3	TAL BUR	WRD
P:Summa Canister	200-30148-A-3	DL	200-95422		10/13/2015 21:29	30	TAL BUR	WRD
A:TO-15	200-30148-A-3	DL	200-95422		10/13/2015 21:29	30	TAL BUR	WRD

Lab ID: 200-30148-4 **Client ID: SV-4**

Sample Date/Time: 10/05/2015 15:15 Received Date/Time: 10/09/2015 10:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	200-30148-A-4		200-95422		10/13/2015 22:18	2	TAL BUR	WRD
A:TO-15	200-30148-A-4		200-95422		10/13/2015 22:18	2	TAL BUR	WRD
P:Summa Canister	200-30148-A-4	DL	200-95422		10/13/2015 23:08	20	TAL BUR	WRD
A:TO-15	200-30148-A-4	DL	200-95422		10/13/2015 23:08	20	TAL BUR	WRD

Client: AKRF Inc

Job Number: 200-30148-1
SDG: 200-30148

Laboratory Chronicle

Lab ID: 200-30148-5 **Client ID: SV-5**

Sample Date/Time: 10/05/2015 14:28 Received Date/Time: 10/09/2015 10:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	200-30148-A-5		200-95422		10/13/2015 23:57	3	TAL BUR	WRD
A:TO-15	200-30148-A-5		200-95422		10/13/2015 23:57	3	TAL BUR	WRD
P:Summa Canister	200-30148-A-5	DL	200-95422		10/14/2015 00:46	30	TAL BUR	WRD
A:TO-15	200-30148-A-5	DL	200-95422		10/14/2015 00:46	30	TAL BUR	WRD

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	MB 200-95422/5		200-95422		10/13/2015 12:18	1	TAL BUR	WRD
A:TO-15	MB 200-95422/5		200-95422		10/13/2015 12:18	1	TAL BUR	WRD

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	LCS 200-95422/4		200-95422		10/13/2015 11:28	1	TAL BUR	WRD
A:TO-15	LCS 200-95422/4		200-95422		10/13/2015 11:28	1	TAL BUR	WRD

Lab References:
TAL BUR = TestAmerica Burlington

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ATTO15CAL1w_00142	09/15/15	07/10/15	Zero Air, Lot 12	15.463 L	ATTO15CAL6w_00111	155 mL	1,1,1-Trichloroethane	0.20044 ppb v/v
							1,1,2,2-Tetrachloroethane	0.20044 ppb v/v
							1,1,2-Trichloroethane	0.20044 ppb v/v
							1,1-Dichloroethane	0.20044 ppb v/v
							1,1-Dichloroethene	0.20044 ppb v/v
							1,2,3-Trichlorobenzene	0.20044 ppb v/v
							1,2,3-Trichloropropane	0.20044 ppb v/v
							1,2,4-Trichlorobenzene	0.20044 ppb v/v
							1,2,4-Trimethylbenzene	0.20044 ppb v/v
							1,2-Dibromoethane	0.20044 ppb v/v
							1,2-Dichlorobenzene	0.20044 ppb v/v
							1,2-Dichloroethane	0.20044 ppb v/v
							1,2-Dichloropropane	0.20044 ppb v/v
							1,2-Dichlorotetrafluoroethane	0.20044 ppb v/v
							1,3,5-Trimethylbenzene	0.20044 ppb v/v
							1,3-Butadiene	0.20044 ppb v/v
							1,3-Dichlorobenzene	0.20044 ppb v/v
							1,4-Dichlorobenzene	0.20044 ppb v/v
							1,4-Dioxane	0.20044 ppb v/v
							2,2,4-Trimethylpentane	0.20044 ppb v/v
							2-Chlorotoluene	0.20044 ppb v/v
							2-Methylbutane	0.20044 ppb v/v
							3-Chloropropene	0.20044 ppb v/v
							4-Ethyltoluene	0.20044 ppb v/v
							4-Isopropyltoluene	0.20044 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acetone	0.20044 ppb v/v
							Acetonitrile	0.20044 ppb v/v
							Acrolein	0.20044 ppb v/v
							Acrylonitrile	0.20044 ppb v/v
							Alpha Methyl Styrene	0.20044 ppb v/v
							Benzene	0.20044 ppb v/v
							Benzyl chloride	0.20044 ppb v/v
							Bromodichloromethane	0.20044 ppb v/v
							Bromoethene(Vinyl Bromide)	0.20044 ppb v/v
							Bromoform	0.20044 ppb v/v
							Bromomethane	0.20044 ppb v/v
							Carbon disulfide	0.20044 ppb v/v
							Carbon tetrachloride	0.20044 ppb v/v
							Chlorobenzene	0.20044 ppb v/v
							Chloroethane	0.20044 ppb v/v
							Chloroform	0.20044 ppb v/v
							Chloromethane	0.20044 ppb v/v
							cis-1,2-Dichloroethene	0.20044 ppb v/v
							cis-1,3-Dichloropropene	0.20044 ppb v/v
							Cumene	0.20044 ppb v/v
							Cyclohexane	0.20044 ppb v/v
							Dibromochloromethane	0.20044 ppb v/v
							Dibromomethane	0.20044 ppb v/v
							Dichlorodifluoromethane	0.20044 ppb v/v
							Dodecane	0.20044 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ethyl acetate	0.20044 ppb v/v
							Ethyl ether	0.20044 ppb v/v
							Ethylbenzene	0.20044 ppb v/v
							Freon 22	0.20044 ppb v/v
							Freon TF	0.20044 ppb v/v
							Hexachlorobutadiene	0.20044 ppb v/v
							Isopropyl alcohol	0.20044 ppb v/v
							m,p-Xylene	0.400879 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	0.20044 ppb v/v
							Methyl Ethyl Ketone	0.20044 ppb v/v
							methyl isobutyl ketone	0.20044 ppb v/v
							Methyl methacrylate	0.20044 ppb v/v
							Methyl tert-butyl ether	0.20044 ppb v/v
							Methylene Chloride	0.20044 ppb v/v
							n-Butane	0.20044 ppb v/v
							n-Butanol	0.20044 ppb v/v
							n-Butylbenzene	0.20044 ppb v/v
							n-Decane	0.20044 ppb v/v
							n-Heptane	0.20044 ppb v/v
							n-Hexane	0.20044 ppb v/v
							n-Nonane	0.20044 ppb v/v
							n-Octane	0.20044 ppb v/v
							n-Propylbenzene	0.20044 ppb v/v
							Naphthalene	0.20044 ppb v/v
							Pentane	0.20044 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Propene	0.20044 ppb v/v
							sec-Butylbenzene	0.20044 ppb v/v
							Styrene	0.20044 ppb v/v
							tert-Butyl alcohol	0.20044 ppb v/v
							tert-Butylbenzene	0.20044 ppb v/v
							Tetrachloroethene	0.20044 ppb v/v
							Tetrahydrofuran	0.20044 ppb v/v
							Toluene	0.20044 ppb v/v
							trans-1,2-Dichloroethene	0.20044 ppb v/v
							trans-1,3-Dichloropropene	0.20044 ppb v/v
							Trichloroethene	0.20044 ppb v/v
							Trichlorofluoromethane	0.20044 ppb v/v
							Undecane	0.20044 ppb v/v
							Vinyl acetate	0.20044 ppb v/v
							Vinyl chloride	0.20044 ppb v/v
							Xylene, o-	0.20044 ppb v/v
							Ethanol	0.400944 ppb v/v
.ATTO15CAL6w_00111	09/15/15	06/22/15	Zero Air, Lot 10	15.463 L	ATTO15CALSTKi_00072	1546 mL	1,1,1-Trichloroethane	19.9961 ppb v/v
							1,1,2,2-Tetrachloroethane	19.9961 ppb v/v
							1,1,2-Trichloroethane	19.9961 ppb v/v
							1,1-Dichloroethane	19.9961 ppb v/v
							1,1-Dichloroethene	19.9961 ppb v/v
							1,2,3-Trichlorobenzene	19.9961 ppb v/v
							1,2,3-Trichloropropane	19.9961 ppb v/v
							1,2,4-Trichlorobenzene	19.9961 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,4-Trimethylbenzene	19.9961 ppb v/v
							1,2-Dibromoethane	19.9961 ppb v/v
							1,2-Dichlorobenzene	19.9961 ppb v/v
							1,2-Dichloroethane	19.9961 ppb v/v
							1,2-Dichloropropane	19.9961 ppb v/v
							1,2-Dichlorotetrafluoroethane	19.9961 ppb v/v
							1,3,5-Trimethylbenzene	19.9961 ppb v/v
							1,3-Butadiene	19.9961 ppb v/v
							1,3-Dichlorobenzene	19.9961 ppb v/v
							1,4-Dichlorobenzene	19.9961 ppb v/v
							1,4-Dioxane	19.9961 ppb v/v
							2,2,4-Trimethylpentane	19.9961 ppb v/v
							2-Chlorotoluene	19.9961 ppb v/v
							2-Methylbutane	19.9961 ppb v/v
							3-Chloropropene	19.9961 ppb v/v
							4-Ethyltoluene	19.9961 ppb v/v
							4-Isopropyltoluene	19.9961 ppb v/v
							Acetone	19.9961 ppb v/v
							Acetonitrile	19.9961 ppb v/v
							Acrolein	19.9961 ppb v/v
							Acrylonitrile	19.9961 ppb v/v
							Alpha Methyl Styrene	19.9961 ppb v/v
							Benzene	19.9961 ppb v/v
							Benzyl chloride	19.9961 ppb v/v
							Bromodichloromethane	19.9961 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bromoethene(Vinyl Bromide)	19.9961 ppb v/v
							Bromoform	19.9961 ppb v/v
							Bromomethane	19.9961 ppb v/v
							Carbon disulfide	19.9961 ppb v/v
							Carbon tetrachloride	19.9961 ppb v/v
							Chlorobenzene	19.9961 ppb v/v
							Chloroethane	19.9961 ppb v/v
							Chloroform	19.9961 ppb v/v
							Chloromethane	19.9961 ppb v/v
							cis-1,2-Dichloroethene	19.9961 ppb v/v
							cis-1,3-Dichloropropene	19.9961 ppb v/v
							Cumene	19.9961 ppb v/v
							Cyclohexane	19.9961 ppb v/v
							Dibromochloromethane	19.9961 ppb v/v
							Dibromomethane	19.9961 ppb v/v
							Dichlorodifluoromethane	19.9961 ppb v/v
							Dodecane	19.9961 ppb v/v
							Ethyl acetate	19.9961 ppb v/v
							Ethyl ether	19.9961 ppb v/v
							Ethylbenzene	19.9961 ppb v/v
							Freon 22	19.9961 ppb v/v
							Freon TF	19.9961 ppb v/v
							Hexachlorobutadiene	19.9961 ppb v/v
							Isopropyl alcohol	19.9961 ppb v/v
							m,p-Xylene	39.9922 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Methyl Butyl Ketone (2-Hexanone)	19.9961 ppb v/v
							Methyl Ethyl Ketone	19.9961 ppb v/v
							methyl isobutyl ketone	19.9961 ppb v/v
							Methyl methacrylate	19.9961 ppb v/v
							Methyl tert-butyl ether	19.9961 ppb v/v
							Methylene Chloride	19.9961 ppb v/v
							n-Butane	19.9961 ppb v/v
							n-Butanol	19.9961 ppb v/v
							n-Butylbenzene	19.9961 ppb v/v
							n-Decane	19.9961 ppb v/v
							n-Heptane	19.9961 ppb v/v
							n-Hexane	19.9961 ppb v/v
							n-Nonane	19.9961 ppb v/v
							n-Octane	19.9961 ppb v/v
							n-Propylbenzene	19.9961 ppb v/v
							Naphthalene	19.9961 ppb v/v
							Pentane	19.9961 ppb v/v
							Propene	19.9961 ppb v/v
							sec-Butylbenzene	19.9961 ppb v/v
							Styrene	19.9961 ppb v/v
							tert-Butyl alcohol	19.9961 ppb v/v
							tert-Butylbenzene	19.9961 ppb v/v
							Tetrachloroethene	19.9961 ppb v/v
							Tetrahydrofuran	19.9961 ppb v/v
							Toluene	19.9961 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							trans-1,2-Dichloroethene	19.9961 ppb v/v
							trans-1,3-Dichloropropene	19.9961 ppb v/v
							Trichloroethene	19.9961 ppb v/v
							Trichlorofluoromethane	19.9961 ppb v/v
							Undecane	19.9961 ppb v/v
							Vinyl acetate	19.9961 ppb v/v
							Vinyl chloride	19.9961 ppb v/v
							Xylene, o-	19.9961 ppb v/v
					ATTO15EthCALw_00058	1237 mL	Ethanol	39.9987 ppb v/v
..ATTO15CALSTKi_00072	09/15/15	06/15/15	Zero Air, Lot 12	37.5 L	ATTO15CALs_00023	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,3-Trichlorobenzene	200 ppb v/v
							1,2,3-Trichloropropane	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							2-Methylbutane	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acetonitrile	200 ppb v/v
							Acrolein	200 ppb v/v
							Acrylonitrile	200 ppb v/v
							Alpha Methyl Styrene	200 ppb v/v
							Benzene	200 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Dodecane	200 ppb v/v
							Ethyl acetate	200 ppb v/v
							Ethyl ether	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butanol	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Nonane	200 ppb v/v
							n-Octane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							Propene	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl acetate	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene, o-	200 ppb v/v
...ATTO15CALs_00023	12/31/15		Spectra Gases, Lot cc-90855		(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,3-Trichlorobenzene	1 ppm v/v
							1,2,3-Trichloropropane	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							2-Methylbutane	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acetonitrile	1 ppm v/v
							Acrolein	1 ppm v/v
							Acrylonitrile	1 ppm v/v
							Alpha Methyl Styrene	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Dodecane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethyl ether	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butanol	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Nonane	1 ppm v/v
							n-Octane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							Propene	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v
							Vinyl acetate	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene, o-	1 ppm v/v
..ATTO15EthCALw_00058	09/15/15	06/15/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
...ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
ATTO15CAL2w_00192	09/15/15	07/10/15	Zero Air, Lot 12	15.463 L	ATTO15CAL6w_00111	387 mL	1,1,1-Trichloroethane	0.500453 ppb v/v
							1,1,2,2-Tetrachloroethane	0.500453 ppb v/v
							1,1,2-Trichloroethane	0.500453 ppb v/v
							1,1-Dichloroethane	0.500453 ppb v/v
							1,1-Dichloroethene	0.500453 ppb v/v
							1,2,3-Trichlorobenzene	0.500453 ppb v/v
							1,2,3-Trichloropropane	0.500453 ppb v/v
							1,2,4-Trichlorobenzene	0.500453 ppb v/v
							1,2,4-Trimethylbenzene	0.500453 ppb v/v
							1,2-Dibromoethane	0.500453 ppb v/v
							1,2-Dichlorobenzene	0.500453 ppb v/v
							1,2-Dichloroethane	0.500453 ppb v/v
							1,2-Dichloropropane	0.500453 ppb v/v
							1,2-Dichlorotetrafluoroethane	0.500453 ppb v/v
							1,3,5-Trimethylbenzene	0.500453 ppb v/v
							1,3-Butadiene	0.500453 ppb v/v
							1,3-Dichlorobenzene	0.500453 ppb v/v
							1,4-Dichlorobenzene	0.500453 ppb v/v
							1,4-Dioxane	0.500453 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,2,4-Trimethylpentane	0.500453 ppb v/v
							2-Chlorotoluene	0.500453 ppb v/v
							2-Methylbutane	0.500453 ppb v/v
							3-Chloropropene	0.500453 ppb v/v
							4-Ethyltoluene	0.500453 ppb v/v
							4-Isopropyltoluene	0.500453 ppb v/v
							Acetone	0.500453 ppb v/v
							Acetonitrile	0.500453 ppb v/v
							Acrolein	0.500453 ppb v/v
							Acrylonitrile	0.500453 ppb v/v
							Alpha Methyl Styrene	0.500453 ppb v/v
							Benzene	0.500453 ppb v/v
							Benzyl chloride	0.500453 ppb v/v
							Bromodichloromethane	0.500453 ppb v/v
							Bromoethene(Vinyl Bromide)	0.500453 ppb v/v
							Bromoform	0.500453 ppb v/v
							Bromomethane	0.500453 ppb v/v
							Carbon disulfide	0.500453 ppb v/v
							Carbon tetrachloride	0.500453 ppb v/v
							Chlorobenzene	0.500453 ppb v/v
							Chloroethane	0.500453 ppb v/v
							Chloroform	0.500453 ppb v/v
							Chloromethane	0.500453 ppb v/v
							cis-1,2-Dichloroethene	0.500453 ppb v/v
							cis-1,3-Dichloropropene	0.500453 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cumene	0.500453 ppb v/v
							Cyclohexane	0.500453 ppb v/v
							Dibromochloromethane	0.500453 ppb v/v
							Dibromomethane	0.500453 ppb v/v
							Dichlorodifluoromethane	0.500453 ppb v/v
							Dodecane	0.500453 ppb v/v
							Ethyl acetate	0.500453 ppb v/v
							Ethyl ether	0.500453 ppb v/v
							Ethylbenzene	0.500453 ppb v/v
							Freon 22	0.500453 ppb v/v
							Freon TF	0.500453 ppb v/v
							Hexachlorobutadiene	0.500453 ppb v/v
							Isopropyl alcohol	0.500453 ppb v/v
							m,p-Xylene	1.00091 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	0.500453 ppb v/v
							Methyl Ethyl Ketone	0.500453 ppb v/v
							methyl isobutyl ketone	0.500453 ppb v/v
							Methyl methacrylate	0.500453 ppb v/v
							Methyl tert-butyl ether	0.500453 ppb v/v
							Methylene Chloride	0.500453 ppb v/v
							n-Butane	0.500453 ppb v/v
							n-Butanol	0.500453 ppb v/v
							n-Butylbenzene	0.500453 ppb v/v
							n-Decane	0.500453 ppb v/v
							n-Heptane	0.500453 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Hexane	0.500453 ppb v/v
							n-Nonane	0.500453 ppb v/v
							n-Octane	0.500453 ppb v/v
							n-Propylbenzene	0.500453 ppb v/v
							Naphthalene	0.500453 ppb v/v
							Pentane	0.500453 ppb v/v
							Propene	0.500453 ppb v/v
							sec-Butylbenzene	0.500453 ppb v/v
							Styrene	0.500453 ppb v/v
							tert-Butyl alcohol	0.500453 ppb v/v
							tert-Butylbenzene	0.500453 ppb v/v
							Tetrachloroethene	0.500453 ppb v/v
							Tetrahydrofuran	0.500453 ppb v/v
							Toluene	0.500453 ppb v/v
							trans-1,2-Dichloroethene	0.500453 ppb v/v
							trans-1,3-Dichloropropene	0.500453 ppb v/v
							Trichloroethene	0.500453 ppb v/v
							Trichlorofluoromethane	0.500453 ppb v/v
							Undecane	0.500453 ppb v/v
							Vinyl acetate	0.500453 ppb v/v
							Vinyl chloride	0.500453 ppb v/v
							Xylene, o-	0.500453 ppb v/v
							Ethanol	5.01064 ppb v/v
					ATTO15EthCALw_00058	124 mL	Ethanol	5.01064 ppb v/v
.ATTO15CAL6w_00111	09/15/15	06/22/15	Zero Air, Lot 10	15.463 L	ATTO15CALSTKi_00072	1546 mL	1,1,1-Trichloroethane	19.9961 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,1,2,2-Tetrachloroethane	19.9961 ppb v/v
							1,1,2-Trichloroethane	19.9961 ppb v/v
							1,1-Dichloroethane	19.9961 ppb v/v
							1,1-Dichloroethene	19.9961 ppb v/v
							1,2,3-Trichlorobenzene	19.9961 ppb v/v
							1,2,3-Trichloropropane	19.9961 ppb v/v
							1,2,4-Trichlorobenzene	19.9961 ppb v/v
							1,2,4-Trimethylbenzene	19.9961 ppb v/v
							1,2-Dibromoethane	19.9961 ppb v/v
							1,2-Dichlorobenzene	19.9961 ppb v/v
							1,2-Dichloroethane	19.9961 ppb v/v
							1,2-Dichloropropane	19.9961 ppb v/v
							1,2-Dichlorotetrafluoroethane	19.9961 ppb v/v
							1,3,5-Trimethylbenzene	19.9961 ppb v/v
							1,3-Butadiene	19.9961 ppb v/v
							1,3-Dichlorobenzene	19.9961 ppb v/v
							1,4-Dichlorobenzene	19.9961 ppb v/v
							1,4-Dioxane	19.9961 ppb v/v
							2,2,4-Trimethylpentane	19.9961 ppb v/v
							2-Chlorotoluene	19.9961 ppb v/v
							2-Methylbutane	19.9961 ppb v/v
							3-Chloropropene	19.9961 ppb v/v
							4-Ethyltoluene	19.9961 ppb v/v
							4-Isopropyltoluene	19.9961 ppb v/v
							Acetone	19.9961 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acetonitrile	19.9961 ppb v/v
							Acrolein	19.9961 ppb v/v
							Acrylonitrile	19.9961 ppb v/v
							Alpha Methyl Styrene	19.9961 ppb v/v
							Benzene	19.9961 ppb v/v
							Benzyl chloride	19.9961 ppb v/v
							Bromodichloromethane	19.9961 ppb v/v
							Bromoethene(Vinyl Bromide)	19.9961 ppb v/v
							Bromoform	19.9961 ppb v/v
							Bromomethane	19.9961 ppb v/v
							Carbon disulfide	19.9961 ppb v/v
							Carbon tetrachloride	19.9961 ppb v/v
							Chlorobenzene	19.9961 ppb v/v
							Chloroethane	19.9961 ppb v/v
							Chloroform	19.9961 ppb v/v
							Chloromethane	19.9961 ppb v/v
							cis-1,2-Dichloroethene	19.9961 ppb v/v
							cis-1,3-Dichloropropene	19.9961 ppb v/v
							Cumene	19.9961 ppb v/v
							Cyclohexane	19.9961 ppb v/v
							Dibromochloromethane	19.9961 ppb v/v
							Dibromomethane	19.9961 ppb v/v
							Dichlorodifluoromethane	19.9961 ppb v/v
							Dodecane	19.9961 ppb v/v
							Ethyl acetate	19.9961 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ethyl ether	19.9961 ppb v/v
							Ethylbenzene	19.9961 ppb v/v
							Freon 22	19.9961 ppb v/v
							Freon TF	19.9961 ppb v/v
							Hexachlorobutadiene	19.9961 ppb v/v
							Isopropyl alcohol	19.9961 ppb v/v
							m,p-Xylene	39.9922 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	19.9961 ppb v/v
							Methyl Ethyl Ketone	19.9961 ppb v/v
							methyl isobutyl ketone	19.9961 ppb v/v
							Methyl methacrylate	19.9961 ppb v/v
							Methyl tert-butyl ether	19.9961 ppb v/v
							Methylene Chloride	19.9961 ppb v/v
							n-Butane	19.9961 ppb v/v
							n-Butanol	19.9961 ppb v/v
							n-Butylbenzene	19.9961 ppb v/v
							n-Decane	19.9961 ppb v/v
							n-Heptane	19.9961 ppb v/v
							n-Hexane	19.9961 ppb v/v
							n-Nonane	19.9961 ppb v/v
							n-Octane	19.9961 ppb v/v
							n-Propylbenzene	19.9961 ppb v/v
							Naphthalene	19.9961 ppb v/v
							Pentane	19.9961 ppb v/v
							Propene	19.9961 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							sec-Butylbenzene	19.9961 ppb v/v
							Styrene	19.9961 ppb v/v
							tert-Butyl alcohol	19.9961 ppb v/v
							tert-Butylbenzene	19.9961 ppb v/v
							Tetrachloroethene	19.9961 ppb v/v
							Tetrahydrofuran	19.9961 ppb v/v
							Toluene	19.9961 ppb v/v
							trans-1,2-Dichloroethene	19.9961 ppb v/v
							trans-1,3-Dichloropropene	19.9961 ppb v/v
							Trichloroethene	19.9961 ppb v/v
							Trichlorofluoromethane	19.9961 ppb v/v
							Undecane	19.9961 ppb v/v
							Vinyl acetate	19.9961 ppb v/v
							Vinyl chloride	19.9961 ppb v/v
							Xylene, o-	19.9961 ppb v/v
					ATTO15EthCALw_00058	1237 mL	Ethanol	39.9987 ppb v/v
..ATTO15CALSTKi_00072	09/15/15	06/15/15	Zero Air, Lot 12	37.5 L	ATTO15CALs_00023	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,3-Trichlorobenzene	200 ppb v/v
							1,2,3-Trichloropropane	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							2-Methylbutane	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acetonitrile	200 ppb v/v
							Acrolein	200 ppb v/v
							Acrylonitrile	200 ppb v/v
							Alpha Methyl Styrene	200 ppb v/v
							Benzene	200 ppb v/v
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Dodecane	200 ppb v/v
							Ethyl acetate	200 ppb v/v
							Ethyl ether	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Butanol	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Nonane	200 ppb v/v
							n-Octane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							Propene	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl acetate	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene, o-	200 ppb v/v
...ATTO15CALs_00023	12/31/15		Spectra Gases, Lot cc-90855		(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,3-Trichlorobenzene	1 ppm v/v
							1,2,3-Trichloropropane	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							2-Methylbutane	1 ppm v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acetonitrile	1 ppm v/v
							Acrolein	1 ppm v/v
							Acrylonitrile	1 ppm v/v
							Alpha Methyl Styrene	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Dodecane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethyl ether	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butanol	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Hexane	1 ppm v/v
							n-Nonane	1 ppm v/v
							n-Octane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							Propene	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v
							Vinyl acetate	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene, o-	1 ppm v/v
..ATTO15EthCALw_00058	09/15/15	06/15/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
...ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
.ATTO15EthCALw_00058	09/15/15	06/15/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
..ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
ATTO15CAL3w_00152	09/01/15	06/03/15	Zero Air, Lot 12	15.463 L	ATTO15CALSTKi_00071	386 mL	1,1,1-Trichloroethane	4.99256 ppb v/v
							1,1,2,2-Tetrachloroethane	4.99256 ppb v/v
							1,1,2-Trichloroethane	4.99256 ppb v/v
							1,1-Dichloroethane	4.99256 ppb v/v
							1,1-Dichloroethene	4.99256 ppb v/v
							1,2,3-Trichlorobenzene	4.99256 ppb v/v
							1,2,3-Trichloropropane	4.99256 ppb v/v
							1,2,4-Trichlorobenzene	4.99256 ppb v/v
							1,2,4-Trimethylbenzene	4.99256 ppb v/v
							1,2-Dibromoethane	4.99256 ppb v/v
							1,2-Dichlorobenzene	4.99256 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dichloroethane	4.99256 ppb v/v
							1,2-Dichloropropane	4.99256 ppb v/v
							1,2-Dichlorotetrafluoroethane	4.99256 ppb v/v
							1,3,5-Trimethylbenzene	4.99256 ppb v/v
							1,3-Butadiene	4.99256 ppb v/v
							1,3-Dichlorobenzene	4.99256 ppb v/v
							1,4-Dichlorobenzene	4.99256 ppb v/v
							1,4-Dioxane	4.99256 ppb v/v
							2,2,4-Trimethylpentane	4.99256 ppb v/v
							2-Chlorotoluene	4.99256 ppb v/v
							2-Methylbutane	4.99256 ppb v/v
							3-Chloropropene	4.99256 ppb v/v
							4-Ethyltoluene	4.99256 ppb v/v
							4-Isopropyltoluene	4.99256 ppb v/v
							Acetone	4.99256 ppb v/v
							Acetonitrile	4.99256 ppb v/v
							Acrolein	4.99256 ppb v/v
							Acrylonitrile	4.99256 ppb v/v
							Alpha Methyl Styrene	4.99256 ppb v/v
							Benzene	4.99256 ppb v/v
							Benzyl chloride	4.99256 ppb v/v
							Bromodichloromethane	4.99256 ppb v/v
							Bromoethene(Vinyl Bromide)	4.99256 ppb v/v
							Bromoform	4.99256 ppb v/v
							Bromomethane	4.99256 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Carbon disulfide	4.99256 ppb v/v
							Carbon tetrachloride	4.99256 ppb v/v
							Chlorobenzene	4.99256 ppb v/v
							Chloroethane	4.99256 ppb v/v
							Chloroform	4.99256 ppb v/v
							Chloromethane	4.99256 ppb v/v
							cis-1,2-Dichloroethene	4.99256 ppb v/v
							cis-1,3-Dichloropropene	4.99256 ppb v/v
							Cumene	4.99256 ppb v/v
							Cyclohexane	4.99256 ppb v/v
							Dibromochloromethane	4.99256 ppb v/v
							Dibromomethane	4.99256 ppb v/v
							Dichlorodifluoromethane	4.99256 ppb v/v
							Dodecane	4.99256 ppb v/v
							Ethyl acetate	4.99256 ppb v/v
							Ethyl ether	4.99256 ppb v/v
							Ethylbenzene	4.99256 ppb v/v
							Freon 22	4.99256 ppb v/v
							Freon TF	4.99256 ppb v/v
							Hexachlorobutadiene	4.99256 ppb v/v
							Isopropyl alcohol	4.99256 ppb v/v
							m,p-Xylene	9.98513 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	4.99256 ppb v/v
							Methyl Ethyl Ketone	4.99256 ppb v/v
							methyl isobutyl ketone	4.99256 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Methyl methacrylate	4.99256 ppb v/v
							Methyl tert-butyl ether	4.99256 ppb v/v
							Methylene Chloride	4.99256 ppb v/v
							n-Butane	4.99256 ppb v/v
							n-Butanol	4.99256 ppb v/v
							n-Butylbenzene	4.99256 ppb v/v
							n-Decane	4.99256 ppb v/v
							n-Heptane	4.99256 ppb v/v
							n-Hexane	4.99256 ppb v/v
							n-Nonane	4.99256 ppb v/v
							n-Octane	4.99256 ppb v/v
							n-Propylbenzene	4.99256 ppb v/v
							Naphthalene	4.99256 ppb v/v
							Pentane	4.99256 ppb v/v
							Propene	4.99256 ppb v/v
							sec-Butylbenzene	4.99256 ppb v/v
							Styrene	4.99256 ppb v/v
							tert-Butyl alcohol	4.99256 ppb v/v
							tert-Butylbenzene	4.99256 ppb v/v
							Tetrachloroethene	4.99256 ppb v/v
							Tetrahydrofuran	4.99256 ppb v/v
							Toluene	4.99256 ppb v/v
							trans-1,2-Dichloroethene	4.99256 ppb v/v
							trans-1,3-Dichloropropene	4.99256 ppb v/v
							Trichloroethene	4.99256 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Trichlorofluoromethane	4.99256 ppb v/v
							Undecane	4.99256 ppb v/v
							Vinyl acetate	4.99256 ppb v/v
							Vinyl chloride	4.99256 ppb v/v
							Xylene, o-	4.99256 ppb v/v
					ATTO15EthCALw_00057	309 mL	Ethanol	9.99159 ppb v/v
.ATTO15CALSTKi_00071	09/01/15	06/01/15	Zero Air, Lot 12	37.5 L	ATTO15CALs_00023	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,3-Trichlorobenzene	200 ppb v/v
							1,2,3-Trichloropropane	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							2-Methylbutane	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acetonitrile	200 ppb v/v
							Acrolein	200 ppb v/v
							Acrylonitrile	200 ppb v/v
							Alpha Methyl Styrene	200 ppb v/v
							Benzene	200 ppb v/v
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Dodecane	200 ppb v/v
							Ethyl acetate	200 ppb v/v
							Ethyl ether	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butanol	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Nonane	200 ppb v/v
							n-Octane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							Propene	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl acetate	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene, o-	200 ppb v/v
..ATTO15CALs_00023	12/31/15	Spectra Gases, Lot cc-90855			(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,3-Trichlorobenzene	1 ppm v/v
							1,2,3-Trichloropropane	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							2-Methylbutane	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acetonitrile	1 ppm v/v
							Acrolein	1 ppm v/v
							Acrylonitrile	1 ppm v/v
							Alpha Methyl Styrene	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Dodecane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethyl ether	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butanol	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Nonane	1 ppm v/v
							n-Octane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							Propene	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Vinyl acetate	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene, o-	1 ppm v/v
.ATTO15EthCALw_00057	09/02/15	06/02/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
..ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
ATTO15CAL4w_00478	09/15/15	07/28/15	Zero Air, Lot 12	15.463 L	ATTO15CALSTKi_00073	773 mL	1,1,1-Trichloroethane	9.99806 ppb v/v
							1,1,2,2-Tetrachloroethane	9.99806 ppb v/v
							1,1,2-Trichloroethane	9.99806 ppb v/v
							1,1-Dichloroethane	9.99806 ppb v/v
							1,1-Dichloroethene	9.99806 ppb v/v
							1,2,3-Trichlorobenzene	9.99806 ppb v/v
							1,2,3-Trichloropropane	9.99806 ppb v/v
							1,2,4-Trichlorobenzene	9.99806 ppb v/v
							1,2,4-Trimethylbenzene	9.99806 ppb v/v
							1,2-Dibromoethane	9.99806 ppb v/v
							1,2-Dichlorobenzene	9.99806 ppb v/v
							1,2-Dichloroethane	9.99806 ppb v/v
							1,2-Dichloropropane	9.99806 ppb v/v
							1,2-Dichlorotetrafluoroethane	9.99806 ppb v/v
							1,3,5-Trimethylbenzene	9.99806 ppb v/v
							1,3-Butadiene	9.99806 ppb v/v
							1,3-Dichlorobenzene	9.99806 ppb v/v
							1,4-Dichlorobenzene	9.99806 ppb v/v
							1,4-Dioxane	9.99806 ppb v/v
							2,2,4-Trimethylpentane	9.99806 ppb v/v
							2-Chlorotoluene	9.99806 ppb v/v
							2-Methylbutane	9.99806 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3-Chloropropene	9.99806 ppb v/v
							4-Ethyltoluene	9.99806 ppb v/v
							4-Isopropyltoluene	9.99806 ppb v/v
							Acetone	9.99806 ppb v/v
							Acetonitrile	9.99806 ppb v/v
							Acrolein	9.99806 ppb v/v
							Acrylonitrile	9.99806 ppb v/v
							Alpha Methyl Styrene	9.99806 ppb v/v
							Benzene	9.99806 ppb v/v
							Benzyl chloride	9.99806 ppb v/v
							Bromodichloromethane	9.99806 ppb v/v
							Bromoethene(Vinyl Bromide)	9.99806 ppb v/v
							Bromoform	9.99806 ppb v/v
							Bromomethane	9.99806 ppb v/v
							Carbon disulfide	9.99806 ppb v/v
							Carbon tetrachloride	9.99806 ppb v/v
							Chlorobenzene	9.99806 ppb v/v
							Chloroethane	9.99806 ppb v/v
							Chloroform	9.99806 ppb v/v
							Chloromethane	9.99806 ppb v/v
							cis-1,2-Dichloroethene	9.99806 ppb v/v
							cis-1,3-Dichloropropene	9.99806 ppb v/v
							Cumene	9.99806 ppb v/v
							Cyclohexane	9.99806 ppb v/v
							Dibromochloromethane	9.99806 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dibromomethane	9.99806 ppb v/v
							Dichlorodifluoromethane	9.99806 ppb v/v
							Dodecane	9.99806 ppb v/v
							Ethyl acetate	9.99806 ppb v/v
							Ethyl ether	9.99806 ppb v/v
							Ethylbenzene	9.99806 ppb v/v
							Freon 22	9.99806 ppb v/v
							Freon TF	9.99806 ppb v/v
							Hexachlorobutadiene	9.99806 ppb v/v
							Isopropyl alcohol	9.99806 ppb v/v
							m,p-Xylene	19.9961 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	9.99806 ppb v/v
							Methyl Ethyl Ketone	9.99806 ppb v/v
							methyl isobutyl ketone	9.99806 ppb v/v
							Methyl methacrylate	9.99806 ppb v/v
							Methyl tert-butyl ether	9.99806 ppb v/v
							Methylene Chloride	9.99806 ppb v/v
							n-Butane	9.99806 ppb v/v
							n-Butanol	9.99806 ppb v/v
							n-Butylbenzene	9.99806 ppb v/v
							n-Decane	9.99806 ppb v/v
							n-Heptane	9.99806 ppb v/v
							n-Hexane	9.99806 ppb v/v
							n-Nonane	9.99806 ppb v/v
							n-Octane	9.99806 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Propylbenzene	9.99806 ppb v/v
							Naphthalene	9.99806 ppb v/v
							Pentane	9.99806 ppb v/v
							Propene	9.99806 ppb v/v
							sec-Butylbenzene	9.99806 ppb v/v
							Styrene	9.99806 ppb v/v
							tert-Butyl alcohol	9.99806 ppb v/v
							tert-Butylbenzene	9.99806 ppb v/v
							Tetrachloroethene	9.99806 ppb v/v
							Tetrahydrofuran	9.99806 ppb v/v
							Toluene	9.99806 ppb v/v
							trans-1,2-Dichloroethene	9.99806 ppb v/v
							trans-1,3-Dichloropropene	9.99806 ppb v/v
							Trichloroethene	9.99806 ppb v/v
							Trichlorofluoromethane	9.99806 ppb v/v
							Undecane	9.99806 ppb v/v
							Vinyl acetate	9.99806 ppb v/v
							Vinyl chloride	9.99806 ppb v/v
							Xylene, o-	9.99806 ppb v/v
					ATTO15EthCALw_00058	464 mL	Ethanol	15.0036 ppb v/v
.ATTO15CALSTKi_00073	10/27/15	07/27/15	Zero Air, Lot 12	37.5 L	ATTO15CALs_00023	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,3-Trichlorobenzene	200 ppb v/v
							1,2,3-Trichloropropane	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							2-Methylbutane	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acetonitrile	200 ppb v/v
							Acrolein	200 ppb v/v
							Acrylonitrile	200 ppb v/v
							Alpha Methyl Styrene	200 ppb v/v
							Benzene	200 ppb v/v
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Dodecane	200 ppb v/v
							Ethyl acetate	200 ppb v/v
							Ethyl ether	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butanol	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Nonane	200 ppb v/v
							n-Octane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							Propene	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl acetate	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene, o-	200 ppb v/v
..ATTO15CALs_00023	12/31/15	Spectra Gases, Lot cc-90855			(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,3-Trichlorobenzene	1 ppm v/v
							1,2,3-Trichloropropane	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							2-Methylbutane	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acetonitrile	1 ppm v/v
							Acrolein	1 ppm v/v
							Acrylonitrile	1 ppm v/v
							Alpha Methyl Styrene	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Dodecane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethyl ether	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butanol	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Nonane	1 ppm v/v
							n-Octane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							Propene	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v
							Vinyl acetate	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene, o-	1 ppm v/v
.ATTO15EthCALw_00058	09/15/15	06/15/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
..ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
ATTO15CAL4w_00492	11/17/15	08/27/15	Zero Air, Lot 13	15.463 L	ATTO15CALSTKi_00074	773 mL	1,1,1-Trichloroethane	9.99806 ppb v/v
							1,1,2,2-Tetrachloroethane	9.99806 ppb v/v
							1,1,2-Trichloroethane	9.99806 ppb v/v
							1,1-Dichloroethane	9.99806 ppb v/v
							1,1-Dichloroethene	9.99806 ppb v/v
							1,2,3-Trichlorobenzene	9.99806 ppb v/v
							1,2,4-Trichlorobenzene	9.99806 ppb v/v
							1,2,4-Trimethylbenzene	9.99806 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dibromoethane	9.99806 ppb v/v
							1,2-Dichlorobenzene	9.99806 ppb v/v
							1,2-Dichloroethane	9.99806 ppb v/v
							1,2-Dichloroethene, Total	19.9961 ppb v/v
							1,2-Dichloropropane	9.99806 ppb v/v
							1,2-Dichlorotetrafluoroethane	9.99806 ppb v/v
							1,3,5-Trimethylbenzene	9.99806 ppb v/v
							1,3-Butadiene	9.99806 ppb v/v
							1,3-Dichlorobenzene	9.99806 ppb v/v
							1,4-Dichlorobenzene	9.99806 ppb v/v
							1,4-Dioxane	9.99806 ppb v/v
							2,2,4-Trimethylpentane	9.99806 ppb v/v
							2-Chlorotoluene	9.99806 ppb v/v
							3-Chloropropene	9.99806 ppb v/v
							4-Ethyltoluene	9.99806 ppb v/v
							4-Isopropyltoluene	9.99806 ppb v/v
							Acetone	9.99806 ppb v/v
							Acrolein	9.99806 ppb v/v
							Benzene	9.99806 ppb v/v
							Benzyl chloride	9.99806 ppb v/v
							Bromodichloromethane	9.99806 ppb v/v
							Bromoethene(Vinyl Bromide)	9.99806 ppb v/v
							Bromoform	9.99806 ppb v/v
							Bromomethane	9.99806 ppb v/v
							Carbon disulfide	9.99806 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Carbon tetrachloride	9.99806 ppb v/v
							Chlorobenzene	9.99806 ppb v/v
							Chloroethane	9.99806 ppb v/v
							Chloroform	9.99806 ppb v/v
							Chloromethane	9.99806 ppb v/v
							cis-1,2-Dichloroethene	9.99806 ppb v/v
							cis-1,3-Dichloropropene	9.99806 ppb v/v
							Cumene	9.99806 ppb v/v
							Cyclohexane	9.99806 ppb v/v
							Dibromochloromethane	9.99806 ppb v/v
							Dibromomethane	9.99806 ppb v/v
							Dichlorodifluoromethane	9.99806 ppb v/v
							Ethyl acetate	9.99806 ppb v/v
							Ethylbenzene	9.99806 ppb v/v
							Freon 22	9.99806 ppb v/v
							Freon TF	9.99806 ppb v/v
							Hexachlorobutadiene	9.99806 ppb v/v
							Isopropyl alcohol	9.99806 ppb v/v
							m,p-Xylene	19.9961 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	9.99806 ppb v/v
							Methyl Ethyl Ketone	9.99806 ppb v/v
							methyl isobutyl ketone	9.99806 ppb v/v
							Methyl methacrylate	9.99806 ppb v/v
							Methyl tert-butyl ether	9.99806 ppb v/v
							Methylene Chloride	9.99806 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Butane	9.99806 ppb v/v
							n-Butylbenzene	9.99806 ppb v/v
							n-Decane	9.99806 ppb v/v
							n-Heptane	9.99806 ppb v/v
							n-Hexane	9.99806 ppb v/v
							n-Nonane	9.99806 ppb v/v
							n-Octane	9.99806 ppb v/v
							n-Propylbenzene	9.99806 ppb v/v
							Naphthalene	9.99806 ppb v/v
							Pentane	9.99806 ppb v/v
							sec-Butylbenzene	9.99806 ppb v/v
							Styrene	9.99806 ppb v/v
							tert-Butyl alcohol	9.99806 ppb v/v
							tert-Butylbenzene	9.99806 ppb v/v
							Tetrachloroethene	9.99806 ppb v/v
							Tetrahydrofuran	9.99806 ppb v/v
							Toluene	9.99806 ppb v/v
							trans-1,2-Dichloroethene	9.99806 ppb v/v
							trans-1,3-Dichloropropene	9.99806 ppb v/v
							Trichloroethene	9.99806 ppb v/v
							Trichlorofluoromethane	9.99806 ppb v/v
							Undecane	9.99806 ppb v/v
							Vinyl chloride	9.99806 ppb v/v
							Xylene (total)	29.9942 ppb v/v
							Xylene, o-	9.99806 ppb v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					ATTO15EthCALw_00059	464 mL	Ethanol	15.0036 ppb v/v
.ATTO15CALSTKi_00074	11/25/15	08/25/15	Zero Air, Lot 13	37.5 L	ATTO15CALs_00023	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,3-Trichlorobenzene	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloroethene, Total	400 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acrolein	200 ppb v/v
							Benzene	200 ppb v/v
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Ethyl acetate	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Nonane	200 ppb v/v
							n-Octane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene (total)	600 ppb v/v
							Xylene, o-	200 ppb v/v
..ATTO15CALs_00023	12/31/15		Spectra Gases, Lot cc-90855		(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,3-Trichlorobenzene	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloroethene, Total	2 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acrolein	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Nonane	1 ppm v/v
							n-Octane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene (total)	3 ppm v/v
							Xylene, o-	1 ppm v/v
.ATTO15EthCALw_00059	11/17/15	08/17/15	Zero Air, Lot 1020	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
..ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
ATTO15CAL5w_00055	09/15/15	06/22/15	Zero Air, Lot 10	15.463 L	ATTO15CALSTKi_00072	1160 mL	1,1,1-Trichloroethane	15.0036 ppb v/v
							1,1,2,2-Tetrachloroethane	15.0036 ppb v/v
							1,1,2-Trichloroethane	15.0036 ppb v/v
							1,1-Dichloroethane	15.0036 ppb v/v
							1,1-Dichloroethene	15.0036 ppb v/v
							1,2,3-Trichlorobenzene	15.0036 ppb v/v
							1,2,3-Trichloropropane	15.0036 ppb v/v
							1,2,4-Trichlorobenzene	15.0036 ppb v/v
							1,2,4-Trimethylbenzene	15.0036 ppb v/v
							1,2-Dibromoethane	15.0036 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dichlorobenzene	15.0036 ppb v/v
							1,2-Dichloroethane	15.0036 ppb v/v
							1,2-Dichloropropane	15.0036 ppb v/v
							1,2-Dichlorotetrafluoroethane	15.0036 ppb v/v
							1,3,5-Trimethylbenzene	15.0036 ppb v/v
							1,3-Butadiene	15.0036 ppb v/v
							1,3-Dichlorobenzene	15.0036 ppb v/v
							1,4-Dichlorobenzene	15.0036 ppb v/v
							1,4-Dioxane	15.0036 ppb v/v
							2,2,4-Trimethylpentane	15.0036 ppb v/v
							2-Chlorotoluene	15.0036 ppb v/v
							2-Methylbutane	15.0036 ppb v/v
							3-Chloropropene	15.0036 ppb v/v
							4-Ethyltoluene	15.0036 ppb v/v
							4-Isopropyltoluene	15.0036 ppb v/v
							Acetone	15.0036 ppb v/v
							Acetonitrile	15.0036 ppb v/v
							Acrolein	15.0036 ppb v/v
							Acrylonitrile	15.0036 ppb v/v
							Alpha Methyl Styrene	15.0036 ppb v/v
							Benzene	15.0036 ppb v/v
							Benzyl chloride	15.0036 ppb v/v
							Bromodichloromethane	15.0036 ppb v/v
							Bromoethene(Vinyl Bromide)	15.0036 ppb v/v
							Bromoform	15.0036 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bromomethane	15.0036 ppb v/v
							Carbon disulfide	15.0036 ppb v/v
							Carbon tetrachloride	15.0036 ppb v/v
							Chlorobenzene	15.0036 ppb v/v
							Chloroethane	15.0036 ppb v/v
							Chloroform	15.0036 ppb v/v
							Chloromethane	15.0036 ppb v/v
							cis-1,2-Dichloroethene	15.0036 ppb v/v
							cis-1,3-Dichloropropene	15.0036 ppb v/v
							Cumene	15.0036 ppb v/v
							Cyclohexane	15.0036 ppb v/v
							Dibromochloromethane	15.0036 ppb v/v
							Dibromomethane	15.0036 ppb v/v
							Dichlorodifluoromethane	15.0036 ppb v/v
							Dodecane	15.0036 ppb v/v
							Ethyl acetate	15.0036 ppb v/v
							Ethyl ether	15.0036 ppb v/v
							Ethylbenzene	15.0036 ppb v/v
							Freon 22	15.0036 ppb v/v
							Freon TF	15.0036 ppb v/v
							Hexachlorobutadiene	15.0036 ppb v/v
							Isopropyl alcohol	15.0036 ppb v/v
							m,p-Xylene	30.0071 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	15.0036 ppb v/v
							Methyl Ethyl Ketone	15.0036 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							methyl isobutyl ketone	15.0036 ppb v/v
							Methyl methacrylate	15.0036 ppb v/v
							Methyl tert-butyl ether	15.0036 ppb v/v
							Methylene Chloride	15.0036 ppb v/v
							n-Butane	15.0036 ppb v/v
							n-Butanol	15.0036 ppb v/v
							n-Butylbenzene	15.0036 ppb v/v
							n-Decane	15.0036 ppb v/v
							n-Heptane	15.0036 ppb v/v
							n-Hexane	15.0036 ppb v/v
							n-Nonane	15.0036 ppb v/v
							n-Octane	15.0036 ppb v/v
							n-Propylbenzene	15.0036 ppb v/v
							Naphthalene	15.0036 ppb v/v
							Pentane	15.0036 ppb v/v
							Propene	15.0036 ppb v/v
							sec-Butylbenzene	15.0036 ppb v/v
							Styrene	15.0036 ppb v/v
							tert-Butyl alcohol	15.0036 ppb v/v
							tert-Butylbenzene	15.0036 ppb v/v
							Tetrachloroethene	15.0036 ppb v/v
							Tetrahydrofuran	15.0036 ppb v/v
							Toluene	15.0036 ppb v/v
							trans-1,2-Dichloroethene	15.0036 ppb v/v
							trans-1,3-Dichloropropene	15.0036 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Trichloroethene	15.0036 ppb v/v
							Trichlorofluoromethane	15.0036 ppb v/v
							Undecane	15.0036 ppb v/v
							Vinyl acetate	15.0036 ppb v/v
							Vinyl chloride	15.0036 ppb v/v
							Xylene, o-	15.0036 ppb v/v
					ATTO15EthCALw_00058	620 mL	Ethanol	20.0479 ppb v/v
.ATTO15CALSTKi_00072	09/15/15	06/15/15	Zero Air, Lot 12	37.5 L	ATTO15CALs_00023	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,3-Trichlorobenzene	200 ppb v/v
							1,2,3-Trichloropropane	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							2-Methylbutane	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acetonitrile	200 ppb v/v
							Acrolein	200 ppb v/v
							Acrylonitrile	200 ppb v/v
							Alpha Methyl Styrene	200 ppb v/v
							Benzene	200 ppb v/v
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Dodecane	200 ppb v/v
							Ethyl acetate	200 ppb v/v
							Ethyl ether	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butanol	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Nonane	200 ppb v/v
							n-Octane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							Propene	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl acetate	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene, o-	200 ppb v/v
..ATTO15CALs_00023	12/31/15	Spectra Gases, Lot cc-90855			(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,3-Trichlorobenzene	1 ppm v/v
							1,2,3-Trichloropropane	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							2-Methylbutane	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acetonitrile	1 ppm v/v
							Acrolein	1 ppm v/v
							Acrylonitrile	1 ppm v/v
							Alpha Methyl Styrene	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Dodecane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethyl ether	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butanol	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Nonane	1 ppm v/v
							n-Octane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							Propene	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v
							Vinyl acetate	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene, o-	1 ppm v/v
.ATTO15EthCALw_00058	09/15/15	06/15/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
..ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
ATTO15CAL6w_00111	09/15/15	06/22/15	Zero Air, Lot 10	15.463 L	ATTO15CALSTKi_00072	1546 mL	1,1,1-Trichloroethane	19.9961 ppb v/v
							1,1,2,2-Tetrachloroethane	19.9961 ppb v/v
							1,1,2-Trichloroethane	19.9961 ppb v/v
							1,1-Dichloroethane	19.9961 ppb v/v
							1,1-Dichloroethene	19.9961 ppb v/v
							1,2,3-Trichlorobenzene	19.9961 ppb v/v
							1,2,3-Trichloropropane	19.9961 ppb v/v
							1,2,4-Trichlorobenzene	19.9961 ppb v/v
							1,2,4-Trimethylbenzene	19.9961 ppb v/v
							1,2-Dibromoethane	19.9961 ppb v/v
							1,2-Dichlorobenzene	19.9961 ppb v/v
							1,2-Dichloroethane	19.9961 ppb v/v
							1,2-Dichloropropane	19.9961 ppb v/v
							1,2-Dichlorotetrafluoroethane	19.9961 ppb v/v
							1,3,5-Trimethylbenzene	19.9961 ppb v/v
							1,3-Butadiene	19.9961 ppb v/v
							1,3-Dichlorobenzene	19.9961 ppb v/v
							1,4-Dichlorobenzene	19.9961 ppb v/v
							1,4-Dioxane	19.9961 ppb v/v
							2,2,4-Trimethylpentane	19.9961 ppb v/v
							2-Chlorotoluene	19.9961 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Methylbutane	19.9961 ppb v/v
							3-Chloropropene	19.9961 ppb v/v
							4-Ethyltoluene	19.9961 ppb v/v
							4-Isopropyltoluene	19.9961 ppb v/v
							Acetone	19.9961 ppb v/v
							Acetonitrile	19.9961 ppb v/v
							Acrolein	19.9961 ppb v/v
							Acrylonitrile	19.9961 ppb v/v
							Alpha Methyl Styrene	19.9961 ppb v/v
							Benzene	19.9961 ppb v/v
							Benzyl chloride	19.9961 ppb v/v
							Bromodichloromethane	19.9961 ppb v/v
							Bromoethene(Vinyl Bromide)	19.9961 ppb v/v
							Bromoform	19.9961 ppb v/v
							Bromomethane	19.9961 ppb v/v
							Carbon disulfide	19.9961 ppb v/v
							Carbon tetrachloride	19.9961 ppb v/v
							Chlorobenzene	19.9961 ppb v/v
							Chloroethane	19.9961 ppb v/v
							Chloroform	19.9961 ppb v/v
							Chloromethane	19.9961 ppb v/v
							cis-1,2-Dichloroethene	19.9961 ppb v/v
							cis-1,3-Dichloropropene	19.9961 ppb v/v
							Cumene	19.9961 ppb v/v
							Cyclohexane	19.9961 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dibromochloromethane	19.9961 ppb v/v
							Dibromomethane	19.9961 ppb v/v
							Dichlorodifluoromethane	19.9961 ppb v/v
							Dodecane	19.9961 ppb v/v
							Ethyl acetate	19.9961 ppb v/v
							Ethyl ether	19.9961 ppb v/v
							Ethylbenzene	19.9961 ppb v/v
							Freon 22	19.9961 ppb v/v
							Freon TF	19.9961 ppb v/v
							Hexachlorobutadiene	19.9961 ppb v/v
							Isopropyl alcohol	19.9961 ppb v/v
							m,p-Xylene	39.9922 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	19.9961 ppb v/v
							Methyl Ethyl Ketone	19.9961 ppb v/v
							methyl isobutyl ketone	19.9961 ppb v/v
							Methyl methacrylate	19.9961 ppb v/v
							Methyl tert-butyl ether	19.9961 ppb v/v
							Methylene Chloride	19.9961 ppb v/v
							n-Butane	19.9961 ppb v/v
							n-Butanol	19.9961 ppb v/v
							n-Butylbenzene	19.9961 ppb v/v
							n-Decane	19.9961 ppb v/v
							n-Heptane	19.9961 ppb v/v
							n-Hexane	19.9961 ppb v/v
							n-Nonane	19.9961 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Octane	19.9961 ppb v/v
							n-Propylbenzene	19.9961 ppb v/v
							Naphthalene	19.9961 ppb v/v
							Pentane	19.9961 ppb v/v
							Propene	19.9961 ppb v/v
							sec-Butylbenzene	19.9961 ppb v/v
							Styrene	19.9961 ppb v/v
							tert-Butyl alcohol	19.9961 ppb v/v
							tert-Butylbenzene	19.9961 ppb v/v
							Tetrachloroethene	19.9961 ppb v/v
							Tetrahydrofuran	19.9961 ppb v/v
							Toluene	19.9961 ppb v/v
							trans-1,2-Dichloroethene	19.9961 ppb v/v
							trans-1,3-Dichloropropene	19.9961 ppb v/v
							Trichloroethene	19.9961 ppb v/v
							Trichlorofluoromethane	19.9961 ppb v/v
							Undecane	19.9961 ppb v/v
							Vinyl acetate	19.9961 ppb v/v
							Vinyl chloride	19.9961 ppb v/v
							Xylene, o-	19.9961 ppb v/v
					ATTO15EthCALw_00058	1237 mL	Ethanol	39.9987 ppb v/v
.ATTO15CALSTKi_00072	09/15/15	06/15/15	Zero Air, Lot 12	37.5 L	ATTO15CALs_00023	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,3-Trichlorobenzene	200 ppb v/v
							1,2,3-Trichloropropane	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							2-Methylbutane	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acetonitrile	200 ppb v/v
							Acrolein	200 ppb v/v
							Acrylonitrile	200 ppb v/v
							Alpha Methyl Styrene	200 ppb v/v
							Benzene	200 ppb v/v
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Dodecane	200 ppb v/v
							Ethyl acetate	200 ppb v/v
							Ethyl ether	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butanol	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Nonane	200 ppb v/v
							n-Octane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							Propene	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl acetate	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene, o-	200 ppb v/v
..ATTO15CALs_00023	12/31/15	Spectra Gases, Lot cc-90855			(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,3-Trichlorobenzene	1 ppm v/v
							1,2,3-Trichloropropane	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							2-Methylbutane	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acetonitrile	1 ppm v/v
							Acrolein	1 ppm v/v
							Acrylonitrile	1 ppm v/v
							Alpha Methyl Styrene	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Dodecane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethyl ether	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butanol	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Nonane	1 ppm v/v
							n-Octane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							Propene	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v
							Vinyl acetate	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene, o-	1 ppm v/v
.ATTO15EthCALw_00058	09/15/15	06/15/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
..ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
ATTO15CAL7w_00056	09/15/15	06/22/15	Zero Air, Lot 10	15.463 L	ATTO15CALSTKi_00072	3092 mL	1,1,1-Trichloroethane	39.9922 ppb v/v
							1,1,2,2-Tetrachloroethane	39.9922 ppb v/v
							1,1,2-Trichloroethane	39.9922 ppb v/v
							1,1-Dichloroethane	39.9922 ppb v/v
							1,1-Dichloroethene	39.9922 ppb v/v
							1,2,3-Trichlorobenzene	39.9922 ppb v/v
							1,2,3-Trichloropropane	39.9922 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,4-Trichlorobenzene	39.9922 ppb v/v
							1,2,4-Trimethylbenzene	39.9922 ppb v/v
							1,2-Dibromoethane	39.9922 ppb v/v
							1,2-Dichlorobenzene	39.9922 ppb v/v
							1,2-Dichloroethane	39.9922 ppb v/v
							1,2-Dichloropropane	39.9922 ppb v/v
							1,2-Dichlorotetrafluoroethane	39.9922 ppb v/v
							1,3,5-Trimethylbenzene	39.9922 ppb v/v
							1,3-Butadiene	39.9922 ppb v/v
							1,3-Dichlorobenzene	39.9922 ppb v/v
							1,4-Dichlorobenzene	39.9922 ppb v/v
							1,4-Dioxane	39.9922 ppb v/v
							2,2,4-Trimethylpentane	39.9922 ppb v/v
							2-Chlorotoluene	39.9922 ppb v/v
							2-Methylbutane	39.9922 ppb v/v
							3-Chloropropene	39.9922 ppb v/v
							4-Ethyltoluene	39.9922 ppb v/v
							4-Isopropyltoluene	39.9922 ppb v/v
							Acetone	39.9922 ppb v/v
							Acetonitrile	39.9922 ppb v/v
							Acrolein	39.9922 ppb v/v
							Acrylonitrile	39.9922 ppb v/v
							Alpha Methyl Styrene	39.9922 ppb v/v
							Benzene	39.9922 ppb v/v
							Benzyl chloride	39.9922 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bromodichloromethane	39.9922 ppb v/v
							Bromoethene(Vinyl Bromide)	39.9922 ppb v/v
							Bromoform	39.9922 ppb v/v
							Bromomethane	39.9922 ppb v/v
							Carbon disulfide	39.9922 ppb v/v
							Carbon tetrachloride	39.9922 ppb v/v
							Chlorobenzene	39.9922 ppb v/v
							Chloroethane	39.9922 ppb v/v
							Chloroform	39.9922 ppb v/v
							Chloromethane	39.9922 ppb v/v
							cis-1,2-Dichloroethene	39.9922 ppb v/v
							cis-1,3-Dichloropropene	39.9922 ppb v/v
							Cumene	39.9922 ppb v/v
							Cyclohexane	39.9922 ppb v/v
							Dibromochloromethane	39.9922 ppb v/v
							Dibromomethane	39.9922 ppb v/v
							Dichlorodifluoromethane	39.9922 ppb v/v
							Dodecane	39.9922 ppb v/v
							Ethyl acetate	39.9922 ppb v/v
							Ethyl ether	39.9922 ppb v/v
							Ethylbenzene	39.9922 ppb v/v
							Freon 22	39.9922 ppb v/v
							Freon TF	39.9922 ppb v/v
							Hexachlorobutadiene	39.9922 ppb v/v
							Isopropyl alcohol	39.9922 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							m,p-Xylene	79.9845 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	39.9922 ppb v/v
							Methyl Ethyl Ketone	39.9922 ppb v/v
							methyl isobutyl ketone	39.9922 ppb v/v
							Methyl methacrylate	39.9922 ppb v/v
							Methyl tert-butyl ether	39.9922 ppb v/v
							Methylene Chloride	39.9922 ppb v/v
							n-Butane	39.9922 ppb v/v
							n-Butanol	39.9922 ppb v/v
							n-Butylbenzene	39.9922 ppb v/v
							n-Decane	39.9922 ppb v/v
							n-Heptane	39.9922 ppb v/v
							n-Hexane	39.9922 ppb v/v
							n-Nonane	39.9922 ppb v/v
							n-Octane	39.9922 ppb v/v
							n-Propylbenzene	39.9922 ppb v/v
							Naphthalene	39.9922 ppb v/v
							Pentane	39.9922 ppb v/v
							Propene	39.9922 ppb v/v
							sec-Butylbenzene	39.9922 ppb v/v
							Styrene	39.9922 ppb v/v
							tert-Butyl alcohol	39.9922 ppb v/v
							tert-Butylbenzene	39.9922 ppb v/v
							Tetrachloroethene	39.9922 ppb v/v
							Tetrahydrofuran	39.9922 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Toluene	39.9922 ppb v/v
							trans-1,2-Dichloroethene	39.9922 ppb v/v
							trans-1,3-Dichloropropene	39.9922 ppb v/v
							Trichloroethene	39.9922 ppb v/v
							Trichlorofluoromethane	39.9922 ppb v/v
							Undecane	39.9922 ppb v/v
							Vinyl acetate	39.9922 ppb v/v
							Vinyl chloride	39.9922 ppb v/v
							Xylene, o-	39.9922 ppb v/v
					ATTO15EthCALw_00058	3092 mL	Ethanol	99.9806 ppb v/v
.ATTO15CALSTKi_00072	09/15/15	06/15/15	Zero Air, Lot 12	37.5 L	ATTO15CALs_00023	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,3-Trichlorobenzene	200 ppb v/v
							1,2,3-Trichloropropane	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							2-Methylbutane	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acetonitrile	200 ppb v/v
							Acrolein	200 ppb v/v
							Acrylonitrile	200 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Alpha Methyl Styrene	200 ppb v/v
							Benzene	200 ppb v/v
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Dodecane	200 ppb v/v
							Ethyl acetate	200 ppb v/v
							Ethyl ether	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butanol	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Nonane	200 ppb v/v
							n-Octane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							Propene	200 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl acetate	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene, o-	200 ppb v/v
..ATTO15CALs_00023	12/31/15		Spectra Gases, Lot cc-90855		(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,3-Trichlorobenzene	1 ppm v/v
							1,2,3-Trichloropropane	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							2-Methylbutane	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acetonitrile	1 ppm v/v
							Acrolein	1 ppm v/v
							Acrylonitrile	1 ppm v/v
							Alpha Methyl Styrene	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Dodecane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethyl ether	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butanol	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Nonane	1 ppm v/v
							n-Octane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							Propene	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v
							Vinyl acetate	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene, o-	1 ppm v/v
.ATTO15EthCALw_00058	09/15/15	06/15/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
..ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
ATTO15GIS_00009	11/15/15		Spectra Gases, Lot CC-279057		(Purchased Reagent)		1,4-Difluorobenzene	100 ppb v/v
							Chlorobenzene-d5	100 ppb v/v
							Chlorobromomethane	100 ppb v/v
ATTO15LCSW_00504	09/15/15	06/22/15	Zero Air, Lot 12	15.463 L	ATTO15EthCALw_00058	464 mL	Ethanol	15.0036 ppb v/v
					ATTO15LCSSTKi_00063	773 mL	1,1,1-Trichloroethane	9.99806 ppb v/v
							1,1,2,2-Tetrachloroethane	9.99806 ppb v/v
							1,1,2-Trichloroethane	9.99806 ppb v/v
							1,1-Dichloroethane	9.99806 ppb v/v
							1,1-Dichloroethene	9.99806 ppb v/v
							1,2,4-Trichlorobenzene	9.99806 ppb v/v
							1,2,4-Trimethylbenzene	9.99806 ppb v/v
							1,2-Dibromoethane	9.99806 ppb v/v
							1,2-Dichlorobenzene	9.99806 ppb v/v
							1,2-Dichloroethane	9.99806 ppb v/v
							1,2-Dichloroethene, Total	19.9961 ppb v/v
							1,2-Dichloropropane	9.99806 ppb v/v
							1,2-Dichlorotetrafluoroethane	9.99806 ppb v/v
							1,3,5-Trimethylbenzene	9.99806 ppb v/v
							1,3-Butadiene	9.99806 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,3-Dichlorobenzene	9.99806 ppb v/v
							1,4-Dichlorobenzene	9.99806 ppb v/v
							1,4-Dioxane	9.99806 ppb v/v
							2,2,4-Trimethylpentane	9.99806 ppb v/v
							2-Chlorotoluene	9.99806 ppb v/v
							3-Chloropropene	9.99806 ppb v/v
							4-Ethyltoluene	9.99806 ppb v/v
							4-Isopropyltoluene	9.99806 ppb v/v
							Acetone	9.99806 ppb v/v
							Acetonitrile	9.99806 ppb v/v
							Acrolein	9.99806 ppb v/v
							Alpha Methyl Styrene	9.99806 ppb v/v
							Benzene	9.99806 ppb v/v
							Benzyl chloride	9.99806 ppb v/v
							Bromodichloromethane	9.99806 ppb v/v
							Bromoethene(Vinyl Bromide)	9.99806 ppb v/v
							Bromoform	9.99806 ppb v/v
							Bromomethane	9.99806 ppb v/v
							Carbon disulfide	9.99806 ppb v/v
							Carbon tetrachloride	9.99806 ppb v/v
							Chlorobenzene	9.99806 ppb v/v
							Chloroethane	9.99806 ppb v/v
							Chloroform	9.99806 ppb v/v
							Chloromethane	9.99806 ppb v/v
							cis-1,2-Dichloroethene	9.99806 ppb v/v

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							cis-1,3-Dichloropropene	9.99806 ppb v/v
							Cumene	9.99806 ppb v/v
							Cyclohexane	9.99806 ppb v/v
							Dibromochloromethane	9.99806 ppb v/v
							Dibromomethane	9.99806 ppb v/v
							Dichlorodifluoromethane	9.99806 ppb v/v
							Dodecane	9.99806 ppb v/v
							Ethyl acetate	9.99806 ppb v/v
							Ethyl ether	9.99806 ppb v/v
							Ethylbenzene	9.99806 ppb v/v
							Freon 22	9.99806 ppb v/v
							Freon TF	9.99806 ppb v/v
							Hexachlorobutadiene	9.99806 ppb v/v
							Isopropyl alcohol	9.99806 ppb v/v
							m,p-Xylene	19.9961 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	9.99806 ppb v/v
							Methyl Ethyl Ketone	9.99806 ppb v/v
							methyl isobutyl ketone	9.99806 ppb v/v
							Methyl methacrylate	9.99806 ppb v/v
							Methyl tert-butyl ether	9.99806 ppb v/v
							Methylene Chloride	9.99806 ppb v/v
							n-Butane	9.99806 ppb v/v
							n-Butanol	9.99806 ppb v/v
							n-Butylbenzene	9.99806 ppb v/v
							n-Decane	9.99806 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Heptane	9.99806 ppb v/v
							n-Hexane	9.99806 ppb v/v
							n-Propylbenzene	9.99806 ppb v/v
							Naphthalene	9.99806 ppb v/v
							Pentane	9.99806 ppb v/v
							sec-Butylbenzene	9.99806 ppb v/v
							Styrene	9.99806 ppb v/v
							tert-Butyl alcohol	9.99806 ppb v/v
							tert-Butylbenzene	9.99806 ppb v/v
							Tetrachloroethene	9.99806 ppb v/v
							Tetrahydrofuran	9.99806 ppb v/v
							Toluene	9.99806 ppb v/v
							trans-1,2-Dichloroethene	9.99806 ppb v/v
							trans-1,3-Dichloropropene	9.99806 ppb v/v
							Trichloroethene	9.99806 ppb v/v
							Trichlorofluoromethane	9.99806 ppb v/v
							Undecane	9.99806 ppb v/v
							Vinyl acetate	9.99806 ppb v/v
							Vinyl chloride	9.99806 ppb v/v
							Xylene (total)	29.9942 ppb v/v
							Xylene, o-	9.99806 ppb v/v
.ATTO15EthCALw_00058	09/15/15	06/15/15	Zero Air, Lot 12	37.5 ppb	ATTO15EthCALs_00007	18.75 uL	Ethanol	500 ppb v/v
..ATTO15EthCALs_00007	09/11/17		SIGMA, Lot SHBB5682V		(Purchased Reagent)		Ethanol	1 mL/mL
.ATTO15LCSSTKi_00063	09/15/15	06/15/15	Zero Air, Lot 12	37.5 L	ATTO15LCSs_00018	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloroethene, Total	400 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Acetonitrile	200 ppb v/v
							Acrolein	200 ppb v/v
							Alpha Methyl Styrene	200 ppb v/v
							Benzene	200 ppb v/v
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dibromomethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Dodecane	200 ppb v/v
							Ethyl acetate	200 ppb v/v
							Ethyl ether	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butanol	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Decane	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							Pentane	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Undecane	200 ppb v/v
							Vinyl acetate	200 ppb v/v
							Vinyl chloride	200 ppb v/v
							Xylene (total)	600 ppb v/v
							Xylene, o-	200 ppb v/v
..ATTO15LCSs_00018	12/31/15	Spectra Gases, Lot CC-250179			(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloroethene, Total	2 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Acetonitrile	1 ppm v/v
							Acrolein	1 ppm v/v
							Alpha Methyl Styrene	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dibromomethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Dodecane	1 ppm v/v
							Ethyl acetate	1 ppm v/v
							Ethyl ether	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Butanol	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Decane	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							Pentane	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Undecane	1 ppm v/v
							Vinyl acetate	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene (total)	3 ppm v/v
							Xylene, o-	1 ppm v/v
ATTO15LCSW_00529	11/17/15	10/02/15	Zero Air, Lot 13	15.463 L	ATTO15LCSSTKi_00065	773 mL	1,1,1-Trichloroethane	9.99806 ppb v/v
							1,1,2,2-Tetrachloroethane	9.99806 ppb v/v
							1,1,2-Trichloroethane	9.99806 ppb v/v
							1,1-Dichloroethane	9.99806 ppb v/v
							1,1-Dichloroethene	9.99806 ppb v/v
							1,2,4-Trichlorobenzene	9.99806 ppb v/v
							1,2,4-Trimethylbenzene	9.99806 ppb v/v
							1,2-Dibromoethane	9.99806 ppb v/v
							1,2-Dichlorobenzene	9.99806 ppb v/v
							1,2-Dichloroethane	9.99806 ppb v/v
							1,2-Dichloroethene, Total	19.9961 ppb v/v
							1,2-Dichloropropane	9.99806 ppb v/v

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SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dichlorotetrafluoroethane	9.99806 ppb v/v
							1,3,5-Trimethylbenzene	9.99806 ppb v/v
							1,3-Butadiene	9.99806 ppb v/v
							1,3-Dichlorobenzene	9.99806 ppb v/v
							1,4-Dichlorobenzene	9.99806 ppb v/v
							1,4-Dioxane	9.99806 ppb v/v
							2,2,4-Trimethylpentane	9.99806 ppb v/v
							2-Chlorotoluene	9.99806 ppb v/v
							3-Chloropropene	9.99806 ppb v/v
							4-Ethyltoluene	9.99806 ppb v/v
							4-Isopropyltoluene	9.99806 ppb v/v
							Acetone	9.99806 ppb v/v
							Benzene	9.99806 ppb v/v
							Benzyl chloride	9.99806 ppb v/v
							Bromodichloromethane	9.99806 ppb v/v
							Bromoethene(Vinyl Bromide)	9.99806 ppb v/v
							Bromoform	9.99806 ppb v/v
							Bromomethane	9.99806 ppb v/v
							Carbon disulfide	9.99806 ppb v/v
							Carbon tetrachloride	9.99806 ppb v/v
							Chlorobenzene	9.99806 ppb v/v
							Chloroethane	9.99806 ppb v/v
							Chloroform	9.99806 ppb v/v
							Chloromethane	9.99806 ppb v/v
							cis-1,2-Dichloroethene	9.99806 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							cis-1,3-Dichloropropene	9.99806 ppb v/v
							Cumene	9.99806 ppb v/v
							Cyclohexane	9.99806 ppb v/v
							Dibromochloromethane	9.99806 ppb v/v
							Dichlorodifluoromethane	9.99806 ppb v/v
							Ethylbenzene	9.99806 ppb v/v
							Freon 22	9.99806 ppb v/v
							Freon TF	9.99806 ppb v/v
							Hexachlorobutadiene	9.99806 ppb v/v
							Isopropyl alcohol	9.99806 ppb v/v
							m,p-Xylene	19.9961 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	9.99806 ppb v/v
							Methyl Ethyl Ketone	9.99806 ppb v/v
							methyl isobutyl ketone	9.99806 ppb v/v
							Methyl methacrylate	9.99806 ppb v/v
							Methyl tert-butyl ether	9.99806 ppb v/v
							Methylene Chloride	9.99806 ppb v/v
							n-Butane	9.99806 ppb v/v
							n-Butylbenzene	9.99806 ppb v/v
							n-Heptane	9.99806 ppb v/v
							n-Hexane	9.99806 ppb v/v
							n-Propylbenzene	9.99806 ppb v/v
							Naphthalene	9.99806 ppb v/v
							sec-Butylbenzene	9.99806 ppb v/v
							Styrene	9.99806 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							tert-Butyl alcohol	9.99806 ppb v/v
							tert-Butylbenzene	9.99806 ppb v/v
							Tetrachloroethene	9.99806 ppb v/v
							Tetrahydrofuran	9.99806 ppb v/v
							Toluene	9.99806 ppb v/v
							trans-1,2-Dichloroethene	9.99806 ppb v/v
							trans-1,3-Dichloropropene	9.99806 ppb v/v
							Trichloroethene	9.99806 ppb v/v
							Trichlorofluoromethane	9.99806 ppb v/v
							Vinyl chloride	9.99806 ppb v/v
							Xylene (total)	29.9942 ppb v/v
							Xylene, o-	9.99806 ppb v/v
.ATTO15LCSSTKi_00065	12/17/15	09/17/15	Zero Air, Lot 13	37.5 L	ATTO15LCSs_00018	7500 mL	1,1,1-Trichloroethane	200 ppb v/v
							1,1,2,2-Tetrachloroethane	200 ppb v/v
							1,1,2-Trichloroethane	200 ppb v/v
							1,1-Dichloroethane	200 ppb v/v
							1,1-Dichloroethene	200 ppb v/v
							1,2,4-Trichlorobenzene	200 ppb v/v
							1,2,4-Trimethylbenzene	200 ppb v/v
							1,2-Dibromoethane	200 ppb v/v
							1,2-Dichlorobenzene	200 ppb v/v
							1,2-Dichloroethane	200 ppb v/v
							1,2-Dichloroethene, Total	400 ppb v/v
							1,2-Dichloropropane	200 ppb v/v
							1,2-Dichlorotetrafluoroethane	200 ppb v/v
							1,3,5-Trimethylbenzene	200 ppb v/v
							1,3-Butadiene	200 ppb v/v
							1,3-Dichlorobenzene	200 ppb v/v
							1,4-Dichlorobenzene	200 ppb v/v
							1,4-Dioxane	200 ppb v/v
							2,2,4-Trimethylpentane	200 ppb v/v
							2-Chlorotoluene	200 ppb v/v
							3-Chloropropene	200 ppb v/v
							4-Ethyltoluene	200 ppb v/v
							4-Isopropyltoluene	200 ppb v/v
							Acetone	200 ppb v/v
							Benzene	200 ppb v/v

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzyl chloride	200 ppb v/v
							Bromodichloromethane	200 ppb v/v
							Bromoethene(Vinyl Bromide)	200 ppb v/v
							Bromoform	200 ppb v/v
							Bromomethane	200 ppb v/v
							Carbon disulfide	200 ppb v/v
							Carbon tetrachloride	200 ppb v/v
							Chlorobenzene	200 ppb v/v
							Chloroethane	200 ppb v/v
							Chloroform	200 ppb v/v
							Chloromethane	200 ppb v/v
							cis-1,2-Dichloroethene	200 ppb v/v
							cis-1,3-Dichloropropene	200 ppb v/v
							Cumene	200 ppb v/v
							Cyclohexane	200 ppb v/v
							Dibromochloromethane	200 ppb v/v
							Dichlorodifluoromethane	200 ppb v/v
							Ethylbenzene	200 ppb v/v
							Freon 22	200 ppb v/v
							Freon TF	200 ppb v/v
							Hexachlorobutadiene	200 ppb v/v
							Isopropyl alcohol	200 ppb v/v
							m,p-Xylene	400 ppb v/v
							Methyl Butyl Ketone (2-Hexanone)	200 ppb v/v
							Methyl Ethyl Ketone	200 ppb v/v
							methyl isobutyl ketone	200 ppb v/v
							Methyl methacrylate	200 ppb v/v
							Methyl tert-butyl ether	200 ppb v/v
							Methylene Chloride	200 ppb v/v
							n-Butane	200 ppb v/v
							n-Butylbenzene	200 ppb v/v
							n-Heptane	200 ppb v/v
							n-Hexane	200 ppb v/v
							n-Propylbenzene	200 ppb v/v
							Naphthalene	200 ppb v/v
							sec-Butylbenzene	200 ppb v/v
							Styrene	200 ppb v/v
							tert-Butyl alcohol	200 ppb v/v
							tert-Butylbenzene	200 ppb v/v
							Tetrachloroethene	200 ppb v/v
							Tetrahydrofuran	200 ppb v/v
							Toluene	200 ppb v/v
							trans-1,2-Dichloroethene	200 ppb v/v
							trans-1,3-Dichloropropene	200 ppb v/v
							Trichloroethene	200 ppb v/v
							Trichlorofluoromethane	200 ppb v/v
							Vinyl chloride	200 ppb v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Xylene (total)	600 ppb v/v
							Xylene, o-	200 ppb v/v
..ATTO15LCSs_00018	12/31/15	Spectra Gases, Lot CC-250179			(Purchased Reagent)		1,1,1-Trichloroethane	1 ppm v/v
							1,1,2,2-Tetrachloroethane	1 ppm v/v
							1,1,2-Trichloroethane	1 ppm v/v
							1,1-Dichloroethane	1 ppm v/v
							1,1-Dichloroethene	1 ppm v/v
							1,2,4-Trichlorobenzene	1 ppm v/v
							1,2,4-Trimethylbenzene	1 ppm v/v
							1,2-Dibromoethane	1 ppm v/v
							1,2-Dichlorobenzene	1 ppm v/v
							1,2-Dichloroethane	1 ppm v/v
							1,2-Dichloroethene, Total	2 ppm v/v
							1,2-Dichloropropane	1 ppm v/v
							1,2-Dichlorotetrafluoroethane	1 ppm v/v
							1,3,5-Trimethylbenzene	1 ppm v/v
							1,3-Butadiene	1 ppm v/v
							1,3-Dichlorobenzene	1 ppm v/v
							1,4-Dichlorobenzene	1 ppm v/v
							1,4-Dioxane	1 ppm v/v
							2,2,4-Trimethylpentane	1 ppm v/v
							2-Chlorotoluene	1 ppm v/v
							3-Chloropropene	1 ppm v/v
							4-Ethyltoluene	1 ppm v/v
							4-Isopropyltoluene	1 ppm v/v
							Acetone	1 ppm v/v
							Benzene	1 ppm v/v
							Benzyl chloride	1 ppm v/v
							Bromodichloromethane	1 ppm v/v
							Bromoethene(Vinyl Bromide)	1 ppm v/v
							Bromoform	1 ppm v/v
							Bromomethane	1 ppm v/v
							Carbon disulfide	1 ppm v/v
							Carbon tetrachloride	1 ppm v/v
							Chlorobenzene	1 ppm v/v
							Chloroethane	1 ppm v/v
							Chloroform	1 ppm v/v
							Chloromethane	1 ppm v/v
							cis-1,2-Dichloroethene	1 ppm v/v
							cis-1,3-Dichloropropene	1 ppm v/v
							Cumene	1 ppm v/v
							Cyclohexane	1 ppm v/v
							Dibromochloromethane	1 ppm v/v
							Dichlorodifluoromethane	1 ppm v/v
							Ethylbenzene	1 ppm v/v
							Freon 22	1 ppm v/v
							Freon TF	1 ppm v/v
							Hexachlorobutadiene	1 ppm v/v

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Isopropyl alcohol	1 ppm v/v
							m,p-Xylene	2 ppm v/v
							Methyl Butyl Ketone (2-Hexanone)	1 ppm v/v
							Methyl Ethyl Ketone	1 ppm v/v
							methyl isobutyl ketone	1 ppm v/v
							Methyl methacrylate	1 ppm v/v
							Methyl tert-butyl ether	1 ppm v/v
							Methylene Chloride	1 ppm v/v
							n-Butane	1 ppm v/v
							n-Butylbenzene	1 ppm v/v
							n-Heptane	1 ppm v/v
							n-Hexane	1 ppm v/v
							n-Propylbenzene	1 ppm v/v
							Naphthalene	1 ppm v/v
							sec-Butylbenzene	1 ppm v/v
							Styrene	1 ppm v/v
							tert-Butyl alcohol	1 ppm v/v
							tert-Butylbenzene	1 ppm v/v
							Tetrachloroethene	1 ppm v/v
							Tetrahydrofuran	1 ppm v/v
							Toluene	1 ppm v/v
							trans-1,2-Dichloroethene	1 ppm v/v
							trans-1,3-Dichloropropene	1 ppm v/v
							Trichloroethene	1 ppm v/v
							Trichlorofluoromethane	1 ppm v/v
							Vinyl chloride	1 ppm v/v
							Xylene (total)	3 ppm v/v
							Xylene, o-	1 ppm v/v

Source tank from Linde made 12/31/14

TALS Batch 83073

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Chrom Batch 1511 1/6/15

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-026a.D

Lab ID: LCS 200-83073/26 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Propylene	40.0	47.3	118	70-130	E
Dichlorodifluoromethane	40.0	48.3	121	70-130	E
Freon 22	40.0	47.8	119	70-130	E
1,2-Dichlorotetrafluoroethane	40.0	48.2	121	70-130	E
Chloromethane	40.0	45.7	114	70-130	E
n-Butane	40.0	46.5	116	70-130	E
Vinyl chloride	40.0	44.7	112	70-130	E
1,3-Butadiene	40.0	47.9	120	70-130	E
Bromomethane	40.0	42.9	107	70-130	E
Chloroethane	40.0	45.0	113	70-130	E
Bromoethene(Vinyl Bromide)	40.0	43.6	109	70-130	E
Trichlorofluoromethane	40.0	45.5	114	70-130	E
Freon TF	40.0	49.4	123	70-130	E
1,1-Dichloroethene	40.0	48.2	121	70-130	E
Acetone	40.0	43.4	108	70-130	E
Isopropyl alcohol	40.0	48.9	122	70-130	E
Carbon disulfide	40.0	46.6	117	70-130	E
3-Chloropropene	40.0	50.4	126	70-130	E
Methylene Chloride	40.0	44.6	111	70-130	E
tert-Butyl alcohol	40.0	47.6	119	70-130	E
Methyl tert-butyl ether	40.0	50.2	126	70-130	E
trans-1,2-Dichloroethene	40.0	48.1	120	70-130	E
n-Hexane	40.0	48.3	121	70-130	E
1,1-Dichloroethane	40.0	47.4	119	70-130	E
Vinyl acetate	40.0	51.7	129	70-130	E
Ethyl acetate	40.0	46.4	116	70-130	E
Methyl Ethyl Ketone	40.0	41.7	104	70-130	E
cis-1,2-Dichloroethene	40.0	47.7	119	70-130	E
Chloroform	40.0	50.0	125	70-130	E
Tetrahydrofuran	40.0	44.0	110	70-130	E
1,1,1-Trichloroethane	40.0	47.7	119	70-130	E
Cyclohexane	40.0	44.8	112	70-130	E
Carbon tetrachloride	40.0	49.2	123	70-130	E
2,2,4-Trimethylpentane	40.0	46.3	116	70-130	E
Benzene	40.0	43.8	109	70-130	E
1,2-Dichloroethane	40.0	50.4	126	70-130	E
n-Heptane	40.0	47.3	118	70-130	E
Trichloroethene	40.0	48.0	120	70-130	E
Methyl methacrylate	40.0	49.1	123	70-130	E
1,2-Dichloropropane	40.0	47.7	119	70-130	E
1,4-Dioxane	40.0	42.6	107	70-130	E
Bromodichloromethane	40.0	50.0	125	70-130	E

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-026a.D

Lab ID: LCS 200-83073/26 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
cis-1,3-Dichloropropene	40.0	55.8	140	70-130	E *
methyl isobutyl ketone	40.0	49.9	125	70-130	E
Toluene	40.0	46.2	116	70-130	E
trans-1,3-Dichloropropene	40.0	49.7	124	70-130	E
1,1,2-Trichloroethane	40.0	44.3	111	70-130	E
Tetrachloroethene	40.0	47.2	118	70-130	E
Methyl Butyl Ketone (2-Hexanone)	40.0	49.5	124	70-130	E
Dibromochloromethane	40.0	48.6	121	70-130	E
1,2-Dibromoethane	40.0	46.3	116	70-130	E
Chlorobenzene	40.0	45.1	113	70-130	E
Ethylbenzene	40.0	48.1	120	70-130	E
m,p-Xylene	80.0	90.4	113	70-130	E
Xylene, o-	40.0	45.9	115	70-130	E
Styrene	40.0	49.7	124	70-130	E
Bromoform	40.0	49.0	123	70-130	E
Cumene	40.0	47.7	119	70-130	E
1,1,2,2-Tetrachloroethane	40.0	43.6	109	70-130	E
n-Propylbenzene	40.0	46.1	115	70-130	E
4-Ethyltoluene	40.0	43.5	109	70-130	E
1,3,5-Trimethylbenzene	40.0	46.9	117	70-130	E
2-Chlorotoluene	40.0	45.7	114	70-130	E
tert-Butylbenzene	40.0	46.1	115	70-130	E
1,2,4-Trimethylbenzene	40.0	46.4	116	70-130	E
sec-Butylbenzene	40.0	45.3	113	70-130	E
4-Isopropyltoluene	40.0	46.0	115	70-130	E
1,3-Dichlorobenzene	40.0	44.0	110	70-130	E
1,4-Dichlorobenzene	40.0	44.8	112	70-130	E
Benzyl chloride	40.0	54.0	135	70-130	E *
n-Butylbenzene	40.0	44.0	110	70-130	E
1,2-Dichlorobenzene	40.0	44.8	112	70-130	E
1,2,4-Trichlorobenzene	40.0	54.8	137	70-130	E *
Hexachlorobutadiene	40.0	51.7	129	70-130	E
Naphthalene	40.0	60.6	152	70-130	E *

Column to be used to flag recovery and RPD values

FORM III TO-15

Std tank CC90855 compared to Linde source tank THC# 254556 TO15

960618 THC

FORM III

AIR - GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-018a.D

Lab ID: LCSD 200-83073/18 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCSD CONCENTRATION (ppb v/v)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Propylene	40.0	41.5	104	13	25	70-130	E
Dichlorodifluoromethane	40.0	48.3	121	0	25	70-130	E
Freon 22	40.0	45.0	112	6	25	70-130	E
1,2-Dichlorotetrafluoroethane	40.0	44.5	111	8	25	70-130	E
Chloromethane	40.0	41.9	105	9	25	70-130	E
n-Butane	40.0	44.2	110	5	25	70-130	E
Vinyl chloride	40.0	42.8	107	4	25	70-130	E
1,3-Butadiene	40.0	46.1	115	4	25	70-130	E
Bromomethane	40.0	44.4	111	3	25	70-130	E
Chloroethane	40.0	45.1	113	0	25	70-130	E
Bromoethene(Vinyl Bromide)	40.0	43.9	110	1	25	70-130	E
Trichlorofluoromethane	40.0	48.2	120	6	25	70-130	E
Freon TF	40.0	44.3	111	11	25	70-130	E
1,1-Dichloroethene	40.0	44.2	111	9	25	70-130	E
Acetone	40.0	39.3	98	10	25	70-130	
Isopropyl alcohol	40.0	41.3	103	17	25	70-130	E
Carbon disulfide	40.0	40.2	101	15	25	70-130	E
3-Chloropropene	40.0	44.9	112	11	25	70-130	E
Methylene Chloride	40.0	39.6	99	12	25	70-130	
tert-Butyl alcohol	40.0	43.8	109	8	25	70-130	E
Methyl tert-butyl ether	40.0	48.8	122	3	25	70-130	E
trans-1,2-Dichloroethene	40.0	45.2	113	6	25	70-130	E
n-Hexane	40.0	43.9	110	10	25	70-130	E
1,1-Dichloroethane	40.0	44.2	110	7	25	70-130	E
Vinyl acetate	40.0	45.7	114	12	25	70-130	E
Ethyl acetate	40.0	43.2	108	7	25	70-130	E
Methyl Ethyl Ketone	40.0	38.8	97	7	25	70-130	
cis-1,2-Dichloroethene	40.0	45.1	113	6	25	70-130	E
Chloroform	40.0	47.6	119	5	25	70-130	E
Tetrahydrofuran	40.0	41.3	103	6	25	70-130	E
1,1,1-Trichloroethane	40.0	49.6	124	4	25	70-130	E
Cyclohexane	40.0	45.2	113	1	25	70-130	E
Carbon tetrachloride	40.0	51.3	128	4	25	70-130	E
2,2,4-Trimethylpentane	40.0	45.6	114	2	25	70-130	E
Benzene	40.0	43.6	109	1	25	70-130	E
1,2-Dichloroethane	40.0	52.6	132	4	25	70-130	E *
n-Heptane	40.0	46.6	116	2	25	70-130	E
Trichloroethene	40.0	48.8	122	2	25	70-130	E
Methyl methacrylate	40.0	50.5	126	3	25	70-130	E
1,2-Dichloropropane	40.0	47.5	119	1	25	70-130	E
1,4-Dioxane	40.0	43.6	109	2	25	70-130	E
Bromodichloromethane	40.0	52.9	132	6	25	70-130	E *

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-018a.D

Lab ID: LCSD 200-83073/18 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCSD CONCENTRATION (ppb v/v)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
cis-1,3-Dichloropropene	40.0	53.2	133	5	25	70-130	E *
methyl isobutyl ketone	40.0	50.6	126	1	25	70-130	E
Toluene	40.0	47.0	118	2	25	70-130	E
trans-1,3-Dichloropropene	40.0	52.7	132	6	25	70-130	E *
1,1,2-Trichloroethane	40.0	46.1	115	4	25	70-130	E
Tetrachloroethene	40.0	49.5	124	5	25	70-130	E
Methyl Butyl Ketone (2-Hexanone)	40.0	49.8	125	1	25	70-130	E
Dibromochloromethane	40.0	51.6	129	6	25	70-130	E
1,2-Dibromoethane	40.0	48.2	120	4	25	70-130	E
Chlorobenzene	40.0	46.2	115	2	25	70-130	E
Ethylbenzene	40.0	48.4	121	1	25	70-130	E
m,p-Xylene	80.0	93.2	116	3	25	70-130	E
Xylene, o-	40.0	48.6	121	6	25	70-130	E
Styrene	40.0	50.0	125	1	25	70-130	E
Bromoform	40.0	52.7	132	7	25	70-130	E *
Cumene	40.0	48.9	122	2	25	70-130	E
1,1,2,2-Tetrachloroethane	40.0	44.3	111	2	25	70-130	E
n-Propylbenzene	40.0	47.0	117	2	25	70-130	E
4-Ethyltoluene	40.0	46.4	116	7	25	70-130	E
1,3,5-Trimethylbenzene	40.0	48.9	122	4	25	70-130	E
2-Chlorotoluene	40.0	47.0	118	3	25	70-130	E
tert-Butylbenzene	40.0	47.5	119	3	25	70-130	E
1,2,4-Trimethylbenzene	40.0	48.8	122	5	25	70-130	E
sec-Butylbenzene	40.0	46.3	116	2	25	70-130	E
4-Isopropyltoluene	40.0	47.9	120	4	25	70-130	E
1,3-Dichlorobenzene	40.0	46.0	115	5	25	70-130	E
1,4-Dichlorobenzene	40.0	46.7	117	4	25	70-130	E
Benzyl chloride	40.0	54.7	137	1	25	70-130	E *
n-Butylbenzene	40.0	44.2	111	1	25	70-130	E
1,2-Dichlorobenzene	40.0	46.2	115	3	25	70-130	E
1,2,4-Trichlorobenzene	40.0	52.3	131	5	25	70-130	E *
Hexachlorobutadiene	40.0	51.0	128	1	25	70-130	E
Naphthalene	40.0	57.4	144	5	25	70-130	E *

Column to be used to flag recovery and RPD values

FORM III TO-15

Std tank CC250179 compared to Linde source tank TAG# 754560 TO15 760619 THC

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-021a.D

Lab ID: LCSD 200-83073/21 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCSD CONCENTRATION (ppb v/v)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Propylene	40.0	41.1	103	14	25	70-130	E
Dichlorodifluoromethane	40.0	46.6	116	4	25	70-130	E
Freon 22	40.0	45.2	113	6	25	70-130	E
1,2-Dichlorotetrafluoroethane	40.0	49.0	122	2	25	70-130	E
Chloromethane	40.0	41.8	104	9	25	70-130	E
n-Butane	40.0	45.2	113	3	25	70-130	E
Vinyl chloride	40.0	42.6	106	5	25	70-130	E
1,3-Butadiene	40.0	44.7	112	7	25	70-130	E
Bromomethane	40.0	43.2	108	1	25	70-130	E
Chloroethane	40.0	43.9	110	3	25	70-130	E
Bromoethene(Vinyl Bromide)	40.0	42.4	106	3	25	70-130	E
Trichlorofluoromethane	40.0	45.8	115	1	25	70-130	E
Freon TF	40.0	43.9	110	12	25	70-130	E
1,1-Dichloroethene	40.0	43.2	108	11	25	70-130	E
Acetone	40.0	40.9	102	6	25	70-130	E
Isopropyl alcohol	40.0	39.1	98	22	25	70-130	
Carbon disulfide	40.0	46.5	116	0	25	70-130	E
3-Chloropropene	40.0	44.0	110	14	25	70-130	E
Methylene Chloride	40.0	40.3	101	10	25	70-130	E
tert-Butyl alcohol	40.0	42.1	105	12	25	70-130	E
Methyl tert-butyl ether	40.0	48.4	121	4	25	70-130	E
trans-1,2-Dichloroethene	40.0	48.1	120	0	25	70-130	E
n-Hexane	40.0	47.7	119	1	25	70-130	E
1,1-Dichloroethane	40.0	45.0	113	5	25	70-130	E
Vinyl acetate	40.0	46.4	116	11	25	70-130	E
Ethyl acetate	40.0	47.6	119	2	25	70-130	E
Methyl Ethyl Ketone	40.0	40.0	100	4	25	70-130	
cis-1,2-Dichloroethene	40.0	44.6	112	7	25	70-130	E
Chloroform	40.0	47.6	119	5	25	70-130	E
Tetrahydrofuran	40.0	43.7	109	1	25	70-130	E
1,1,1-Trichloroethane	40.0	48.4	121	1	25	70-130	E
Cyclohexane	40.0	45.4	114	1	25	70-130	E
Carbon tetrachloride	40.0	49.6	124	1	25	70-130	E
2,2,4-Trimethylpentane	40.0	46.3	116	0	25	70-130	E
Benzene	40.0	43.9	110	0	25	70-130	E
1,2-Dichloroethane	40.0	52.3	131	4	25	70-130	E *
n-Heptane	40.0	47.5	119	0	25	70-130	E
Trichloroethene	40.0	48.7	122	1	25	70-130	E
Methyl methacrylate	40.0	51.8	130	5	25	70-130	E
1,2-Dichloropropane	40.0	48.0	120	0	25	70-130	E
1,4-Dioxane	40.0	42.9	107	1	25	70-130	E
Bromodichloromethane	40.0	51.4	129	3	25	70-130	E

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-021a.D

Lab ID: LCSD 200-83073/21 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCSD CONCENTRATION (ppb v/v)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
cis-1,3-Dichloropropene	40.0	53.9	135	3	25	70-130	E *
methyl isobutyl ketone	40.0	50.8	127	2	25	70-130	E
Toluene	40.0	47.0	118	2	25	70-130	E
trans-1,3-Dichloropropene	40.0	52.7	132	6	25	70-130	E *
1,1,2-Trichloroethane	40.0	46.4	116	5	25	70-130	E
Tetrachloroethene	40.0	48.5	121	3	25	70-130	E
Methyl Butyl Ketone (2-Hexanone)	40.0	49.9	125	1	25	70-130	E
Dibromochloromethane	40.0	48.6	122	0	25	70-130	E
1,2-Dibromoethane	40.0	47.9	120	3	25	70-130	E
Chlorobenzene	40.0	45.4	114	1	25	70-130	E
Ethylbenzene	40.0	48.0	120	0	25	70-130	E
m,p-Xylene	80.0	90.7	113	0	25	70-130	E
Xylene, o-	40.0	46.8	117	2	25	70-130	E
Styrene	40.0	48.7	122	2	25	70-130	E
Bromoform	40.0	49.4	123	1	25	70-130	E
Cumene	40.0	46.9	117	2	25	70-130	E
1,1,2,2-Tetrachloroethane	40.0	44.2	111	1	25	70-130	E
n-Propylbenzene	40.0	45.1	113	2	25	70-130	E
4-Ethyltoluene	40.0	45.3	113	4	25	70-130	E
1,3,5-Trimethylbenzene	40.0	46.8	117	0	25	70-130	E
2-Chlorotoluene	40.0	45.1	113	1	25	70-130	E
tert-Butylbenzene	40.0	45.1	113	2	25	70-130	E
1,2,4-Trimethylbenzene	40.0	46.4	116	0	25	70-130	E
sec-Butylbenzene	40.0	43.8	110	3	25	70-130	E
4-Isopropyltoluene	40.0	45.1	113	2	25	70-130	E
1,3-Dichlorobenzene	40.0	44.0	110	0	25	70-130	E
1,4-Dichlorobenzene	40.0	44.6	112	0	25	70-130	E
Benzyl chloride	40.0	50.2	126	7	25	70-130	E
n-Butylbenzene	40.0	41.6	104	6	25	70-130	E
1,2-Dichlorobenzene	40.0	44.1	110	2	25	70-130	E
1,2,4-Trichlorobenzene	40.0	48.5	121	12	25	70-130	E
Hexachlorobutadiene	40.0	48.5	121	6	25	70-130	E
Naphthalene	40.0	49.5	124	20	25	70-130	E

Column to be used to flag recovery and RPD values

FORM III TO-15

SIGMA-ALDRICH
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9/15/11

Certificate of Analysis

Product Name:
Ethanol – 200 proof, anhydrous, ≥99.5%

CH_3CH_2OH

Product Number:	**459836**
Lot Number:	**SHBB5682V**
Brand:	SIAL
CAS Number:	64-17-5
MDL Number:	MFCD00003568
Formula:	C2H6O
Formula Weight:	46.07 g/mol
Quality Release Date:	15 SEP 2011

389837
ID: ATTO15EthCALs_00007
Exp 09/01/17 Prod Prd Open 09/01/12
TO15 Ethanol Cal source 9

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
Infrared spectrum	Conforms to Structure	Conforms
Purity (GC)	≥ 99.5 %	> 99.9 %
Water (by Karl Fischer)	≤ 0.005 %	0.003 %
Residue on Evaporation	≤ 0.0005 %	0.0003 %
Starting Material Clearance TRACEABLE TO ACS PRODUCT LISTING	Confirmed	Conforms

Jennifer Baughman, Manager
Quality Control
Sheboygan Falls, WI US

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Spectra Gases, Inc.

3434 Route 22 West, Branchburg, New Jersey 08876 USA

ISO 9001:2000

G

SHIPPED FROM: 80 INDUSTRIAL DRIVE ALPHA, NJ. 08865

SHIPPED TO: Test America - Burlington
30 Community Drive
South Burlington, VT 05403 USA

ATO2-011-18

CERTIFICATE OF ANALYSIS

SGI ORDER # :	140016		
ITEM# :	1	**CYLINDER # :**	CC-279057
CERTIFICATION DATE:	12/11/2008	**CYLINDER PRES:**	2000 psig
P.O.# :	2282386	**CYLINDER VALVE:**	CGA 350
BLEND TYPE:	CERTIFIED	**PRODUCT EXPIRATION DATE:**	12/11/2009

ANALYTICAL ACCURACY: +/-10%

COMPONENT	REQUESTED GAS CONC	ANALYSIS
Bromochloromethane	100 ppb	103 ppb
1,4-Difluorobenzene	100 ppb	106 ppb
Chlorobenzene-d5	100 ppb	107 ppb
4-Bromofluorobenzene	100 ppb	107 ppb
Nitrogen	Balance	Balance

84582
ID: ATTO15GIS_00005
Exp 11/15/11 Prpd WRD Open 12/01/10
Instrument G Internal Sta

SOURCE REFERENCE # 260788

ANALYST: Matthew Booth

DATE: 12/11/2008

Tel: +1 908-252-9300 Fax: +1 908-252-0811
www.specialtygases.com

Source tank from Linde made 12/31/14

TALS Batch 83073

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Chrom Batch 1511 1/6/15

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-026a.D

Lab ID: LCS 200-83073/26 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Propylene	40.0	47.3	118	70-130	E
Dichlorodifluoromethane	40.0	48.3	121	70-130	E
Freon 22	40.0	47.8	119	70-130	E
1,2-Dichlorotetrafluoroethane	40.0	48.2	121	70-130	E
Chloromethane	40.0	45.7	114	70-130	E
n-Butane	40.0	46.5	116	70-130	E
Vinyl chloride	40.0	44.7	112	70-130	E
1,3-Butadiene	40.0	47.9	120	70-130	E
Bromomethane	40.0	42.9	107	70-130	E
Chloroethane	40.0	45.0	113	70-130	E
Bromoethene(Vinyl Bromide)	40.0	43.6	109	70-130	E
Trichlorofluoromethane	40.0	45.5	114	70-130	E
Freon TF	40.0	49.4	123	70-130	E
1,1-Dichloroethene	40.0	48.2	121	70-130	E
Acetone	40.0	43.4	108	70-130	E
Isopropyl alcohol	40.0	48.9	122	70-130	E
Carbon disulfide	40.0	46.6	117	70-130	E
3-Chloropropene	40.0	50.4	126	70-130	E
Methylene Chloride	40.0	44.6	111	70-130	E
tert-Butyl alcohol	40.0	47.6	119	70-130	E
Methyl tert-butyl ether	40.0	50.2	126	70-130	E
trans-1,2-Dichloroethene	40.0	48.1	120	70-130	E
n-Hexane	40.0	48.3	121	70-130	E
1,1-Dichloroethane	40.0	47.4	119	70-130	E
Vinyl acetate	40.0	51.7	129	70-130	E
Ethyl acetate	40.0	46.4	116	70-130	E
Methyl Ethyl Ketone	40.0	41.7	104	70-130	E
cis-1,2-Dichloroethene	40.0	47.7	119	70-130	E
Chloroform	40.0	50.0	125	70-130	E
Tetrahydrofuran	40.0	44.0	110	70-130	E
1,1,1-Trichloroethane	40.0	47.7	119	70-130	E
Cyclohexane	40.0	44.8	112	70-130	E
Carbon tetrachloride	40.0	49.2	123	70-130	E
2,2,4-Trimethylpentane	40.0	46.3	116	70-130	E
Benzene	40.0	43.8	109	70-130	E
1,2-Dichloroethane	40.0	50.4	126	70-130	E
n-Heptane	40.0	47.3	118	70-130	E
Trichloroethene	40.0	48.0	120	70-130	E
Methyl methacrylate	40.0	49.1	123	70-130	E
1,2-Dichloropropane	40.0	47.7	119	70-130	E
1,4-Dioxane	40.0	42.6	107	70-130	E
Bromodichloromethane	40.0	50.0	125	70-130	E

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-026a.D

Lab ID: LCS 200-83073/26 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
cis-1,3-Dichloropropene	40.0	55.8	140	70-130	E *
methyl isobutyl ketone	40.0	49.9	125	70-130	E
Toluene	40.0	46.2	116	70-130	E
trans-1,3-Dichloropropene	40.0	49.7	124	70-130	E
1,1,2-Trichloroethane	40.0	44.3	111	70-130	E
Tetrachloroethene	40.0	47.2	118	70-130	E
Methyl Butyl Ketone (2-Hexanone)	40.0	49.5	124	70-130	E
Dibromochloromethane	40.0	48.6	121	70-130	E
1,2-Dibromoethane	40.0	46.3	116	70-130	E
Chlorobenzene	40.0	45.1	113	70-130	E
Ethylbenzene	40.0	48.1	120	70-130	E
m,p-Xylene	80.0	90.4	113	70-130	E
Xylene, o-	40.0	45.9	115	70-130	E
Styrene	40.0	49.7	124	70-130	E
Bromoform	40.0	49.0	123	70-130	E
Cumene	40.0	47.7	119	70-130	E
1,1,2,2-Tetrachloroethane	40.0	43.6	109	70-130	E
n-Propylbenzene	40.0	46.1	115	70-130	E
4-Ethyltoluene	40.0	43.5	109	70-130	E
1,3,5-Trimethylbenzene	40.0	46.9	117	70-130	E
2-Chlorotoluene	40.0	45.7	114	70-130	E
tert-Butylbenzene	40.0	46.1	115	70-130	E
1,2,4-Trimethylbenzene	40.0	46.4	116	70-130	E
sec-Butylbenzene	40.0	45.3	113	70-130	E
4-Isopropyltoluene	40.0	46.0	115	70-130	E
1,3-Dichlorobenzene	40.0	44.0	110	70-130	E
1,4-Dichlorobenzene	40.0	44.8	112	70-130	E
Benzyl chloride	40.0	54.0	135	70-130	E *
n-Butylbenzene	40.0	44.0	110	70-130	E
1,2-Dichlorobenzene	40.0	44.8	112	70-130	E
1,2,4-Trichlorobenzene	40.0	54.8	137	70-130	E *
Hexachlorobutadiene	40.0	51.7	129	70-130	E
Naphthalene	40.0	60.6	152	70-130	E *

Column to be used to flag recovery and RPD values

FORM III TO-15

Std tank CC90855 compared to Linde source tank THC# 254556 TO15

960618 THC

FORM III

AIR - GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-018a.D

Lab ID: LCSD 200-83073/18 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCSD CONCENTRATION (ppb v/v)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Propylene	40.0	41.5	104	13	25	70-130	E
Dichlorodifluoromethane	40.0	48.3	121	0	25	70-130	E
Freon 22	40.0	45.0	112	6	25	70-130	E
1,2-Dichlorotetrafluoroethane	40.0	44.5	111	8	25	70-130	E
Chloromethane	40.0	41.9	105	9	25	70-130	E
n-Butane	40.0	44.2	110	5	25	70-130	E
Vinyl chloride	40.0	42.8	107	4	25	70-130	E
1,3-Butadiene	40.0	46.1	115	4	25	70-130	E
Bromomethane	40.0	44.4	111	3	25	70-130	E
Chloroethane	40.0	45.1	113	0	25	70-130	E
Bromoethene(Vinyl Bromide)	40.0	43.9	110	1	25	70-130	E
Trichlorofluoromethane	40.0	48.2	120	6	25	70-130	E
Freon TF	40.0	44.3	111	11	25	70-130	E
1,1-Dichloroethene	40.0	44.2	111	9	25	70-130	E
Acetone	40.0	39.3	98	10	25	70-130	
Isopropyl alcohol	40.0	41.3	103	17	25	70-130	E
Carbon disulfide	40.0	40.2	101	15	25	70-130	E
3-Chloropropene	40.0	44.9	112	11	25	70-130	E
Methylene Chloride	40.0	39.6	99	12	25	70-130	
tert-Butyl alcohol	40.0	43.8	109	8	25	70-130	E
Methyl tert-butyl ether	40.0	48.8	122	3	25	70-130	E
trans-1,2-Dichloroethene	40.0	45.2	113	6	25	70-130	E
n-Hexane	40.0	43.9	110	10	25	70-130	E
1,1-Dichloroethane	40.0	44.2	110	7	25	70-130	E
Vinyl acetate	40.0	45.7	114	12	25	70-130	E
Ethyl acetate	40.0	43.2	108	7	25	70-130	E
Methyl Ethyl Ketone	40.0	38.8	97	7	25	70-130	
cis-1,2-Dichloroethene	40.0	45.1	113	6	25	70-130	E
Chloroform	40.0	47.6	119	5	25	70-130	E
Tetrahydrofuran	40.0	41.3	103	6	25	70-130	E
1,1,1-Trichloroethane	40.0	49.6	124	4	25	70-130	E
Cyclohexane	40.0	45.2	113	1	25	70-130	E
Carbon tetrachloride	40.0	51.3	128	4	25	70-130	E
2,2,4-Trimethylpentane	40.0	45.6	114	2	25	70-130	E
Benzene	40.0	43.6	109	1	25	70-130	E
1,2-Dichloroethane	40.0	52.6	132	4	25	70-130	E *
n-Heptane	40.0	46.6	116	2	25	70-130	E
Trichloroethene	40.0	48.8	122	2	25	70-130	E
Methyl methacrylate	40.0	50.5	126	3	25	70-130	E
1,2-Dichloropropane	40.0	47.5	119	1	25	70-130	E
1,4-Dioxane	40.0	43.6	109	2	25	70-130	E
Bromodichloromethane	40.0	52.9	132	6	25	70-130	E *

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-018a.D

Lab ID: LCSD 200-83073/18 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCSD CONCENTRATION (ppb v/v)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
cis-1,3-Dichloropropene	40.0	53.2	133	5	25	70-130	E *
methyl isobutyl ketone	40.0	50.6	126	1	25	70-130	E
Toluene	40.0	47.0	118	2	25	70-130	E
trans-1,3-Dichloropropene	40.0	52.7	132	6	25	70-130	E *
1,1,2-Trichloroethane	40.0	46.1	115	4	25	70-130	E
Tetrachloroethene	40.0	49.5	124	5	25	70-130	E
Methyl Butyl Ketone (2-Hexanone)	40.0	49.8	125	1	25	70-130	E
Dibromochloromethane	40.0	51.6	129	6	25	70-130	E
1,2-Dibromoethane	40.0	48.2	120	4	25	70-130	E
Chlorobenzene	40.0	46.2	115	2	25	70-130	E
Ethylbenzene	40.0	48.4	121	1	25	70-130	E
m,p-Xylene	80.0	93.2	116	3	25	70-130	E
Xylene, o-	40.0	48.6	121	6	25	70-130	E
Styrene	40.0	50.0	125	1	25	70-130	E
Bromoform	40.0	52.7	132	7	25	70-130	E *
Cumene	40.0	48.9	122	2	25	70-130	E
1,1,2,2-Tetrachloroethane	40.0	44.3	111	2	25	70-130	E
n-Propylbenzene	40.0	47.0	117	2	25	70-130	E
4-Ethyltoluene	40.0	46.4	116	7	25	70-130	E
1,3,5-Trimethylbenzene	40.0	48.9	122	4	25	70-130	E
2-Chlorotoluene	40.0	47.0	118	3	25	70-130	E
tert-Butylbenzene	40.0	47.5	119	3	25	70-130	E
1,2,4-Trimethylbenzene	40.0	48.8	122	5	25	70-130	E
sec-Butylbenzene	40.0	46.3	116	2	25	70-130	E
4-Isopropyltoluene	40.0	47.9	120	4	25	70-130	E
1,3-Dichlorobenzene	40.0	46.0	115	5	25	70-130	E
1,4-Dichlorobenzene	40.0	46.7	117	4	25	70-130	E
Benzyl chloride	40.0	54.7	137	1	25	70-130	E *
n-Butylbenzene	40.0	44.2	111	1	25	70-130	E
1,2-Dichlorobenzene	40.0	46.2	115	3	25	70-130	E
1,2,4-Trichlorobenzene	40.0	52.3	131	5	25	70-130	E *
Hexachlorobutadiene	40.0	51.0	128	1	25	70-130	E
Naphthalene	40.0	57.4	144	5	25	70-130	E *

Column to be used to flag recovery and RPD values

FORM III TO-15

Std tank CC250179 compared to Linde source tank THC# 754560 TO15 760619 THC

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-021a.D

Lab ID: LCSD 200-83073/21 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCSD CONCENTRATION (ppb v/v)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Propylene	40.0	41.1	103	14	25	70-130	E
Dichlorodifluoromethane	40.0	46.6	116	4	25	70-130	E
Freon 22	40.0	45.2	113	6	25	70-130	E
1,2-Dichlorotetrafluoroethane	40.0	49.0	122	2	25	70-130	E
Chloromethane	40.0	41.8	104	9	25	70-130	E
n-Butane	40.0	45.2	113	3	25	70-130	E
Vinyl chloride	40.0	42.6	106	5	25	70-130	E
1,3-Butadiene	40.0	44.7	112	7	25	70-130	E
Bromomethane	40.0	43.2	108	1	25	70-130	E
Chloroethane	40.0	43.9	110	3	25	70-130	E
Bromoethene(Vinyl Bromide)	40.0	42.4	106	3	25	70-130	E
Trichlorofluoromethane	40.0	45.8	115	1	25	70-130	E
Freon TF	40.0	43.9	110	12	25	70-130	E
1,1-Dichloroethene	40.0	43.2	108	11	25	70-130	E
Acetone	40.0	40.9	102	6	25	70-130	E
Isopropyl alcohol	40.0	39.1	98	22	25	70-130	
Carbon disulfide	40.0	46.5	116	0	25	70-130	E
3-Chloropropene	40.0	44.0	110	14	25	70-130	E
Methylene Chloride	40.0	40.3	101	10	25	70-130	E
tert-Butyl alcohol	40.0	42.1	105	12	25	70-130	E
Methyl tert-butyl ether	40.0	48.4	121	4	25	70-130	E
trans-1,2-Dichloroethene	40.0	48.1	120	0	25	70-130	E
n-Hexane	40.0	47.7	119	1	25	70-130	E
1,1-Dichloroethane	40.0	45.0	113	5	25	70-130	E
Vinyl acetate	40.0	46.4	116	11	25	70-130	E
Ethyl acetate	40.0	47.6	119	2	25	70-130	E
Methyl Ethyl Ketone	40.0	40.0	100	4	25	70-130	
cis-1,2-Dichloroethene	40.0	44.6	112	7	25	70-130	E
Chloroform	40.0	47.6	119	5	25	70-130	E
Tetrahydrofuran	40.0	43.7	109	1	25	70-130	E
1,1,1-Trichloroethane	40.0	48.4	121	1	25	70-130	E
Cyclohexane	40.0	45.4	114	1	25	70-130	E
Carbon tetrachloride	40.0	49.6	124	1	25	70-130	E
2,2,4-Trimethylpentane	40.0	46.3	116	0	25	70-130	E
Benzene	40.0	43.9	110	0	25	70-130	E
1,2-Dichloroethane	40.0	52.3	131	4	25	70-130	E *
n-Heptane	40.0	47.5	119	0	25	70-130	E
Trichloroethene	40.0	48.7	122	1	25	70-130	E
Methyl methacrylate	40.0	51.8	130	5	25	70-130	E
1,2-Dichloropropane	40.0	48.0	120	0	25	70-130	E
1,4-Dioxane	40.0	42.9	107	1	25	70-130	E
Bromodichloromethane	40.0	51.4	129	3	25	70-130	E

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-26189-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 11493-021a.D

Lab ID: LCSD 200-83073/21 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCSD CONCENTRATION (ppb v/v)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
cis-1,3-Dichloropropene	40.0	53.9	135	3	25	70-130	E *
methyl isobutyl ketone	40.0	50.8	127	2	25	70-130	E
Toluene	40.0	47.0	118	2	25	70-130	E
trans-1,3-Dichloropropene	40.0	52.7	132	6	25	70-130	E *
1,1,2-Trichloroethane	40.0	46.4	116	5	25	70-130	E
Tetrachloroethene	40.0	48.5	121	3	25	70-130	E
Methyl Butyl Ketone (2-Hexanone)	40.0	49.9	125	1	25	70-130	E
Dibromochloromethane	40.0	48.6	122	0	25	70-130	E
1,2-Dibromoethane	40.0	47.9	120	3	25	70-130	E
Chlorobenzene	40.0	45.4	114	1	25	70-130	E
Ethylbenzene	40.0	48.0	120	0	25	70-130	E
m,p-Xylene	80.0	90.7	113	0	25	70-130	E
Xylene, o-	40.0	46.8	117	2	25	70-130	E
Styrene	40.0	48.7	122	2	25	70-130	E
Bromoform	40.0	49.4	123	1	25	70-130	E
Cumene	40.0	46.9	117	2	25	70-130	E
1,1,2,2-Tetrachloroethane	40.0	44.2	111	1	25	70-130	E
n-Propylbenzene	40.0	45.1	113	2	25	70-130	E
4-Ethyltoluene	40.0	45.3	113	4	25	70-130	E
1,3,5-Trimethylbenzene	40.0	46.8	117	0	25	70-130	E
2-Chlorotoluene	40.0	45.1	113	1	25	70-130	E
tert-Butylbenzene	40.0	45.1	113	2	25	70-130	E
1,2,4-Trimethylbenzene	40.0	46.4	116	0	25	70-130	E
sec-Butylbenzene	40.0	43.8	110	3	25	70-130	E
4-Isopropyltoluene	40.0	45.1	113	2	25	70-130	E
1,3-Dichlorobenzene	40.0	44.0	110	0	25	70-130	E
1,4-Dichlorobenzene	40.0	44.6	112	0	25	70-130	E
Benzyl chloride	40.0	50.2	126	7	25	70-130	E
n-Butylbenzene	40.0	41.6	104	6	25	70-130	E
1,2-Dichlorobenzene	40.0	44.1	110	2	25	70-130	E
1,2,4-Trichlorobenzene	40.0	48.5	121	12	25	70-130	E
Hexachlorobutadiene	40.0	48.5	121	6	25	70-130	E
Naphthalene	40.0	49.5	124	20	25	70-130	E

Column to be used to flag recovery and RPD values

FORM III TO-15

Certification Summary

Client: AKRF Inc
Project/Site: ver Hage Property

TestAmerica Job ID: 200-30148-1
SDG: 200-30148

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Burlington	Connecticut	State Program	1	PH-0751
TestAmerica Burlington	DE Haz. Subst. Cleanup Act (HSC	State Program	3	NA
TestAmerica Burlington	Florida	NELAP	4	E87467
TestAmerica Burlington	L-A-B	DoD ELAP		L2336
TestAmerica Burlington	Maine	State Program	1	VT00008
TestAmerica Burlington	Minnesota	NELAP	5	050-999-436
TestAmerica Burlington	New Hampshire	NELAP	1	2006
TestAmerica Burlington	New Jersey	NELAP	2	VT972
TestAmerica Burlington	New York	NELAP	2	10391
TestAmerica Burlington	Pennsylvania	NELAP	3	68-00489
TestAmerica Burlington	Rhode Island	State Program	1	LAO00298
TestAmerica Burlington	US Fish & Wildlife	Federal		LE-058448-0
TestAmerica Burlington	USDA	Federal		P330-11-00093
TestAmerica Burlington	Vermont	State Program	1	VT-4000
TestAmerica Burlington	Virginia	NELAP	3	460209

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method TO15

Volatile Organic Compounds (GC/MS) by Method TO15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Matrix: Air Level: Low Lab File ID: 16229_04.D

Lab ID: LCS 200-95422/4 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Dichlorodifluoromethane	10.0	9.78	98	70-130	
Freon 22	10.0	9.52	95	70-130	
1,2-Dichlorotetrafluoroethane	10.0	10.6	106	70-130	
Chloromethane	10.0	8.79	88	70-130	
n-Butane	10.0	8.89	89	70-130	
Vinyl chloride	10.0	9.35	94	70-130	
1,3-Butadiene	10.0	9.01	90	70-130	
Bromomethane	10.0	9.54	95	70-130	
Chloroethane	10.0	9.23	92	70-130	
Bromoethene(Vinyl Bromide)	10.0	9.41	94	70-130	
Trichlorofluoromethane	10.0	9.72	97	70-130	
Freon TF	10.0	9.49	95	70-130	
1,1-Dichloroethene	10.0	9.45	95	70-130	
Acetone	10.0	9.73	97	70-130	
Isopropyl alcohol	10.0	8.23	82	70-130	
Carbon disulfide	10.0	10.9	109	70-130	
3-Chloropropene	10.0	8.55	85	70-130	
Methylene Chloride	10.0	8.64	86	70-130	
tert-Butyl alcohol	10.0	8.80	88	70-130	
Methyl tert-butyl ether	10.0	9.32	93	70-130	
trans-1,2-Dichloroethene	10.0	9.83	98	70-130	
n-Hexane	10.0	9.31	93	70-130	
1,1-Dichloroethane	10.0	9.27	93	70-130	
Methyl Ethyl Ketone	10.0	8.60	86	70-130	
cis-1,2-Dichloroethene	10.0	9.54	95	70-130	
Chloroform	10.0	9.88	99	70-130	
Tetrahydrofuran	10.0	9.21	92	70-130	
1,1,1-Trichloroethane	10.0	9.88	99	70-130	
Cyclohexane	10.0	9.34	93	70-130	
Carbon tetrachloride	10.0	10.6	106	70-130	
2,2,4-Trimethylpentane	10.0	9.11	91	70-130	
Benzene	10.0	9.41	94	70-130	
1,2-Dichloroethane	10.0	9.84	98	70-130	
n-Heptane	10.0	9.09	91	70-130	
Trichloroethene	10.0	9.32	93	70-130	
Methyl methacrylate	10.0	10.0	100	70-130	
1,2-Dichloropropane	10.0	9.84	98	70-130	
1,4-Dioxane	10.0	9.36	94	70-130	
Bromodichloromethane	10.0	10.2	102	70-130	
cis-1,3-Dichloropropene	10.0	10.1	101	70-130	
methyl isobutyl ketone	10.0	9.70	97	70-130	
Toluene	10.0	9.63	96	70-130	

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Matrix: Air Level: Low Lab File ID: 16229_04.D

Lab ID: LCS 200-95422/4 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
trans-1,3-Dichloropropene	10.0	9.75	98	70-130	
1,1,2-Trichloroethane	10.0	9.76	98	70-130	
Tetrachloroethene	10.0	10.3	103	70-130	
Methyl Butyl Ketone (2-Hexanone)	10.0	8.75	87	70-130	
Dibromochloromethane	10.0	10.4	104	70-130	
1,2-Dibromoethane	10.0	9.99	100	70-130	
Chlorobenzene	10.0	9.91	99	70-130	
Ethylbenzene	10.0	9.75	98	70-130	
m,p-Xylene	20.0	19.4	97	70-130	
Xylene, o-	10.0	9.63	96	70-130	
Styrene	10.0	9.69	97	70-130	
Bromoform	10.0	12.4	124	70-130	
Cumene	10.0	9.59	96	70-130	
1,1,2,2-Tetrachloroethane	10.0	10.2	102	70-130	
n-Propylbenzene	10.0	9.66	97	70-130	
4-Ethyltoluene	10.0	9.68	97	70-130	
1,3,5-Trimethylbenzene	10.0	8.12	81	70-130	
2-Chlorotoluene	10.0	9.62	96	70-130	
tert-Butylbenzene	10.0	7.90	79	70-130	
1,2,4-Trimethylbenzene	10.0	8.58	86	70-130	
sec-Butylbenzene	10.0	9.25	92	70-130	
4-Isopropyltoluene	10.0	9.90	99	70-130	
1,3-Dichlorobenzene	10.0	8.54	85	70-130	
1,4-Dichlorobenzene	10.0	8.77	88	70-130	
Benzyl chloride	10.0	9.56	96	70-130	
n-Butylbenzene	10.0	10.1	101	70-130	
1,2-Dichlorobenzene	10.0	9.94	99	70-130	
1,2,4-Trichlorobenzene	10.0	9.93	99	70-130	
Hexachlorobutadiene	10.0	10.4	104	70-130	
Naphthalene	10.0	8.88	89	70-130	

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM IV
AIR - GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab File ID: 16229_05.D Lab Sample ID: MB 200-95422/5

Matrix: Air Heated Purge:(Y/N) N

Instrument ID: CHX.i Date Analyzed: 10/13/2015 12:18

GC Column: RTX-624 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 200-95422/4	16229_04.D	10/13/2015 11:28
SV-1	200-30148-1	16229_11.D	10/13/2015 17:23
SV-1 DL	200-30148-1 DL	16229_12.D	10/13/2015 18:12
SV-2	200-30148-2	16229_13.D	10/13/2015 19:01
SV-2 DL	200-30148-2 DL	16229_14.D	10/13/2015 19:51
SV-3	200-30148-3	16229_15.D	10/13/2015 20:40
SV-3 DL	200-30148-3 DL	16229_16.D	10/13/2015 21:29
SV-4	200-30148-4	16229_17.D	10/13/2015 22:18
SV-4 DL	200-30148-4 DL	16229_18.D	10/13/2015 23:08
SV-5	200-30148-5	16229_19.D	10/13/2015 23:57
SV-5 DL	200-30148-5 DL	16229_20.D	10/14/2015 00:46

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab File ID: 15313_01.D BFB Injection Date: 08/17/2015

Instrument ID: CHX.i BFB Injection Time: 15:35

Analysis Batch No.: 92823

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	12.1	
75	30.0 - 66.0% of mass 95	39.9	
95	Base peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	6.5	
173	Less than 2.0% of mass 174	0.8	(0.8)1
174	50.0 - 120.0% of mass 95	103.8	
175	4.0 - 9.0 % of mass 174	7.5	(7.2)1
176	93.0 - 101.0% of mass 174	101.5	(97.8)1
177	5.0 - 9.0% of mass 176	6.4	(6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 200-92823/4	15313_04.D	08/17/2015	18:04
	IC 200-92823/5	15313_05.D	08/17/2015	18:54
	IC 200-92823/6	15313_06.D	08/17/2015	19:44
	IC 200-92823/7	15313_07.D	08/17/2015	20:33
	ICIS 200-92823/8	15313_08.D	08/17/2015	21:23
	IC 200-92823/9	15313_09.D	08/17/2015	22:13
	IC 200-92823/10	15313_10.D	08/17/2015	23:02
	IC 200-92823/11	15313_11.D	08/17/2015	23:52
	ICV 200-92823/15	15313_15.D	08/18/2015	03:10

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab File ID: 16229_01.D BFB Injection Date: 10/13/2015

Instrument ID: CHX.i BFB Injection Time: 08:59

Analysis Batch No.: 95422

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	14.0	
75	30.0 - 66.0% of mass 95	41.6	
95	Base peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	6.6	
173	Less than 2.0% of mass 174	1.0	(0.9)1
174	50.0 - 120.0% of mass 95	110.7	
175	4.0 - 9.0 % of mass 174	8.1	(7.3)1
176	93.0 - 101.0% of mass 174	107.2	(96.8)1
177	5.0 - 9.0% of mass 176	7.0	(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 200-95422/3	16229_03.D	10/13/2015	10:38
	LCS 200-95422/4	16229_04.D	10/13/2015	11:28
	MB 200-95422/5	16229_05.D	10/13/2015	12:18
SV-1	200-30148-1	16229_11.D	10/13/2015	17:23
SV-1 DL	200-30148-1 DL	16229_12.D	10/13/2015	18:12
SV-2	200-30148-2	16229_13.D	10/13/2015	19:01
SV-2 DL	200-30148-2 DL	16229_14.D	10/13/2015	19:51
SV-3	200-30148-3	16229_15.D	10/13/2015	20:40
SV-3 DL	200-30148-3 DL	16229_16.D	10/13/2015	21:29
SV-4	200-30148-4	16229_17.D	10/13/2015	22:18
SV-4 DL	200-30148-4 DL	16229_18.D	10/13/2015	23:08
SV-5	200-30148-5	16229_19.D	10/13/2015	23:57
SV-5 DL	200-30148-5 DL	16229_20.D	10/14/2015	00:46

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Sample No.: ICIS 200-92823/8 Date Analyzed: 08/17/2015 21:23

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm)

Lab File ID (Standard): 15313_08.D Heated Purge: (Y/N) N

Calibration ID: 31716

		BCM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		178277	10.28	967745	12.27	948006	18.46
UPPER LIMIT		249588	10.61	1354843	12.60	1327208	18.79
LOWER LIMIT		106966	9.95	580647	11.94	568804	18.13
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 200-92823/15		188633	10.29	1018364	12.27	989108	18.46

BCM = Bromochloromethane
DFB = 1,4-Difluorobenzene
CBZ = Chlorobenzene-d5

Area Limit = 60%-140% of internal standard area
RT Limit = ± 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII TO-15

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Sample No.: CCVIS 200-95422/3 Date Analyzed: 10/13/2015 10:38

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm)

Lab File ID (Standard): 16229_03.D Heated Purge: (Y/N) N

Calibration ID: 31716

		BCM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		156650	10.29	855684	12.27	879882	18.45
UPPER LIMIT		219310	10.62	1197958	12.60	1231835	18.78
LOWER LIMIT		93990	9.96	513410	11.94	527929	18.12
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 200-95422/4		166871	10.28	910178	12.26	929691	18.45
MB 200-95422/5		169691	10.29	941292	12.27	941378	18.45
200-30148-1	SV-1	138953	10.29	765895	12.26	787333	18.45
200-30148-1 DL	SV-1 DL	157175	10.28	867214	12.26	860937	18.45
200-30148-2	SV-2	164012	10.28	908555	12.26	915494	18.44
200-30148-2 DL	SV-2 DL	168956	10.29	939197	12.26	932822	18.45
200-30148-3	SV-3	175634	10.28	965235	12.26	973372	18.44
200-30148-3 DL	SV-3 DL	178464	10.28	988907	12.26	1002758	18.45
200-30148-4	SV-4	178868	10.29	990341	12.26	998506	18.45
200-30148-4 DL	SV-4 DL	180730	10.28	997974	12.26	1009230	18.45
200-30148-5	SV-5	177140	10.29	976954	12.26	991424	18.45
200-30148-5 DL	SV-5 DL	175772	10.28	977700	12.26	988946	18.45

BCM = Bromochloromethane
DFB = 1,4-Difluorobenzene
CBZ = Chlorobenzene-d5

Area Limit = 60%-140% of internal standard area
RT Limit = ± 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII TO-15

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 Lab Sample ID: 200-30148-1

Matrix: Air Lab File ID: 16229_11.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 17:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	6.2		0.50	
75-45-6	Freon 22	86.47	0.50	U	0.50	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	1.3		0.20	
74-87-3	Chloromethane	50.49	0.50	U	0.50	
106-97-8	n-Butane	58.12	15		0.50	
75-01-4	Vinyl chloride	62.50	0.20	U	0.20	
106-99-0	1,3-Butadiene	54.09	2.7		0.20	
74-83-9	Bromomethane	94.94	0.20	U	0.20	
75-00-3	Chloroethane	64.52	0.50	U	0.50	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.20	U	0.20	
75-69-4	Trichlorofluoromethane	137.37	0.32		0.20	
76-13-1	Freon TF	187.38	0.20	U	0.20	
75-35-4	1,1-Dichloroethene	96.94	0.20	U	0.20	
67-64-1	*Acetone*	*58.08*	*120*	*E*	*5.0*	
67-63-0	Isopropyl alcohol	60.10	5.0	U	5.0	
75-15-0	Carbon disulfide	76.14	0.50	U	0.50	
107-05-1	3-Chloropropene	76.53	0.50	U	0.50	
75-09-2	Methylene Chloride	84.93	0.50	U	0.50	
75-65-0	tert-Butyl alcohol	74.12	7.4		5.0	
1634-04-4	Methyl tert-butyl ether	88.15	0.20	U	0.20	
156-60-5	trans-1,2-Dichloroethene	96.94	0.20	U	0.20	
110-54-3	n-Hexane	86.17	1.2		0.20	
75-34-3	1,1-Dichloroethane	98.96	0.20	U	0.20	
78-93-3	Methyl Ethyl Ketone	72.11	6.0		0.50	
156-59-2	cis-1,2-Dichloroethene	96.94	0.20	U	0.20	
540-59-0	1,2-Dichloroethene, Total	96.94	0.40	U	0.40	
67-66-3	Chloroform	119.38	0.20	U	0.20	
109-99-9	Tetrahydrofuran	72.11	5.0	U	5.0	
71-55-6	1,1,1-Trichloroethane	133.41	0.20	U	0.20	
110-82-7	Cyclohexane	84.16	0.27		0.20	
56-23-5	Carbon tetrachloride	153.81	0.20	U	0.20	
540-84-1	2,2,4-Trimethylpentane	114.23	0.20	U	0.20	
71-43-2	Benzene	78.11	0.91		0.20	
107-06-2	1,2-Dichloroethane	98.96	0.20	U	0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 Lab Sample ID: 200-30148-1

Matrix: Air Lab File ID: 16229_11.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 17:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	1.7		0.20	
79-01-6	Trichloroethene	131.39	0.20	U	0.20	
80-62-6	Methyl methacrylate	100.12	0.50	U	0.50	
78-87-5	1,2-Dichloropropane	112.99	0.20	U	0.20	
123-91-1	1,4-Dioxane	88.11	5.0	U	5.0	
75-27-4	Bromodichloromethane	163.83	0.20	U	0.20	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.20	U	0.20	
108-10-1	methyl isobutyl ketone	100.16	3.7		0.50	
108-88-3	Toluene	92.14	4.5		0.20	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.20	U	0.20	
79-00-5	1,1,2-Trichloroethane	133.41	0.20	U	0.20	
127-18-4	Tetrachloroethene	165.83	0.20	U	0.20	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	1.5		0.50	
124-48-1	Dibromochloromethane	208.29	0.20	U	0.20	
106-93-4	1,2-Dibromoethane	187.87	0.20	U	0.20	
108-90-7	Chlorobenzene	112.56	0.20	U	0.20	
100-41-4	Ethylbenzene	106.17	1.5		0.20	
179601-23-1	m,p-Xylene	106.17	4.8		0.50	
95-47-6	Xylene, o-	106.17	1.8		0.20	
1330-20-7	Xylene (total)	106.17	6.6		0.70	
100-42-5	Styrene	104.15	0.74		0.20	
75-25-2	Bromoform	252.75	0.20	U	0.20	
98-82-8	Cumene	120.19	0.20	U	0.20	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.20	U	0.20	
103-65-1	n-Propylbenzene	120.19	0.38		0.20	
622-96-8	4-Ethyltoluene	120.20	0.54		0.20	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.52		0.20	
95-49-8	2-Chlorotoluene	126.59	0.20	U	0.20	
98-06-6	tert-Butylbenzene	134.22	0.20	U	0.20	
95-63-6	1,2,4-Trimethylbenzene	120.20	1.6		0.20	
135-98-8	sec-Butylbenzene	134.22	0.20	U	0.20	
99-87-6	4-Isopropyltoluene	134.22	0.37		0.20	
541-73-1	1,3-Dichlorobenzene	147.00	0.20	U	0.20	
106-46-7	1,4-Dichlorobenzene	147.00	0.20	U	0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 Lab Sample ID: 200-30148-1

Matrix: Air Lab File ID: 16229_11.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 17:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	0.20	U	0.20	
104-51-8	n-Butylbenzene	134.22	0.20	U	0.20	
95-50-1	1,2-Dichlorobenzene	147.00	0.20	U	0.20	
120-82-1	1,2,4-Trichlorobenzene	181.45	0.50	U	0.50	
87-68-3	Hexachlorobutadiene	260.76	0.20	U	0.20	
91-20-3	Naphthalene	128.17	0.50	U	0.50	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 Lab Sample ID: 200-30148-1

Matrix: Air Lab File ID: 16229_11.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 17:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	30		2.5	
75-45-6	Freon 22	86.47	1.8	U	1.8	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	8.9		1.4	
74-87-3	Chloromethane	50.49	1.0	U	1.0	
106-97-8	n-Butane	58.12	35		1.2	
75-01-4	Vinyl chloride	62.50	0.51	U	0.51	
106-99-0	1,3-Butadiene	54.09	6.1		0.44	
74-83-9	Bromomethane	94.94	0.78	U	0.78	
75-00-3	Chloroethane	64.52	1.3	U	1.3	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.87	U	0.87	
75-69-4	Trichlorofluoromethane	137.37	1.8		1.1	
76-13-1	Freon TF	187.38	1.5	U	1.5	
75-35-4	1,1-Dichloroethene	96.94	0.79	U	0.79	
67-64-1	*Acetone*	*58.08*	*290*	*E*	*12*	
67-63-0	Isopropyl alcohol	60.10	12	U	12	
75-15-0	Carbon disulfide	76.14	1.6	U	1.6	
107-05-1	3-Chloropropene	76.53	1.6	U	1.6	
75-09-2	Methylene Chloride	84.93	1.7	U	1.7	
75-65-0	tert-Butyl alcohol	74.12	22		15	
1634-04-4	Methyl tert-butyl ether	88.15	0.72	U	0.72	
156-60-5	trans-1,2-Dichloroethene	96.94	0.79	U	0.79	
110-54-3	n-Hexane	86.17	4.2		0.70	
75-34-3	1,1-Dichloroethane	98.96	0.81	U	0.81	
78-93-3	Methyl Ethyl Ketone	72.11	18		1.5	
156-59-2	cis-1,2-Dichloroethene	96.94	0.79	U	0.79	
540-59-0	1,2-Dichloroethene, Total	96.94	1.6	U	1.6	
67-66-3	Chloroform	119.38	0.98	U	0.98	
109-99-9	Tetrahydrofuran	72.11	15	U	15	
71-55-6	1,1,1-Trichloroethane	133.41	1.1	U	1.1	
110-82-7	Cyclohexane	84.16	0.93		0.69	
56-23-5	Carbon tetrachloride	153.81	1.3	U	1.3	
540-84-1	2,2,4-Trimethylpentane	114.23	0.93	U	0.93	
71-43-2	Benzene	78.11	2.9		0.64	
107-06-2	1,2-Dichloroethane	98.96	0.81	U	0.81	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 Lab Sample ID: 200-30148-1

Matrix: Air Lab File ID: 16229_11.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 17:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	7.1		0.82	
79-01-6	Trichloroethene	131.39	1.1	U	1.1	
80-62-6	Methyl methacrylate	100.12	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	112.99	0.92	U	0.92	
123-91-1	1,4-Dioxane	88.11	18	U	18	
75-27-4	Bromodichloromethane	163.83	1.3	U	1.3	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.91	U	0.91	
108-10-1	methyl isobutyl ketone	100.16	15		2.0	
108-88-3	Toluene	92.14	17		0.75	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.91	U	0.91	
79-00-5	1,1,2-Trichloroethane	133.41	1.1	U	1.1	
127-18-4	Tetrachloroethene	165.83	1.4	U	1.4	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	6.1		2.0	
124-48-1	Dibromochloromethane	208.29	1.7	U	1.7	
106-93-4	1,2-Dibromoethane	187.87	1.5	U	1.5	
108-90-7	Chlorobenzene	112.56	0.92	U	0.92	
100-41-4	Ethylbenzene	106.17	6.4		0.87	
179601-23-1	m,p-Xylene	106.17	21		2.2	
95-47-6	Xylene, o-	106.17	7.6		0.87	
1330-20-7	Xylene (total)	106.17	29		3.0	
100-42-5	Styrene	104.15	3.1		0.85	
75-25-2	Bromoform	252.75	2.1	U	2.1	
98-82-8	Cumene	120.19	0.98	U	0.98	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	1.4	U	1.4	
103-65-1	n-Propylbenzene	120.19	1.9		0.98	
622-96-8	4-Ethyltoluene	120.20	2.6		0.98	
108-67-8	1,3,5-Trimethylbenzene	120.20	2.5		0.98	
95-49-8	2-Chlorotoluene	126.59	1.0	U	1.0	
98-06-6	tert-Butylbenzene	134.22	1.1	U	1.1	
95-63-6	1,2,4-Trimethylbenzene	120.20	7.8		0.98	
135-98-8	sec-Butylbenzene	134.22	1.1	U	1.1	
99-87-6	4-Isopropyltoluene	134.22	2.0		1.1	
541-73-1	1,3-Dichlorobenzene	147.00	1.2	U	1.2	
106-46-7	1,4-Dichlorobenzene	147.00	1.2	U	1.2	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 Lab Sample ID: 200-30148-1

Matrix: Air Lab File ID: 16229_11.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 17:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	1.0	U	1.0	
104-51-8	n-Butylbenzene	134.22	1.1	U	1.1	
95-50-1	1,2-Dichlorobenzene	147.00	1.2	U	1.2	
120-82-1	1,2,4-Trichlorobenzene	181.45	3.7	U	3.7	
87-68-3	Hexachlorobutadiene	260.76	2.1	U	2.1	
91-20-3	Naphthalene	128.17	2.6	U	2.6	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 Lab Sample ID: 200-30148-1

Matrix: Air Lab File ID: 16229_11.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 17:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 10 TIC Result Total: 55.6

CAS NO.	COMPOUND NAME	RT	RESULT	Q
115-07-1	Propene	3.11	17	J N
	Unknown	4.14	9.6	J
541-05-9	Cyclotrisiloxane, hexamethyl-	16.07	9.8	J N
66-25-1	Hexanal	17.15	3.8	J N
110-43-0	2-Heptanone	19.99	2.2	J N
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	2.9	J N
620-14-4	Benzene, 1-ethyl-3-methyl-	21.18	2.1	J N
5989-27-5	D-Limonene	22.20	3.6	J N
1120-21-4	Undecane	22.89	2.2	J N
124-19-6	Nonanal	23.90	2.4	J N

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Sample Type: Client
Inject. Date: 13-Oct-2015 17:23:30 ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0016229-011
Misc. Info.: 30148-1
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 07:41:12 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 07:41:12

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85	3.177	3.177	0.000	99	166232	6.15	
3 Chlorodifluoromethane	51	3.225	3.231	-0.006	96	2140	0.1637	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.445	3.445	0.000	95	35033	1.27	
5 Chloromethane	50	3.573	3.584	-0.006	31	1604	0.2109	M
6 Butane	43	3.776	3.777	-0.001	94	184589	14.8	
7 Vinyl chloride	62		3.819				ND	
8 Butadiene	54	3.894	3.894	0.000	96	18945	2.75	
9 Bromomethane	94		4.563				ND	
10 Chloroethane	64		4.793				ND	
12 Vinyl bromide	106		5.167				ND	
13 Trichlorofluoromethane	101	5.264	5.264	0.000	85	9526	0.3195	
18 1,1,2-Trichloro-1,2,2-trif	101	6.307	6.307	0.000	47	1102	0.0462	
20 1,1-Dichloroethene	96		6.355				ND	
21 Acetone	43	6.590	6.623	-0.033	87	1475676	121.3	E
22 Carbon disulfide	76	6.746	6.751	-0.005	98	13387	0.4723	
23 Isopropyl alcohol	45	6.949	6.949	0.000	100	16871	1.46	
24 3-Chloro-1-propene	41		7.125				ND	
26 Methylene Chloride	49	7.425	7.436	0.011	75	2027	0.1979	M
28 2-Methyl-2-propanol	59	7.719	7.735	-0.016	99	136806	7.40	
29 Methyl tert-butyl ether	73		7.837				ND	
30 trans-1,2-Dichloroethene	61		7.842				ND	
32 Hexane	57	8.211	8.211	0.000	92	17947	1.18	
33 1,1-Dichloroethane	63		8.714				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.891	9.881	0.010	98	38650	5.99	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.287	10.287	0.000	76	138953	10.0	
39 Tetrahydrofuran	42	10.330	10.314	0.016	82	4334	0.3972	
41 Chloroform	83		10.416				ND	
42 Cyclohexane	84	10.651	10.672	-0.005	79	5165	0.2694	M
43 1,1,1-Trichloroethane	97		10.694				ND	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	44 Carbon tetrachloride	117	10.940	10.934	0.006	26	742	0.0255	
	45 Isooctane	57	11.368	11.373	-0.005	92	12491	0.1950	
	46 Benzene	78	11.410	11.416	-0.006	93	40815	0.9128	
	47 1,2-Dichloroethane	62		11.609				ND	
	48 n-Heptane	43	11.758	11.764	-0.006	88	37450	1.74	
*	50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	92	765895	10.0	
	52 Trichloroethene	95	12.743	12.748	-0.005	25	581	0.0258	
	53 1,2-Dichloropropane	63		13.336				ND	
	54 Methyl methacrylate	69	13.508	13.502	0.006	92	6730	0.3974	
	55 1,4-Dioxane	88	13.604	13.588	0.016	37	936	0.1114	
	57 Dichlorobromomethane	83		13.909				ND	
	58 cis-1,3-Dichloropropene	75		14.872				ND	
	61 4-Methyl-2-pentanone (MIBK	43	15.187	15.198	-0.011	93	108364	3.71	
	62 Toluene	92	15.476	15.482	-0.006	94	182268	4.55	
	67 trans-1,3-Dichloropropene	75		16.097				ND	
	68 1,1,2-Trichloroethane	83		16.487				ND	
	69 Tetrachloroethene	166	16.573	16.584	-0.011	92	3404	0.0853	
	70 2-Hexanone	43	16.947	16.958	-0.011	93	44031	1.48	
	71 Chlorodibromomethane	129		17.269				ND	
	72 Ethylene Dibromide	107		17.547				ND	
*	73 Chlorobenzene-d5	117	18.445	18.451	-0.006	82	787333	10.0	
	74 Chlorobenzene	112		18.510				ND	
	75 Ethylbenzene	91	18.654	18.654	0.000	97	126634	1.47	
	77 m-Xylene & p-Xylene	106	18.900	18.906	-0.006	99	175089	4.80	
	78 o-Xylene	106	19.719	19.719	0.000	94	63249	1.76	
	79 Styrene	104	19.767	19.772	-0.005	97	41355	0.7356	
S	80 Xylenes, Total	106				0		6.56	
	81 Bromoform	173		20.179				ND	
	82 Isopropylbenzene	105	20.355	20.355	0.000	94	19549	0.1902	
	85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
	86 N-Propylbenzene	91	21.035	21.040	-0.005	99	45953	0.3837	
	89 4-Ethyltoluene	105	21.216	21.217	-0.001	71	55585	0.5353	
	90 2-Chlorotoluene	91		21.238				ND	
	91 1,3,5-Trimethylbenzene	105	21.313	21.318	-0.005	95	44428	0.5183	
	93 tert-Butylbenzene	119		21.789				ND	
	94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	137007	1.59	
	95 sec-Butylbenzene	105		22.105				ND	
	96 4-Isopropyltoluene	119	22.297	22.297	0.000	97	40851	0.3714	
	97 1,3-Dichlorobenzene	146		22.345				ND	
	98 1,4-Dichlorobenzene	146		22.484				ND	
	99 Benzyl chloride	91		22.688				ND	
	101 n-Butylbenzene	91		22.886				ND	
	102 1,2-Dichlorobenzene	146		23.041				ND	
	104 1,2,4-Trichlorobenzene	180		25.673				ND	
	105 Hexachlorobutadiene	225		25.855				ND	
	106 Naphthalene	128	26.197	26.197	0.000	99	41931	0.3788	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Reagents:

ATTO15GIS_00009	Amount Added:	20.00	Units: mL	Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Sample Type: Client
Inject. Date: 13-Oct-2015 17:23:30 ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0016229-011
Misc. Info.: 30148-1
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 07:41:12 Calib Date: 17-Aug-2015 23:52:30
Tic RT Window: 0.000 -0.000 Response: area
Quant By: Nearest ISTD Quant LOD: 10.00000
MS Library: \\ChromNA\Burlington\Database\NIST14.L
Min. Match: 1

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 07:41:12

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
	115-07-1 Propene							
3.108	1360126	16.8	40	90	57	C3H6	42	
	Unknown							
4.135	778174	9.64	40	0	0		0	
	541-05-9 Cyclotrisiloxane, hexamethyl-							
16.065	1985727	9.76	73	87	85994	C6H18O3Si3	222	
	66-25-1 Hexanal							
17.145	774353	3.80	73	90	3831	C6H12O	100	
	110-43-0 2-Heptanone							
19.986	655515	2.21	83	90	7569	C7H14O	114	
	7785-26-4 (1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2							
20.254	866205	2.92	83	96	16223	C10H16	136	
	620-14-4 Benzene, 1-ethyl-3-methyl-							
21.179	617700	2.08	83	91	9604	C9H12	120	
	5989-27-5 D-Limonene							
22.201	1082152	3.65	83	95	16044	C10H16	136	
	1120-21-4 Undecane							
22.886	656394	2.21	83	93	29354	C11H24	156	
	124-19-6 Nonanal							
23.902	708493	2.39	83	91	20436	C9H18O	142	

Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 40 Chlorobromomethane	10.287	807237	10.0
* 73 Chlorobenzene-d5	18.445	2035202	10.0
* 83 4-Bromofluorobenzene	20.714	2967832	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

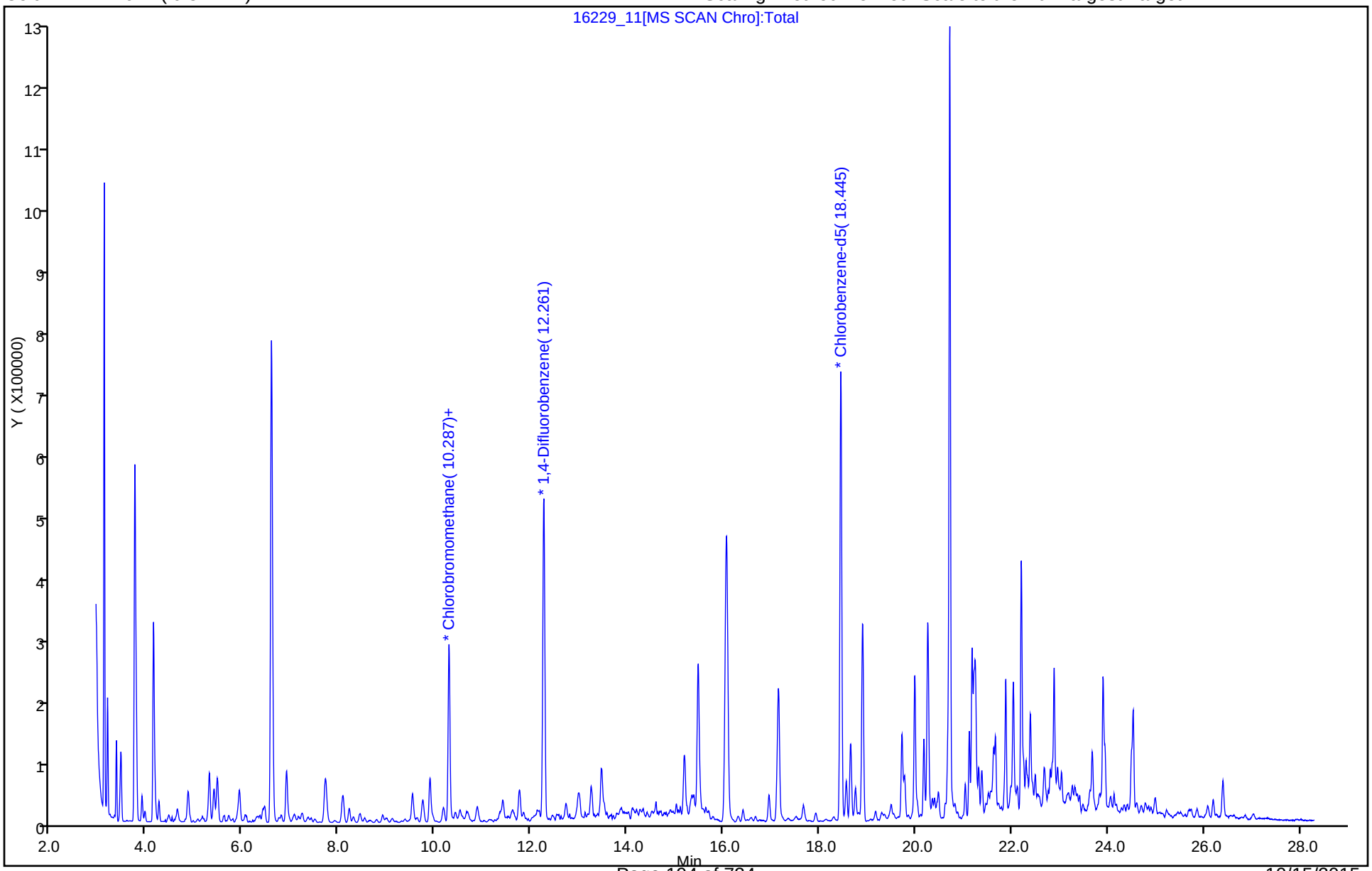
Report Date: 14-Oct-2015 07:41:12 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D

Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1	Worklist Smp#:	11
Client ID:	SV-1				
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

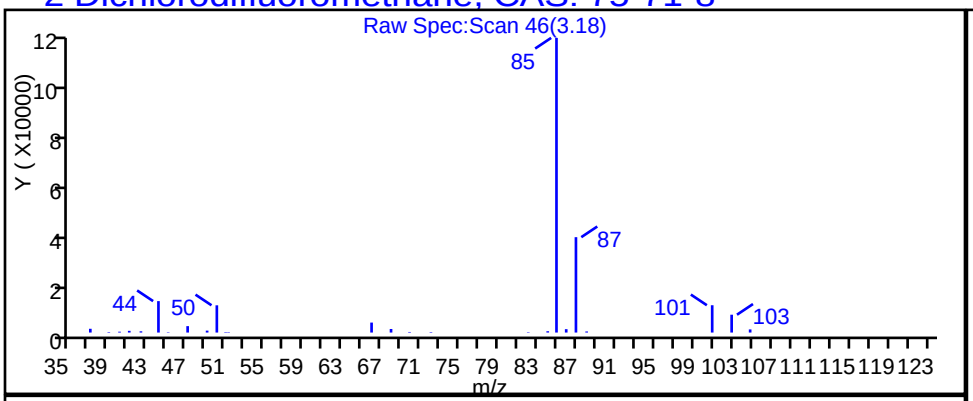
Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

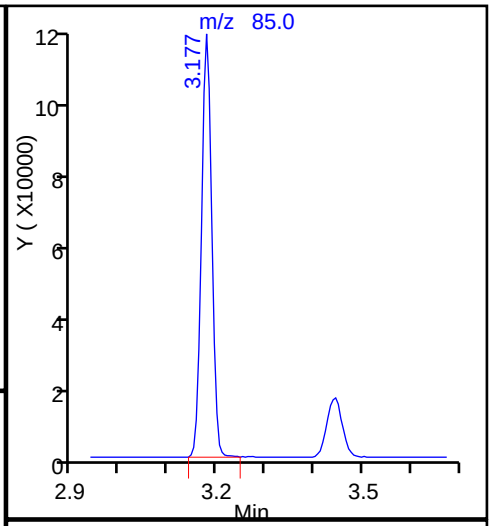


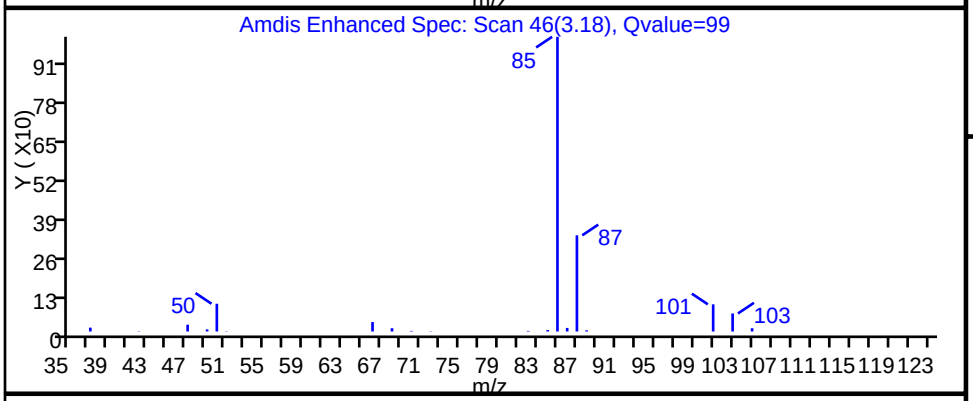
TestAmerica Burlington

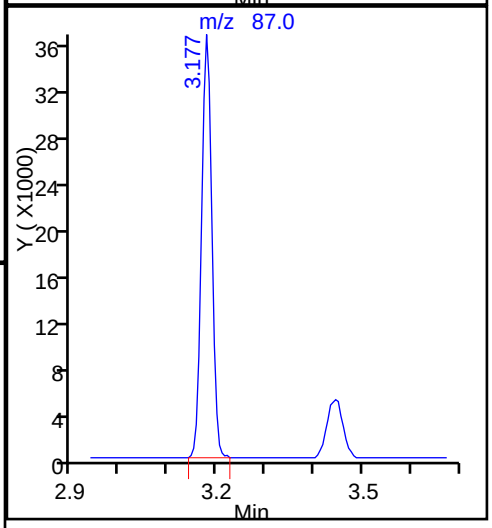
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

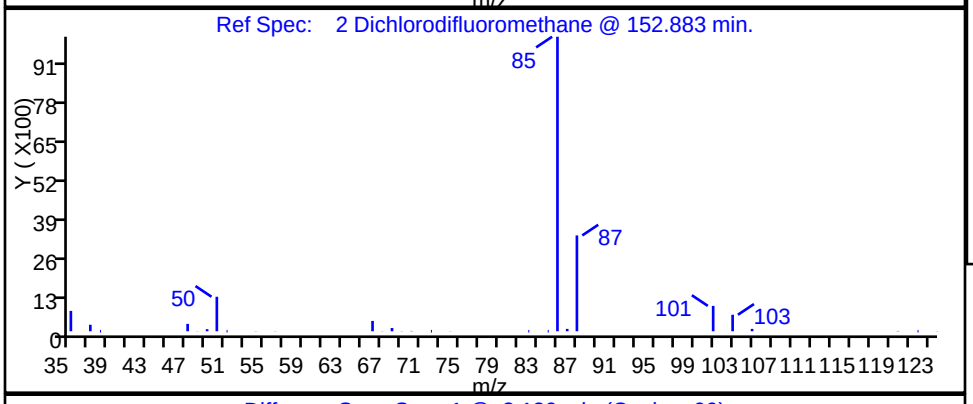
2 Dichlorodifluoromethane, CAS: 75-71-8

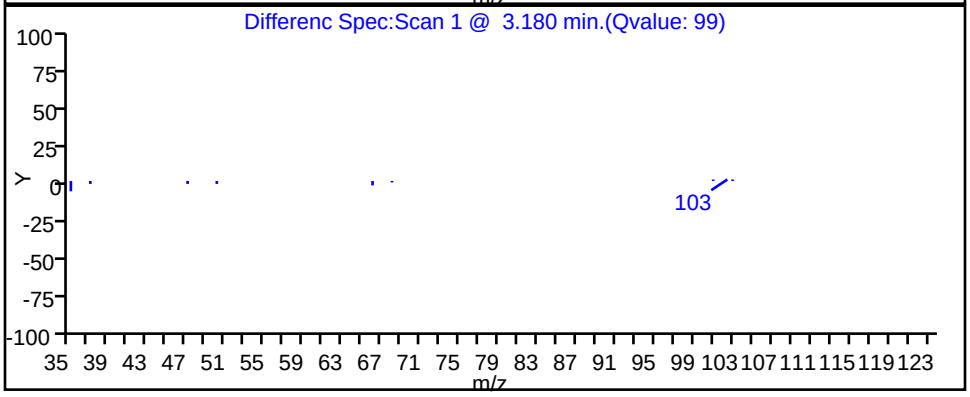








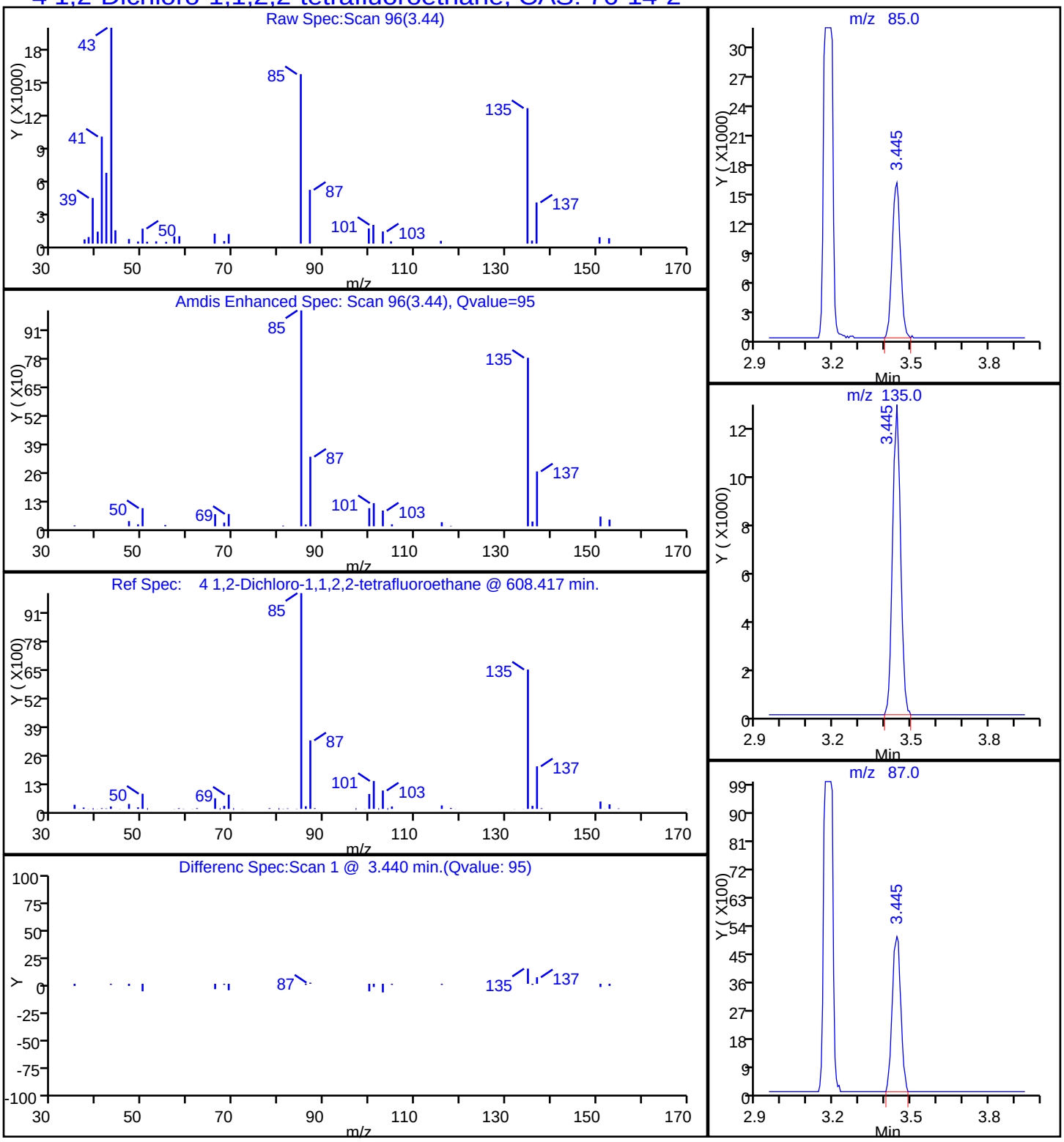




TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

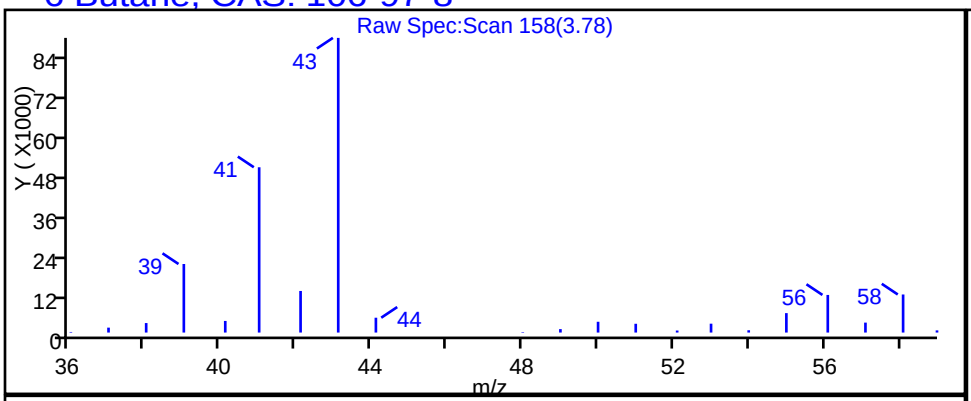
4 1,2-Dichloro-1,1,2,2-tetrafluoroethane, CAS: 76-14-2

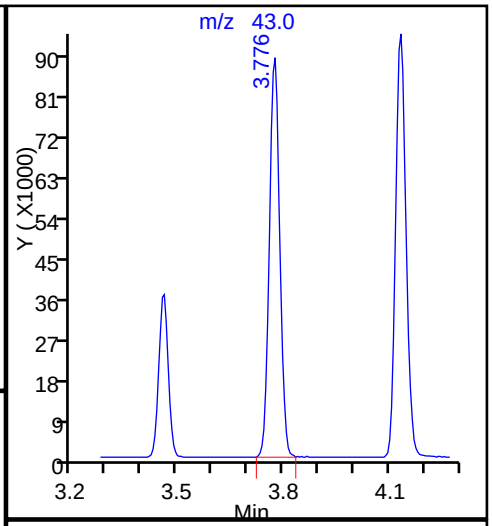


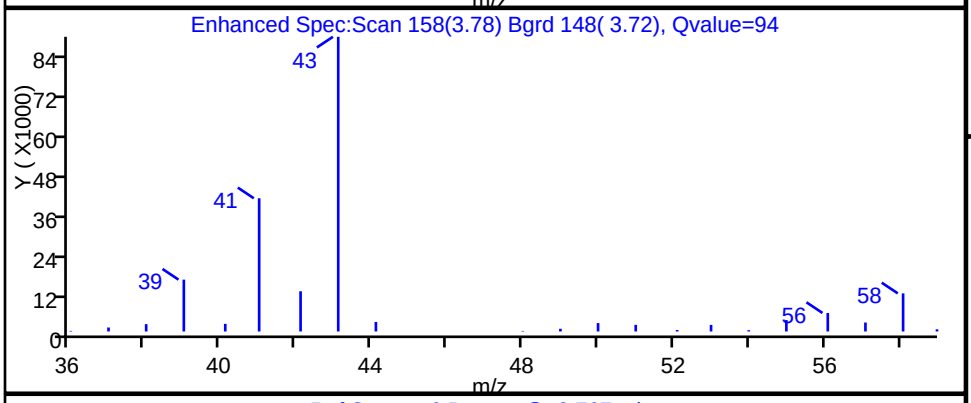
TestAmerica Burlington

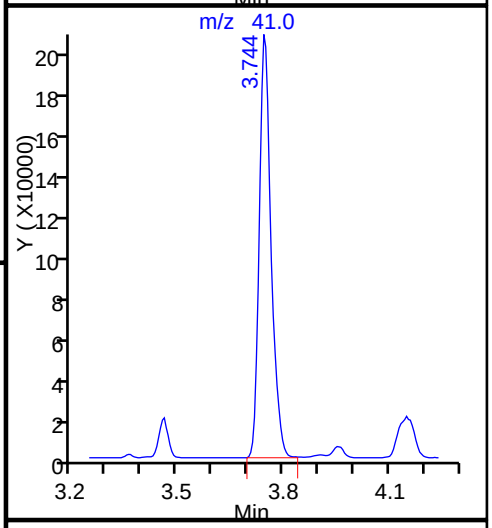
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D		
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1
Client ID:	SV-1		
Operator ID:	wrd	ALS Bottle#:	9 Worklist Smp#: 11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN

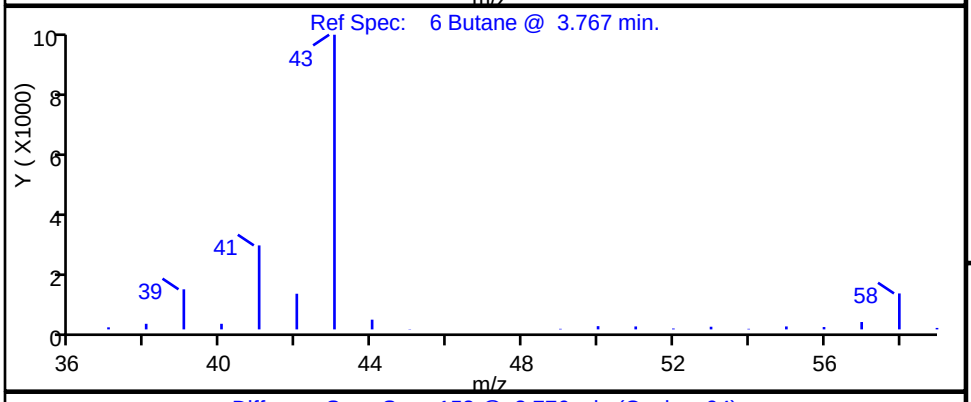
6 Butane, CAS: 106-97-8

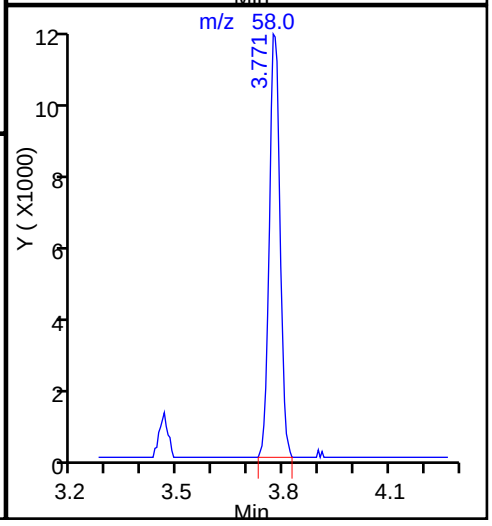


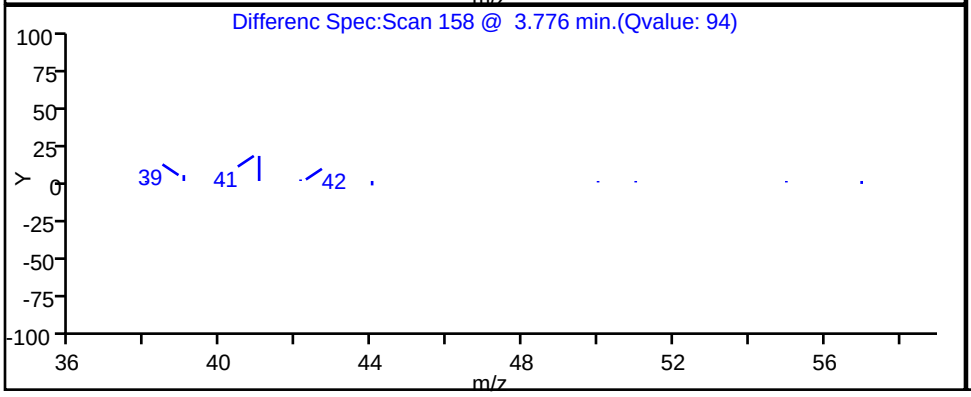








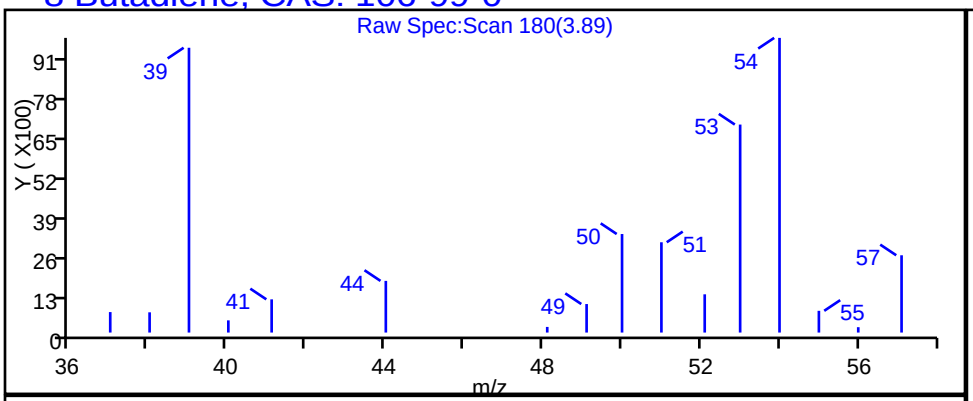


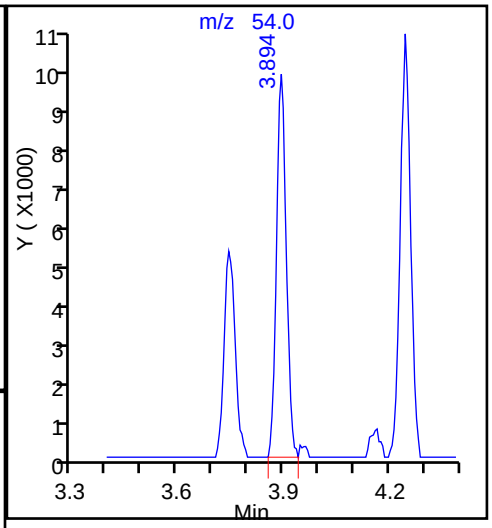


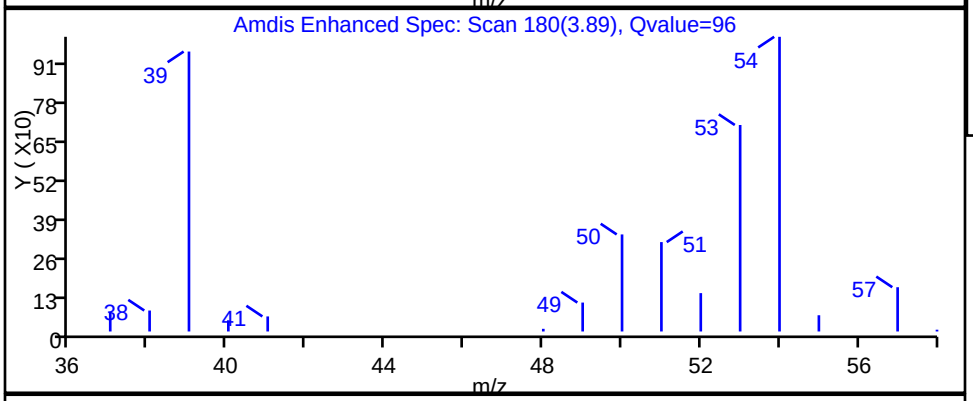
TestAmerica Burlington

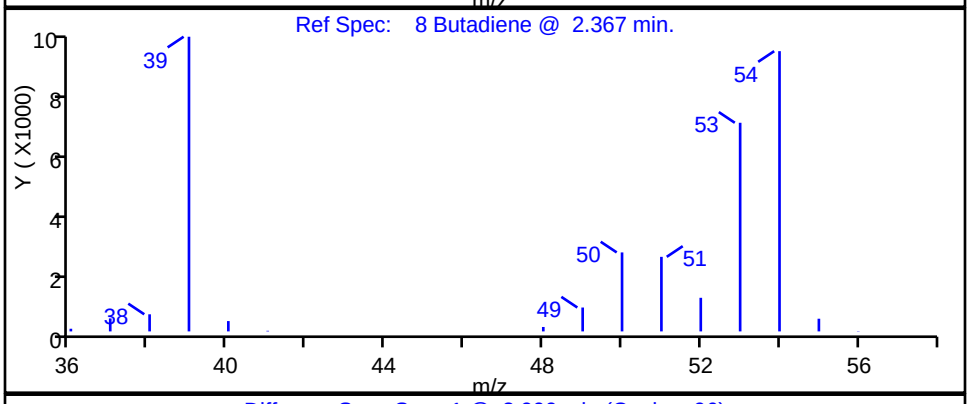
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

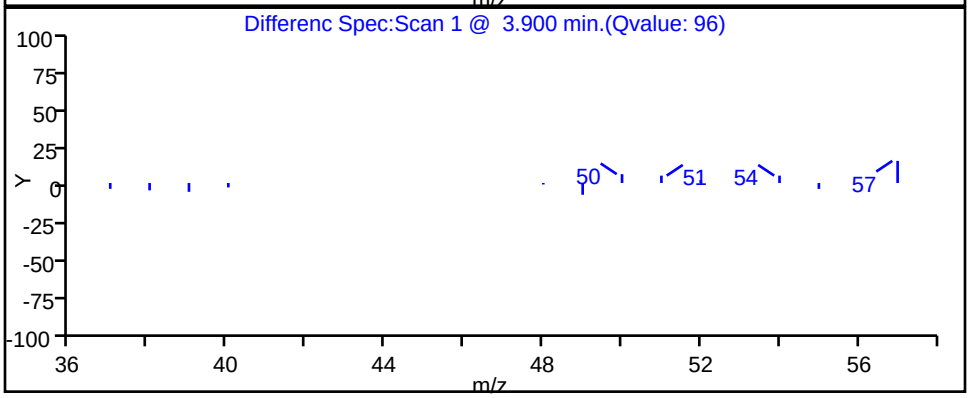
8 Butadiene, CAS: 106-99-0







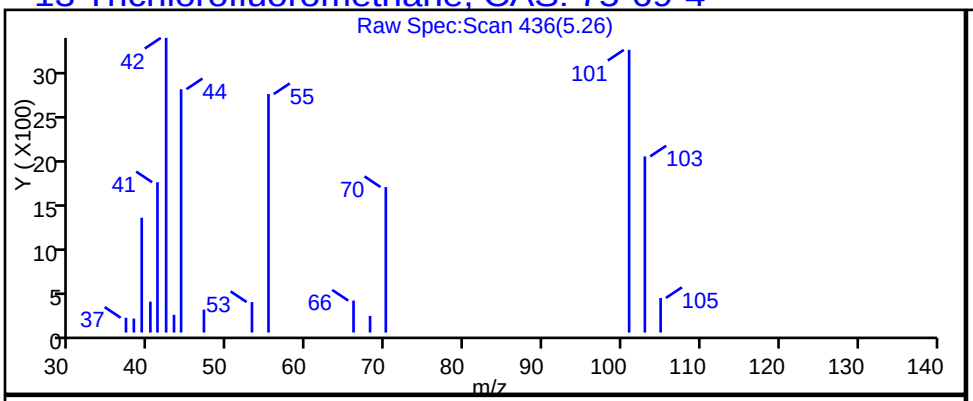


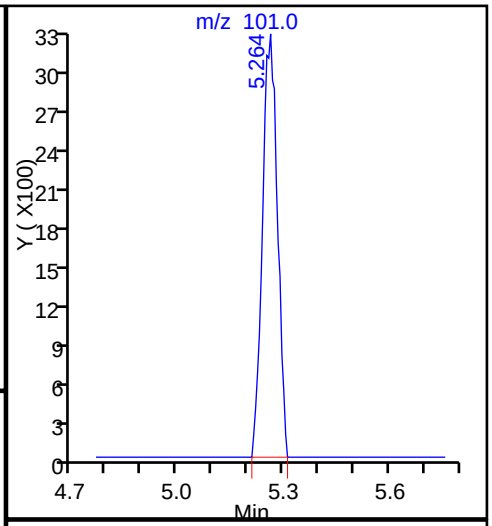


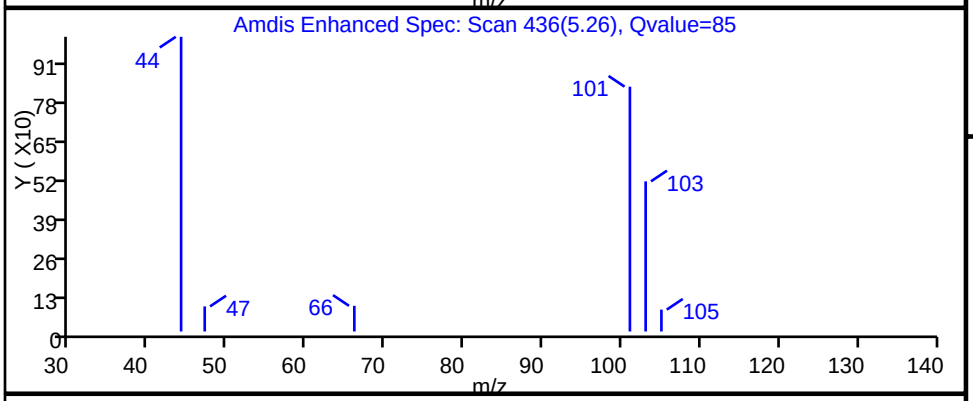
TestAmerica Burlington

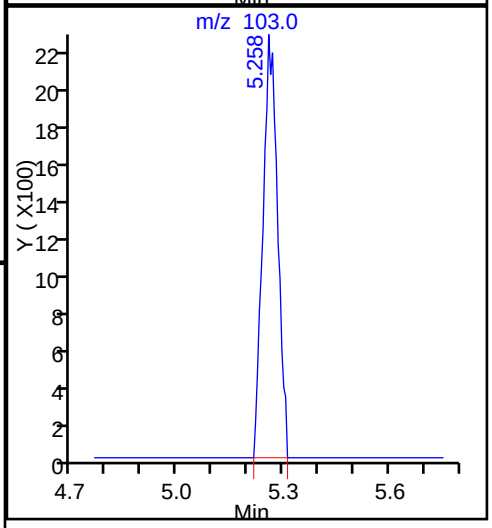
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

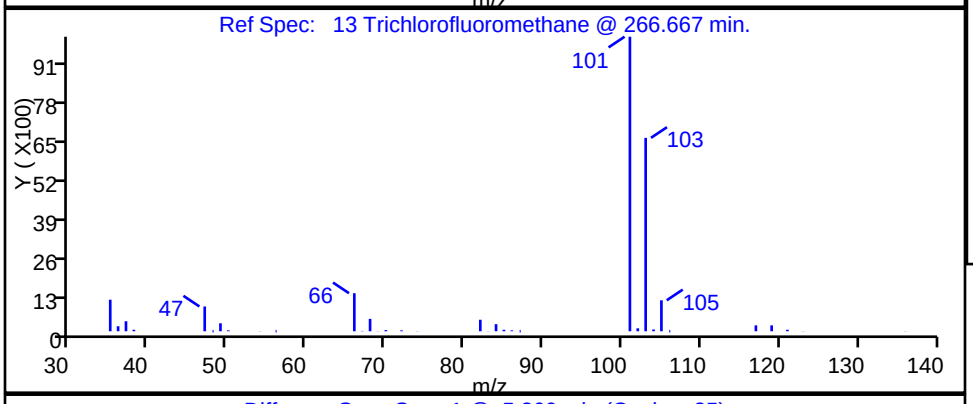
13 Trichlorofluoromethane, CAS: 75-69-4

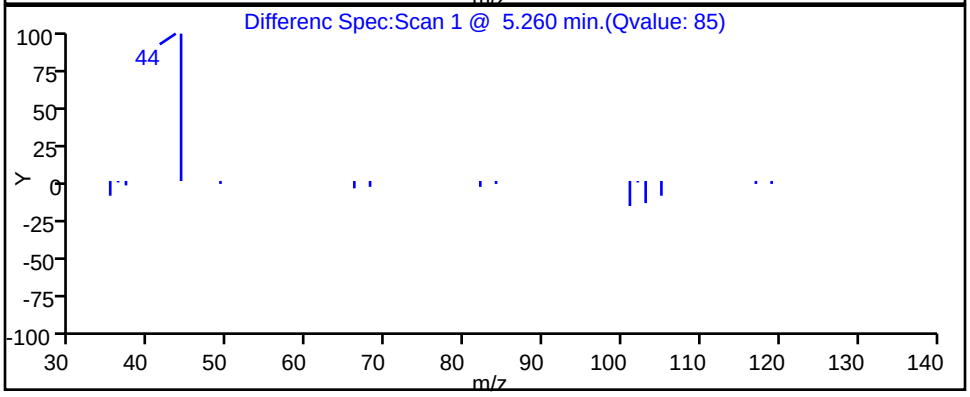








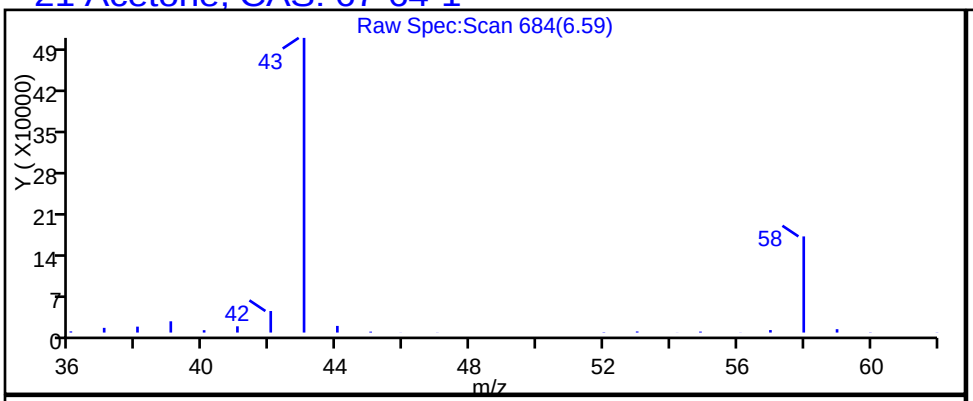


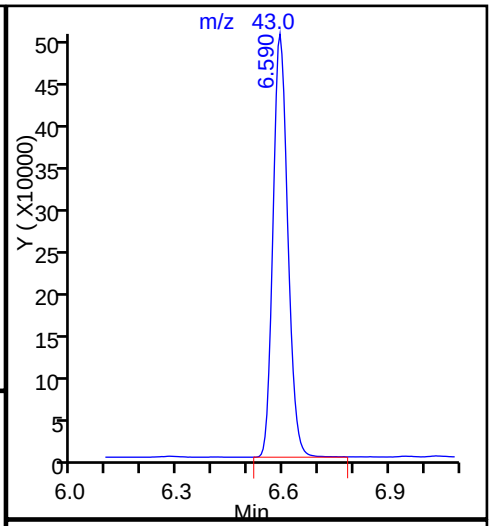


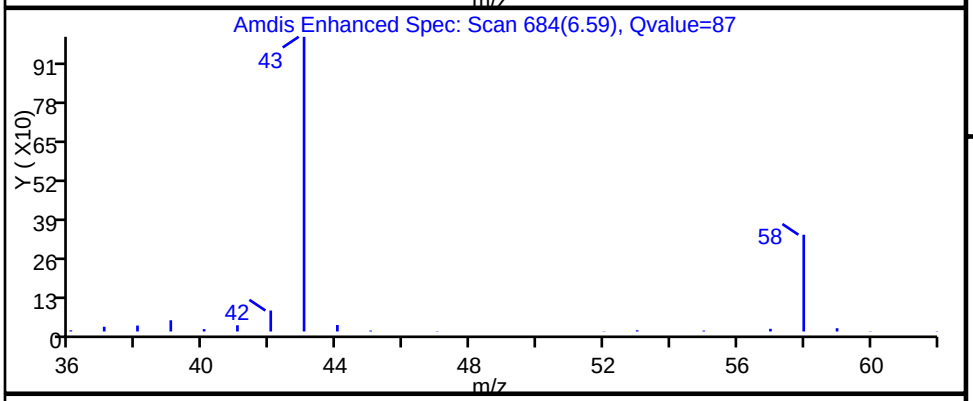
TestAmerica Burlington

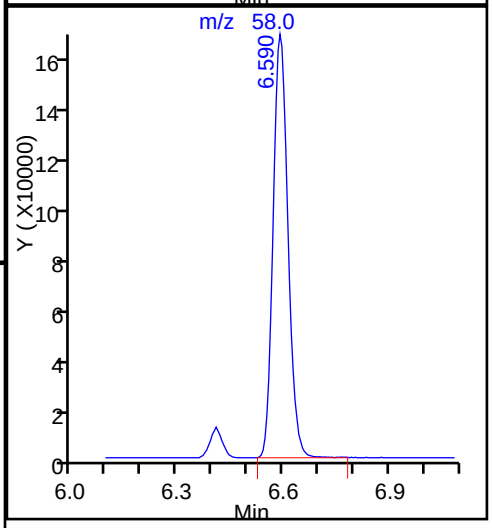
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

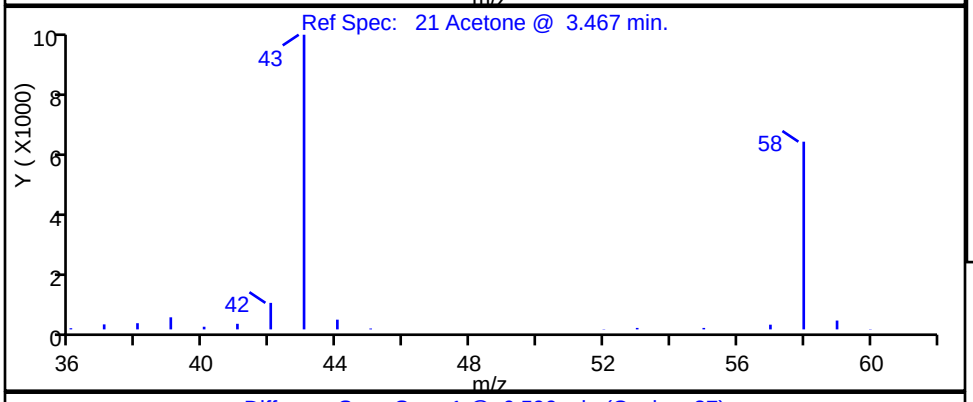
21 Acetone, CAS: 67-64-1

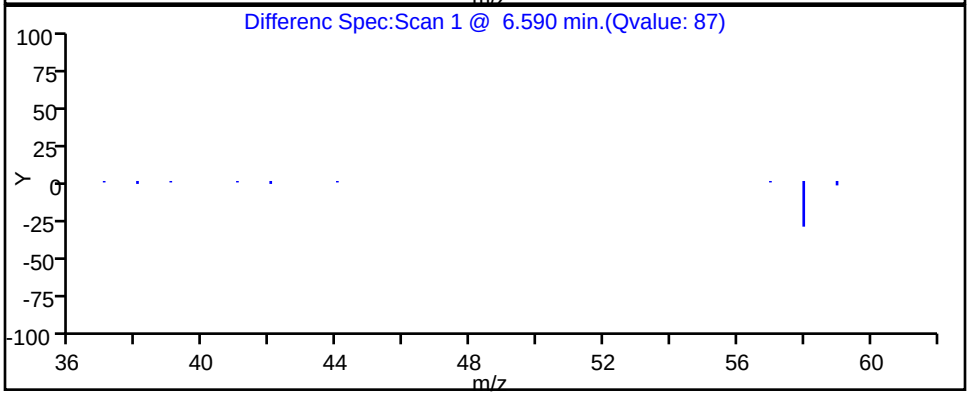








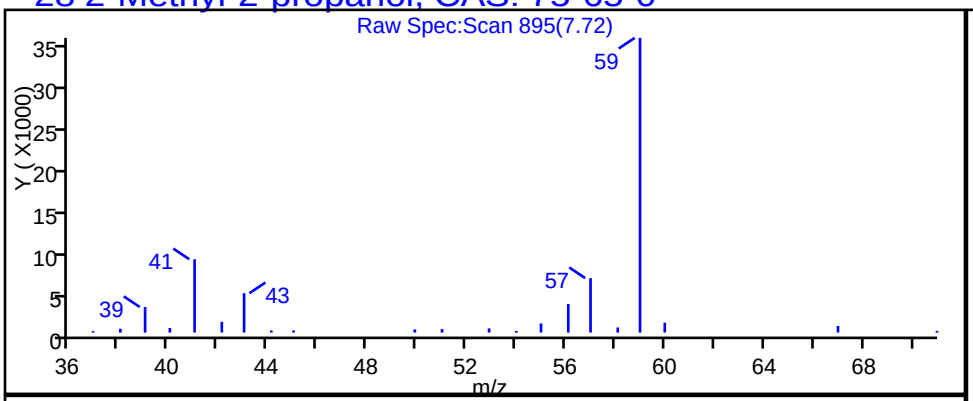


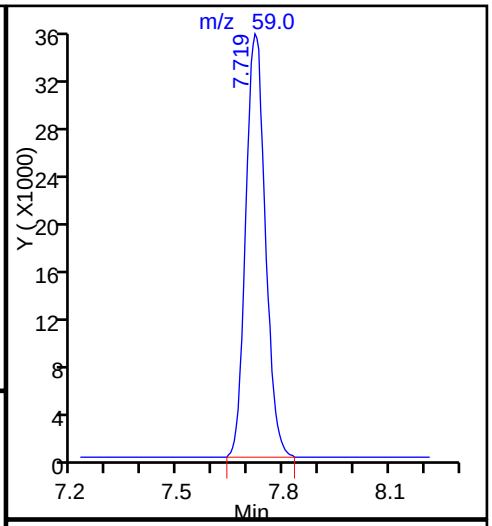


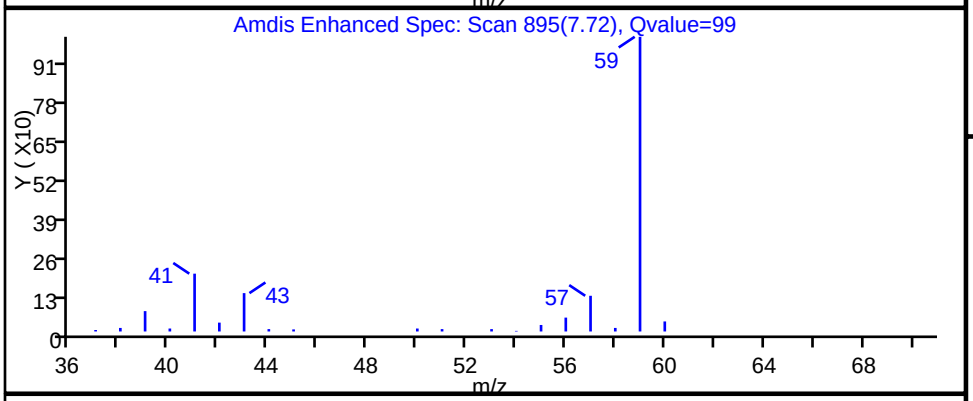
TestAmerica Burlington

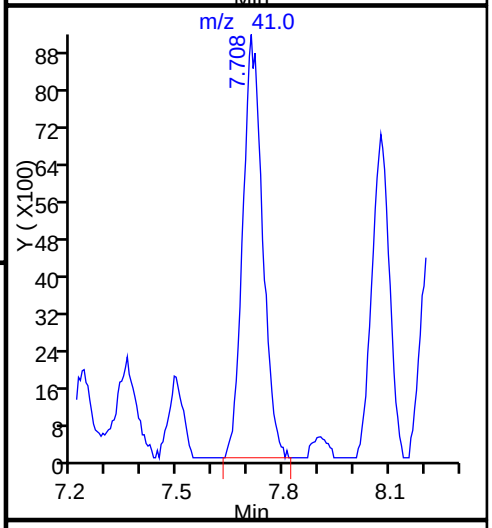
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

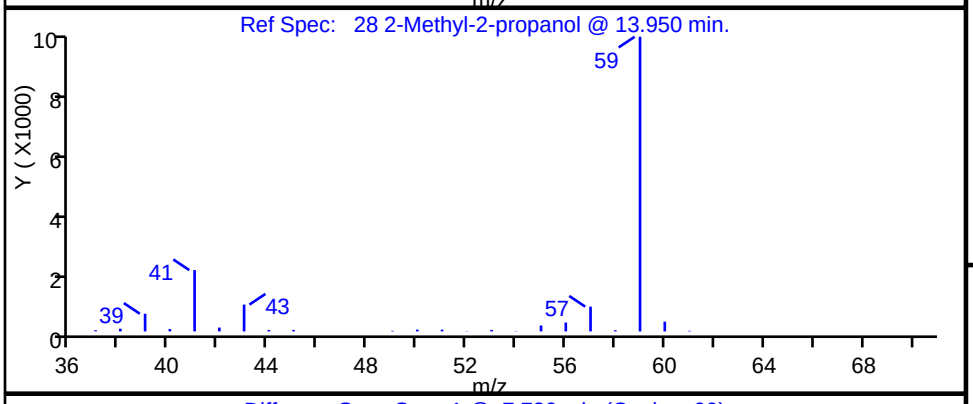
28 2-Methyl-2-propanol, CAS: 75-65-0

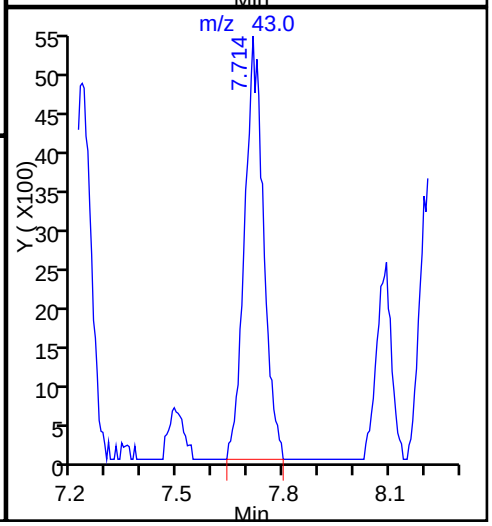


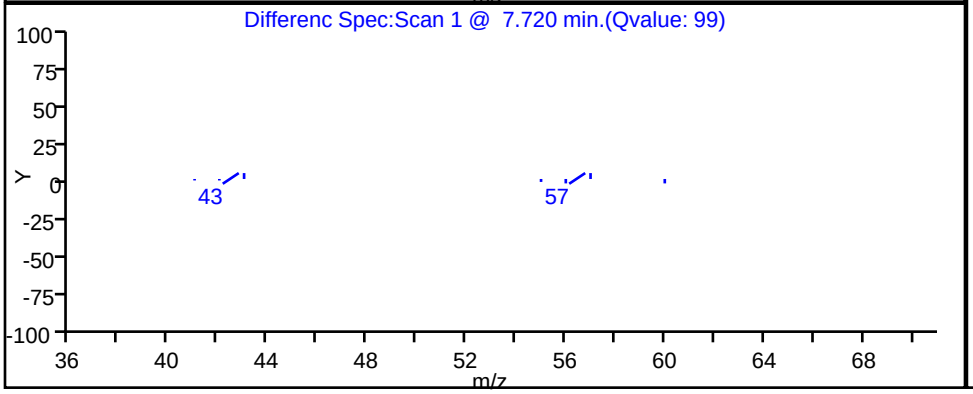








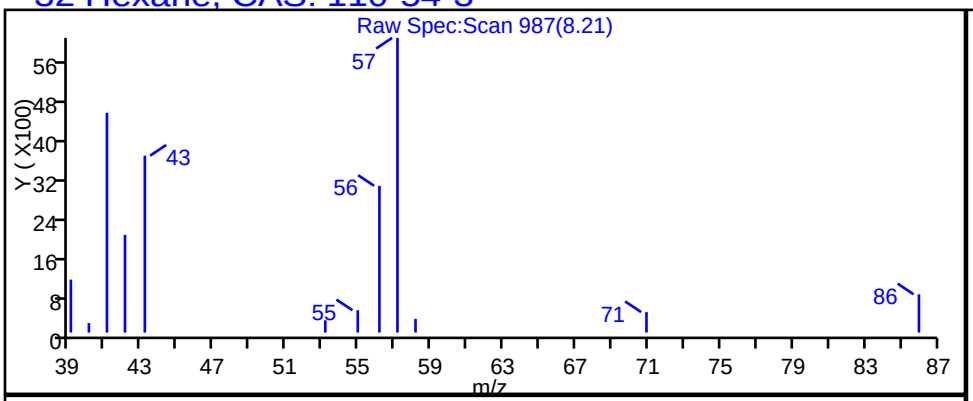


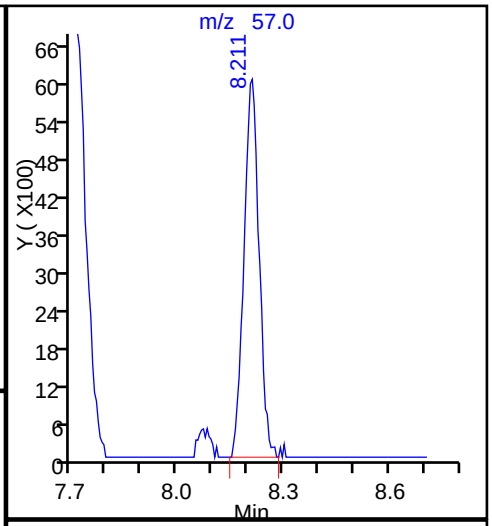


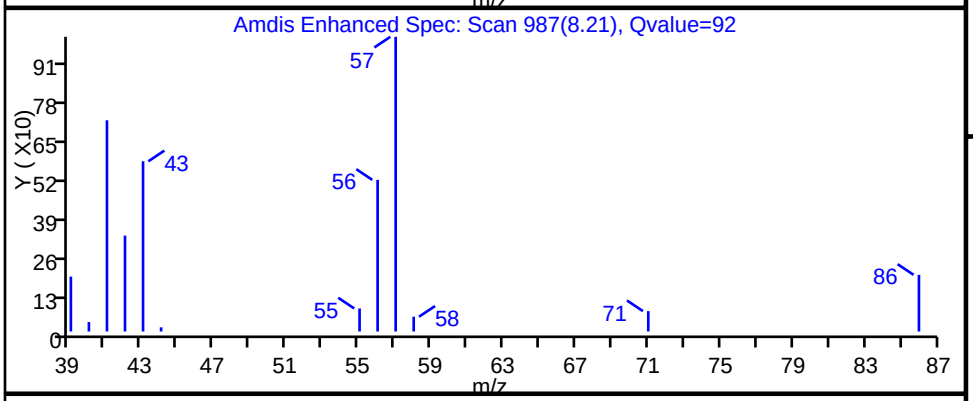
TestAmerica Burlington

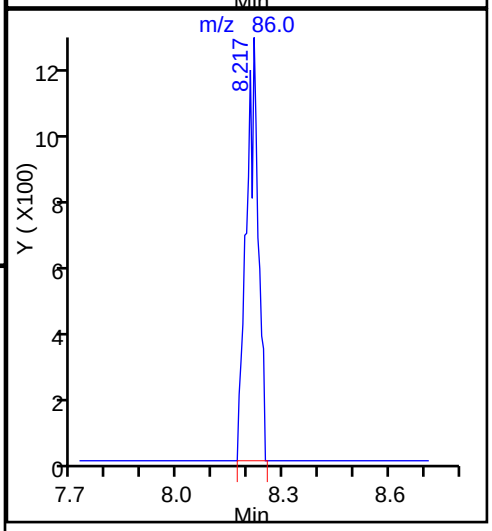
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

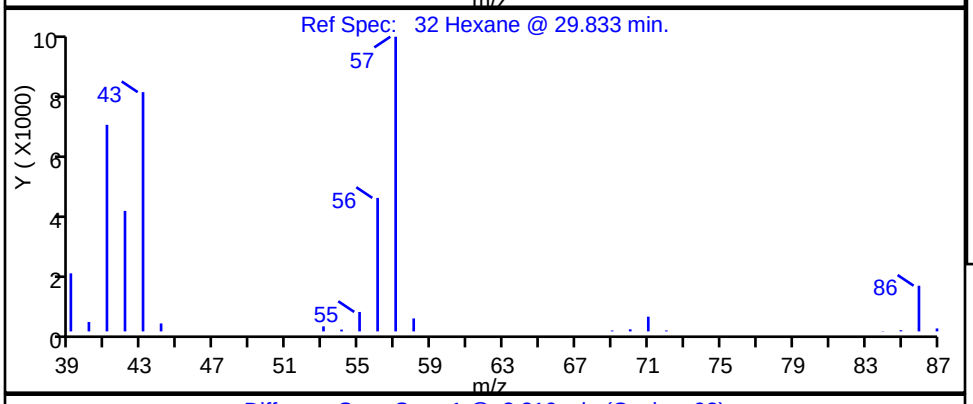
32 Hexane, CAS: 110-54-3

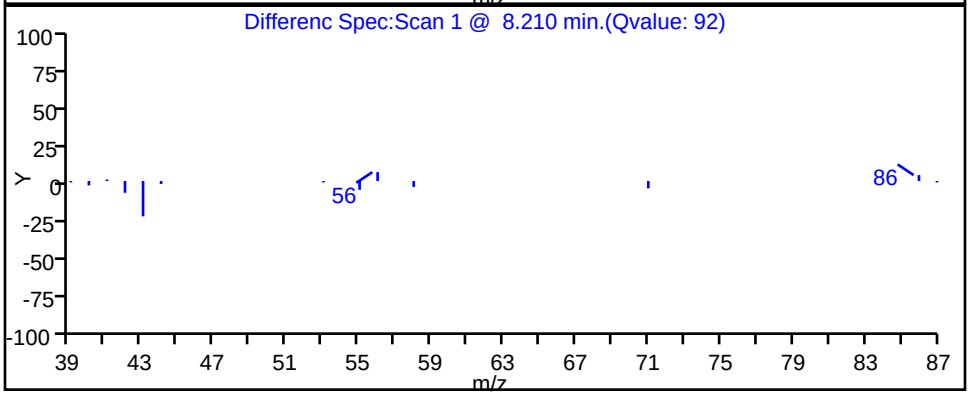








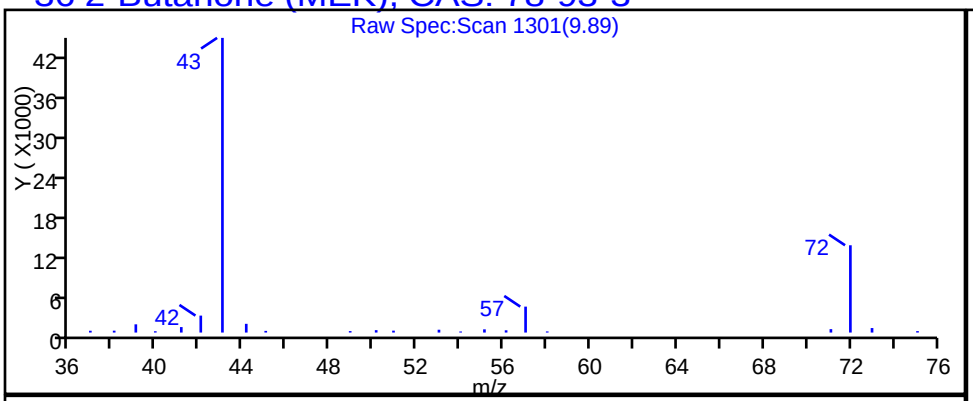


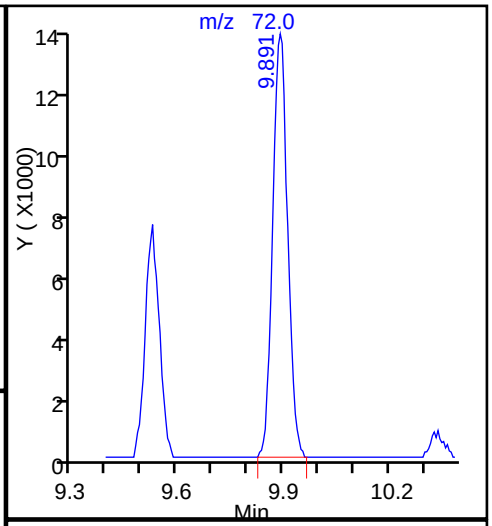


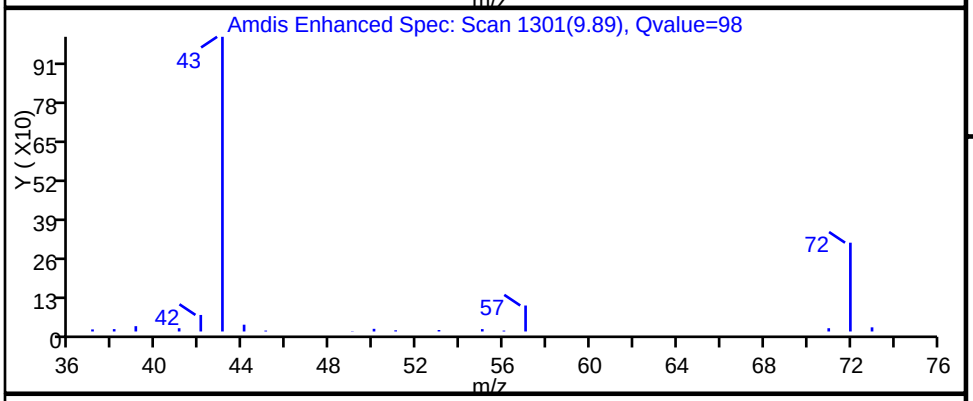
TestAmerica Burlington

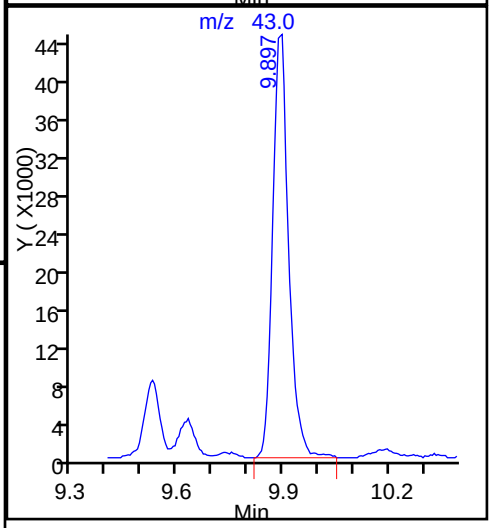
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

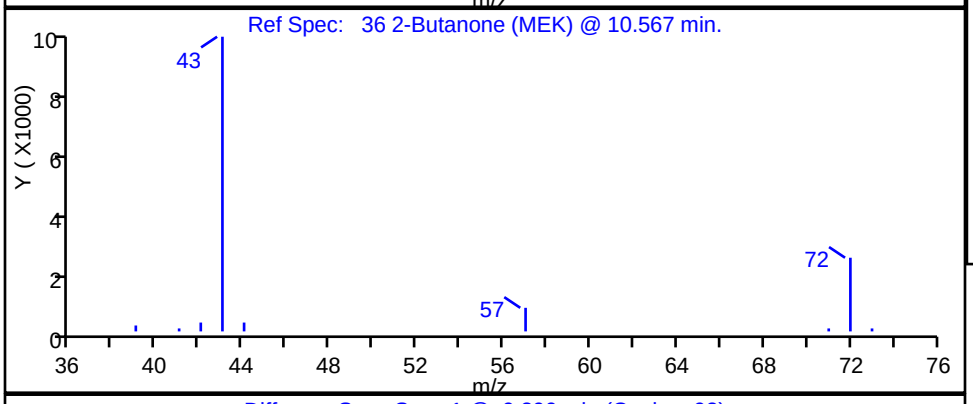
36 2-Butanone (MEK), CAS: 78-93-3

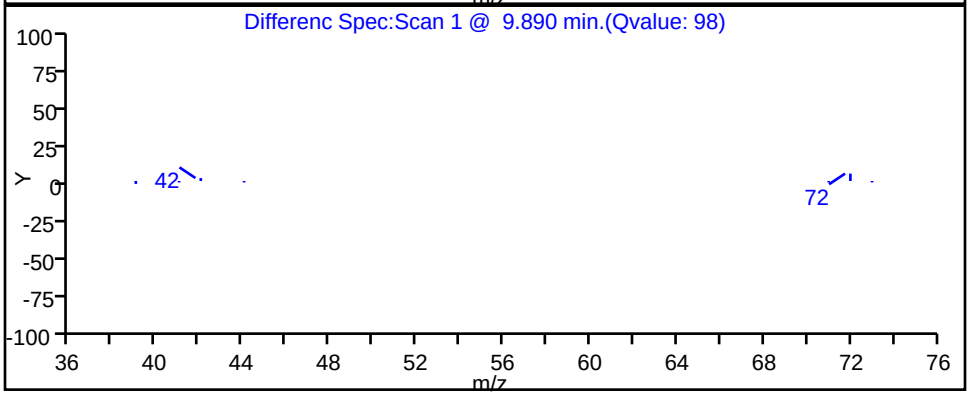








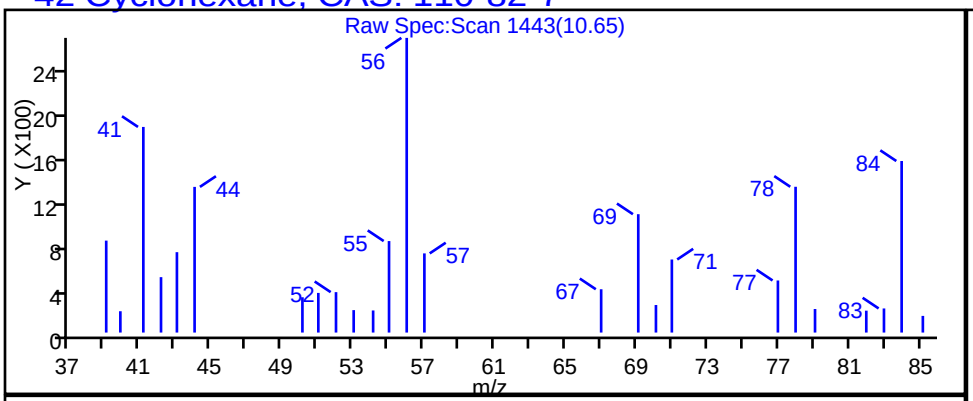


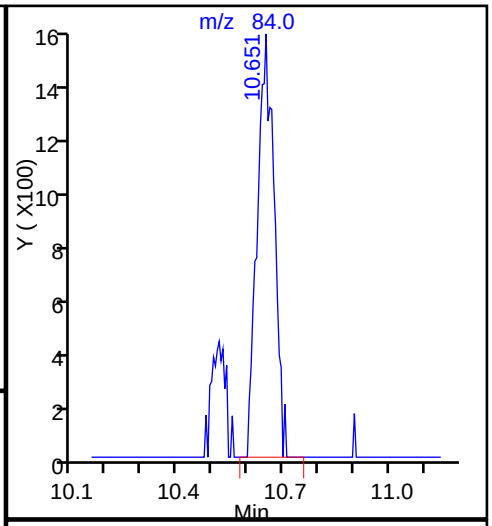


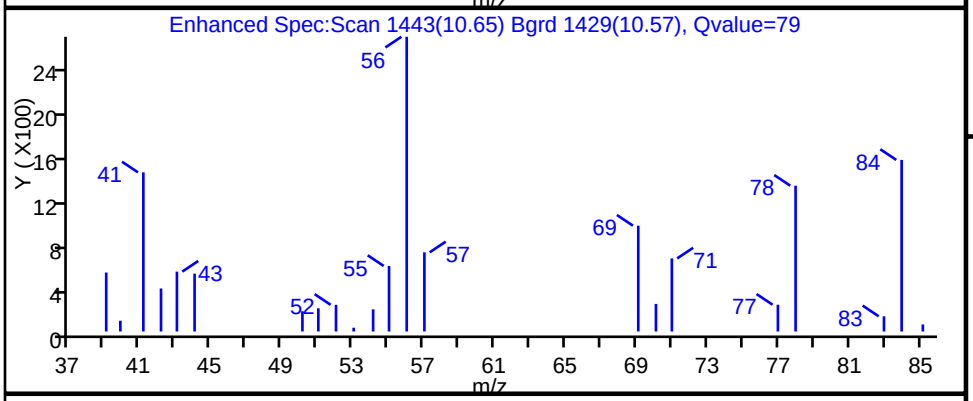
TestAmerica Burlington

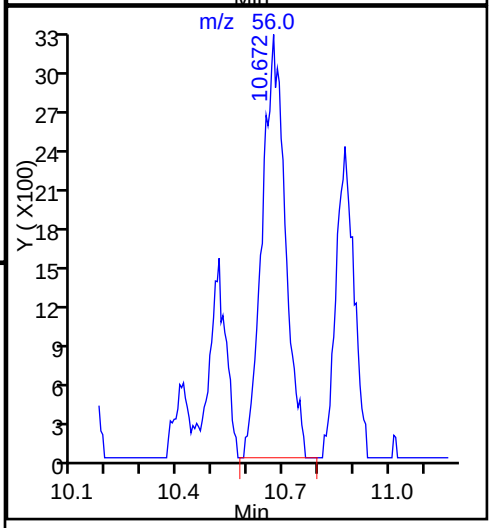
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D		
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1
Client ID:	SV-1		
Operator ID:	wrd	ALS Bottle#:	9 Worklist Smp#: 11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN

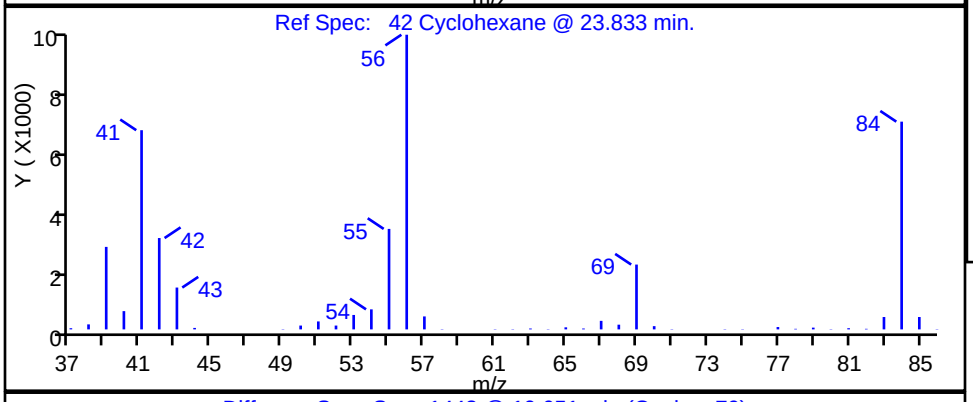
42 Cyclohexane, CAS: 110-82-7

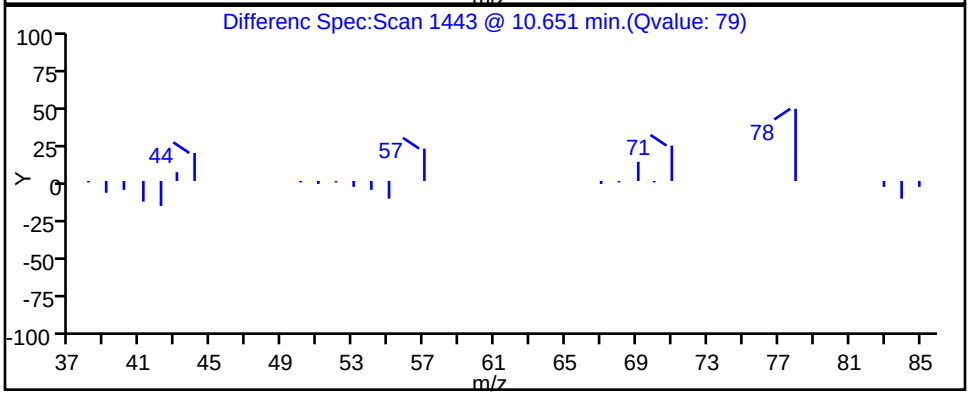








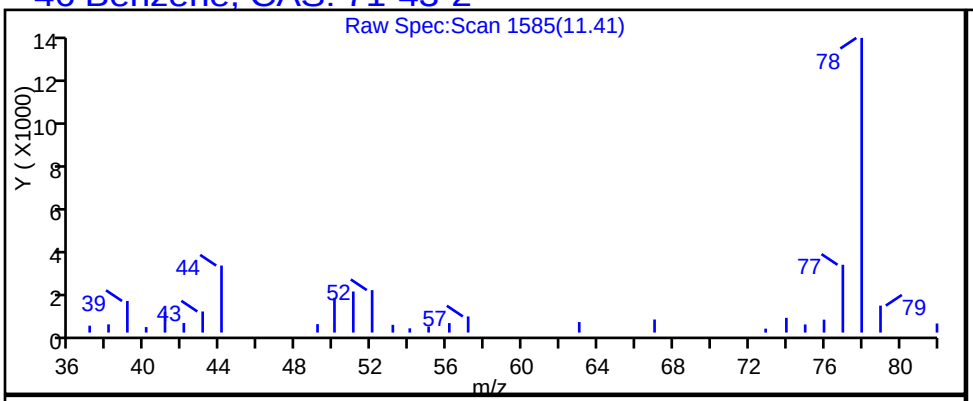


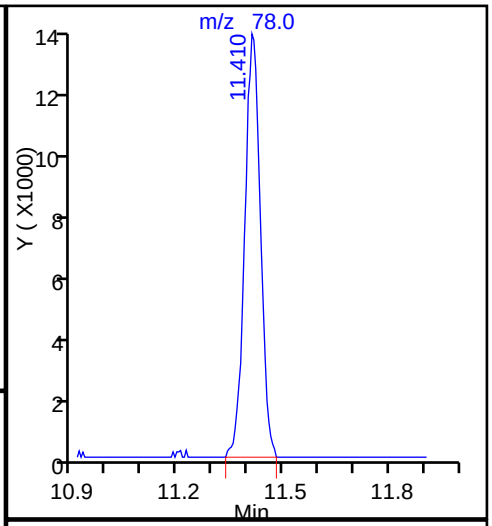


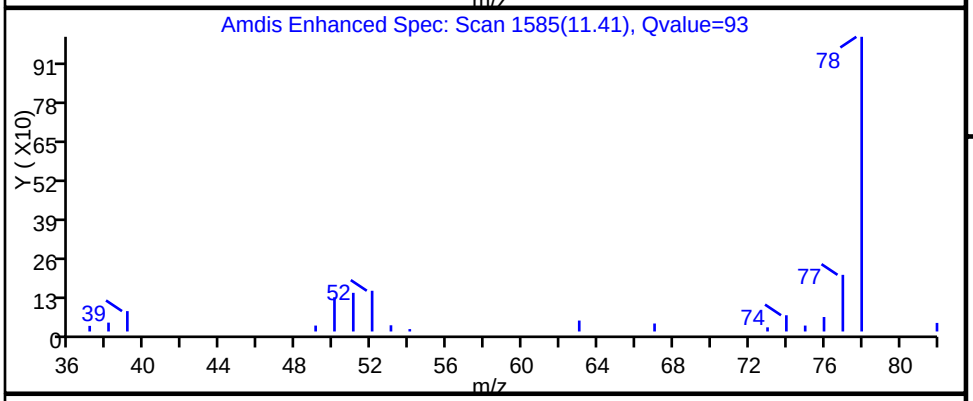
TestAmerica Burlington

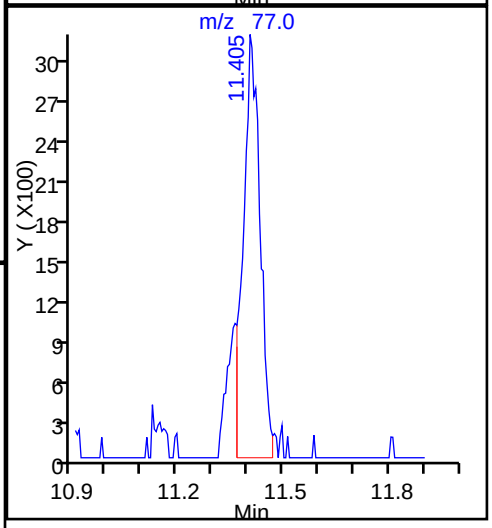
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

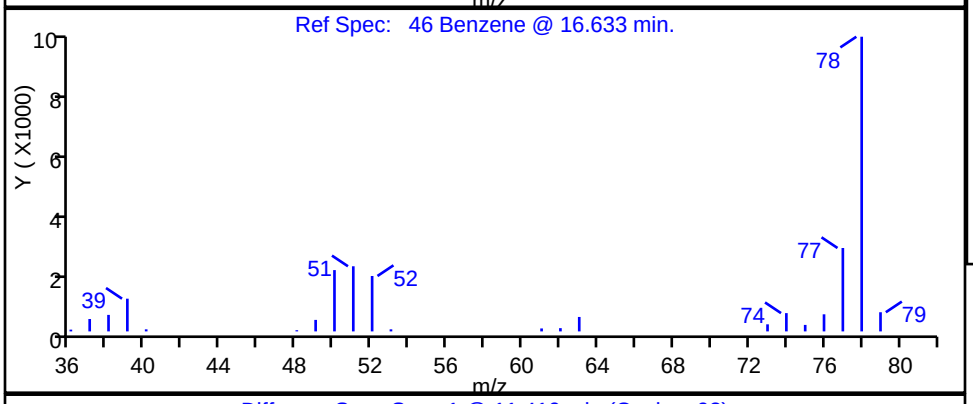
46 Benzene, CAS: 71-43-2

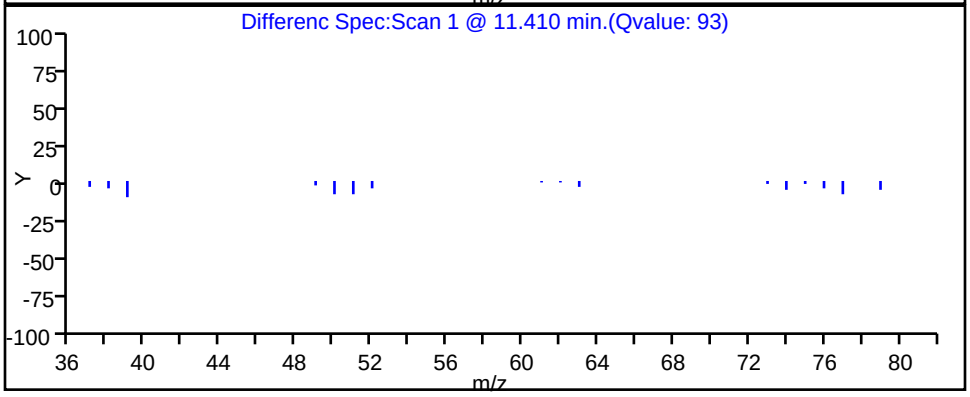








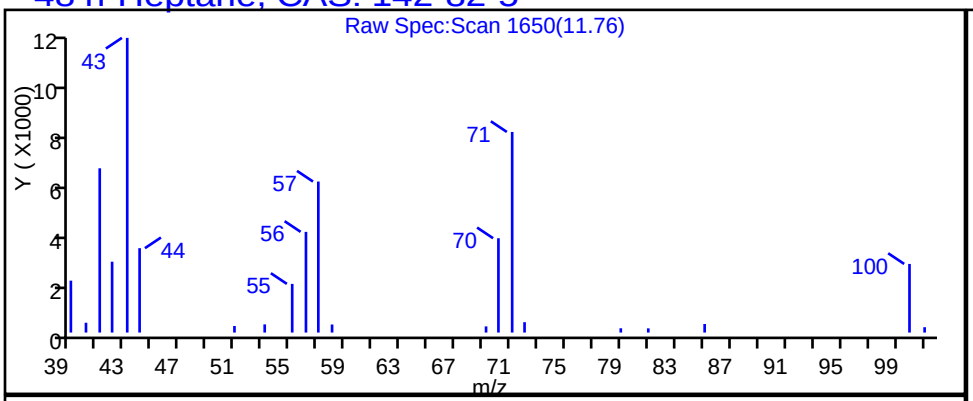


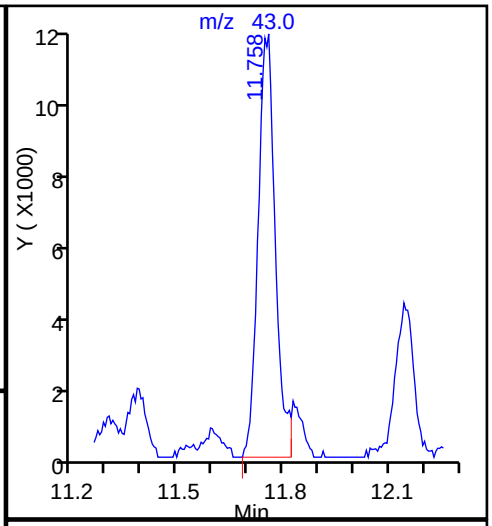


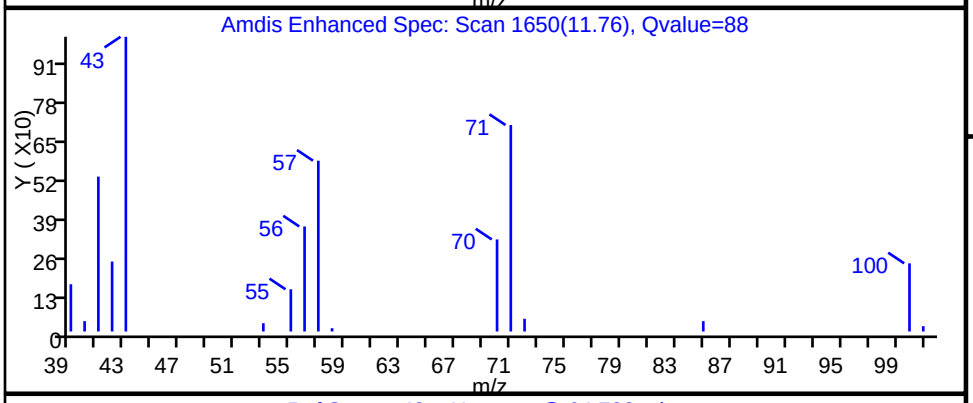
TestAmerica Burlington

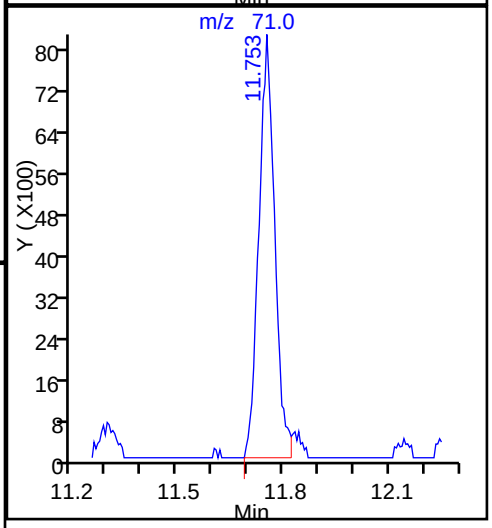
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

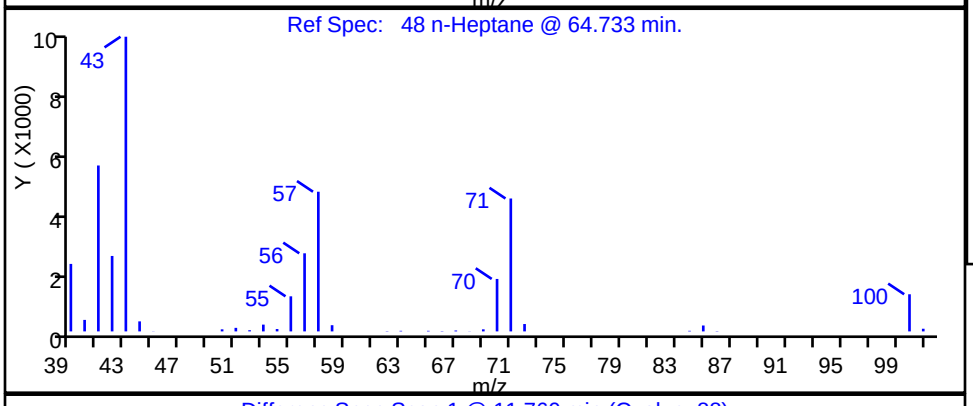
48 n-Heptane, CAS: 142-82-5

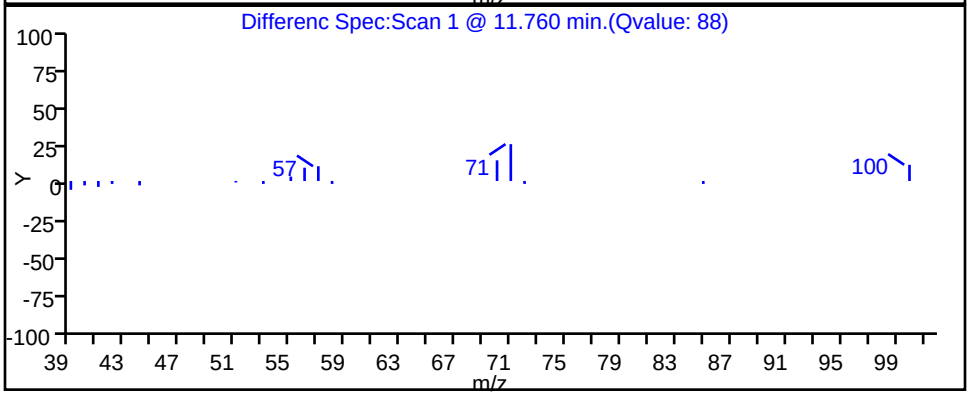








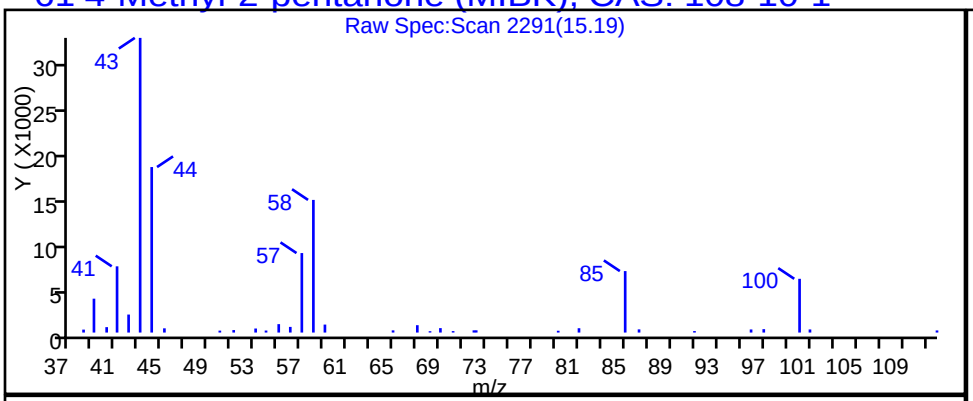


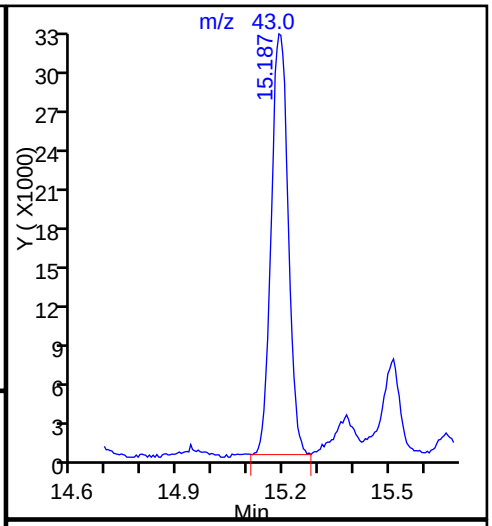


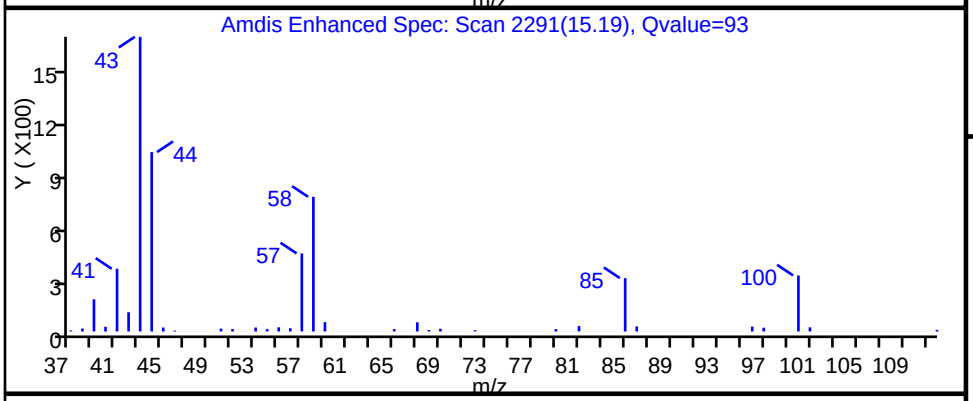
TestAmerica Burlington

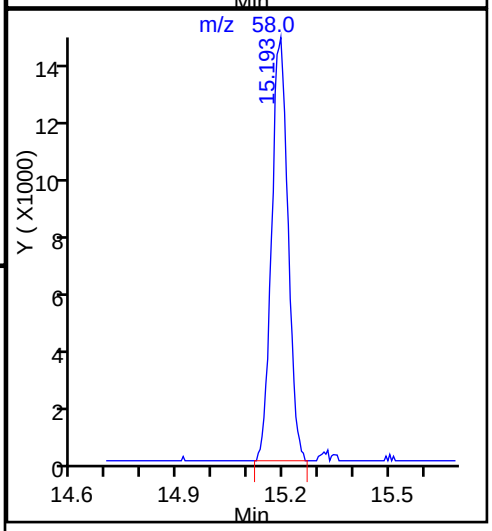
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

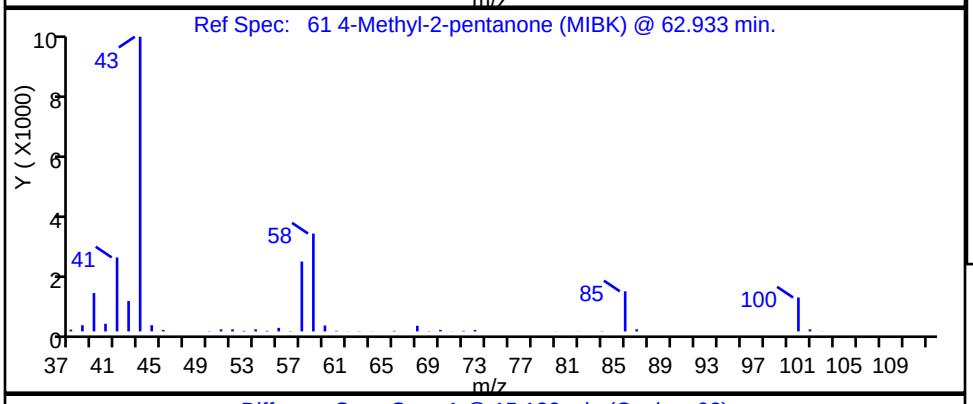
61 4-Methyl-2-pentanone (MIBK), CAS: 108-10-1

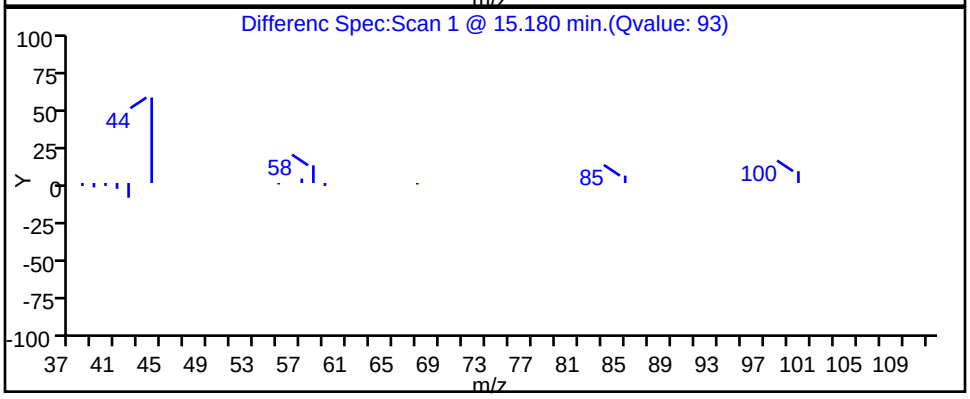








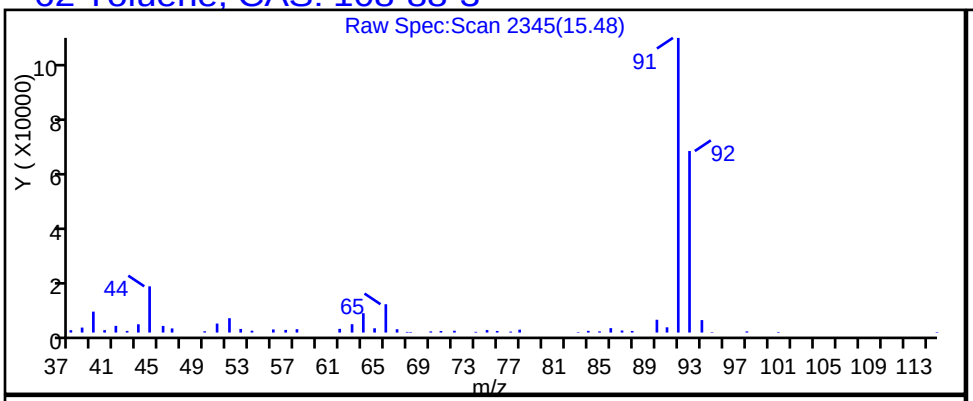


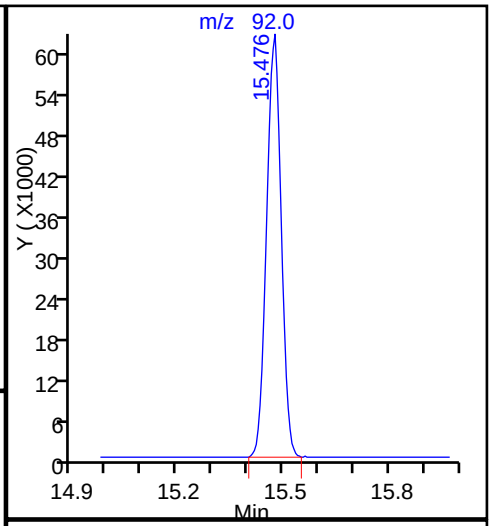


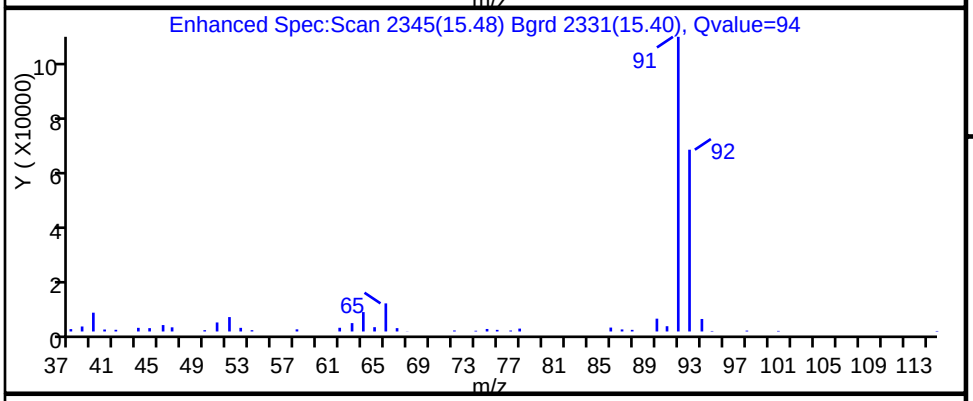
TestAmerica Burlington

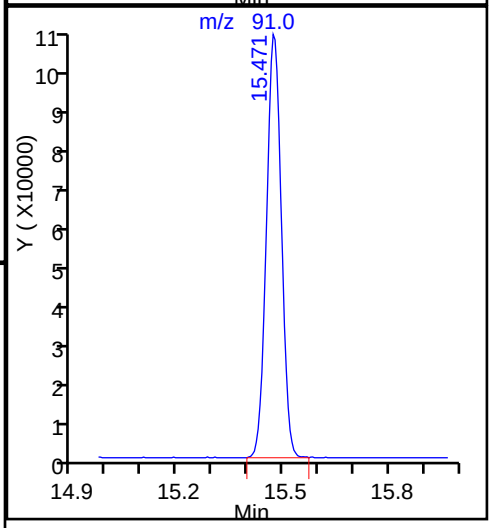
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

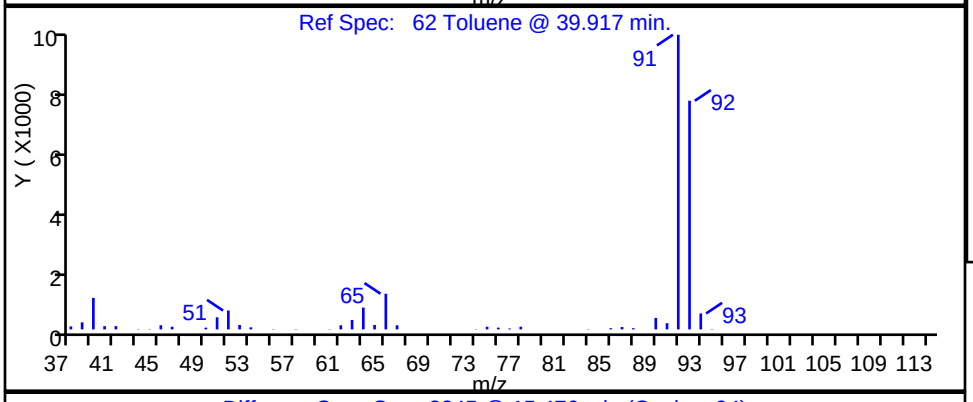
62 Toluene, CAS: 108-88-3

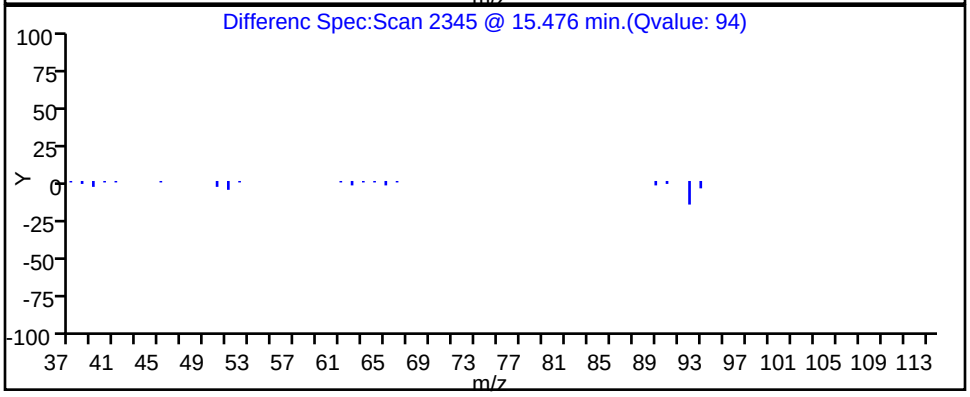








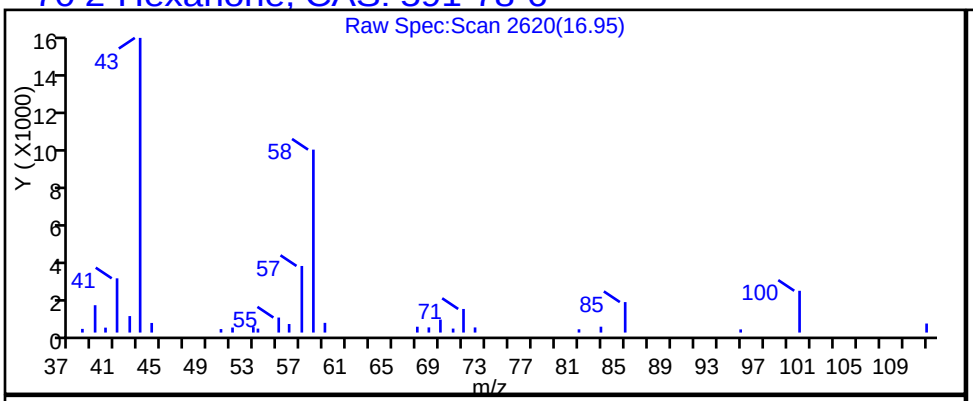


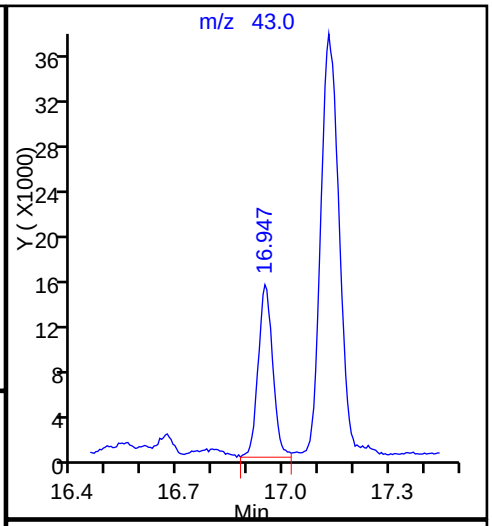


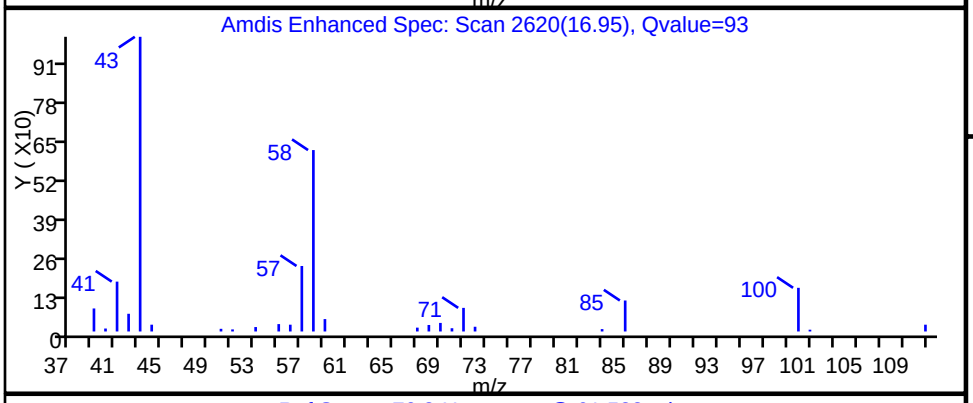
TestAmerica Burlington

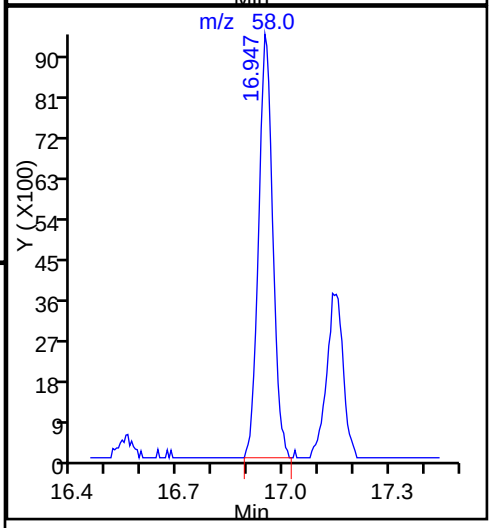
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

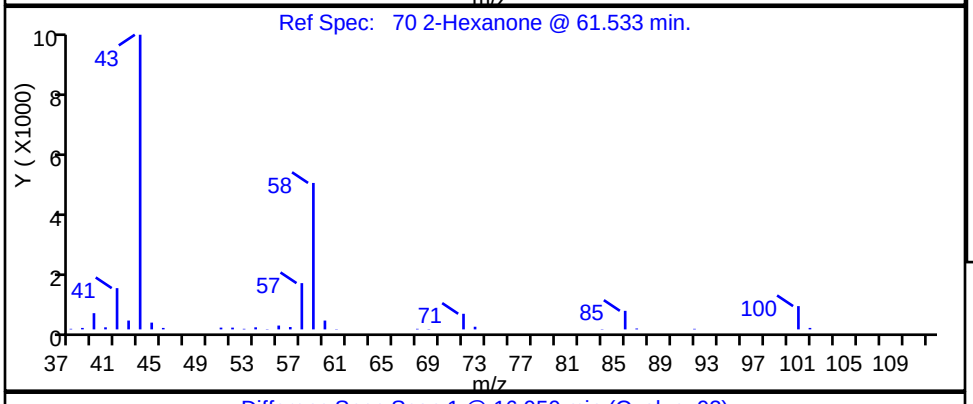
70 2-Hexanone, CAS: 591-78-6

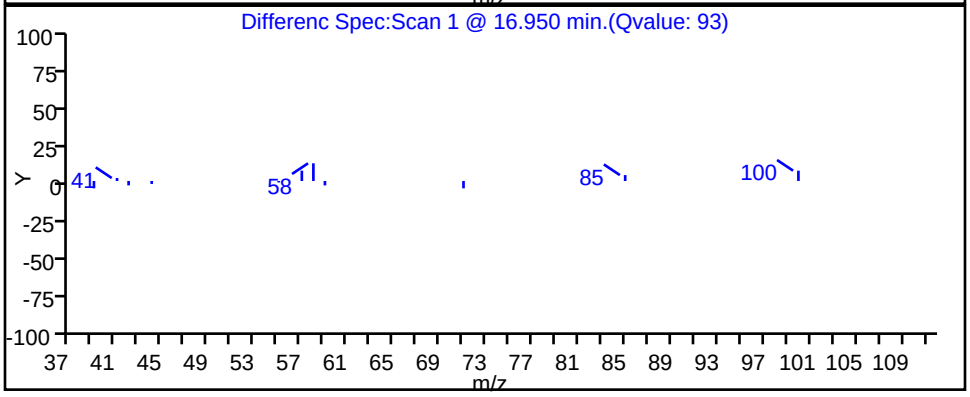








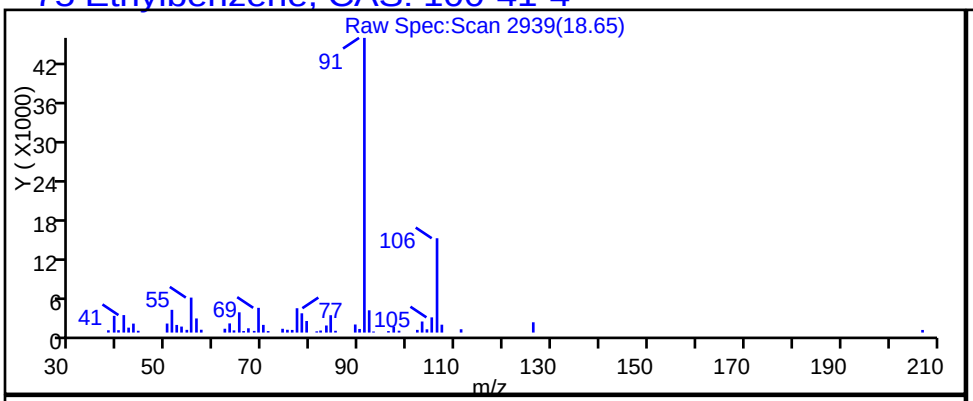


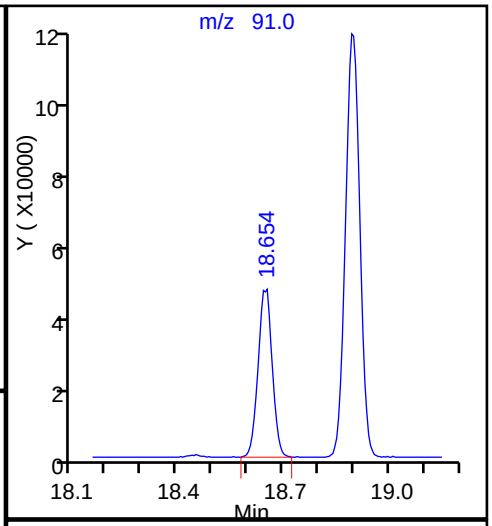


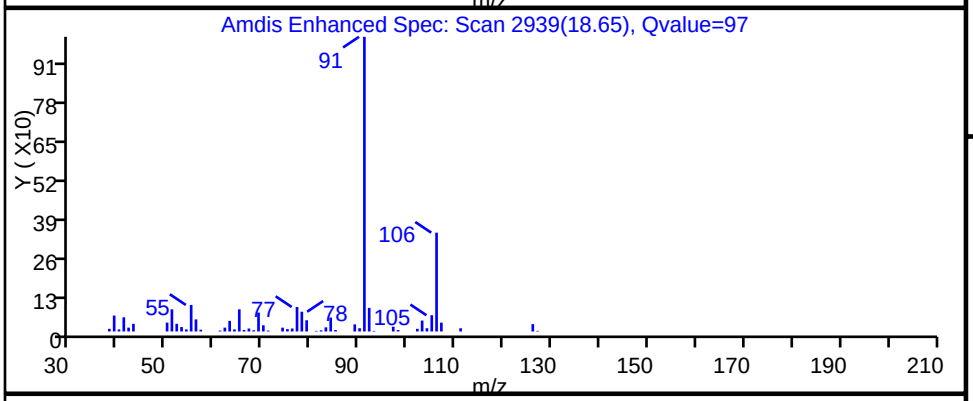
TestAmerica Burlington

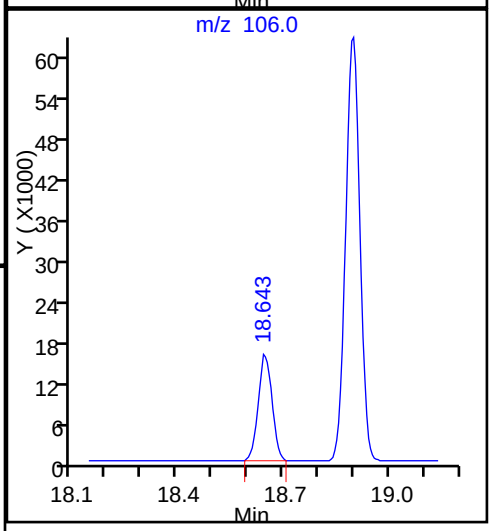
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

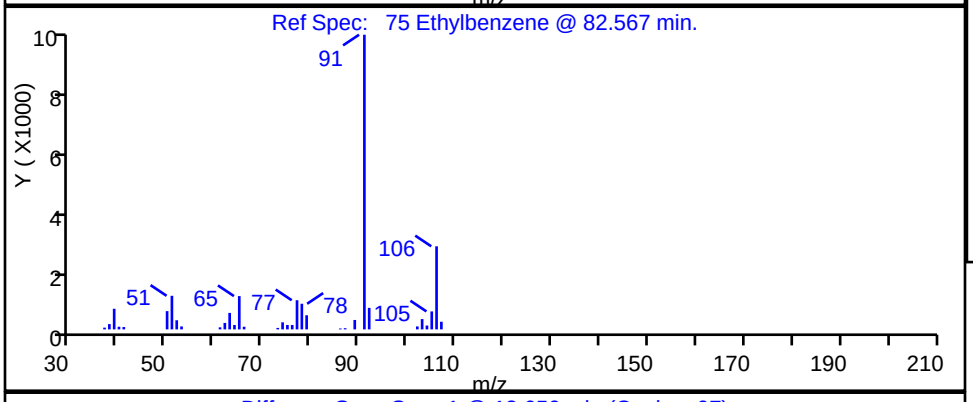
75 Ethylbenzene, CAS: 100-41-4

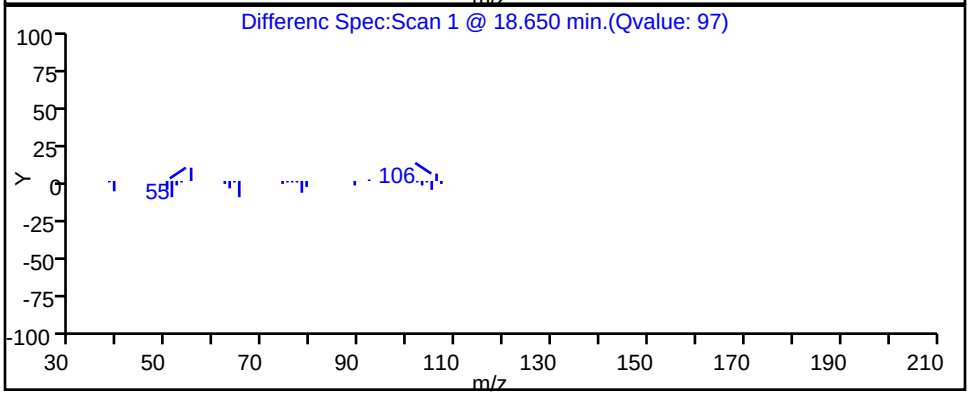












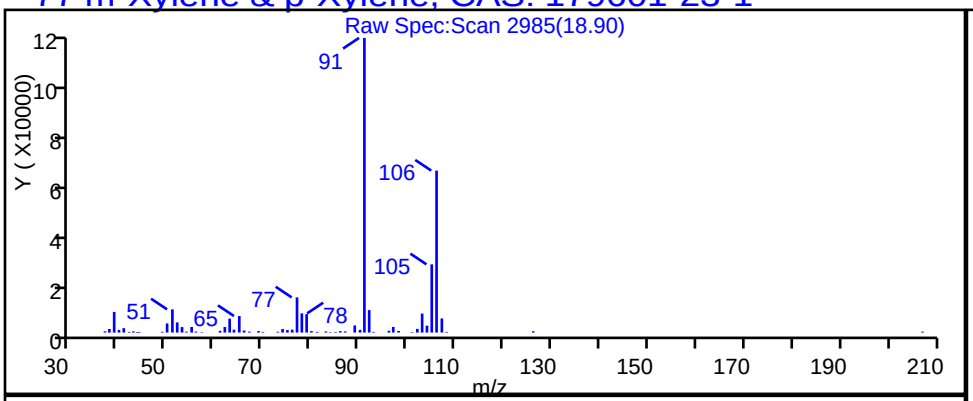
Report Date: 14-Oct-2015 07:41:13 Chrom Revision: 2.2 08-Oct-2015 07:17:48

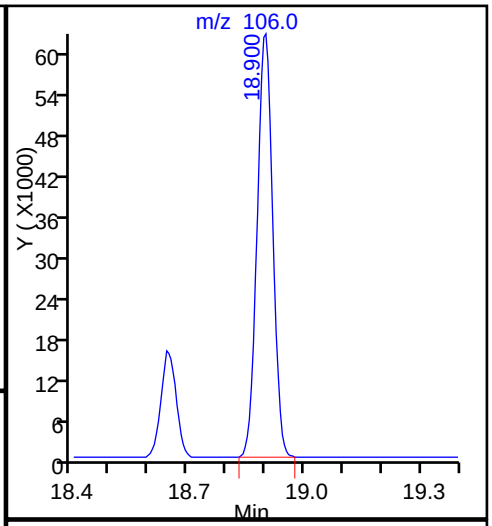
TestAmerica Burlington

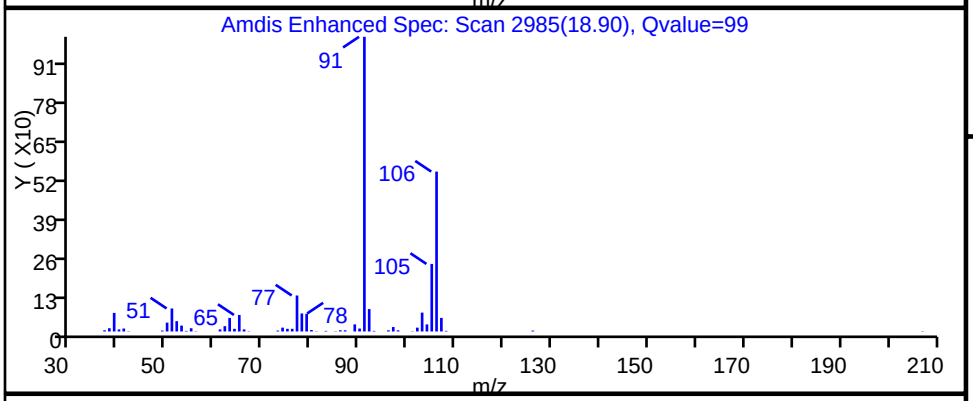
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D

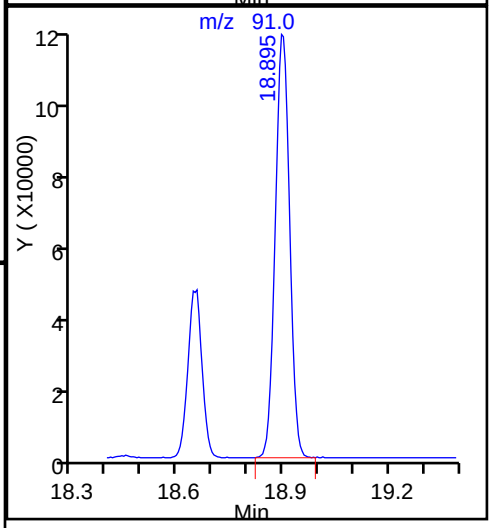
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

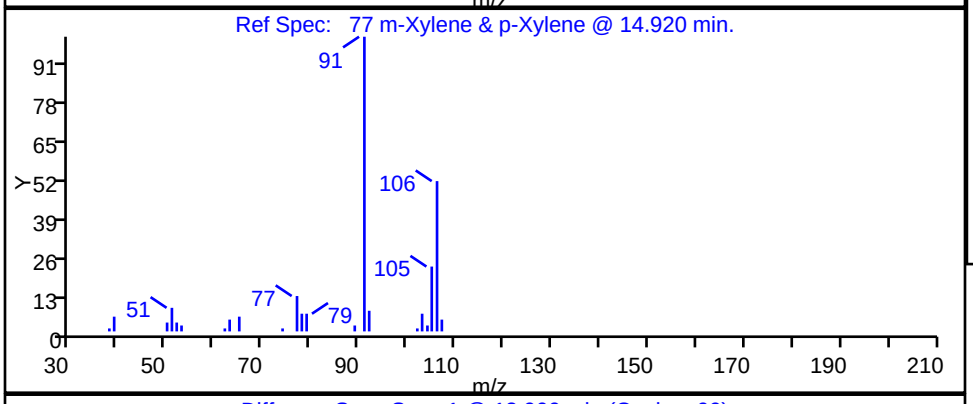
77 m-Xylene & p-Xylene, CAS: 179601-23-1

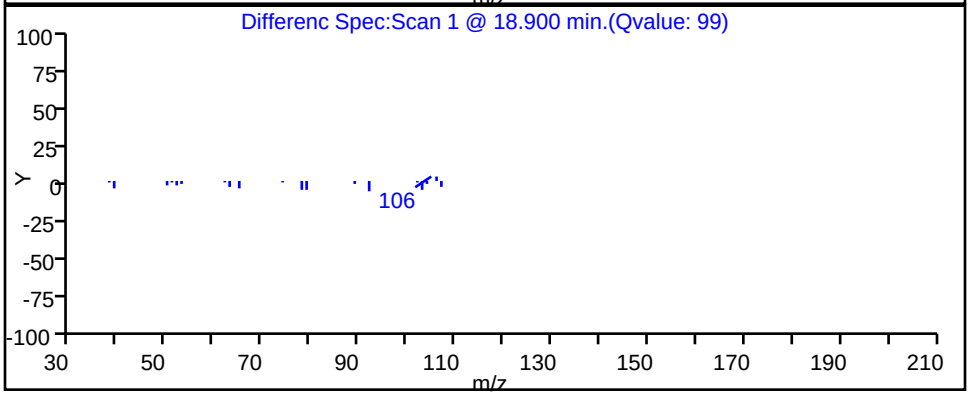








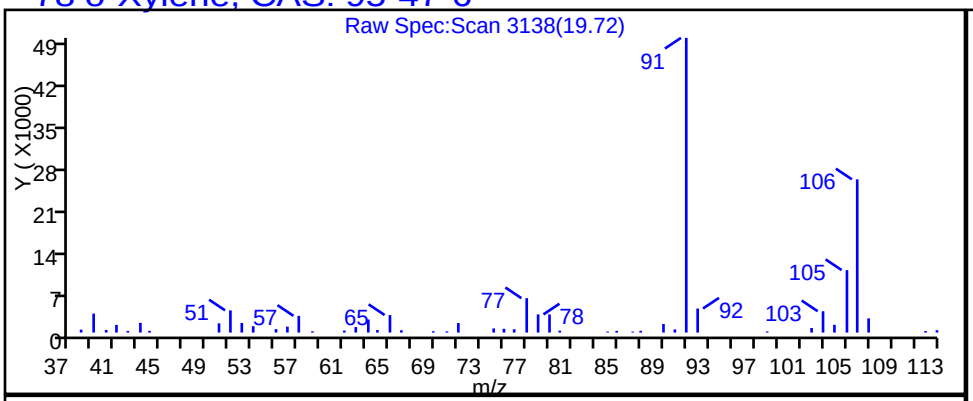


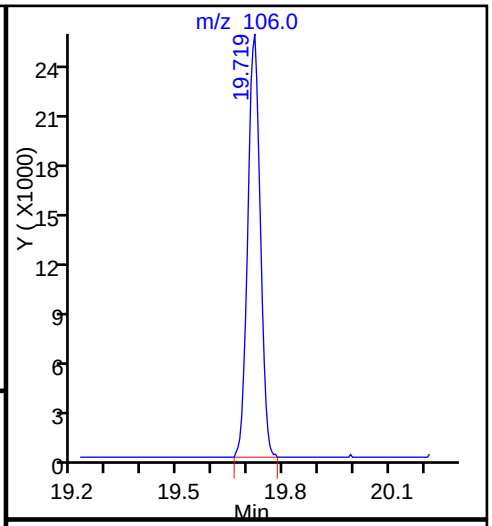


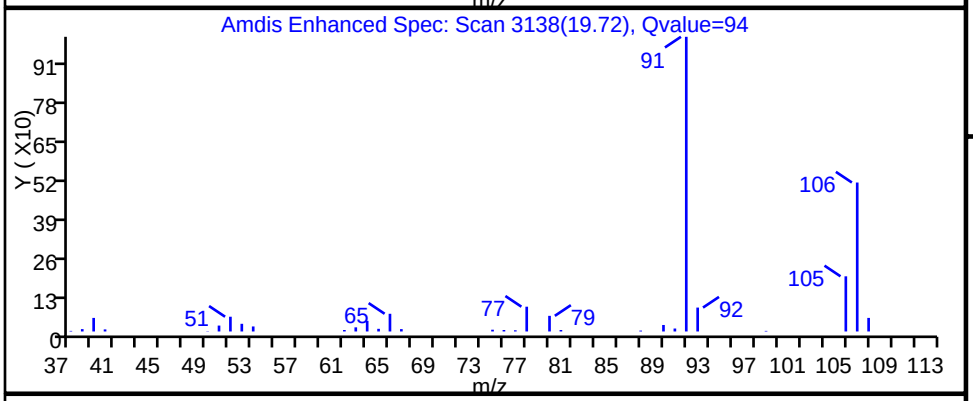
TestAmerica Burlington

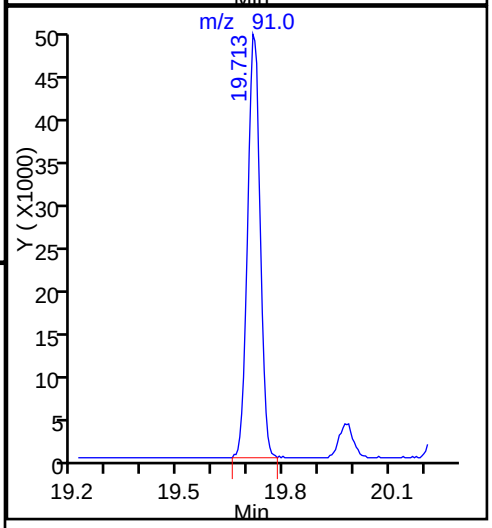
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

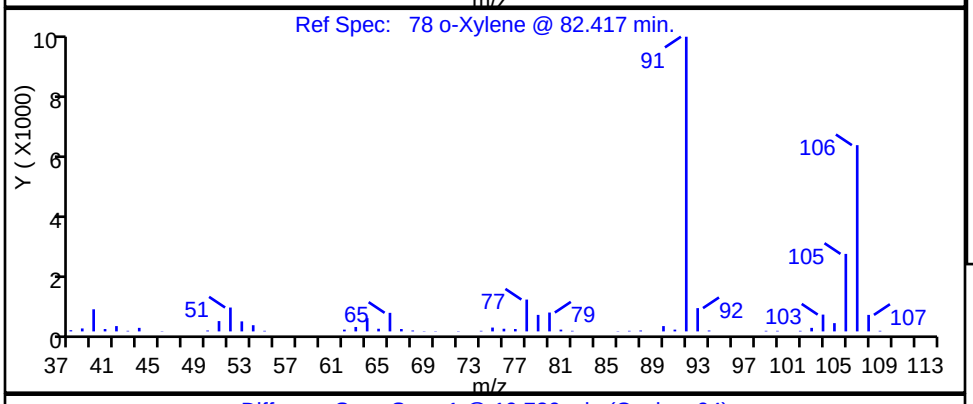
78 o-Xylene, CAS: 95-47-6

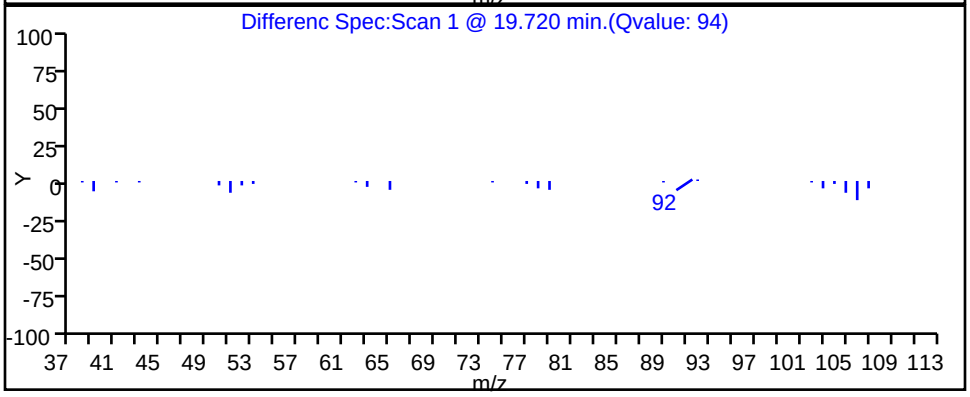








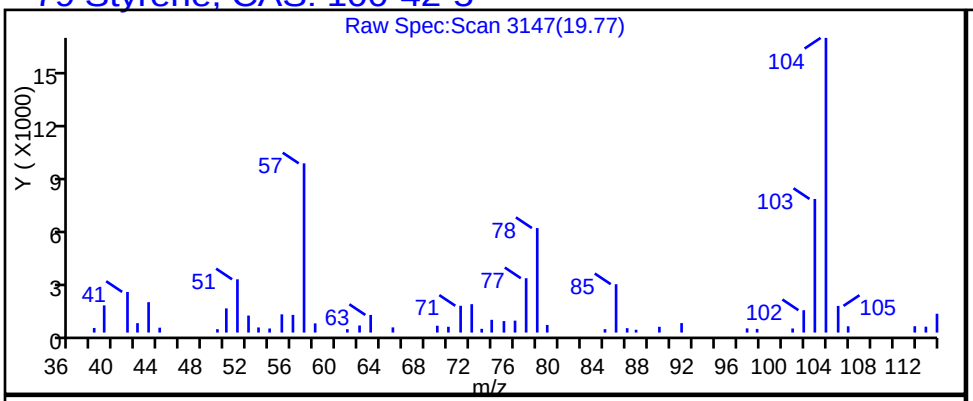


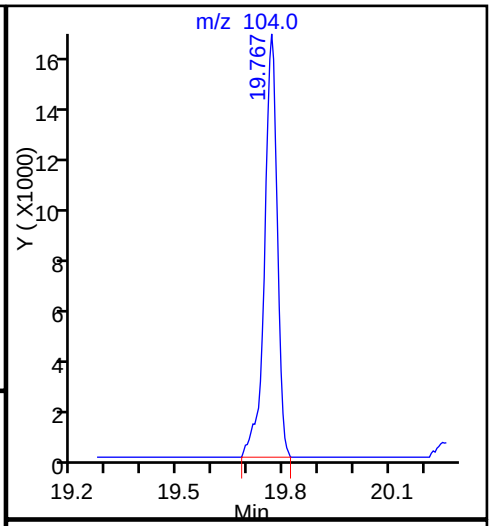


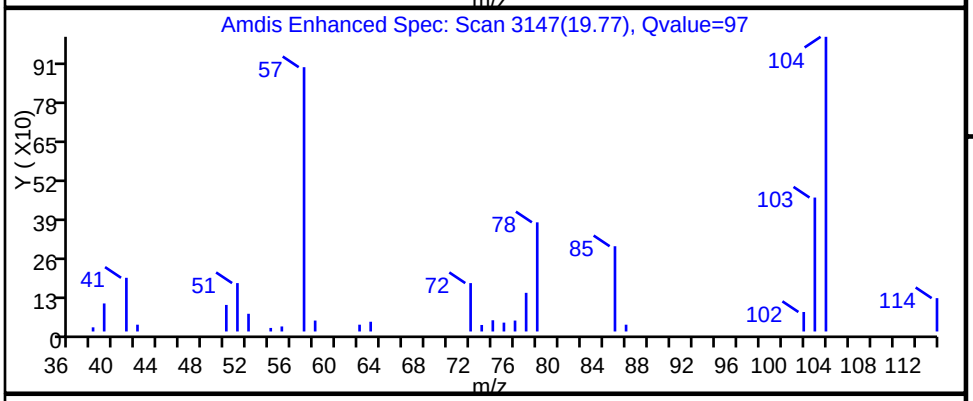
TestAmerica Burlington

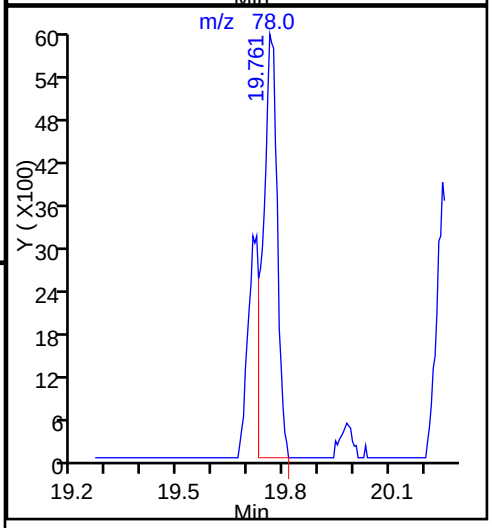
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

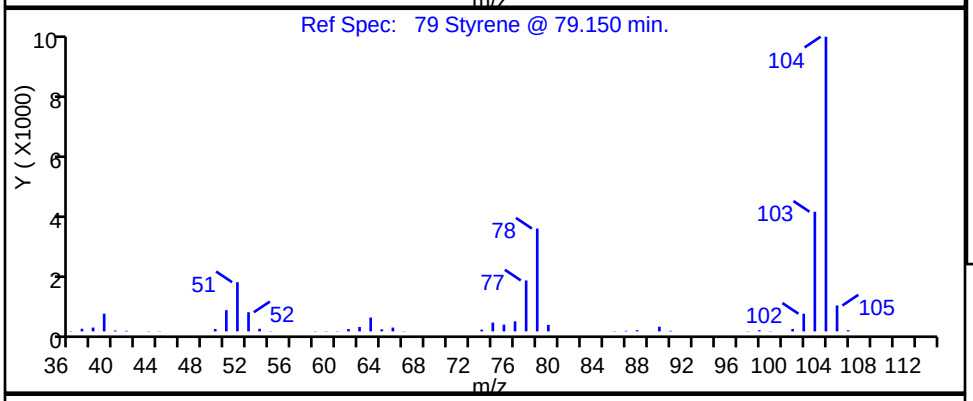
79 Styrene, CAS: 100-42-5

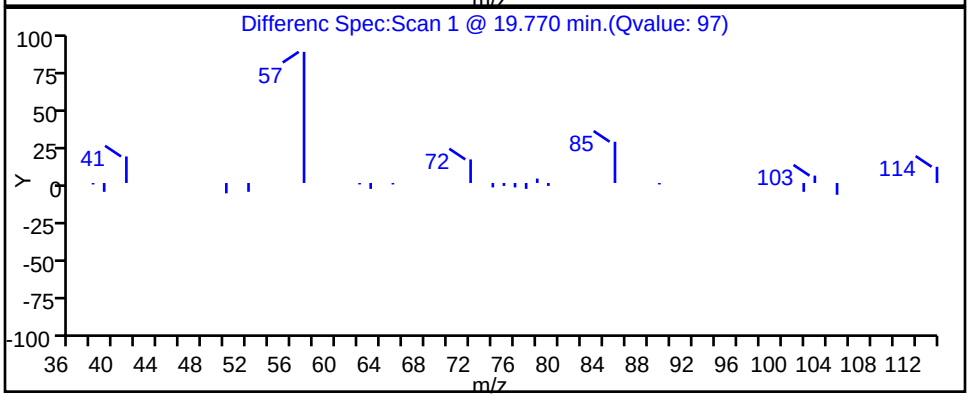








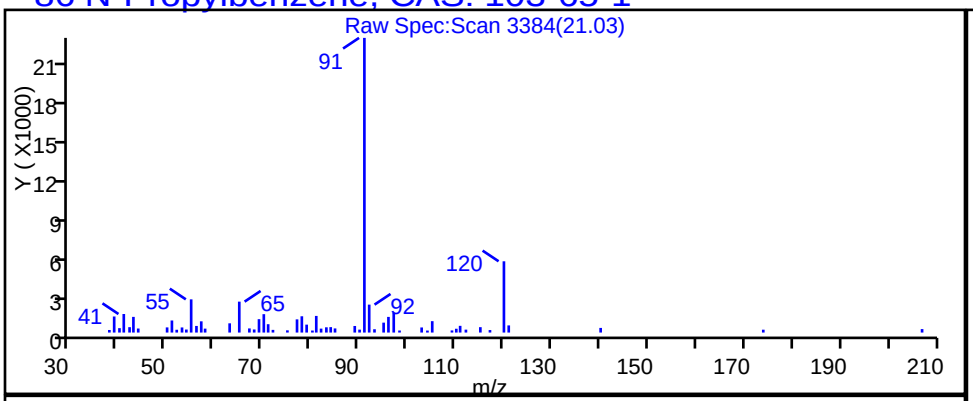


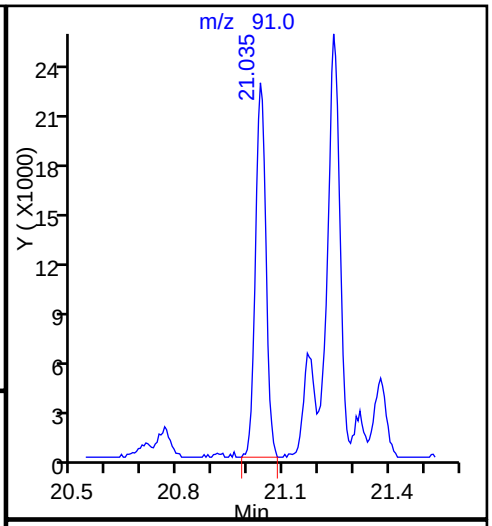


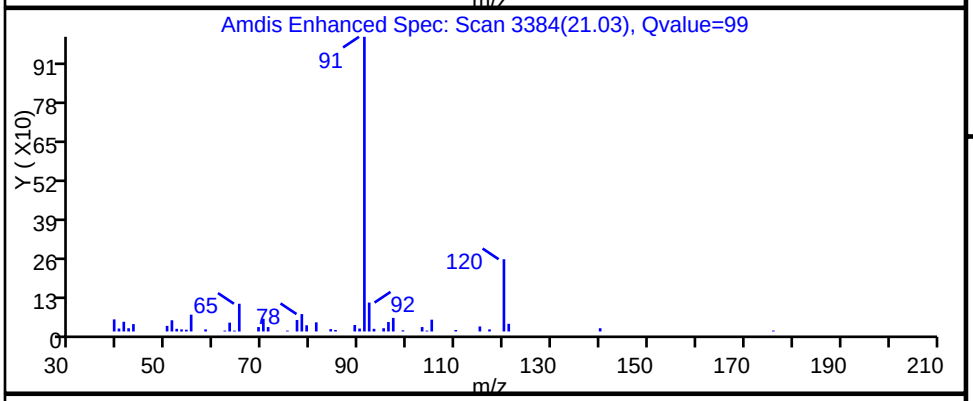
TestAmerica Burlington

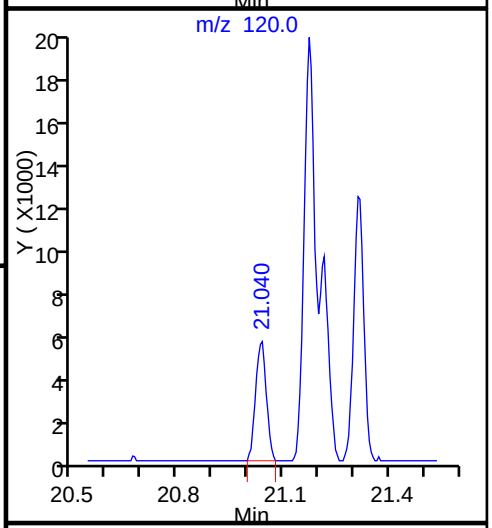
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

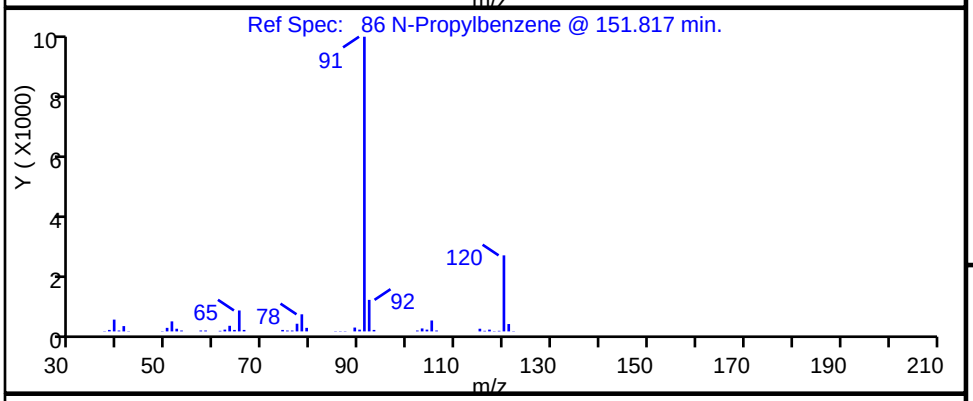
86 N-Propylbenzene, CAS: 103-65-1

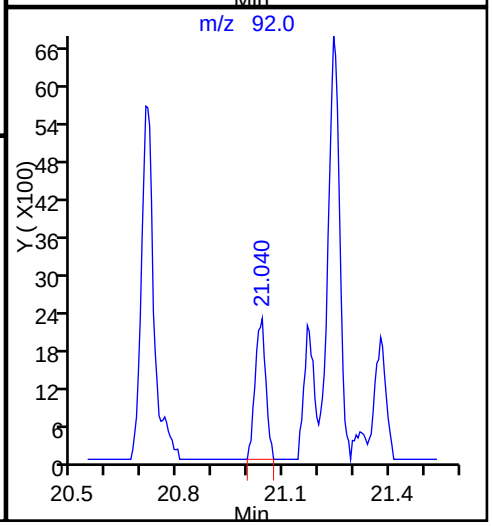


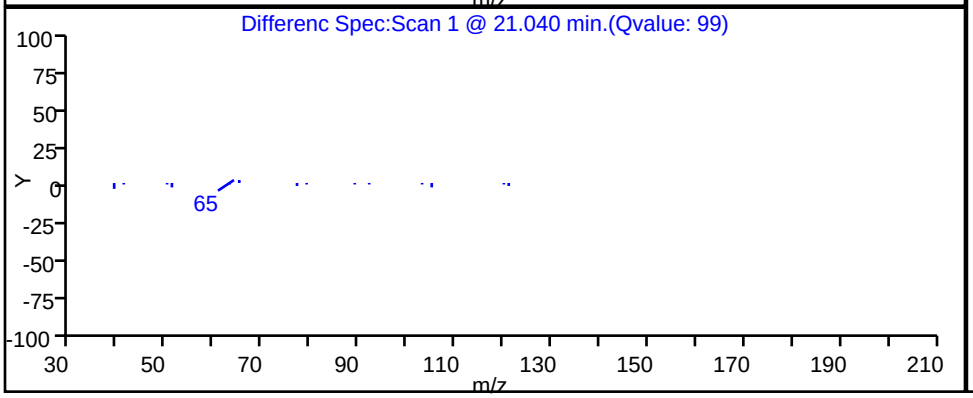








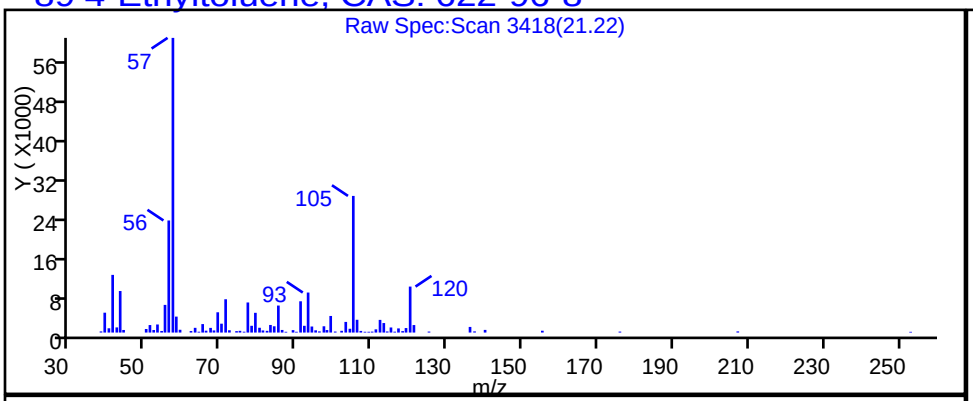


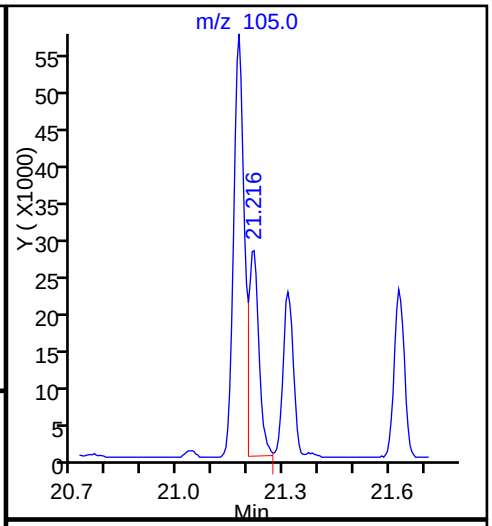


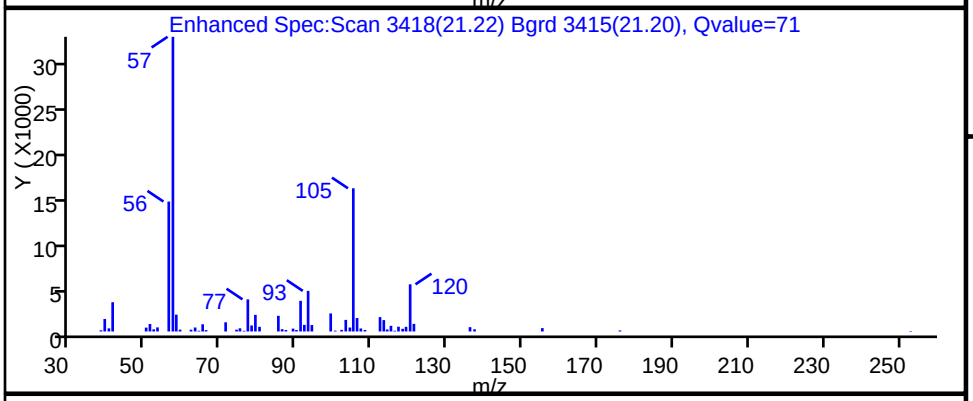
TestAmerica Burlington

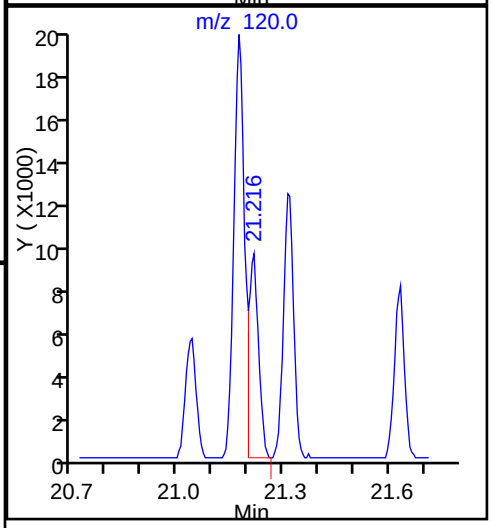
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

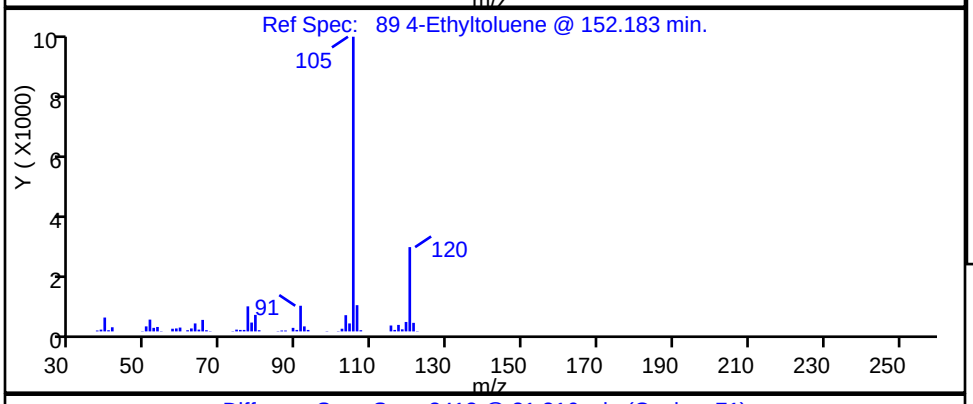
89 4-Ethyltoluene, CAS: 622-96-8

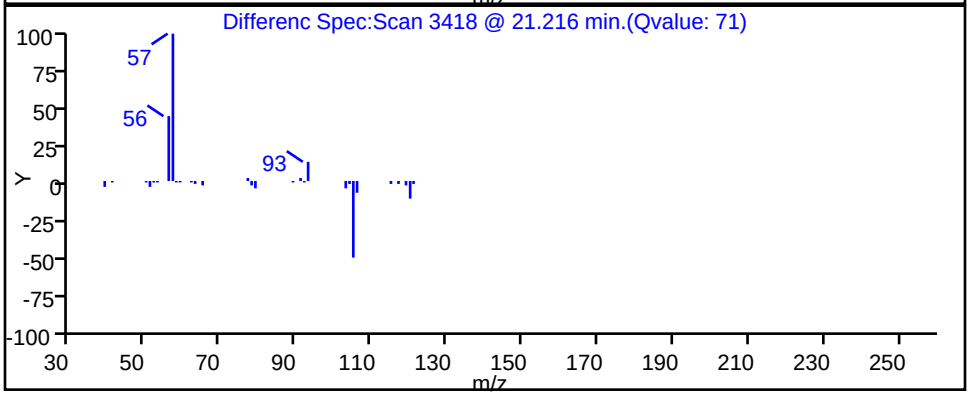








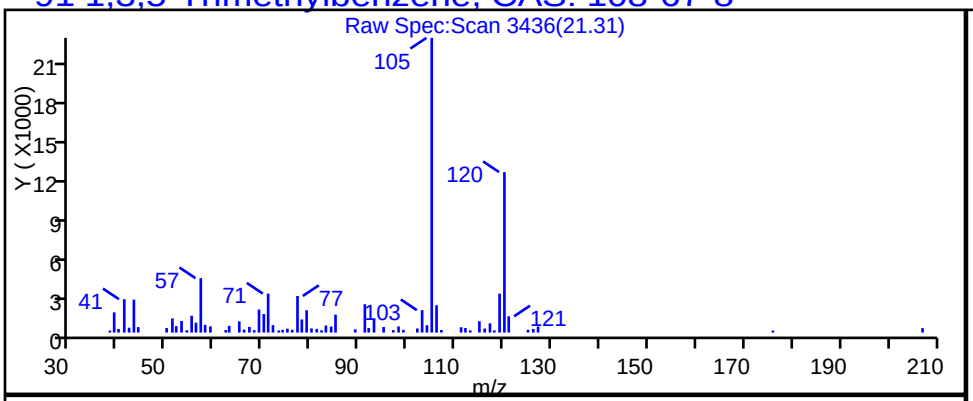


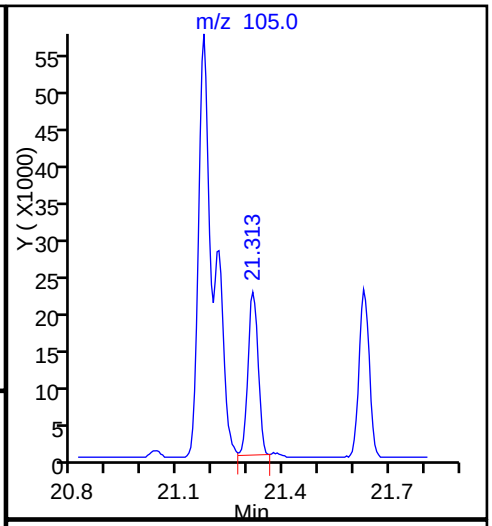


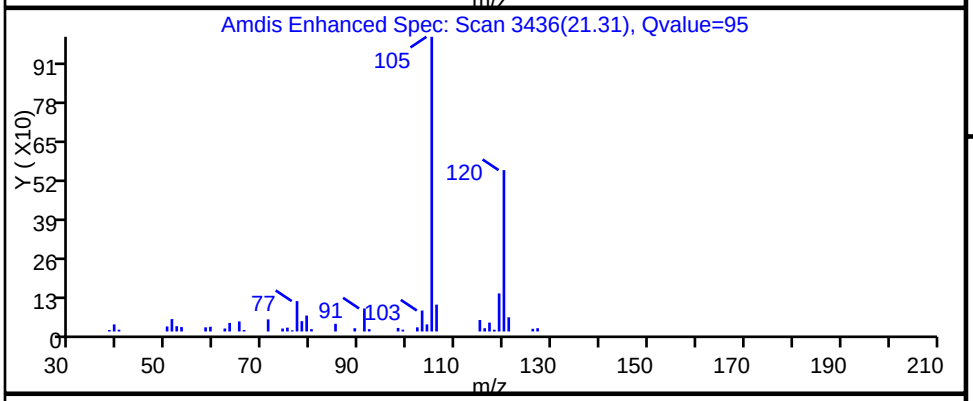
TestAmerica Burlington

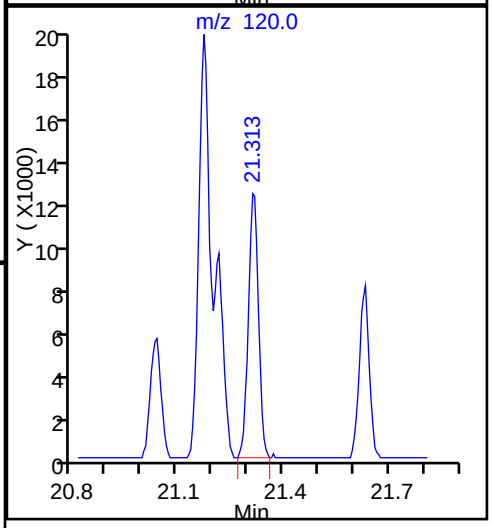
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

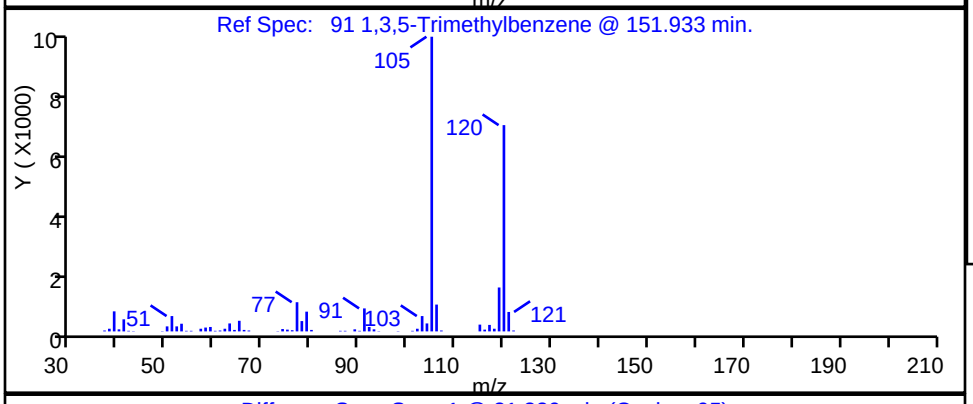
91 1,3,5-Trimethylbenzene, CAS: 108-67-8

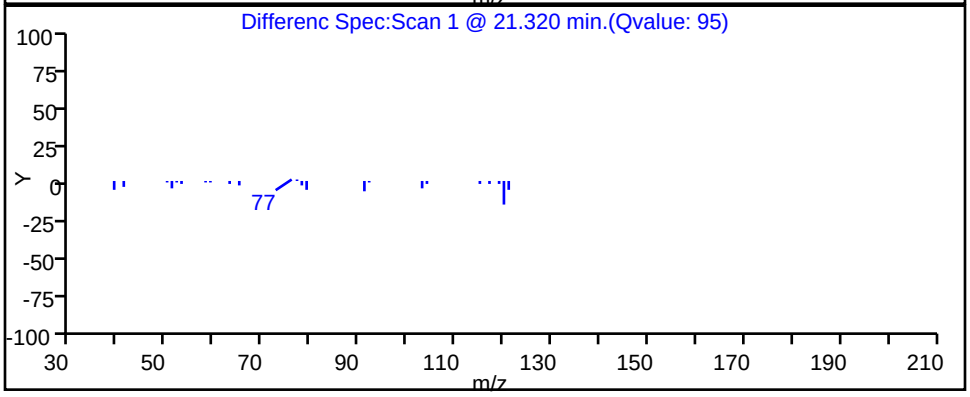








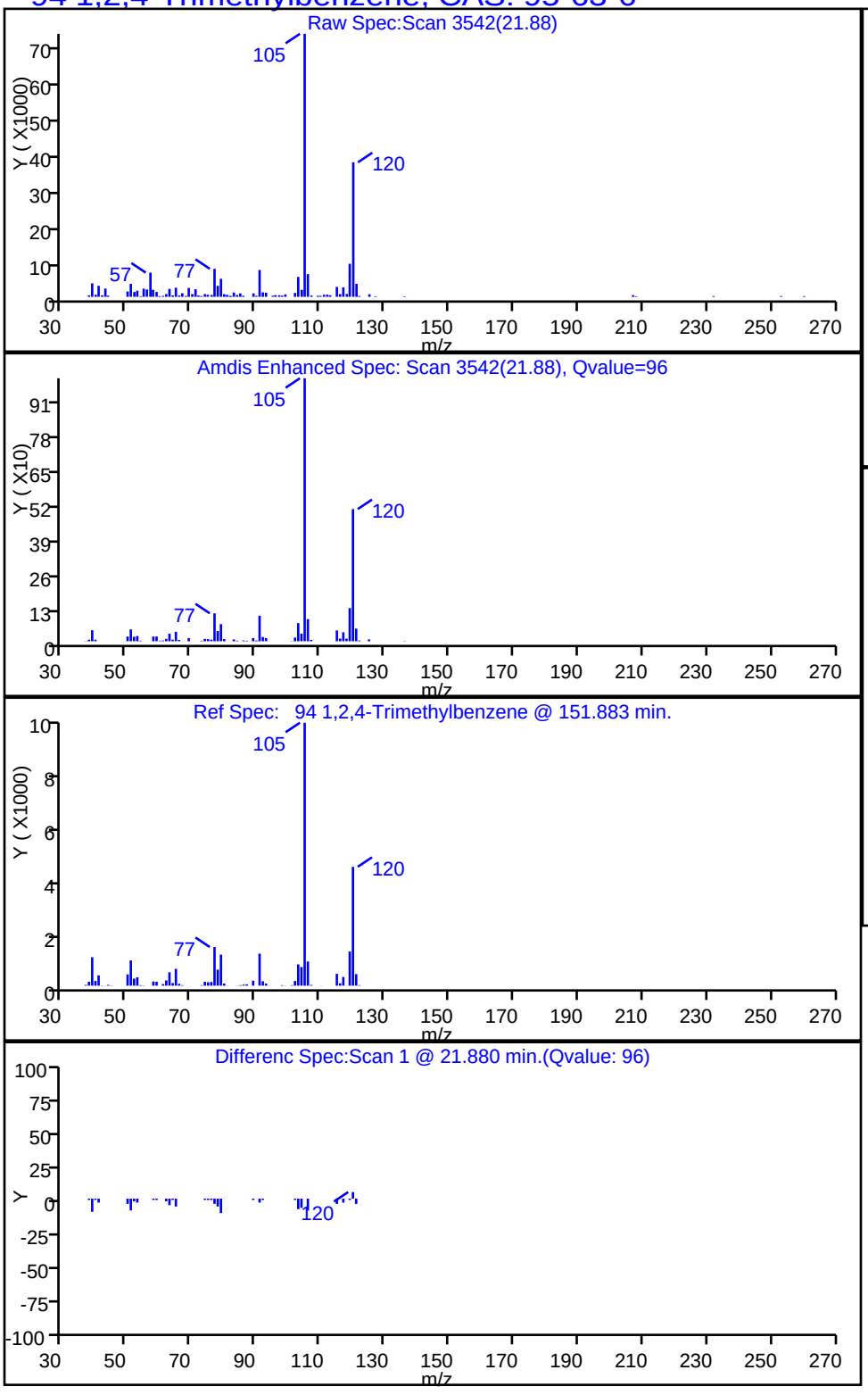


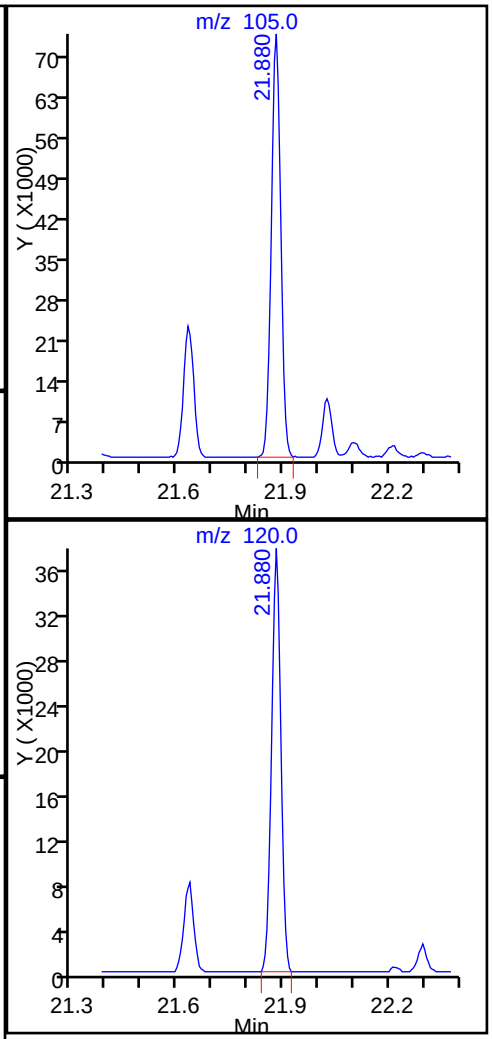


TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

94 1,2,4-Trimethylbenzene, CAS: 95-63-6

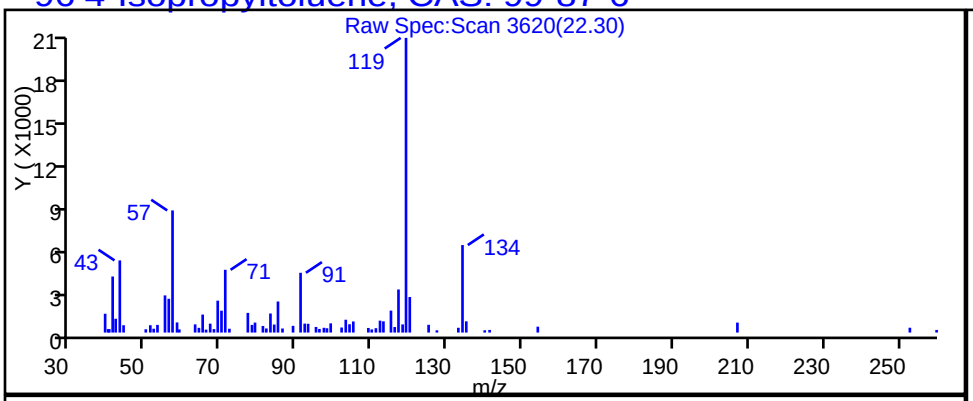


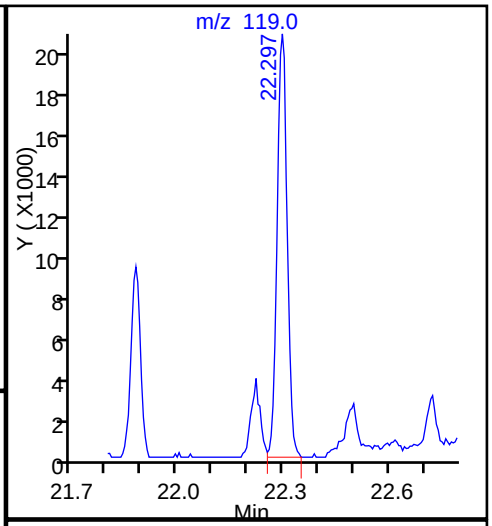


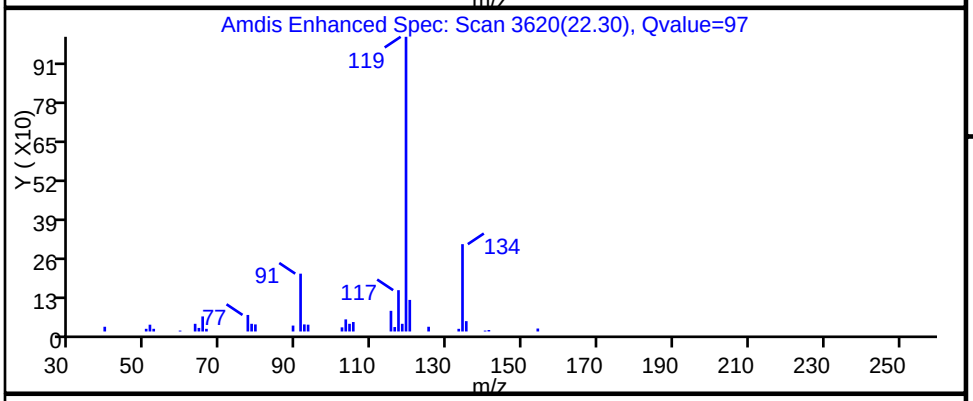
TestAmerica Burlington

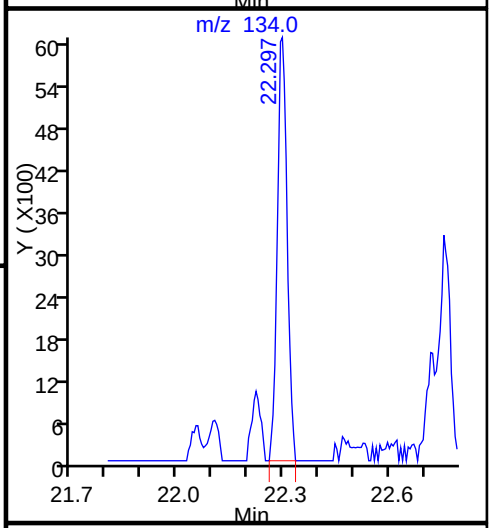
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

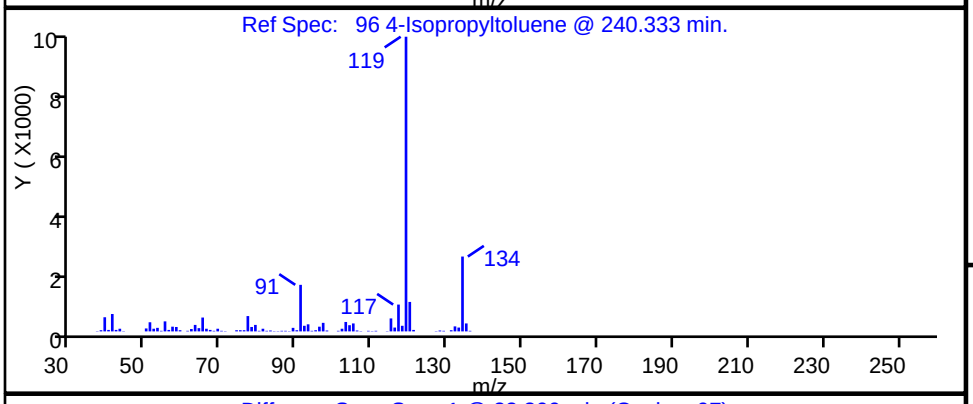
96 4-Isopropyltoluene, CAS: 99-87-6

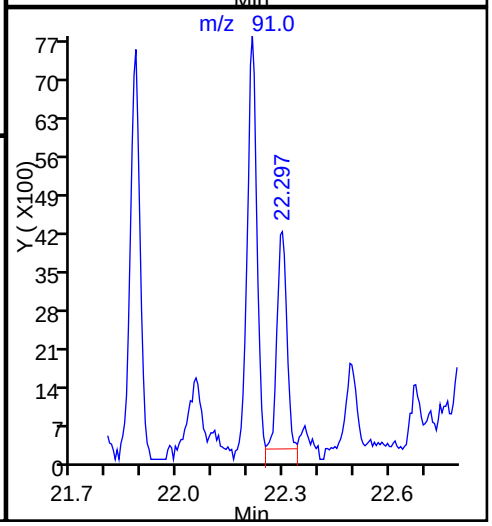


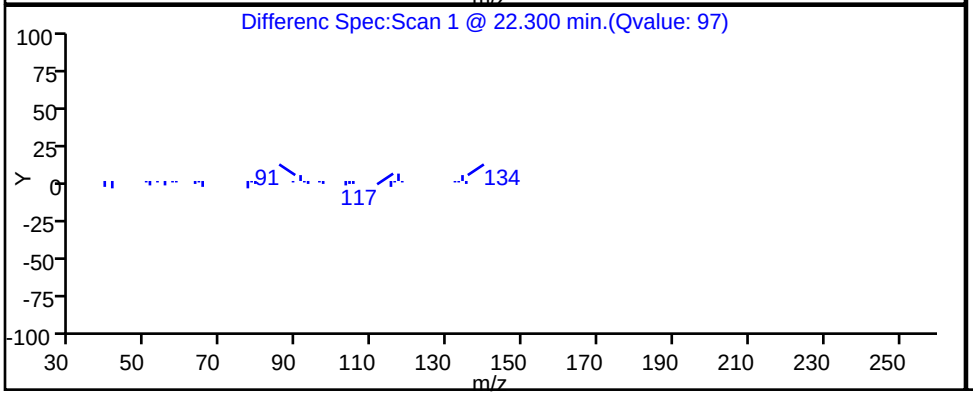












Manual Integration/User Assign Peak Report

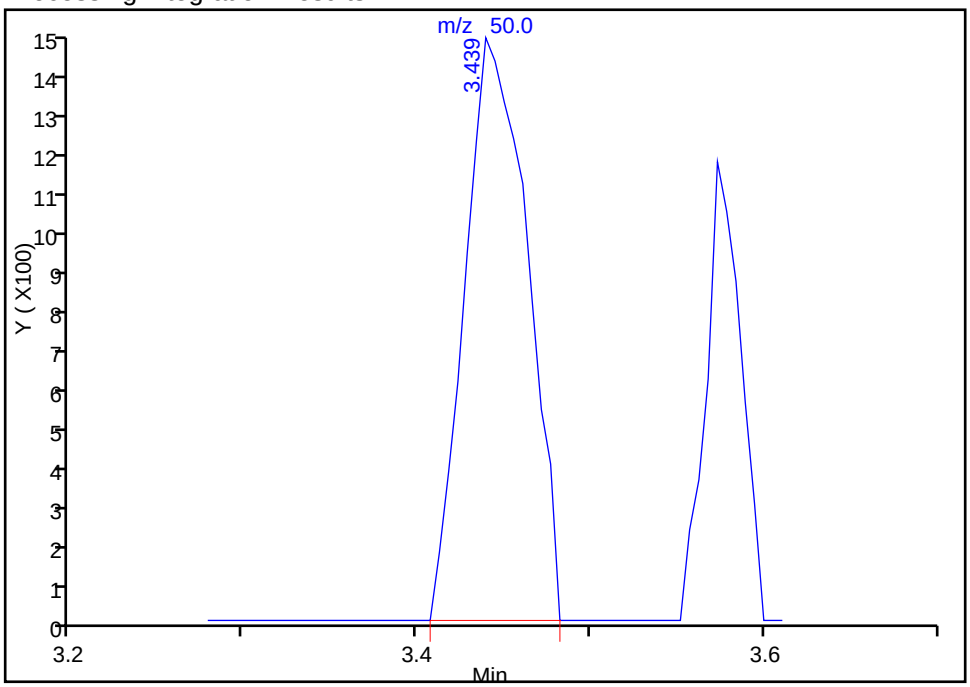
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

5 Chloromethane, CAS: 74-87-3

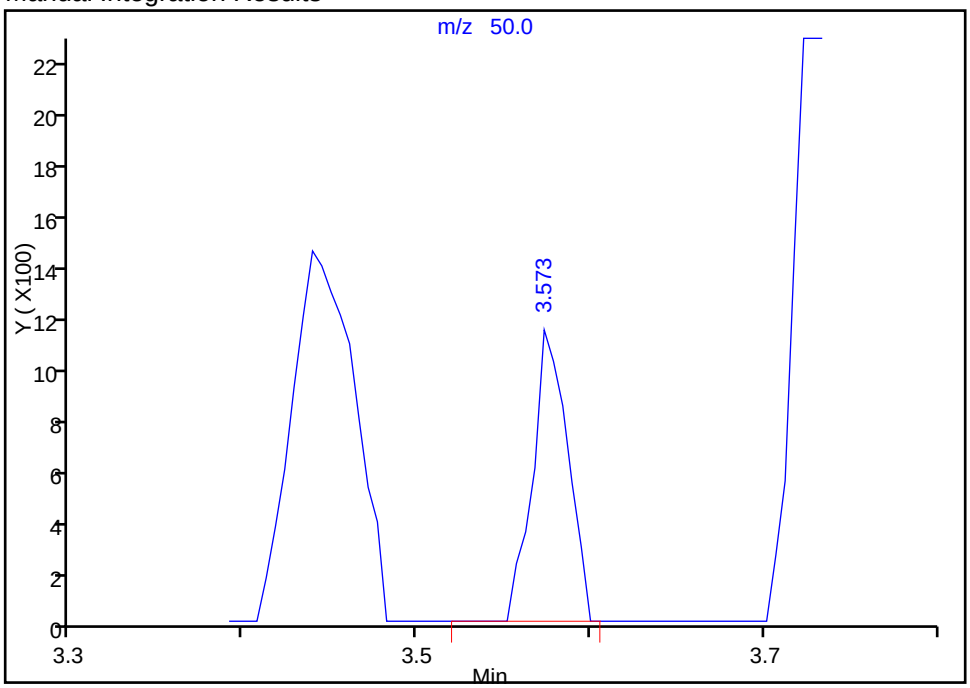
Processing Integration Results

RT: 3.44
Area: 3639
Amount: 0.478457
Amount Units: ppb v/v



Manual Integration Results

RT: 3.57
Area: 1604
Amount: 0.210894
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:41:12
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

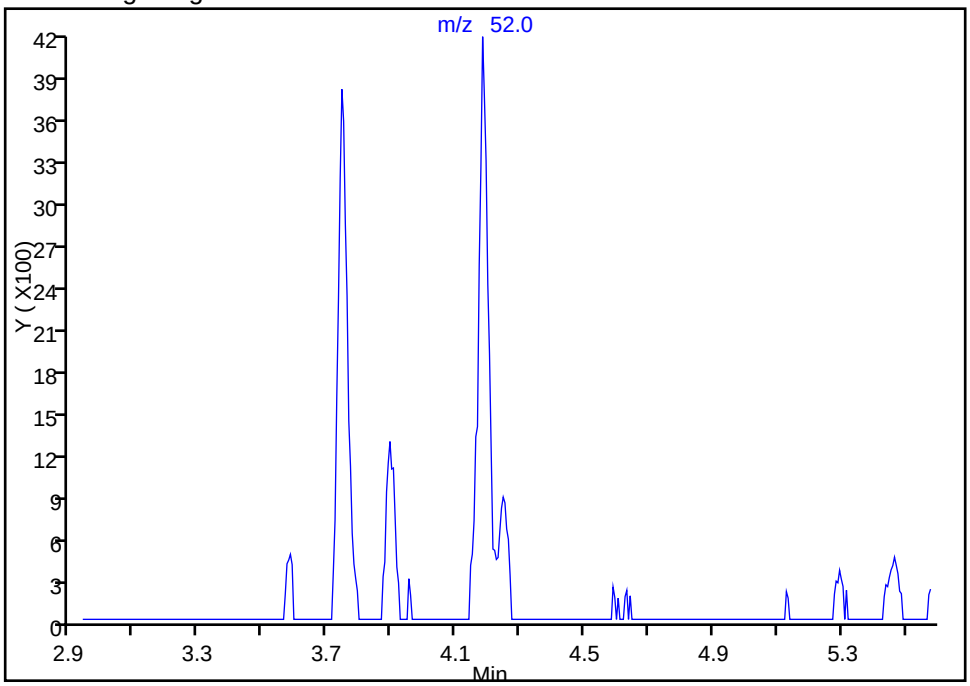
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

5 Chloromethane, CAS: 74-87-3

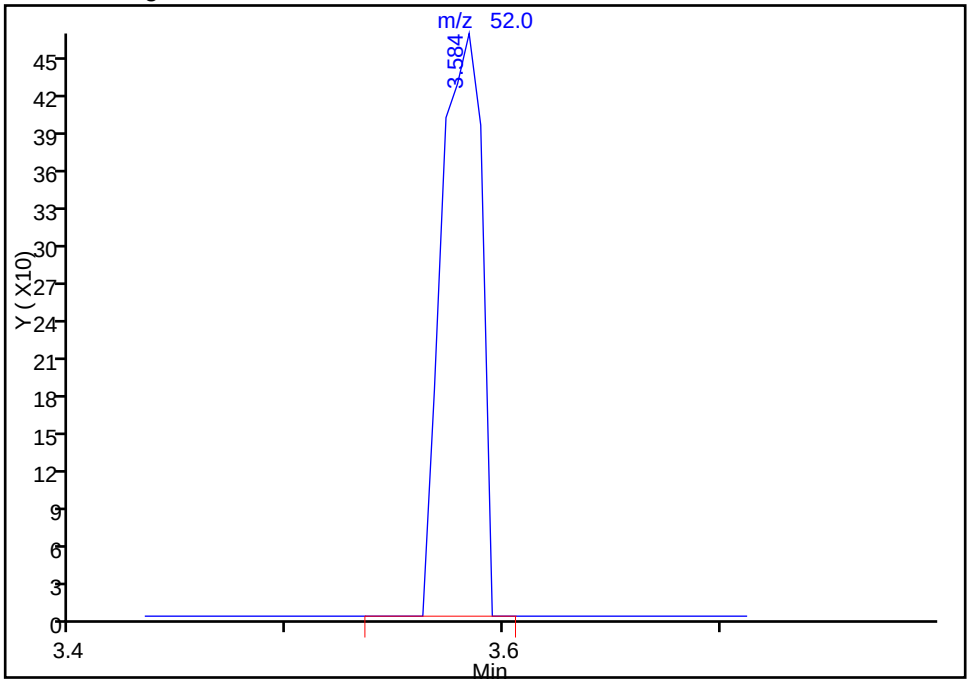
Processing Integration Results

RT: 3.58
Area: 0
Amount: 0.478457
Amount Units: ppb v/v



Manual Integration Results

RT: 3.58
Area: 596
Amount: 0.210894
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:41:12
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

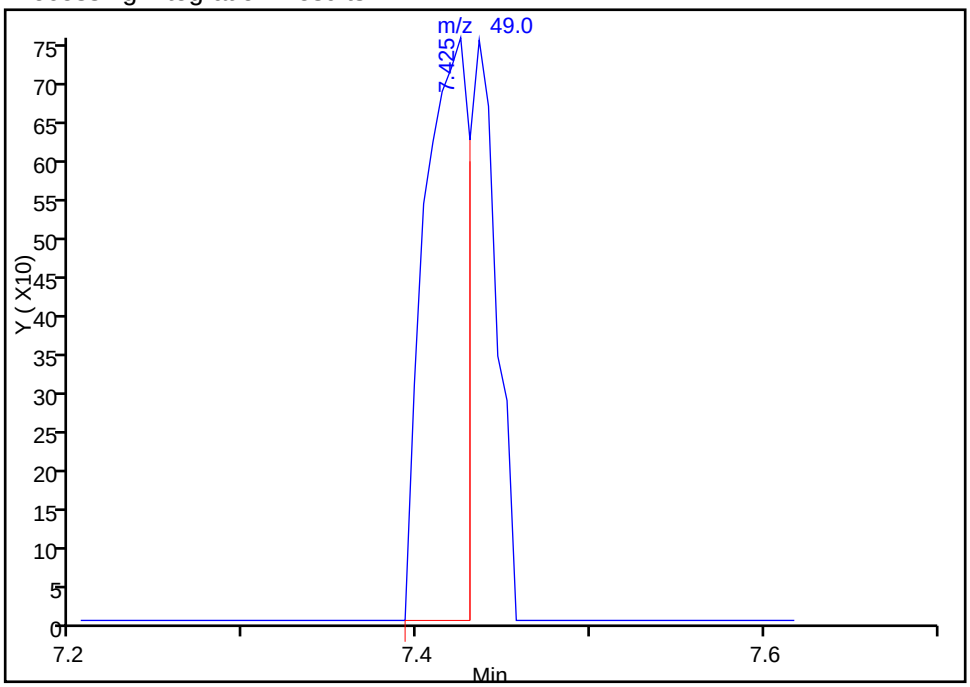
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

26 Methylene Chloride, CAS: 75-09-2

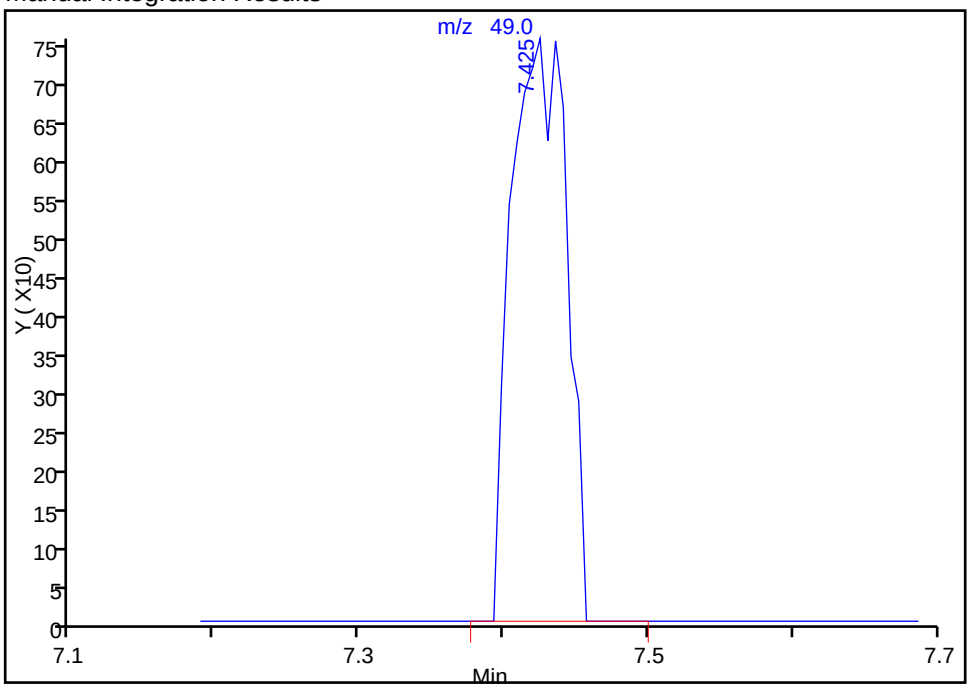
Processing Integration Results

RT: 7.42
Area: 1368
Amount: 0.133573
Amount Units: ppb v/v



Manual Integration Results

RT: 7.42
Area: 2027
Amount: 0.197919
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:41:12
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

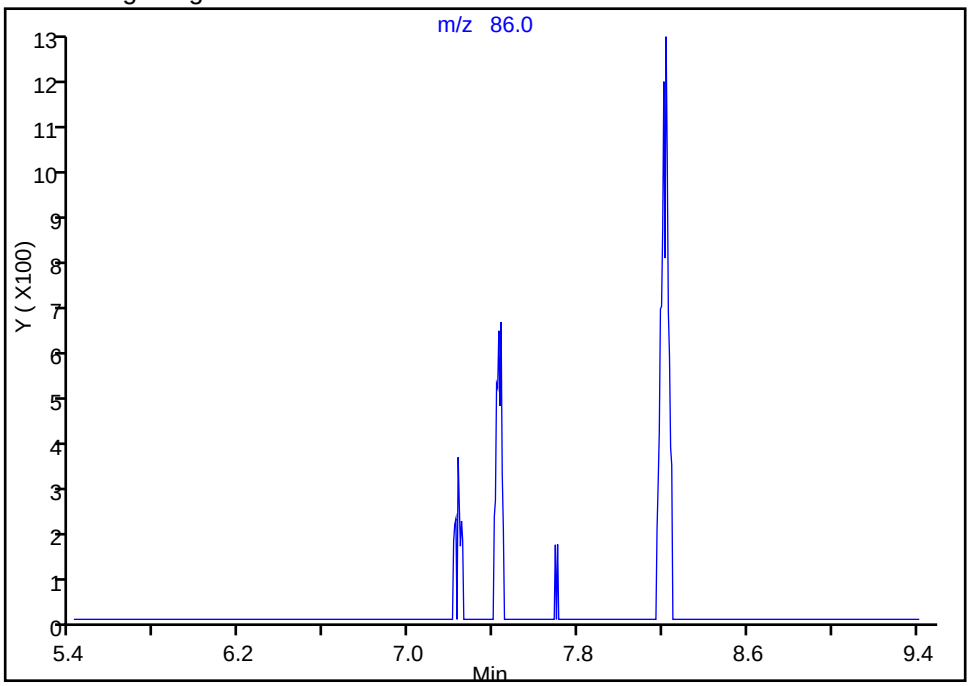
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

26 Methylene Chloride, CAS: 75-09-2

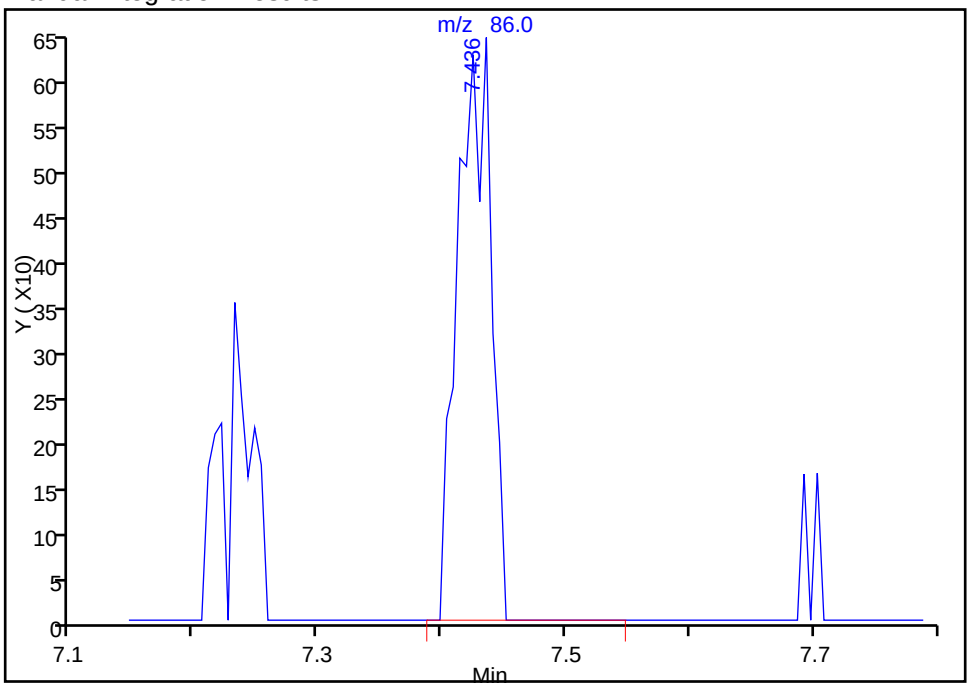
Processing Integration Results

RT: 7.41
Area: 0
Amount: 0.133573
Amount Units: ppb v/v



Manual Integration Results

RT: 7.44
Area: 1196
Amount: 0.197919
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:41:12
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

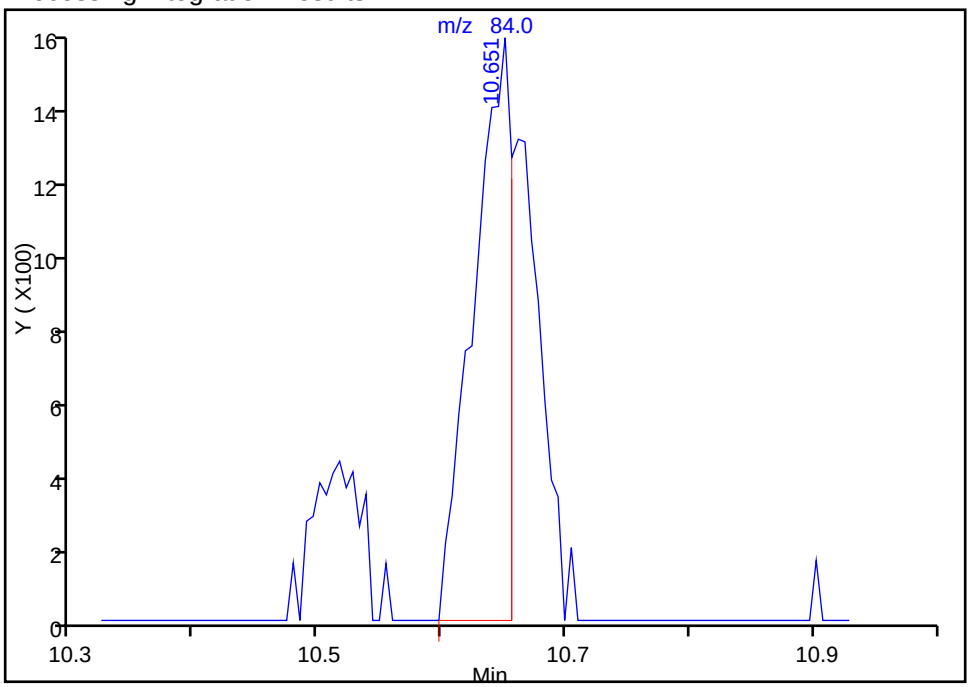
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

42 Cyclohexane, CAS: 110-82-7

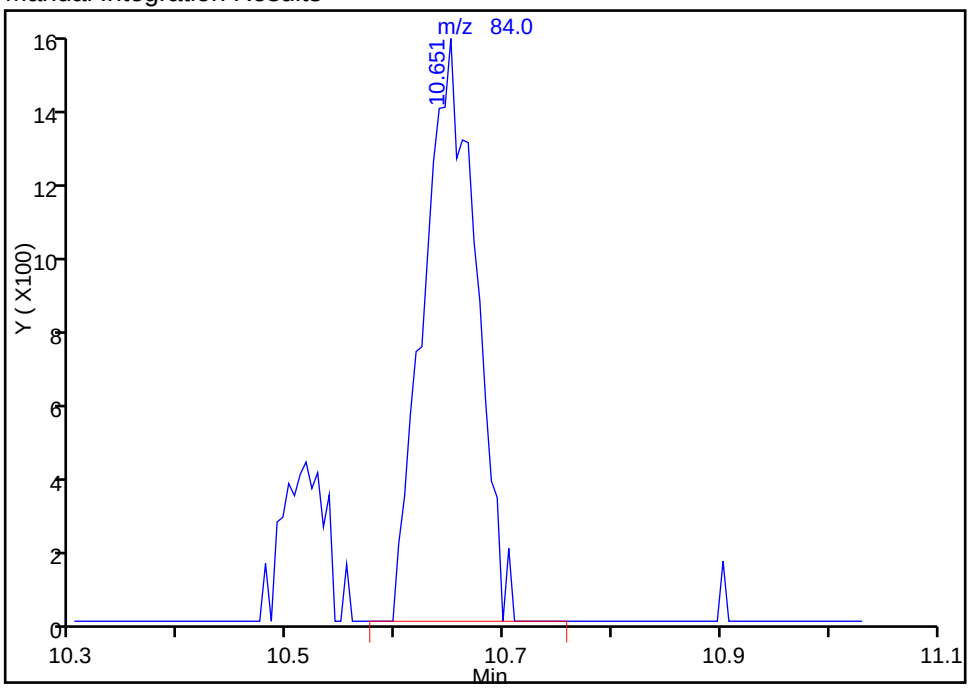
Processing Integration Results

RT: 10.65
Area: 3278
Amount: 0.170989
Amount Units: ppb v/v



Manual Integration Results

RT: 10.65
Area: 5165
Amount: 0.269420
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:41:12
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

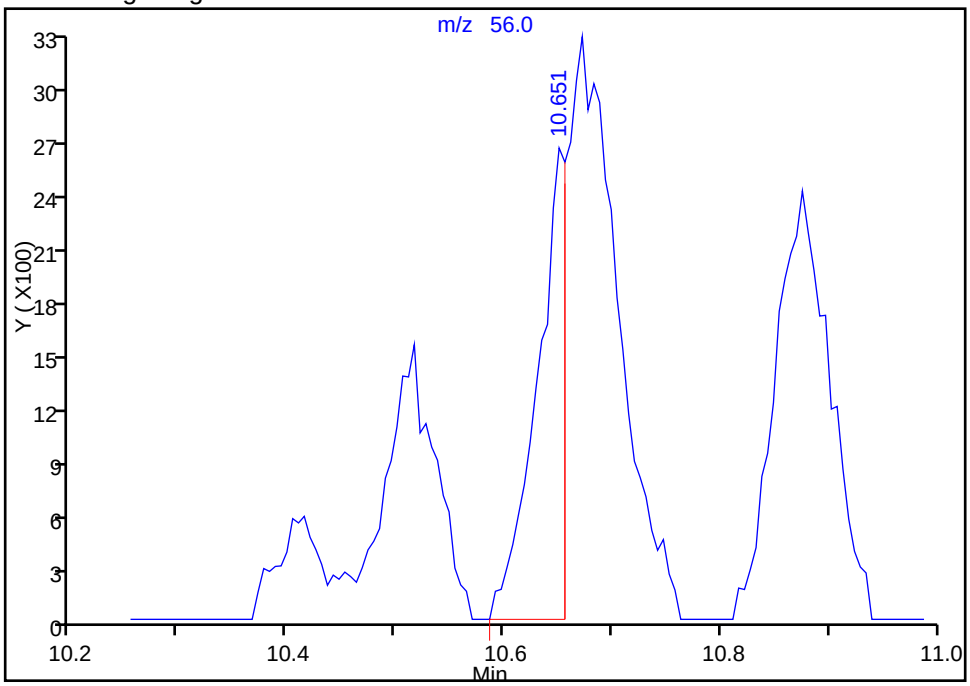
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D				
Injection Date:	13-Oct-2015 17:23:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

42 Cyclohexane, CAS: 110-82-7

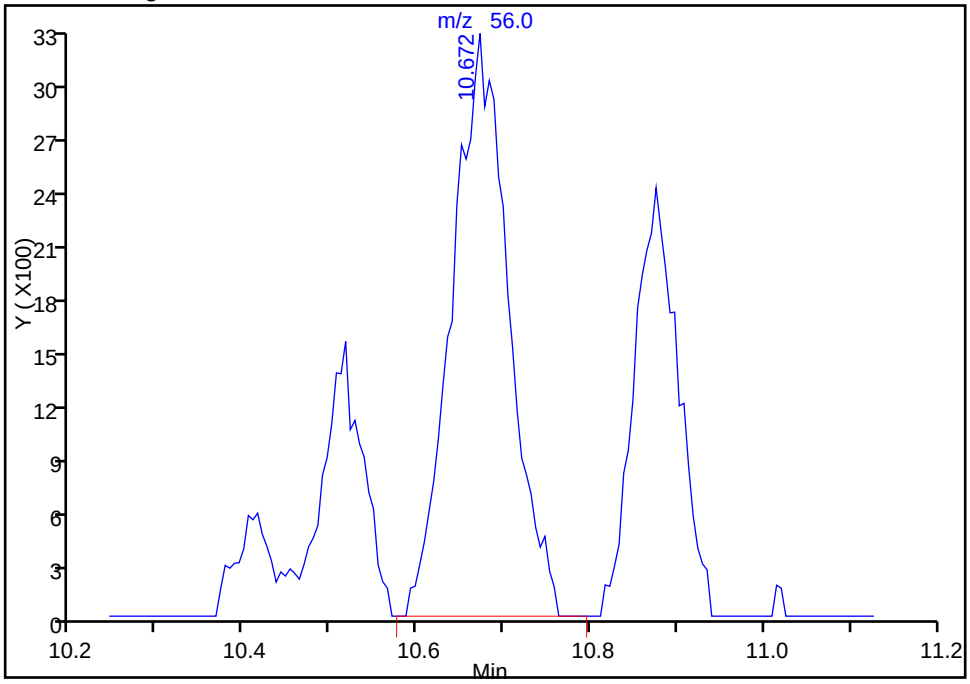
Processing Integration Results

RT: 10.65
Area: 4965
Amount: 0.170989
Amount Units: ppb v/v



Manual Integration Results

RT: 10.67
Area: 14982
Amount: 0.269420
Amount Units: ppb v/v

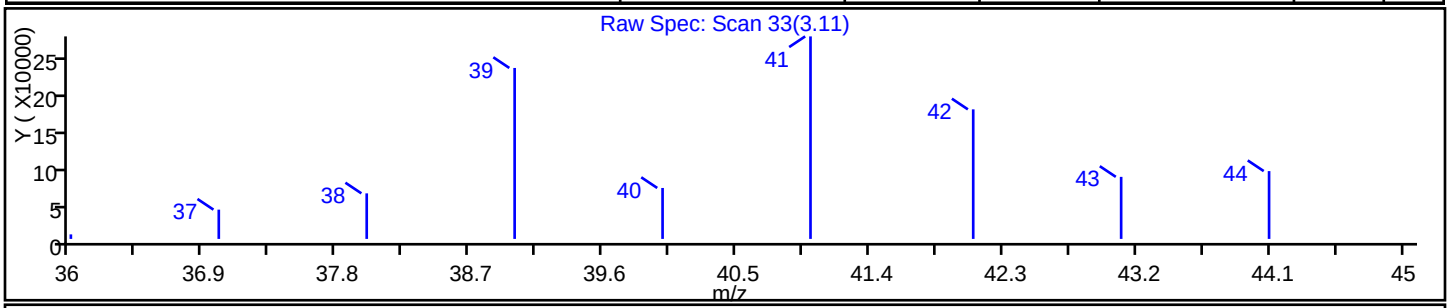


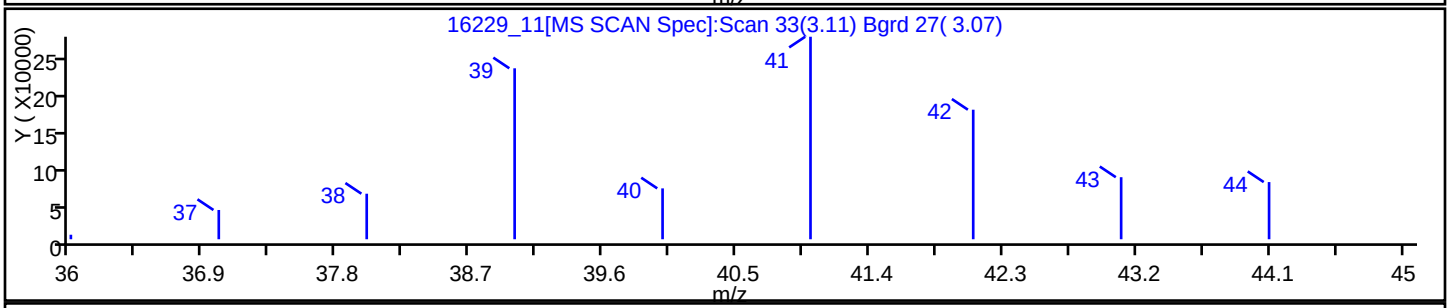
Reviewer: desjardinsb, 14-Oct-2015 07:41:12
Audit Action: Manually Integrated
Audit Reason: Baseline

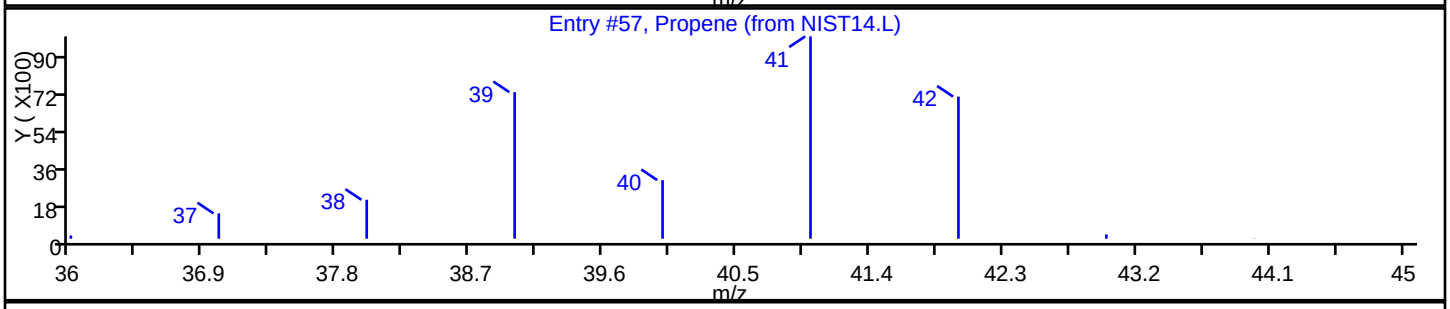
TestAmerica Burlington

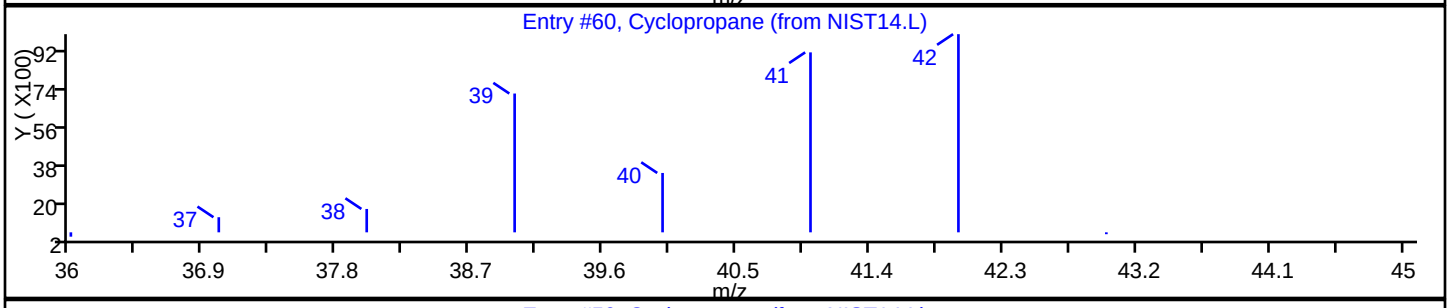
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

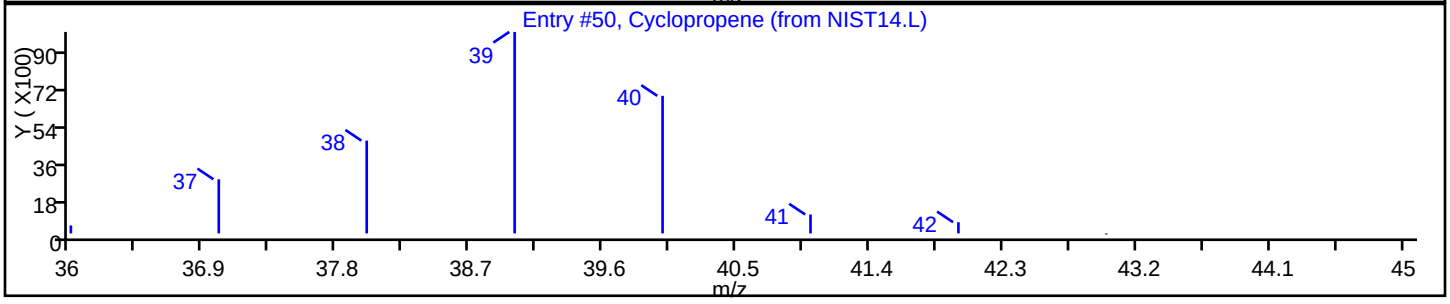
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Propene	115-07-1	NIST14.L	57	C3H6	42	90
Cyclopropane	75-19-4	NIST14.L	60	C3H6	42	10
Cyclopropene	2781-85-3	NIST14.L	50	C3H4	40	9











Report Date: 14-Oct-2015 07:41:14 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D

Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1

Client ID: SV-1

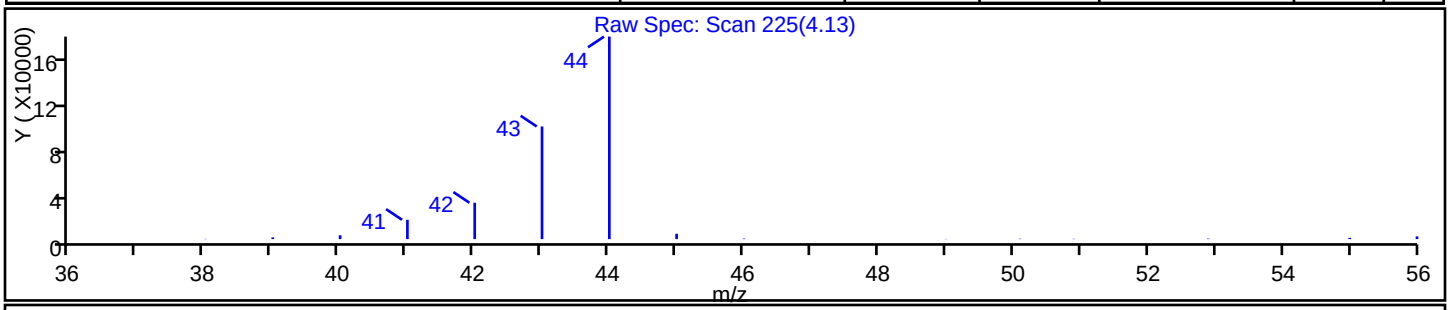
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11

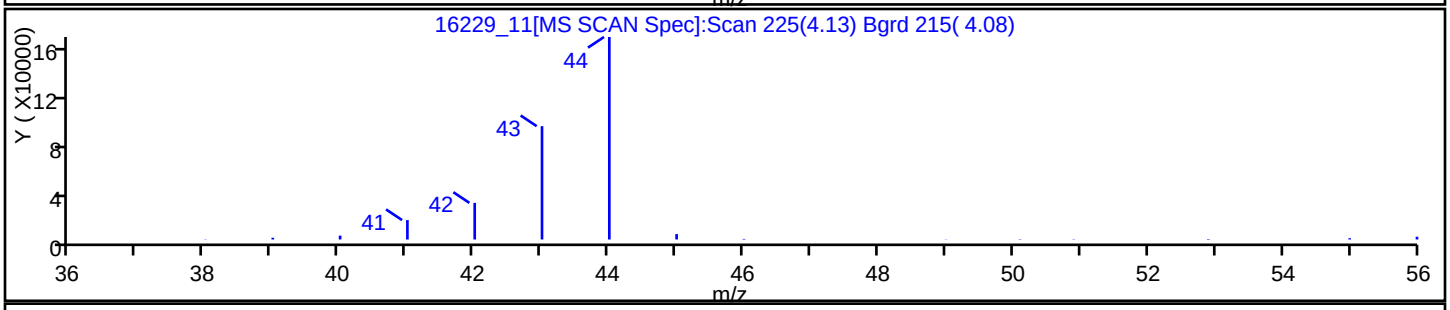
Purge Vol: 200.000 mL Dil. Factor: 1.0000

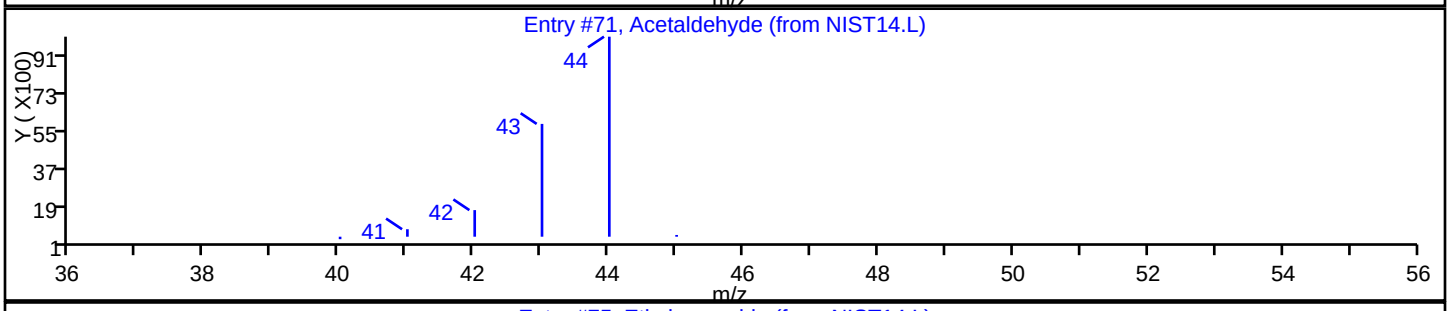
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

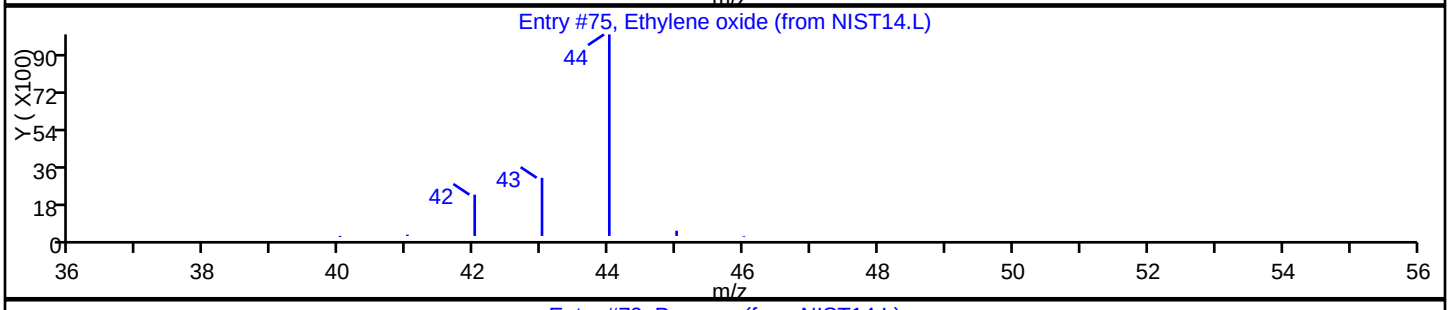
Column: Detector MS SCAN

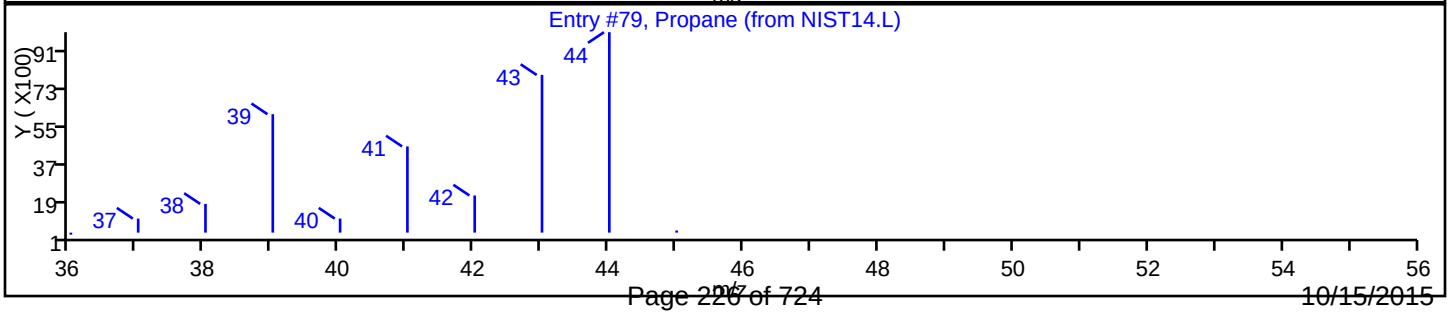
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Acetaldehyde	75-07-0	NIST14.L	71	C2H4O	44	56
Ethylene oxide	75-21-8	NIST14.L	75	C2H4O	44	5
Propane	74-98-6	NIST14.L	79	C3H8	44	5







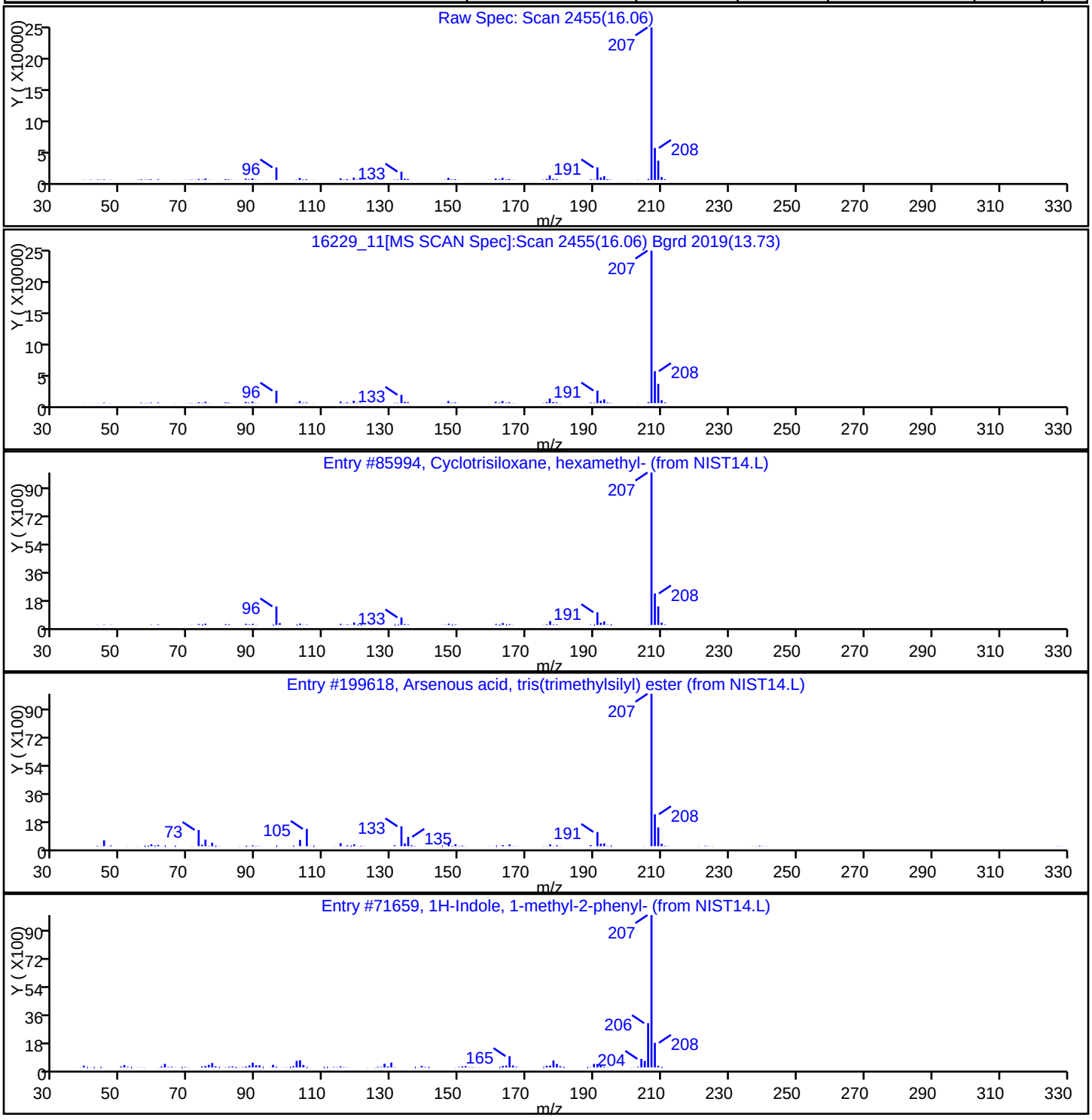




TestAmerica Burlington

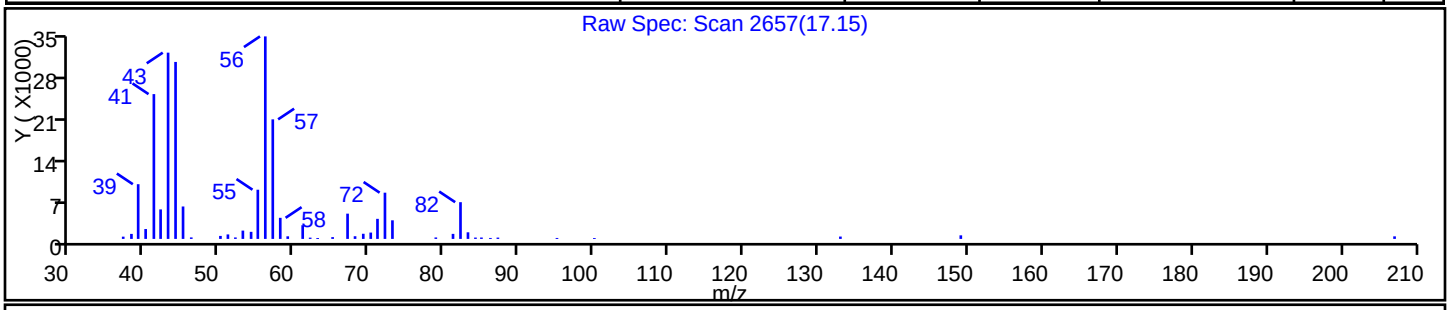
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

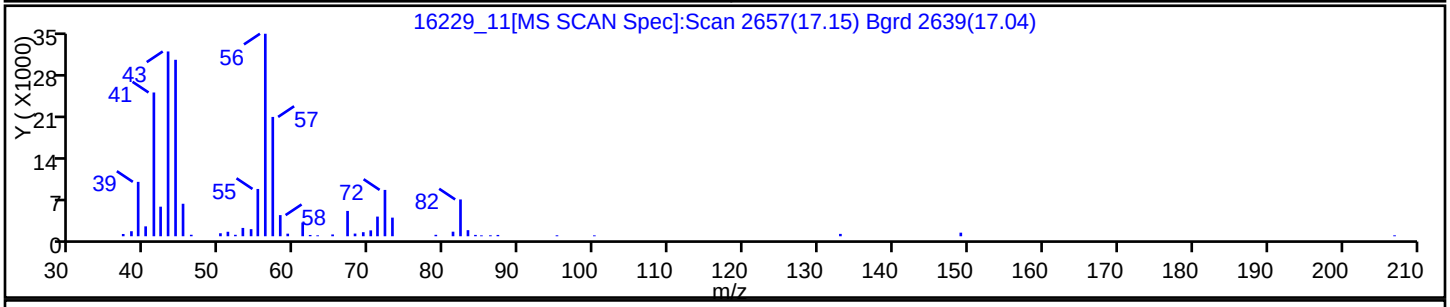
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Cyclotrisiloxane, hexamethyl-	541-05-9	NIST14.L	85994	C6H18O3Si3	222	87
Arsenous acid, tris(trimethylsilyl) este	55429-29-3	NIST14.L	199618	C9H27AsO3Si3	342	72
1H-Indole, 1-methyl-2-phenyl-	3558-24-5	NIST14.L	71659	C15H13N	207	50

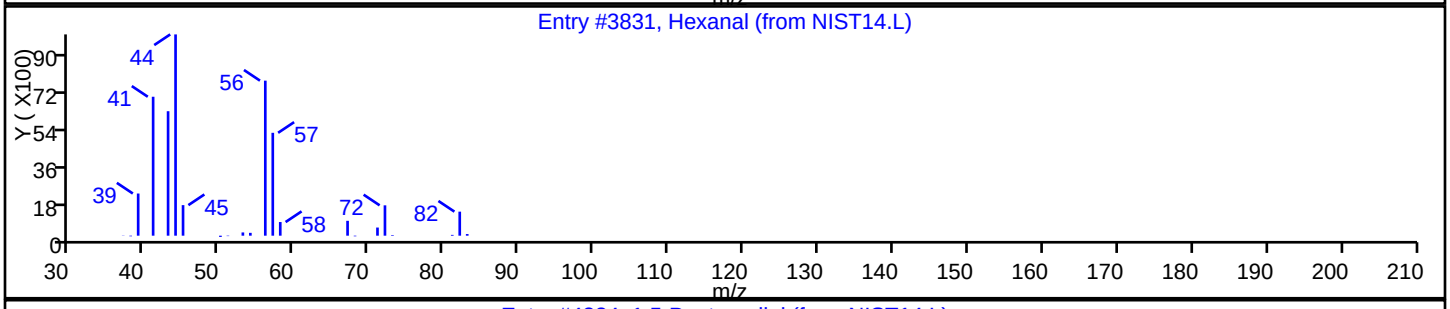


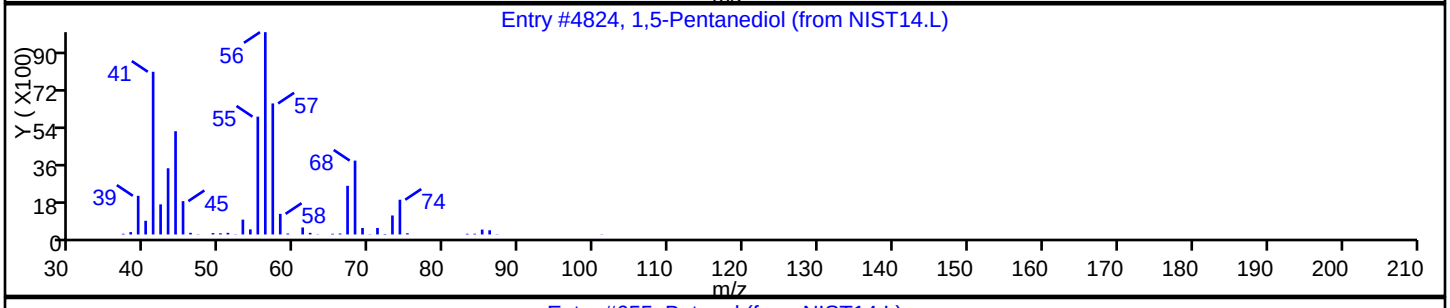
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

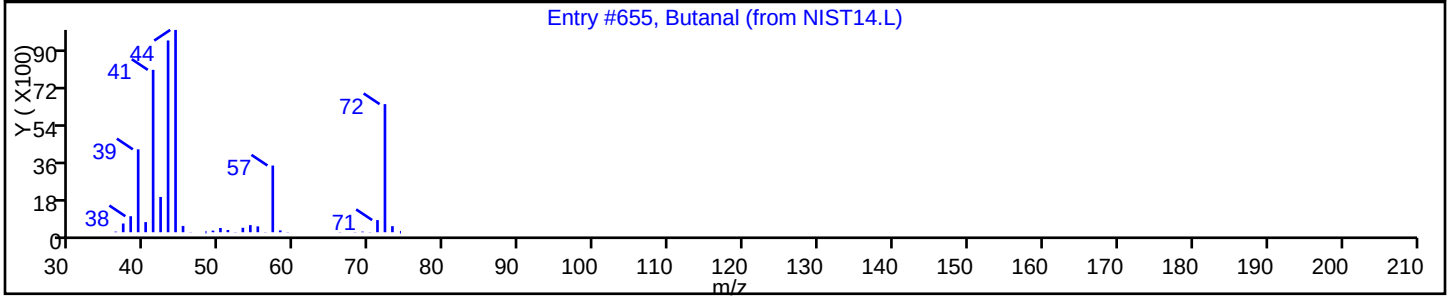
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Hexanal	66-25-1	NIST14.L	3831	C6H12O	100	90
1,5-Pentanediol	111-29-5	NIST14.L	4824	C5H12O2	104	28
Butanal	123-72-8	NIST14.L	655	C4H8O	72	27







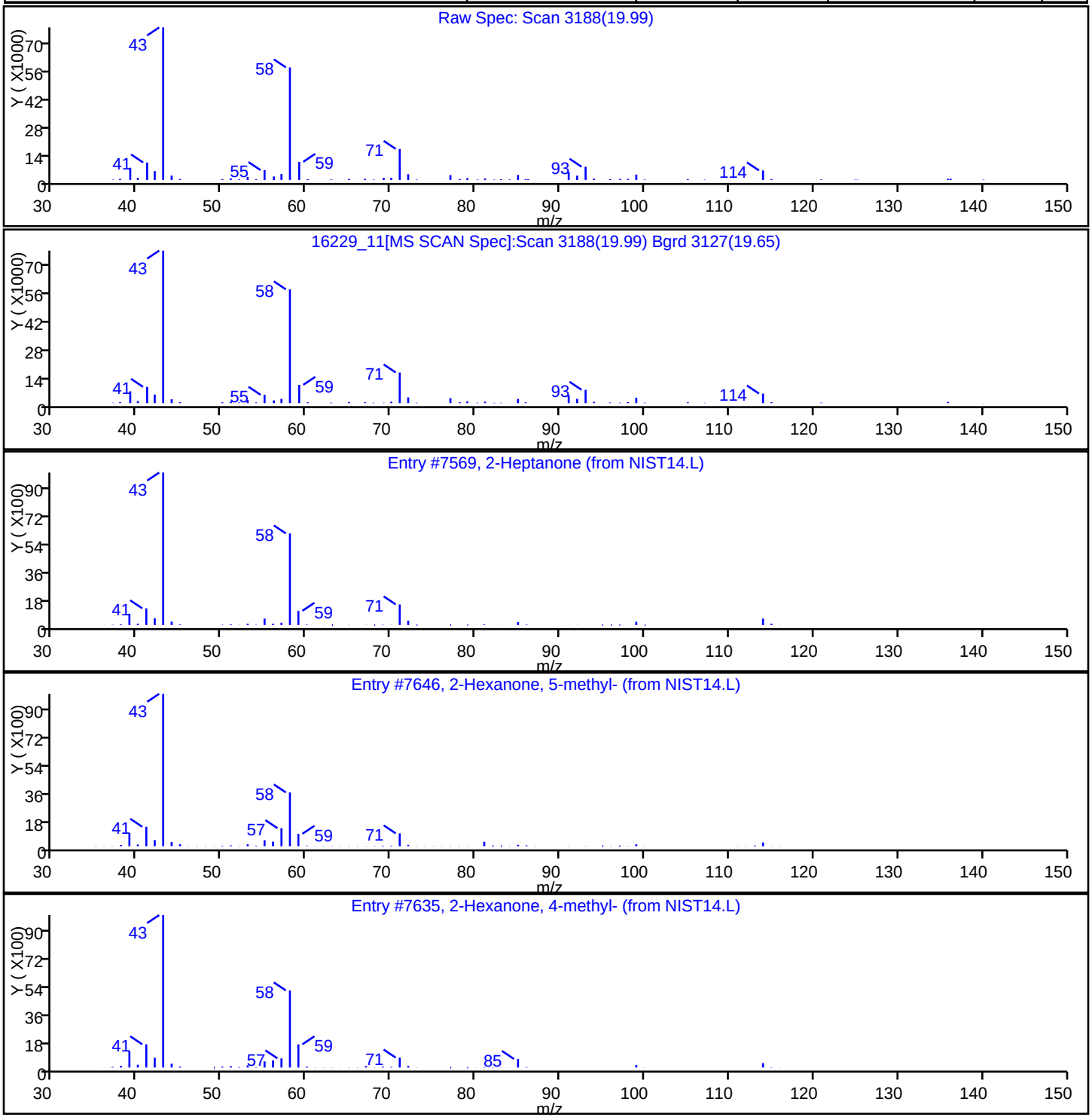




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

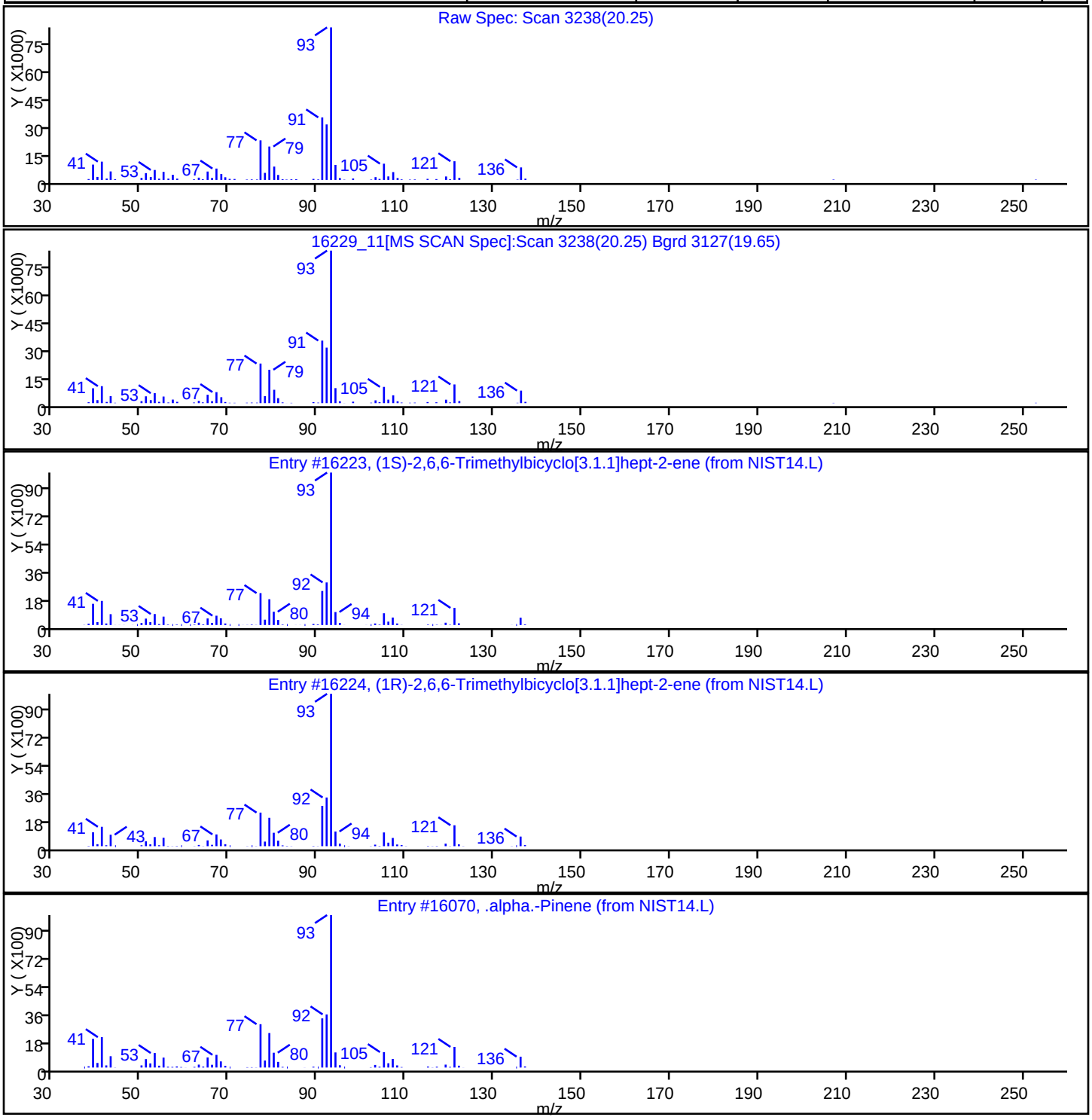
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
2-Heptanone	110-43-0	NIST14.L	7569	C7H14O	114	90
2-Hexanone, 5-methyl-	110-12-3	NIST14.L	7646	C7H14O	114	72
2-Hexanone, 4-methyl-	105-42-0	NIST14.L	7635	C7H14O	114	59



TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

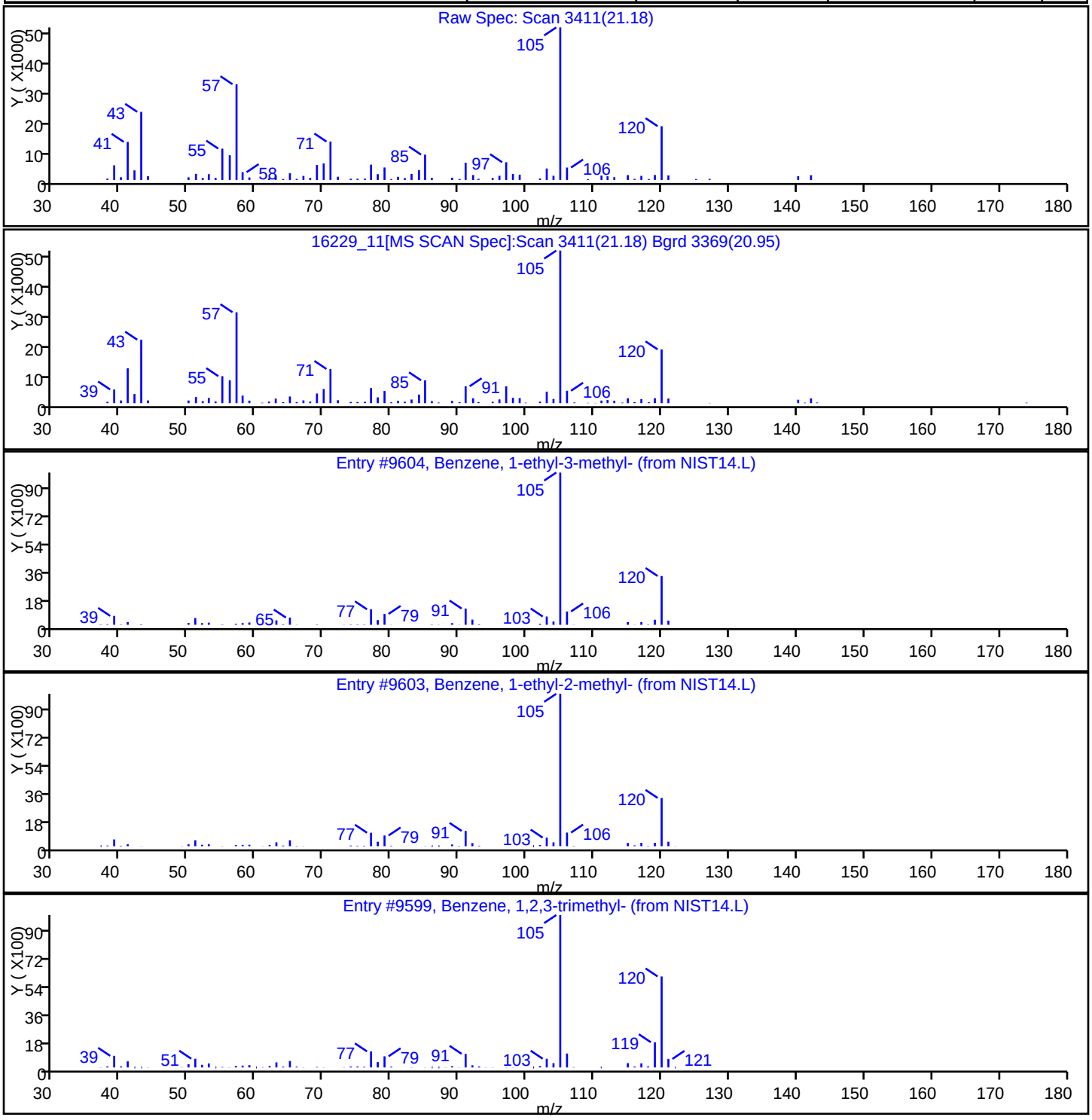
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-26-4	NIST14.L	16223	C10H16	136	96
(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-70-8	NIST14.L	16224	C10H16	136	96
.alpha.-Pinene	80-56-8	NIST14.L	16070	C10H16	136	95



TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

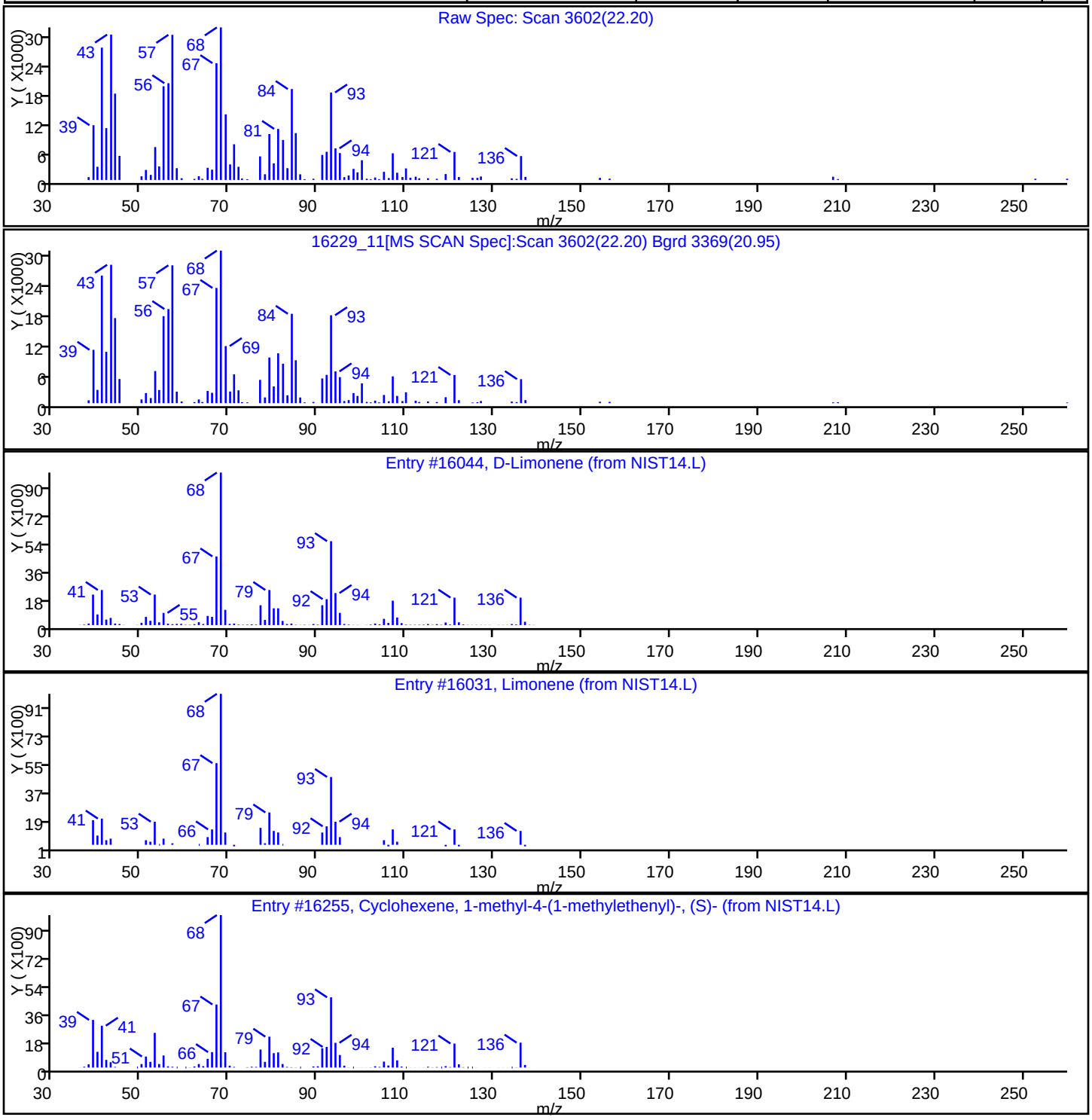
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Benzene, 1-ethyl-3-methyl-	620-14-4	NIST14.L	9604	C9H12	120	91
Benzene, 1-ethyl-2-methyl-	611-14-3	NIST14.L	9603	C9H12	120	90
Benzene, 1,2,3-trimethyl-	526-73-8	NIST14.L	9599	C9H12	120	55



TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

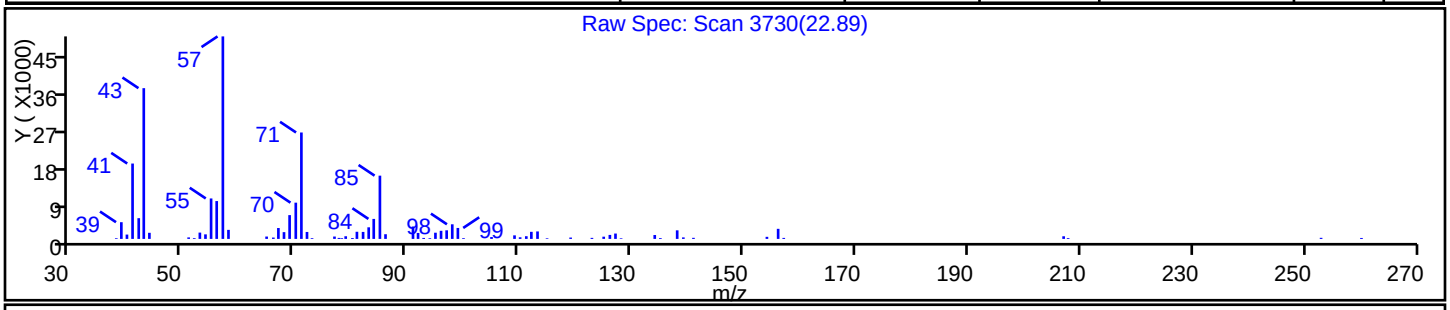
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
D-Limonene	5989-27-5	NIST14.L	16044	C10H16	136	95
Limonene	138-86-3	NIST14.L	16031	C10H16	136	78
Cyclohexene, 1-methyl-4-(1-methylethenyl	5989-54-8	NIST14.L	16255	C10H16	136	64

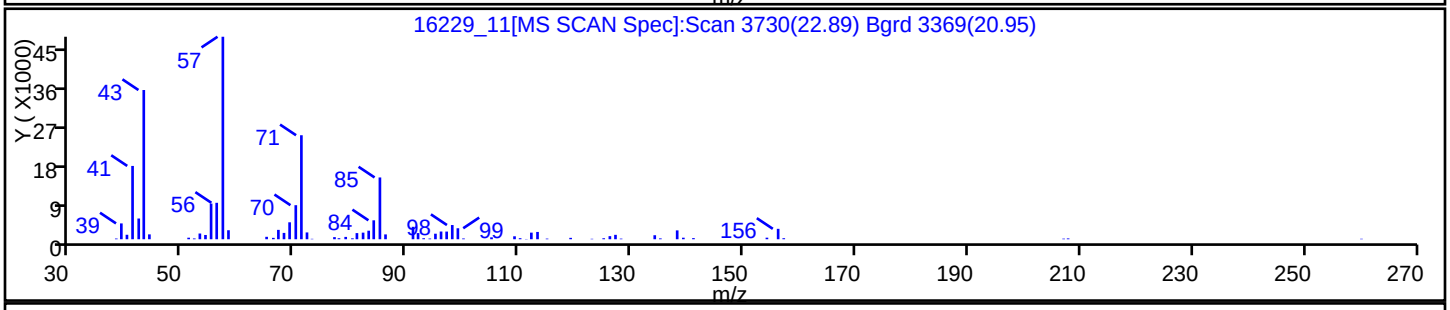


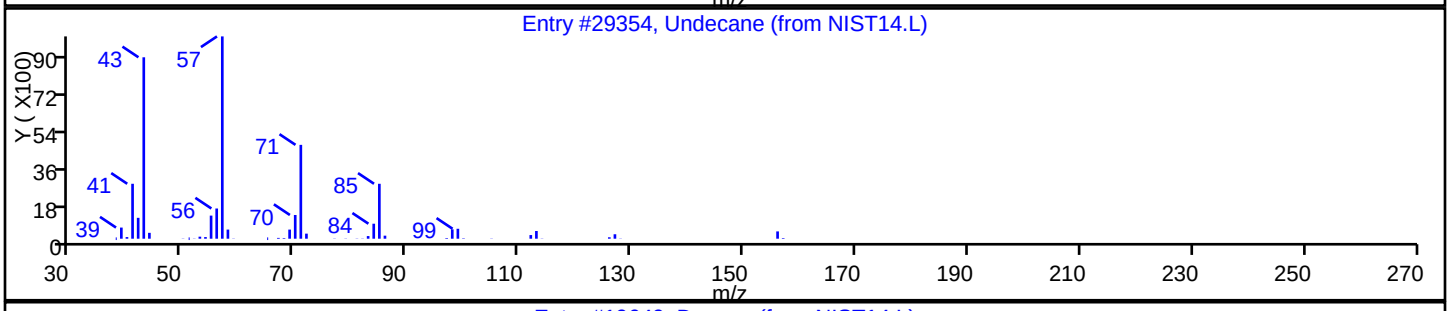
TestAmerica Burlington

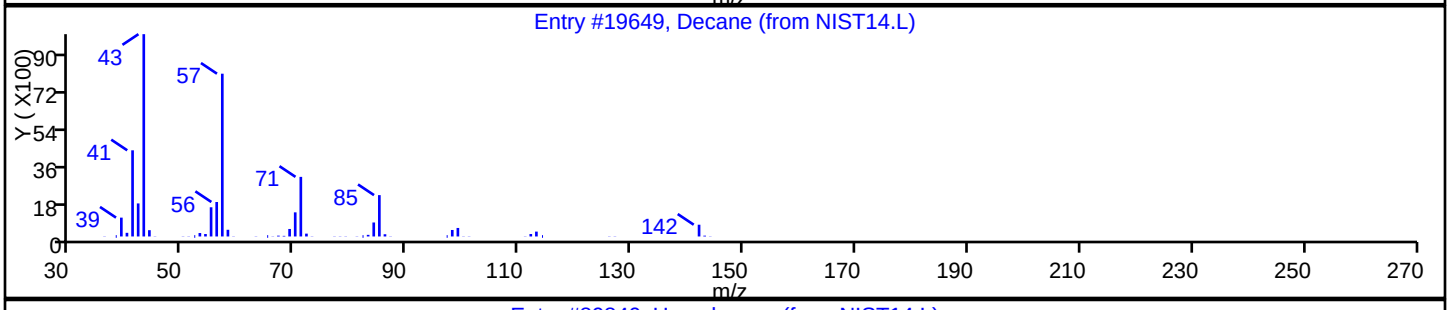
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

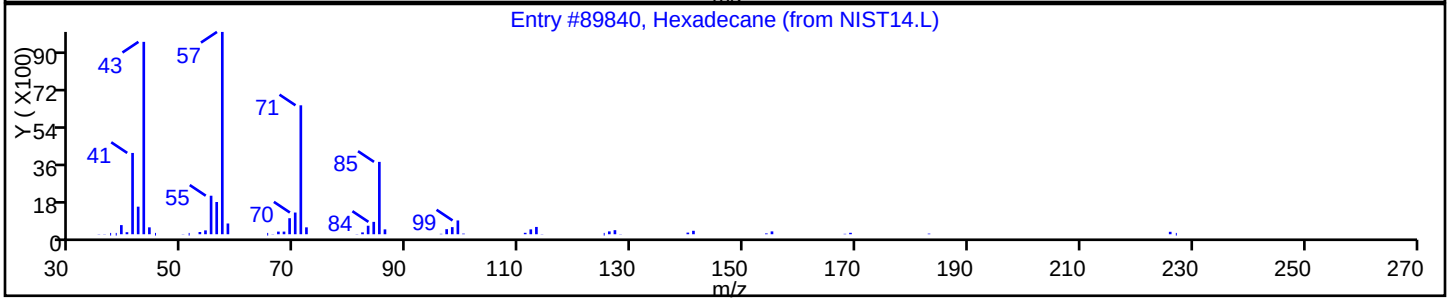
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Undecane	1120-21-4	NIST14.L	29354	C11H24	156	93
Decane	124-18-5	NIST14.L	19649	C10H22	142	80
Hexadecane	544-76-3	NIST14.L	89840	C16H34	226	80









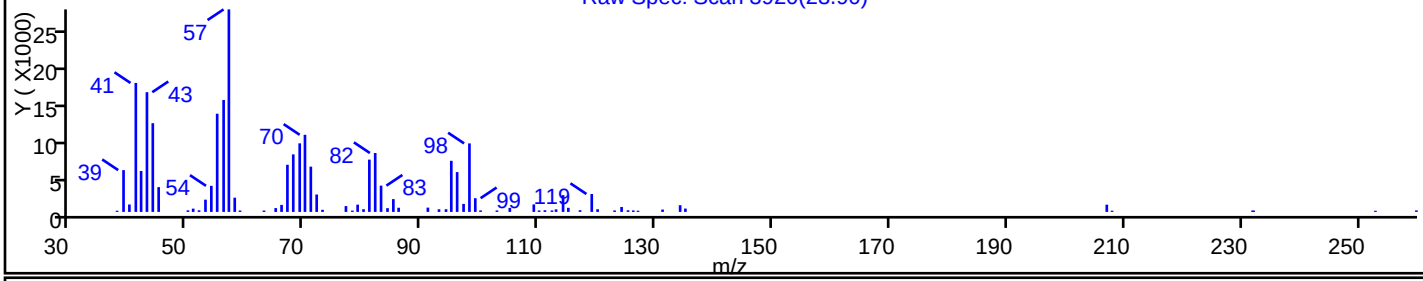


TestAmerica Burlington

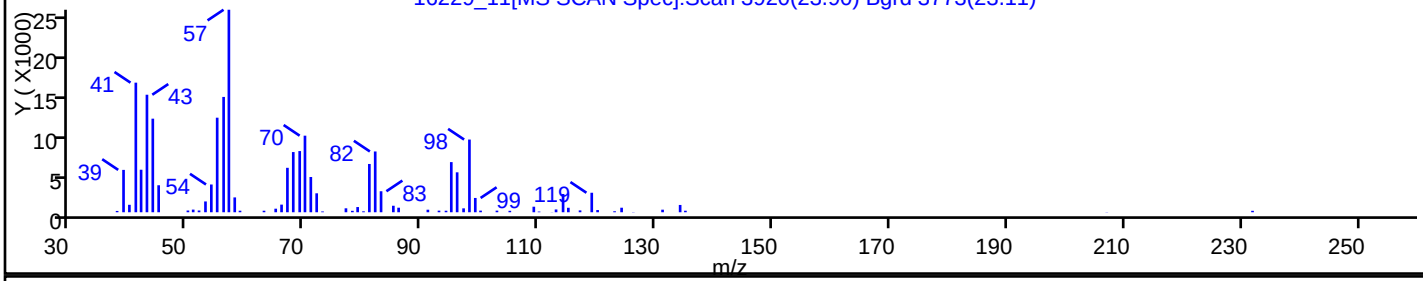
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_11.D
Injection Date: 13-Oct-2015 17:23:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Nonanal	124-19-6	NIST14.L	20436	C9H18O	142	91
Cyclohexanol, 2-methyl-	583-59-5	NIST14.L	7680	C7H14O	114	25
Butane, 1-isocyanato-	111-36-4	NIST14.L	3536	C5H9NO	99	22

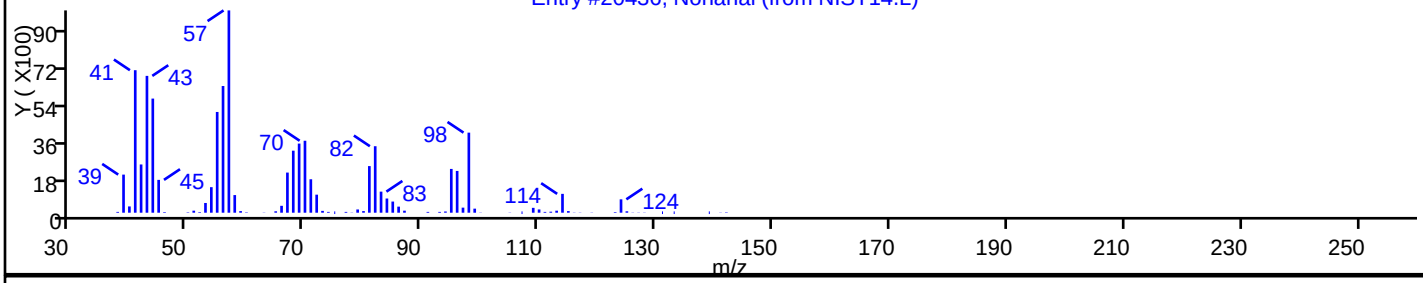
Raw Spec: Scan 3920(23.90)



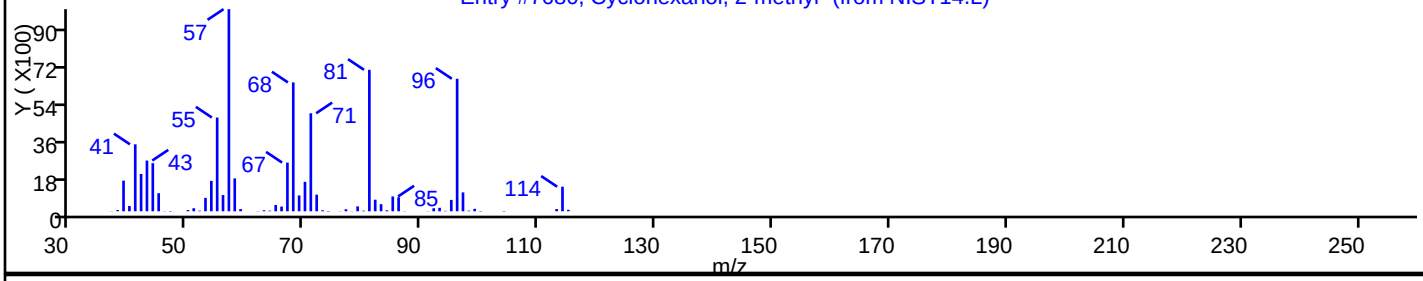
16229_11[MS SCAN Spec]:Scan 3920(23.90) Bgrd 3773(23.11)



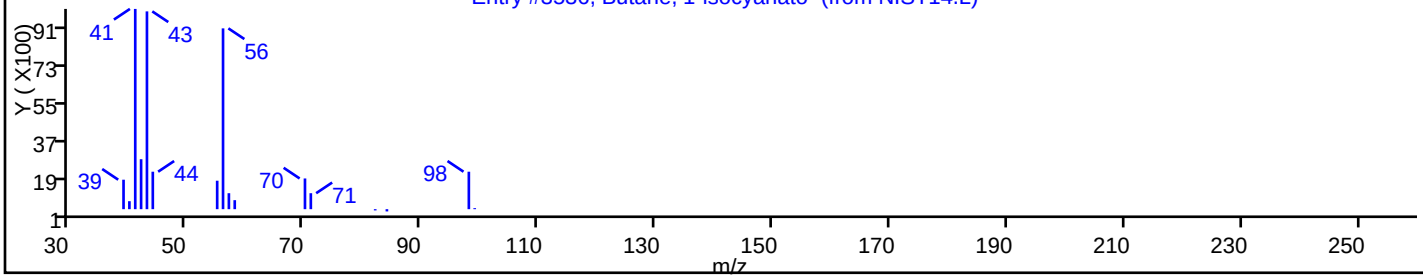
Entry #20436, Nonanal (from NIST14.L)



Entry #7680, Cyclohexanol, 2-methyl- (from NIST14.L)



Entry #3536, Butane, 1-isocyanato- (from NIST14.L)



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 DL | Lab Sample ID: 200-30148-1 DL

Matrix: Air | Lab File ID: 16229_12.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:27

Sample wt/vol: 50(mL) | Date Analyzed: 10/13/2015 18:12

Soil Aliquot Vol: | Dilution Factor: 4

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	5.5	D	2.0	
75-45-6	Freon 22	86.47	2.0	U	2.0	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	1.2	D	0.80	
74-87-3	Chloromethane	50.49	2.0	U	2.0	
106-97-8	n-Butane	58.12	13	D	2.0	
75-01-4	Vinyl chloride	62.50	0.80	U	0.80	
106-99-0	1,3-Butadiene	54.09	2.6	D	0.80	
74-83-9	Bromomethane	94.94	0.80	U	0.80	
75-00-3	Chloroethane	64.52	2.0	U	2.0	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.80	U	0.80	
75-69-4	Trichlorofluoromethane	137.37	0.80	U	0.80	
76-13-1	Freon TF	187.38	0.80	U	0.80	
75-35-4	1,1-Dichloroethene	96.94	0.80	U	0.80	
67-64-1	Acetone	58.08	110	D	20	
67-63-0	Isopropyl alcohol	60.10	20	U	20	
75-15-0	Carbon disulfide	76.14	2.0	U	2.0	
107-05-1	3-Chloropropene	76.53	2.0	U	2.0	
75-09-2	Methylene Chloride	84.93	2.0	U	2.0	
75-65-0	tert-Butyl alcohol	74.12	20	U	20	
1634-04-4	Methyl tert-butyl ether	88.15	0.80	U	0.80	
156-60-5	trans-1,2-Dichloroethene	96.94	0.80	U	0.80	
110-54-3	n-Hexane	86.17	1.1	D	0.80	
75-34-3	1,1-Dichloroethane	98.96	0.80	U	0.80	
78-93-3	Methyl Ethyl Ketone	72.11	5.4	D	2.0	
156-59-2	cis-1,2-Dichloroethene	96.94	0.80	U	0.80	
540-59-0	1,2-Dichloroethene, Total	96.94	1.6	U	1.6	
67-66-3	Chloroform	119.38	0.80	U	0.80	
109-99-9	Tetrahydrofuran	72.11	20	U	20	
71-55-6	1,1,1-Trichloroethane	133.41	0.80	U	0.80	
110-82-7	Cyclohexane	84.16	0.80	U	0.80	
56-23-5	Carbon tetrachloride	153.81	0.80	U	0.80	
540-84-1	2,2,4-Trimethylpentane	114.23	0.80	U	0.80	
71-43-2	Benzene	78.11	0.86	D	0.80	
107-06-2	1,2-Dichloroethane	98.96	0.80	U	0.80	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 DL | Lab Sample ID: 200-30148-1 DL

Matrix: Air | Lab File ID: 16229_12.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:27

Sample wt/vol: 50(mL) | Date Analyzed: 10/13/2015 18:12

Soil Aliquot Vol: | Dilution Factor: 4

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	1.5	D	0.80	
79-01-6	Trichloroethene	131.39	0.80	U	0.80	
80-62-6	Methyl methacrylate	100.12	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	112.99	0.80	U	0.80	
123-91-1	1,4-Dioxane	88.11	20	U	20	
75-27-4	Bromodichloromethane	163.83	0.80	U	0.80	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.80	U	0.80	
108-10-1	methyl isobutyl ketone	100.16	3.3	D	2.0	
108-88-3	Toluene	92.14	4.4	D	0.80	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.80	U	0.80	
79-00-5	1,1,2-Trichloroethane	133.41	0.80	U	0.80	
127-18-4	Tetrachloroethene	165.83	0.80	U	0.80	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	2.0	U	2.0	
124-48-1	Dibromochloromethane	208.29	0.80	U	0.80	
106-93-4	1,2-Dibromoethane	187.87	0.80	U	0.80	
108-90-7	Chlorobenzene	112.56	0.80	U	0.80	
100-41-4	Ethylbenzene	106.17	1.4	D	0.80	
179601-23-1	m,p-Xylene	106.17	4.6	D	2.0	
95-47-6	Xylene, o-	106.17	1.6	D	0.80	
1330-20-7	Xylene (total)	106.17	6.2	D	2.8	
100-42-5	Styrene	104.15	0.80	U	0.80	
75-25-2	Bromoform	252.75	0.80	U	0.80	
98-82-8	Cumene	120.19	0.80	U	0.80	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.80	U	0.80	
103-65-1	n-Propylbenzene	120.19	0.80	U	0.80	
622-96-8	4-Ethyltoluene	120.20	0.80	U	0.80	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.80	U	0.80	
95-49-8	2-Chlorotoluene	126.59	0.80	U	0.80	
98-06-6	tert-Butylbenzene	134.22	0.80	U	0.80	
95-63-6	1,2,4-Trimethylbenzene	120.20	1.5	D	0.80	
135-98-8	sec-Butylbenzene	134.22	0.80	U	0.80	
99-87-6	4-Isopropyltoluene	134.22	0.80	U	0.80	
541-73-1	1,3-Dichlorobenzene	147.00	0.80	U	0.80	
106-46-7	1,4-Dichlorobenzene	147.00	0.80	U	0.80	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 DL Lab Sample ID: 200-30148-1 DL

Matrix: Air Lab File ID: 16229_12.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 50(mL) Date Analyzed: 10/13/2015 18:12

Soil Aliquot Vol: Dilution Factor: 4

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*0.80*	*U*	*0.80*	
104-51-8	*n-Butylbenzene*	*134.22*	*0.80*	*U*	*0.80*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*0.80*	*U*	*0.80*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*2.0*	*U*	*2.0*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*0.80*	*U*	*0.80*	
91-20-3	*Naphthalene*	*128.17*	*2.0*	*U*	*2.0*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 DL | Lab Sample ID: 200-30148-1 DL

Matrix: Air | Lab File ID: 16229_12.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:27

Sample wt/vol: 50(mL) | Date Analyzed: 10/13/2015 18:12

Soil Aliquot Vol: | Dilution Factor: 4

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	27	D	9.9	
75-45-6	Freon 22	86.47	7.1	U	7.1	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	8.4	D	5.6	
74-87-3	Chloromethane	50.49	4.1	U	4.1	
106-97-8	n-Butane	58.12	32	D	4.8	
75-01-4	Vinyl chloride	62.50	2.0	U	2.0	
106-99-0	1,3-Butadiene	54.09	5.7	D	1.8	
74-83-9	Bromomethane	94.94	3.1	U	3.1	
75-00-3	Chloroethane	64.52	5.3	U	5.3	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	3.5	U	3.5	
75-69-4	Trichlorofluoromethane	137.37	4.5	U	4.5	
76-13-1	Freon TF	187.38	6.1	U	6.1	
75-35-4	1,1-Dichloroethene	96.94	3.2	U	3.2	
67-64-1	Acetone	58.08	260	D	48	
67-63-0	Isopropyl alcohol	60.10	49	U	49	
75-15-0	Carbon disulfide	76.14	6.2	U	6.2	
107-05-1	3-Chloropropene	76.53	6.3	U	6.3	
75-09-2	Methylene Chloride	84.93	6.9	U	6.9	
75-65-0	tert-Butyl alcohol	74.12	61	U	61	
1634-04-4	Methyl tert-butyl ether	88.15	2.9	U	2.9	
156-60-5	trans-1,2-Dichloroethene	96.94	3.2	U	3.2	
110-54-3	n-Hexane	86.17	4.0	D	2.8	
75-34-3	1,1-Dichloroethane	98.96	3.2	U	3.2	
78-93-3	Methyl Ethyl Ketone	72.11	16	D	5.9	
156-59-2	cis-1,2-Dichloroethene	96.94	3.2	U	3.2	
540-59-0	1,2-Dichloroethene, Total	96.94	6.3	U	6.3	
67-66-3	Chloroform	119.38	3.9	U	3.9	
109-99-9	Tetrahydrofuran	72.11	59	U	59	
71-55-6	1,1,1-Trichloroethane	133.41	4.4	U	4.4	
110-82-7	Cyclohexane	84.16	2.8	U	2.8	
56-23-5	Carbon tetrachloride	153.81	5.0	U	5.0	
540-84-1	2,2,4-Trimethylpentane	114.23	3.7	U	3.7	
71-43-2	Benzene	78.11	2.8	D	2.6	
107-06-2	1,2-Dichloroethane	98.96	3.2	U	3.2	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 DL | Lab Sample ID: 200-30148-1 DL

Matrix: Air | Lab File ID: 16229_12.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:27

Sample wt/vol: 50(mL) | Date Analyzed: 10/13/2015 18:12

Soil Aliquot Vol: | Dilution Factor: 4

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	6.1	D	3.3	
79-01-6	Trichloroethene	131.39	4.3	U	4.3	
80-62-6	Methyl methacrylate	100.12	8.2	U	8.2	
78-87-5	1,2-Dichloropropane	112.99	3.7	U	3.7	
123-91-1	1,4-Dioxane	88.11	72	U	72	
75-27-4	Bromodichloromethane	163.83	5.4	U	5.4	
10061-01-5	cis-1,3-Dichloropropene	110.97	3.6	U	3.6	
108-10-1	methyl isobutyl ketone	100.16	14	D	8.2	
108-88-3	Toluene	92.14	16	D	3.0	
10061-02-6	trans-1,3-Dichloropropene	110.97	3.6	U	3.6	
79-00-5	1,1,2-Trichloroethane	133.41	4.4	U	4.4	
127-18-4	Tetrachloroethene	165.83	5.4	U	5.4	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	8.2	U	8.2	
124-48-1	Dibromochloromethane	208.29	6.8	U	6.8	
106-93-4	1,2-Dibromoethane	187.87	6.1	U	6.1	
108-90-7	Chlorobenzene	112.56	3.7	U	3.7	
100-41-4	Ethylbenzene	106.17	6.1	D	3.5	
179601-23-1	m,p-Xylene	106.17	20	D	8.7	
95-47-6	Xylene, o-	106.17	7.2	D	3.5	
1330-20-7	Xylene (total)	106.17	27	D	12	
100-42-5	Styrene	104.15	3.4	U	3.4	
75-25-2	Bromoform	252.75	8.3	U	8.3	
98-82-8	Cumene	120.19	3.9	U	3.9	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	5.5	U	5.5	
103-65-1	n-Propylbenzene	120.19	3.9	U	3.9	
622-96-8	4-Ethyltoluene	120.20	3.9	U	3.9	
108-67-8	1,3,5-Trimethylbenzene	120.20	3.9	U	3.9	
95-49-8	2-Chlorotoluene	126.59	4.1	U	4.1	
98-06-6	tert-Butylbenzene	134.22	4.4	U	4.4	
95-63-6	1,2,4-Trimethylbenzene	120.20	7.3	D	3.9	
135-98-8	sec-Butylbenzene	134.22	4.4	U	4.4	
99-87-6	4-Isopropyltoluene	134.22	4.4	U	4.4	
541-73-1	1,3-Dichlorobenzene	147.00	4.8	U	4.8	
106-46-7	1,4-Dichlorobenzene	147.00	4.8	U	4.8	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 DL Lab Sample ID: 200-30148-1 DL

Matrix: Air Lab File ID: 16229_12.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 50(mL) Date Analyzed: 10/13/2015 18:12

Soil Aliquot Vol: Dilution Factor: 4

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*4.1*	*U*	*4.1*	
104-51-8	*n-Butylbenzene*	*134.22*	*4.4*	*U*	*4.4*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*4.8*	*U*	*4.8*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*15*	*U*	*15*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*8.5*	*U*	*8.5*	
91-20-3	*Naphthalene*	*128.17*	*10*	*U*	*10*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-1 DL Lab Sample ID: 200-30148-1 DL

Matrix: Air Lab File ID: 16229_12.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:27

Sample wt/vol: 50(mL) Date Analyzed: 10/13/2015 18:12

Soil Aliquot Vol: Dilution Factor: 4

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 2 TIC Result Total: 29

CAS NO.	COMPOUND NAME	RT	RESULT	Q
115-07-1	Propene	3.10	19	D J N
541-05-9	Cyclotrisiloxane, hexamethyl-	16.09	10	D J N

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D
Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1
Client ID: SV-1
Sample Type: Client
Inject. Date: 13-Oct-2015 18:12:30 ALS Bottle#: 9 Worklist Smp#: 12
Purge Vol: 200.000 mL Dil. Factor: 4.0000
Sample Info: 200-0016229-012
Misc. Info.: 30148-1
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 07:43:32 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 07:43:32

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85	3.172	3.177	-0.005	99	42345	1.39	
3 Chlorodifluoromethane	51		3.231				ND	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.440	3.445	-0.005	96	9296	0.2991	
5 Chloromethane	50		3.579				ND	
6 Butane	43	3.771	3.777	-0.006	96	46996	3.33	
7 Vinyl chloride	62		3.819				ND	
8 Butadiene	54	3.889	3.894	-0.005	92	5011	0.6430	
9 Bromomethane	94		4.563				ND	
10 Chloroethane	64		4.793				ND	
12 Vinyl bromide	106		5.167				ND	
13 Trichlorofluoromethane	101	5.253	5.264	-0.011	94	2353	0.0698	
18 1,1,2-Trichloro-1,2,2-trif	101		6.307				ND	
20 1,1-Dichloroethene	96		6.355				ND	
21 Acetone	43	6.623	6.623	0.000	88	377708	27.5	
22 Carbon disulfide	76	6.735	6.751	-0.016	97	3526	0.1100	
23 Isopropyl alcohol	45		6.949				ND	
24 3-Chloro-1-propene	41		7.125				ND	
26 Methylene Chloride	49	7.425	7.414	0.011	84	1727	0.1491	
28 2-Methyl-2-propanol	59	7.826	7.735	0.091	99	32243	1.54	
29 Methyl tert-butyl ether	73		7.837				ND	
30 trans-1,2-Dichloroethene	61		7.842				ND	
32 Hexane	57	8.212	8.211	0.001	90	4897	0.2846	
33 1,1-Dichloroethane	63		8.714				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.956	9.881	0.075	98	9823	1.35	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.282	10.287	-0.005	75	157175	10.0	
39 Tetrahydrofuran	42		10.314				ND	
41 Chloroform	83		10.416				ND	
42 Cyclohexane	84		10.656				ND	
43 1,1,1-Trichloroethane	97		10.694				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
44 Carbon tetrachloride	117		10.934				ND	
45 Isooctane	57	11.389	11.373	0.016	92	3106	0.0428	
46 Benzene	78	11.411	11.416	-0.005	62	10913	0.2155	
47 1,2-Dichloroethane	62		11.609				ND	
48 n-Heptane	43	11.758	11.764	-0.006	87	9140	0.3741	
* 50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	92	867214	10.0	
52 Trichloroethene	95		12.748				ND	
53 1,2-Dichloropropane	63		13.336				ND	
54 Methyl methacrylate	69	13.535	13.502	0.032	37	1415	0.0738	
55 1,4-Dioxane	88		13.588				ND	
57 Dichlorobromomethane	83		13.909				ND	
58 cis-1,3-Dichloropropene	75		14.872				ND	
61 4-Methyl-2-pentanone (MIBK	43	15.246	15.198	0.048	82	27466	0.8298	
62 Toluene	92	15.471	15.482	-0.011	93	47903	1.09	
67 trans-1,3-Dichloropropene	75		16.097				ND	
68 1,1,2-Trichloroethane	83		16.487				ND	
69 Tetrachloroethene	166	16.589	16.584	0.005	77	826	0.0189	
70 2-Hexanone	43	16.985	16.958	0.027	92	11604	0.3565	
71 Chlorodibromomethane	129		17.269				ND	
72 Ethylene Dibromide	107		17.547				ND	
* 73 Chlorobenzene-d5	117	18.446	18.451	-0.005	82	860937	10.0	
74 Chlorobenzene	112		18.510				ND	
75 Ethylbenzene	91	18.654	18.654	0.000	97	33214	0.3514	
77 m-Xylene & p-Xylene	106	18.900	18.906	-0.006	99	45656	1.15	
78 o-Xylene	106	19.719	19.719	0.000	94	16220	0.4118	
79 Styrene	104	19.767	19.772	-0.005	95	10088	0.1641	
S 80 Xylenes, Total	106				0		1.56	
81 Bromoform	173		20.179				ND	
82 Isopropylbenzene	105	20.350	20.355	-0.005	95	5005	0.0445	
85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
86 N-Propylbenzene	91	21.035	21.040	-0.005	99	11431	0.0873	
89 4-Ethyltoluene	105	21.211	21.217	-0.006	63	14595	0.1285	
90 2-Chlorotoluene	91		21.238				ND	
91 1,3,5-Trimethylbenzene	105	21.313	21.318	-0.005	94	11404	0.1217	
93 tert-Butylbenzene	119		21.789				ND	
94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	34760	0.3699	
95 sec-Butylbenzene	105		22.105				ND	
96 4-Isopropyltoluene	119	22.297	22.297	0.000	98	12117	0.1007	
97 1,3-Dichlorobenzene	146		22.345				ND	
98 1,4-Dichlorobenzene	146		22.484				ND	
99 Benzyl chloride	91		22.688				ND	
101 n-Butylbenzene	91		22.886				ND	
102 1,2-Dichlorobenzene	146		23.041				ND	
104 1,2,4-Trichlorobenzene	180		25.673				ND	
105 Hexachlorobutadiene	225		25.855				ND	
106 Naphthalene	128	26.197	26.197	0.000	98	9016	0.0745	

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Sample Type:	Client				
Inject. Date:	13-Oct-2015 18:12:30	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Sample Info:	200-0016229-012				
Misc. Info.:	30148-1				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	14-Oct-2015 07:43:32	Calib Date:	17-Aug-2015 23:52:30		
Tic RT Window:	0.000 -0.000	Response:	area		
Quant By:	Nearest ISTD	Quant LOD:	10.00000		
MS Library:	\\ChromNA\Burlington\Database\NIST14.L				
Min. Match:	1				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK013				
First Level Reviewer: desjardinsb		Date:	14-Oct-2015 07:43:32		

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
115-07-1 Propene								
3.103	400305	4.72	40	86	57	C3H6	42	
541-05-9 Cyclotrisiloxane, hexamethyl-								
16.086	537042	2.50	73	91	85994	C6H18O3Si3	222	

Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 40 Chlorobromomethane	10.282	848403	10.0
* 73 Chlorobenzene-d5	18.446	2151466	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

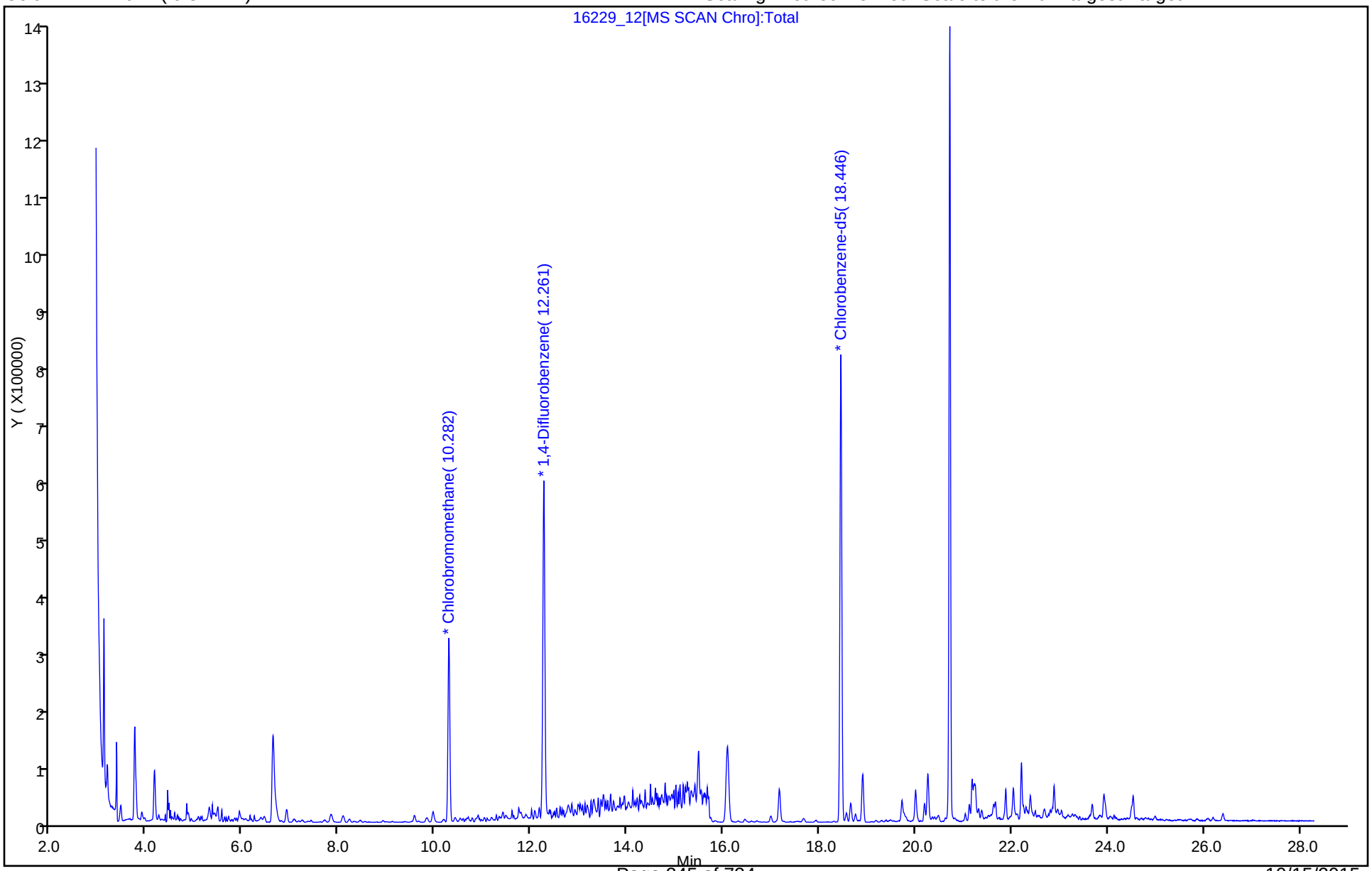
Report Date: 14-Oct-2015 07:43:32 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D

Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1	Worklist Smp#:	12
Client ID:	SV-1				
Purge Vol:	200.000 mL	Dil. Factor:	4.0000	ALS Bottle#:	9
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Burlington

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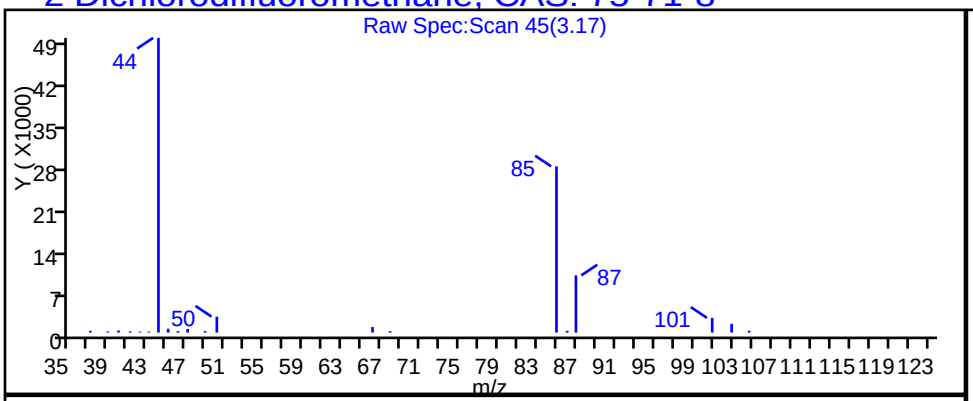
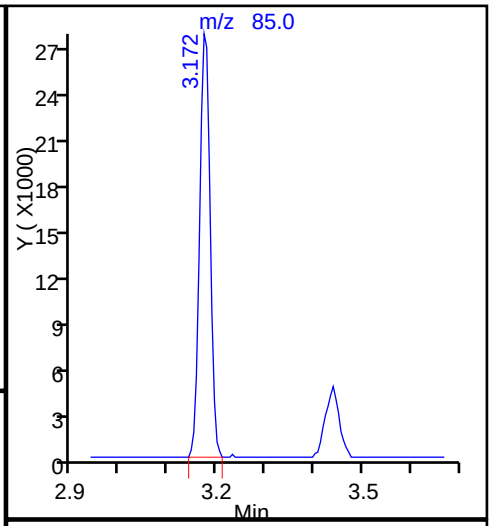
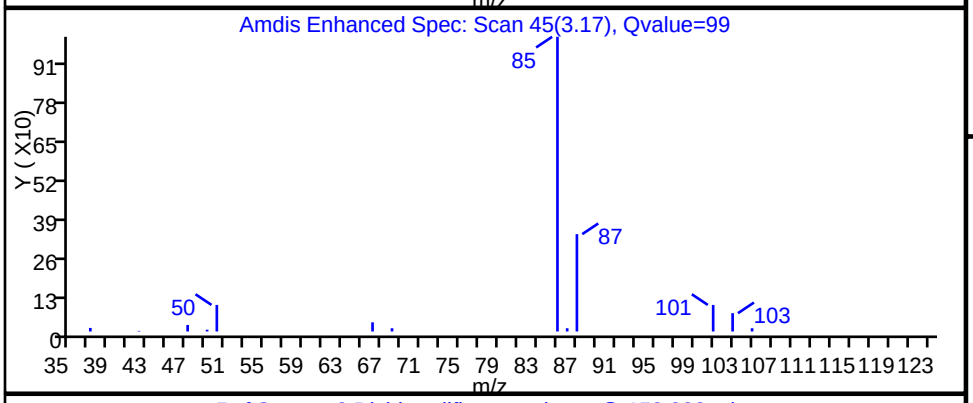
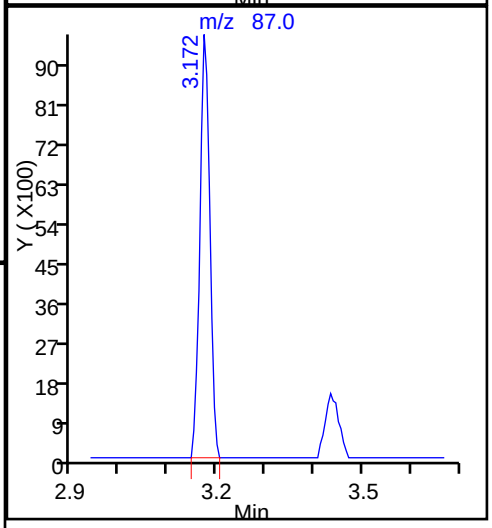
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

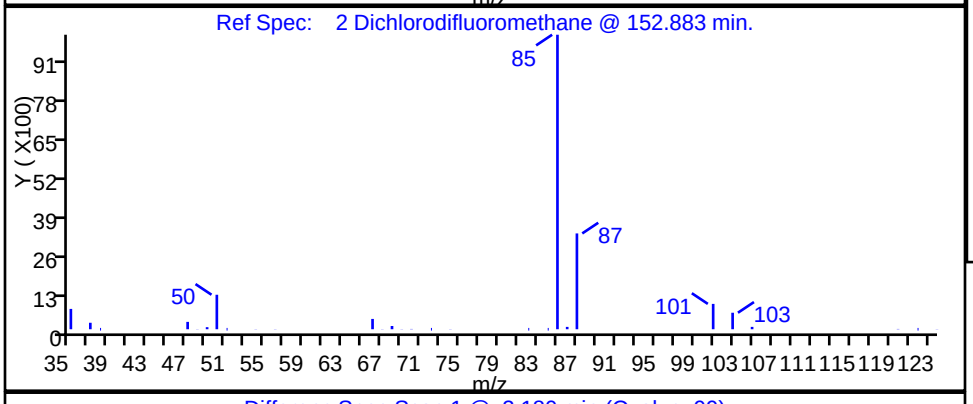
2 Dichlorodifluoromethane, CAS: 75-71-8

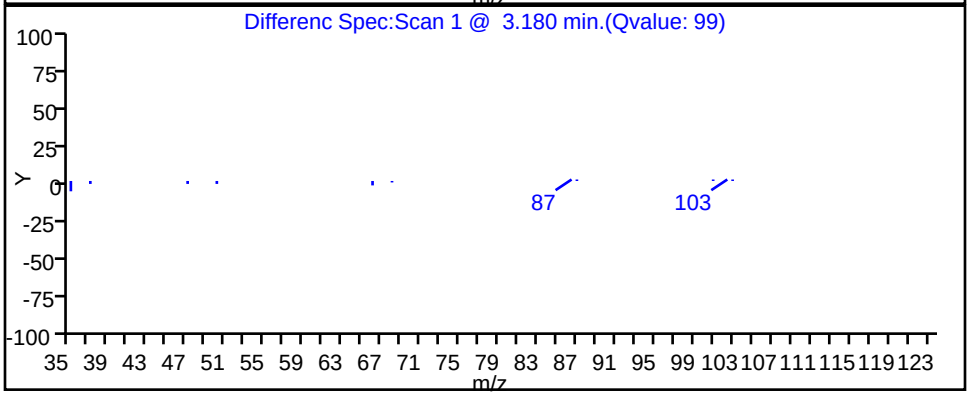








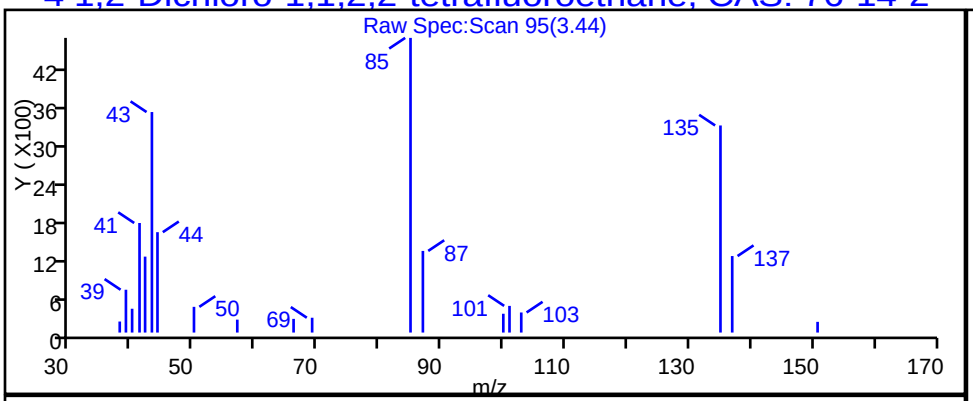


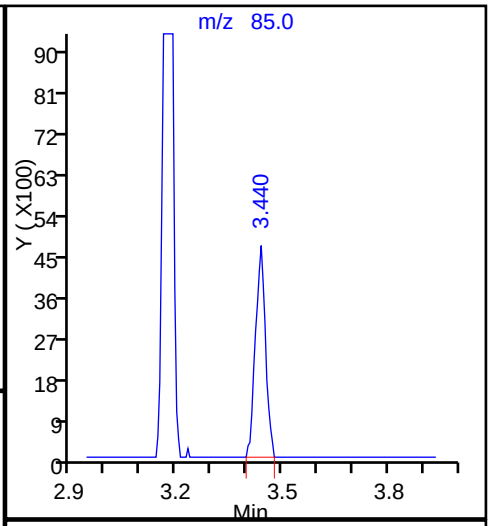


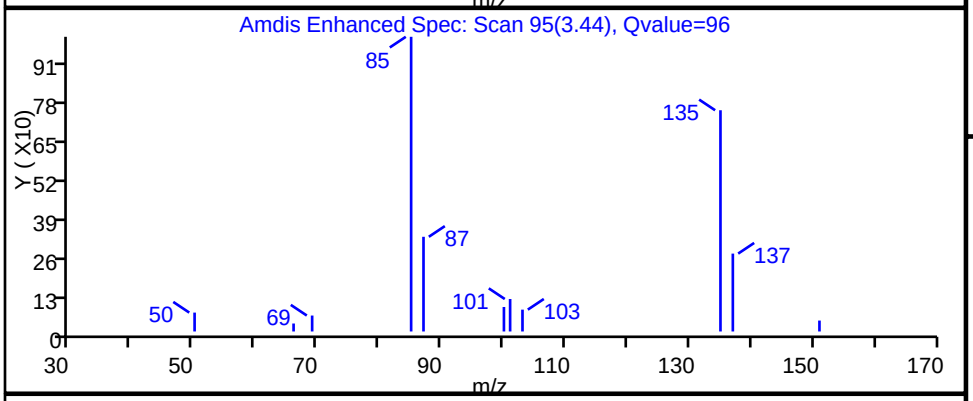
TestAmerica Burlington

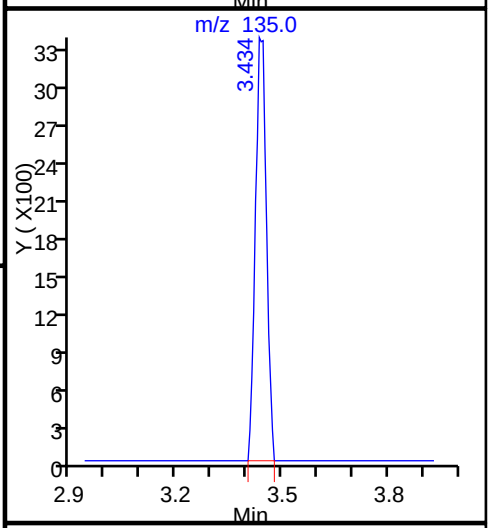
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

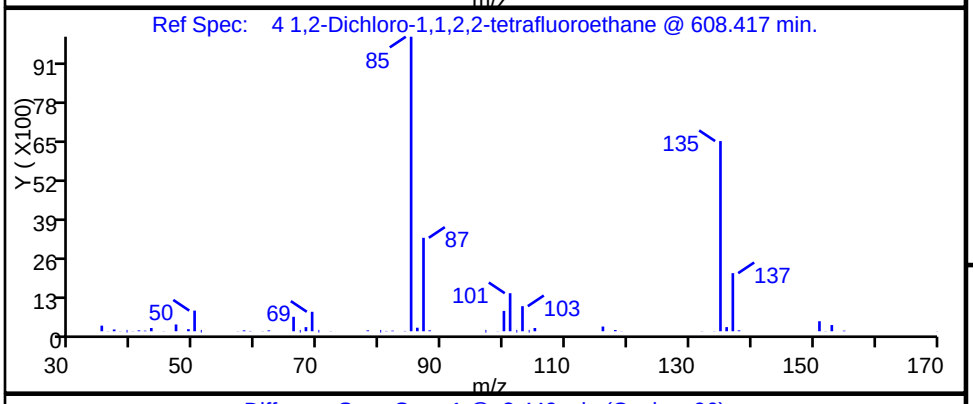
4 1,2-Dichloro-1,1,2,2-tetrafluoroethane, CAS: 76-14-2

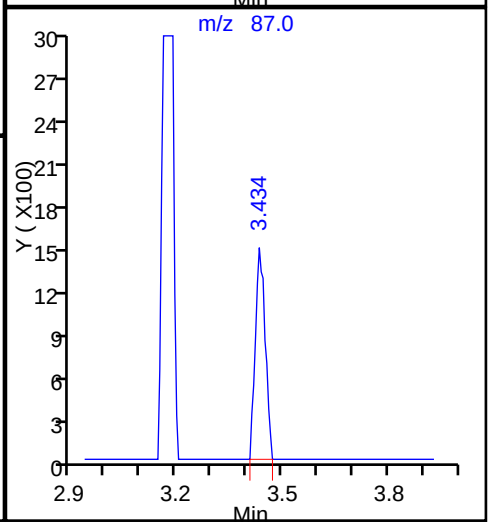


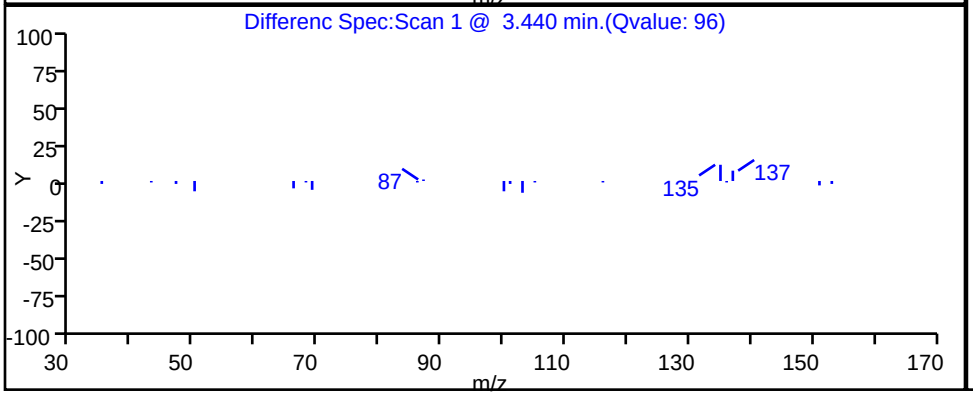








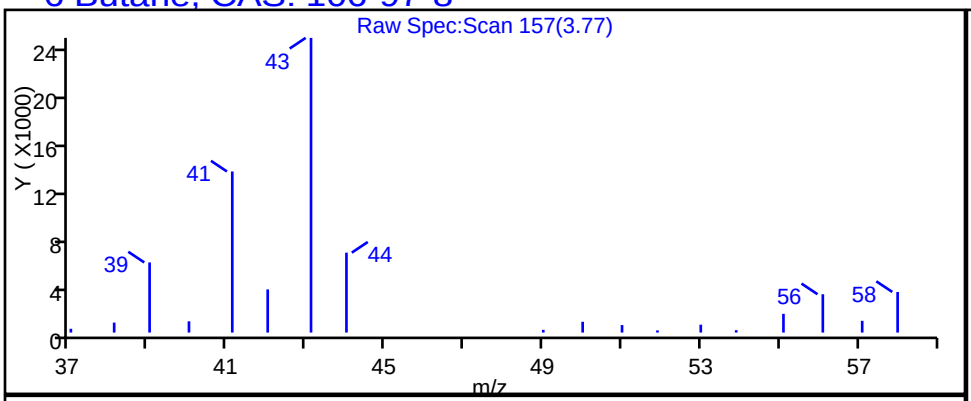


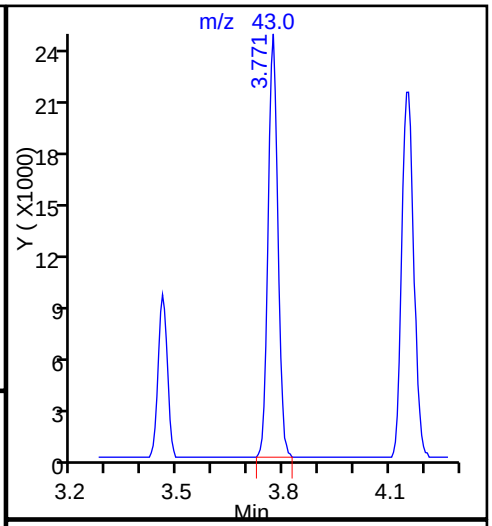


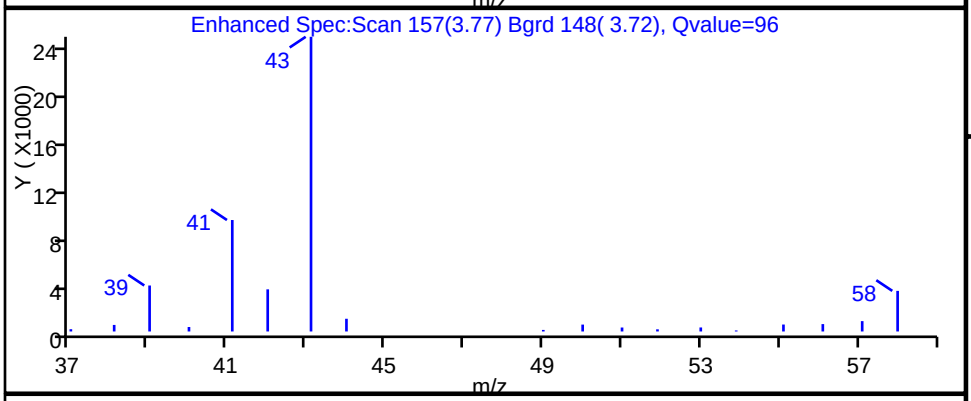
TestAmerica Burlington

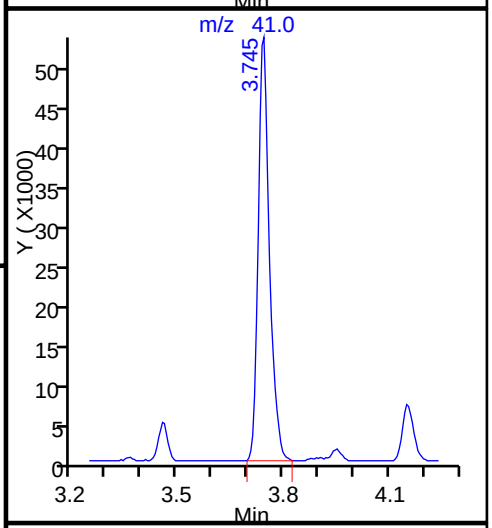
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D		
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1
Client ID:	SV-1		
Operator ID:	wrd	ALS Bottle#:	9 Worklist Smp#: 12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN

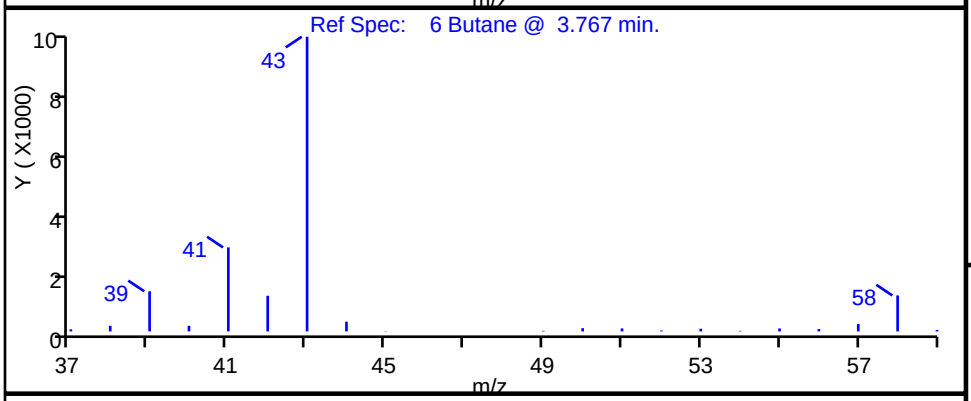
6 Butane, CAS: 106-97-8

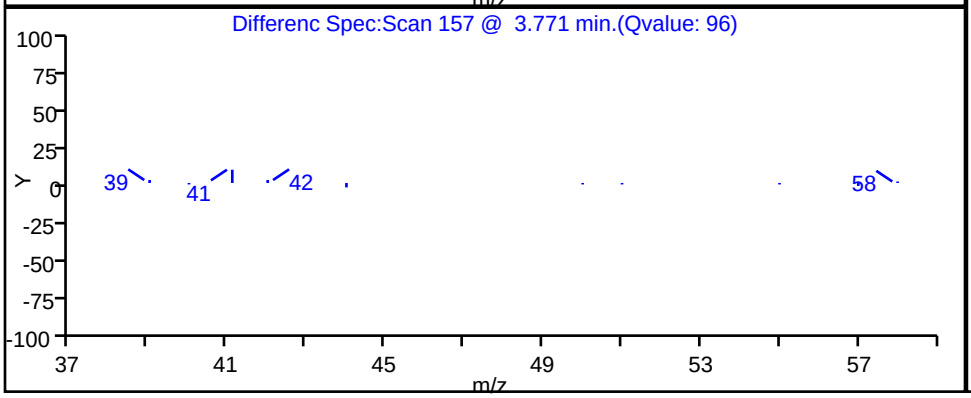


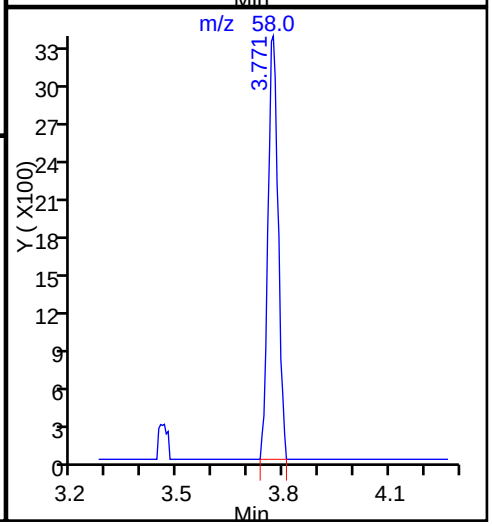








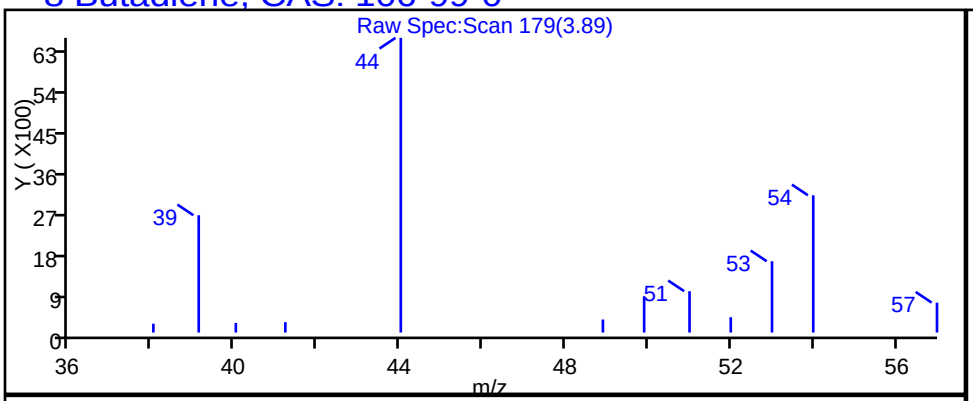


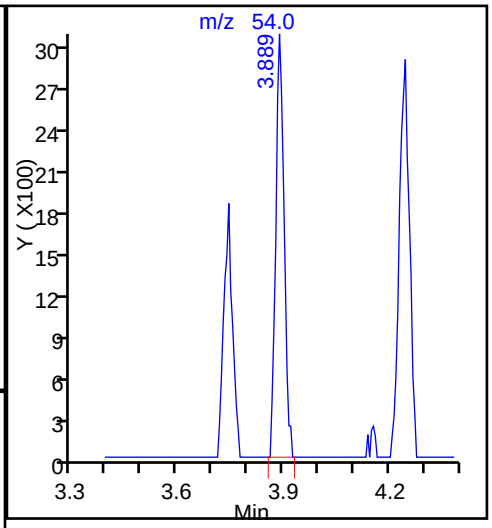


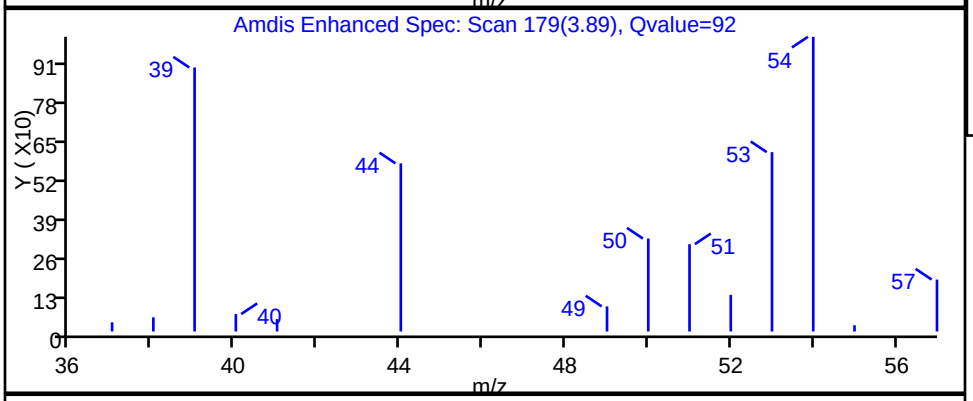
TestAmerica Burlington

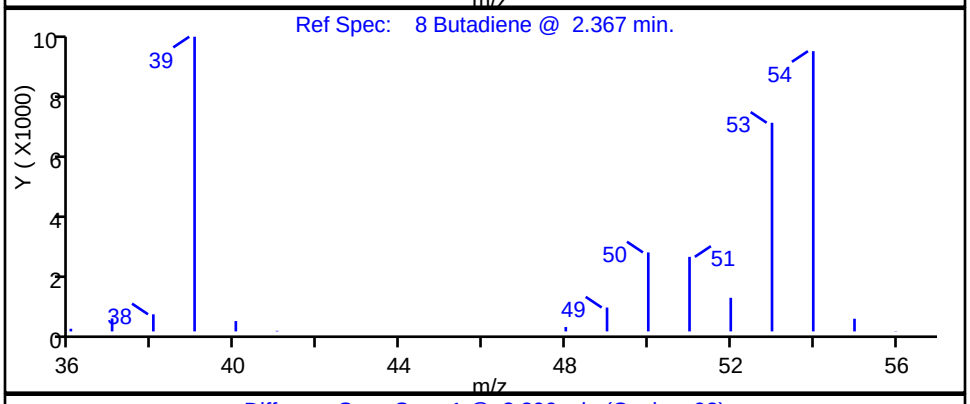
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

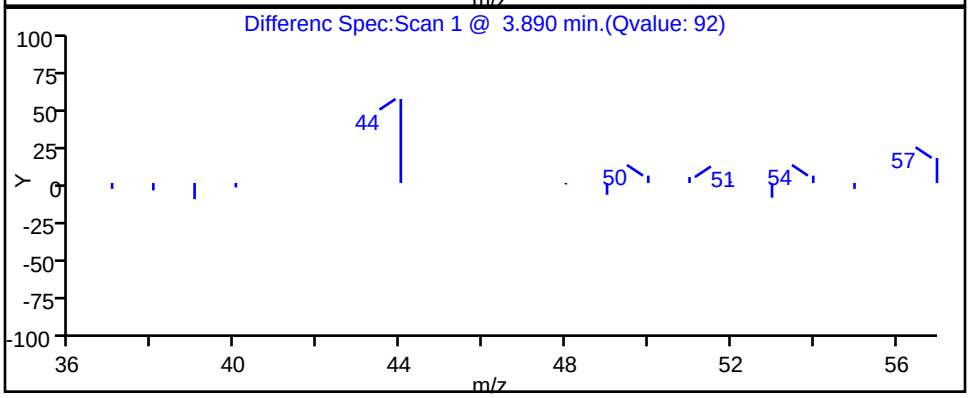
8 Butadiene, CAS: 106-99-0







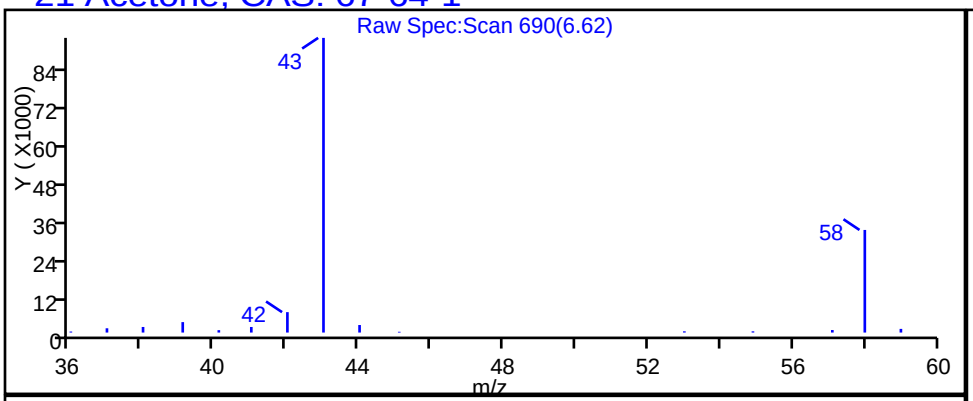


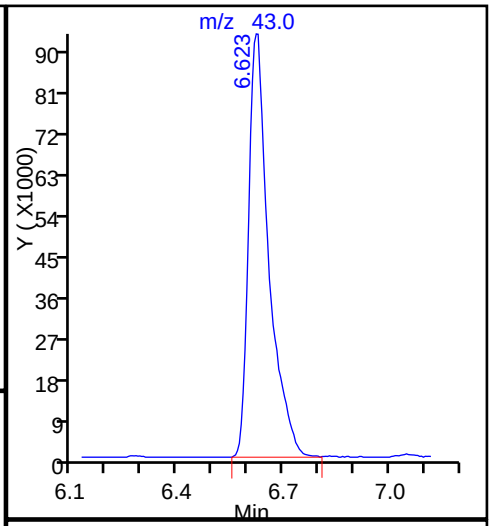


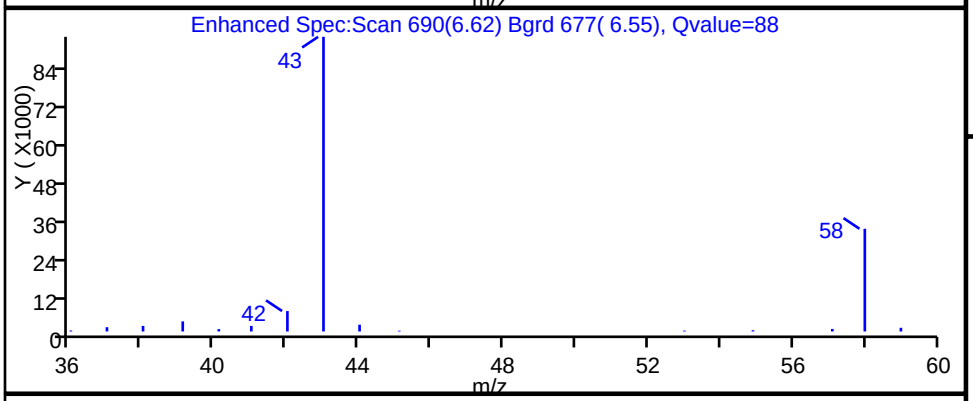
TestAmerica Burlington

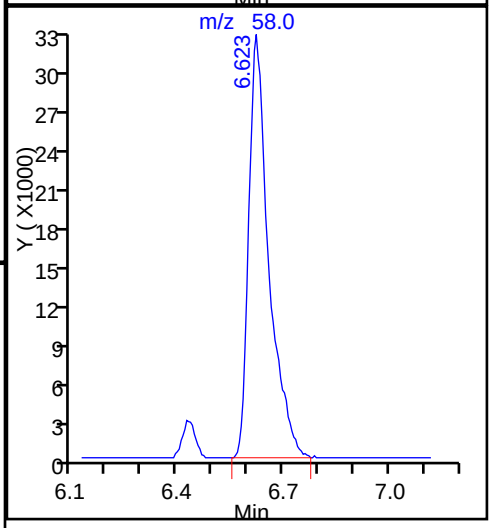
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

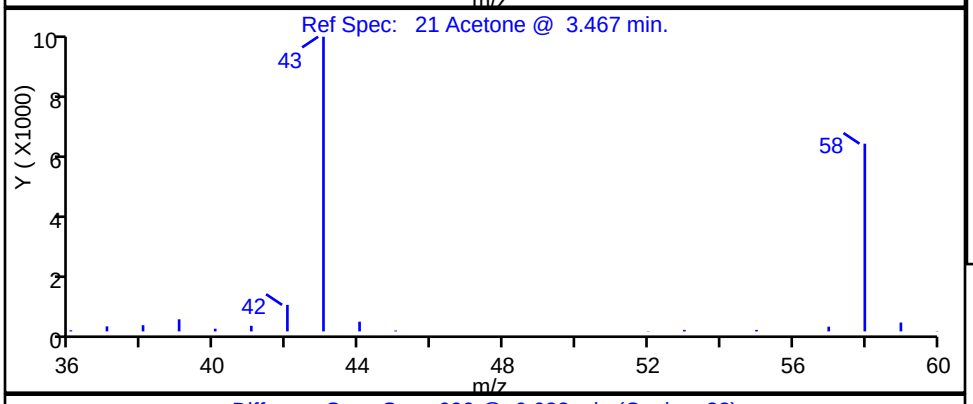
21 Acetone, CAS: 67-64-1

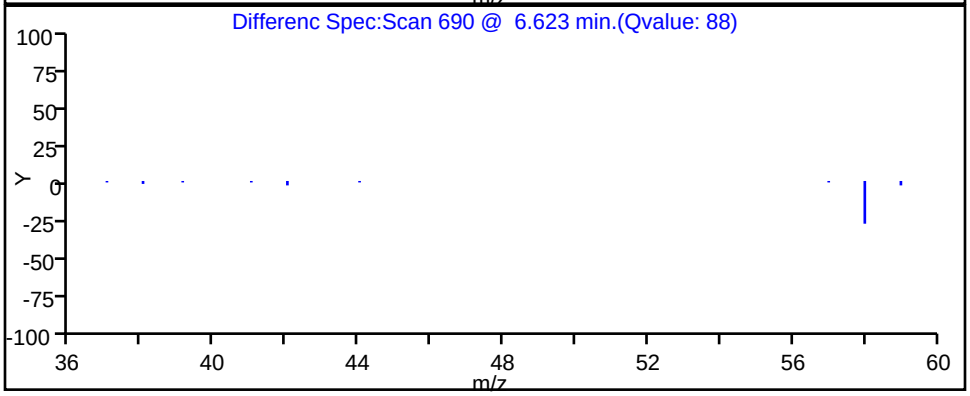








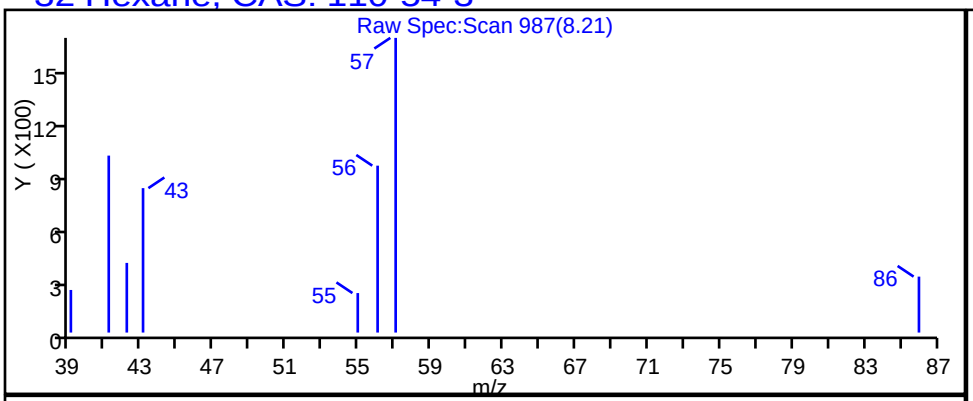


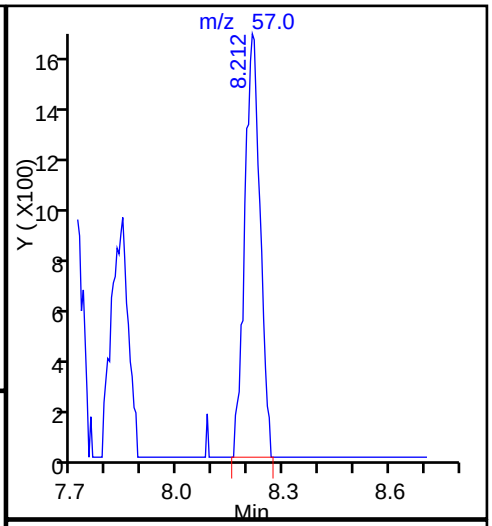


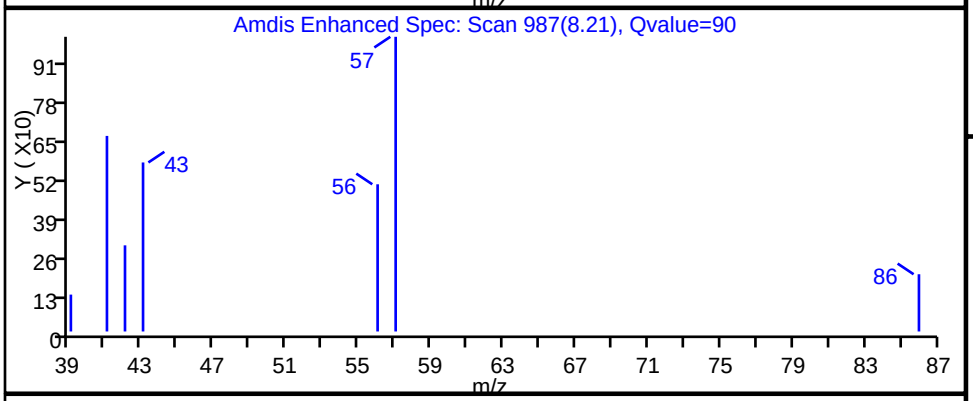
TestAmerica Burlington

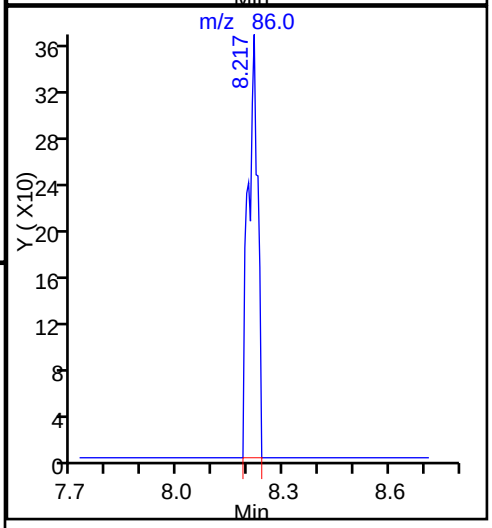
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

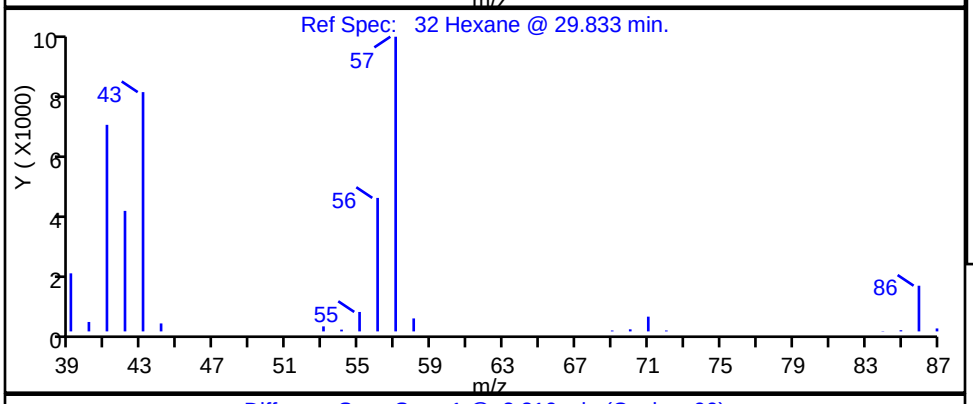
32 Hexane, CAS: 110-54-3

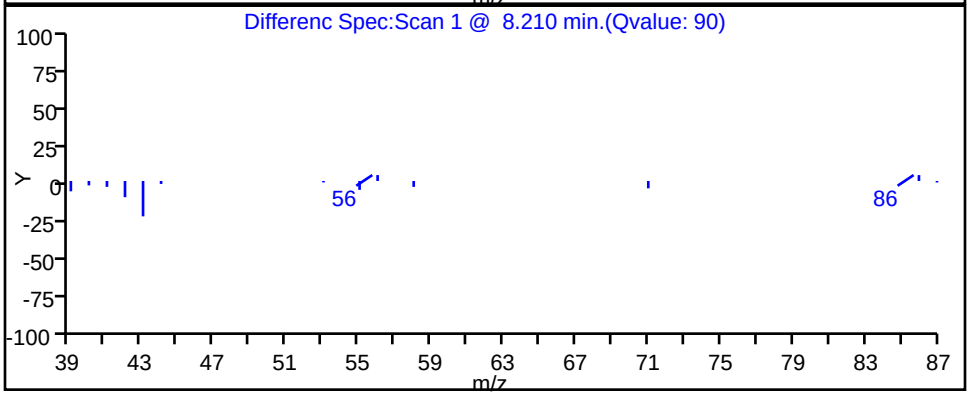








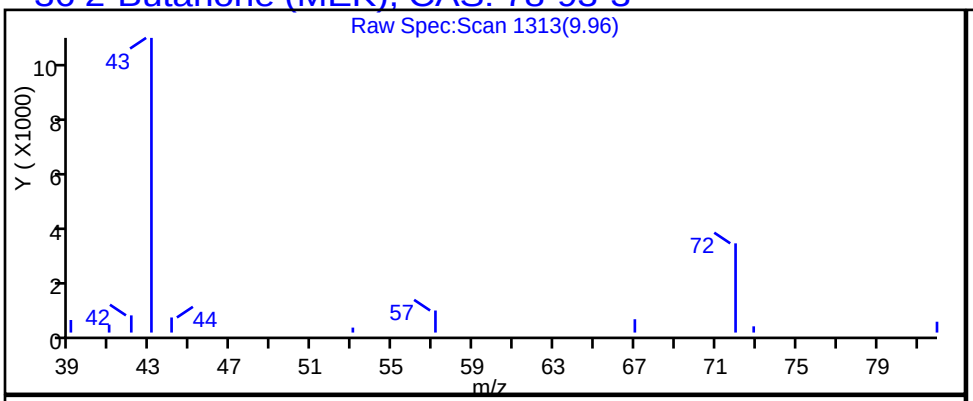


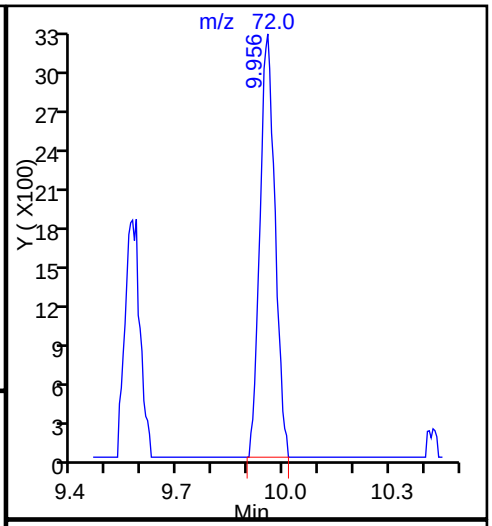


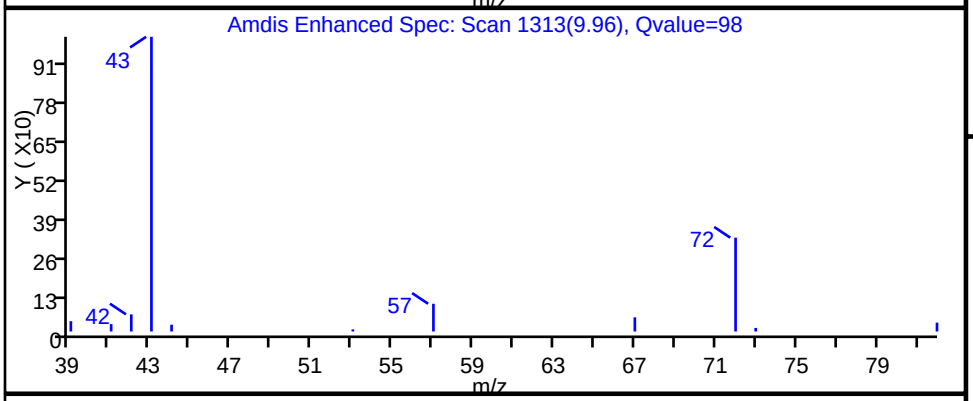
TestAmerica Burlington

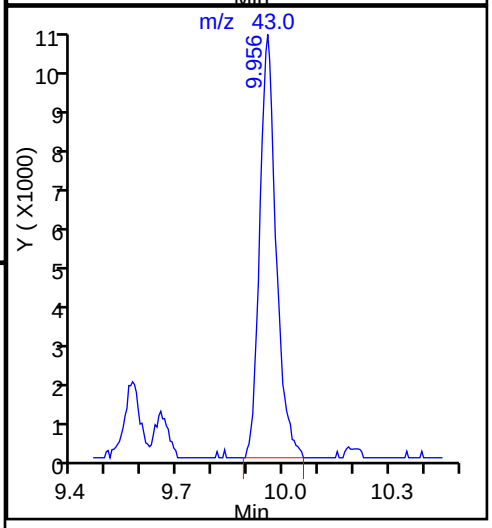
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

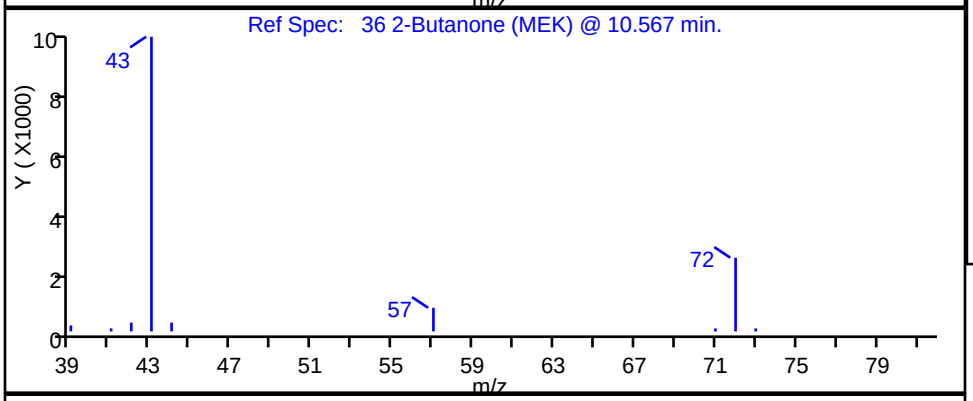
36 2-Butanone (MEK), CAS: 78-93-3

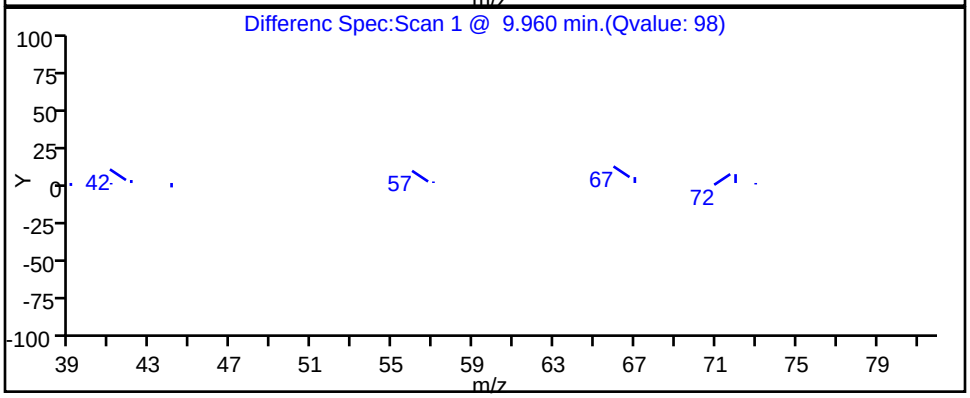








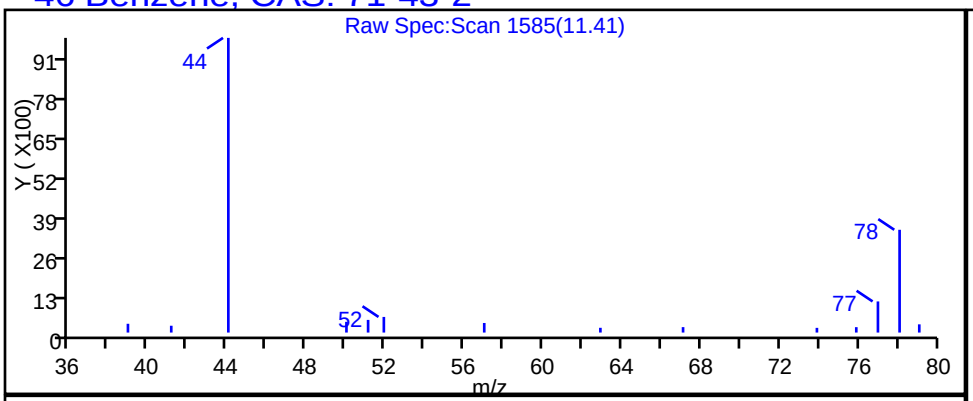


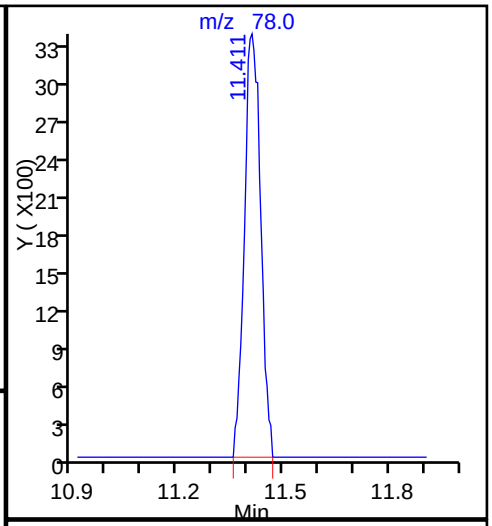


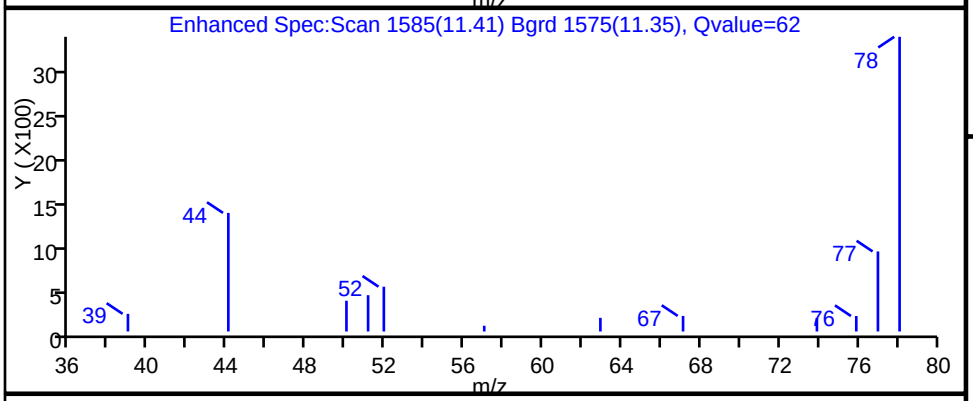
TestAmerica Burlington

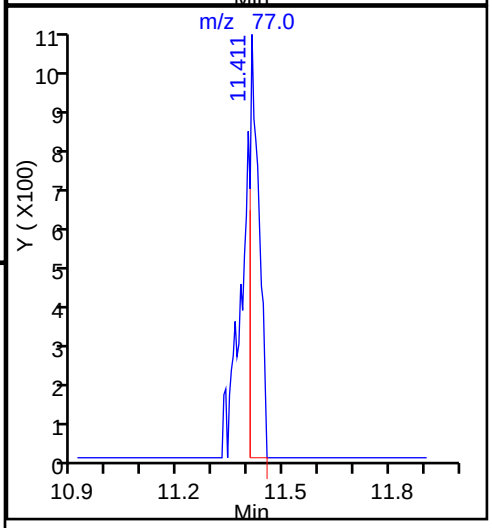
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

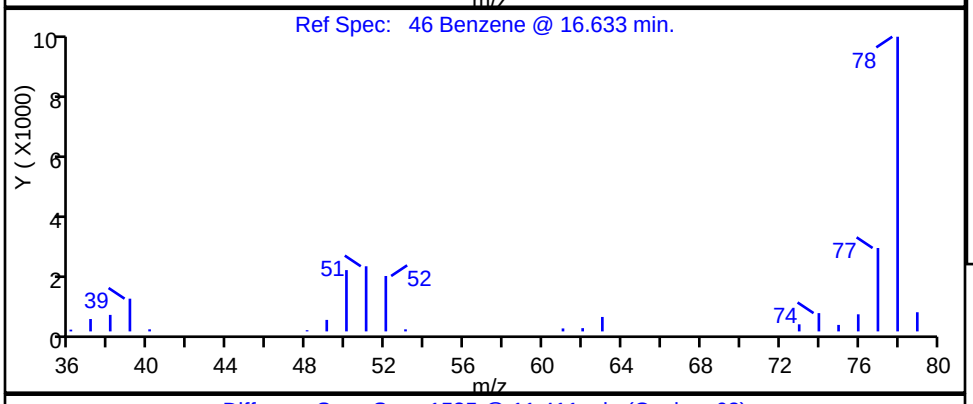
46 Benzene, CAS: 71-43-2

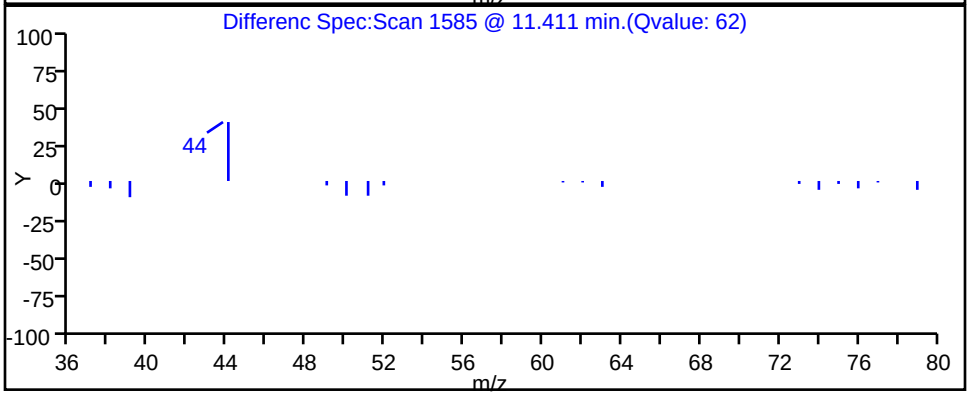








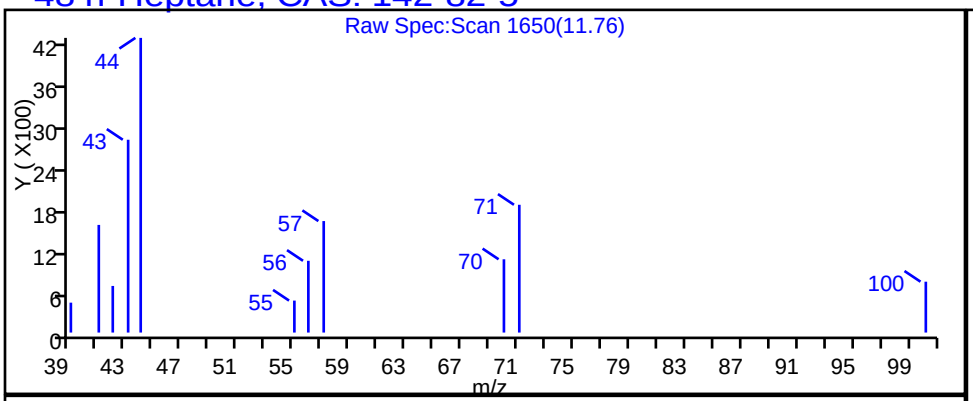


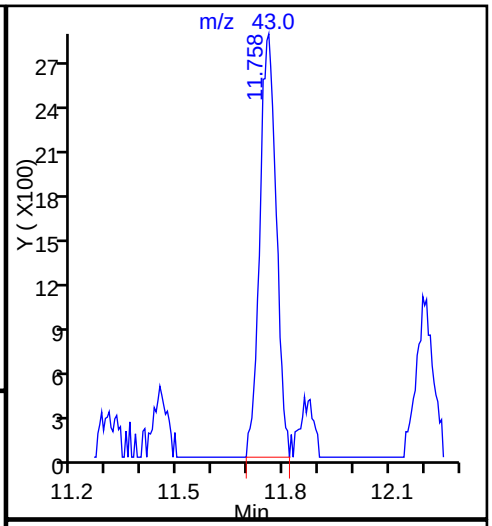


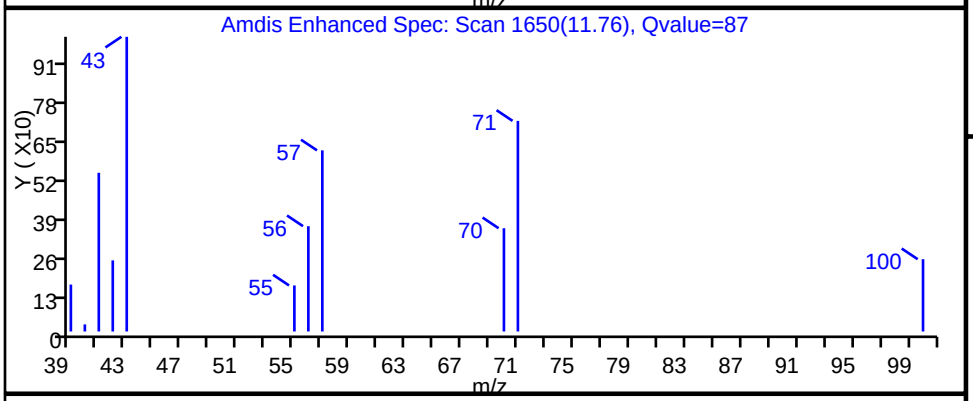
TestAmerica Burlington

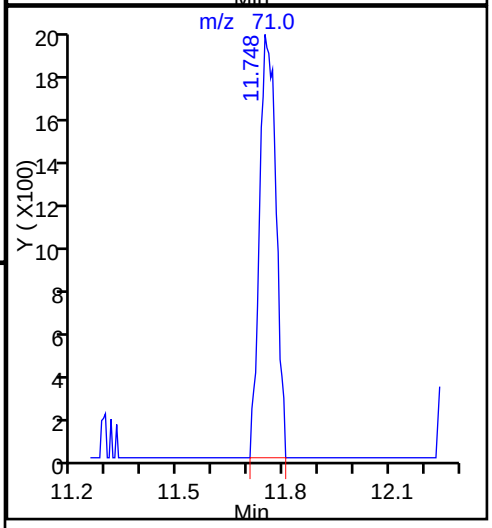
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

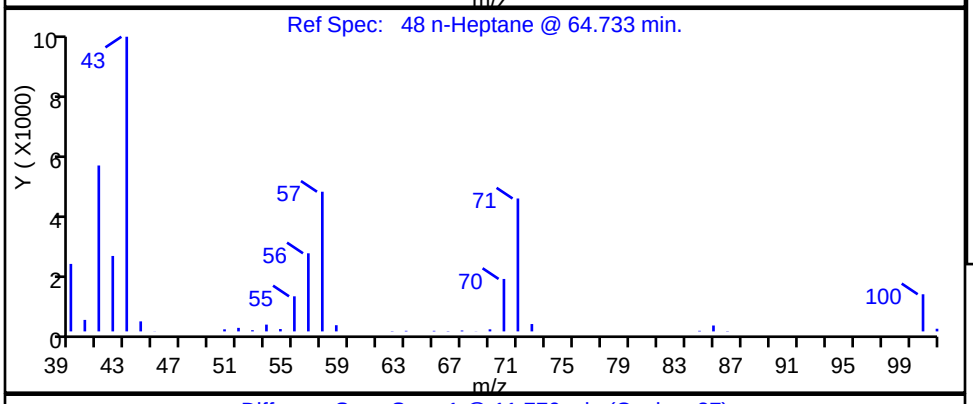
48 n-Heptane, CAS: 142-82-5

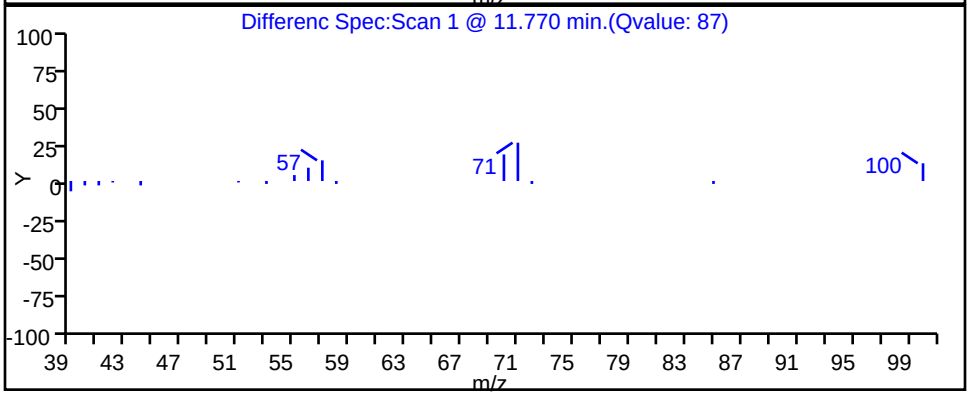








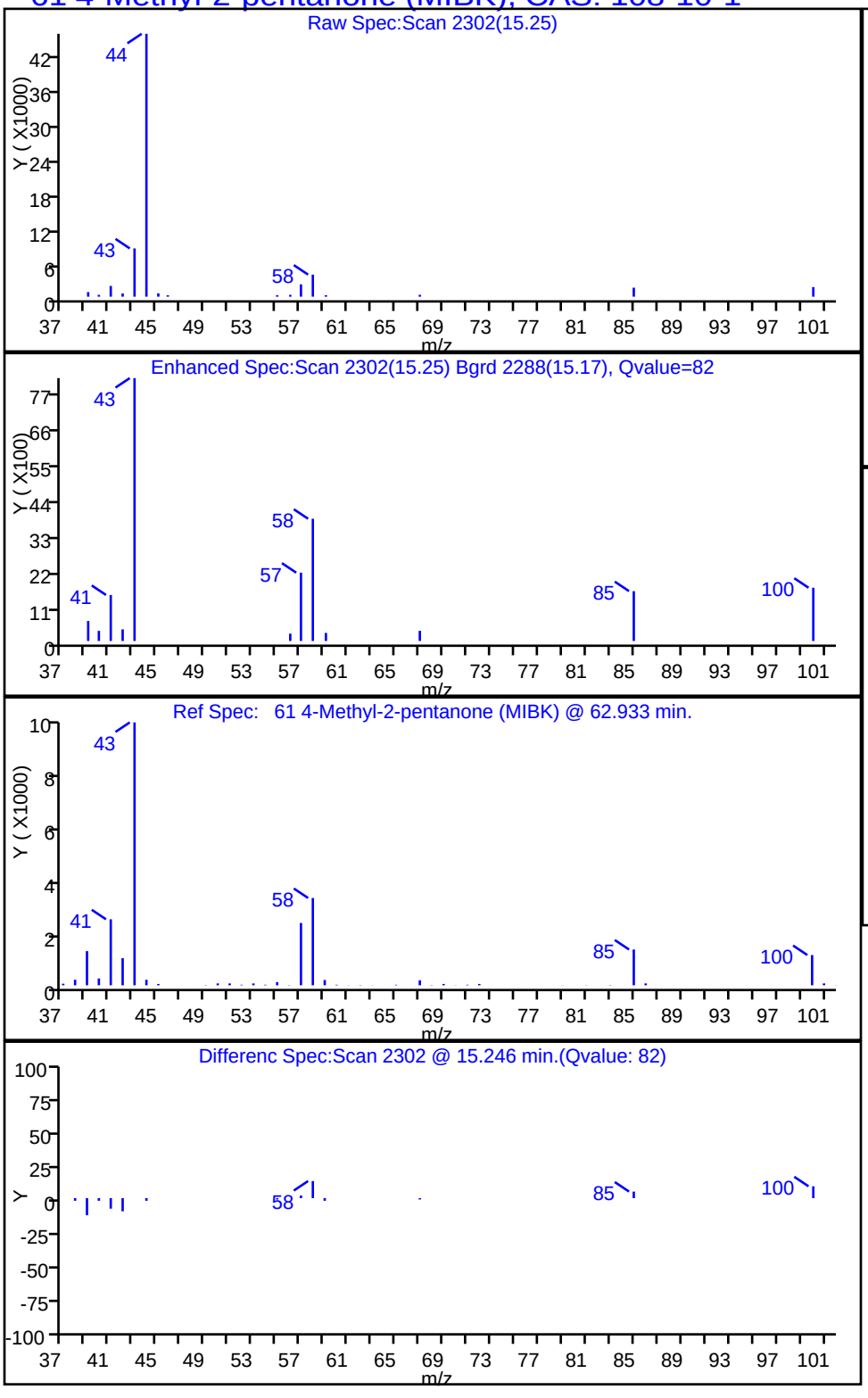


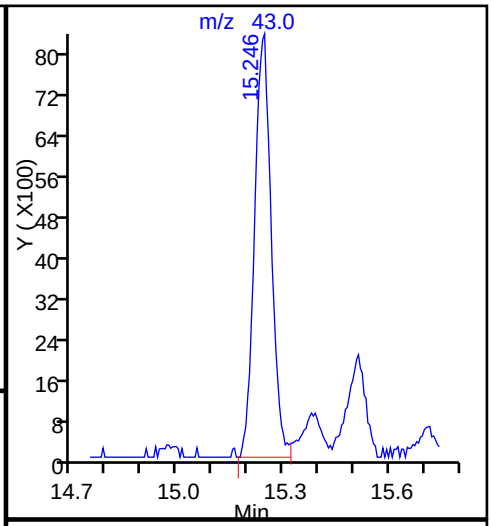


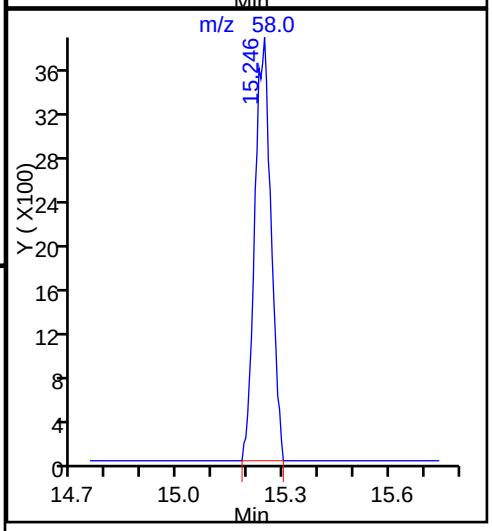
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

61 4-Methyl-2-pentanone (MIBK), CAS: 108-10-1



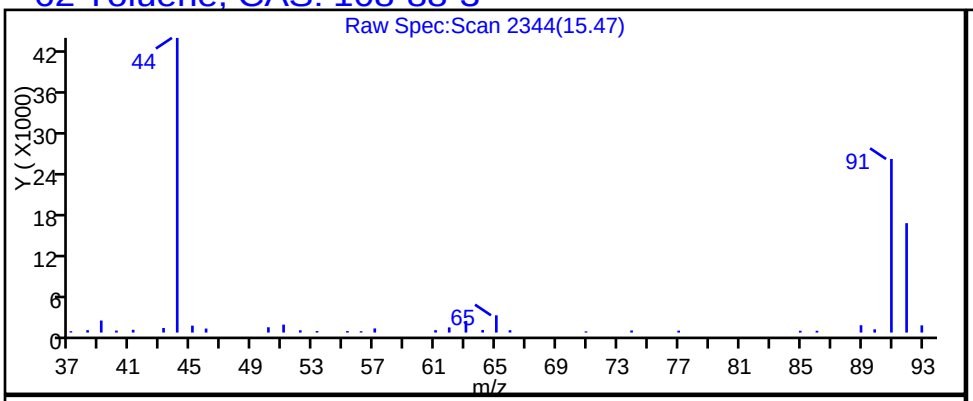


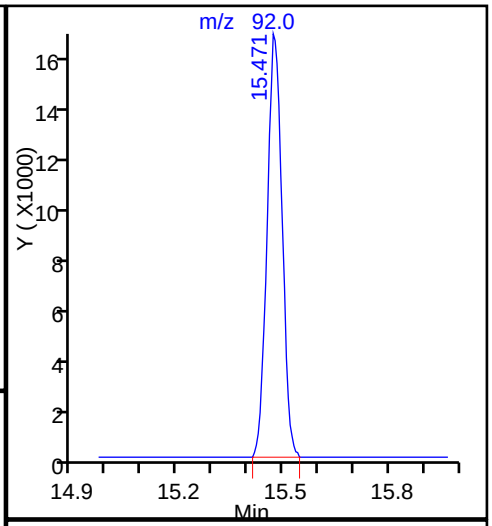


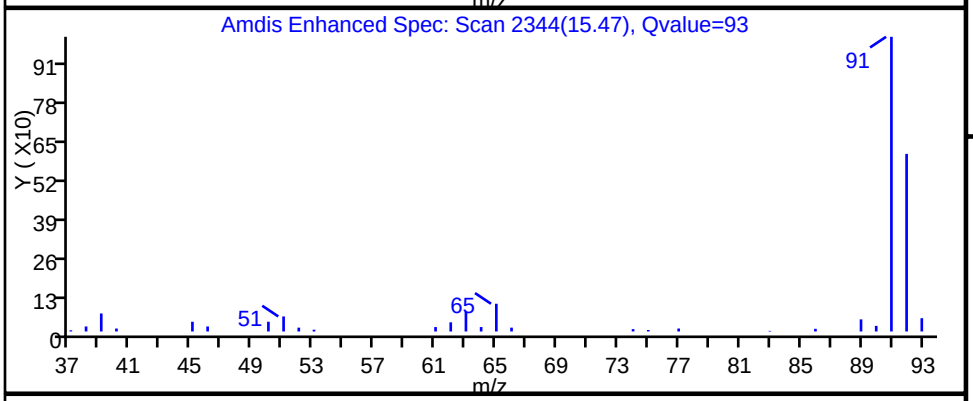
TestAmerica Burlington

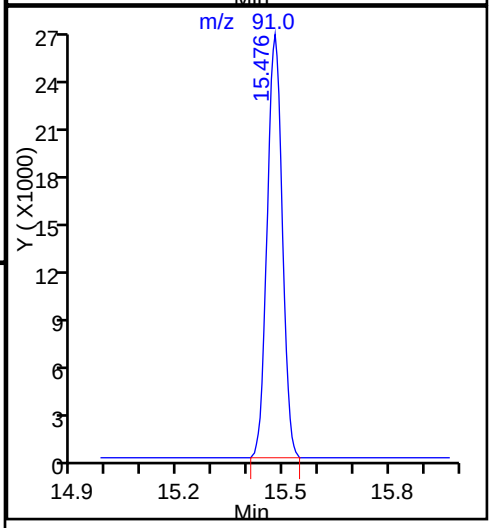
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

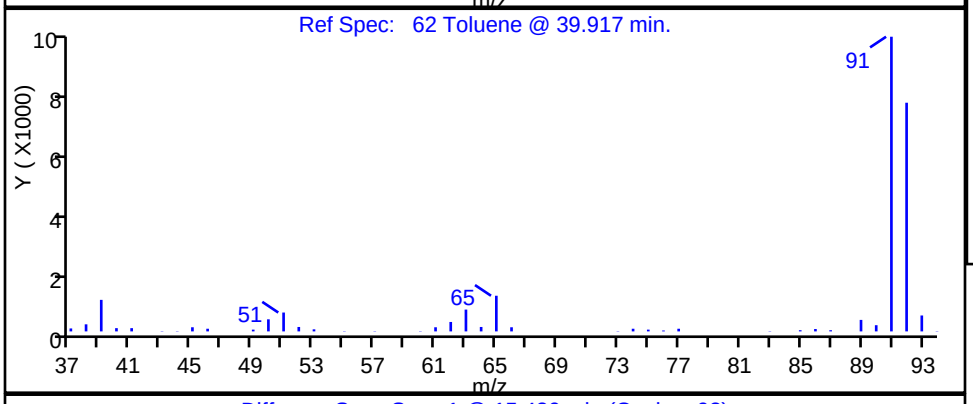
62 Toluene, CAS: 108-88-3

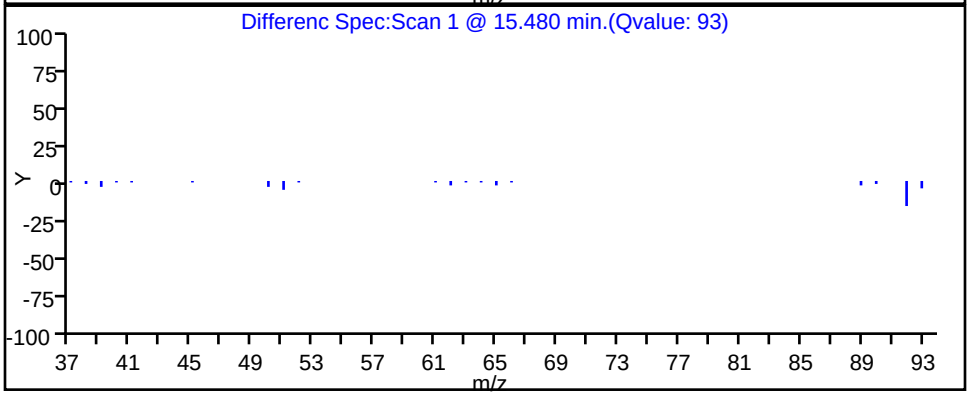








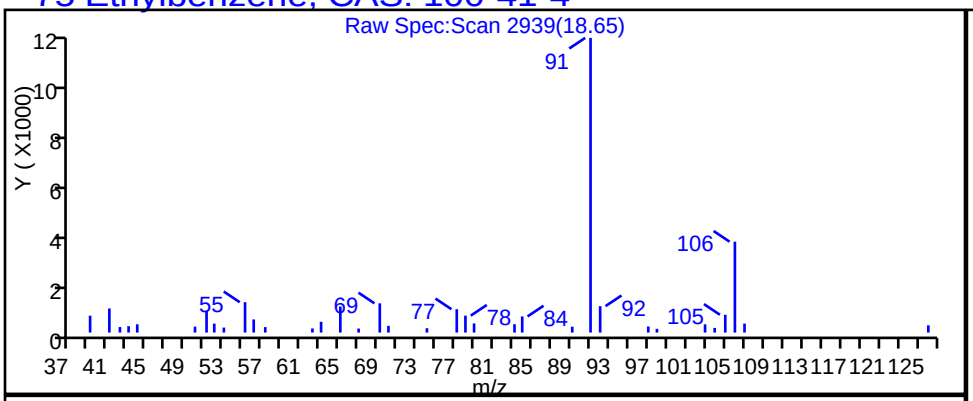


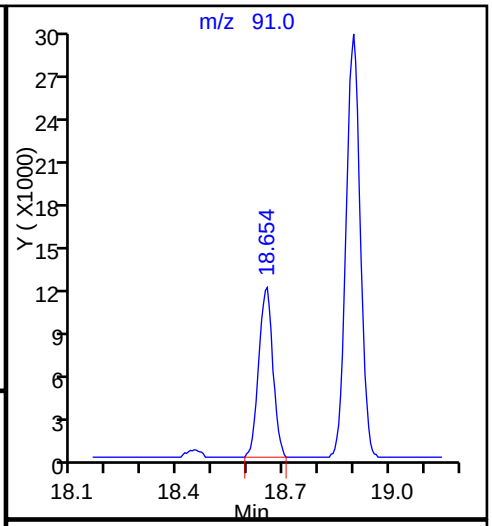


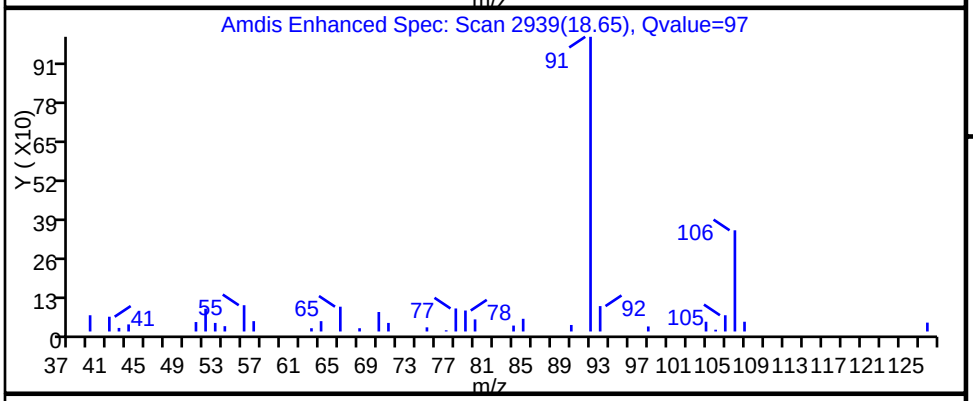
TestAmerica Burlington

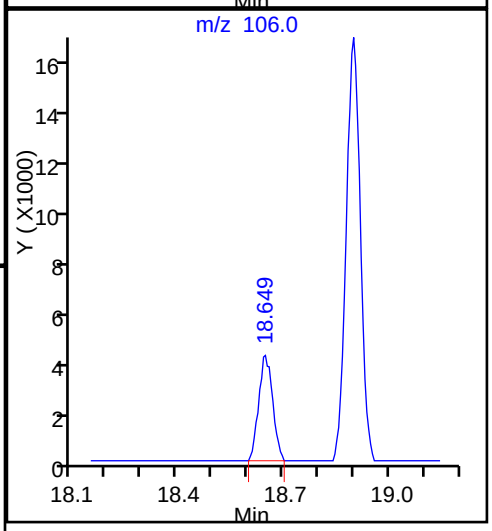
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

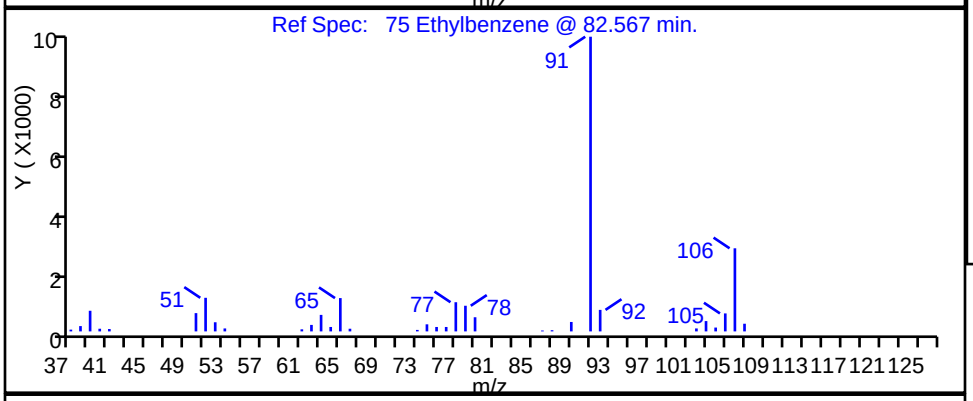
75 Ethylbenzene, CAS: 100-41-4

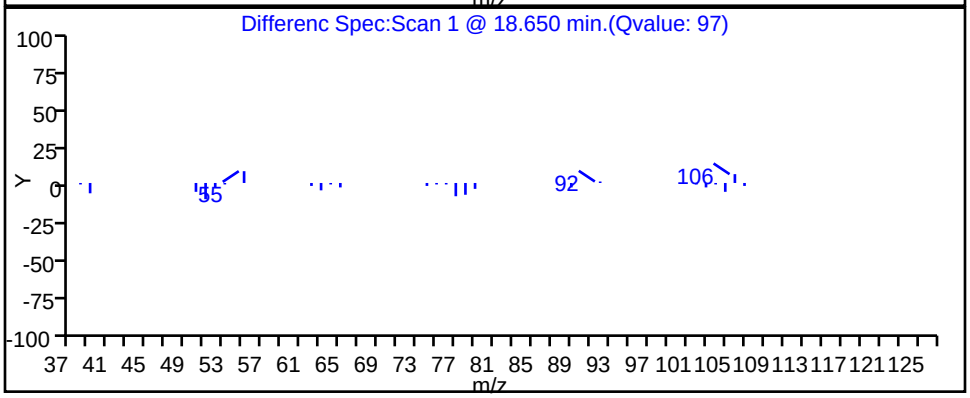








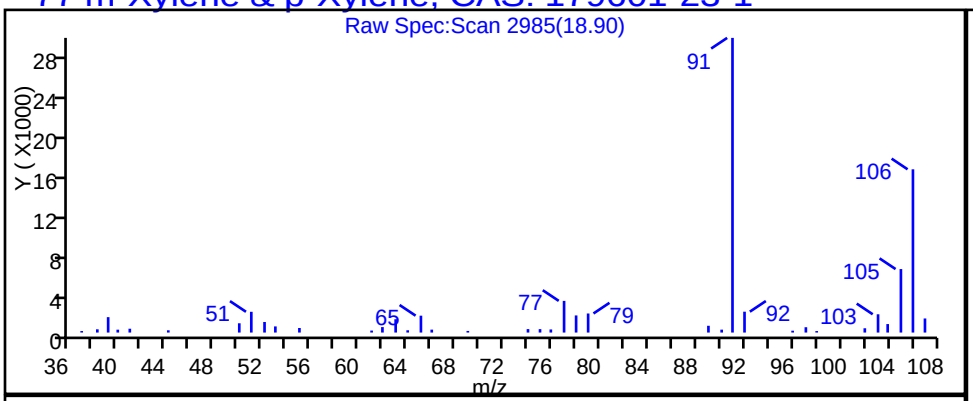


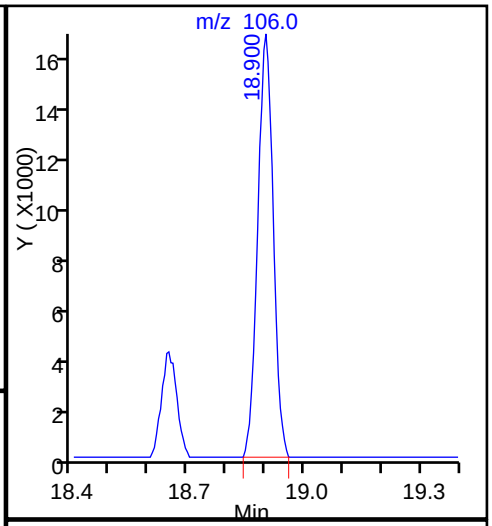


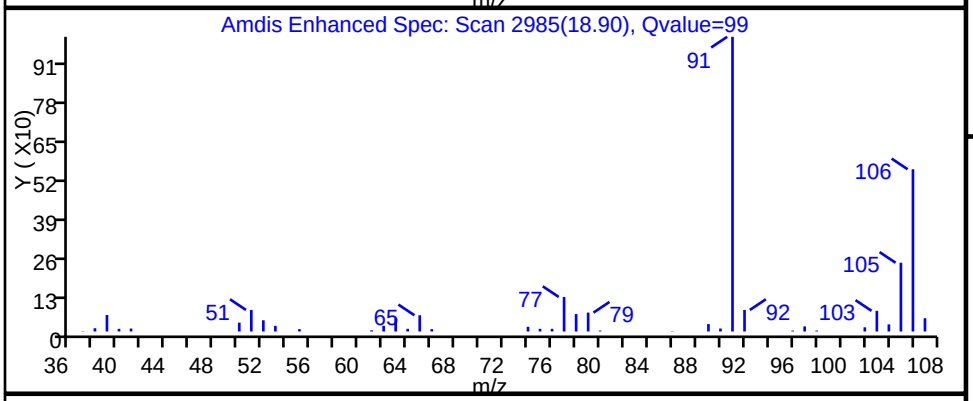
TestAmerica Burlington

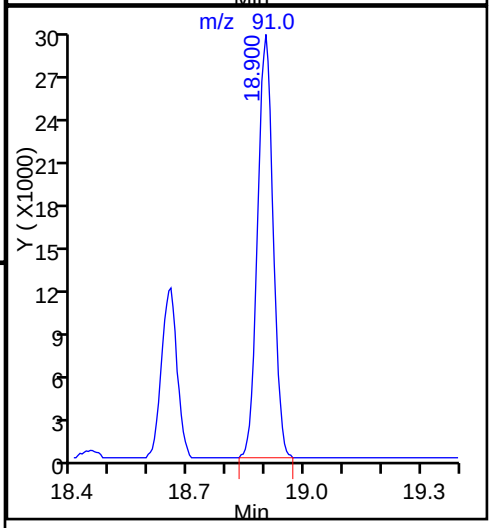
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

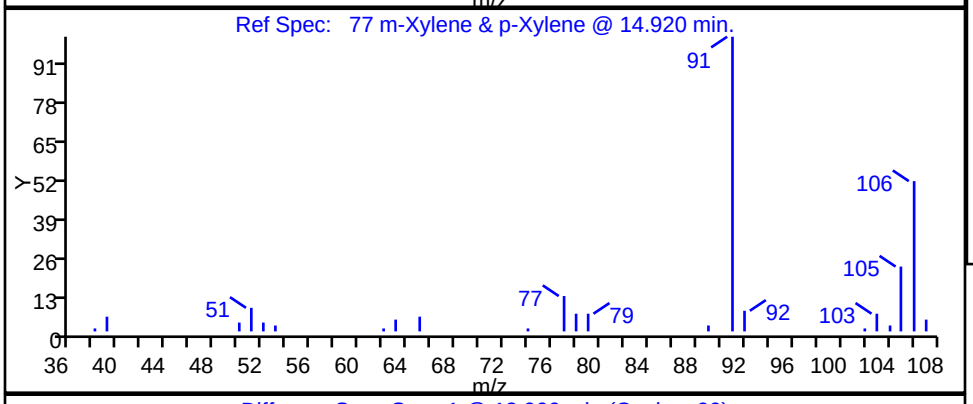
77 m-Xylene & p-Xylene, CAS: 179601-23-1

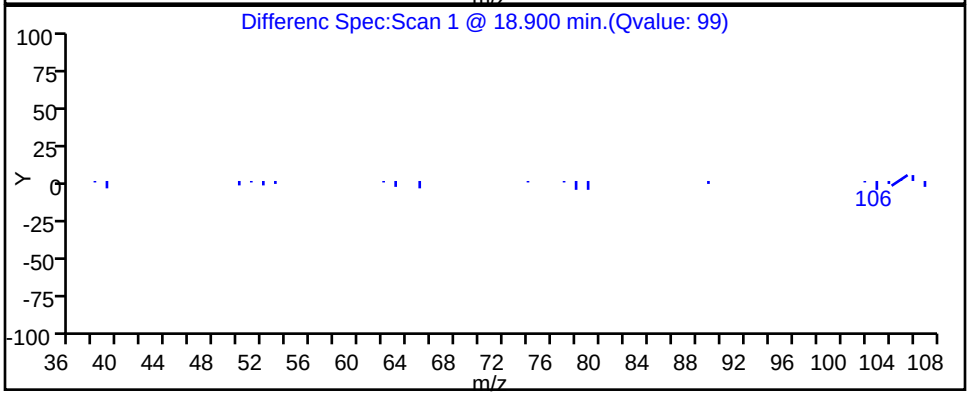








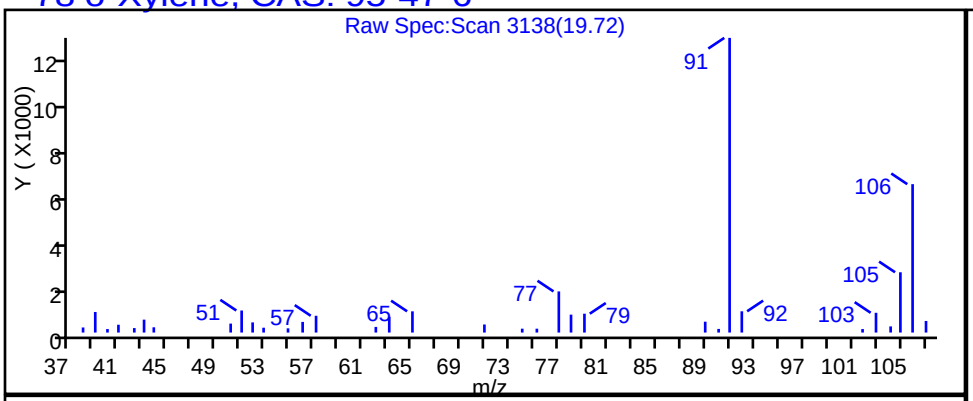


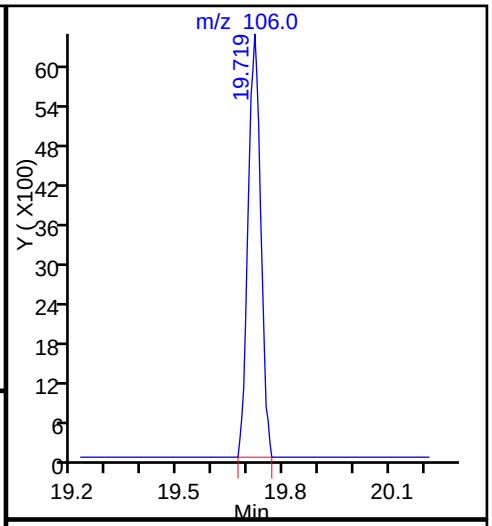


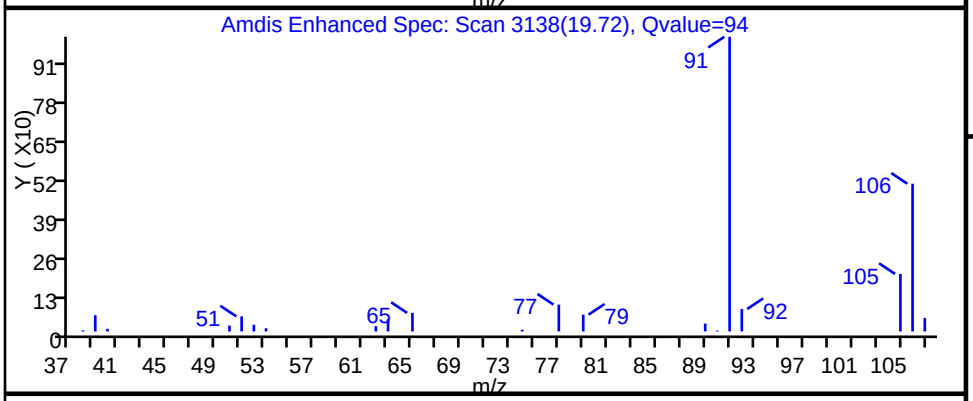
TestAmerica Burlington

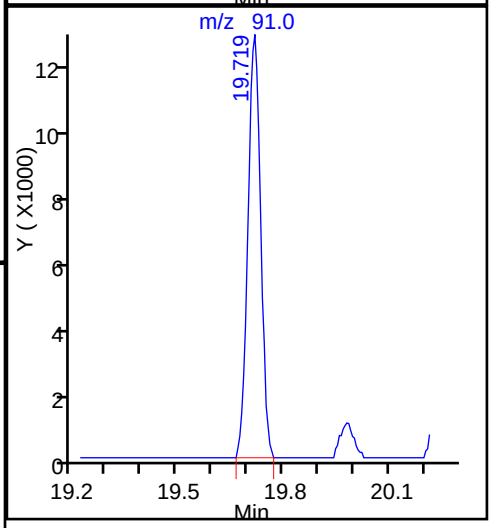
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

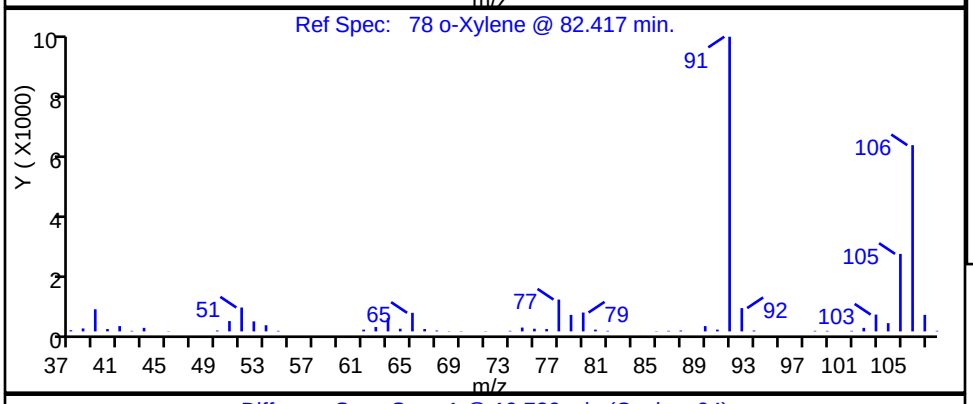
78 o-Xylene, CAS: 95-47-6

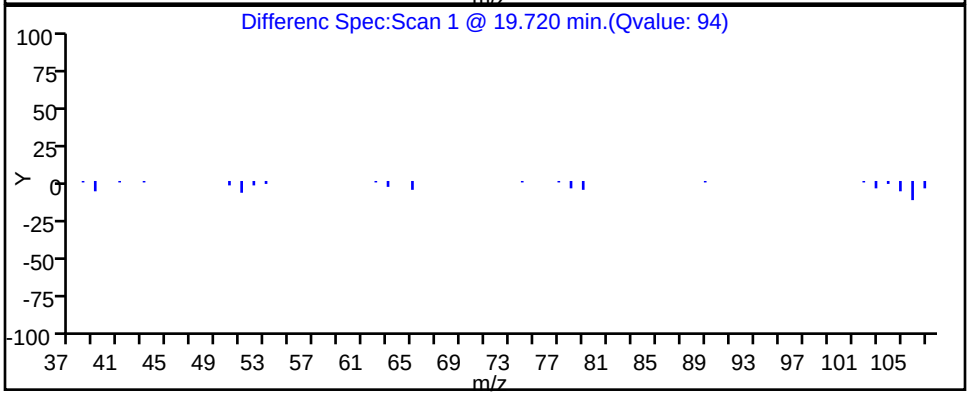








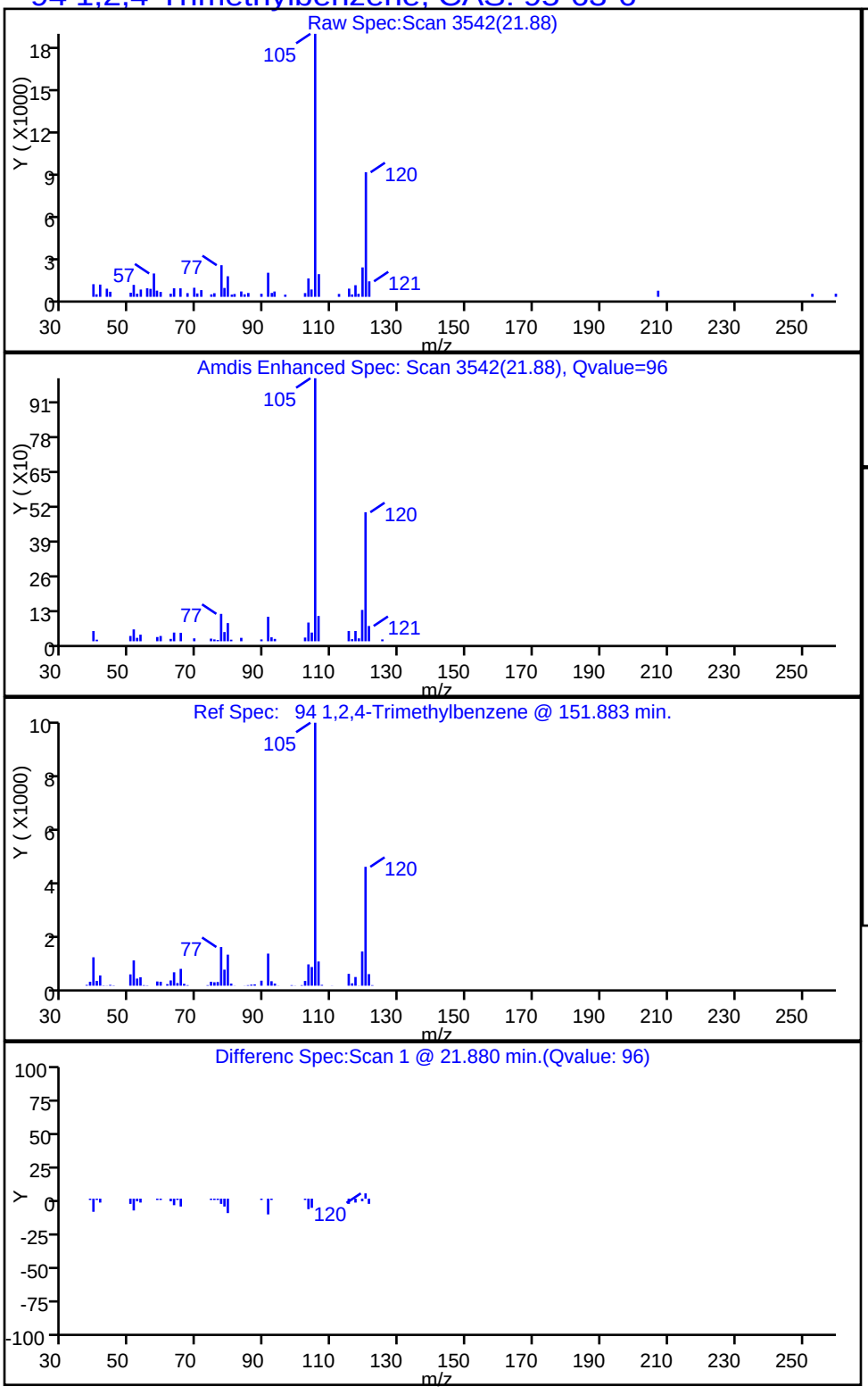


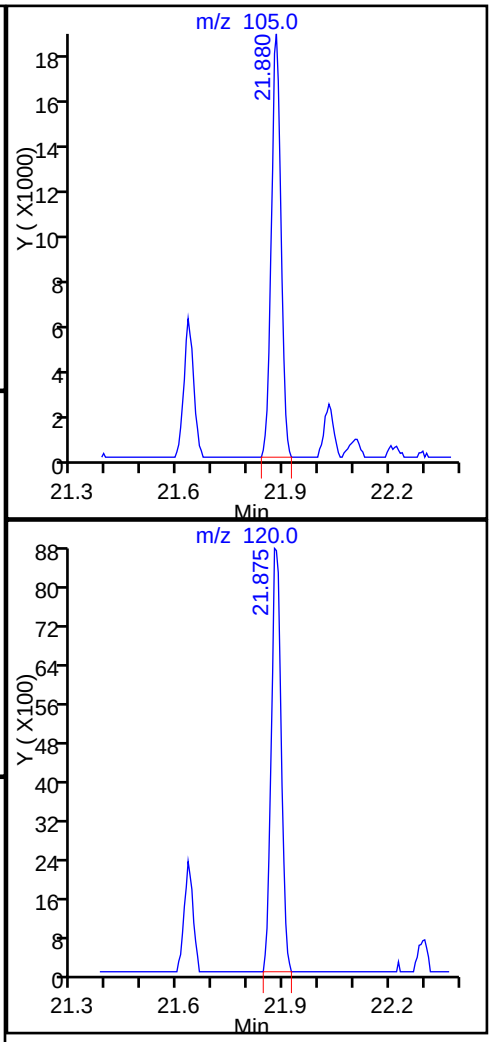


TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D				
Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

94 1,2,4-Trimethylbenzene, CAS: 95-63-6





Report Date: 14-Oct-2015 07:43:33 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D

Injection Date: 13-Oct-2015 18:12:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-1 Lab Sample ID: 200-30148-1

Client ID: SV-1

Operator ID: wrd ALS Bottle#: 9 Worklist Smp#: 12

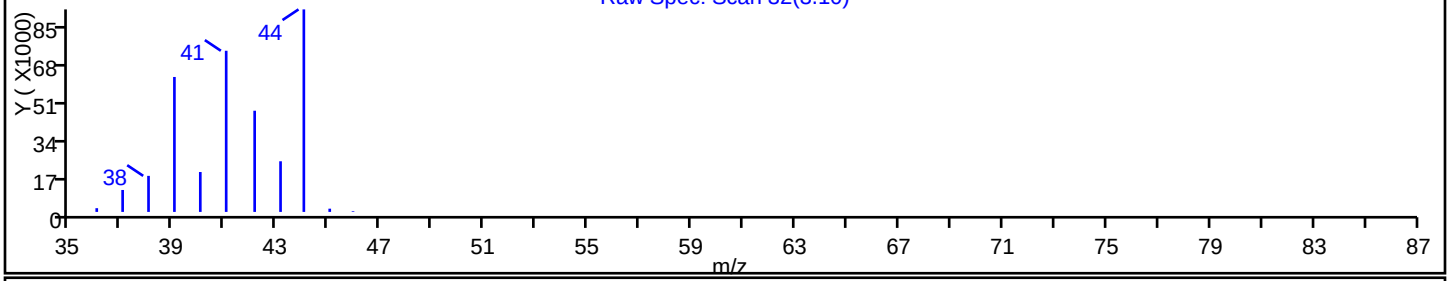
Purge Vol: 200.000 mL Dil. Factor: 4.0000

Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

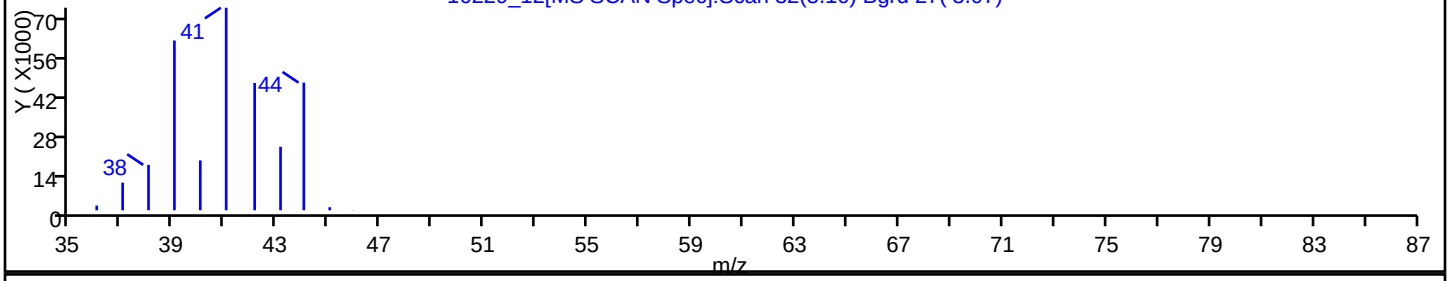
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Propene	115-07-1	NIST14.L	57	C3H6	42	86
Cyclopropane	75-19-4	NIST14.L	60	C3H6	42	10
2-Oxetanone, 4-methyl-	3068-88-0	NIST14.L	1692	C4H6O2	86	9

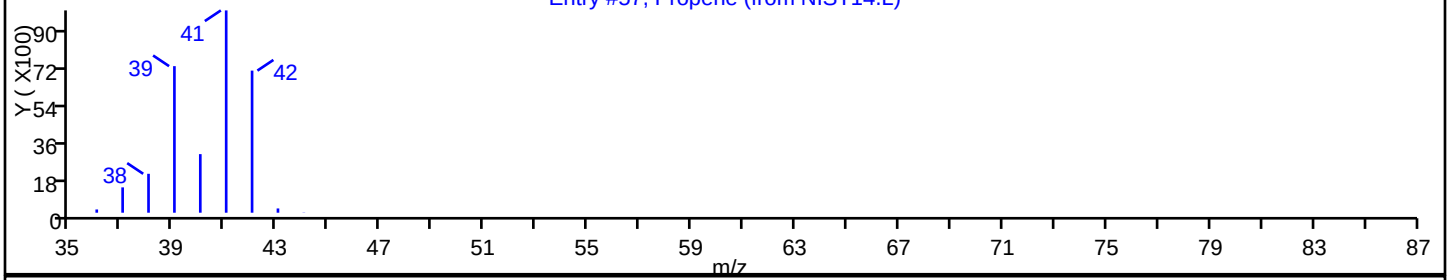
Raw Spec: Scan 32(3.10)



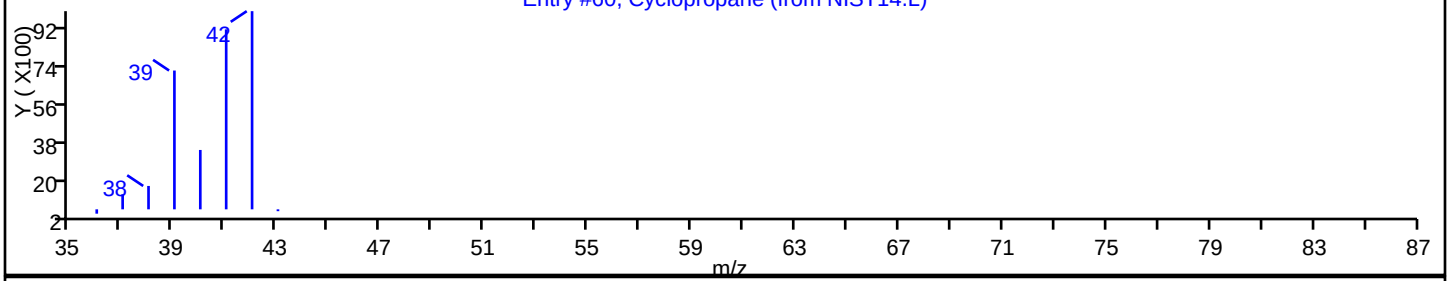
16229_12[MS SCAN Spec]:Scan 32(3.10) Bgrd 27(3.07)



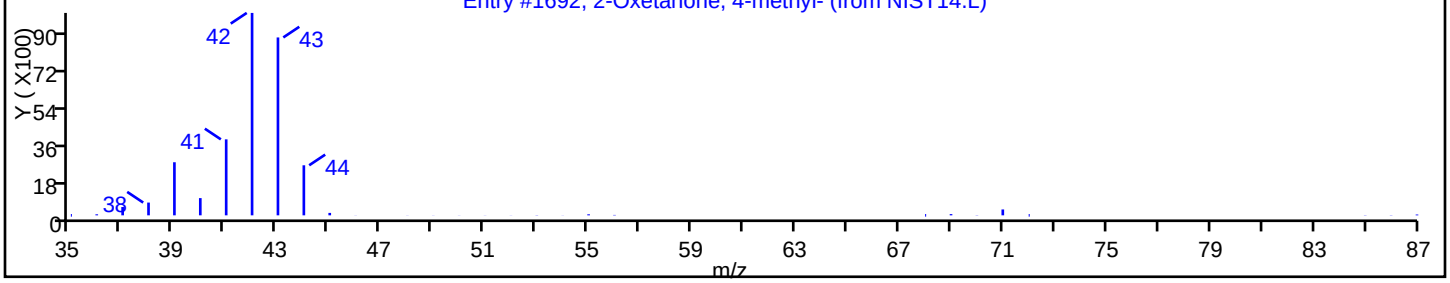
Entry #57, Propene (from NIST14.L)



Entry #60, Cyclopropane (from NIST14.L)



Entry #1692, 2-Oxetanone, 4-methyl- (from NIST14.L)

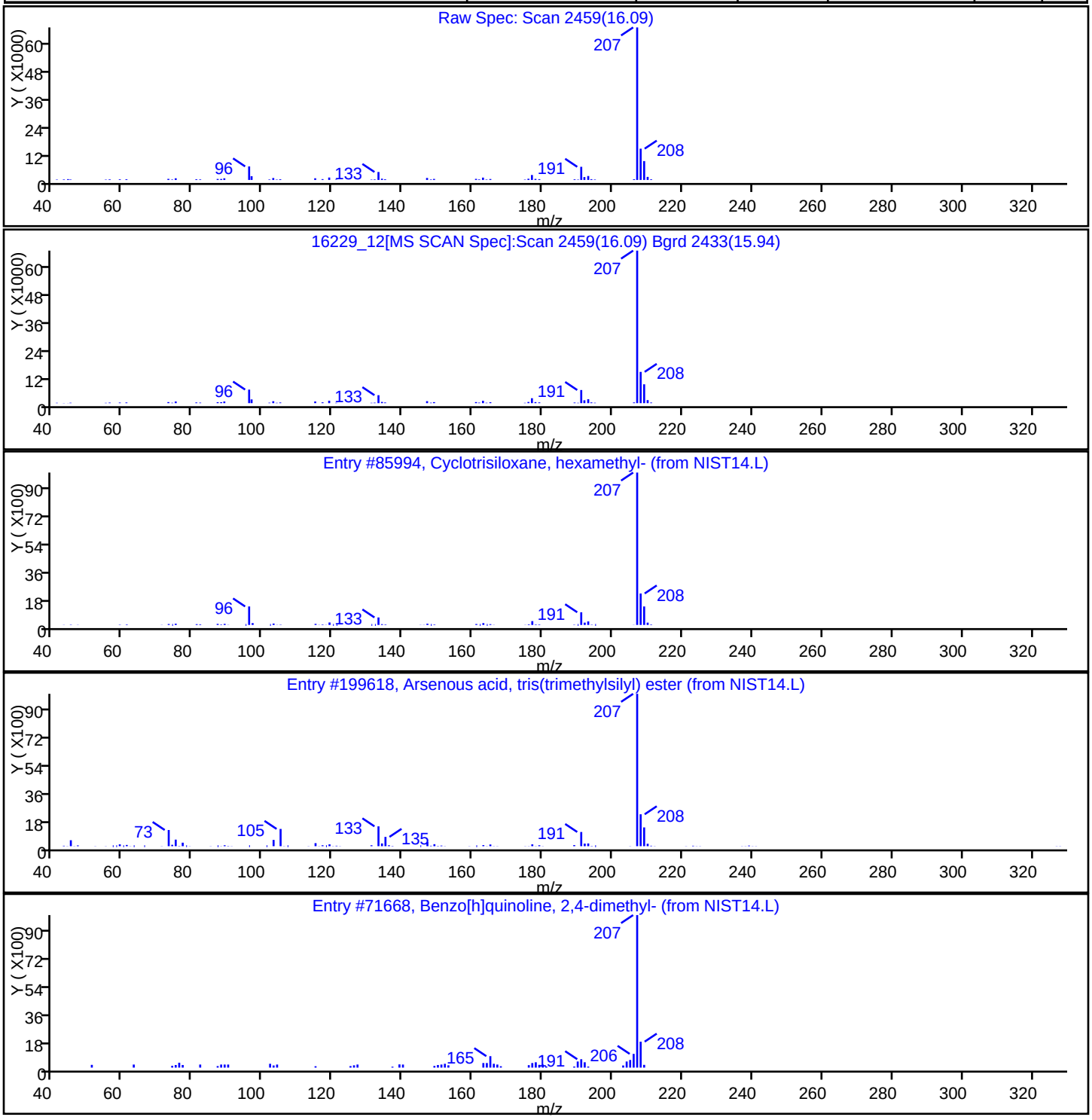


TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_12.D

Injection Date:	13-Oct-2015 18:12:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-1	Lab Sample ID:	200-30148-1		
Client ID:	SV-1				
Operator ID:	wrd	ALS Bottle#:	9	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:		Detector	MS SCAN		

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Cyclotrisiloxane, hexamethyl-	541-05-9	NIST14.L	85994	C6H18O3Si3	222	91
Arsenous acid, tris(trimethylsilyl) este	55429-29-3	NIST14.L	199618	C9H27AsO3Si3	342	78
Benzo[h]quinoline, 2,4-dimethyl-	605-67-4	NIST14.L	71668	C15H13N	207	50



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 | Lab Sample ID: 200-30148-2

Matrix: Air | Lab File ID: 16229_13.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:42

Sample wt/vol: 200(mL) | Date Analyzed: 10/13/2015 19:01

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	2.0		0.50	
75-45-6	Freon 22	86.47	0.50	U	0.50	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	0.20	U	0.20	
74-87-3	Chloromethane	50.49	8.2		0.50	
106-97-8	n-Butane	58.12	22		0.50	
75-01-4	Vinyl chloride	62.50	1.0		0.20	
106-99-0	1,3-Butadiene	54.09	2.9		0.20	
74-83-9	Bromomethane	94.94	0.20	U	0.20	
75-00-3	Chloroethane	64.52	0.65		0.50	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.20	U	0.20	
75-69-4	Trichlorofluoromethane	137.37	0.37		0.20	
76-13-1	Freon TF	187.38	0.20	U	0.20	
75-35-4	1,1-Dichloroethene	96.94	0.20	U	0.20	
67-64-1	*Acetone*	*58.08*	*87*	*E*	*5.0*	
67-63-0	Isopropyl alcohol	60.10	5.0	U	5.0	
75-15-0	Carbon disulfide	76.14	0.50	U	0.50	
107-05-1	3-Chloropropene	76.53	0.50	U	0.50	
75-09-2	Methylene Chloride	84.93	0.50	U	0.50	
75-65-0	tert-Butyl alcohol	74.12	5.9		5.0	
1634-04-4	Methyl tert-butyl ether	88.15	0.20	U	0.20	
156-60-5	trans-1,2-Dichloroethene	96.94	0.20	U	0.20	
110-54-3	n-Hexane	86.17	1.5		0.20	
75-34-3	1,1-Dichloroethane	98.96	0.20	U	0.20	
78-93-3	Methyl Ethyl Ketone	72.11	4.1		0.50	
156-59-2	cis-1,2-Dichloroethene	96.94	0.20	U	0.20	
540-59-0	1,2-Dichloroethene, Total	96.94	0.40	U	0.40	
67-66-3	Chloroform	119.38	0.20	U	0.20	
109-99-9	Tetrahydrofuran	72.11	5.0	U	5.0	
71-55-6	1,1,1-Trichloroethane	133.41	0.20	U	0.20	
110-82-7	Cyclohexane	84.16	0.51		0.20	
56-23-5	Carbon tetrachloride	153.81	0.20	U	0.20	
540-84-1	2,2,4-Trimethylpentane	114.23	0.26		0.20	
71-43-2	Benzene	78.11	5.7		0.20	
107-06-2	1,2-Dichloroethane	98.96	0.20	U	0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 Lab Sample ID: 200-30148-2

Matrix: Air Lab File ID: 16229_13.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 19:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	1.9		0.20	
79-01-6	Trichloroethene	131.39	0.20	U	0.20	
80-62-6	Methyl methacrylate	100.12	1.7		0.50	
78-87-5	1,2-Dichloropropane	112.99	0.20	U	0.20	
123-91-1	1,4-Dioxane	88.11	5.0	U	5.0	
75-27-4	Bromodichloromethane	163.83	0.20	U	0.20	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.20	U	0.20	
108-10-1	methyl isobutyl ketone	100.16	1.9		0.50	
108-88-3	Toluene	92.14	4.5		0.20	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.20	U	0.20	
79-00-5	1,1,2-Trichloroethane	133.41	0.20	U	0.20	
127-18-4	Tetrachloroethene	165.83	0.20	U	0.20	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	0.59		0.50	
124-48-1	Dibromochloromethane	208.29	0.20	U	0.20	
106-93-4	1,2-Dibromoethane	187.87	0.20	U	0.20	
108-90-7	Chlorobenzene	112.56	0.20	U	0.20	
100-41-4	Ethylbenzene	106.17	1.2		0.20	
179601-23-1	m,p-Xylene	106.17	3.9		0.50	
95-47-6	Xylene, o-	106.17	1.5		0.20	
1330-20-7	Xylene (total)	106.17	5.4		0.70	
100-42-5	Styrene	104.15	0.55		0.20	
75-25-2	Bromoform	252.75	0.20	U	0.20	
98-82-8	Cumene	120.19	0.20	U	0.20	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.20	U	0.20	
103-65-1	n-Propylbenzene	120.19	0.29		0.20	
622-96-8	4-Ethyltoluene	120.20	0.44		0.20	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.39		0.20	
95-49-8	2-Chlorotoluene	126.59	0.20	U	0.20	
98-06-6	tert-Butylbenzene	134.22	0.20	U	0.20	
95-63-6	1,2,4-Trimethylbenzene	120.20	1.2		0.20	
135-98-8	sec-Butylbenzene	134.22	0.20	U	0.20	
99-87-6	4-Isopropyltoluene	134.22	0.33		0.20	
541-73-1	1,3-Dichlorobenzene	147.00	0.20	U	0.20	
106-46-7	1,4-Dichlorobenzene	147.00	0.20	U	0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 Lab Sample ID: 200-30148-2

Matrix: Air Lab File ID: 16229_13.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 19:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	0.20	U	0.20	
104-51-8	n-Butylbenzene	134.22	0.20	U	0.20	
95-50-1	1,2-Dichlorobenzene	147.00	0.20	U	0.20	
120-82-1	1,2,4-Trichlorobenzene	181.45	0.50	U	0.50	
87-68-3	Hexachlorobutadiene	260.76	0.20	U	0.20	
91-20-3	Naphthalene	128.17	0.50	U	0.50	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 Lab Sample ID: 200-30148-2

Matrix: Air Lab File ID: 16229_13.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 19:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	9.7		2.5	
75-45-6	Freon 22	86.47	1.8	U	1.8	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	1.4	U	1.4	
74-87-3	Chloromethane	50.49	17		1.0	
106-97-8	n-Butane	58.12	52		1.2	
75-01-4	Vinyl chloride	62.50	2.6		0.51	
106-99-0	1,3-Butadiene	54.09	6.4		0.44	
74-83-9	Bromomethane	94.94	0.78	U	0.78	
75-00-3	Chloroethane	64.52	1.7		1.3	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.87	U	0.87	
75-69-4	Trichlorofluoromethane	137.37	2.1		1.1	
76-13-1	Freon TF	187.38	1.5	U	1.5	
75-35-4	1,1-Dichloroethene	96.94	0.79	U	0.79	
67-64-1	*Acetone*	*58.08*	*210*	*E*	*12*	
67-63-0	Isopropyl alcohol	60.10	12	U	12	
75-15-0	Carbon disulfide	76.14	1.6	U	1.6	
107-05-1	3-Chloropropene	76.53	1.6	U	1.6	
75-09-2	Methylene Chloride	84.93	1.7	U	1.7	
75-65-0	tert-Butyl alcohol	74.12	18		15	
1634-04-4	Methyl tert-butyl ether	88.15	0.72	U	0.72	
156-60-5	trans-1,2-Dichloroethene	96.94	0.79	U	0.79	
110-54-3	n-Hexane	86.17	5.1		0.70	
75-34-3	1,1-Dichloroethane	98.96	0.81	U	0.81	
78-93-3	Methyl Ethyl Ketone	72.11	12		1.5	
156-59-2	cis-1,2-Dichloroethene	96.94	0.79	U	0.79	
540-59-0	1,2-Dichloroethene, Total	96.94	1.6	U	1.6	
67-66-3	Chloroform	119.38	0.98	U	0.98	
109-99-9	Tetrahydrofuran	72.11	15	U	15	
71-55-6	1,1,1-Trichloroethane	133.41	1.1	U	1.1	
110-82-7	Cyclohexane	84.16	1.8		0.69	
56-23-5	Carbon tetrachloride	153.81	1.3	U	1.3	
540-84-1	2,2,4-Trimethylpentane	114.23	1.2		0.93	
71-43-2	Benzene	78.11	18		0.64	
107-06-2	1,2-Dichloroethane	98.96	0.81	U	0.81	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 Lab Sample ID: 200-30148-2

Matrix: Air Lab File ID: 16229_13.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 19:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	7.6		0.82	
79-01-6	Trichloroethene	131.39	1.1	U	1.1	
80-62-6	Methyl methacrylate	100.12	6.8		2.0	
78-87-5	1,2-Dichloropropane	112.99	0.92	U	0.92	
123-91-1	1,4-Dioxane	88.11	18	U	18	
75-27-4	Bromodichloromethane	163.83	1.3	U	1.3	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.91	U	0.91	
108-10-1	methyl isobutyl ketone	100.16	7.9		2.0	
108-88-3	Toluene	92.14	17		0.75	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.91	U	0.91	
79-00-5	1,1,2-Trichloroethane	133.41	1.1	U	1.1	
127-18-4	Tetrachloroethene	165.83	1.4	U	1.4	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	2.4		2.0	
124-48-1	Dibromochloromethane	208.29	1.7	U	1.7	
106-93-4	1,2-Dibromoethane	187.87	1.5	U	1.5	
108-90-7	Chlorobenzene	112.56	0.92	U	0.92	
100-41-4	Ethylbenzene	106.17	5.4		0.87	
179601-23-1	m,p-Xylene	106.17	17		2.2	
95-47-6	Xylene, o-	106.17	6.4		0.87	
1330-20-7	Xylene (total)	106.17	23		3.0	
100-42-5	Styrene	104.15	2.4		0.85	
75-25-2	Bromoform	252.75	2.1	U	2.1	
98-82-8	Cumene	120.19	0.98	U	0.98	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	1.4	U	1.4	
103-65-1	n-Propylbenzene	120.19	1.4		0.98	
622-96-8	4-Ethyltoluene	120.20	2.2		0.98	
108-67-8	1,3,5-Trimethylbenzene	120.20	1.9		0.98	
95-49-8	2-Chlorotoluene	126.59	1.0	U	1.0	
98-06-6	tert-Butylbenzene	134.22	1.1	U	1.1	
95-63-6	1,2,4-Trimethylbenzene	120.20	5.9		0.98	
135-98-8	sec-Butylbenzene	134.22	1.1	U	1.1	
99-87-6	4-Isopropyltoluene	134.22	1.8		1.1	
541-73-1	1,3-Dichlorobenzene	147.00	1.2	U	1.2	
106-46-7	1,4-Dichlorobenzene	147.00	1.2	U	1.2	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 Lab Sample ID: 200-30148-2

Matrix: Air Lab File ID: 16229_13.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 19:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	1.0	U	1.0	
104-51-8	n-Butylbenzene	134.22	1.1	U	1.1	
95-50-1	1,2-Dichlorobenzene	147.00	1.2	U	1.2	
120-82-1	1,2,4-Trichlorobenzene	181.45	3.7	U	3.7	
87-68-3	Hexachlorobutadiene	260.76	2.1	U	2.1	
91-20-3	Naphthalene	128.17	2.6	U	2.6	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 Lab Sample ID: 200-30148-2

Matrix: Air Lab File ID: 16229_13.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 19:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 10 TIC Result Total: 32.9

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown	3.10	9.8	J
	Unknown	4.13	6.4	J
	Unknown	17.15	2.0	J
110-43-0	2-Heptanone	19.99	1.1	J N
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	5.7	J N
	Unknown	22.04	1.5	J
5989-27-5	D-Limonene	22.21	2.0	J N
	Unknown	22.39	1.2	J
1120-21-4	Undecane	22.89	1.7	J N
112-40-3	Dodecane	24.53	1.5	J N

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Sample Type: Client
Inject. Date: 13-Oct-2015 19:01:30 ALS Bottle#: 10 Worklist Smp#: 13
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0016229-013
Misc. Info.: 30148-2
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 07:47:40 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 07:47:40

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85	3.172	3.177	-0.005	99	62652	1.96	
3 Chlorodifluoromethane	51	3.226	3.231	-0.005	96	2588	0.1677	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.440	3.445	-0.005	33	4838	0.1492	
5 Chloromethane	50	3.573	3.579	-0.006	98	73412	8.18	
6 Butane	43	3.771	3.777	-0.006	96	319915	21.7	
7 Vinyl chloride	62	3.814	3.819	-0.005	96	11489	1.01	
8 Butadiene	54	3.889	3.894	-0.005	96	23426	2.88	
9 Bromomethane	94		4.563				ND	
10 Chloroethane	64	4.793	4.793	0.000	88	3737	0.6536	
12 Vinyl bromide	106		5.167				ND	
13 Trichlorofluoromethane	101	5.259	5.264	-0.005	65	13142	0.3735	
18 1,1,2-Trichloro-1,2,2-trif	101	6.312	6.307	0.005	36	2001	0.0710	
20 1,1-Dichloroethene	96		6.355				ND	
21 Acetone	43	6.585	6.623	-0.038	88	1255106	87.4	E
22 Carbon disulfide	76	6.740	6.751	-0.011	98	12976	0.3878	
23 Isopropyl alcohol	45	6.960	6.949	0.011	98	21374	1.57	
24 3-Chloro-1-propene	41		7.125				ND	
26 Methylene Chloride	49	7.420	7.414	0.006	87	5201	0.4302	
28 2-Methyl-2-propanol	59	7.741	7.735	0.006	98	128236	5.88	
29 Methyl tert-butyl ether	73		7.837				ND	
30 trans-1,2-Dichloroethene	61		7.842				ND	
32 Hexane	57	8.206	8.211	-0.005	90	26098	1.45	
33 1,1-Dichloroethane	63		8.714				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.891	9.881	0.010	97	30957	4.06	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.282	10.287	-0.005	75	164012	10.0	
39 Tetrahydrofuran	42	10.351	10.314	0.037	85	4030	0.3113	
41 Chloroform	83		10.416				ND	
42 Cyclohexane	84	10.651	10.667	-0.005	91	11563	0.5084	M
43 1,1,1-Trichloroethane	97		10.694				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
44 Carbon tetrachloride	117	10.929	10.934	-0.005	26	1213	0.0351	
45 Isooctane	57	11.357	11.373	-0.016	98	19891	0.2617	
46 Benzene	78	11.411	11.416	-0.005	93	300519	5.67	
47 1,2-Dichloroethane	62		11.609				ND	
48 n-Heptane	43	11.748	11.764	-0.016	86	47471	1.85	
* 50 1,4-Difluorobenzene	114	12.256	12.267	-0.011	92	908555	10.0	
52 Trichloroethene	95	12.754	12.743	0.006	1	951	0.0356	M
53 1,2-Dichloropropane	63		13.336				ND	
54 Methyl methacrylate	69	13.497	13.502	-0.005	88	33315	1.66	
55 1,4-Dioxane	88		13.588				ND	
57 Dichlorobromomethane	83		13.909				ND	
58 cis-1,3-Dichloropropene	75		14.872				ND	
61 4-Methyl-2-pentanone (MIBK	43	15.204	15.198	0.006	93	66998	1.93	
62 Toluene	92	15.471	15.482	-0.011	93	209419	4.49	
67 trans-1,3-Dichloropropene	75		16.097				ND	
68 1,1,2-Trichloroethane	83		16.487				ND	
69 Tetrachloroethene	166	16.573	16.584	-0.011	93	4124	0.0888	
70 2-Hexanone	43	16.964	16.958	0.006	93	20365	0.5883	
71 Chlorodibromomethane	129		17.269				ND	
72 Ethylene Dibromide	107		17.547				ND	
* 73 Chlorobenzene-d5	117	18.440	18.451	-0.011	82	915494	10.0	
74 Chlorobenzene	112		18.510				ND	
75 Ethylbenzene	91	18.649	18.654	-0.005	97	125218	1.25	
77 m-Xylene & p-Xylene	106	18.895	18.906	-0.011	99	165480	3.90	
78 o-Xylene	106	19.713	19.719	-0.006	94	61400	1.47	
79 Styrene	104	19.767	19.772	-0.005	95	36074	0.5518	
S 80 Xylenes, Total	106				0		5.37	
81 Bromoform	173		20.179				ND	
82 Isopropylbenzene	105	20.350	20.355	-0.005	94	17739	0.1485	
85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
86 N-Propylbenzene	91	21.035	21.040	-0.005	99	40924	0.2939	
89 4-Ethyltoluene	105	21.217	21.217	0.000	71	53037	0.4392	
90 2-Chlorotoluene	91		21.238				ND	
91 1,3,5-Trimethylbenzene	105	21.313	21.318	-0.005	95	38758	0.3889	
93 tert-Butylbenzene	119		21.789				ND	
94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	120913	1.21	
95 sec-Butylbenzene	105		22.105				ND	
96 4-Isopropyltoluene	119	22.297	22.297	0.000	98	41819	0.3270	
97 1,3-Dichlorobenzene	146		22.345				ND	
98 1,4-Dichlorobenzene	146		22.484				ND	
99 Benzyl chloride	91		22.688				ND	
101 n-Butylbenzene	91		22.886				ND	
102 1,2-Dichlorobenzene	146		23.041				ND	
104 1,2,4-Trichlorobenzene	180		25.673				ND	
105 Hexachlorobutadiene	225		25.855				ND	
106 Naphthalene	128	26.203	26.197	0.006	99	33084	0.2570	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Reagents:

ATTO15GIS_00009	Amount Added:	20.00	Units: mL	Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Sample Type:	Client				
Inject. Date:	13-Oct-2015 19:01:30	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Sample Info:	200-0016229-013				
Misc. Info.:	30148-2				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	14-Oct-2015 07:47:40	Calib Date:	17-Aug-2015 23:52:30		
Tic RT Window:	0.000 -0.000	Response:	area		
Quant By:	Nearest ISTD	Quant LOD:	10.00000		
MS Library:	\\ChromNA\Burlington\Database\NIST14.L				
Min. Match:	1				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK013				
First Level Reviewer: desjardinsb		Date:	14-Oct-2015 07:47:40		

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
	Unknown							
3.103	876340	9.84	40	0	0		0	
	Unknown							
4.130	572811	6.43	40	0	0		0	
	Unknown							
17.146	450986	1.98	73	0	0		0	
110-43-0	2-Heptanone							
19.992	355738	1.12	83	91	7564	C7H14O	114	
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2							
20.254	1820486	5.74	83	96	16223	C10H16	136	
	Unknown							
22.035	484220	1.53	83	0	0		0	
5989-27-5	D-Limonene							
22.206	628577	1.98	83	98	16046	C10H16	136	
	Unknown							
22.388	382585	1.21	83	0	0		0	
1120-21-4	Undecane							
22.886	530606	1.67	83	93	29354	C11H24	156	
112-40-3	Dodecane							
24.528	482879	1.52	83	97	39974	C12H26	170	

Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 40 Chlorobromomethane	10.282	890847	10.0
* 73 Chlorobenzene-d5	18.440	2281747	10.0
* 83 4-Bromofluorobenzene	20.714	3174228	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

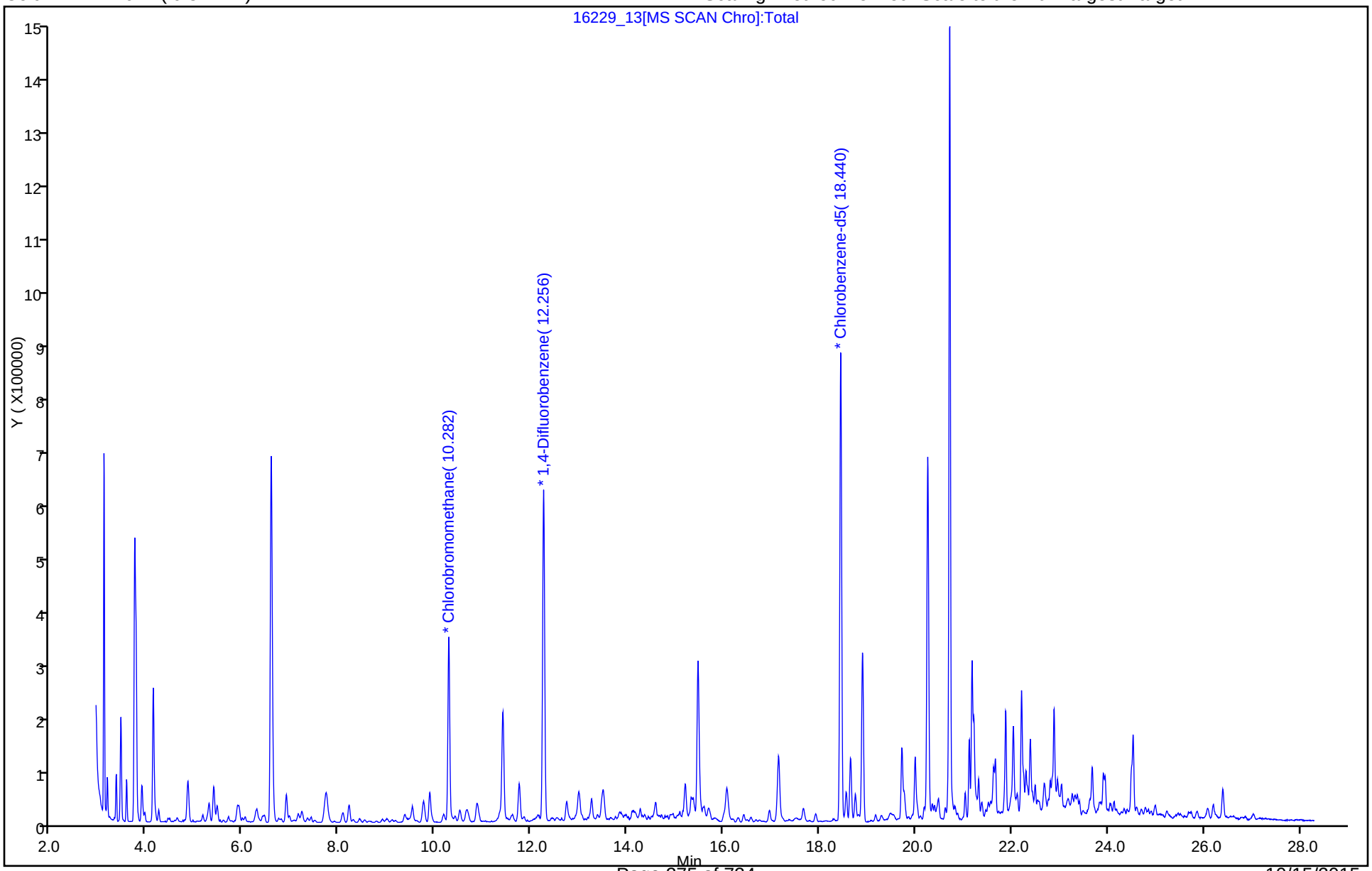
Report Date: 14-Oct-2015 07:47:41 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2	Worklist Smp#:	13
Client ID:	SV-2				
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

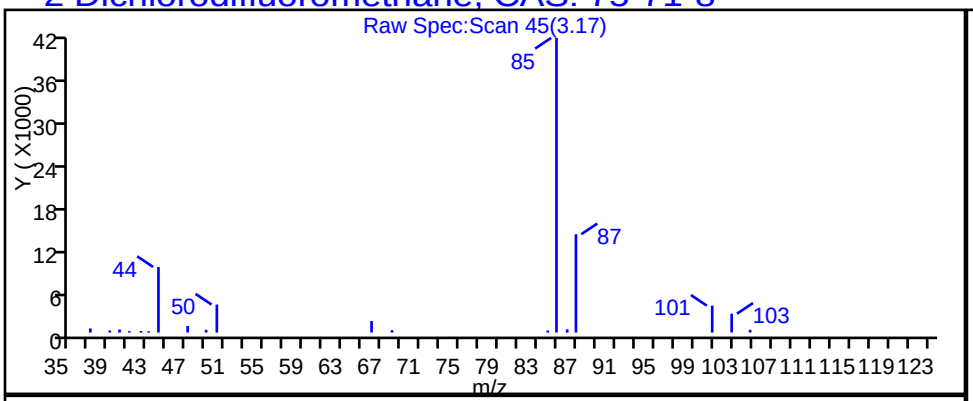
Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

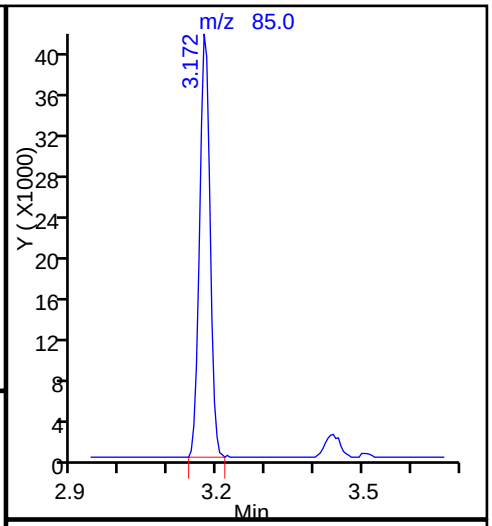


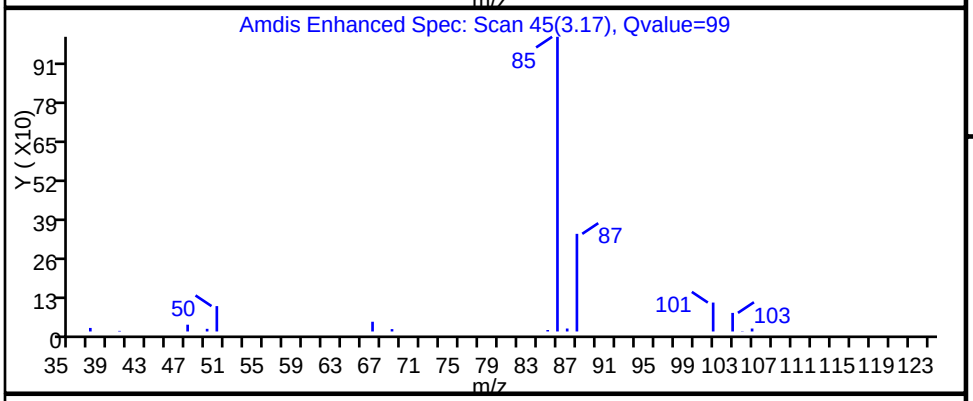
TestAmerica Burlington

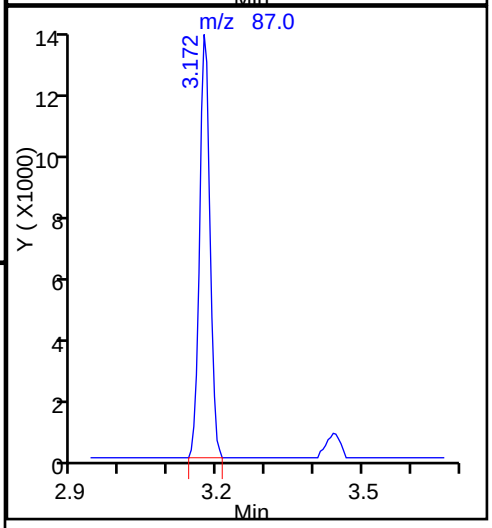
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

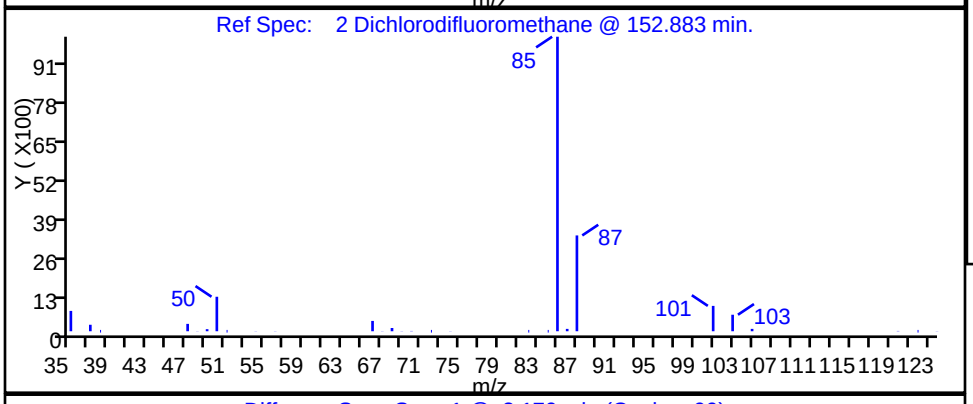
2 Dichlorodifluoromethane, CAS: 75-71-8

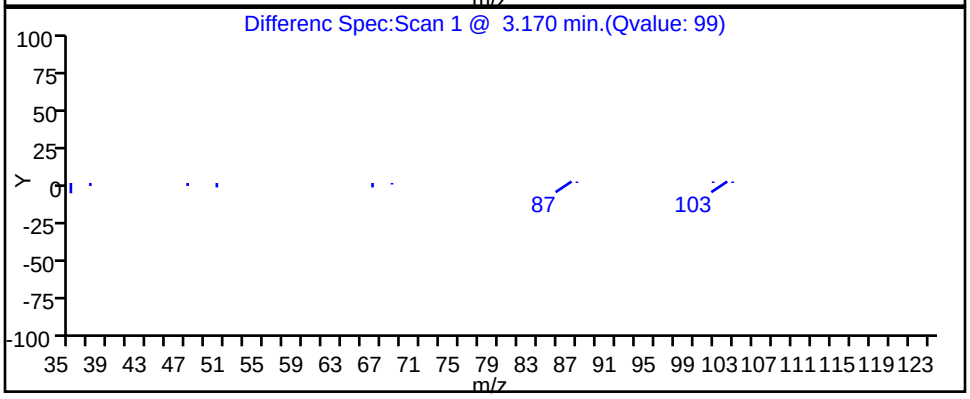










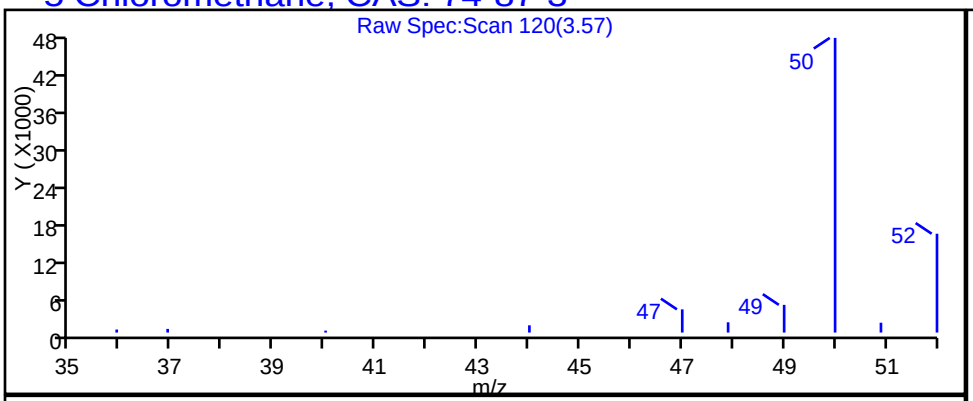


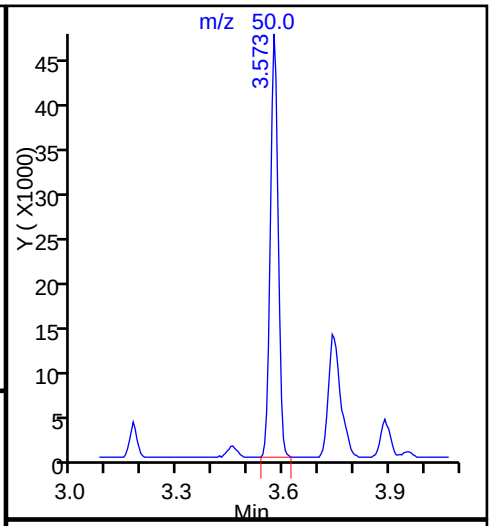
TestAmerica Burlington

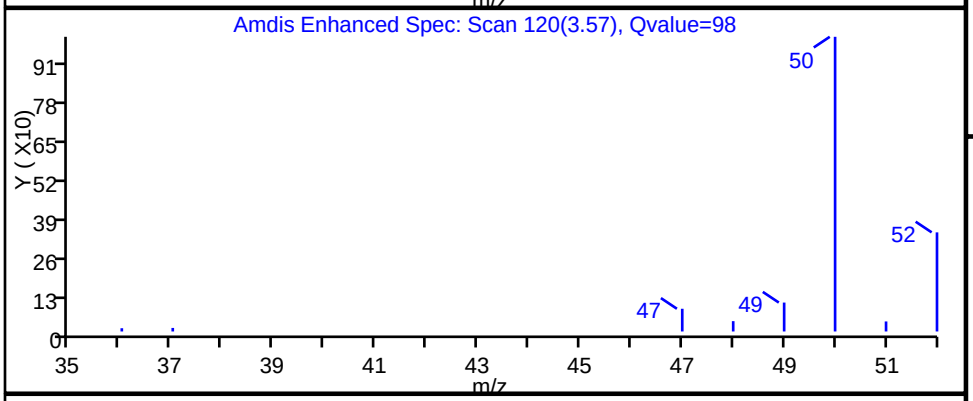
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

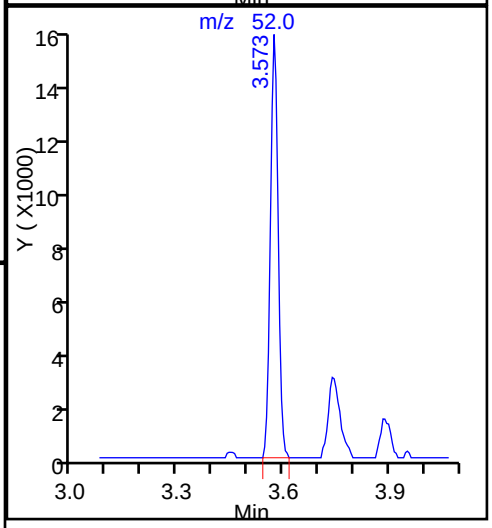
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

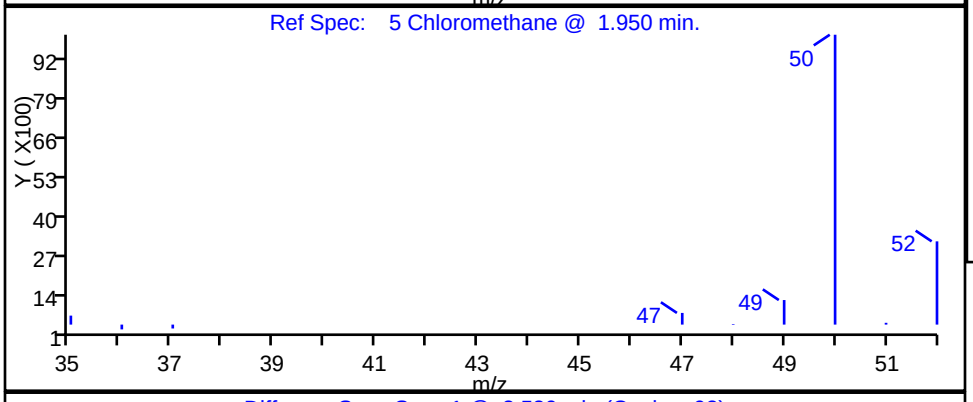
5 Chloromethane, CAS: 74-87-3

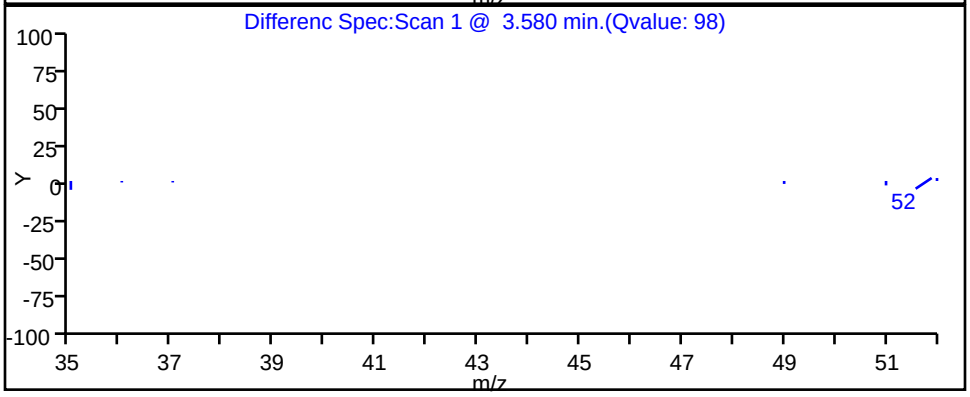








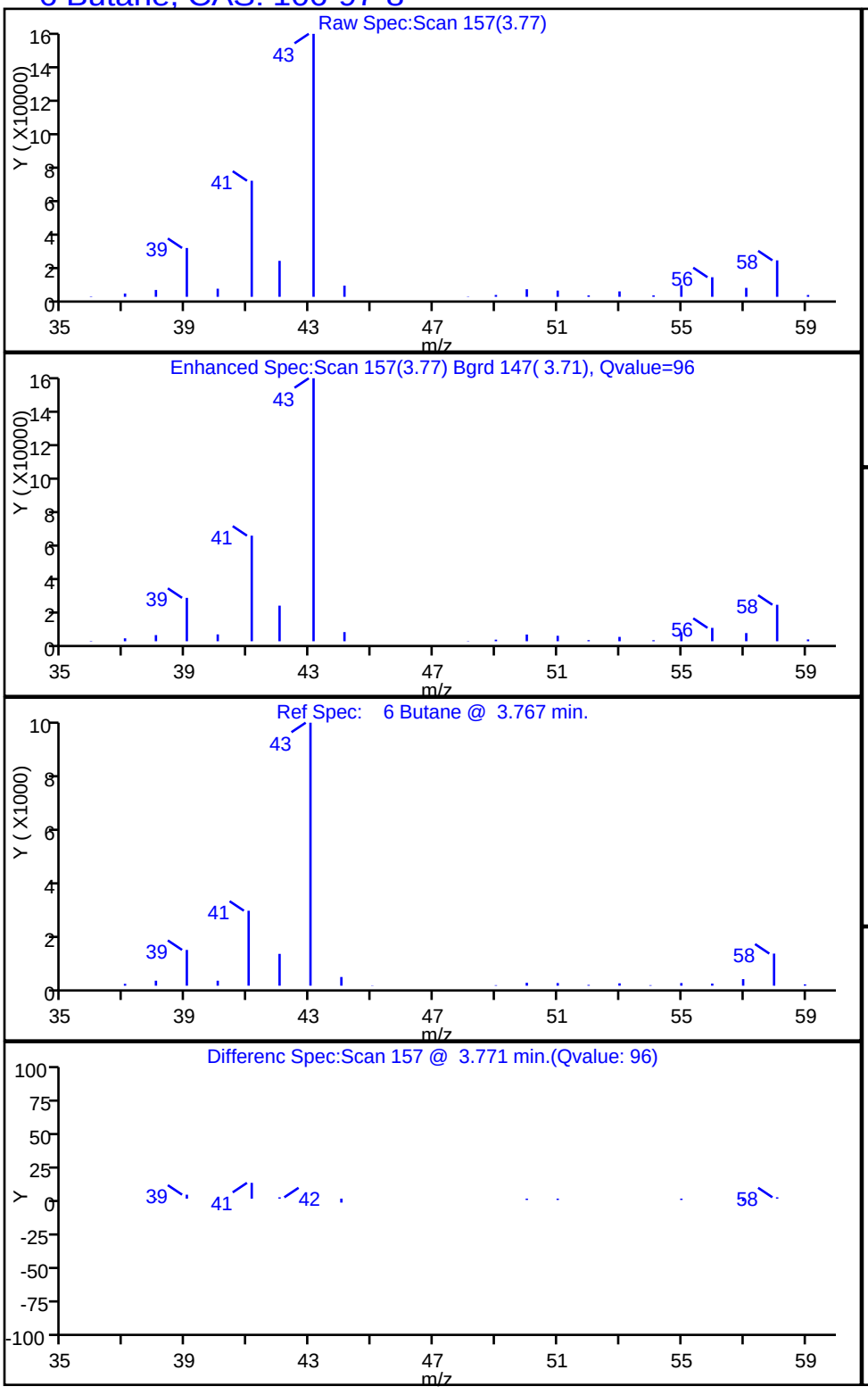


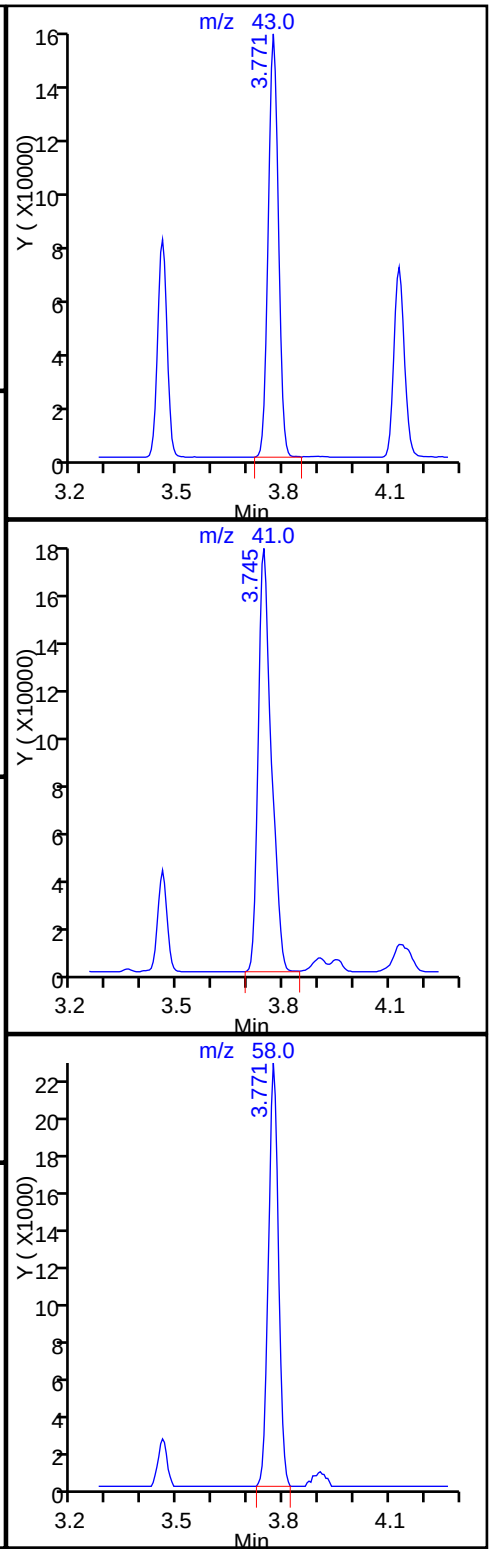


TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

6 Butane, CAS: 106-97-8

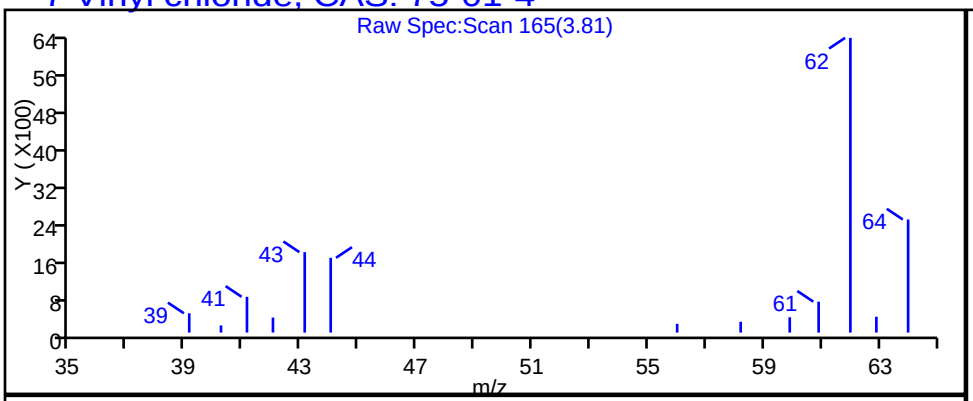


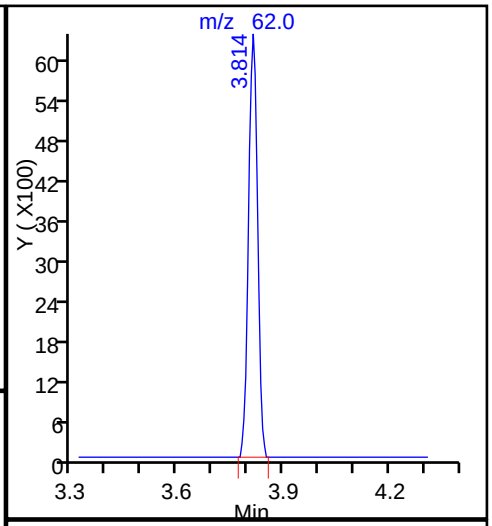


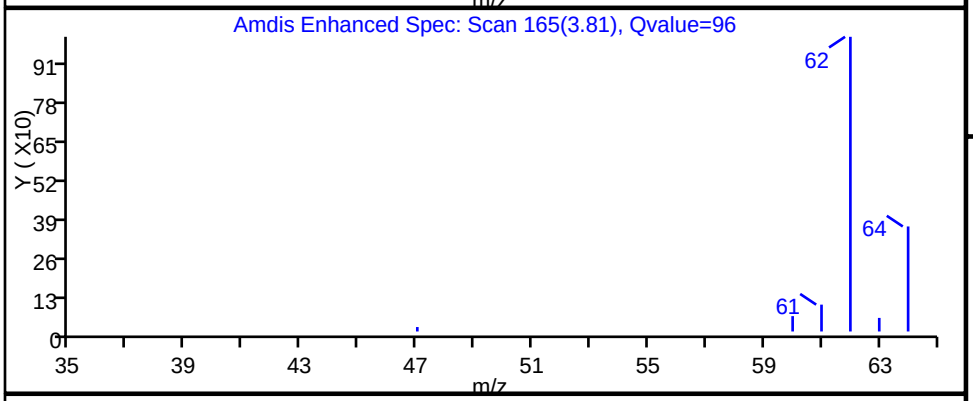
TestAmerica Burlington

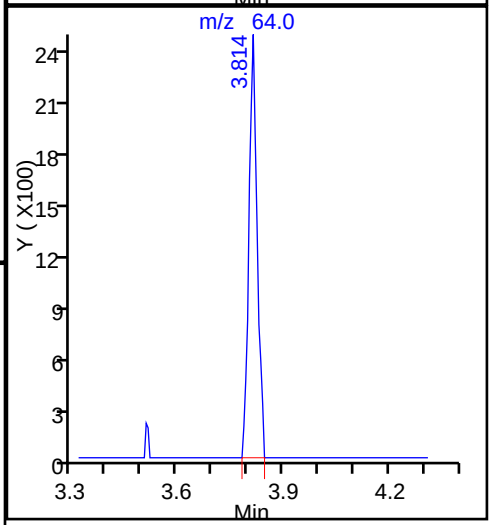
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

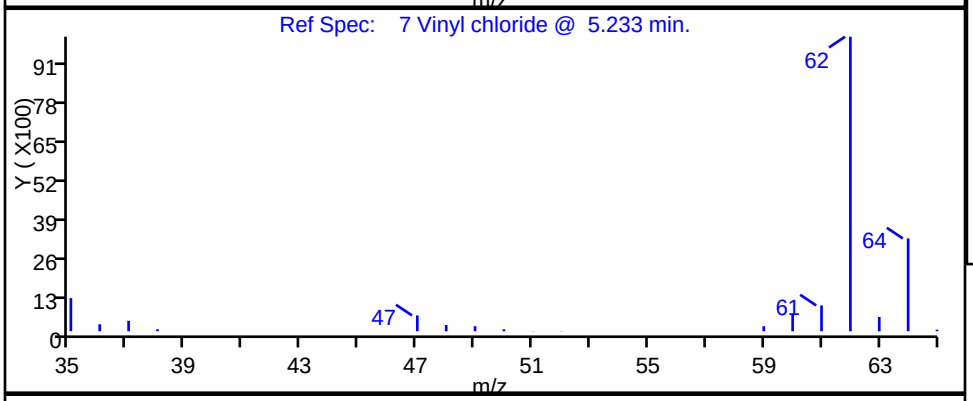
7 Vinyl chloride, CAS: 75-01-4

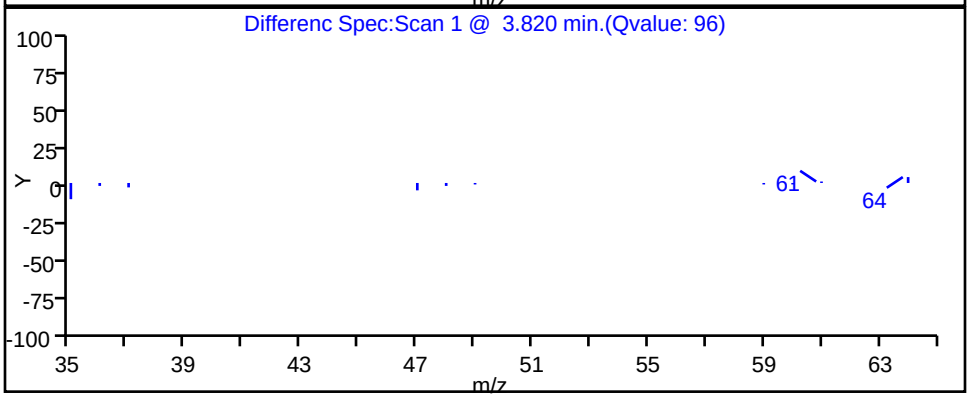








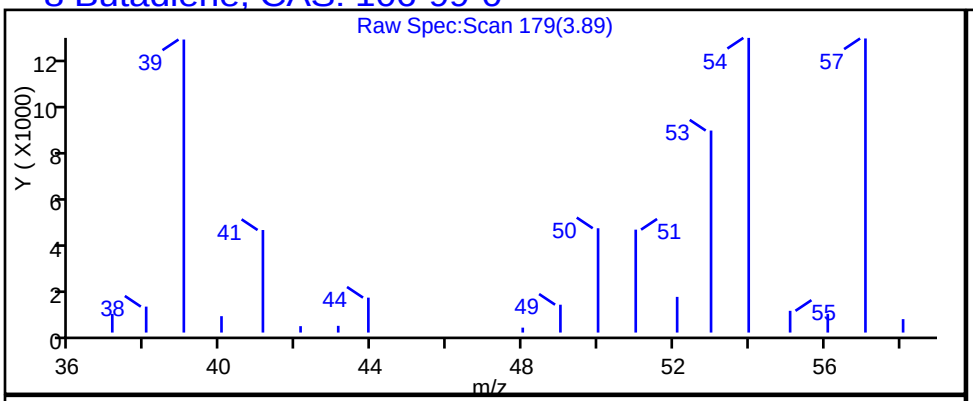


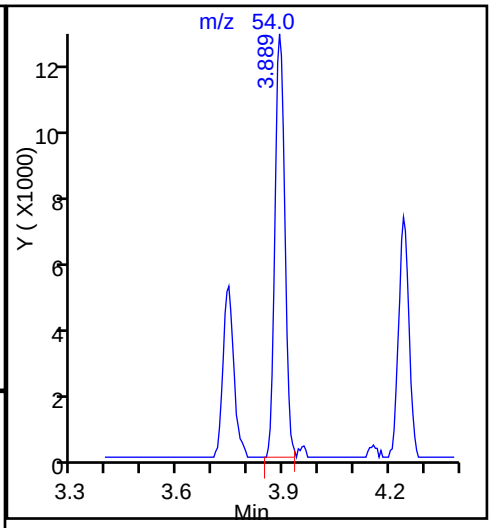


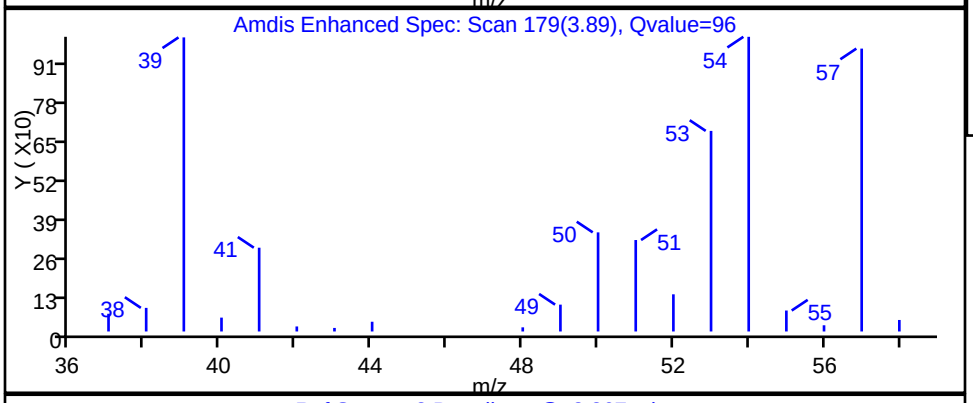
TestAmerica Burlington

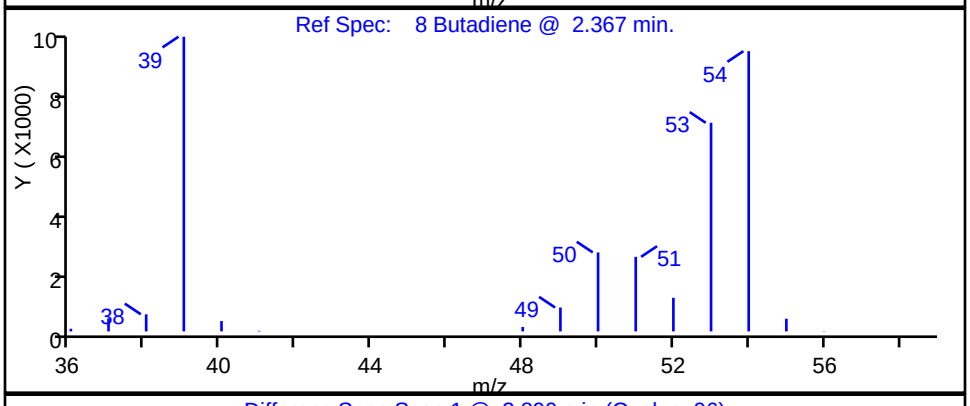
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

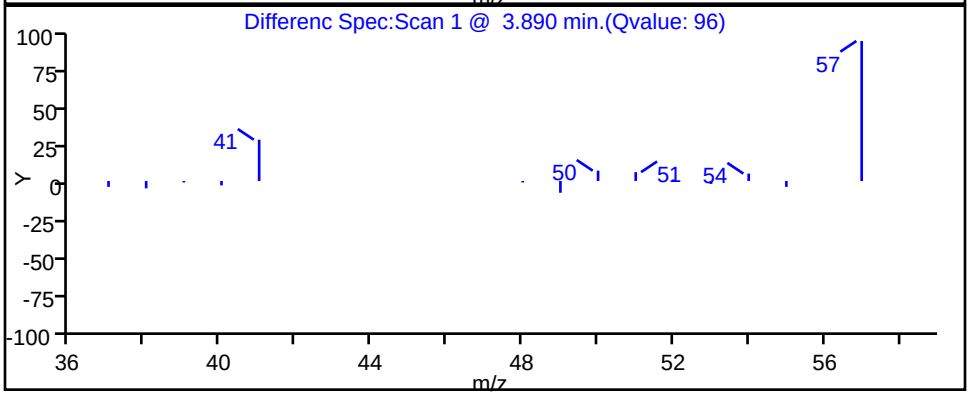
8 Butadiene, CAS: 106-99-0







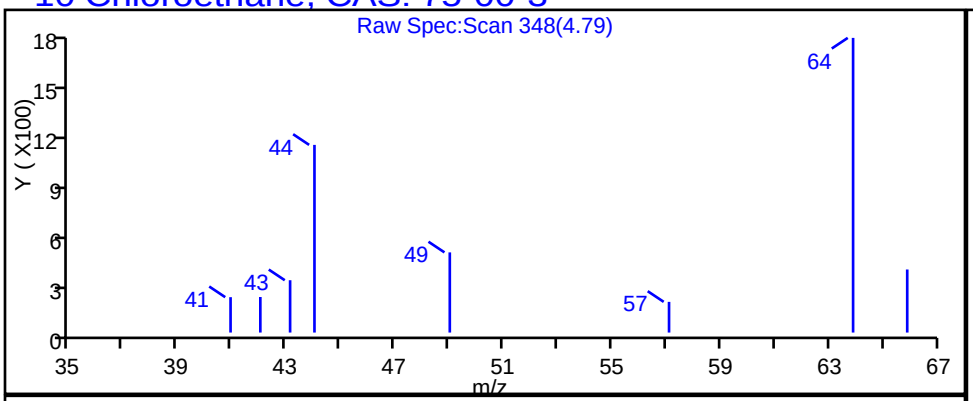


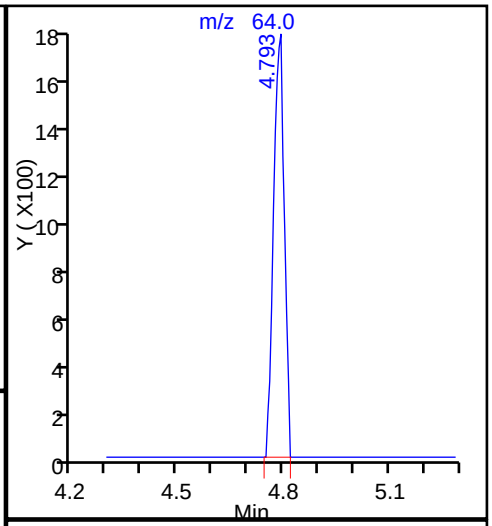


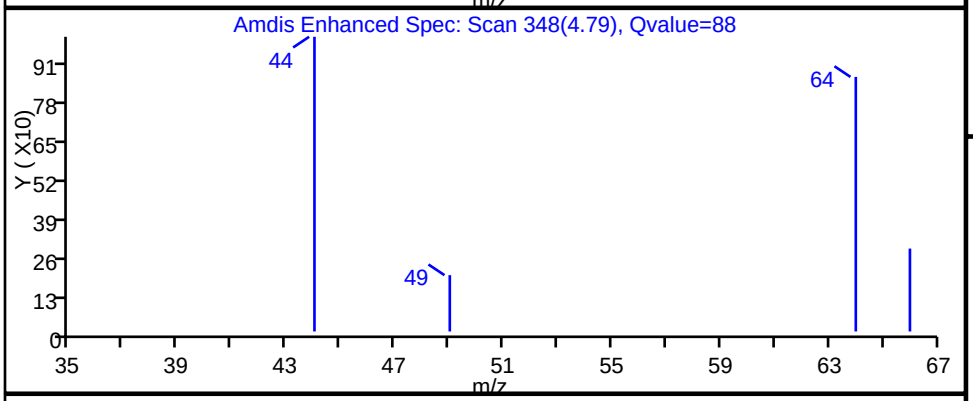
TestAmerica Burlington

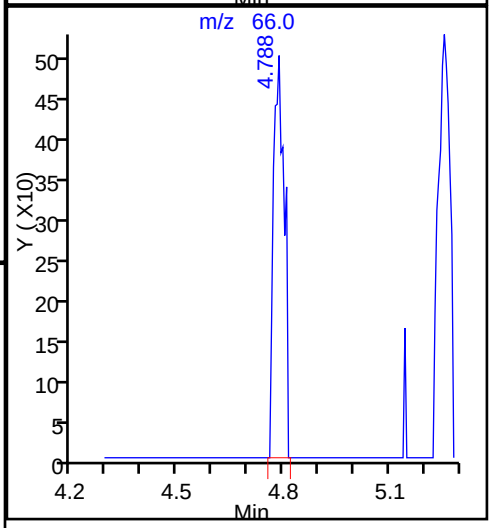
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D
Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

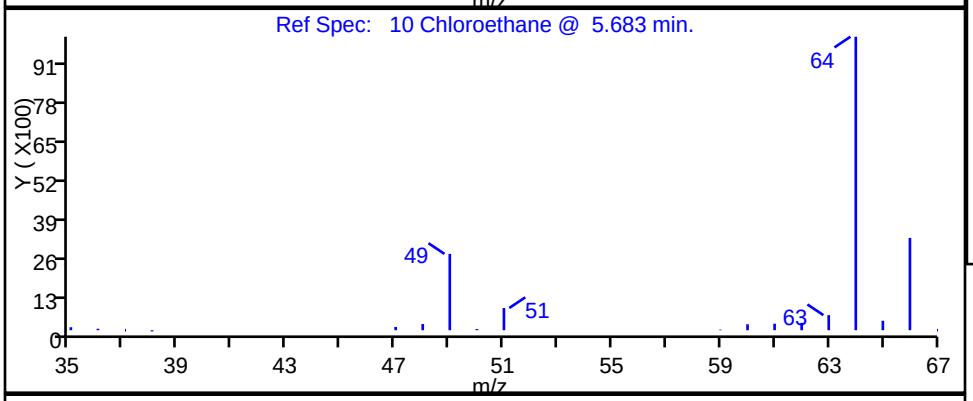
10 Chloroethane, CAS: 75-00-3

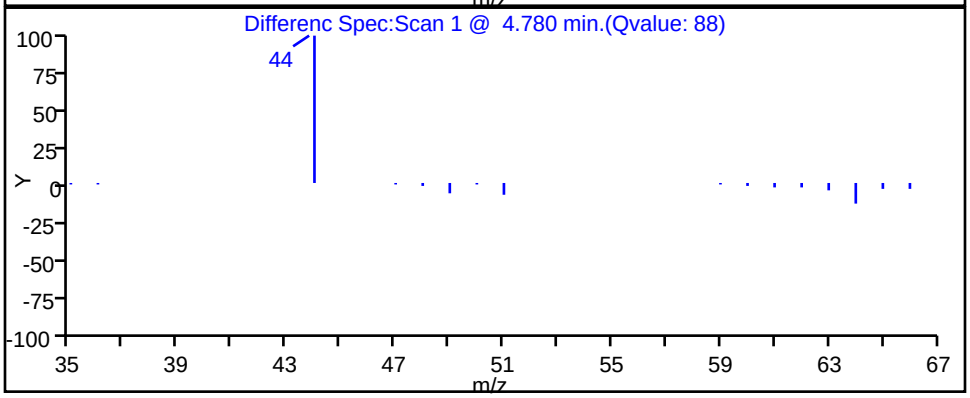










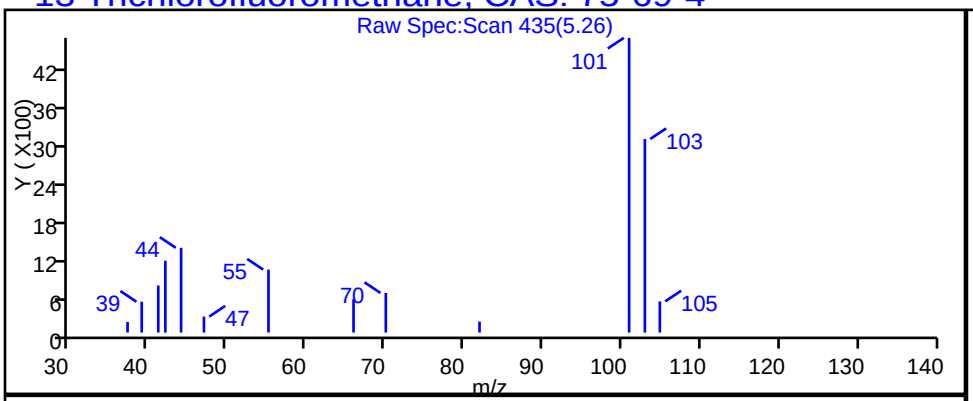


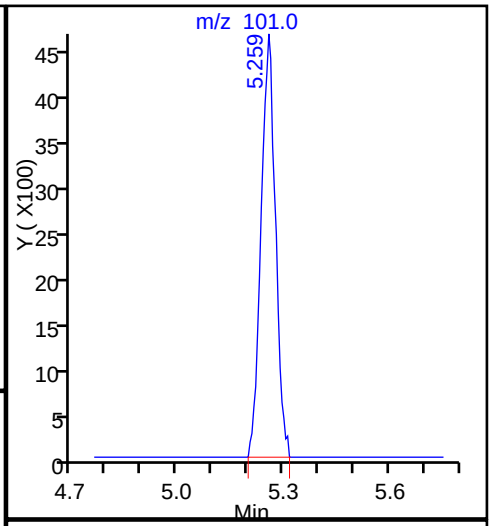
TestAmerica Burlington

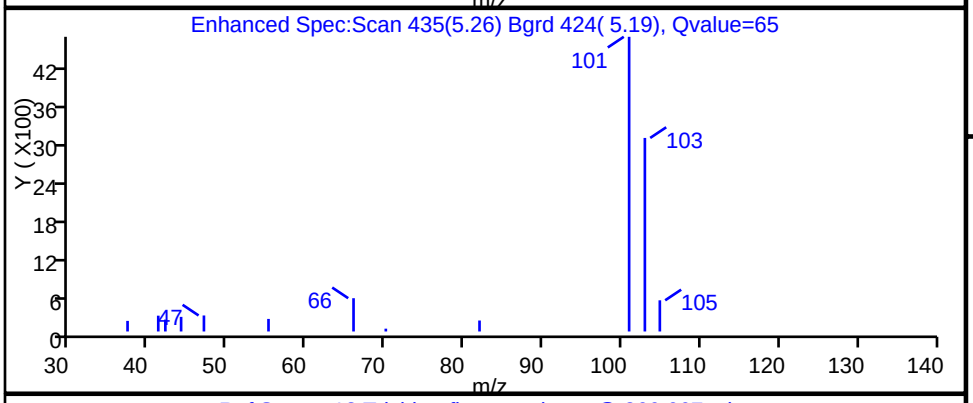
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

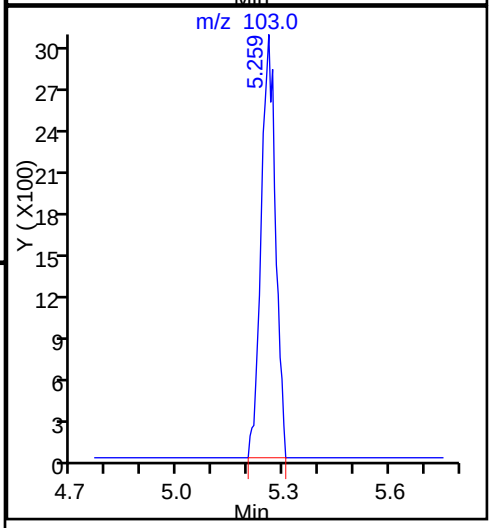
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

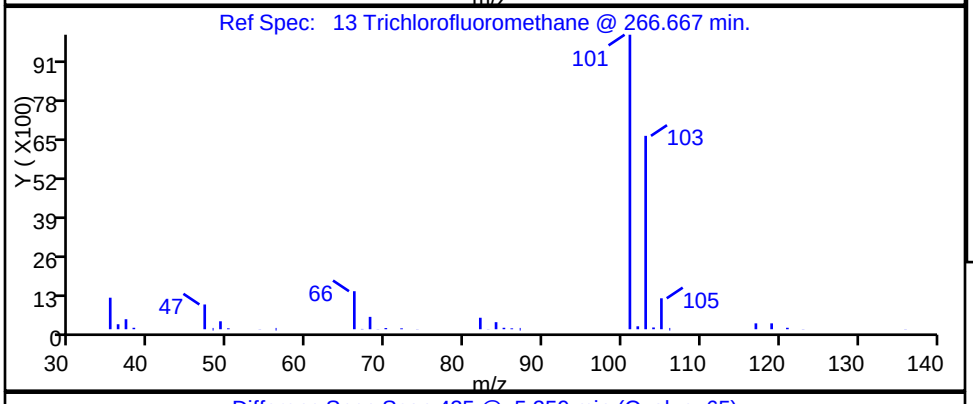
13 Trichlorofluoromethane, CAS: 75-69-4

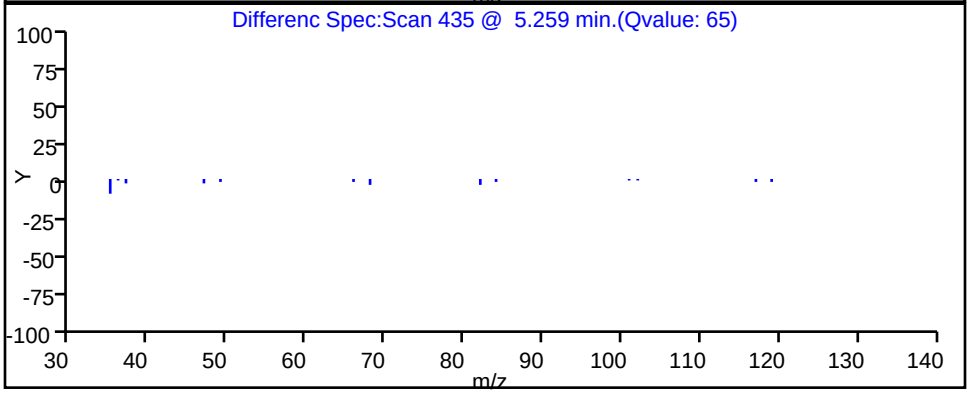








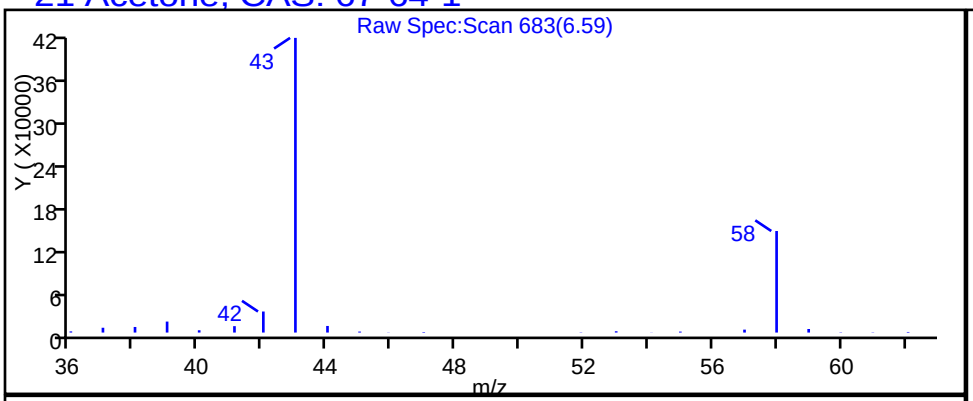


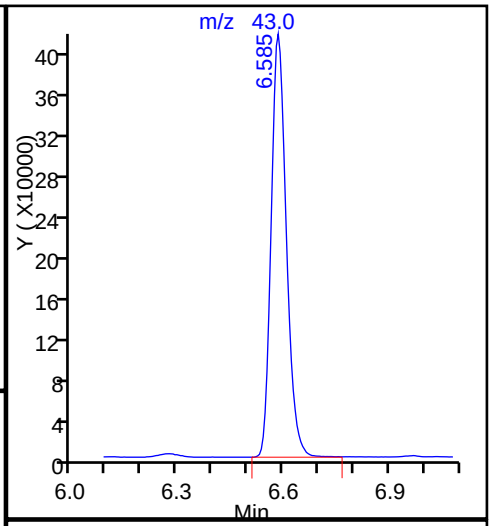


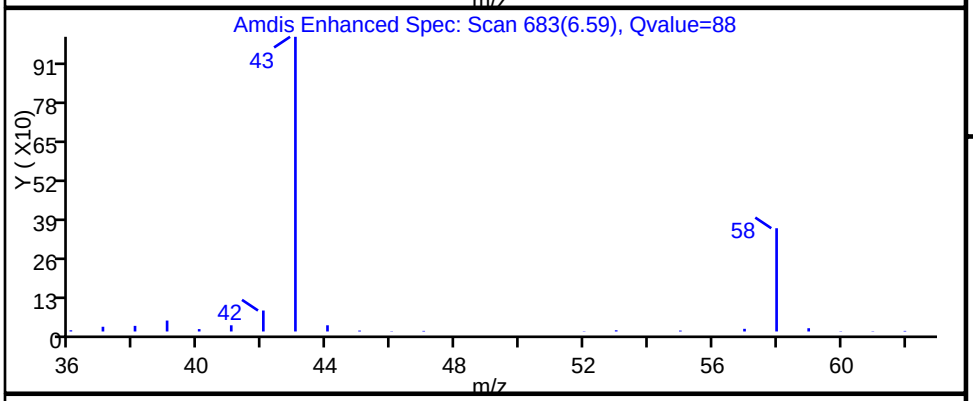
TestAmerica Burlington

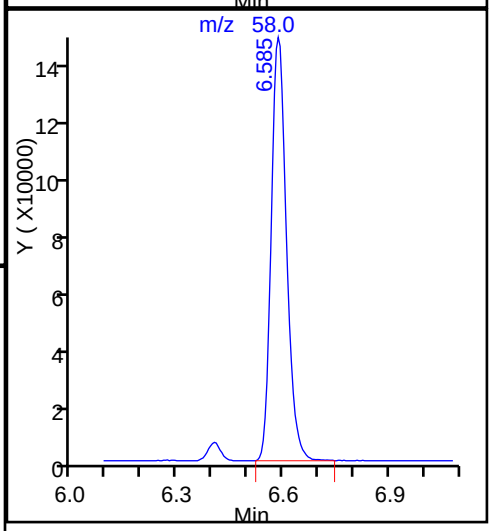
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

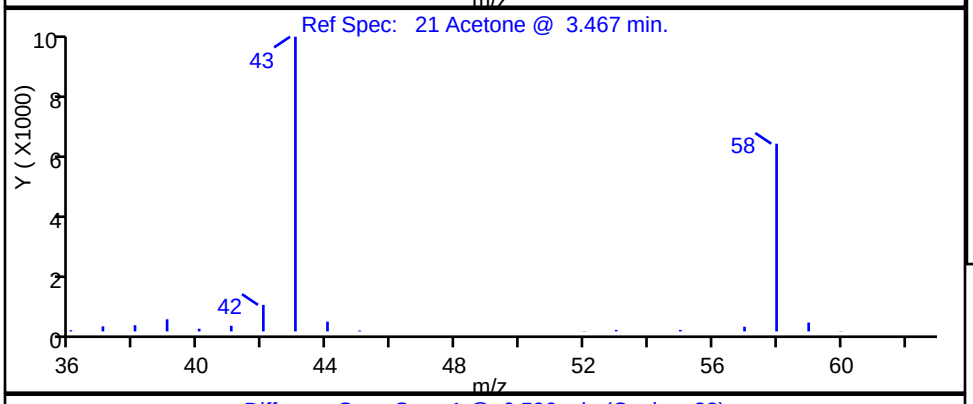
21 Acetone, CAS: 67-64-1

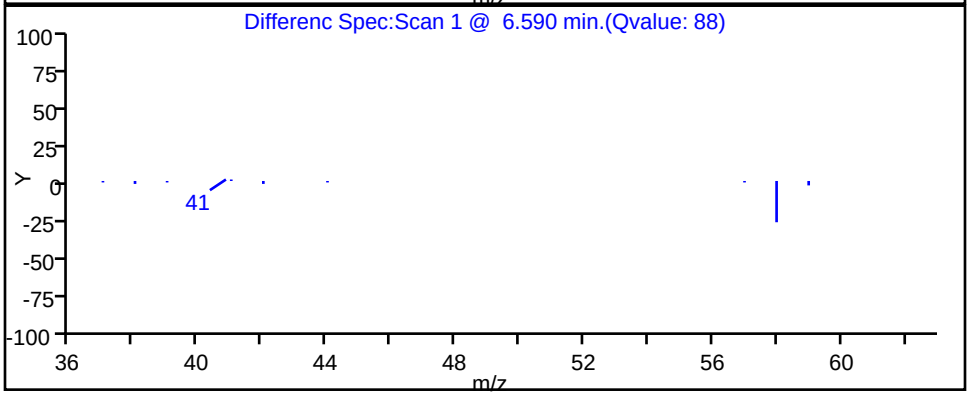








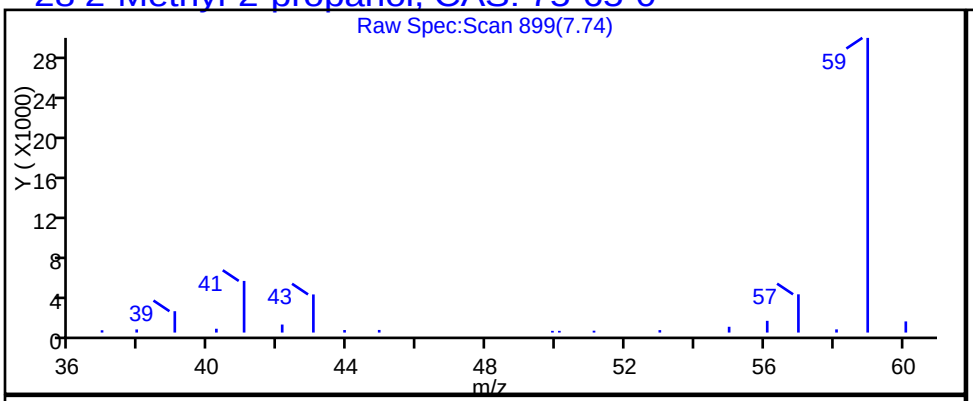


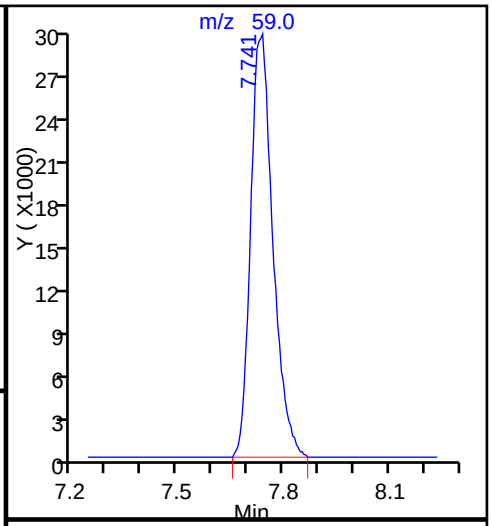


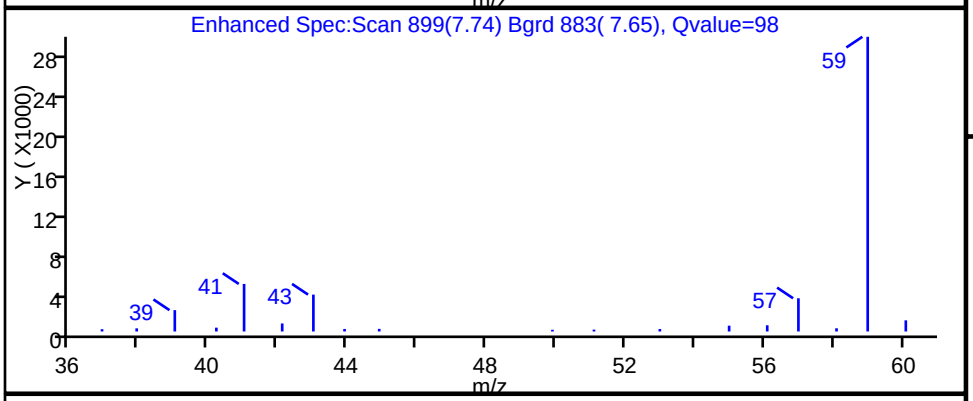
TestAmerica Burlington

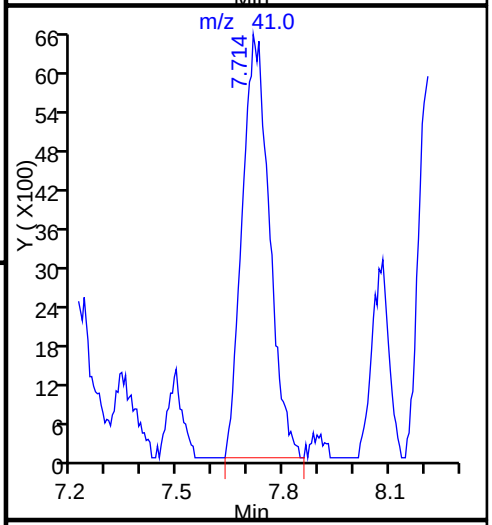
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D
Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

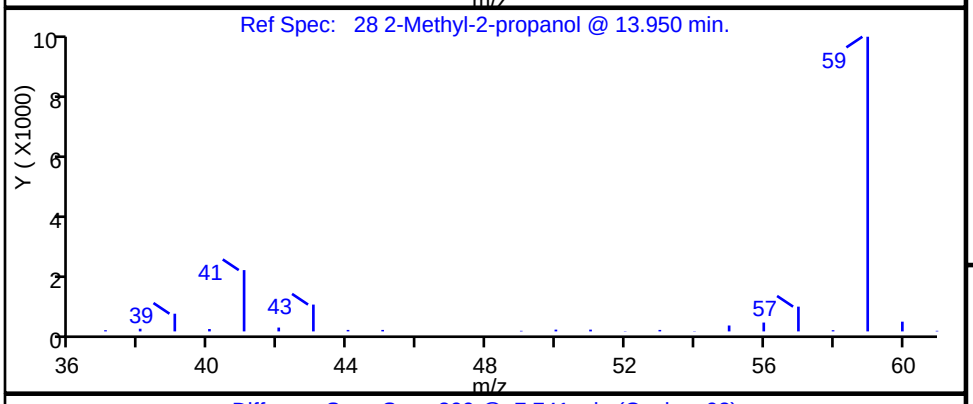
28 2-Methyl-2-propanol, CAS: 75-65-0

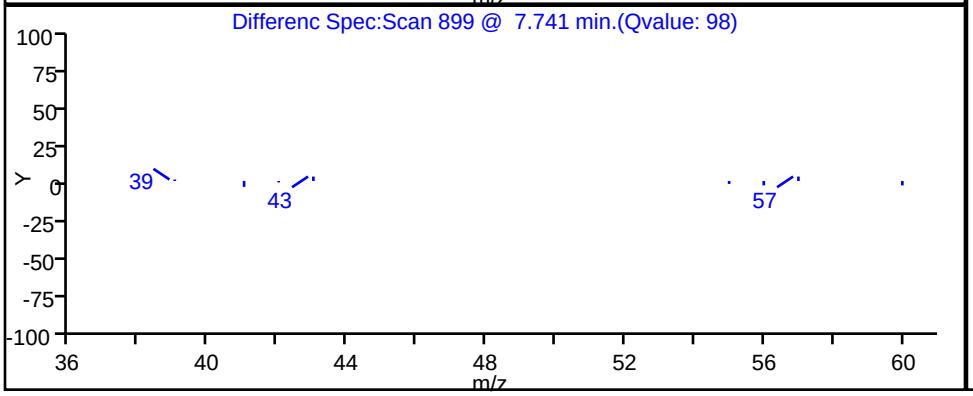


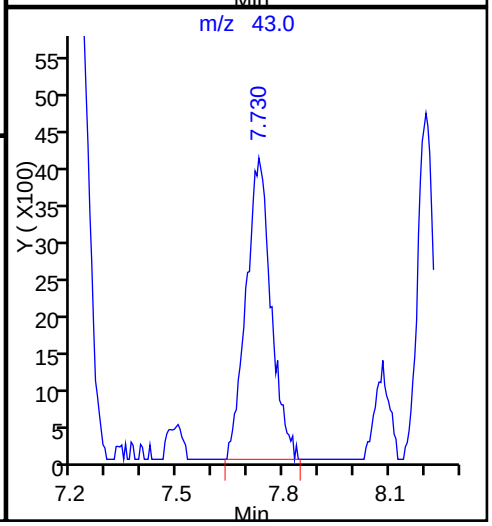












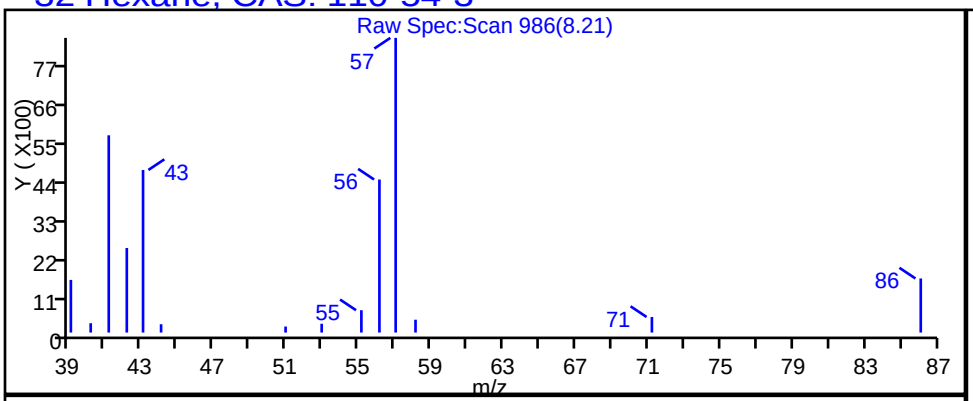
Report Date: 14-Oct-2015 07:47:41 Chrom Revision: 2.2 08-Oct-2015 07:17:48

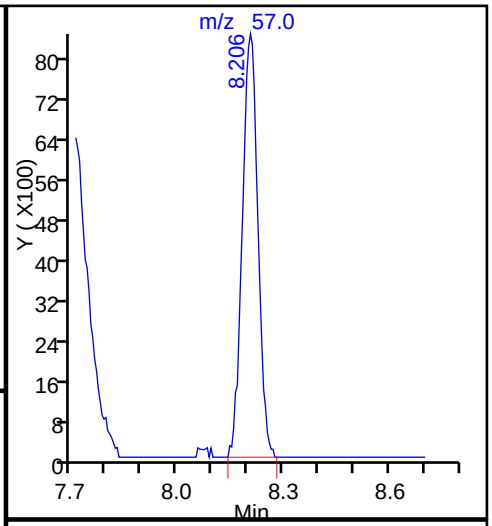
TestAmerica Burlington

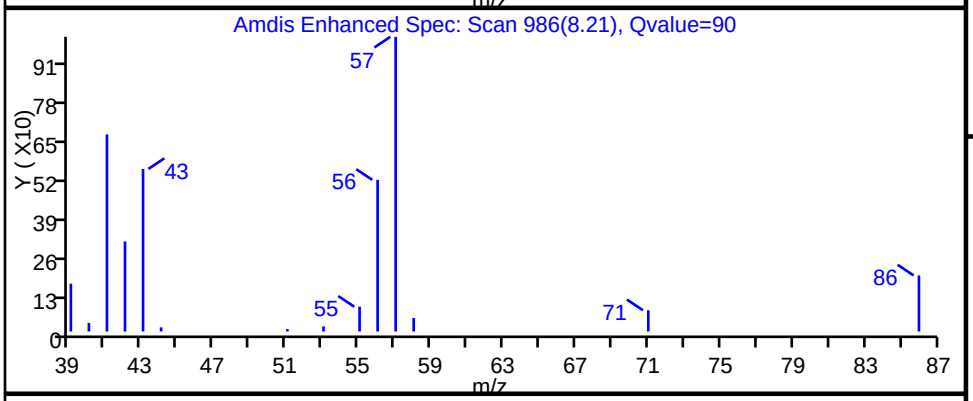
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

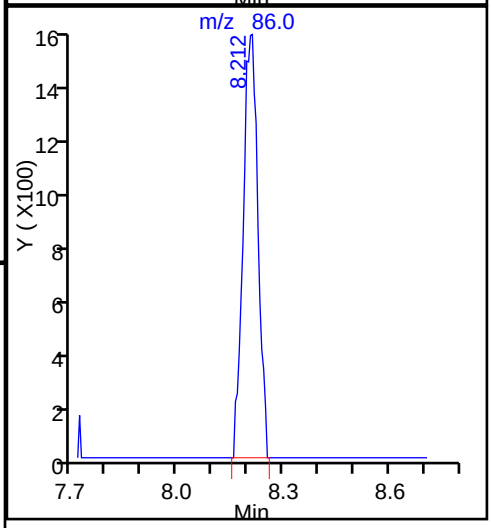
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

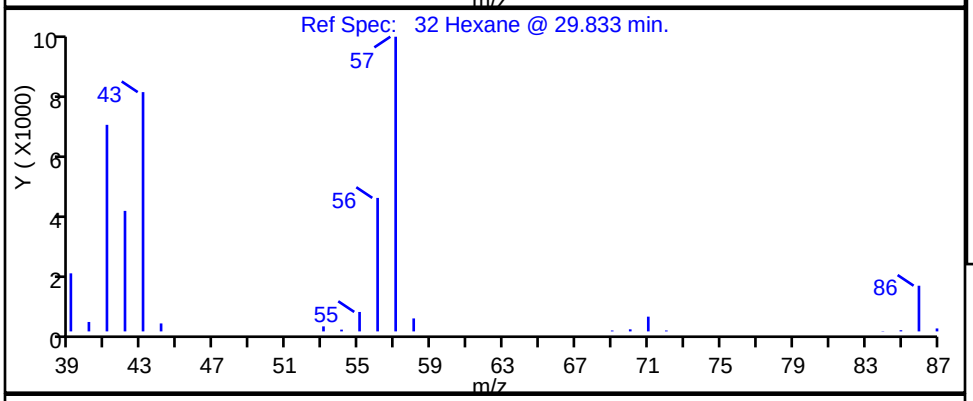
32 Hexane, CAS: 110-54-3

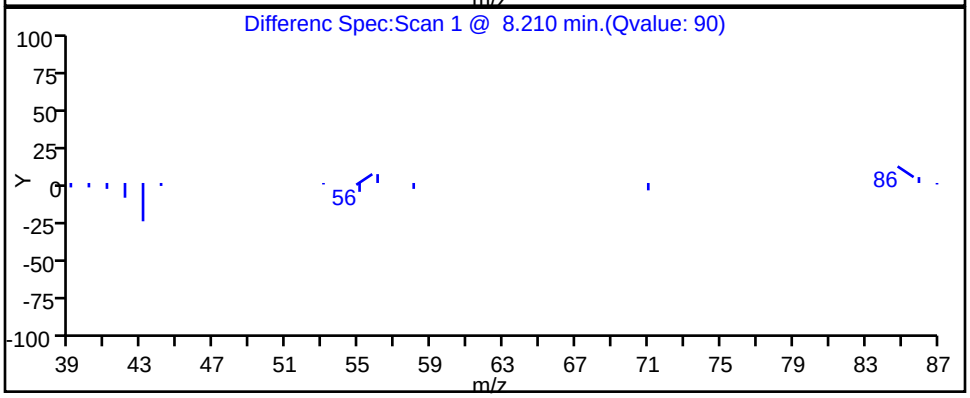








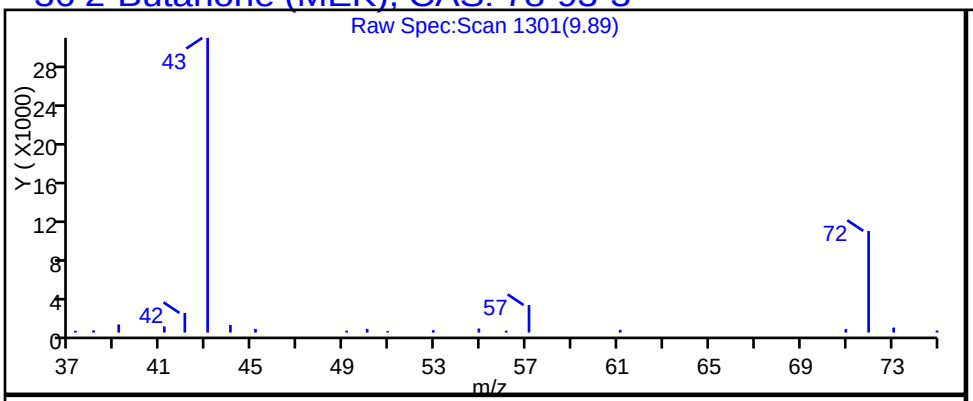


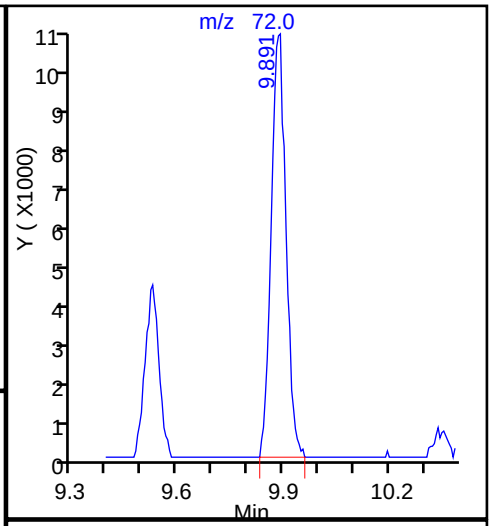


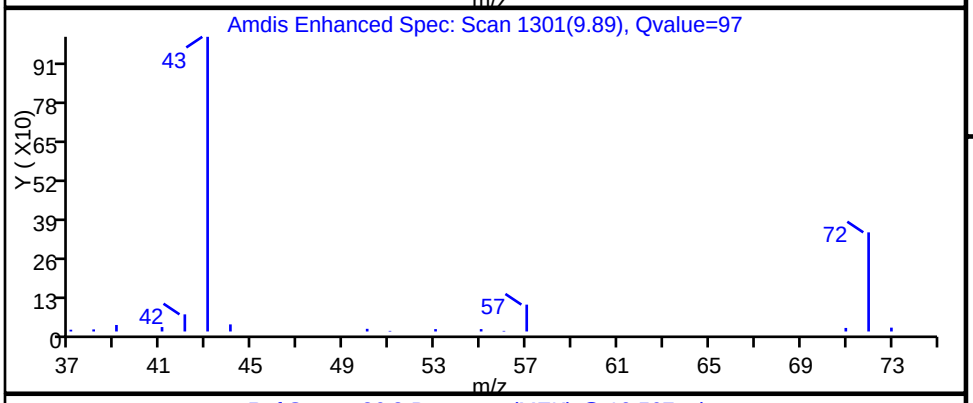
TestAmerica Burlington

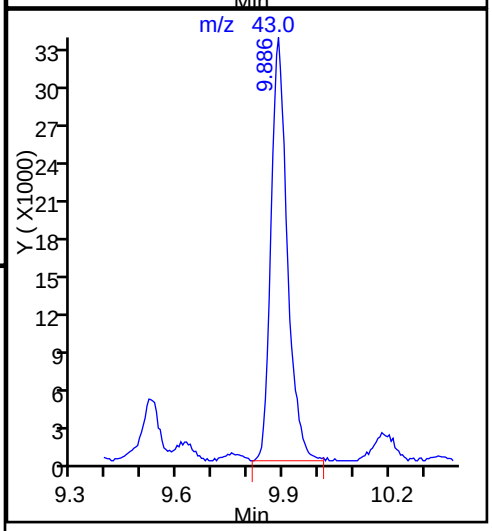
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

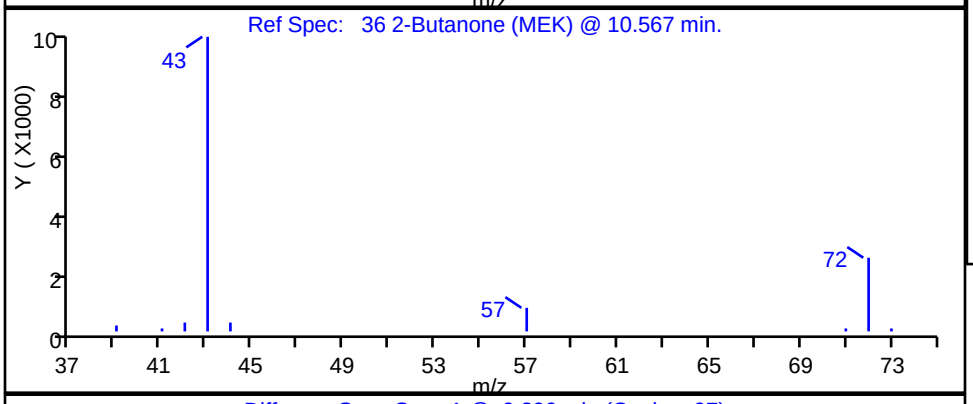
36 2-Butanone (MEK), CAS: 78-93-3

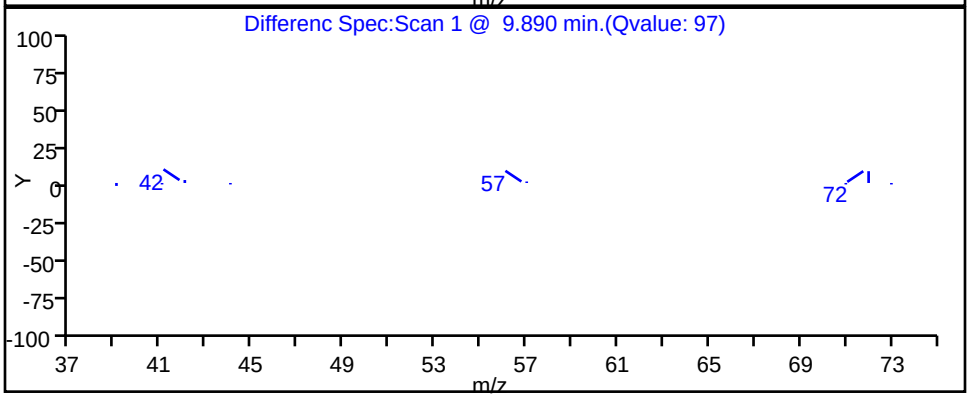








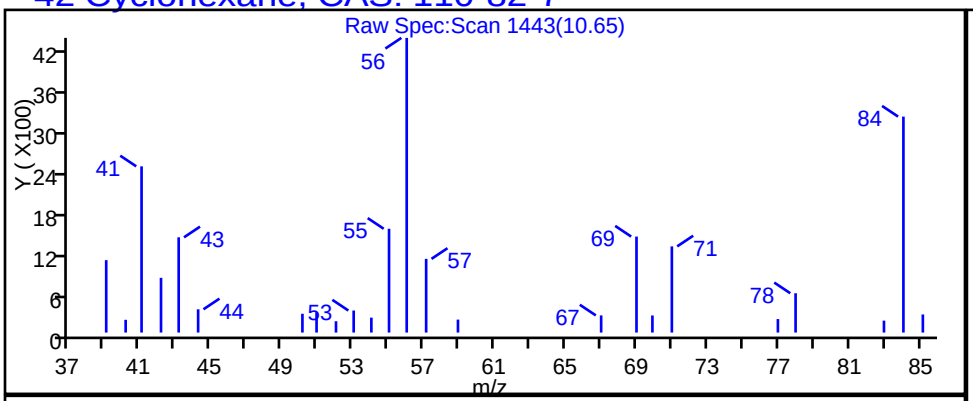


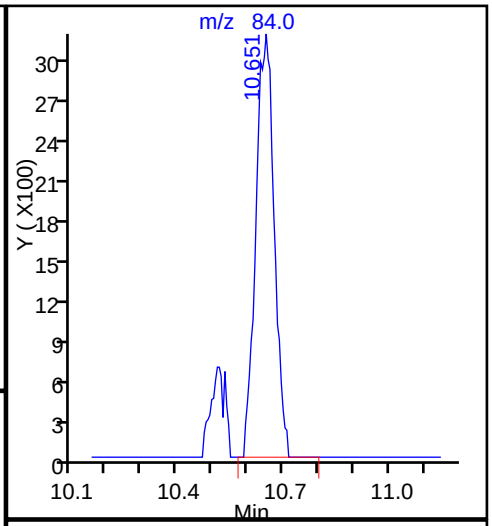


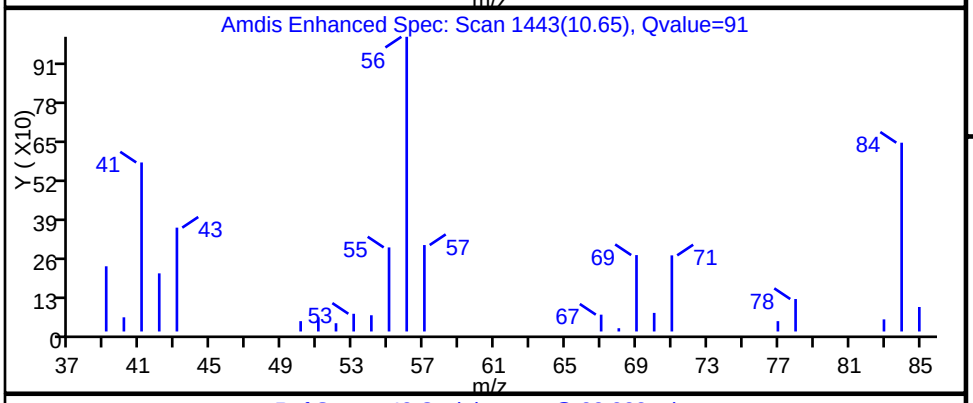
TestAmerica Burlington

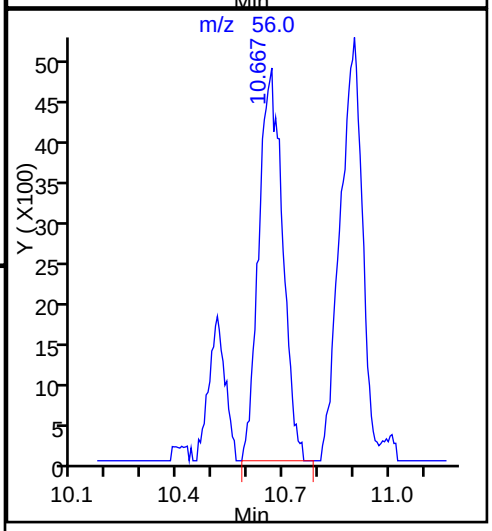
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

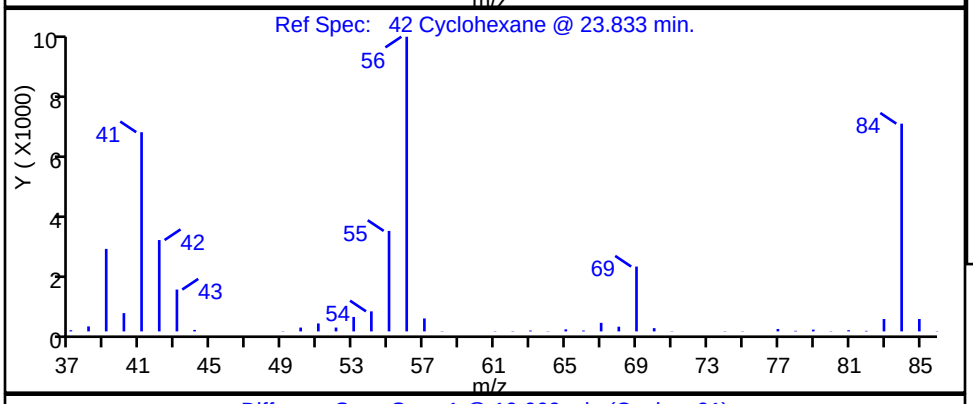
42 Cyclohexane, CAS: 110-82-7

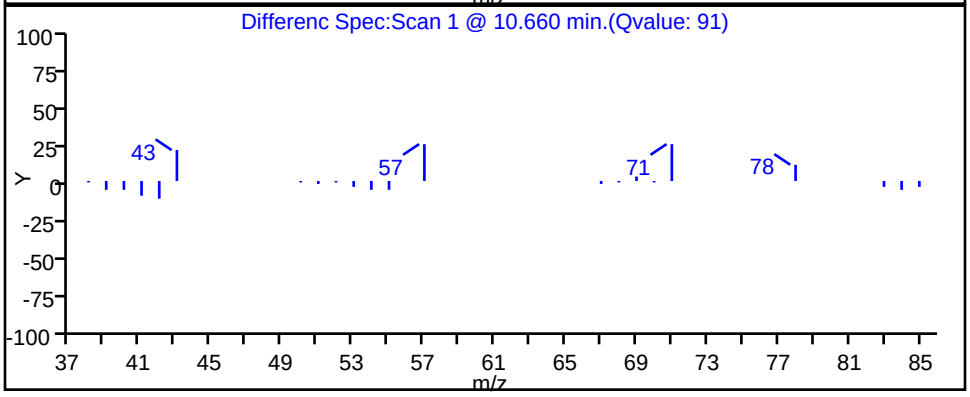










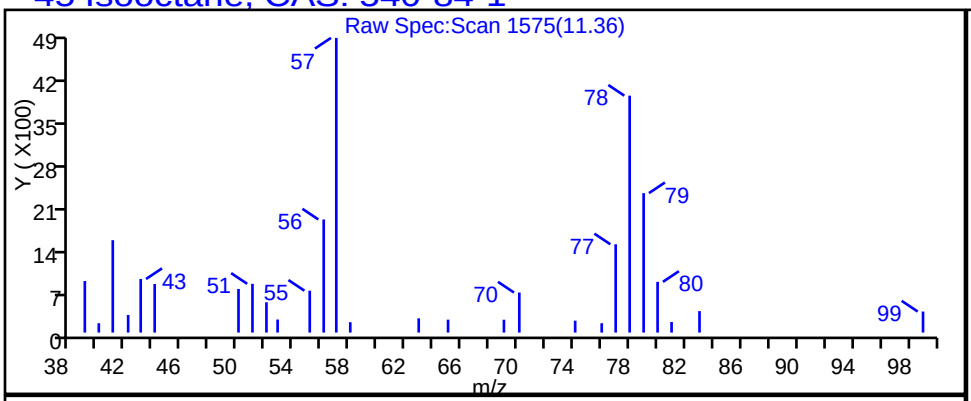


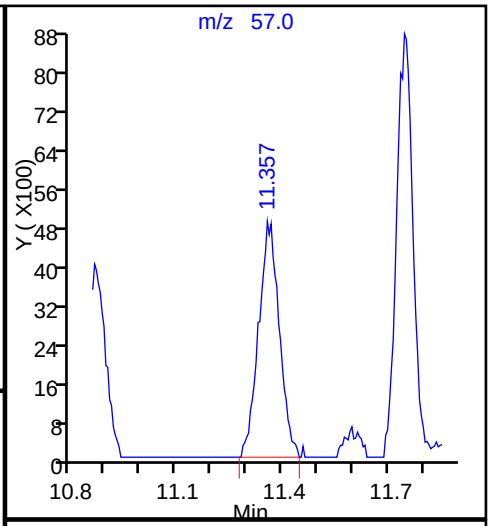
TestAmerica Burlington

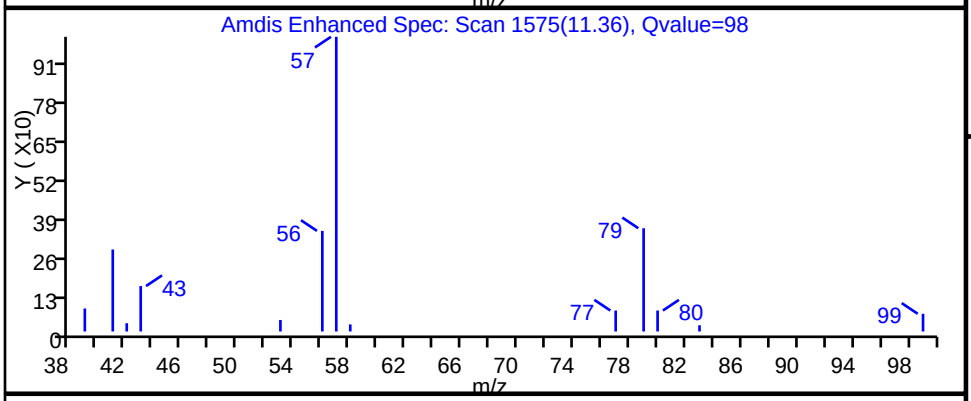
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

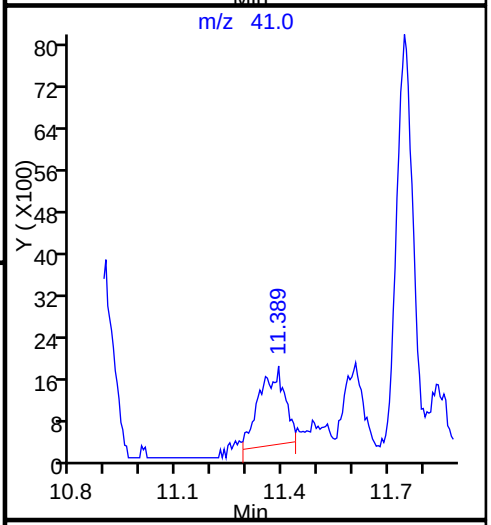
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

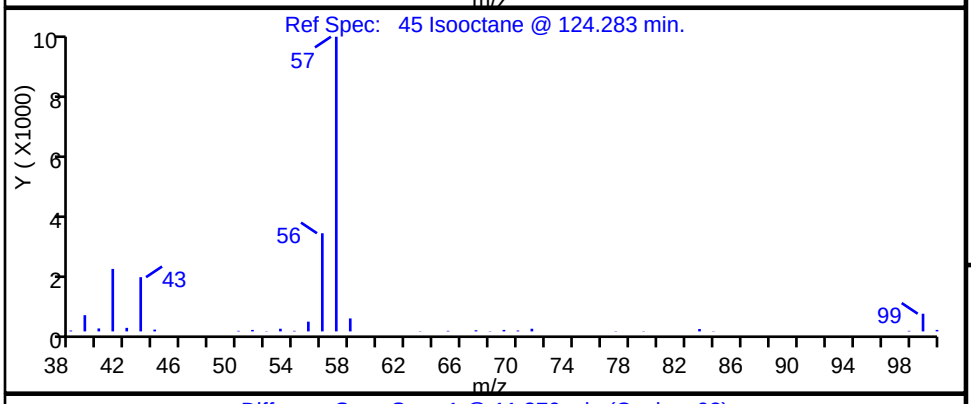
45 Isooctane, CAS: 540-84-1

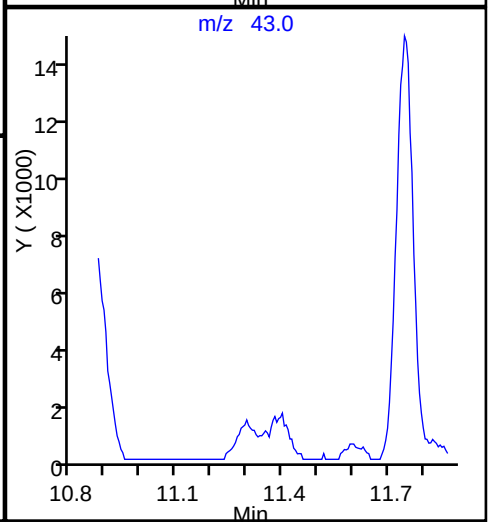


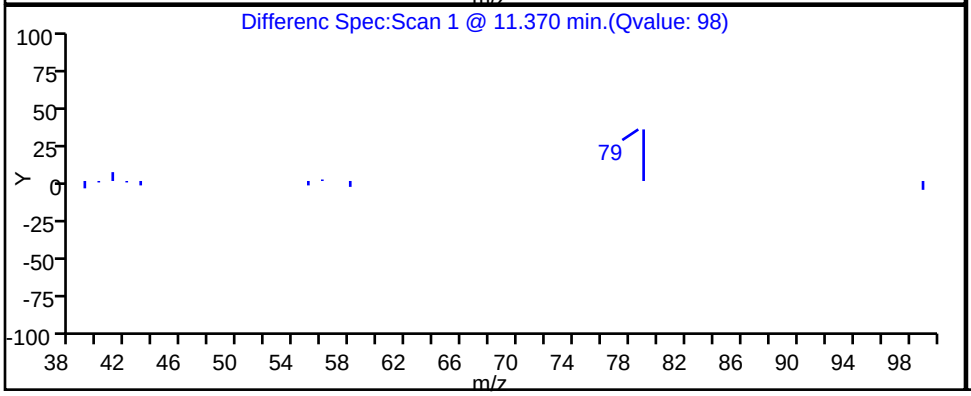








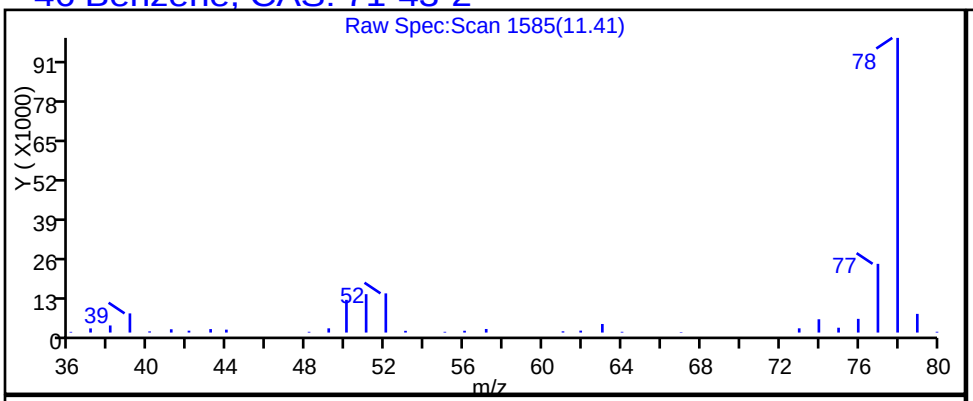


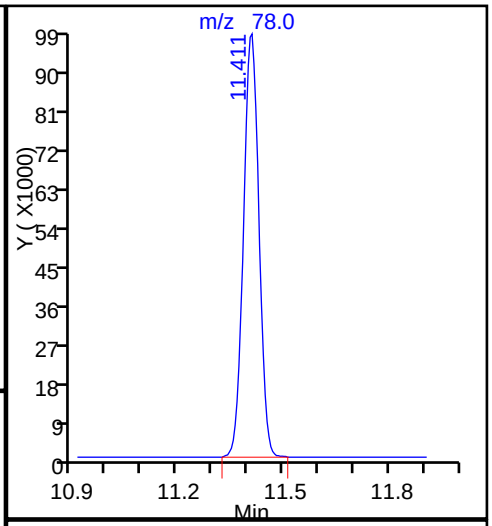


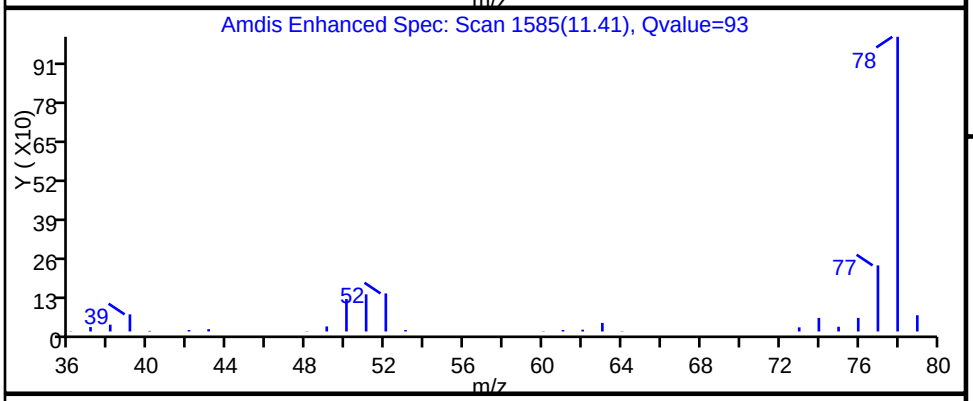
TestAmerica Burlington

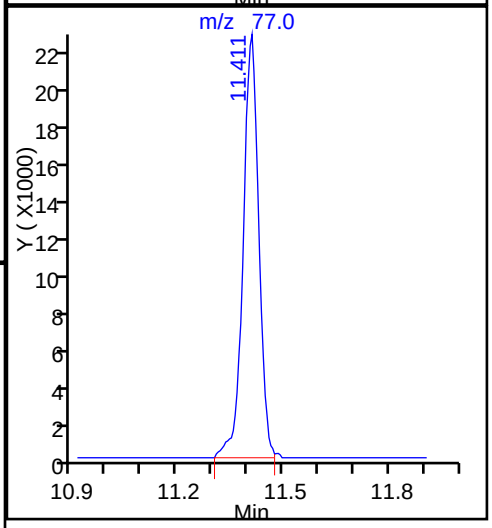
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

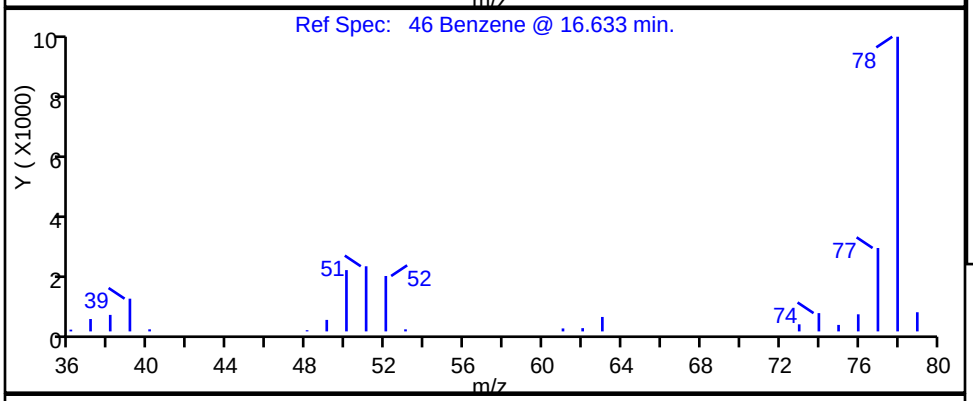
46 Benzene, CAS: 71-43-2

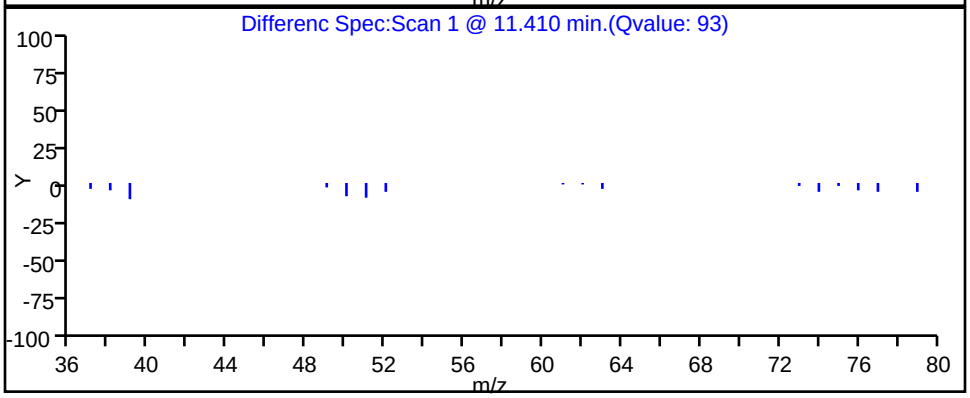








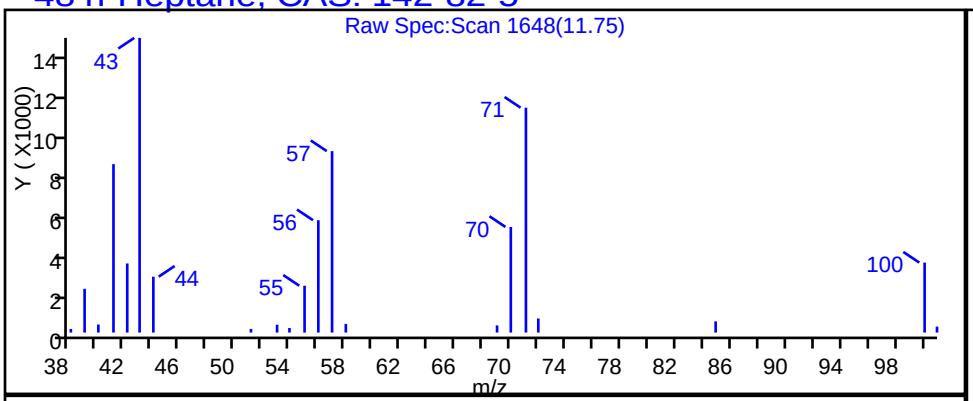


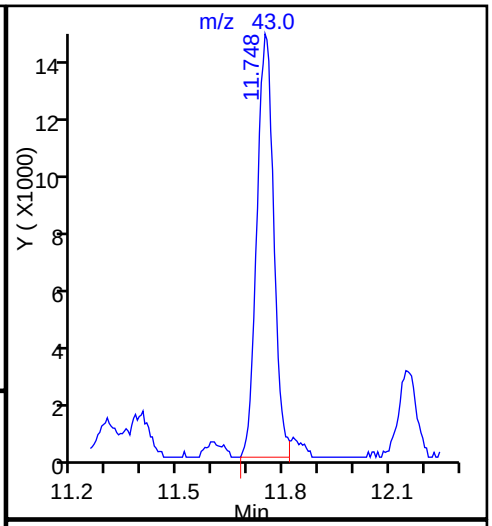


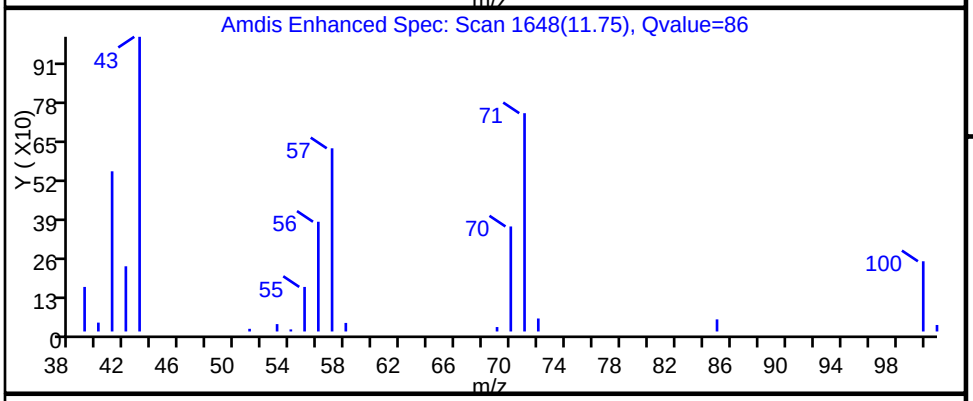
TestAmerica Burlington

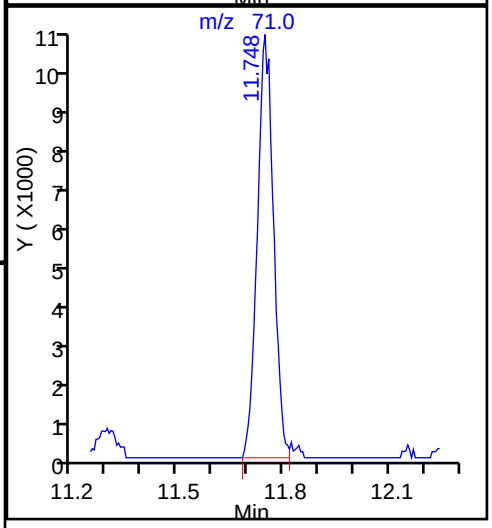
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

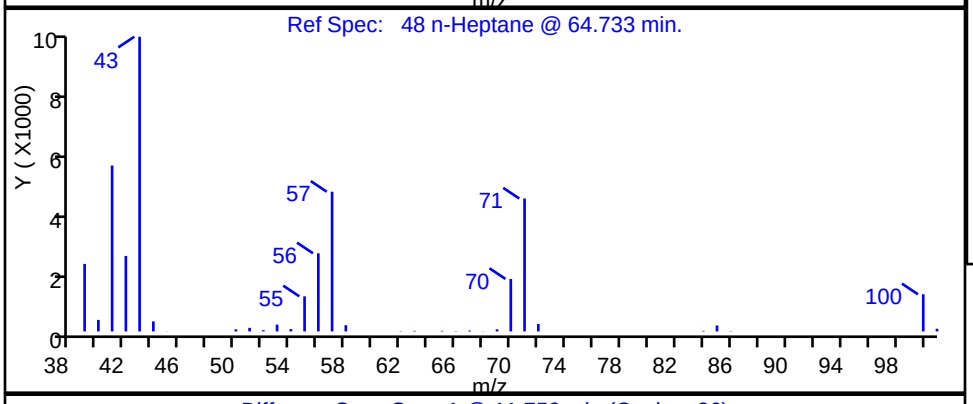
48 n-Heptane, CAS: 142-82-5

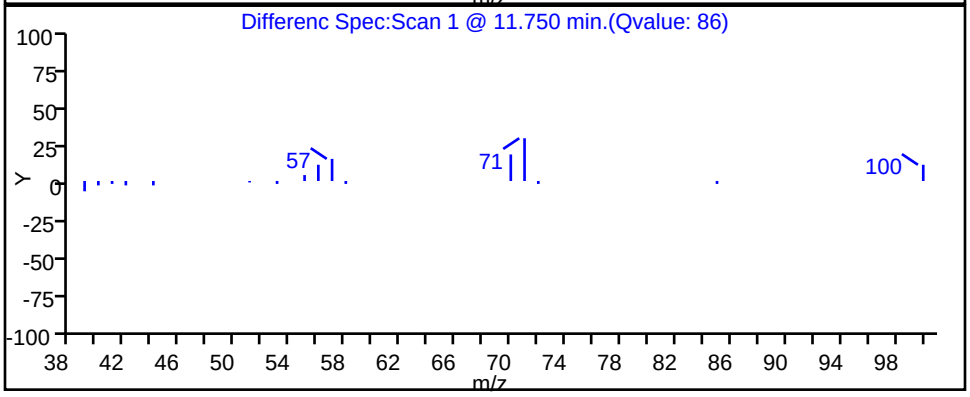








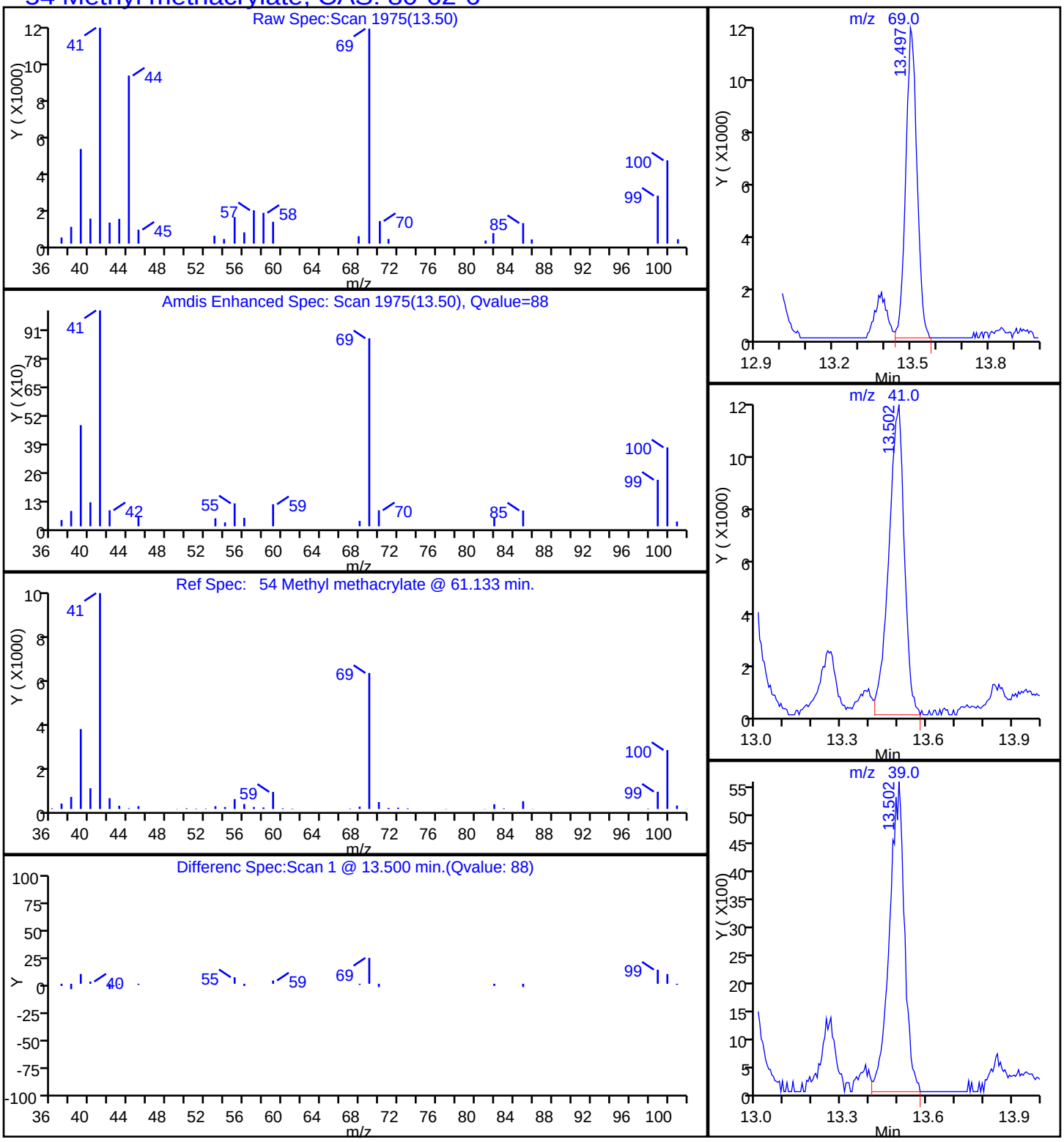




TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

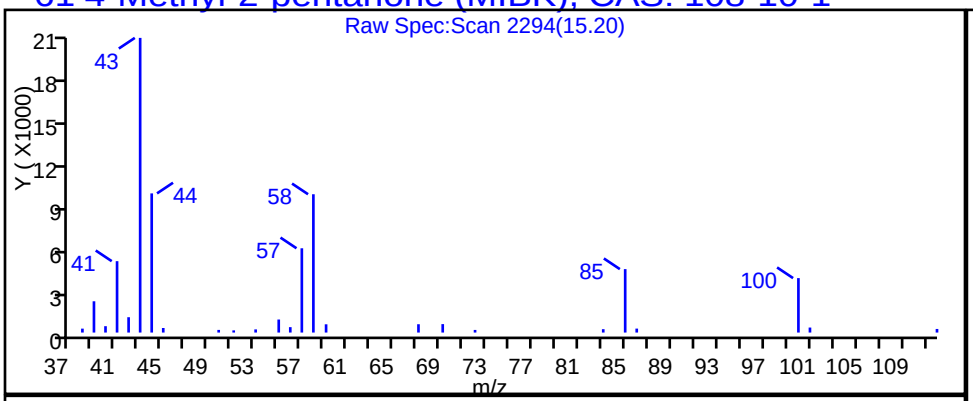
54 Methyl methacrylate, CAS: 80-62-6

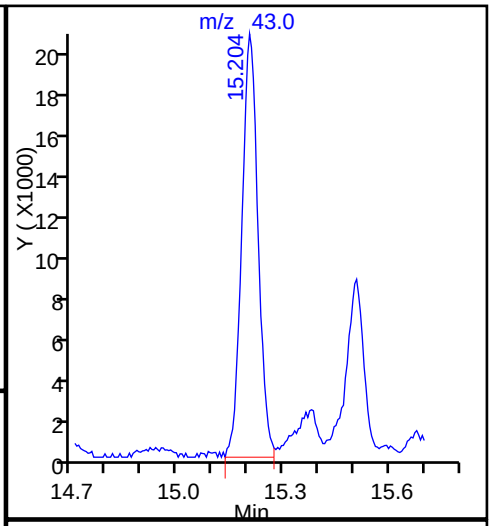


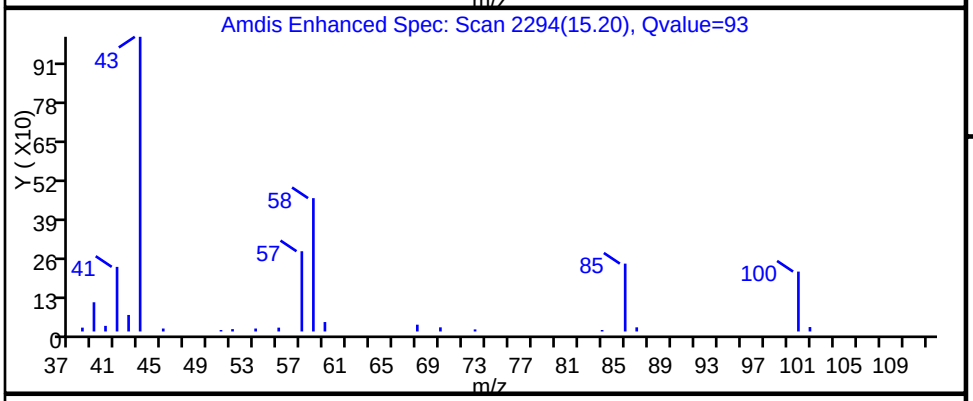
TestAmerica Burlington

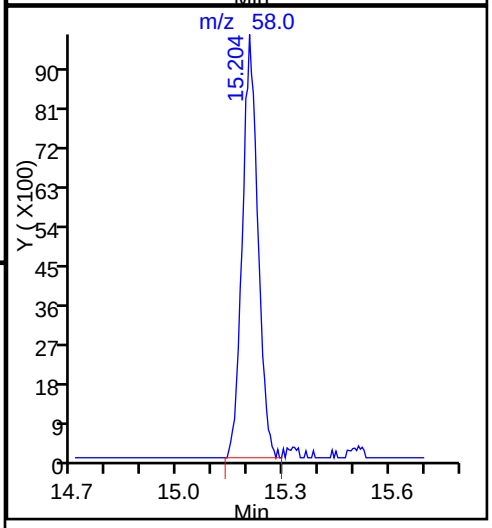
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

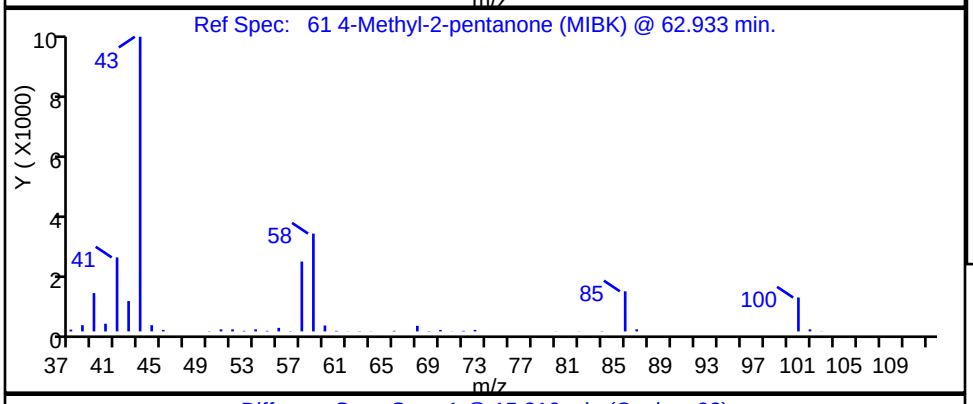
61 4-Methyl-2-pentanone (MIBK), CAS: 108-10-1

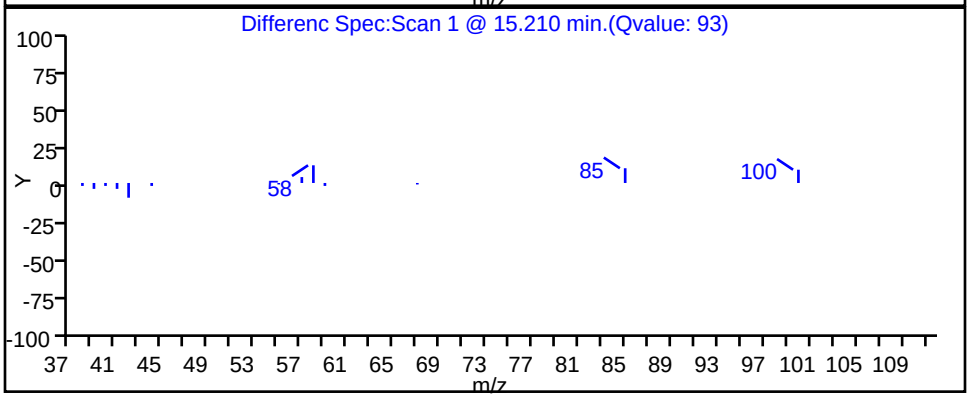








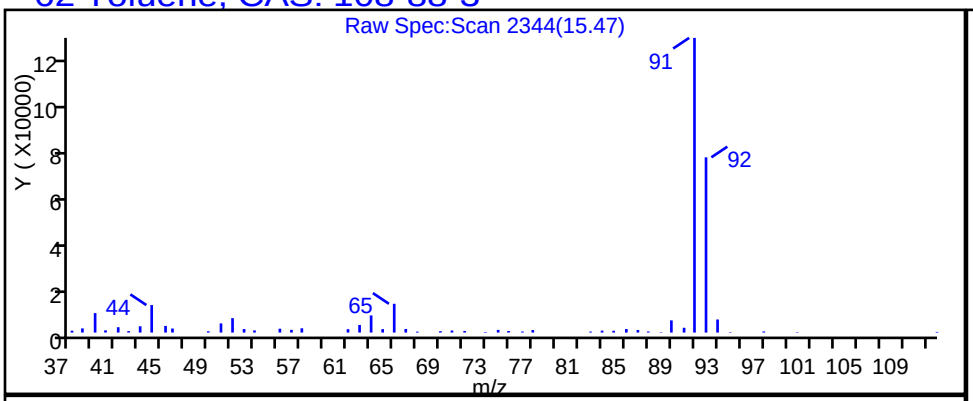


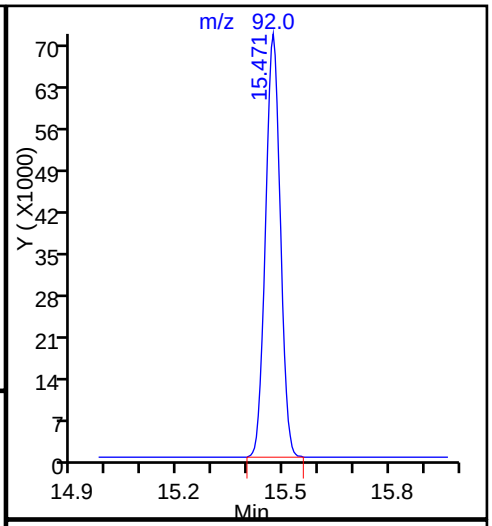


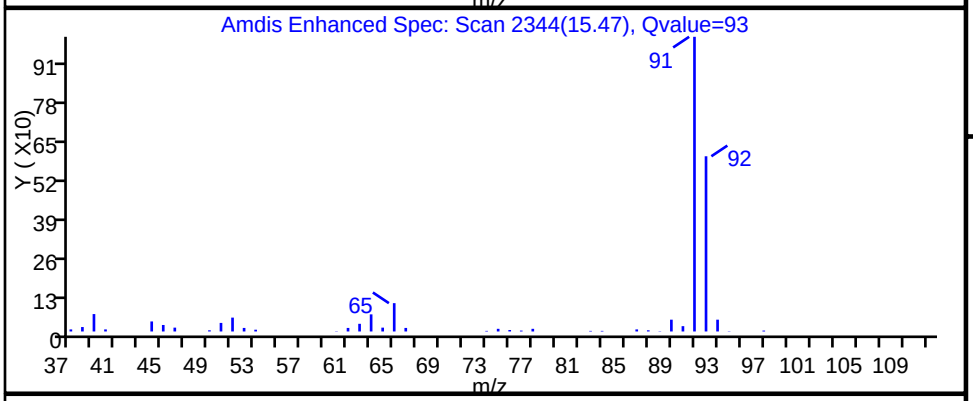
TestAmerica Burlington

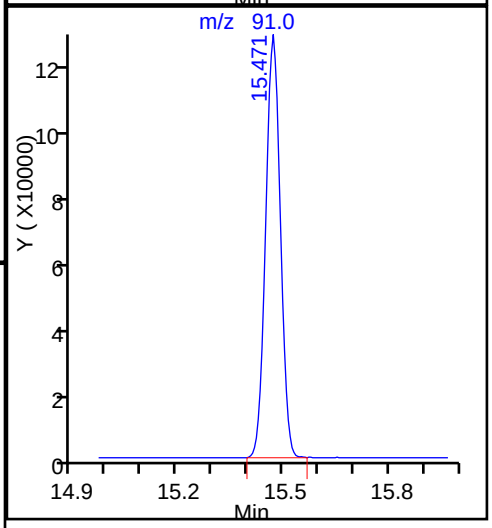
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

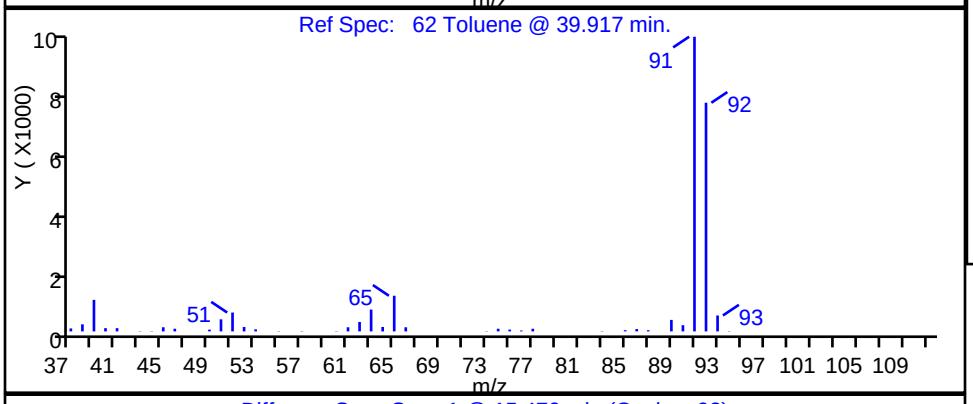
62 Toluene, CAS: 108-88-3

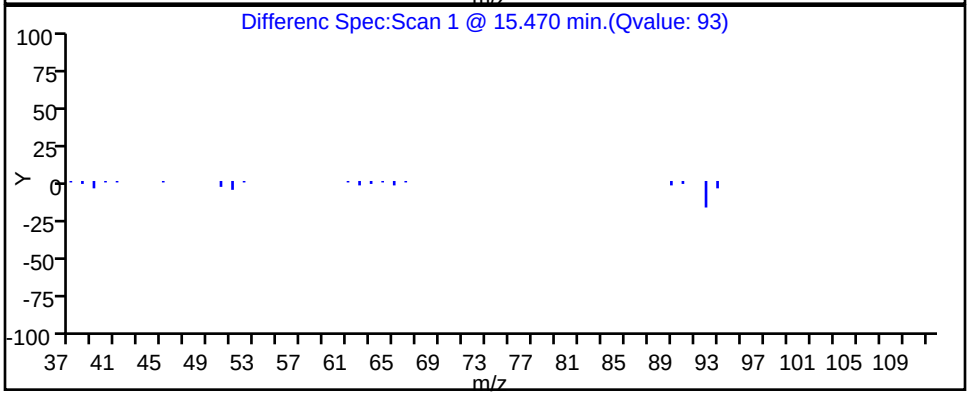








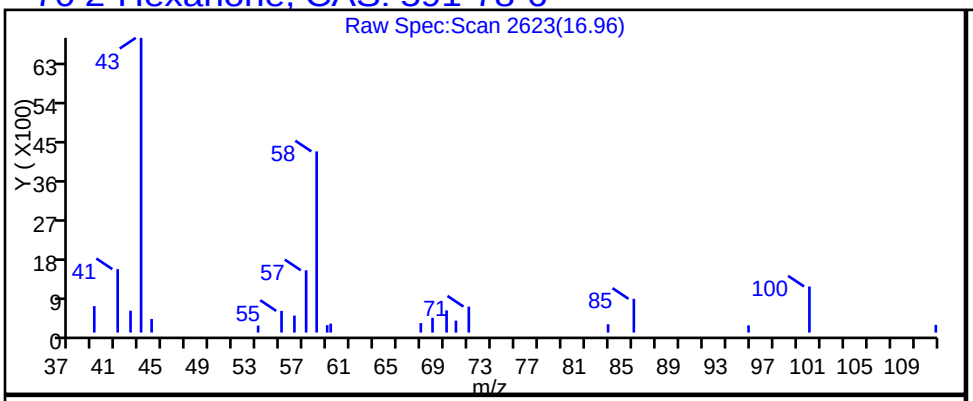


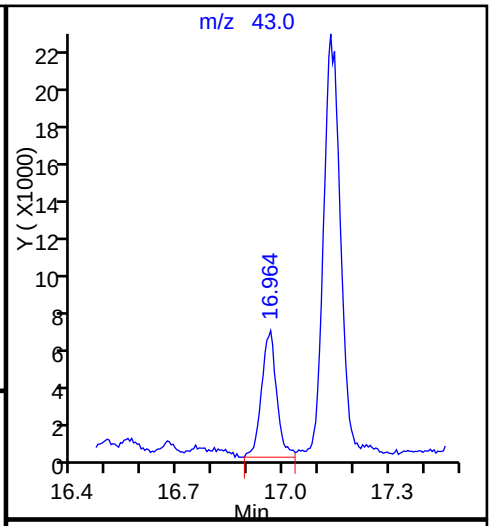


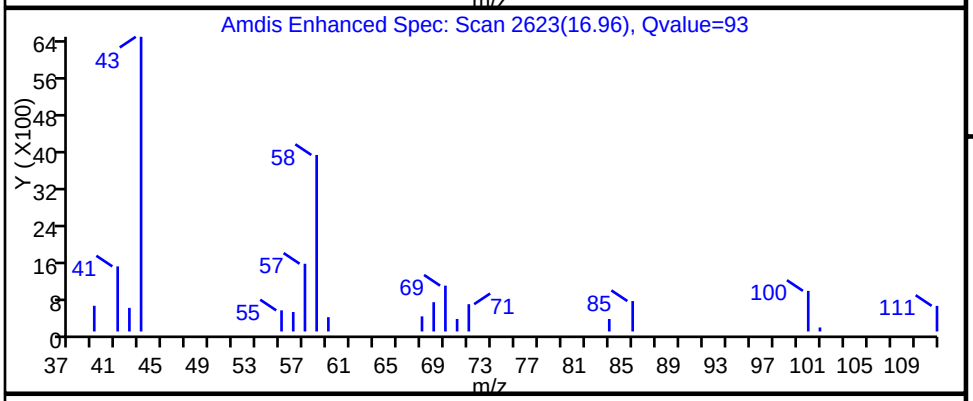
TestAmerica Burlington

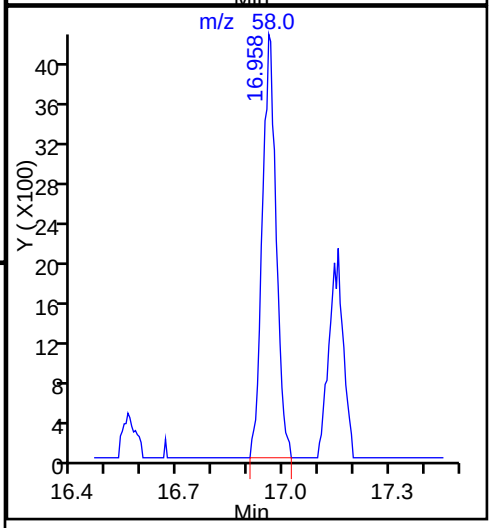
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

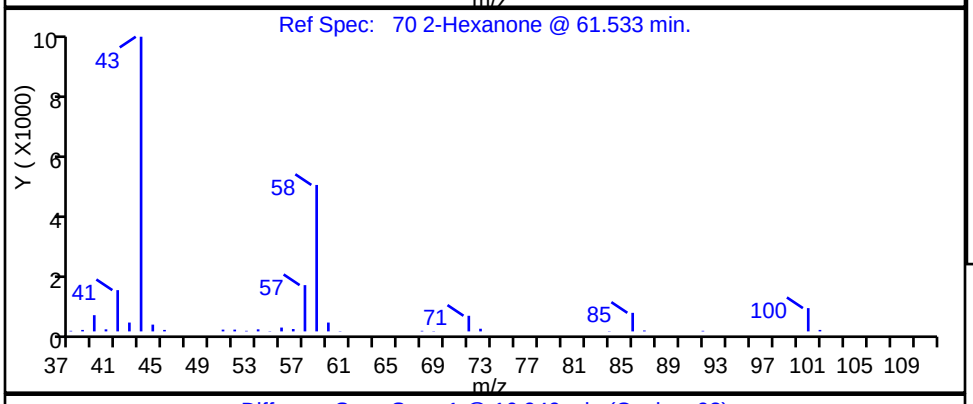
70 2-Hexanone, CAS: 591-78-6

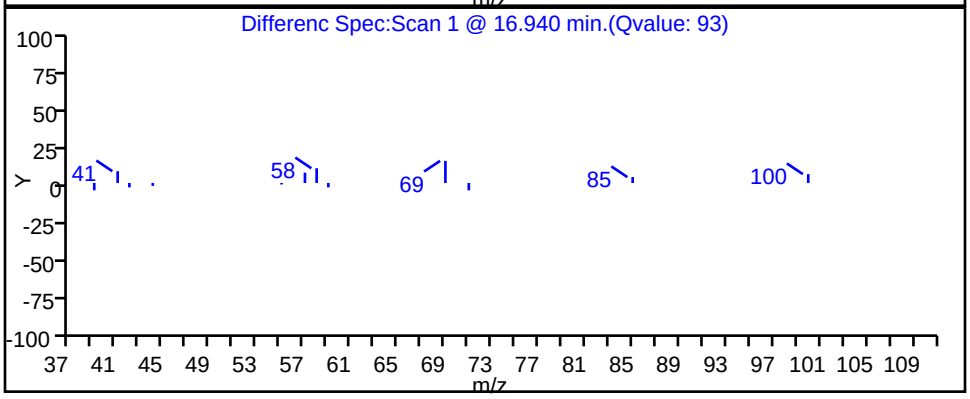








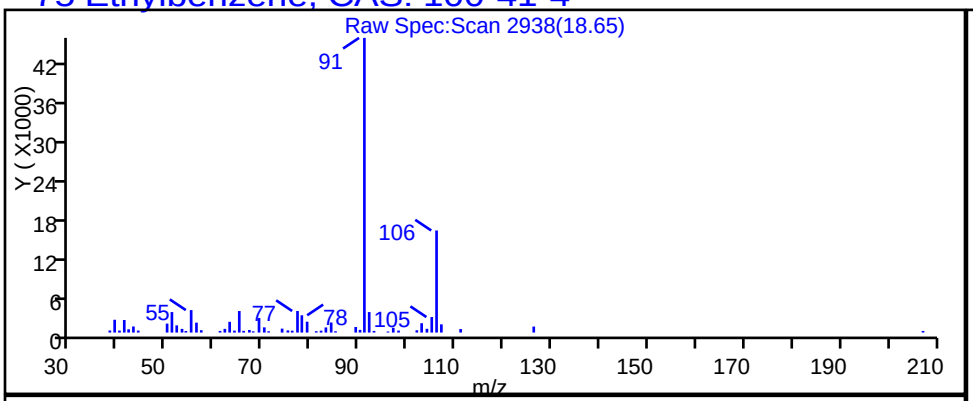


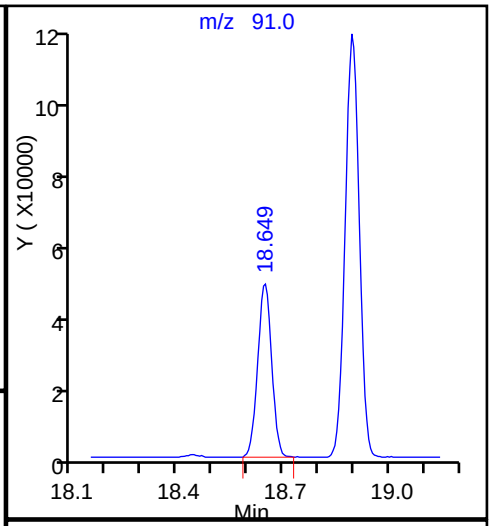


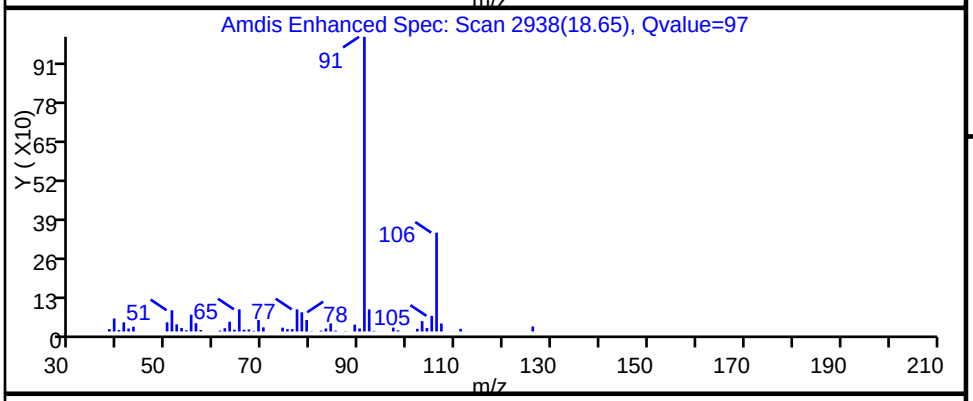
TestAmerica Burlington

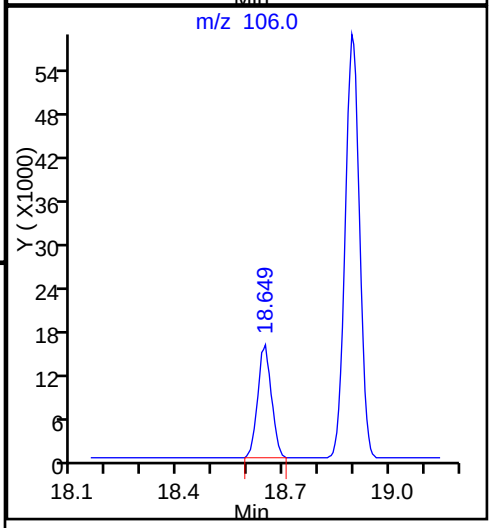
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

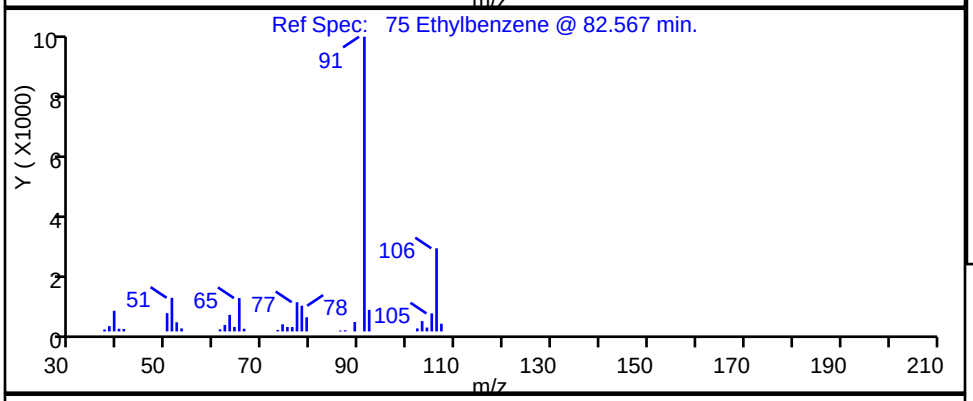
75 Ethylbenzene, CAS: 100-41-4

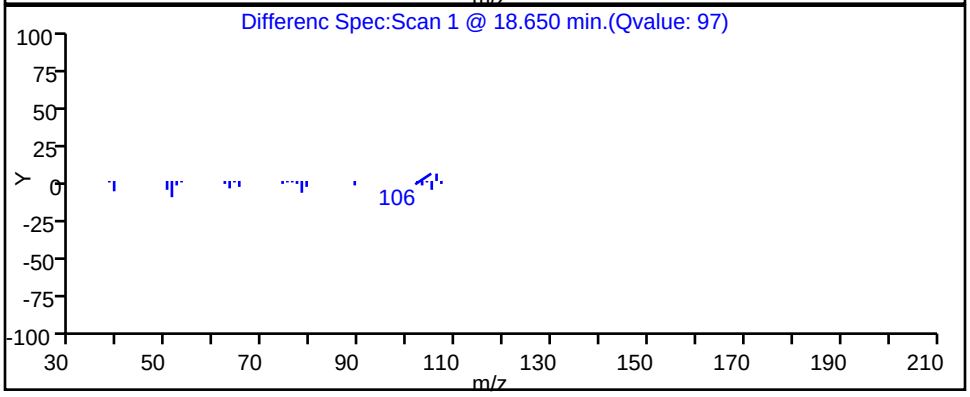












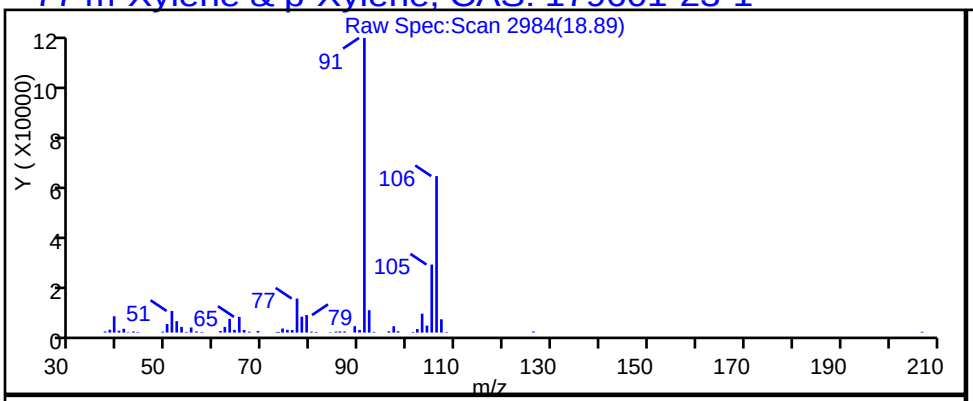
Report Date: 14-Oct-2015 07:47:42 Chrom Revision: 2.2 08-Oct-2015 07:17:48

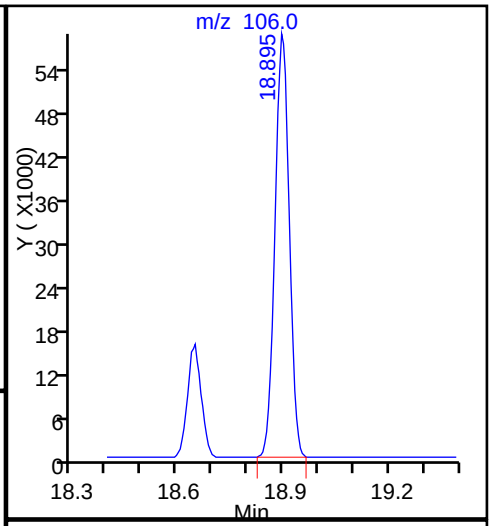
TestAmerica Burlington

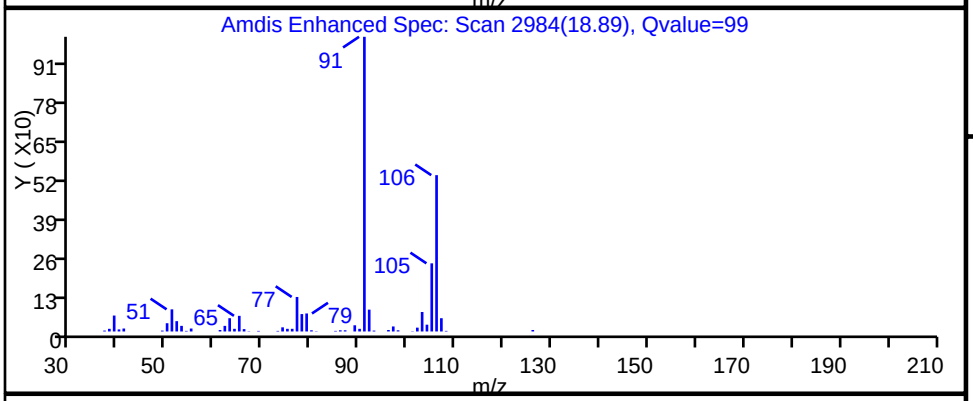
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

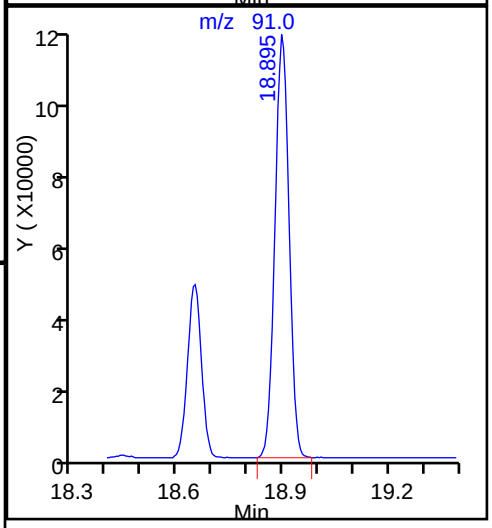
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

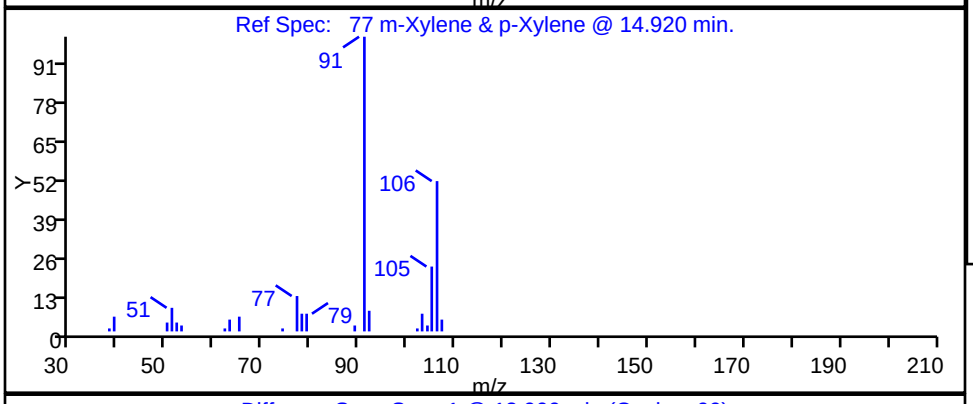
77 m-Xylene & p-Xylene, CAS: 179601-23-1

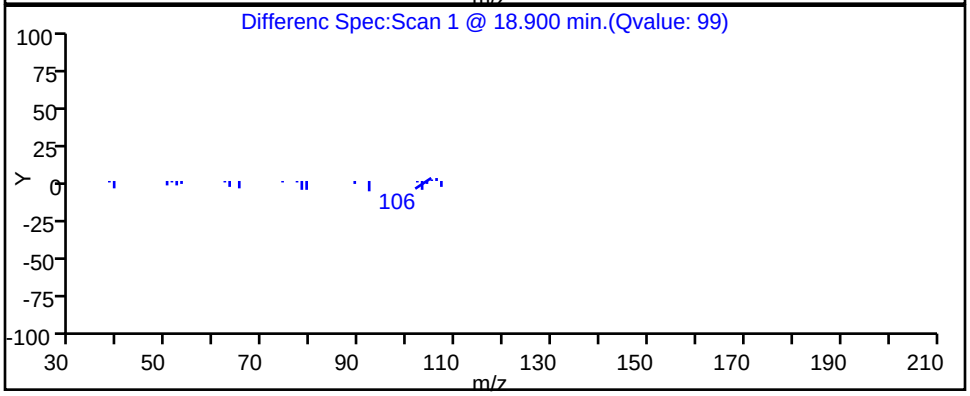








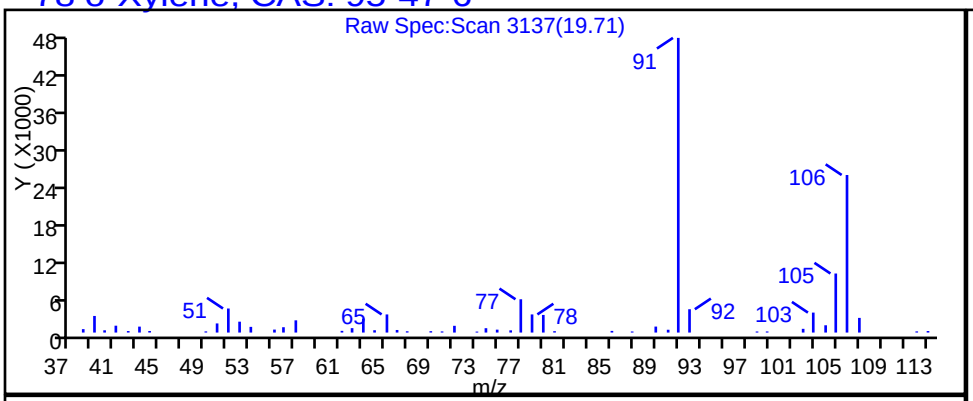


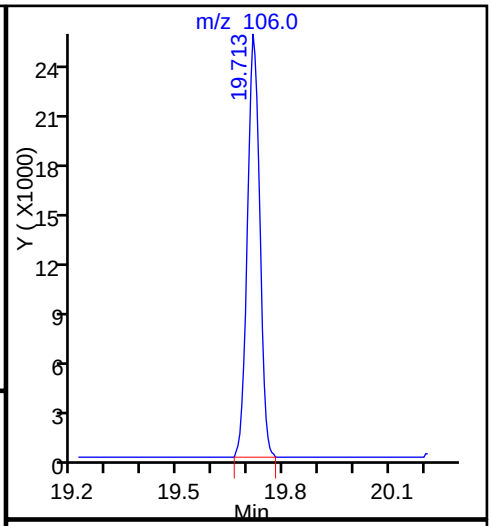


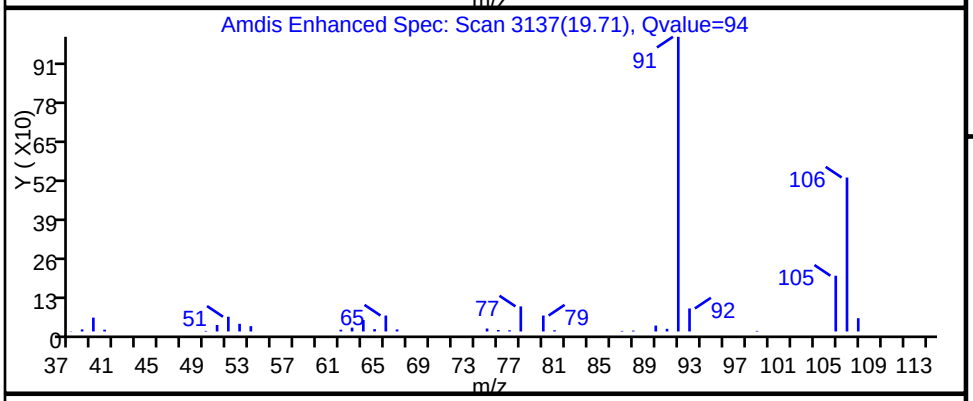
TestAmerica Burlington

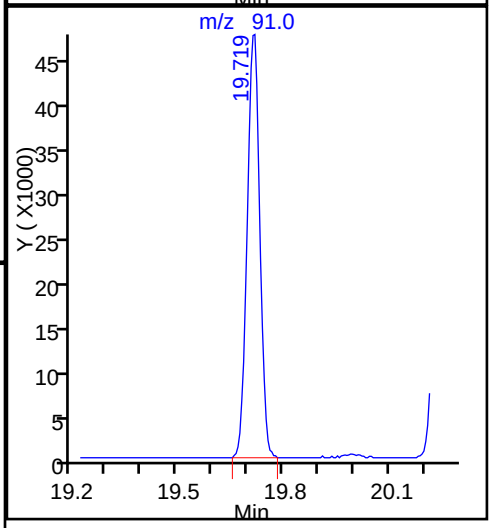
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

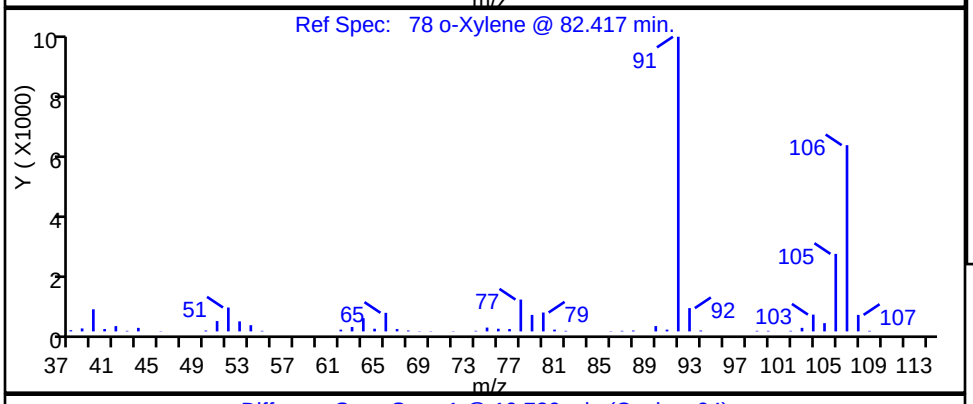
78 o-Xylene, CAS: 95-47-6

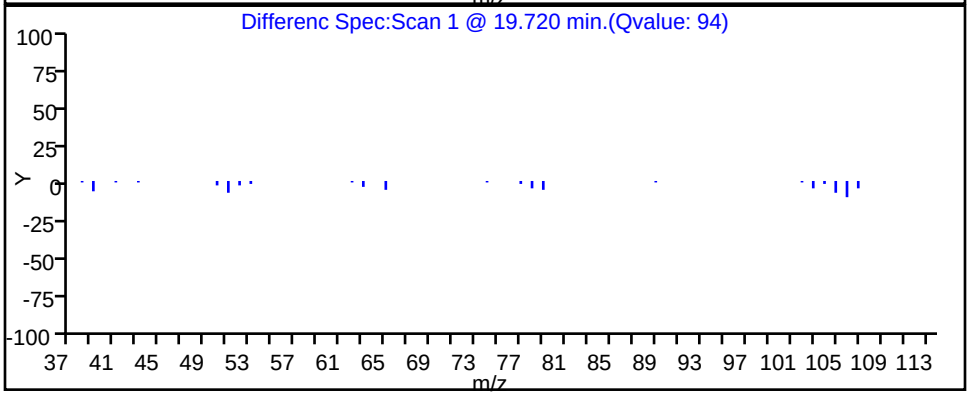










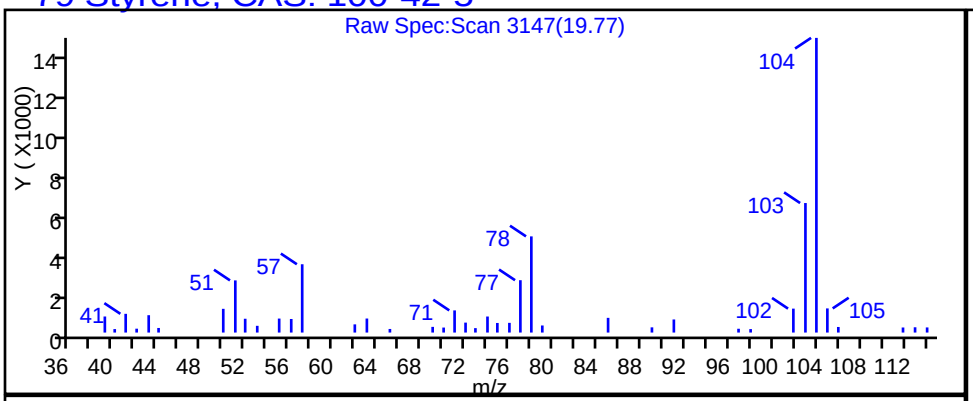


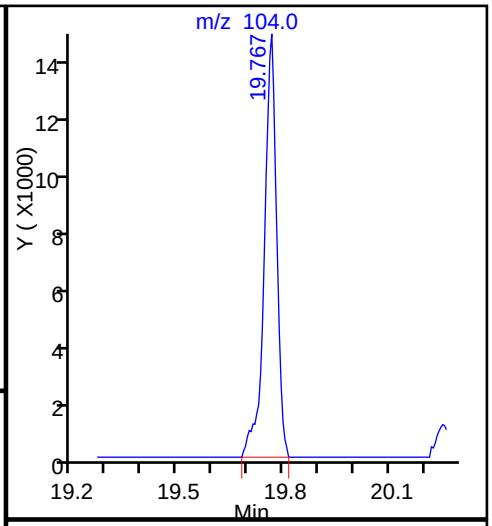
TestAmerica Burlington

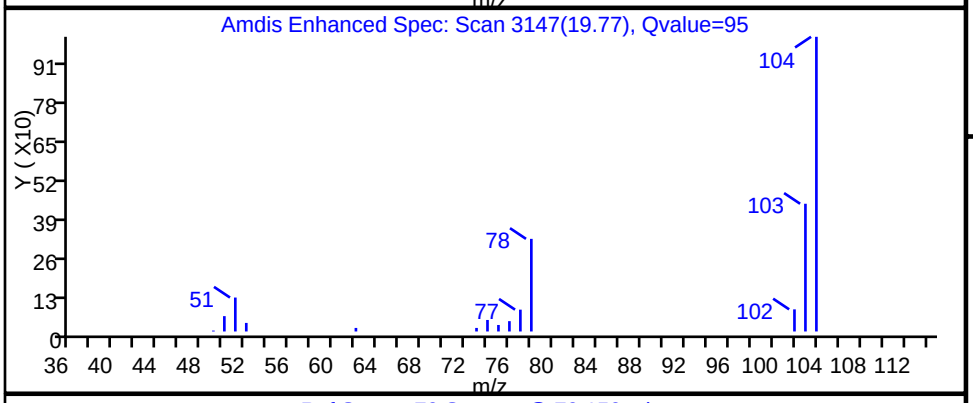
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

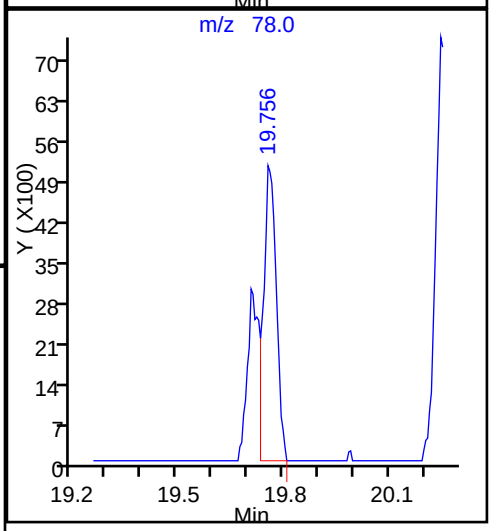
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

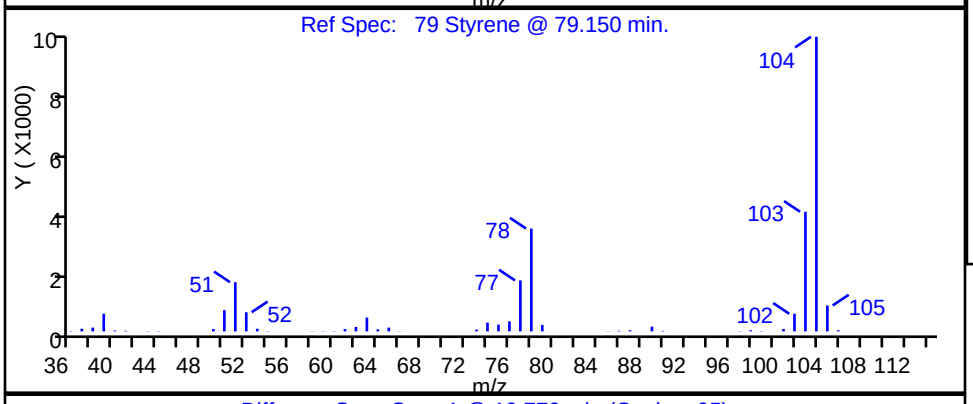
79 Styrene, CAS: 100-42-5

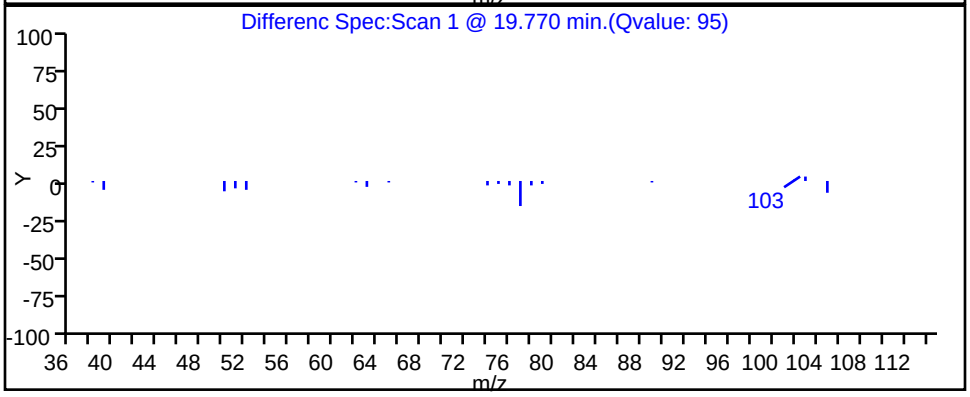








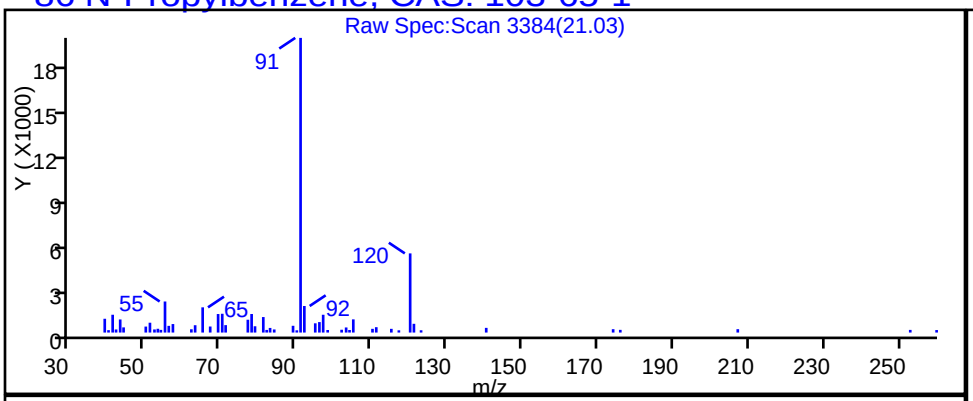


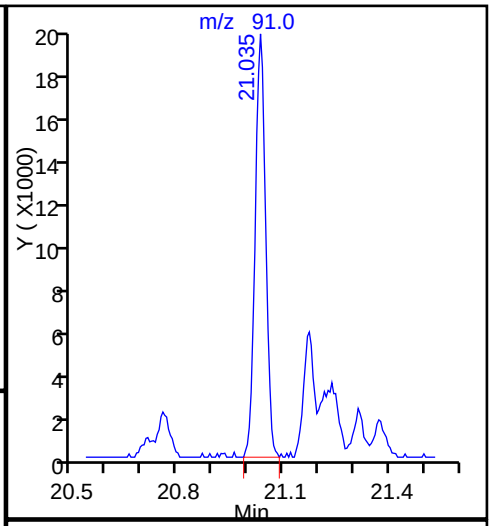


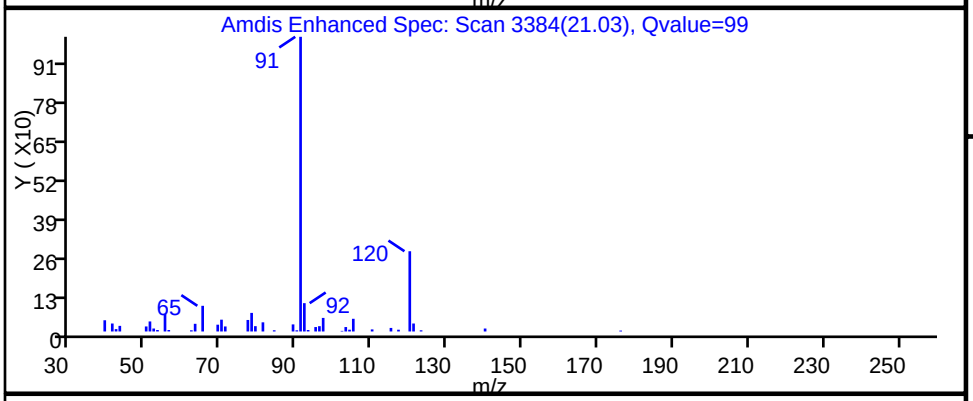
TestAmerica Burlington

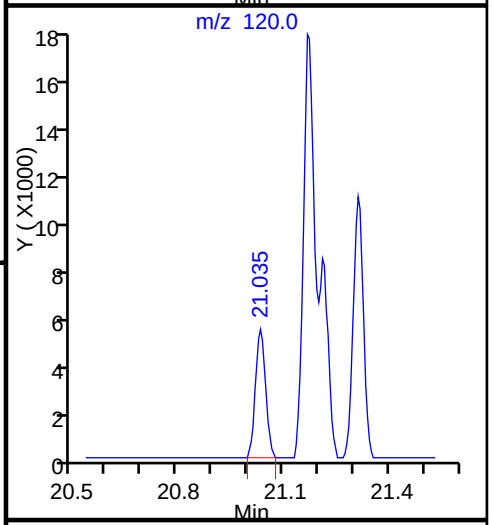
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

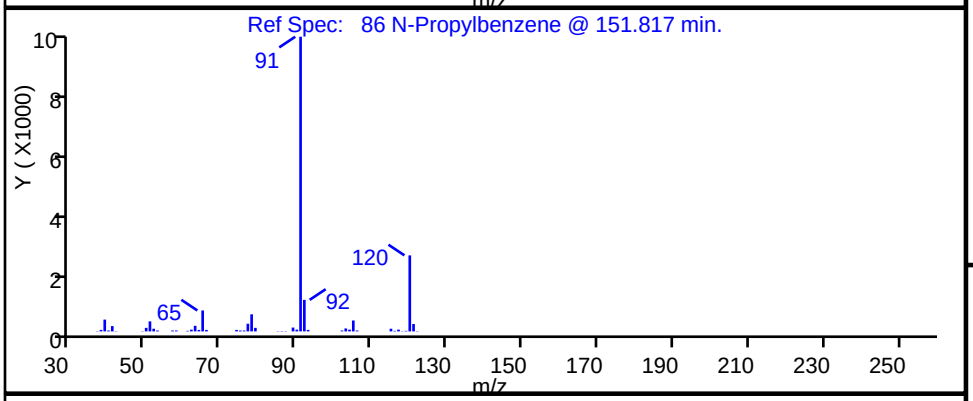
86 N-Propylbenzene, CAS: 103-65-1

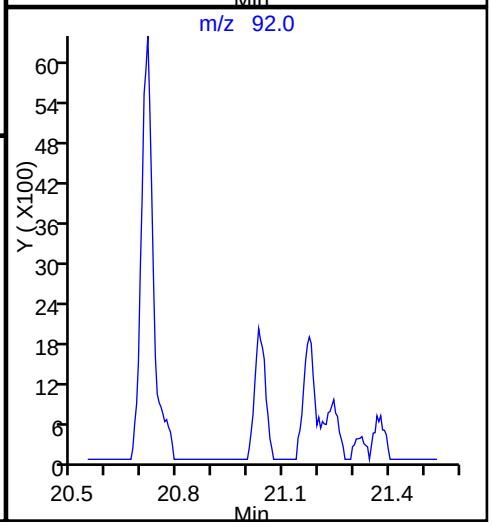


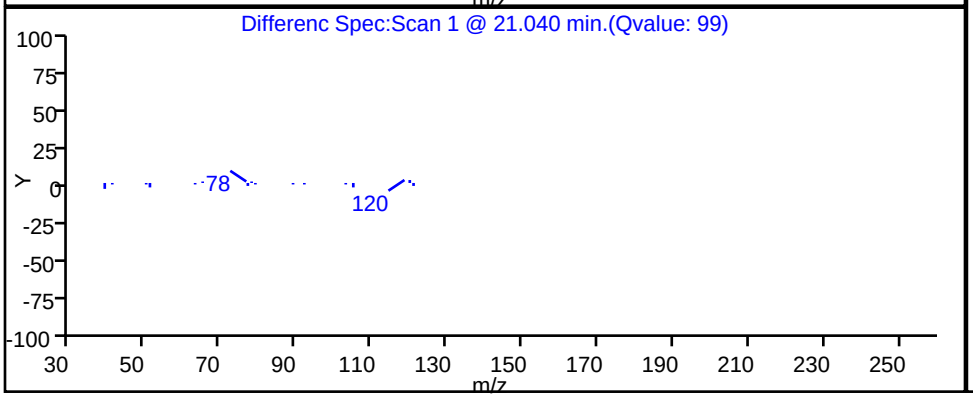








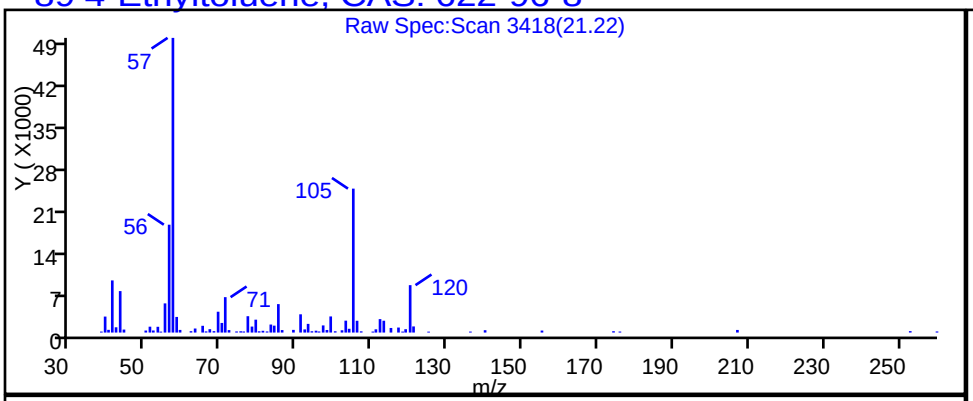


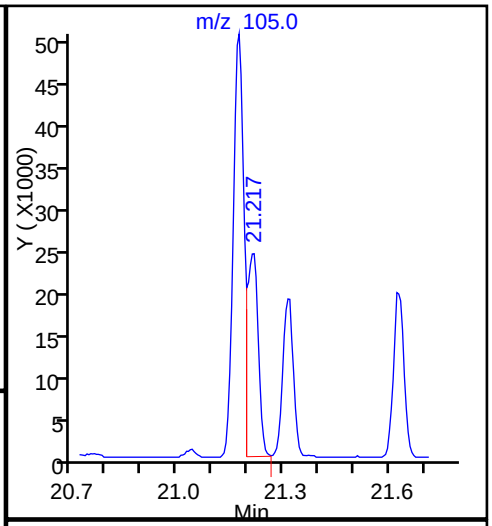


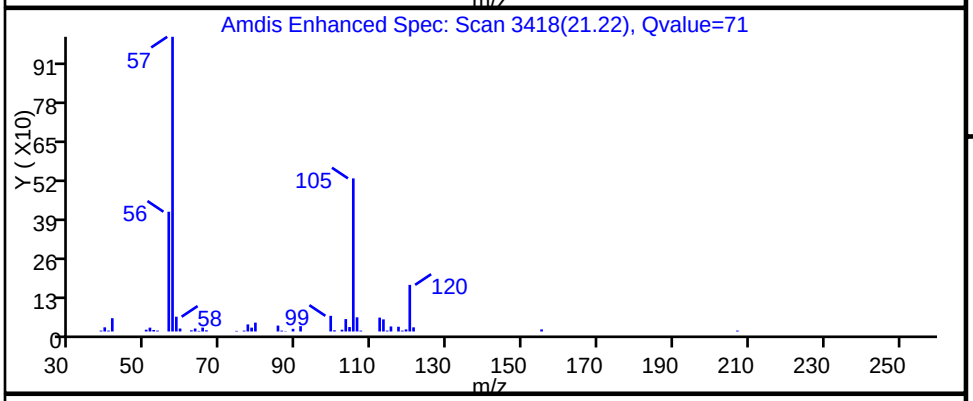
TestAmerica Burlington

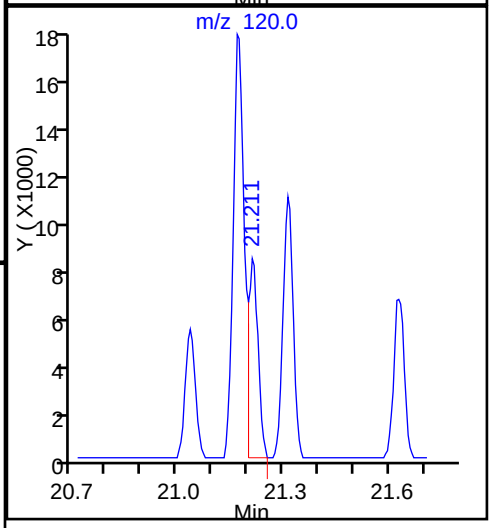
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

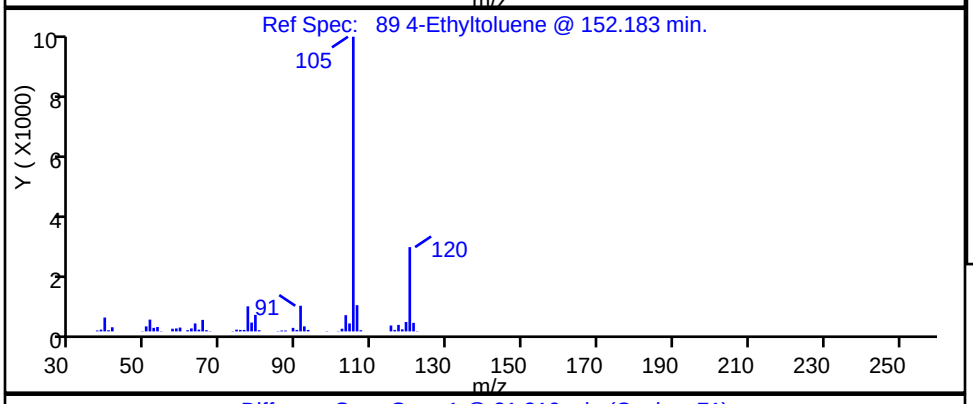
89 4-Ethyltoluene, CAS: 622-96-8

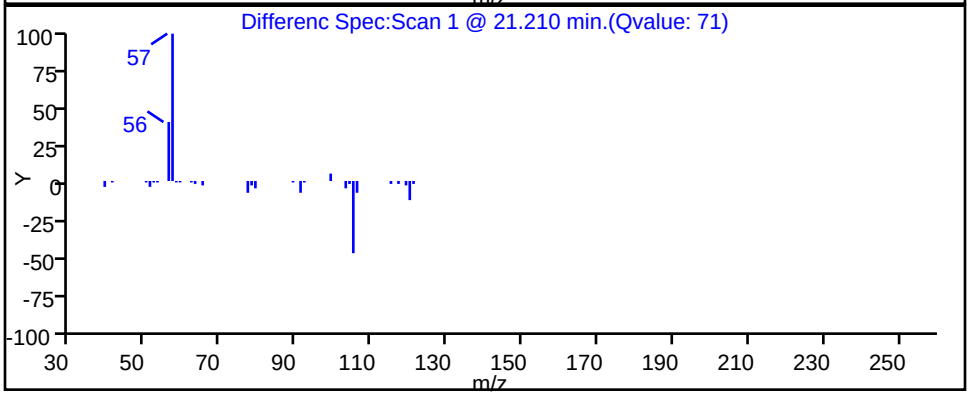








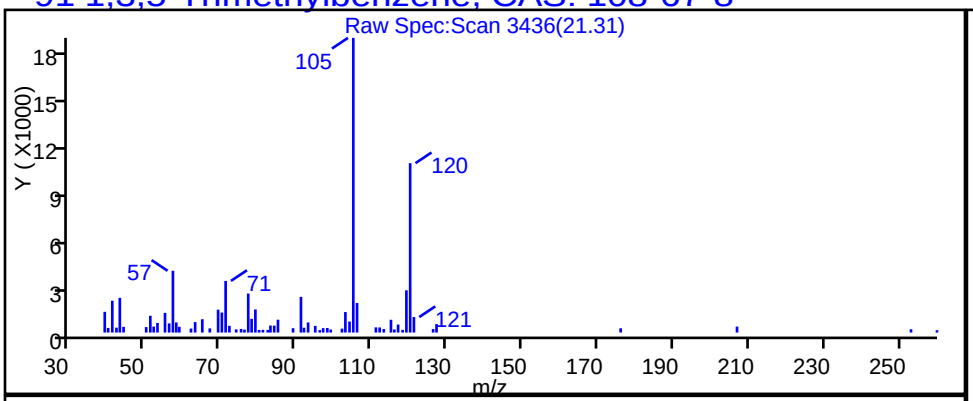


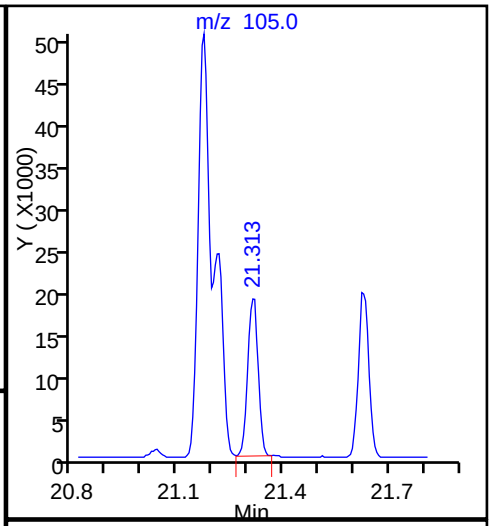


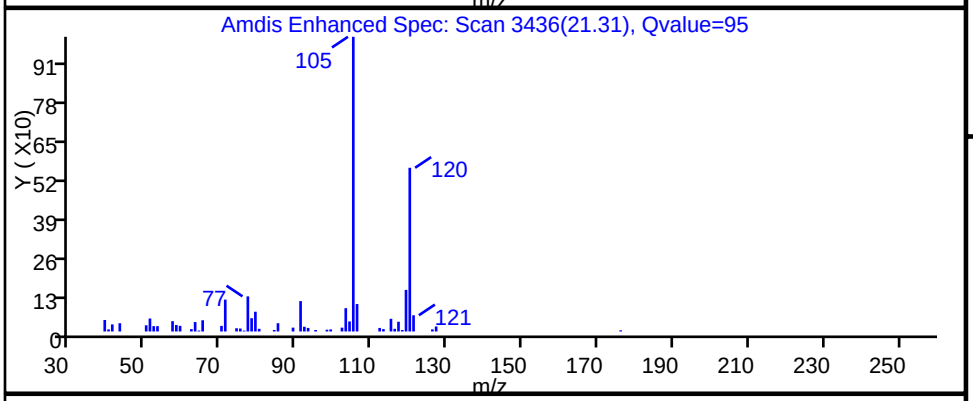
TestAmerica Burlington

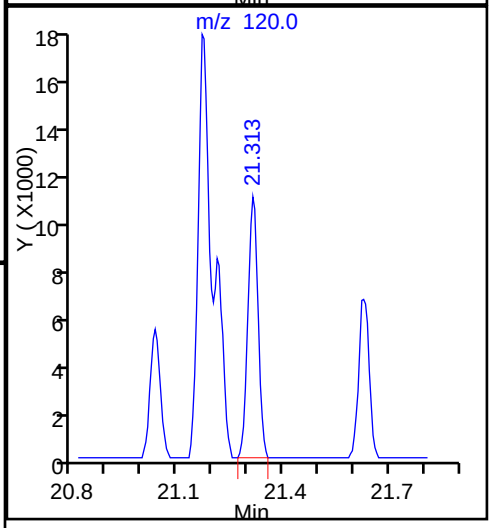
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

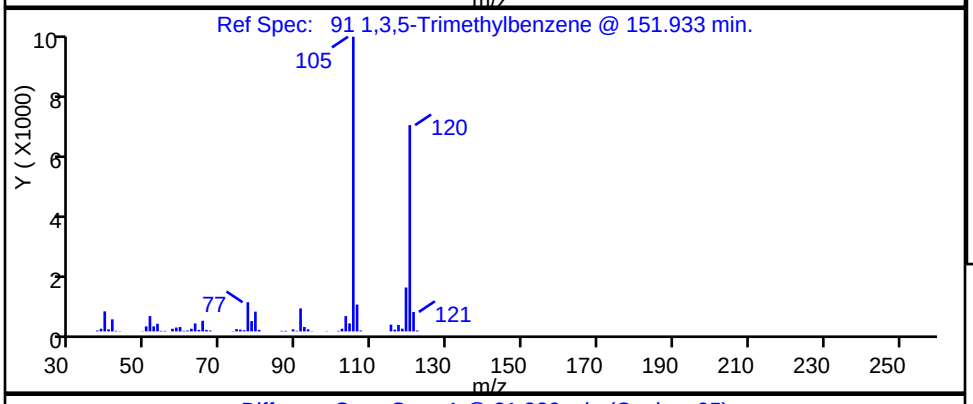
91 1,3,5-Trimethylbenzene, CAS: 108-67-8

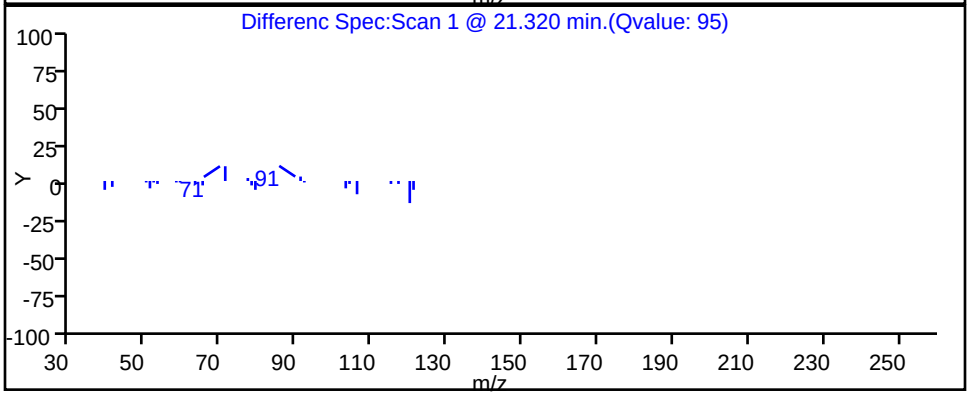








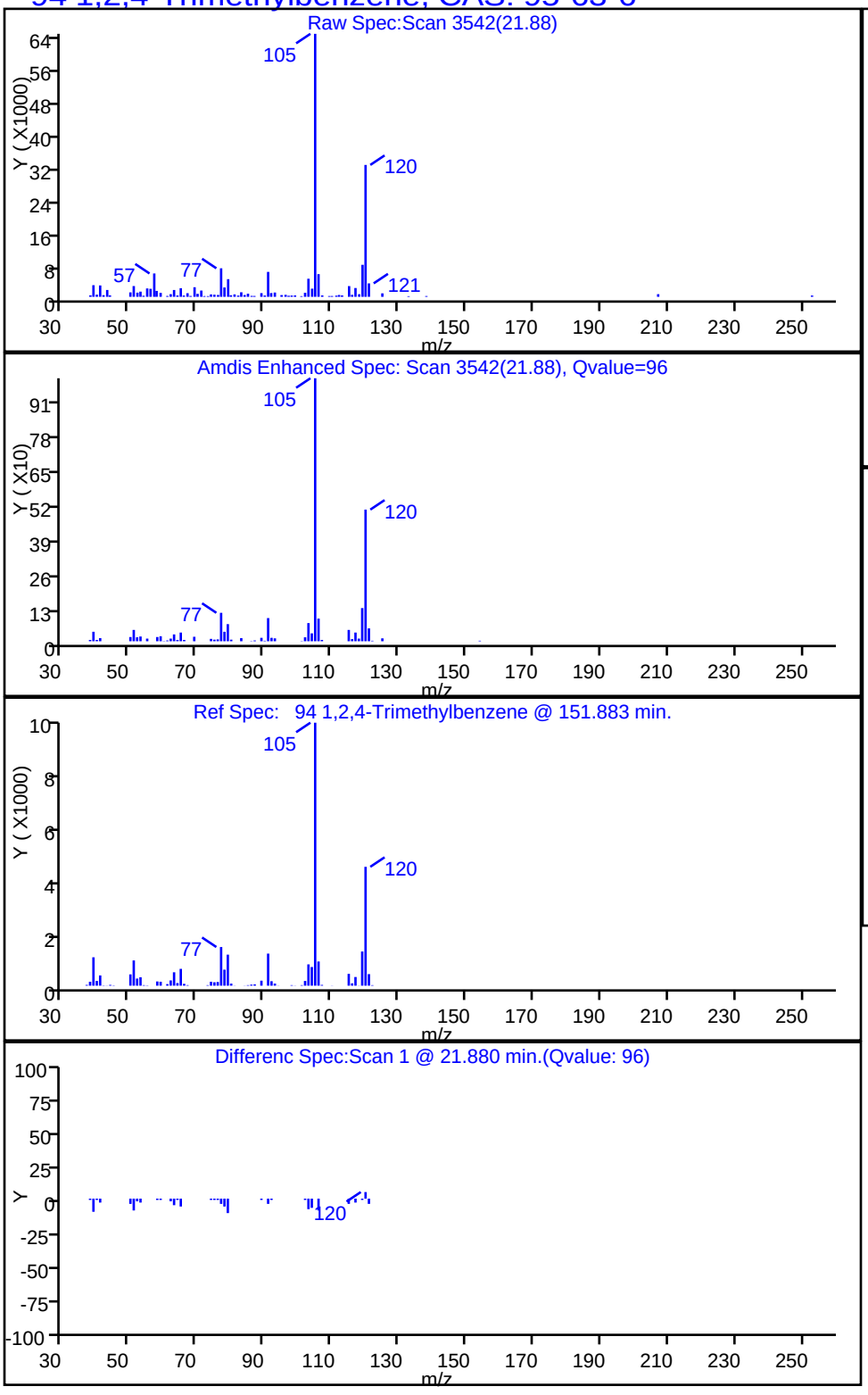


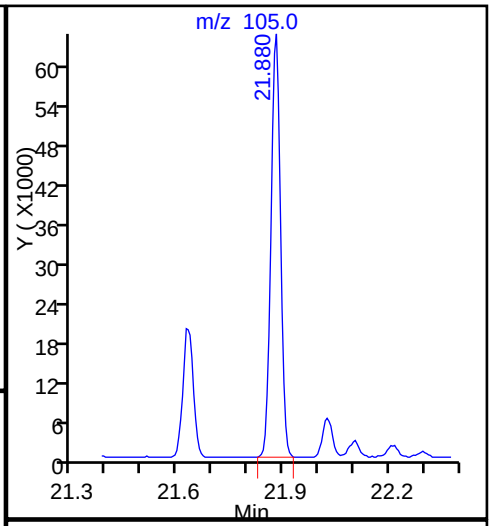


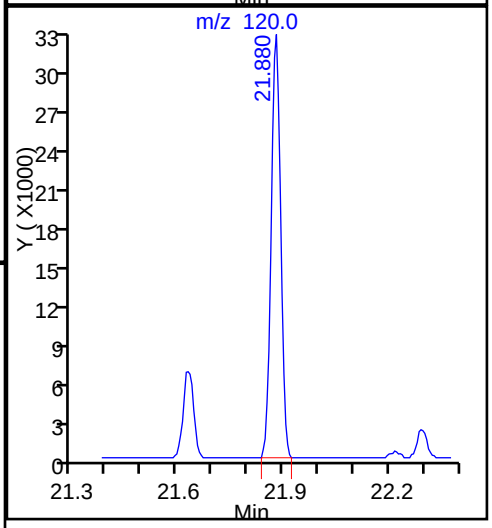
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

94 1,2,4-Trimethylbenzene, CAS: 95-63-6



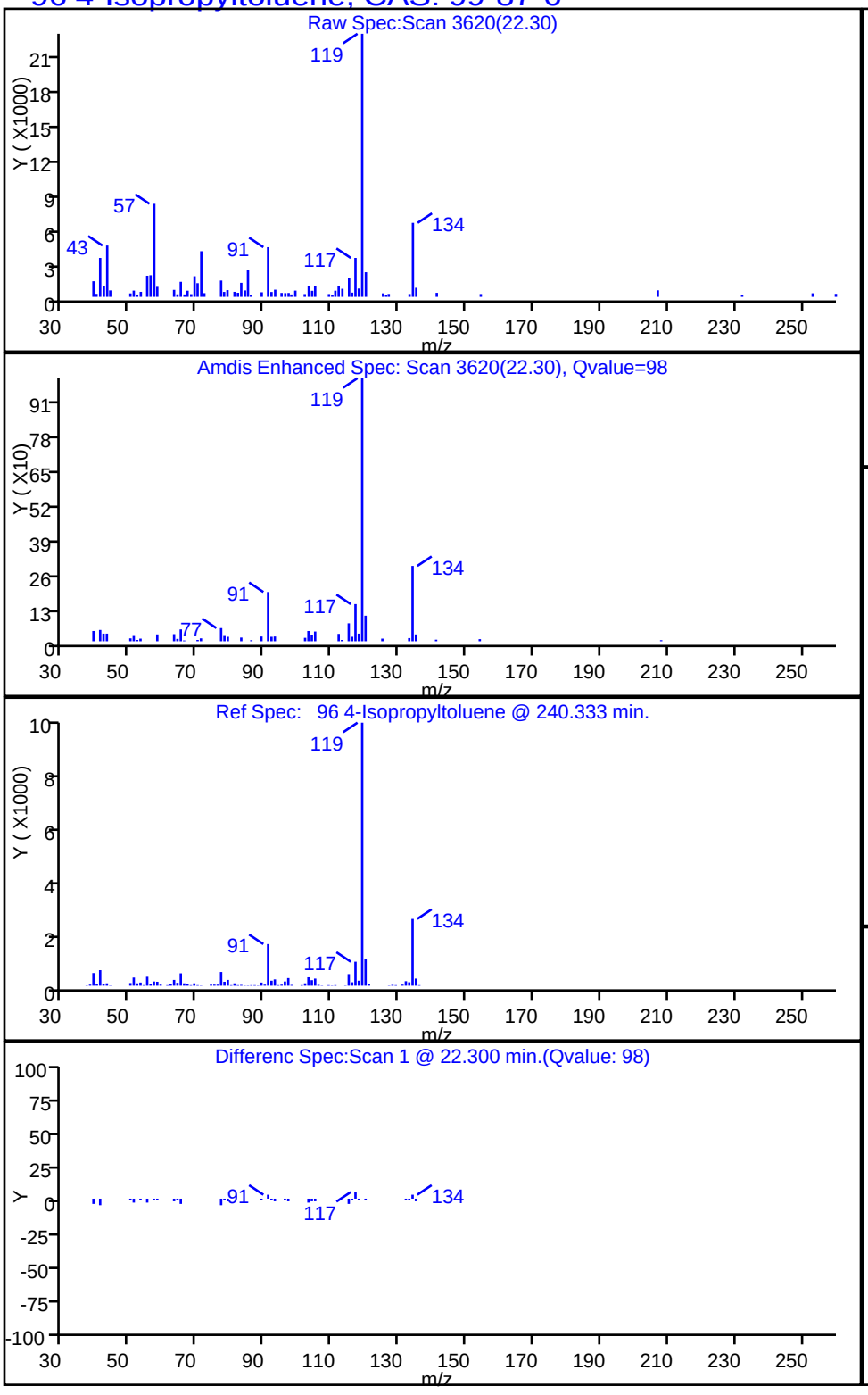


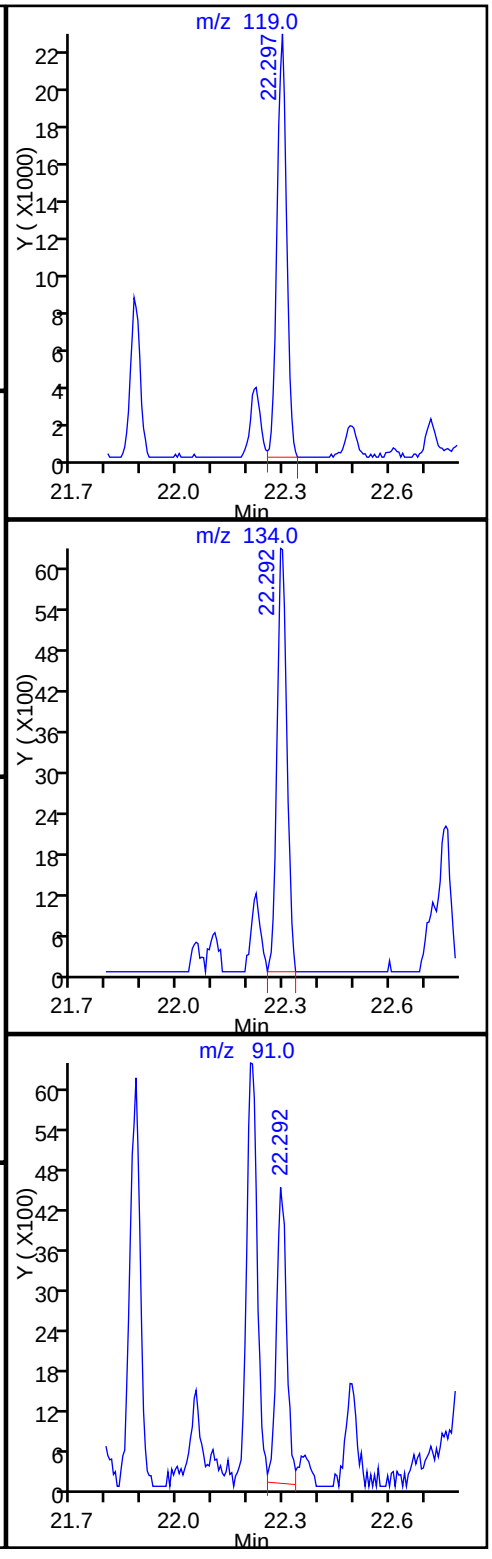


TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

96 4-Isopropyltoluene, CAS: 99-87-6





Manual Integration/User Assign Peak Report

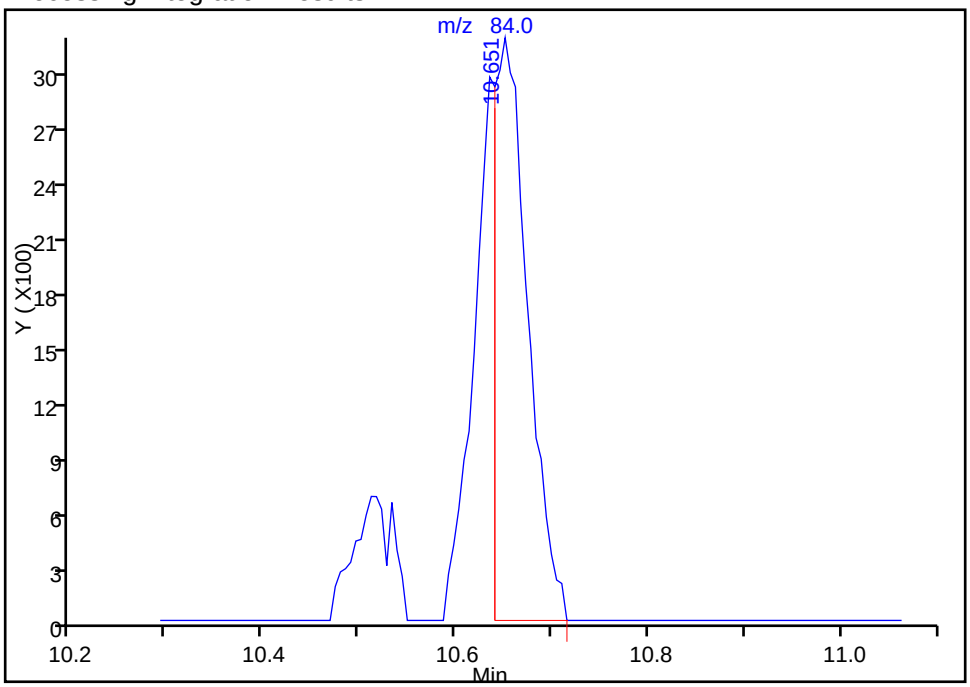
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

42 Cyclohexane, CAS: 110-82-7

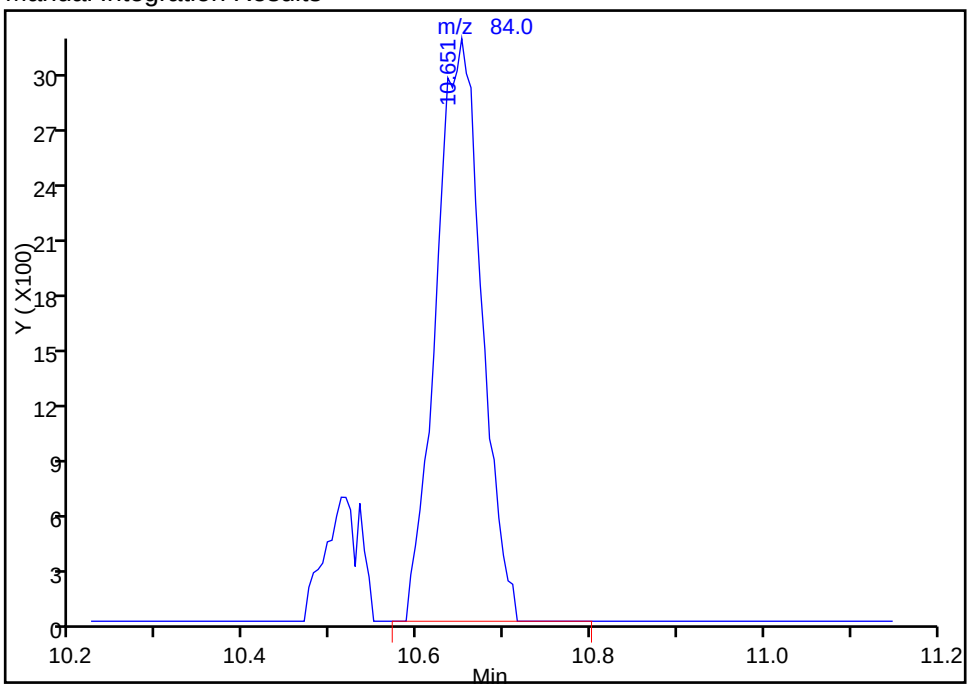
Processing Integration Results

RT: 10.65
Area: 7661
Amount: 0.336871
Amount Units: ppb v/v



Manual Integration Results

RT: 10.65
Area: 11563
Amount: 0.508450
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:47:40
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

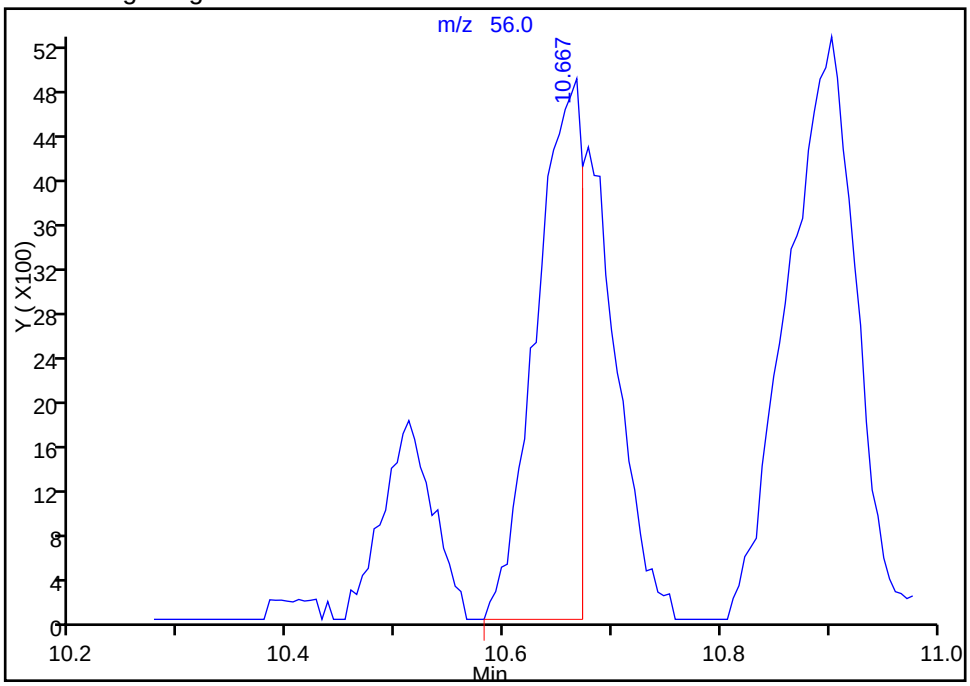
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

42 Cyclohexane, CAS: 110-82-7

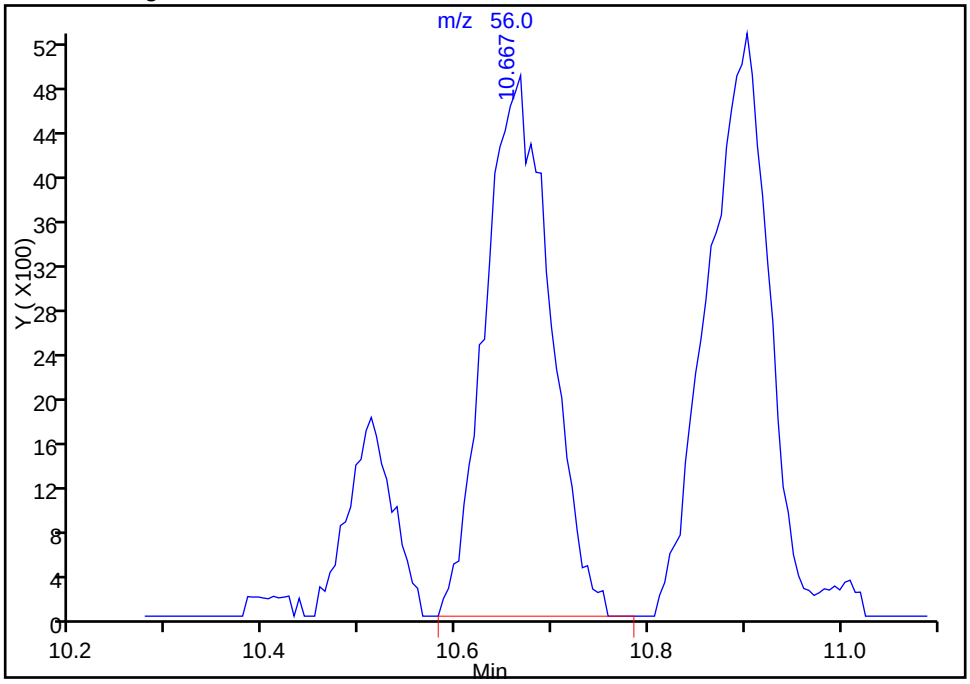
Processing Integration Results

RT: 10.67
Area: 14158
Amount: 0.336871
Amount Units: ppb v/v



Manual Integration Results

RT: 10.67
Area: 22800
Amount: 0.508450
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:47:40
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

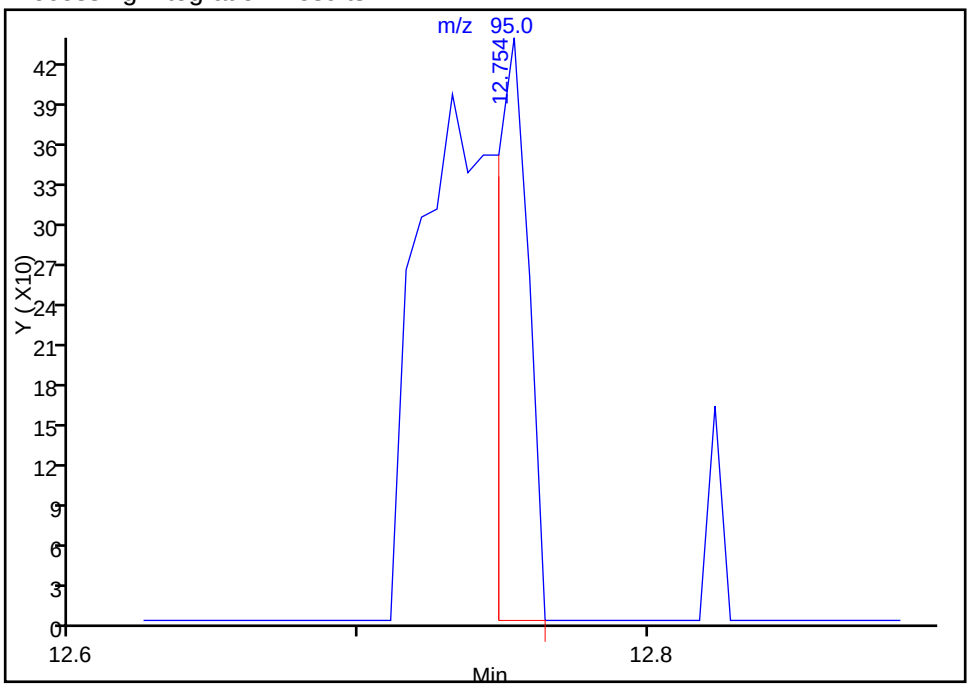
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

52 Trichloroethene, CAS: 79-01-6

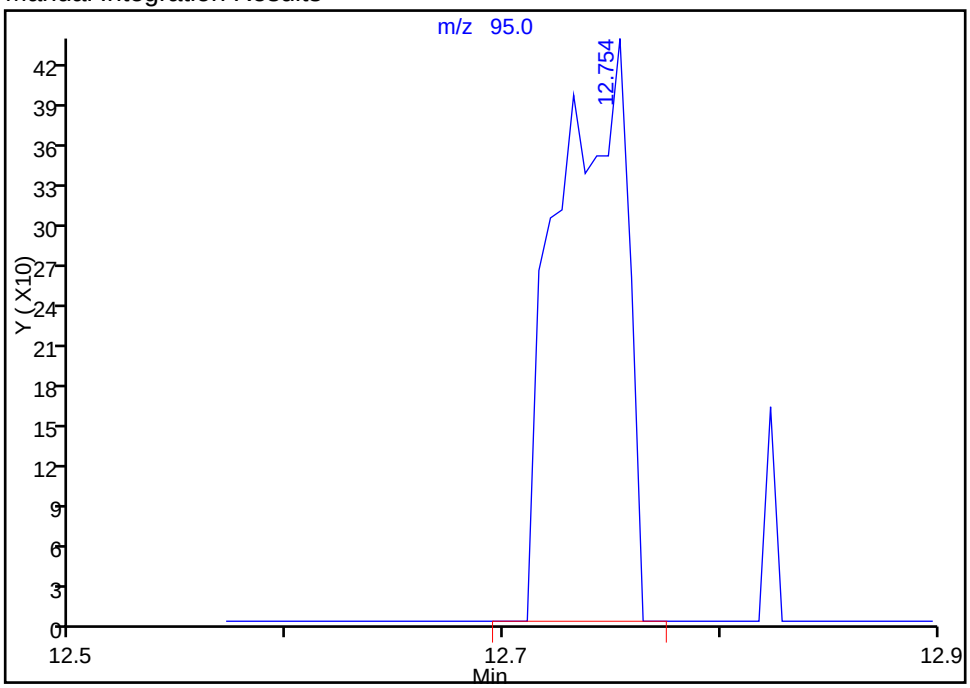
Processing Integration Results

RT: 12.75
Area: 331
Amount: 0.012383
Amount Units: ppb v/v



Manual Integration Results

RT: 12.75
Area: 951
Amount: 0.035577
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:47:40
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

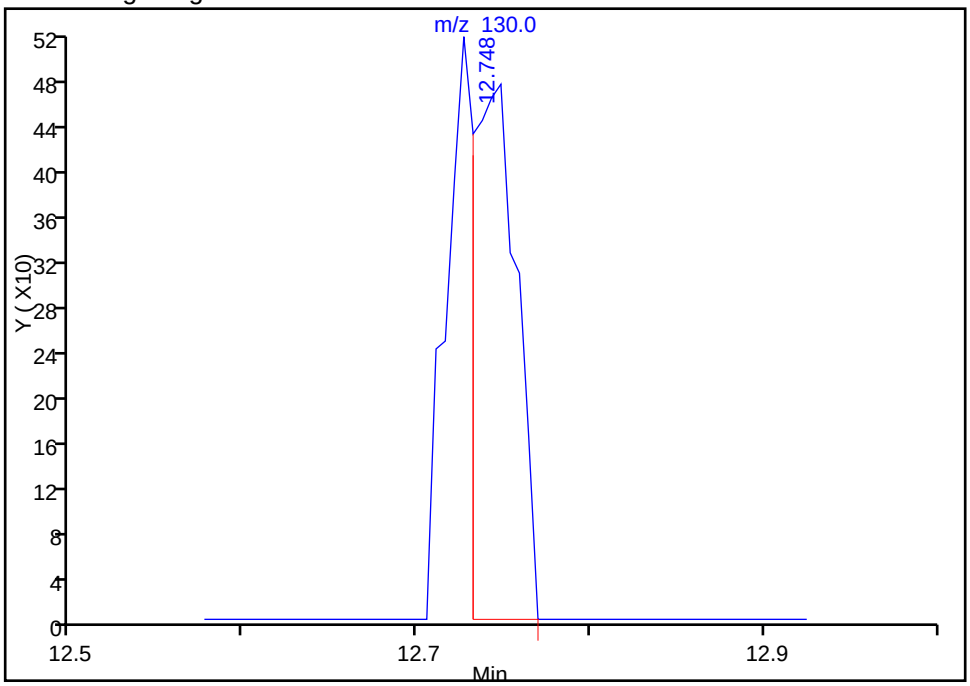
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

52 Trichloroethene, CAS: 79-01-6

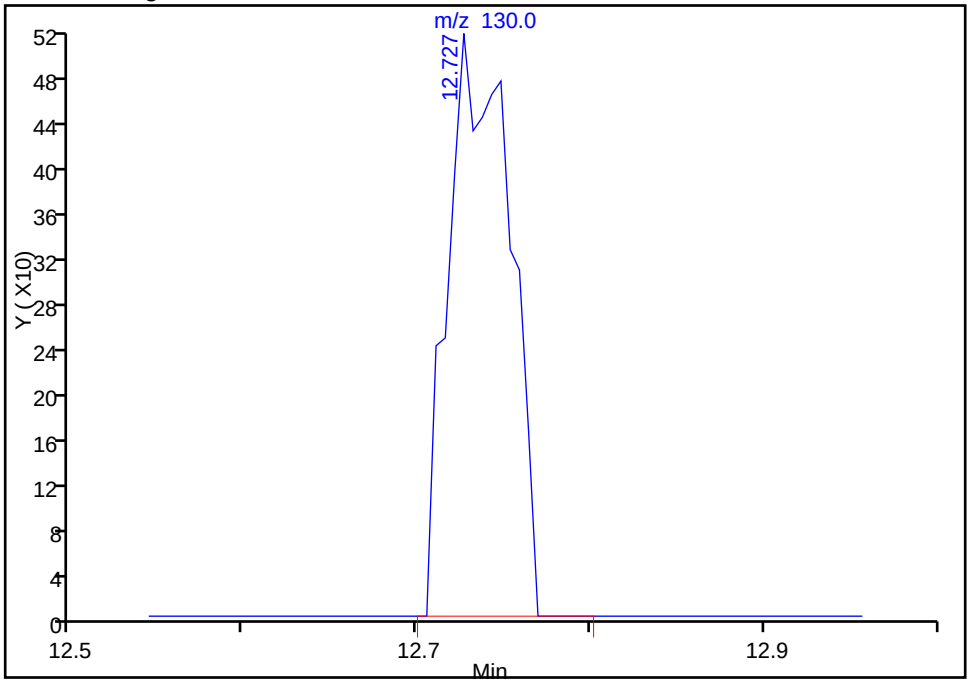
Processing Integration Results

RT: 12.75
Area: 833
Amount: 0.012383
Amount Units: ppb v/v



Manual Integration Results

RT: 12.73
Area: 1279
Amount: 0.035577
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:47:40
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

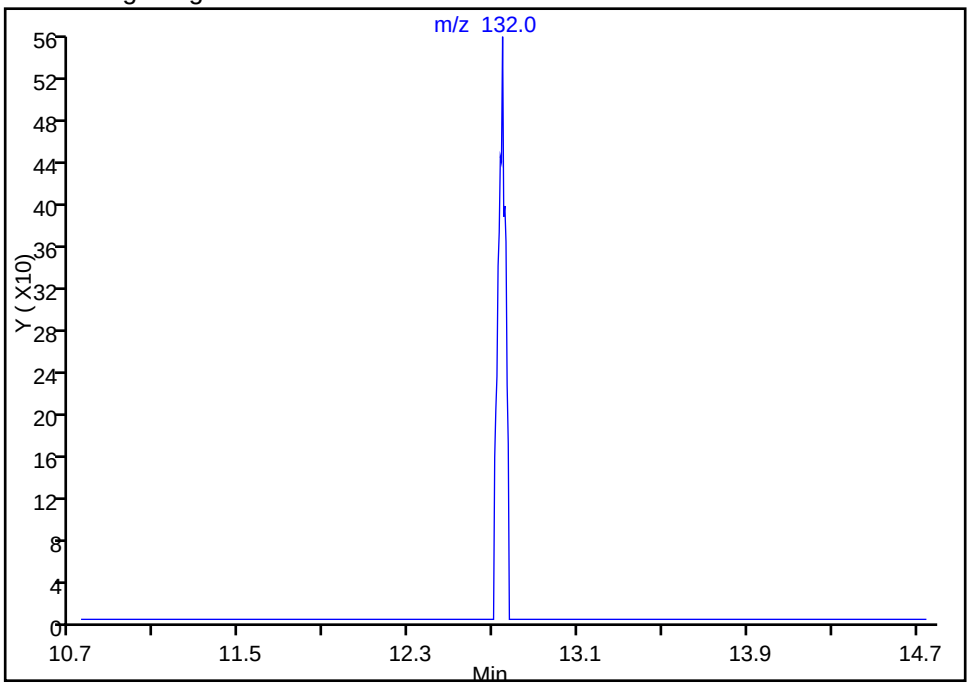
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D				
Injection Date:	13-Oct-2015 19:01:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

52 Trichloroethene, CAS: 79-01-6

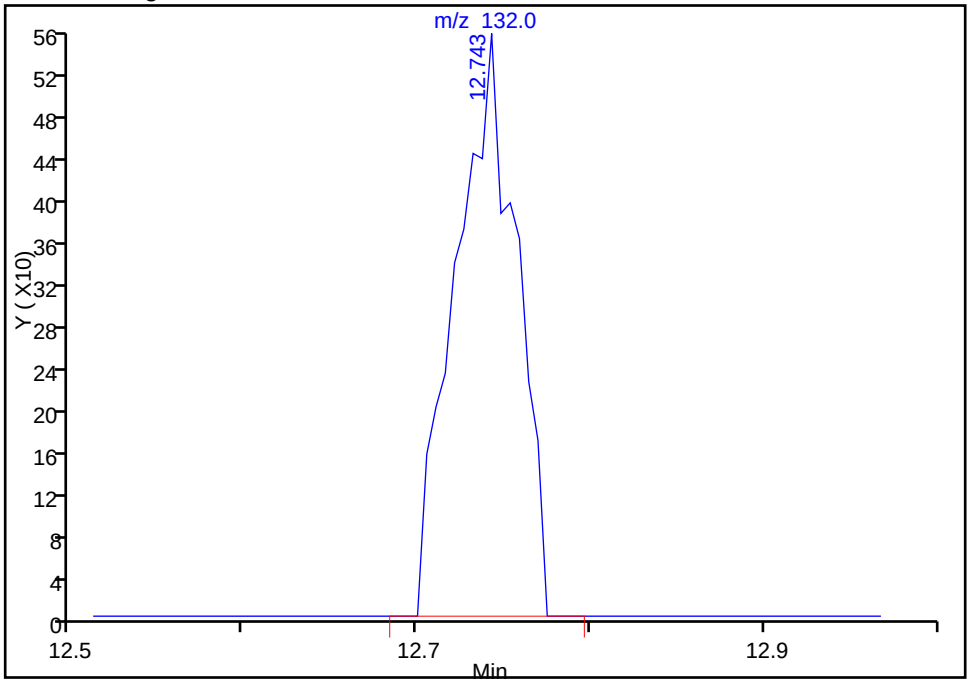
Processing Integration Results

RT: 12.75
Area: 0
Amount: 0.012383
Amount Units: ppb v/v



Manual Integration Results

RT: 12.74
Area: 1362
Amount: 0.035577
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:47:40
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 14-Oct-2015 07:47:42 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2

Client ID: SV-2

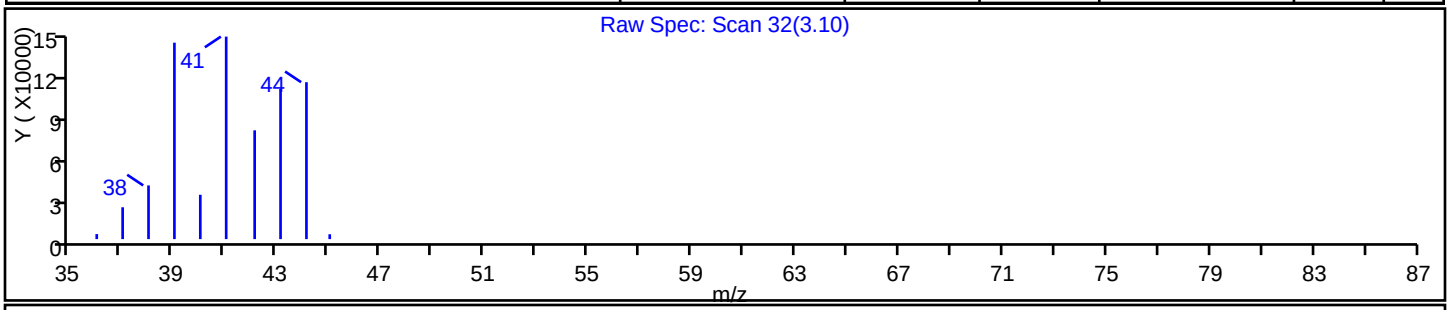
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13

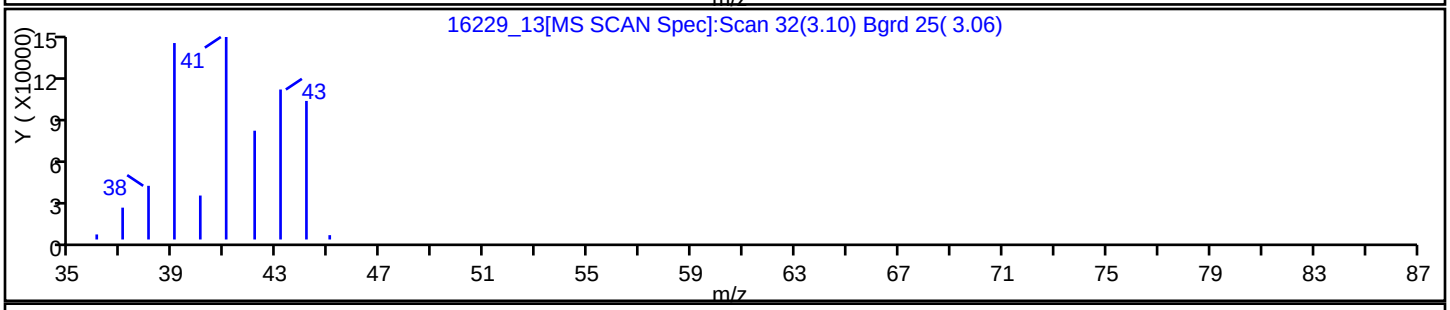
Purge Vol: 200.000 mL Dil. Factor: 1.0000

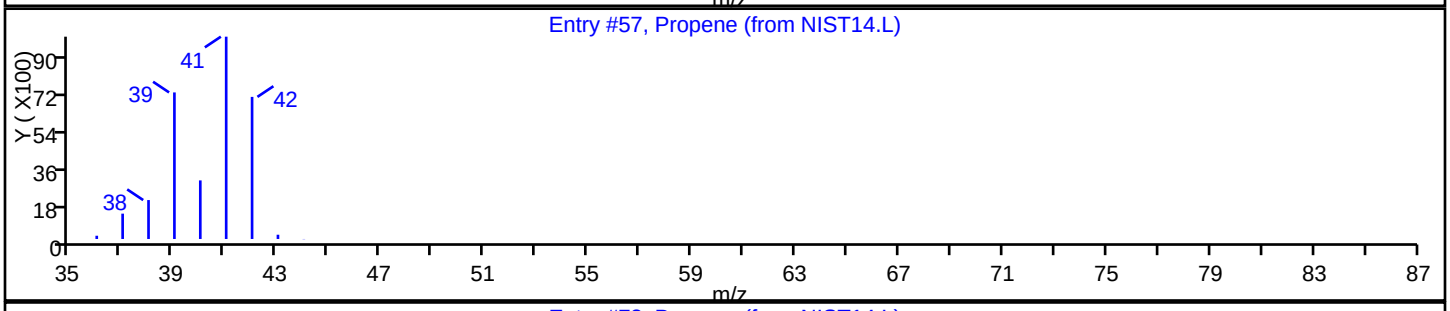
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

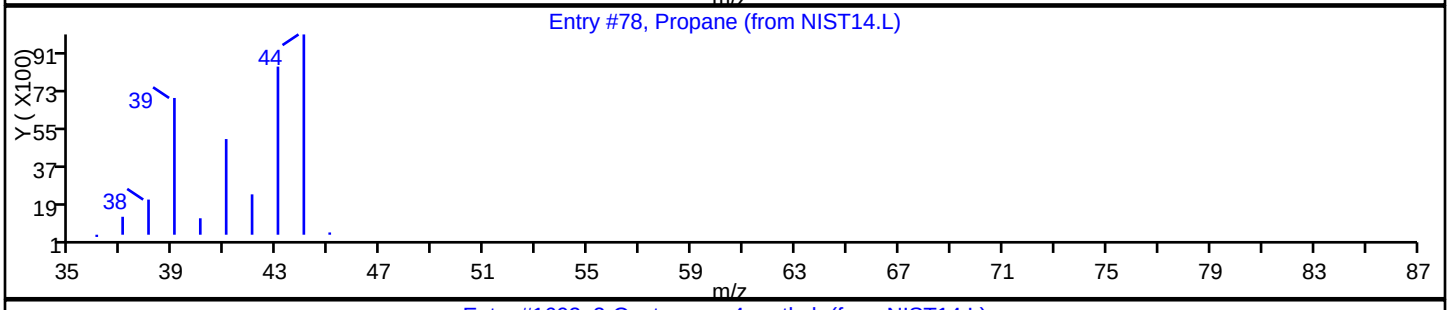
Column: Detector MS SCAN

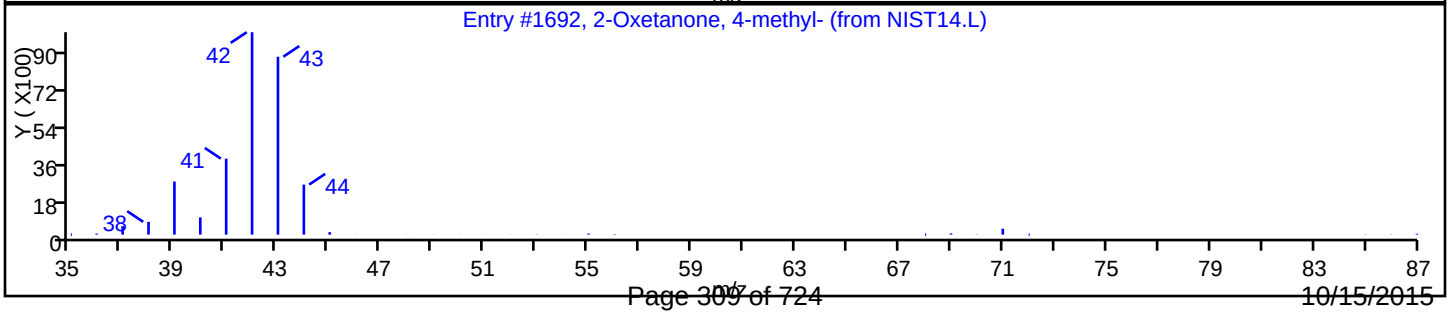
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Propene	115-07-1	NIST14.L	57	C3H6	42	7
Propane	74-98-6	NIST14.L	78	C3H8	44	4
2-Oxetanone, 4-methyl-	3068-88-0	NIST14.L	1692	C4H6O2	86	4











Report Date: 14-Oct-2015 07:47:42 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2

Client ID: SV-2

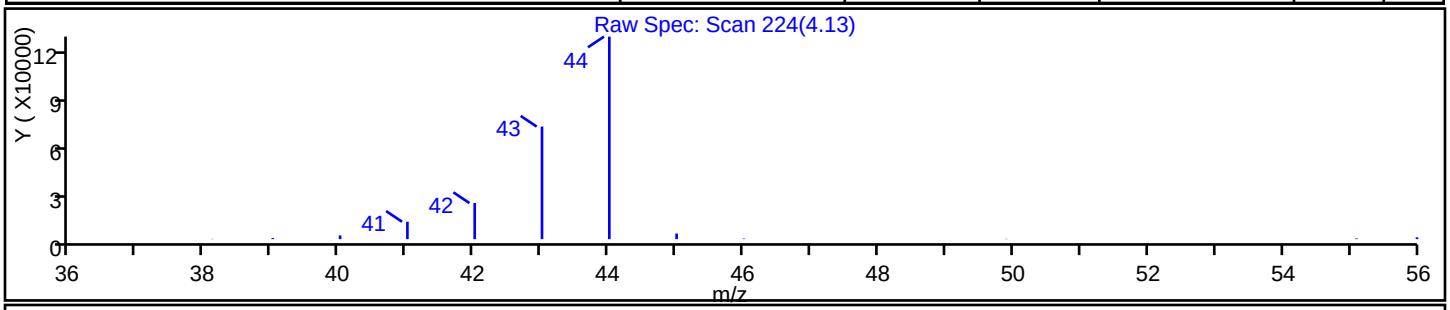
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13

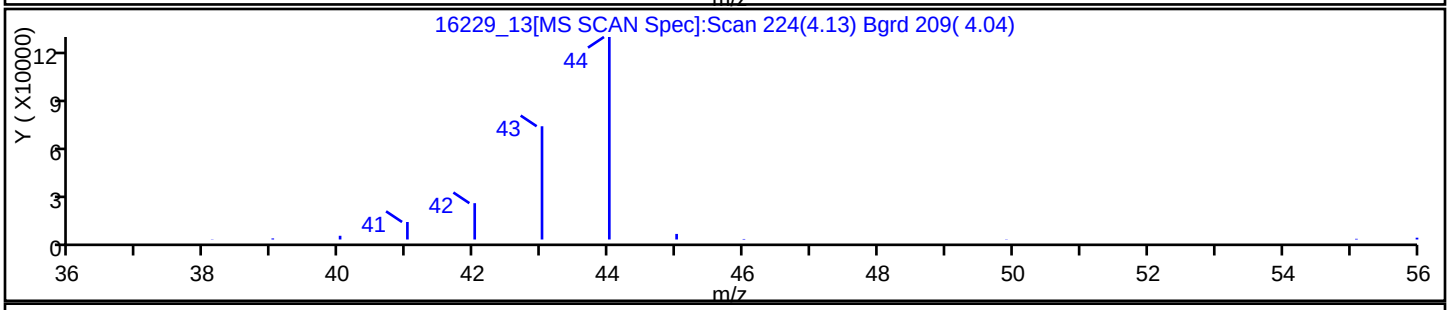
Purge Vol: 200.000 mL Dil. Factor: 1.0000

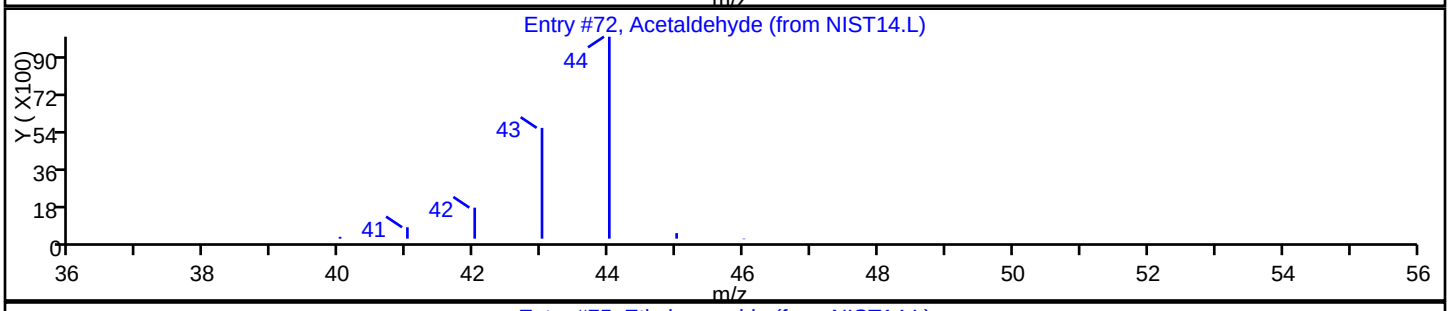
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

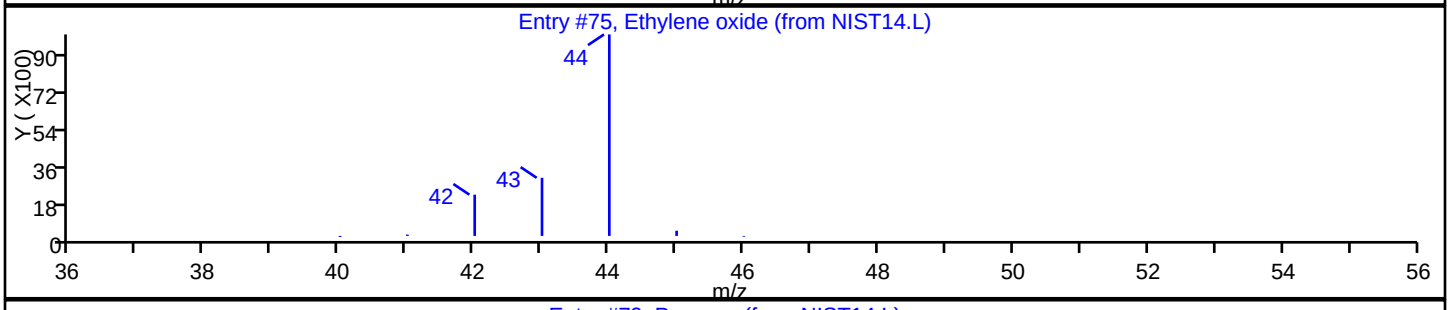
Column: Detector MS SCAN

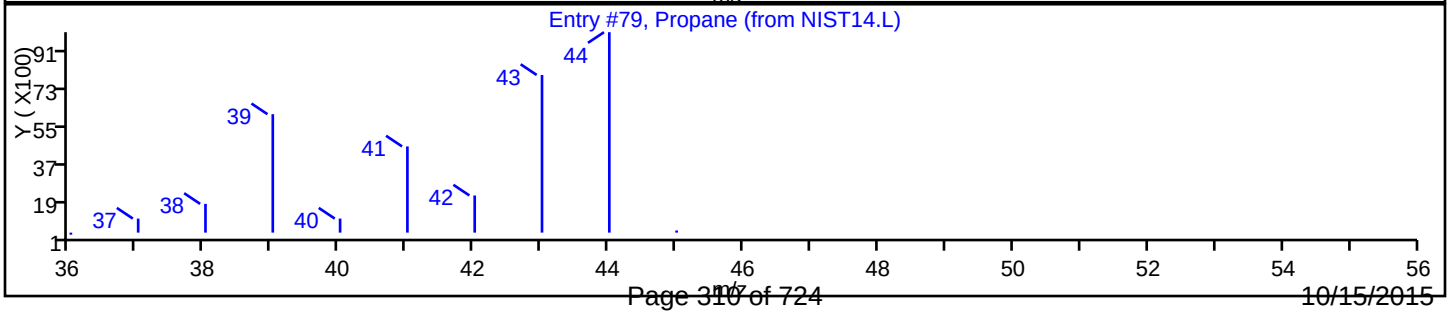
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Acetaldehyde	75-07-0	NIST14.L	72	C2H4O	44	64
Ethylene oxide	75-21-8	NIST14.L	75	C2H4O	44	5
Propane	74-98-6	NIST14.L	79	C3H8	44	5











Report Date: 14-Oct-2015 07:47:42 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2

Client ID: SV-2

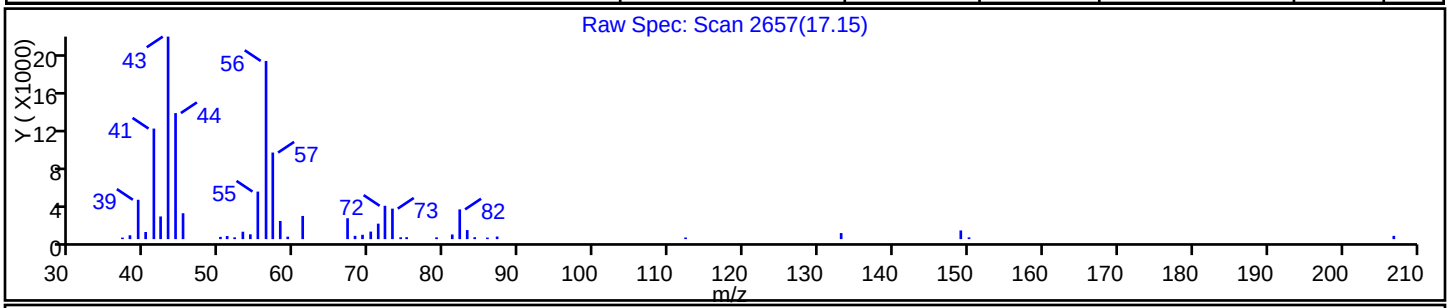
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13

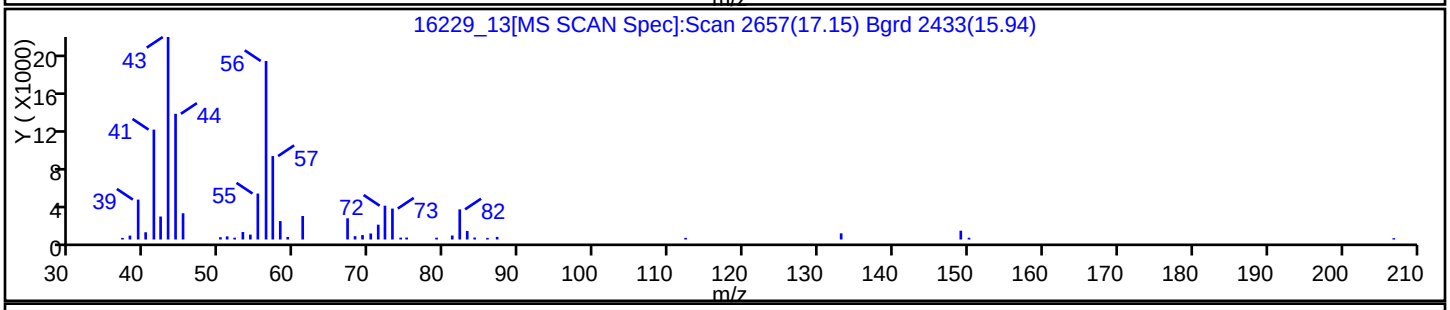
Purge Vol: 200.000 mL Dil. Factor: 1.0000

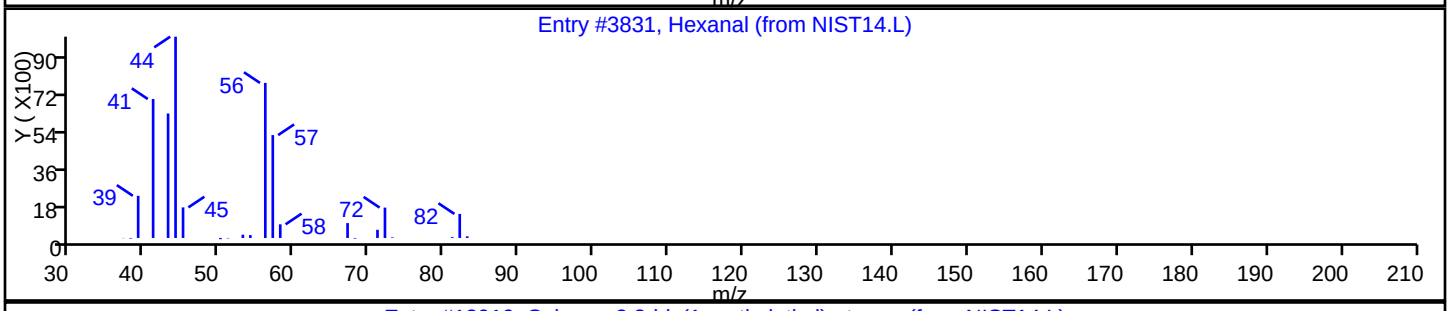
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

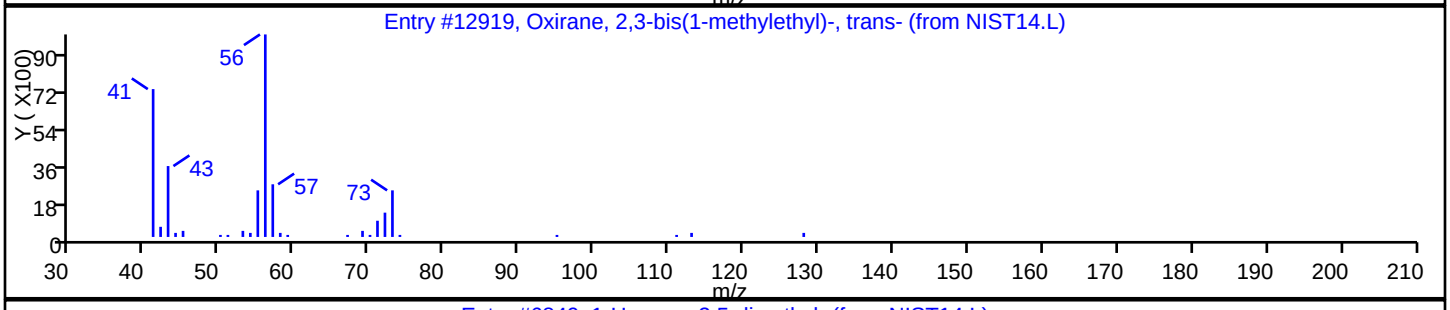
Column: Detector MS SCAN

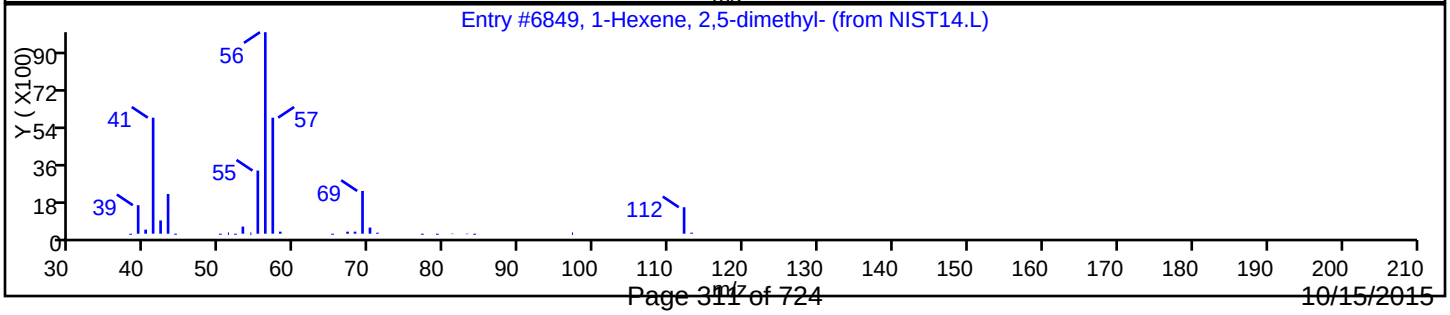
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Hexanal	66-25-1	NIST14.L	3831	C6H12O	100	80
Oxirane, 2,3-bis(1-methylethyl)-, trans-	54644-32-5	NIST14.L	12919	C8H16O	128	37
1-Hexene, 2,5-dimethyl-	6975-92-4	NIST14.L	6849	C8H16	112	35







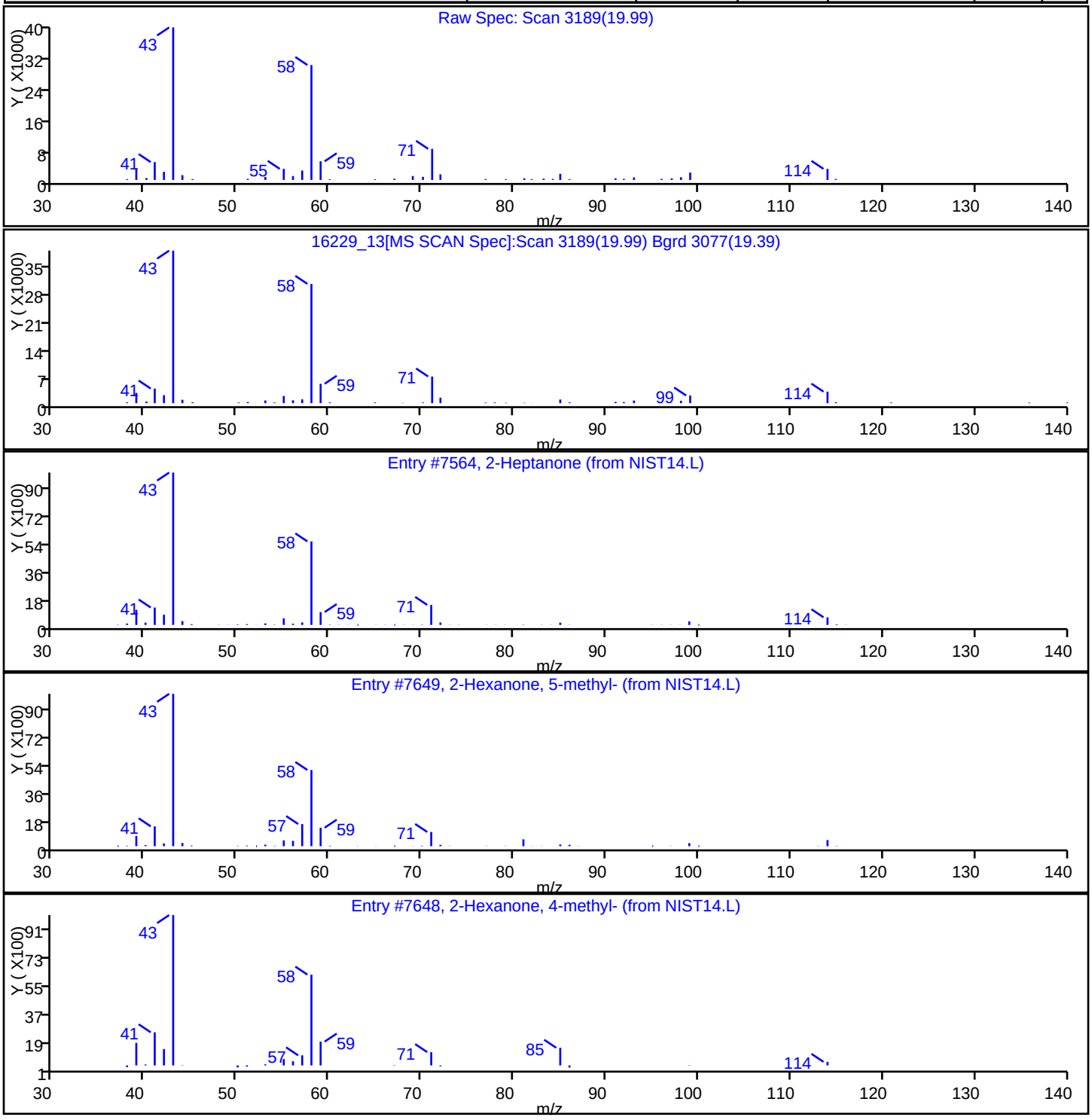




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D
Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

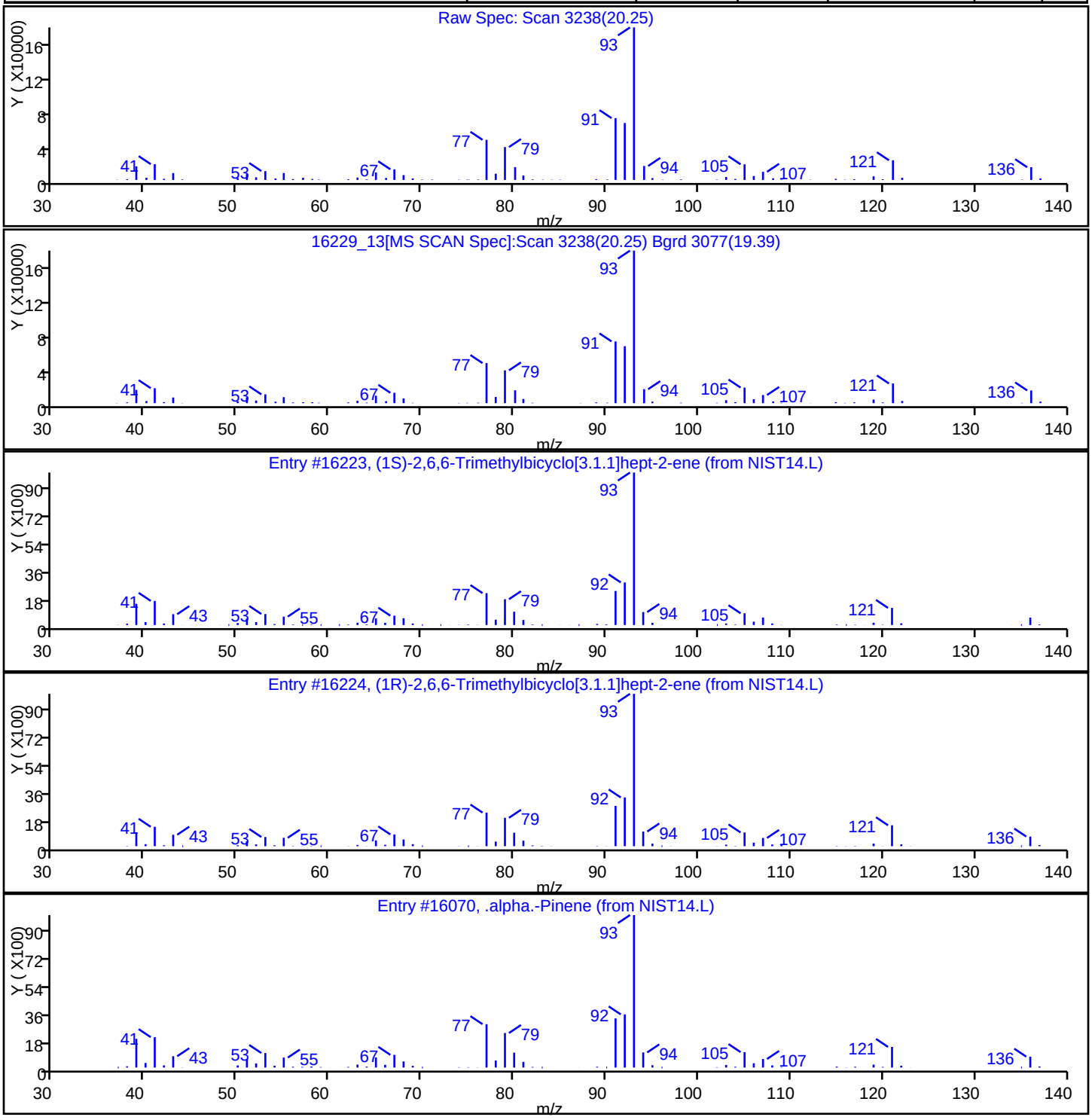
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
2-Heptanone	110-43-0	NIST14.L	7564	C7H14O	114	91
2-Hexanone, 5-methyl-	110-12-3	NIST14.L	7649	C7H14O	114	50
2-Hexanone, 4-methyl-	105-42-0	NIST14.L	7648	C7H14O	114	40



TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D
Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-26-4	NIST14.L	16223	C10H16	136	96
(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-70-8	NIST14.L	16224	C10H16	136	96
.alpha.-Pinene	80-56-8	NIST14.L	16070	C10H16	136	95



Report Date: 14-Oct-2015 07:47:43 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2

Client ID: SV-2

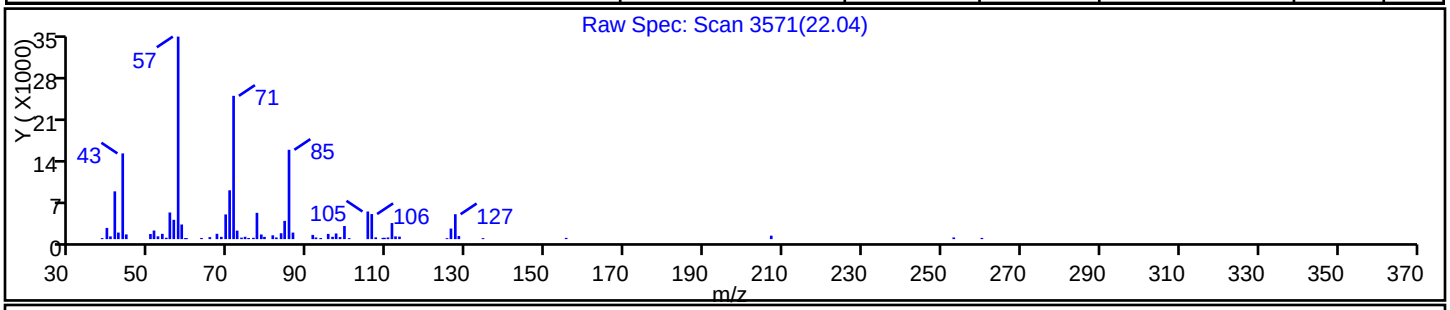
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13

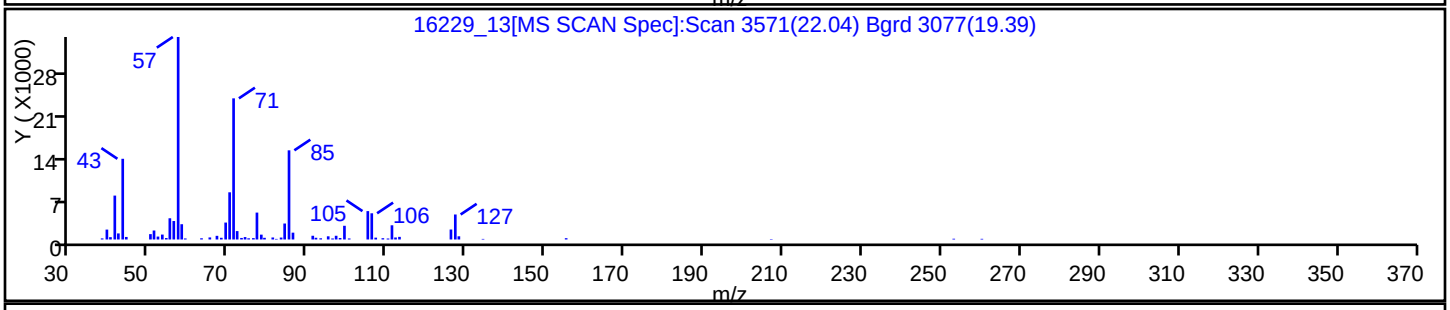
Purge Vol: 200.000 mL Dil. Factor: 1.0000

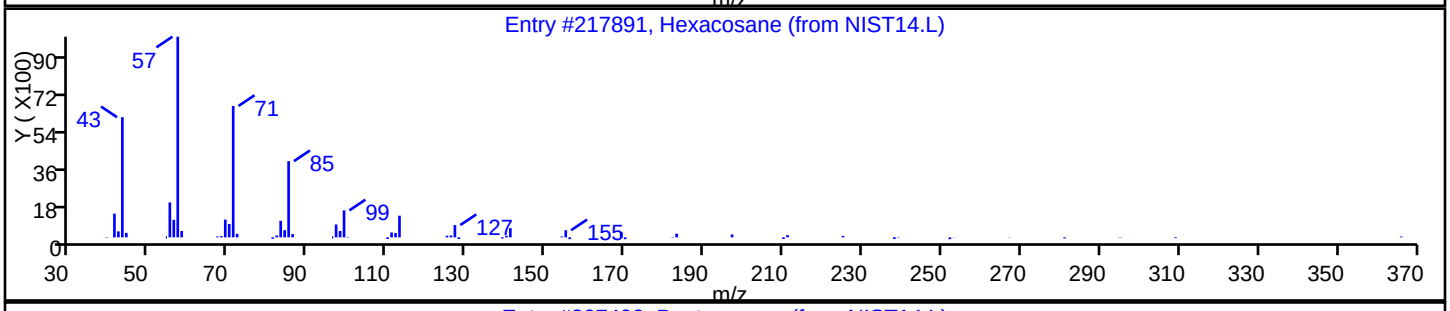
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

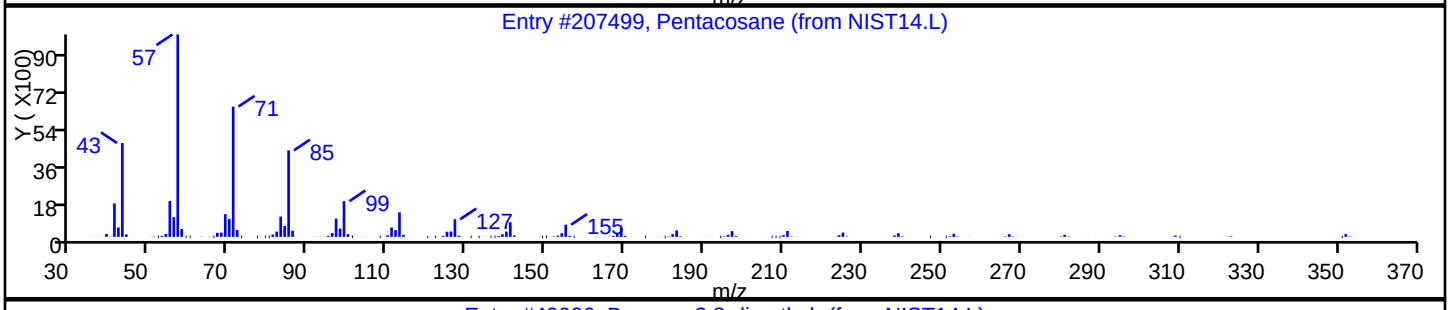
Column: Detector MS SCAN

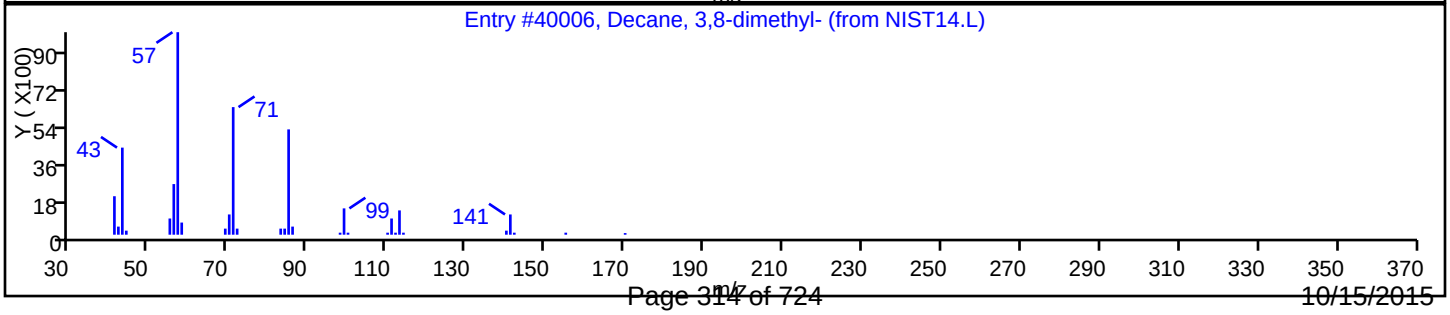
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Hexacosane	630-01-3	NIST14.L	217891	C26H54	366	53
Pentacosane	629-99-2	NIST14.L	207499	C25H52	352	53
Decane, 3,8-dimethyl-	17312-55-9	NIST14.L	40006	C12H26	170	53







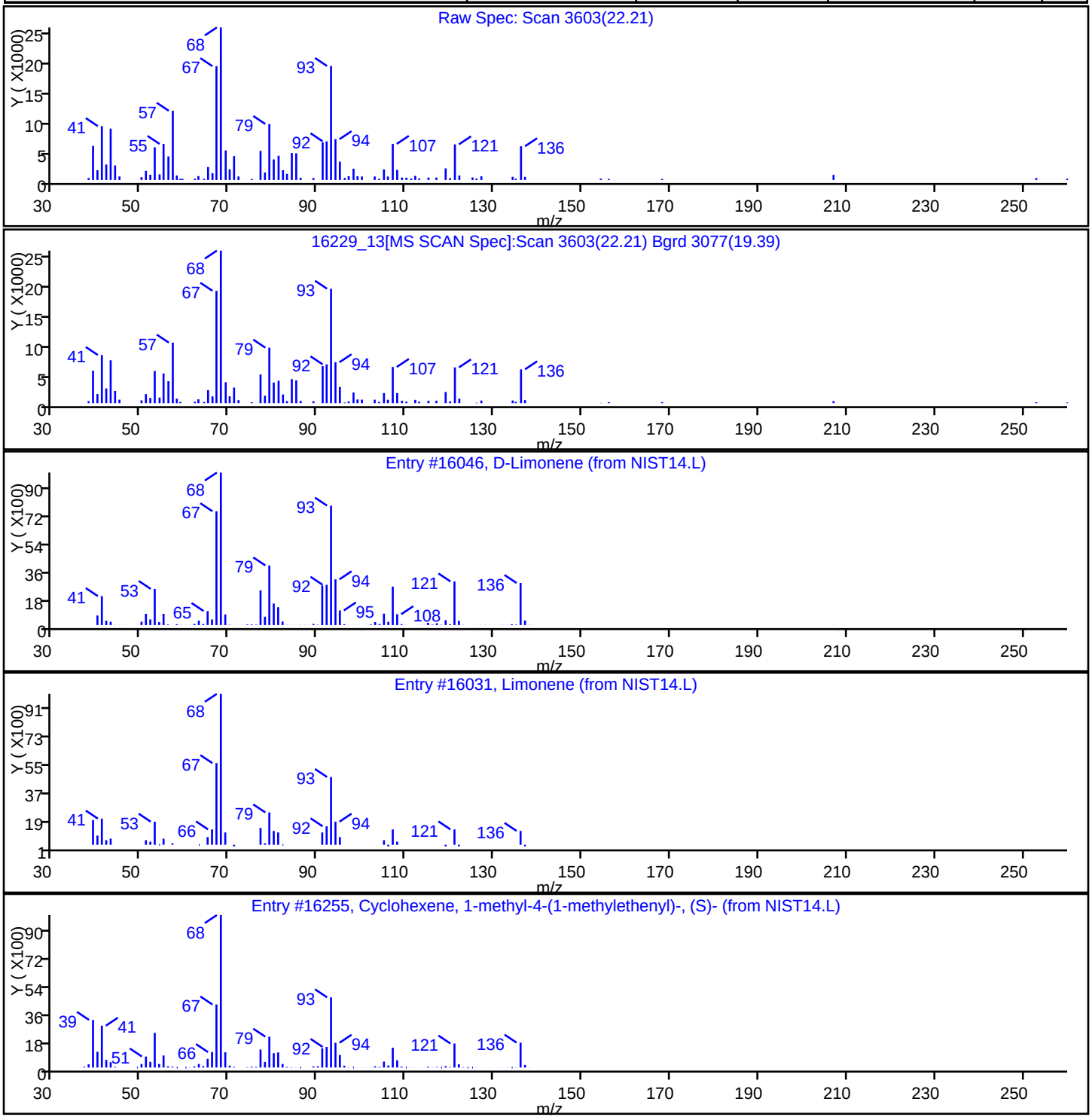




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D
Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
D-Limonene	5989-27-5	NIST14.L	16046	C10H16	136	98
Limonene	138-86-3	NIST14.L	16031	C10H16	136	94
Cyclohexene, 1-methyl-4-(1-methylethenyl	5989-54-8	NIST14.L	16255	C10H16	136	86



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TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D

Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2

Client ID: SV-2

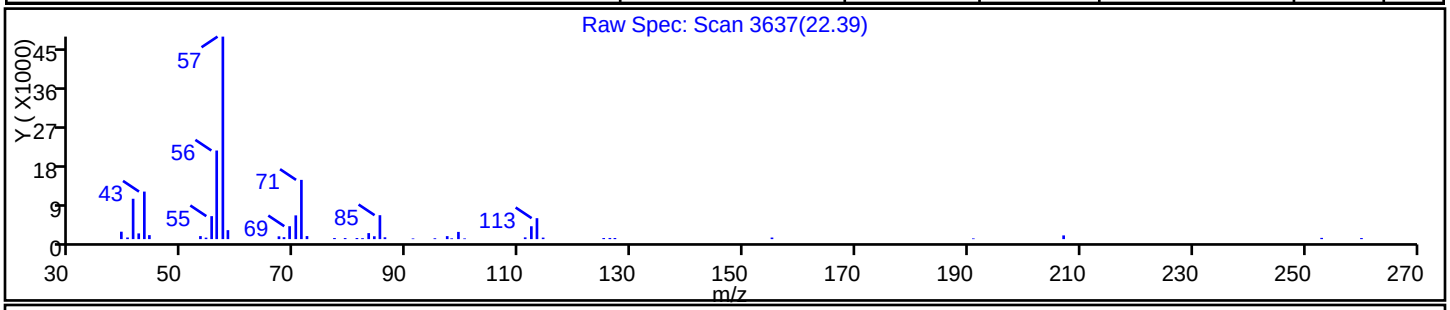
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13

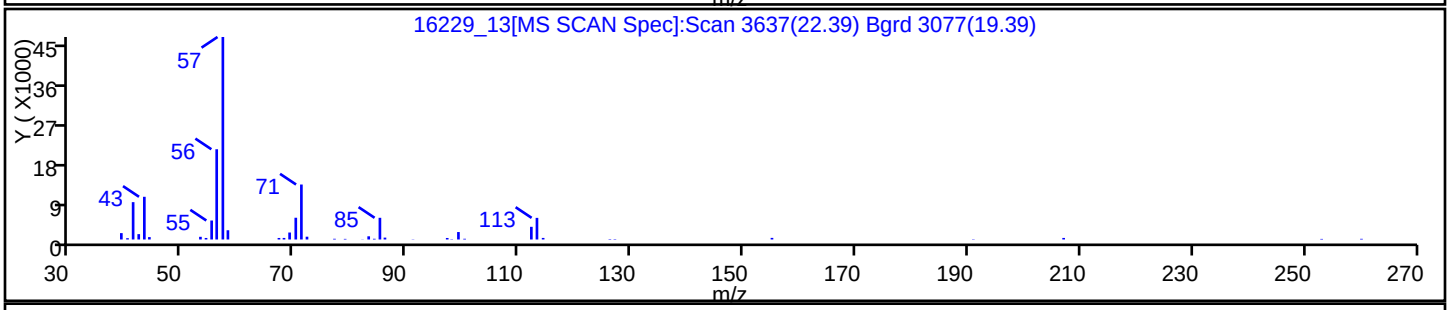
Purge Vol: 200.000 mL Dil. Factor: 1.0000

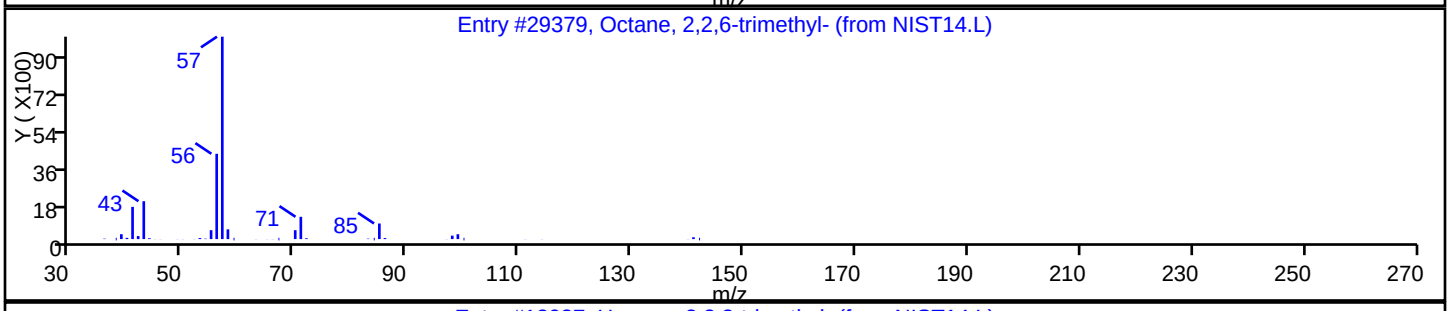
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

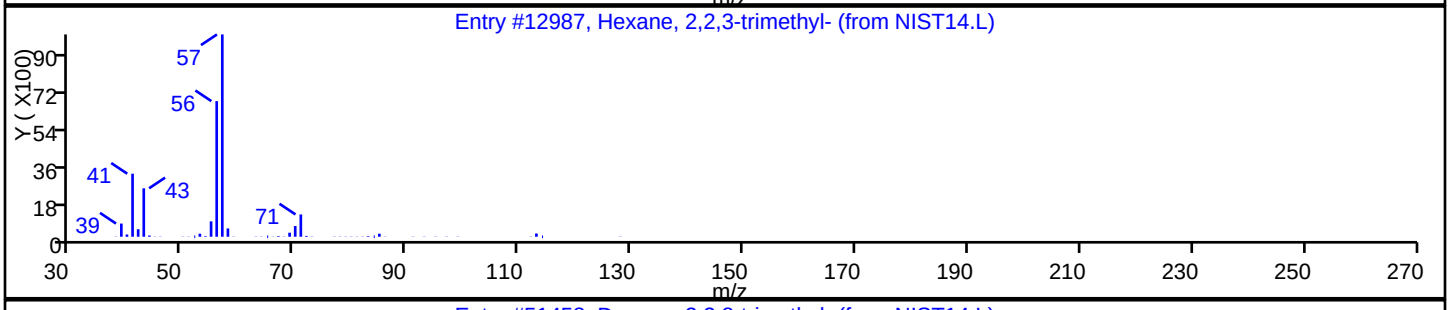
Column: Detector MS SCAN

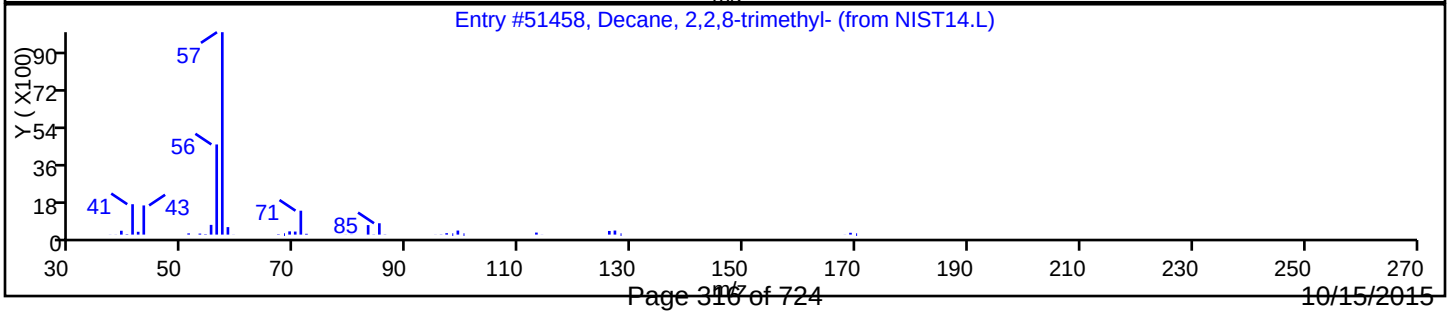
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Octane, 2,2,6-trimethyl-	62016-28-8	NIST14.L	29379	C11H24	156	59
Hexane, 2,2,3-trimethyl-	16747-25-4	NIST14.L	12987	C9H20	128	59
Decane, 2,2,8-trimethyl-	62238-01-1	NIST14.L	51458	C13H28	184	53







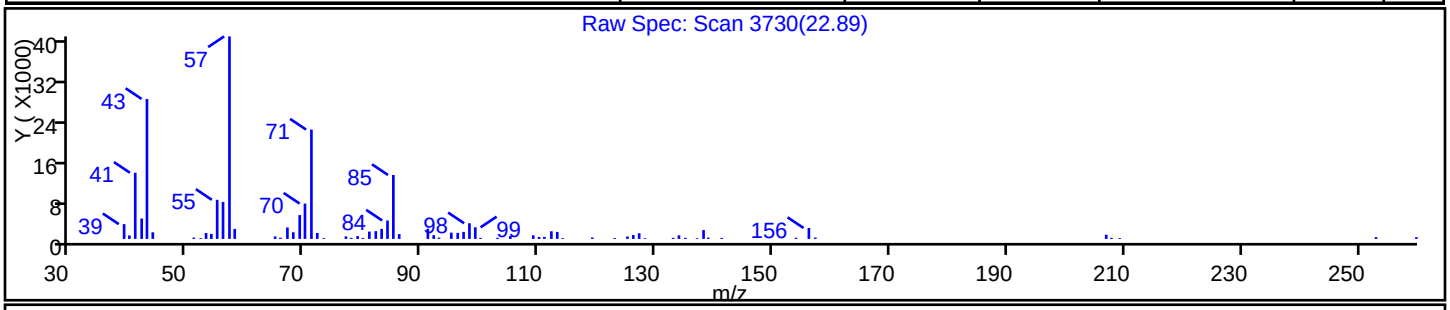


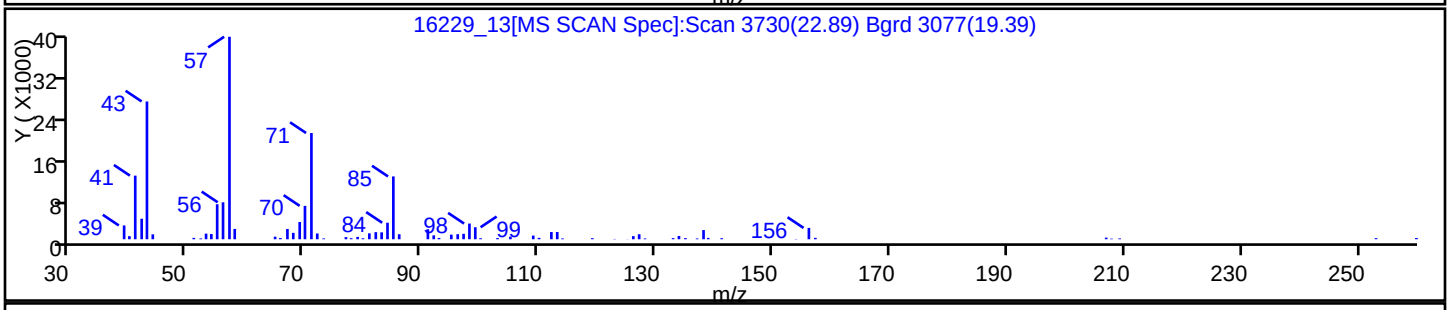


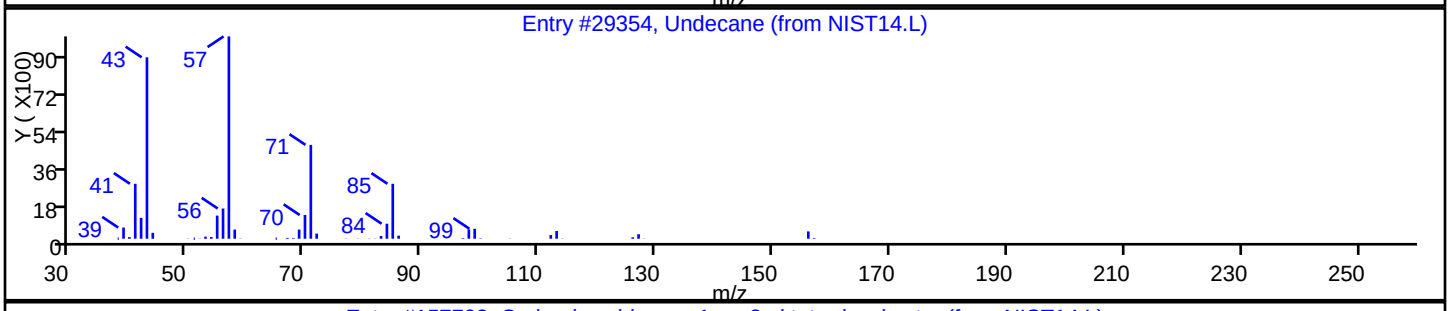
TestAmerica Burlington

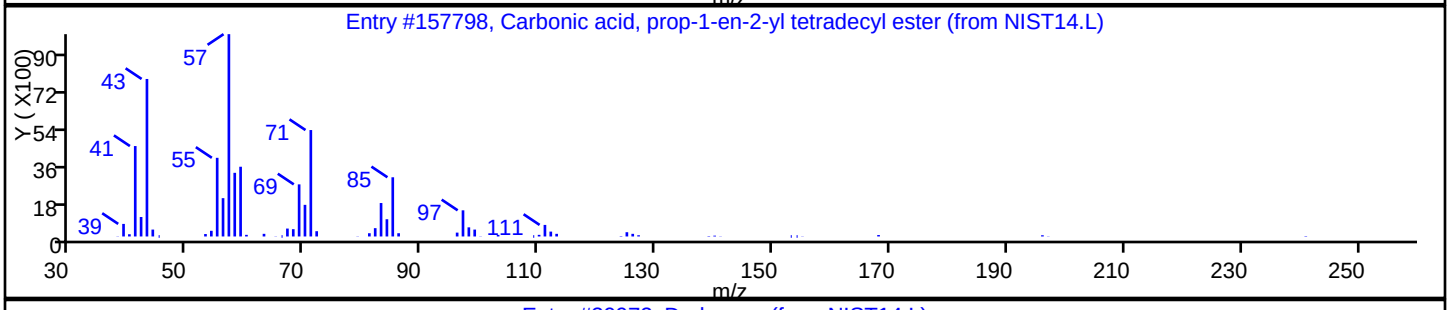
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D
Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

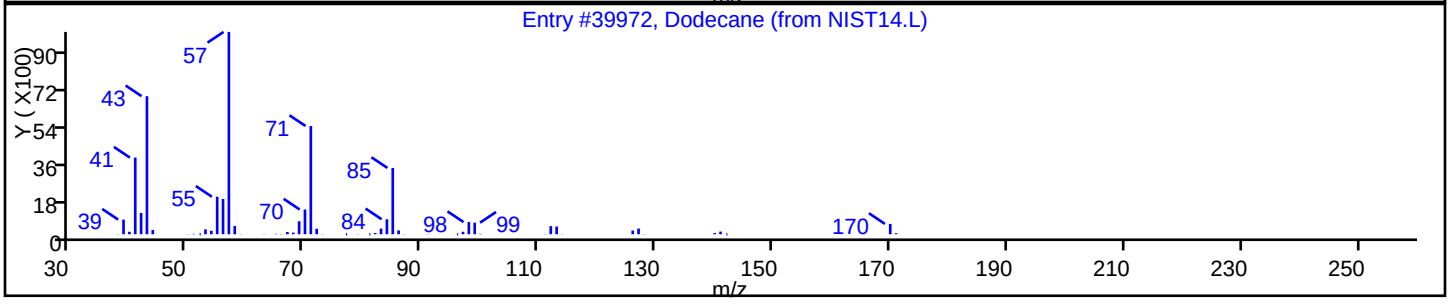
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Undecane	1120-21-4	NIST14.L	29354	C11H24	156	93
Carbonic acid, prop-1-en-2-yl tetradecyl	1000382-90-9	NIST14.L	157798	C18H34O3	298	86
Dodecane	112-40-3	NIST14.L	39972	C12H26	170	86







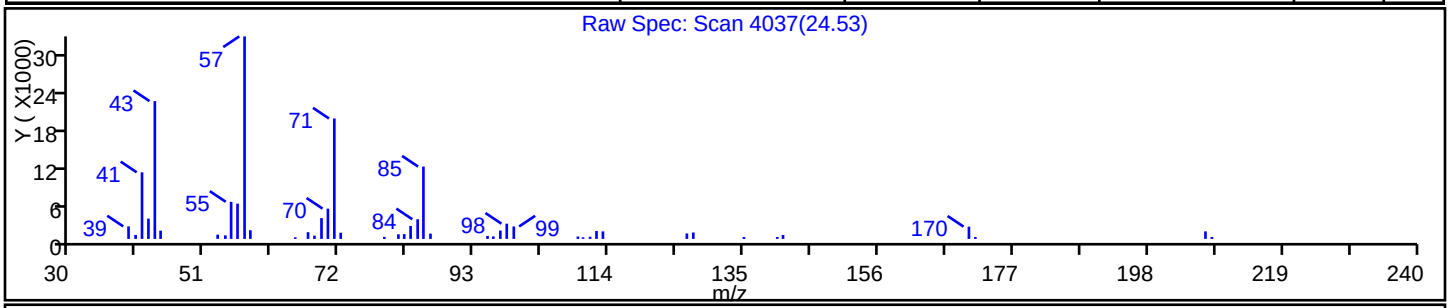


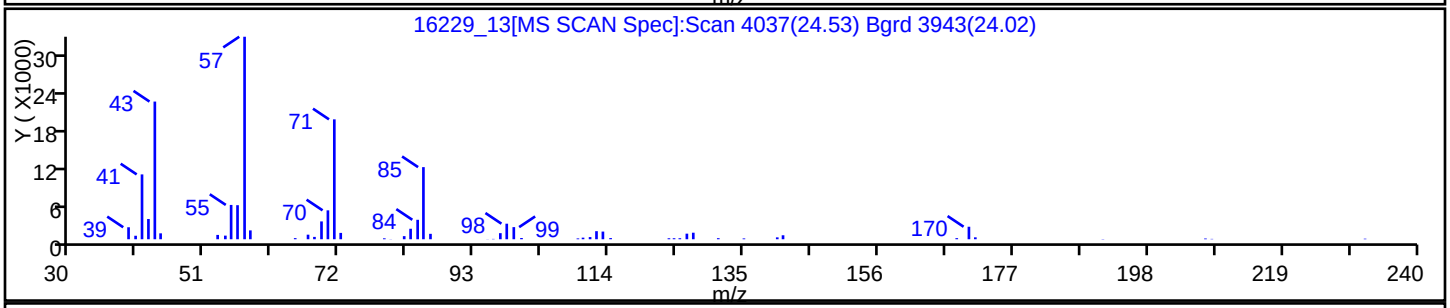


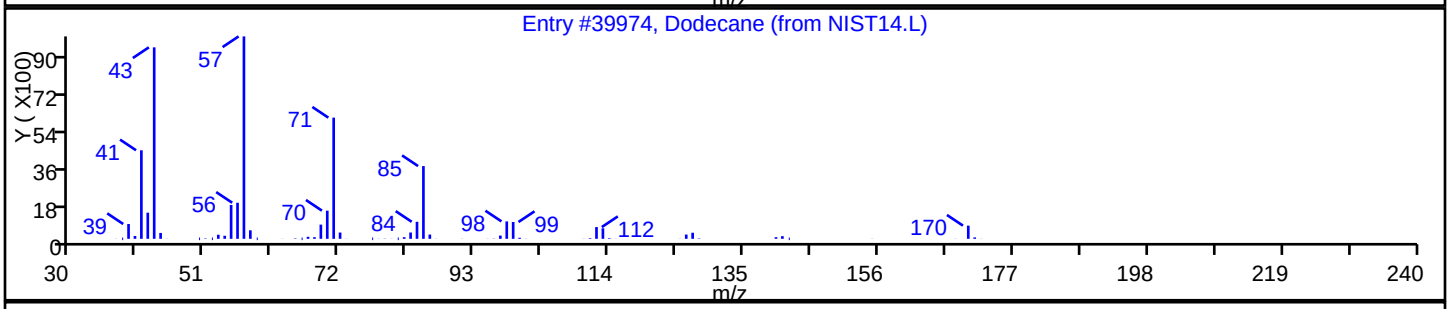
TestAmerica Burlington

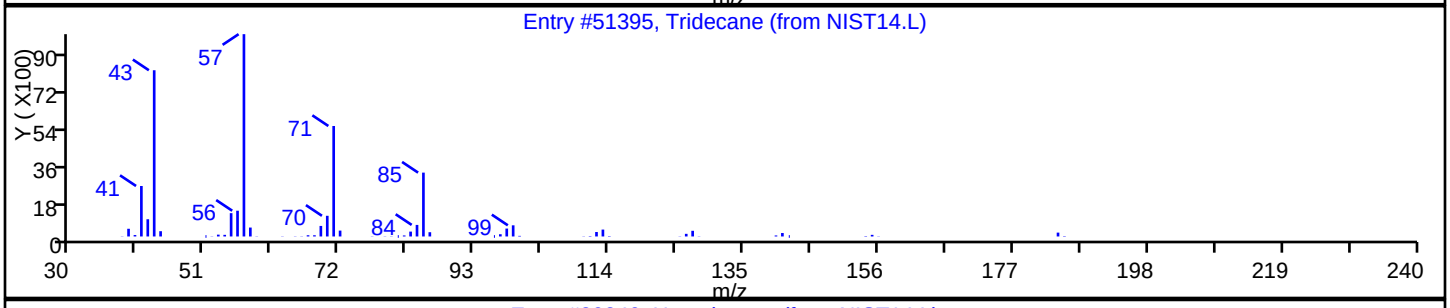
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_13.D
Injection Date: 13-Oct-2015 19:01:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 13
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

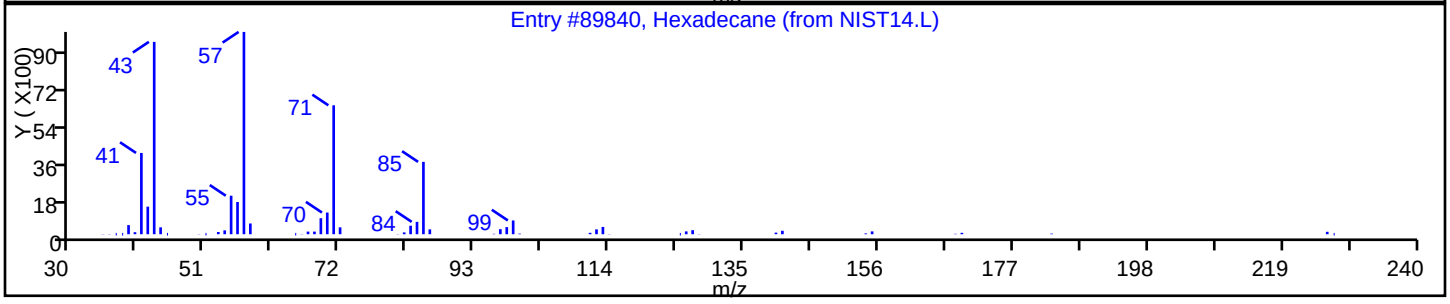
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Dodecane	112-40-3	NIST14.L	39974	C12H26	170	97
Tridecane	629-50-5	NIST14.L	51395	C13H28	184	90
Hexadecane	544-76-3	NIST14.L	89840	C16H34	226	86











FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 DL | Lab Sample ID: 200-30148-2 DL

Matrix: Air | Lab File ID: 16229_14.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:42

Sample wt/vol: 50(mL) | Date Analyzed: 10/13/2015 19:51

Soil Aliquot Vol: | Dilution Factor: 4

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	2.0	U	2.0	
75-45-6	Freon 22	86.47	2.0	U	2.0	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	0.80	U	0.80	
74-87-3	Chloromethane	50.49	7.5	D	2.0	
106-97-8	n-Butane	58.12	20	D	2.0	
75-01-4	Vinyl chloride	62.50	0.92	D	0.80	
106-99-0	1,3-Butadiene	54.09	2.5	D	0.80	
74-83-9	Bromomethane	94.94	0.80	U	0.80	
75-00-3	Chloroethane	64.52	2.0	U	2.0	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.80	U	0.80	
75-69-4	Trichlorofluoromethane	137.37	0.80	U	0.80	
76-13-1	Freon TF	187.38	0.80	U	0.80	
75-35-4	1,1-Dichloroethene	96.94	0.80	U	0.80	
67-64-1	Acetone	58.08	81	D	20	
67-63-0	Isopropyl alcohol	60.10	20	U	20	
75-15-0	Carbon disulfide	76.14	2.0	U	2.0	
107-05-1	3-Chloropropene	76.53	2.0	U	2.0	
75-09-2	Methylene Chloride	84.93	2.0	U	2.0	
75-65-0	tert-Butyl alcohol	74.12	20	U	20	
1634-04-4	Methyl tert-butyl ether	88.15	0.80	U	0.80	
156-60-5	trans-1,2-Dichloroethene	96.94	0.80	U	0.80	
110-54-3	n-Hexane	86.17	1.4	D	0.80	
75-34-3	1,1-Dichloroethane	98.96	0.80	U	0.80	
78-93-3	Methyl Ethyl Ketone	72.11	3.6	D	2.0	
156-59-2	cis-1,2-Dichloroethene	96.94	0.80	U	0.80	
540-59-0	1,2-Dichloroethene, Total	96.94	1.6	U	1.6	
67-66-3	Chloroform	119.38	0.80	U	0.80	
109-99-9	Tetrahydrofuran	72.11	20	U	20	
71-55-6	1,1,1-Trichloroethane	133.41	0.80	U	0.80	
110-82-7	Cyclohexane	84.16	0.80	U	0.80	
56-23-5	Carbon tetrachloride	153.81	0.80	U	0.80	
540-84-1	2,2,4-Trimethylpentane	114.23	0.80	U	0.80	
71-43-2	Benzene	78.11	5.3	D	0.80	
107-06-2	1,2-Dichloroethane	98.96	0.80	U	0.80	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 DL | Lab Sample ID: 200-30148-2 DL

Matrix: Air | Lab File ID: 16229_14.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:42

Sample wt/vol: 50(mL) | Date Analyzed: 10/13/2015 19:51

Soil Aliquot Vol: | Dilution Factor: 4

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	1.7	D	0.80	
79-01-6	Trichloroethene	131.39	0.80	U	0.80	
80-62-6	Methyl methacrylate	100.12	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	112.99	0.80	U	0.80	
123-91-1	1,4-Dioxane	88.11	20	U	20	
75-27-4	Bromodichloromethane	163.83	0.80	U	0.80	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.80	U	0.80	
108-10-1	methyl isobutyl ketone	100.16	2.2	D	2.0	
108-88-3	Toluene	92.14	4.2	D	0.80	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.80	U	0.80	
79-00-5	1,1,2-Trichloroethane	133.41	0.80	U	0.80	
127-18-4	Tetrachloroethene	165.83	0.80	U	0.80	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	2.0	U	2.0	
124-48-1	Dibromochloromethane	208.29	0.80	U	0.80	
106-93-4	1,2-Dibromoethane	187.87	0.80	U	0.80	
108-90-7	Chlorobenzene	112.56	0.80	U	0.80	
100-41-4	Ethylbenzene	106.17	1.2	D	0.80	
179601-23-1	m,p-Xylene	106.17	3.7	D	2.0	
95-47-6	Xylene, o-	106.17	1.4	D	0.80	
1330-20-7	Xylene (total)	106.17	5.1	D	2.8	
100-42-5	Styrene	104.15	0.80	U	0.80	
75-25-2	Bromoform	252.75	0.80	U	0.80	
98-82-8	Cumene	120.19	0.80	U	0.80	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.80	U	0.80	
103-65-1	n-Propylbenzene	120.19	0.80	U	0.80	
622-96-8	4-Ethyltoluene	120.20	0.80	U	0.80	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.80	U	0.80	
95-49-8	2-Chlorotoluene	126.59	0.80	U	0.80	
98-06-6	tert-Butylbenzene	134.22	0.80	U	0.80	
95-63-6	1,2,4-Trimethylbenzene	120.20	1.0	D	0.80	
135-98-8	sec-Butylbenzene	134.22	0.80	U	0.80	
99-87-6	4-Isopropyltoluene	134.22	0.80	U	0.80	
541-73-1	1,3-Dichlorobenzene	147.00	0.80	U	0.80	
106-46-7	1,4-Dichlorobenzene	147.00	0.80	U	0.80	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 DL Lab Sample ID: 200-30148-2 DL

Matrix: Air Lab File ID: 16229_14.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 50(mL) Date Analyzed: 10/13/2015 19:51

Soil Aliquot Vol: Dilution Factor: 4

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*0.80*	*U*	*0.80*	
104-51-8	*n-Butylbenzene*	*134.22*	*0.80*	*U*	*0.80*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*0.80*	*U*	*0.80*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*2.0*	*U*	*2.0*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*0.80*	*U*	*0.80*	
91-20-3	*Naphthalene*	*128.17*	*2.0*	*U*	*2.0*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 DL | Lab Sample ID: 200-30148-2 DL

Matrix: Air | Lab File ID: 16229_14.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:42

Sample wt/vol: 50(mL) | Date Analyzed: 10/13/2015 19:51

Soil Aliquot Vol: | Dilution Factor: 4

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	9.9	U	9.9	
75-45-6	Freon 22	86.47	7.1	U	7.1	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	5.6	U	5.6	
74-87-3	Chloromethane	50.49	16	D	4.1	
106-97-8	n-Butane	58.12	48	D	4.8	
75-01-4	Vinyl chloride	62.50	2.4	D	2.0	
106-99-0	1,3-Butadiene	54.09	5.6	D	1.8	
74-83-9	Bromomethane	94.94	3.1	U	3.1	
75-00-3	Chloroethane	64.52	5.3	U	5.3	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	3.5	U	3.5	
75-69-4	Trichlorofluoromethane	137.37	4.5	U	4.5	
76-13-1	Freon TF	187.38	6.1	U	6.1	
75-35-4	1,1-Dichloroethene	96.94	3.2	U	3.2	
67-64-1	Acetone	58.08	190	D	48	
67-63-0	Isopropyl alcohol	60.10	49	U	49	
75-15-0	Carbon disulfide	76.14	6.2	U	6.2	
107-05-1	3-Chloropropene	76.53	6.3	U	6.3	
75-09-2	Methylene Chloride	84.93	6.9	U	6.9	
75-65-0	tert-Butyl alcohol	74.12	61	U	61	
1634-04-4	Methyl tert-butyl ether	88.15	2.9	U	2.9	
156-60-5	trans-1,2-Dichloroethene	96.94	3.2	U	3.2	
110-54-3	n-Hexane	86.17	4.8	D	2.8	
75-34-3	1,1-Dichloroethane	98.96	3.2	U	3.2	
78-93-3	Methyl Ethyl Ketone	72.11	11	D	5.9	
156-59-2	cis-1,2-Dichloroethene	96.94	3.2	U	3.2	
540-59-0	1,2-Dichloroethene, Total	96.94	6.3	U	6.3	
67-66-3	Chloroform	119.38	3.9	U	3.9	
109-99-9	Tetrahydrofuran	72.11	59	U	59	
71-55-6	1,1,1-Trichloroethane	133.41	4.4	U	4.4	
110-82-7	Cyclohexane	84.16	2.8	U	2.8	
56-23-5	Carbon tetrachloride	153.81	5.0	U	5.0	
540-84-1	2,2,4-Trimethylpentane	114.23	3.7	U	3.7	
71-43-2	Benzene	78.11	17	D	2.6	
107-06-2	1,2-Dichloroethane	98.96	3.2	U	3.2	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 DL | Lab Sample ID: 200-30148-2 DL

Matrix: Air | Lab File ID: 16229_14.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 17:42

Sample wt/vol: 50(mL) | Date Analyzed: 10/13/2015 19:51

Soil Aliquot Vol: | Dilution Factor: 4

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	7.0	D	3.3	
79-01-6	Trichloroethene	131.39	4.3	U	4.3	
80-62-6	Methyl methacrylate	100.12	8.2	U	8.2	
78-87-5	1,2-Dichloropropane	112.99	3.7	U	3.7	
123-91-1	1,4-Dioxane	88.11	72	U	72	
75-27-4	Bromodichloromethane	163.83	5.4	U	5.4	
10061-01-5	cis-1,3-Dichloropropene	110.97	3.6	U	3.6	
108-10-1	methyl isobutyl ketone	100.16	8.9	D	8.2	
108-88-3	Toluene	92.14	16	D	3.0	
10061-02-6	trans-1,3-Dichloropropene	110.97	3.6	U	3.6	
79-00-5	1,1,2-Trichloroethane	133.41	4.4	U	4.4	
127-18-4	Tetrachloroethene	165.83	5.4	U	5.4	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	8.2	U	8.2	
124-48-1	Dibromochloromethane	208.29	6.8	U	6.8	
106-93-4	1,2-Dibromoethane	187.87	6.1	U	6.1	
108-90-7	Chlorobenzene	112.56	3.7	U	3.7	
100-41-4	Ethylbenzene	106.17	5.1	D	3.5	
179601-23-1	m,p-Xylene	106.17	16	D	8.7	
95-47-6	Xylene, o-	106.17	6.0	D	3.5	
1330-20-7	Xylene (total)	106.17	22	D	12	
100-42-5	Styrene	104.15	3.4	U	3.4	
75-25-2	Bromoform	252.75	8.3	U	8.3	
98-82-8	Cumene	120.19	3.9	U	3.9	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	5.5	U	5.5	
103-65-1	n-Propylbenzene	120.19	3.9	U	3.9	
622-96-8	4-Ethyltoluene	120.20	3.9	U	3.9	
108-67-8	1,3,5-Trimethylbenzene	120.20	3.9	U	3.9	
95-49-8	2-Chlorotoluene	126.59	4.1	U	4.1	
98-06-6	tert-Butylbenzene	134.22	4.4	U	4.4	
95-63-6	1,2,4-Trimethylbenzene	120.20	5.1	D	3.9	
135-98-8	sec-Butylbenzene	134.22	4.4	U	4.4	
99-87-6	4-Isopropyltoluene	134.22	4.4	U	4.4	
541-73-1	1,3-Dichlorobenzene	147.00	4.8	U	4.8	
106-46-7	1,4-Dichlorobenzene	147.00	4.8	U	4.8	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 DL Lab Sample ID: 200-30148-2 DL

Matrix: Air Lab File ID: 16229_14.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 50(mL) Date Analyzed: 10/13/2015 19:51

Soil Aliquot Vol: Dilution Factor: 4

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*4.1*	*U*	*4.1*	
104-51-8	*n-Butylbenzene*	*134.22*	*4.4*	*U*	*4.4*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*4.8*	*U*	*4.8*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*15*	*U*	*15*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*8.5*	*U*	*8.5*	
91-20-3	*Naphthalene*	*128.17*	*10*	*U*	*10*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-2 DL Lab Sample ID: 200-30148-2 DL

Matrix: Air Lab File ID: 16229_14.D

Analysis Method: TO-15 Date Collected: 10/05/2015 17:42

Sample wt/vol: 50(mL) Date Analyzed: 10/13/2015 19:51

Soil Aliquot Vol: Dilution Factor: 4

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 1 TIC Result Total: 5.7

CAS NO.	COMPOUND NAME	RT	RESULT	Q
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	5.7	D J N

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Sample Type: Client
Inject. Date: 13-Oct-2015 19:51:30 ALS Bottle#: 10 Worklist Smp#: 14
Purge Vol: 200.000 mL Dil. Factor: 4.0000
Sample Info: 200-0016229-014
Misc. Info.: 30148-2
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 10:28:08 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK052

First Level Reviewer: nelsona Date: 14-Oct-2015 14:45:39

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85	3.178	3.188	-0.010	99	14997	0.4563	
3 Chlorodifluoromethane	51	3.231	3.236	-0.005	93	633	0.0398	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.445	3.450	-0.005	1	1138	0.0341	
5 Chloromethane	50	3.579	3.589	-0.010	98	17389	1.88	
6 Butane	43	3.771	3.782	-0.011	97	76624	5.04	
7 Vinyl chloride	62	3.820	3.830	-0.010	95	2685	0.2302	
8 Butadiene	54	3.889	3.905	-0.016	94	5319	0.6350	
9 Bromomethane	94		4.574				ND	
10 Chloroethane	64		4.804				ND	
12 Vinyl bromide	106		5.178				ND	
13 Trichlorofluoromethane	101	5.253	5.269	-0.016	36	3215	0.0887	
18 1,1,2-Trichloro-1,2,2-trif	101		6.318				ND	
20 1,1-Dichloroethene	96		6.366				ND	
21 Acetone	43	6.634	6.639	-0.005	88	300629	20.3	
22 Carbon disulfide	76	6.741	6.756	-0.016	95	3091	0.0897	
23 Isopropyl alcohol	45		6.970				ND	
24 3-Chloro-1-propene	41		7.136				ND	
26 Methylene Chloride	49	7.420	7.420	0.000	83	2596	0.2085	
28 2-Methyl-2-propanol	59		7.762				ND	
29 Methyl tert-butyl ether	73		7.853				ND	
30 trans-1,2-Dichloroethene	61		7.848				ND	
32 Hexane	57	8.217	8.222	-0.005	89	6268	0.3389	
33 1,1-Dichloroethane	63		8.720				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.988	9.897	0.091	98	7006	0.8927	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.287	10.293	-0.006	74	168956	10.0	
39 Tetrahydrofuran	42		10.319				ND	
41 Chloroform	83		10.421				ND	
42 Cyclohexane	84	10.651	10.662	-0.011	60	2648	0.1126	
43 1,1,1-Trichloroethane	97		10.699				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
44 Carbon tetrachloride	117		10.945				ND	
45 Isooctane	57	11.384	11.384	0.000	94	4697	0.0598	
46 Benzene	78	11.416	11.427	-0.011	93	72787	1.33	
47 1,2-Dichloroethane	62		11.619				ND	
48 n-Heptane	43	11.759	11.764	-0.005	86	11219	0.4240	
* 50 1,4-Difluorobenzene	114	12.261	12.272	-0.011	92	939197	10.0	
52 Trichloroethene	95		12.753				ND	
53 1,2-Dichloropropane	63		13.342				ND	
54 Methyl methacrylate	69	13.551	13.513	0.038	79	7564	0.3643	
55 1,4-Dioxane	88		13.599				ND	
57 Dichlorobromomethane	83		13.914				ND	
58 cis-1,3-Dichloropropene	75		14.877				ND	
61 4-Methyl-2-pentanone (MIBK	43	15.257	15.209	0.048	92	19459	0.5429	
62 Toluene	92	15.471	15.487	-0.016	93	50194	1.06	
67 trans-1,3-Dichloropropene	75		16.102				ND	
68 1,1,2-Trichloroethane	83		16.488				ND	
69 Tetrachloroethene	166	16.584	16.589	-0.005	71	756	0.0160	
70 2-Hexanone	43	17.001	16.969	0.032	93	4143	0.1175	
71 Chlorodibromomethane	129		17.269				ND	
72 Ethylene Dibromide	107		17.552				ND	
* 73 Chlorobenzene-d5	117	18.446	18.451	-0.005	81	932822	10.0	
74 Chlorobenzene	112		18.515				ND	
75 Ethylbenzene	91	18.649	18.654	-0.005	96	30070	0.2936	
77 m-Xylene & p-Xylene	106	18.900	18.911	-0.011	99	40244	0.9320	
78 o-Xylene	106	19.719	19.724	-0.005	95	14651	0.3433	
79 Styrene	104	19.772	19.772	0.000	94	7776	0.1167	
S 80 Xylenes, Total	106				0		1.28	
81 Bromoform	173		20.184				ND	
82 Isopropylbenzene	105	20.350	20.355	-0.005	93	4349	0.0357	
85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
86 N-Propylbenzene	91	21.035	21.040	-0.005	100	9678	0.0682	
89 4-Ethyltoluene	105	21.217	21.217	0.000	67	11702	0.0951	
90 2-Chlorotoluene	91		21.238				ND	
91 1,3,5-Trimethylbenzene	105	21.313	21.318	-0.005	95	9708	0.0956	
93 tert-Butylbenzene	119		21.794				ND	
94 1,2,4-Trimethylbenzene	105	21.880	21.885	-0.005	96	26172	0.2571	
95 sec-Butylbenzene	105		22.105				ND	
96 4-Isopropyltoluene	119	22.297	22.303	-0.006	97	10523	0.0807	
97 1,3-Dichlorobenzene	146		22.351				ND	
98 1,4-Dichlorobenzene	146		22.485				ND	
99 Benzyl chloride	91		22.688				ND	
101 n-Butylbenzene	91		22.891				ND	
102 1,2-Dichlorobenzene	146		23.046				ND	
104 1,2,4-Trichlorobenzene	180		25.673				ND	
105 Hexachlorobutadiene	225		25.855				ND	
106 Naphthalene	128	26.197	26.197	0.000	97	6868	0.0524	

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Sample Type:	Client				
Inject. Date:	13-Oct-2015 19:51:30	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Sample Info:	200-0016229-014				
Misc. Info.:	30148-2				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	14-Oct-2015 10:28:08	Calib Date:	17-Aug-2015 23:52:30		
Tic RT Window:	0.000 -0.000	Response:	area		
Quant By:	Nearest ISTD	Quant LOD:	10.00000		
MS Library:	\\ChromNA\Burlington\Database\NIST14.L				
Min. Match:	1				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK052				
First Level Reviewer: nelsona		Date:	14-Oct-2015 14:45:39		

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
7785-26-4 (1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2								
20.254	434893	1.43	83	97	16223	C10H16	136	

Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 83 4-Bromofluorobenzene	20.714	3039071	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

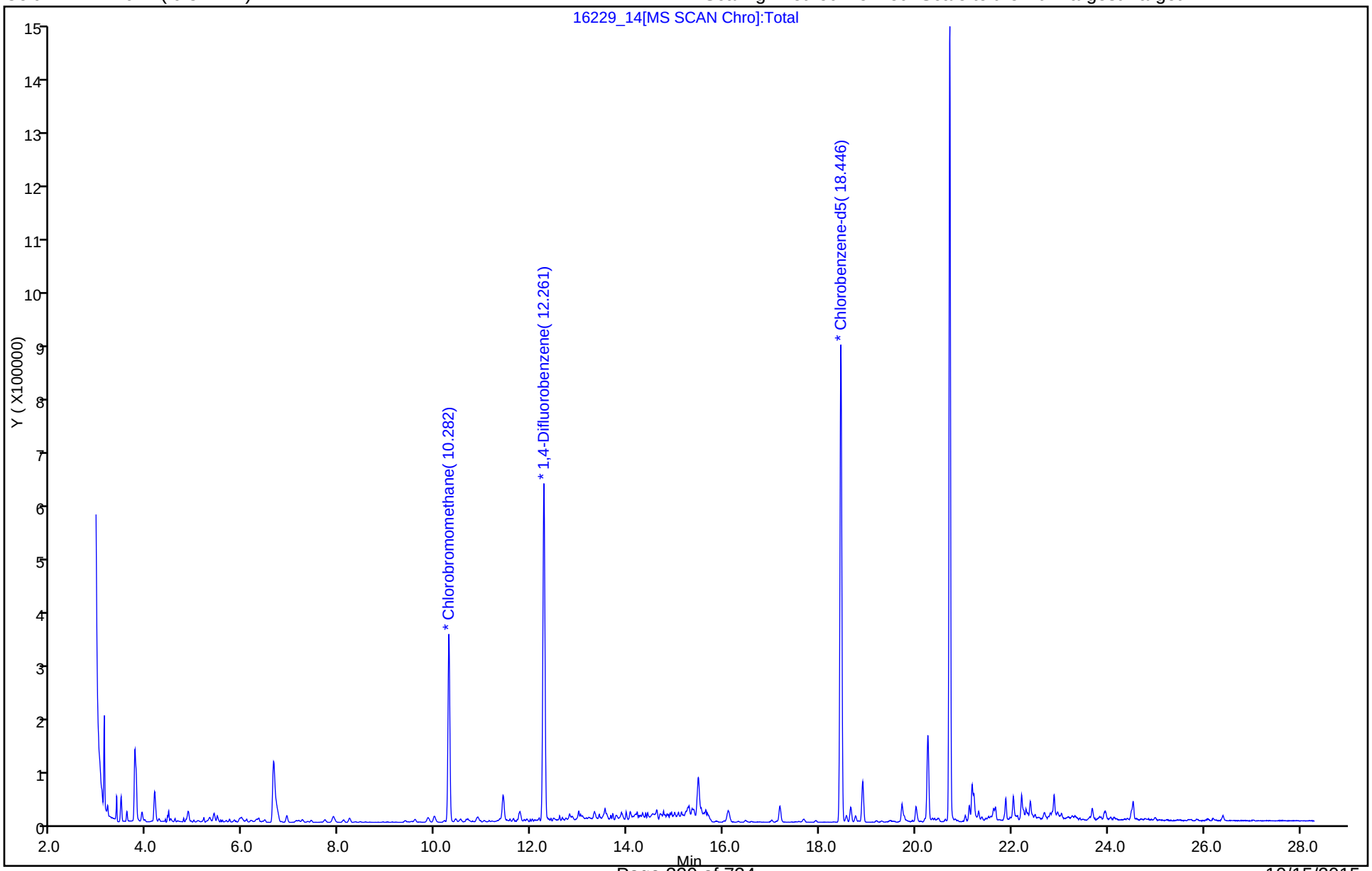
Report Date: 14-Oct-2015 14:46:00 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D

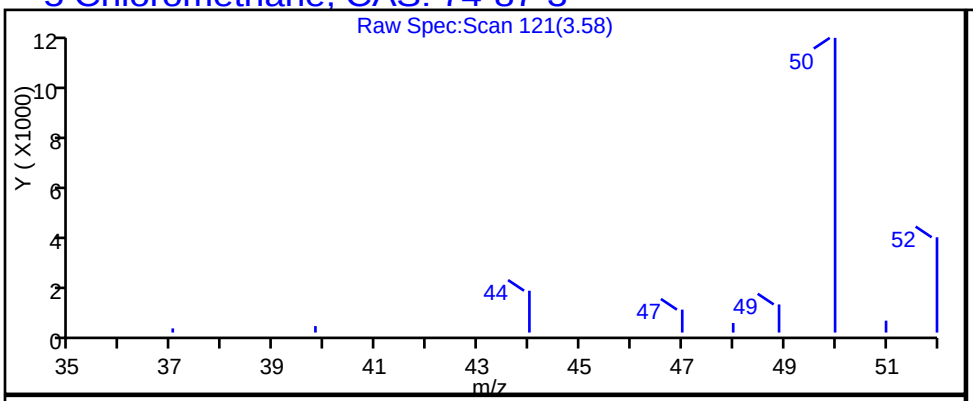
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2	Worklist Smp#:	14
Client ID:	SV-2				
Purge Vol:	200.000 mL	Dil. Factor:	4.0000	ALS Bottle#:	10
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

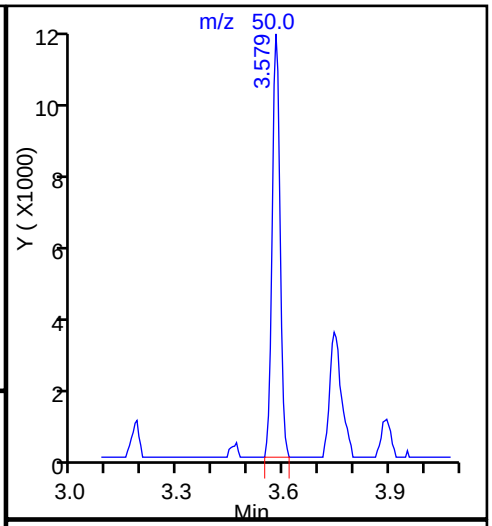
Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

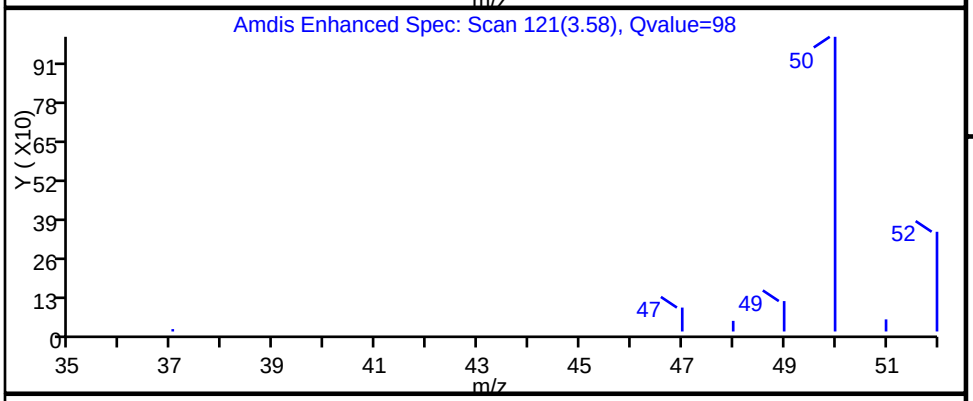


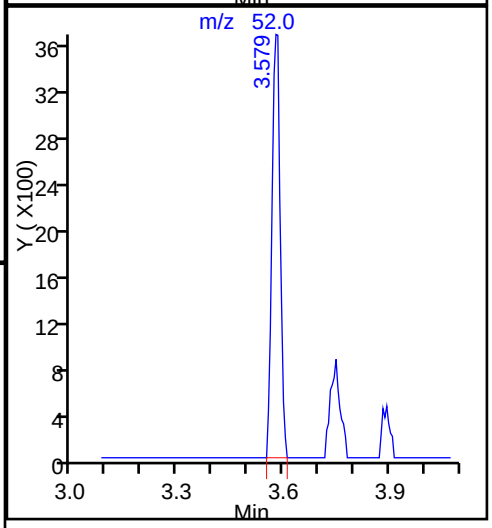
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D
Injection Date: 13-Oct-2015 19:51:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 14
Purge Vol: 200.000 mL Dil. Factor: 4.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

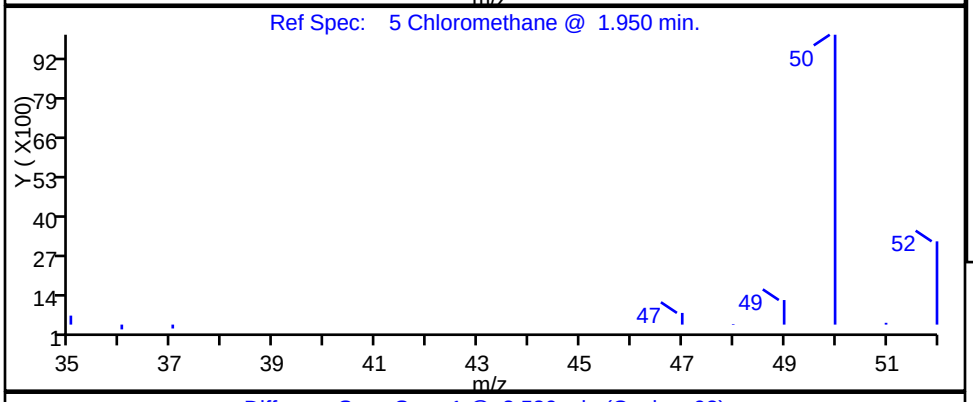
5 Chloromethane, CAS: 74-87-3

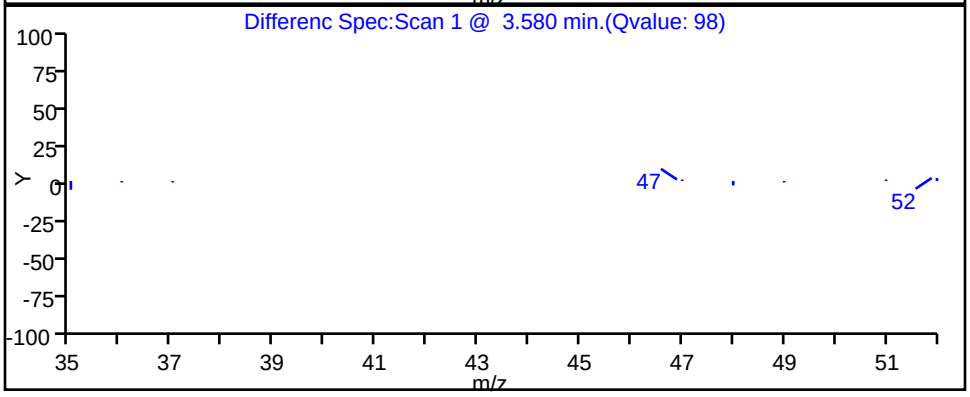








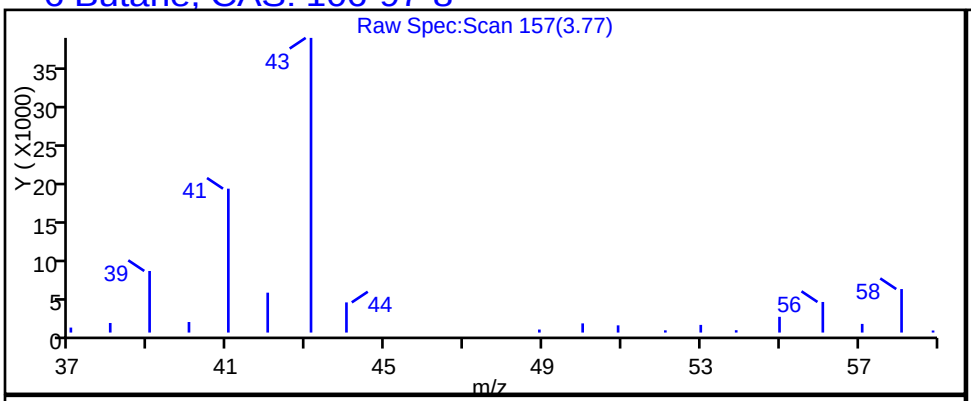


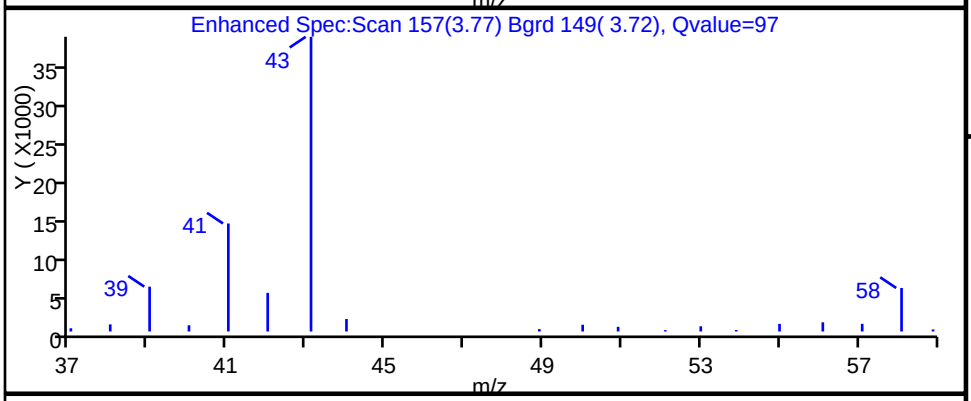


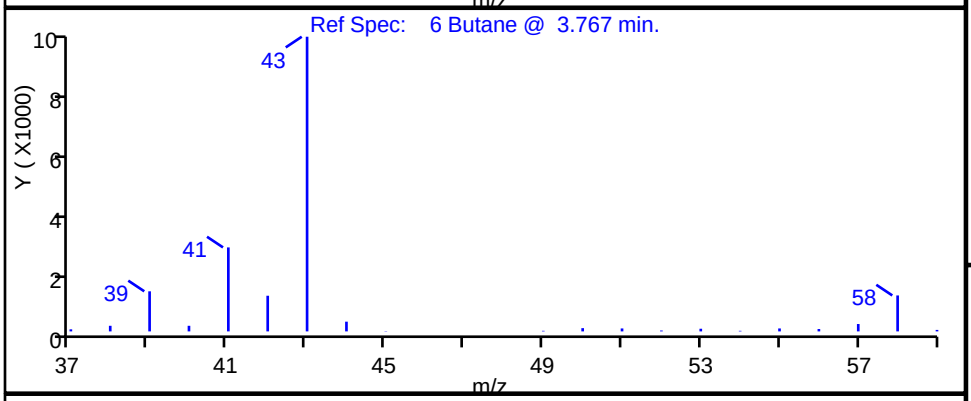
TestAmerica Burlington

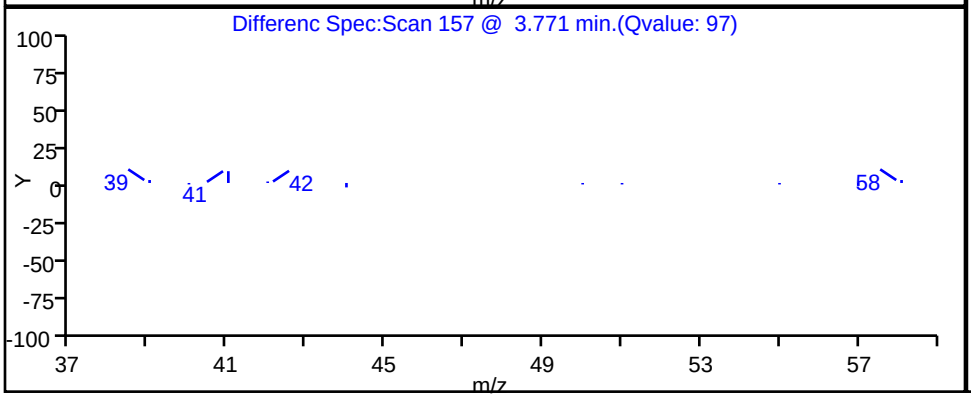
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

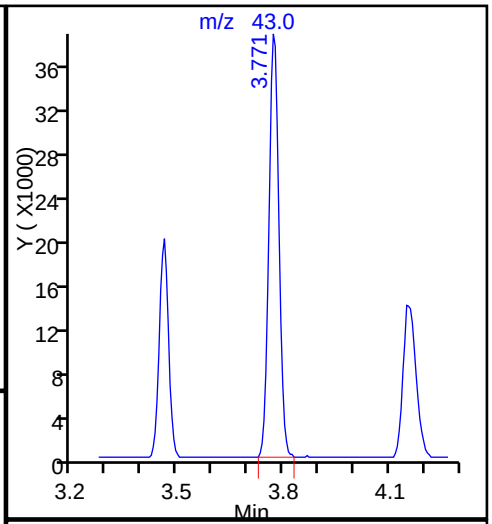
6 Butane, CAS: 106-97-8

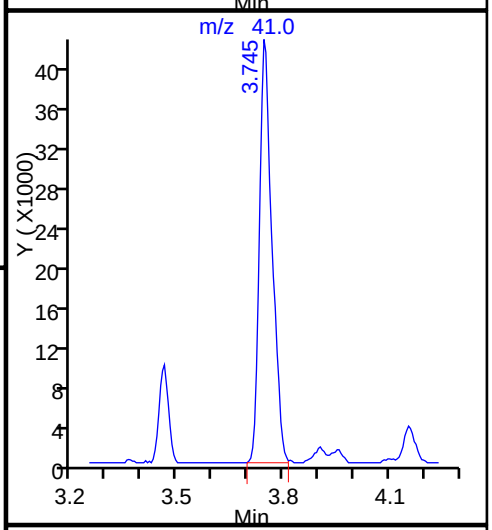


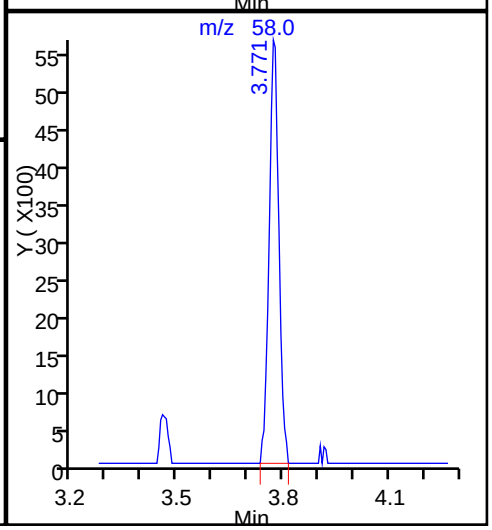








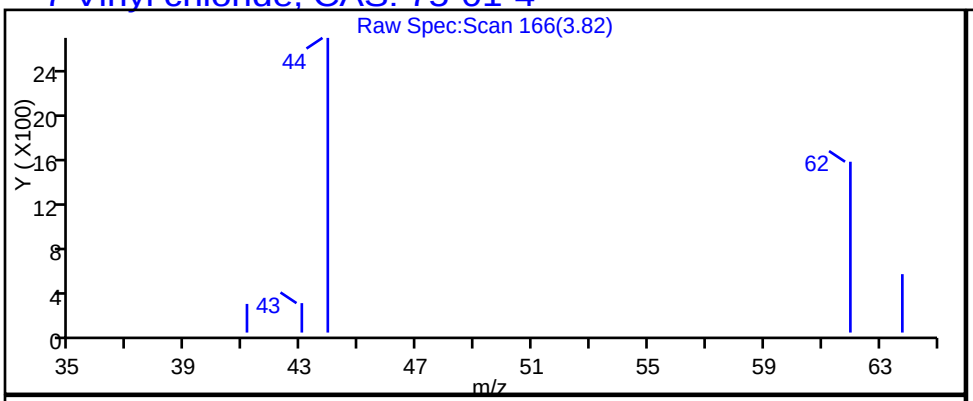


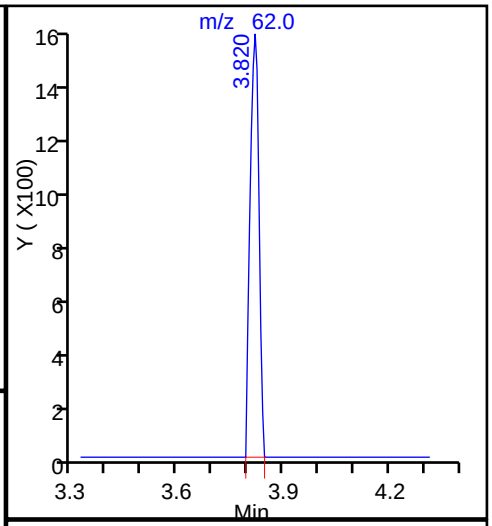


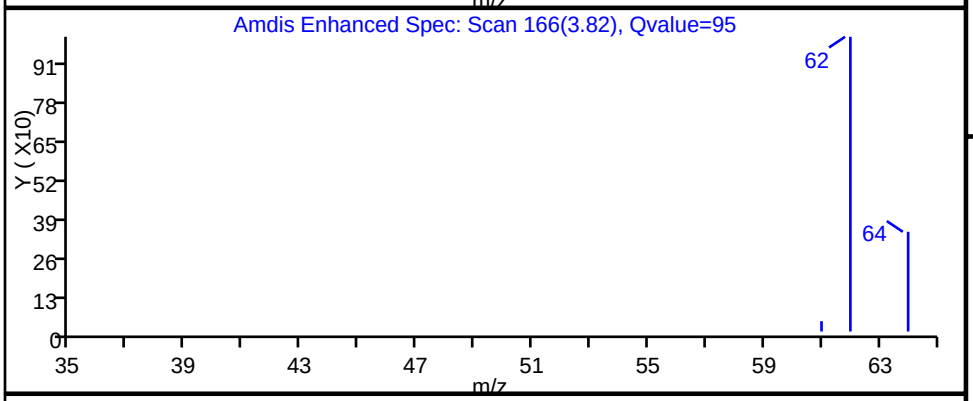
TestAmerica Burlington

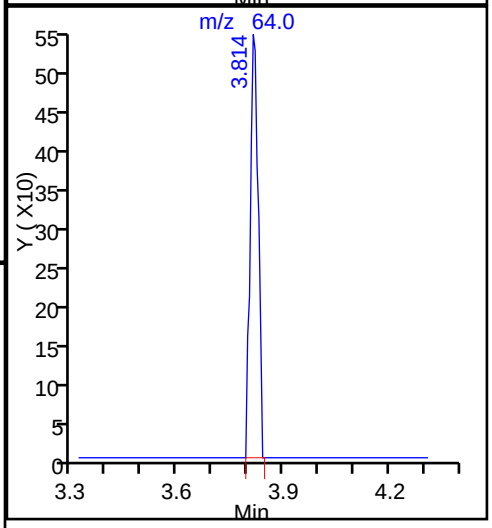
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

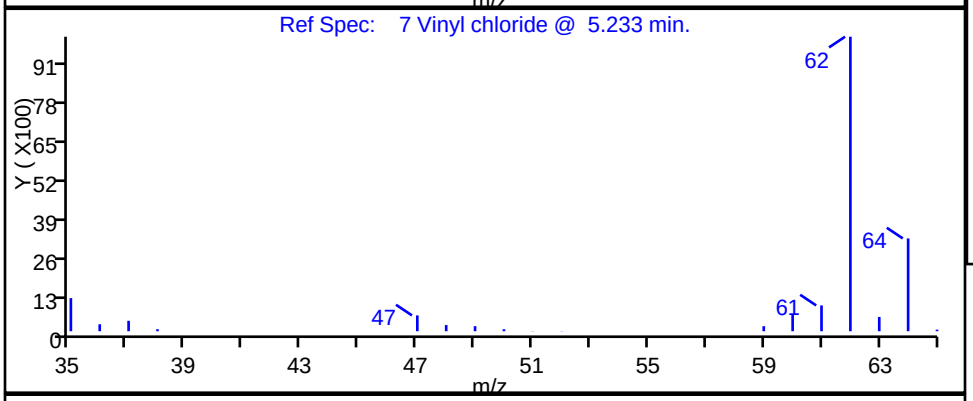
7 Vinyl chloride, CAS: 75-01-4

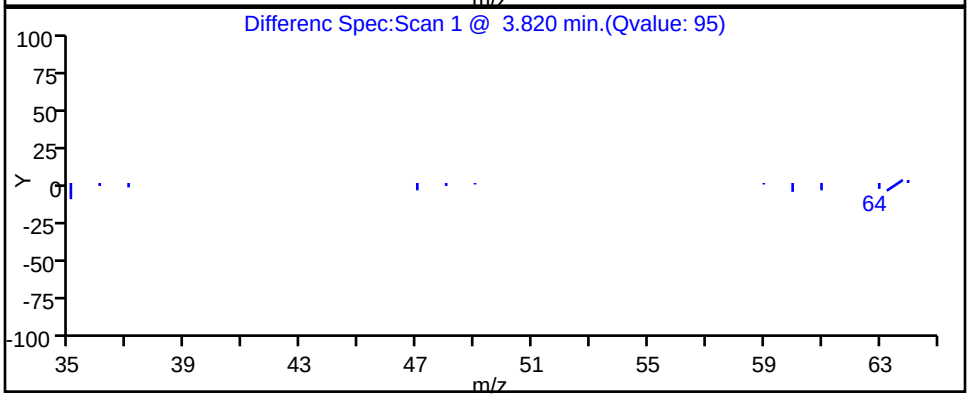








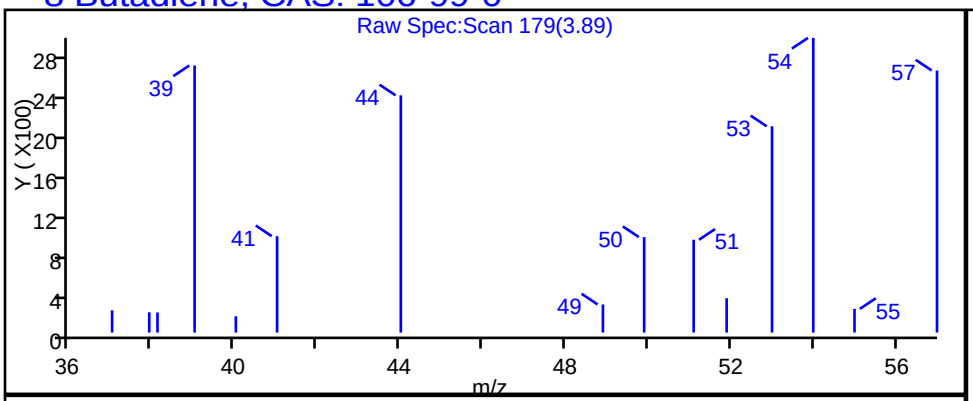


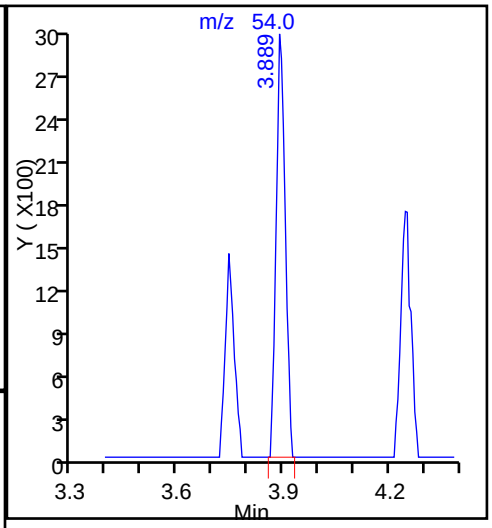


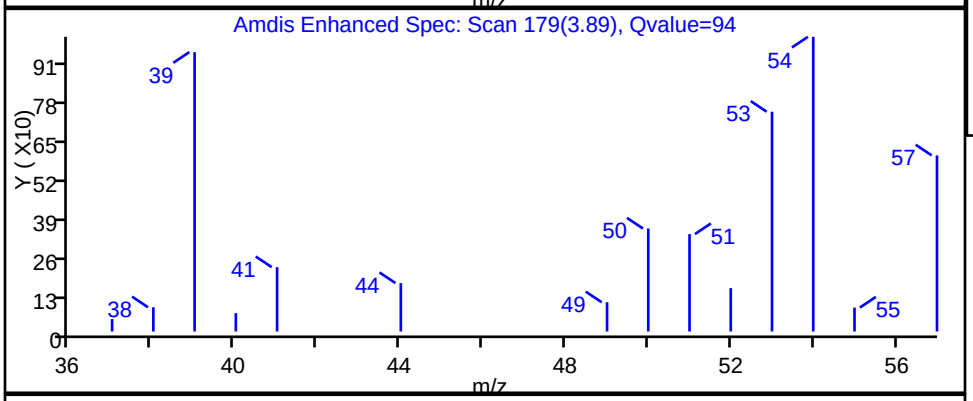
TestAmerica Burlington

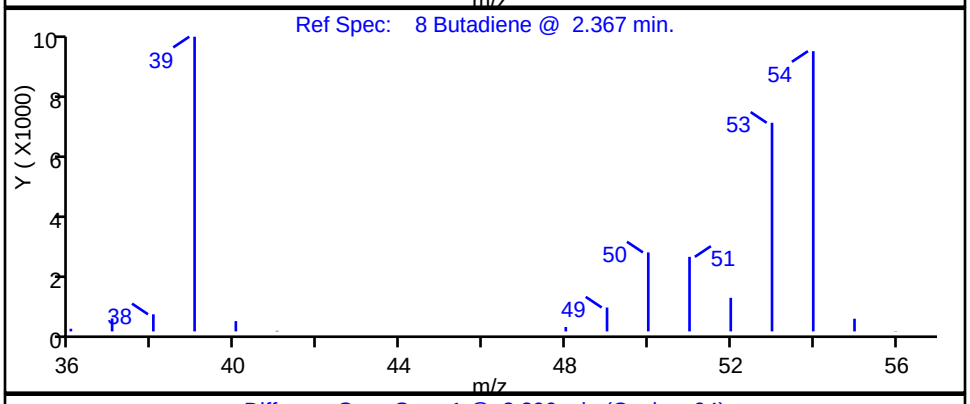
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

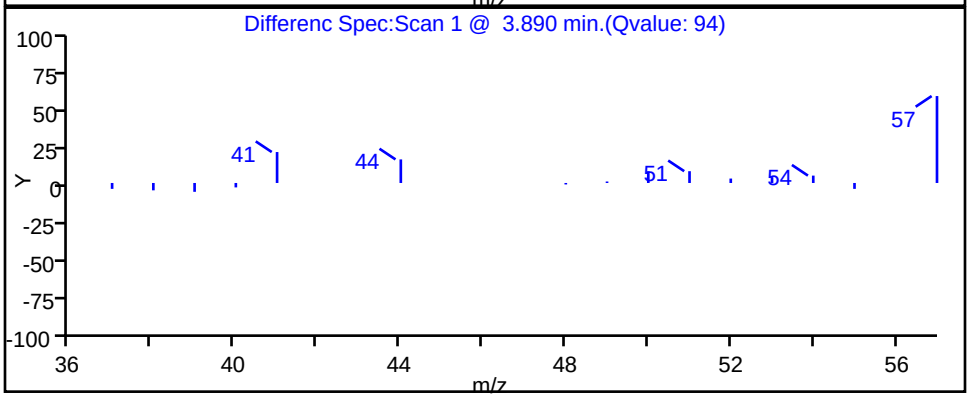
8 Butadiene, CAS: 106-99-0







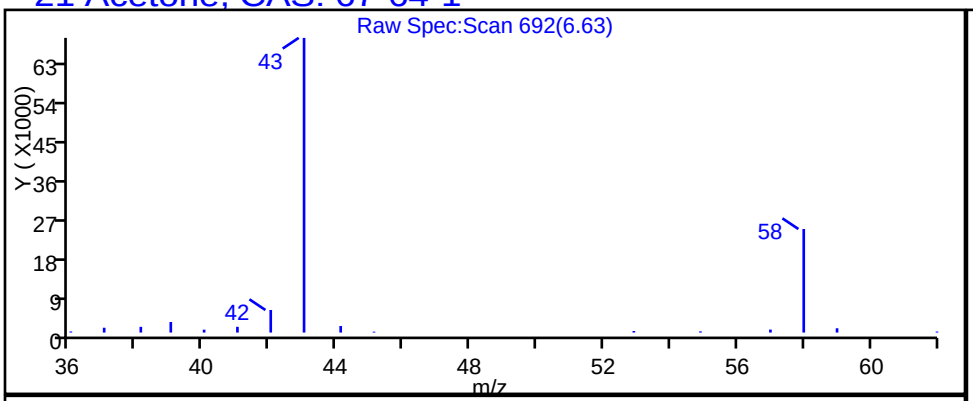


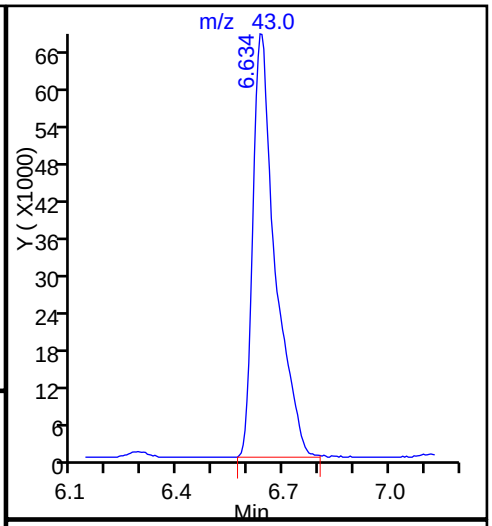


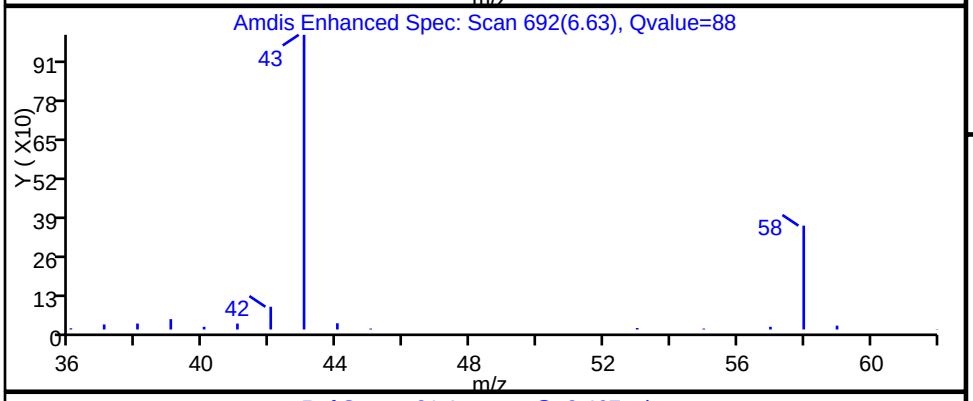
TestAmerica Burlington

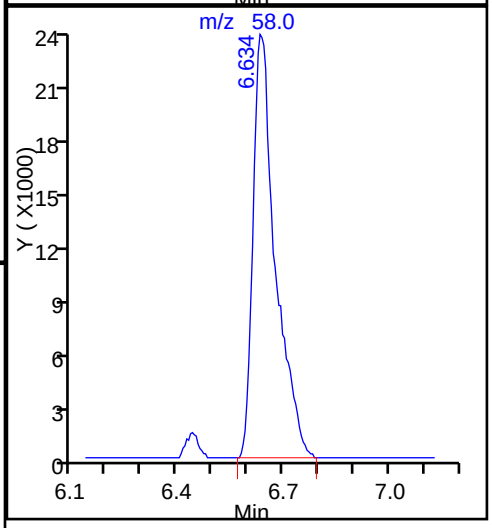
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

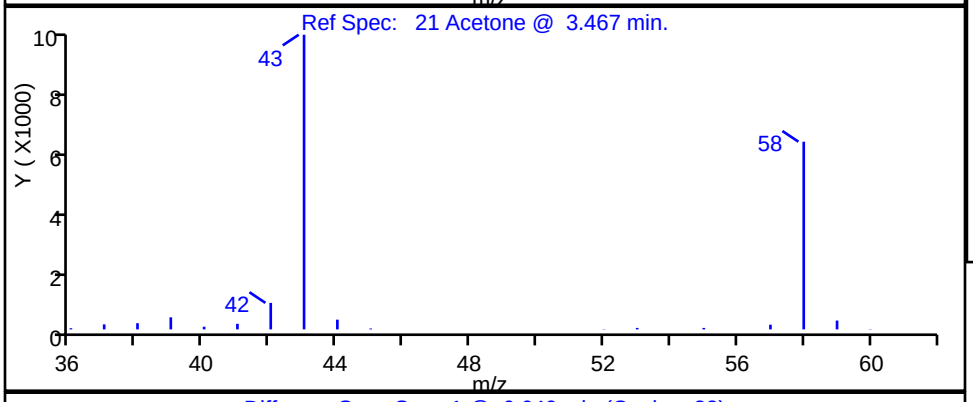
21 Acetone, CAS: 67-64-1

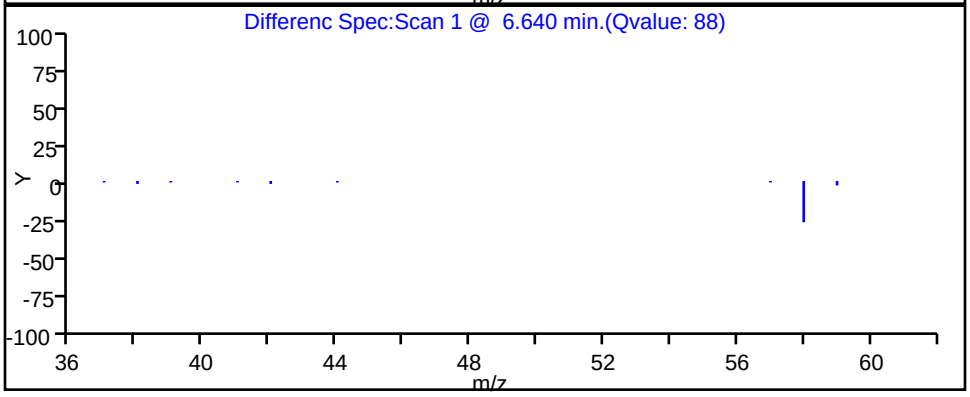








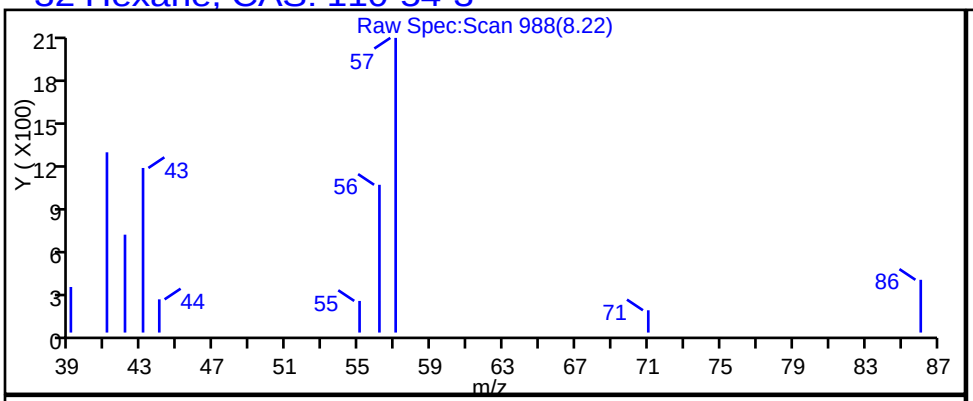


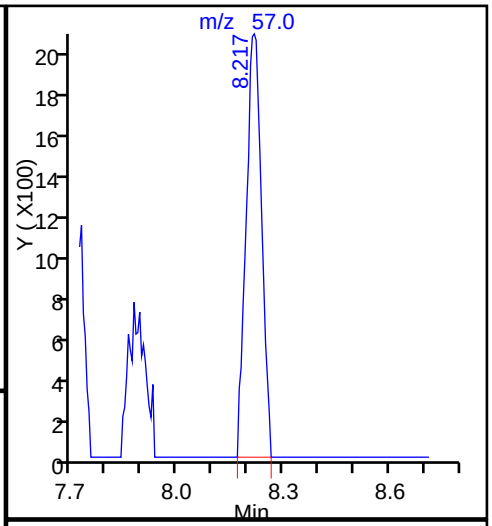


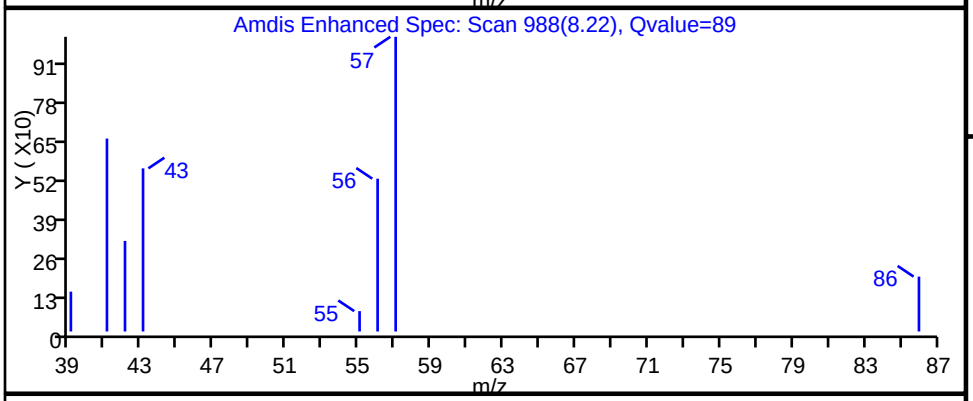
TestAmerica Burlington

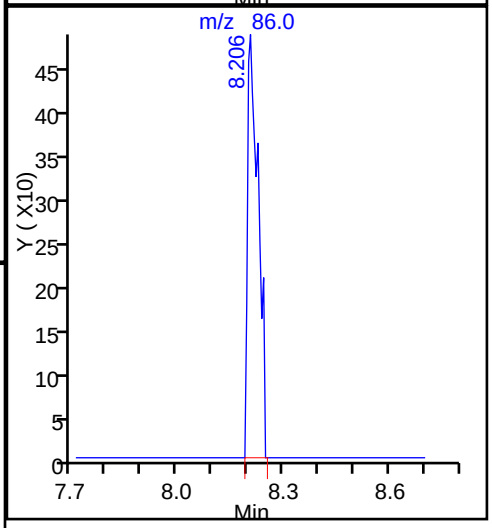
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

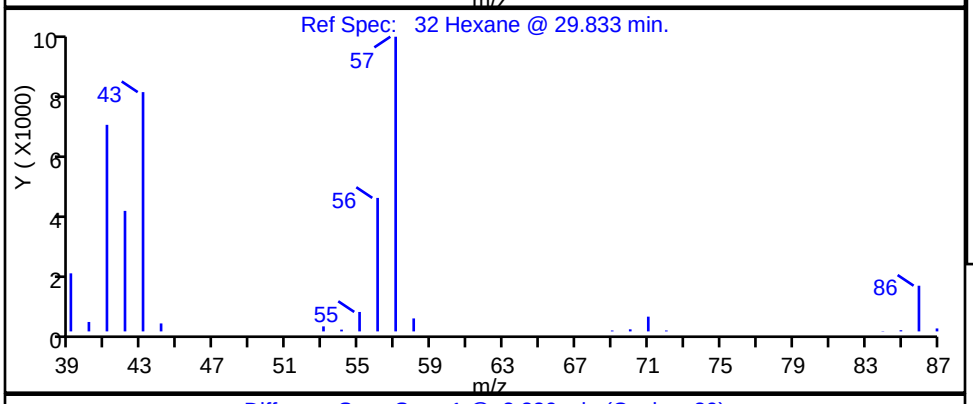
32 Hexane, CAS: 110-54-3

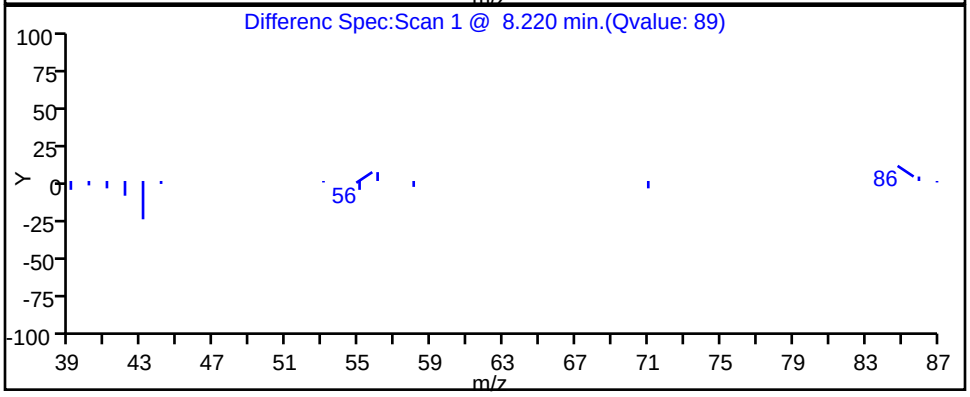








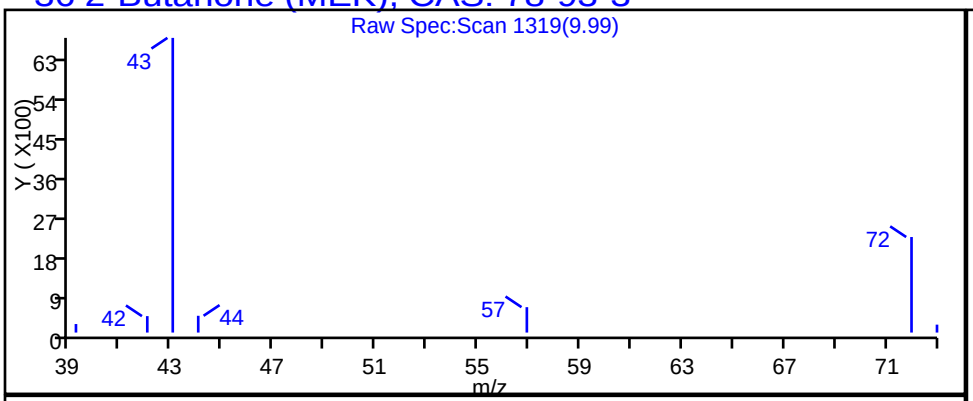


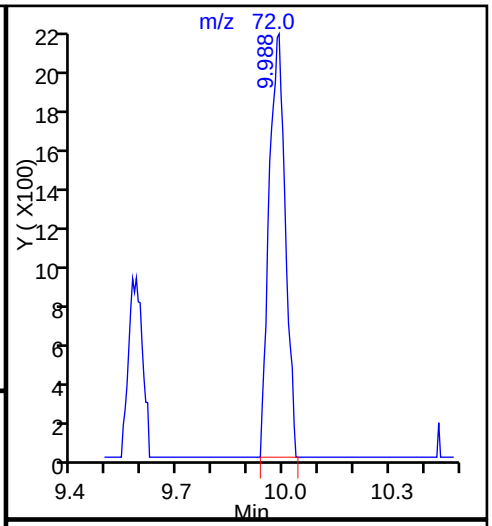


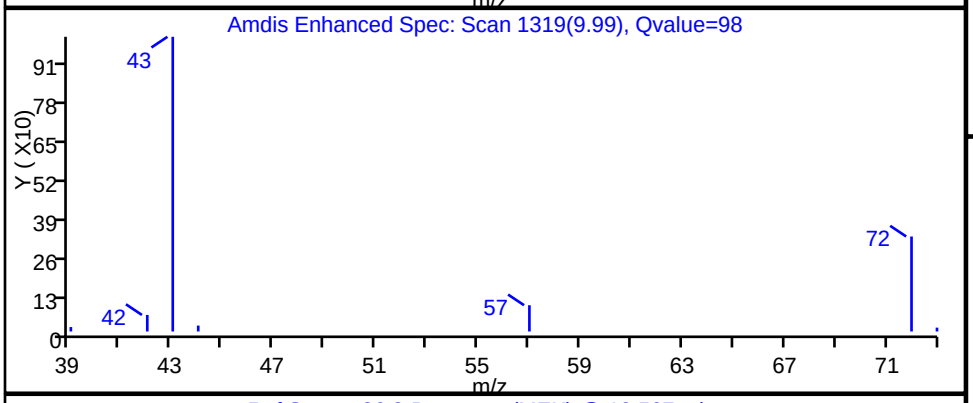
TestAmerica Burlington

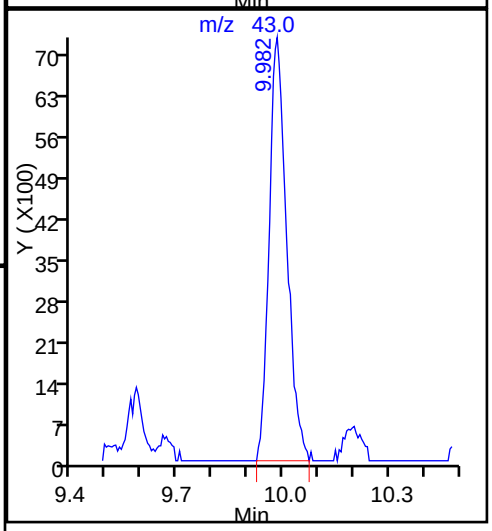
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

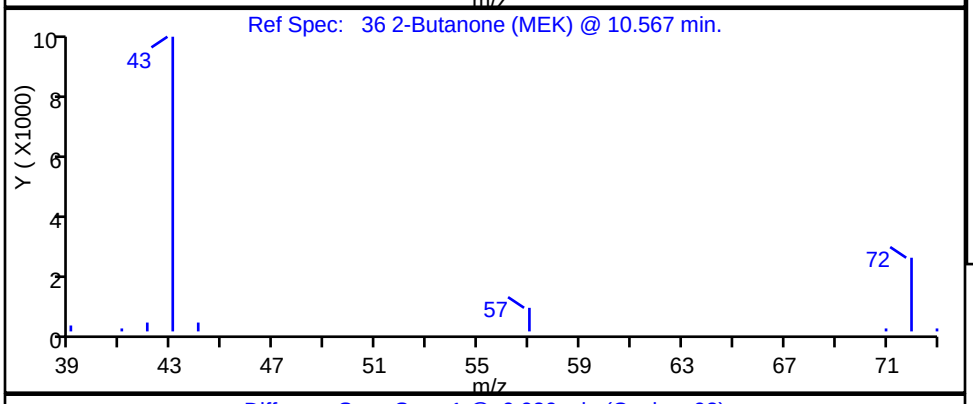
36 2-Butanone (MEK), CAS: 78-93-3

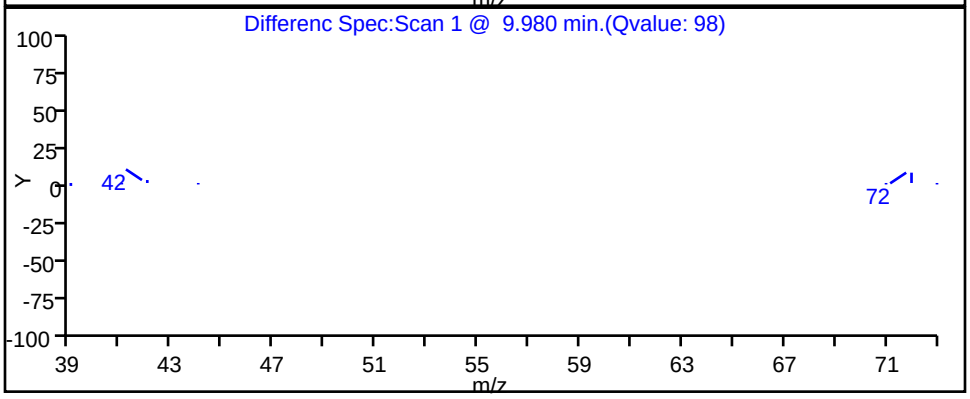








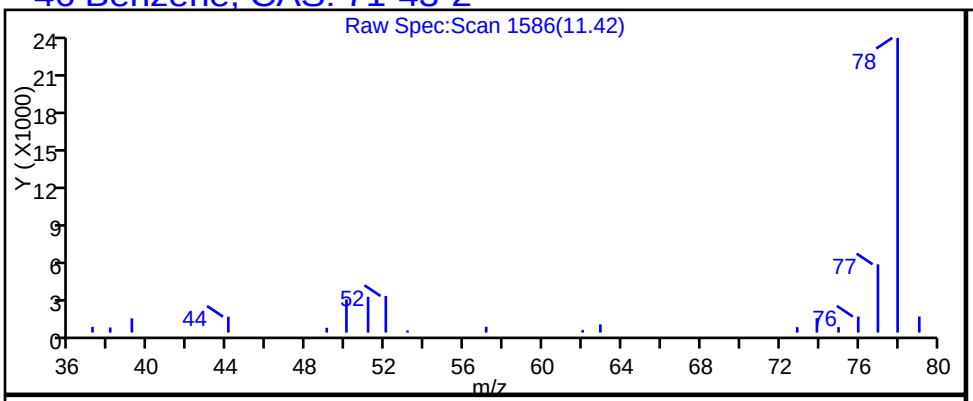


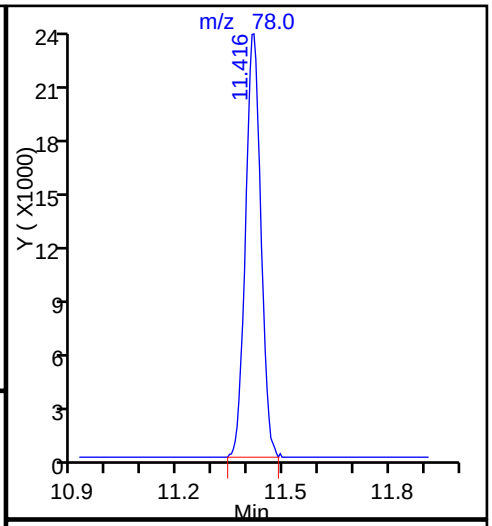


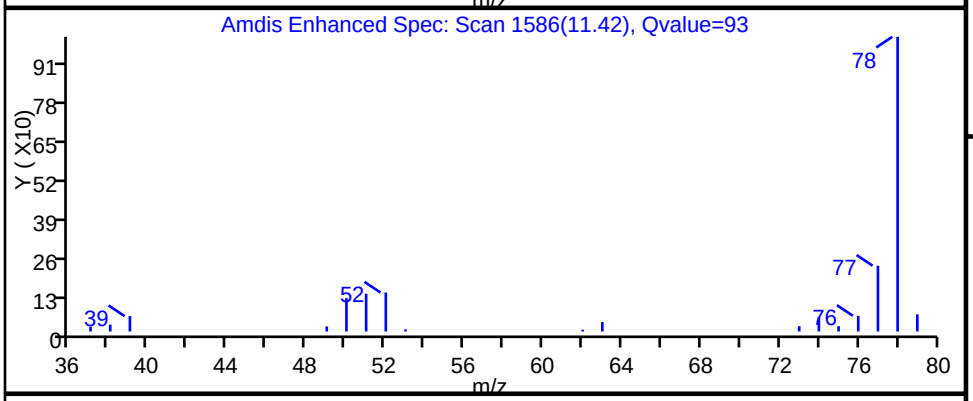
TestAmerica Burlington

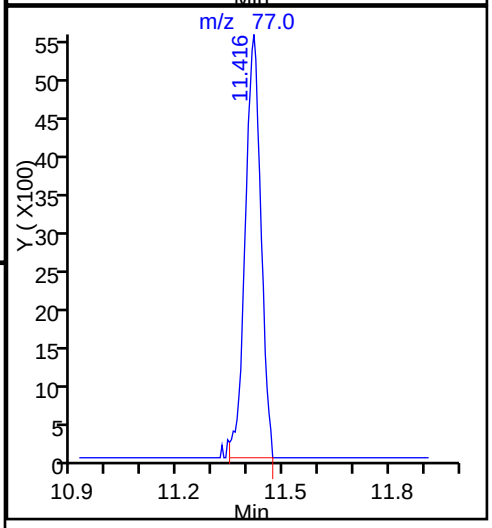
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

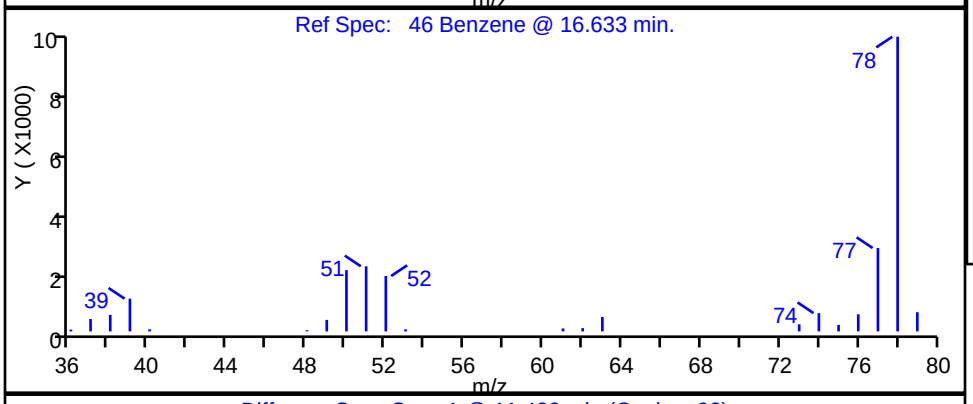
46 Benzene, CAS: 71-43-2

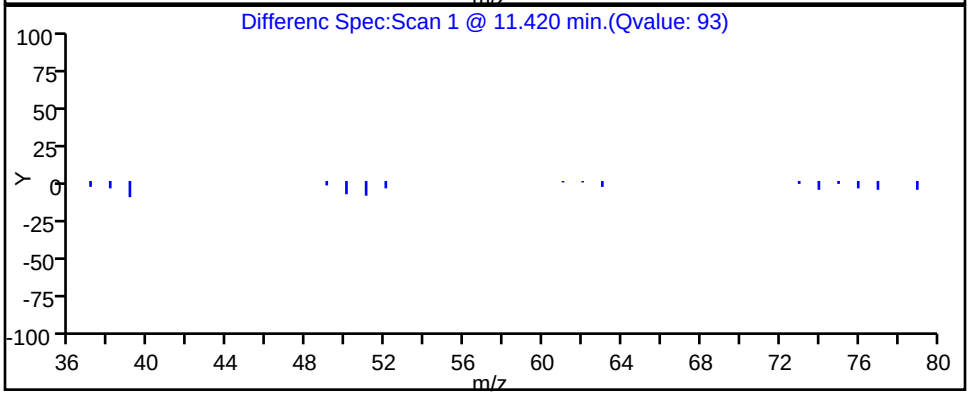








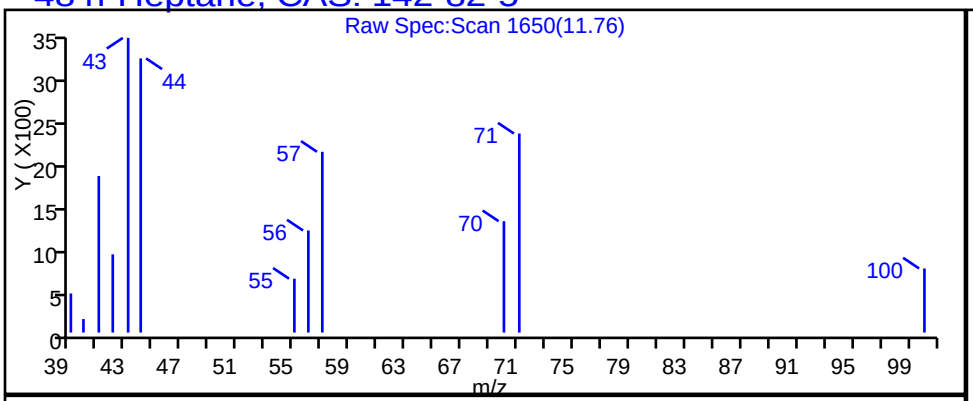


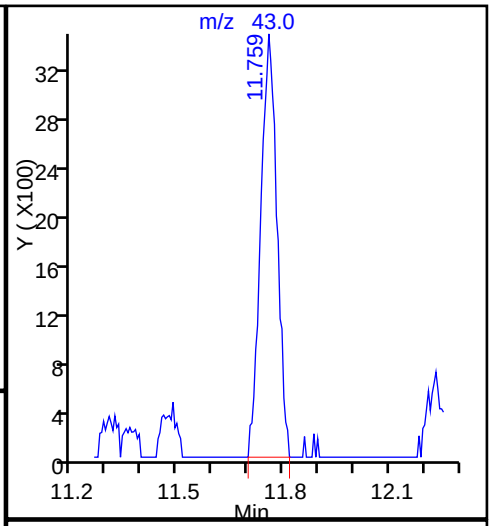


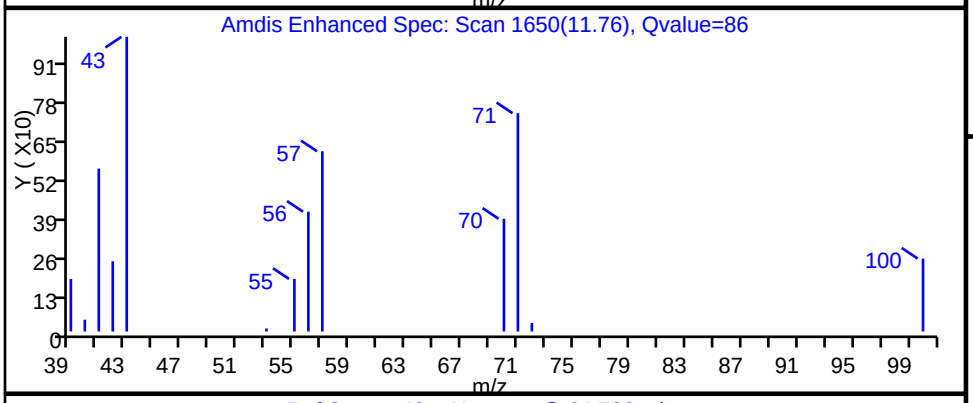
TestAmerica Burlington

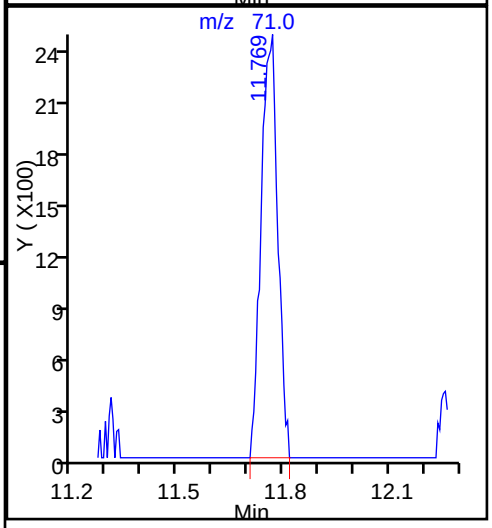
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

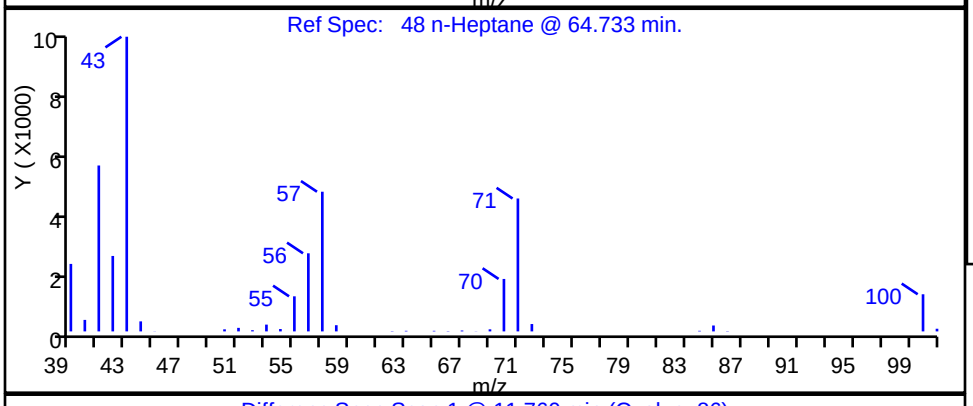
48 n-Heptane, CAS: 142-82-5

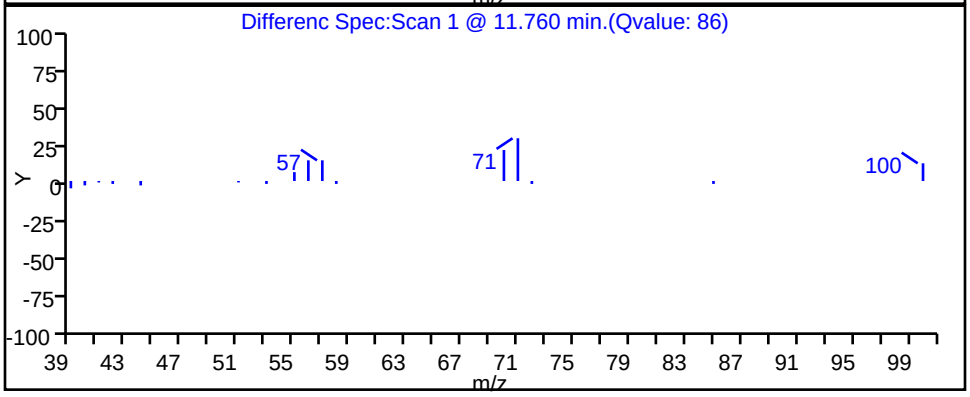








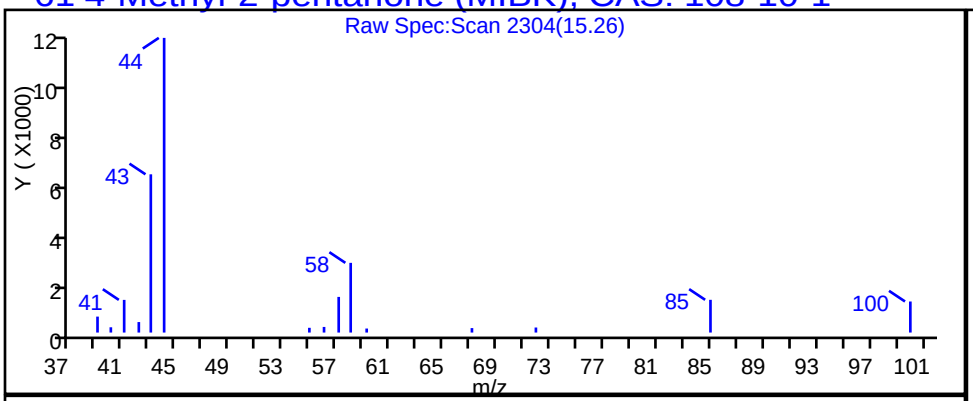


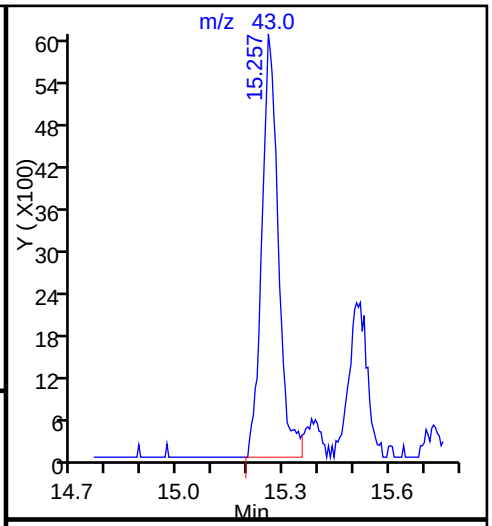


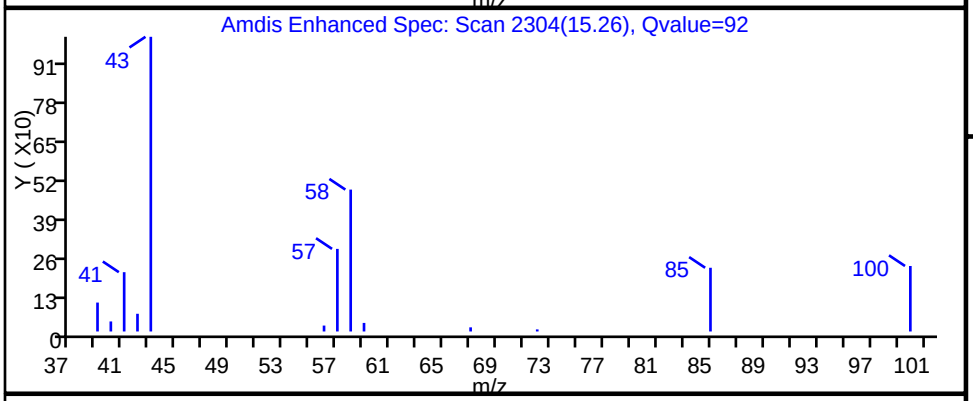
TestAmerica Burlington

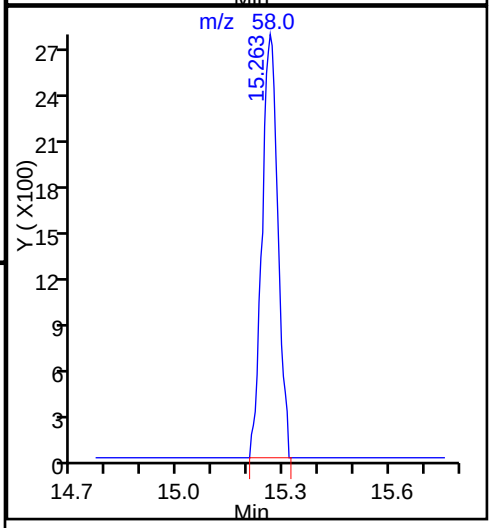
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

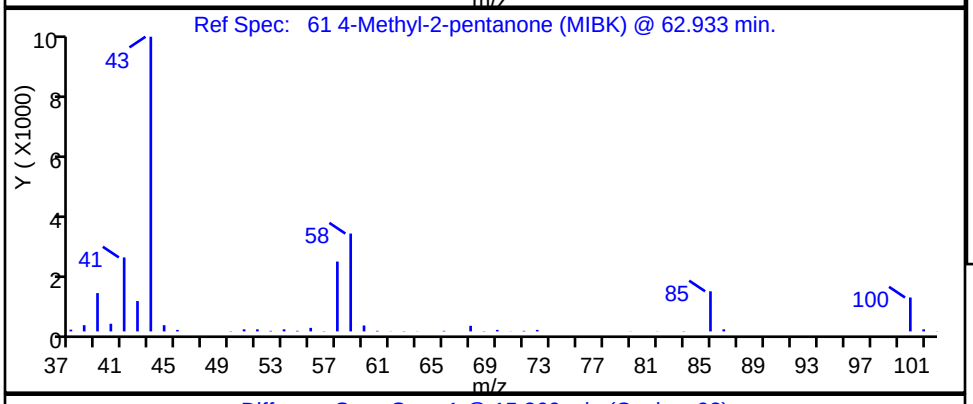
61 4-Methyl-2-pentanone (MIBK), CAS: 108-10-1

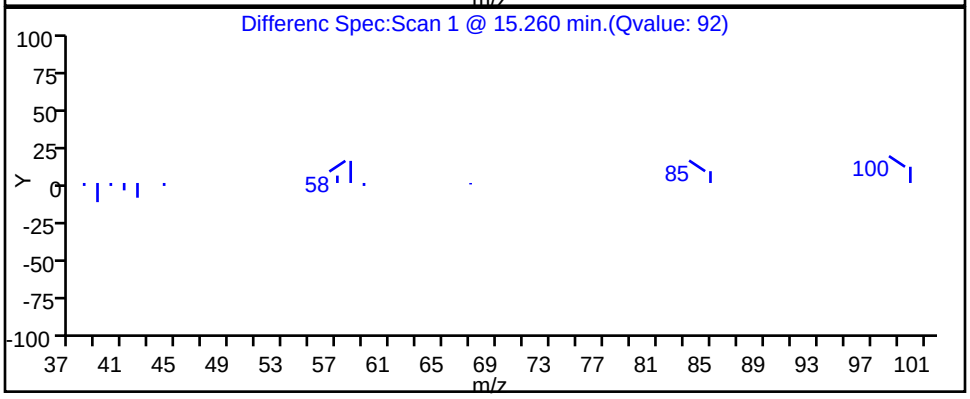








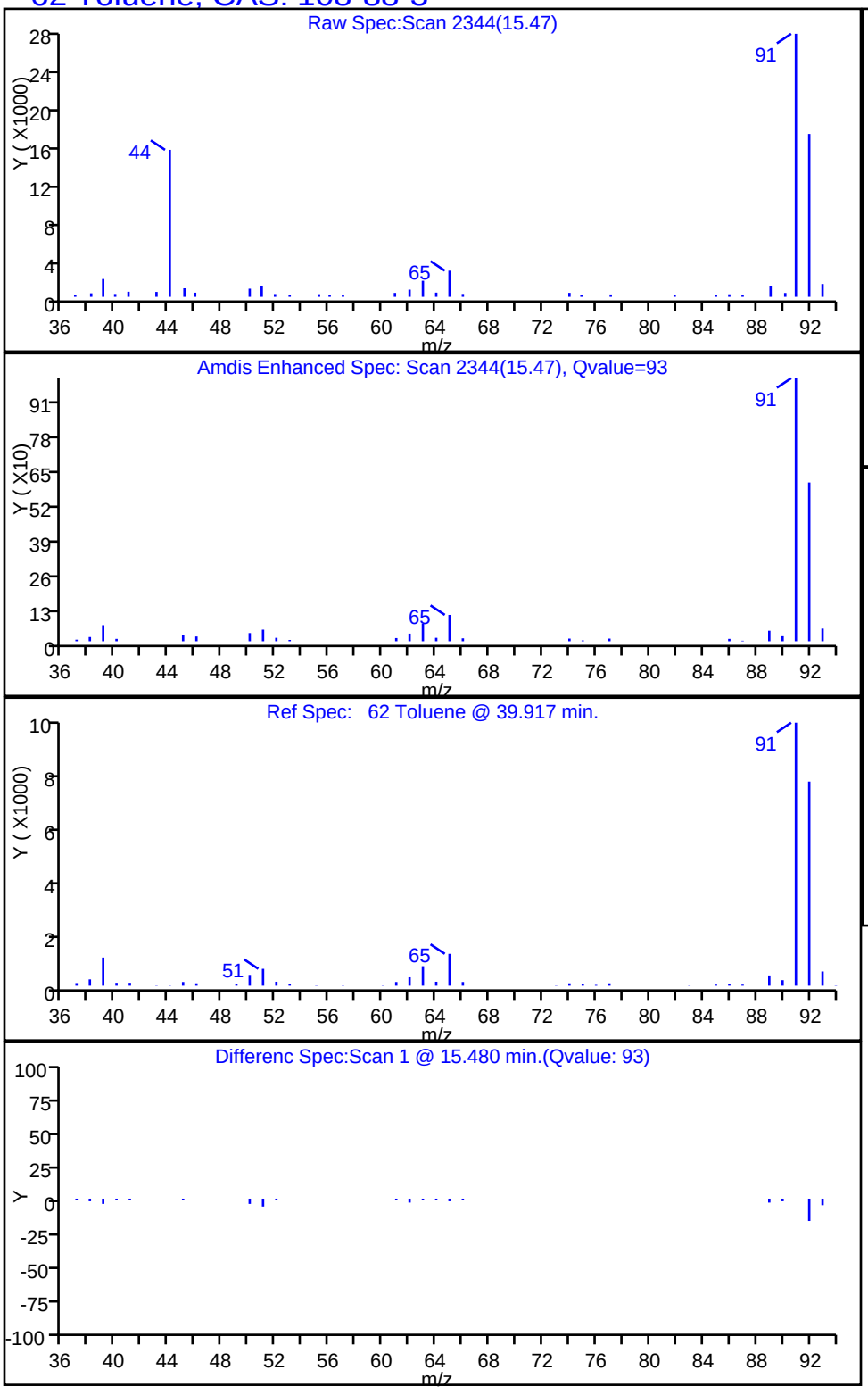


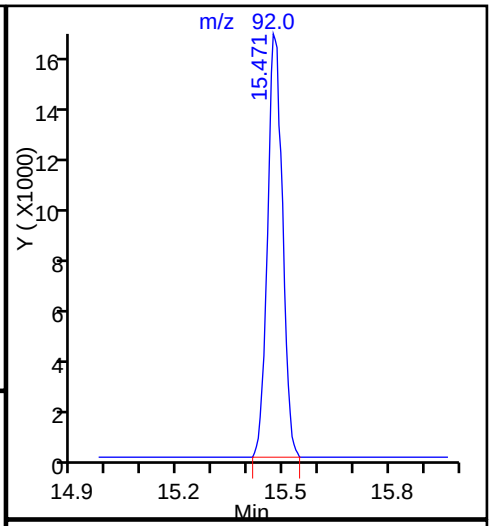


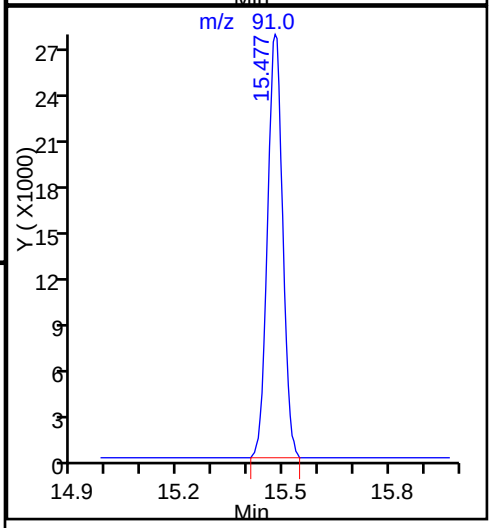
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

62 Toluene, CAS: 108-88-3



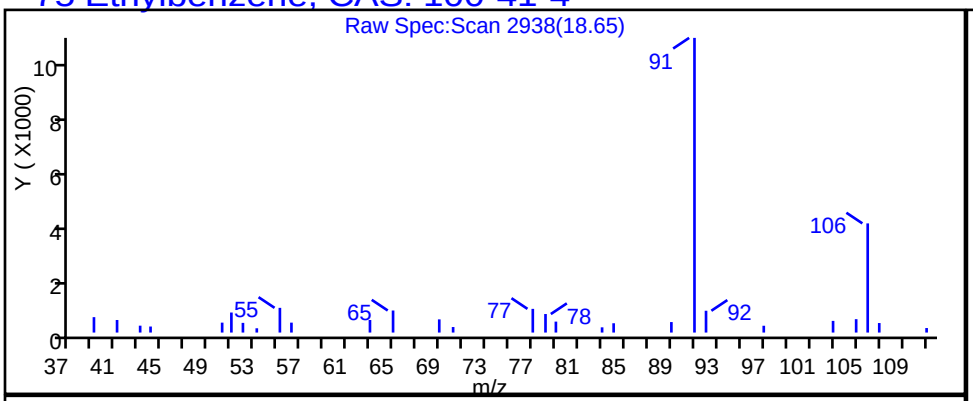


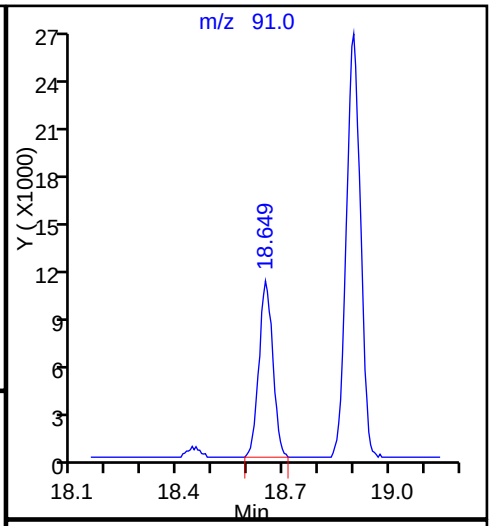


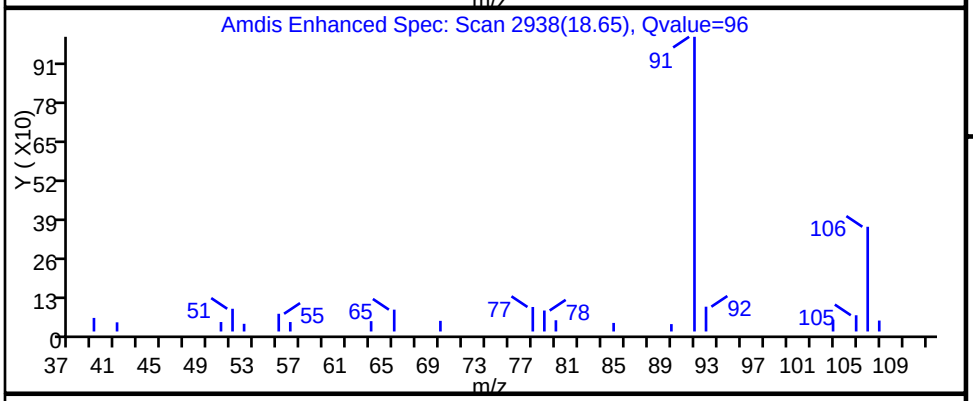
TestAmerica Burlington

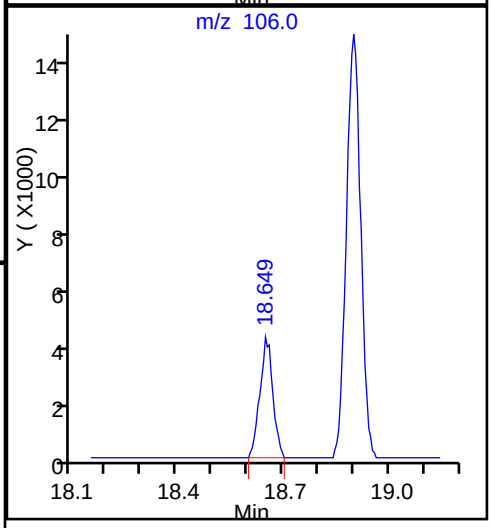
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

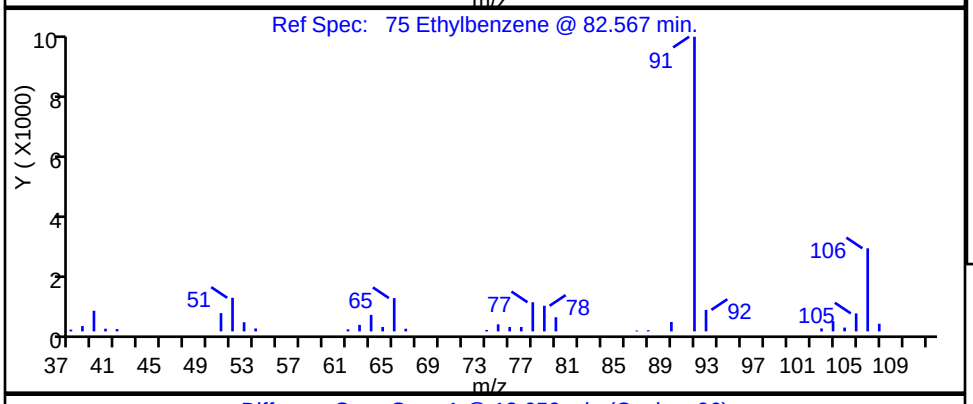
75 Ethylbenzene, CAS: 100-41-4

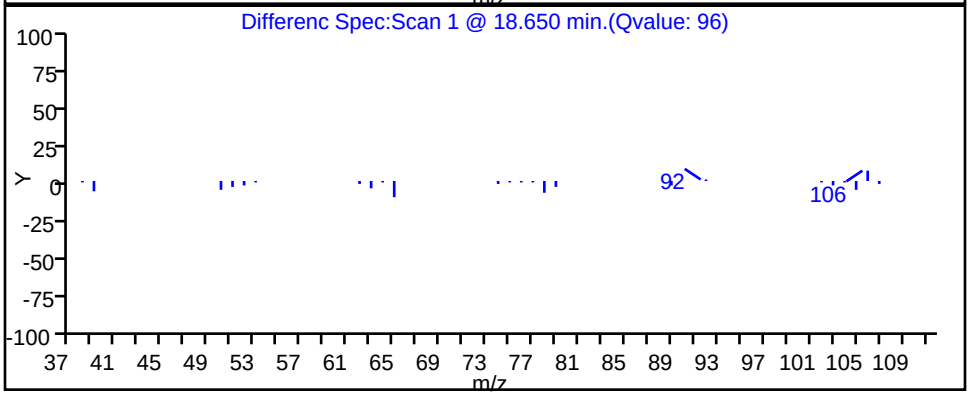










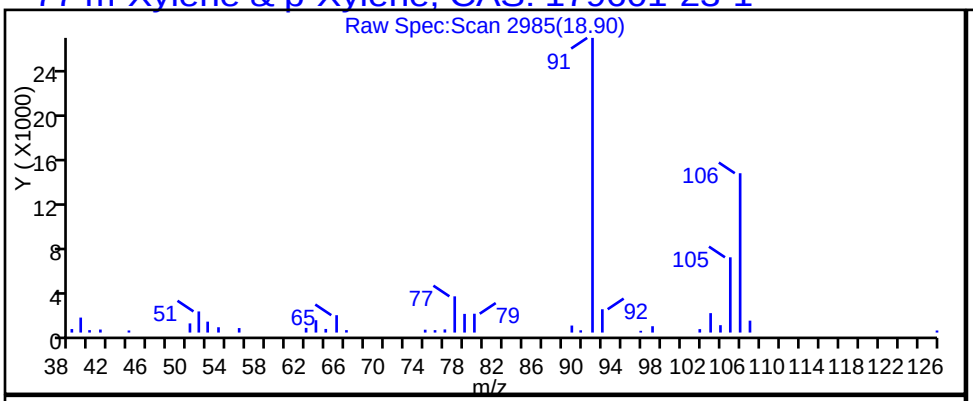


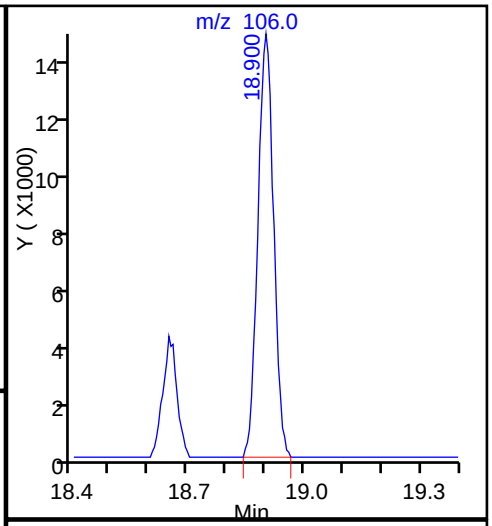
TestAmerica Burlington

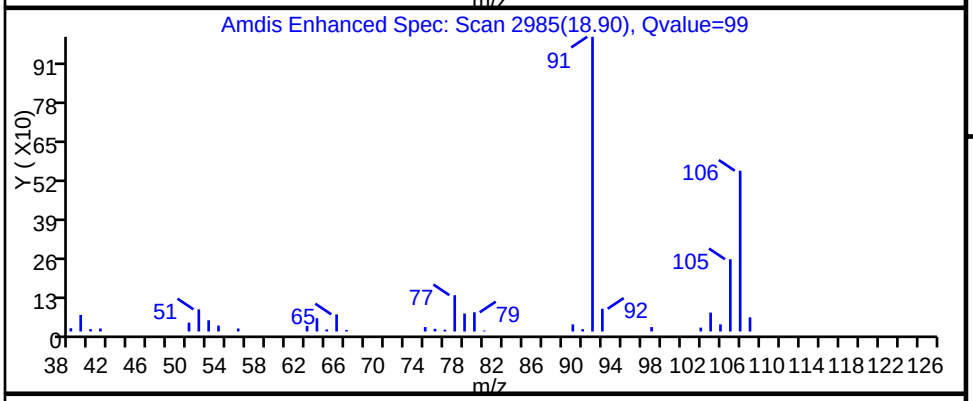
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D

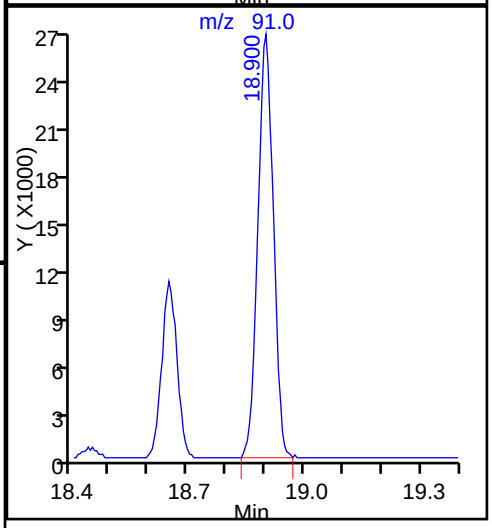
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

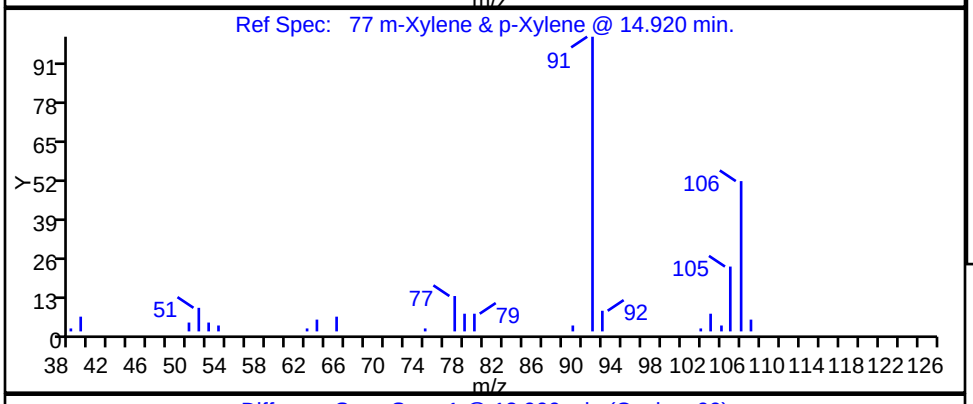
77 m-Xylene & p-Xylene, CAS: 179601-23-1

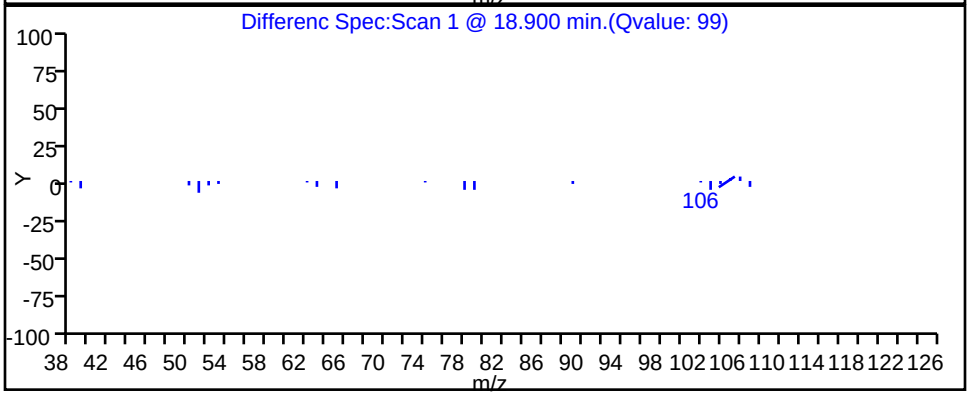








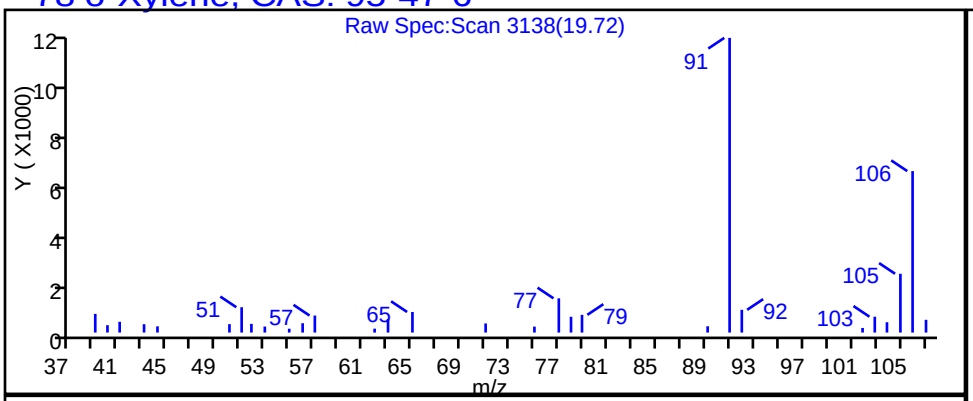


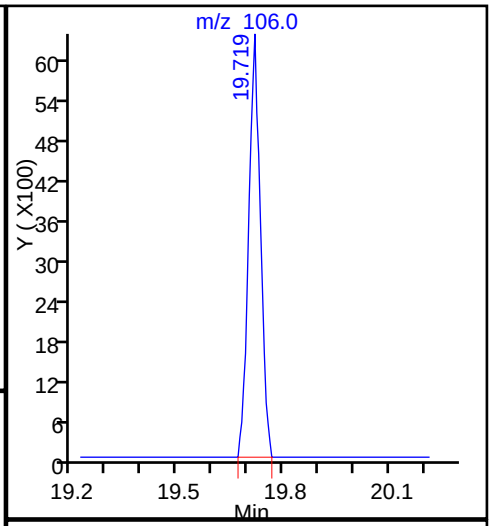


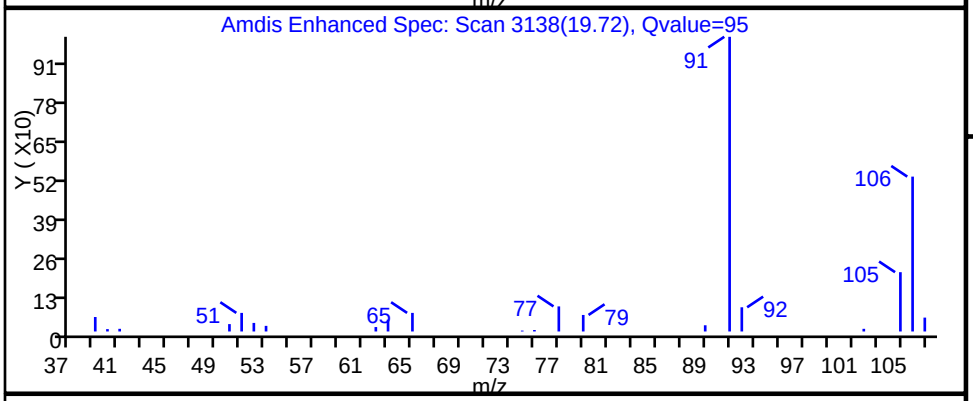
TestAmerica Burlington

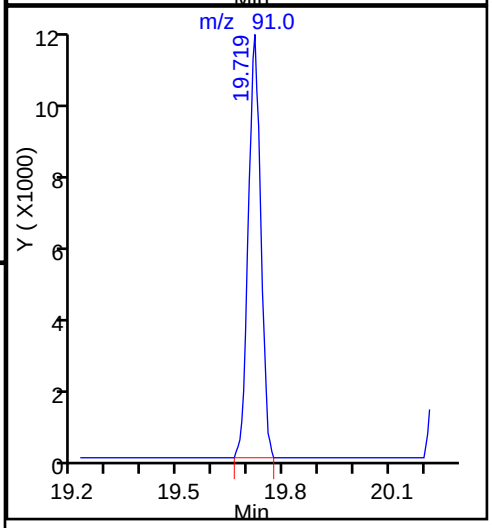
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

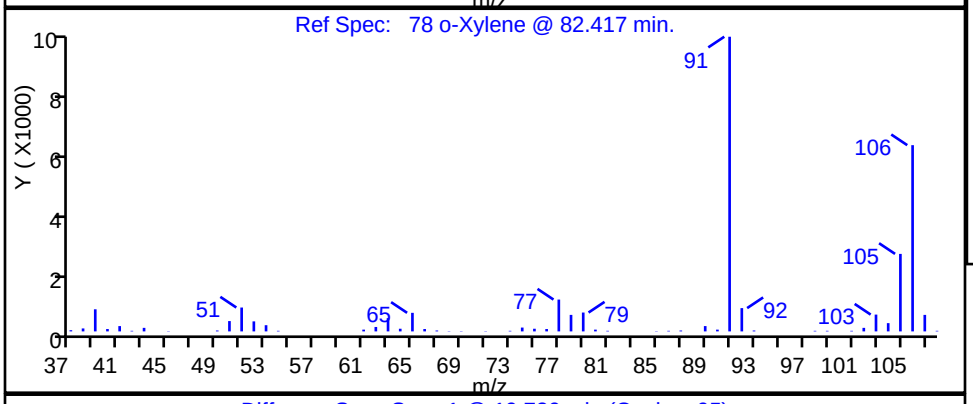
78 o-Xylene, CAS: 95-47-6

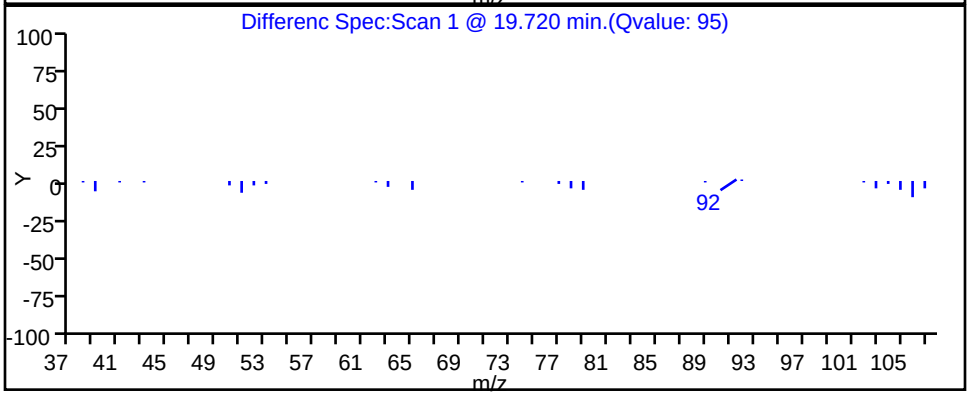








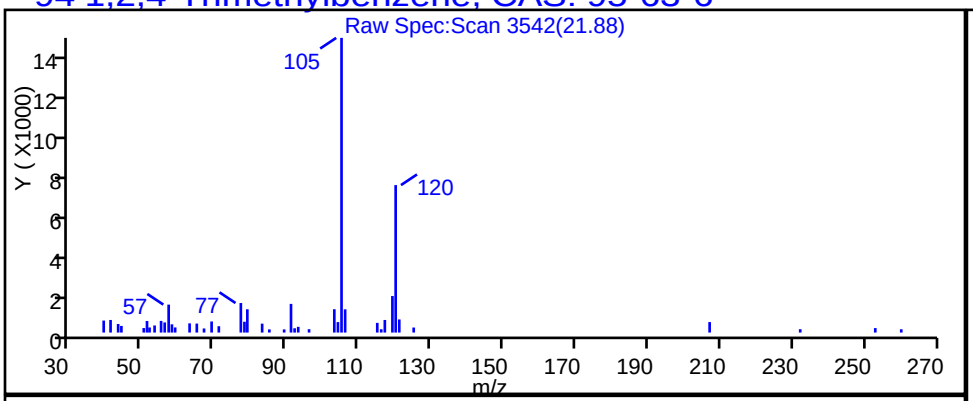


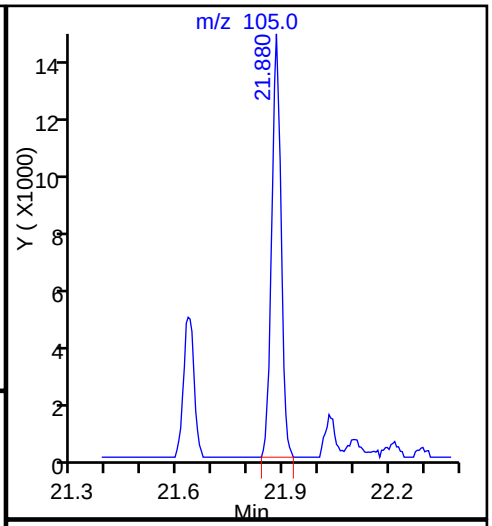


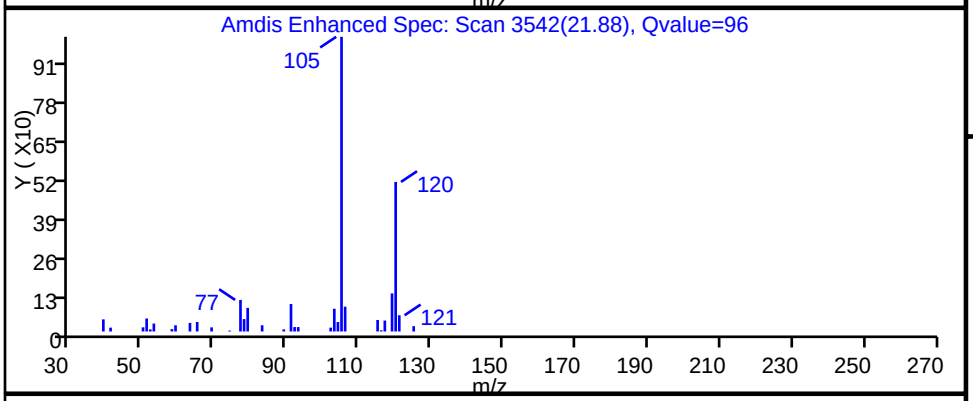
TestAmerica Burlington

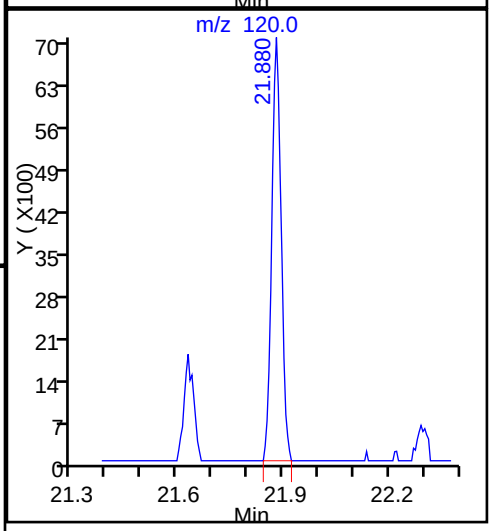
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D				
Injection Date:	13-Oct-2015 19:51:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-2	Lab Sample ID:	200-30148-2		
Client ID:	SV-2				
Operator ID:	wrd	ALS Bottle#:	10	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	4.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

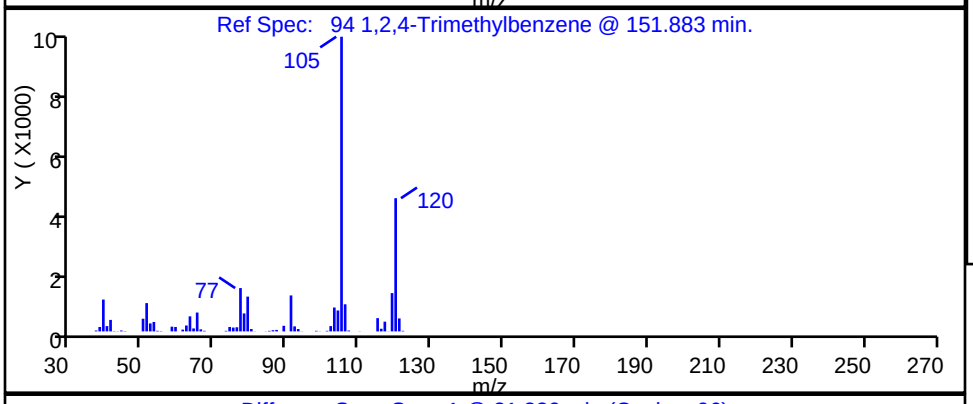
94 1,2,4-Trimethylbenzene, CAS: 95-63-6

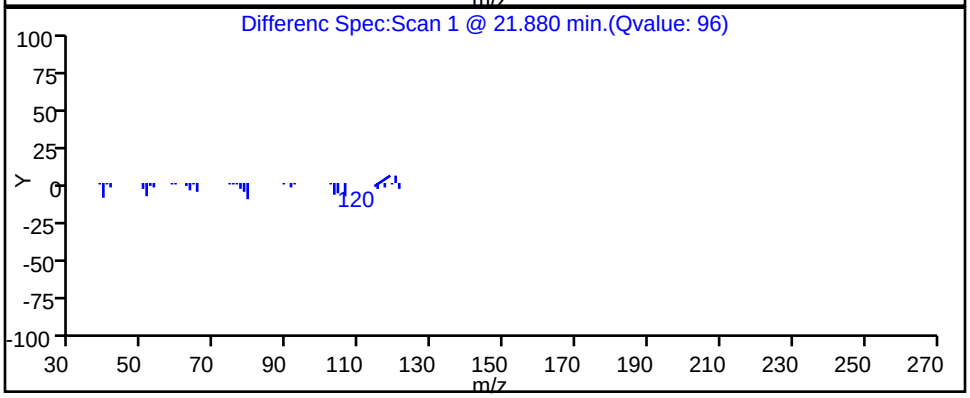






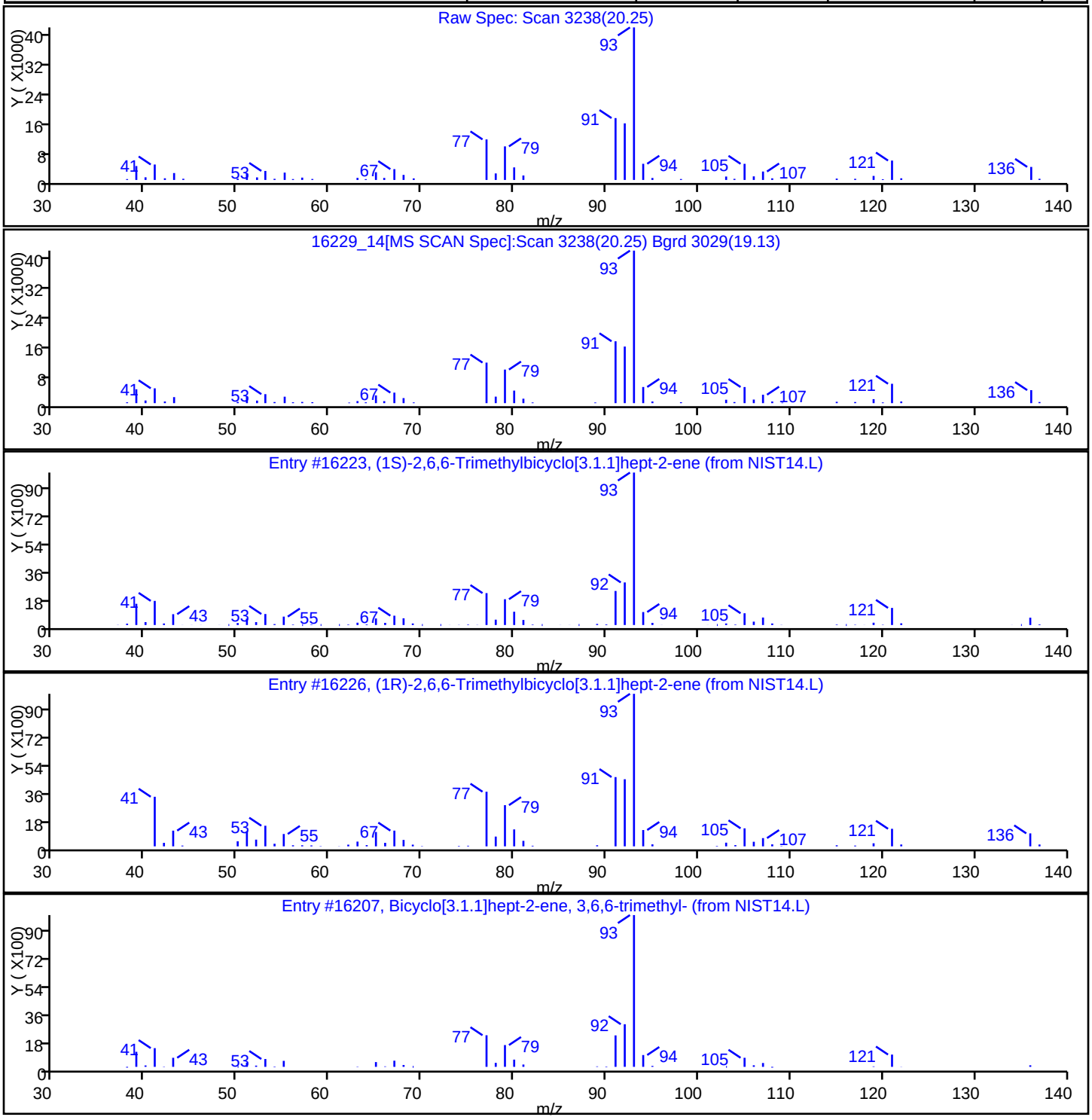






Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_14.D
Injection Date: 13-Oct-2015 19:51:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-2 Lab Sample ID: 200-30148-2
Client ID: SV-2
Operator ID: wrd ALS Bottle#: 10 Worklist Smp#: 14
Purge Vol: 200.000 mL Dil. Factor: 4.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-26-4	NIST14.L	16223	C10H16	136	97
(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-70-8	NIST14.L	16226	C10H16	136	95
Bicyclo[3.1.1]hept-2-ene, 3,6,6-trimethy	4889-83-2	NIST14.L	16207	C10H16	136	94



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 | Lab Sample ID: 200-30148-3

Matrix: Air | Lab File ID: 16229_15.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 13:48

Sample wt/vol: 200(mL) | Date Analyzed: 10/13/2015 20:40

Soil Aliquot Vol: | Dilution Factor: 3

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	1.5	U	1.5	
75-45-6	Freon 22	86.47	1.5	U	1.5	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	0.60	U	0.60	
74-87-3	Chloromethane	50.49	1.5	U	1.5	
106-97-8	n-Butane	58.12	1.5	U	1.5	
75-01-4	Vinyl chloride	62.50	0.60	U	0.60	
106-99-0	1,3-Butadiene	54.09	0.60	U	0.60	
74-83-9	Bromomethane	94.94	0.60	U	0.60	
75-00-3	Chloroethane	64.52	1.5	U	1.5	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.60	U	0.60	
75-69-4	Trichlorofluoromethane	137.37	0.60	U	0.60	
76-13-1	Freon TF	187.38	0.60	U	0.60	
75-35-4	1,1-Dichloroethene	96.94	0.60	U	0.60	
67-64-1	*Acetone*	*58.08*	*530*	*E*	*15*	
67-63-0	Isopropyl alcohol	60.10	15	U	15	
75-15-0	Carbon disulfide	76.14	1.5	U	1.5	
107-05-1	3-Chloropropene	76.53	1.5	U	1.5	
75-09-2	Methylene Chloride	84.93	1.5	U	1.5	
75-65-0	tert-Butyl alcohol	74.12	15	U	15	
1634-04-4	Methyl tert-butyl ether	88.15	0.60	U	0.60	
156-60-5	trans-1,2-Dichloroethene	96.94	0.60	U	0.60	
110-54-3	n-Hexane	86.17	0.77		0.60	
75-34-3	1,1-Dichloroethane	98.96	0.60	U	0.60	
78-93-3	Methyl Ethyl Ketone	72.11	8.5		1.5	
156-59-2	cis-1,2-Dichloroethene	96.94	0.60	U	0.60	
540-59-0	1,2-Dichloroethene, Total	96.94	1.2	U	1.2	
67-66-3	Chloroform	119.38	0.60	U	0.60	
109-99-9	Tetrahydrofuran	72.11	15	U	15	
71-55-6	1,1,1-Trichloroethane	133.41	0.60	U	0.60	
110-82-7	Cyclohexane	84.16	0.60	U	0.60	
56-23-5	Carbon tetrachloride	153.81	0.60	U	0.60	
540-84-1	2,2,4-Trimethylpentane	114.23	0.60	U	0.60	
71-43-2	Benzene	78.11	0.60	U	0.60	
107-06-2	1,2-Dichloroethane	98.96	0.60	U	0.60	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 Lab Sample ID: 200-30148-3

Matrix: Air Lab File ID: 16229_15.D

Analysis Method: TO-15 Date Collected: 10/05/2015 13:48

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 20:40

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	2.0		0.60	
79-01-6	Trichloroethene	131.39	0.60	U	0.60	
80-62-6	Methyl methacrylate	100.12	1.5	U	1.5	
78-87-5	1,2-Dichloropropane	112.99	0.60	U	0.60	
123-91-1	1,4-Dioxane	88.11	15	U	15	
75-27-4	Bromodichloromethane	163.83	0.60	U	0.60	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.60	U	0.60	
108-10-1	methyl isobutyl ketone	100.16	2.8		1.5	
108-88-3	Toluene	92.14	4.6		0.60	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.60	U	0.60	
79-00-5	1,1,2-Trichloroethane	133.41	0.60	U	0.60	
127-18-4	Tetrachloroethene	165.83	0.60	U	0.60	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	1.7		1.5	
124-48-1	Dibromochloromethane	208.29	0.60	U	0.60	
106-93-4	1,2-Dibromoethane	187.87	0.60	U	0.60	
108-90-7	Chlorobenzene	112.56	0.60	U	0.60	
100-41-4	Ethylbenzene	106.17	1.4		0.60	
179601-23-1	m,p-Xylene	106.17	5.1		1.5	
95-47-6	Xylene, o-	106.17	2.0		0.60	
1330-20-7	Xylene (total)	106.17	7.1		2.1	
100-42-5	Styrene	104.15	0.60	U	0.60	
75-25-2	Bromoform	252.75	0.60	U	0.60	
98-82-8	Cumene	120.19	0.60	U	0.60	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.60	U	0.60	
103-65-1	n-Propylbenzene	120.19	0.60	U	0.60	
622-96-8	4-Ethyltoluene	120.20	1.9		0.60	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.92		0.60	
95-49-8	2-Chlorotoluene	126.59	0.60	U	0.60	
98-06-6	tert-Butylbenzene	134.22	0.60	U	0.60	
95-63-6	1,2,4-Trimethylbenzene	120.20	2.3		0.60	
135-98-8	sec-Butylbenzene	134.22	0.60	U	0.60	
99-87-6	4-Isopropyltoluene	134.22	0.60	U	0.60	
541-73-1	1,3-Dichlorobenzene	147.00	0.60	U	0.60	
106-46-7	1,4-Dichlorobenzene	147.00	0.60	U	0.60	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 Lab Sample ID: 200-30148-3

Matrix: Air Lab File ID: 16229_15.D

Analysis Method: TO-15 Date Collected: 10/05/2015 13:48

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 20:40

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	0.60	U	0.60	
104-51-8	n-Butylbenzene	134.22	0.60	U	0.60	
95-50-1	1,2-Dichlorobenzene	147.00	0.60	U	0.60	
120-82-1	1,2,4-Trichlorobenzene	181.45	1.5	U	1.5	
87-68-3	Hexachlorobutadiene	260.76	0.60	U	0.60	
91-20-3	Naphthalene	128.17	1.5	U	1.5	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 | Lab Sample ID: 200-30148-3

Matrix: Air | Lab File ID: 16229_15.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 13:48

Sample wt/vol: 200(mL) | Date Analyzed: 10/13/2015 20:40

Soil Aliquot Vol: | Dilution Factor: 3

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	7.4	U	7.4	
75-45-6	Freon 22	86.47	5.3	U	5.3	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	4.2	U	4.2	
74-87-3	Chloromethane	50.49	3.1	U	3.1	
106-97-8	n-Butane	58.12	3.6	U	3.6	
75-01-4	Vinyl chloride	62.50	1.5	U	1.5	
106-99-0	1,3-Butadiene	54.09	1.3	U	1.3	
74-83-9	Bromomethane	94.94	2.3	U	2.3	
75-00-3	Chloroethane	64.52	4.0	U	4.0	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	2.6	U	2.6	
75-69-4	Trichlorofluoromethane	137.37	3.4	U	3.4	
76-13-1	Freon TF	187.38	4.6	U	4.6	
75-35-4	1,1-Dichloroethene	96.94	2.4	U	2.4	
67-64-1	*Acetone*	*58.08*	*1300*	*E*	*36*	
67-63-0	Isopropyl alcohol	60.10	37	U	37	
75-15-0	Carbon disulfide	76.14	4.7	U	4.7	
107-05-1	3-Chloropropene	76.53	4.7	U	4.7	
75-09-2	Methylene Chloride	84.93	5.2	U	5.2	
75-65-0	tert-Butyl alcohol	74.12	45	U	45	
1634-04-4	Methyl tert-butyl ether	88.15	2.2	U	2.2	
156-60-5	trans-1,2-Dichloroethene	96.94	2.4	U	2.4	
110-54-3	n-Hexane	86.17	2.7		2.1	
75-34-3	1,1-Dichloroethane	98.96	2.4	U	2.4	
78-93-3	Methyl Ethyl Ketone	72.11	25		4.4	
156-59-2	cis-1,2-Dichloroethene	96.94	2.4	U	2.4	
540-59-0	1,2-Dichloroethene, Total	96.94	4.8	U	4.8	
67-66-3	Chloroform	119.38	2.9	U	2.9	
109-99-9	Tetrahydrofuran	72.11	44	U	44	
71-55-6	1,1,1-Trichloroethane	133.41	3.3	U	3.3	
110-82-7	Cyclohexane	84.16	2.1	U	2.1	
56-23-5	Carbon tetrachloride	153.81	3.8	U	3.8	
540-84-1	2,2,4-Trimethylpentane	114.23	2.8	U	2.8	
71-43-2	Benzene	78.11	1.9	U	1.9	
107-06-2	1,2-Dichloroethane	98.96	2.4	U	2.4	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 Lab Sample ID: 200-30148-3

Matrix: Air Lab File ID: 16229_15.D

Analysis Method: TO-15 Date Collected: 10/05/2015 13:48

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 20:40

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	8.2		2.5	
79-01-6	Trichloroethene	131.39	3.2	U	3.2	
80-62-6	Methyl methacrylate	100.12	6.1	U	6.1	
78-87-5	1,2-Dichloropropane	112.99	2.8	U	2.8	
123-91-1	1,4-Dioxane	88.11	54	U	54	
75-27-4	Bromodichloromethane	163.83	4.0	U	4.0	
10061-01-5	cis-1,3-Dichloropropene	110.97	2.7	U	2.7	
108-10-1	methyl isobutyl ketone	100.16	11		6.1	
108-88-3	Toluene	92.14	17		2.3	
10061-02-6	trans-1,3-Dichloropropene	110.97	2.7	U	2.7	
79-00-5	1,1,2-Trichloroethane	133.41	3.3	U	3.3	
127-18-4	Tetrachloroethene	165.83	4.1	U	4.1	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	7.1		6.1	
124-48-1	Dibromochloromethane	208.29	5.1	U	5.1	
106-93-4	1,2-Dibromoethane	187.87	4.6	U	4.6	
108-90-7	Chlorobenzene	112.56	2.8	U	2.8	
100-41-4	Ethylbenzene	106.17	5.9		2.6	
179601-23-1	m,p-Xylene	106.17	22		6.5	
95-47-6	Xylene, o-	106.17	8.9		2.6	
1330-20-7	Xylene (total)	106.17	31		9.1	
100-42-5	Styrene	104.15	2.6	U	2.6	
75-25-2	Bromoform	252.75	6.2	U	6.2	
98-82-8	Cumene	120.19	2.9	U	2.9	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	4.1	U	4.1	
103-65-1	n-Propylbenzene	120.19	2.9	U	2.9	
622-96-8	4-Ethyltoluene	120.20	9.2		2.9	
108-67-8	1,3,5-Trimethylbenzene	120.20	4.5		2.9	
95-49-8	2-Chlorotoluene	126.59	3.1	U	3.1	
98-06-6	tert-Butylbenzene	134.22	3.3	U	3.3	
95-63-6	1,2,4-Trimethylbenzene	120.20	11		2.9	
135-98-8	sec-Butylbenzene	134.22	3.3	U	3.3	
99-87-6	4-Isopropyltoluene	134.22	3.3	U	3.3	
541-73-1	1,3-Dichlorobenzene	147.00	3.6	U	3.6	
106-46-7	1,4-Dichlorobenzene	147.00	3.6	U	3.6	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 Lab Sample ID: 200-30148-3

Matrix: Air Lab File ID: 16229_15.D

Analysis Method: TO-15 Date Collected: 10/05/2015 13:48

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 20:40

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	3.1	U	3.1	
104-51-8	n-Butylbenzene	134.22	3.3	U	3.3	
95-50-1	1,2-Dichlorobenzene	147.00	3.6	U	3.6	
120-82-1	1,2,4-Trichlorobenzene	181.45	11	U	11	
87-68-3	Hexachlorobutadiene	260.76	6.4	U	6.4	
91-20-3	Naphthalene	128.17	7.9	U	7.9	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 Lab Sample ID: 200-30148-3

Matrix: Air Lab File ID: 16229_15.D

Analysis Method: TO-15 Date Collected: 10/05/2015 13:48

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 20:40

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 10 TIC Result Total: 132

CAS NO.	COMPOUND NAME	RT	RESULT	Q
115-11-7	1-Propene, 2-methyl-	3.74	25	J N
	Unknown	4.12	27	J
541-05-9	Cyclotrisiloxane, hexamethyl-	16.07	9.8	J N
7785-70-8	(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	11	J N
	Unknown	21.52	9.3	J
1072-05-5	Heptane, 2,6-dimethyl-	22.25	10	J N
	Unknown	22.47	11	J
	Unknown	22.82	9.4	J
	Unknown	22.91	11	J
17312-53-7	Decane, 3,6-dimethyl-	23.27	8.5	J N

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Sample Type: Client
Inject. Date: 13-Oct-2015 20:40:30 ALS Bottle#: 11 Worklist Smp#: 15
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Sample Info: 200-0016229-015
Misc. Info.: 30148-3
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 07:54:24 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 07:54:24

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	2 Dichlorodifluoromethane	85	3.172	3.177	-0.005	98	6513	0.1906	
	3 Chlorodifluoromethane	51		3.231				ND	
	4 1,2-Dichloro-1,1,2,2-tetra	85		3.445				ND	
	5 Chloromethane	50		3.579				ND	
	6 Butane	43		3.777				ND	
	7 Vinyl chloride	62		3.819				ND	
	8 Butadiene	54	3.889	3.894	-0.005	82	1154	0.1325	
	9 Bromomethane	94		4.563				ND	
	10 Chloroethane	64		4.793				ND	
	12 Vinyl bromide	106		5.167				ND	
	13 Trichlorofluoromethane	101	5.253	5.253	-0.011	91	2427	0.0644	M
	18 1,1,2-Trichloro-1,2,2-trif	101		6.307				ND	
	20 1,1-Dichloroethene	96		6.355				ND	
	21 Acetone	43	6.580	6.623	-0.043	88	2696878	175.4	E
	22 Carbon disulfide	76	6.735	6.751	-0.016	97	5628	0.1571	
	23 Isopropyl alcohol	45	6.960	6.949	0.011	99	16481	1.13	
	24 3-Chloro-1-propene	41		7.125				ND	
	26 Methylene Chloride	49	7.420	7.414	0.006	77	1798	0.1389	
	28 2-Methyl-2-propanol	59	7.730	7.735	-0.005	99	107660	4.61	
	29 Methyl tert-butyl ether	73		7.837				ND	
	30 trans-1,2-Dichloroethene	61		7.842				ND	
	32 Hexane	57	8.206	8.211	-0.005	86	4956	0.2578	
	33 1,1-Dichloroethane	63		8.714				ND	
	35 cis-1,2-Dichloroethene	96		9.822				ND	
	36 2-Butanone (MEK)	72	9.897	9.881	0.016	97	23187	2.84	
S	38 1,2-Dichloroethene, Total	61		10.000				ND	
*	40 Chlorobromomethane	128	10.282	10.287	-0.005	74	175634	10.0	
	39 Tetrahydrofuran	42		10.314				ND	
	41 Chloroform	83		10.416				ND	
	42 Cyclohexane	84	10.640	10.662	-0.016	92	2086	0.0863	M
	43 1,1,1-Trichloroethane	97		10.694				ND	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	44 Carbon tetrachloride	117		10.934				ND	
	45 Isooctane	57	11.357	11.373	-0.016	95	9312	0.1153	
	46 Benzene	78	11.400	11.416	-0.016	96	10327	0.1833	
	47 1,2-Dichloroethane	62		11.609				ND	
	48 n-Heptane	43	11.742	11.764	-0.022	85	18157	0.6677	
*	50 1,4-Difluorobenzene	114	12.256	12.267	-0.011	92	965235	10.0	
	52 Trichloroethene	95	12.743	12.748	-0.005	27	274	0.009648	
	53 1,2-Dichloropropane	63		13.336				ND	
	54 Methyl methacrylate	69		13.502				ND	
	55 1,4-Dioxane	88		13.588				ND	
	57 Dichlorobromomethane	83		13.909				ND	
	58 cis-1,3-Dichloropropene	75		14.872				ND	
	61 4-Methyl-2-pentanone (MIBK	43	15.198	15.198	0.000	92	34396	0.9337	
	62 Toluene	92	15.466	15.482	-0.016	92	75360	1.52	
	67 trans-1,3-Dichloropropene	75		16.097				ND	
	68 1,1,2-Trichloroethane	83		16.487				ND	
	69 Tetrachloroethene	166	16.573	16.584	-0.011	85	1419	0.0287	
	70 2-Hexanone	43	16.953	16.958	-0.005	90	21185	0.5756	
	71 Chlorodibromomethane	129		17.269				ND	
	72 Ethylene Dibromide	107		17.547				ND	
*	73 Chlorobenzene-d5	117	18.440	18.451	-0.011	81	973372	10.0	
	74 Chlorobenzene	112		18.510				ND	
	75 Ethylbenzene	91	18.643	18.654	-0.011	97	48292	0.4519	
	77 m-Xylene & p-Xylene	106	18.895	18.906	-0.011	99	76296	1.69	
	78 o-Xylene	106	19.713	19.719	-0.006	96	30267	0.6796	
	79 Styrene	104	19.756	19.772	-0.016	75	2677	0.0385	
S	80 Xylenes, Total	106				0		2.37	
	81 Bromoform	173		20.179				ND	
	82 Isopropylbenzene	105	20.345	20.355	-0.010	92	7319	0.0576	
	85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
	86 N-Propylbenzene	91		21.040				ND	
	89 4-Ethyltoluene	105	21.217	21.217	0.000	95	80077	0.6237	
	90 2-Chlorotoluene	91		21.238				ND	
	91 1,3,5-Trimethylbenzene	105	21.313	21.318	-0.005	91	32529	0.3070	
	93 tert-Butylbenzene	119		21.789				ND	
	94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	81365	0.7659	
	95 sec-Butylbenzene	105		22.105				ND	
	96 4-Isopropyltoluene	119	22.292	22.297	-0.005	97	25748	0.1893	
	97 1,3-Dichlorobenzene	146		22.345				ND	
	98 1,4-Dichlorobenzene	146		22.484				ND	
	99 Benzyl chloride	91		22.688				ND	
	101 n-Butylbenzene	91		22.886				ND	
	102 1,2-Dichlorobenzene	146		23.041				ND	
	104 1,2,4-Trichlorobenzene	180		25.673				ND	
	105 Hexachlorobutadiene	225		25.855				ND	
	106 Naphthalene	128		26.197				ND	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Reagents:

ATTO15GIS_00009	Amount Added:	20.00	Units: mL	Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Sample Type:	Client				
Inject. Date:	13-Oct-2015 20:40:30	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Sample Info:	200-0016229-015				
Misc. Info.:	30148-3				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	14-Oct-2015 07:54:24	Calib Date:	17-Aug-2015 23:52:30		
Tic RT Window:	0.000 -0.000	Response:	area		
Quant By:	Nearest ISTD	Quant LOD:	10.00000		
MS Library:	\\ChromNA\Burlington\Database\NIST14.L				
Min. Match:	1				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK013				
First Level Reviewer: desjardinsb		Date:	14-Oct-2015 07:54:24		

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
	115-11-7	1-Propene, 2-methyl-						
3.739	784911	8.20	40	90	187	C4H8	56	
		Unknown						
4.124	876921	9.16	40	0	0		0	
	541-05-9	Cyclotrisiloxane, hexamethyl-						
16.065	813622	3.25	73	90	85992	C6H18O3Si3	222	
	7785-70-8	(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2						
20.254	1721926	3.79	83	97	16224	C10H16	136	
		Unknown						
21.522	1413475	3.11	83	0	0		0	
	1072-05-5	Heptane, 2,6-dimethyl-						
22.249	1552162	3.42	83	87	12968	C9H20	128	
		Unknown						
22.474	1724397	3.80	83	0	0		0	
		Unknown						
22.816	1421773	3.13	83	0	0		0	
		Unknown						
22.907	1668849	3.67	83	0	0		0	
	17312-53-7	Decane, 3,6-dimethyl-						
23.271	1279916	2.82	83	93	40000	C12H26	170	

Report Date: 14-Oct-2015 07:54:24 Chrom Revision: 2.2 08-Oct-2015 07:17:48
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D
Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 40 Chlorobromomethane	10.282	957217	10.0
* 73 Chlorobenzene-d5	18.440	2500823	10.0
* 83 4-Bromofluorobenzene	20.708	4541939	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

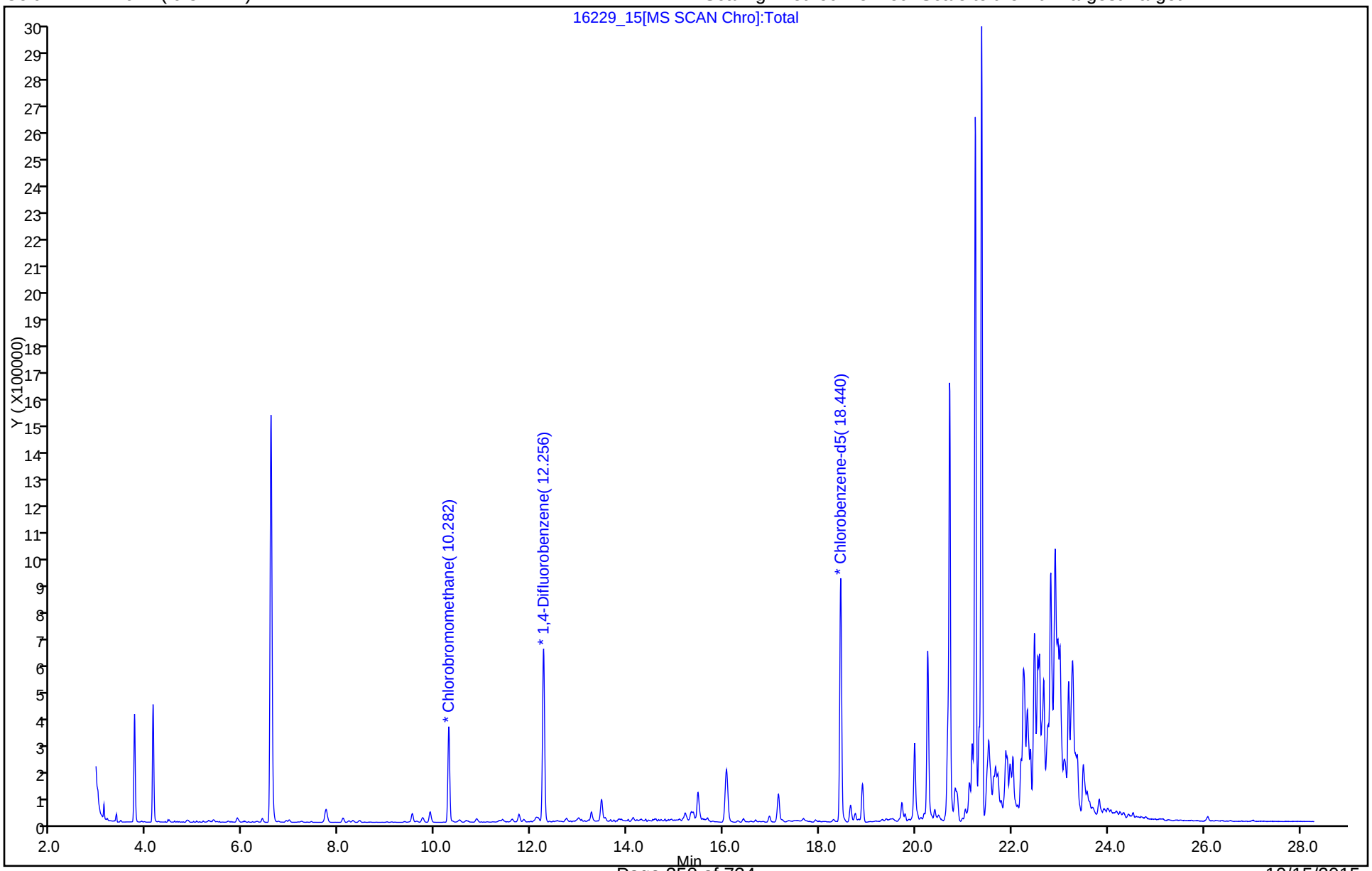
Report Date: 14-Oct-2015 07:54:24 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D

Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3	Worklist Smp#:	15
Client ID:	SV-3				
Purge Vol:	200.000 mL	Dil. Factor:	3.0000	ALS Bottle#:	11
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

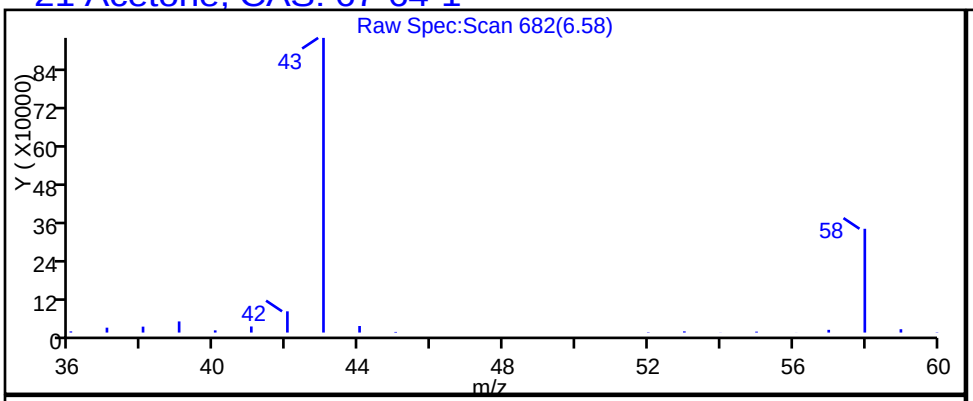


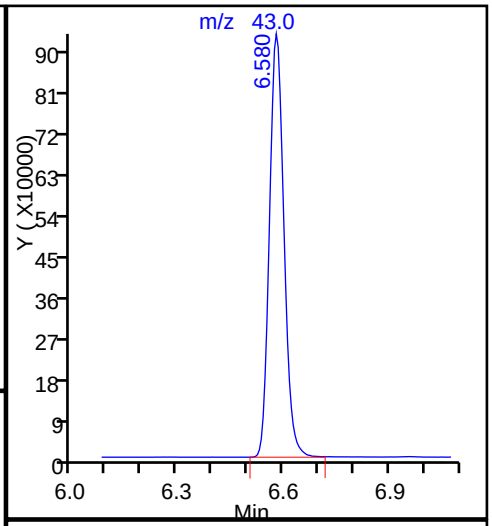
TestAmerica Burlington

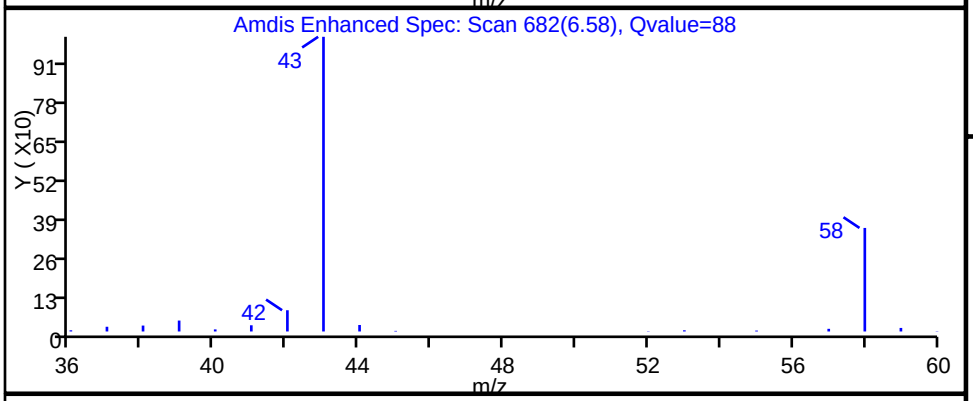
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D

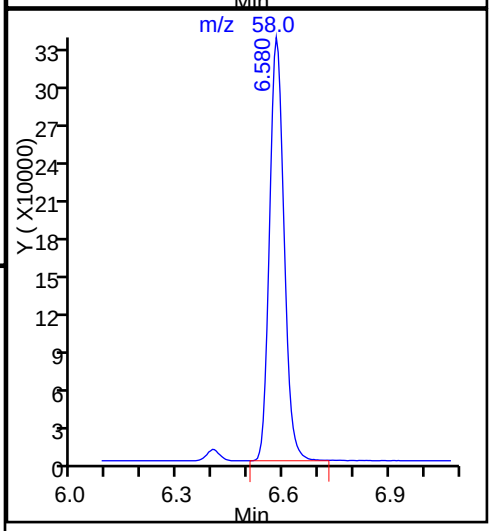
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

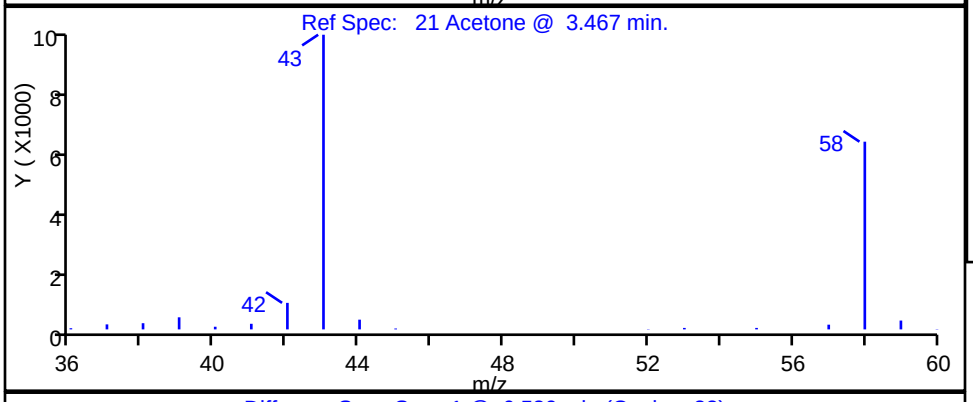
21 Acetone, CAS: 67-64-1

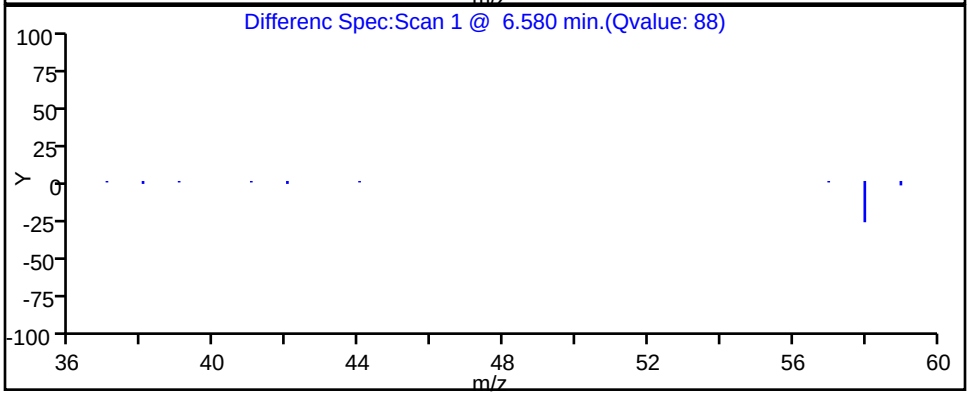








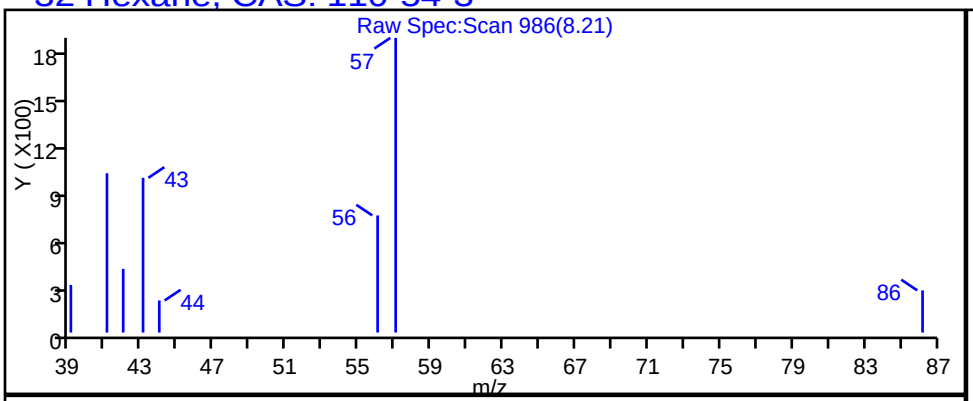


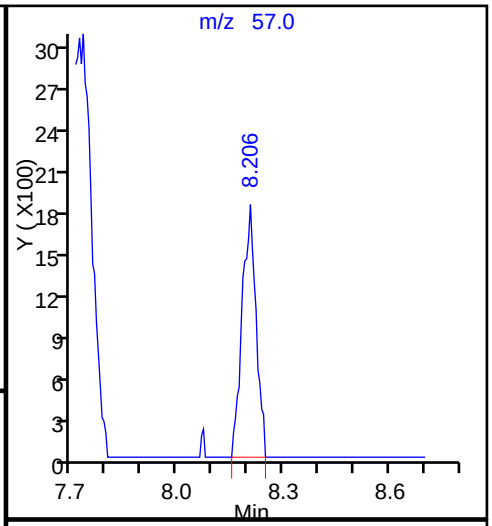


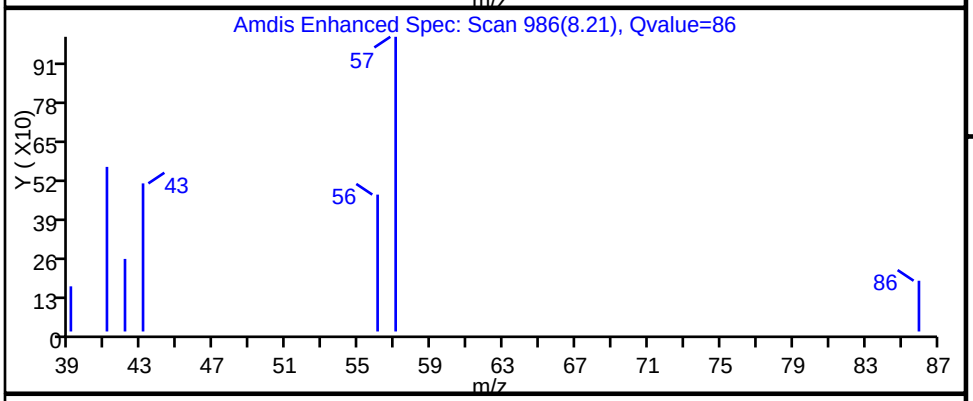
TestAmerica Burlington

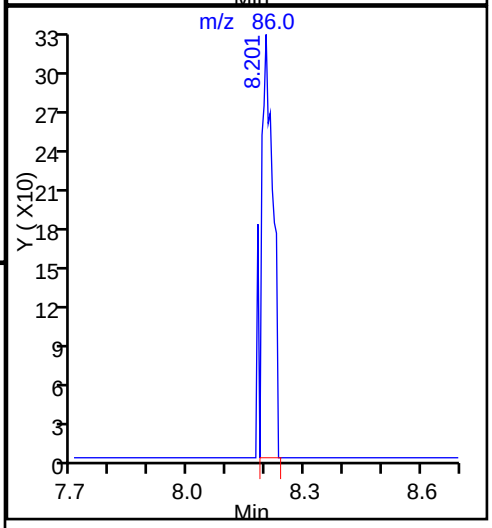
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

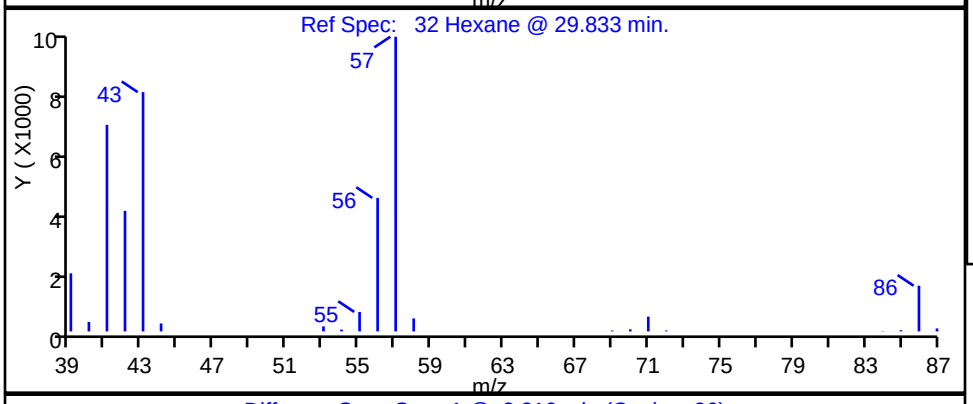
32 Hexane, CAS: 110-54-3

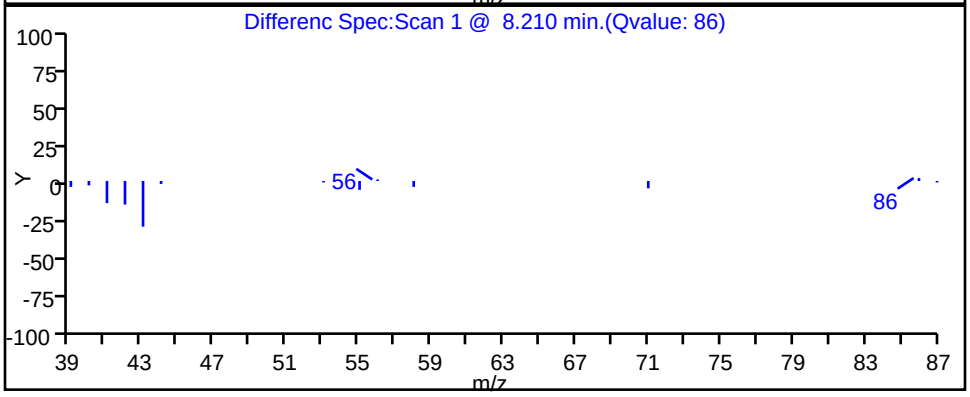








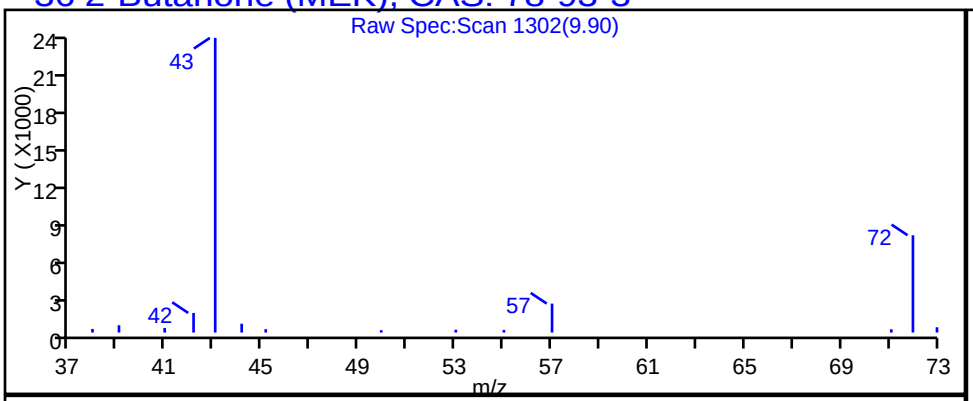


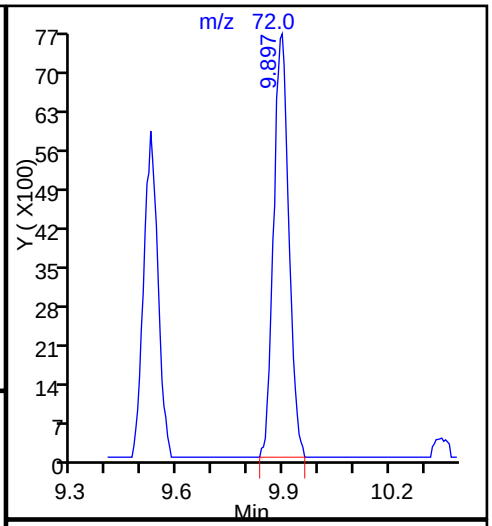


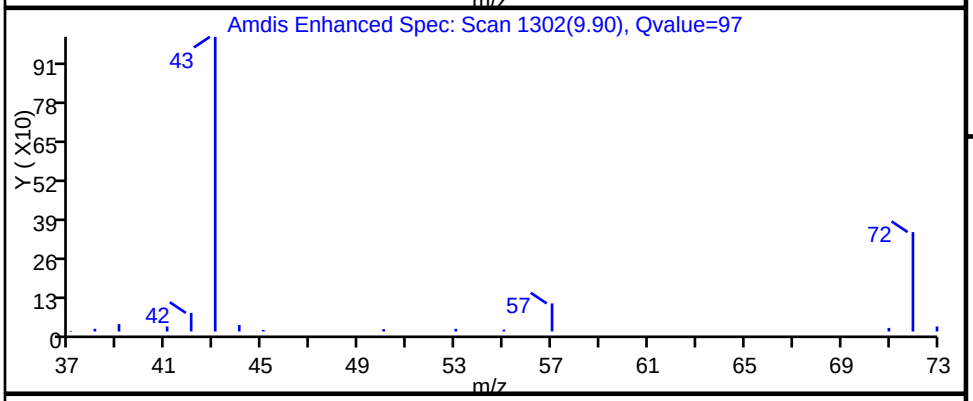
TestAmerica Burlington

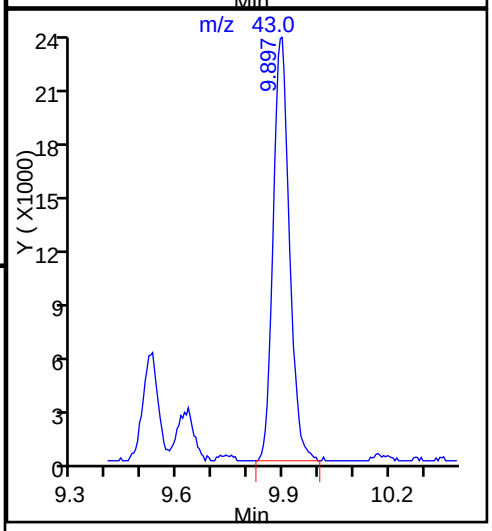
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

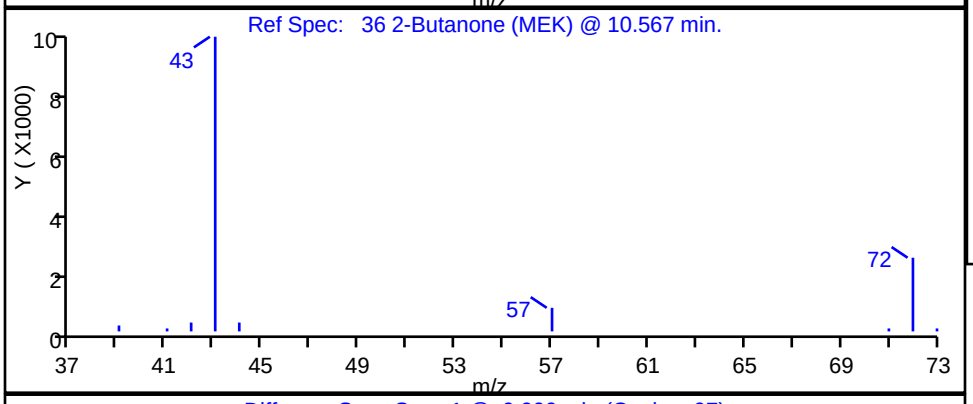
36 2-Butanone (MEK), CAS: 78-93-3

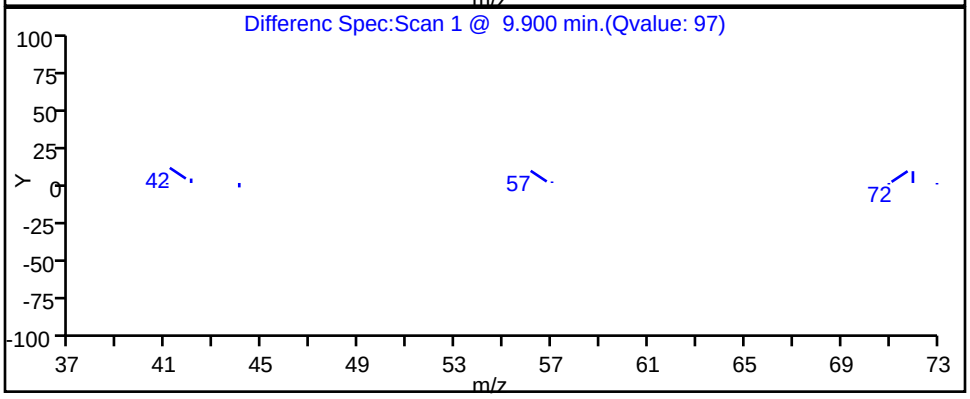








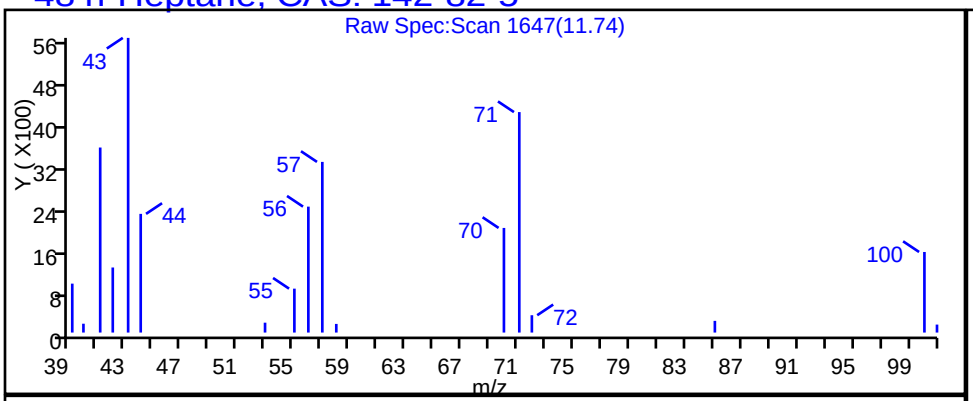


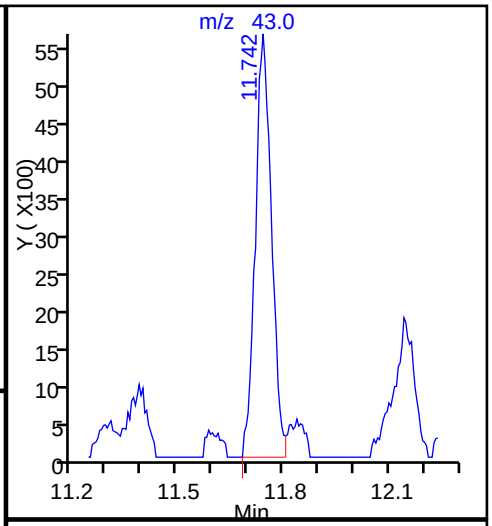


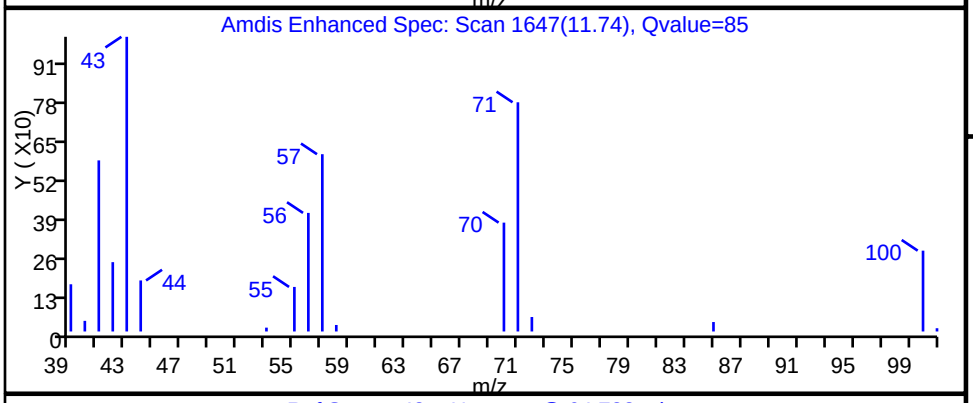
TestAmerica Burlington

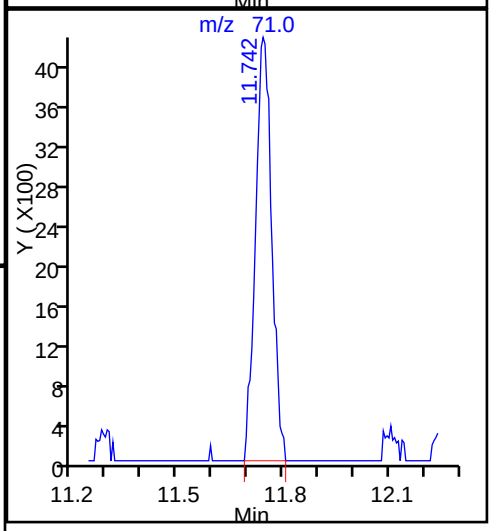
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

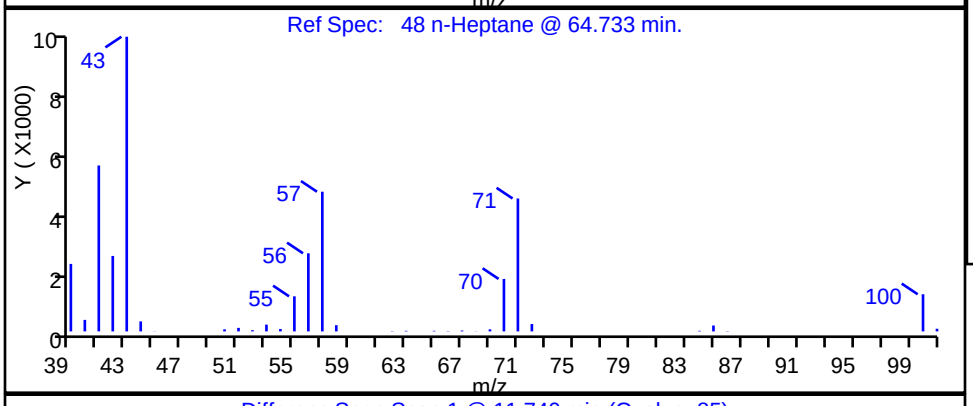
48 n-Heptane, CAS: 142-82-5

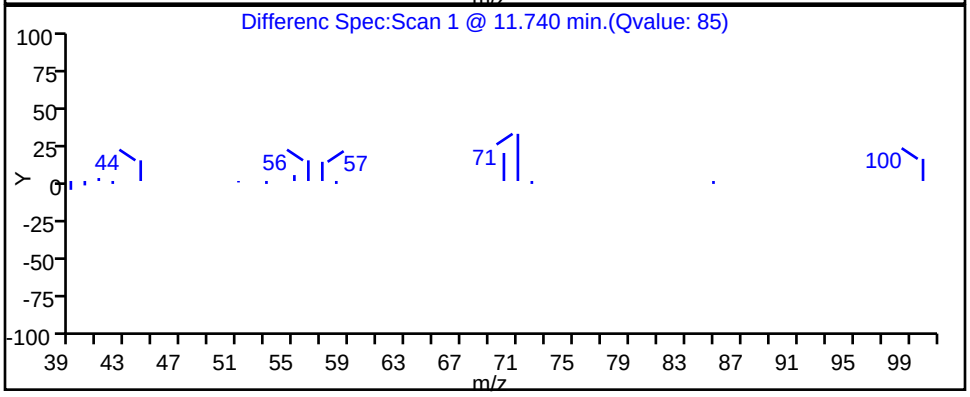








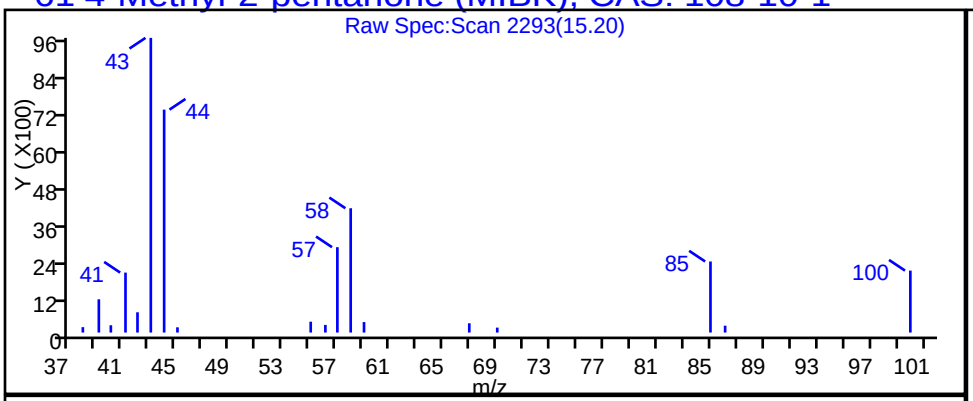


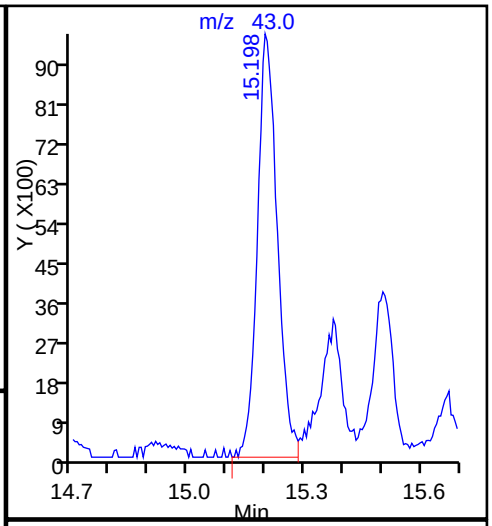


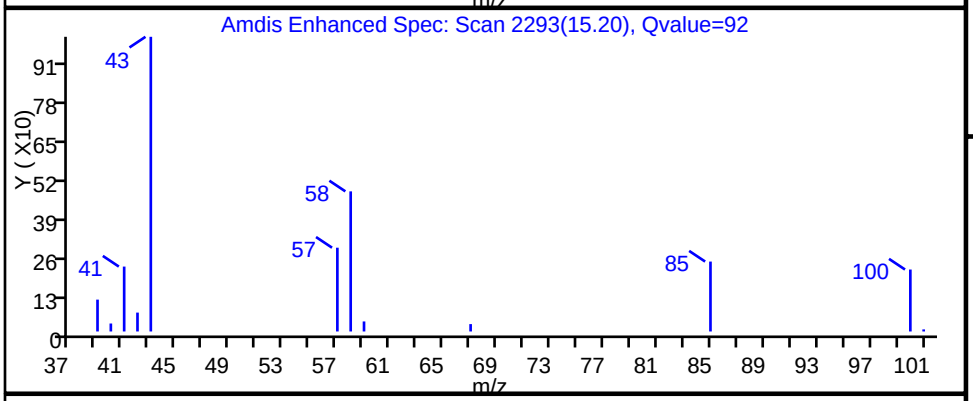
TestAmerica Burlington

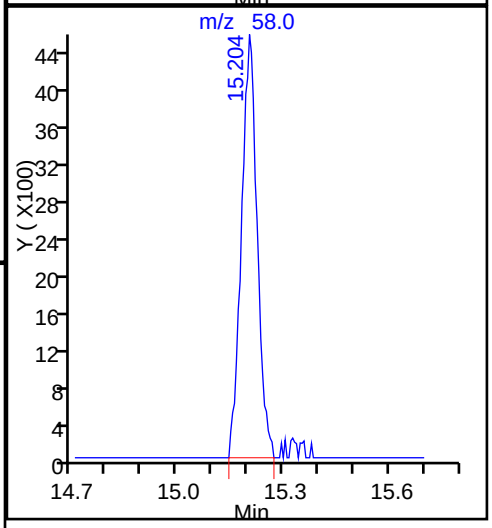
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

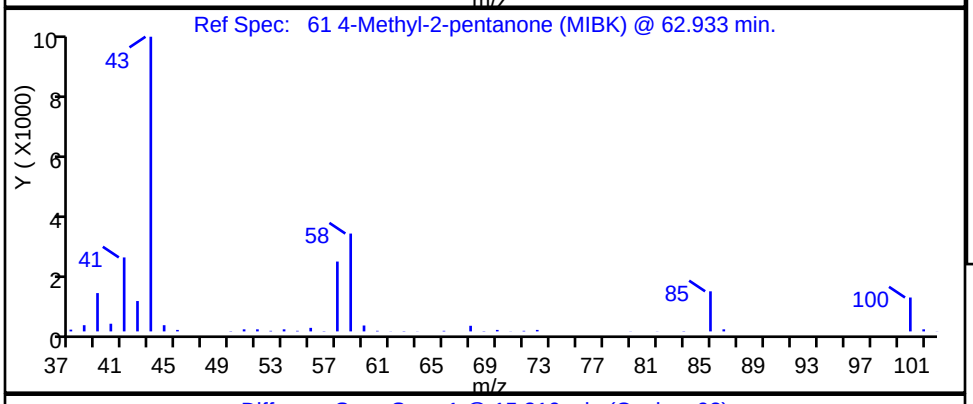
61 4-Methyl-2-pentanone (MIBK), CAS: 108-10-1

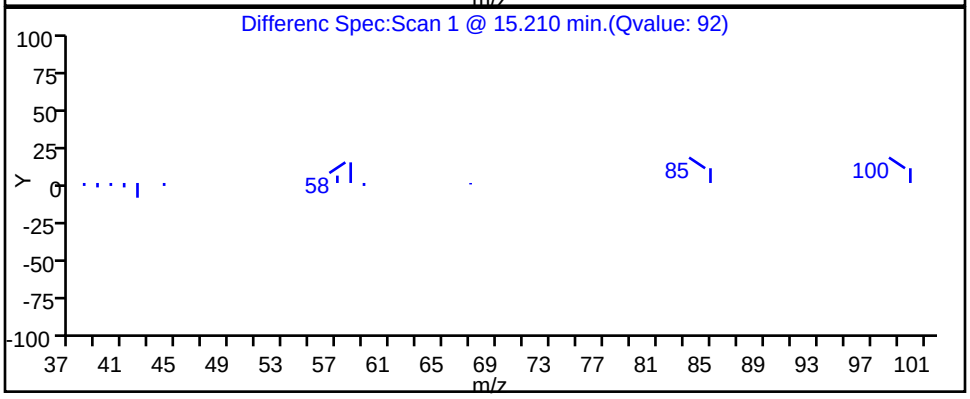








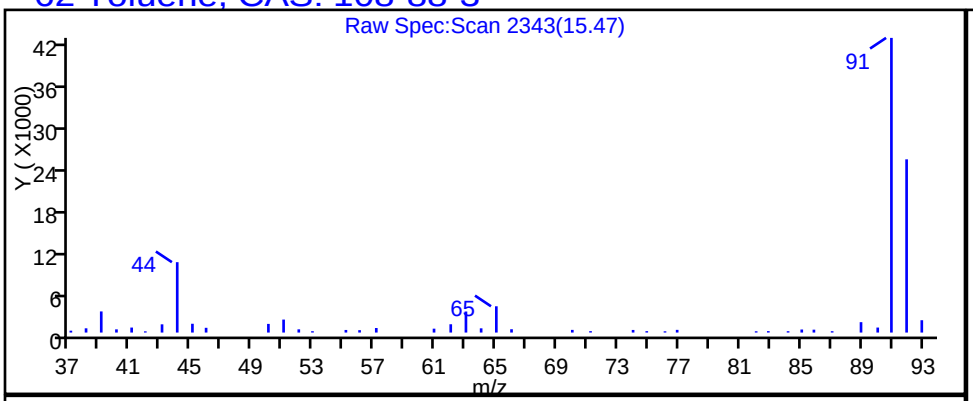


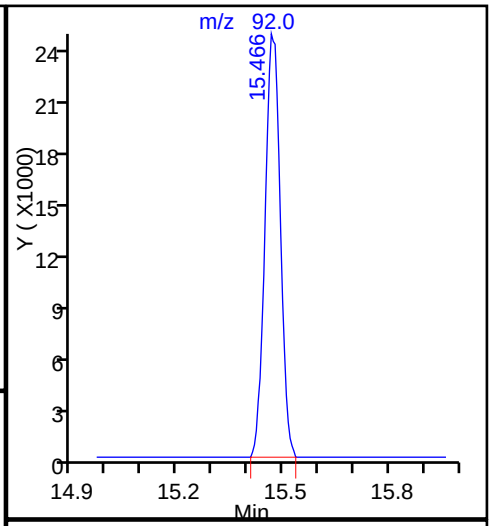


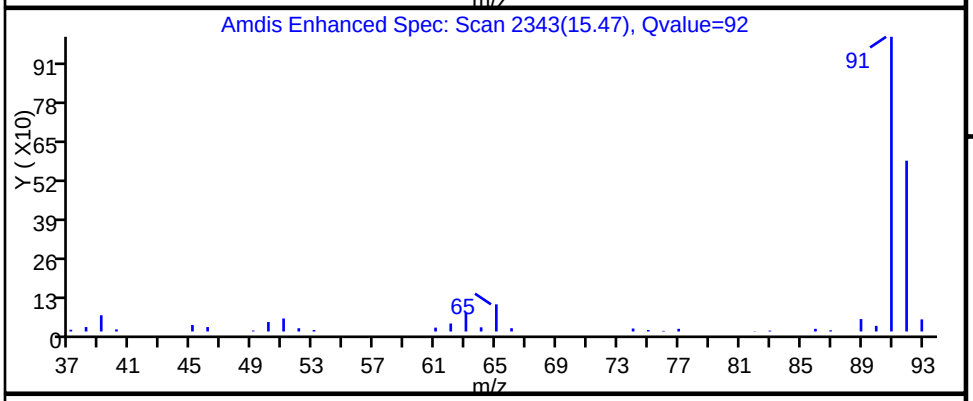
TestAmerica Burlington

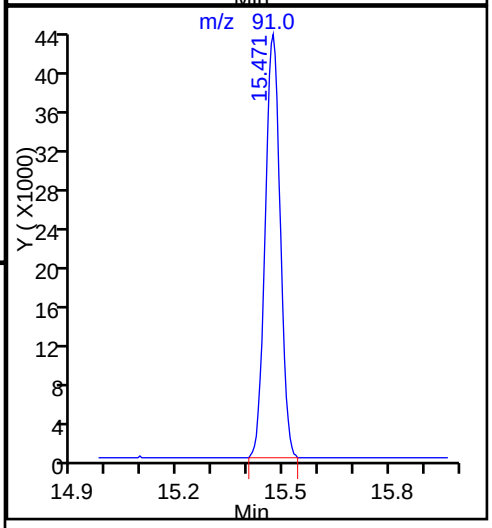
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

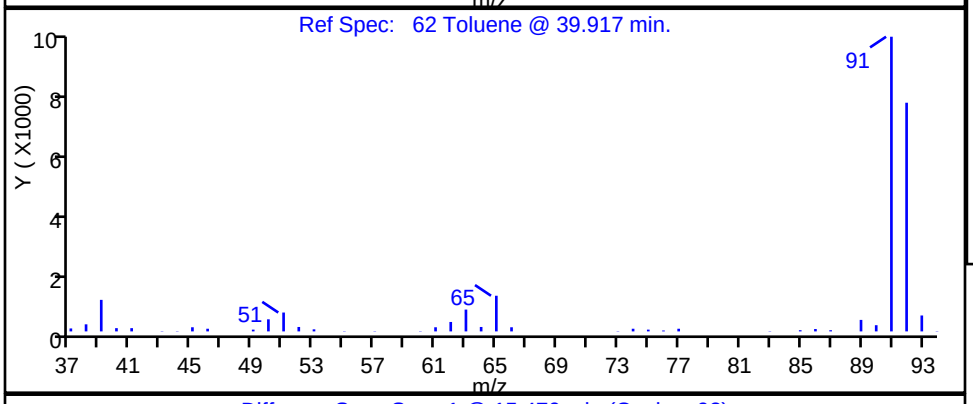
62 Toluene, CAS: 108-88-3

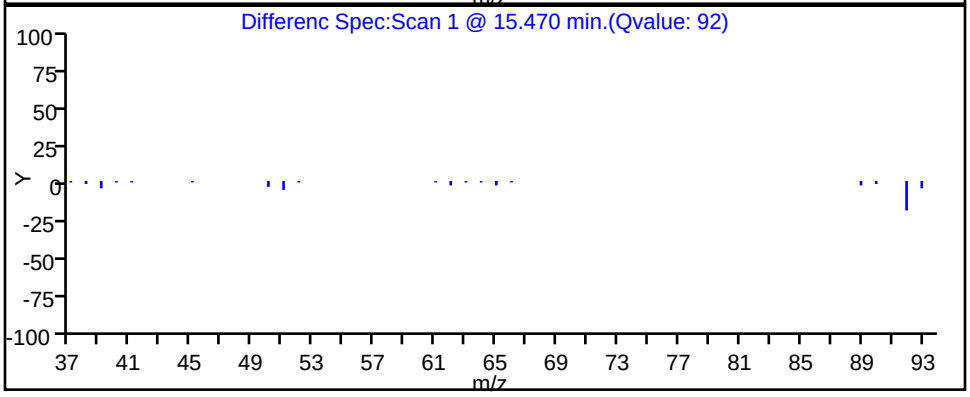








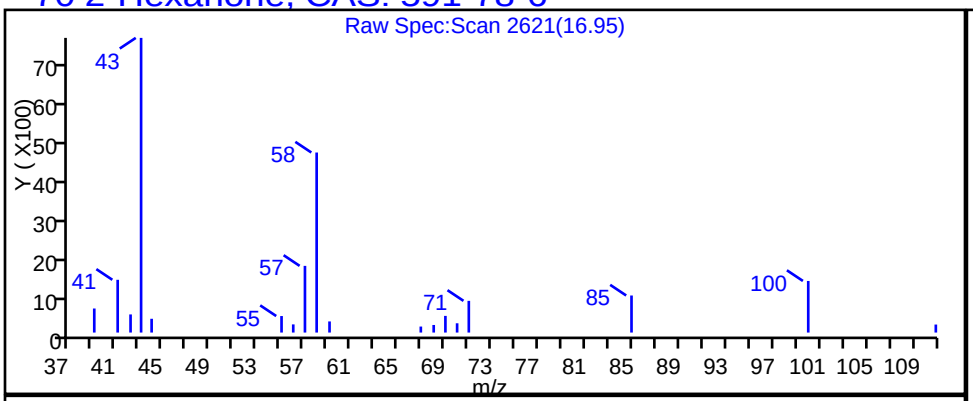


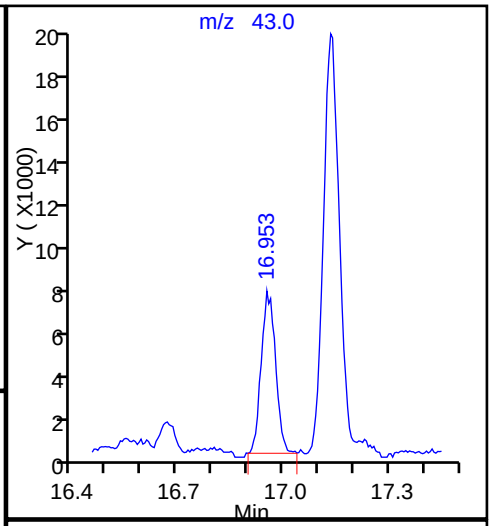


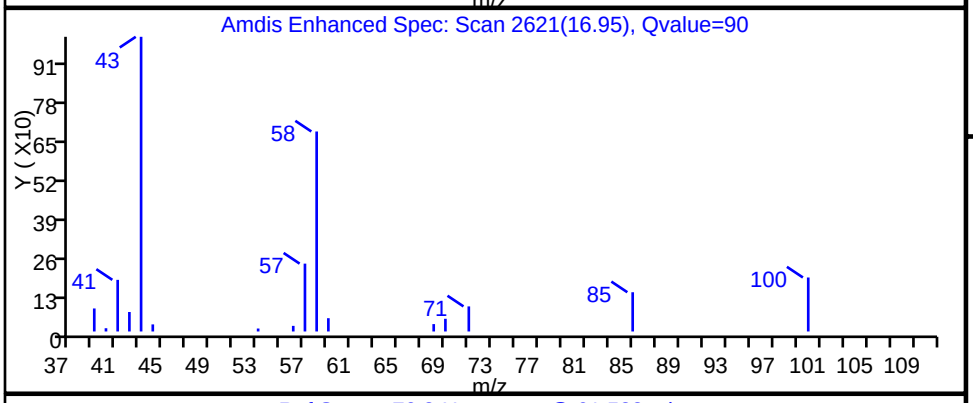
TestAmerica Burlington

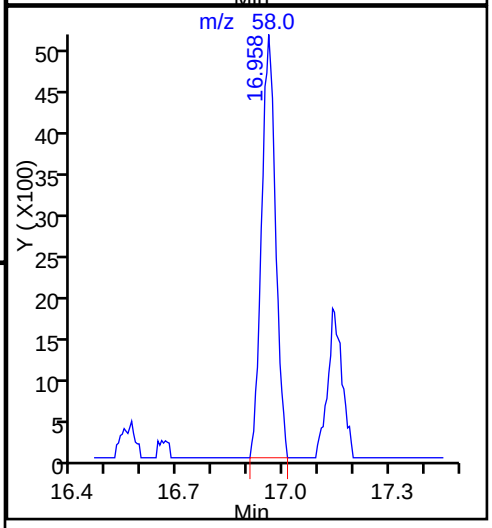
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

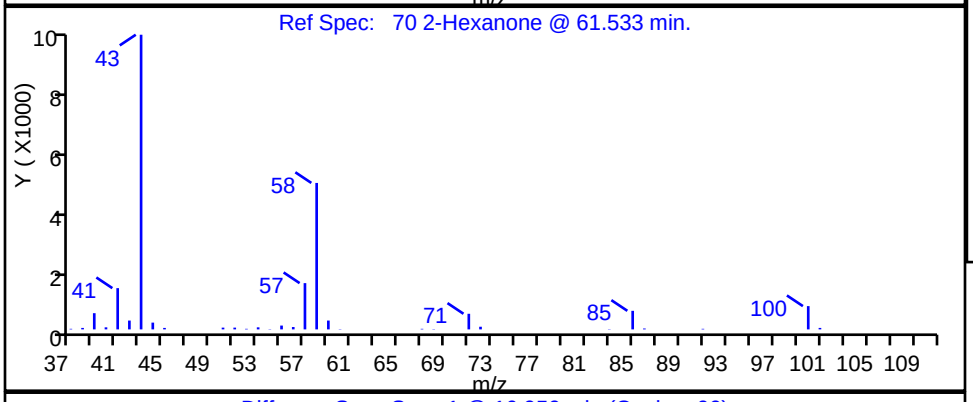
70 2-Hexanone, CAS: 591-78-6

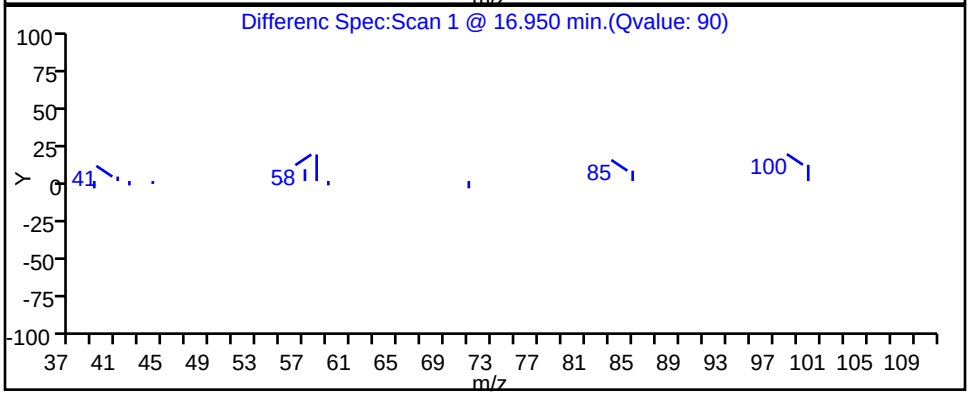












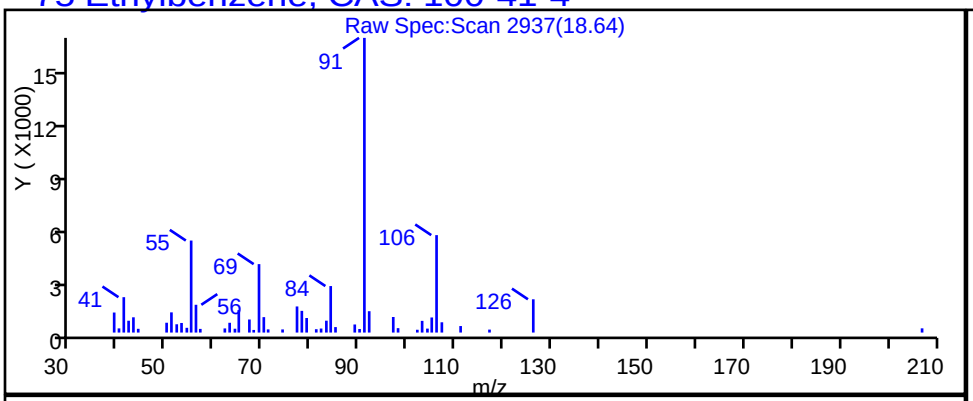
Report Date: 14-Oct-2015 07:54:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

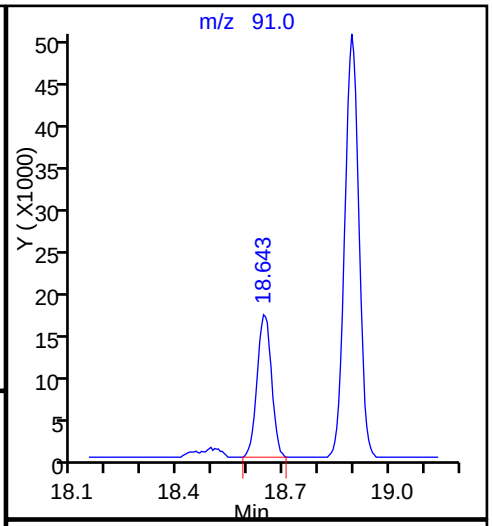
TestAmerica Burlington

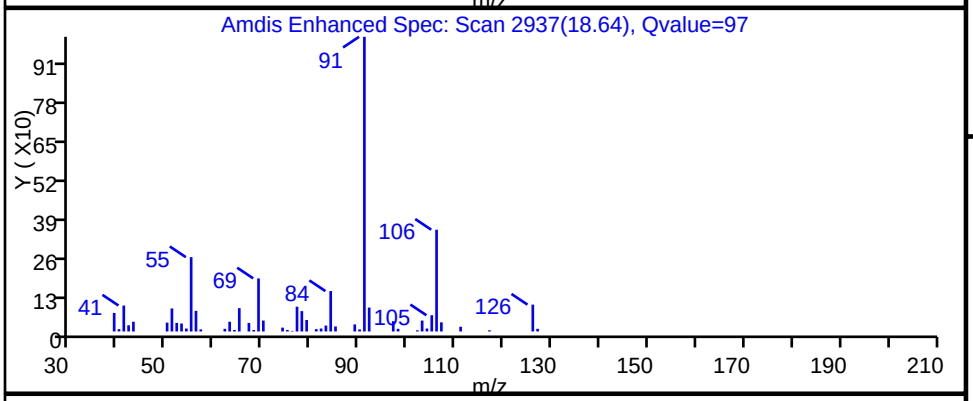
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D

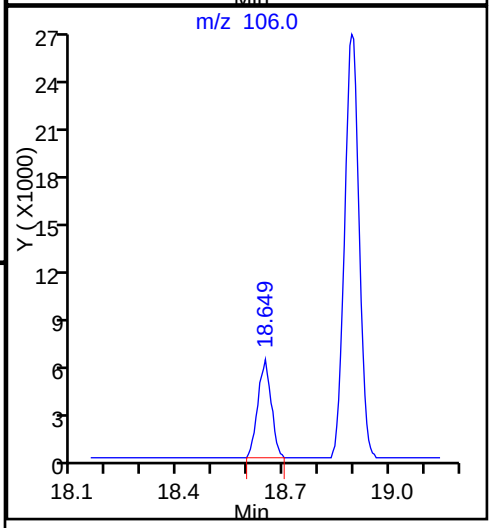
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

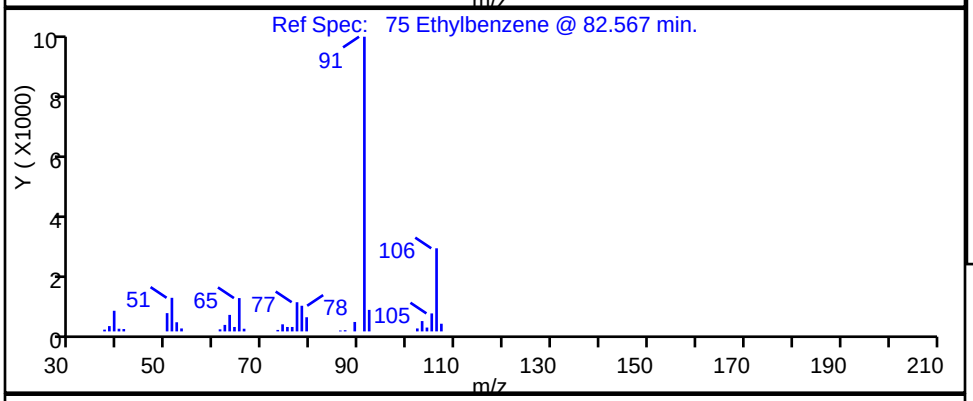
75 Ethylbenzene, CAS: 100-41-4

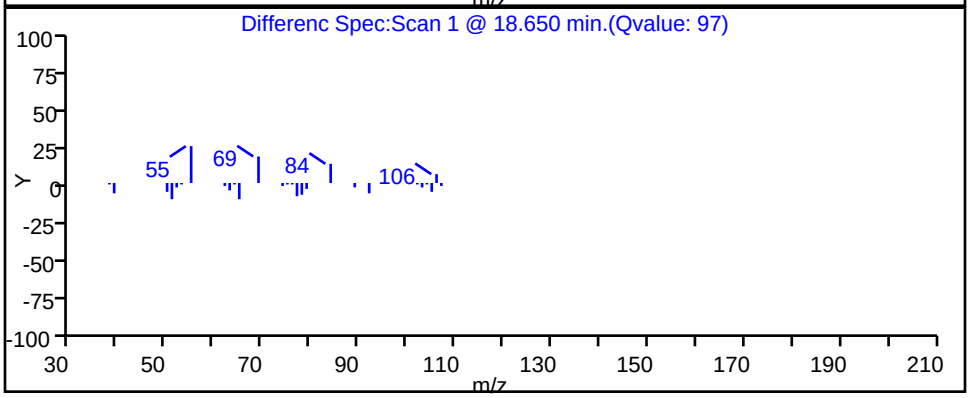








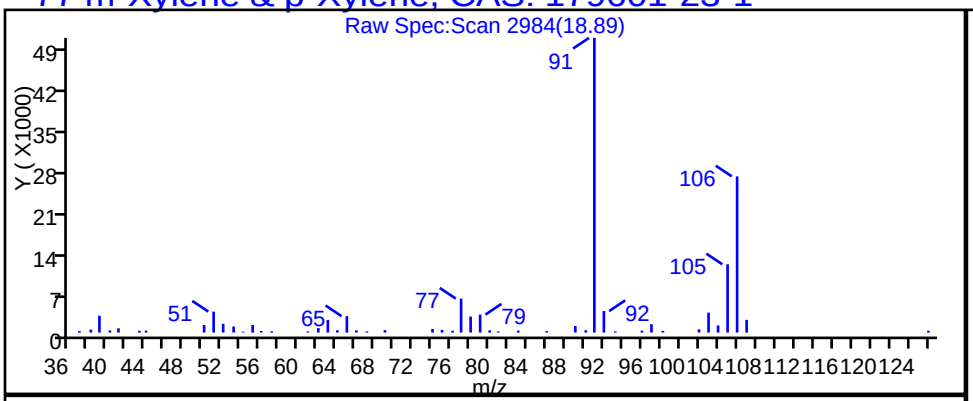


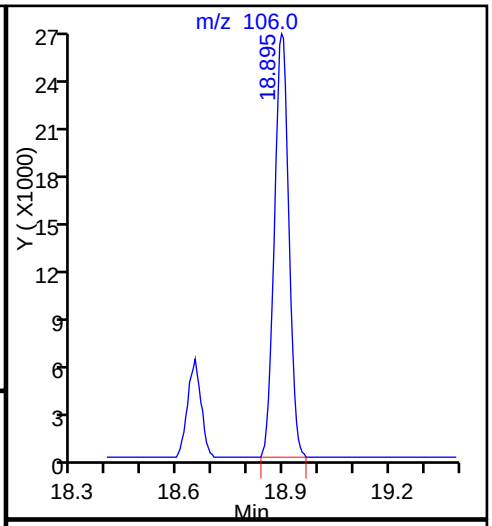


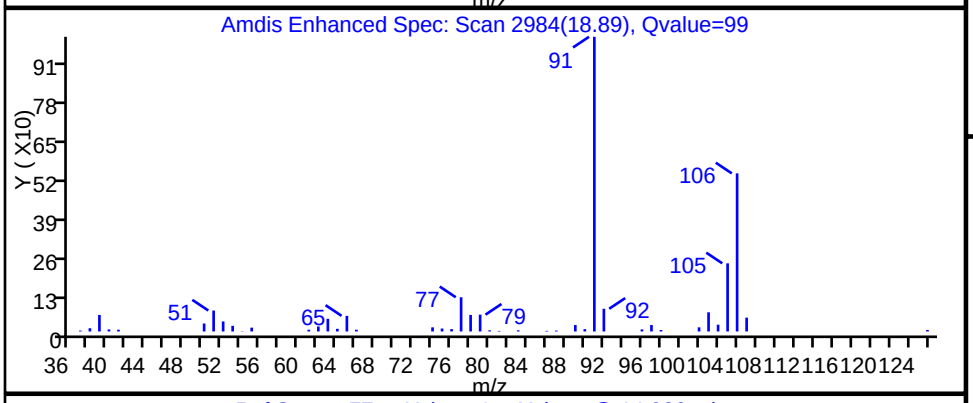
TestAmerica Burlington

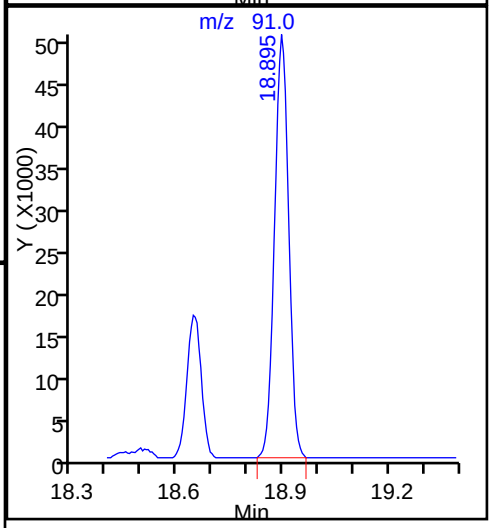
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

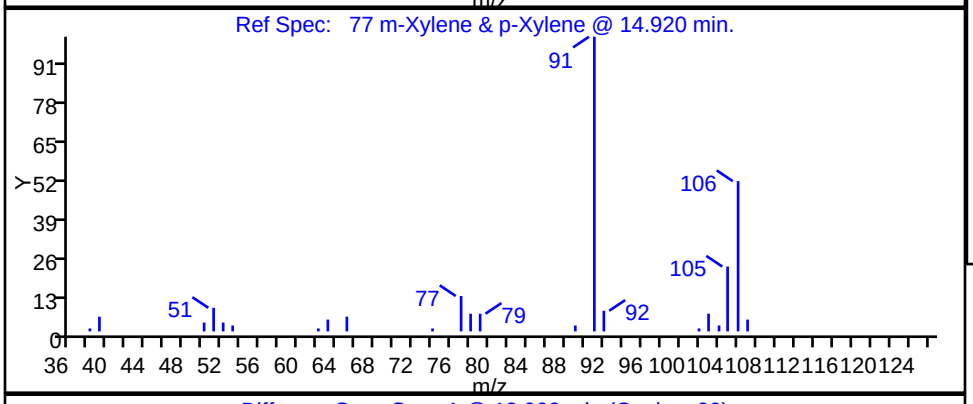
77 m-Xylene & p-Xylene, CAS: 179601-23-1

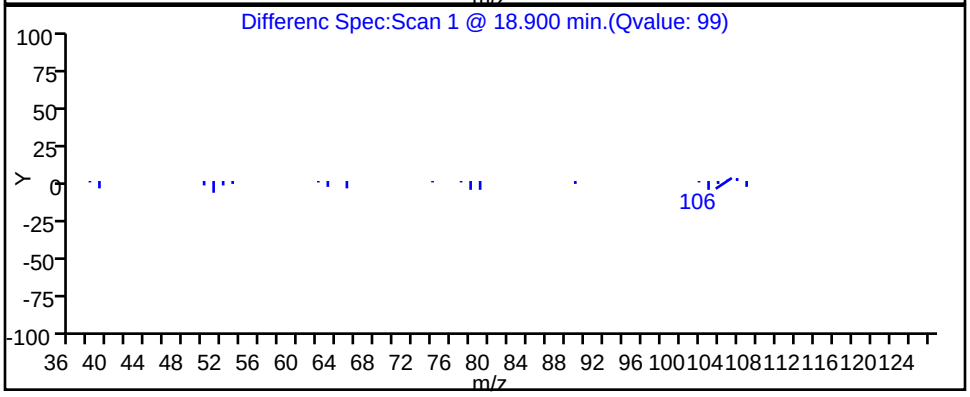








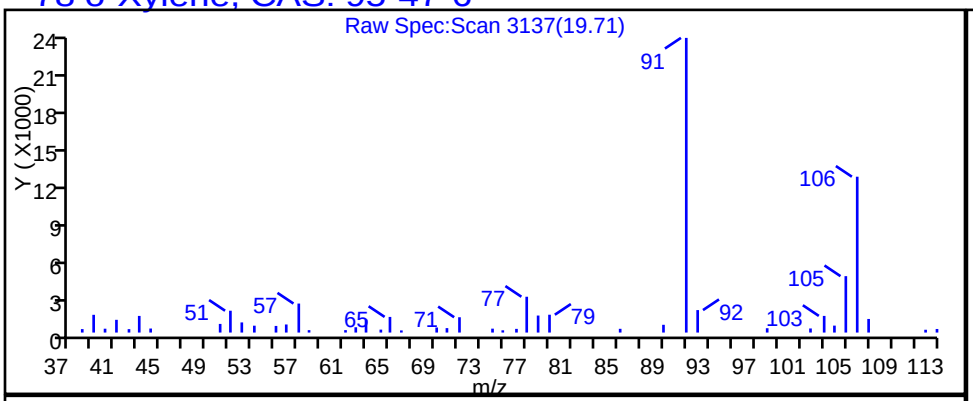


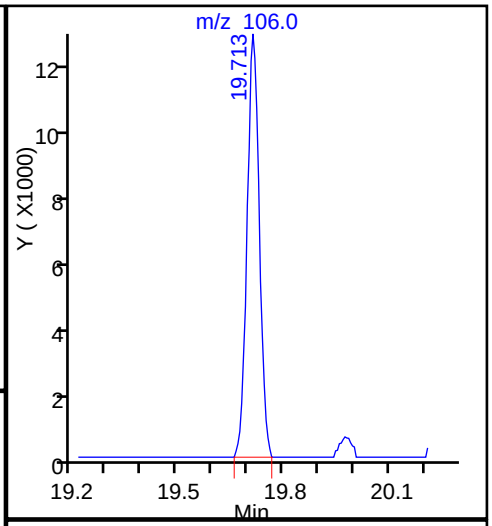


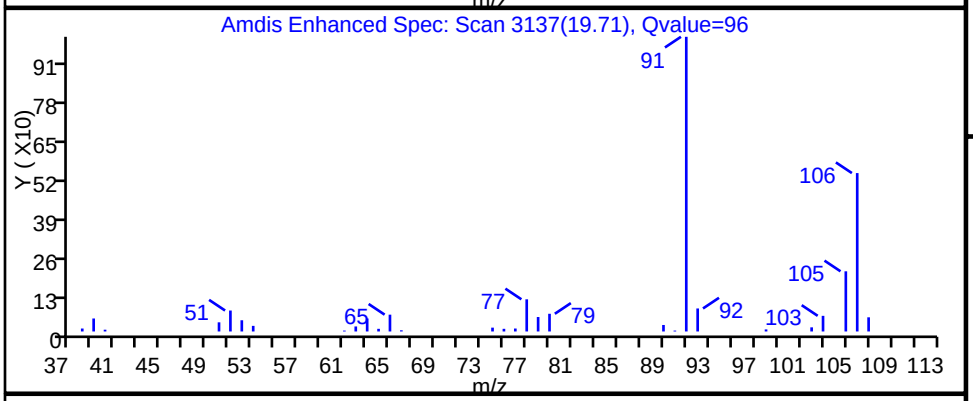
TestAmerica Burlington

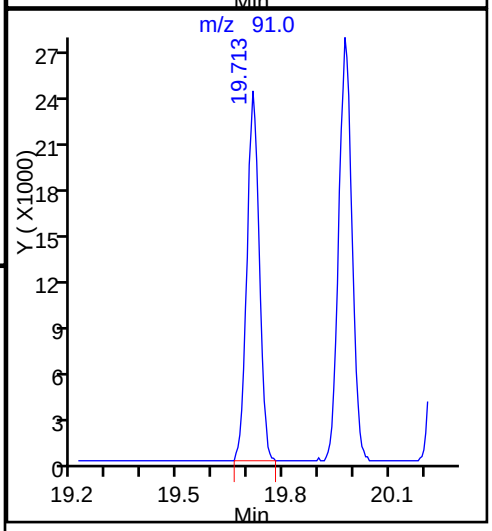
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

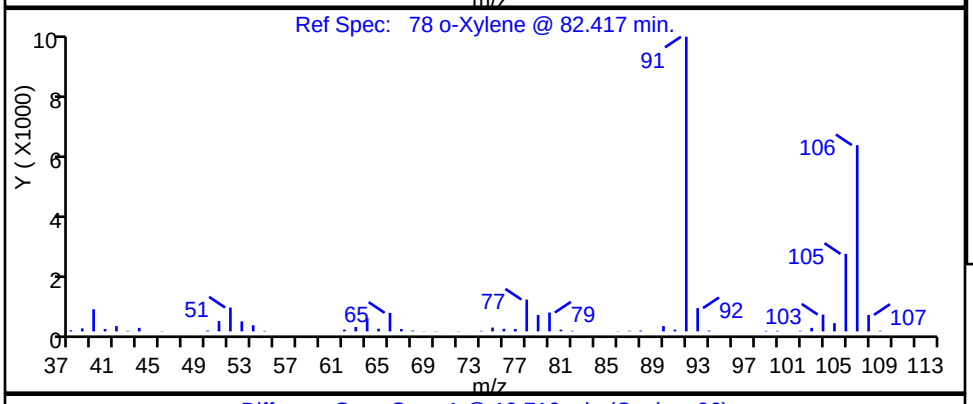
78 o-Xylene, CAS: 95-47-6

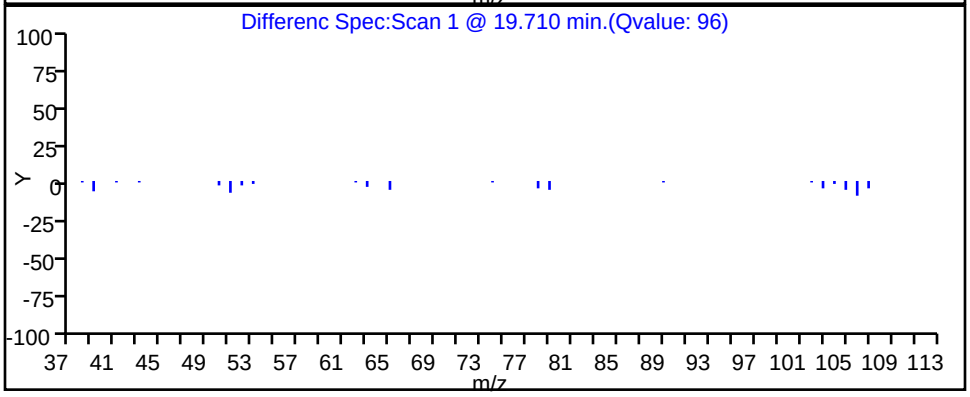








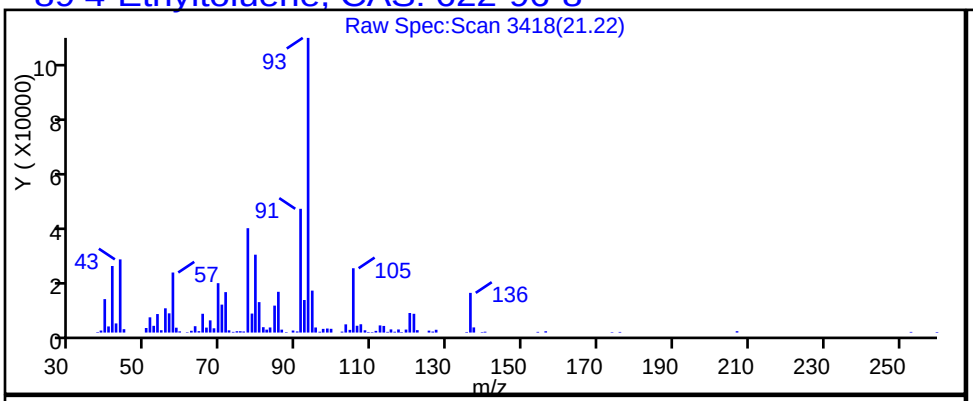


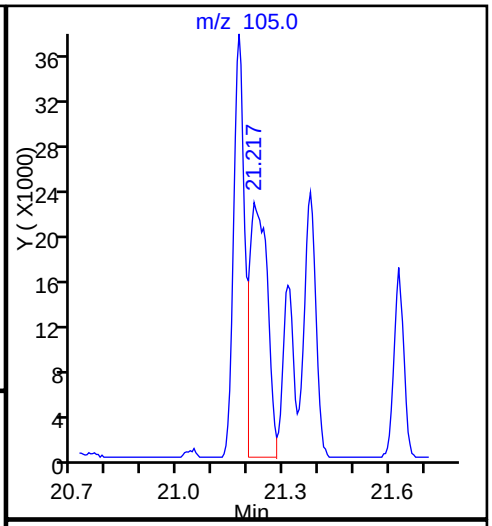


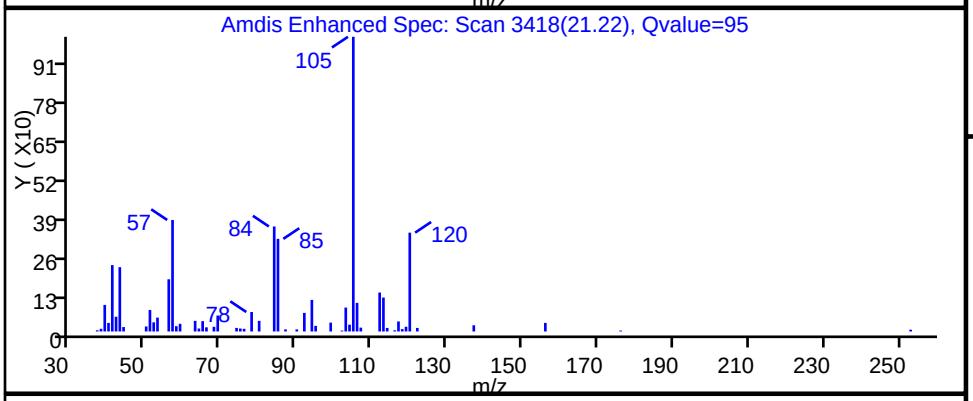
TestAmerica Burlington

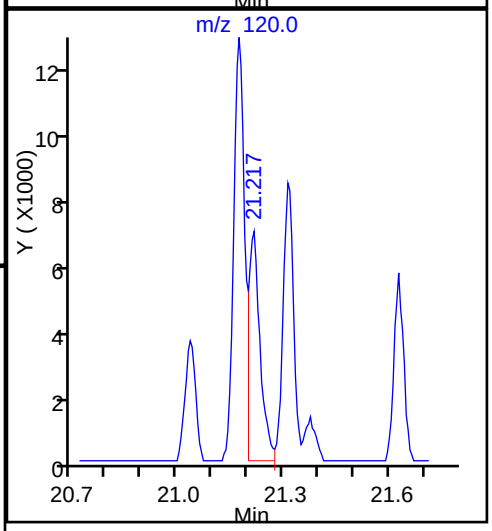
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

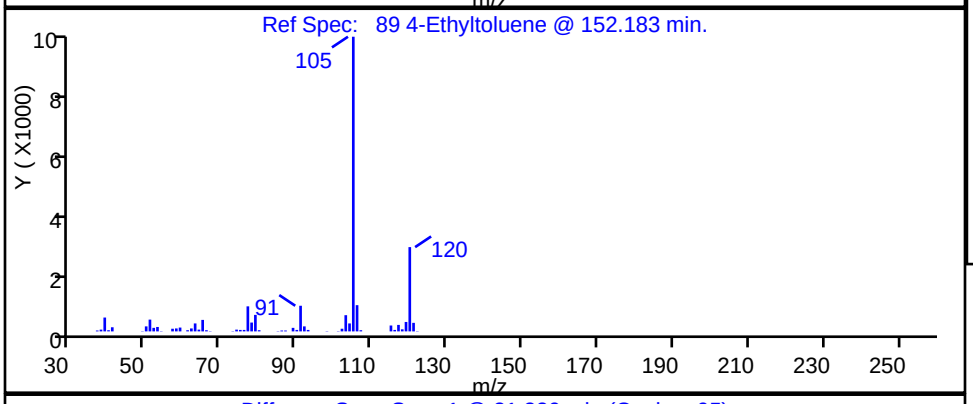
89 4-Ethyltoluene, CAS: 622-96-8

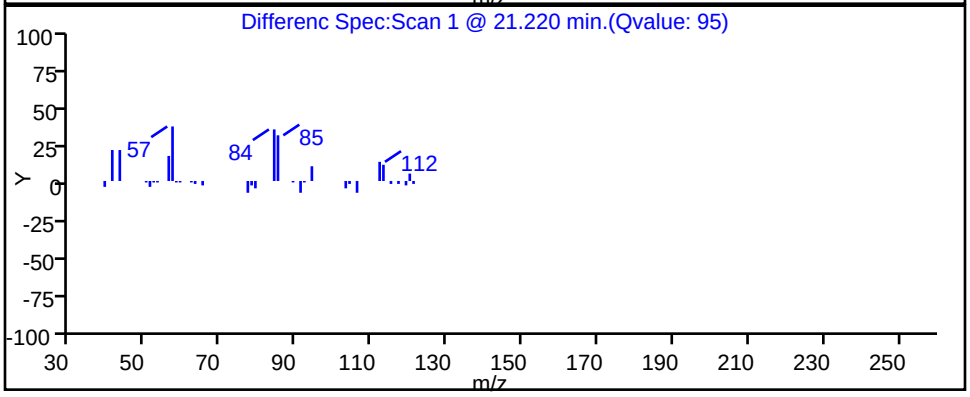








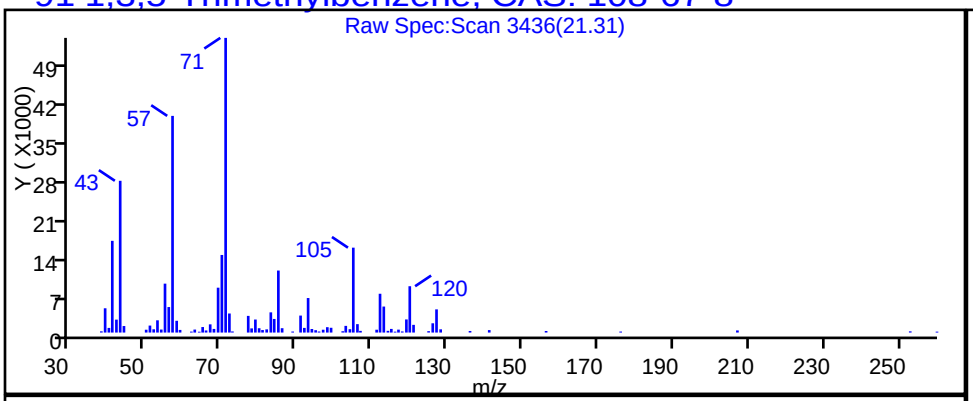


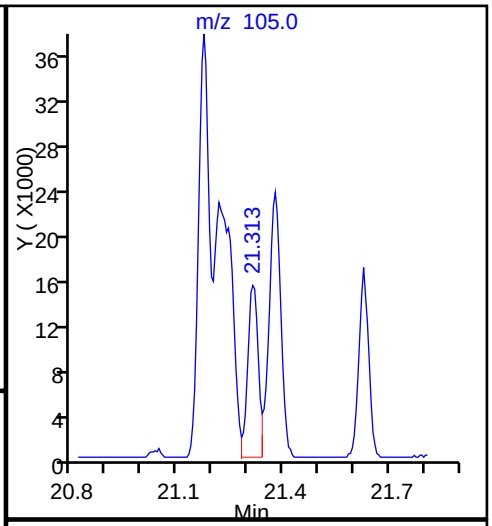


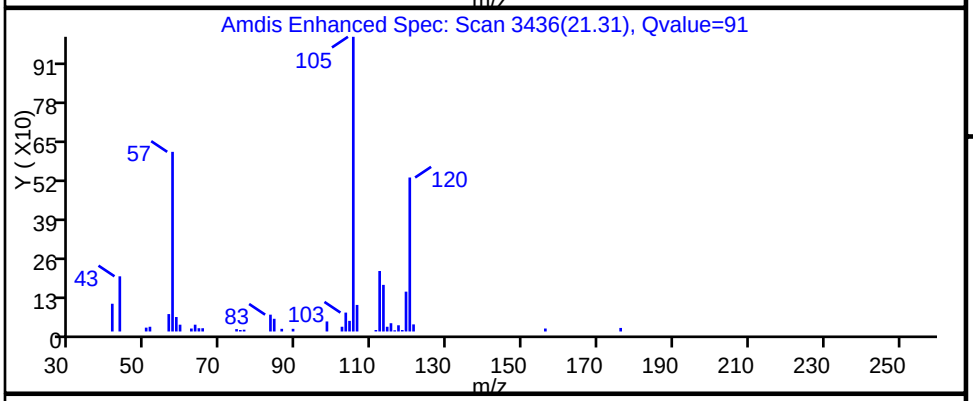
TestAmerica Burlington

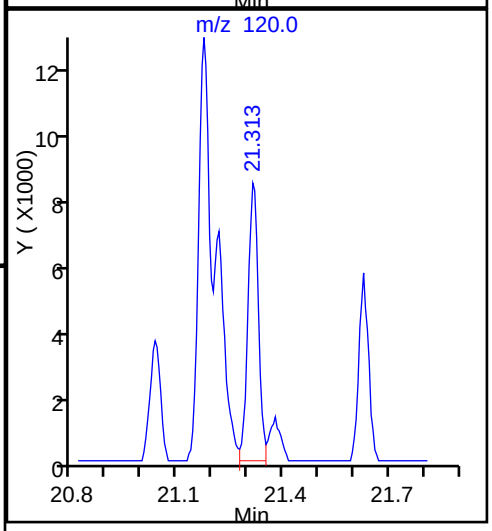
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

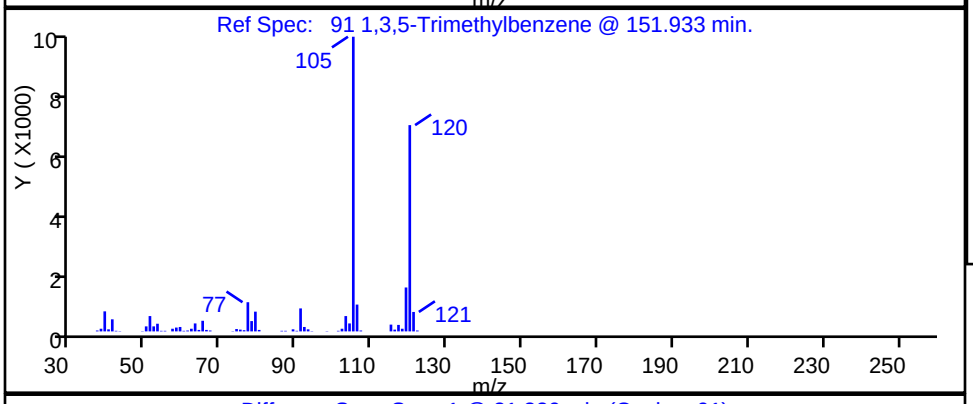
91 1,3,5-Trimethylbenzene, CAS: 108-67-8

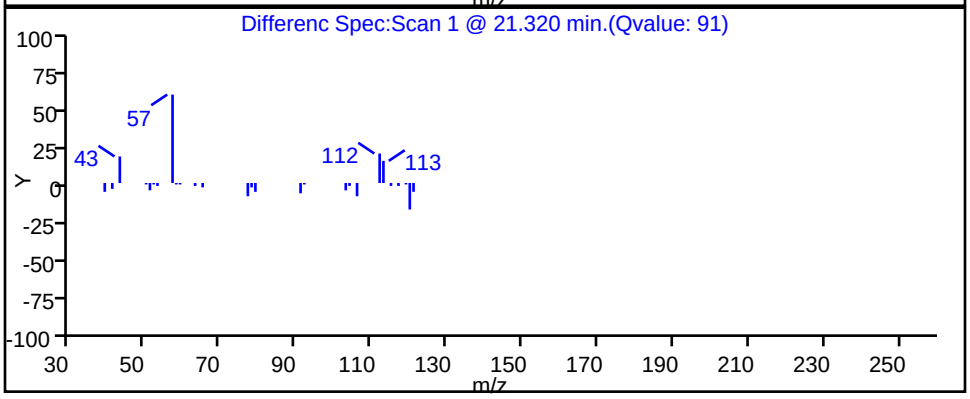








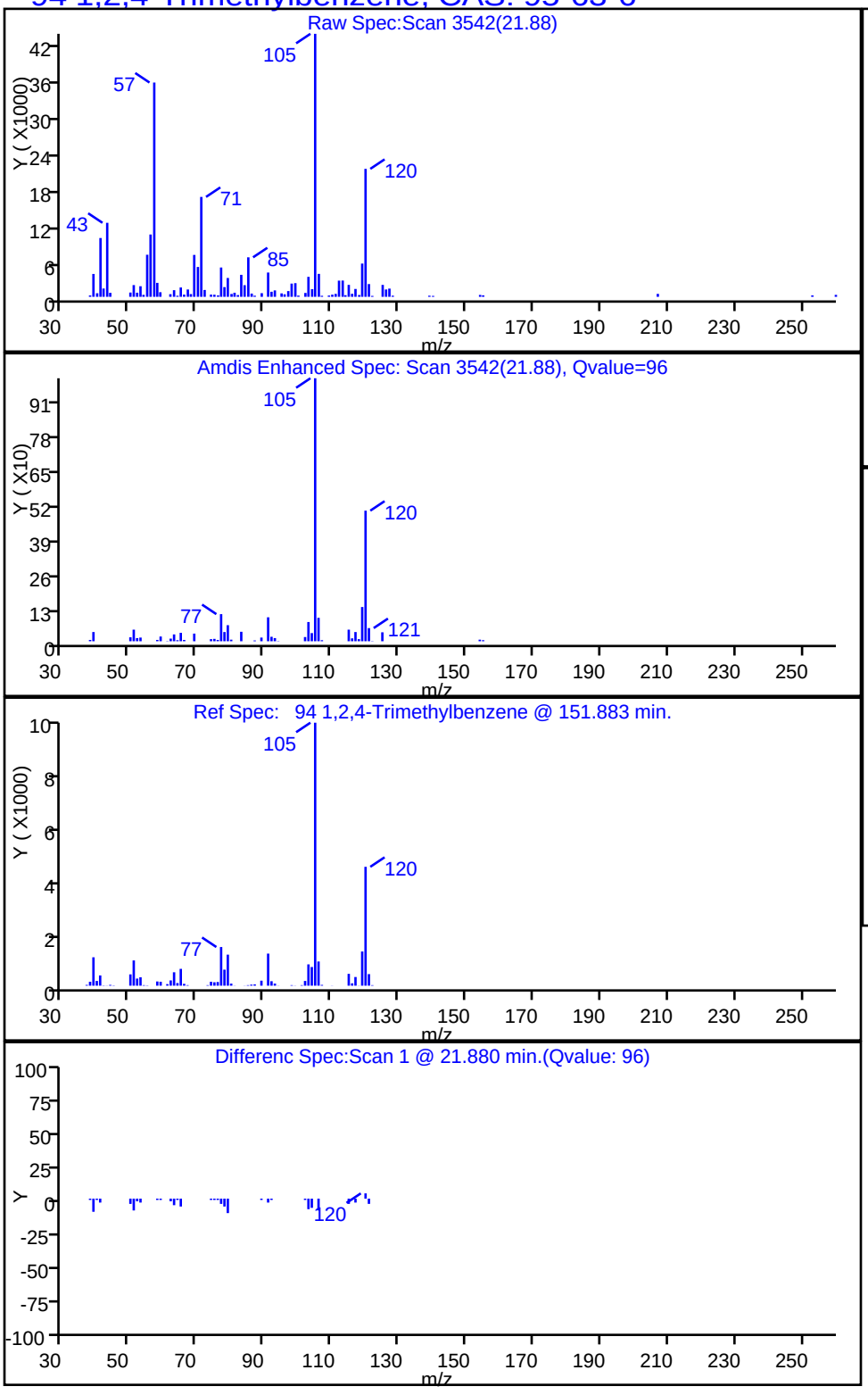


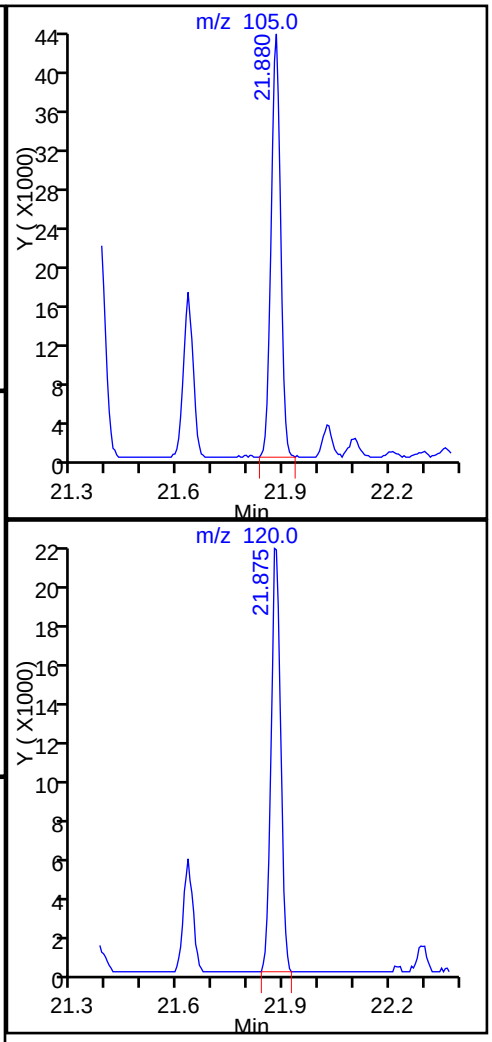


TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

94 1,2,4-Trimethylbenzene, CAS: 95-63-6





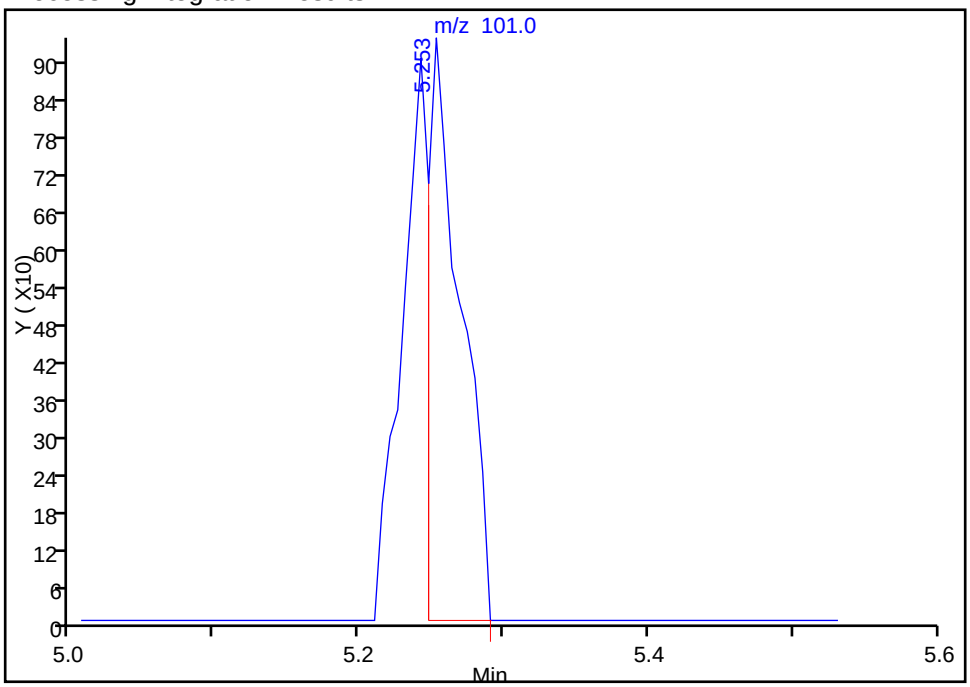
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

13 Trichlorofluoromethane, CAS: 75-69-4

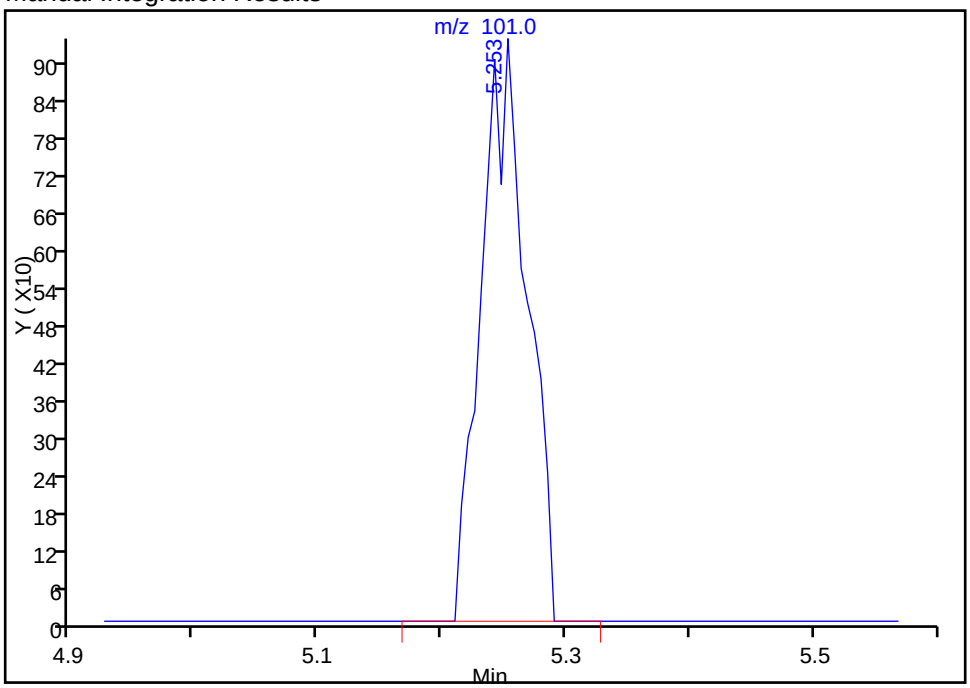
Processing Integration Results

RT: 5.25
Area: 1470
Amount: 0.039012
Amount Units: ppb v/v



Manual Integration Results

RT: 5.25
Area: 2427
Amount: 0.064410
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:54:24
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

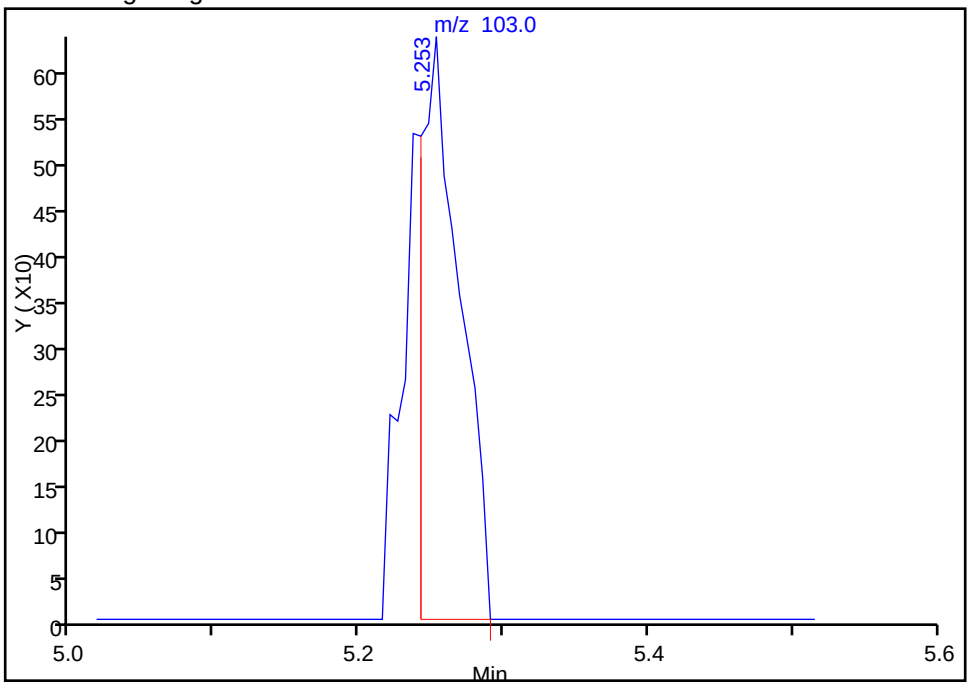
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

13 Trichlorofluoromethane, CAS: 75-69-4

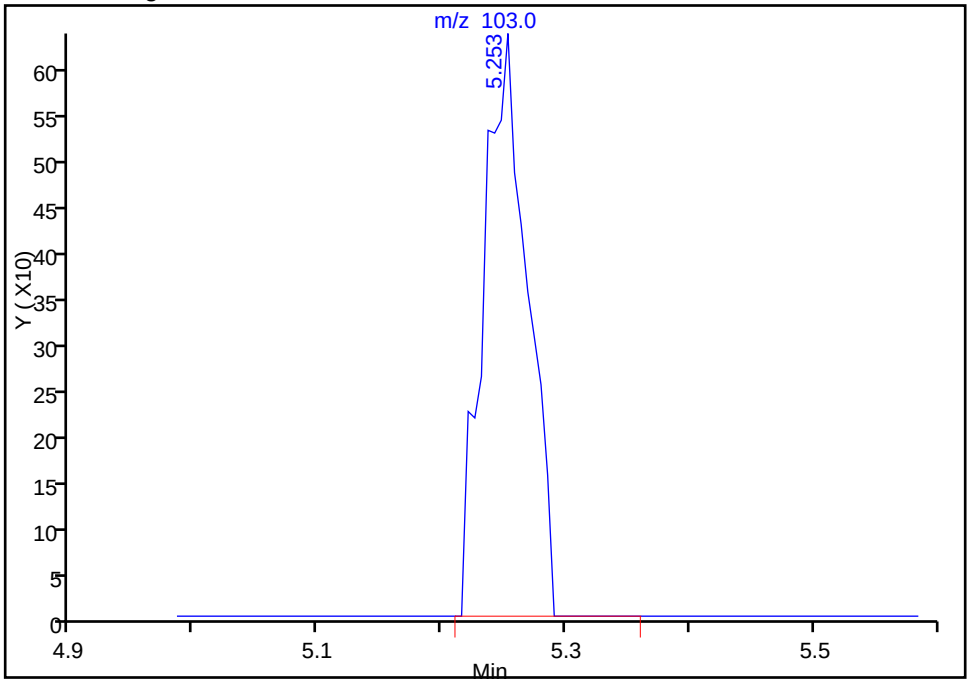
Processing Integration Results

RT: 5.25
Area: 1174
Amount: 0.039012
Amount Units: ppb v/v



Manual Integration Results

RT: 5.25
Area: 1567
Amount: 0.064410
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:54:24
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

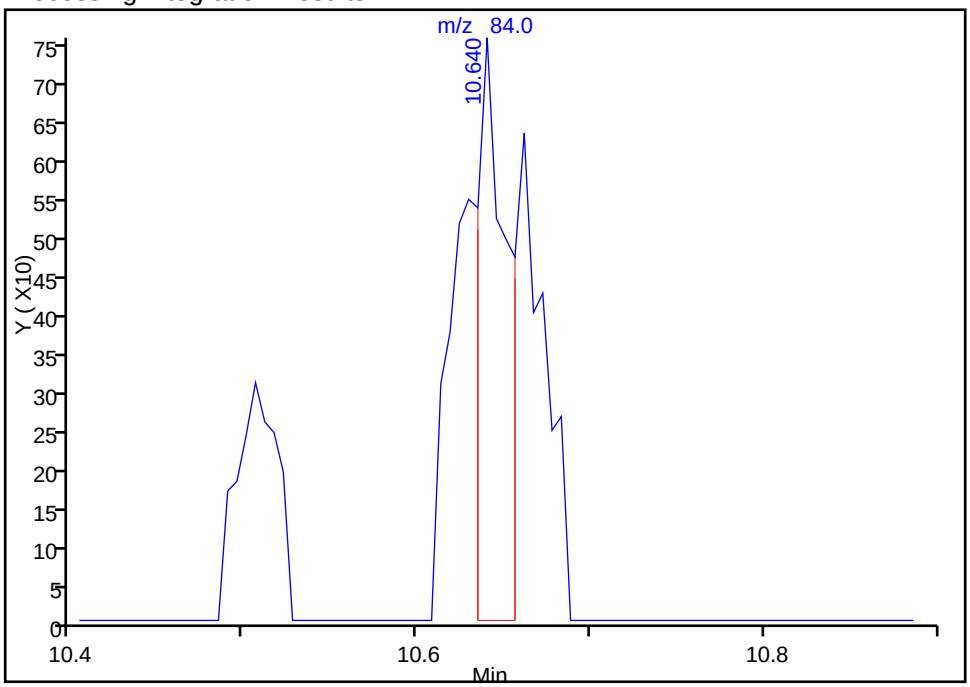
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

42 Cyclohexane, CAS: 110-82-7

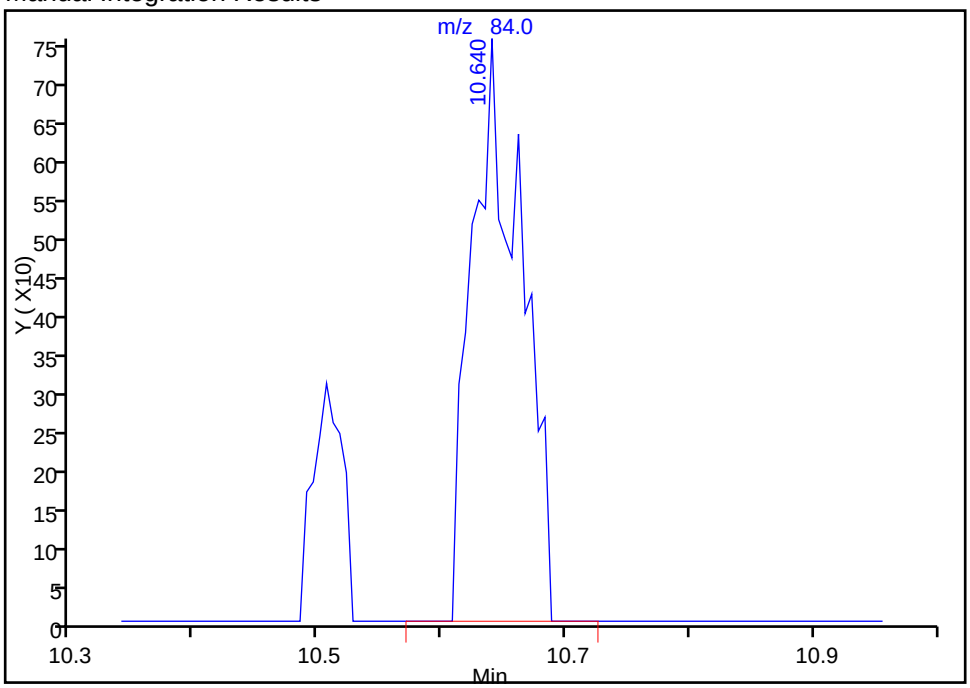
Processing Integration Results

RT: 10.64
Area: 893
Amount: 0.036961
Amount Units: ppb v/v



Manual Integration Results

RT: 10.64
Area: 2086
Amount: 0.086340
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:54:24
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

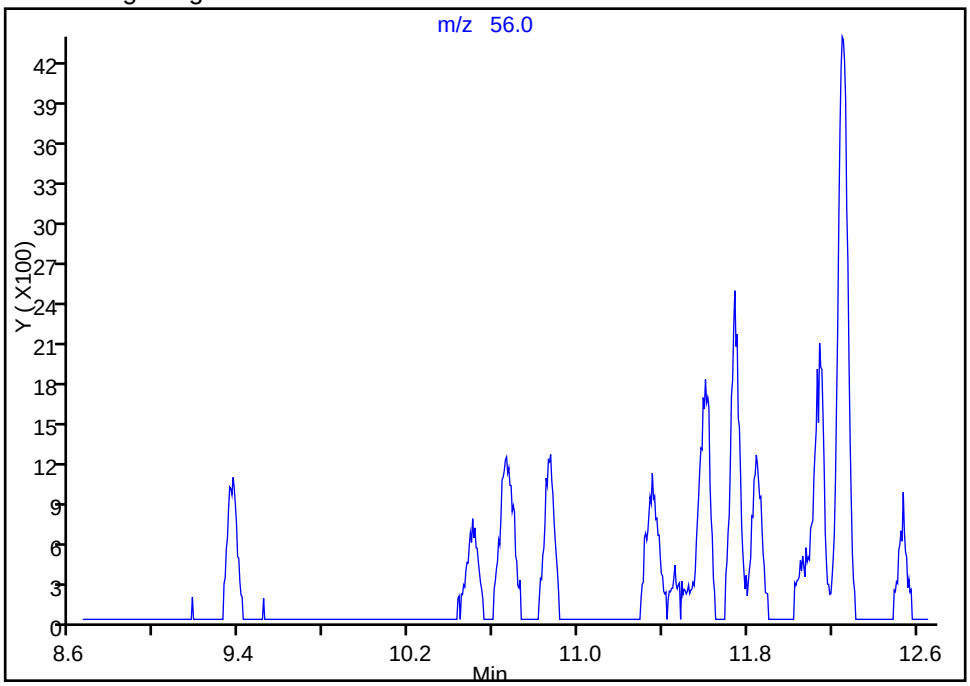
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D				
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

42 Cyclohexane, CAS: 110-82-7

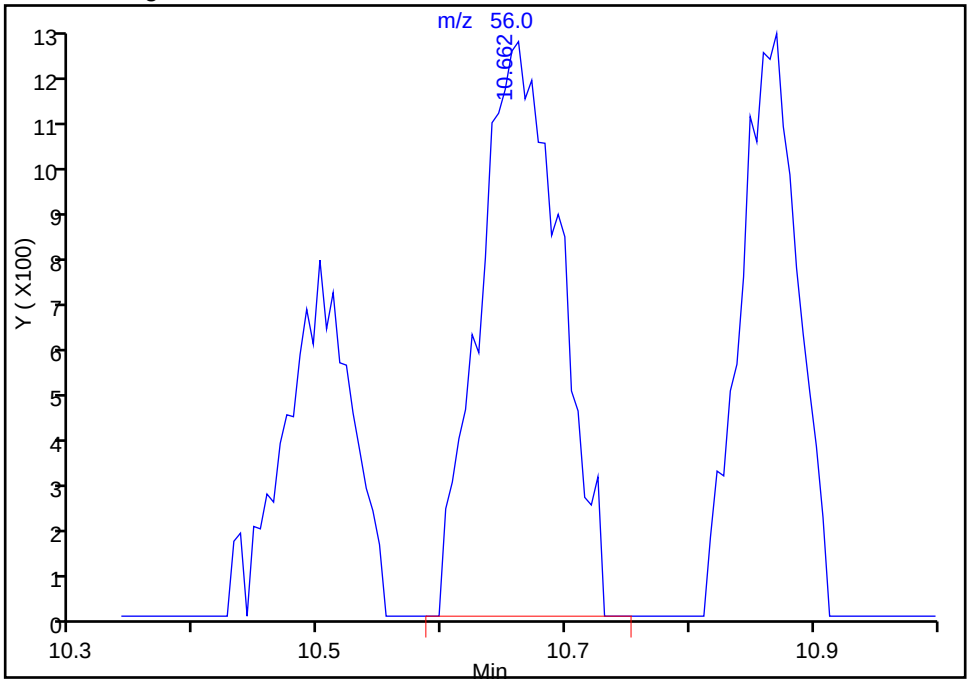
Processing Integration Results

RT: 10.66
Area: 0
Amount: 0.036961
Amount Units: ppb v/v



Manual Integration Results

RT: 10.66
Area: 5484
Amount: 0.086340
Amount Units: ppb v/v

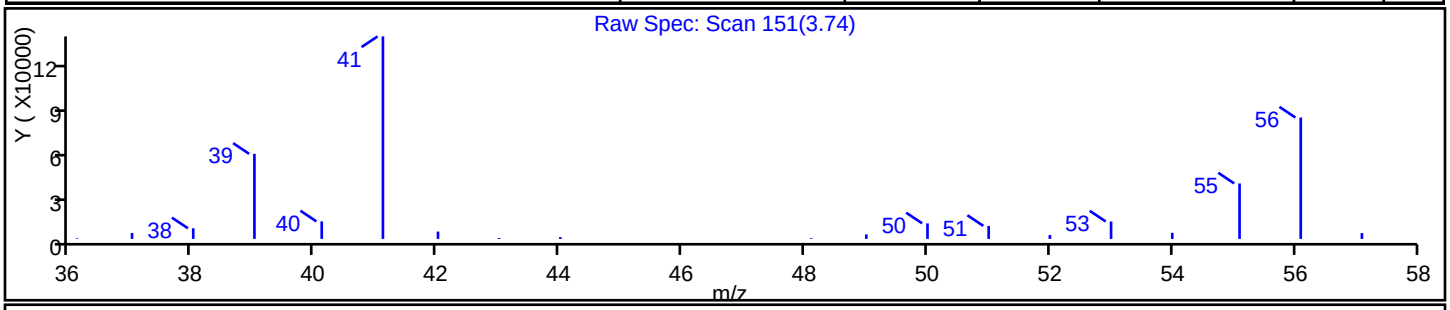


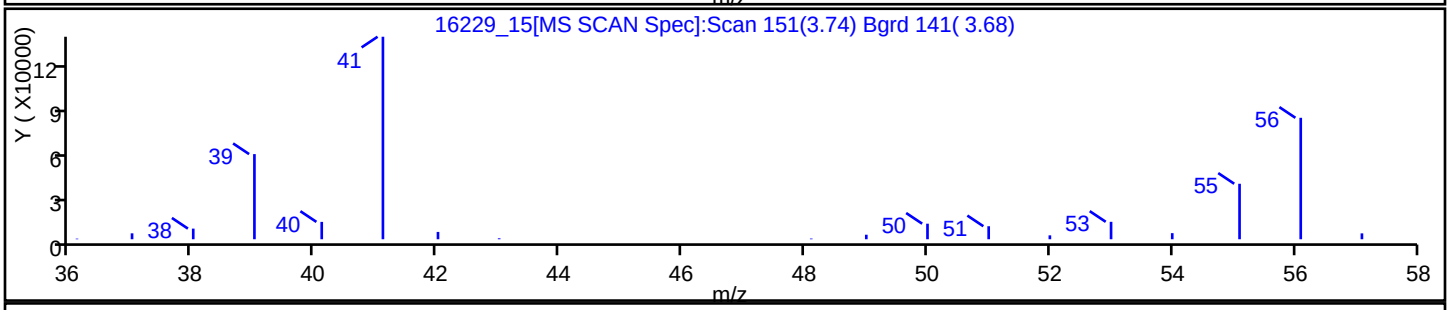
Reviewer: desjardinsb, 14-Oct-2015 07:54:24
Audit Action: Manually Integrated
Audit Reason: Baseline

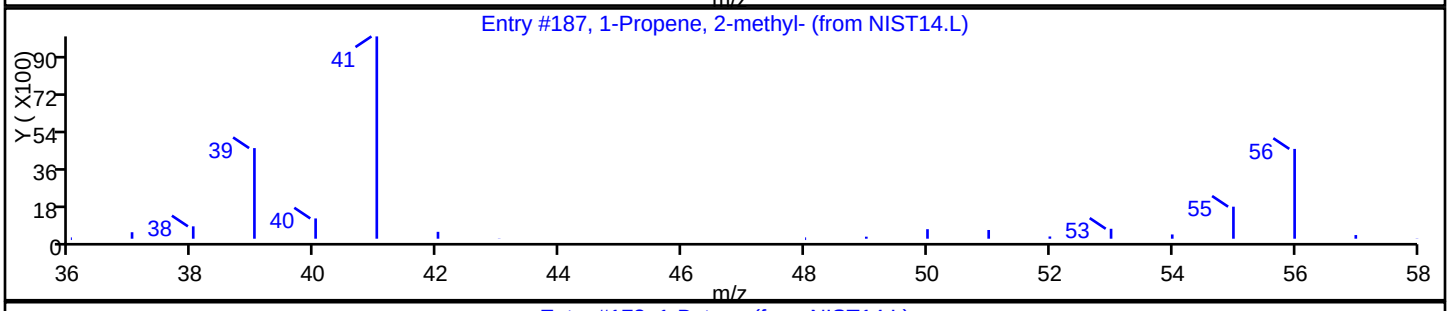
TestAmerica Burlington

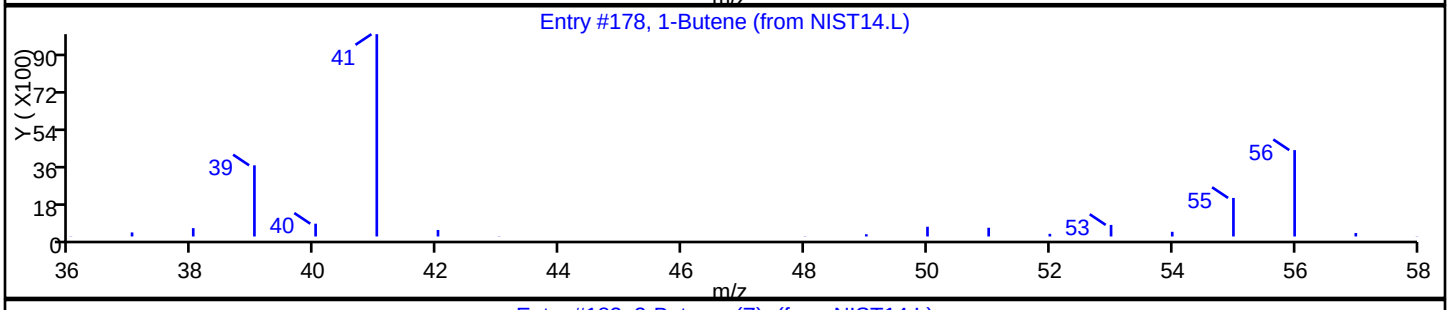
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D
Injection Date: 13-Oct-2015 20:40:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 15
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

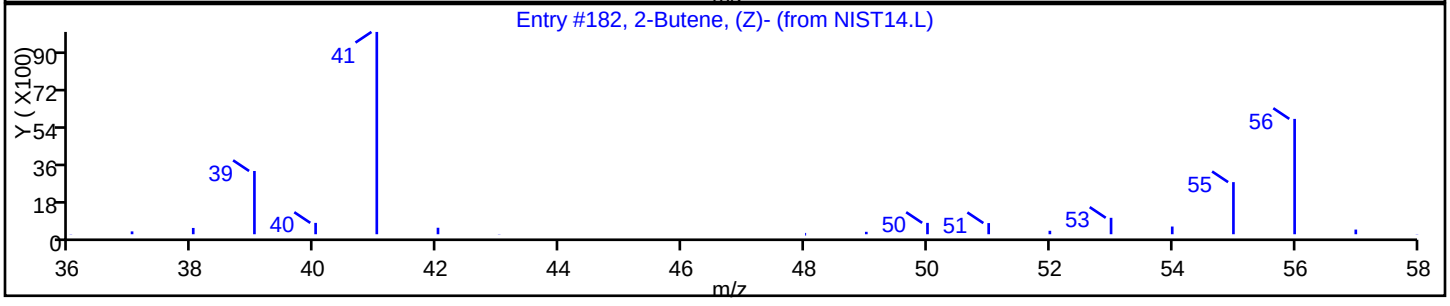
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
1-Propene, 2-methyl-	115-11-7	NIST14.L	187	C4H8	56	90
1-Butene	106-98-9	NIST14.L	178	C4H8	56	90
2-Butene, (Z)-	590-18-1	NIST14.L	182	C4H8	56	86











Report Date: 14-Oct-2015 07:54:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D

Injection Date: 13-Oct-2015 20:40:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3

Client ID: SV-3

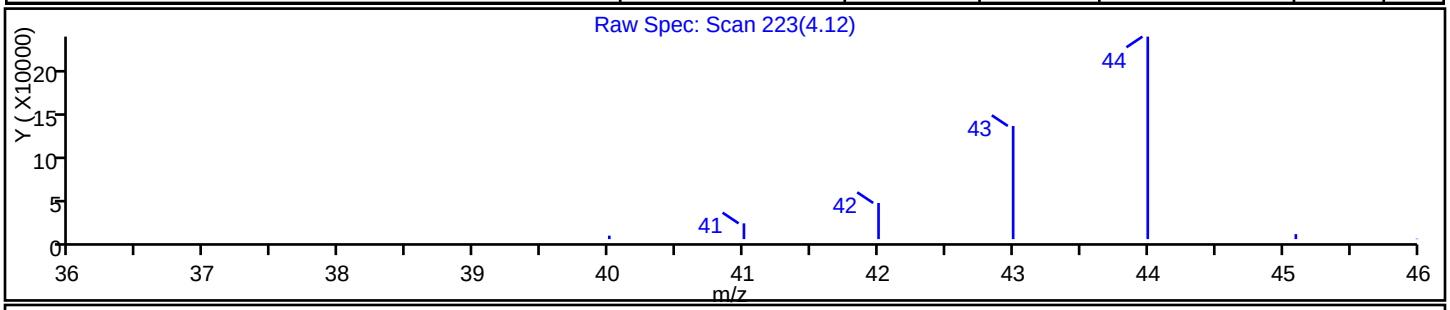
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 15

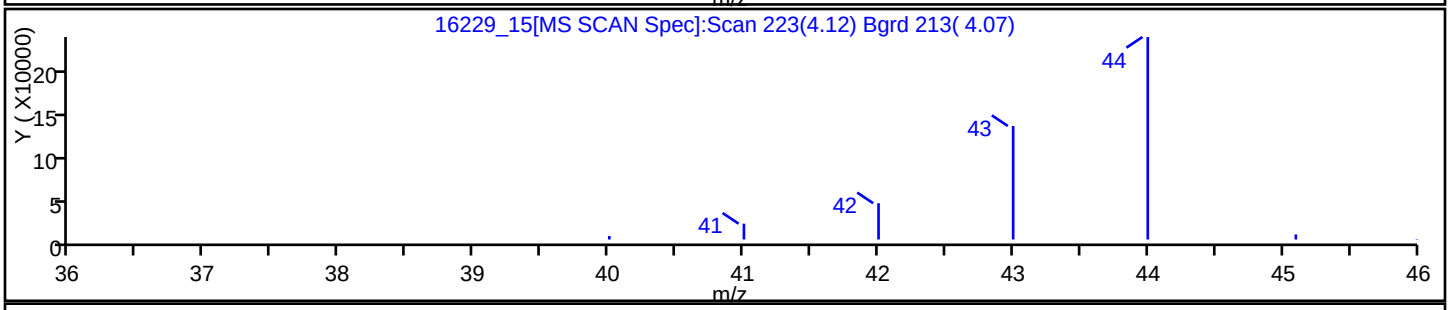
Purge Vol: 200.000 mL Dil. Factor: 3.0000

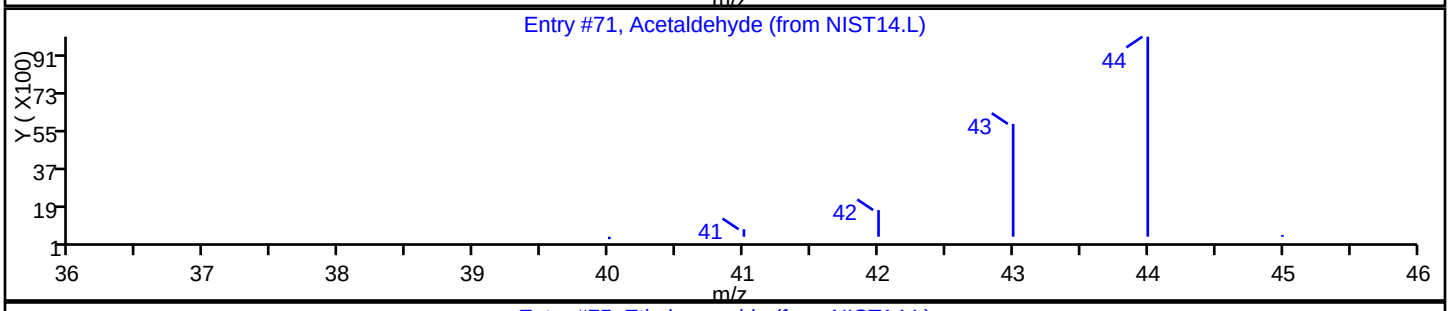
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

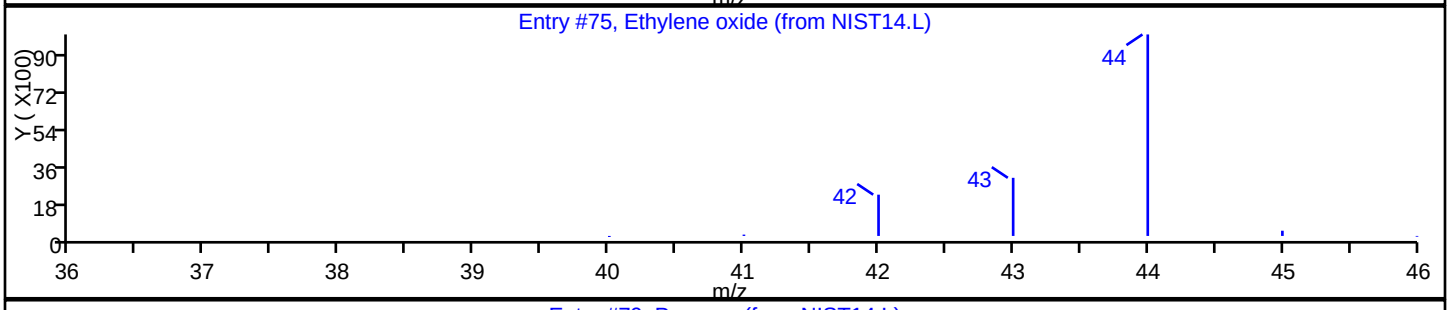
Column: Detector MS SCAN

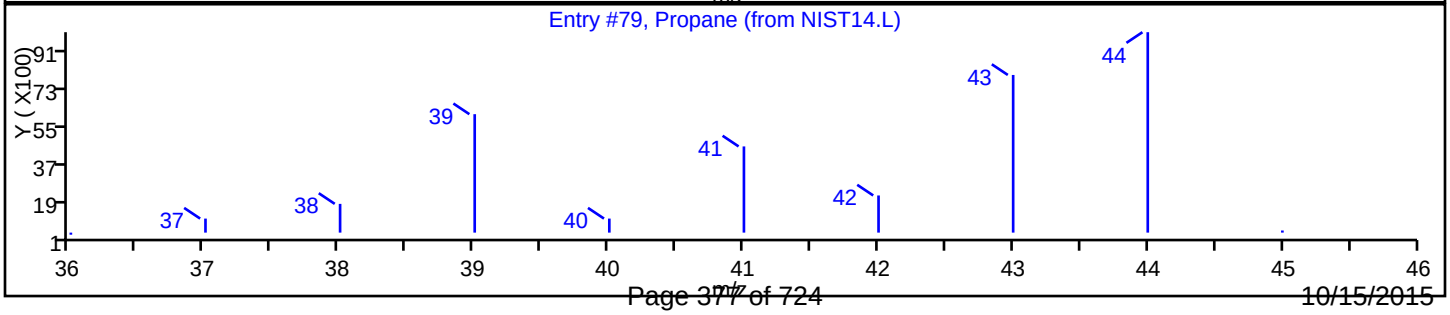
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Acetaldehyde	75-07-0	NIST14.L	71	C2H4O	44	74
Ethylene oxide	75-21-8	NIST14.L	75	C2H4O	44	5
Propane	74-98-6	NIST14.L	79	C3H8	44	5







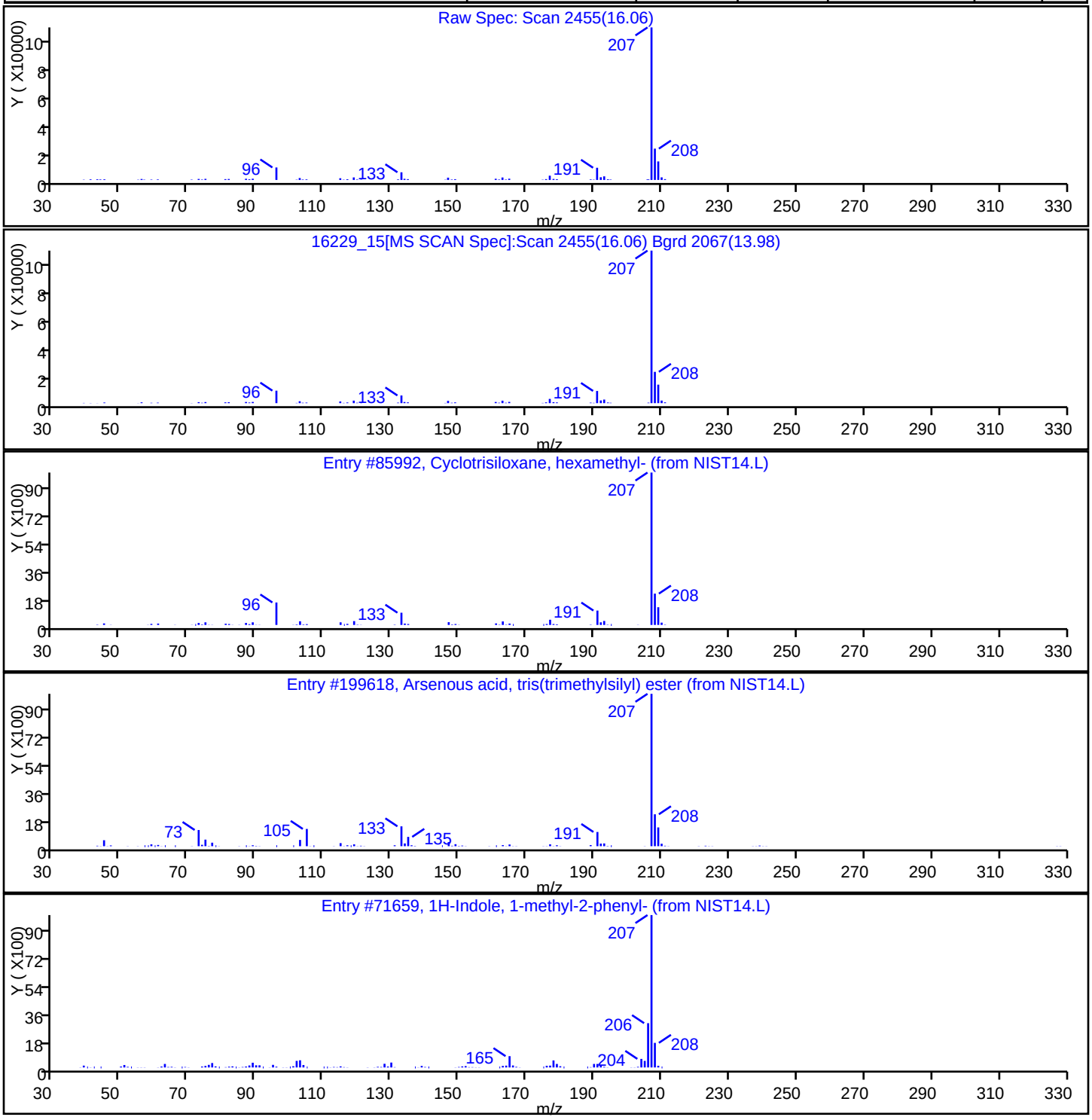




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D
Injection Date: 13-Oct-2015 20:40:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 15
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

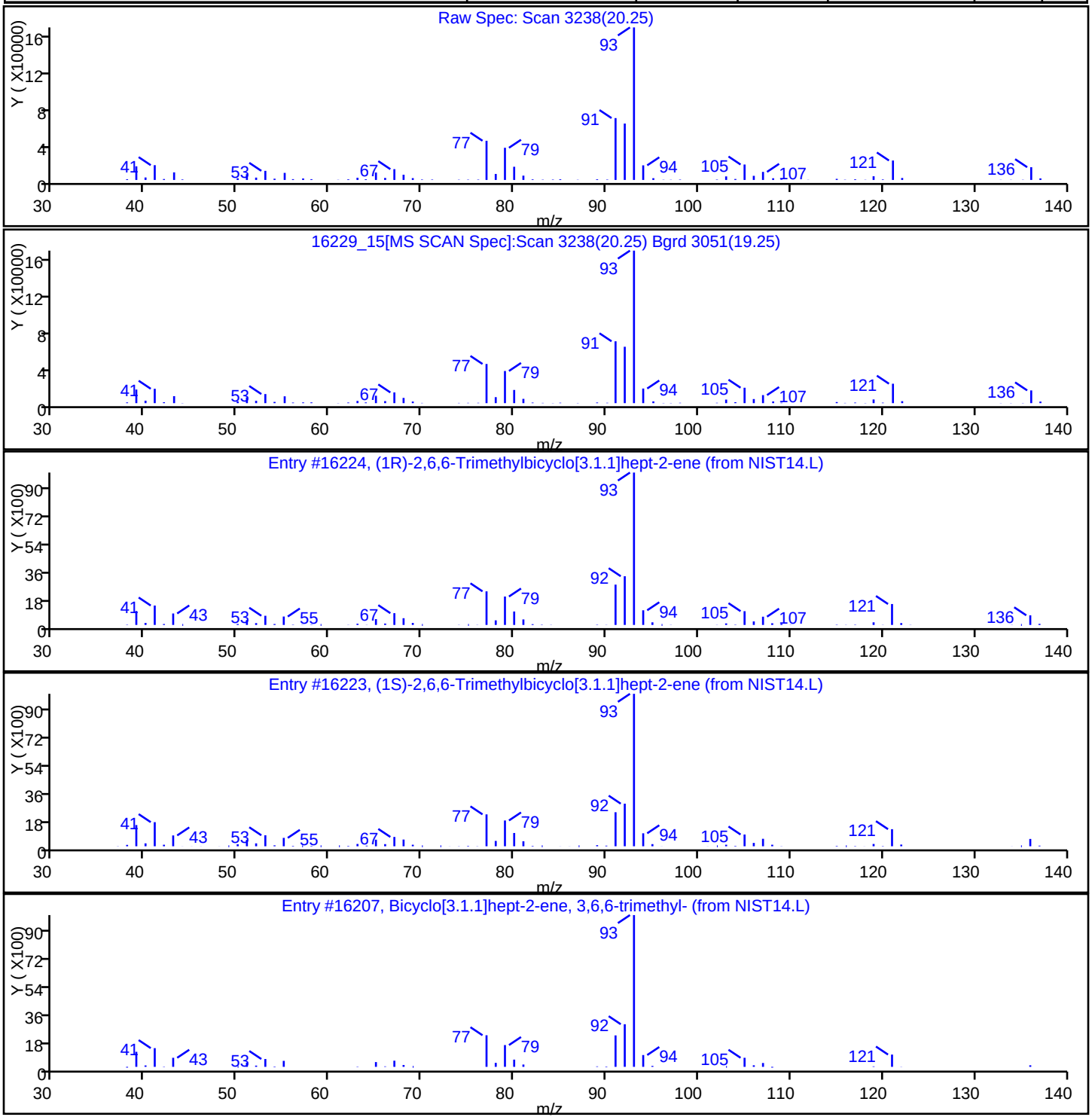
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Cyclotrisiloxane, hexamethyl-	541-05-9	NIST14.L	85992	C6H18O3Si3	222	90
Arsenous acid, tris(trimethylsilyl) este	55429-29-3	NIST14.L	199618	C9H27AsO3Si3	342	78
1H-Indole, 1-methyl-2-phenyl-	3558-24-5	NIST14.L	71659	C15H13N	207	50



TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D
Injection Date: 13-Oct-2015 20:40:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 15
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-70-8	NIST14.L	16224	C10H16	136	97
(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-26-4	NIST14.L	16223	C10H16	136	96
Bicyclo[3.1.1]hept-2-ene, 3,6,6-trimethy	4889-83-2	NIST14.L	16207	C10H16	136	94



Report Date: 14-Oct-2015 07:54:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D

Injection Date: 13-Oct-2015 20:40:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3

Client ID: SV-3

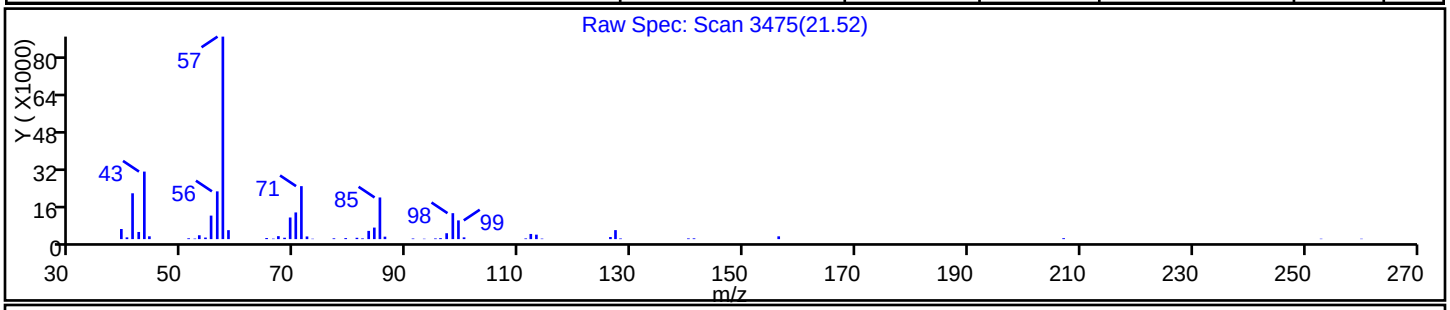
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 15

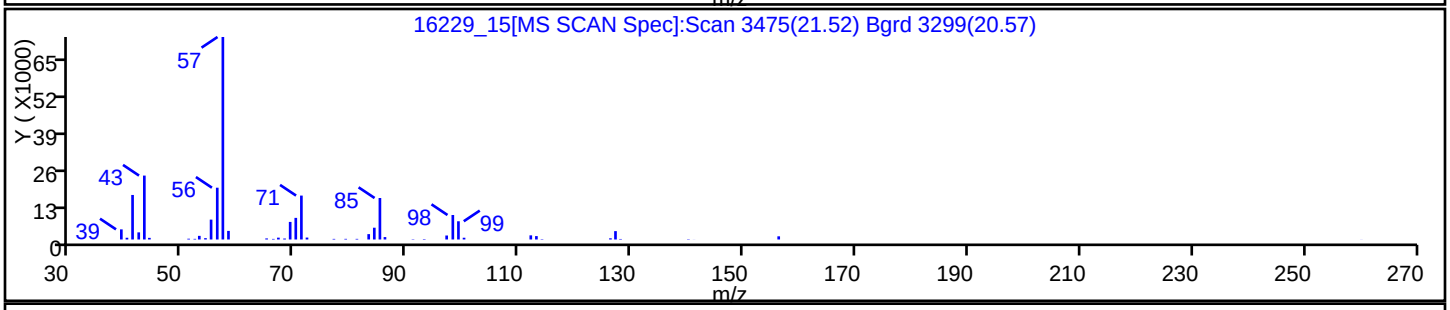
Purge Vol: 200.000 mL Dil. Factor: 3.0000

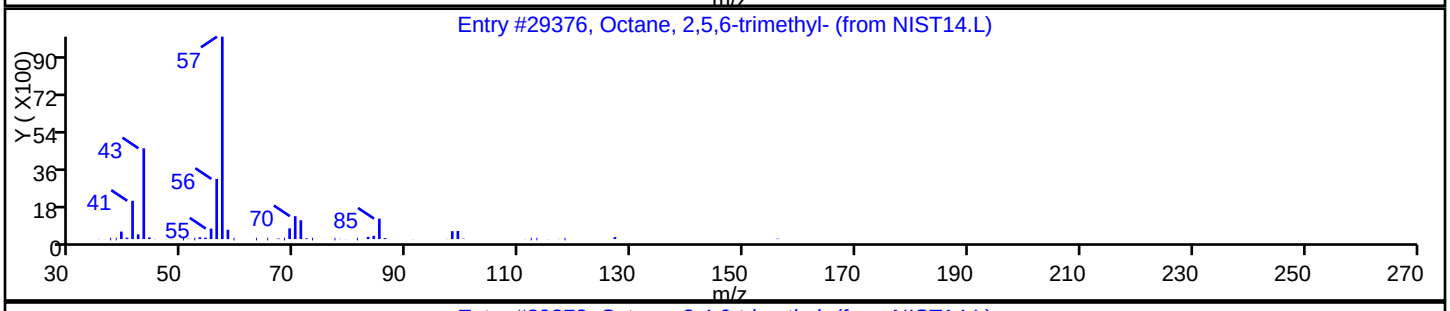
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

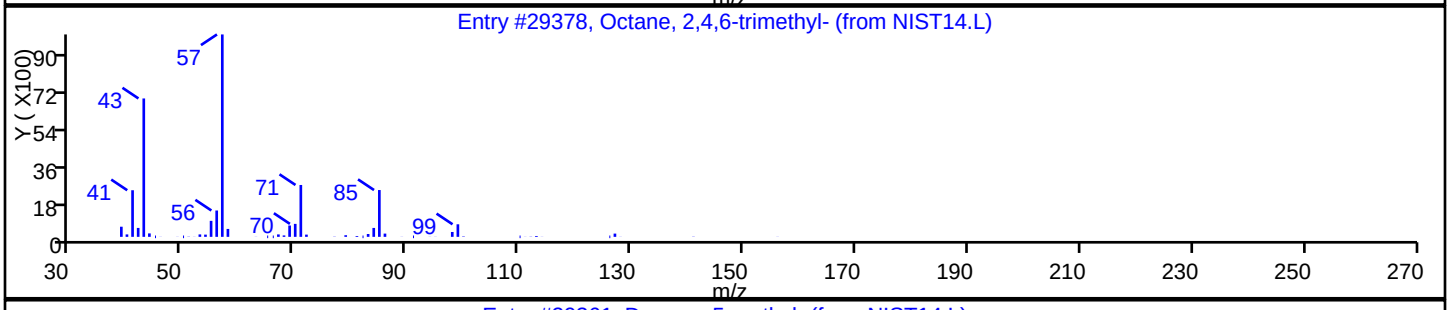
Column: Detector MS SCAN

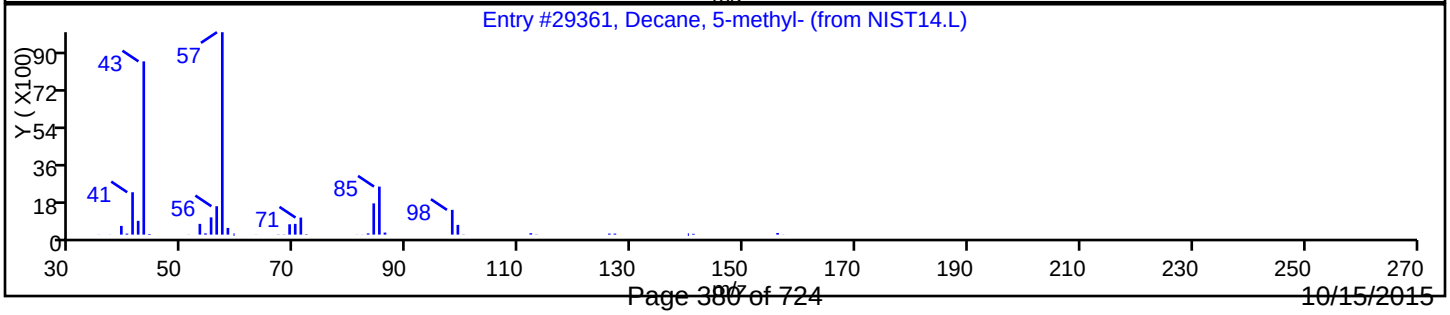
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Octane, 2,5,6-trimethyl-	62016-14-2	NIST14.L	29376	C11H24	156	64
Octane, 2,4,6-trimethyl-	62016-37-9	NIST14.L	29378	C11H24	156	59
Decane, 5-methyl-	13151-35-4	NIST14.L	29361	C11H24	156	52







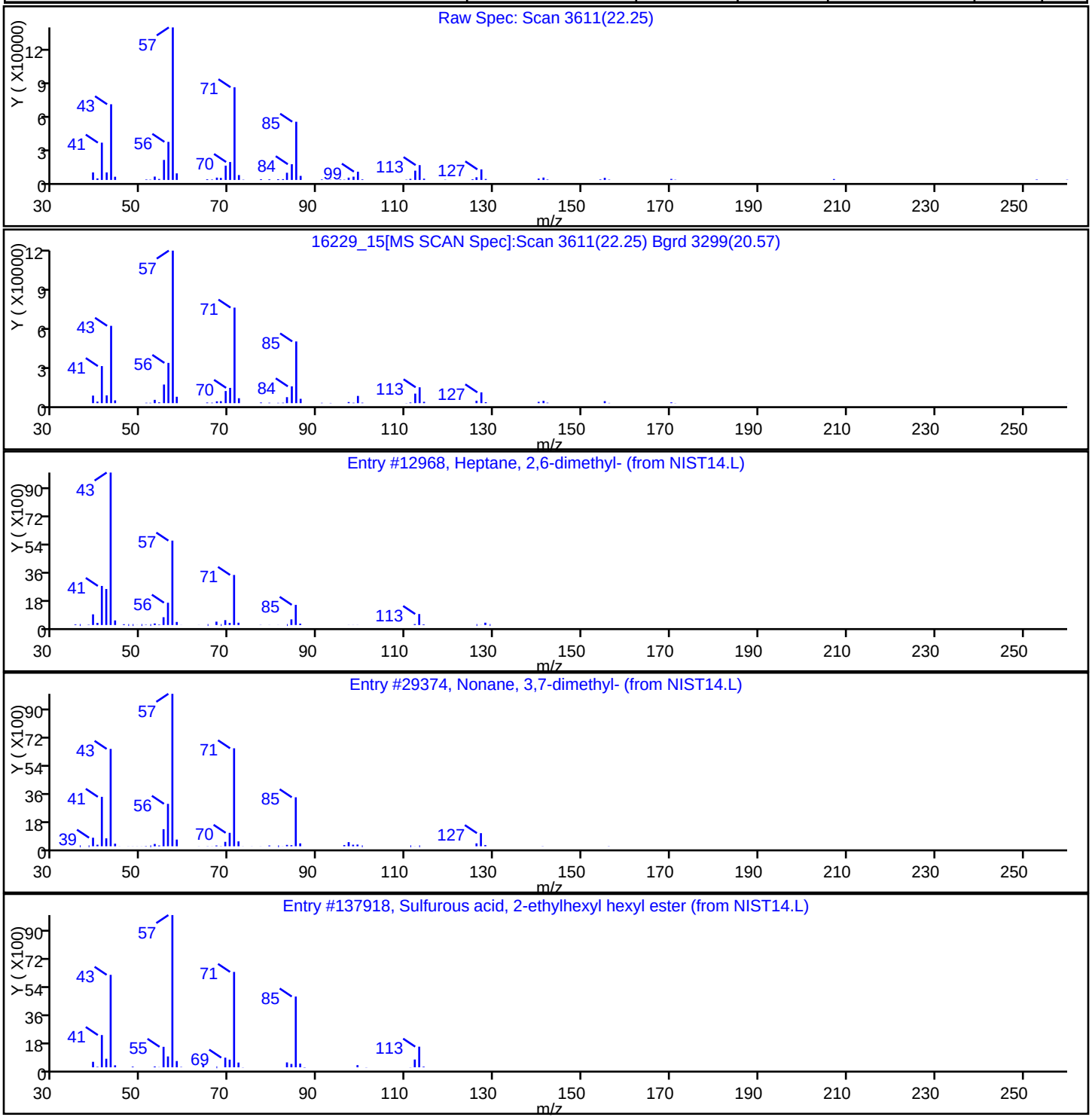




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D
Injection Date: 13-Oct-2015 20:40:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 15
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Heptane, 2,6-dimethyl-	1072-05-5	NIST14.L	12968	C9H20	128	87
Nonane, 3,7-dimethyl-	17302-32-8	NIST14.L	29374	C11H24	156	70
Sulfurous acid, 2-ethylhexyl hexyl ester	1000309-20-2	NIST14.L	137918	C14H30O3S	278	64



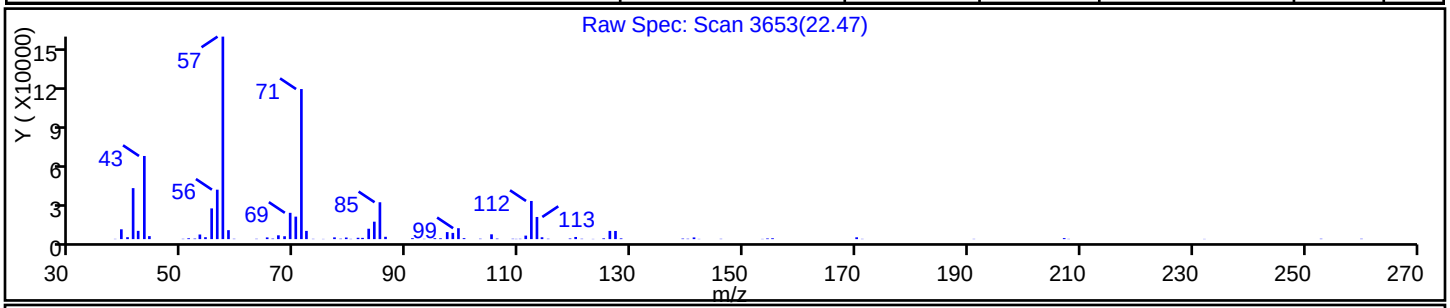
Report Date: 14-Oct-2015 07:54:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

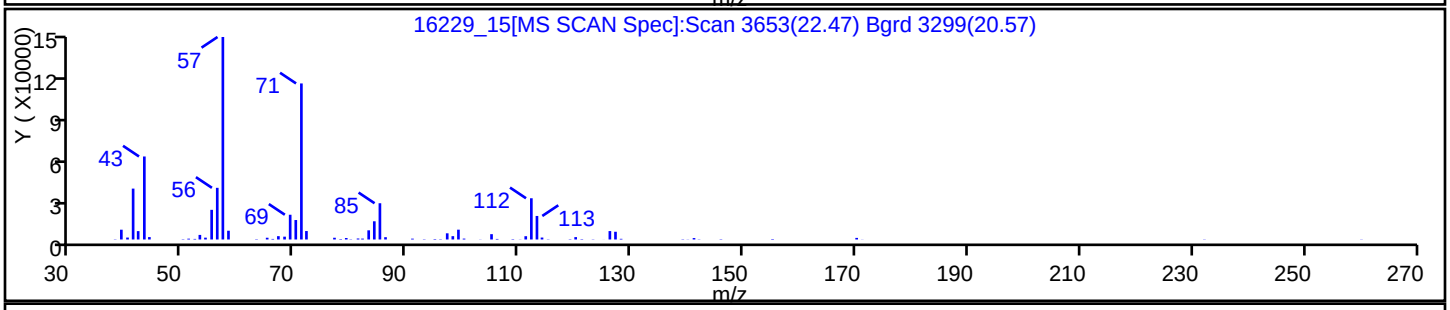
TestAmerica Burlington

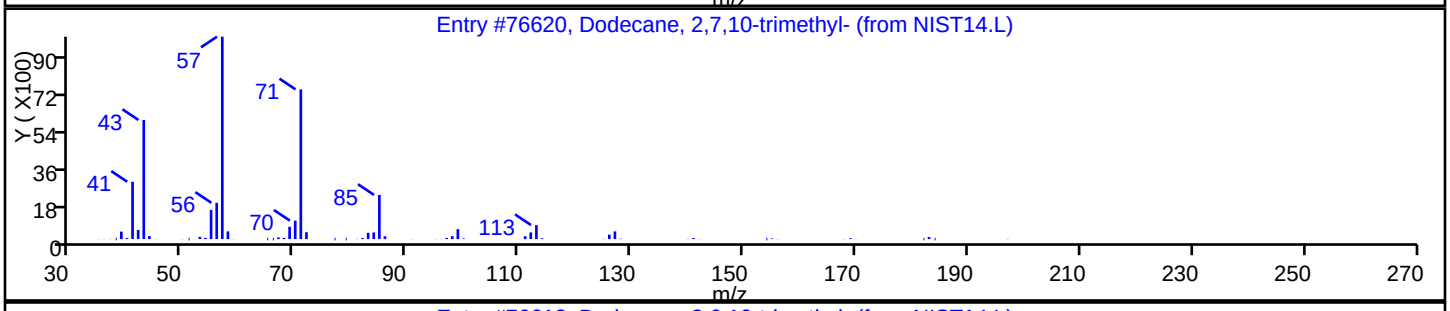
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D

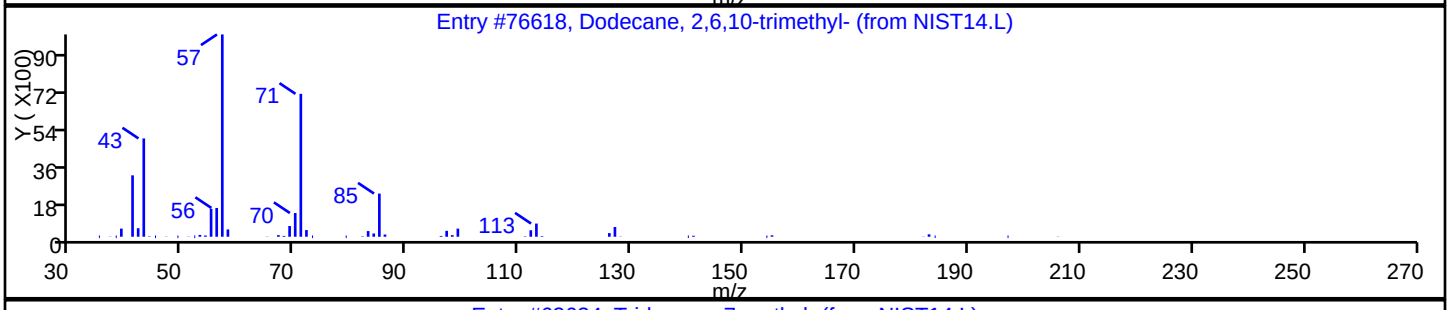
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:		Detector	MS SCAN		

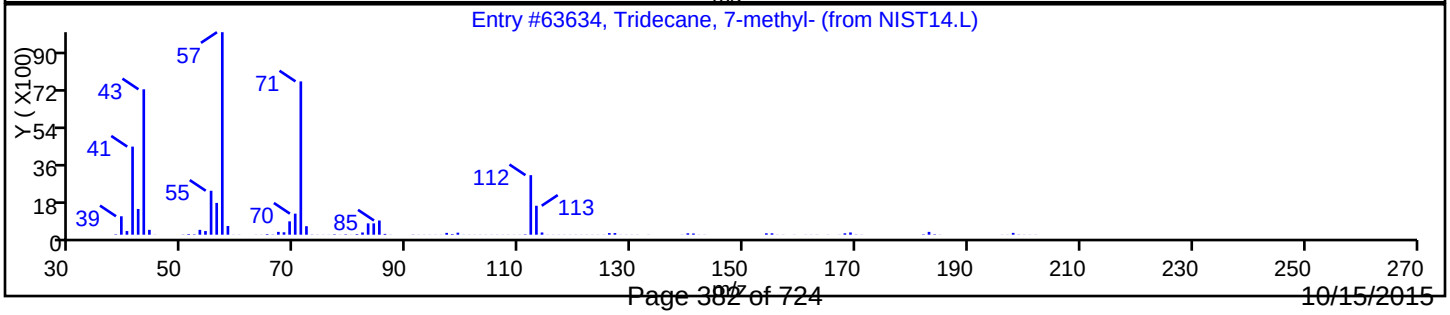
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Dodecane, 2,7,10-trimethyl-	74645-98-0	NIST14.L	76620	C15H32	212	64
Dodecane, 2,6,10-trimethyl-	3891-98-3	NIST14.L	76618	C15H32	212	64
Tridecane, 7-methyl-	26730-14-3	NIST14.L	63634	C14H30	198	64











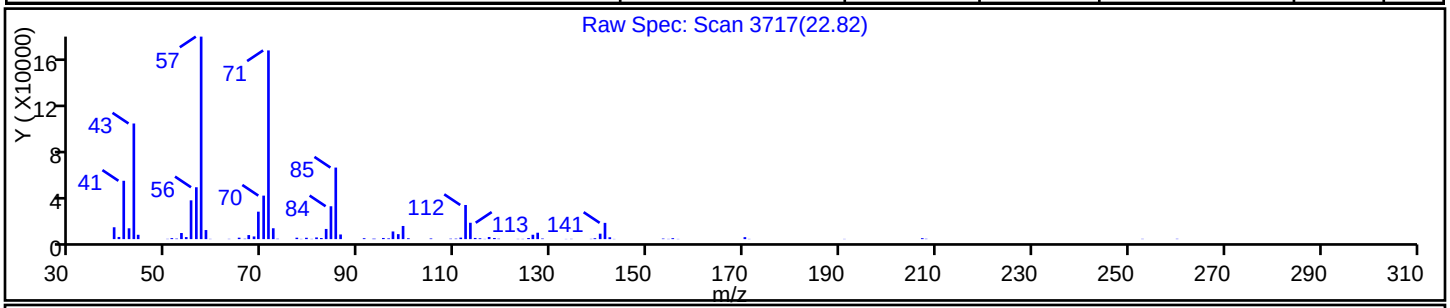
Report Date: 14-Oct-2015 07:54:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

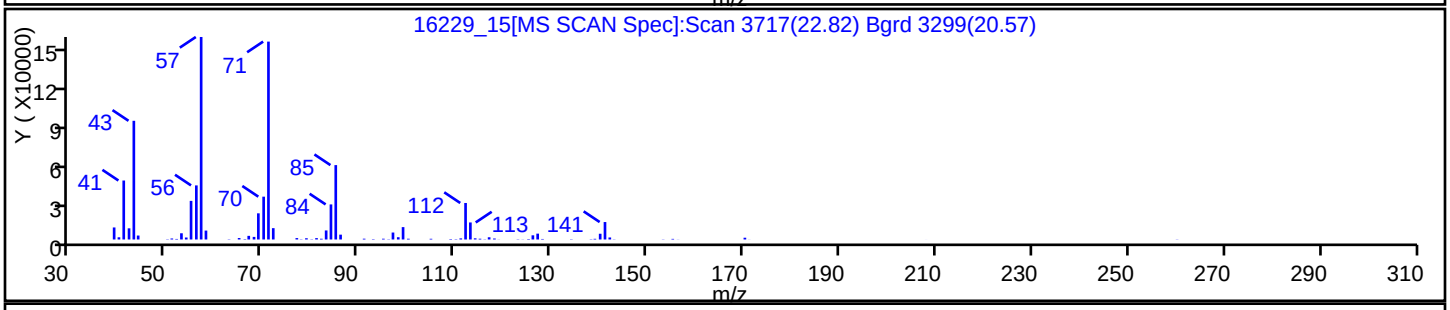
TestAmerica Burlington

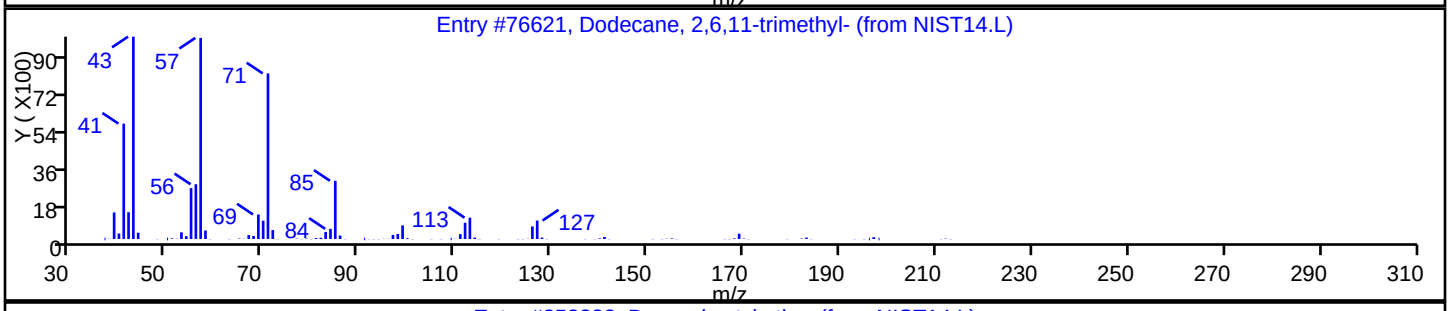
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D

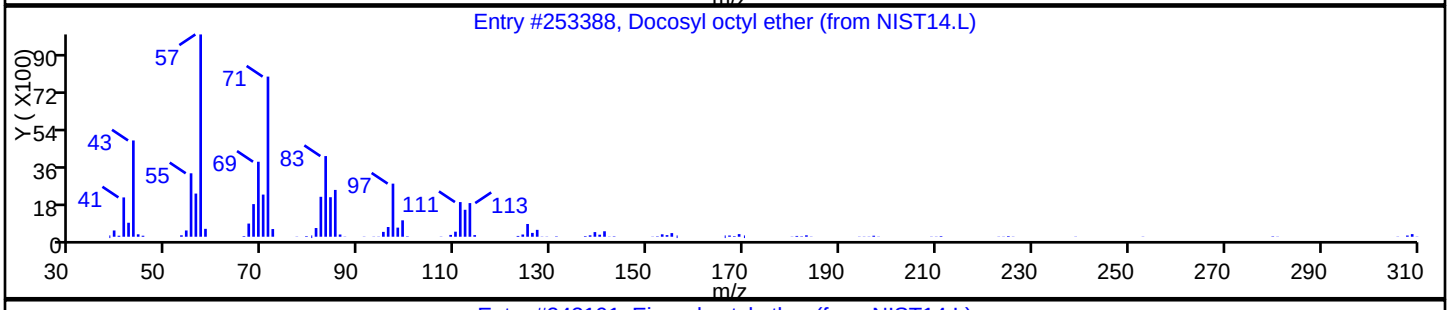
Injection Date:	13-Oct-2015 20:40:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:		Detector	MS SCAN		

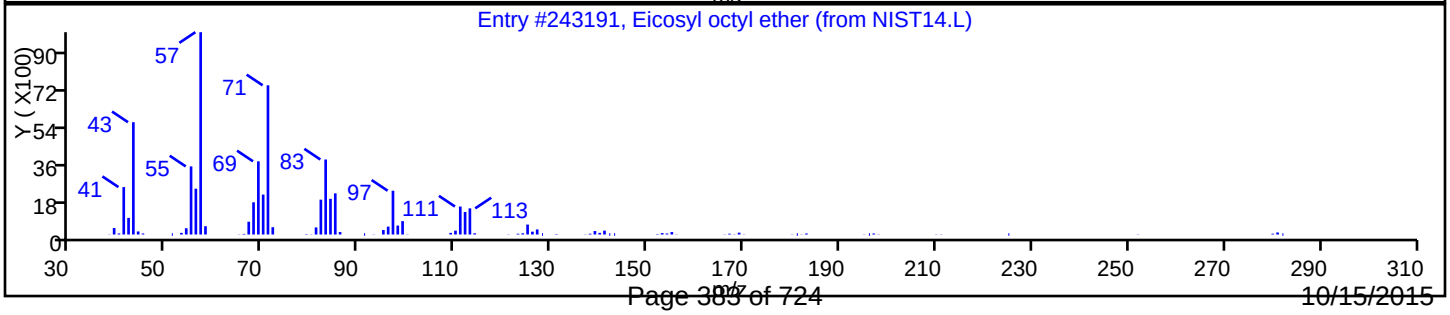
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Dodecane, 2,6,11-trimethyl-	31295-56-4	NIST14.L	76621	C15H32	212	80
Docosyl octyl ether	1000406-38-9	NIST14.L	253388	C30H62O	438	78
Eicosyl octyl ether	1000406-38-8	NIST14.L	243191	C28H58O	410	78











Report Date: 14-Oct-2015 07:54:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D

Injection Date: 13-Oct-2015 20:40:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3

Client ID: SV-3

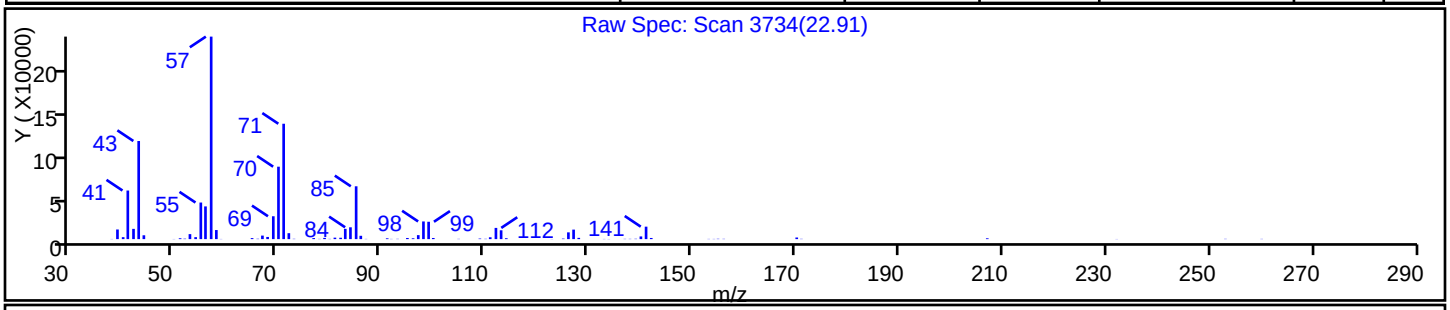
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 15

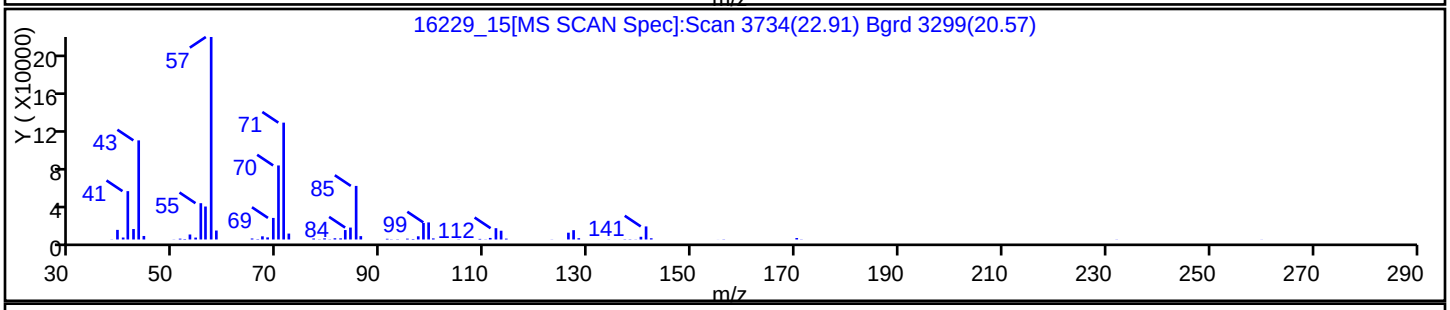
Purge Vol: 200.000 mL Dil. Factor: 3.0000

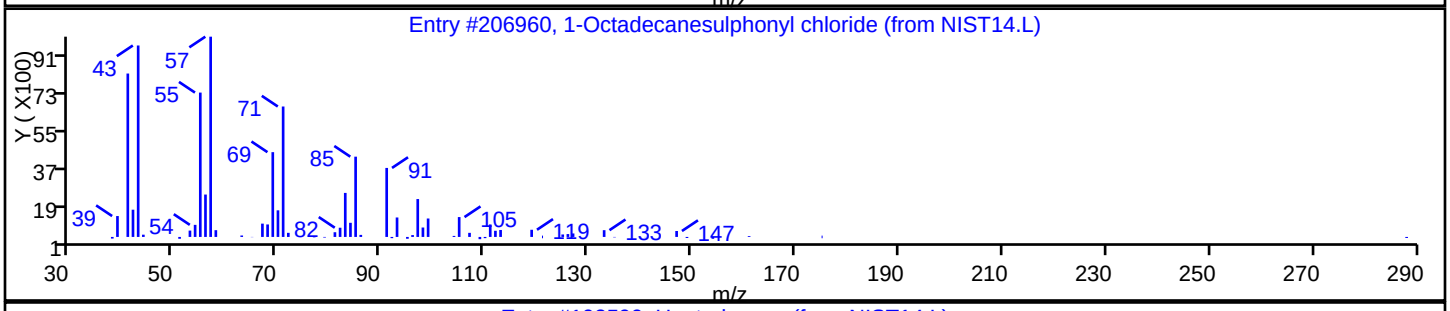
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

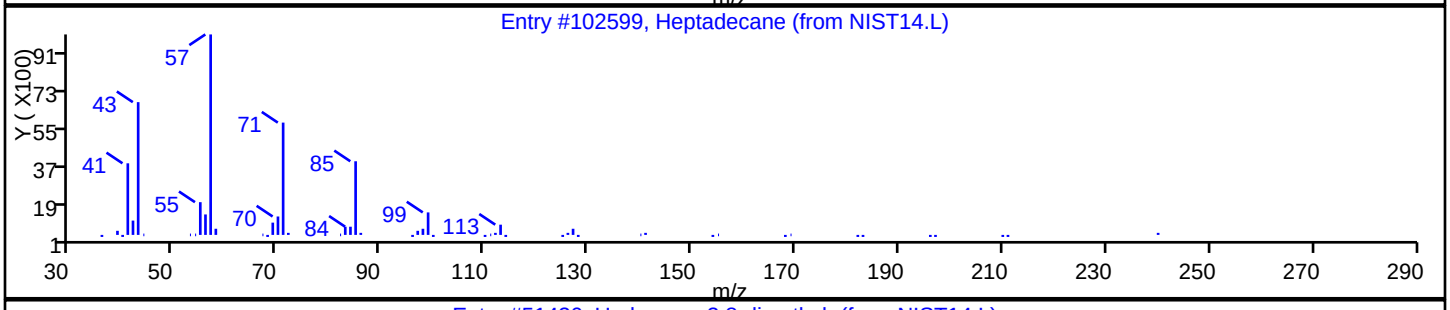
Column: Detector MS SCAN

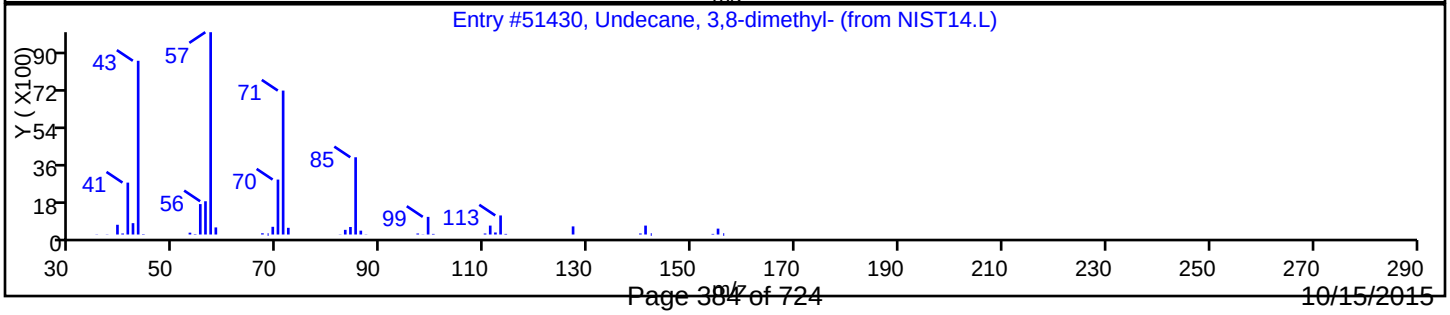
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
1-Octadecanesulphonyl chloride	1000342-70-4	NIST14.L	206960	C18H37ClO2S	352	64
Heptadecane	629-78-7	NIST14.L	102599	C17H36	240	64
Undecane, 3,8-dimethyl-	17301-30-3	NIST14.L	51430	C13H28	184	59







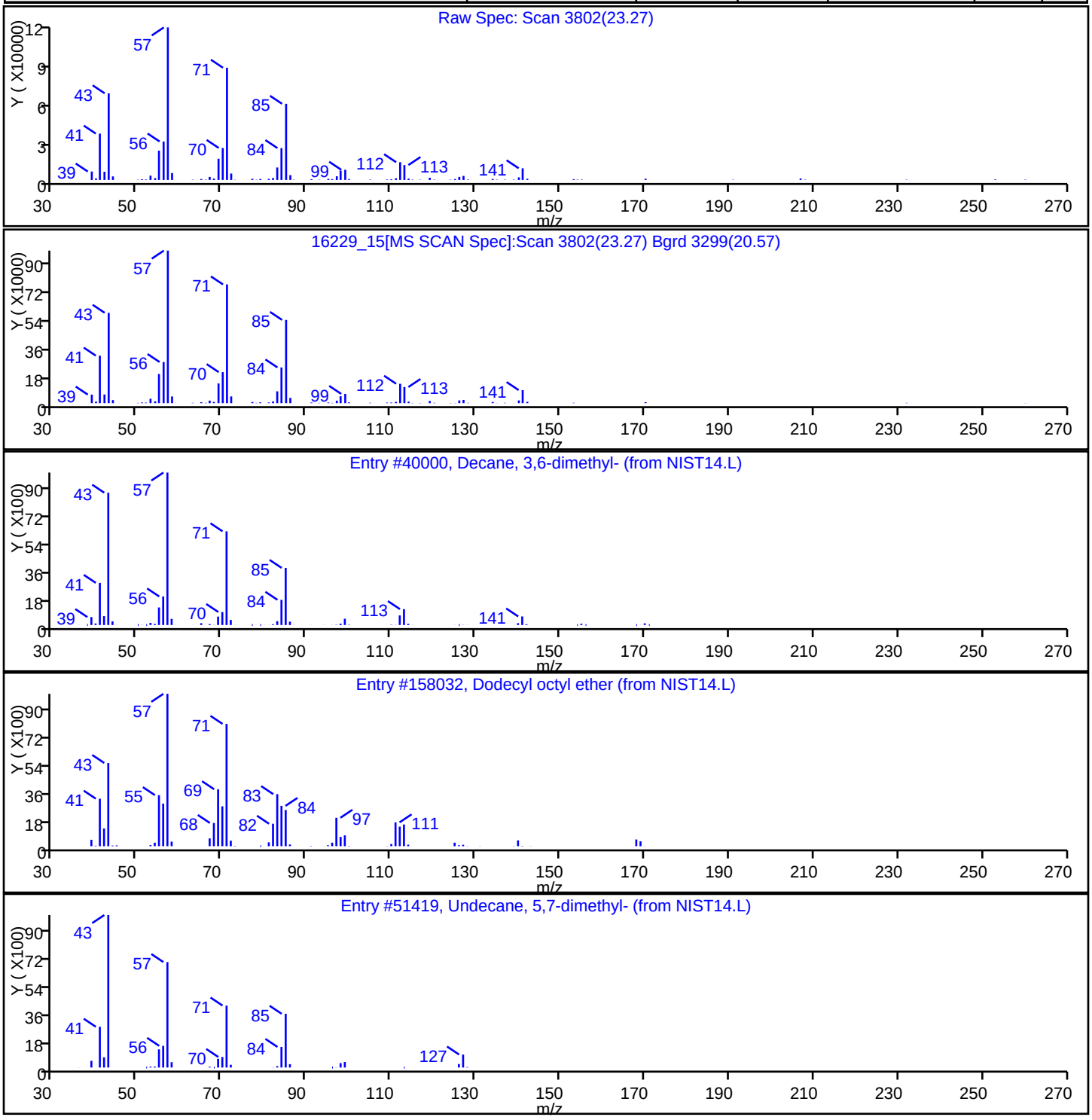




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_15.D
Injection Date: 13-Oct-2015 20:40:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 15
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Decane, 3,6-dimethyl-	17312-53-7	NIST14.L	40000	C12H26	170	93
Dodecyl octyl ether	1000406-38-4	NIST14.L	158032	C20H42O	298	72
Undecane, 5,7-dimethyl-	17312-83-3	NIST14.L	51419	C13H28	184	72



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 DL | Lab Sample ID: 200-30148-3 DL

Matrix: Air | Lab File ID: 16229_16.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 13:48

Sample wt/vol: 20(mL) | Date Analyzed: 10/13/2015 21:29

Soil Aliquot Vol: | Dilution Factor: 30

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	15	U	15	
75-45-6	Freon 22	86.47	15	U	15	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	6.0	U	6.0	
74-87-3	Chloromethane	50.49	15	U	15	
106-97-8	n-Butane	58.12	15	U	15	
75-01-4	Vinyl chloride	62.50	6.0	U	6.0	
106-99-0	1,3-Butadiene	54.09	6.0	U	6.0	
74-83-9	Bromomethane	94.94	6.0	U	6.0	
75-00-3	Chloroethane	64.52	15	U	15	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	6.0	U	6.0	
75-69-4	Trichlorofluoromethane	137.37	6.0	U	6.0	
76-13-1	Freon TF	187.38	6.0	U	6.0	
75-35-4	1,1-Dichloroethene	96.94	6.0	U	6.0	
67-64-1	Acetone	58.08	540	D	150	
67-63-0	Isopropyl alcohol	60.10	150	U	150	
75-15-0	Carbon disulfide	76.14	15	U	15	
107-05-1	3-Chloropropene	76.53	15	U	15	
75-09-2	Methylene Chloride	84.93	15	U	15	
75-65-0	tert-Butyl alcohol	74.12	150	U	150	
1634-04-4	Methyl tert-butyl ether	88.15	6.0	U	6.0	
156-60-5	trans-1,2-Dichloroethene	96.94	6.0	U	6.0	
110-54-3	n-Hexane	86.17	6.0	U	6.0	
75-34-3	1,1-Dichloroethane	98.96	6.0	U	6.0	
78-93-3	Methyl Ethyl Ketone	72.11	15	U	15	
156-59-2	cis-1,2-Dichloroethene	96.94	6.0	U	6.0	
540-59-0	1,2-Dichloroethene, Total	96.94	12	U	12	
67-66-3	Chloroform	119.38	6.0	U	6.0	
109-99-9	Tetrahydrofuran	72.11	150	U	150	
71-55-6	1,1,1-Trichloroethane	133.41	6.0	U	6.0	
110-82-7	Cyclohexane	84.16	6.0	U	6.0	
56-23-5	Carbon tetrachloride	153.81	6.0	U	6.0	
540-84-1	2,2,4-Trimethylpentane	114.23	6.0	U	6.0	
71-43-2	Benzene	78.11	6.0	U	6.0	
107-06-2	1,2-Dichloroethane	98.96	6.0	U	6.0	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 DL | Lab Sample ID: 200-30148-3 DL

Matrix: Air | Lab File ID: 16229_16.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 13:48

Sample wt/vol: 20(mL) | Date Analyzed: 10/13/2015 21:29

Soil Aliquot Vol: | Dilution Factor: 30

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	*n-Heptane*	*100.21*	*6.0*	*U*	*6.0*	
79-01-6	*Trichloroethene*	*131.39*	*6.0*	*U*	*6.0*	
80-62-6	*Methyl methacrylate*	*100.12*	*15*	*U*	*15*	
78-87-5	*1,2-Dichloropropane*	*112.99*	*6.0*	*U*	*6.0*	
123-91-1	*1,4-Dioxane*	*88.11*	*150*	*U*	*150*	
75-27-4	*Bromodichloromethane*	*163.83*	*6.0*	*U*	*6.0*	
10061-01-5	*cis-1,3-Dichloropropene*	*110.97*	*6.0*	*U*	*6.0*	
108-10-1	*methyl isobutyl ketone*	*100.16*	*15*	*U*	*15*	
108-88-3	*Toluene*	*92.14*	*6.0*	*U*	*6.0*	
10061-02-6	*trans-1,3-Dichloropropene*	*110.97*	*6.0*	*U*	*6.0*	
79-00-5	*1,1,2-Trichloroethane*	*133.41*	*6.0*	*U*	*6.0*	
127-18-4	*Tetrachloroethene*	*165.83*	*6.0*	*U*	*6.0*	
591-78-6	*Methyl Butyl Ketone (2-Hexanone)*	*100.20*	*15*	*U*	*15*	
124-48-1	*Dibromochloromethane*	*208.29*	*6.0*	*U*	*6.0*	
106-93-4	*1,2-Dibromoethane*	*187.87*	*6.0*	*U*	*6.0*	
108-90-7	*Chlorobenzene*	*112.56*	*6.0*	*U*	*6.0*	
100-41-4	*Ethylbenzene*	*106.17*	*6.0*	*U*	*6.0*	
179601-23-1	*m,p-Xylene*	*106.17*	*15*	*U*	*15*	
95-47-6	*Xylene, o-*	*106.17*	*6.0*	*U*	*6.0*	
1330-20-7	*Xylene (total)*	*106.17*	*21*	*U*	*21*	
100-42-5	*Styrene*	*104.15*	*6.0*	*U*	*6.0*	
75-25-2	*Bromoform*	*252.75*	*6.0*	*U*	*6.0*	
98-82-8	*Cumene*	*120.19*	*6.0*	*U*	*6.0*	
79-34-5	*1,1,2,2-Tetrachloroethane*	*167.85*	*6.0*	*U*	*6.0*	
103-65-1	*n-Propylbenzene*	*120.19*	*6.0*	*U*	*6.0*	
622-96-8	*4-Ethyltoluene*	*120.20*	*6.0*	*U*	*6.0*	
108-67-8	*1,3,5-Trimethylbenzene*	*120.20*	*6.0*	*U*	*6.0*	
95-49-8	*2-Chlorotoluene*	*126.59*	*6.0*	*U*	*6.0*	
98-06-6	*tert-Butylbenzene*	*134.22*	*6.0*	*U*	*6.0*	
95-63-6	*1,2,4-Trimethylbenzene*	*120.20*	*6.0*	*U*	*6.0*	
135-98-8	*sec-Butylbenzene*	*134.22*	*6.0*	*U*	*6.0*	
99-87-6	*4-Isopropyltoluene*	*134.22*	*6.0*	*U*	*6.0*	
541-73-1	*1,3-Dichlorobenzene*	*147.00*	*6.0*	*U*	*6.0*	
106-46-7	*1,4-Dichlorobenzene*	*147.00*	*6.0*	*U*	*6.0*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 DL Lab Sample ID: 200-30148-3 DL

Matrix: Air Lab File ID: 16229_16.D

Analysis Method: TO-15 Date Collected: 10/05/2015 13:48

Sample wt/vol: 20(mL) Date Analyzed: 10/13/2015 21:29

Soil Aliquot Vol: Dilution Factor: 30

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*6.0*	*U*	*6.0*	
104-51-8	*n-Butylbenzene*	*134.22*	*6.0*	*U*	*6.0*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*6.0*	*U*	*6.0*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*15*	*U*	*15*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*6.0*	*U*	*6.0*	
91-20-3	*Naphthalene*	*128.17*	*15*	*U*	*15*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 DL | Lab Sample ID: 200-30148-3 DL

Matrix: Air | Lab File ID: 16229_16.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 13:48

Sample wt/vol: 20(mL) | Date Analyzed: 10/13/2015 21:29

Soil Aliquot Vol: | Dilution Factor: 30

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	74	U	74	
75-45-6	Freon 22	86.47	53	U	53	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	42	U	42	
74-87-3	Chloromethane	50.49	31	U	31	
106-97-8	n-Butane	58.12	36	U	36	
75-01-4	Vinyl chloride	62.50	15	U	15	
106-99-0	1,3-Butadiene	54.09	13	U	13	
74-83-9	Bromomethane	94.94	23	U	23	
75-00-3	Chloroethane	64.52	40	U	40	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	26	U	26	
75-69-4	Trichlorofluoromethane	137.37	34	U	34	
76-13-1	Freon TF	187.38	46	U	46	
75-35-4	1,1-Dichloroethene	96.94	24	U	24	
67-64-1	Acetone	58.08	1300	D	360	
67-63-0	Isopropyl alcohol	60.10	370	U	370	
75-15-0	Carbon disulfide	76.14	47	U	47	
107-05-1	3-Chloropropene	76.53	47	U	47	
75-09-2	Methylene Chloride	84.93	52	U	52	
75-65-0	tert-Butyl alcohol	74.12	450	U	450	
1634-04-4	Methyl tert-butyl ether	88.15	22	U	22	
156-60-5	trans-1,2-Dichloroethene	96.94	24	U	24	
110-54-3	n-Hexane	86.17	21	U	21	
75-34-3	1,1-Dichloroethane	98.96	24	U	24	
78-93-3	Methyl Ethyl Ketone	72.11	44	U	44	
156-59-2	cis-1,2-Dichloroethene	96.94	24	U	24	
540-59-0	1,2-Dichloroethene, Total	96.94	48	U	48	
67-66-3	Chloroform	119.38	29	U	29	
109-99-9	Tetrahydrofuran	72.11	440	U	440	
71-55-6	1,1,1-Trichloroethane	133.41	33	U	33	
110-82-7	Cyclohexane	84.16	21	U	21	
56-23-5	Carbon tetrachloride	153.81	38	U	38	
540-84-1	2,2,4-Trimethylpentane	114.23	28	U	28	
71-43-2	Benzene	78.11	19	U	19	
107-06-2	1,2-Dichloroethane	98.96	24	U	24	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 DL | Lab Sample ID: 200-30148-3 DL

Matrix: Air | Lab File ID: 16229_16.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 13:48

Sample wt/vol: 20(mL) | Date Analyzed: 10/13/2015 21:29

Soil Aliquot Vol: | Dilution Factor: 30

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	25	U	25	
79-01-6	Trichloroethene	131.39	32	U	32	
80-62-6	Methyl methacrylate	100.12	61	U	61	
78-87-5	1,2-Dichloropropane	112.99	28	U	28	
123-91-1	1,4-Dioxane	88.11	540	U	540	
75-27-4	Bromodichloromethane	163.83	40	U	40	
10061-01-5	cis-1,3-Dichloropropene	110.97	27	U	27	
108-10-1	methyl isobutyl ketone	100.16	61	U	61	
108-88-3	Toluene	92.14	23	U	23	
10061-02-6	trans-1,3-Dichloropropene	110.97	27	U	27	
79-00-5	1,1,2-Trichloroethane	133.41	33	U	33	
127-18-4	Tetrachloroethene	165.83	41	U	41	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	61	U	61	
124-48-1	Dibromochloromethane	208.29	51	U	51	
106-93-4	1,2-Dibromoethane	187.87	46	U	46	
108-90-7	Chlorobenzene	112.56	28	U	28	
100-41-4	Ethylbenzene	106.17	26	U	26	
179601-23-1	m,p-Xylene	106.17	65	U	65	
95-47-6	Xylene, o-	106.17	26	U	26	
1330-20-7	Xylene (total)	106.17	91	U	91	
100-42-5	Styrene	104.15	26	U	26	
75-25-2	Bromoform	252.75	62	U	62	
98-82-8	Cumene	120.19	29	U	29	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	41	U	41	
103-65-1	n-Propylbenzene	120.19	29	U	29	
622-96-8	4-Ethyltoluene	120.20	29	U	29	
108-67-8	1,3,5-Trimethylbenzene	120.20	29	U	29	
95-49-8	2-Chlorotoluene	126.59	31	U	31	
98-06-6	tert-Butylbenzene	134.22	33	U	33	
95-63-6	1,2,4-Trimethylbenzene	120.20	29	U	29	
135-98-8	sec-Butylbenzene	134.22	33	U	33	
99-87-6	4-Isopropyltoluene	134.22	33	U	33	
541-73-1	1,3-Dichlorobenzene	147.00	36	U	36	
106-46-7	1,4-Dichlorobenzene	147.00	36	U	36	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 DL Lab Sample ID: 200-30148-3 DL

Matrix: Air Lab File ID: 16229_16.D

Analysis Method: TO-15 Date Collected: 10/05/2015 13:48

Sample wt/vol: 20(mL) Date Analyzed: 10/13/2015 21:29

Soil Aliquot Vol: Dilution Factor: 30

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*31*	*U*	*31*	
104-51-8	*n-Butylbenzene*	*134.22*	*33*	*U*	*33*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*36*	*U*	*36*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*110*	*U*	*110*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*64*	*U*	*64*	
91-20-3	*Naphthalene*	*128.17*	*79*	*U*	*79*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-3 DL Lab Sample ID: 200-30148-3 DL

Matrix: Air Lab File ID: 16229_16.D

Analysis Method: TO-15 Date Collected: 10/05/2015 13:48

Sample wt/vol: 20(mL) Date Analyzed: 10/13/2015 21:29

Soil Aliquot Vol: Dilution Factor: 30

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 2 TIC Result Total: 119

CAS NO.	COMPOUND NAME	RT	RESULT	Q
3387-41-5	Bicyclo[3.1.0]hexane, 4-methylene-1-(1-m	21.24	50	D J N
127-91-3	.beta.-Pinene	21.38	69	D J N

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_16.D
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Sample Type: Client
Inject. Date: 13-Oct-2015 21:29:30 ALS Bottle#: 11 Worklist Smp#: 16
Purge Vol: 200.000 mL Dil. Factor: 30.0000
Sample Info: 200-0016229-016
Misc. Info.: 30148-3
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 07:56:46 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 07:56:46

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85		3.177				ND	
3 Chlorodifluoromethane	51		3.231				ND	
4 1,2-Dichloro-1,1,2,2-tetra	85		3.445				ND	
5 Chloromethane	50		3.579				ND	
6 Butane	43		3.777				ND	
7 Vinyl chloride	62		3.819				ND	
8 Butadiene	54		3.894				ND	
9 Bromomethane	94		4.563				ND	
10 Chloroethane	64		4.793				ND	
12 Vinyl bromide	106		5.167				ND	
13 Trichlorofluoromethane	101		5.264				ND	
18 1,1,2-Trichloro-1,2,2-trif	101		6.307				ND	
20 1,1-Dichloroethene	96		6.355				ND	
21 Acetone	43	6.644	6.623	0.021	88	280682	18.0	
22 Carbon disulfide	76		6.751				ND	
23 Isopropyl alcohol	45		6.949				ND	
24 3-Chloro-1-propene	41		7.125				ND	
26 Methylene Chloride	49	7.425	7.414	0.011	73	1774	0.1349	
28 2-Methyl-2-propanol	59	7.923	7.735	0.188	99	10229	0.4311	
29 Methyl tert-butyl ether	73		7.837				ND	
30 trans-1,2-Dichloroethene	61		7.842				ND	
32 Hexane	57		8.211				ND	
33 1,1-Dichloroethane	63		8.714				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.993	9.881	0.112	96	2226	0.2685	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.282	10.287	-0.005	74	178464	10.0	
39 Tetrahydrofuran	42		10.314				ND	
41 Chloroform	83		10.416				ND	
42 Cyclohexane	84		10.656				ND	
43 1,1,1-Trichloroethane	97		10.694				ND	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	44 Carbon tetrachloride	117		10.934				ND	
	45 Isooctane	57		11.373				ND	
	46 Benzene	78		11.416				ND	
	47 1,2-Dichloroethane	62		11.609				ND	
	48 n-Heptane	43	11.769	11.758	0.005	55	2025	0.0727	M
*	50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	91	988907	10.0	
	52 Trichloroethene	95		12.748				ND	
	53 1,2-Dichloropropane	63		13.336				ND	
	54 Methyl methacrylate	69		13.502				ND	
	55 1,4-Dioxane	88		13.588				ND	
	57 Dichlorobromomethane	83		13.909				ND	
	58 cis-1,3-Dichloropropene	75		14.872				ND	
	61 4-Methyl-2-pentanone (MIBK	43	15.268	15.198	0.070	51	3778	0.1001	
	62 Toluene	92	15.471	15.482	-0.011	93	8078	0.1582	
	67 trans-1,3-Dichloropropene	75		16.097				ND	
	68 1,1,2-Trichloroethane	83		16.487				ND	
	69 Tetrachloroethene	166		16.584				ND	
	70 2-Hexanone	43	17.023	16.958	0.064	78	1740	0.0459	
	71 Chlorodibromomethane	129		17.269				ND	
	72 Ethylene Dibromide	107		17.547				ND	
*	73 Chlorobenzene-d5	117	18.446	18.451	-0.005	81	1002758	10.0	
	74 Chlorobenzene	112		18.510				ND	
	75 Ethylbenzene	91	18.649	18.654	-0.005	93	4793	0.0435	
	77 m-Xylene & p-Xylene	106	18.895	18.906	-0.011	98	7899	0.1702	
	78 o-Xylene	106	19.719	19.719	0.000	94	3002	0.0654	
	79 Styrene	104		19.772				ND	
S	80 Xylenes, Total	106				0		0.2356	
	81 Bromoform	173		20.179				ND	
	82 Isopropylbenzene	105		20.355				ND	
	85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
	86 N-Propylbenzene	91	21.035	21.040	-0.005	98	2910	0.0191	
	89 4-Ethyltoluene	105		21.217				ND	
	90 2-Chlorotoluene	91		21.238				ND	
	91 1,3,5-Trimethylbenzene	105		21.318				ND	
	93 tert-Butylbenzene	119		21.789				ND	
	94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	6391	0.0584	
	95 sec-Butylbenzene	105		22.105				ND	
	96 4-Isopropyltoluene	119	22.297	22.297	0.000	94	3010	0.0215	
	97 1,3-Dichlorobenzene	146		22.345				ND	
	98 1,4-Dichlorobenzene	146		22.484				ND	
	99 Benzyl chloride	91		22.688				ND	
	101 n-Butylbenzene	91		22.886				ND	
	102 1,2-Dichlorobenzene	146		23.041				ND	
	104 1,2,4-Trichlorobenzene	180		25.673				ND	
	105 Hexachlorobutadiene	225		25.855				ND	
	106 Naphthalene	128		26.197				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_16.D				
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Sample Type:	Client				
Inject. Date:	13-Oct-2015 21:29:30	ALS Bottle#:	11	Worklist Smp#:	16
Purge Vol:	200.000 mL	Dil. Factor:	30.0000		
Sample Info:	200-0016229-016				
Misc. Info.:	30148-3				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	14-Oct-2015 07:56:46	Calib Date:	17-Aug-2015 23:52:30		
Tic RT Window:	0.000 -0.000	Response:	area		
Quant By:	Nearest ISTD	Quant LOD:	10.00000		
MS Library:	\\ChromNA\Burlington\Database\NIST14.L				
Min. Match:	1				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK013				
First Level Reviewer: desjardinsb		Date:	14-Oct-2015 07:56:46		

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
3387-41-5 Bicyclo[3.1.0]hexane, 4-methylene-1-(1-m								
21.243	547627	1.66	83	96	16270	C10H16	136	
127-91-3 .beta.-Pinene								
21.377	754348	2.29	83	94	16055	C10H16	136	

Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 83 4-Bromofluorobenzene	20.714	3293442	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

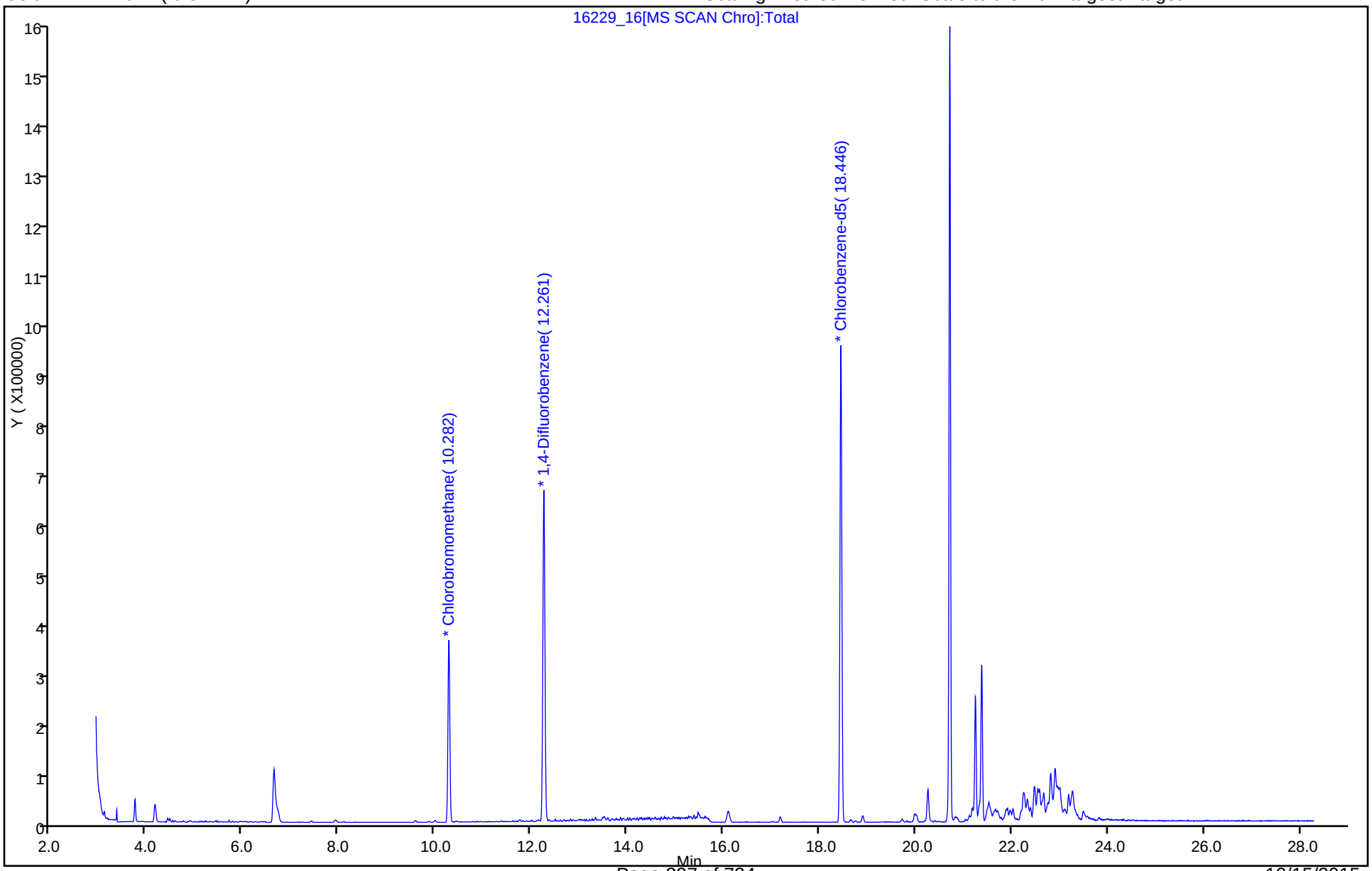
Report Date: 14-Oct-2015 07:56:46 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_16.D

Injection Date:	13-Oct-2015 21:29:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3	Worklist Smp#:	16
Client ID:	SV-3				
Purge Vol:	200.000 mL	Dil. Factor:	30.0000	ALS Bottle#:	11
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

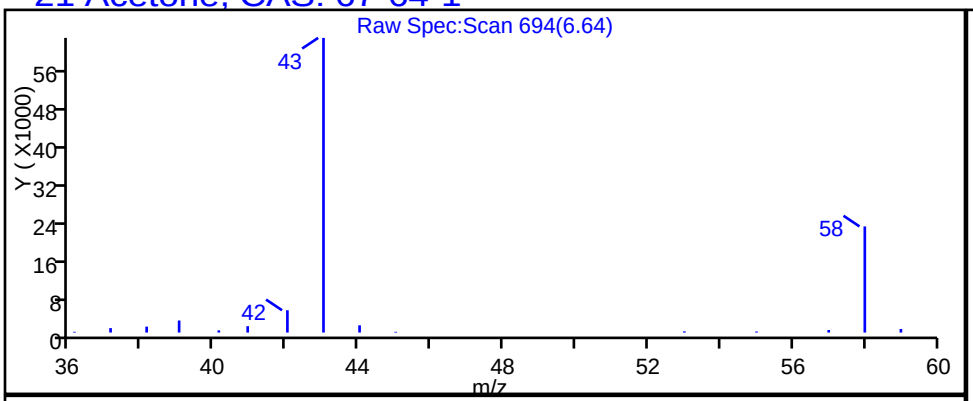
Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

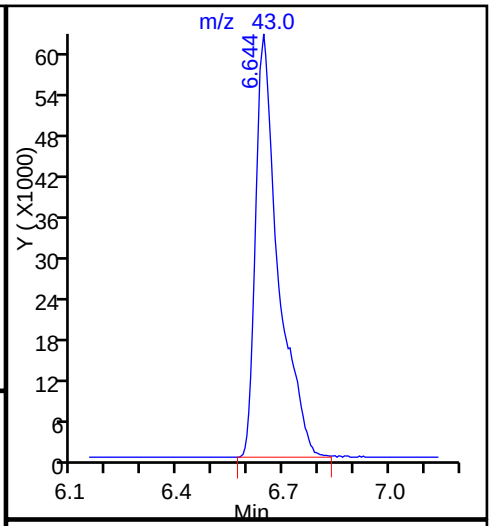


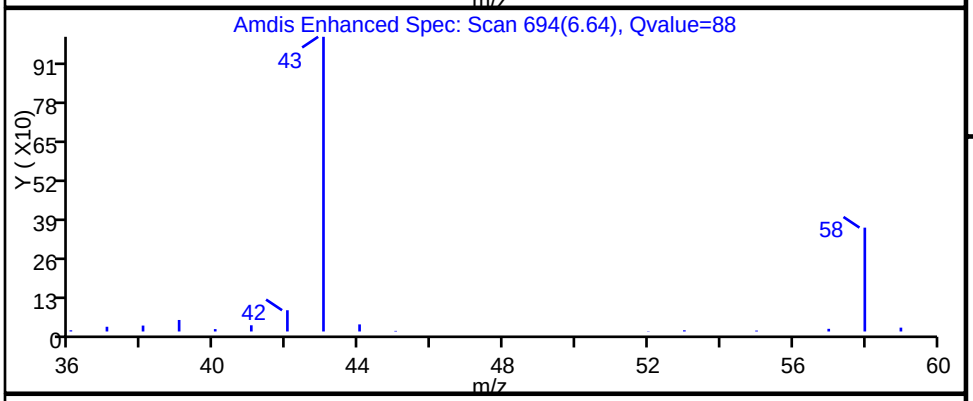
TestAmerica Burlington

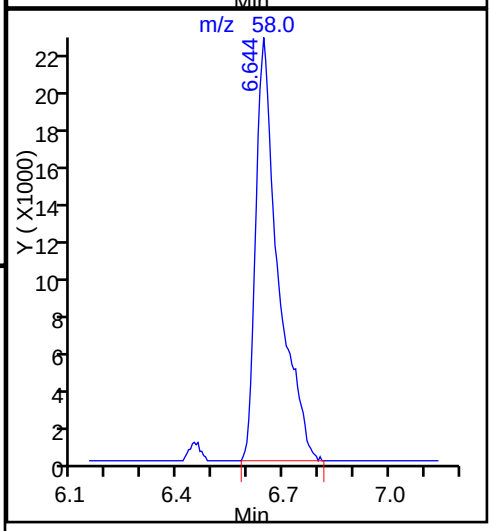
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_16.D				
Injection Date:	13-Oct-2015 21:29:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	16
Purge Vol:	200.000 mL	Dil. Factor:	30.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

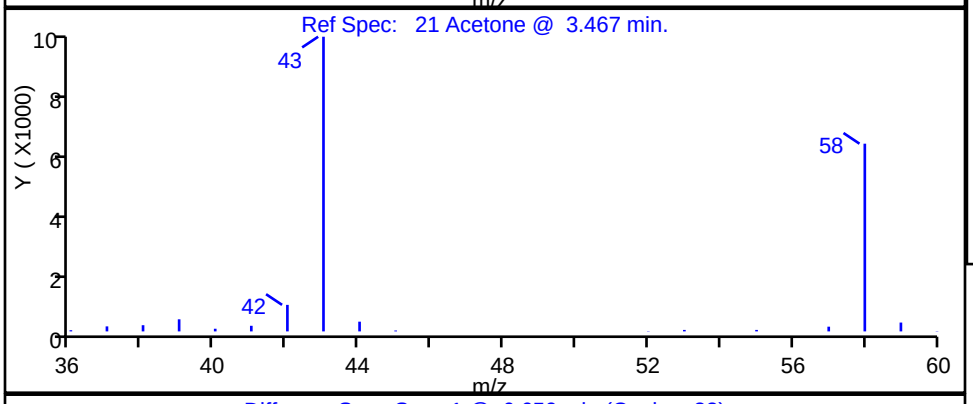
21 Acetone, CAS: 67-64-1

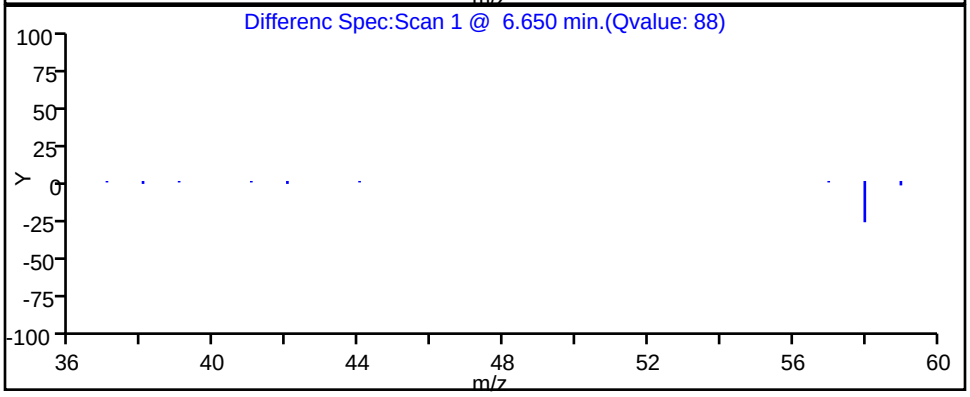












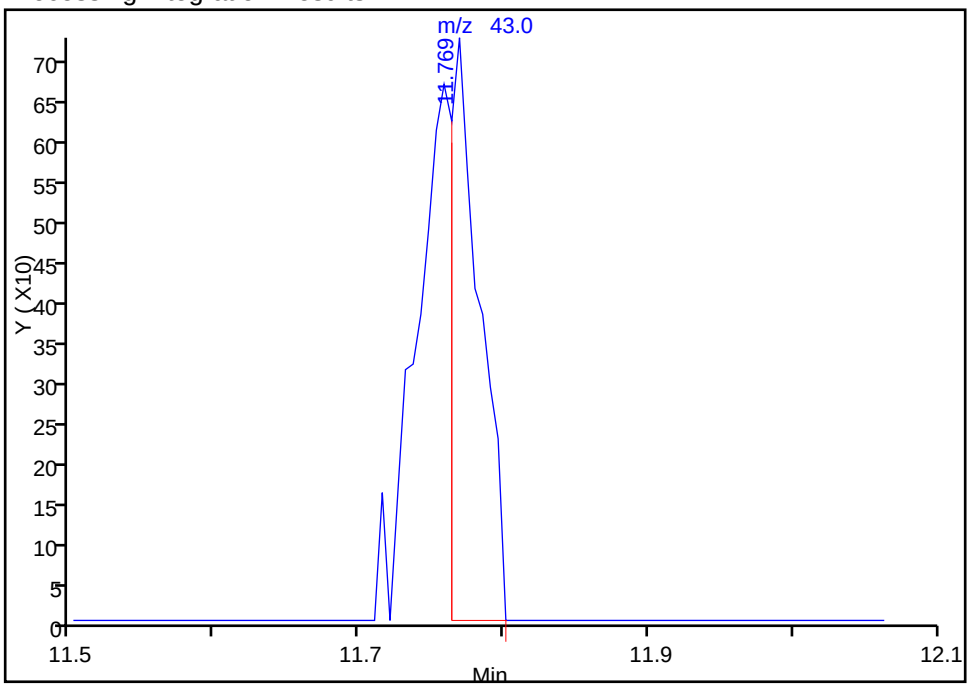
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_16.D				
Injection Date:	13-Oct-2015 21:29:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	16
Purge Vol:	200.000 mL	Dil. Factor:	30.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

48 n-Heptane, CAS: 142-82-5

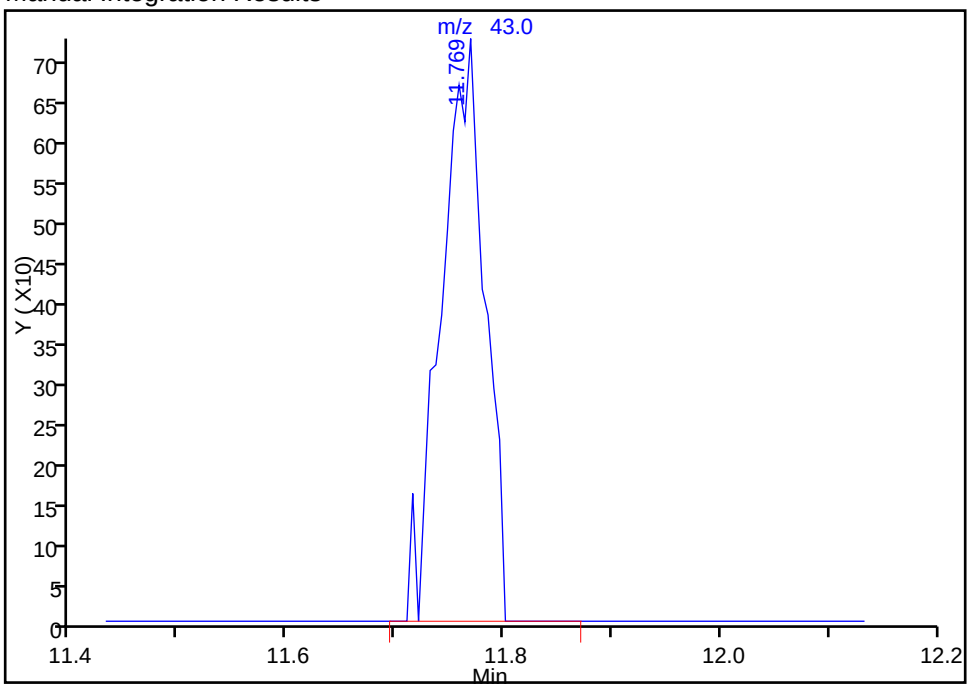
Processing Integration Results

RT: 11.77
Area: 1033
Amount: 0.037078
Amount Units: ppb v/v



Manual Integration Results

RT: 11.77
Area: 2025
Amount: 0.072685
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 07:56:46
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

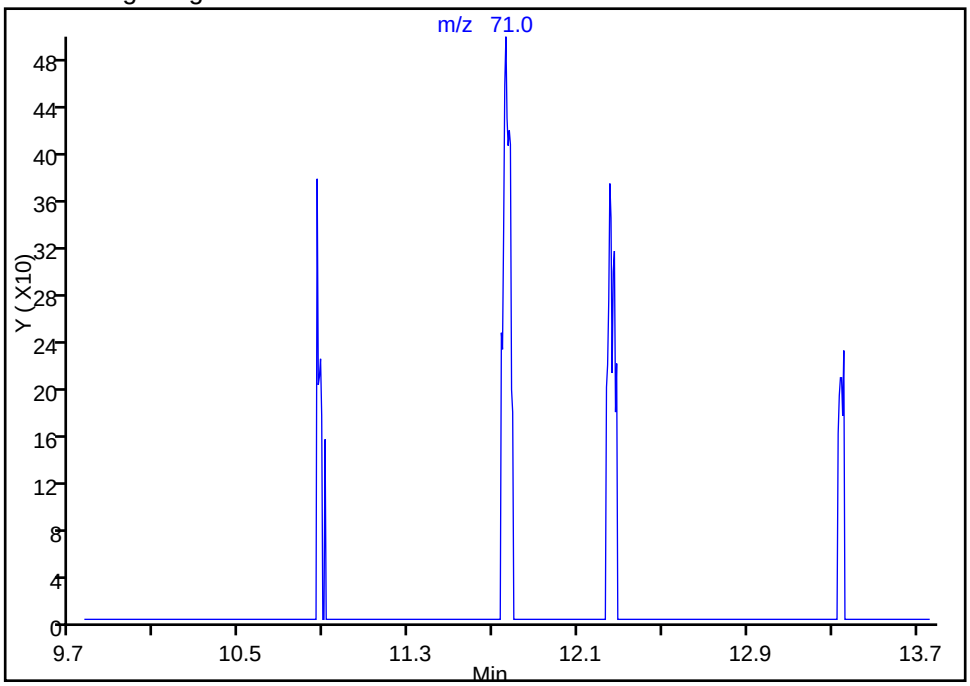
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_16.D				
Injection Date:	13-Oct-2015 21:29:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-3	Lab Sample ID:	200-30148-3		
Client ID:	SV-3				
Operator ID:	wrd	ALS Bottle#:	11	Worklist Smp#:	16
Purge Vol:	200.000 mL	Dil. Factor:	30.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

48 n-Heptane, CAS: 142-82-5

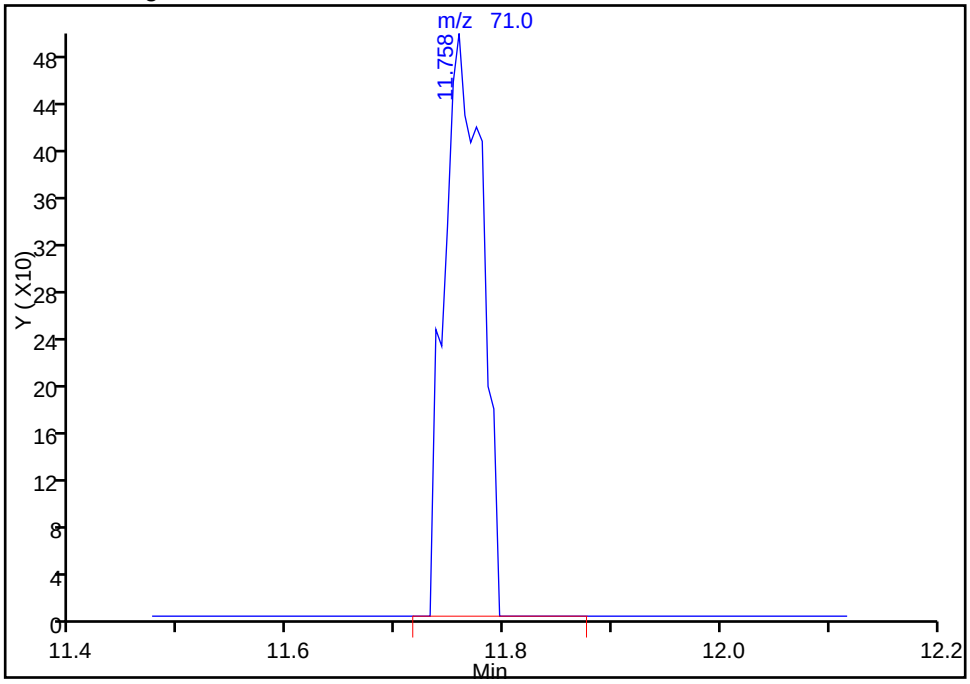
Processing Integration Results

RT: 11.76
Area: 0
Amount: 0.037078
Amount Units: ppb v/v



Manual Integration Results

RT: 11.76
Area: 1203
Amount: 0.072685
Amount Units: ppb v/v

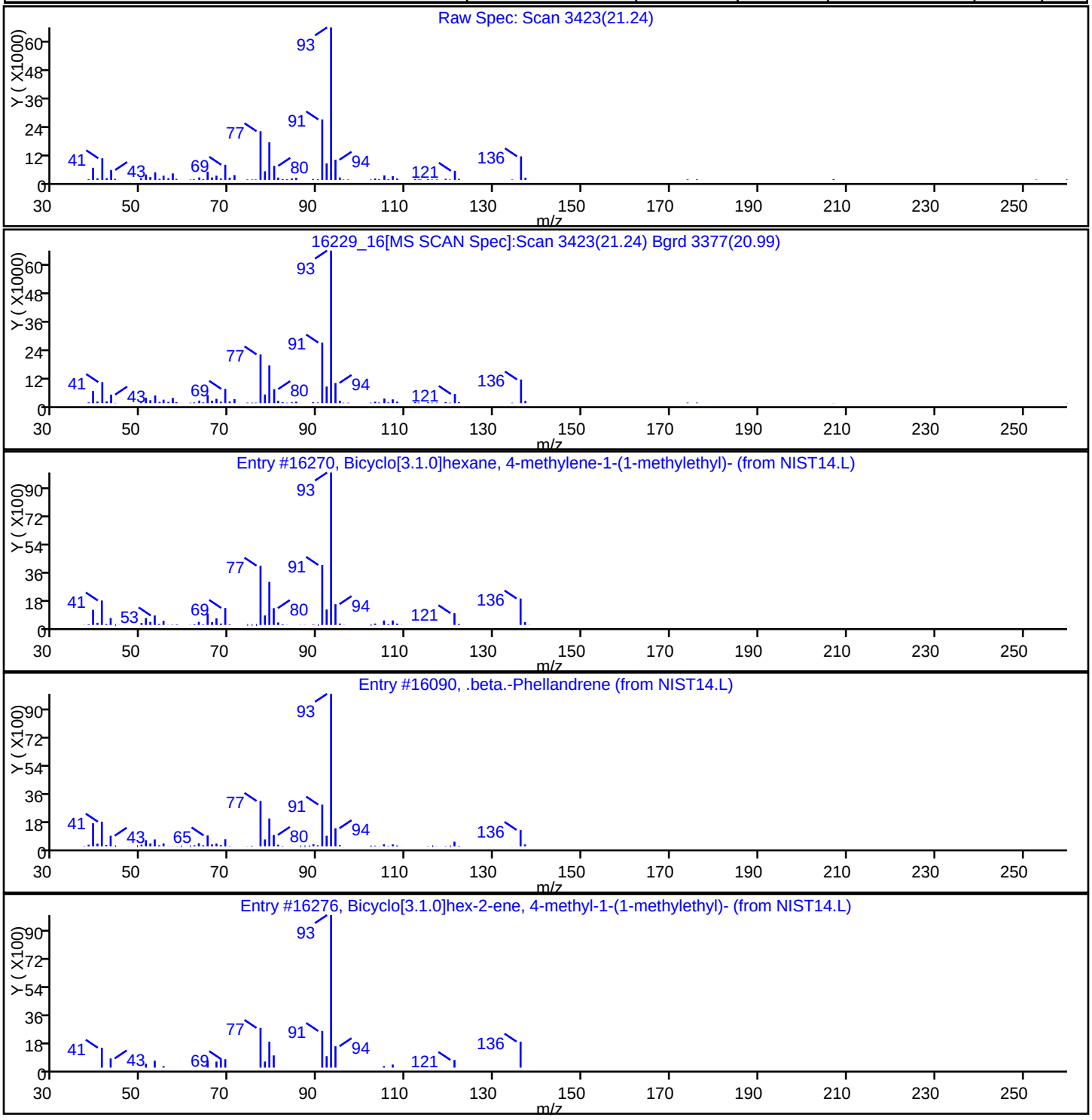


Reviewer: desjardinsb, 14-Oct-2015 07:56:46
Audit Action: Manually Integrated
Audit Reason: Baseline

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_16.D
Injection Date: 13-Oct-2015 21:29:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 16
Purge Vol: 200.000 mL Dil. Factor: 30.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

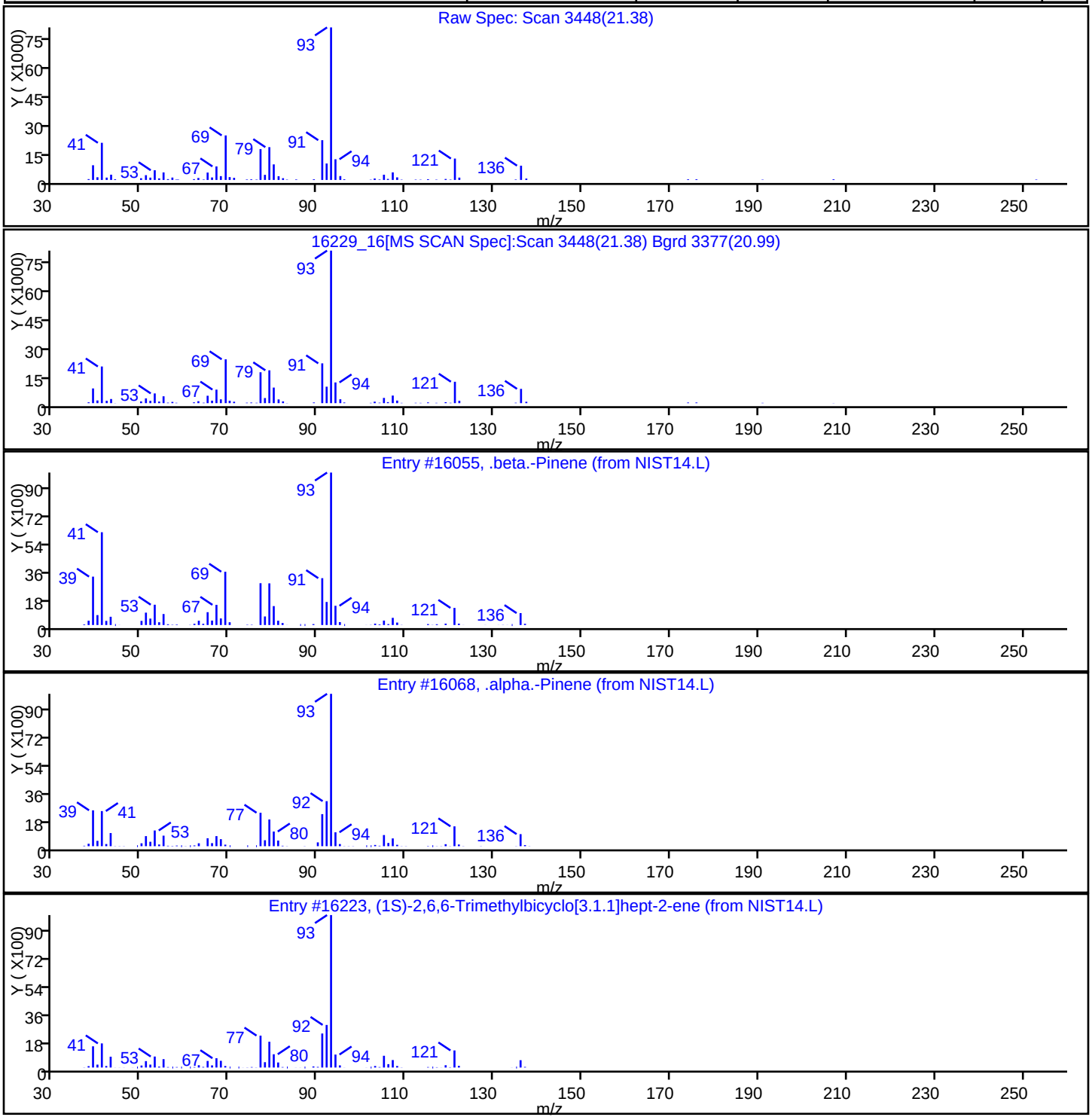
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-m	3387-41-5	NIST14.L	16270	C10H16	136	96
.beta.-Phellandrene	555-10-2	NIST14.L	16090	C10H16	136	94
Bicyclo[3.1.0]hex-2-ene, 4-methyl-1-(1-m	28634-89-1	NIST14.L	16276	C10H16	136	90



TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_16.D
Injection Date: 13-Oct-2015 21:29:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-3 Lab Sample ID: 200-30148-3
Client ID: SV-3
Operator ID: wrd ALS Bottle#: 11 Worklist Smp#: 16
Purge Vol: 200.000 mL Dil. Factor: 30.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
.beta.-Pinene	127-91-3	NIST14.L	16055	C10H16	136	94
.alpha.-Pinene	80-56-8	NIST14.L	16068	C10H16	136	91
(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-26-4	NIST14.L	16223	C10H16	136	91



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 | Lab Sample ID: 200-30148-4

Matrix: Air | Lab File ID: 16229_17.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 15:15

Sample wt/vol: 200(mL) | Date Analyzed: 10/13/2015 22:18

Soil Aliquot Vol: | Dilution Factor: 2

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	11		1.0	
75-45-6	Freon 22	86.47	1.0	U	1.0	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	1.3		0.40	
74-87-3	Chloromethane	50.49	1.0	U	1.0	
106-97-8	n-Butane	58.12	3.0		1.0	
75-01-4	Vinyl chloride	62.50	0.40	U	0.40	
106-99-0	1,3-Butadiene	54.09	0.40	U	0.40	
74-83-9	Bromomethane	94.94	0.40	U	0.40	
75-00-3	Chloroethane	64.52	1.0	U	1.0	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.40	U	0.40	
75-69-4	Trichlorofluoromethane	137.37	33		0.40	
76-13-1	Freon TF	187.38	2.6		0.40	
75-35-4	1,1-Dichloroethene	96.94	0.40	U	0.40	
67-64-1	*Acetone*	*58.08*	*370*	*E*	*10*	
67-63-0	Isopropyl alcohol	60.10	10	U	10	
75-15-0	Carbon disulfide	76.14	1.0	U	1.0	
107-05-1	3-Chloropropene	76.53	1.0	U	1.0	
75-09-2	Methylene Chloride	84.93	1.0	U	1.0	
75-65-0	tert-Butyl alcohol	74.12	16		10	
1634-04-4	Methyl tert-butyl ether	88.15	0.40	U	0.40	
156-60-5	trans-1,2-Dichloroethene	96.94	0.40	U	0.40	
110-54-3	n-Hexane	86.17	0.54		0.40	
75-34-3	1,1-Dichloroethane	98.96	0.40	U	0.40	
78-93-3	Methyl Ethyl Ketone	72.11	6.5		1.0	
156-59-2	cis-1,2-Dichloroethene	96.94	0.40	U	0.40	
540-59-0	1,2-Dichloroethene, Total	96.94	0.80	U	0.80	
67-66-3	Chloroform	119.38	0.40	U	0.40	
109-99-9	Tetrahydrofuran	72.11	10	U	10	
71-55-6	1,1,1-Trichloroethane	133.41	0.67		0.40	
110-82-7	Cyclohexane	84.16	0.40	U	0.40	
56-23-5	Carbon tetrachloride	153.81	0.40	U	0.40	
540-84-1	2,2,4-Trimethylpentane	114.23	0.40	U	0.40	
71-43-2	Benzene	78.11	0.51		0.40	
107-06-2	1,2-Dichloroethane	98.96	0.40	U	0.40	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 Lab Sample ID: 200-30148-4

Matrix: Air Lab File ID: 16229_17.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 22:18

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	1.2		0.40	
79-01-6	Trichloroethene	131.39	0.40	U	0.40	
80-62-6	Methyl methacrylate	100.12	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	112.99	0.40	U	0.40	
123-91-1	1,4-Dioxane	88.11	10	U	10	
75-27-4	Bromodichloromethane	163.83	0.40	U	0.40	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.40	U	0.40	
108-10-1	methyl isobutyl ketone	100.16	2.1		1.0	
108-88-3	Toluene	92.14	4.4		0.40	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.40	U	0.40	
79-00-5	1,1,2-Trichloroethane	133.41	0.40	U	0.40	
127-18-4	Tetrachloroethene	165.83	0.40	U	0.40	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	1.4		1.0	
124-48-1	Dibromochloromethane	208.29	0.40	U	0.40	
106-93-4	1,2-Dibromoethane	187.87	0.40	U	0.40	
108-90-7	Chlorobenzene	112.56	0.40	U	0.40	
100-41-4	Ethylbenzene	106.17	1.5		0.40	
179601-23-1	m,p-Xylene	106.17	5.1		1.0	
95-47-6	Xylene, o-	106.17	2.1		0.40	
1330-20-7	Xylene (total)	106.17	7.2		1.4	
100-42-5	Styrene	104.15	0.80		0.40	
75-25-2	Bromoform	252.75	0.40	U	0.40	
98-82-8	Cumene	120.19	0.40	U	0.40	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.40	U	0.40	
103-65-1	n-Propylbenzene	120.19	0.42		0.40	
622-96-8	4-Ethyltoluene	120.20	0.57		0.40	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.61		0.40	
95-49-8	2-Chlorotoluene	126.59	0.40	U	0.40	
98-06-6	tert-Butylbenzene	134.22	0.40	U	0.40	
95-63-6	1,2,4-Trimethylbenzene	120.20	1.7		0.40	
135-98-8	sec-Butylbenzene	134.22	0.40	U	0.40	
99-87-6	4-Isopropyltoluene	134.22	0.46		0.40	
541-73-1	1,3-Dichlorobenzene	147.00	0.40	U	0.40	
106-46-7	1,4-Dichlorobenzene	147.00	0.40	U	0.40	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 Lab Sample ID: 200-30148-4

Matrix: Air Lab File ID: 16229_17.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 22:18

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	0.40	U	0.40	
104-51-8	n-Butylbenzene	134.22	0.40	U	0.40	
95-50-1	1,2-Dichlorobenzene	147.00	0.40	U	0.40	
120-82-1	1,2,4-Trichlorobenzene	181.45	1.0	U	1.0	
87-68-3	Hexachlorobutadiene	260.76	0.40	U	0.40	
91-20-3	Naphthalene	128.17	1.0	U	1.0	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 Lab Sample ID: 200-30148-4

Matrix: Air Lab File ID: 16229_17.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 22:18

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	56		4.9	
75-45-6	Freon 22	86.47	3.5	U	3.5	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	9.0		2.8	
74-87-3	Chloromethane	50.49	2.1	U	2.1	
106-97-8	n-Butane	58.12	7.1		2.4	
75-01-4	Vinyl chloride	62.50	1.0	U	1.0	
106-99-0	1,3-Butadiene	54.09	0.88	U	0.88	
74-83-9	Bromomethane	94.94	1.6	U	1.6	
75-00-3	Chloroethane	64.52	2.6	U	2.6	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	1.7	U	1.7	
75-69-4	Trichlorofluoromethane	137.37	190		2.2	
76-13-1	Freon TF	187.38	20		3.1	
75-35-4	1,1-Dichloroethene	96.94	1.6	U	1.6	
67-64-1	*Acetone*	*58.08*	*870*	*E*	*24*	
67-63-0	Isopropyl alcohol	60.10	25	U	25	
75-15-0	Carbon disulfide	76.14	3.1	U	3.1	
107-05-1	3-Chloropropene	76.53	3.1	U	3.1	
75-09-2	Methylene Chloride	84.93	3.5	U	3.5	
75-65-0	tert-Butyl alcohol	74.12	49		30	
1634-04-4	Methyl tert-butyl ether	88.15	1.4	U	1.4	
156-60-5	trans-1,2-Dichloroethene	96.94	1.6	U	1.6	
110-54-3	n-Hexane	86.17	1.9		1.4	
75-34-3	1,1-Dichloroethane	98.96	1.6	U	1.6	
78-93-3	Methyl Ethyl Ketone	72.11	19		2.9	
156-59-2	cis-1,2-Dichloroethene	96.94	1.6	U	1.6	
540-59-0	1,2-Dichloroethene, Total	96.94	3.2	U	3.2	
67-66-3	Chloroform	119.38	2.0	U	2.0	
109-99-9	Tetrahydrofuran	72.11	29	U	29	
71-55-6	1,1,1-Trichloroethane	133.41	3.7		2.2	
110-82-7	Cyclohexane	84.16	1.4	U	1.4	
56-23-5	Carbon tetrachloride	153.81	2.5	U	2.5	
540-84-1	2,2,4-Trimethylpentane	114.23	1.9	U	1.9	
71-43-2	Benzene	78.11	1.6		1.3	
107-06-2	1,2-Dichloroethane	98.96	1.6	U	1.6	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 Lab Sample ID: 200-30148-4

Matrix: Air Lab File ID: 16229_17.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 22:18

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	5.1		1.6	
79-01-6	Trichloroethene	131.39	2.1	U	2.1	
80-62-6	Methyl methacrylate	100.12	4.1	U	4.1	
78-87-5	1,2-Dichloropropane	112.99	1.8	U	1.8	
123-91-1	1,4-Dioxane	88.11	36	U	36	
75-27-4	Bromodichloromethane	163.83	2.7	U	2.7	
10061-01-5	cis-1,3-Dichloropropene	110.97	1.8	U	1.8	
108-10-1	methyl isobutyl ketone	100.16	8.4		4.1	
108-88-3	Toluene	92.14	16		1.5	
10061-02-6	trans-1,3-Dichloropropene	110.97	1.8	U	1.8	
79-00-5	1,1,2-Trichloroethane	133.41	2.2	U	2.2	
127-18-4	Tetrachloroethene	165.83	2.7	U	2.7	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	5.8		4.1	
124-48-1	Dibromochloromethane	208.29	3.4	U	3.4	
106-93-4	1,2-Dibromoethane	187.87	3.1	U	3.1	
108-90-7	Chlorobenzene	112.56	1.8	U	1.8	
100-41-4	Ethylbenzene	106.17	6.4		1.7	
179601-23-1	m,p-Xylene	106.17	22		4.3	
95-47-6	Xylene, o-	106.17	9.2		1.7	
1330-20-7	Xylene (total)	106.17	31		6.1	
100-42-5	Styrene	104.15	3.4		1.7	
75-25-2	Bromoform	252.75	4.1	U	4.1	
98-82-8	Cumene	120.19	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	2.7	U	2.7	
103-65-1	n-Propylbenzene	120.19	2.1		2.0	
622-96-8	4-Ethyltoluene	120.20	2.8		2.0	
108-67-8	1,3,5-Trimethylbenzene	120.20	3.0		2.0	
95-49-8	2-Chlorotoluene	126.59	2.1	U	2.1	
98-06-6	tert-Butylbenzene	134.22	2.2	U	2.2	
95-63-6	1,2,4-Trimethylbenzene	120.20	8.3		2.0	
135-98-8	sec-Butylbenzene	134.22	2.2	U	2.2	
99-87-6	4-Isopropyltoluene	134.22	2.5		2.2	
541-73-1	1,3-Dichlorobenzene	147.00	2.4	U	2.4	
106-46-7	1,4-Dichlorobenzene	147.00	2.4	U	2.4	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 Lab Sample ID: 200-30148-4

Matrix: Air Lab File ID: 16229_17.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 22:18

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	2.1	U	2.1	
104-51-8	n-Butylbenzene	134.22	2.2	U	2.2	
95-50-1	1,2-Dichlorobenzene	147.00	2.4	U	2.4	
120-82-1	1,2,4-Trichlorobenzene	181.45	7.4	U	7.4	
87-68-3	Hexachlorobutadiene	260.76	4.3	U	4.3	
91-20-3	Naphthalene	128.17	5.2	U	5.2	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 Lab Sample ID: 200-30148-4

Matrix: Air Lab File ID: 16229_17.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 22:18

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 10 TIC Result Total: 75.8

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown	4.14	21	J
541-05-9	Cyclotrisiloxane, hexamethyl-	16.07	8.7	J N
	Unknown	17.16	3.9	J
7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	20.25	9.3	J N
	Unknown	21.52	8.0	J
	Unknown	22.48	5.9	J
	Unknown	22.67	4.0	J
	Unknown	22.82	4.9	J
	Unknown	22.90	4.6	J
	Unknown	23.27	5.5	J

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D
Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4
Client ID: SV-4
Sample Type: Client
Inject. Date: 13-Oct-2015 22:18:30 ALS Bottle#: 12 Worklist Smp#: 17
Purge Vol: 200.000 mL Dil. Factor: 2.0000
Sample Info: 200-0016229-017
Misc. Info.: 30148-4
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 08:00:19 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 08:00:19

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85	3.178	3.177	0.001	99	196586	5.65	
3 Chlorodifluoromethane	51	3.231	3.231	0.000	96	3518	0.2091	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.440	3.445	-0.005	93	22721	0.6423	
5 Chloromethane	50		3.579				ND	
6 Butane	43	3.777	3.777	0.000	92	23895	1.49	
7 Vinyl chloride	62		3.819				ND	
8 Butadiene	54	3.900	3.894	0.006	94	1557	0.1756	
9 Bromomethane	94		4.563				ND	
10 Chloroethane	64		4.793				ND	
12 Vinyl bromide	106		5.167				ND	
13 Trichlorofluoromethane	101	5.264	5.264	0.000	98	633563	16.5	
18 1,1,2-Trichloro-1,2,2-trif	101	6.302	6.307	-0.005	92	39939	1.30	
20 1,1-Dichloroethene	96		6.355				ND	
21 Acetone	43	6.596	6.623	-0.027	88	2861094	182.8	E
22 Carbon disulfide	76	6.751	6.751	0.000	96	2920	0.0800	
23 Isopropyl alcohol	45	6.981	6.949	0.032	98	26935	1.82	
24 3-Chloro-1-propene	41		7.125				ND	
26 Methylene Chloride	49	7.436	7.414	0.022	76	1899	0.1440	
28 2-Methyl-2-propanol	59	7.752	7.735	0.017	99	191189	8.04	
29 Methyl tert-butyl ether	73		7.837				ND	
30 trans-1,2-Dichloroethene	61		7.842				ND	
32 Hexane	57	8.206	8.211	-0.005	88	5288	0.2700	
33 1,1-Dichloroethane	63		8.714				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.891	9.881	0.010	97	26866	3.23	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.293	10.287	0.006	74	178868	10.0	
39 Tetrahydrofuran	42	10.362	10.314	0.048	79	1696	0.1202	
41 Chloroform	83		10.416				ND	
42 Cyclohexane	84	10.656	10.683	0.000	89	3627	0.1463	M
43 1,1,1-Trichloroethane	97	10.699	10.694	0.005	96	12125	0.3358	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	44 Carbon tetrachloride	117		10.934				ND	
	45 Isooctane	57	11.368	11.373	-0.005	82	13032	0.1573	
	46 Benzene	78	11.416	11.416	0.000	94	14883	0.2574	
	47 1,2-Dichloroethane	62		11.609				ND	
	48 n-Heptane	43	11.748	11.764	-0.016	85	17231	0.6176	
*	50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	91	990341	10.0	
	52 Trichloroethene	95		12.748				ND	
	53 1,2-Dichloropropane	63		13.336				ND	
	54 Methyl methacrylate	69	13.508	13.502	0.006	63	5261	0.2403	
	55 1,4-Dioxane	88		13.588				ND	
	57 Dichlorobromomethane	83		13.909				ND	
	58 cis-1,3-Dichloropropene	75		14.872				ND	
	61 4-Methyl-2-pentanone (MIBK	43	15.214	15.198	0.016	92	38800	1.03	
	62 Toluene	92	15.476	15.482	-0.006	93	110834	2.18	
	67 trans-1,3-Dichloropropene	75		16.097				ND	
	68 1,1,2-Trichloroethane	83		16.487				ND	
	69 Tetrachloroethene	166	16.568	16.579	-0.016	73	2077	0.0410	M
	70 2-Hexanone	43	16.964	16.958	0.006	92	26608	0.7048	
	71 Chlorodibromomethane	129		17.269				ND	
	72 Ethylene Dibromide	107		17.547				ND	
*	73 Chlorobenzene-d5	117	18.446	18.451	-0.005	81	998506	10.0	
	74 Chlorobenzene	112		18.510				ND	
	75 Ethylbenzene	91	18.649	18.654	-0.005	97	80759	0.7368	
	77 m-Xylene & p-Xylene	106	18.900	18.906	-0.006	99	117052	2.53	
	78 o-Xylene	106	19.713	19.719	-0.006	94	48461	1.06	
	79 Styrene	104	19.762	19.772	-0.010	93	28625	0.4015	
S	80 Xylenes, Total	106				0		3.59	
	81 Bromoform	173		20.179				ND	
	82 Isopropylbenzene	105	20.355	20.355	0.000	93	15624	0.1199	
	85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
	86 N-Propylbenzene	91	21.035	21.040	-0.005	100	31682	0.2086	
	89 4-Ethyltoluene	105	21.217	21.217	0.000	61	37815	0.2871	
	90 2-Chlorotoluene	91		21.238				ND	
	91 1,3,5-Trimethylbenzene	105	21.313	21.318	-0.005	95	33273	0.3061	
	93 tert-Butylbenzene	119		21.789				ND	
	94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	92390	0.8478	
	95 sec-Butylbenzene	105		22.105				ND	
	96 4-Isopropyltoluene	119	22.297	22.297	0.000	97	32258	0.2312	
	97 1,3-Dichlorobenzene	146		22.345				ND	
	98 1,4-Dichlorobenzene	146		22.484				ND	
	99 Benzyl chloride	91		22.688				ND	
	101 n-Butylbenzene	91		22.886				ND	
	102 1,2-Dichlorobenzene	146		23.041				ND	
	104 1,2,4-Trichlorobenzene	180		25.673				ND	
	105 Hexachlorobutadiene	225		25.855				ND	
	106 Naphthalene	128	26.197	26.197	0.000	99	15732	0.1121	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Reagents:

ATTO15GIS_00009	Amount Added:	20.00	Units: mL	Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Sample Type:	Client				
Inject. Date:	13-Oct-2015 22:18:30	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Sample Info:	200-0016229-017				
Misc. Info.:	30148-4				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	14-Oct-2015 08:00:19	Calib Date:	17-Aug-2015 23:52:30		
Tic RT Window:	0.000 -0.000	Response:	area		
Quant By:	Nearest ISTD	Quant LOD:	10.00000		
MS Library:	\\ChromNA\Burlington\Database\NIST14.L				
Min. Match:	1				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK013				
First Level Reviewer: desjardinsb		Date:	14-Oct-2015 08:00:19		

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
		Unknown						
4.135	993500	10.3	40	0	0		0	
	541-05-9	Cyclotrisiloxane, hexamethyl-						
16.070	1082236	4.37	73	91	85994	C6H18O3Si3	222	
		Unknown						
17.156	484461	1.95	73	0	0		0	
	7785-26-4	(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2						
20.254	1814521	4.64	83	96	16223	C10H16	136	
		Unknown						
21.522	1562033	3.99	83	0	0		0	
		Unknown						
22.479	1148481	2.94	83	0	0		0	
		Unknown						
22.666	773084	1.98	83	0	0		0	
		Unknown						
22.816	964712	2.47	83	0	0		0	
		Unknown						
22.902	904150	2.31	83	0	0		0	
		Unknown						
23.266	1077669	2.76	83	0	0		0	

Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 40 Chlorobromomethane	10.293	962907	10.0
* 73 Chlorobenzene-d5	18.446	2479193	10.0
* 83 4-Bromofluorobenzene	20.714	3911367	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

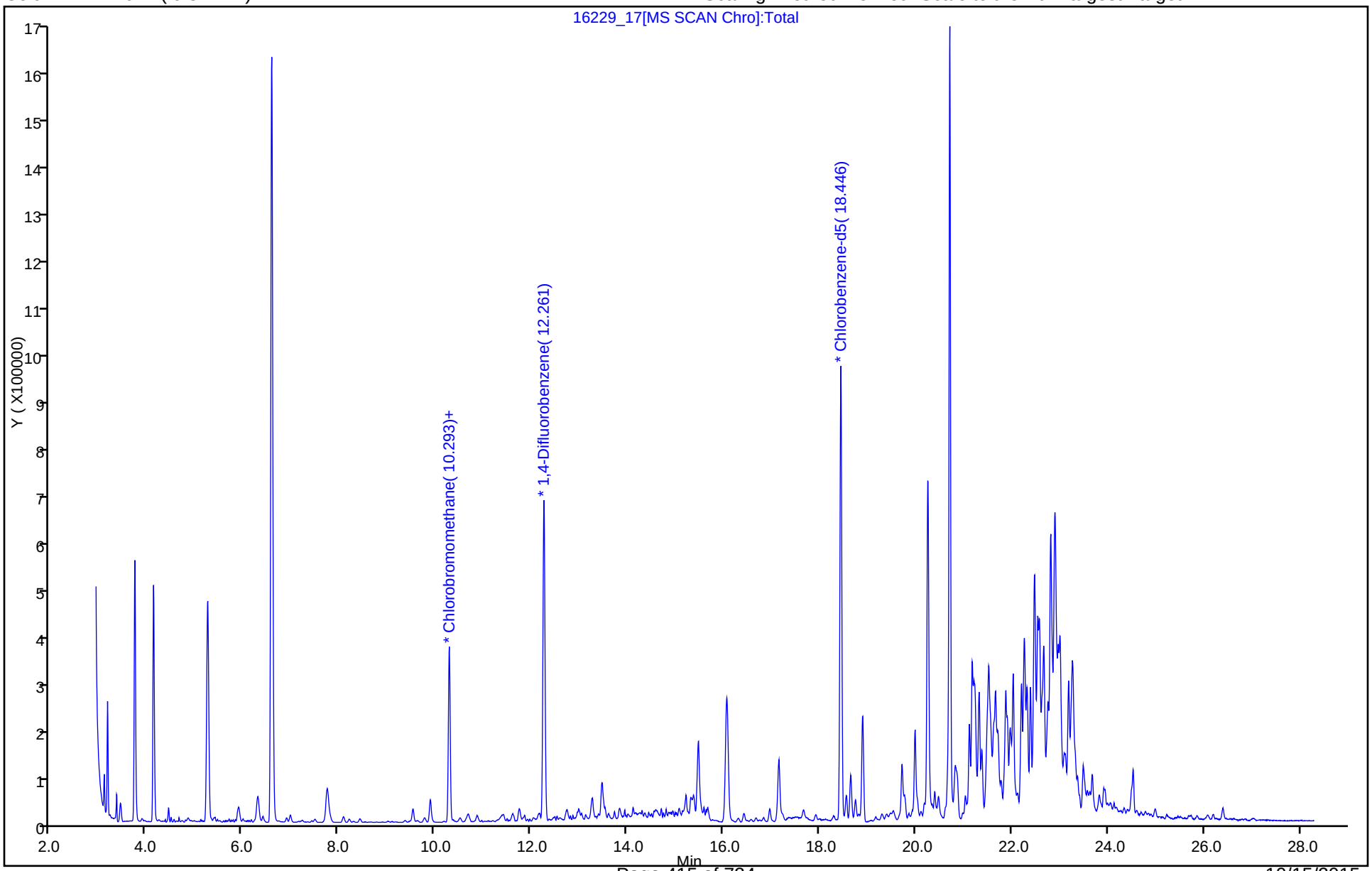
Report Date: 14-Oct-2015 08:00:21 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4	Worklist Smp#:	17
Client ID:	SV-4				
Purge Vol:	200.000 mL	Dil. Factor:	2.0000	ALS Bottle#:	12
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

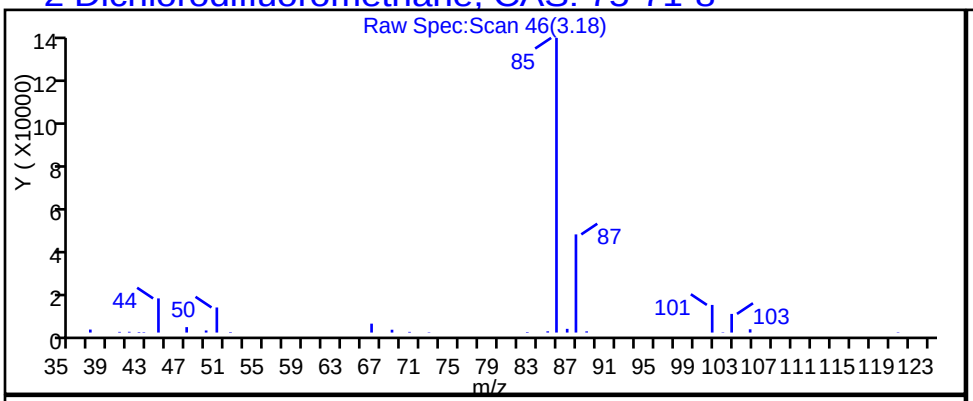
Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

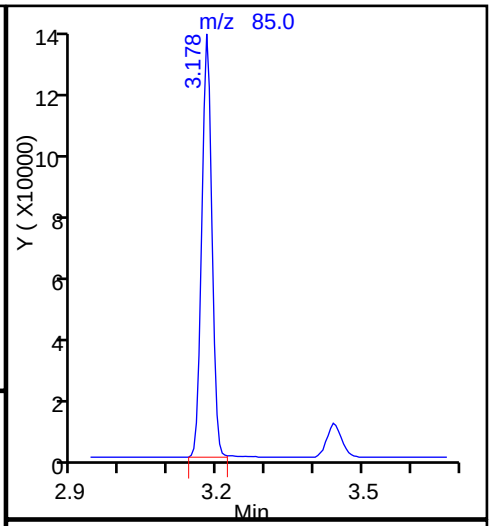


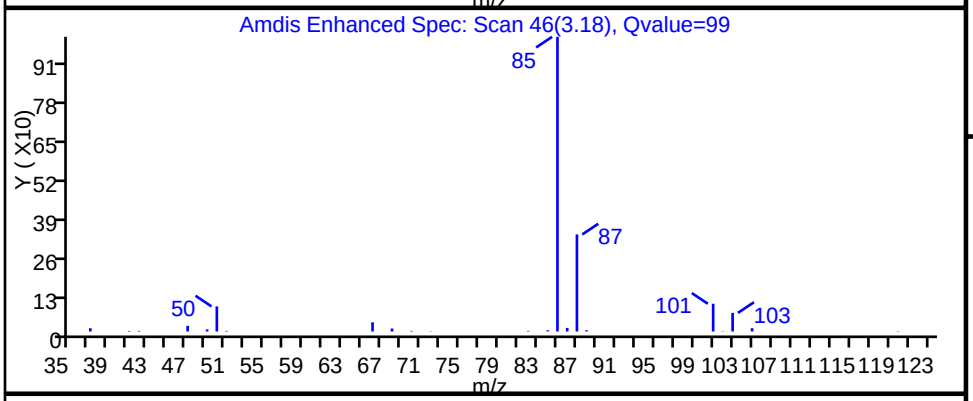
TestAmerica Burlington

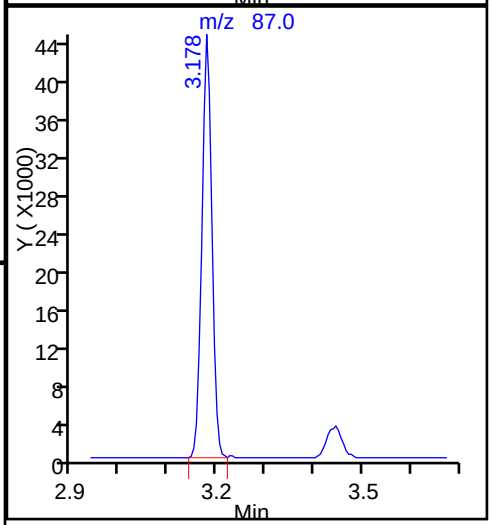
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

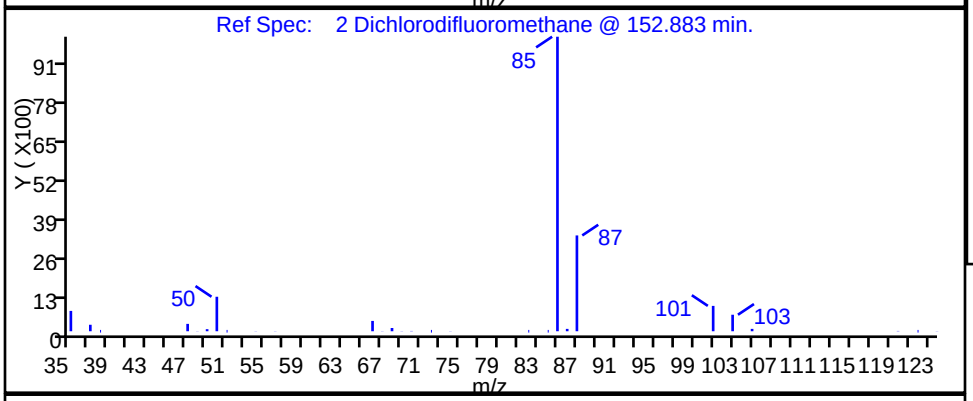
2 Dichlorodifluoromethane, CAS: 75-71-8

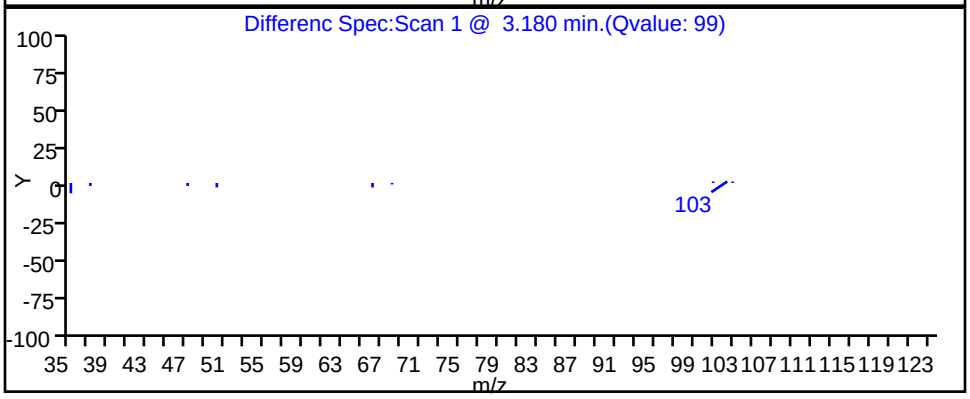








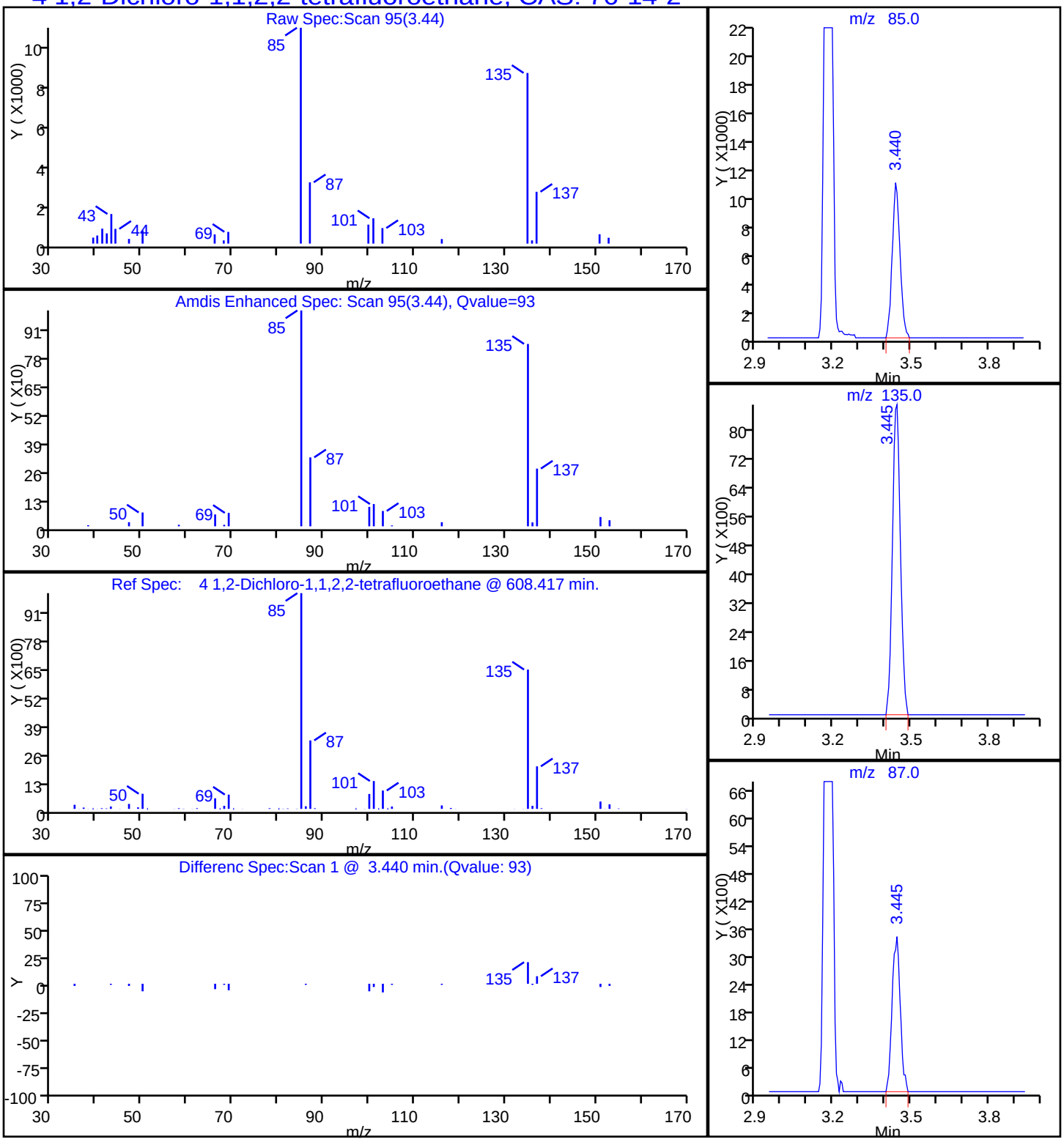




TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

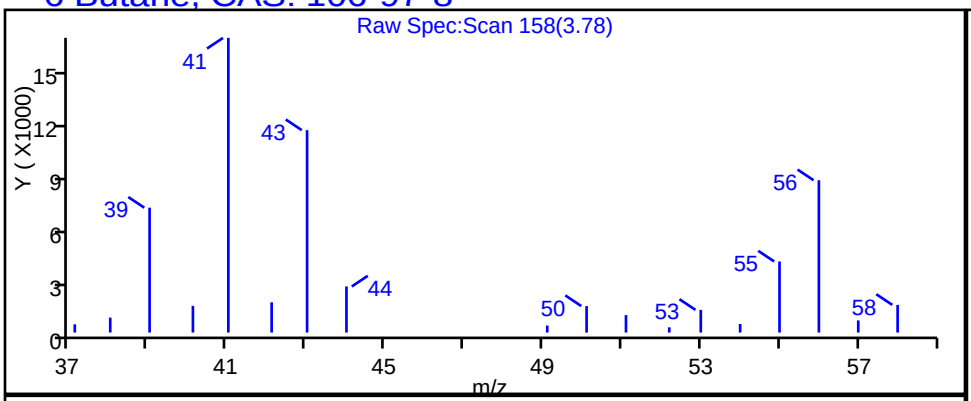
4 1,2-Dichloro-1,1,2,2-tetrafluoroethane, CAS: 76-14-2

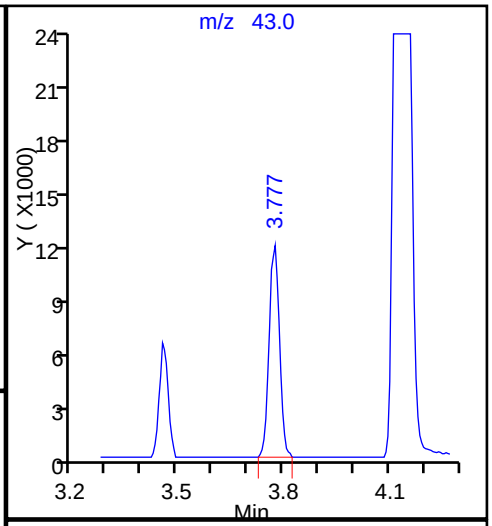


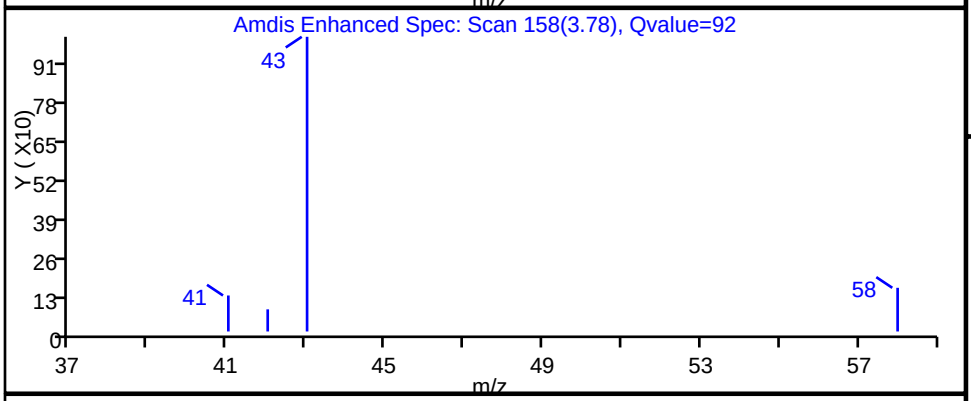
TestAmerica Burlington

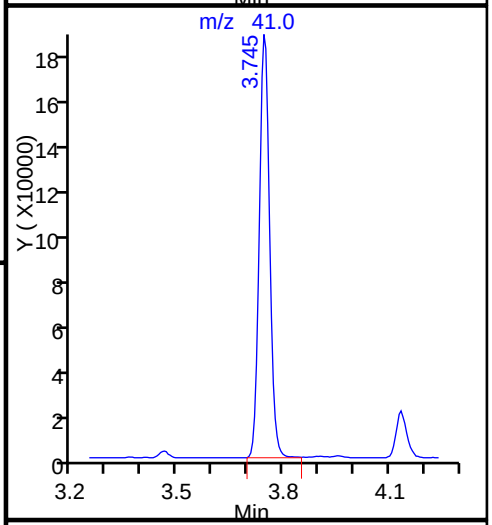
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

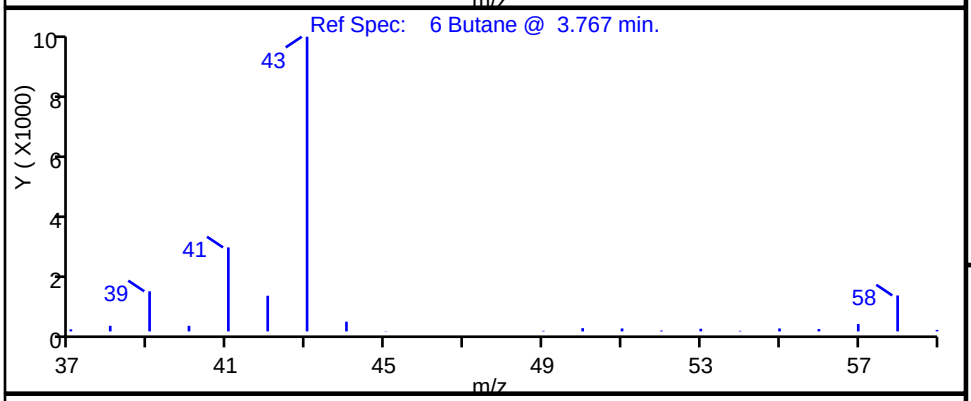
6 Butane, CAS: 106-97-8

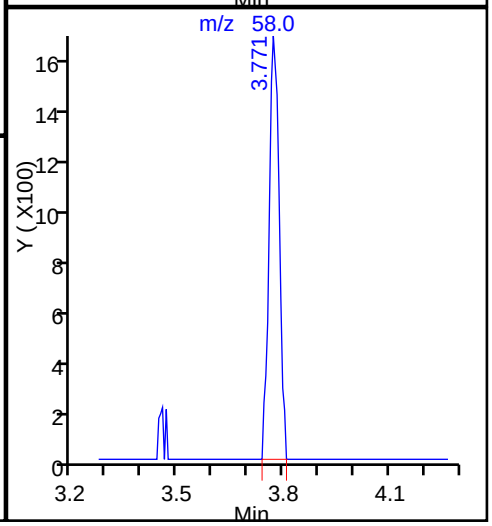


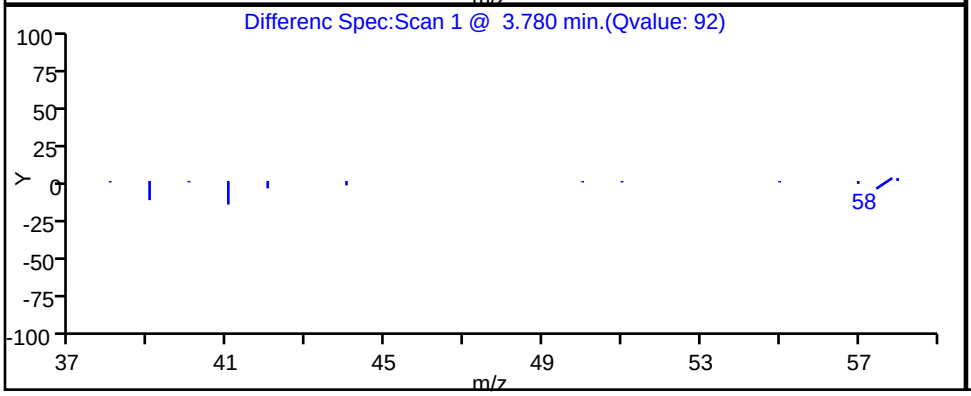








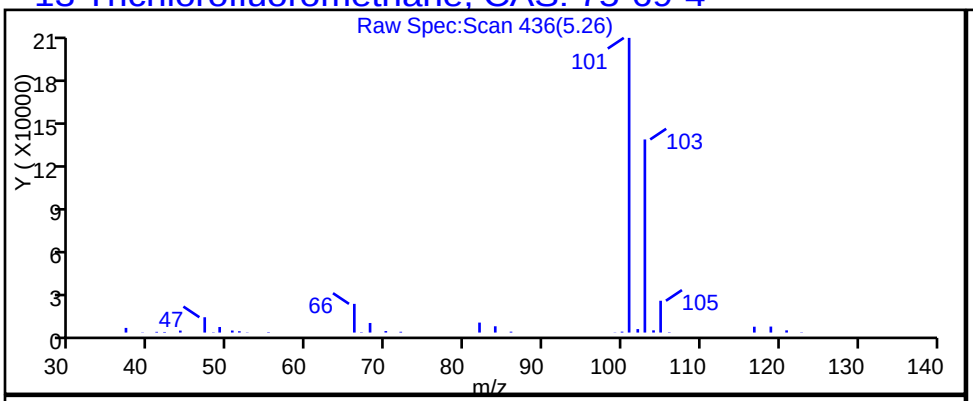


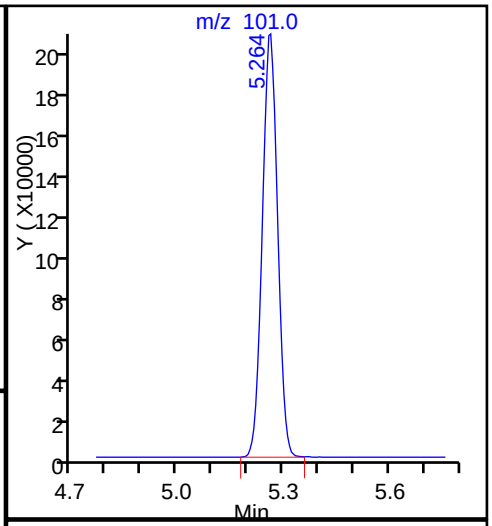


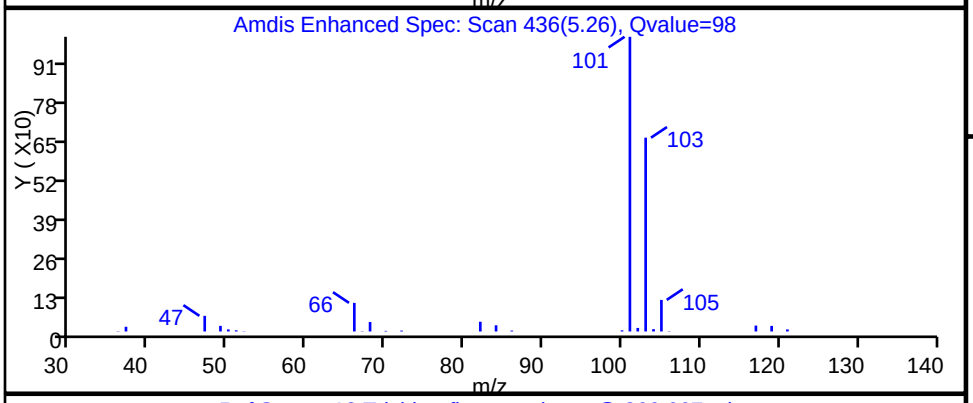
TestAmerica Burlington

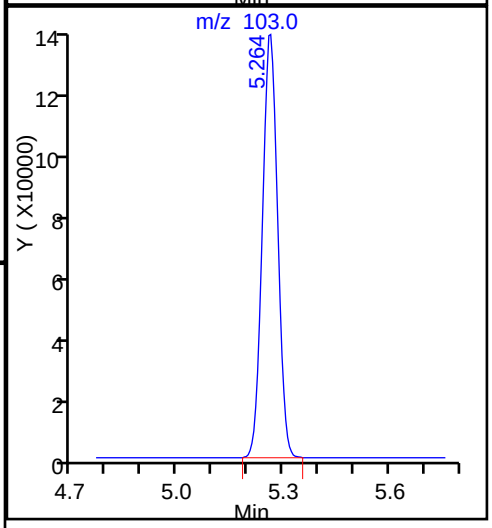
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

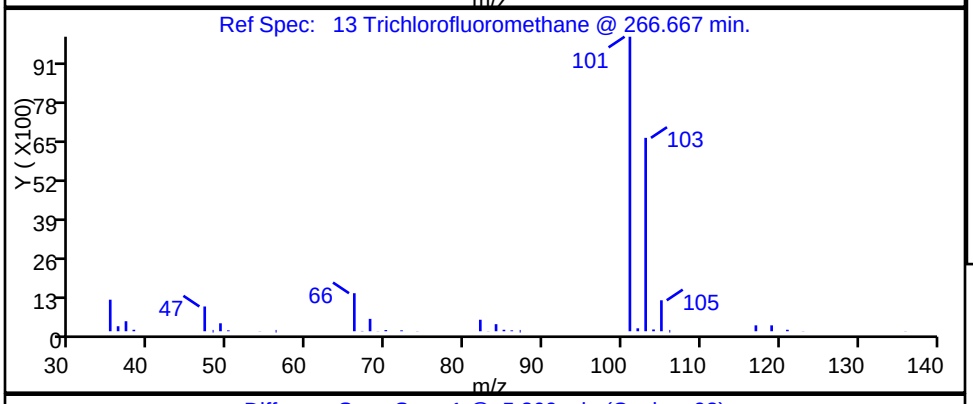
13 Trichlorofluoromethane, CAS: 75-69-4

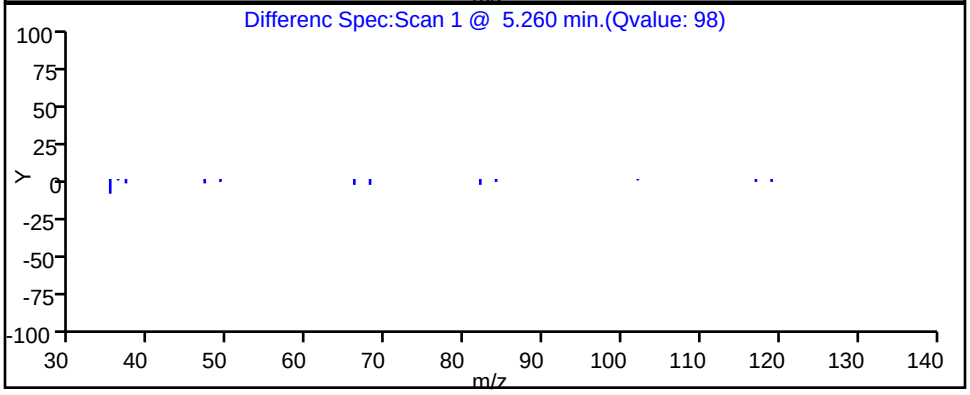










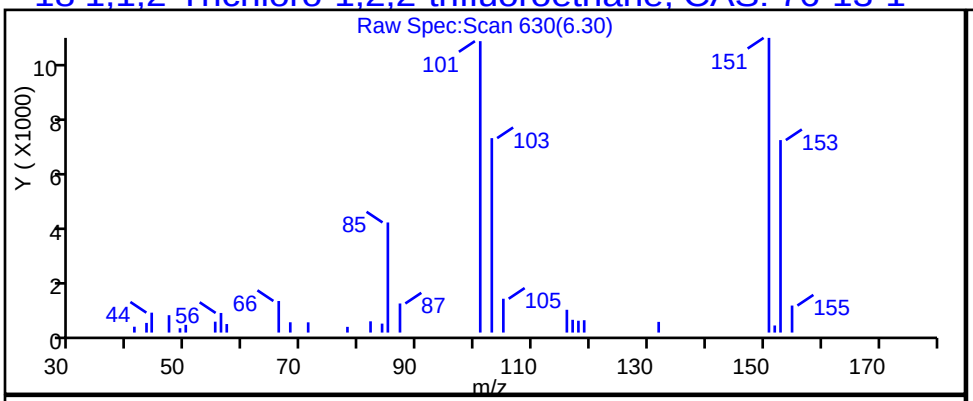


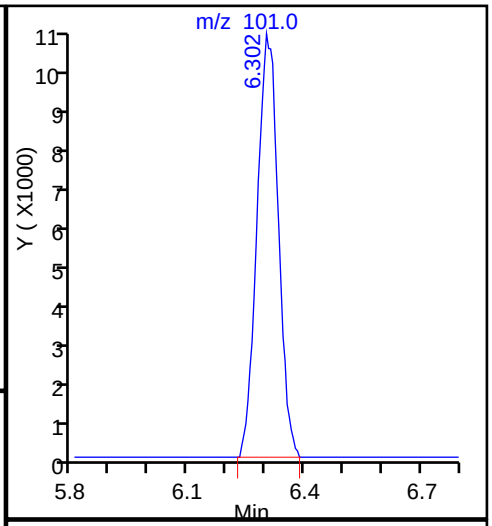
TestAmerica Burlington

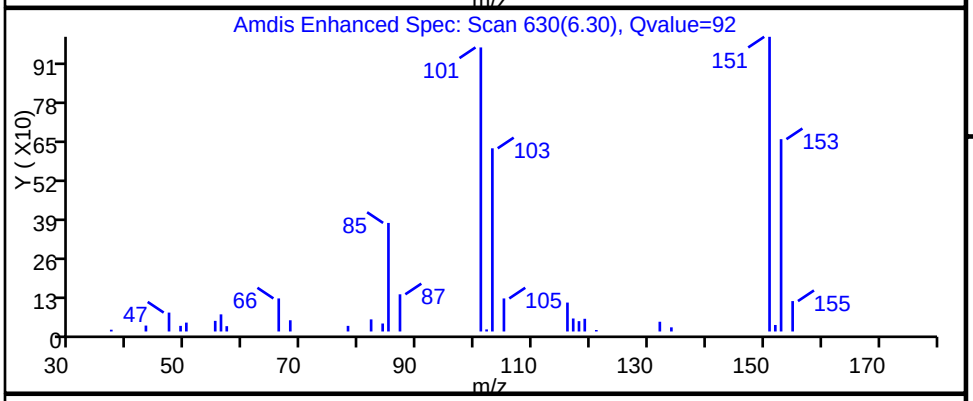
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

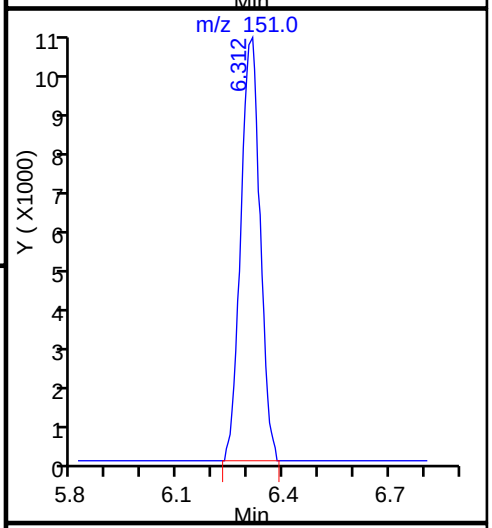
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

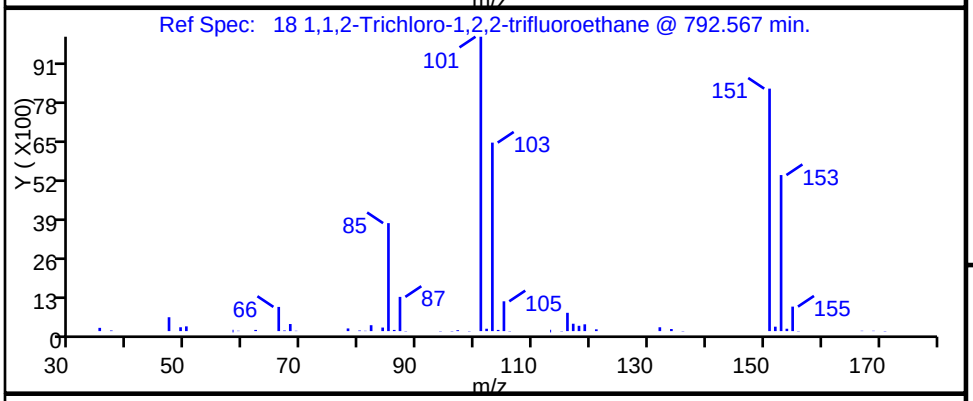
18 1,1,2-Trichloro-1,2,2-trifluoroethane, CAS: 76-13-1

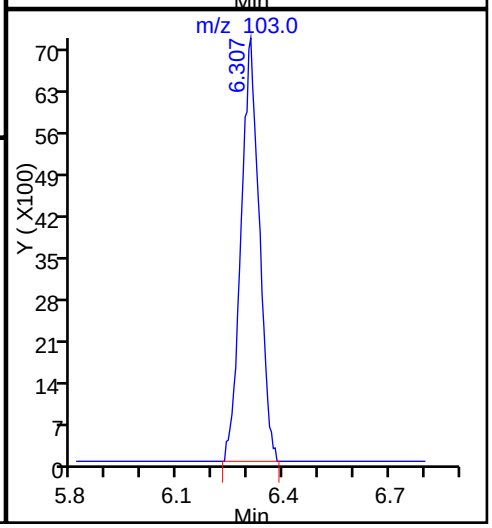


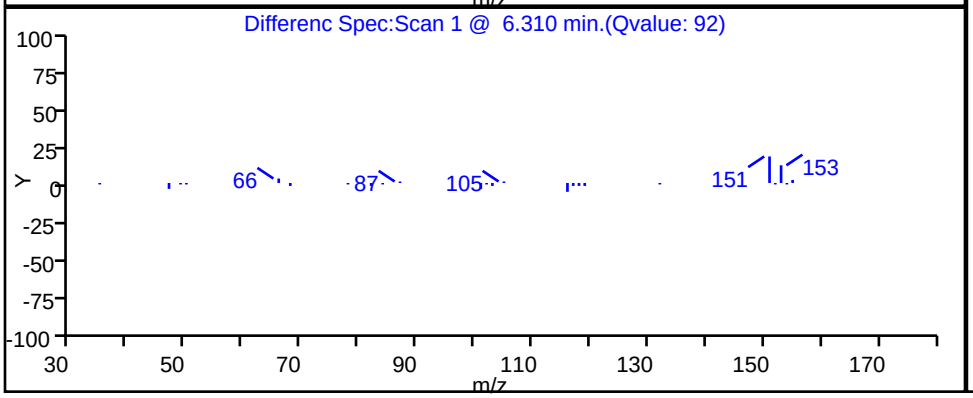








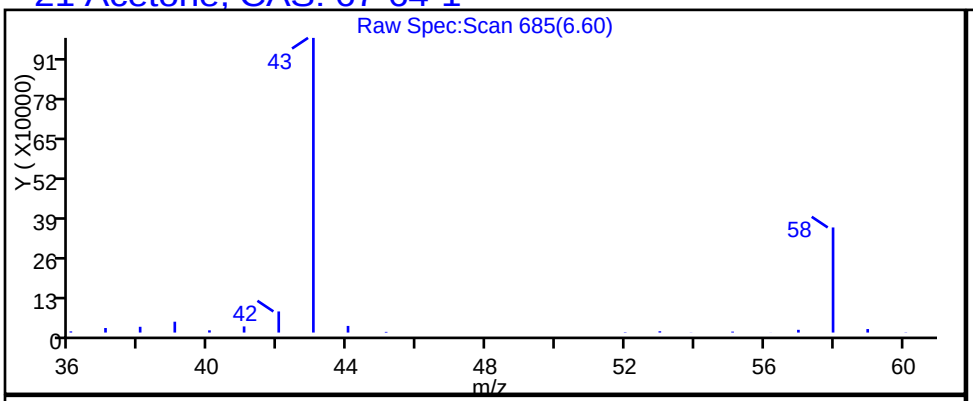


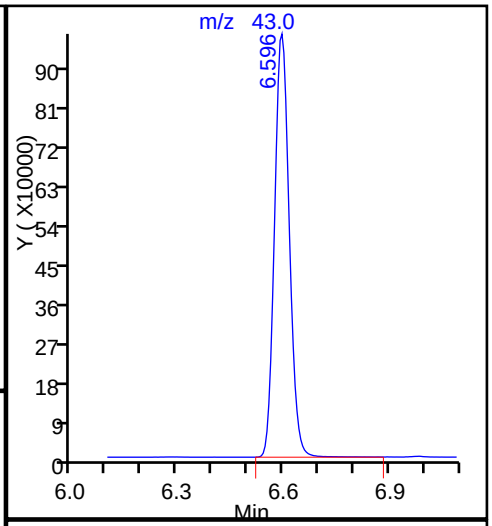


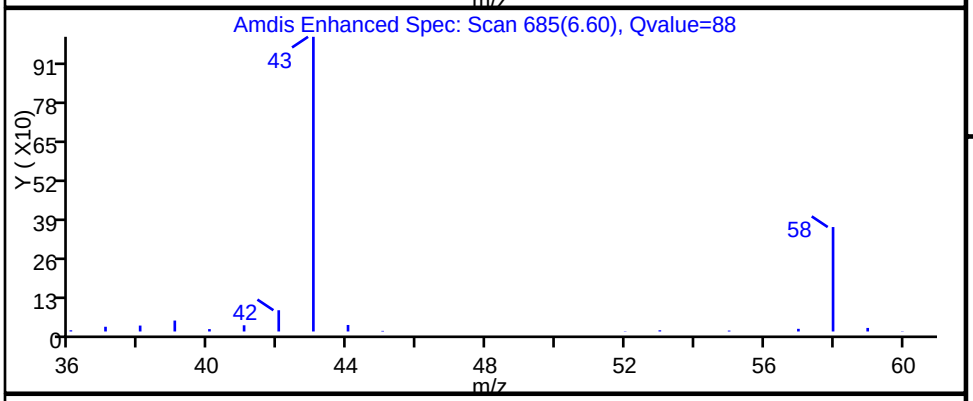
TestAmerica Burlington

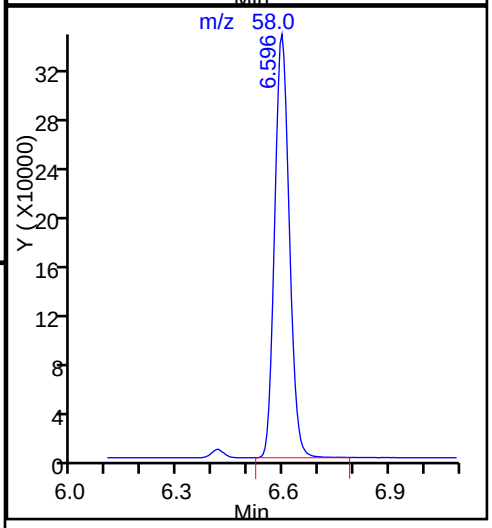
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

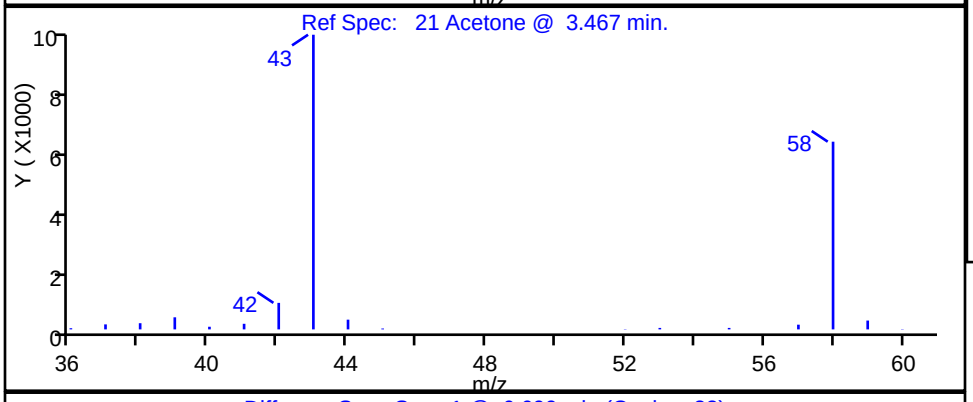
21 Acetone, CAS: 67-64-1

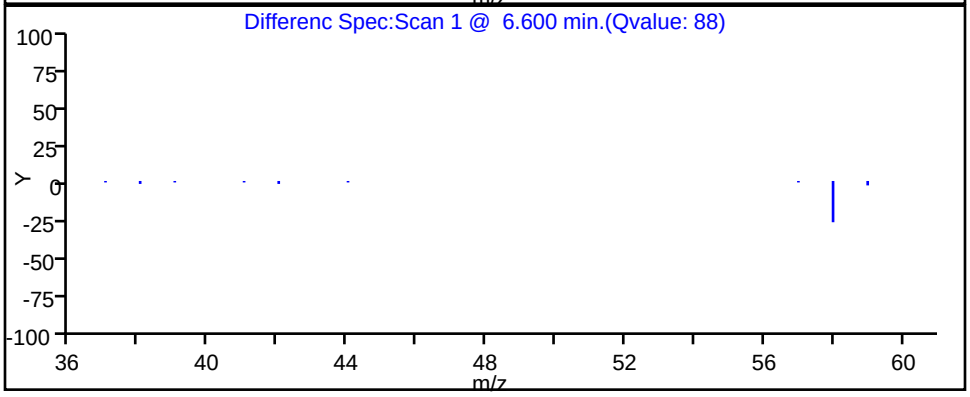








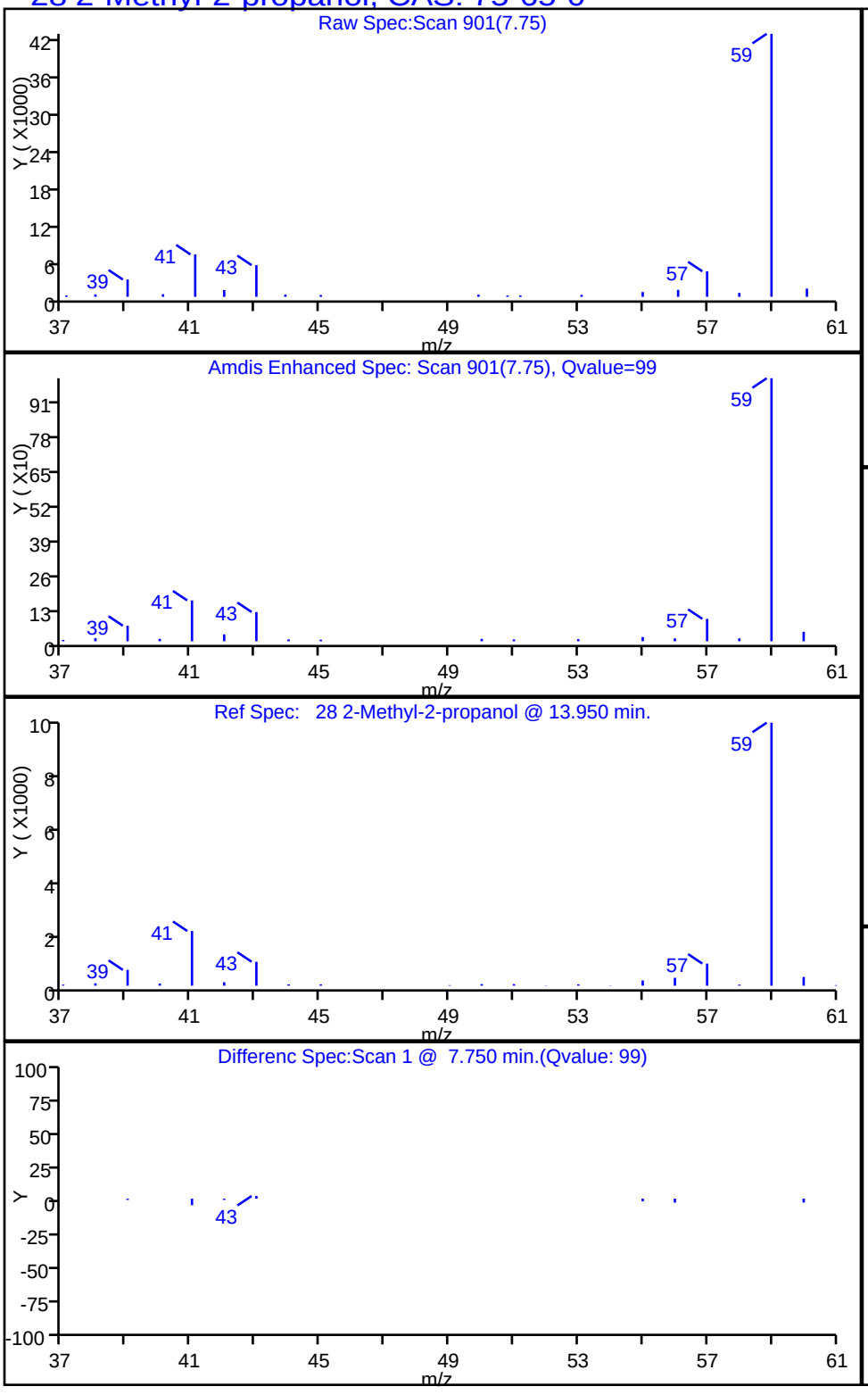


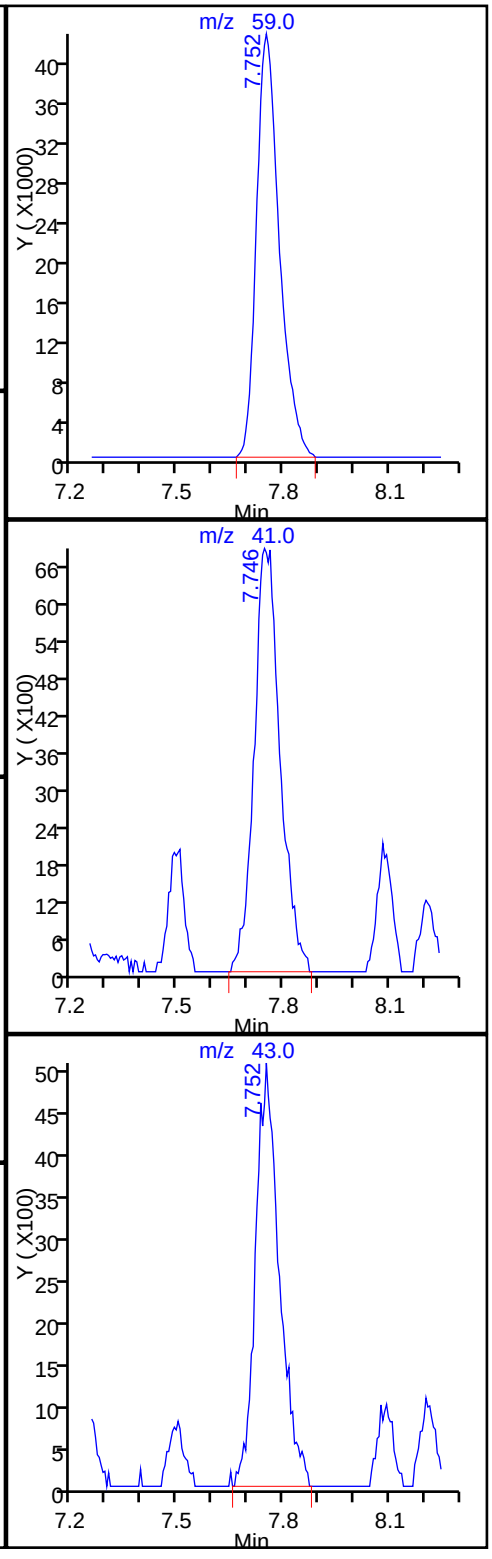


TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

28 2-Methyl-2-propanol, CAS: 75-65-0

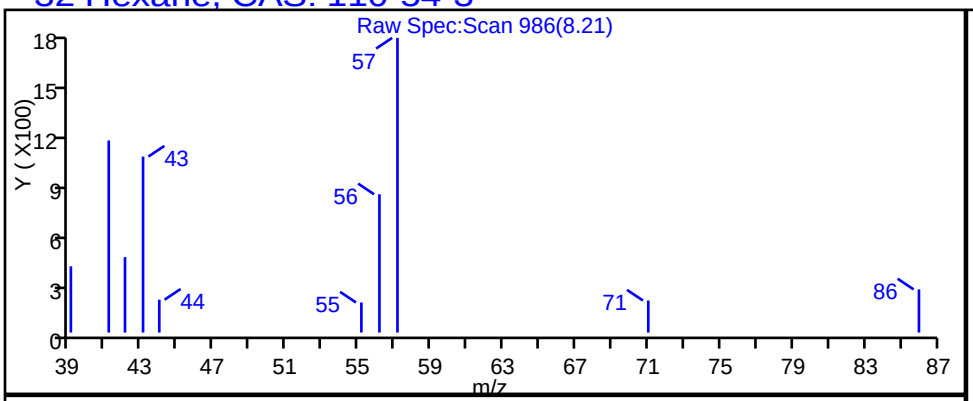


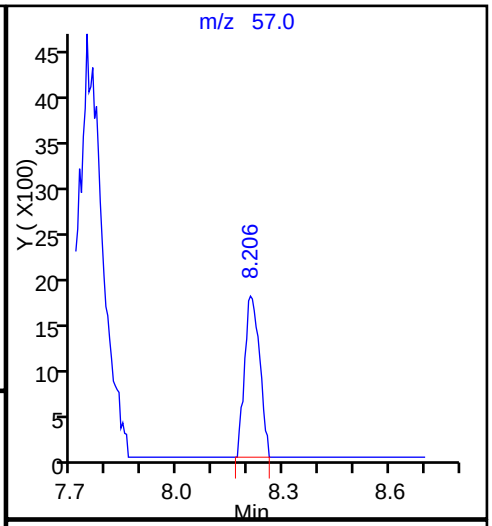


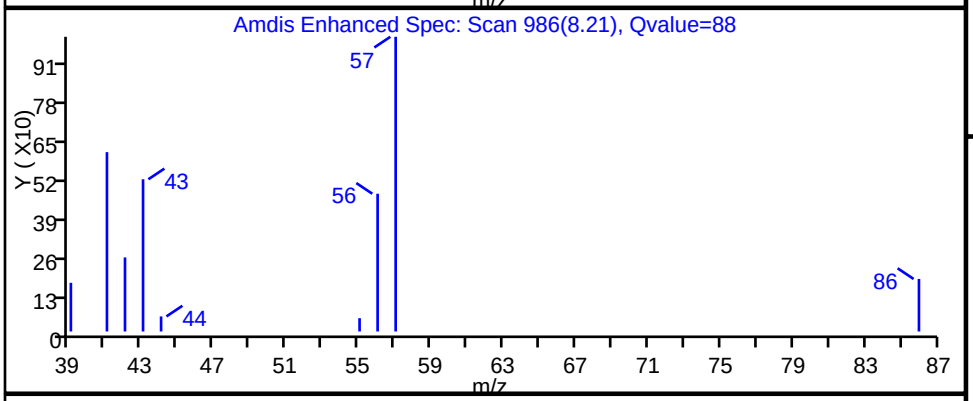
TestAmerica Burlington

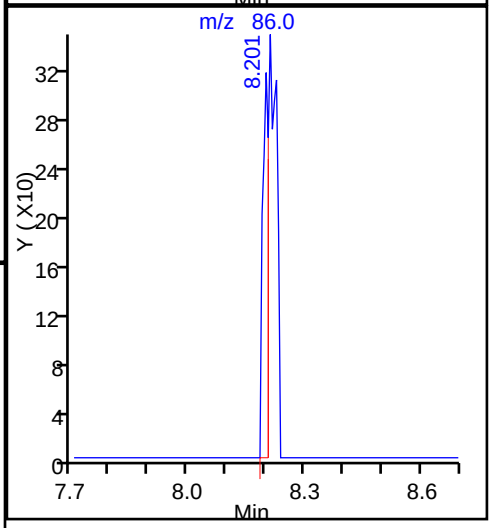
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

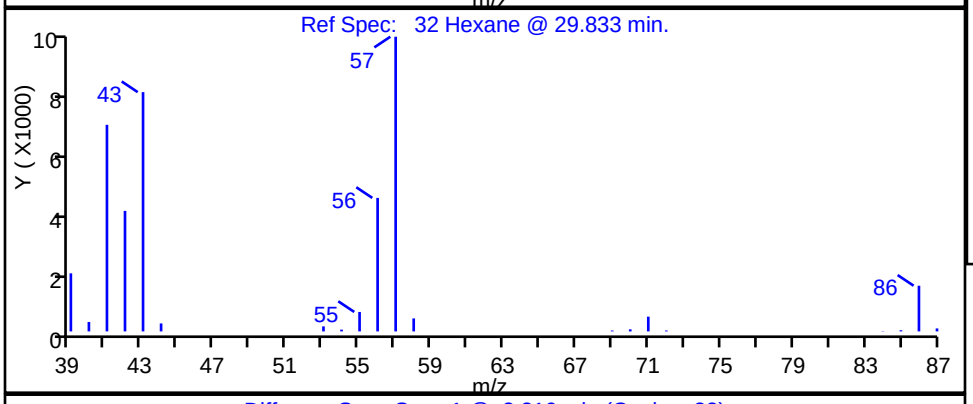
32 Hexane, CAS: 110-54-3

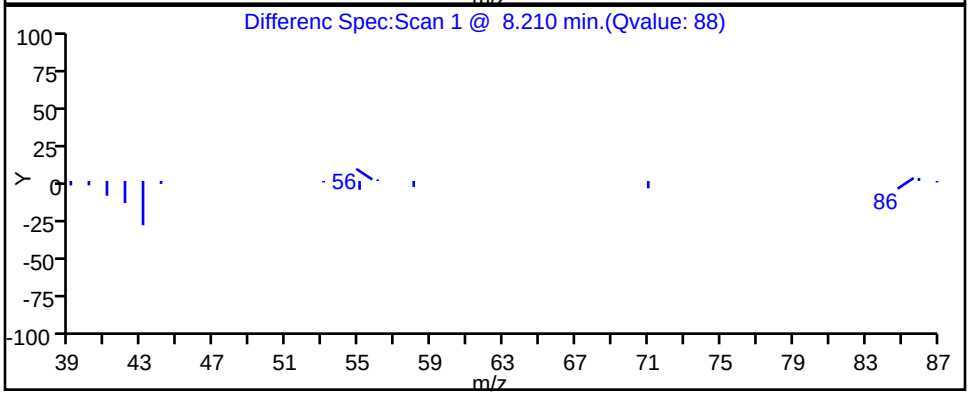








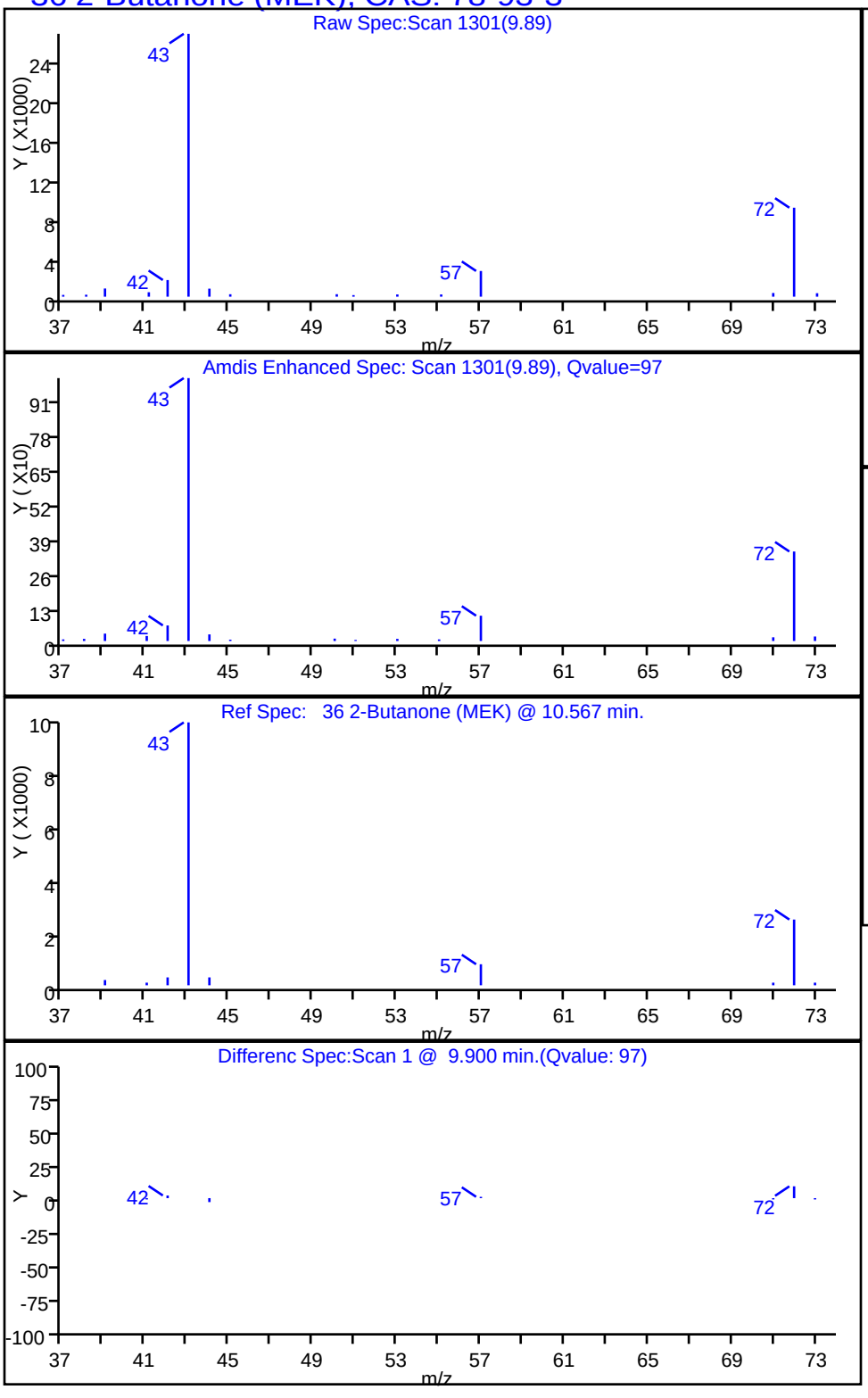


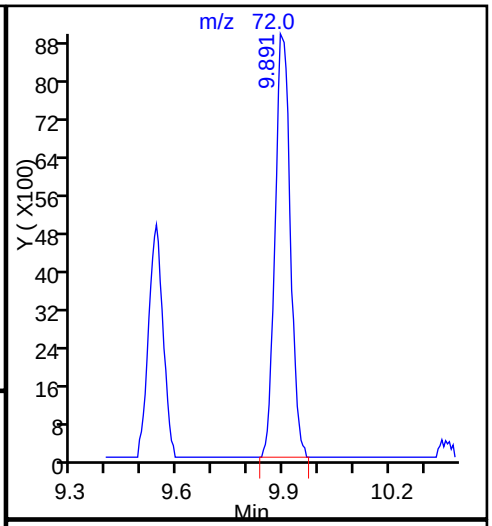


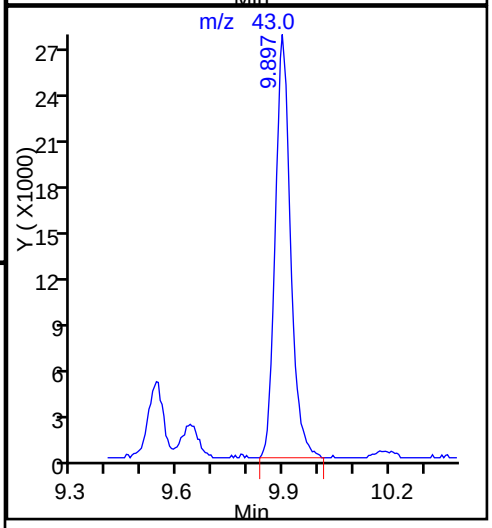
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

36 2-Butanone (MEK), CAS: 78-93-3



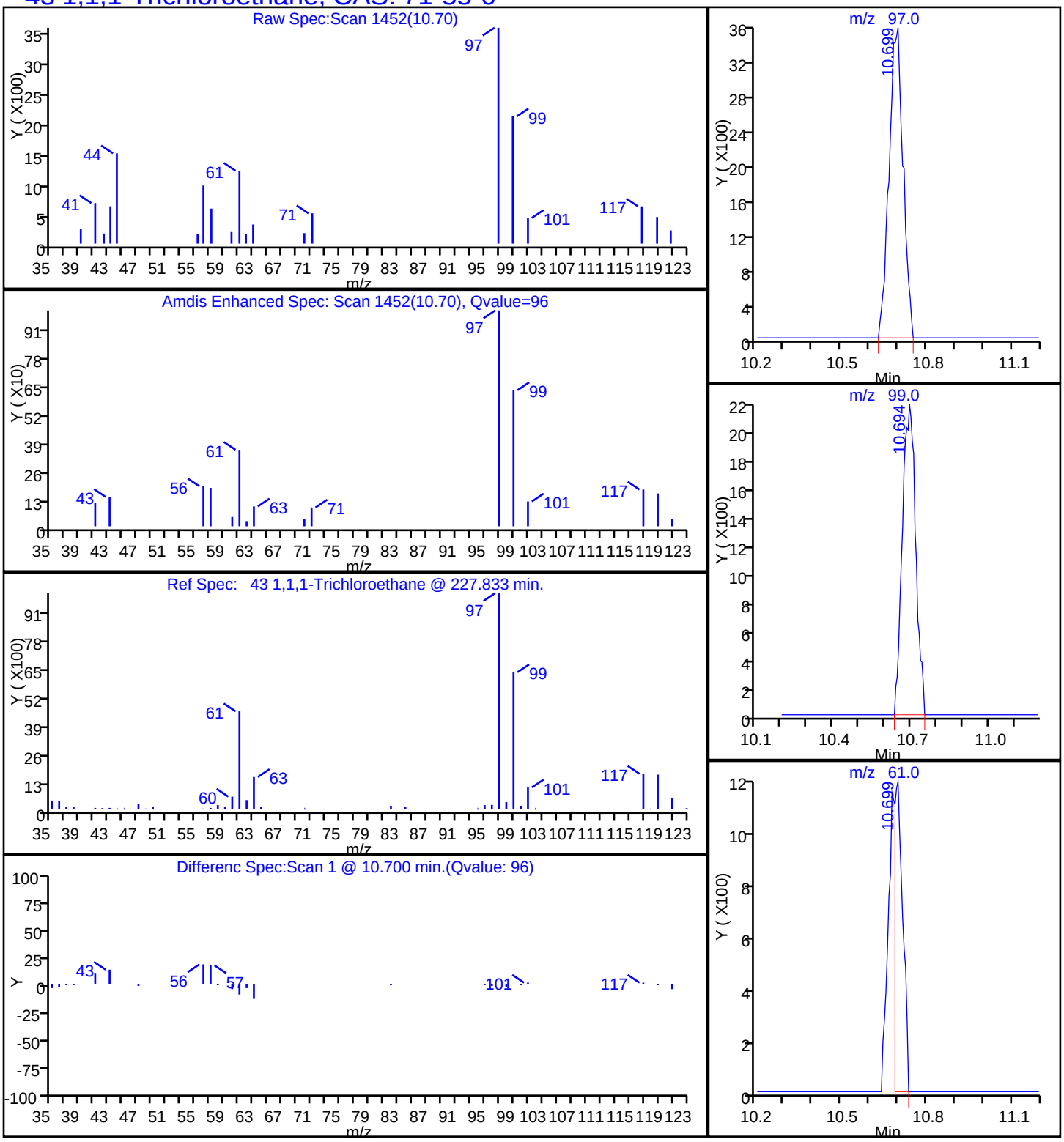




TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

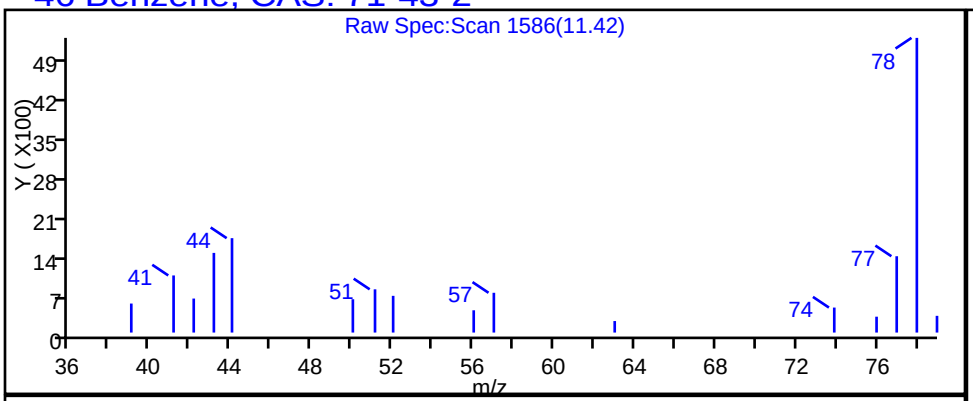
43 1,1,1-Trichloroethane, CAS: 71-55-6

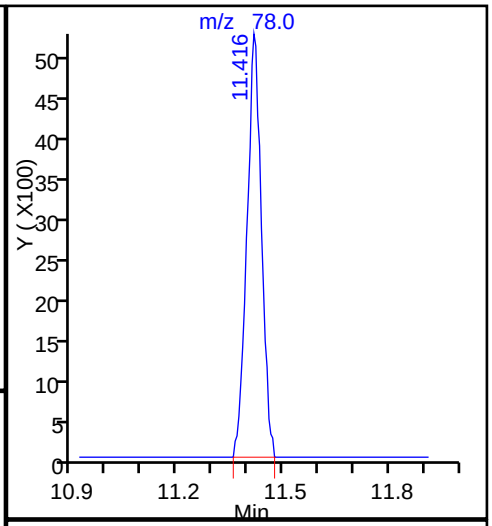


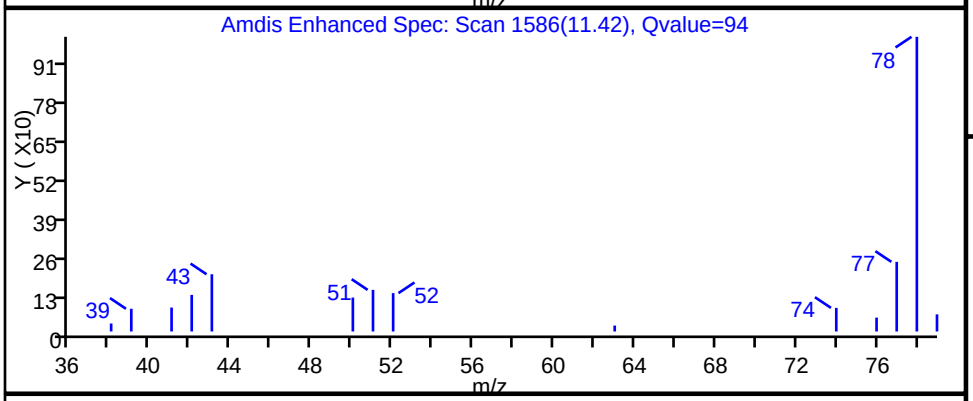
TestAmerica Burlington

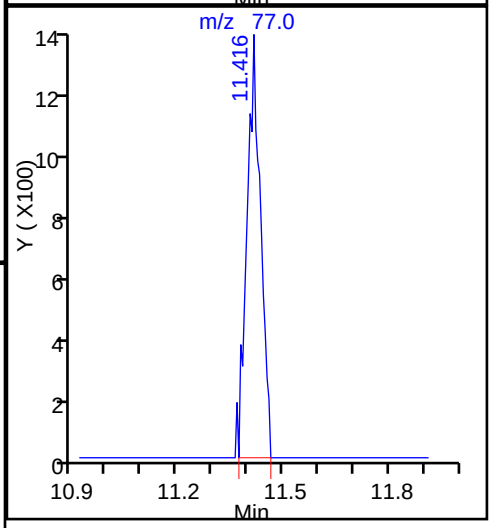
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

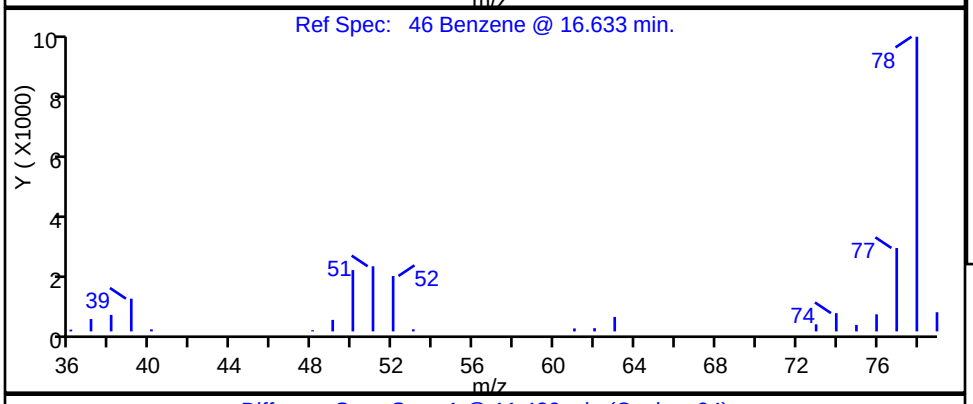
46 Benzene, CAS: 71-43-2

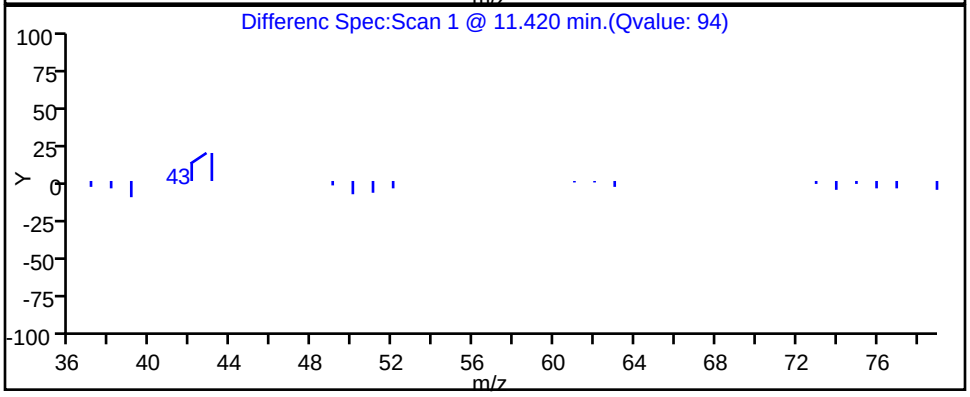








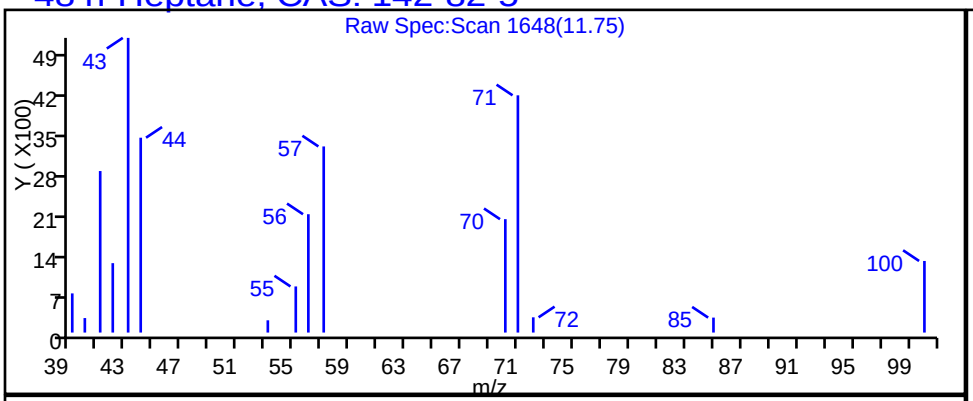


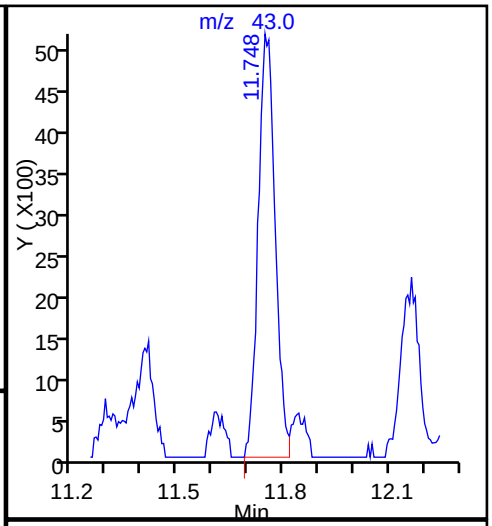


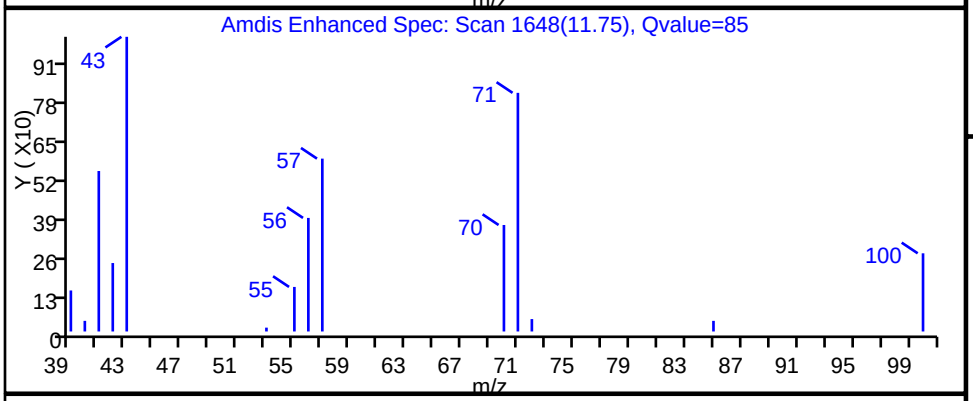
TestAmerica Burlington

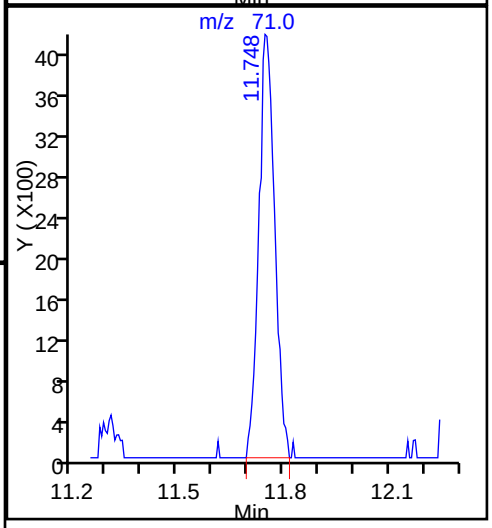
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

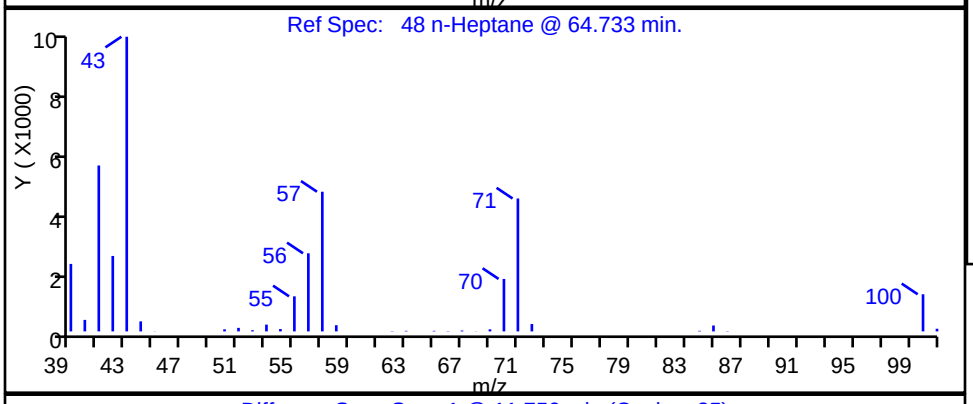
48 n-Heptane, CAS: 142-82-5

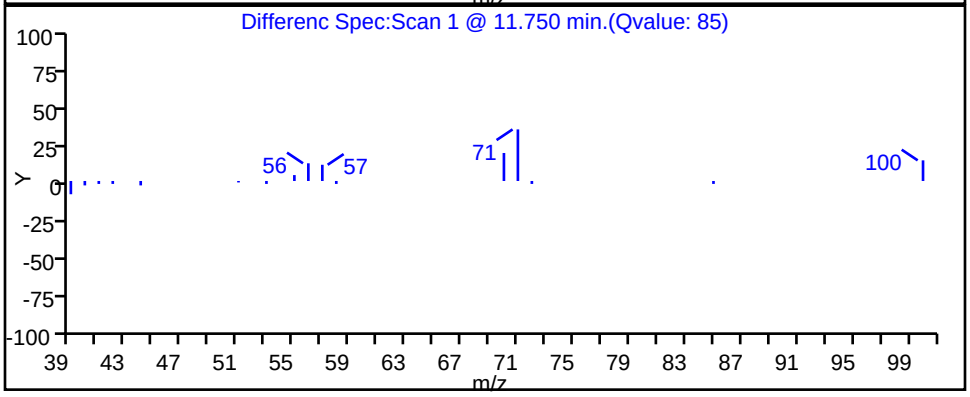








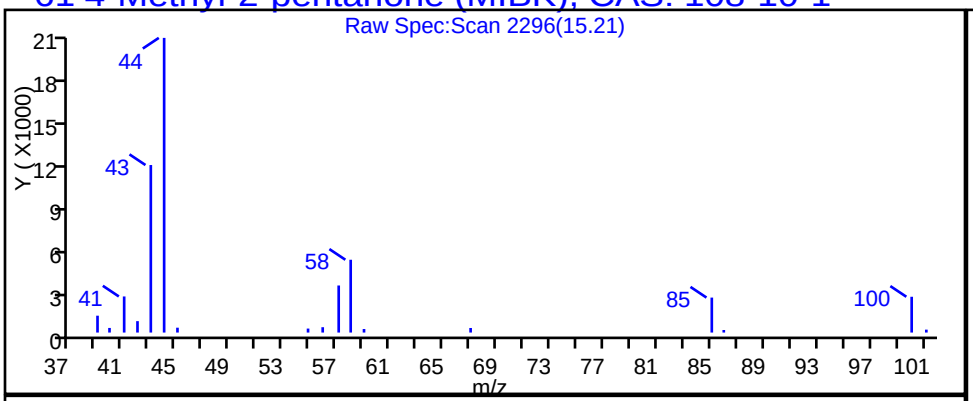


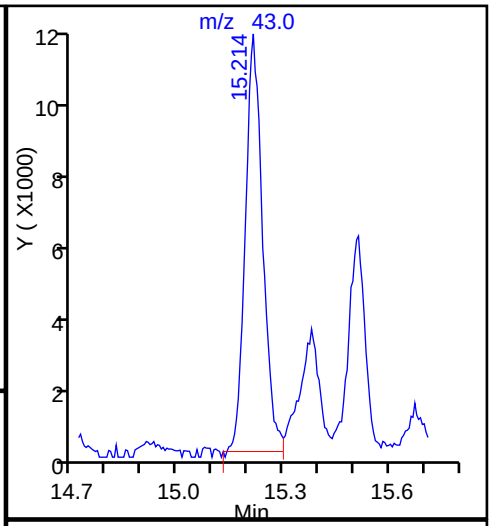


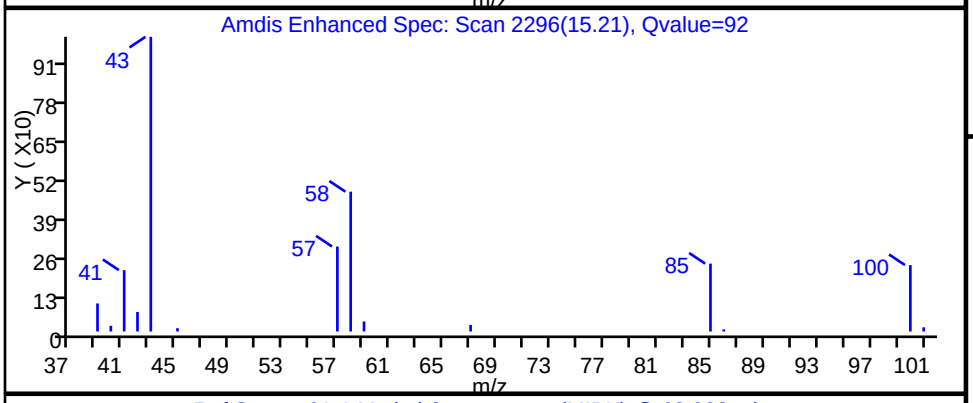
TestAmerica Burlington

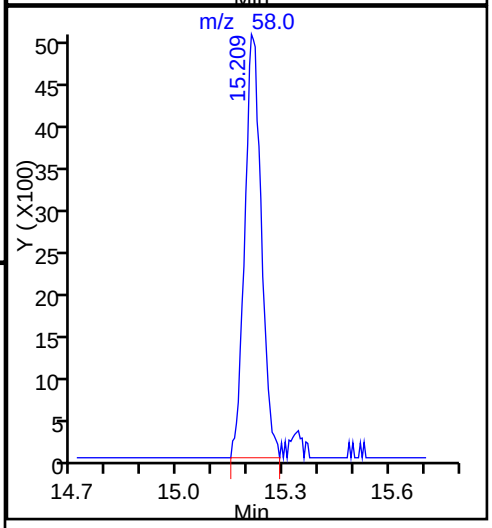
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

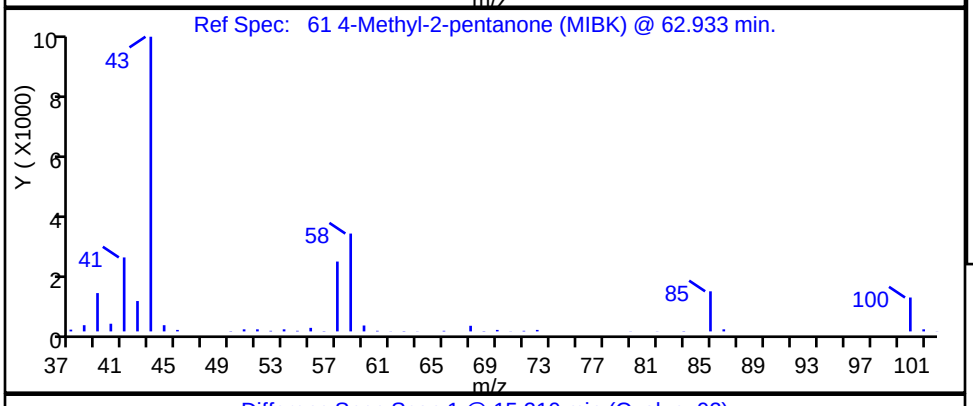
61 4-Methyl-2-pentanone (MIBK), CAS: 108-10-1

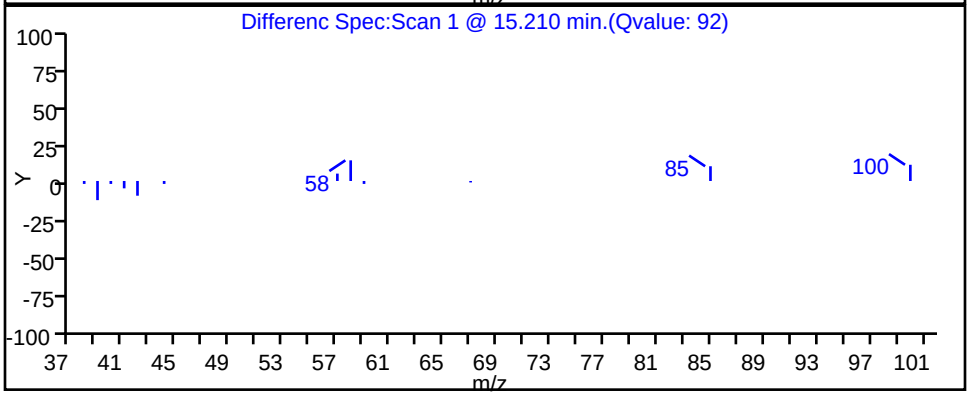








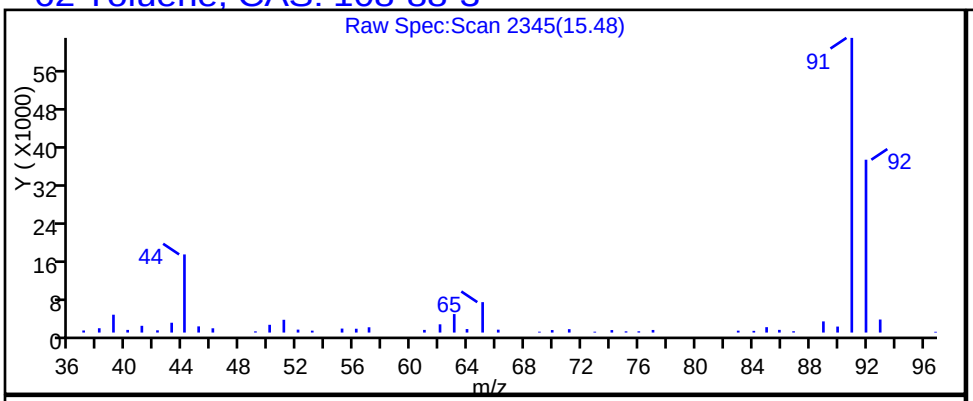


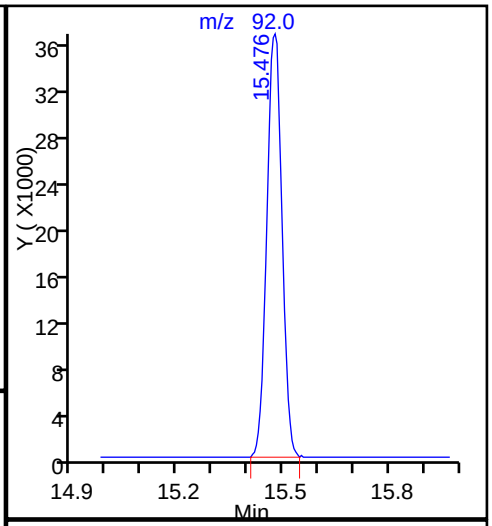


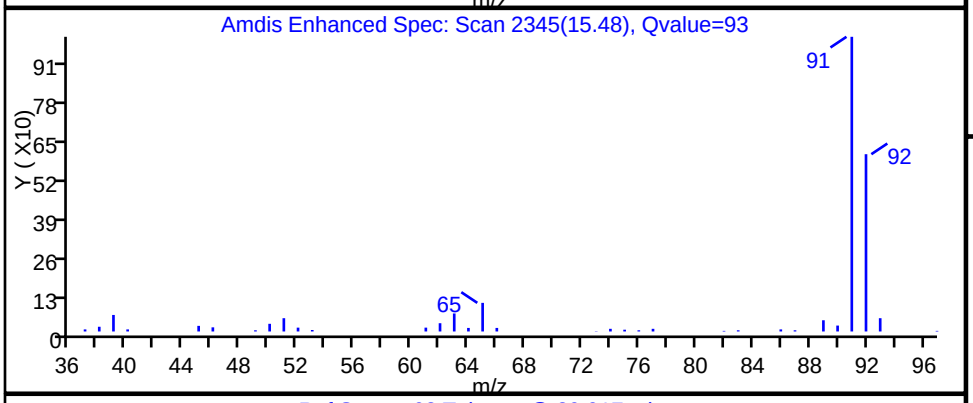
TestAmerica Burlington

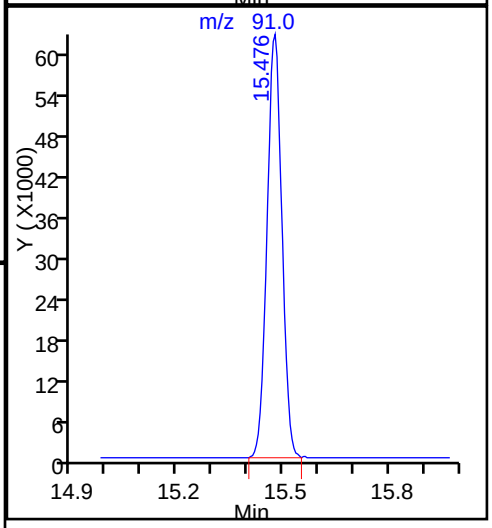
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

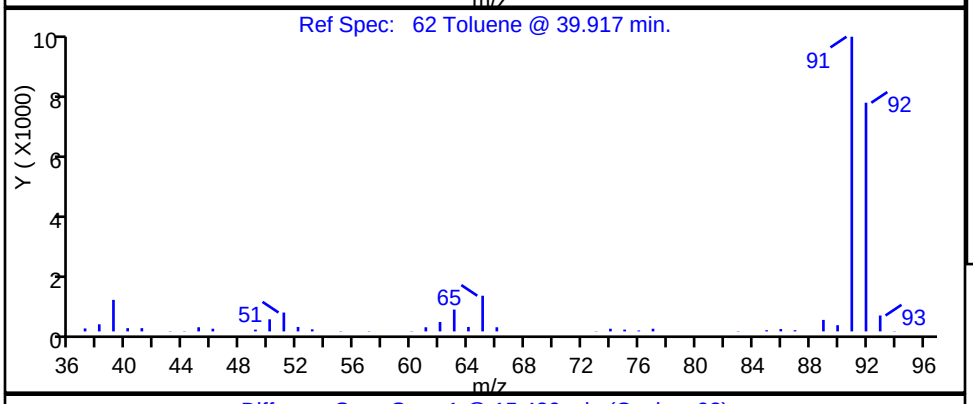
62 Toluene, CAS: 108-88-3

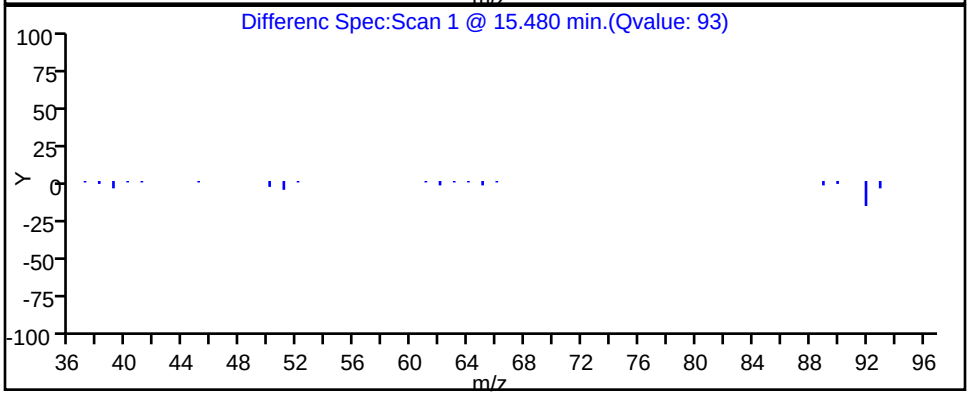








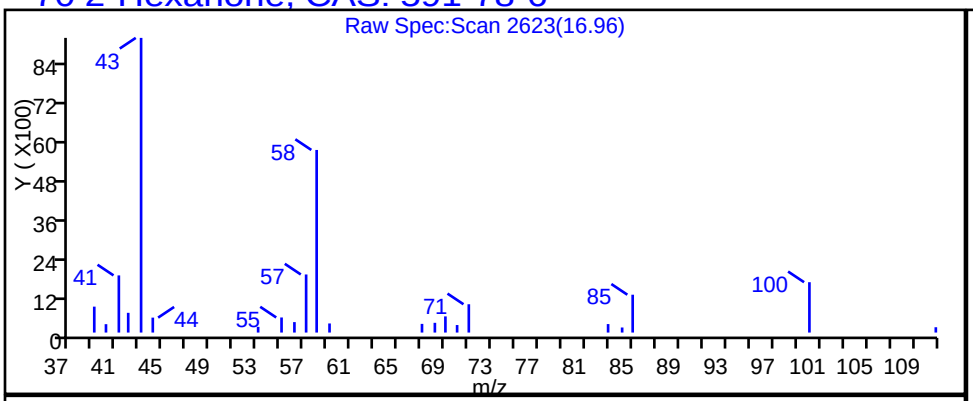


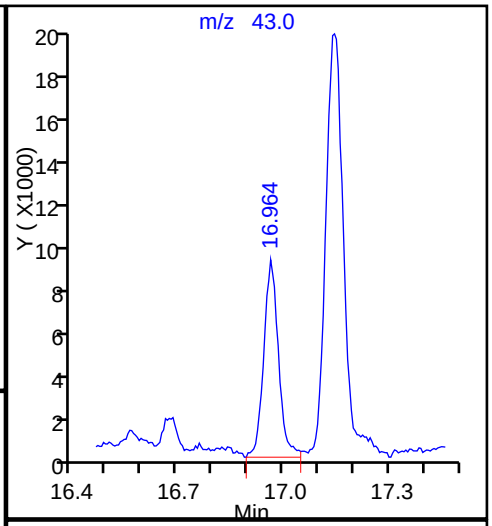


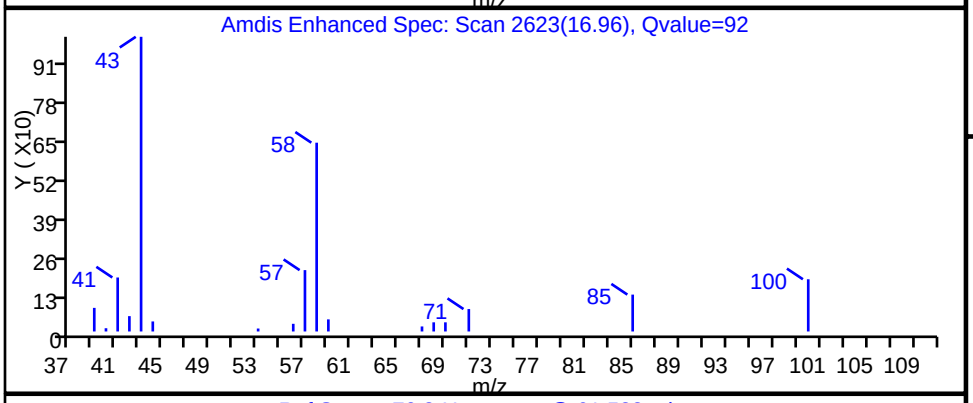
TestAmerica Burlington

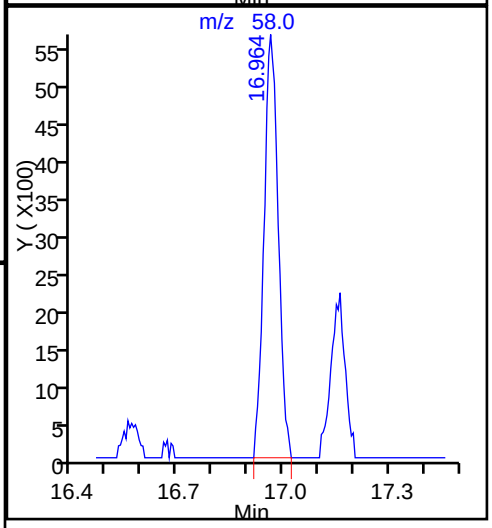
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

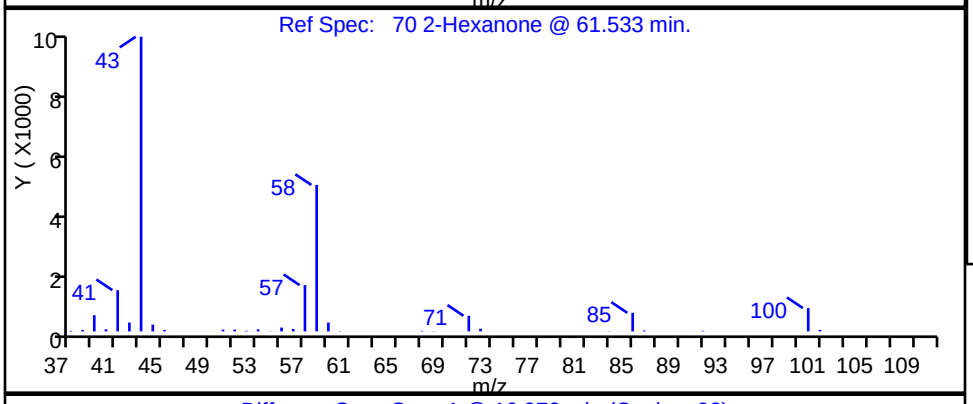
70 2-Hexanone, CAS: 591-78-6

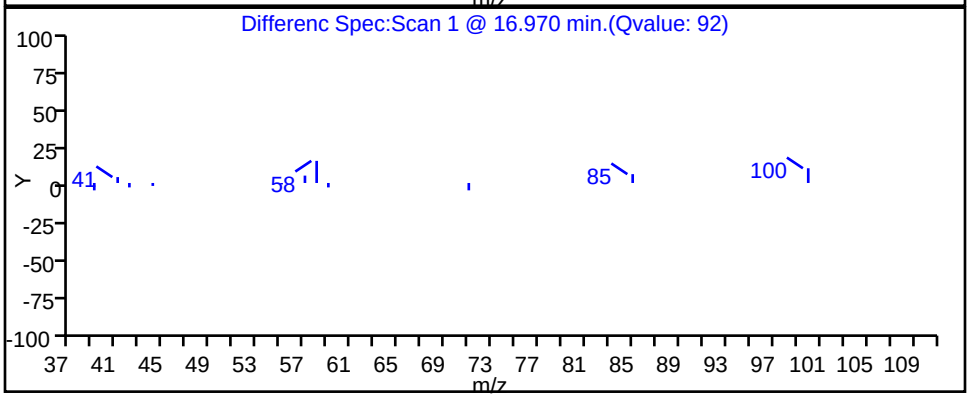








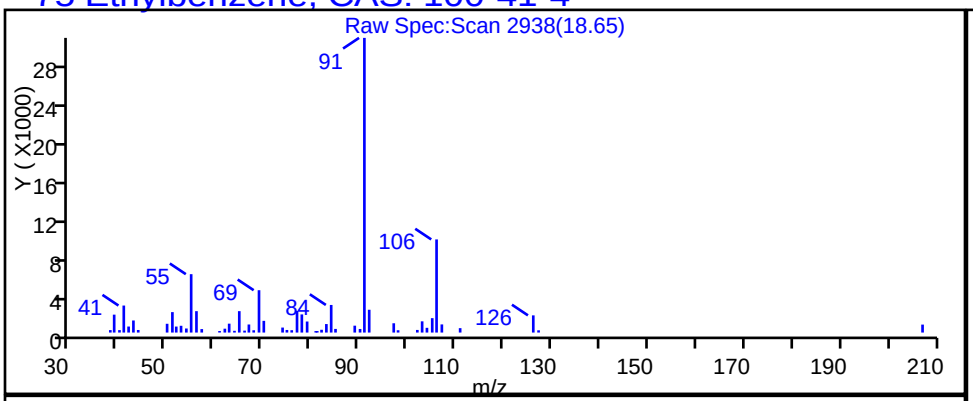


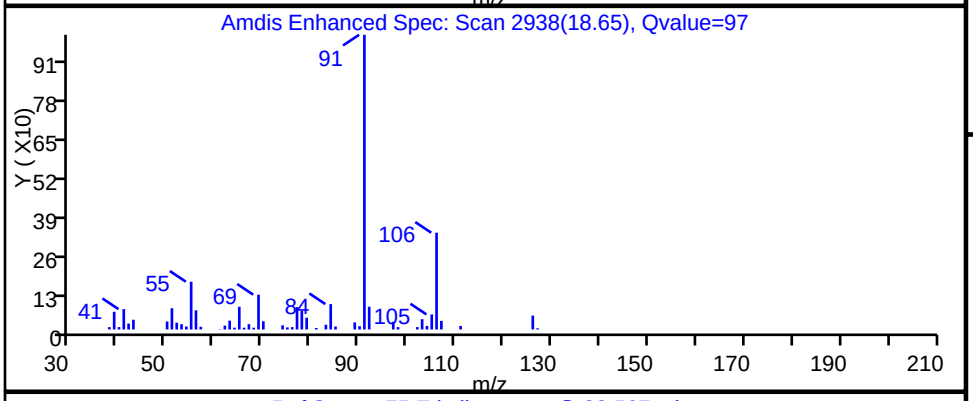


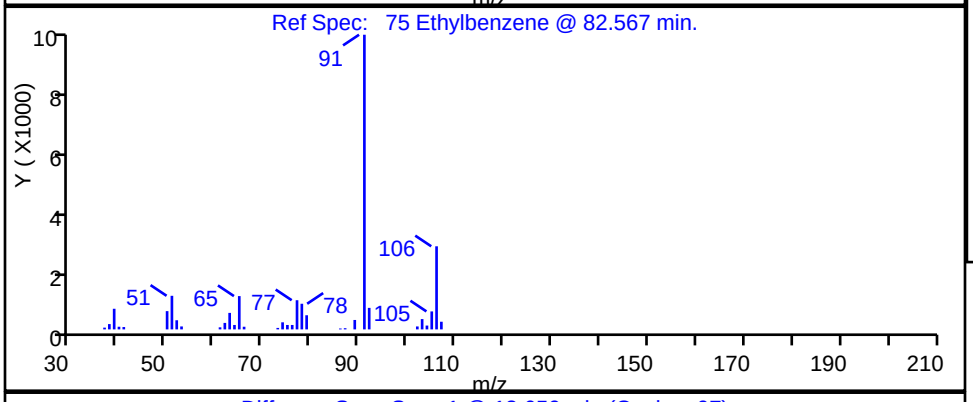
TestAmerica Burlington

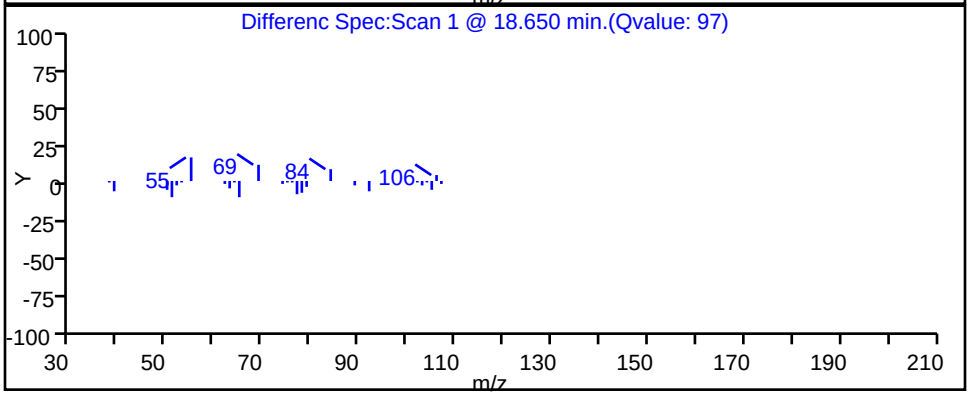
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

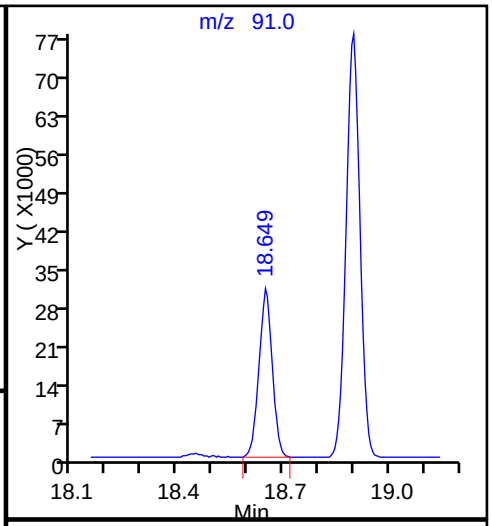
75 Ethylbenzene, CAS: 100-41-4

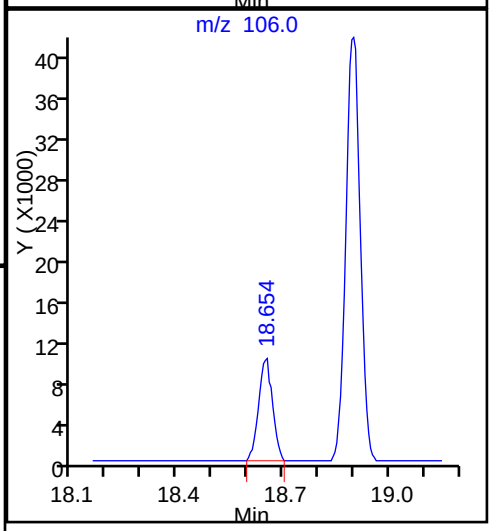












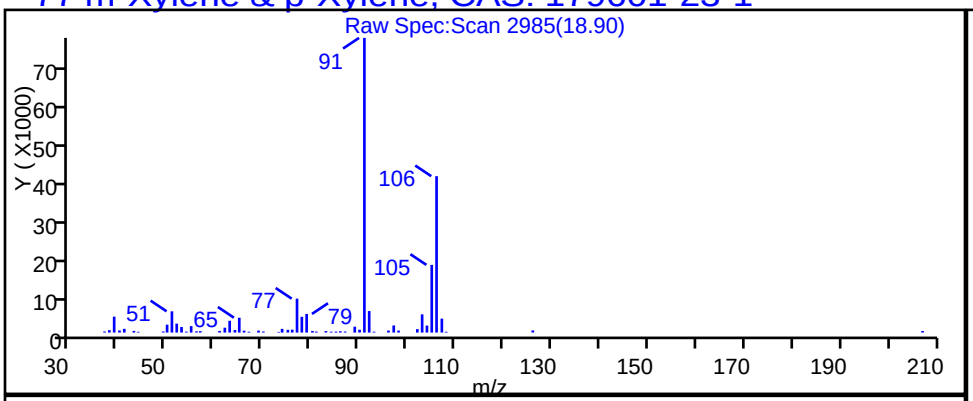
Report Date: 14-Oct-2015 08:00:23 Chrom Revision: 2.2 08-Oct-2015 07:17:48

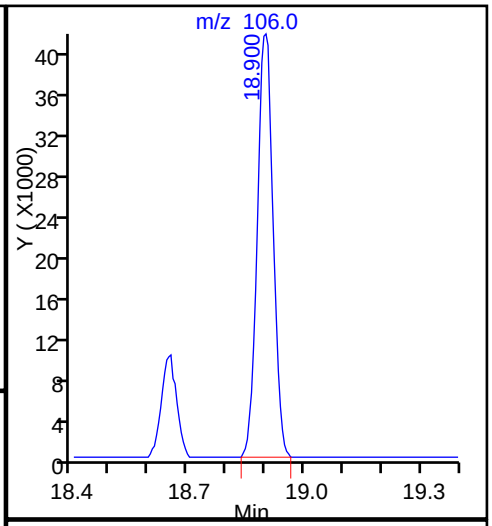
TestAmerica Burlington

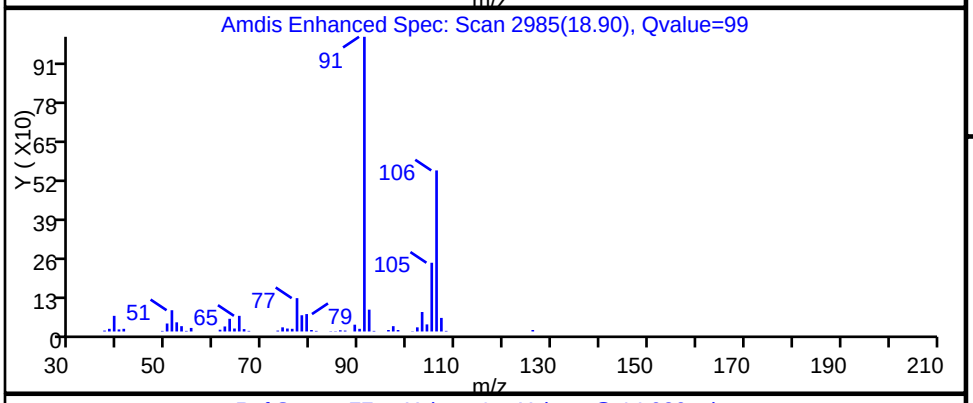
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

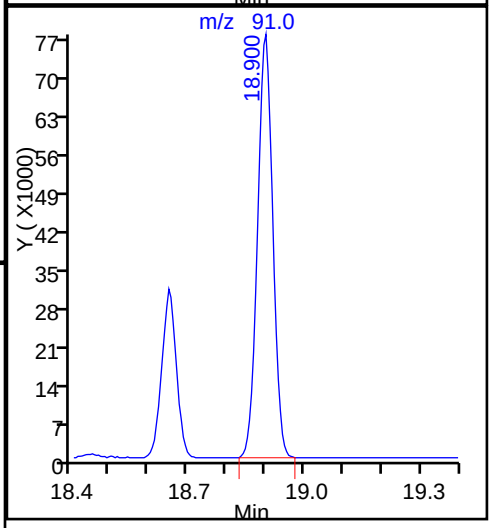
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

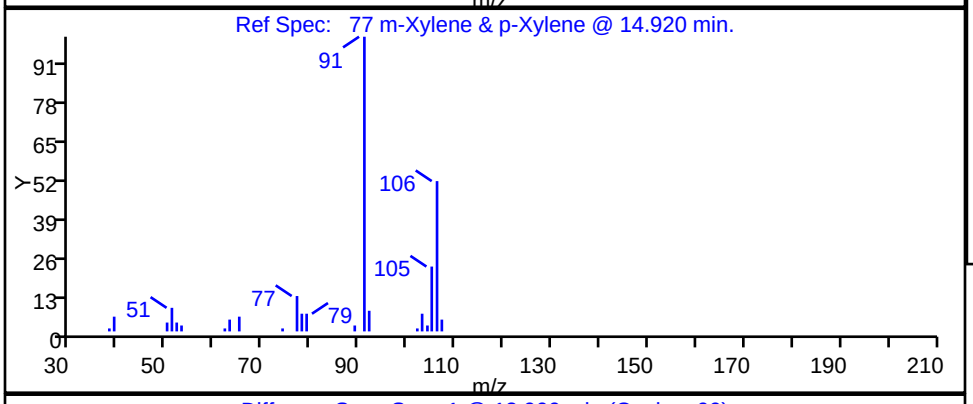
77 m-Xylene & p-Xylene, CAS: 179601-23-1

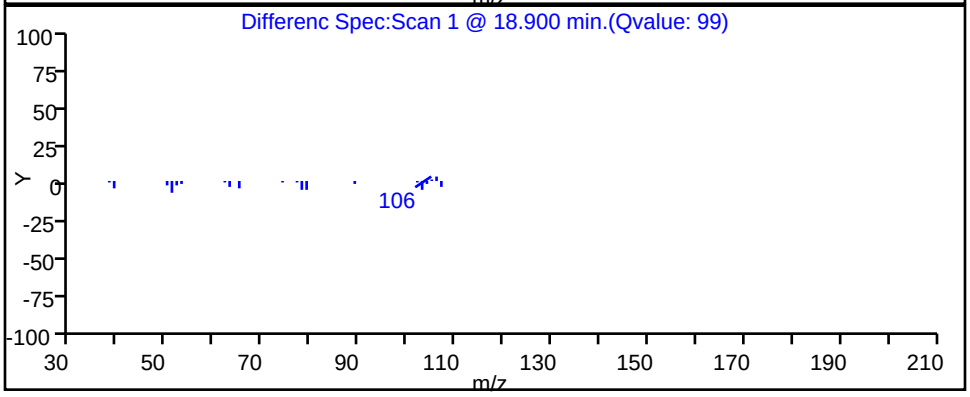












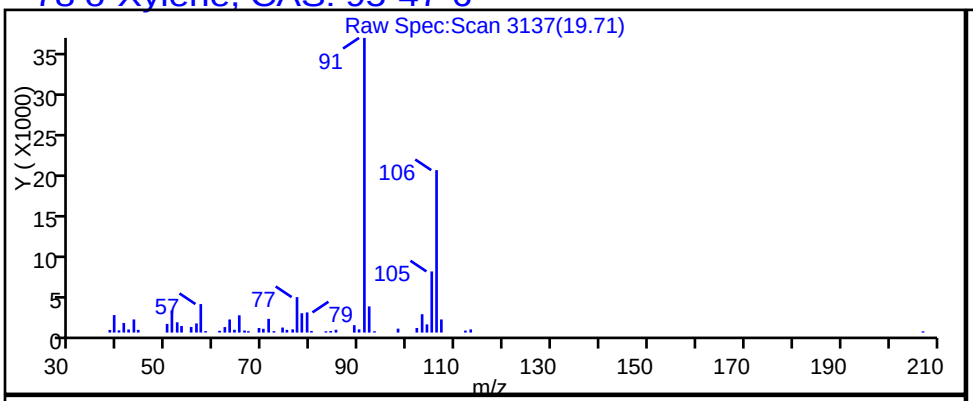
Report Date: 14-Oct-2015 08:00:23 Chrom Revision: 2.2 08-Oct-2015 07:17:48

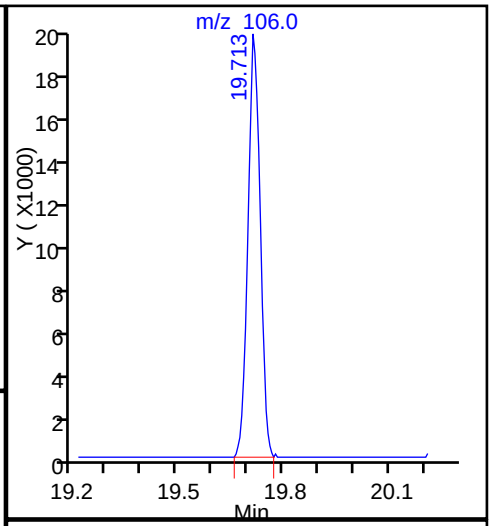
TestAmerica Burlington

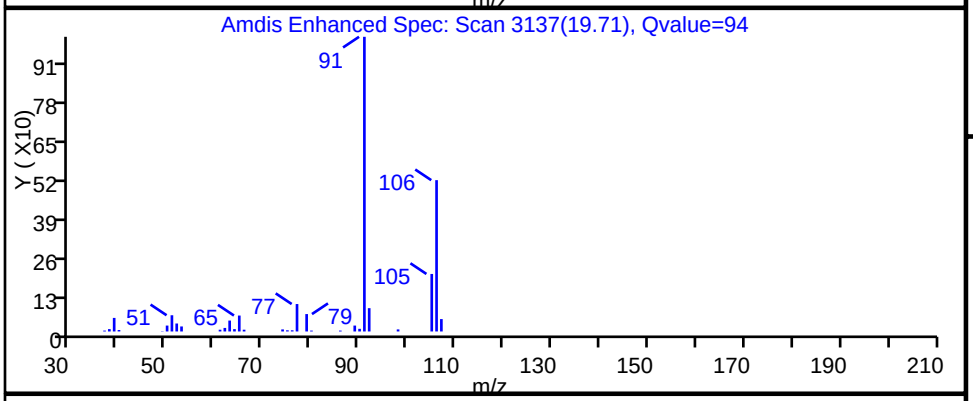
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

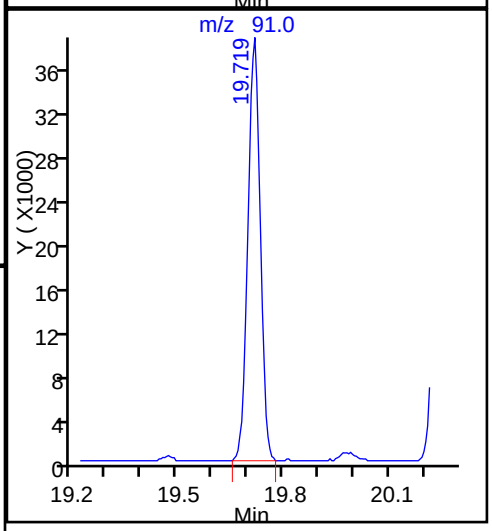
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

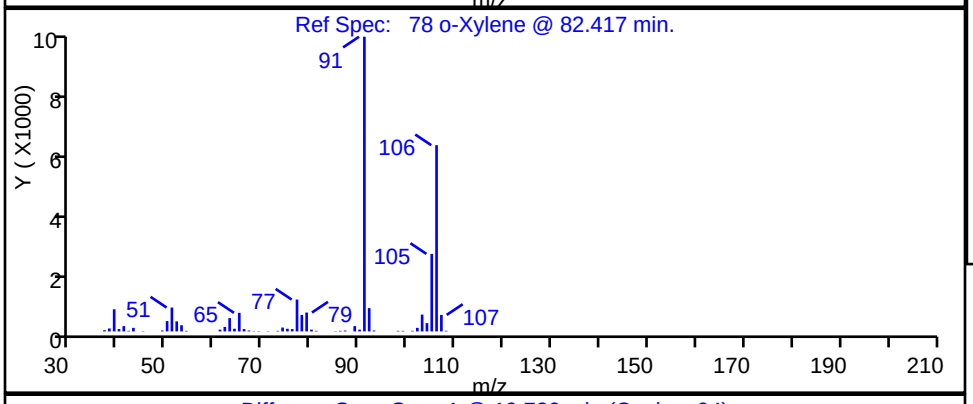
78 o-Xylene, CAS: 95-47-6

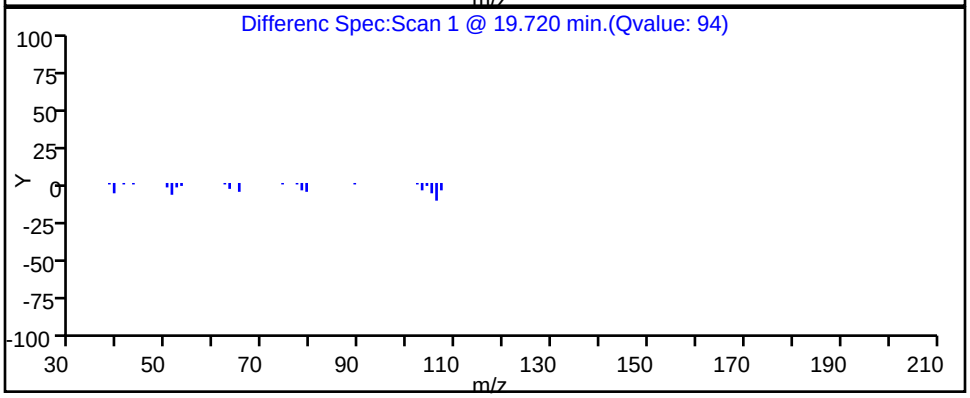








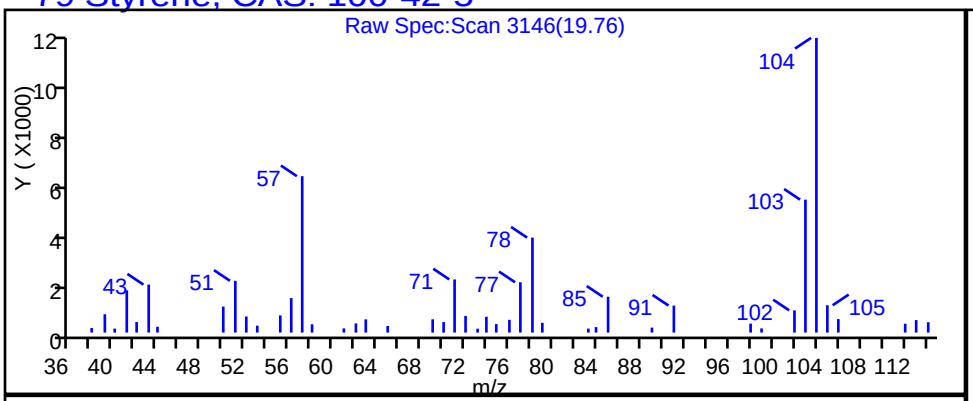


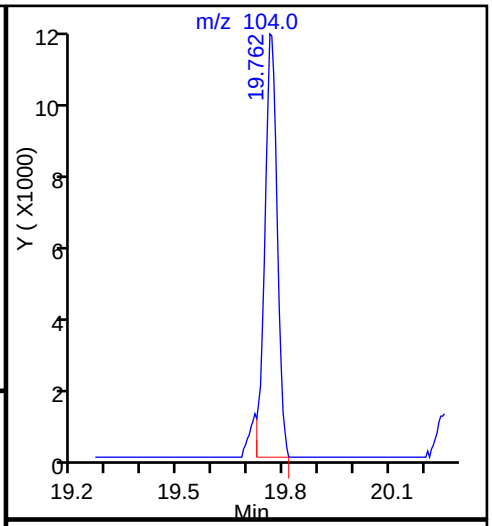


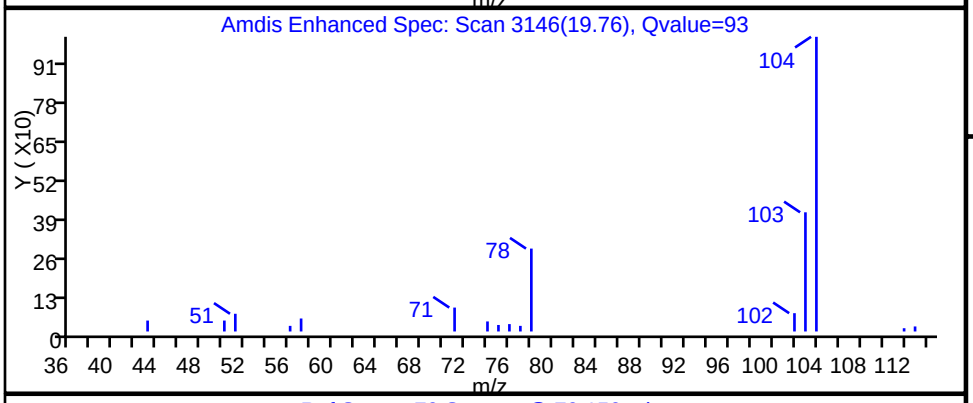
TestAmerica Burlington

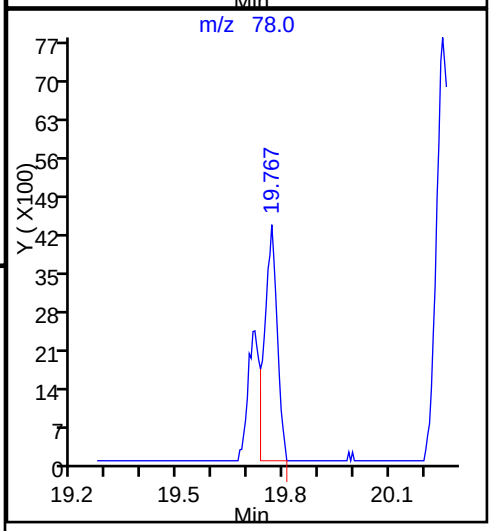
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

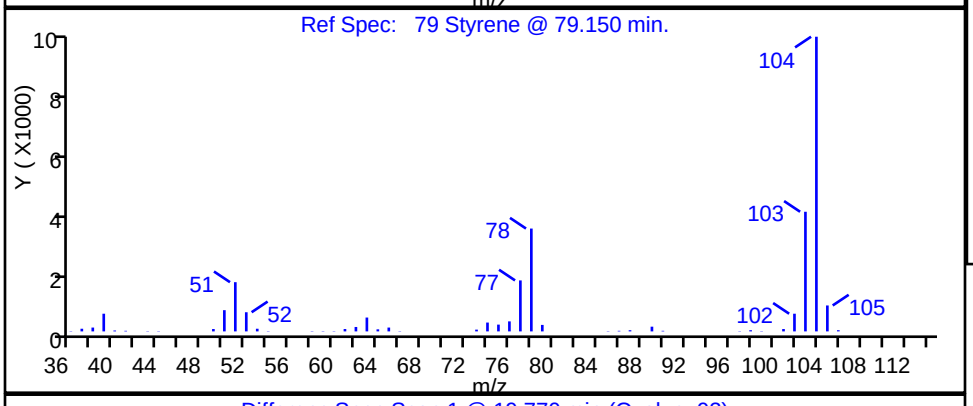
79 Styrene, CAS: 100-42-5

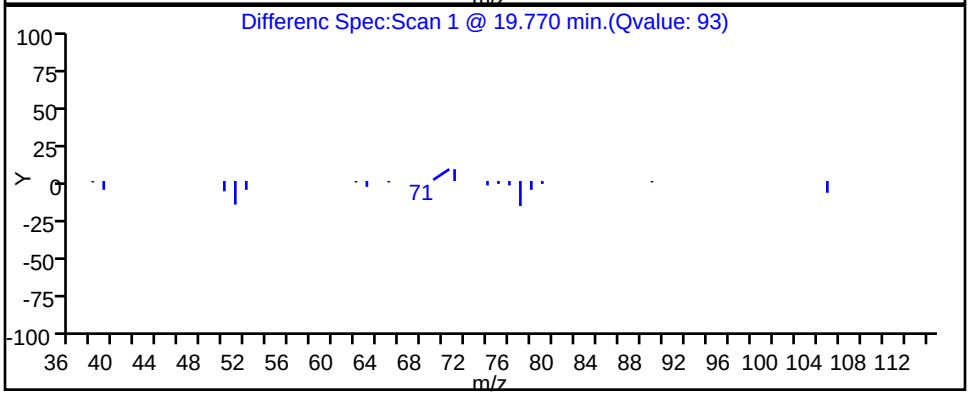












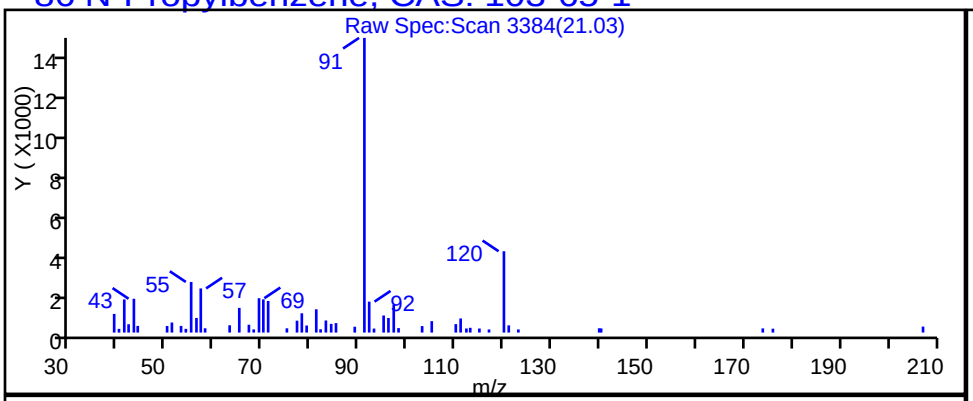
Report Date: 14-Oct-2015 08:00:23 Chrom Revision: 2.2 08-Oct-2015 07:17:48

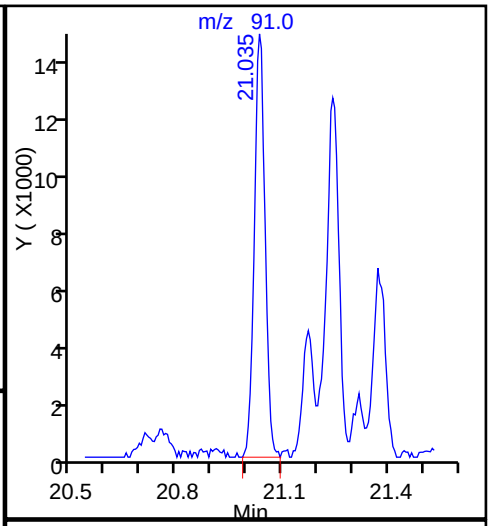
TestAmerica Burlington

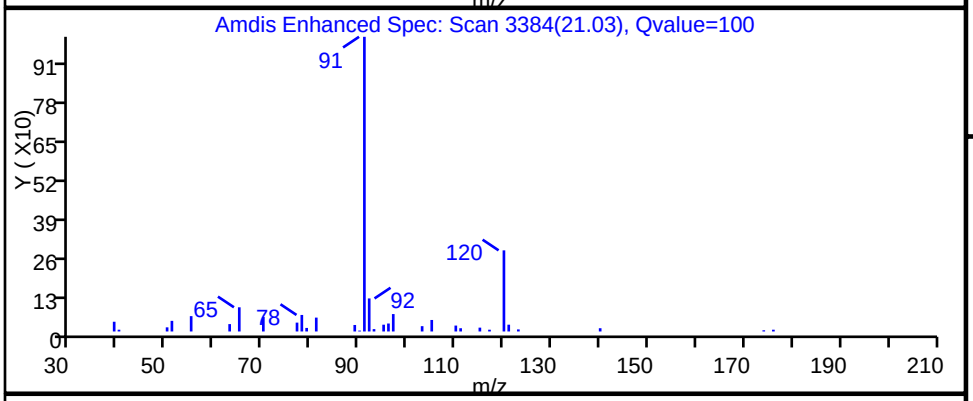
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

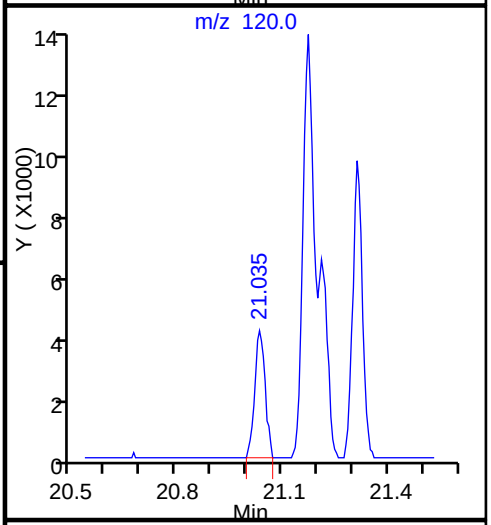
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

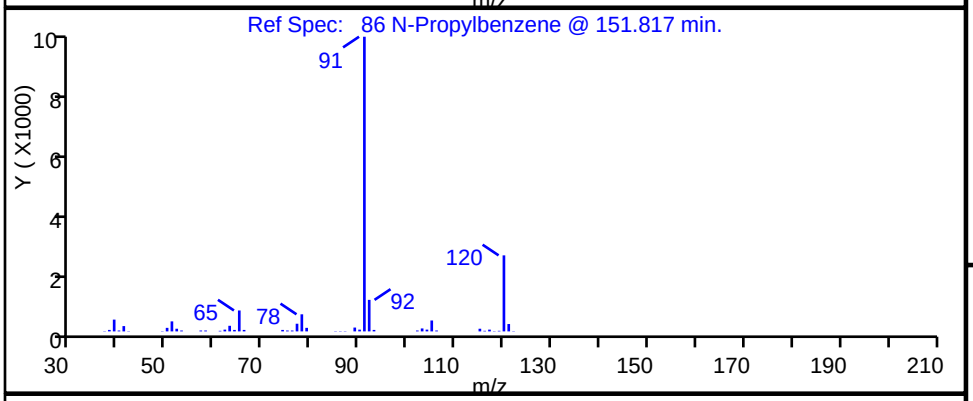
86 N-Propylbenzene, CAS: 103-65-1

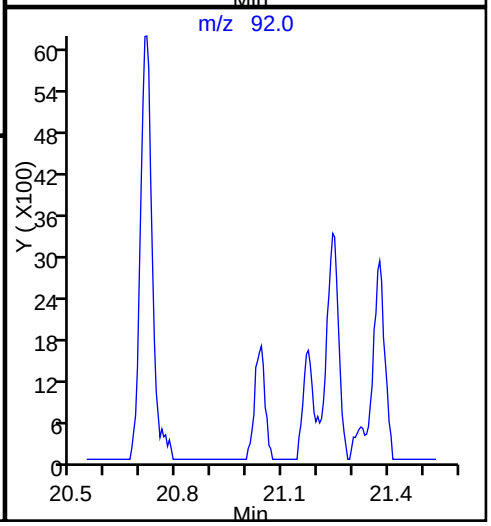


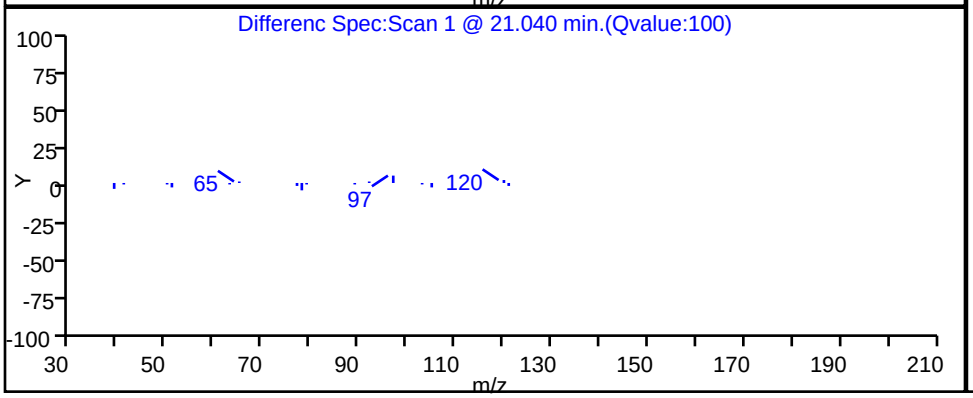








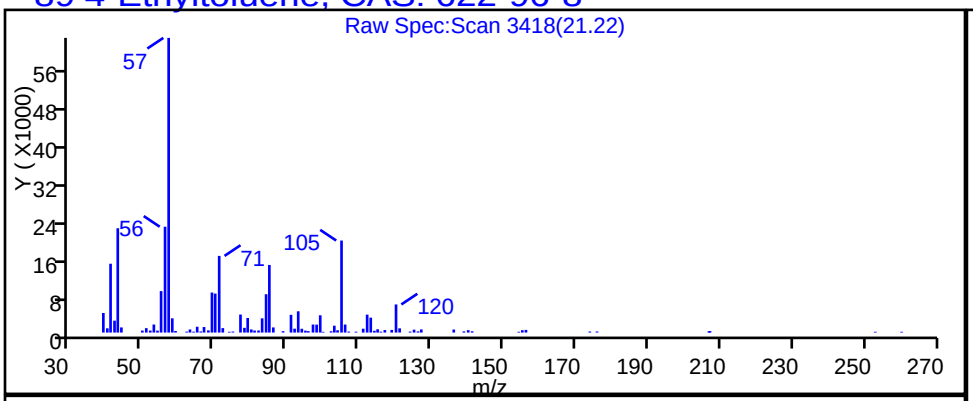


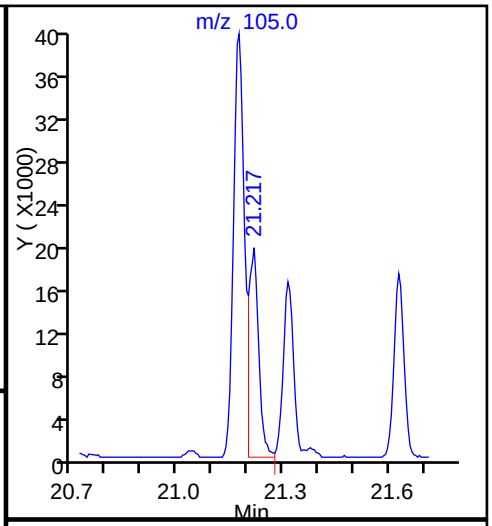


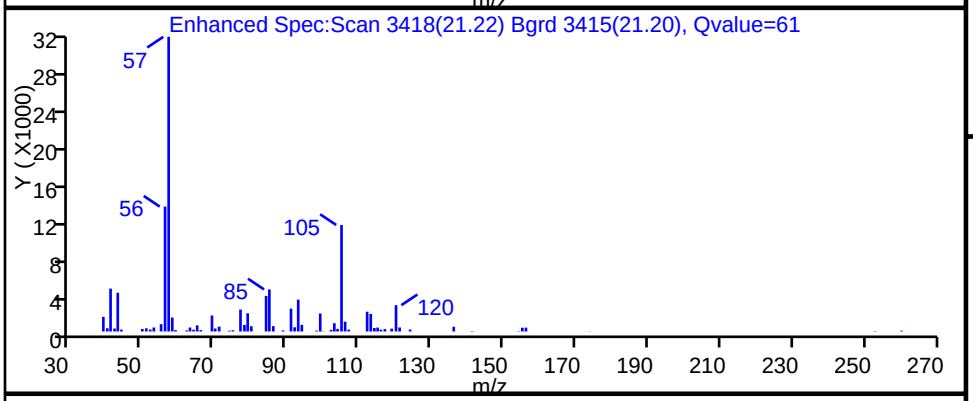
TestAmerica Burlington

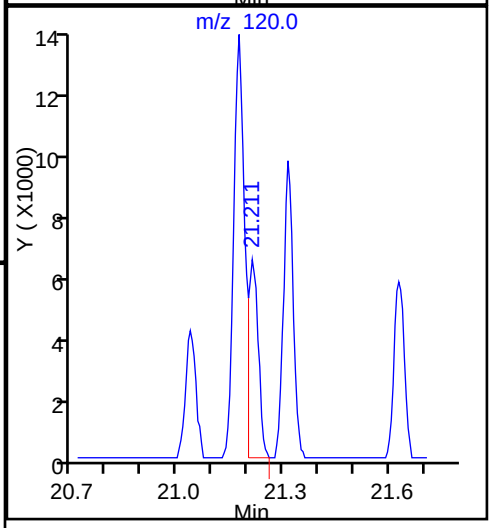
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

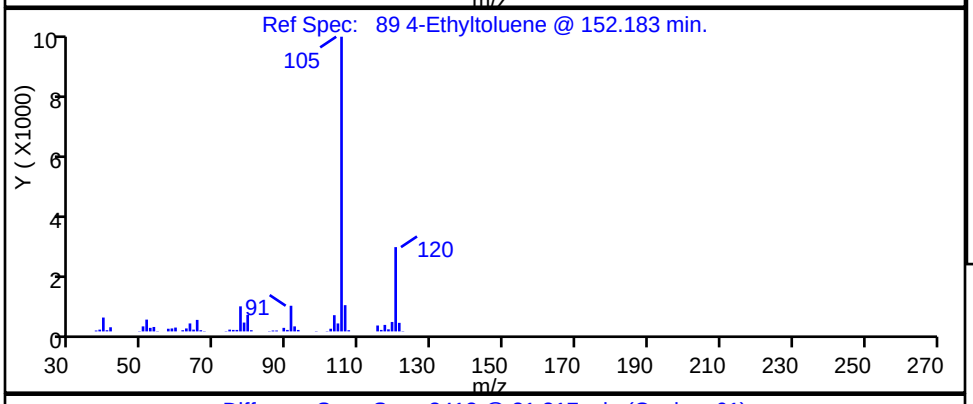
89 4-Ethyltoluene, CAS: 622-96-8

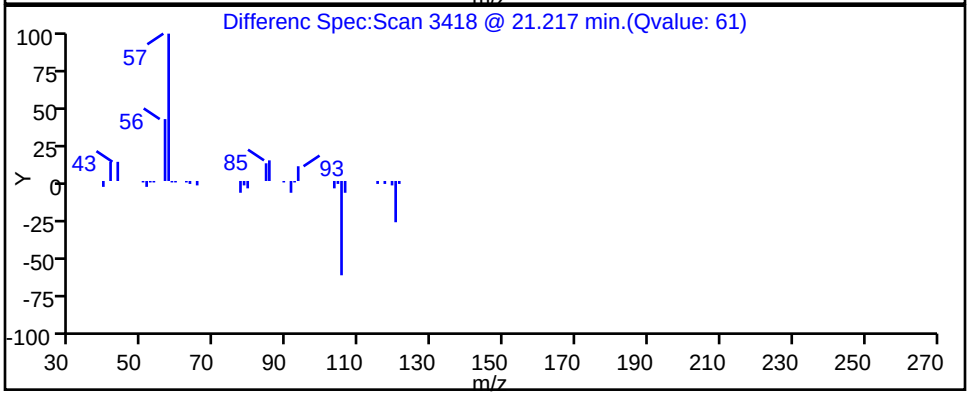








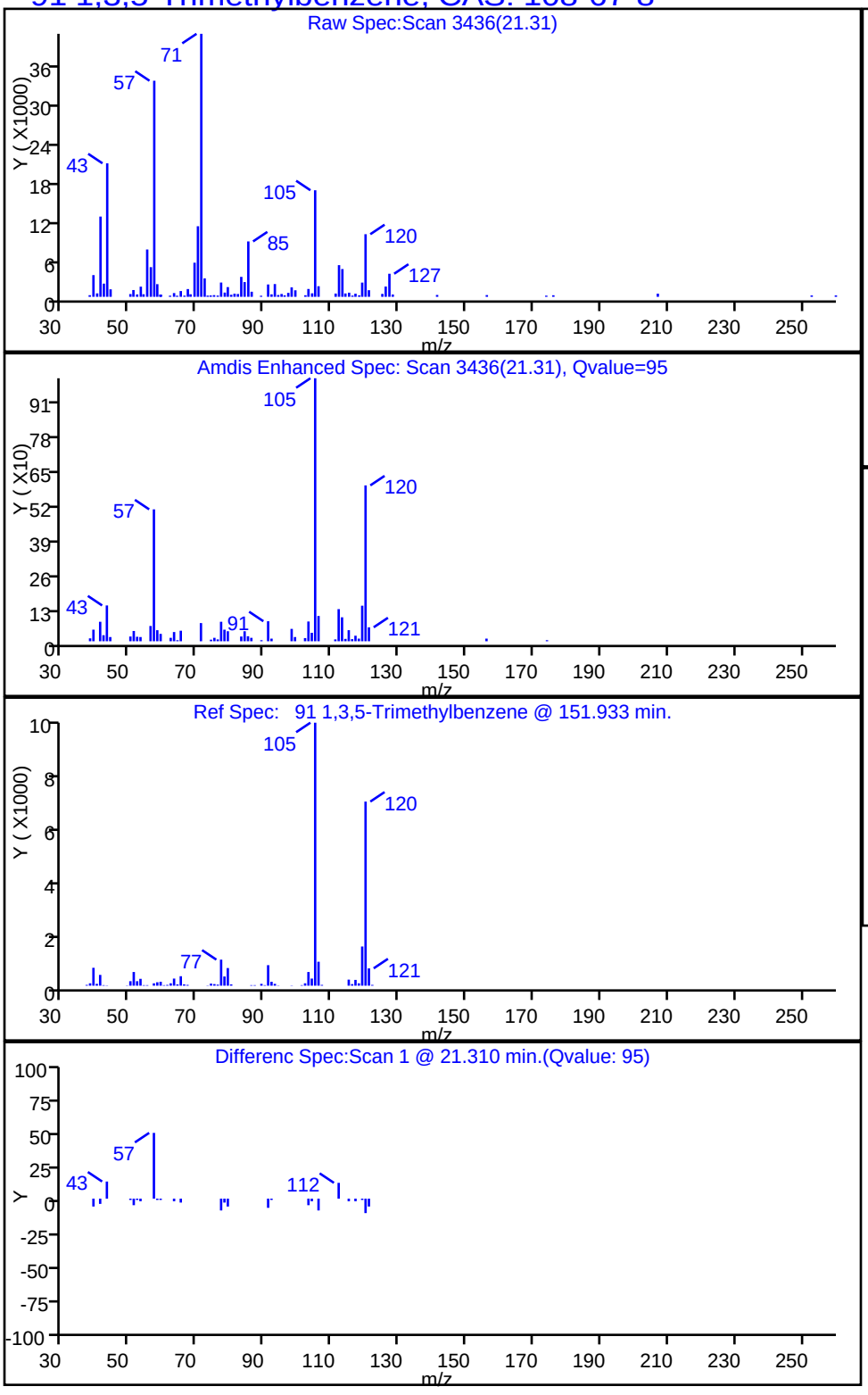


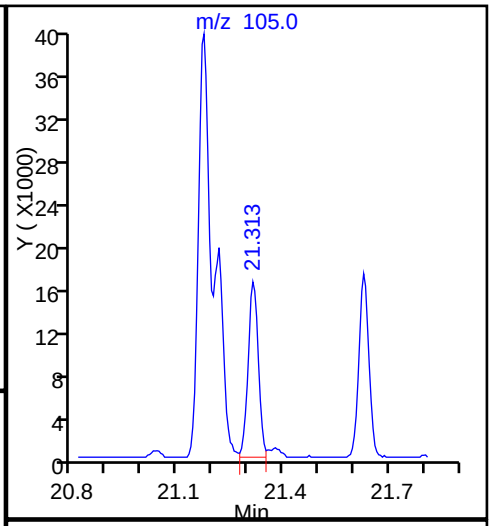


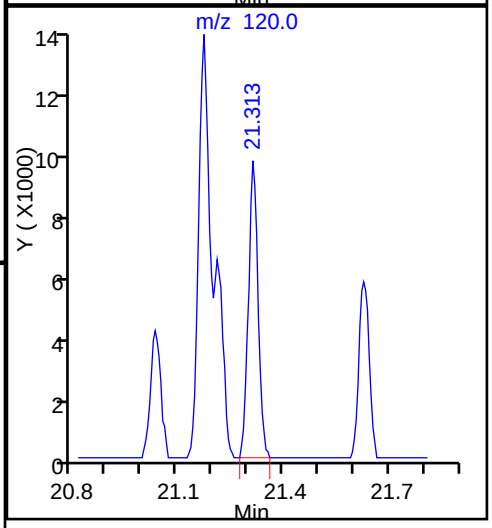
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

91 1,3,5-Trimethylbenzene, CAS: 108-67-8



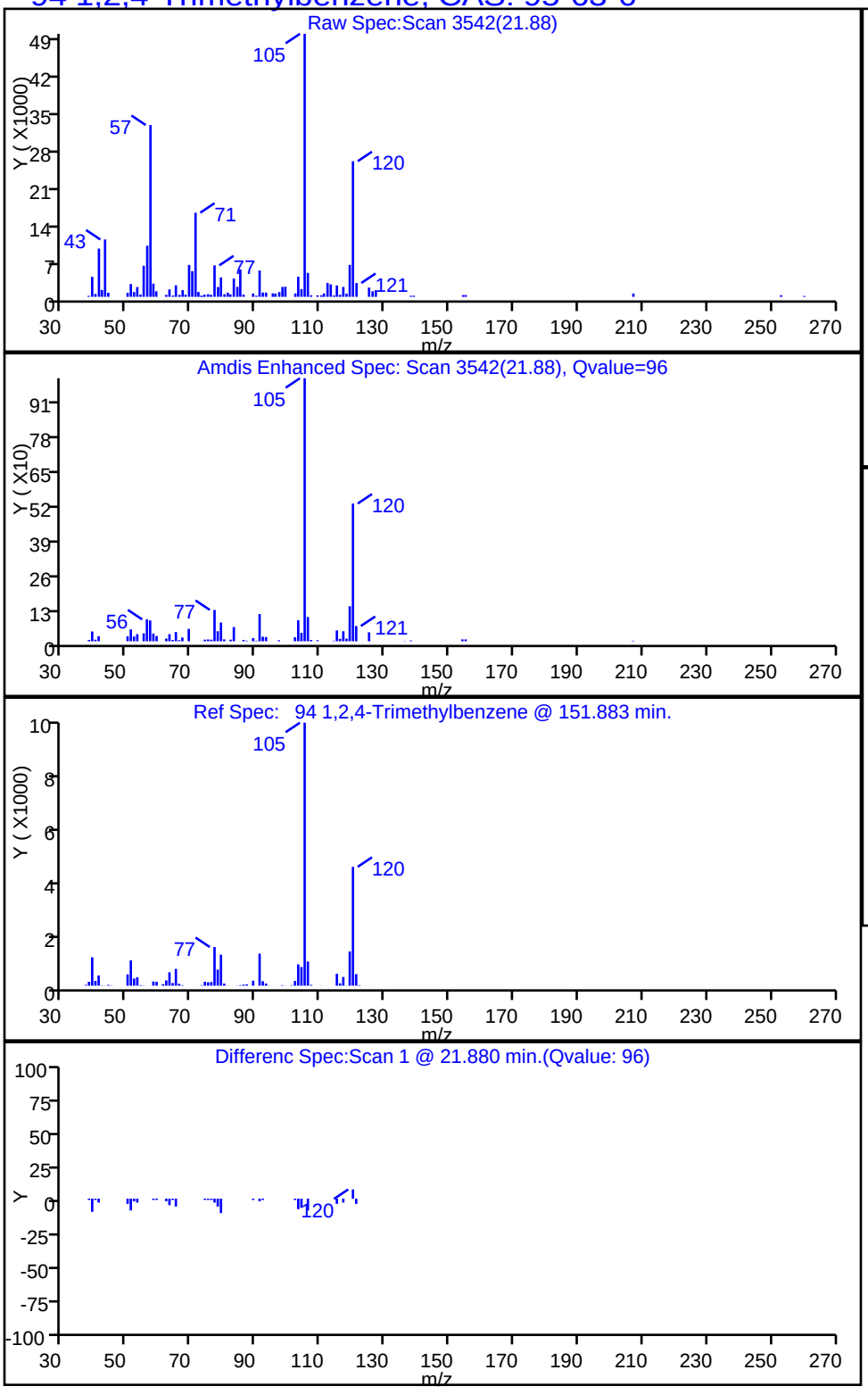


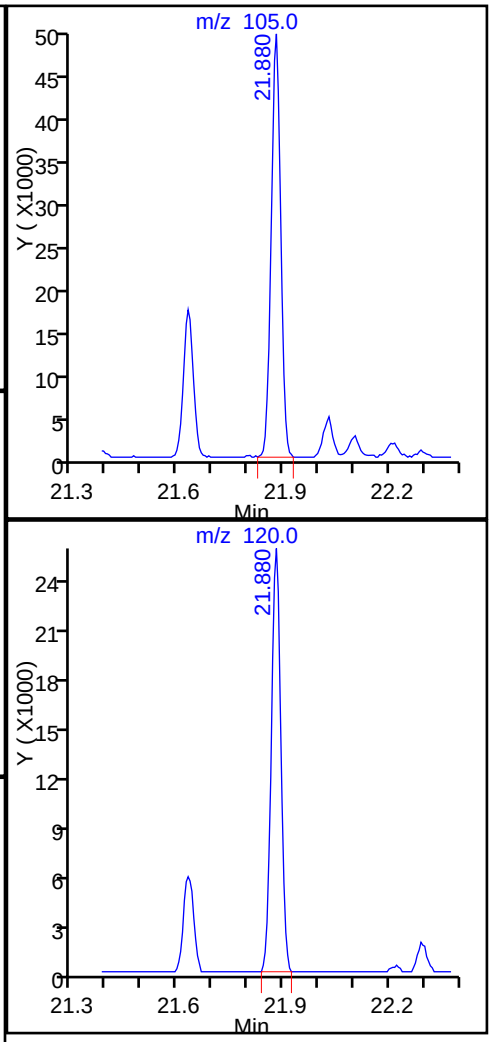


TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

94 1,2,4-Trimethylbenzene, CAS: 95-63-6

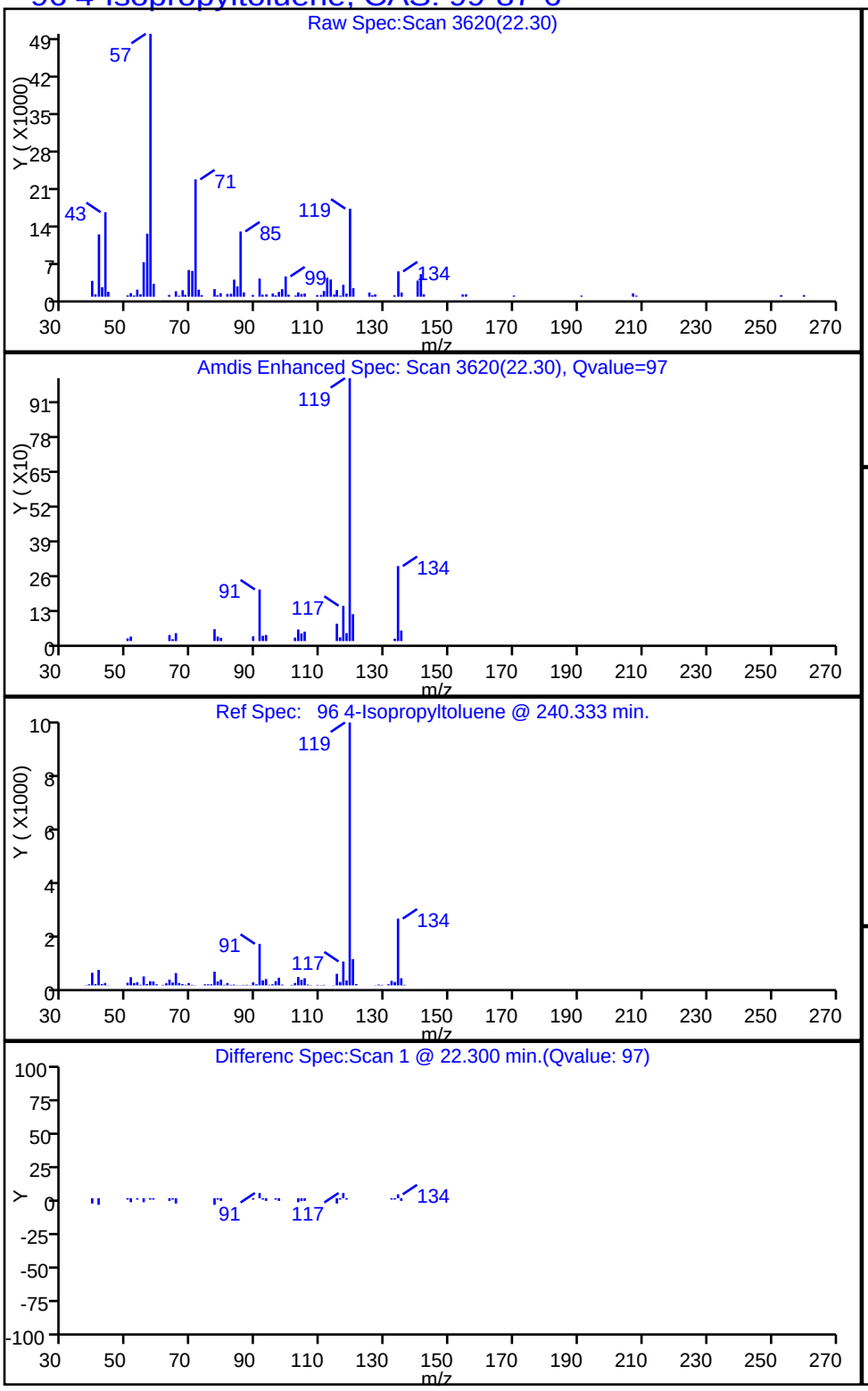


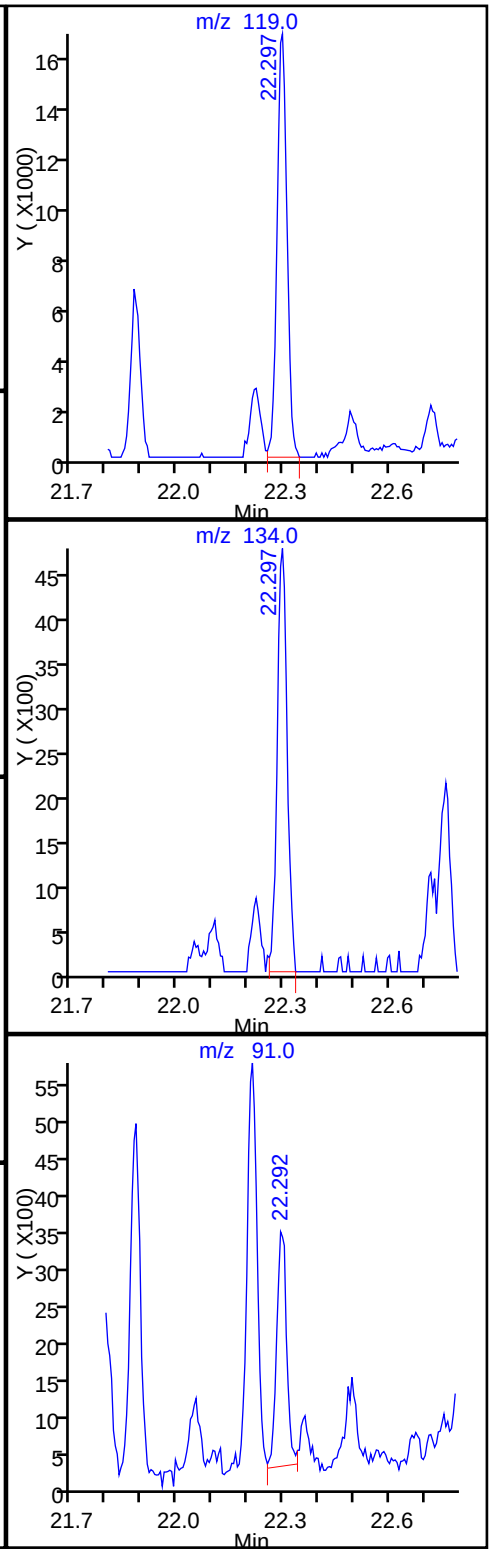


TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

96 4-Isopropyltoluene, CAS: 99-87-6





Manual Integration/User Assign Peak Report

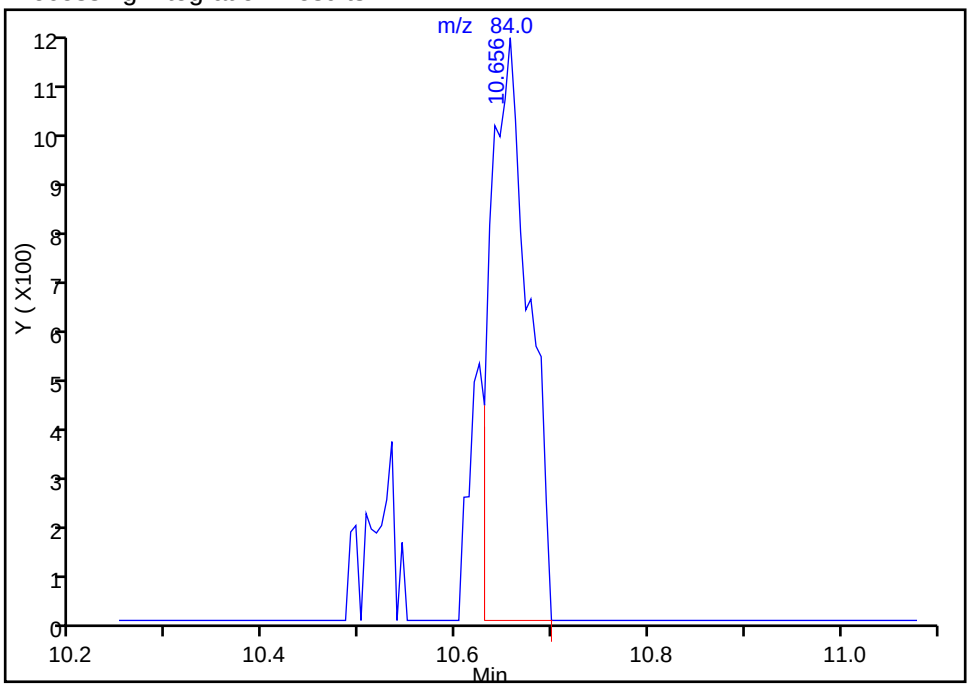
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

42 Cyclohexane, CAS: 110-82-7

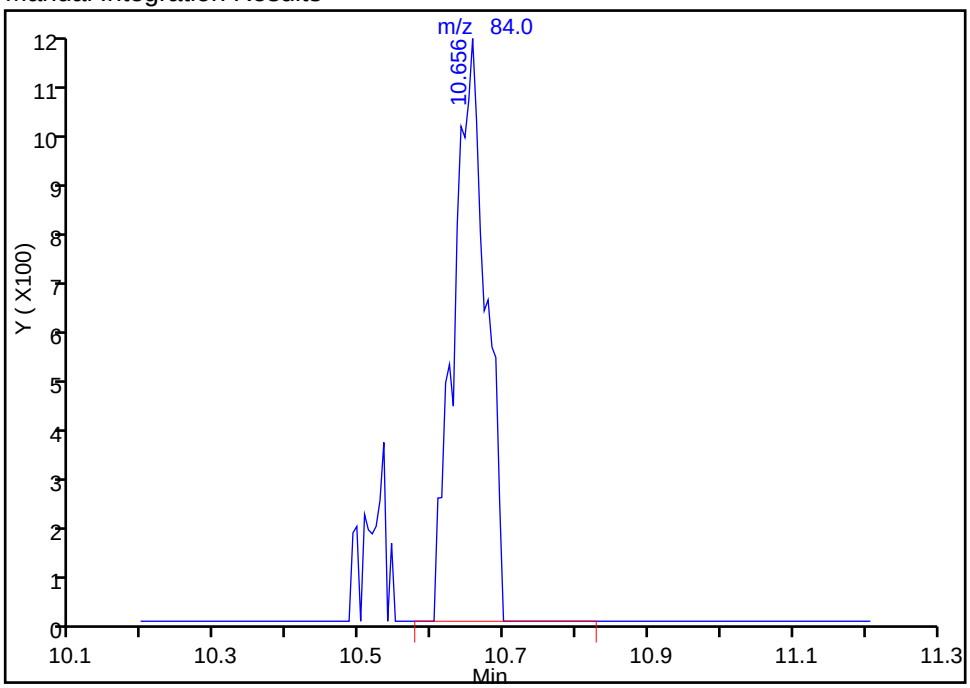
Processing Integration Results

RT: 10.66
Area: 3147
Amount: 0.126952
Amount Units: ppb v/v



Manual Integration Results

RT: 10.66
Area: 3627
Amount: 0.146316
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 08:00:19
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

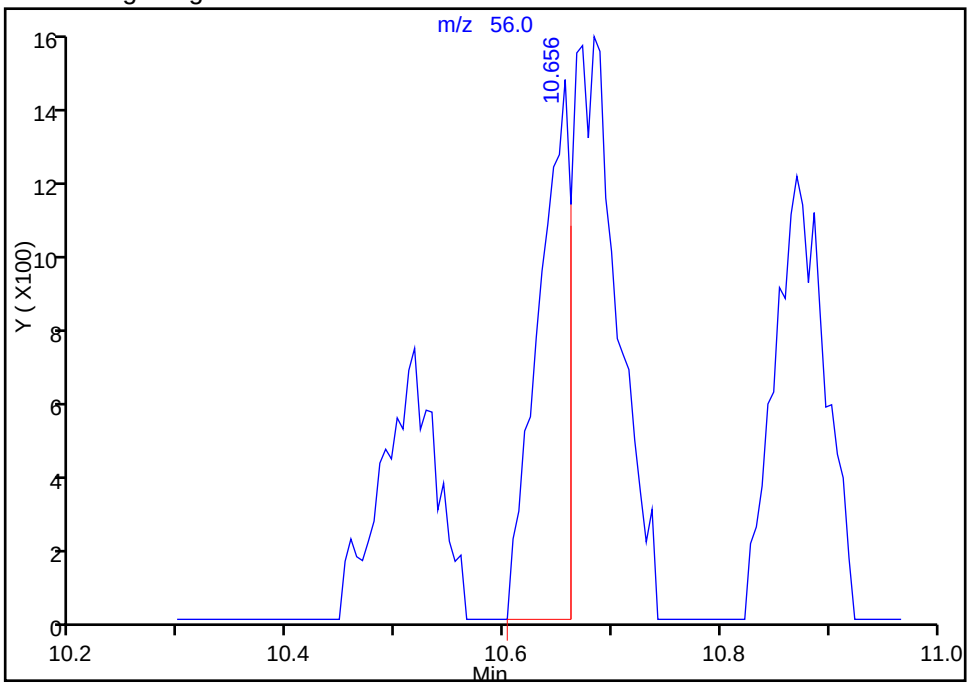
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

42 Cyclohexane, CAS: 110-82-7

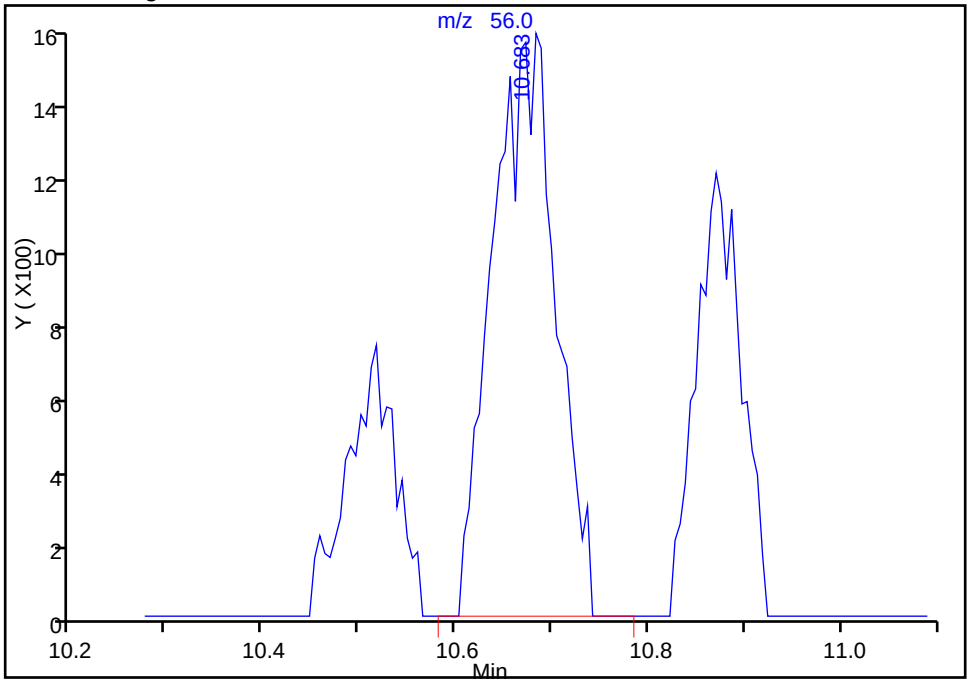
Processing Integration Results

RT: 10.66
Area: 2886
Amount: 0.126952
Amount Units: ppb v/v



Manual Integration Results

RT: 10.68
Area: 6913
Amount: 0.146316
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 08:00:19
Audit Action: Manually Integrated
Audit Reason: Baseline

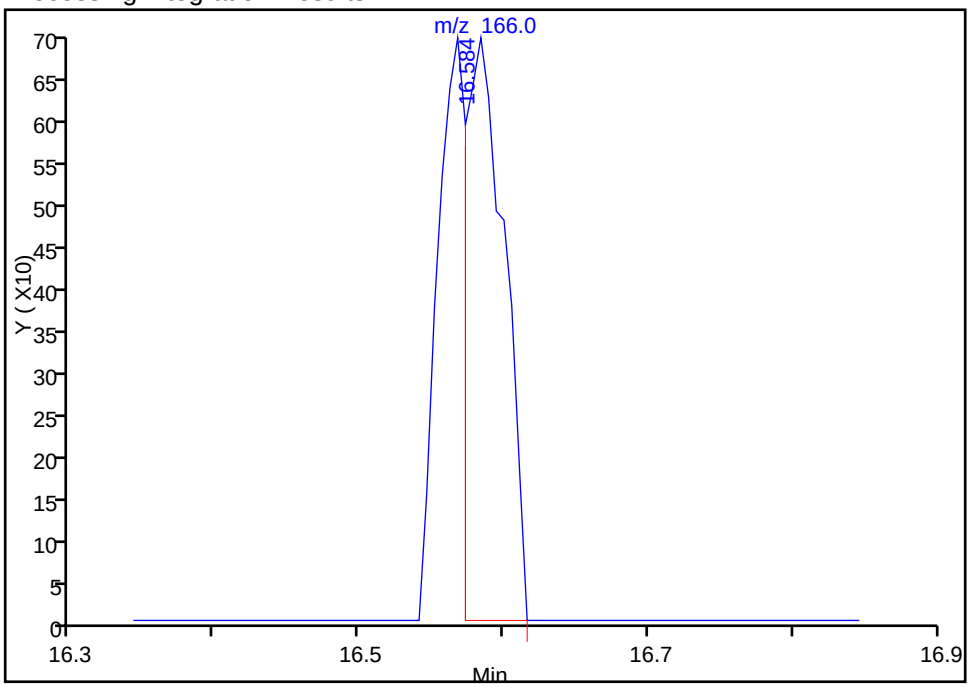
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

69 Tetrachloroethene, CAS: 127-18-4

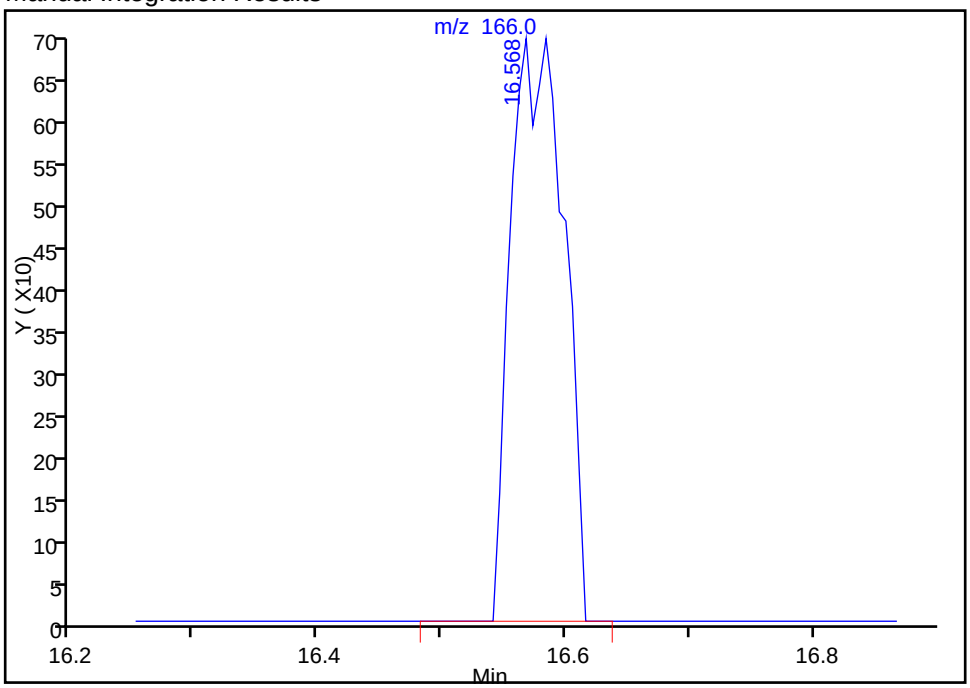
Processing Integration Results

RT: 16.58
Area: 1309
Amount: 0.025852
Amount Units: ppb v/v



Manual Integration Results

RT: 16.57
Area: 2077
Amount: 0.041020
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 08:00:19
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

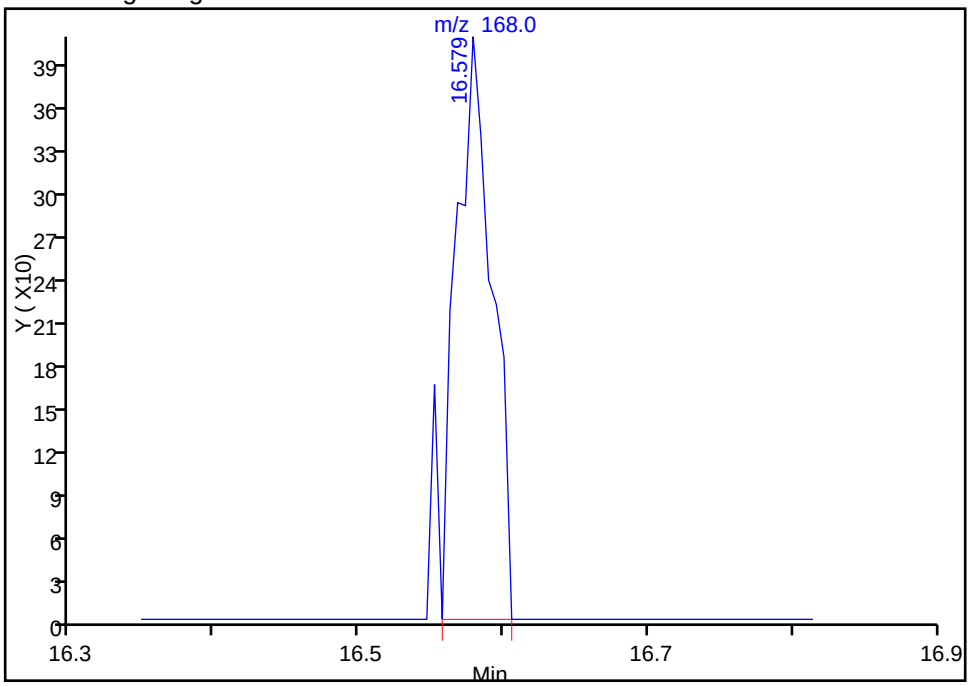
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

69 Tetrachloroethene, CAS: 127-18-4

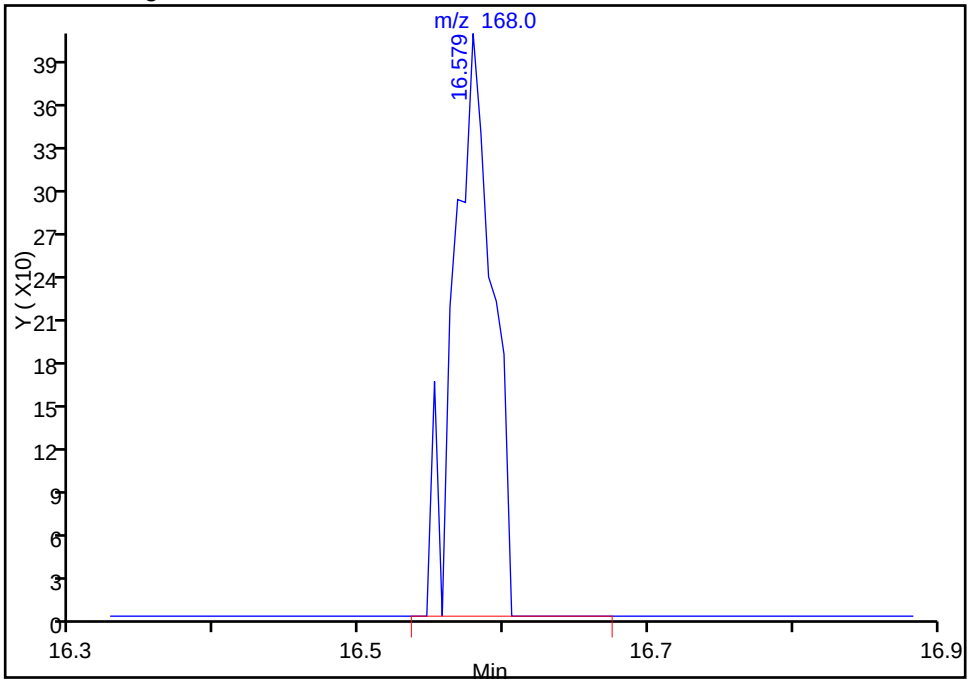
Processing Integration Results

RT: 16.58
Area: 700
Amount: 0.025852
Amount Units: ppb v/v



Manual Integration Results

RT: 16.58
Area: 753
Amount: 0.041020
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 08:00:19
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

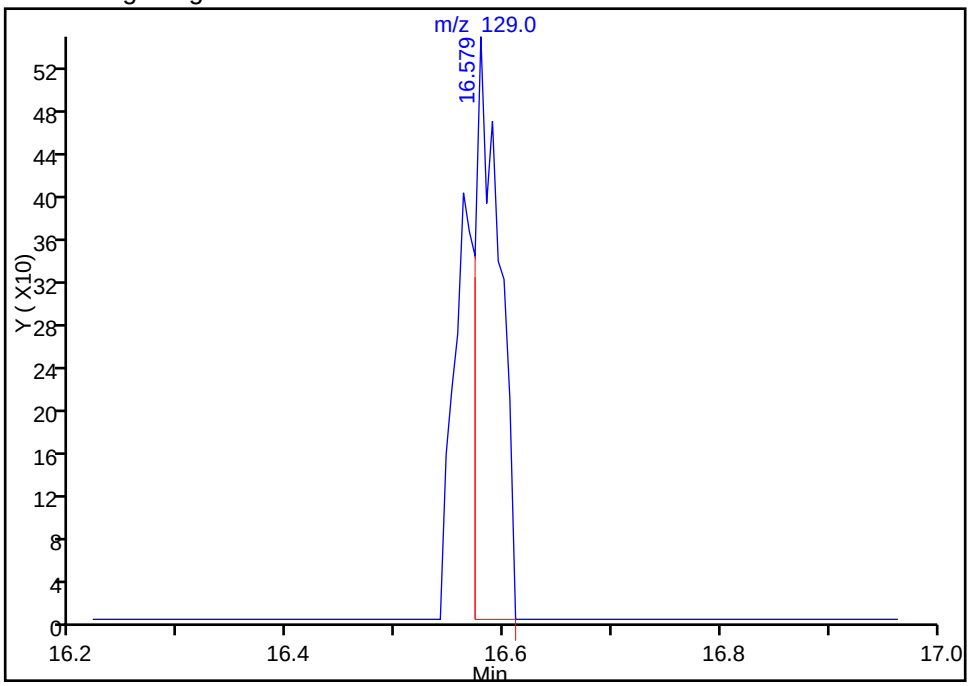
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D				
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

69 Tetrachloroethene, CAS: 127-18-4

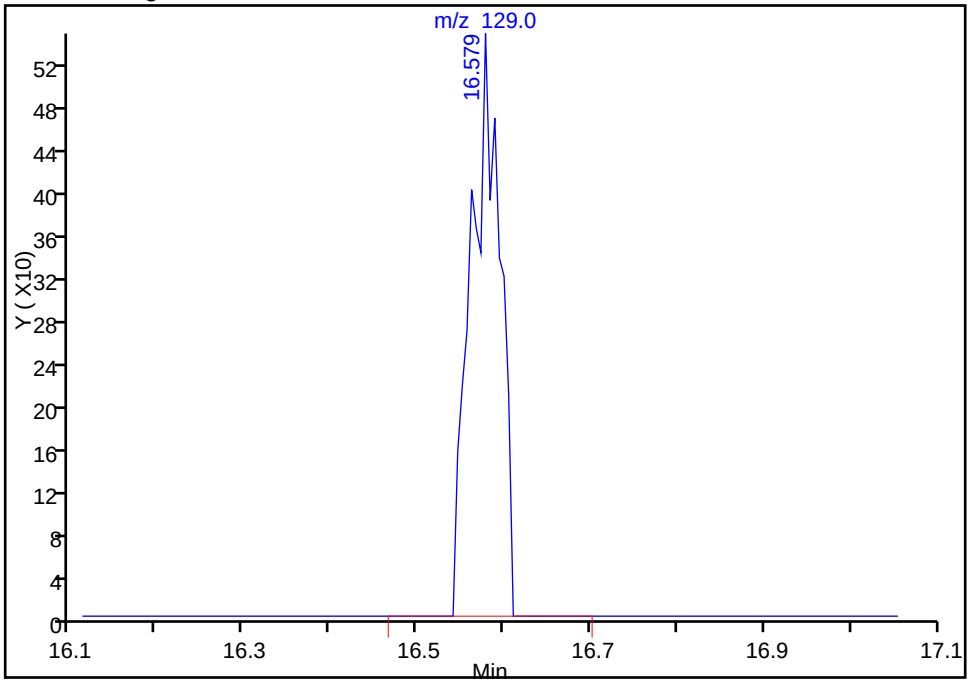
Processing Integration Results

RT: 16.58
Area: 834
Amount: 0.025852
Amount Units: ppb v/v



Manual Integration Results

RT: 16.58
Area: 1284
Amount: 0.041020
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 08:00:19
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 14-Oct-2015 08:00:24 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

Injection Date: 13-Oct-2015 22:18:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4

Client ID: SV-4

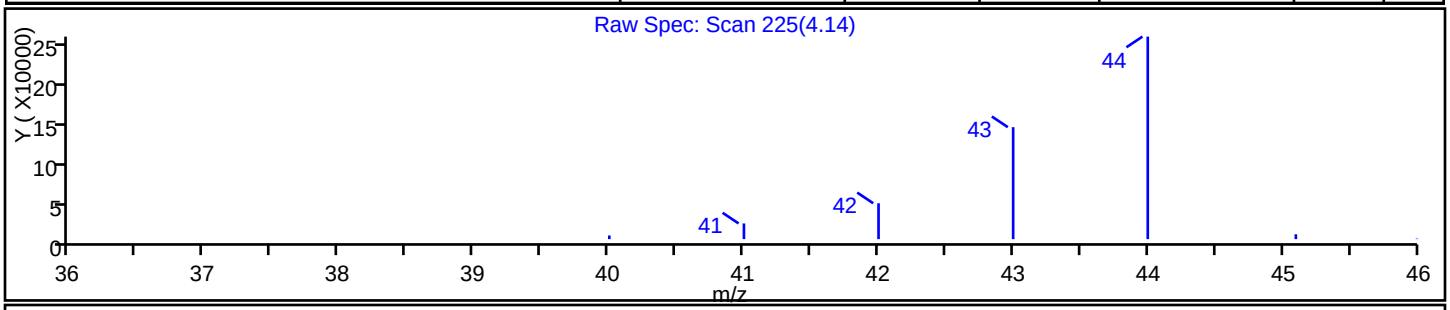
Operator ID: wrd ALS Bottle#: 12 Worklist Smp#: 17

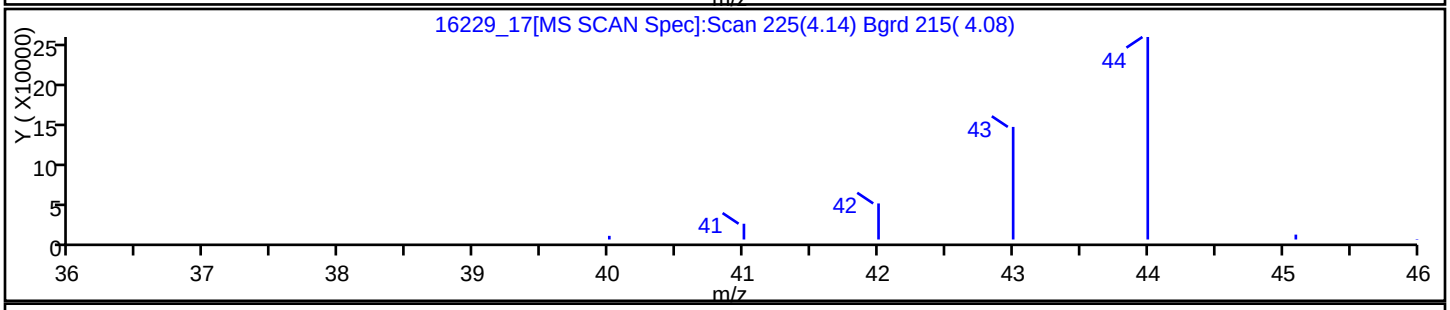
Purge Vol: 200.000 mL Dil. Factor: 2.0000

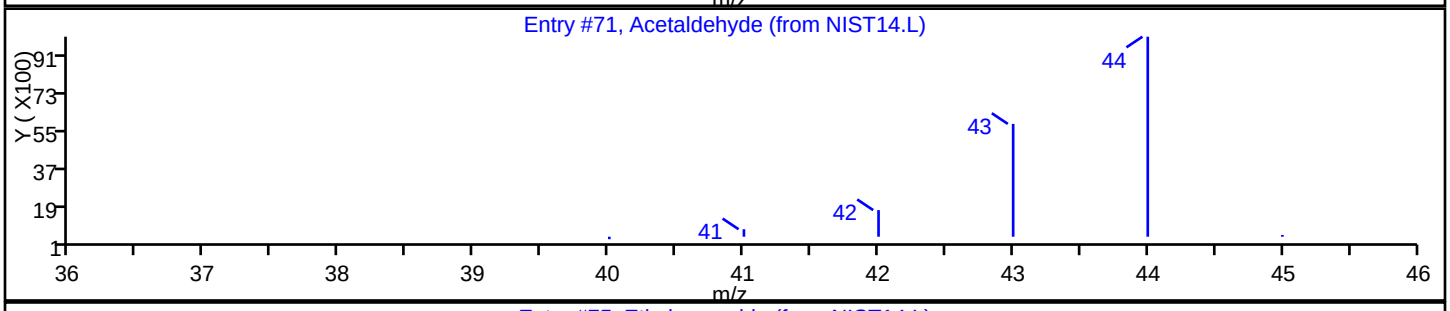
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

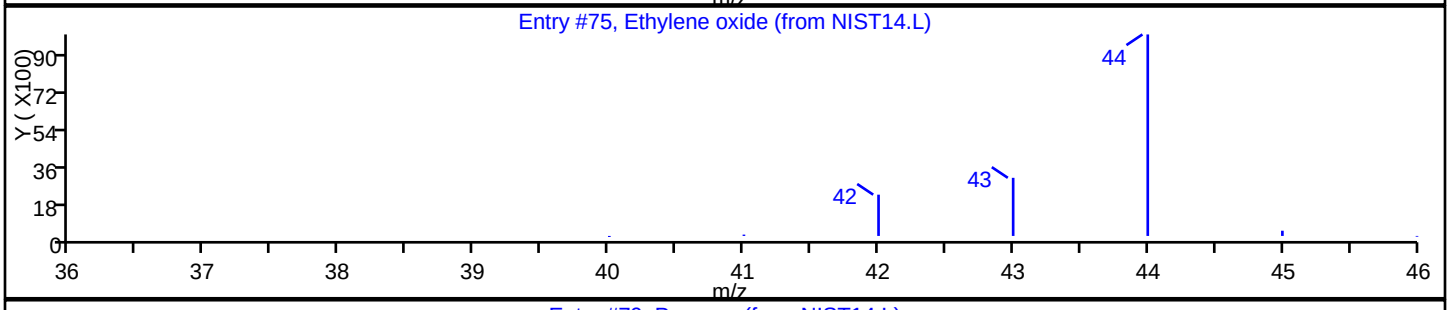
Column: Detector MS SCAN

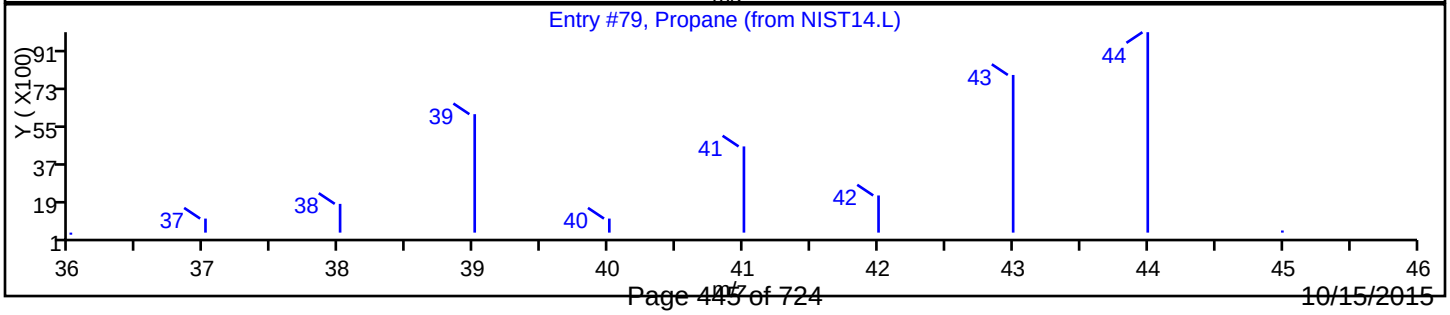
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Acetaldehyde	75-07-0	NIST14.L	71	C2H4O	44	74
Ethylene oxide	75-21-8	NIST14.L	75	C2H4O	44	5
Propane	74-98-6	NIST14.L	79	C3H8	44	5









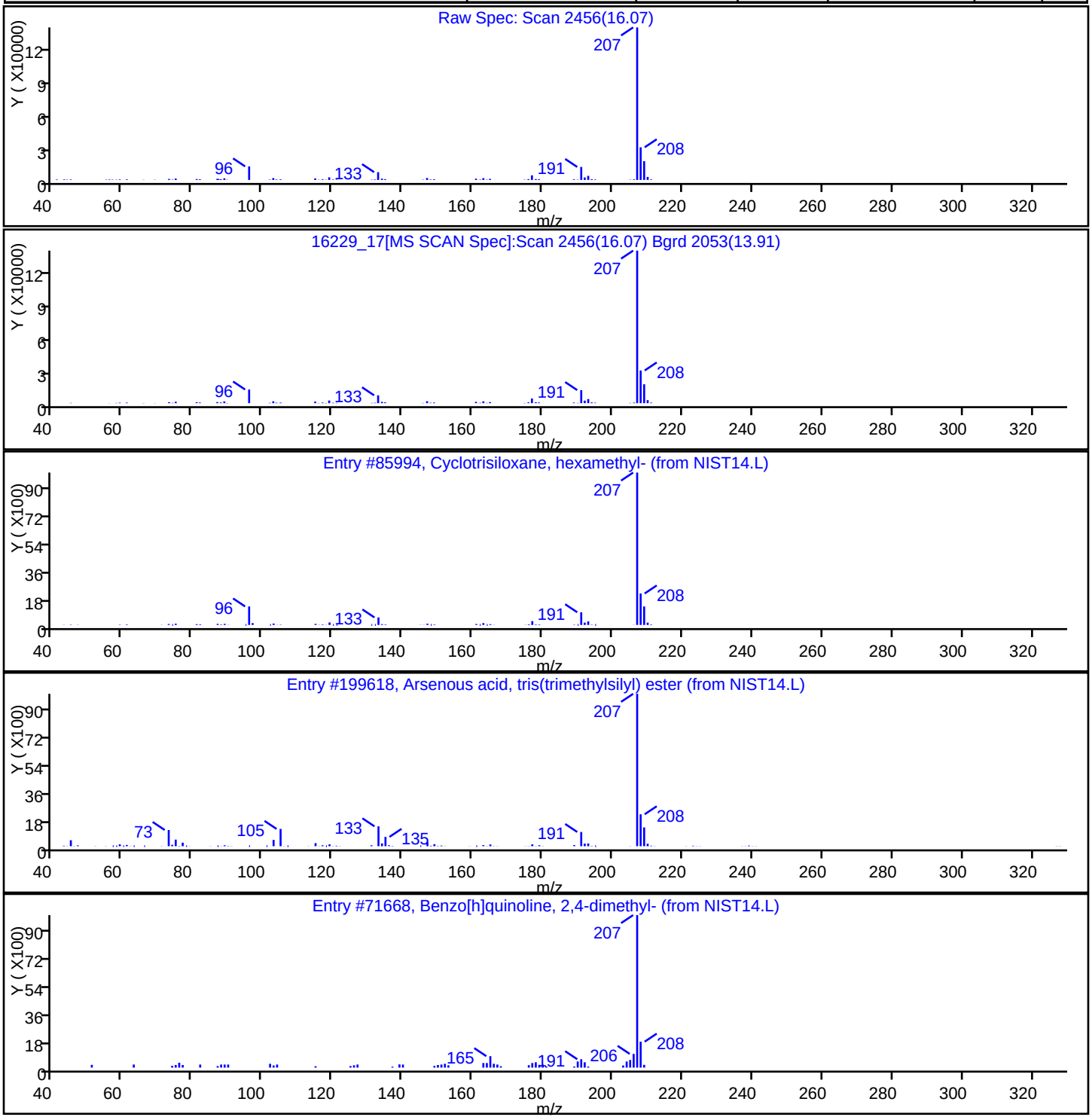


TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:		Detector	MS SCAN		

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Cyclotrisiloxane, hexamethyl-	541-05-9	NIST14.L	85994	C6H18O3Si3	222	91
Arsenous acid, tris(trimethylsilyl) este	55429-29-3	NIST14.L	199618	C9H27AsO3Si3	342	78
Benzo[h]quinoline, 2,4-dimethyl-	605-67-4	NIST14.L	71668	C15H13N	207	50



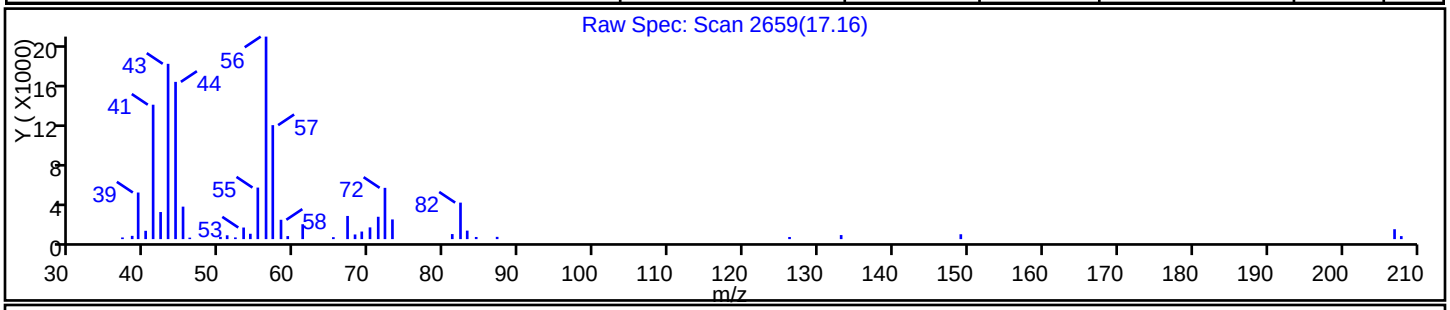
Report Date: 14-Oct-2015 08:00:24 Chrom Revision: 2.2 08-Oct-2015 07:17:48

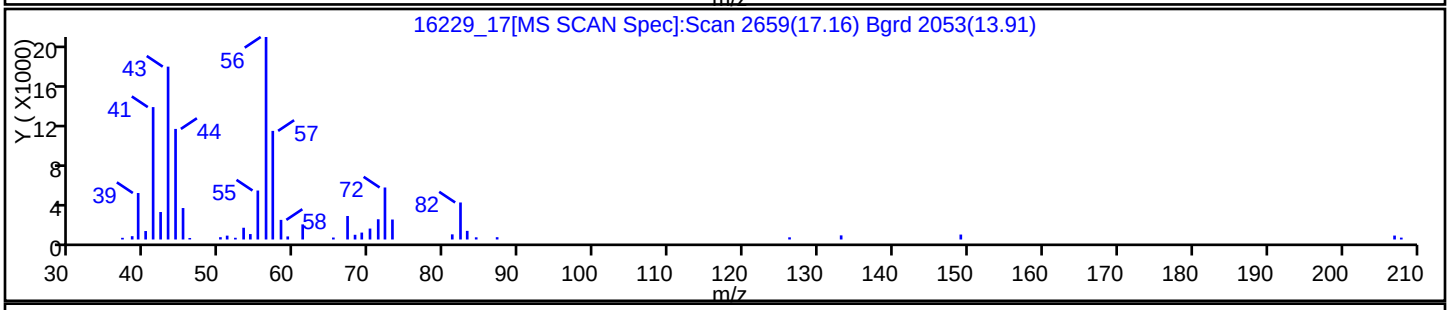
TestAmerica Burlington

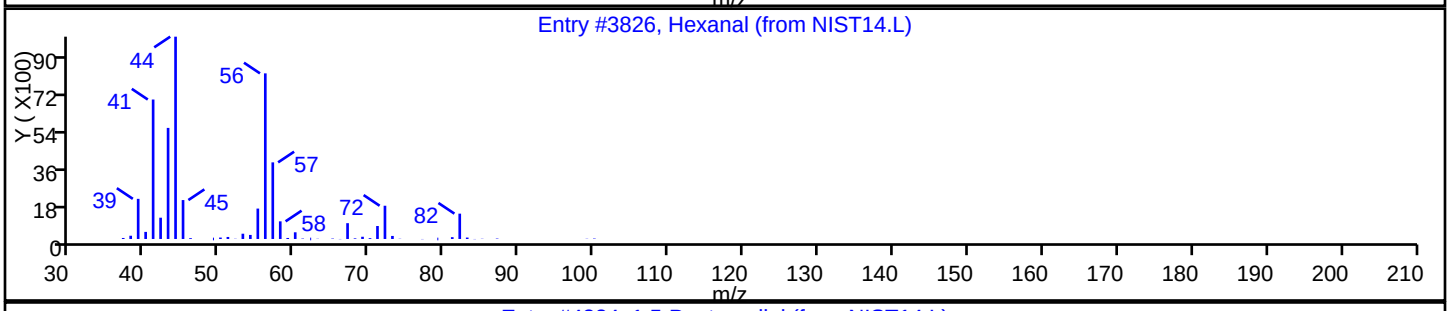
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

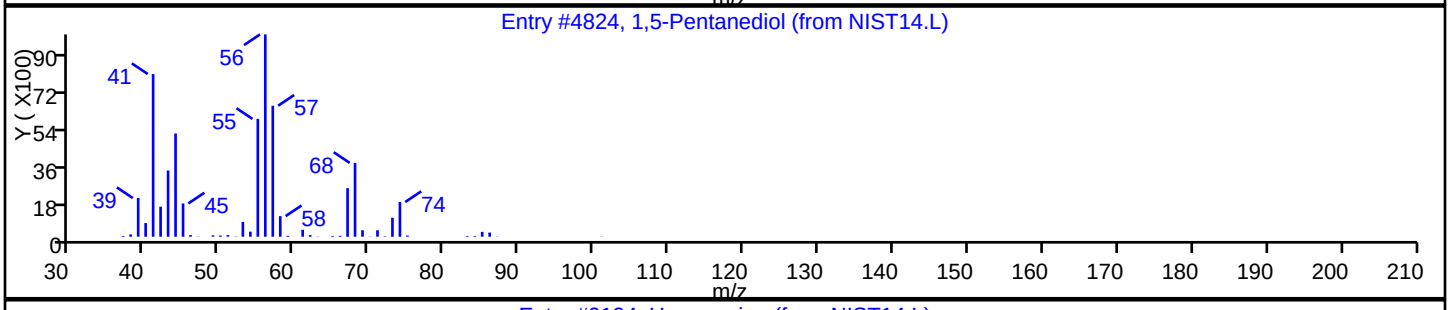
Injection Date:	13-Oct-2015 22:18:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	17
Purge Vol:	200.000 mL	Dil. Factor:	2.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:		Detector	MS SCAN		

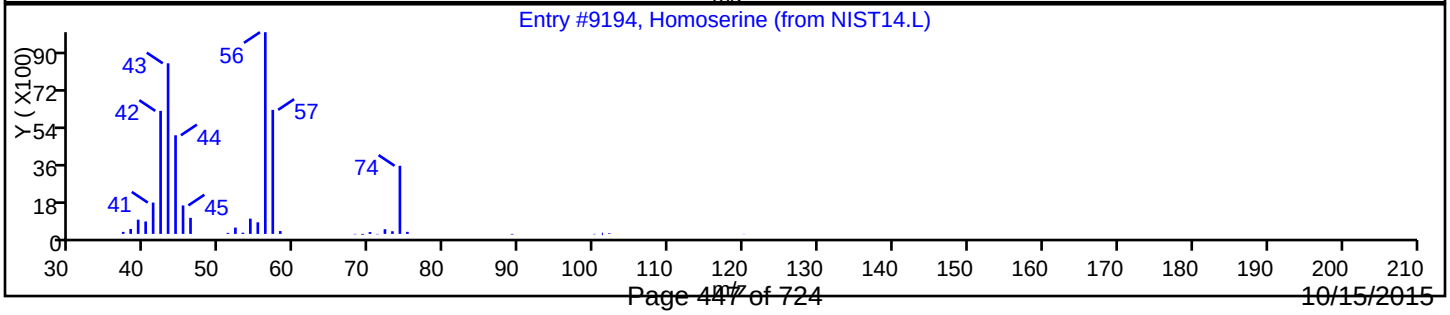
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Hexanal	66-25-1	NIST14.L	3826	C6H12O	100	78
1,5-Pentanediol	111-29-5	NIST14.L	4824	C5H12O2	104	40
Homoserine	498-19-1	NIST14.L	9194	C4H9NO3	119	38







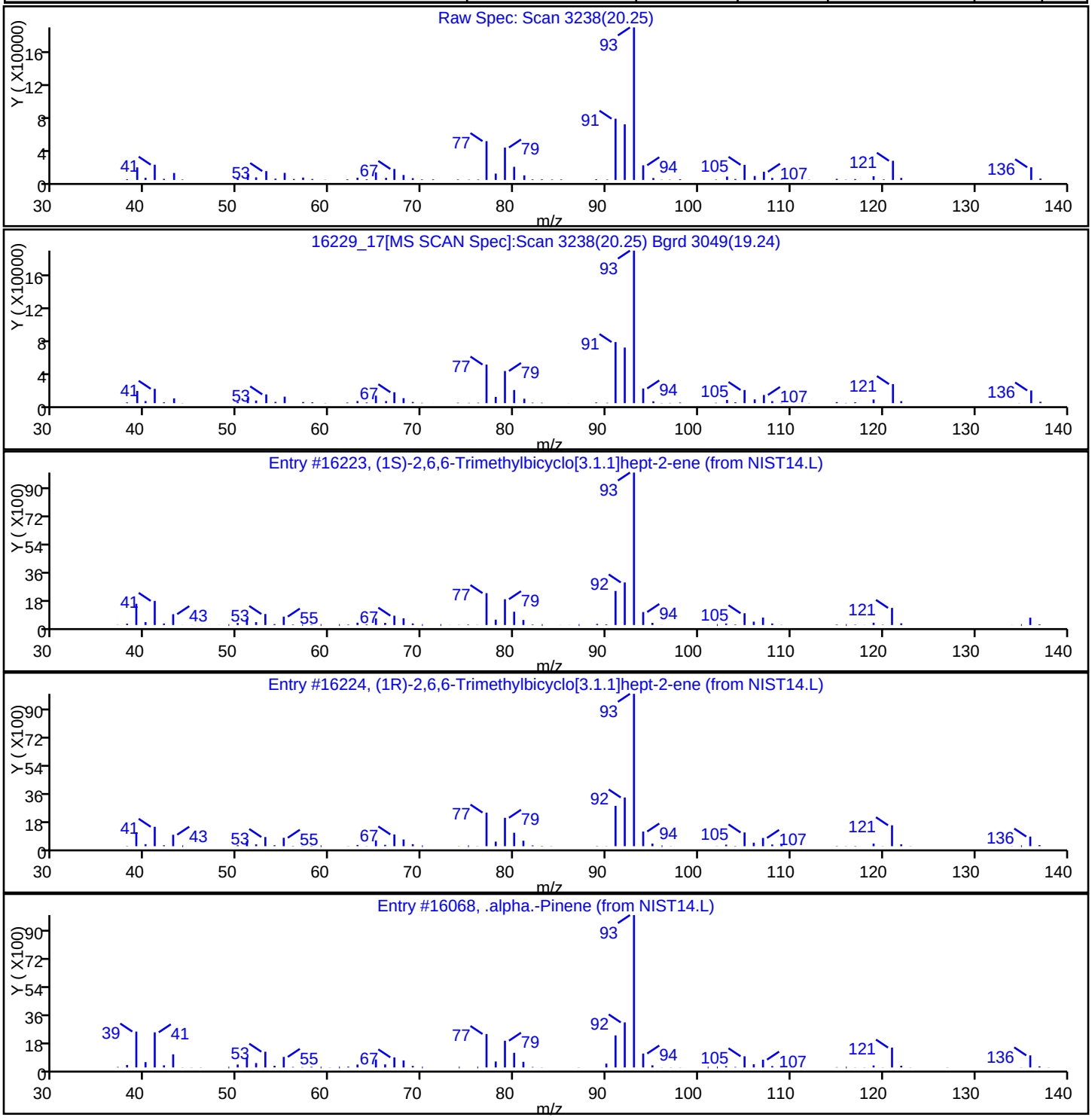




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D
Injection Date: 13-Oct-2015 22:18:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4
Client ID: SV-4
Operator ID: wrd ALS Bottle#: 12 Worklist Smp#: 17
Purge Vol: 200.000 mL Dil. Factor: 2.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
(1S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-26-4	NIST14.L	16223	C10H16	136	96
(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2	7785-70-8	NIST14.L	16224	C10H16	136	96
.alpha.-Pinene	80-56-8	NIST14.L	16068	C10H16	136	94



Report Date: 14-Oct-2015 08:00:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

Injection Date: 13-Oct-2015 22:18:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4

Client ID: SV-4

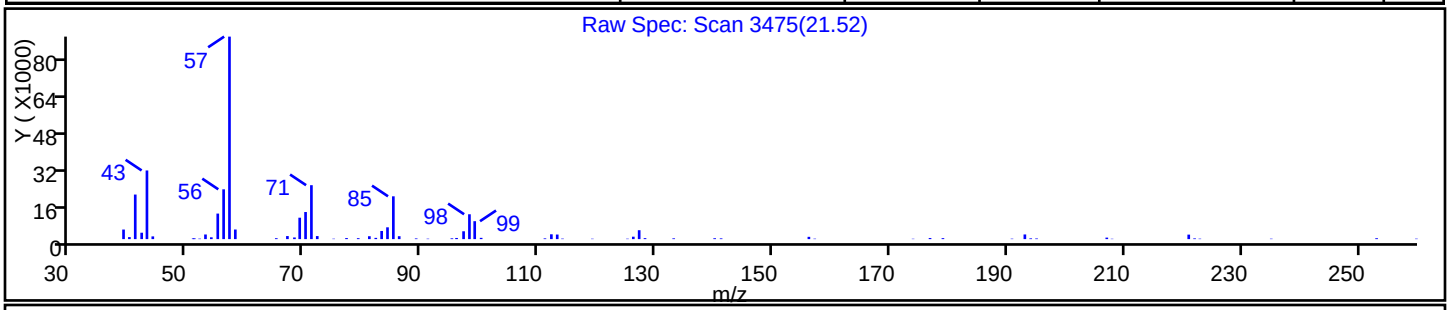
Operator ID: wrd ALS Bottle#: 12 Worklist Smp#: 17

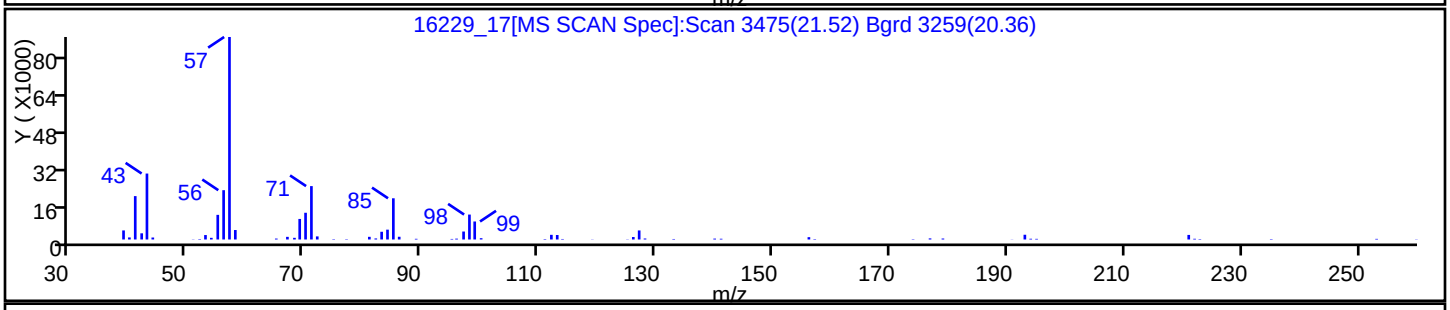
Purge Vol: 200.000 mL Dil. Factor: 2.0000

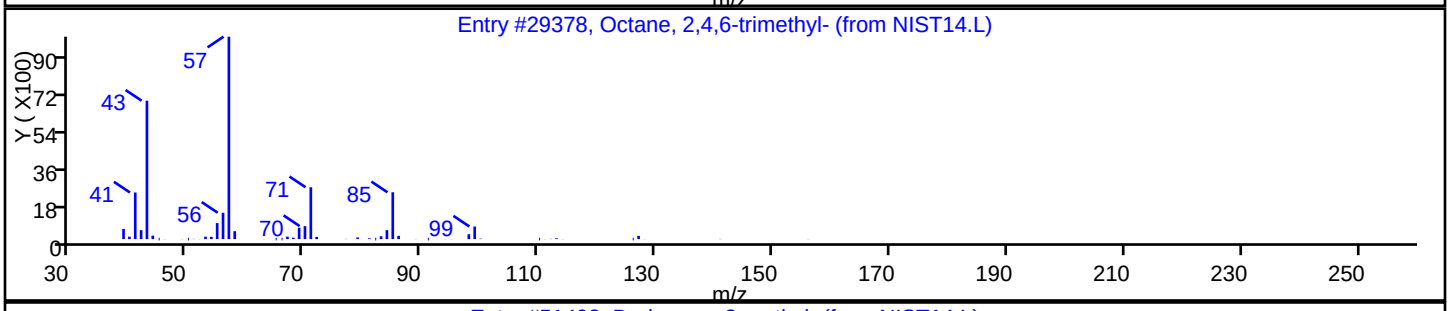
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

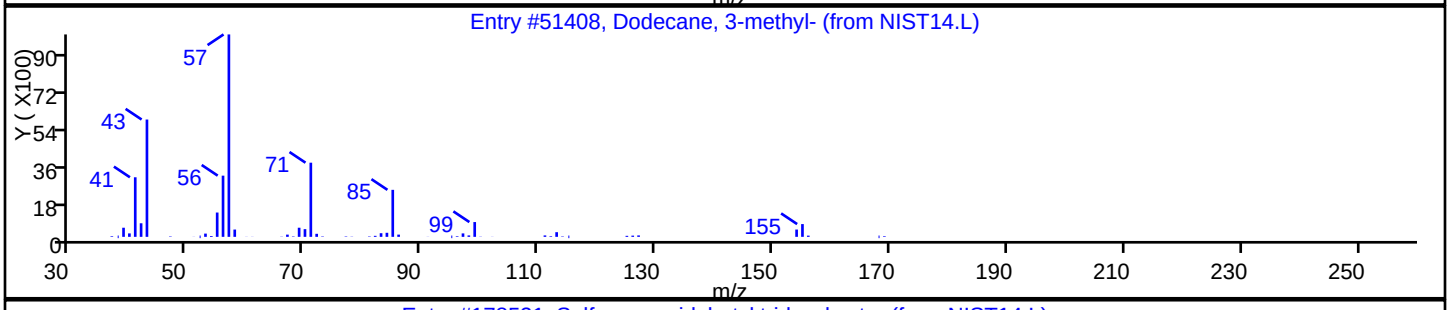
Column: Detector MS SCAN

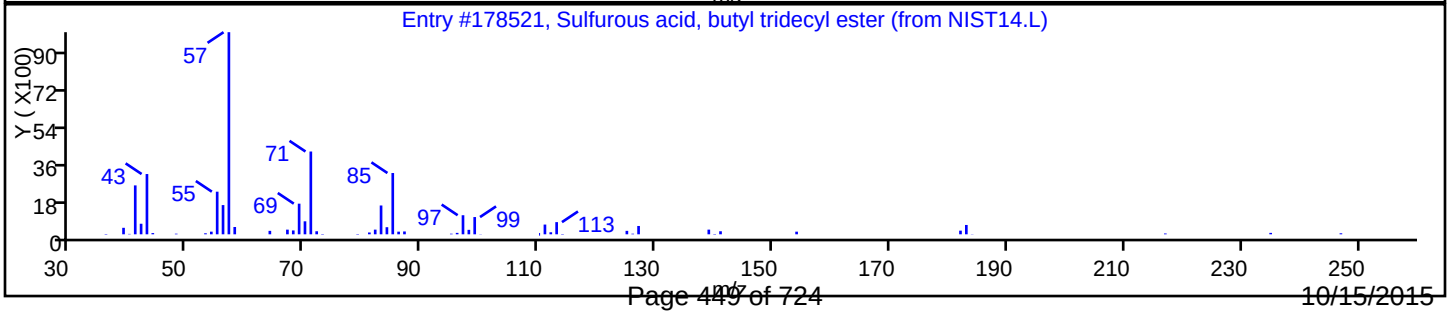
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Octane, 2,4,6-trimethyl-	62016-37-9	NIST14.L	29378	C11H24	156	59
Dodecane, 3-methyl-	17312-57-1	NIST14.L	51408	C13H28	184	53
Sulfurous acid, butyl tridecyl ester	1000309-18-0	NIST14.L	178521	C17H36O3S	320	53







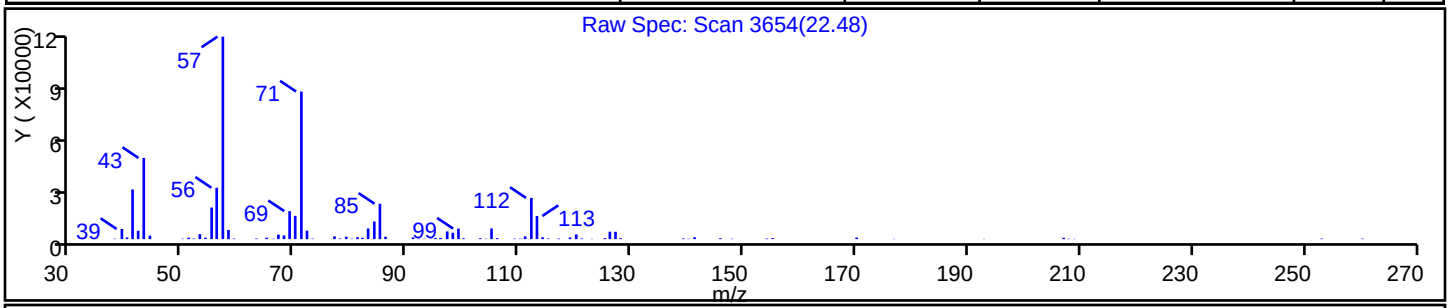


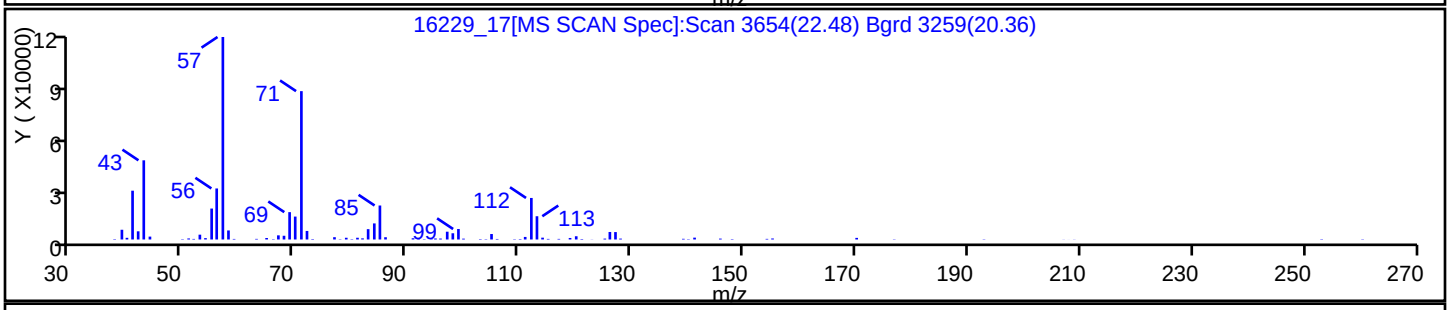


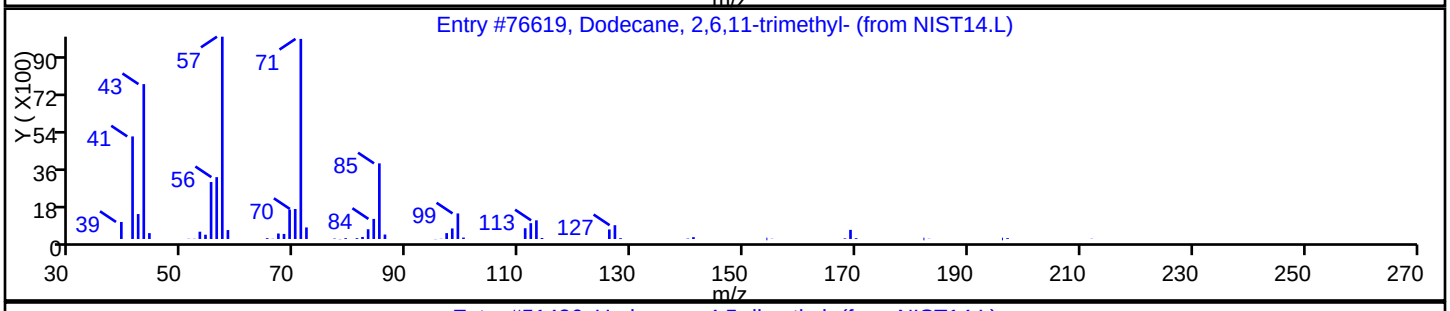
TestAmerica Burlington

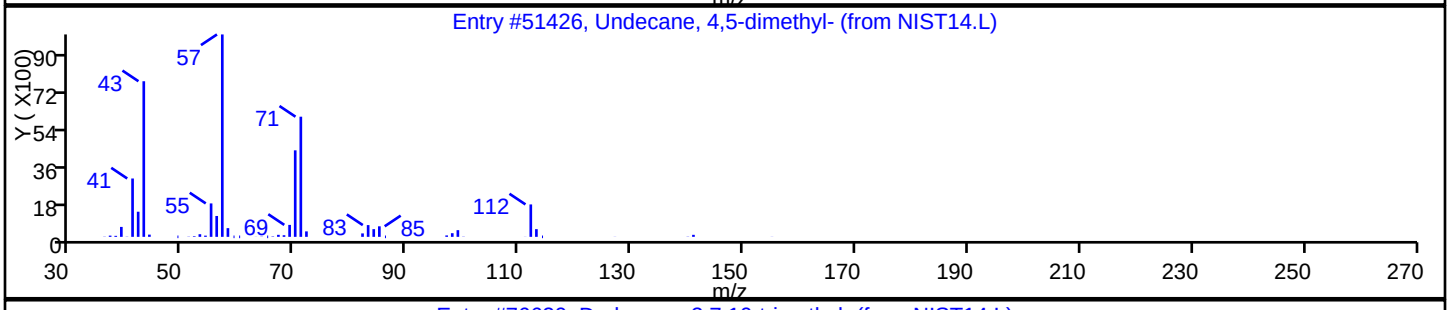
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D
Injection Date: 13-Oct-2015 22:18:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4
Client ID: SV-4
Operator ID: wrd ALS Bottle#: 12 Worklist Smp#: 17
Purge Vol: 200.000 mL Dil. Factor: 2.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

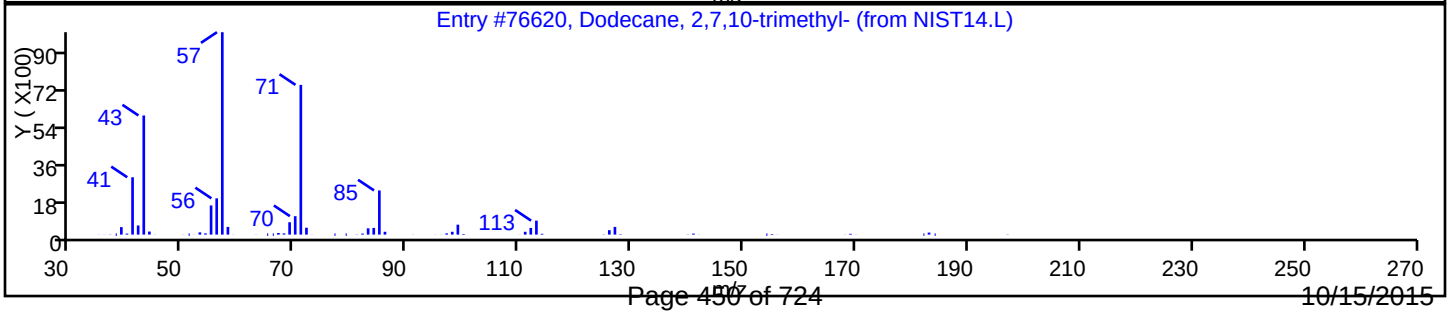
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Dodecane, 2,6,11-trimethyl-	31295-56-4	NIST14.L	76619	C15H32	212	72
Undecane, 4,5-dimethyl-	17312-79-7	NIST14.L	51426	C13H28	184	64
Dodecane, 2,7,10-trimethyl-	74645-98-0	NIST14.L	76620	C15H32	212	64











Report Date: 14-Oct-2015 08:00:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

Injection Date: 13-Oct-2015 22:18:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4

Client ID: SV-4

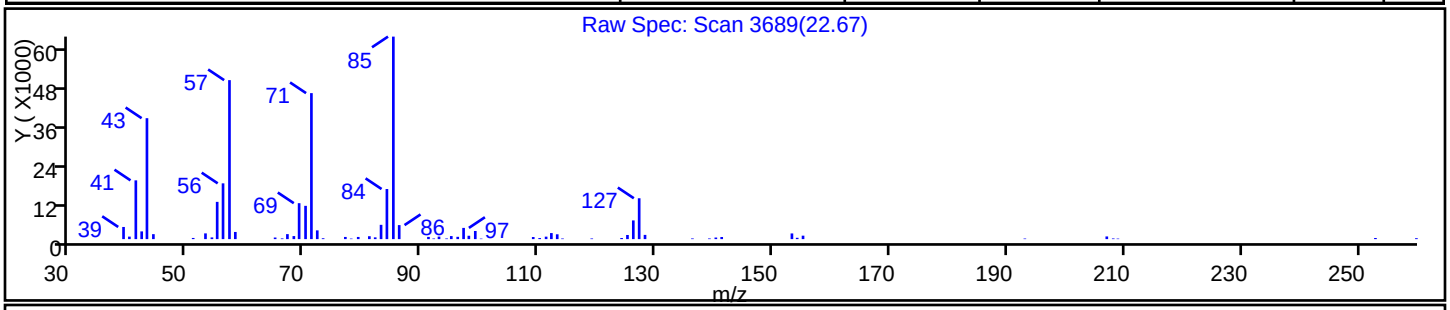
Operator ID: wrd ALS Bottle#: 12 Worklist Smp#: 17

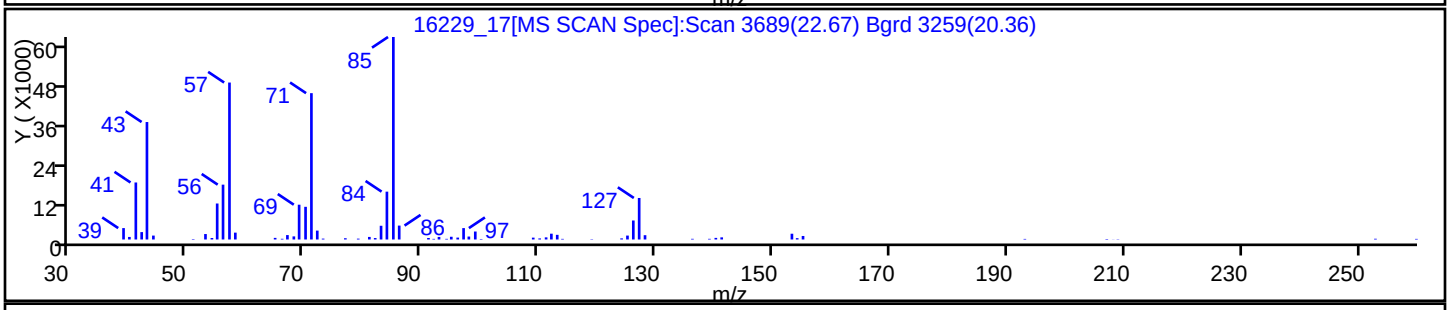
Purge Vol: 200.000 mL Dil. Factor: 2.0000

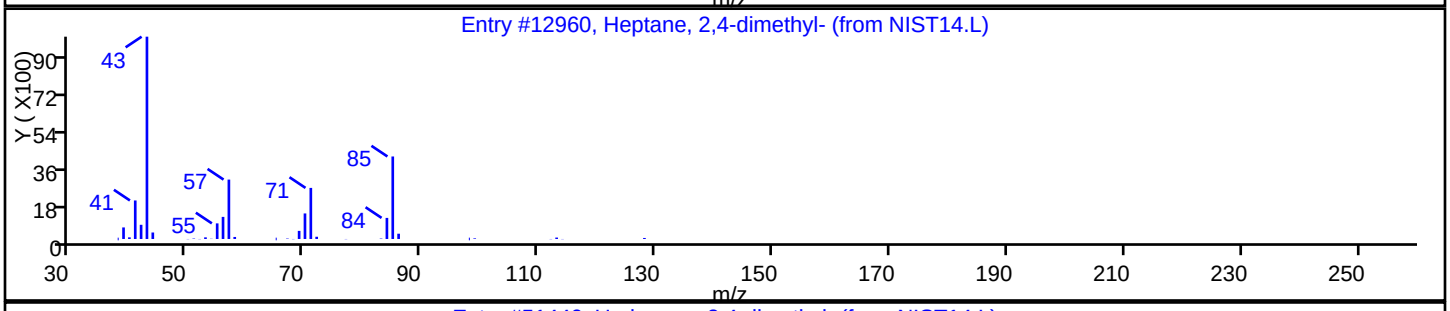
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

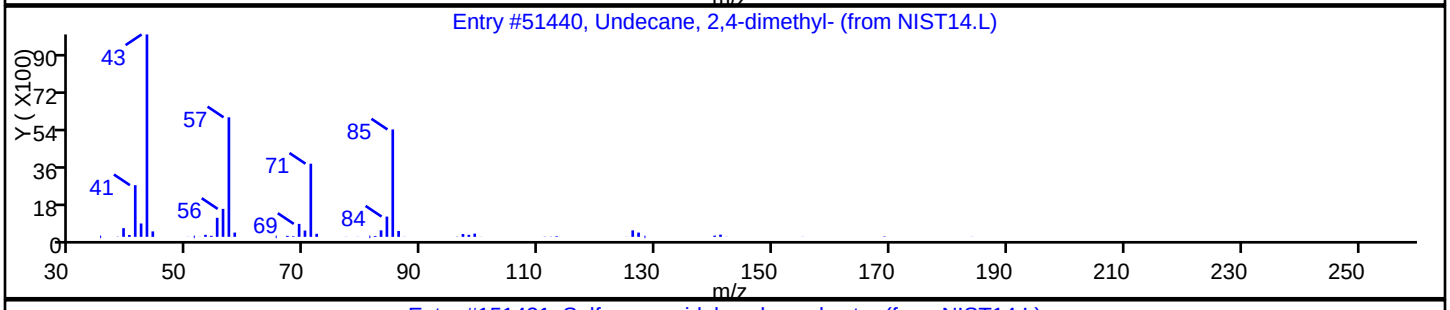
Column: Detector MS SCAN

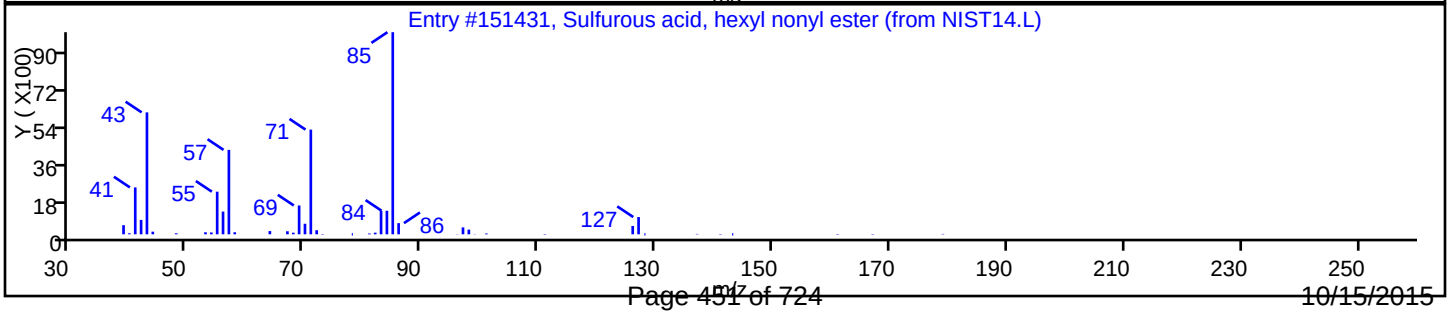
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Heptane, 2,4-dimethyl-	2213-23-2	NIST14.L	12960	C9H20	128	74
Undecane, 2,4-dimethyl-	17312-80-0	NIST14.L	51440	C13H28	184	72
Sulfurous acid, hexyl nonyl ester	1000309-13-1	NIST14.L	151431	C15H32O3S	292	53





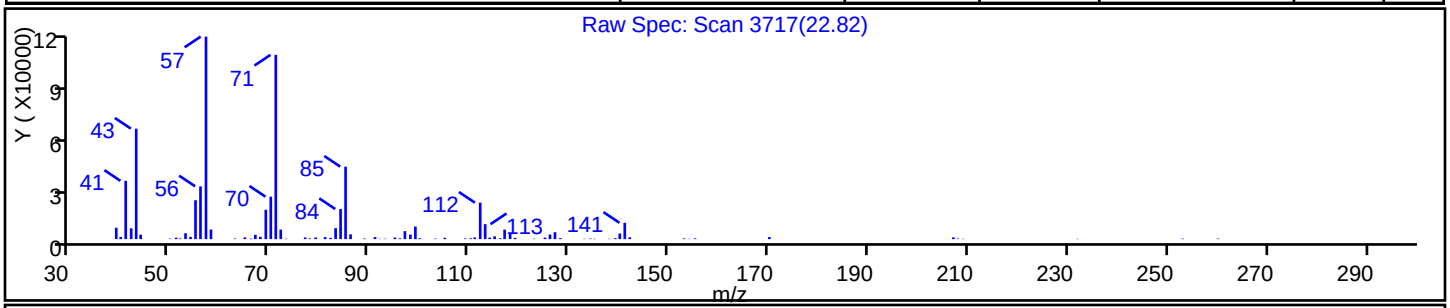


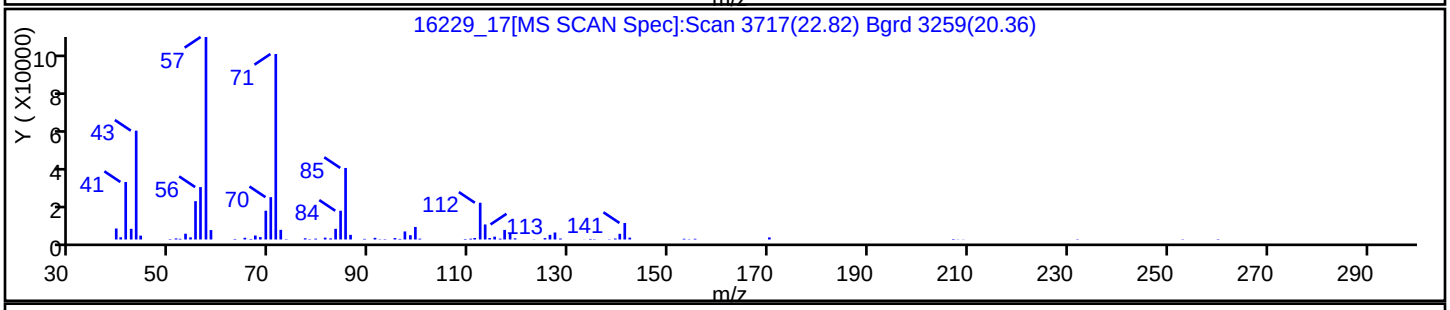


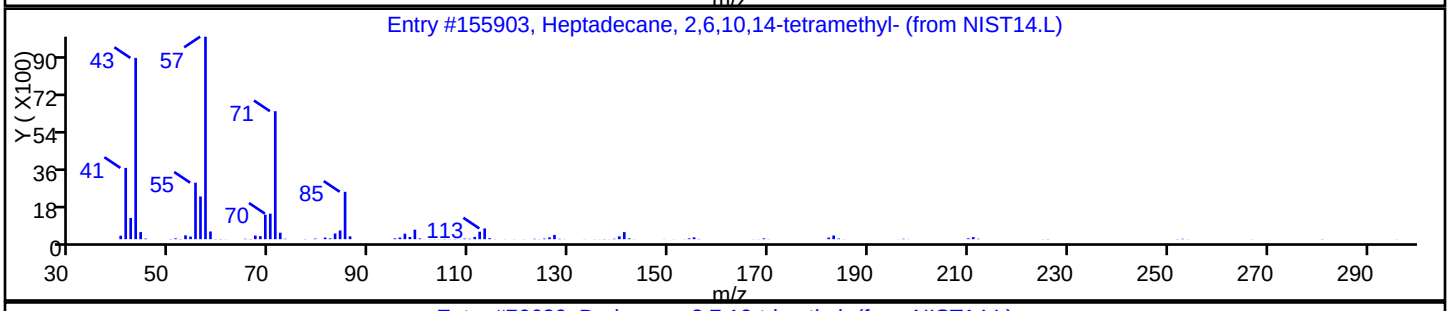


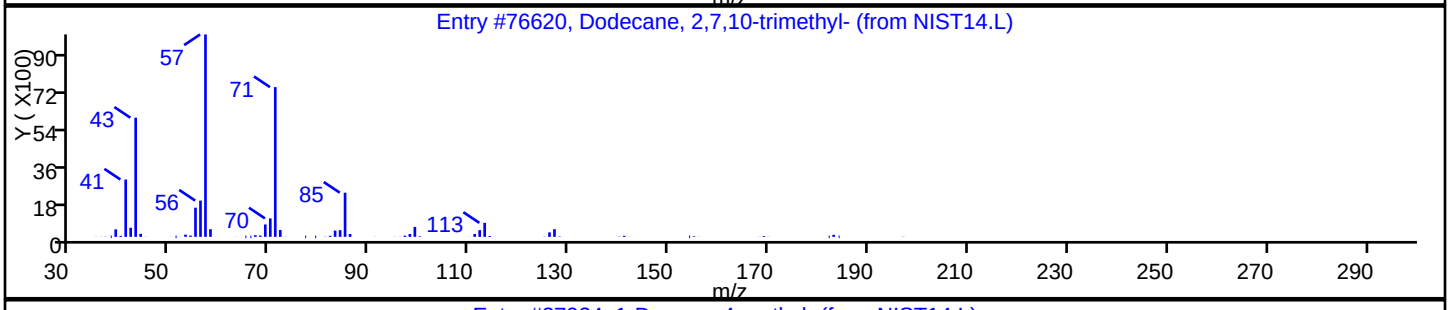
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D
Injection Date: 13-Oct-2015 22:18:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4
Client ID: SV-4
Operator ID: wrd ALS Bottle#: 12 Worklist Smp#: 17
Purge Vol: 200.000 mL Dil. Factor: 2.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

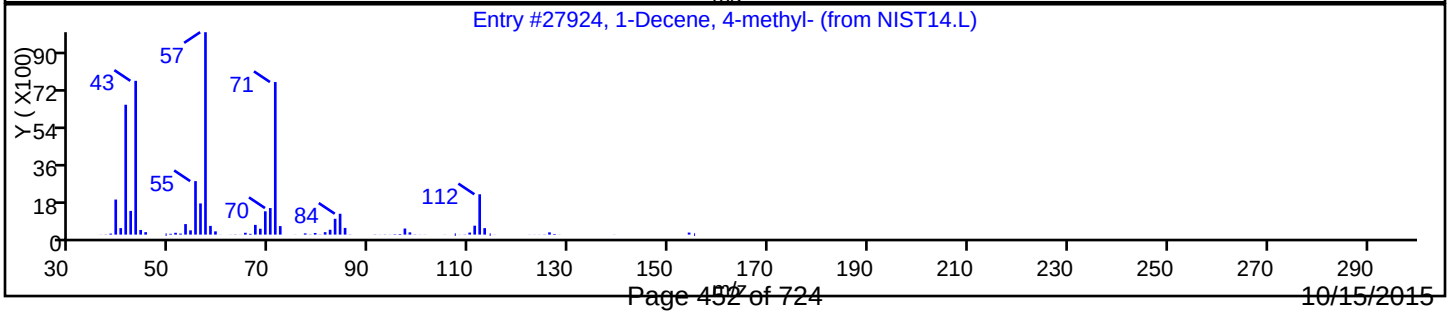
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Heptadecane, 2,6,10,14-tetramethyl-	18344-37-1	NIST14.L	155903	C21H44	296	64
Dodecane, 2,7,10-trimethyl-	74645-98-0	NIST14.L	76620	C15H32	212	59
1-Decene, 4-methyl-	13151-29-6	NIST14.L	27924	C11H22	154	59











Report Date: 14-Oct-2015 08:00:25 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

Injection Date: 13-Oct-2015 22:18:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4

Client ID: SV-4

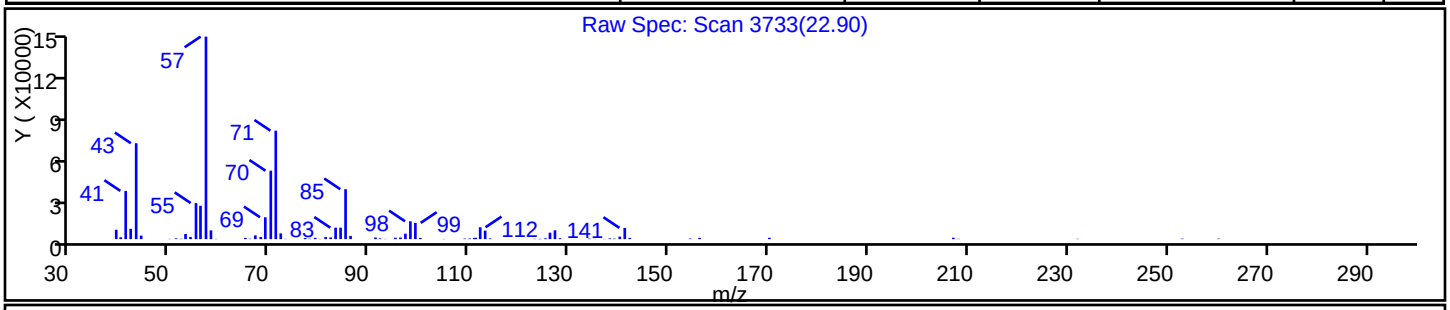
Operator ID: wrd ALS Bottle#: 12 Worklist Smp#: 17

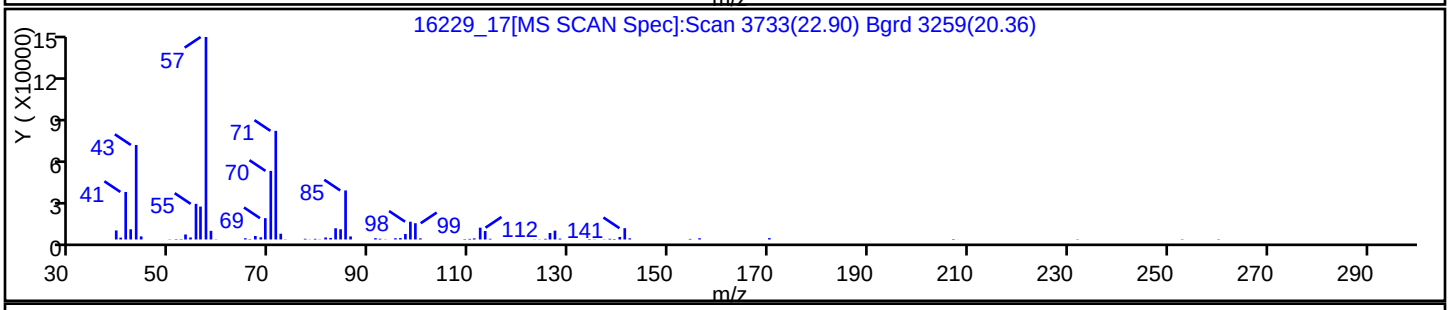
Purge Vol: 200.000 mL Dil. Factor: 2.0000

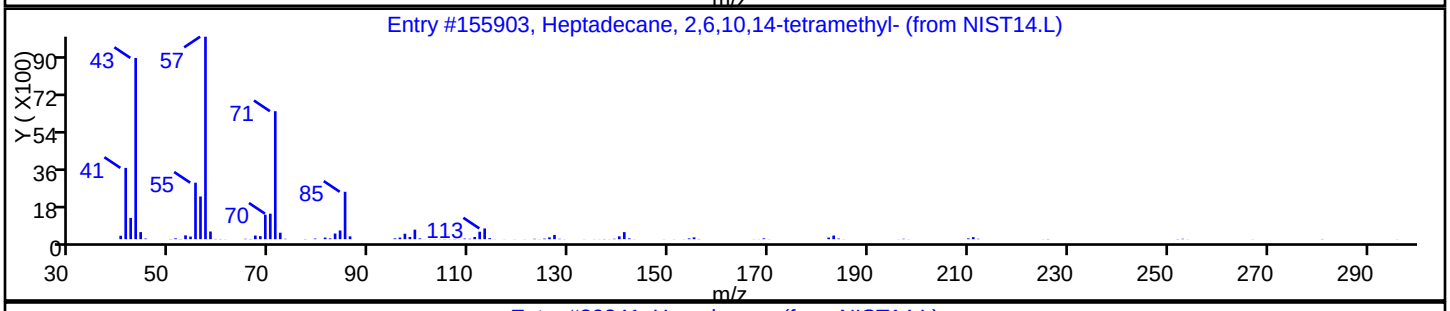
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

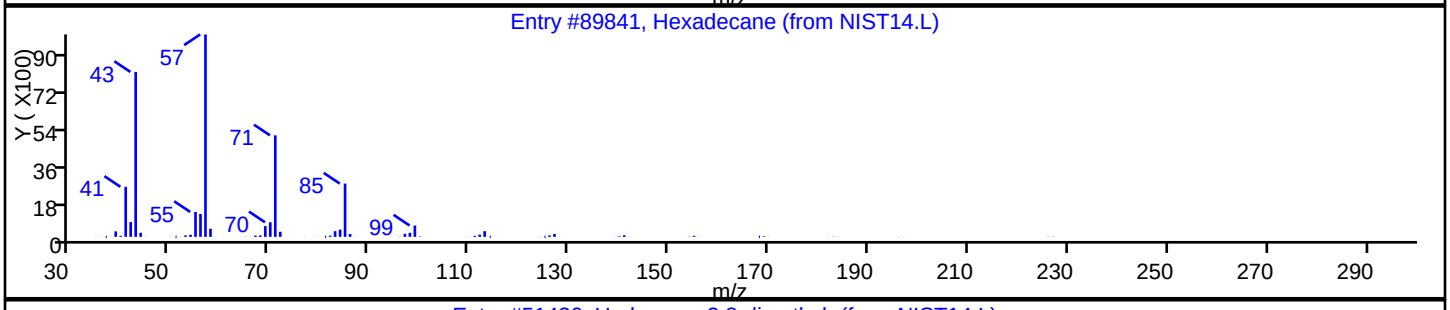
Column: Detector MS SCAN

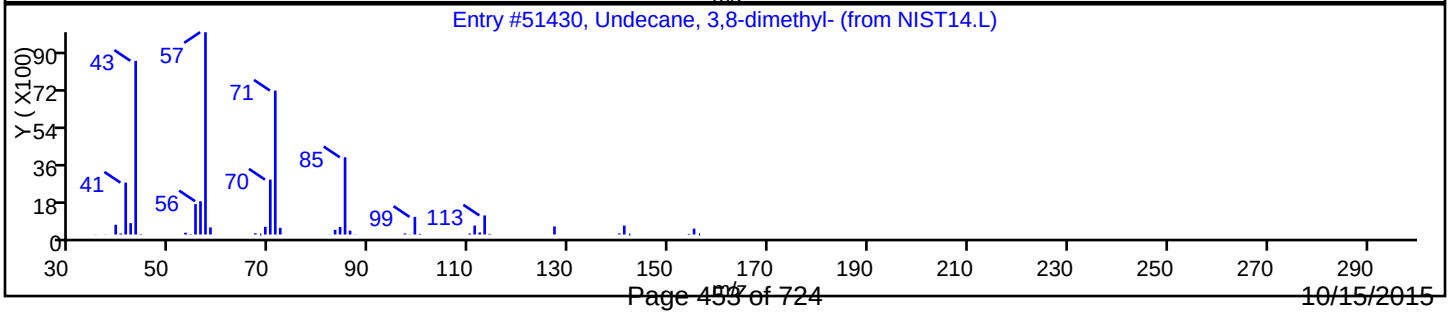
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Heptadecane, 2,6,10,14-tetramethyl-	18344-37-1	NIST14.L	155903	C21H44	296	72
Hexadecane	544-76-3	NIST14.L	89841	C16H34	226	53
Undecane, 3,8-dimethyl-	17301-30-3	NIST14.L	51430	C13H28	184	53











Report Date: 14-Oct-2015 08:00:26 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_17.D

Injection Date: 13-Oct-2015 22:18:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4

Client ID: SV-4

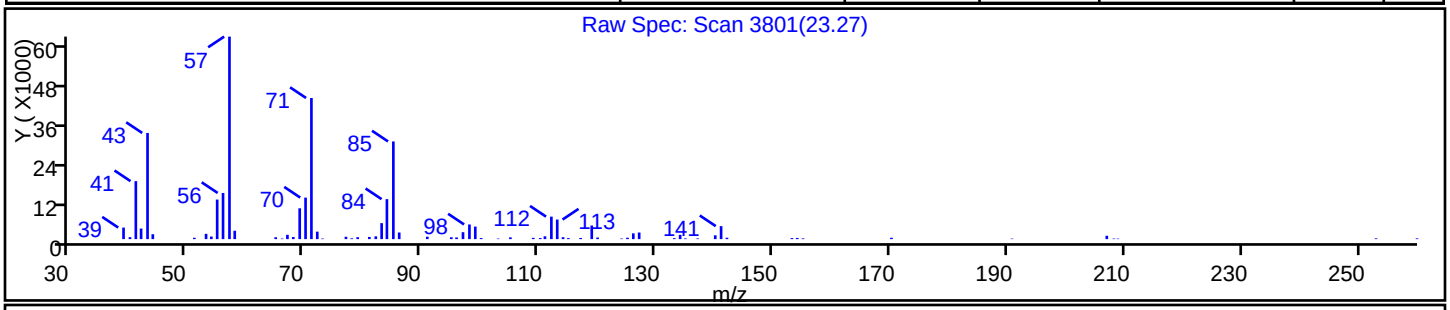
Operator ID: wrd ALS Bottle#: 12 Worklist Smp#: 17

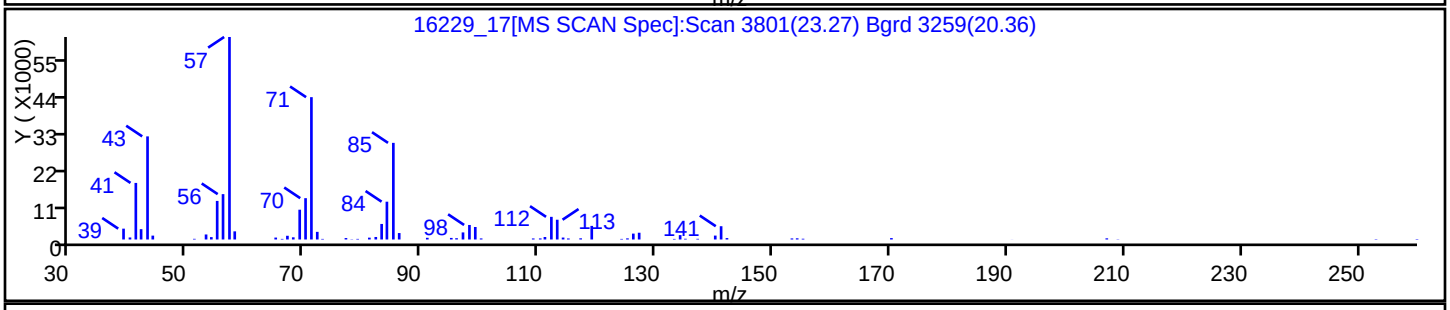
Purge Vol: 200.000 mL Dil. Factor: 2.0000

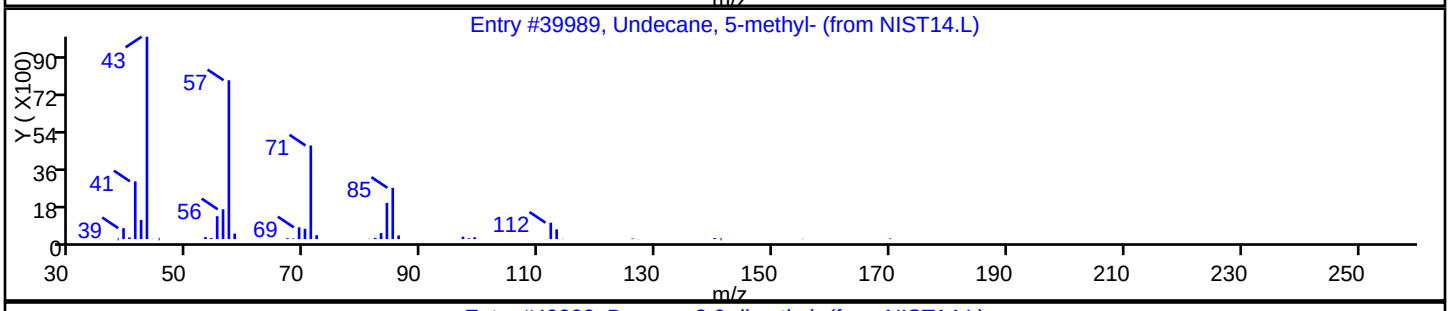
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

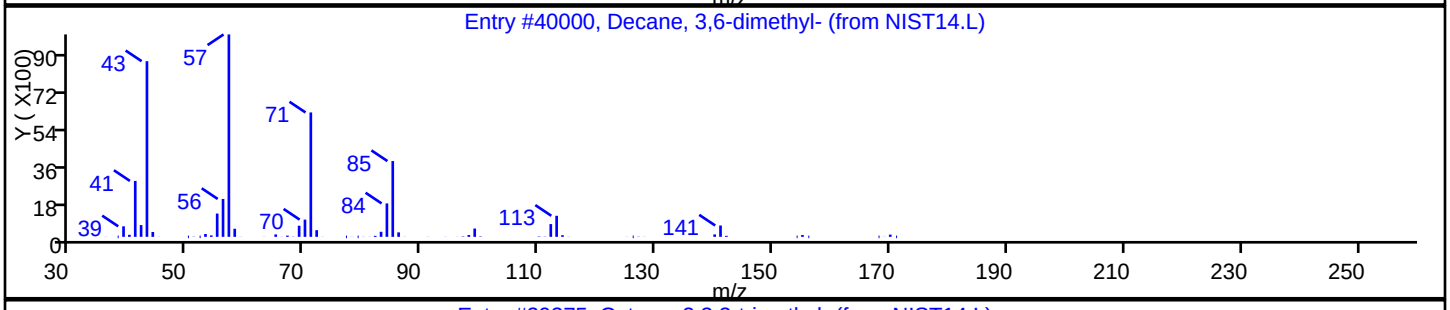
Column: Detector MS SCAN

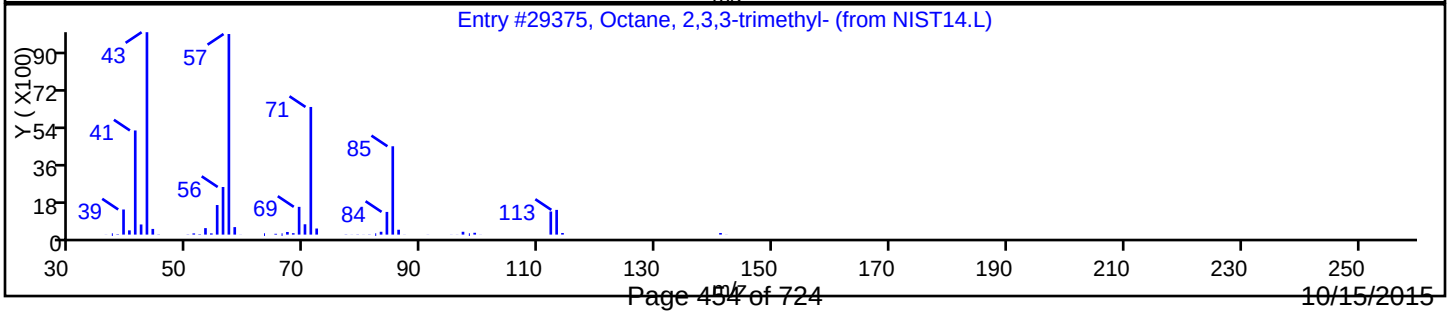
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Undecane, 5-methyl-	1632-70-8	NIST14.L	39989	C12H26	170	76
Decane, 3,6-dimethyl-	17312-53-7	NIST14.L	40000	C12H26	170	72
Octane, 2,3,3-trimethyl-	62016-30-2	NIST14.L	29375	C11H24	156	72











FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 DL | Lab Sample ID: 200-30148-4 DL

Matrix: Air | Lab File ID: 16229_18.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 15:15

Sample wt/vol: 20(mL) | Date Analyzed: 10/13/2015 23:08

Soil Aliquot Vol: | Dilution Factor: 20

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	11	D	10	
75-45-6	Freon 22	86.47	10	U	10	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	4.0	U	4.0	
74-87-3	Chloromethane	50.49	10	U	10	
106-97-8	n-Butane	58.12	10	U	10	
75-01-4	Vinyl chloride	62.50	4.0	U	4.0	
106-99-0	1,3-Butadiene	54.09	4.0	U	4.0	
74-83-9	Bromomethane	94.94	4.0	U	4.0	
75-00-3	Chloroethane	64.52	10	U	10	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	4.0	U	4.0	
75-69-4	Trichlorofluoromethane	137.37	32	D	4.0	
76-13-1	Freon TF	187.38	4.0	U	4.0	
75-35-4	1,1-Dichloroethene	96.94	4.0	U	4.0	
67-64-1	Acetone	58.08	370	D	100	
67-63-0	Isopropyl alcohol	60.10	100	U	100	
75-15-0	Carbon disulfide	76.14	10	U	10	
107-05-1	3-Chloropropene	76.53	10	U	10	
75-09-2	Methylene Chloride	84.93	10	U	10	
75-65-0	tert-Butyl alcohol	74.12	100	U	100	
1634-04-4	Methyl tert-butyl ether	88.15	4.0	U	4.0	
156-60-5	trans-1,2-Dichloroethene	96.94	4.0	U	4.0	
110-54-3	n-Hexane	86.17	4.0	U	4.0	
75-34-3	1,1-Dichloroethane	98.96	4.0	U	4.0	
78-93-3	Methyl Ethyl Ketone	72.11	10	U	10	
156-59-2	cis-1,2-Dichloroethene	96.94	4.0	U	4.0	
540-59-0	1,2-Dichloroethene, Total	96.94	8.0	U	8.0	
67-66-3	Chloroform	119.38	4.0	U	4.0	
109-99-9	Tetrahydrofuran	72.11	100	U	100	
71-55-6	1,1,1-Trichloroethane	133.41	4.0	U	4.0	
110-82-7	Cyclohexane	84.16	4.0	U	4.0	
56-23-5	Carbon tetrachloride	153.81	4.0	U	4.0	
540-84-1	2,2,4-Trimethylpentane	114.23	4.0	U	4.0	
71-43-2	Benzene	78.11	4.0	U	4.0	
107-06-2	1,2-Dichloroethane	98.96	4.0	U	4.0	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 DL | Lab Sample ID: 200-30148-4 DL

Matrix: Air | Lab File ID: 16229_18.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 15:15

Sample wt/vol: 20(mL) | Date Analyzed: 10/13/2015 23:08

Soil Aliquot Vol: | Dilution Factor: 20

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	4.0	U	4.0	
79-01-6	Trichloroethene	131.39	4.0	U	4.0	
80-62-6	Methyl methacrylate	100.12	10	U	10	
78-87-5	1,2-Dichloropropane	112.99	4.0	U	4.0	
123-91-1	1,4-Dioxane	88.11	100	U	100	
75-27-4	Bromodichloromethane	163.83	4.0	U	4.0	
10061-01-5	cis-1,3-Dichloropropene	110.97	4.0	U	4.0	
108-10-1	methyl isobutyl ketone	100.16	10	U	10	
108-88-3	Toluene	92.14	4.3	D	4.0	
10061-02-6	trans-1,3-Dichloropropene	110.97	4.0	U	4.0	
79-00-5	1,1,2-Trichloroethane	133.41	4.0	U	4.0	
127-18-4	Tetrachloroethene	165.83	4.0	U	4.0	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	10	U	10	
124-48-1	Dibromochloromethane	208.29	4.0	U	4.0	
106-93-4	1,2-Dibromoethane	187.87	4.0	U	4.0	
108-90-7	Chlorobenzene	112.56	4.0	U	4.0	
100-41-4	Ethylbenzene	106.17	4.0	U	4.0	
179601-23-1	m,p-Xylene	106.17	10	U	10	
95-47-6	Xylene, o-	106.17	4.0	U	4.0	
1330-20-7	Xylene (total)	106.17	14	U	14	
100-42-5	Styrene	104.15	4.0	U	4.0	
75-25-2	Bromoform	252.75	4.0	U	4.0	
98-82-8	Cumene	120.19	4.0	U	4.0	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	4.0	U	4.0	
103-65-1	n-Propylbenzene	120.19	4.0	U	4.0	
622-96-8	4-Ethyltoluene	120.20	4.0	U	4.0	
108-67-8	1,3,5-Trimethylbenzene	120.20	4.0	U	4.0	
95-49-8	2-Chlorotoluene	126.59	4.0	U	4.0	
98-06-6	tert-Butylbenzene	134.22	4.0	U	4.0	
95-63-6	1,2,4-Trimethylbenzene	120.20	4.0	U	4.0	
135-98-8	sec-Butylbenzene	134.22	4.0	U	4.0	
99-87-6	4-Isopropyltoluene	134.22	4.0	U	4.0	
541-73-1	1,3-Dichlorobenzene	147.00	4.0	U	4.0	
106-46-7	1,4-Dichlorobenzene	147.00	4.0	U	4.0	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 DL Lab Sample ID: 200-30148-4 DL

Matrix: Air Lab File ID: 16229_18.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 20(mL) Date Analyzed: 10/13/2015 23:08

Soil Aliquot Vol: Dilution Factor: 20

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*4.0*	*U*	*4.0*	
104-51-8	*n-Butylbenzene*	*134.22*	*4.0*	*U*	*4.0*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*4.0*	*U*	*4.0*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*10*	*U*	*10*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*4.0*	*U*	*4.0*	
91-20-3	*Naphthalene*	*128.17*	*10*	*U*	*10*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 DL | Lab Sample ID: 200-30148-4 DL

Matrix: Air | Lab File ID: 16229_18.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 15:15

Sample wt/vol: 20(mL) | Date Analyzed: 10/13/2015 23:08

Soil Aliquot Vol: | Dilution Factor: 20

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	56	D	49	
75-45-6	Freon 22	86.47	35	U	35	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	28	U	28	
74-87-3	Chloromethane	50.49	21	U	21	
106-97-8	n-Butane	58.12	24	U	24	
75-01-4	Vinyl chloride	62.50	10	U	10	
106-99-0	1,3-Butadiene	54.09	8.8	U	8.8	
74-83-9	Bromomethane	94.94	16	U	16	
75-00-3	Chloroethane	64.52	26	U	26	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	17	U	17	
75-69-4	Trichlorofluoromethane	137.37	180	D	22	
76-13-1	Freon TF	187.38	31	U	31	
75-35-4	1,1-Dichloroethene	96.94	16	U	16	
67-64-1	Acetone	58.08	870	D	240	
67-63-0	Isopropyl alcohol	60.10	250	U	250	
75-15-0	Carbon disulfide	76.14	31	U	31	
107-05-1	3-Chloropropene	76.53	31	U	31	
75-09-2	Methylene Chloride	84.93	35	U	35	
75-65-0	tert-Butyl alcohol	74.12	300	U	300	
1634-04-4	Methyl tert-butyl ether	88.15	14	U	14	
156-60-5	trans-1,2-Dichloroethene	96.94	16	U	16	
110-54-3	n-Hexane	86.17	14	U	14	
75-34-3	1,1-Dichloroethane	98.96	16	U	16	
78-93-3	Methyl Ethyl Ketone	72.11	29	U	29	
156-59-2	cis-1,2-Dichloroethene	96.94	16	U	16	
540-59-0	1,2-Dichloroethene, Total	96.94	32	U	32	
67-66-3	Chloroform	119.38	20	U	20	
109-99-9	Tetrahydrofuran	72.11	290	U	290	
71-55-6	1,1,1-Trichloroethane	133.41	22	U	22	
110-82-7	Cyclohexane	84.16	14	U	14	
56-23-5	Carbon tetrachloride	153.81	25	U	25	
540-84-1	2,2,4-Trimethylpentane	114.23	19	U	19	
71-43-2	Benzene	78.11	13	U	13	
107-06-2	1,2-Dichloroethane	98.96	16	U	16	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 DL | Lab Sample ID: 200-30148-4 DL

Matrix: Air | Lab File ID: 16229_18.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 15:15

Sample wt/vol: 20(mL) | Date Analyzed: 10/13/2015 23:08

Soil Aliquot Vol: | Dilution Factor: 20

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	16	U	16	
79-01-6	Trichloroethene	131.39	21	U	21	
80-62-6	Methyl methacrylate	100.12	41	U	41	
78-87-5	1,2-Dichloropropane	112.99	18	U	18	
123-91-1	1,4-Dioxane	88.11	360	U	360	
75-27-4	Bromodichloromethane	163.83	27	U	27	
10061-01-5	cis-1,3-Dichloropropene	110.97	18	U	18	
108-10-1	methyl isobutyl ketone	100.16	41	U	41	
108-88-3	Toluene	92.14	16	D	15	
10061-02-6	trans-1,3-Dichloropropene	110.97	18	U	18	
79-00-5	1,1,2-Trichloroethane	133.41	22	U	22	
127-18-4	Tetrachloroethene	165.83	27	U	27	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	41	U	41	
124-48-1	Dibromochloromethane	208.29	34	U	34	
106-93-4	1,2-Dibromoethane	187.87	31	U	31	
108-90-7	Chlorobenzene	112.56	18	U	18	
100-41-4	Ethylbenzene	106.17	17	U	17	
179601-23-1	m,p-Xylene	106.17	43	U	43	
95-47-6	Xylene, o-	106.17	17	U	17	
1330-20-7	Xylene (total)	106.17	61	U	61	
100-42-5	Styrene	104.15	17	U	17	
75-25-2	Bromoform	252.75	41	U	41	
98-82-8	Cumene	120.19	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	27	U	27	
103-65-1	n-Propylbenzene	120.19	20	U	20	
622-96-8	4-Ethyltoluene	120.20	20	U	20	
108-67-8	1,3,5-Trimethylbenzene	120.20	20	U	20	
95-49-8	2-Chlorotoluene	126.59	21	U	21	
98-06-6	tert-Butylbenzene	134.22	22	U	22	
95-63-6	1,2,4-Trimethylbenzene	120.20	20	U	20	
135-98-8	sec-Butylbenzene	134.22	22	U	22	
99-87-6	4-Isopropyltoluene	134.22	22	U	22	
541-73-1	1,3-Dichlorobenzene	147.00	24	U	24	
106-46-7	1,4-Dichlorobenzene	147.00	24	U	24	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 DL Lab Sample ID: 200-30148-4 DL

Matrix: Air Lab File ID: 16229_18.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 20(mL) Date Analyzed: 10/13/2015 23:08

Soil Aliquot Vol: Dilution Factor: 20

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*21*	*U*	*21*	
104-51-8	*n-Butylbenzene*	*134.22*	*22*	*U*	*22*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*24*	*U*	*24*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*74*	*U*	*74*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*43*	*U*	*43*	
91-20-3	*Naphthalene*	*128.17*	*52*	*U*	*52*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-4 DL Lab Sample ID: 200-30148-4 DL

Matrix: Air Lab File ID: 16229_18.D

Analysis Method: TO-15 Date Collected: 10/05/2015 15:15

Sample wt/vol: 20(mL) Date Analyzed: 10/13/2015 23:08

Soil Aliquot Vol: Dilution Factor: 20

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_18.D
Lims ID: 200-30148-A-4 Lab Sample ID: 200-30148-4
Client ID: SV-4
Sample Type: Client
Inject. Date: 13-Oct-2015 23:08:30 ALS Bottle#: 12 Worklist Smp#: 18
Purge Vol: 200.000 mL Dil. Factor: 20.0000
Sample Info: 200-0016229-018
Misc. Info.: 30148-4
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 08:02:48 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 08:02:47

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85	3.177	3.177	0.000	99	19797	0.5632	
3 Chlorodifluoromethane	51		3.231				ND	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.439	3.445	-0.006	92	2319	0.0649	
5 Chloromethane	50		3.579				ND	
6 Butane	43	3.777	3.777	0.000	85	2528	0.1556	
7 Vinyl chloride	62		3.819				ND	
8 Butadiene	54		3.894				ND	
9 Bromomethane	94		4.563				ND	
10 Chloroethane	64		4.793				ND	
12 Vinyl bromide	106		5.167				ND	
13 Trichlorofluoromethane	101	5.258	5.264	-0.006	98	62460	1.61	
18 1,1,2-Trichloro-1,2,2-trif	101	6.307	6.307	0.000	86	3718	0.1198	
20 1,1-Dichloroethene	96		6.355				ND	
21 Acetone	43	6.628	6.623	0.005	88	289114	18.3	
22 Carbon disulfide	76		6.751				ND	
23 Isopropyl alcohol	45		6.949				ND	
24 3-Chloro-1-propene	41		7.125				ND	
26 Methylene Chloride	49	7.420	7.414	0.006	78	1798	0.1350	
28 2-Methyl-2-propanol	59	7.890	7.735	0.155	99	16773	0.6980	
29 Methyl tert-butyl ether	73		7.837				ND	
30 trans-1,2-Dichloroethene	61		7.842				ND	
32 Hexane	57		8.211				ND	
33 1,1-Dichloroethane	63		8.714				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.988	9.881	0.107	98	2435	0.2901	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.282	10.287	-0.005	77	180730	10.0	
39 Tetrahydrofuran	42		10.314				ND	
41 Chloroform	83		10.416				ND	
42 Cyclohexane	84		10.656				ND	
43 1,1,1-Trichloroethane	97		10.694				ND	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	44 Carbon tetrachloride	117		10.934				ND	
	45 Isooctane	57		11.373				ND	
	46 Benzene	78		11.416				ND	
	47 1,2-Dichloroethane	62		11.609				ND	
	48 n-Heptane	43	11.764	11.758	0.000	32	1648	0.0586	M
*	50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	91	997974	10.0	
	52 Trichloroethene	95		12.748				ND	
	53 1,2-Dichloropropane	63		13.336				ND	
	54 Methyl methacrylate	69		13.502				ND	
	55 1,4-Dioxane	88		13.588				ND	
	57 Dichlorobromomethane	83		13.909				ND	
	58 cis-1,3-Dichloropropene	75		14.872				ND	
	61 4-Methyl-2-pentanone (MIBK	43	15.273	15.198	0.075	69	4183	0.1098	
	62 Toluene	92	15.471	15.482	-0.011	68	10945	0.2130	
	67 trans-1,3-Dichloropropene	75		16.097				ND	
	68 1,1,2-Trichloroethane	83		16.487				ND	
	69 Tetrachloroethene	166		16.584				ND	
	70 2-Hexanone	43		16.958				ND	
	71 Chlorodibromomethane	129		17.269				ND	
	72 Ethylene Dibromide	107		17.547				ND	
*	73 Chlorobenzene-d5	117	18.445	18.451	-0.006	81	1009230	10.0	
	74 Chlorobenzene	112		18.510				ND	
	75 Ethylbenzene	91	18.654	18.654	0.000	95	7823	0.0706	
	77 m-Xylene & p-Xylene	106	18.889	18.906	-0.017	98	11291	0.2417	
	78 o-Xylene	106	19.719	19.719	0.000	94	4889	0.1059	
	79 Styrene	104	19.767	19.772	-0.005	95	2438	0.0338	
S	80 Xylenes, Total	106				0		0.3476	
	81 Bromoform	173		20.179				ND	
	82 Isopropylbenzene	105		20.355				ND	
	85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
	86 N-Propylbenzene	91	21.040	21.040	0.000	97	3244	0.0211	
	89 4-Ethyltoluene	105	21.211	21.217	-0.006	63	4555	0.0342	
	90 2-Chlorotoluene	91		21.238				ND	
	91 1,3,5-Trimethylbenzene	105	21.318	21.318	0.000	93	3240	0.0295	
	93 tert-Butylbenzene	119		21.789				ND	
	94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	9289	0.0843	
	95 sec-Butylbenzene	105		22.105				ND	
	96 4-Isopropyltoluene	119	22.297	22.297	0.000	97	4088	0.0290	
	97 1,3-Dichlorobenzene	146		22.345				ND	
	98 1,4-Dichlorobenzene	146		22.484				ND	
	99 Benzyl chloride	91		22.688				ND	
	101 n-Butylbenzene	91		22.886				ND	
	102 1,2-Dichlorobenzene	146		23.041				ND	
	104 1,2,4-Trichlorobenzene	180		25.673				ND	
	105 Hexachlorobutadiene	225		25.855				ND	
	106 Naphthalene	128		26.197				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

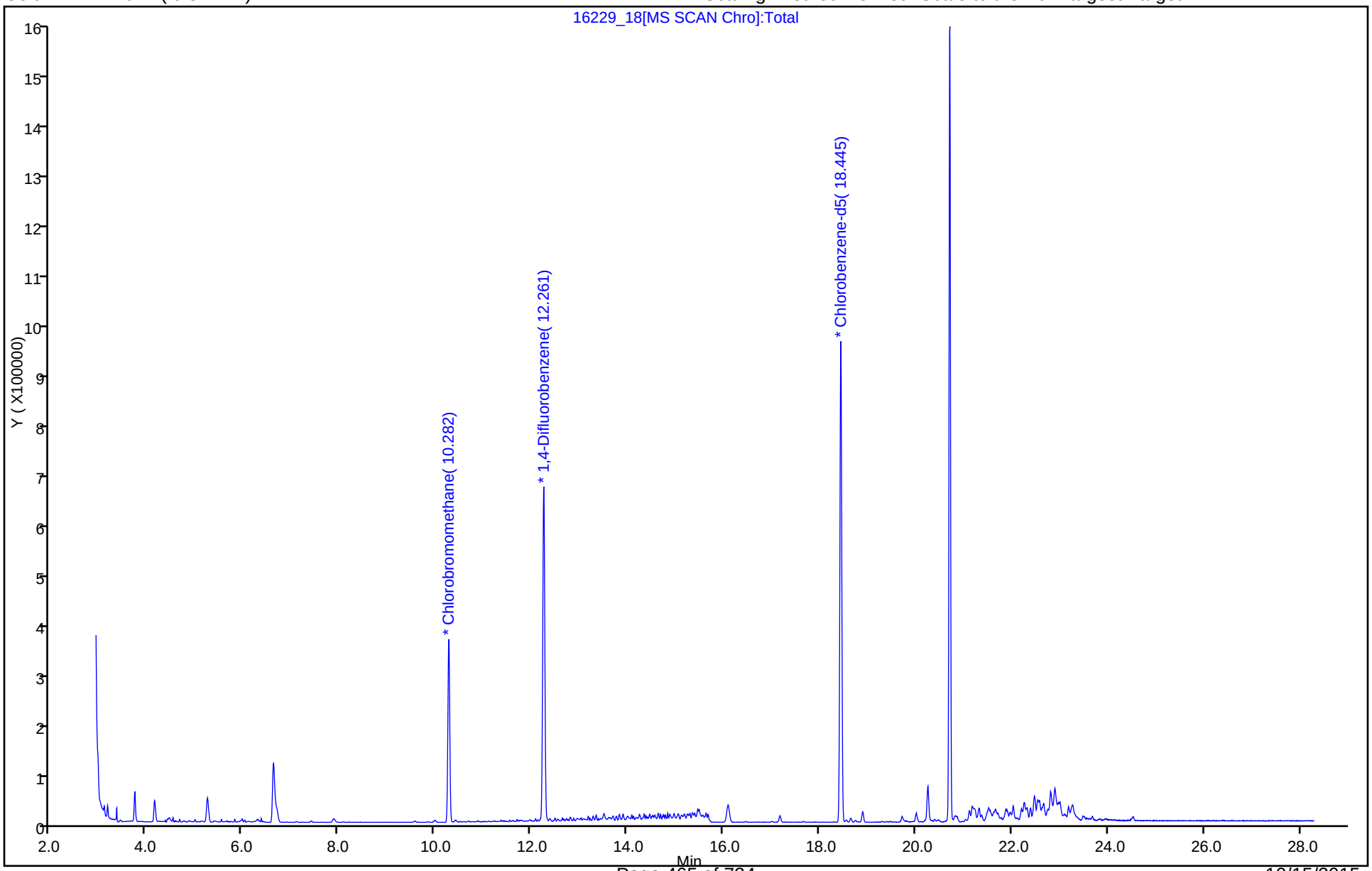
Report Date: 14-Oct-2015 08:02:49 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_18.D

Injection Date:	13-Oct-2015 23:08:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4	Worklist Smp#:	18
Client ID:	SV-4				
Purge Vol:	200.000 mL	Dil. Factor:	20.0000	ALS Bottle#:	12
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

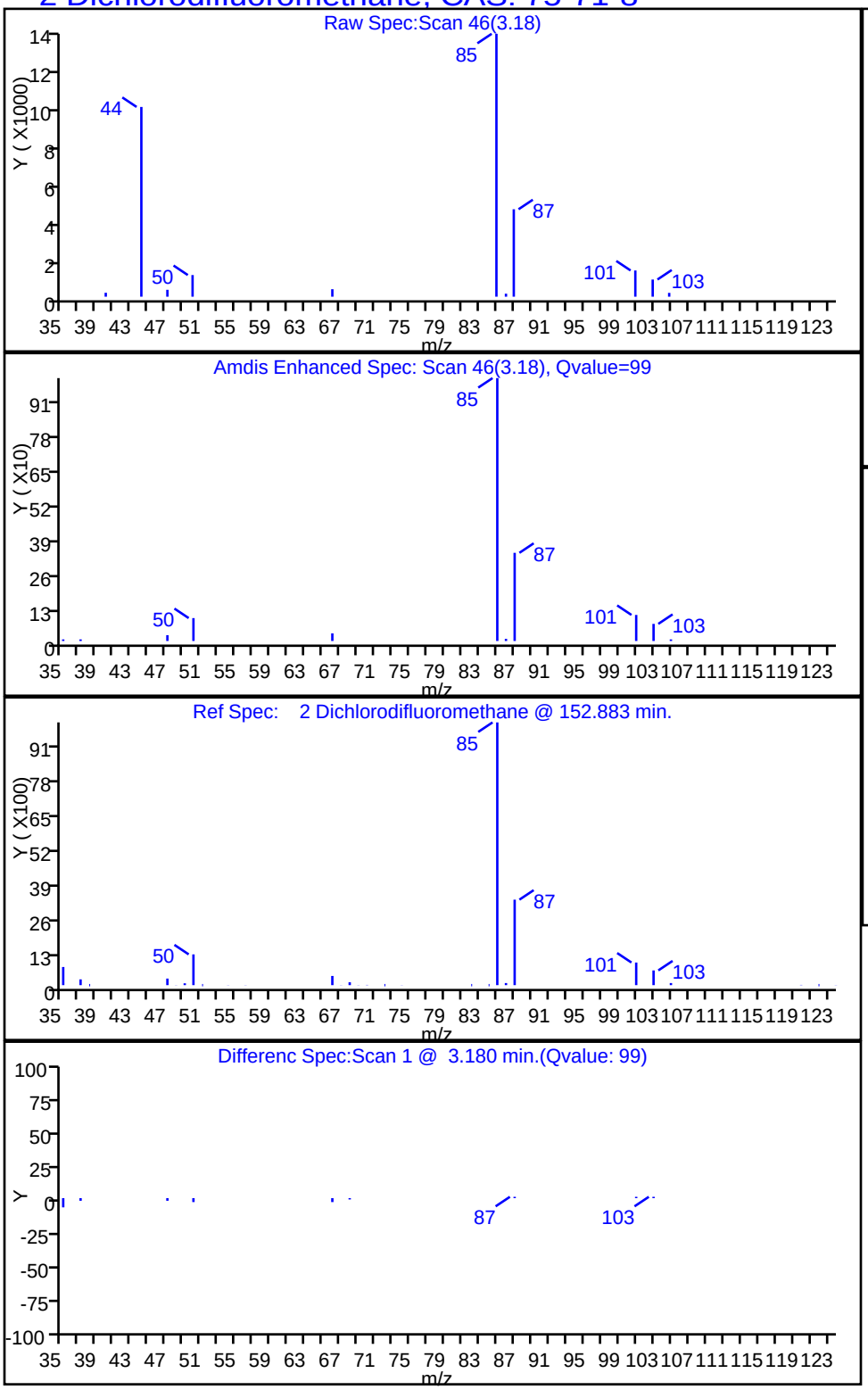
Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

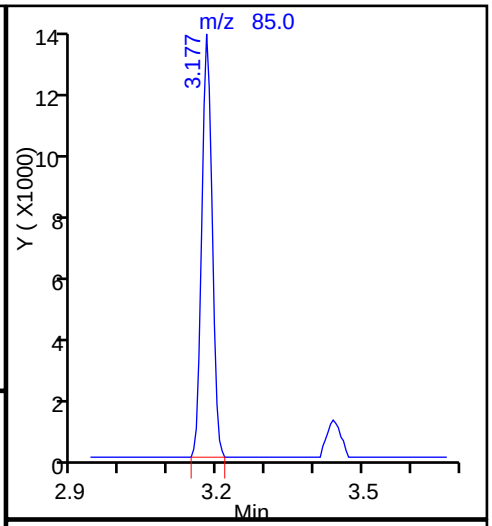


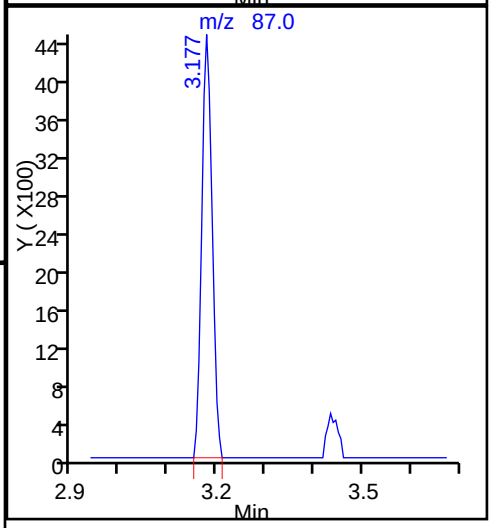
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_18.D				
Injection Date:	13-Oct-2015 23:08:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	18
Purge Vol:	200.000 mL	Dil. Factor:	20.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

2 Dichlorodifluoromethane, CAS: 75-71-8



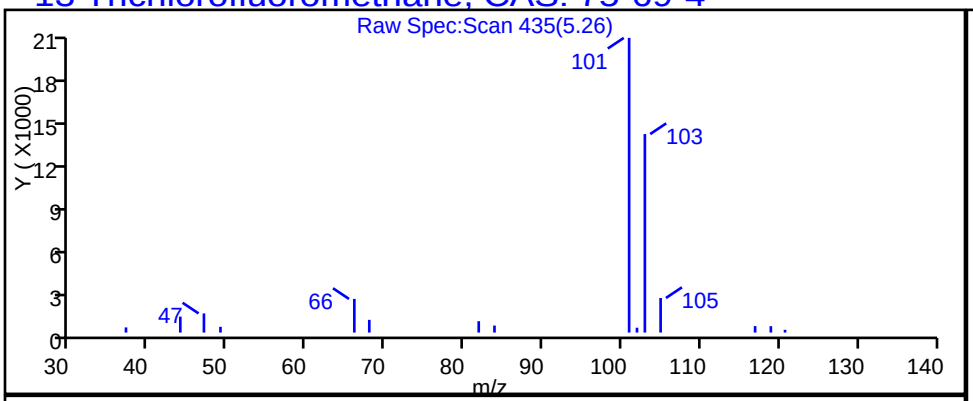


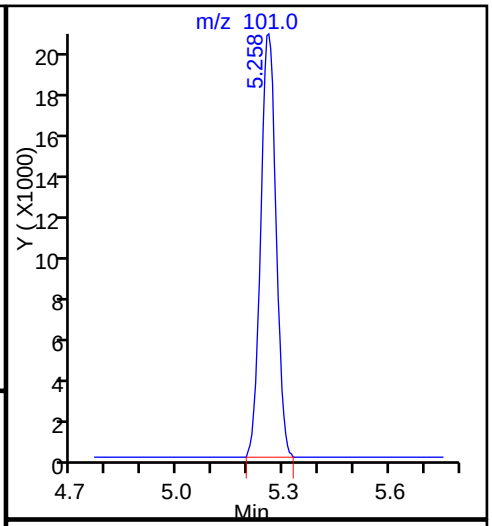


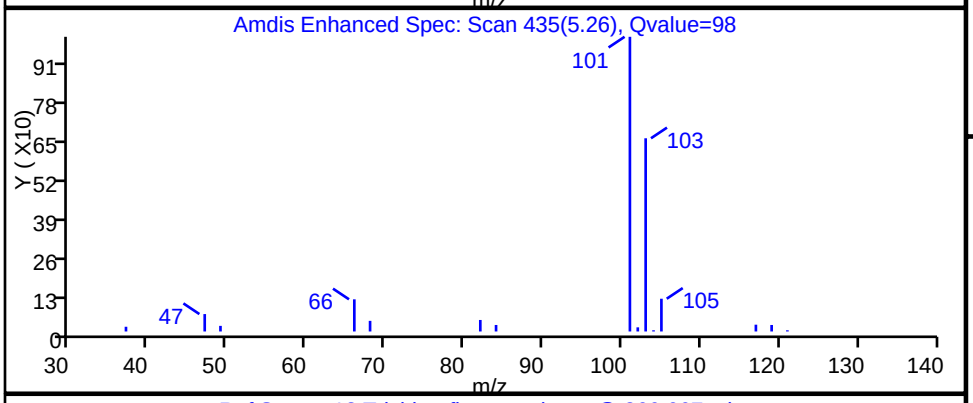
TestAmerica Burlington

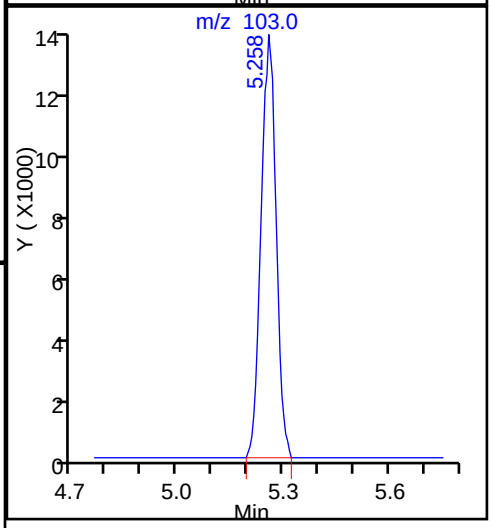
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_18.D				
Injection Date:	13-Oct-2015 23:08:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	18
Purge Vol:	200.000 mL	Dil. Factor:	20.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

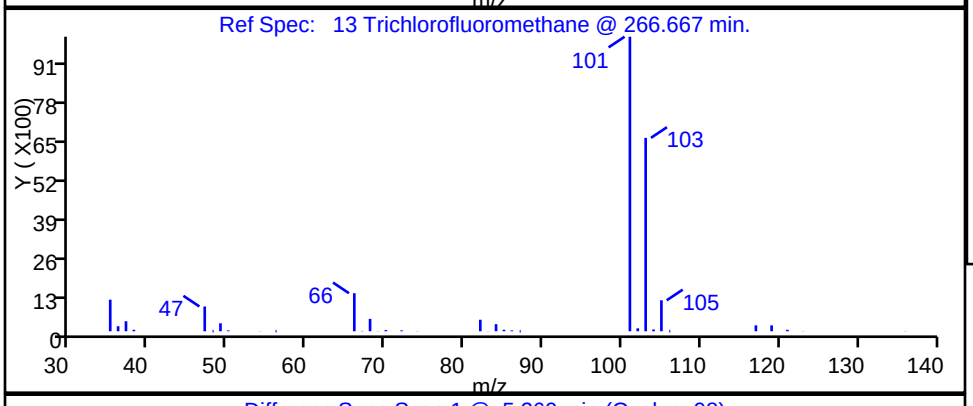
13 Trichlorofluoromethane, CAS: 75-69-4

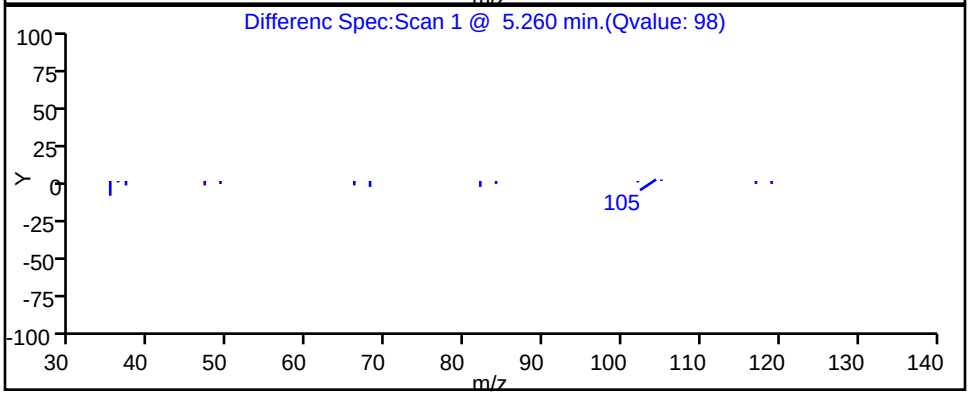








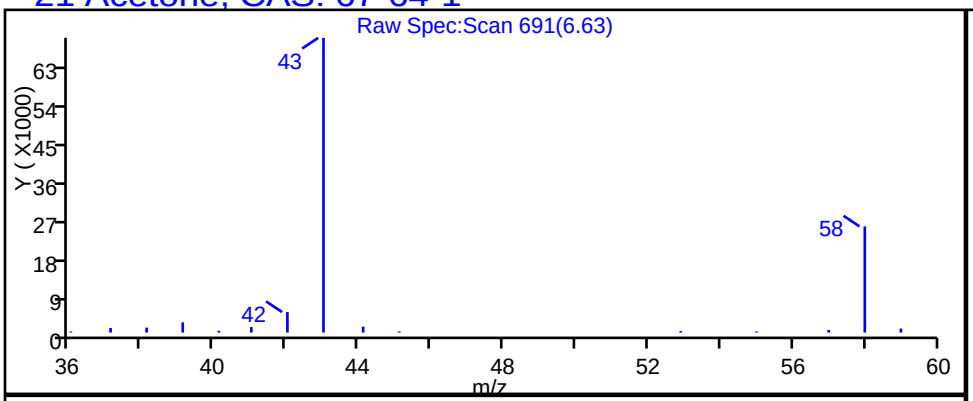


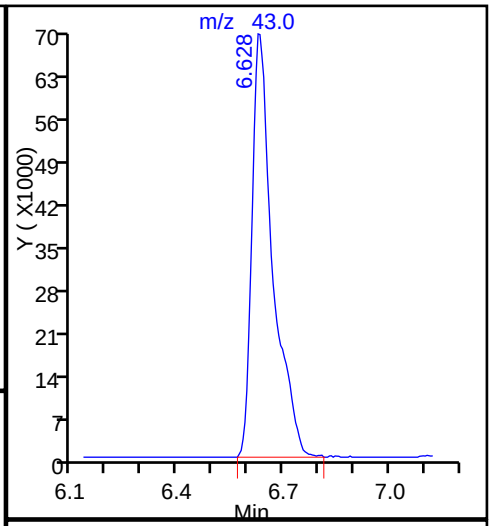


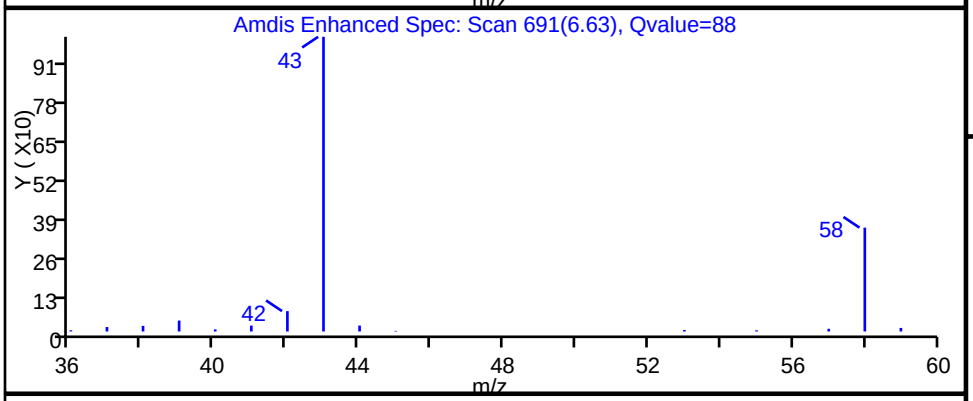
TestAmerica Burlington

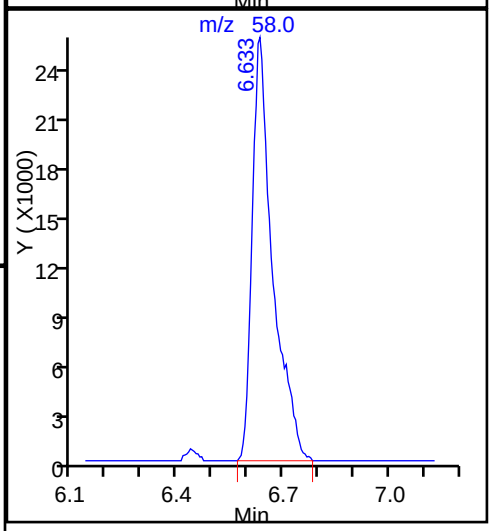
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_18.D				
Injection Date:	13-Oct-2015 23:08:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	18
Purge Vol:	200.000 mL	Dil. Factor:	20.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

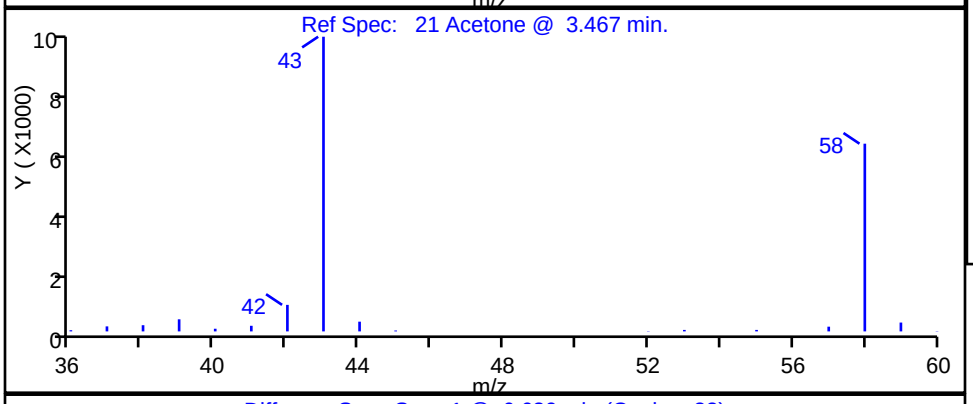
21 Acetone, CAS: 67-64-1

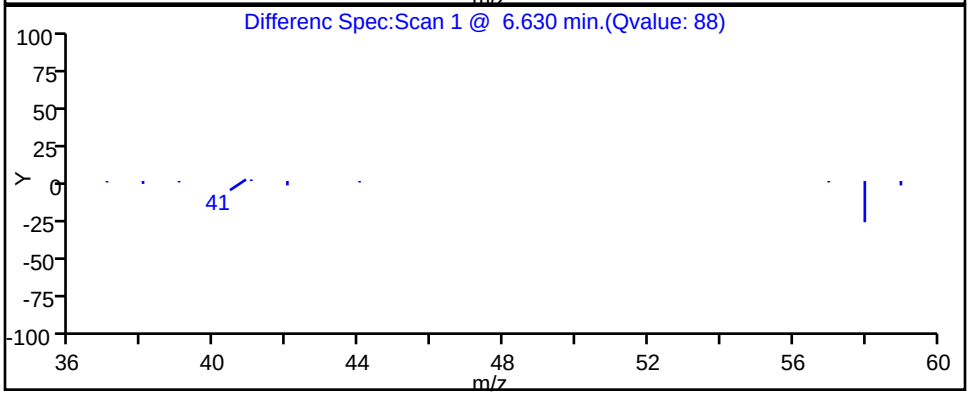








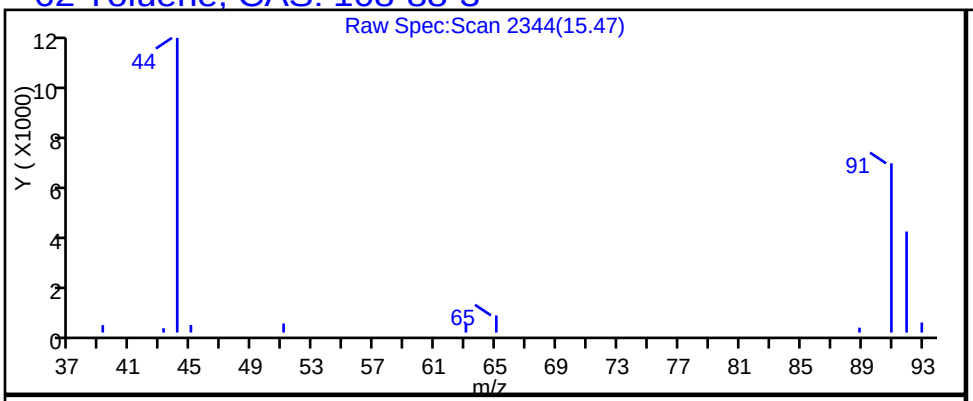


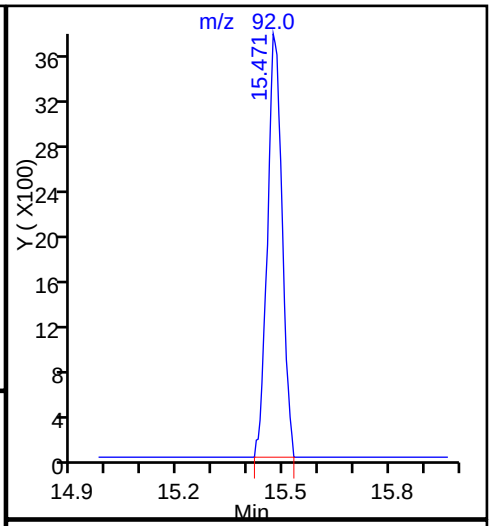


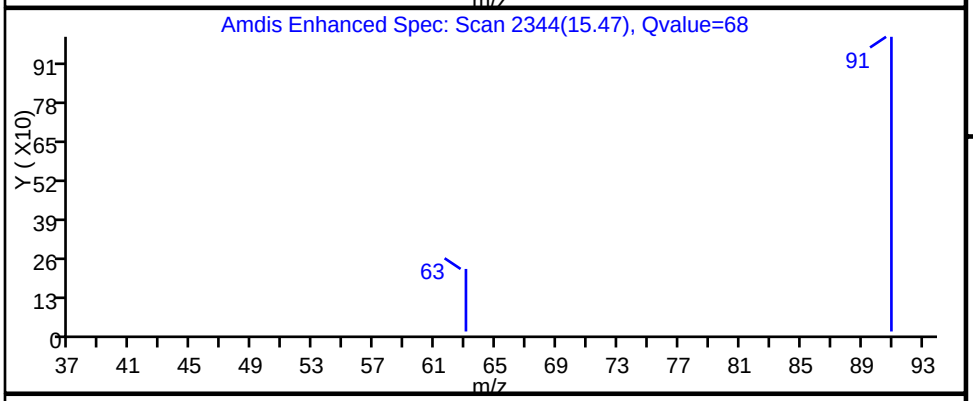
TestAmerica Burlington

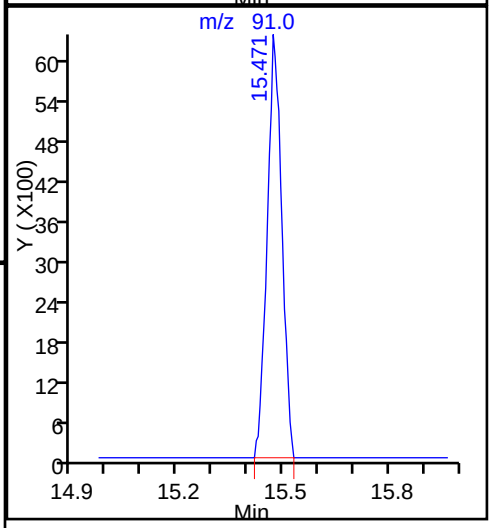
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_18.D				
Injection Date:	13-Oct-2015 23:08:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	18
Purge Vol:	200.000 mL	Dil. Factor:	20.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

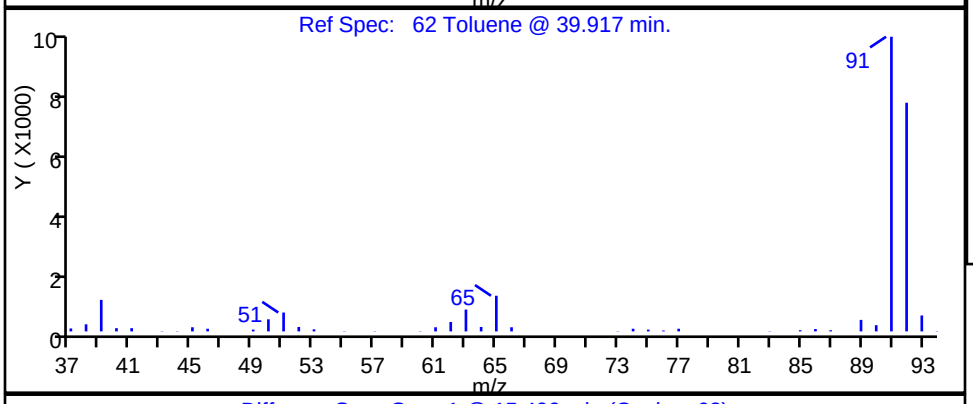
62 Toluene, CAS: 108-88-3

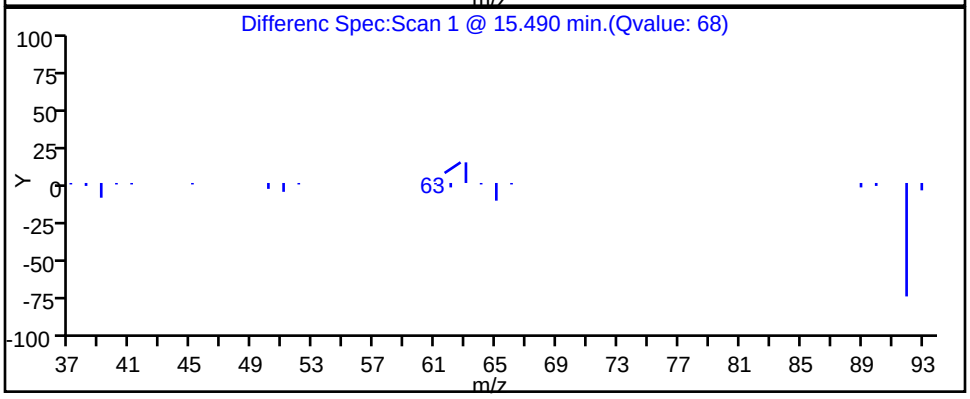












Manual Integration/User Assign Peak Report

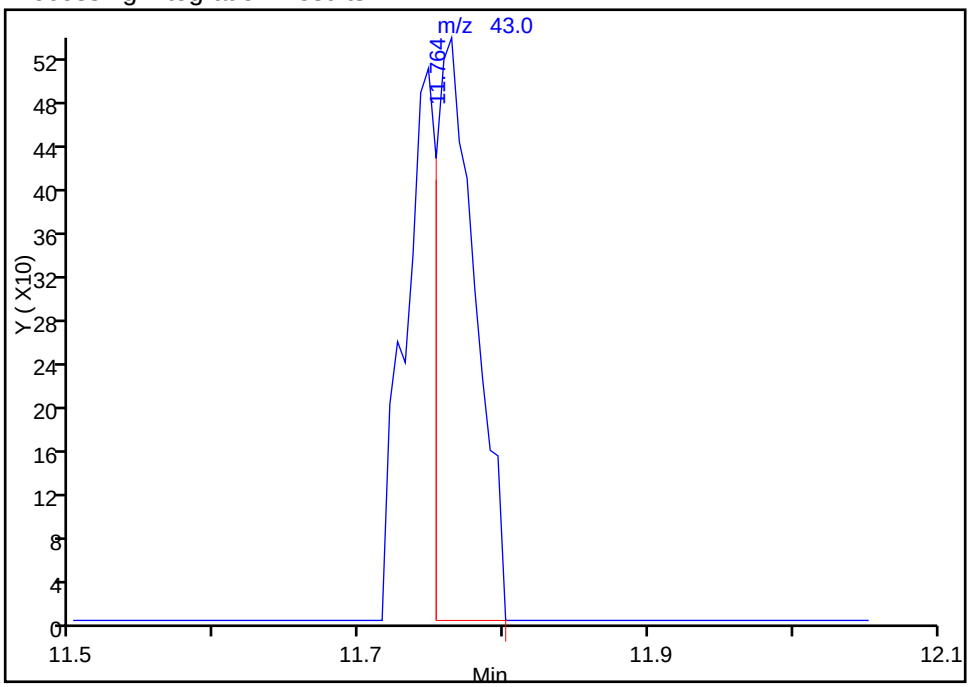
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_18.D				
Injection Date:	13-Oct-2015 23:08:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	18
Purge Vol:	200.000 mL	Dil. Factor:	20.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

48 n-Heptane, CAS: 142-82-5

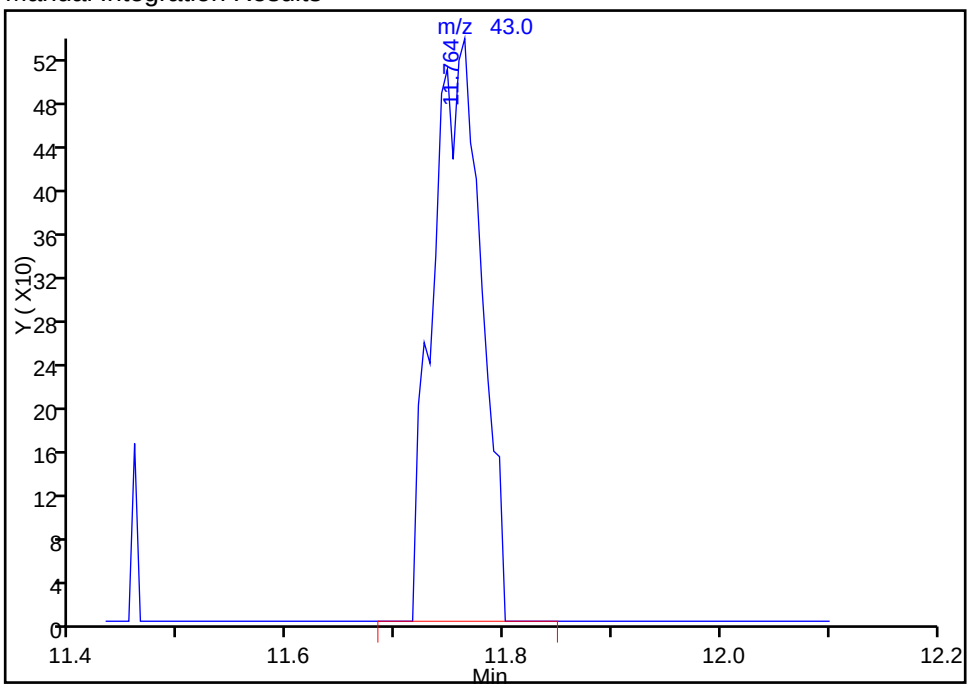
Processing Integration Results

RT: 11.76
Area: 1005
Amount: 0.035746
Amount Units: ppb v/v



Manual Integration Results

RT: 11.76
Area: 1648
Amount: 0.058616
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 08:02:47
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

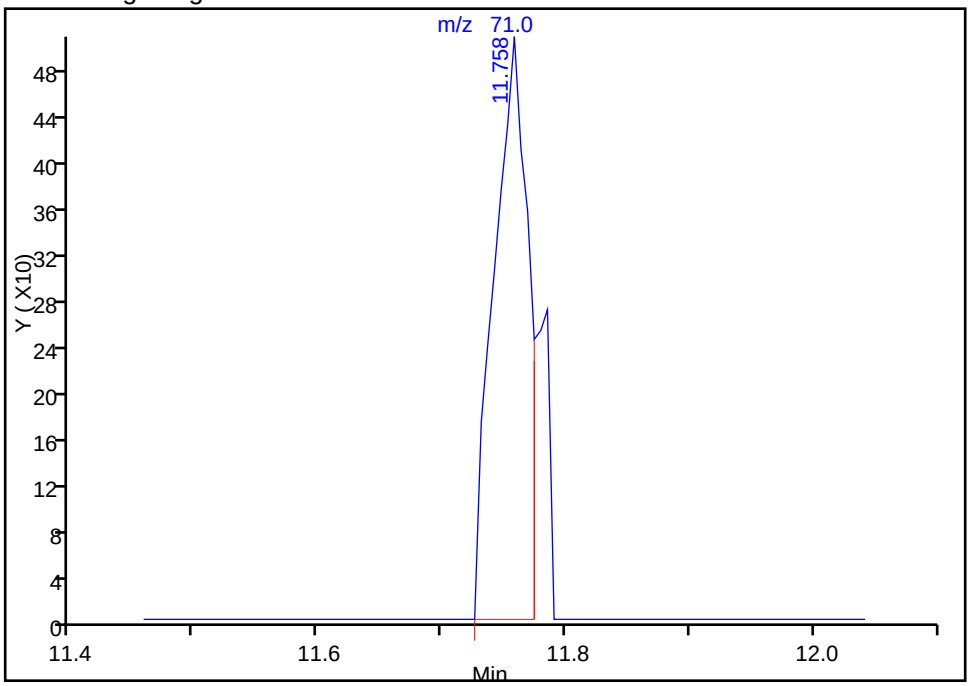
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_18.D				
Injection Date:	13-Oct-2015 23:08:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-4	Lab Sample ID:	200-30148-4		
Client ID:	SV-4				
Operator ID:	wrd	ALS Bottle#:	12	Worklist Smp#:	18
Purge Vol:	200.000 mL	Dil. Factor:	20.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

48 n-Heptane, CAS: 142-82-5

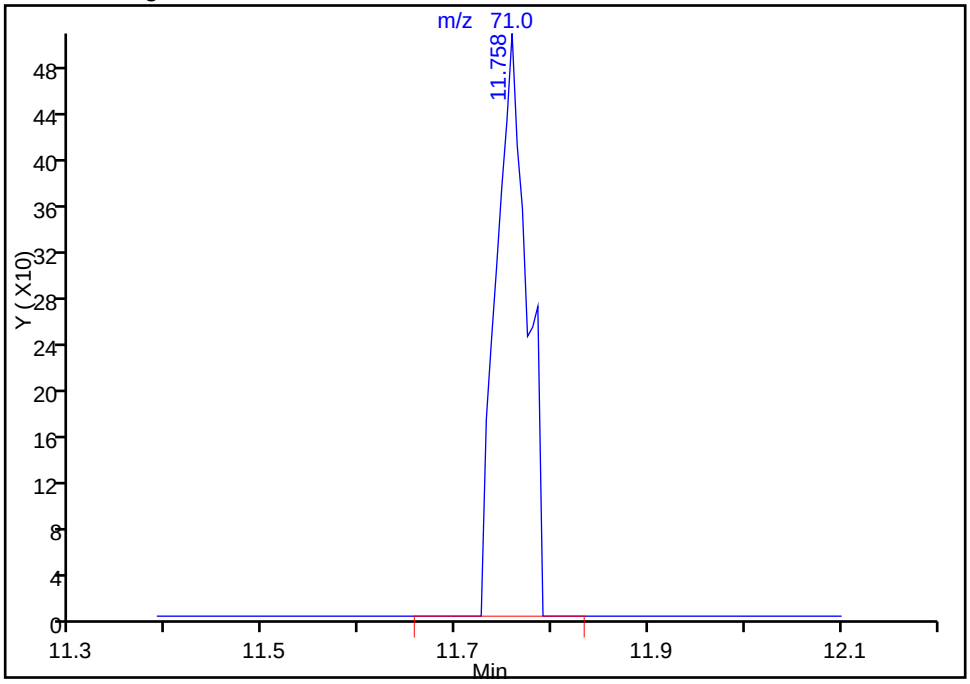
Processing Integration Results

RT: 11.76
Area: 976
Amount: 0.035746
Amount Units: ppb v/v



Manual Integration Results

RT: 11.76
Area: 1144
Amount: 0.058616
Amount Units: ppb v/v



Reviewer: desjardinsb, 14-Oct-2015 08:02:47
Audit Action: Manually Integrated
Audit Reason: Baseline

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 | Lab Sample ID: 200-30148-5

Matrix: Air | Lab File ID: 16229_19.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 14:28

Sample wt/vol: 200(mL) | Date Analyzed: 10/13/2015 23:57

Soil Aliquot Vol: | Dilution Factor: 3

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	5.7		1.5	
75-45-6	Freon 22	86.47	1.5	U	1.5	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	0.60	U	0.60	
74-87-3	Chloromethane	50.49	1.5	U	1.5	
106-97-8	n-Butane	58.12	6.8		1.5	
75-01-4	Vinyl chloride	62.50	0.60	U	0.60	
106-99-0	1,3-Butadiene	54.09	1.4		0.60	
74-83-9	Bromomethane	94.94	0.60	U	0.60	
75-00-3	Chloroethane	64.52	1.5	U	1.5	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.60	U	0.60	
75-69-4	Trichlorofluoromethane	137.37	2.4		0.60	
76-13-1	Freon TF	187.38	0.60	U	0.60	
75-35-4	1,1-Dichloroethene	96.94	0.60	U	0.60	
67-64-1	*Acetone*	*58.08*	*660*	*E*	*15*	
67-63-0	Isopropyl alcohol	60.10	15	U	15	
75-15-0	Carbon disulfide	76.14	1.5	U	1.5	
107-05-1	3-Chloropropene	76.53	1.5	U	1.5	
75-09-2	Methylene Chloride	84.93	1.5	U	1.5	
75-65-0	tert-Butyl alcohol	74.12	15	U	15	
1634-04-4	Methyl tert-butyl ether	88.15	0.60	U	0.60	
156-60-5	trans-1,2-Dichloroethene	96.94	0.60	U	0.60	
110-54-3	n-Hexane	86.17	1.2		0.60	
75-34-3	1,1-Dichloroethane	98.96	0.60	U	0.60	
78-93-3	Methyl Ethyl Ketone	72.11	10		1.5	
156-59-2	cis-1,2-Dichloroethene	96.94	0.60	U	0.60	
540-59-0	1,2-Dichloroethene, Total	96.94	1.2	U	1.2	
67-66-3	Chloroform	119.38	0.60	U	0.60	
109-99-9	Tetrahydrofuran	72.11	15	U	15	
71-55-6	1,1,1-Trichloroethane	133.41	0.60	U	0.60	
110-82-7	Cyclohexane	84.16	0.60	U	0.60	
56-23-5	Carbon tetrachloride	153.81	0.60	U	0.60	
540-84-1	2,2,4-Trimethylpentane	114.23	0.60	U	0.60	
71-43-2	Benzene	78.11	1.1		0.60	
107-06-2	1,2-Dichloroethane	98.96	0.60	U	0.60	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 Lab Sample ID: 200-30148-5

Matrix: Air Lab File ID: 16229_19.D

Analysis Method: TO-15 Date Collected: 10/05/2015 14:28

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 23:57

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	2.3		0.60	
79-01-6	Trichloroethene	131.39	0.60	U	0.60	
80-62-6	Methyl methacrylate	100.12	1.5	U	1.5	
78-87-5	1,2-Dichloropropane	112.99	0.60	U	0.60	
123-91-1	1,4-Dioxane	88.11	15	U	15	
75-27-4	Bromodichloromethane	163.83	0.60	U	0.60	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.60	U	0.60	
108-10-1	methyl isobutyl ketone	100.16	2.1		1.5	
108-88-3	Toluene	92.14	5.5		0.60	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.60	U	0.60	
79-00-5	1,1,2-Trichloroethane	133.41	0.60	U	0.60	
127-18-4	Tetrachloroethene	165.83	0.60	U	0.60	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	1.7		1.5	
124-48-1	Dibromochloromethane	208.29	0.60	U	0.60	
106-93-4	1,2-Dibromoethane	187.87	0.60	U	0.60	
108-90-7	Chlorobenzene	112.56	0.60	U	0.60	
100-41-4	Ethylbenzene	106.17	1.5		0.60	
179601-23-1	m,p-Xylene	106.17	5.5		1.5	
95-47-6	Xylene, o-	106.17	2.2		0.60	
1330-20-7	Xylene (total)	106.17	7.7		2.1	
100-42-5	Styrene	104.15	0.60	U	0.60	
75-25-2	Bromoform	252.75	0.60	U	0.60	
98-82-8	Cumene	120.19	0.60	U	0.60	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.60	U	0.60	
103-65-1	n-Propylbenzene	120.19	0.60	U	0.60	
622-96-8	4-Ethyltoluene	120.20	0.93		0.60	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.85		0.60	
95-49-8	2-Chlorotoluene	126.59	0.60	U	0.60	
98-06-6	tert-Butylbenzene	134.22	0.60	U	0.60	
95-63-6	1,2,4-Trimethylbenzene	120.20	2.3		0.60	
135-98-8	sec-Butylbenzene	134.22	0.60	U	0.60	
99-87-6	4-Isopropyltoluene	134.22	0.60	U	0.60	
541-73-1	1,3-Dichlorobenzene	147.00	0.60	U	0.60	
106-46-7	1,4-Dichlorobenzene	147.00	0.60	U	0.60	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 Lab Sample ID: 200-30148-5

Matrix: Air Lab File ID: 16229_19.D

Analysis Method: TO-15 Date Collected: 10/05/2015 14:28

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 23:57

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	0.60	U	0.60	
104-51-8	n-Butylbenzene	134.22	0.60	U	0.60	
95-50-1	1,2-Dichlorobenzene	147.00	0.60	U	0.60	
120-82-1	1,2,4-Trichlorobenzene	181.45	1.5	U	1.5	
87-68-3	Hexachlorobutadiene	260.76	0.60	U	0.60	
91-20-3	Naphthalene	128.17	1.5	U	1.5	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 | Lab Sample ID: 200-30148-5

Matrix: Air | Lab File ID: 16229_19.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 14:28

Sample wt/vol: 200(mL) | Date Analyzed: 10/13/2015 23:57

Soil Aliquot Vol: | Dilution Factor: 3

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	28		7.4	
75-45-6	Freon 22	86.47	5.3	U	5.3	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	4.2	U	4.2	
74-87-3	Chloromethane	50.49	3.1	U	3.1	
106-97-8	n-Butane	58.12	16		3.6	
75-01-4	Vinyl chloride	62.50	1.5	U	1.5	
106-99-0	1,3-Butadiene	54.09	3.1		1.3	
74-83-9	Bromomethane	94.94	2.3	U	2.3	
75-00-3	Chloroethane	64.52	4.0	U	4.0	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	2.6	U	2.6	
75-69-4	Trichlorofluoromethane	137.37	13		3.4	
76-13-1	Freon TF	187.38	4.6	U	4.6	
75-35-4	1,1-Dichloroethene	96.94	2.4	U	2.4	
67-64-1	*Acetone*	*58.08*	*1600*	*E*	*36*	
67-63-0	Isopropyl alcohol	60.10	37	U	37	
75-15-0	Carbon disulfide	76.14	4.7	U	4.7	
107-05-1	3-Chloropropene	76.53	4.7	U	4.7	
75-09-2	Methylene Chloride	84.93	5.2	U	5.2	
75-65-0	tert-Butyl alcohol	74.12	45	U	45	
1634-04-4	Methyl tert-butyl ether	88.15	2.2	U	2.2	
156-60-5	trans-1,2-Dichloroethene	96.94	2.4	U	2.4	
110-54-3	n-Hexane	86.17	4.3		2.1	
75-34-3	1,1-Dichloroethane	98.96	2.4	U	2.4	
78-93-3	Methyl Ethyl Ketone	72.11	31		4.4	
156-59-2	cis-1,2-Dichloroethene	96.94	2.4	U	2.4	
540-59-0	1,2-Dichloroethene, Total	96.94	4.8	U	4.8	
67-66-3	Chloroform	119.38	2.9	U	2.9	
109-99-9	Tetrahydrofuran	72.11	44	U	44	
71-55-6	1,1,1-Trichloroethane	133.41	3.3	U	3.3	
110-82-7	Cyclohexane	84.16	2.1	U	2.1	
56-23-5	Carbon tetrachloride	153.81	3.8	U	3.8	
540-84-1	2,2,4-Trimethylpentane	114.23	2.8	U	2.8	
71-43-2	Benzene	78.11	3.6		1.9	
107-06-2	1,2-Dichloroethane	98.96	2.4	U	2.4	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 Lab Sample ID: 200-30148-5

Matrix: Air Lab File ID: 16229_19.D

Analysis Method: TO-15 Date Collected: 10/05/2015 14:28

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 23:57

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	9.5		2.5	
79-01-6	Trichloroethene	131.39	3.2	U	3.2	
80-62-6	Methyl methacrylate	100.12	6.1	U	6.1	
78-87-5	1,2-Dichloropropane	112.99	2.8	U	2.8	
123-91-1	1,4-Dioxane	88.11	54	U	54	
75-27-4	Bromodichloromethane	163.83	4.0	U	4.0	
10061-01-5	cis-1,3-Dichloropropene	110.97	2.7	U	2.7	
108-10-1	methyl isobutyl ketone	100.16	8.7		6.1	
108-88-3	Toluene	92.14	21		2.3	
10061-02-6	trans-1,3-Dichloropropene	110.97	2.7	U	2.7	
79-00-5	1,1,2-Trichloroethane	133.41	3.3	U	3.3	
127-18-4	Tetrachloroethene	165.83	4.1	U	4.1	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	6.9		6.1	
124-48-1	Dibromochloromethane	208.29	5.1	U	5.1	
106-93-4	1,2-Dibromoethane	187.87	4.6	U	4.6	
108-90-7	Chlorobenzene	112.56	2.8	U	2.8	
100-41-4	Ethylbenzene	106.17	6.6		2.6	
179601-23-1	m,p-Xylene	106.17	24		6.5	
95-47-6	Xylene, o-	106.17	9.7		2.6	
1330-20-7	Xylene (total)	106.17	33		9.1	
100-42-5	Styrene	104.15	2.6	U	2.6	
75-25-2	Bromoform	252.75	6.2	U	6.2	
98-82-8	Cumene	120.19	2.9	U	2.9	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	4.1	U	4.1	
103-65-1	n-Propylbenzene	120.19	2.9	U	2.9	
622-96-8	4-Ethyltoluene	120.20	4.6		2.9	
108-67-8	1,3,5-Trimethylbenzene	120.20	4.2		2.9	
95-49-8	2-Chlorotoluene	126.59	3.1	U	3.1	
98-06-6	tert-Butylbenzene	134.22	3.3	U	3.3	
95-63-6	1,2,4-Trimethylbenzene	120.20	11		2.9	
135-98-8	sec-Butylbenzene	134.22	3.3	U	3.3	
99-87-6	4-Isopropyltoluene	134.22	3.3	U	3.3	
541-73-1	1,3-Dichlorobenzene	147.00	3.6	U	3.6	
106-46-7	1,4-Dichlorobenzene	147.00	3.6	U	3.6	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 Lab Sample ID: 200-30148-5

Matrix: Air Lab File ID: 16229_19.D

Analysis Method: TO-15 Date Collected: 10/05/2015 14:28

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 23:57

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	3.1	U	3.1	
104-51-8	n-Butylbenzene	134.22	3.3	U	3.3	
95-50-1	1,2-Dichlorobenzene	147.00	3.6	U	3.6	
120-82-1	1,2,4-Trichlorobenzene	181.45	11	U	11	
87-68-3	Hexachlorobutadiene	260.76	6.4	U	6.4	
91-20-3	Naphthalene	128.17	7.9	U	7.9	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 Lab Sample ID: 200-30148-5

Matrix: Air Lab File ID: 16229_19.D

Analysis Method: TO-15 Date Collected: 10/05/2015 14:28

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 23:57

Soil Aliquot Vol: Dilution Factor: 3

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 10 TIC Result Total: 152

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown	4.13	34	J
541-05-9	Cyclotrisiloxane, hexamethyl-	16.08	10	J N
62016-14-2	Octane, 2,5,6-trimethyl-	21.52	17	J N
	Unknown	22.27	11	J
	Unknown	22.47	15	J
2213-23-2	Heptane, 2,4-dimethyl-	22.67	11	J N
	Unknown	22.82	13	J
	Unknown	22.91	16	J
	Unknown	23.00	11	J
112-40-3	Dodecane	23.27	14	J N

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Sample Type: Client
Inject. Date: 13-Oct-2015 23:57:30 ALS Bottle#: 13 Worklist Smp#: 19
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Sample Info: 200-0016229-019
Misc. Info.: 30148-5
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 08:06:10 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 08:06:10

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85	3.172	3.177	-0.005	99	65969	1.91	
3 Chlorodifluoromethane	51	3.226	3.231	-0.005	96	1778	0.1067	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.440	3.445	-0.005	94	6192	0.1768	
5 Chloromethane	50		3.579				ND	
6 Butane	43	3.771	3.777	-0.006	91	35852	2.25	
7 Vinyl chloride	62		3.819				ND	
8 Butadiene	54	3.889	3.894	-0.005	93	4114	0.4684	
9 Bromomethane	94		4.563				ND	
10 Chloroethane	64		4.793				ND	
12 Vinyl bromide	106		5.167				ND	
13 Trichlorofluoromethane	101	5.253	5.264	-0.011	98	30305	0.7974	
18 1,1,2-Trichloro-1,2,2-trif	101	6.291	6.307	-0.016	92	5879	0.1932	
20 1,1-Dichloroethene	96		6.355				ND	
21 Acetone	43	6.591	6.623	-0.032	88	3420201	220.6	E
22 Carbon disulfide	76	6.735	6.751	-0.016	96	2225	0.0616	
23 Isopropyl alcohol	45	6.986	6.949	0.037	99	22271	1.52	
24 3-Chloro-1-propene	41		7.125				ND	
26 Methylene Chloride	49	7.430	7.414	0.016	82	6193	0.4743	
28 2-Methyl-2-propanol	59	7.762	7.735	0.027	98	90736	3.85	
29 Methyl tert-butyl ether	73		7.837				ND	
30 trans-1,2-Dichloroethene	61		7.842				ND	
32 Hexane	57	8.211	8.211	0.000	87	7842	0.4044	
33 1,1-Dichloroethane	63		8.714				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.891	9.881	0.010	97	28716	3.49	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.293	10.287	0.006	73	177140	10.0	
39 Tetrahydrofuran	42		10.314				ND	
41 Chloroform	83		10.416				ND	
42 Cyclohexane	84	10.651	10.656	-0.005	89	3435	0.1405	
43 1,1,1-Trichloroethane	97		10.694				ND	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	44 Carbon tetrachloride	117	10.934	10.934	0.000	8	625	0.0168	
	45 Isooctane	57	11.362	11.373	-0.011	95	14038	0.1718	
	46 Benzene	78	11.411	11.416	-0.005	93	21507	0.3771	
	47 1,2-Dichloroethane	62		11.609				ND	
	48 n-Heptane	43	11.753	11.764	-0.011	85	21367	0.7763	
*	50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	92	976954	10.0	
	52 Trichloroethene	95	12.743	12.748	-0.005	1	220	0.007654	
	53 1,2-Dichloropropane	63		13.336				ND	
	54 Methyl methacrylate	69		13.502				ND	
	55 1,4-Dioxane	88		13.588				ND	
	57 Dichlorobromomethane	83		13.909				ND	
	58 cis-1,3-Dichloropropene	75		14.872				ND	
	61 4-Methyl-2-pentanone (MIBK	43	15.214	15.198	0.016	92	26291	0.7051	
	62 Toluene	92	15.476	15.482	-0.006	92	92555	1.83	
	67 trans-1,3-Dichloropropene	75		16.097				ND	
	68 1,1,2-Trichloroethane	83		16.487				ND	
	69 Tetrachloroethene	166	16.573	16.584	-0.011	82	2048	0.0407	
	70 2-Hexanone	43	16.964	16.958	0.006	93	20891	0.5573	
	71 Chlorodibromomethane	129		17.269				ND	
	72 Ethylene Dibromide	107		17.547				ND	
*	73 Chlorobenzene-d5	117	18.445	18.451	-0.006	81	991424	10.0	
	74 Chlorobenzene	112		18.510				ND	
	75 Ethylbenzene	91	18.649	18.654	-0.005	97	55514	0.5101	
	77 m-Xylene & p-Xylene	106	18.900	18.906	-0.006	99	84664	1.84	
	78 o-Xylene	106	19.713	19.719	-0.006	96	33631	0.7414	
	79 Styrene	104	19.762	19.772	-0.010	79	2850	0.0403	
S	80 Xylenes, Total	106				0		2.59	
	81 Bromoform	173		20.179				ND	
	82 Isopropylbenzene	105	20.355	20.355	0.000	94	7798	0.0603	
	85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
	86 N-Propylbenzene	91	21.035	21.040	-0.005	100	28008	0.1857	
	89 4-Ethyltoluene	105	21.217	21.217	0.000	98	40625	0.3107	
	90 2-Chlorotoluene	91		21.238				ND	
	91 1,3,5-Trimethylbenzene	105	21.313	21.318	-0.005	94	30744	0.2848	
	93 tert-Butylbenzene	119		21.789				ND	
	94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	81404	0.7523	
	95 sec-Butylbenzene	105		22.105				ND	
	96 4-Isopropyltoluene	119	22.297	22.297	0.000	94	3584	0.0259	
	97 1,3-Dichlorobenzene	146		22.345				ND	
	98 1,4-Dichlorobenzene	146		22.484				ND	
	99 Benzyl chloride	91		22.688				ND	
	101 n-Butylbenzene	91		22.886				ND	
	102 1,2-Dichlorobenzene	146		23.041				ND	
	104 1,2,4-Trichlorobenzene	180		25.673				ND	
	105 Hexachlorobutadiene	225		25.855				ND	
	106 Naphthalene	128		26.197				ND	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Sample Type:	Client				
Inject. Date:	13-Oct-2015 23:57:30	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Sample Info:	200-0016229-019				
Misc. Info.:	30148-5				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	14-Oct-2015 08:06:10	Calib Date:	17-Aug-2015 23:52:30		
Tic RT Window:	0.000 -0.000	Response:	area		
Quant By:	Nearest ISTD	Quant LOD:	10.00000		
MS Library:	\\ChromNA\Burlington\Database\NIST14.L				
Min. Match:	1				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK013				
First Level Reviewer: desjardinsb		Date:	14-Oct-2015 08:06:10		

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
		Unknown						
4.130	1062725	11.3	40	0	0		0	
	541-05-9	Cyclotrisiloxane, hexamethyl-						
16.076	826922	3.35	73	91	85994	C6H18O3Si3	222	
	62016-14-2	Octane, 2,5,6-trimethyl-						
21.522	2444076	5.58	83	90	29376	C11H24	156	
		Unknown						
22.265	1569040	3.58	83	0	0		0	
		Unknown						
22.474	2216427	5.06	83	0	0		0	
	2213-23-2	Heptane, 2,4-dimethyl-						
22.666	1549697	3.54	83	87	12960	C9H20	128	
		Unknown						
22.816	1954564	4.46	83	0	0		0	
		Unknown						
22.907	2295888	5.24	83	0	0		0	
		Unknown						
23.003	1653999	3.77	83	0	0		0	
	112-40-3	Dodecane						
23.271	2013675	4.60	83	86	39974	C12H26	170	

Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 40 Chlorobromomethane	10.287	942990	10.0
* 73 Chlorobenzene-d5	18.440	2471523	10.0
* 83 4-Bromofluorobenzene	20.714	4382227	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

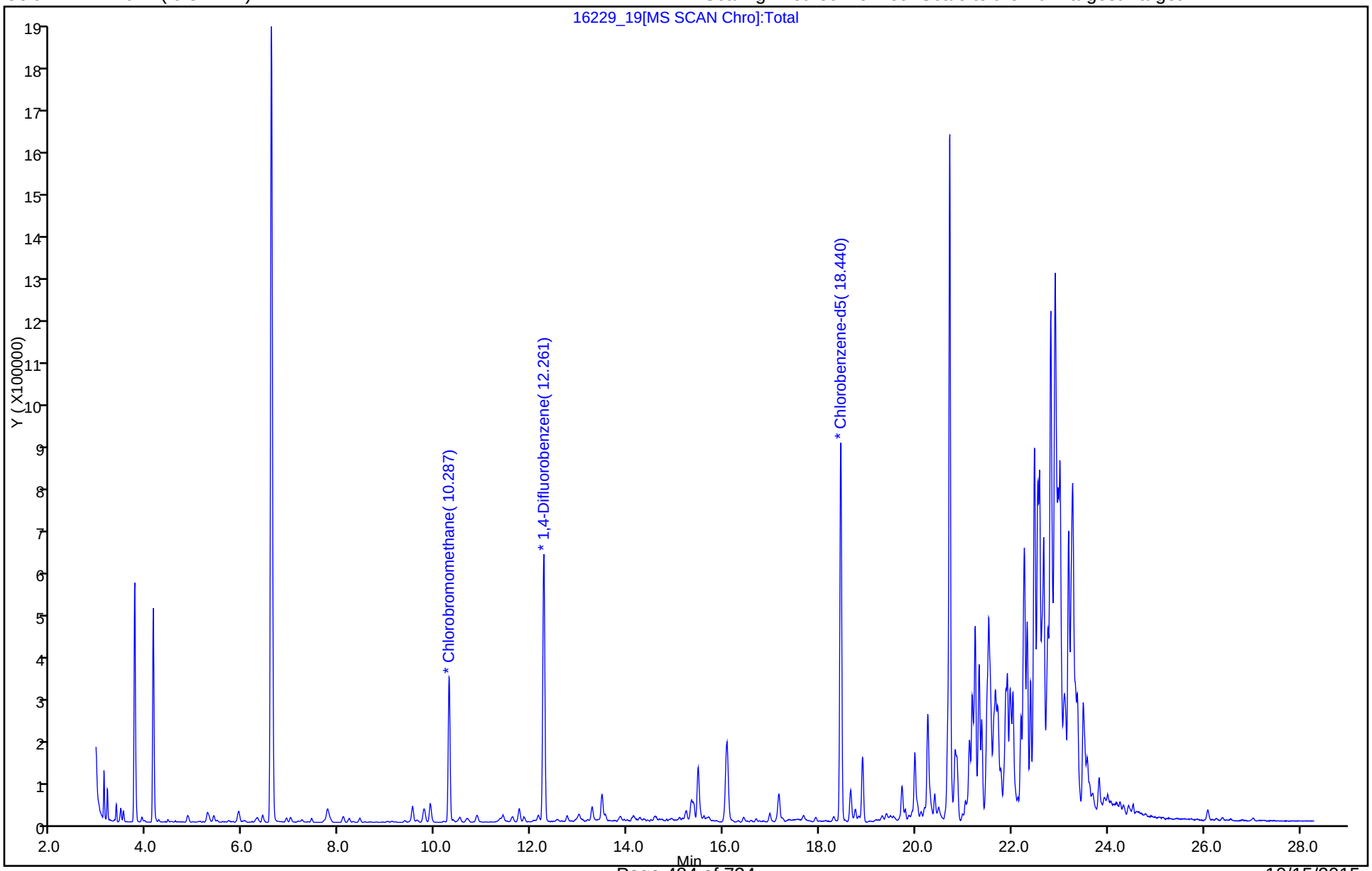
Report Date: 14-Oct-2015 08:06:10 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

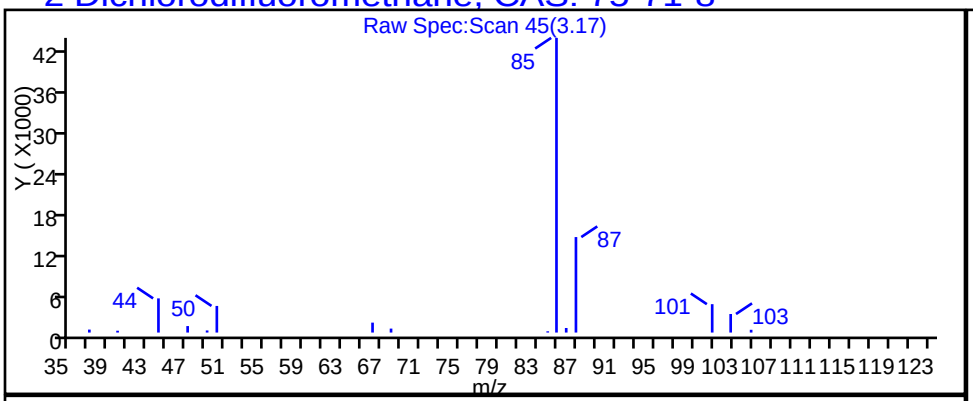
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5	Worklist Smp#:	19
Client ID:	SV-5				
Purge Vol:	200.000 mL	Dil. Factor:	3.0000	ALS Bottle#:	13
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

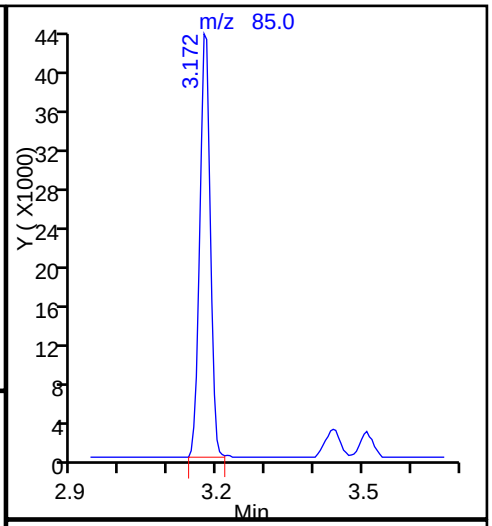
Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

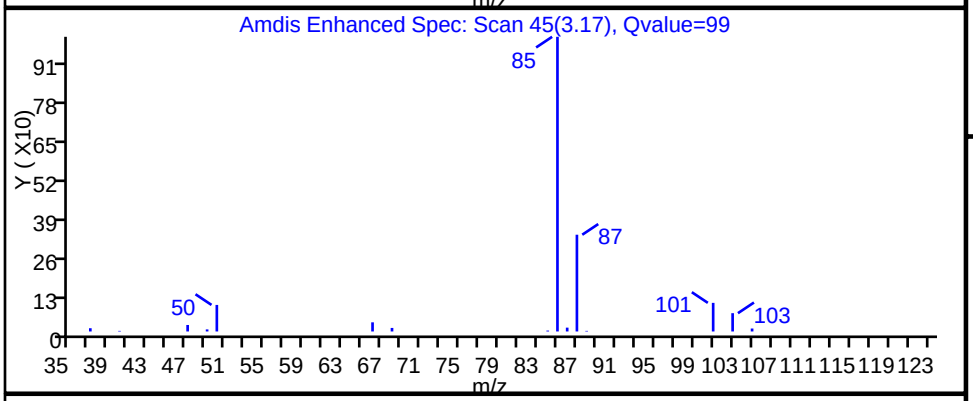


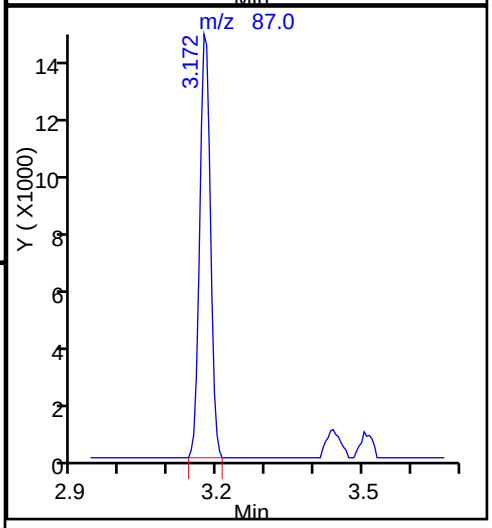
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D
Injection Date: 13-Oct-2015 23:57:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 19
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

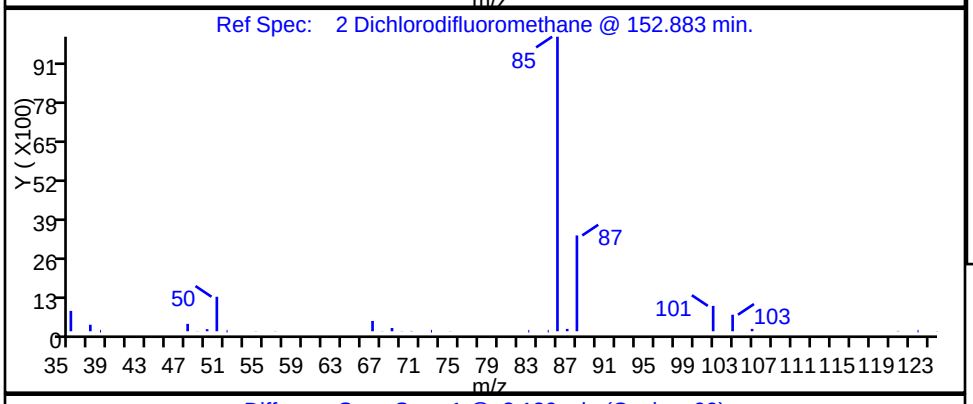
2 Dichlorodifluoromethane, CAS: 75-71-8

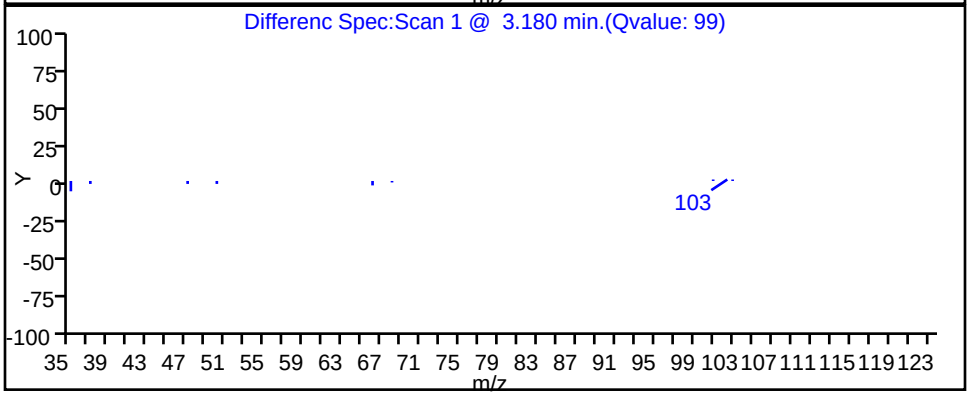








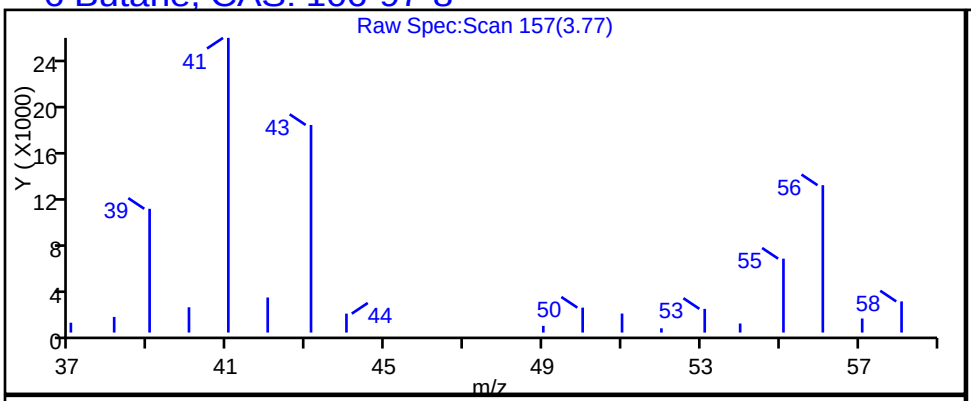


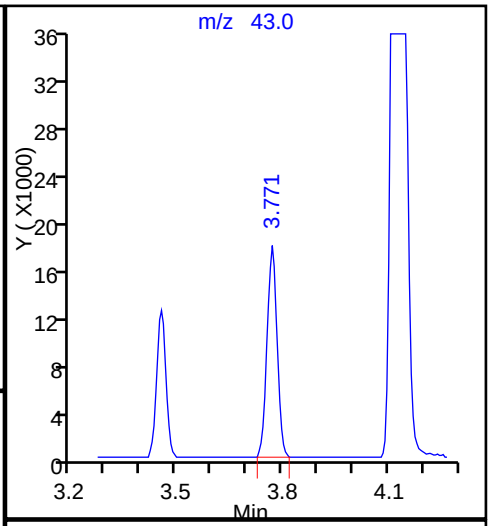


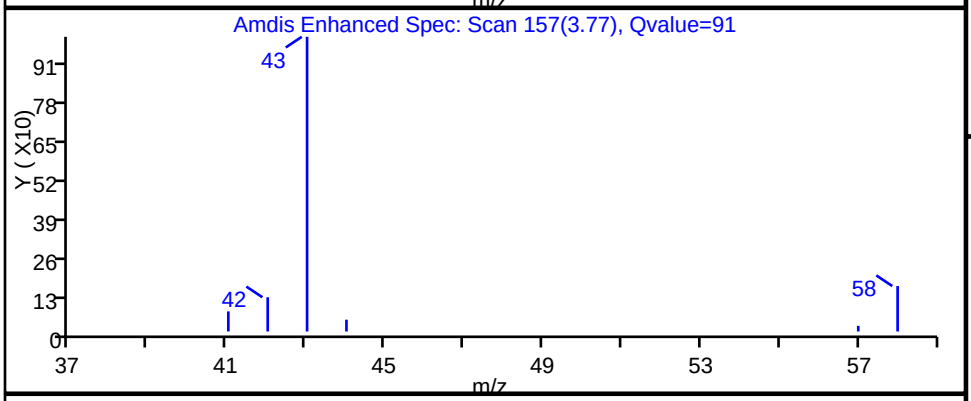
TestAmerica Burlington

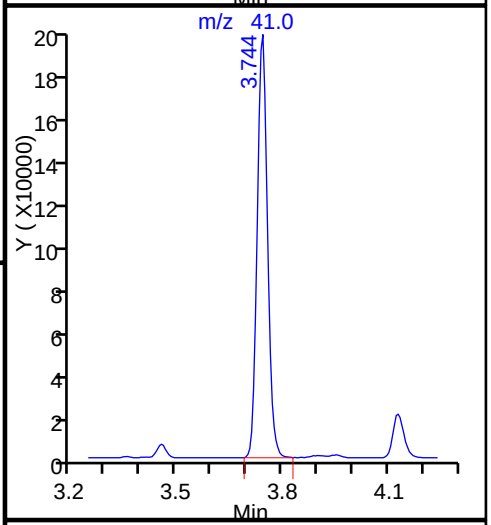
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

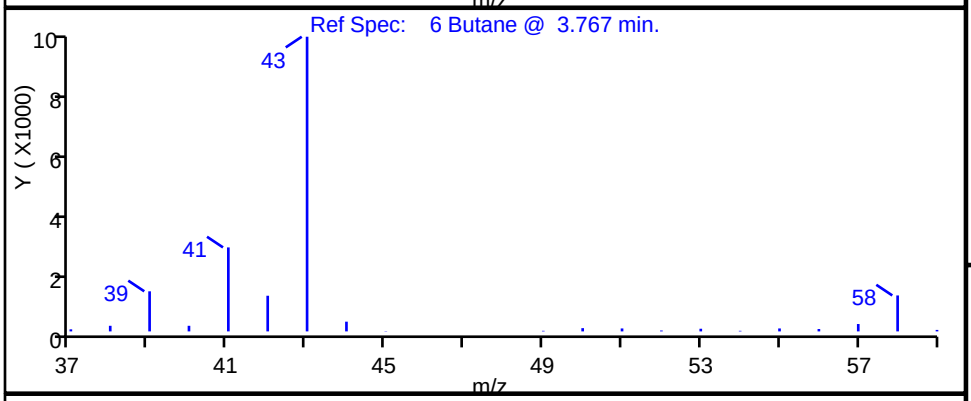
6 Butane, CAS: 106-97-8

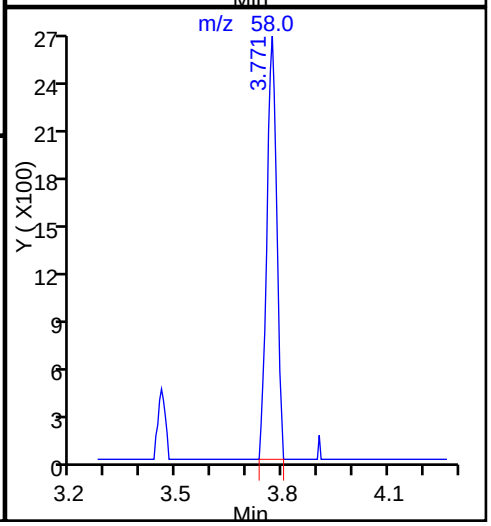


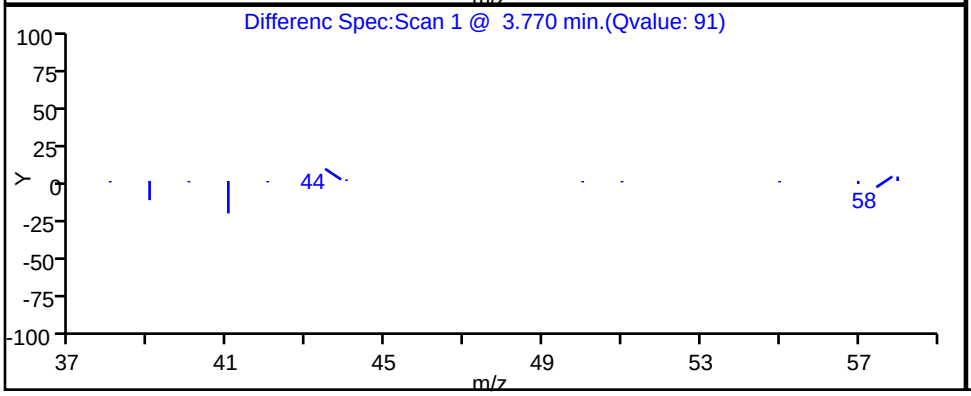








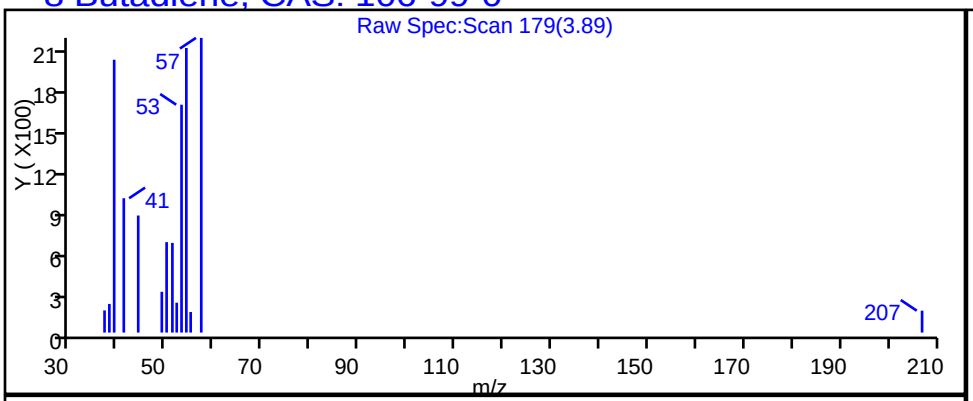


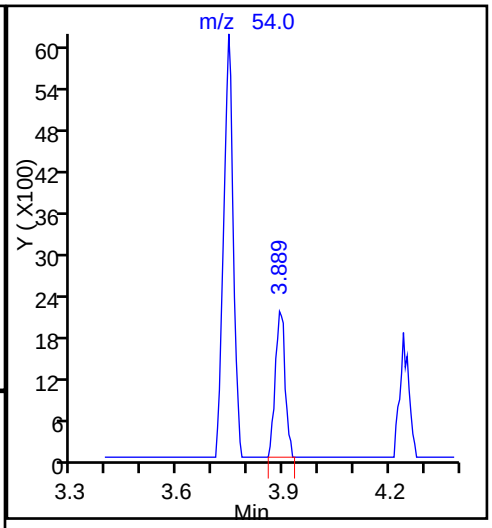


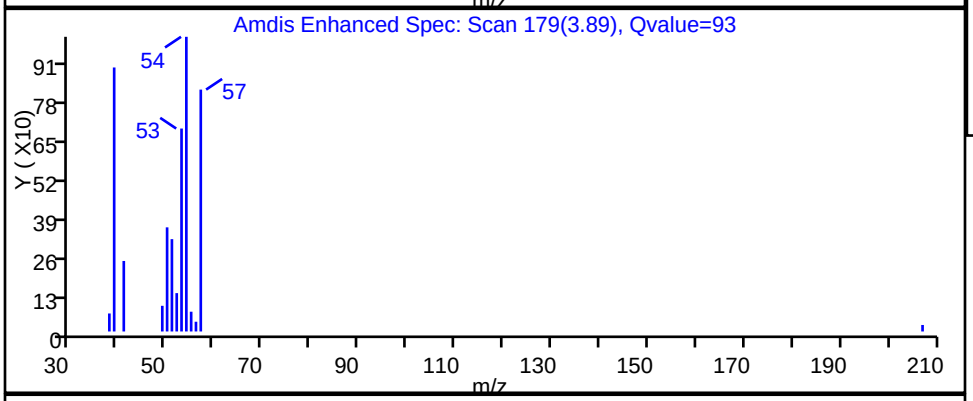
TestAmerica Burlington

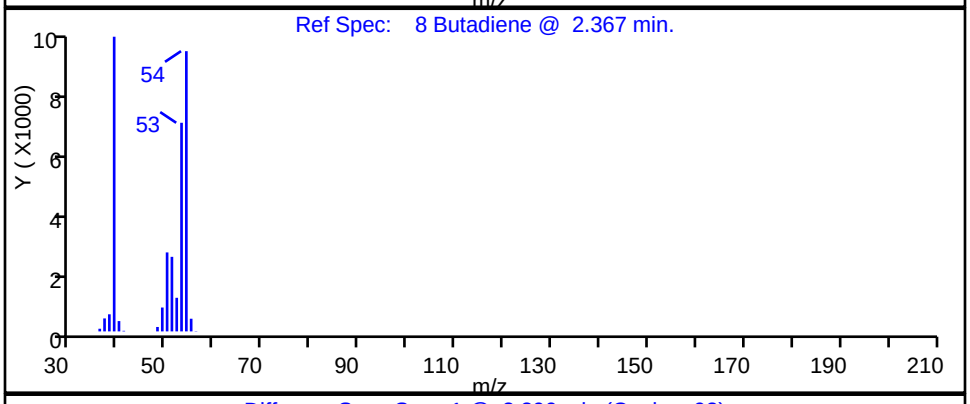
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

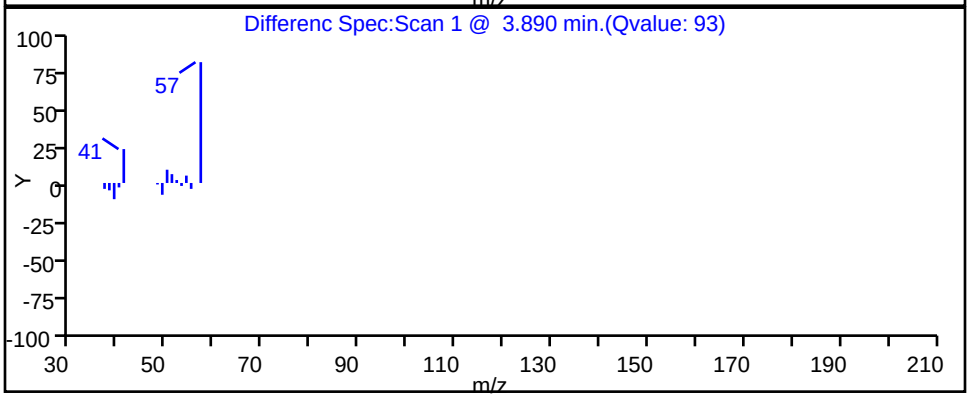
8 Butadiene, CAS: 106-99-0







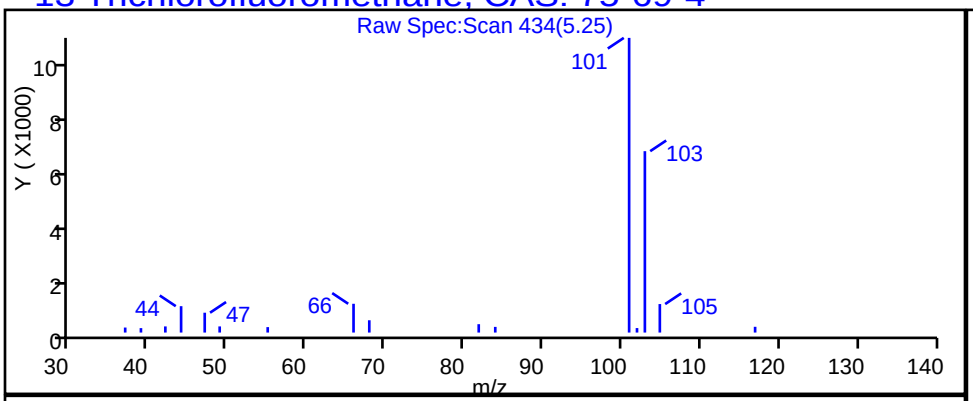


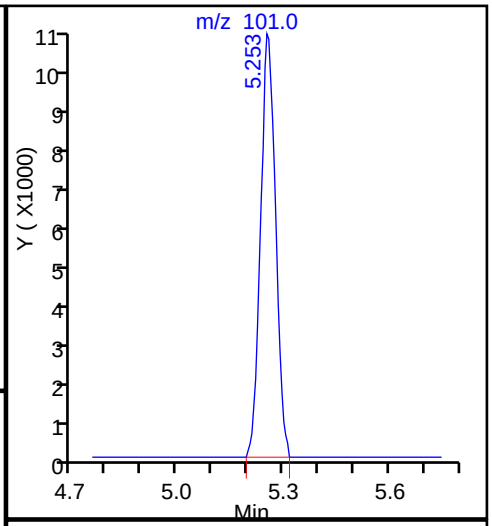


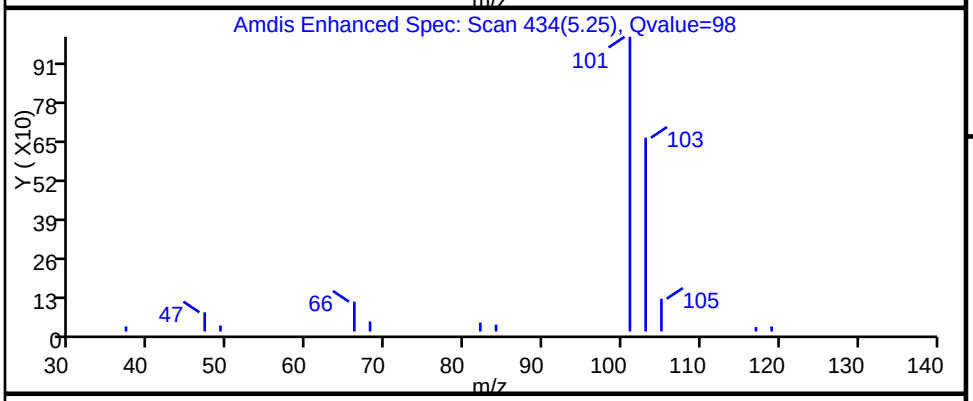
TestAmerica Burlington

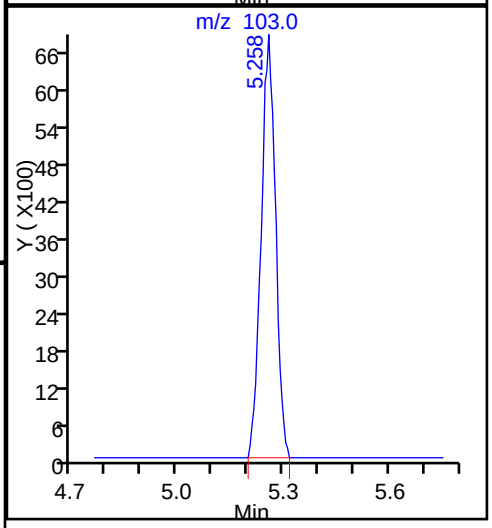
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

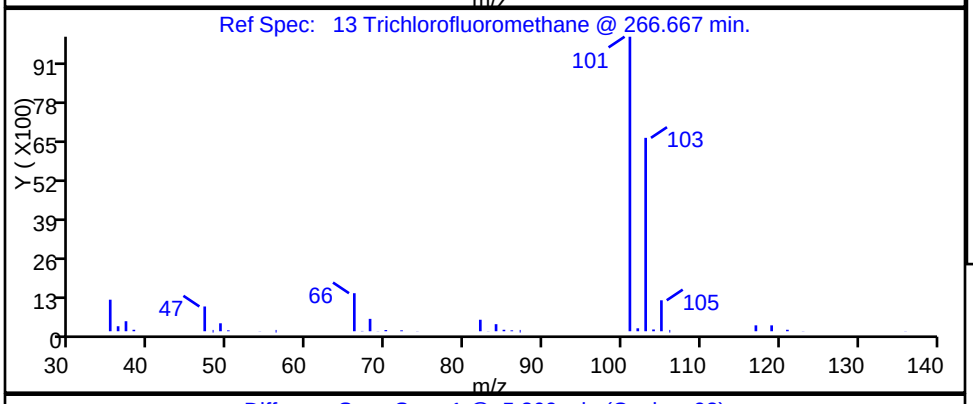
13 Trichlorofluoromethane, CAS: 75-69-4

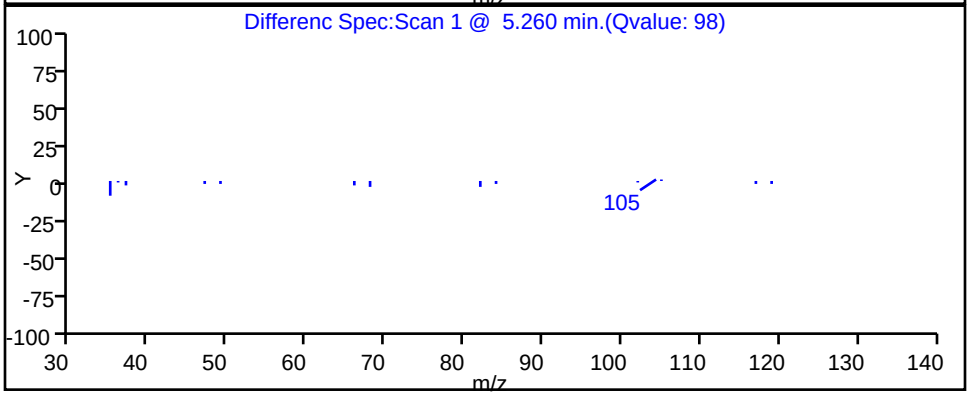










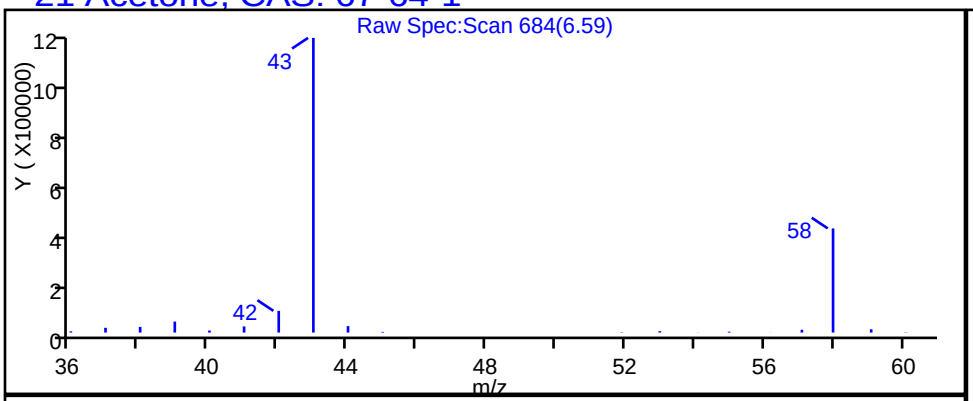


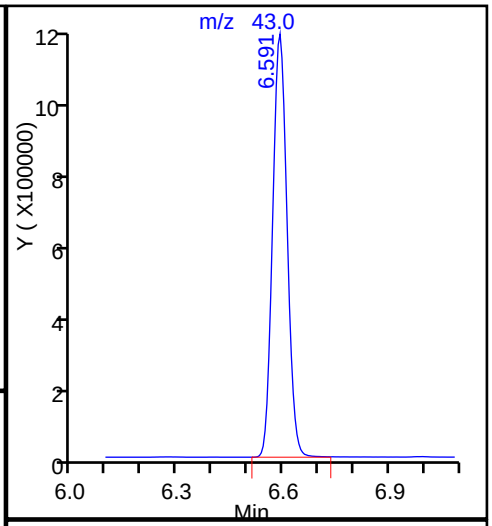
TestAmerica Burlington

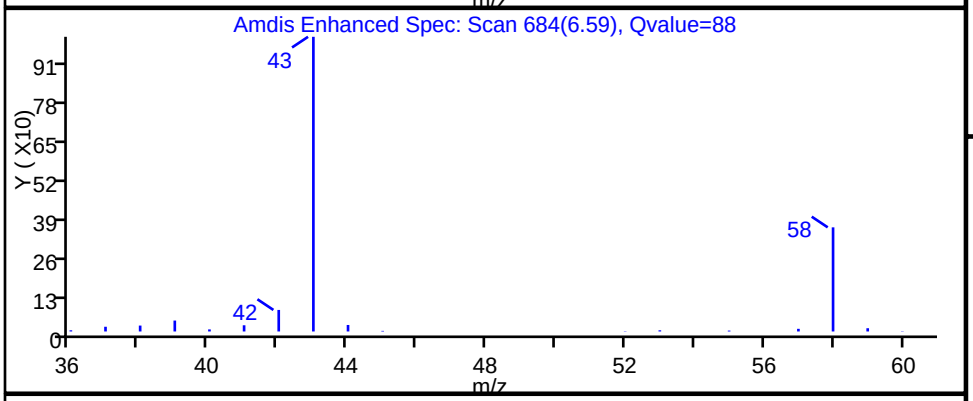
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

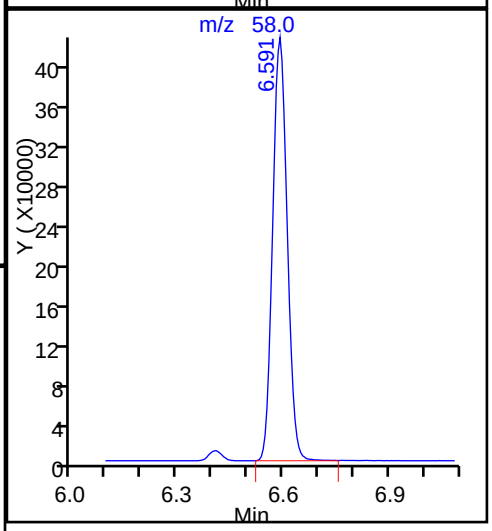
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

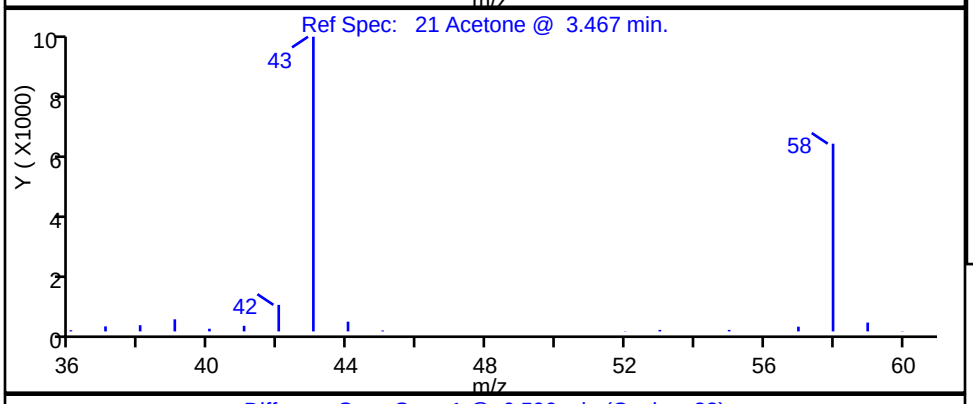
21 Acetone, CAS: 67-64-1

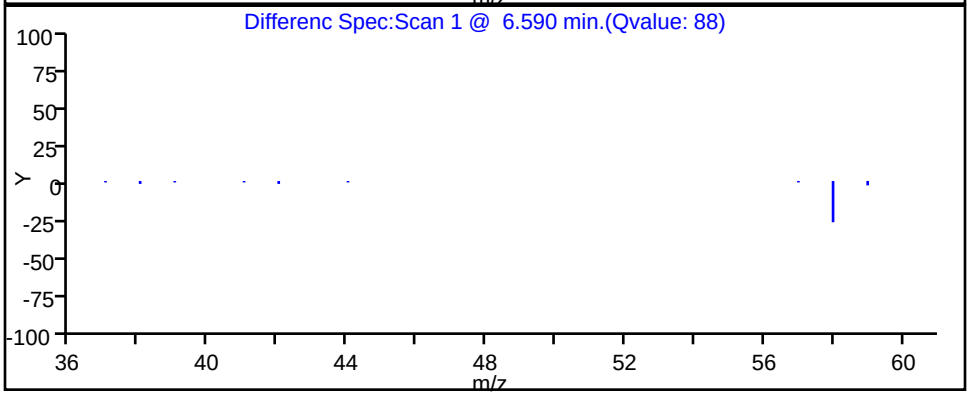








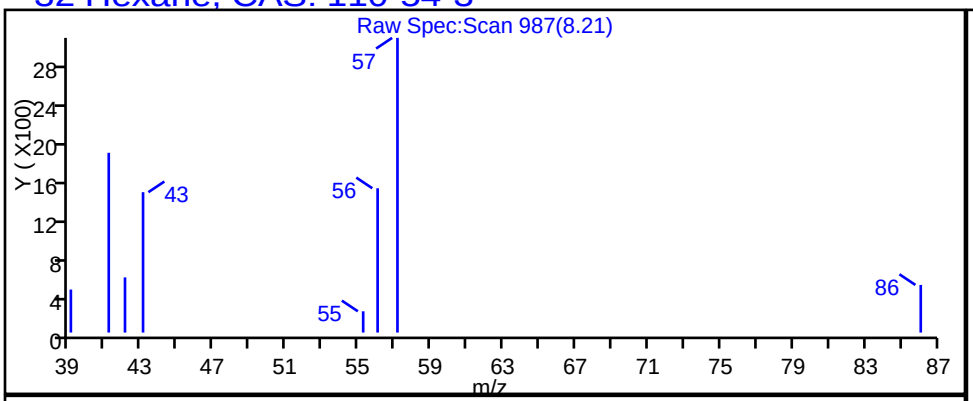


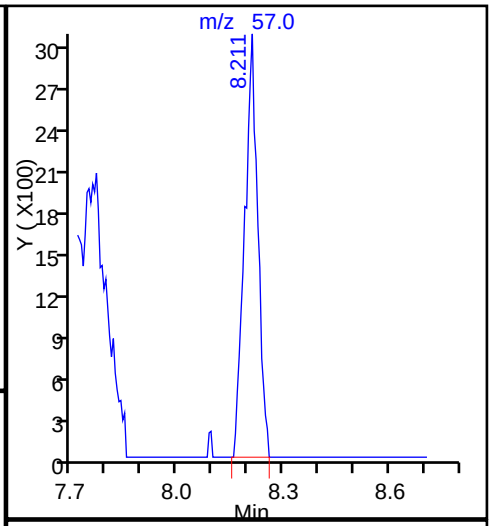


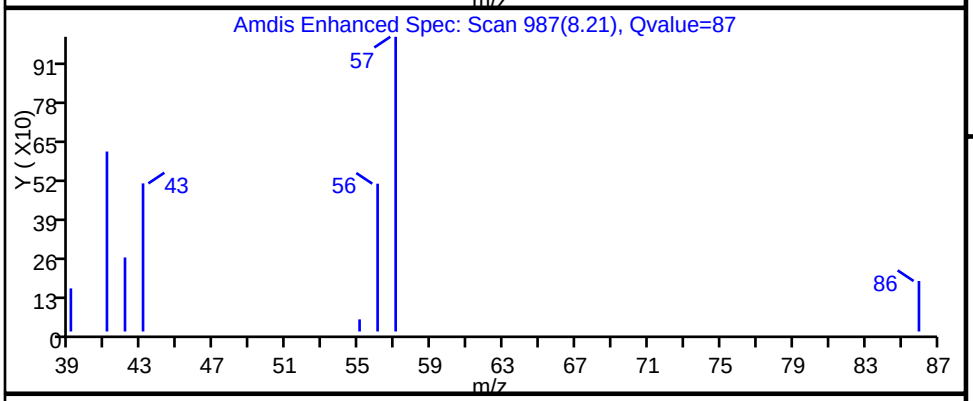
TestAmerica Burlington

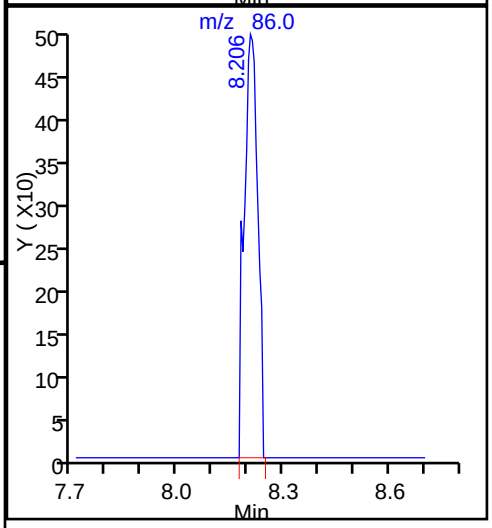
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

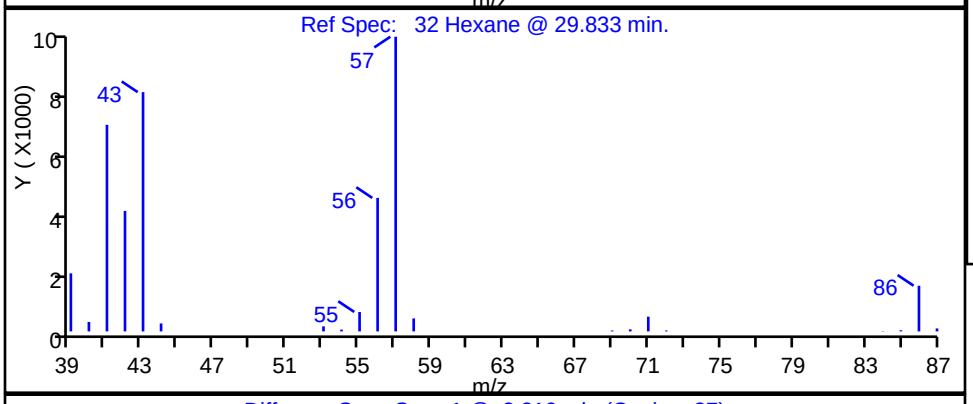
32 Hexane, CAS: 110-54-3

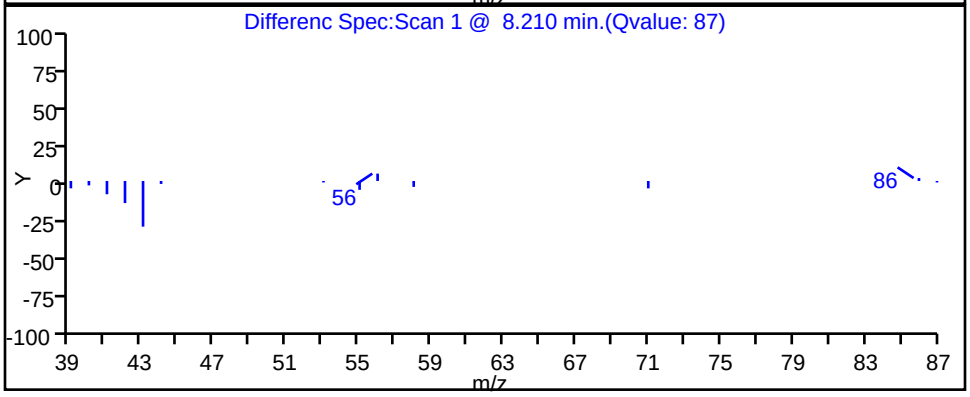








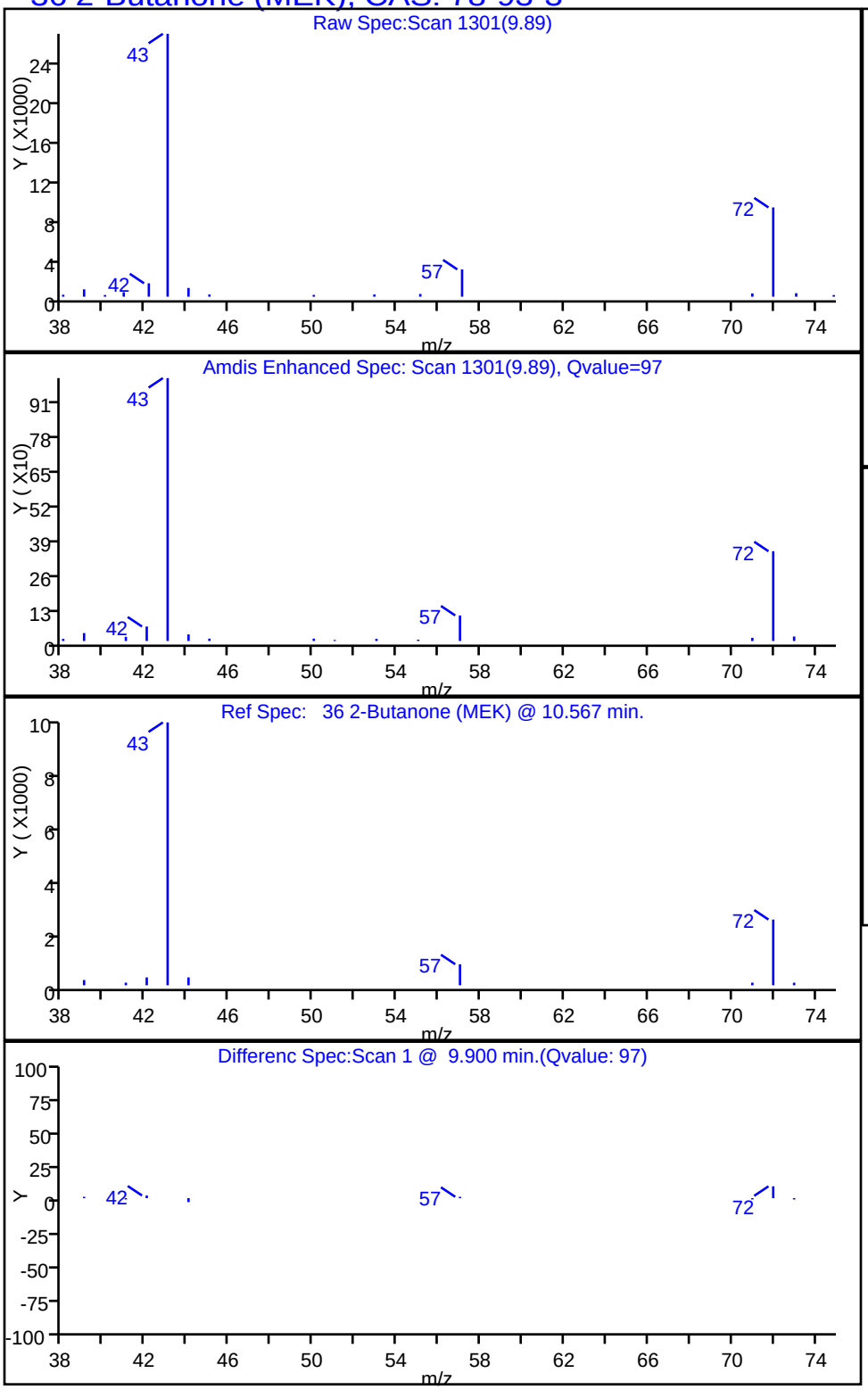


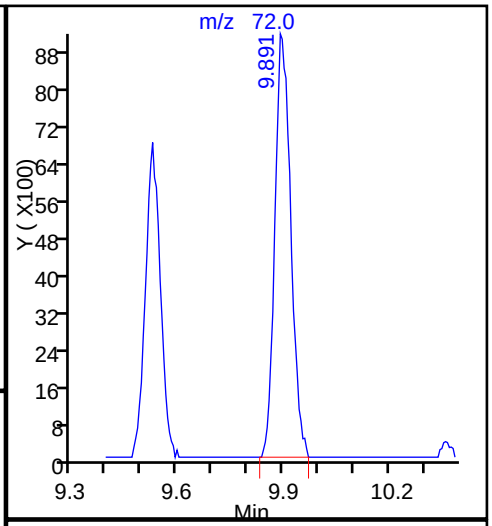


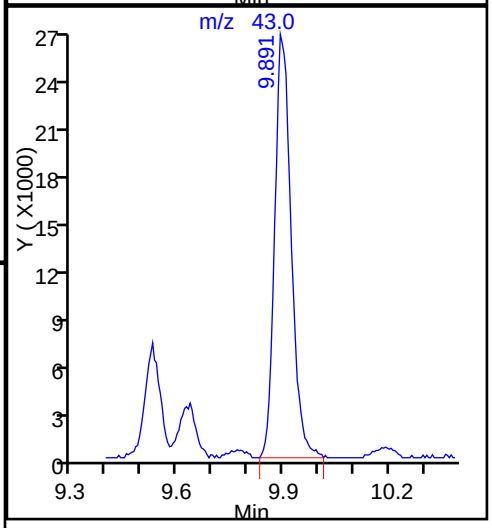
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

36 2-Butanone (MEK), CAS: 78-93-3



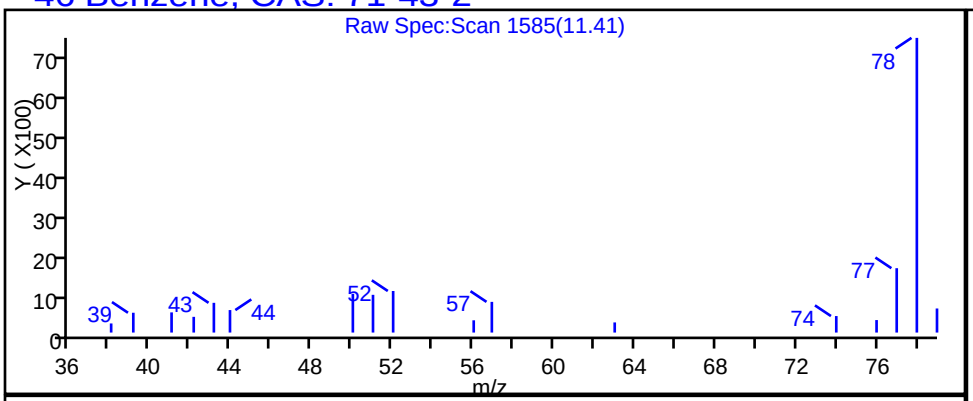


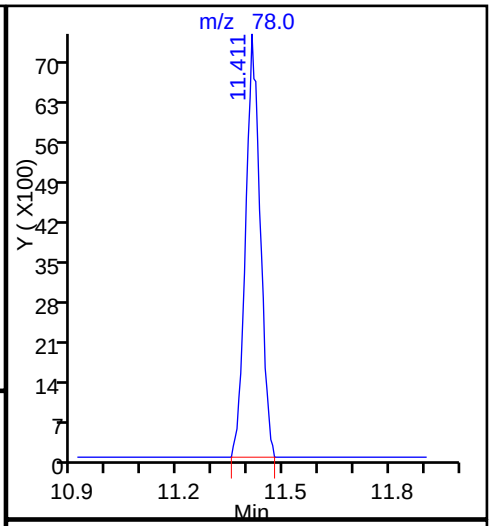


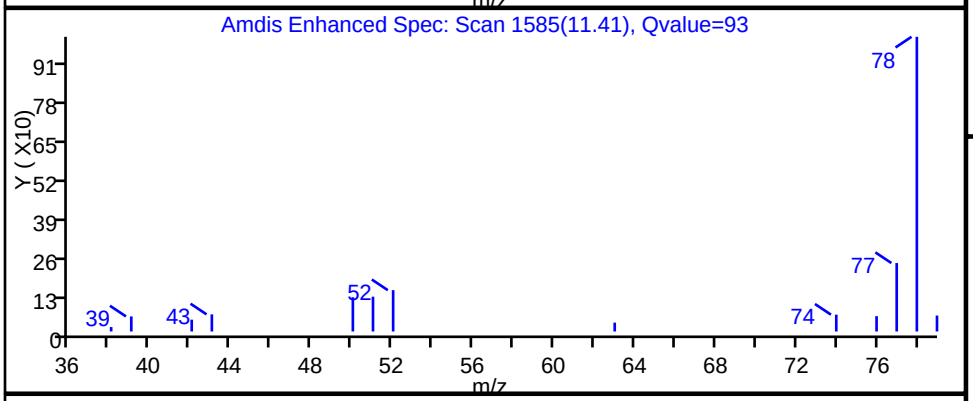
TestAmerica Burlington

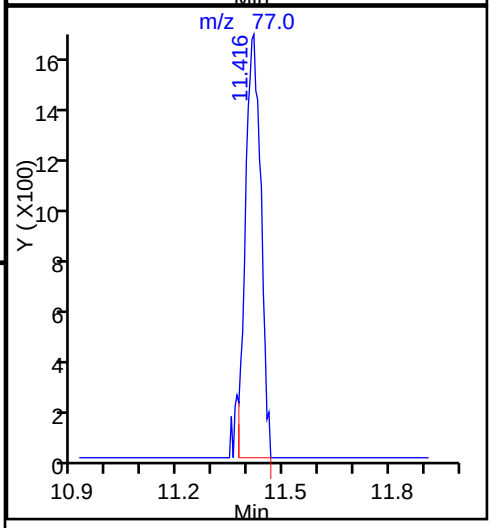
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

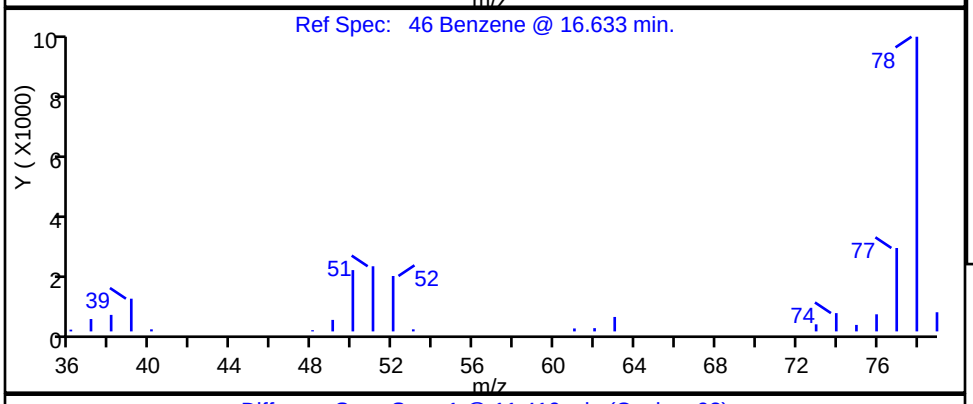
46 Benzene, CAS: 71-43-2

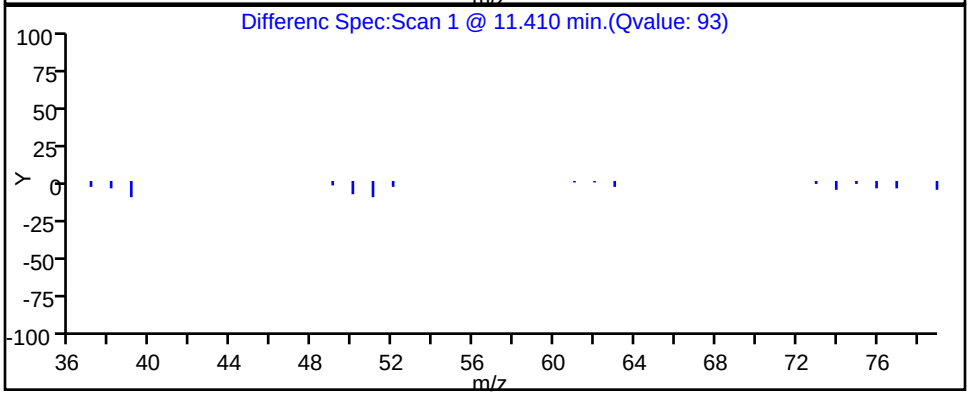








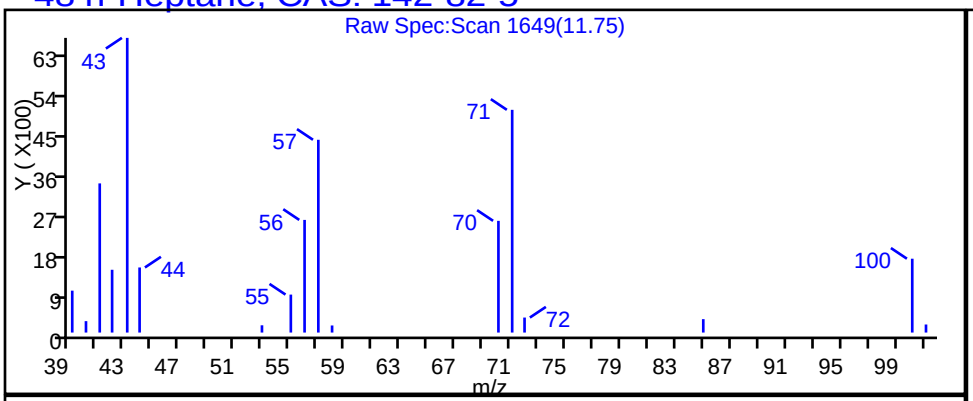


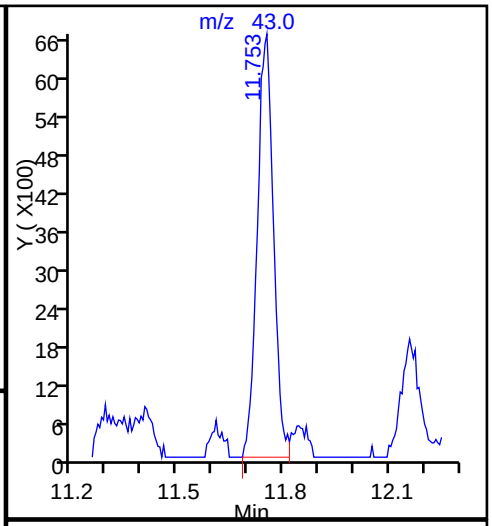


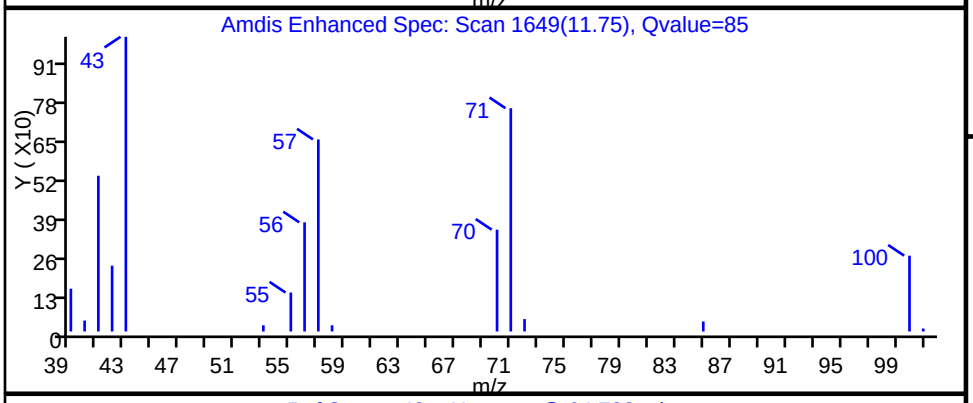
TestAmerica Burlington

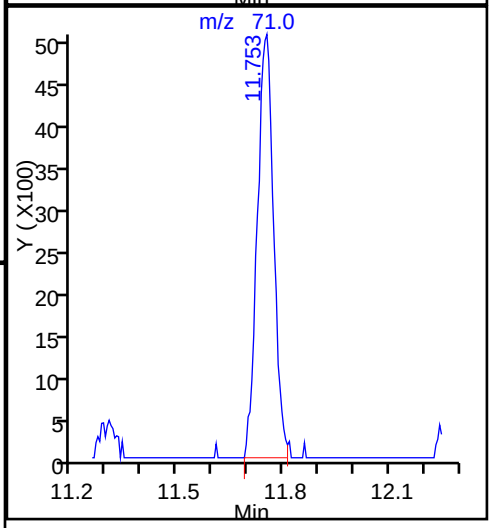
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

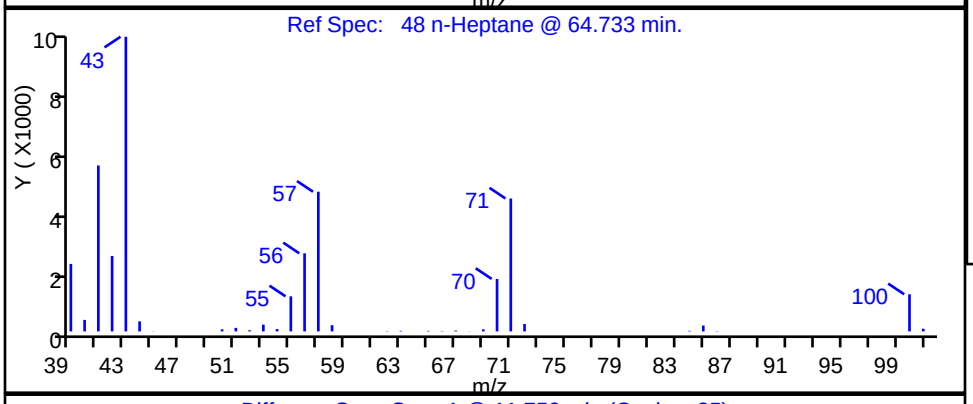
48 n-Heptane, CAS: 142-82-5

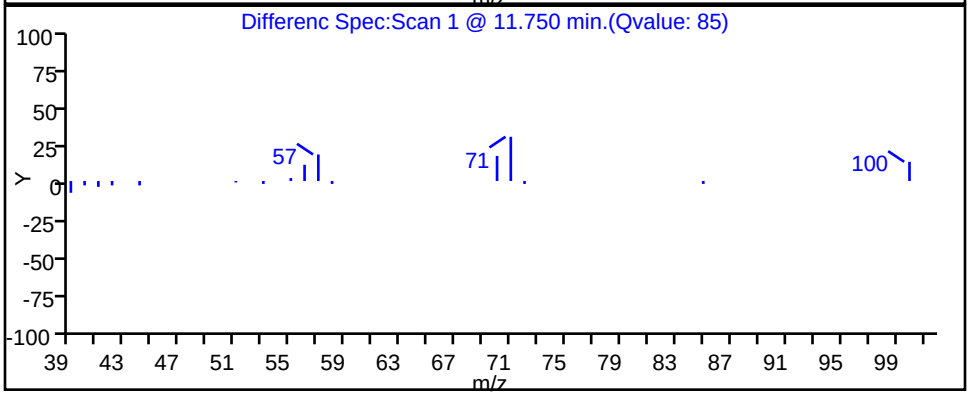








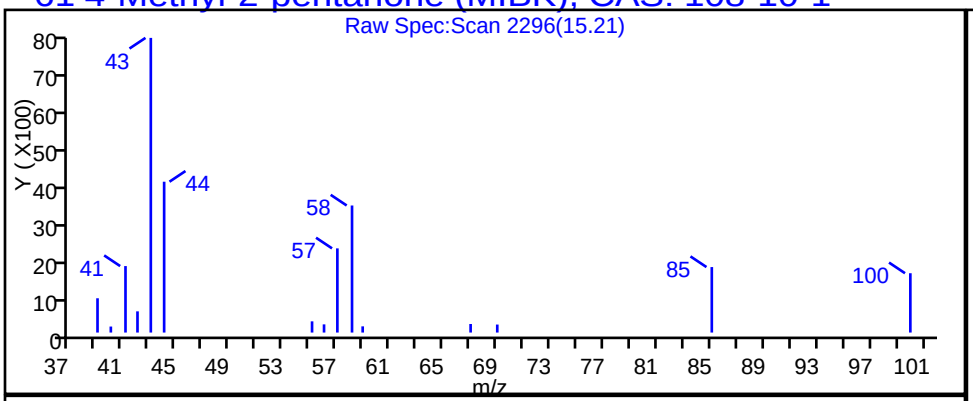


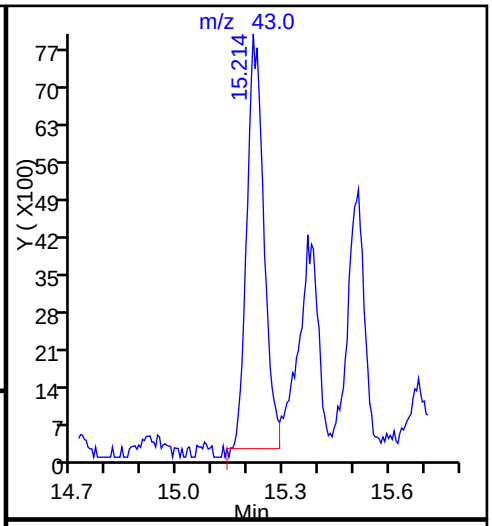


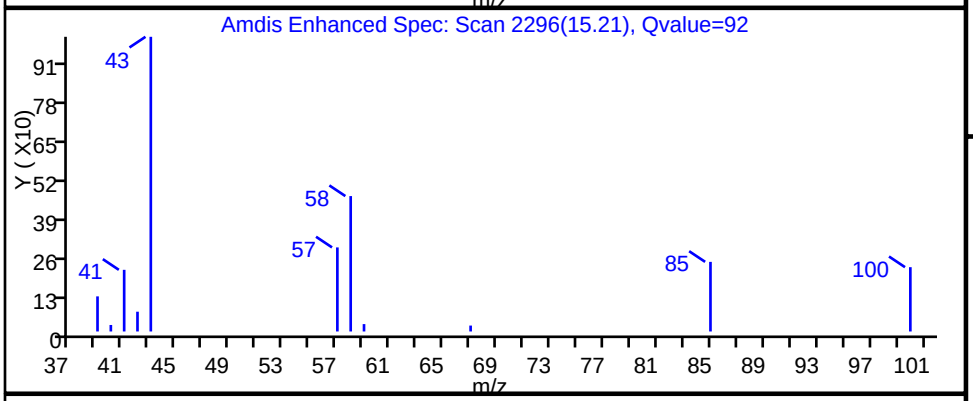
TestAmerica Burlington

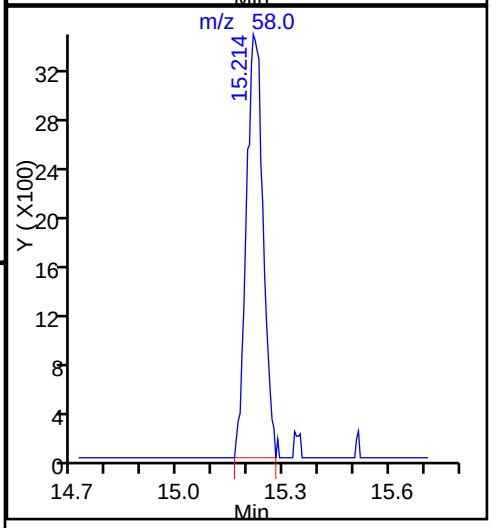
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

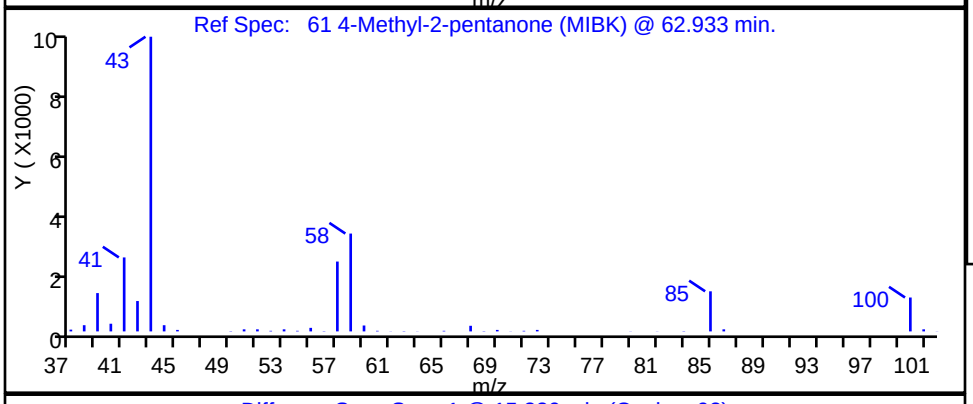
61 4-Methyl-2-pentanone (MIBK), CAS: 108-10-1

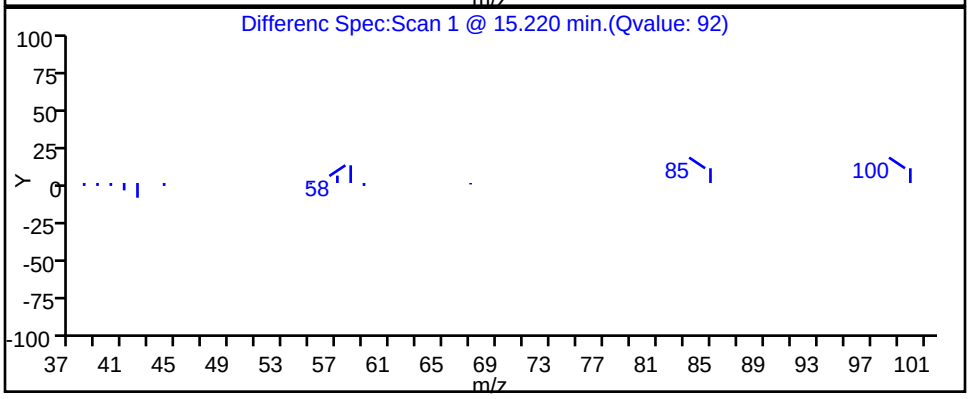








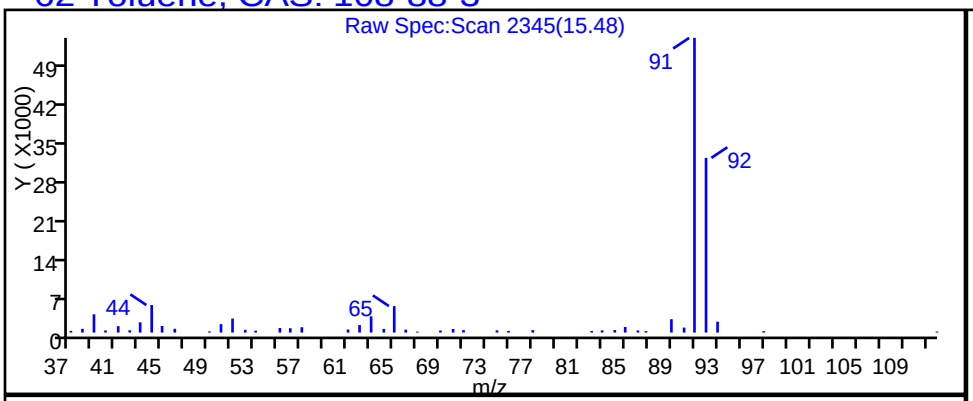


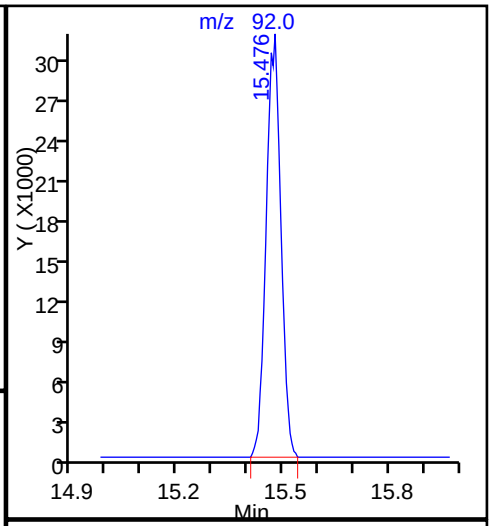


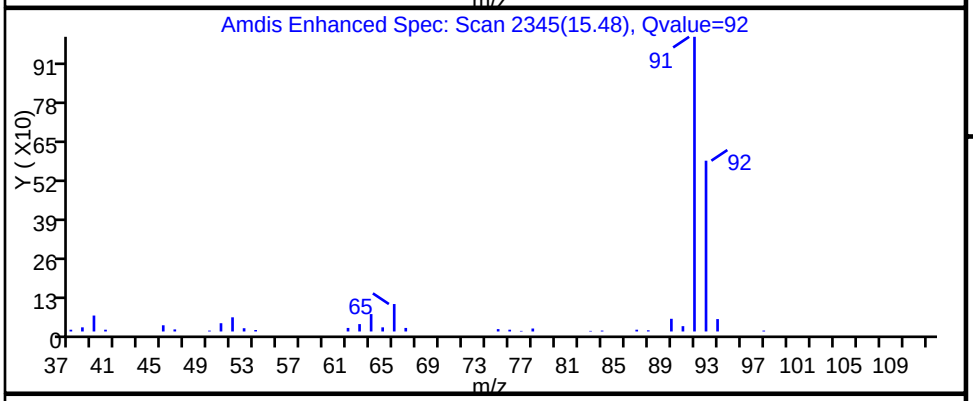
TestAmerica Burlington

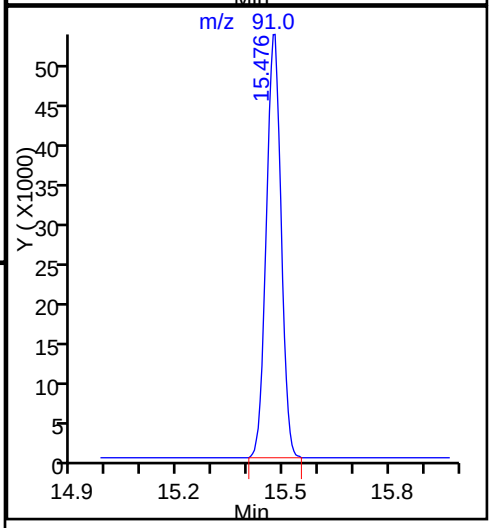
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

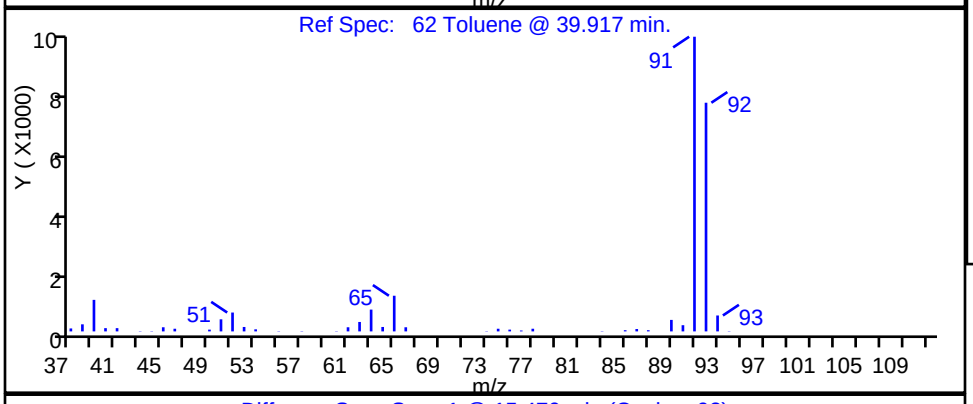
62 Toluene, CAS: 108-88-3

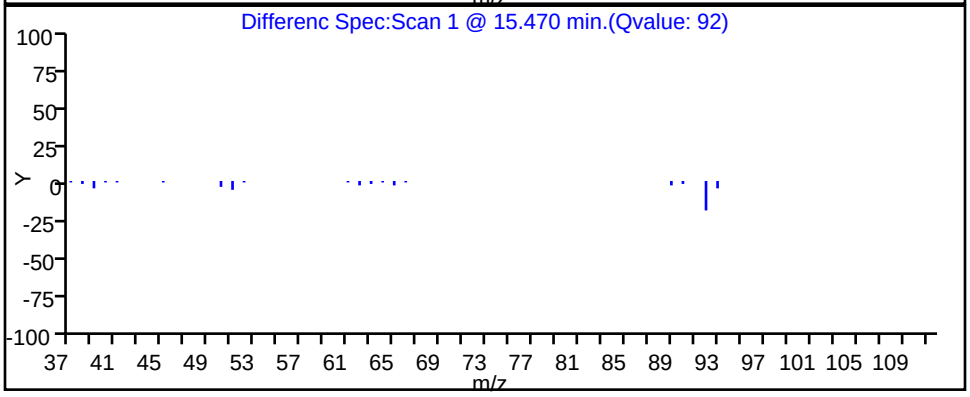












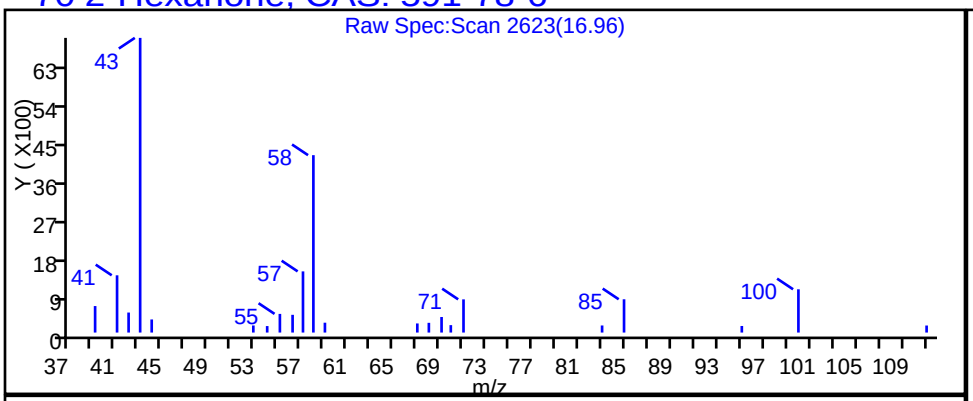
Report Date: 14-Oct-2015 08:06:11 Chrom Revision: 2.2 08-Oct-2015 07:17:48

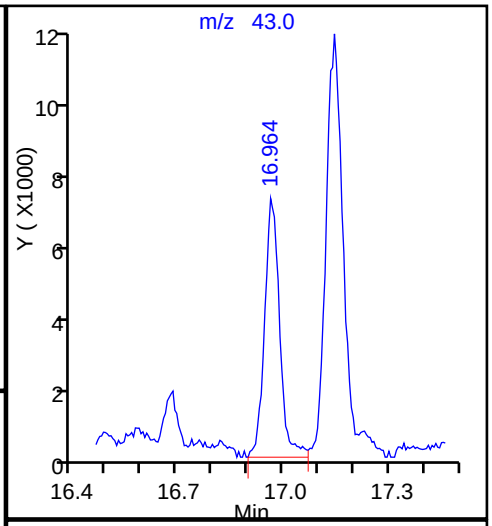
TestAmerica Burlington

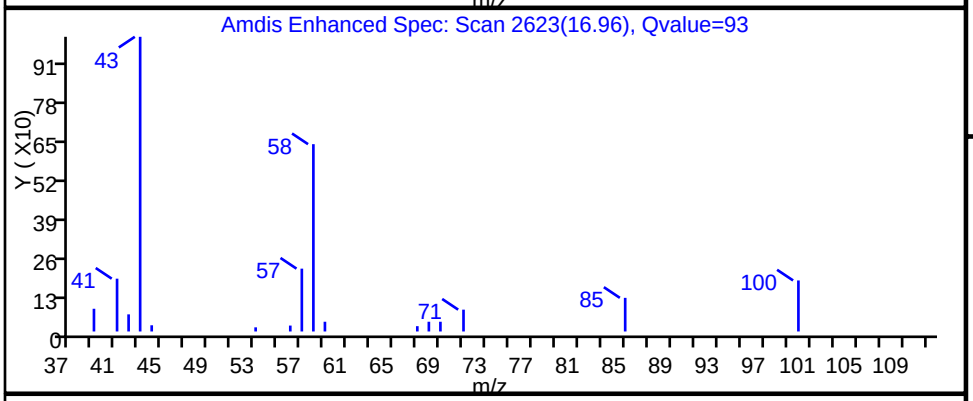
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

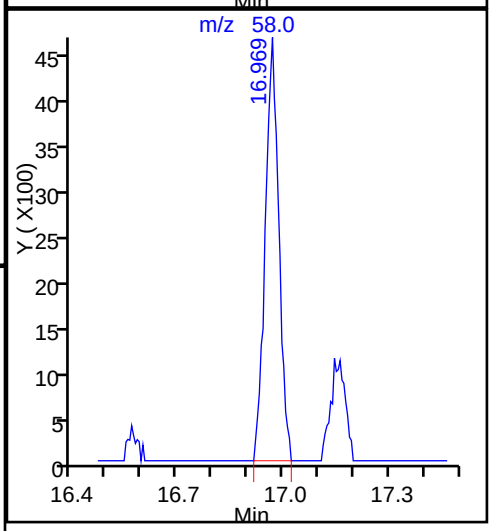
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

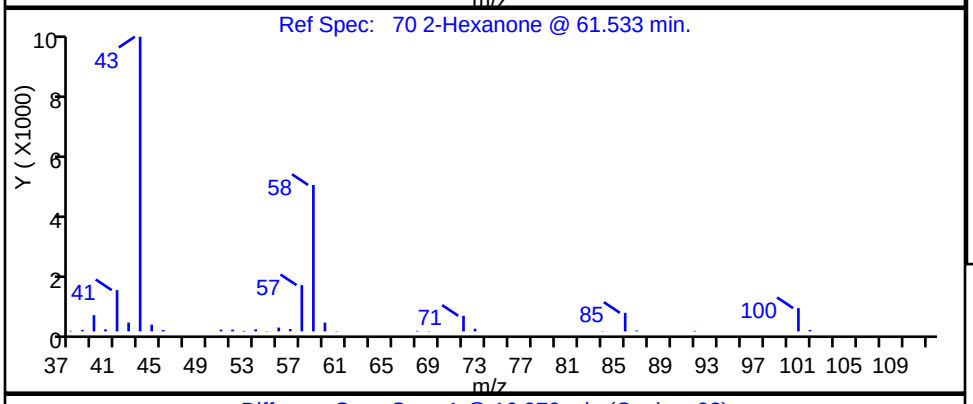
70 2-Hexanone, CAS: 591-78-6

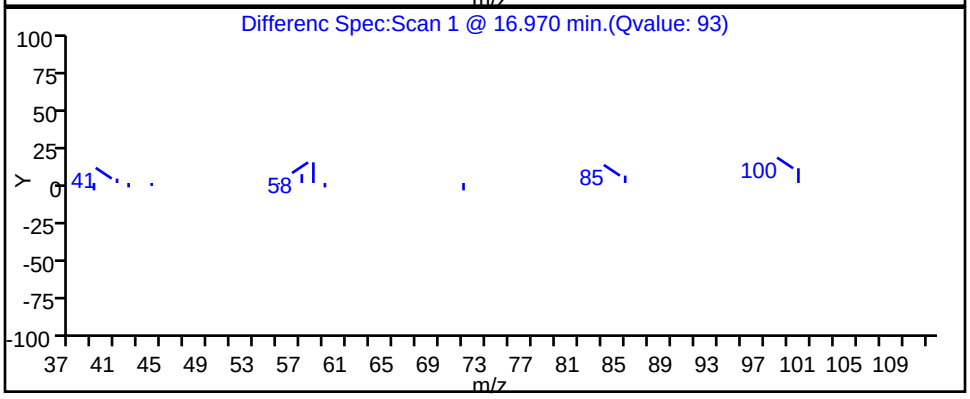








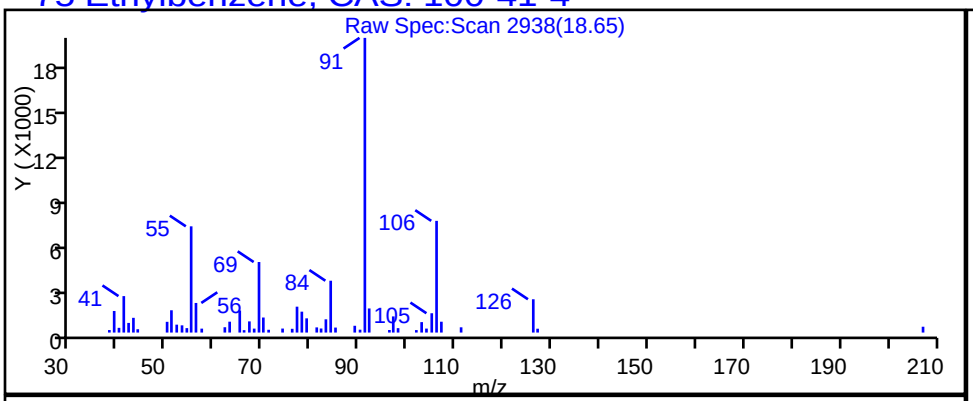


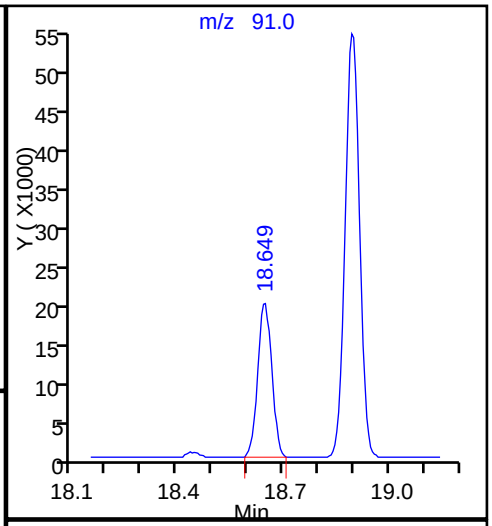


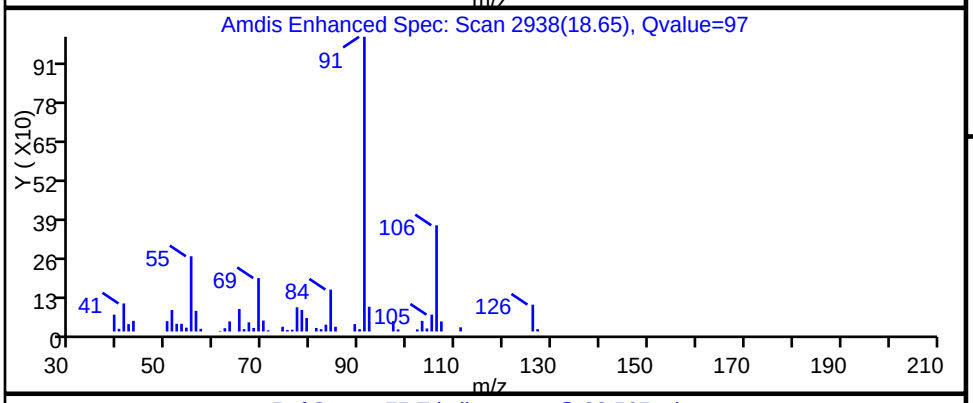
TestAmerica Burlington

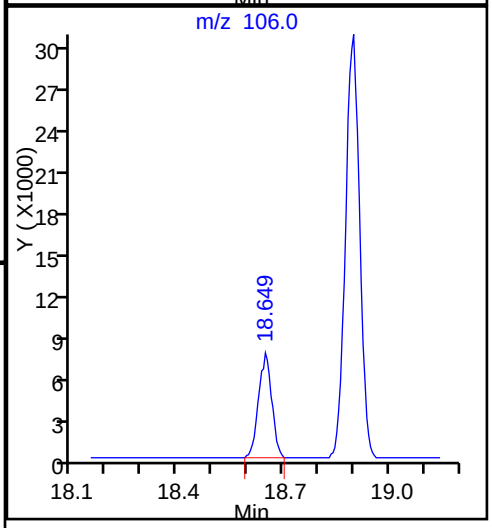
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

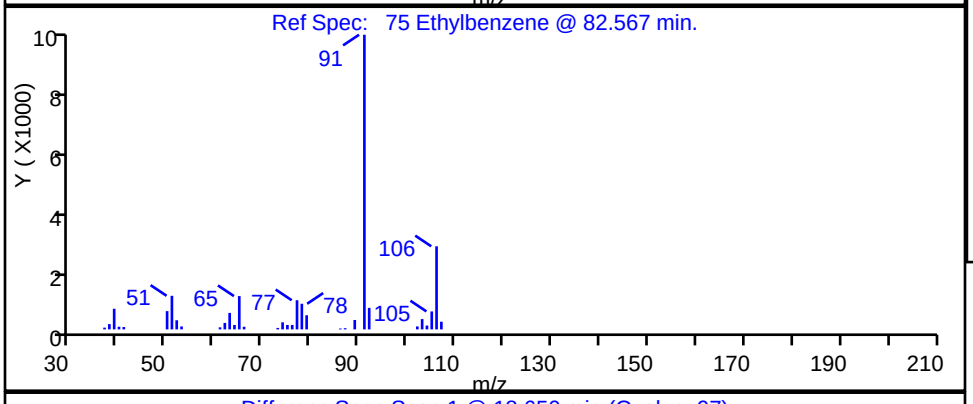
75 Ethylbenzene, CAS: 100-41-4

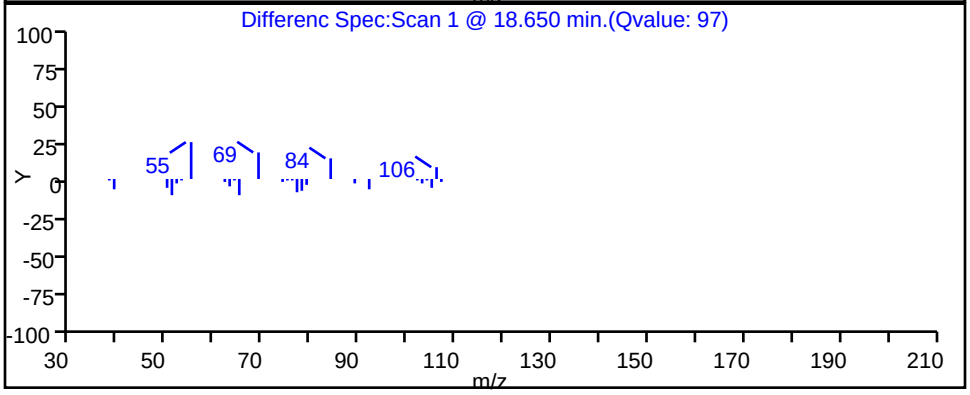












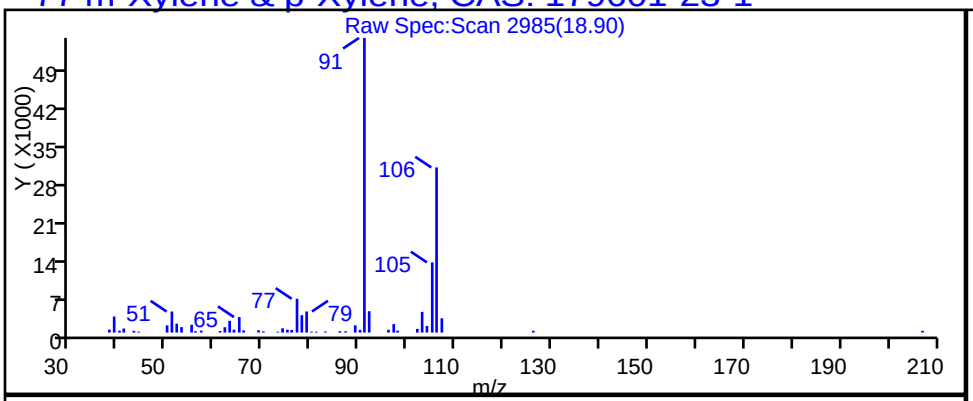
Report Date: 14-Oct-2015 08:06:11 Chrom Revision: 2.2 08-Oct-2015 07:17:48

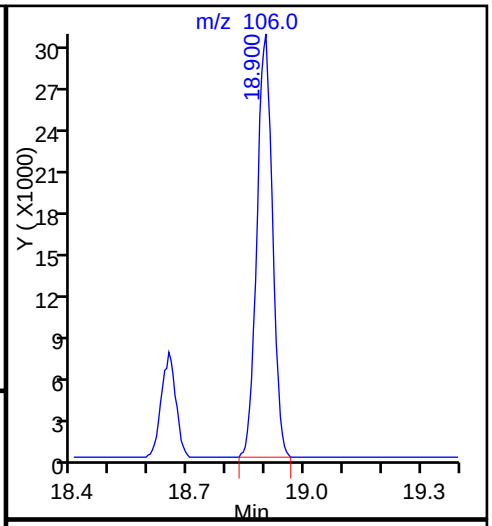
TestAmerica Burlington

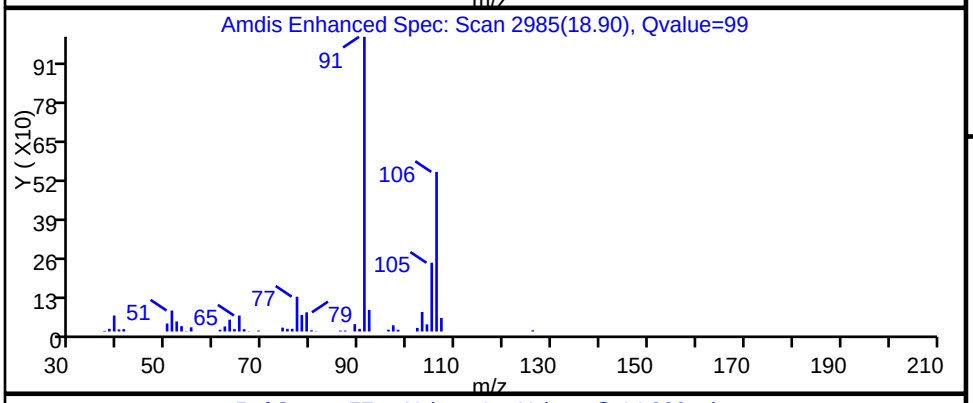
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

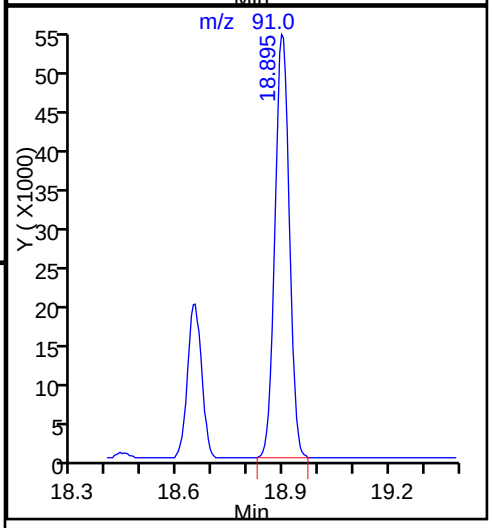
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

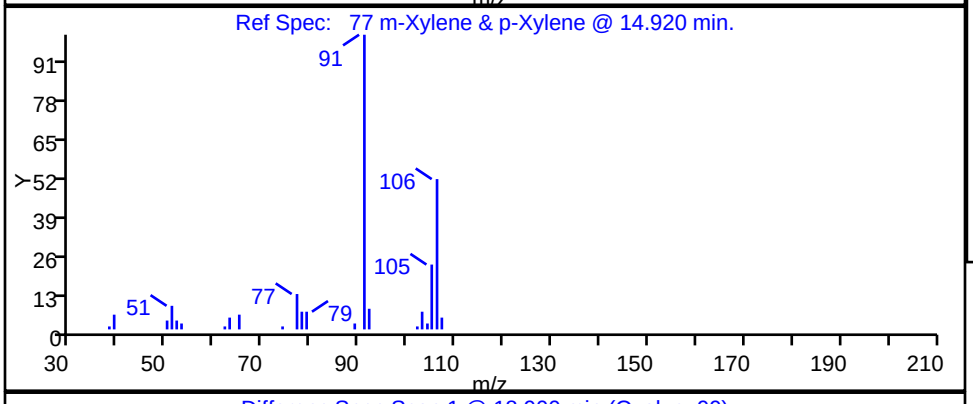
77 m-Xylene & p-Xylene, CAS: 179601-23-1

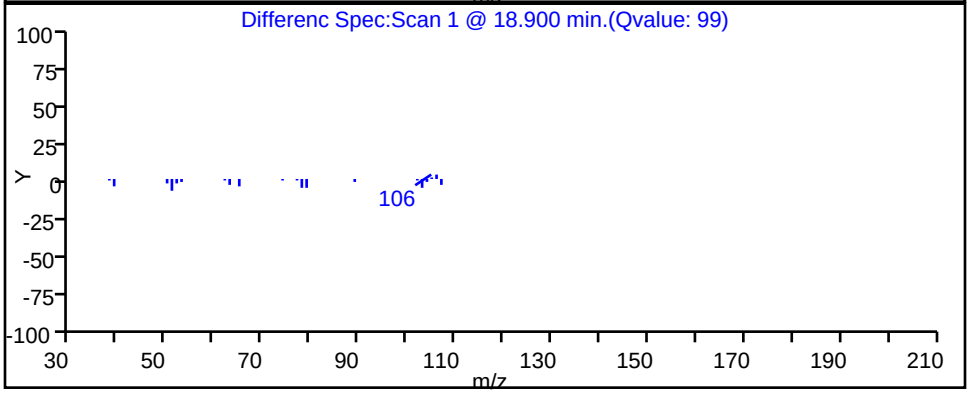








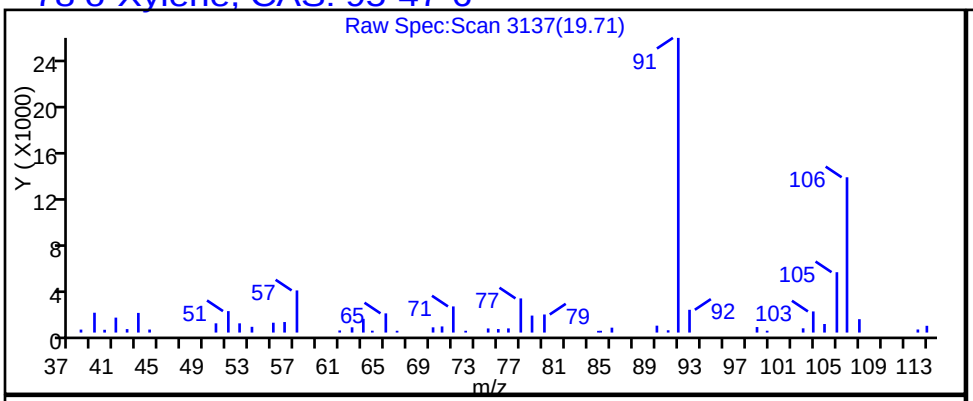


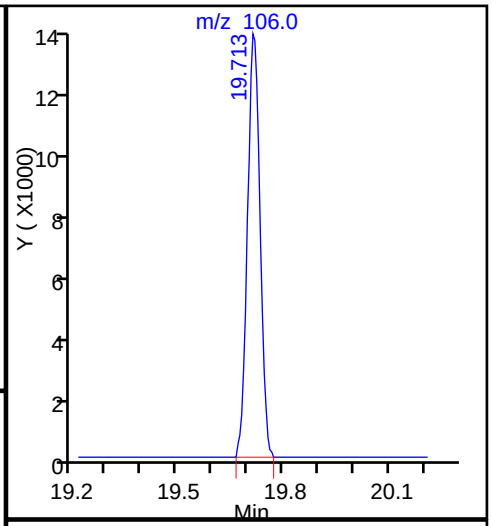


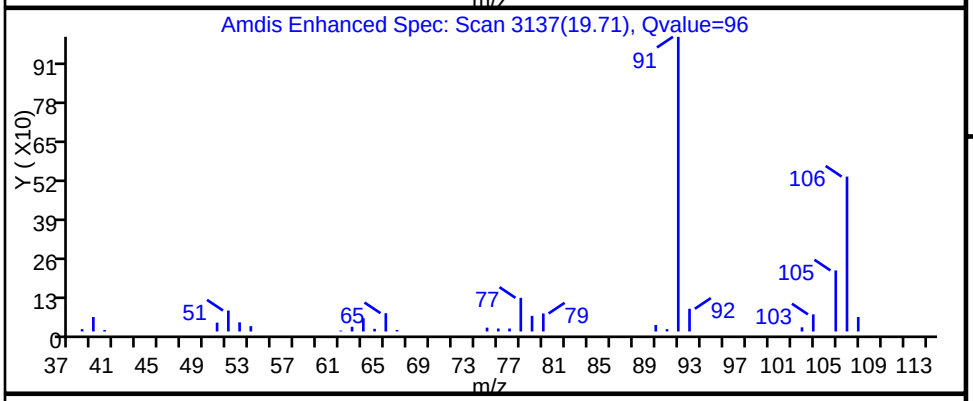
TestAmerica Burlington

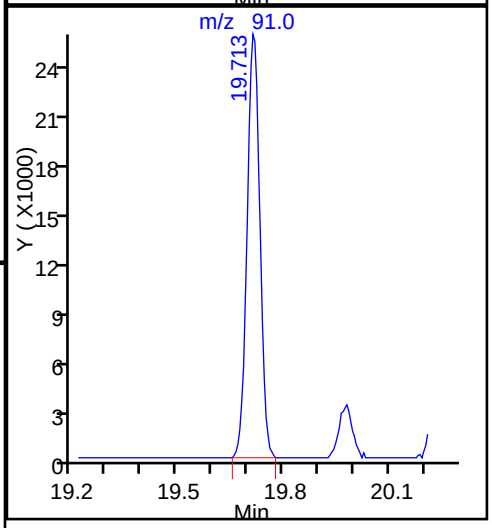
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

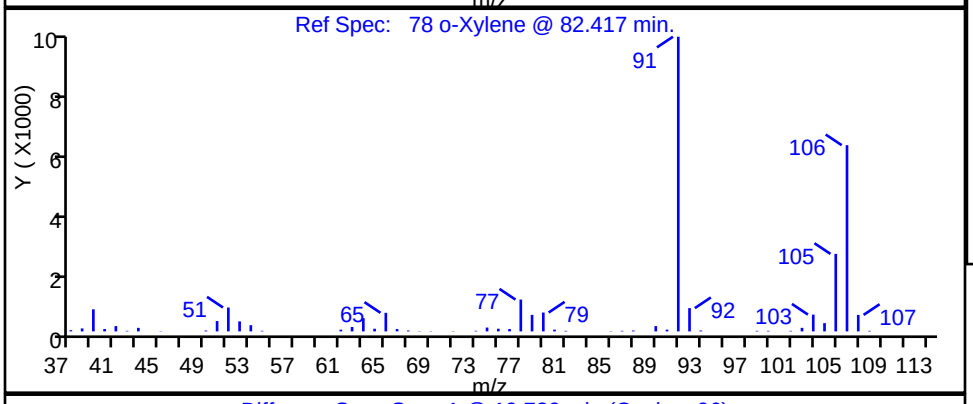
78 o-Xylene, CAS: 95-47-6

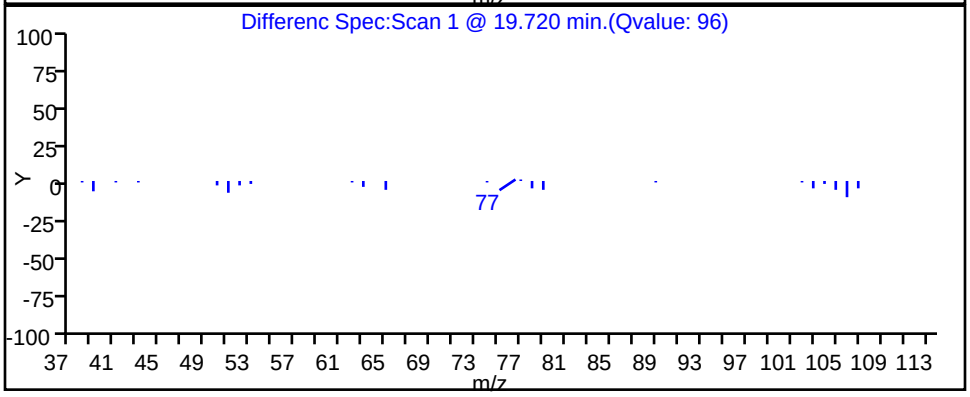








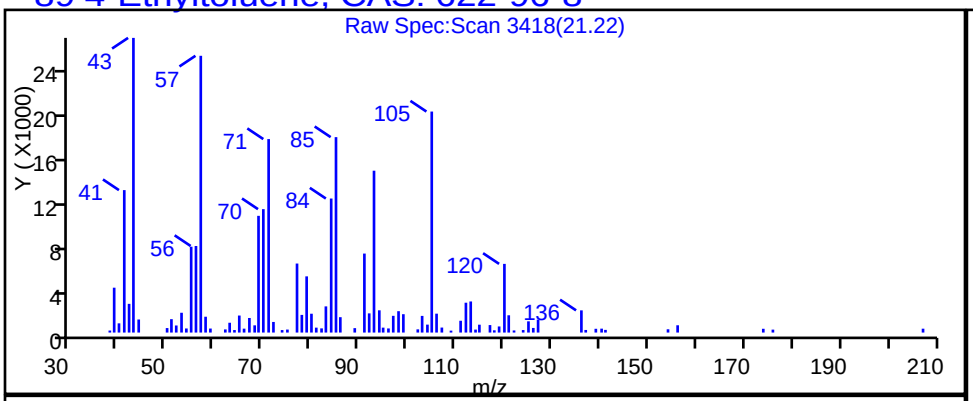


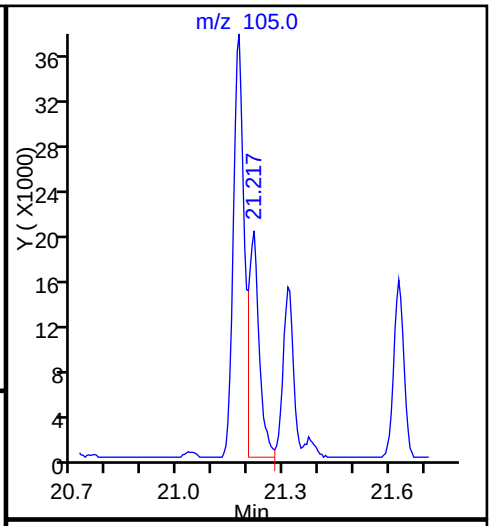


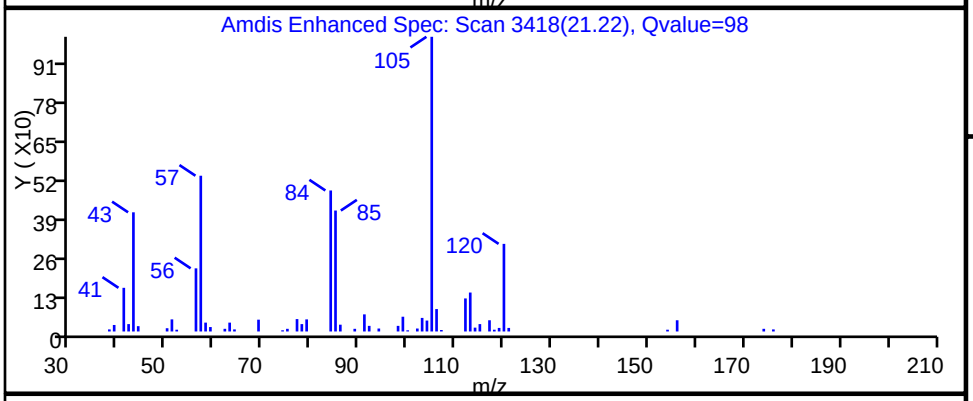
TestAmerica Burlington

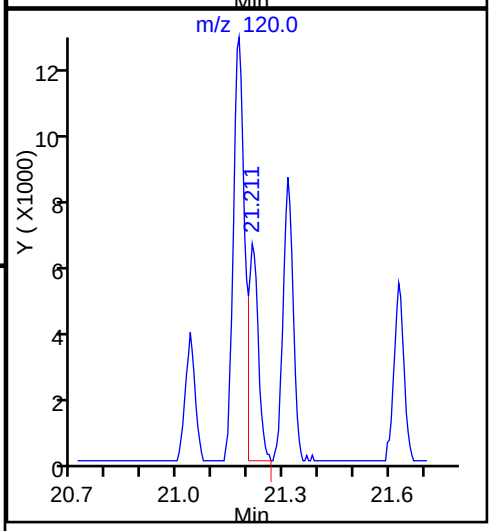
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

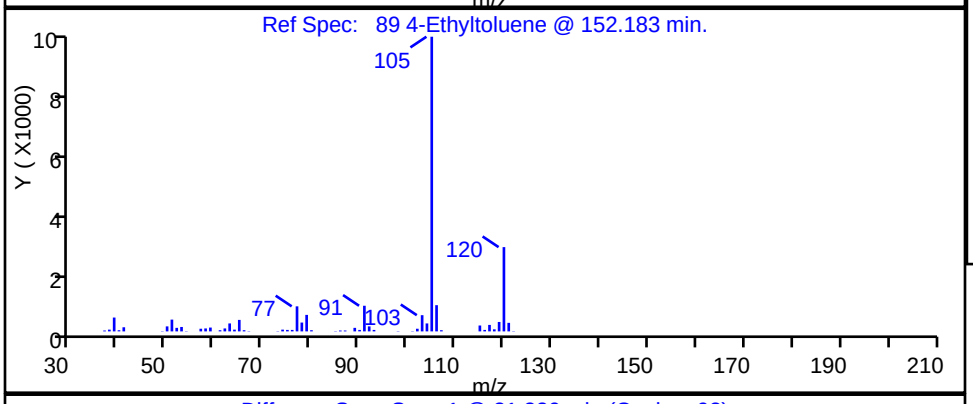
89 4-Ethyltoluene, CAS: 622-96-8

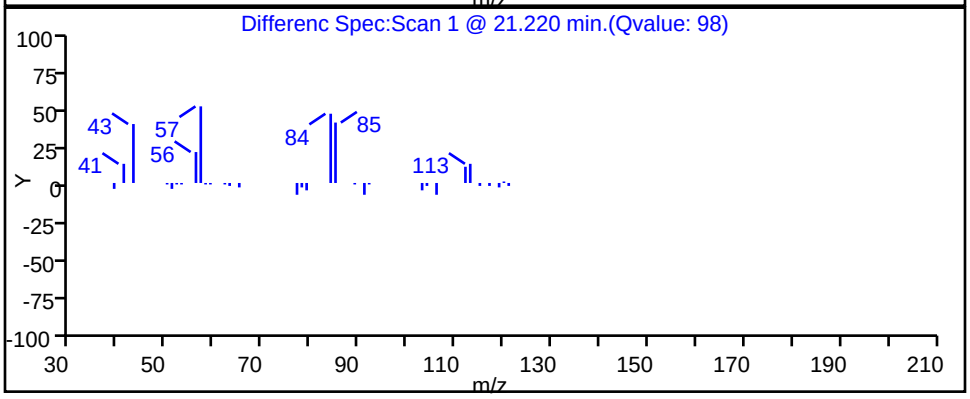








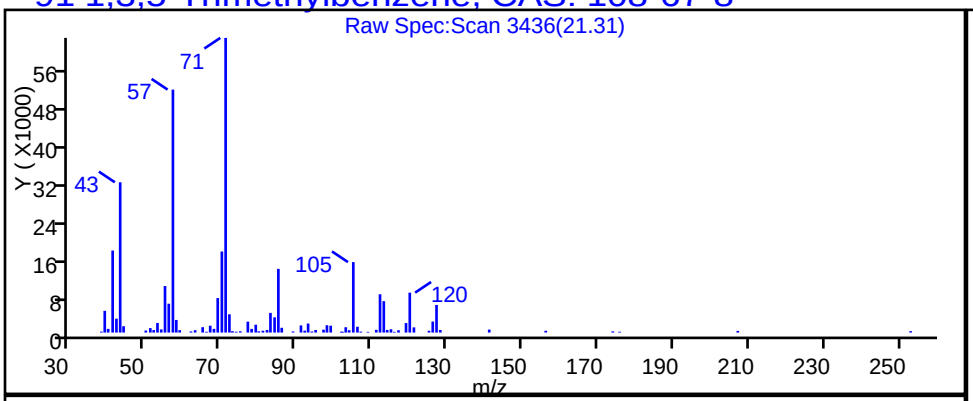


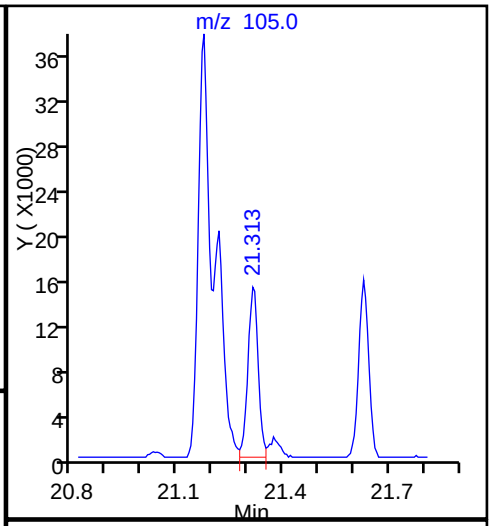


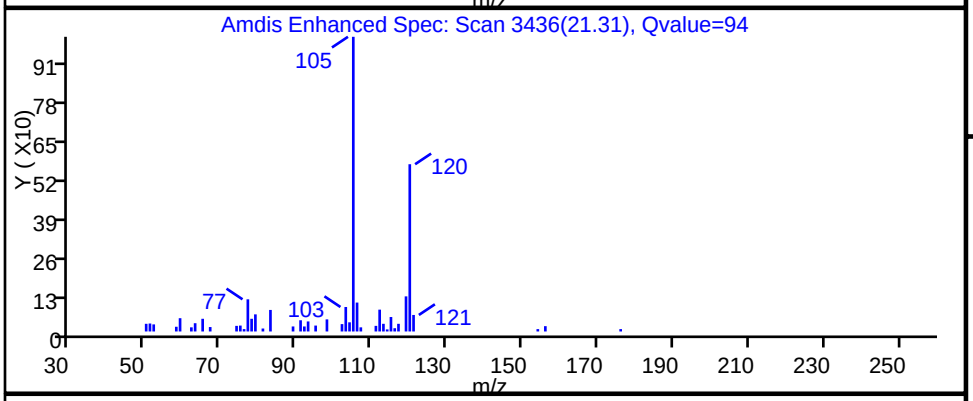
TestAmerica Burlington

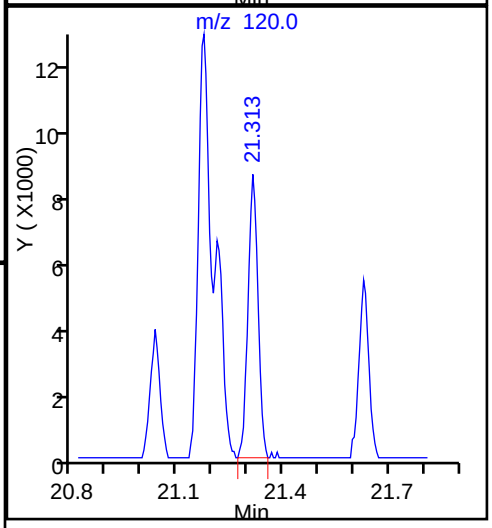
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

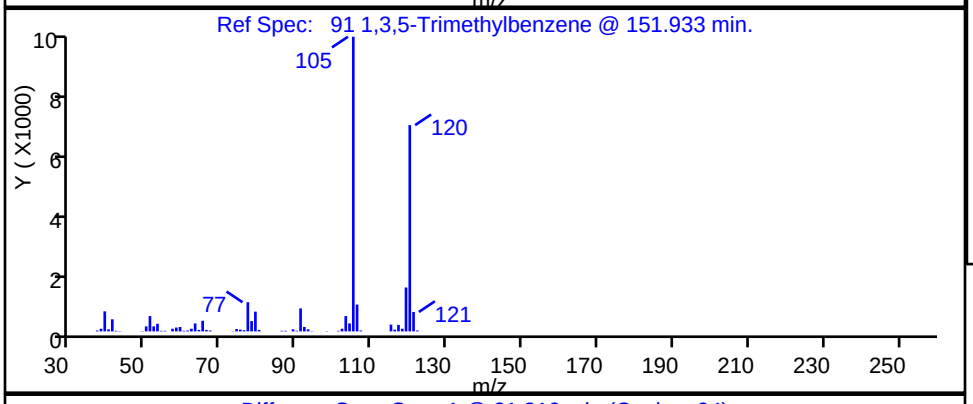
91 1,3,5-Trimethylbenzene, CAS: 108-67-8

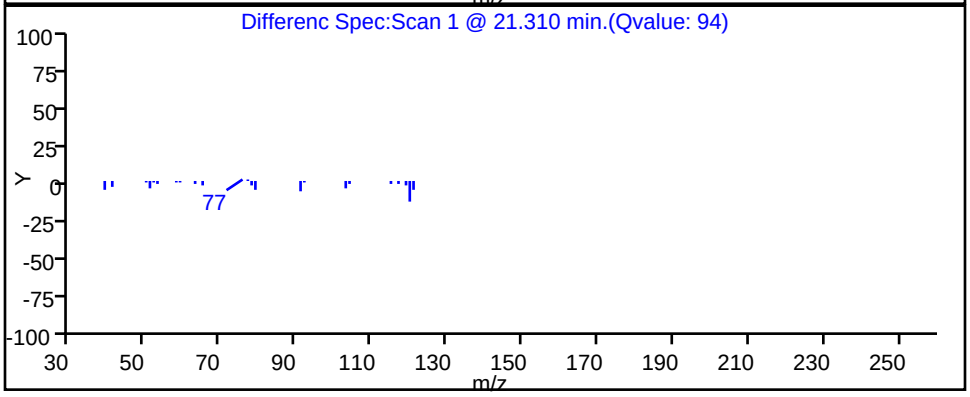








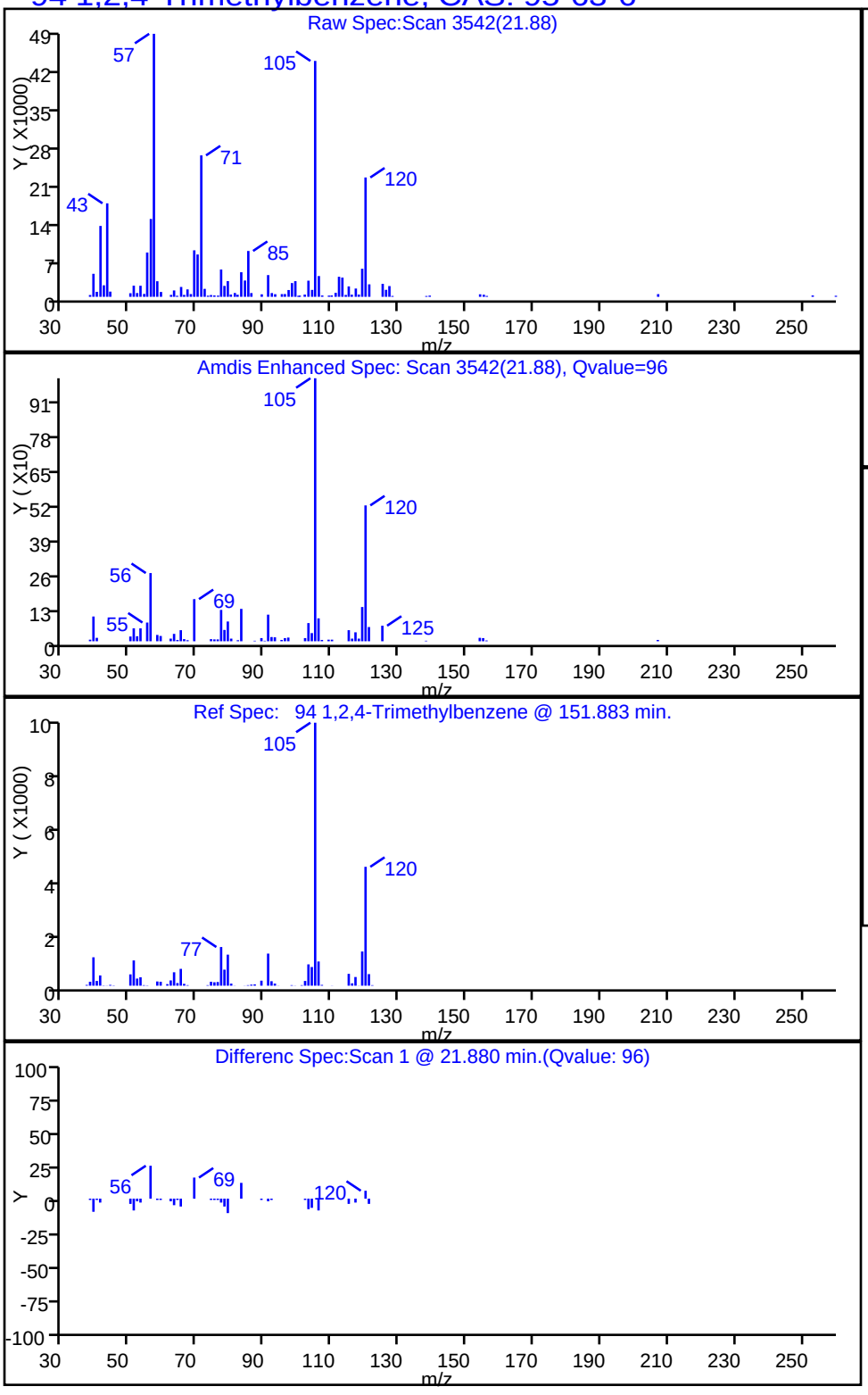


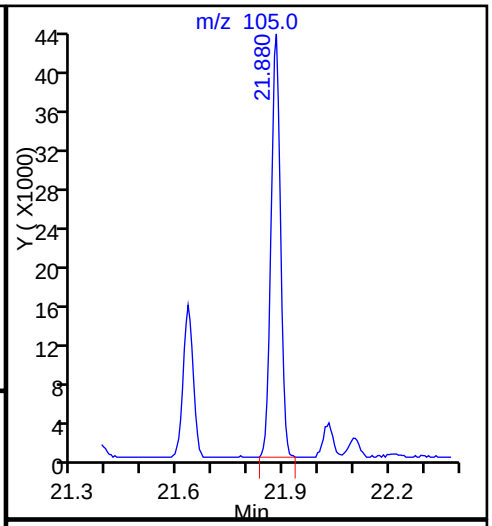


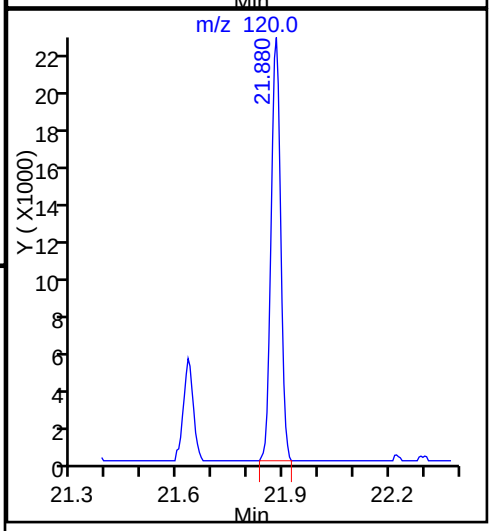
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D				
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

94 1,2,4-Trimethylbenzene, CAS: 95-63-6







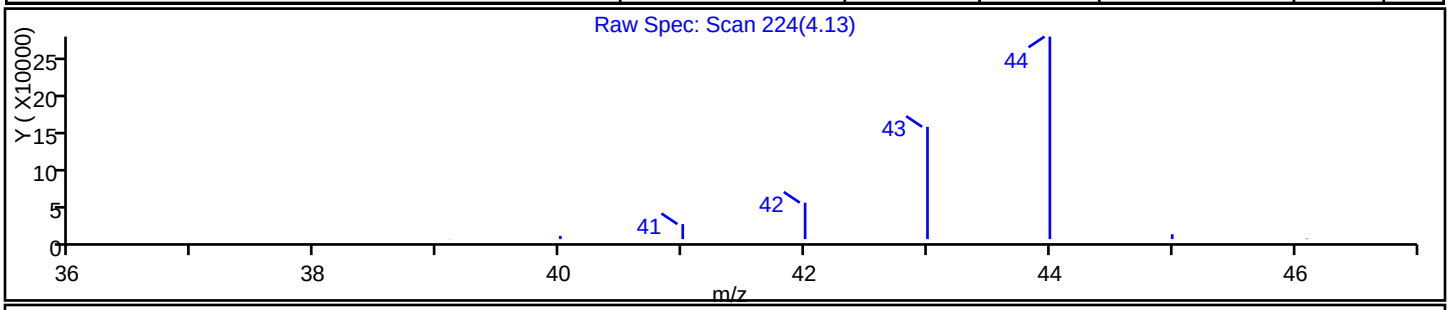
Report Date: 14-Oct-2015 08:06:11 Chrom Revision: 2.2 08-Oct-2015 07:17:48

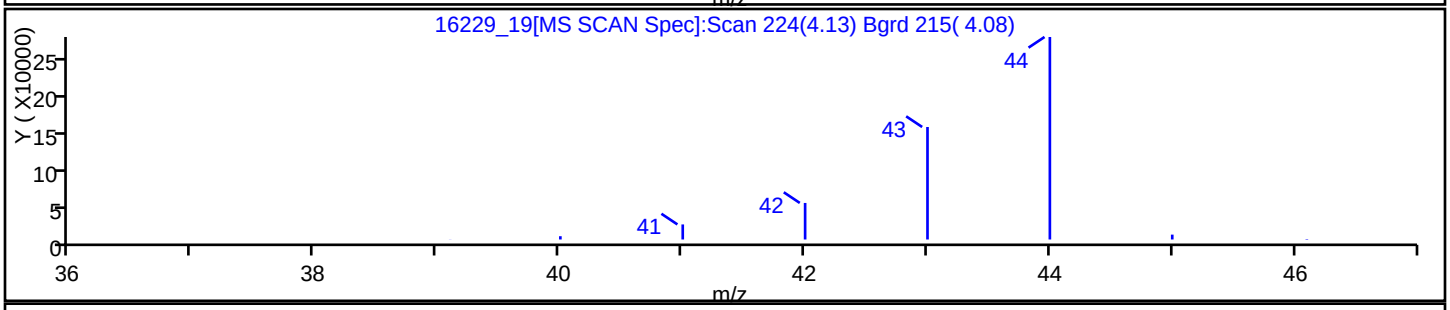
TestAmerica Burlington

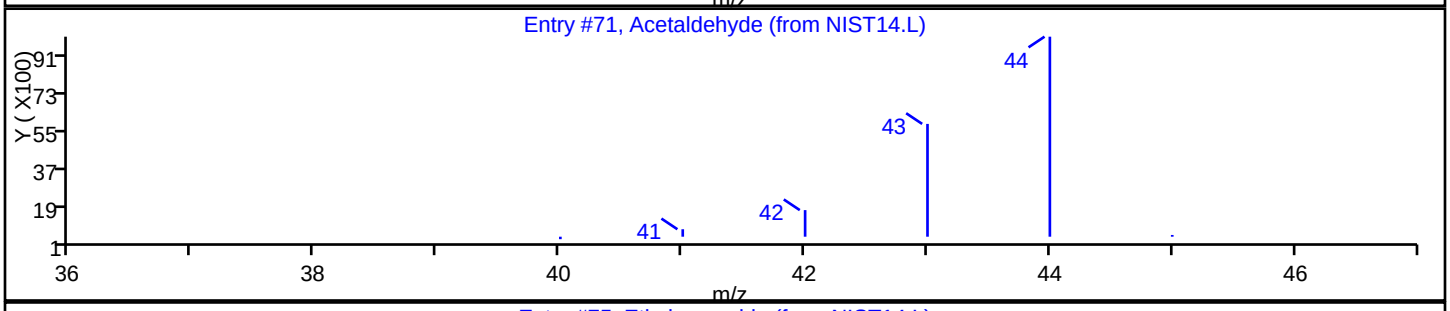
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

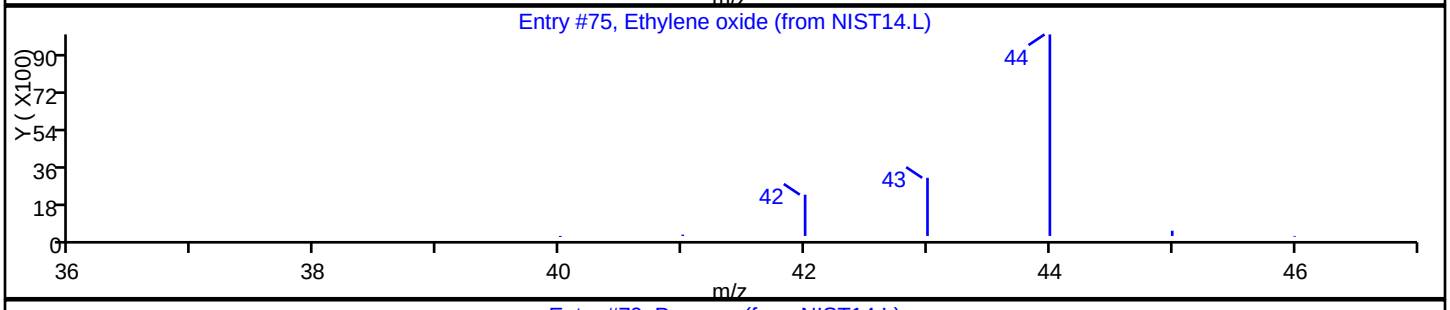
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:		Detector	MS SCAN		

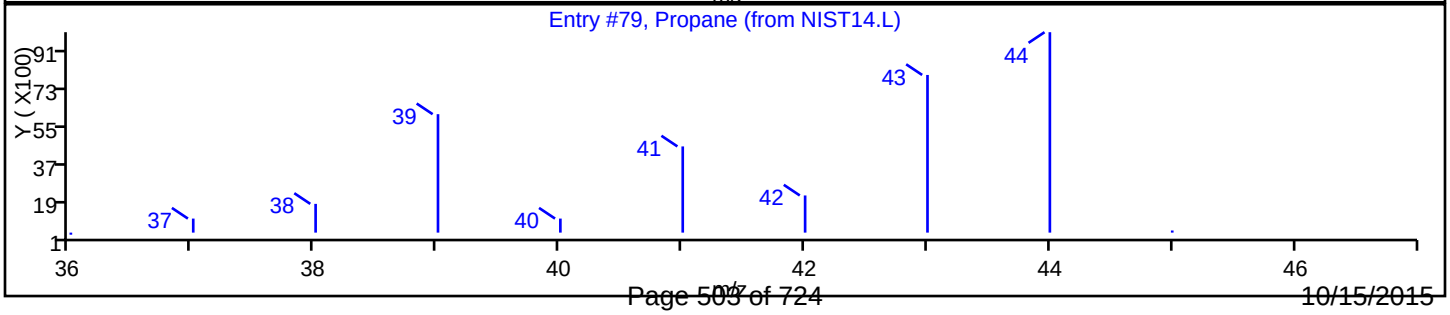
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Acetaldehyde	75-07-0	NIST14.L	71	C2H4O	44	83
Ethylene oxide	75-21-8	NIST14.L	75	C2H4O	44	5
Propane	74-98-6	NIST14.L	79	C3H8	44	5







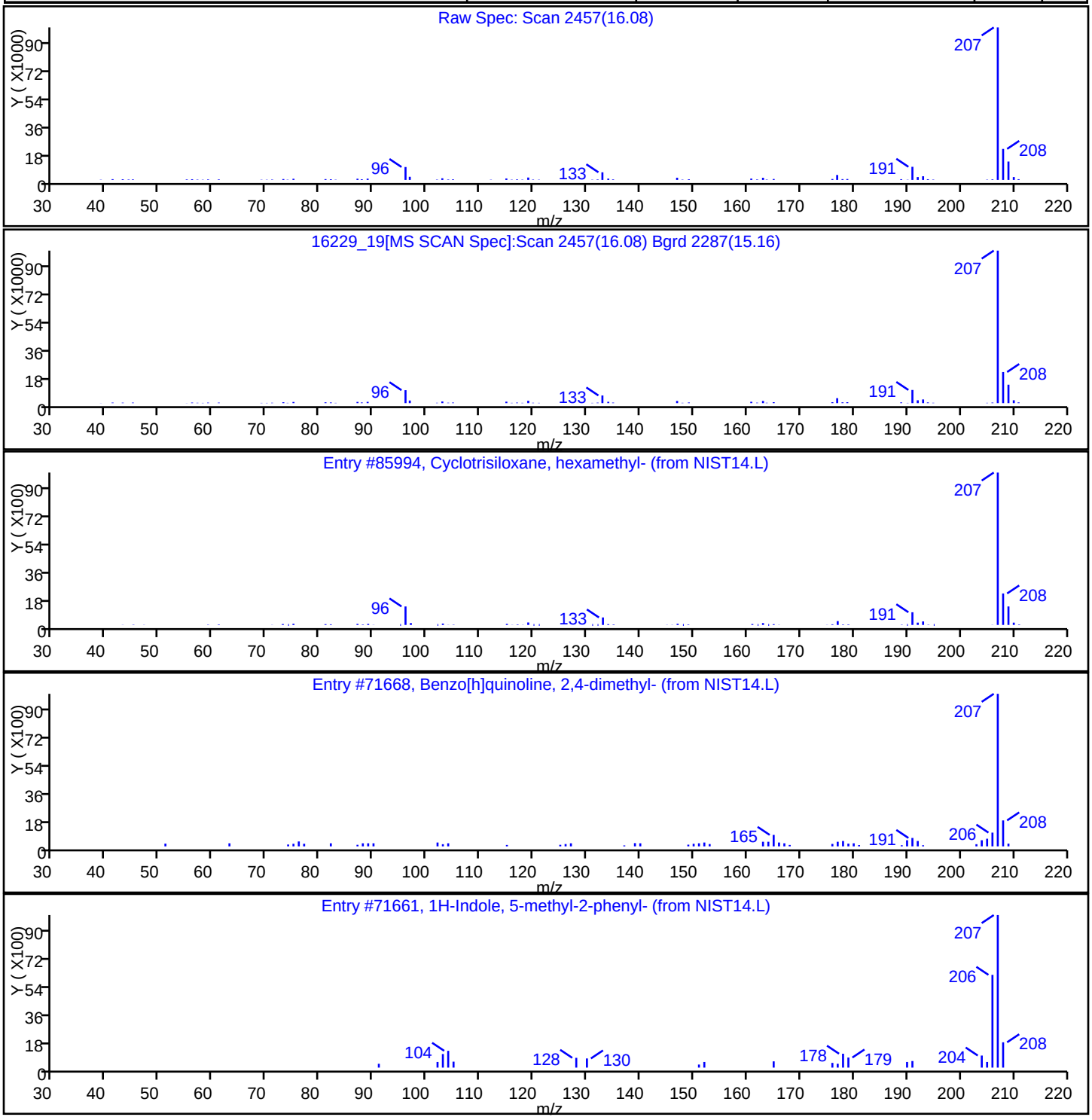




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D
Injection Date: 13-Oct-2015 23:57:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 19
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

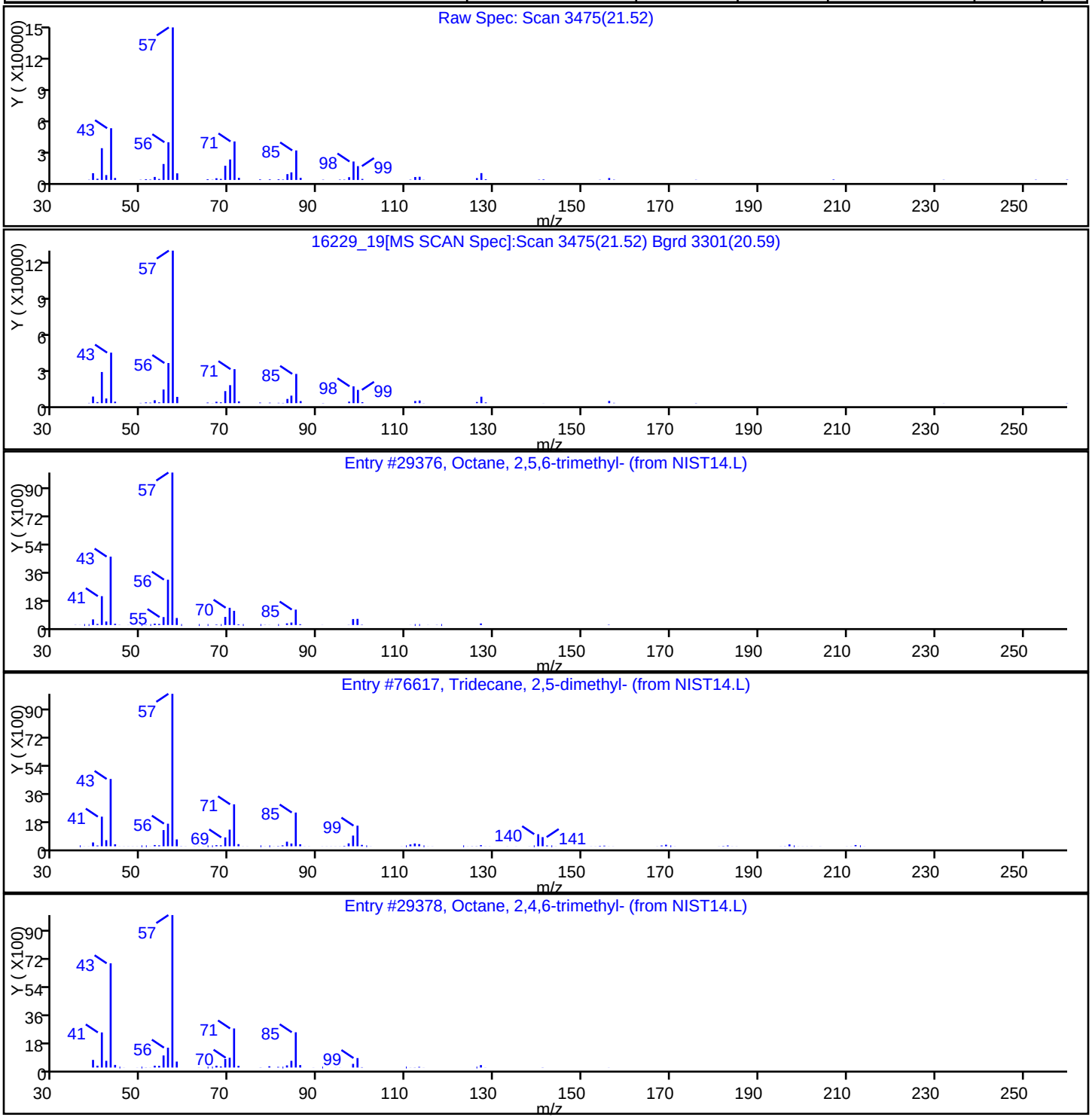
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Cyclotrisiloxane, hexamethyl-	541-05-9	NIST14.L	85994	C6H18O3Si3	222	91
Benzo[h]quinoline, 2,4-dimethyl-	605-67-4	NIST14.L	71668	C15H13N	207	50
1H-Indole, 5-methyl-2-phenyl-	13228-36-9	NIST14.L	71661	C15H13N	207	45



TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D
Injection Date: 13-Oct-2015 23:57:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 19
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

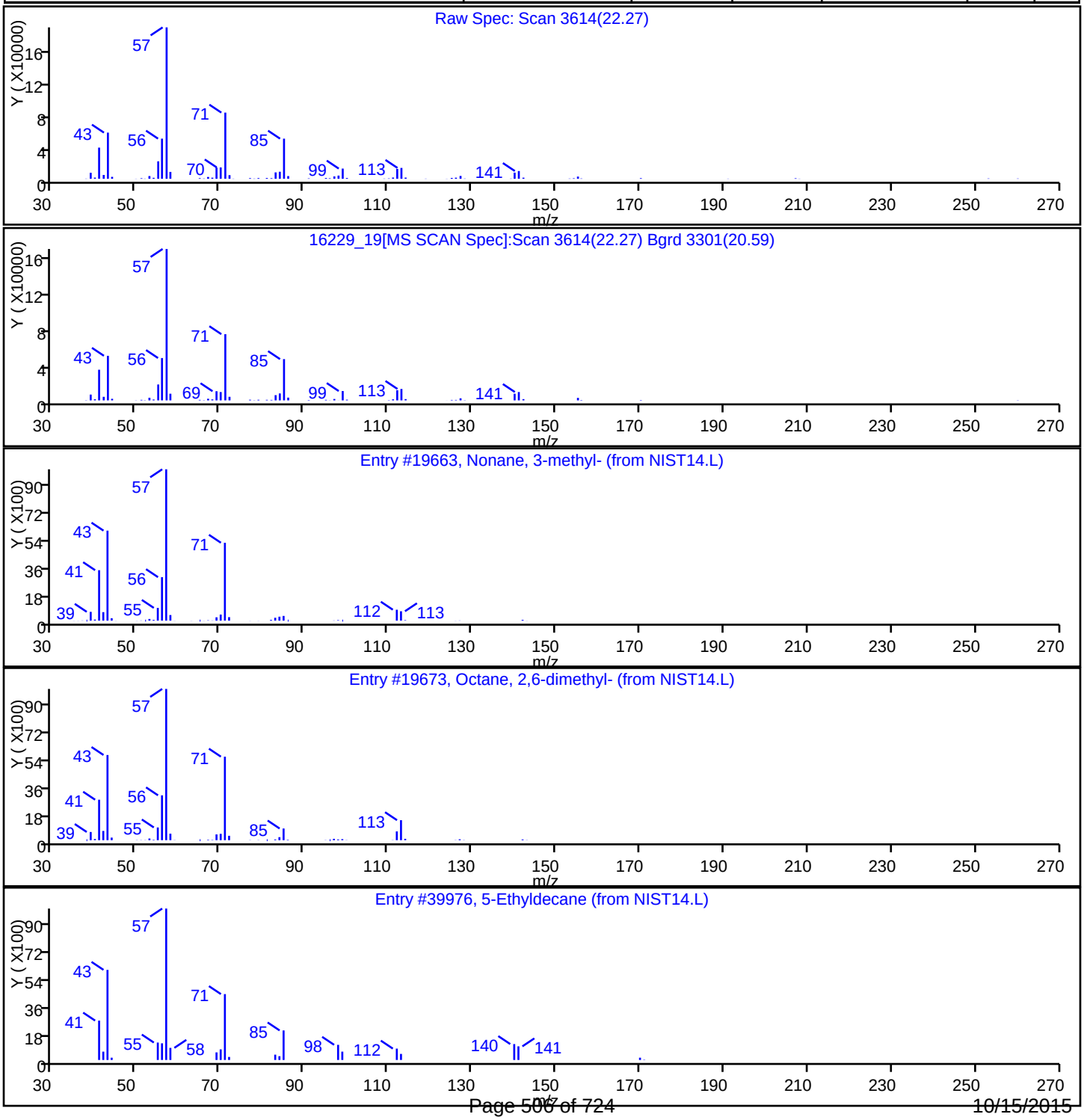
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Octane, 2,5,6-trimethyl-	62016-14-2	NIST14.L	29376	C11H24	156	90
Tridecane, 2,5-dimethyl-	56292-66-1	NIST14.L	76617	C15H32	212	59
Octane, 2,4,6-trimethyl-	62016-37-9	NIST14.L	29378	C11H24	156	59



TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D
Injection Date: 13-Oct-2015 23:57:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 19
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Nonane, 3-methyl-	5911-04-6	NIST14.L	19663	C10H22	142	76
Octane, 2,6-dimethyl-	2051-30-1	NIST14.L	19673	C10H22	142	68
5-Ethyldecane	17302-36-2	NIST14.L	39976	C12H26	170	59



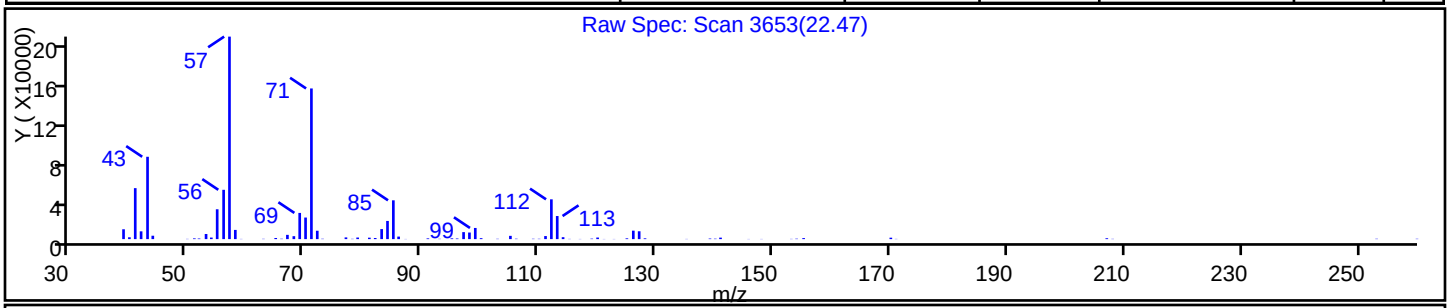
Report Date: 14-Oct-2015 08:06:12 Chrom Revision: 2.2 08-Oct-2015 07:17:48

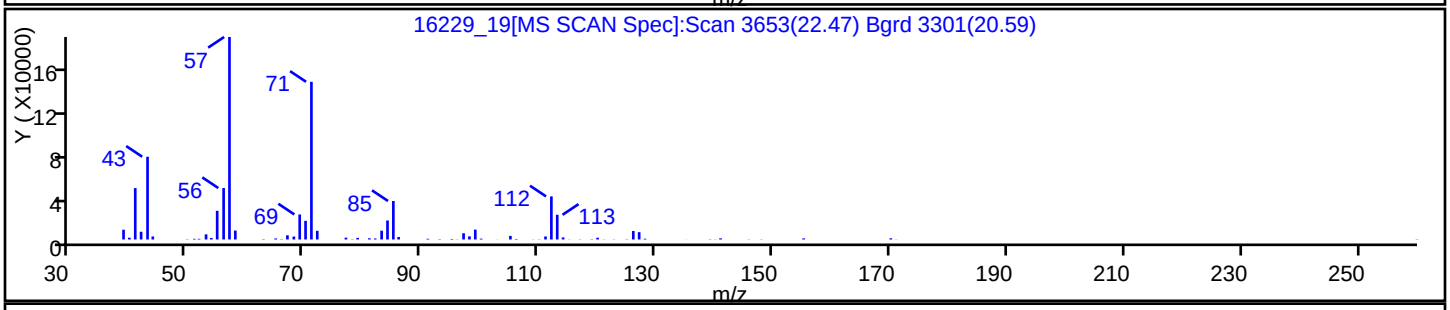
TestAmerica Burlington

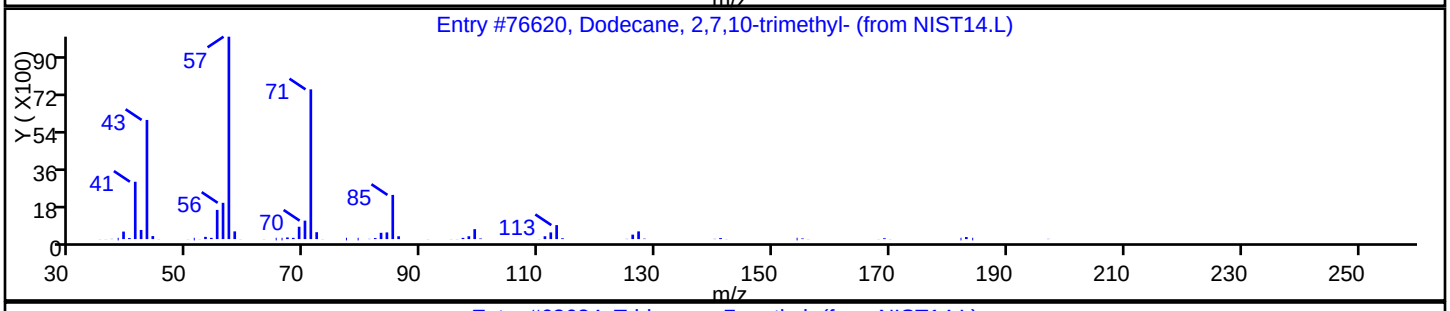
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

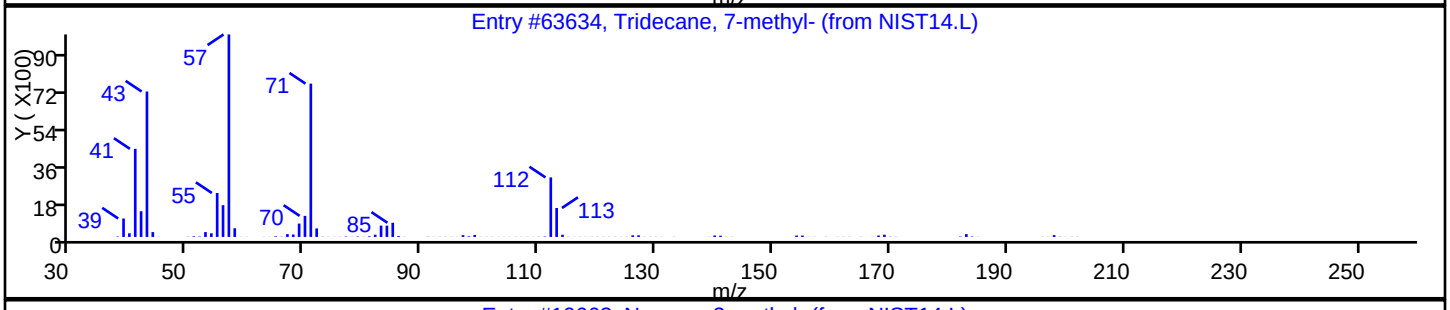
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:		Detector	MS SCAN		

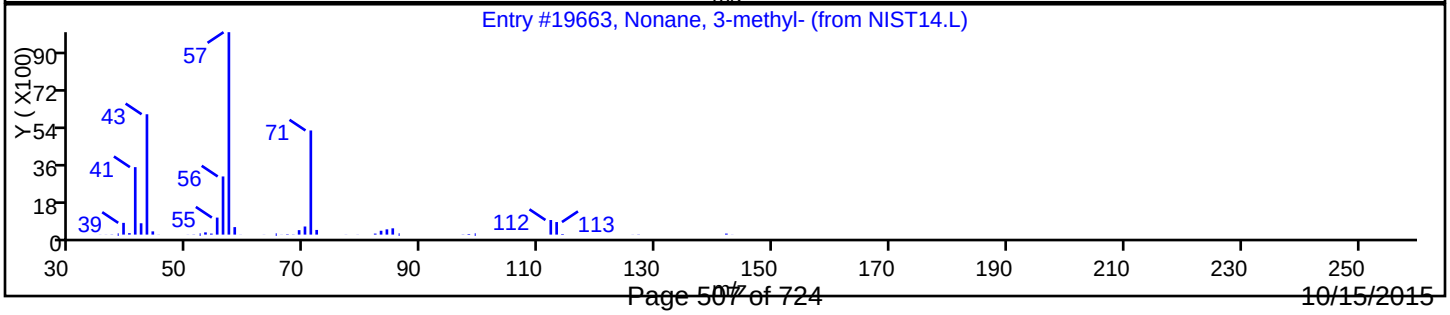
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Dodecane, 2,7,10-trimethyl-	74645-98-0	NIST14.L	76620	C15H32	212	64
Tridecane, 7-methyl-	26730-14-3	NIST14.L	63634	C14H30	198	64
Nonane, 3-methyl-	5911-04-6	NIST14.L	19663	C10H22	142	64







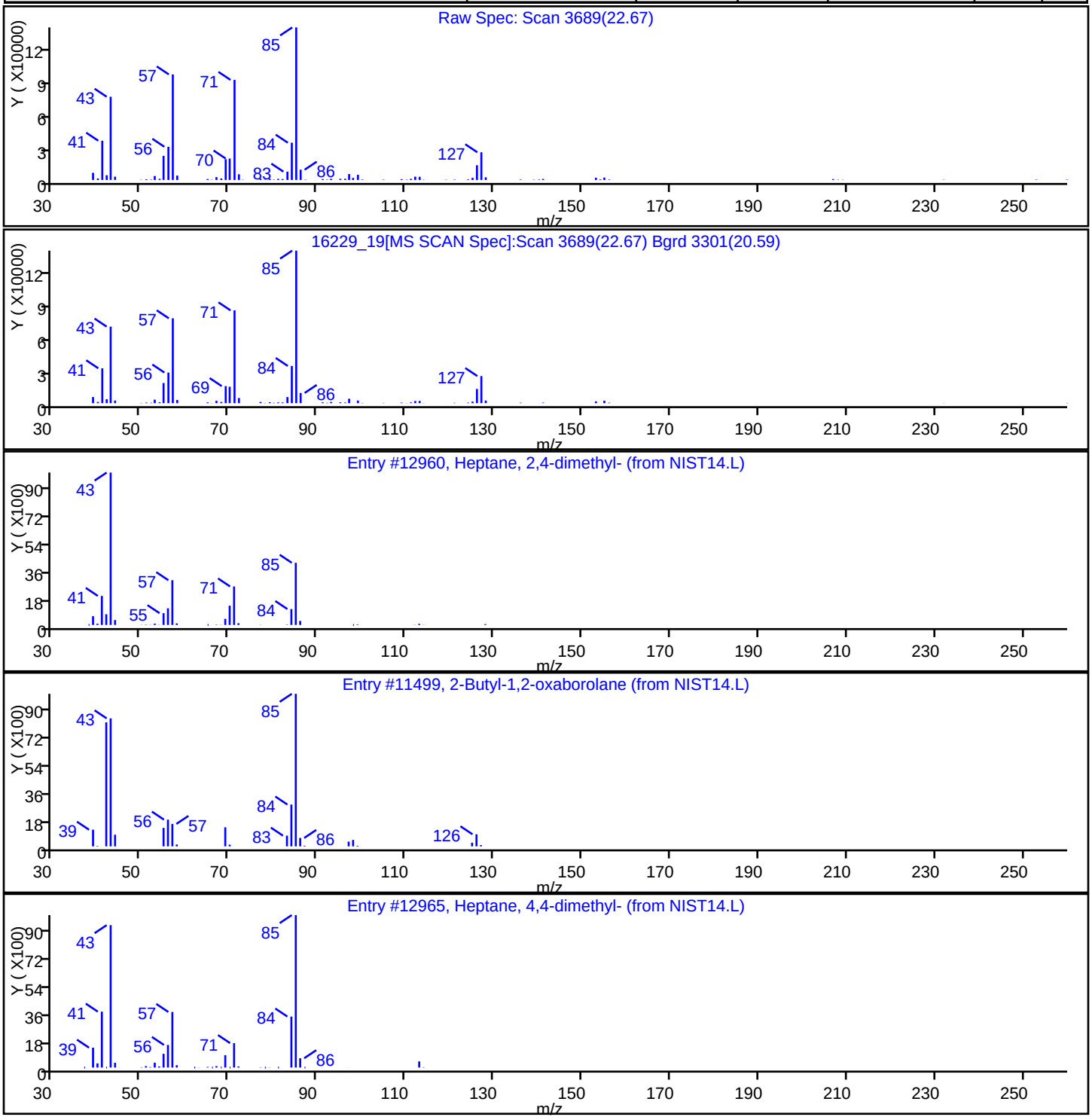




TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D
Injection Date: 13-Oct-2015 23:57:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 19
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Heptane, 2,4-dimethyl-	2213-23-2	NIST14.L	12960	C9H20	128	87
2-Butyl-1,2-oxaborolane	5357-13-1	NIST14.L	11499	C7H15BO	126	58
Heptane, 4,4-dimethyl-	1068-19-5	NIST14.L	12965	C9H20	128	50



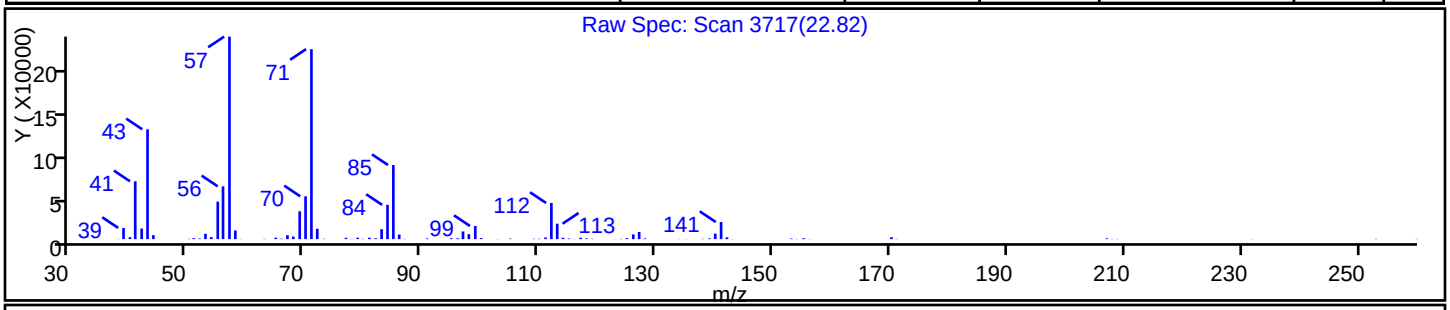
Report Date: 14-Oct-2015 08:06:12 Chrom Revision: 2.2 08-Oct-2015 07:17:48

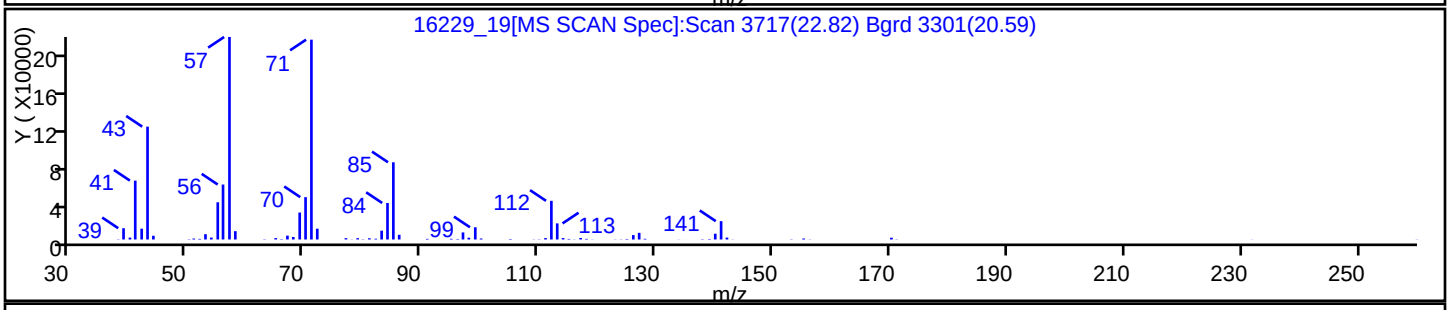
TestAmerica Burlington

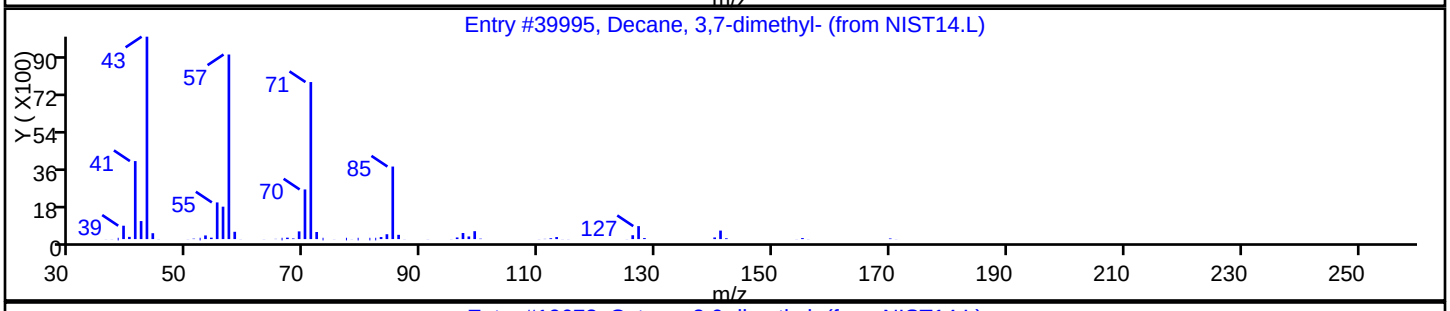
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

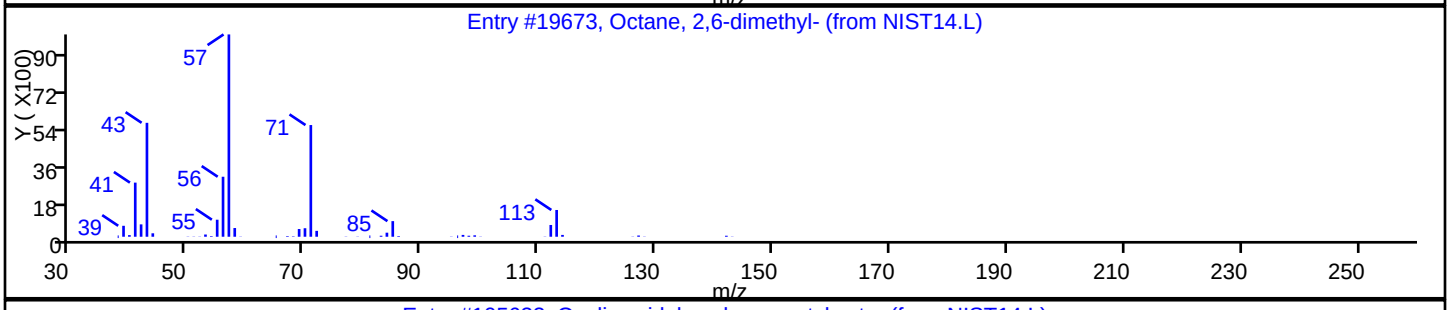
Injection Date:	13-Oct-2015 23:57:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	19
Purge Vol:	200.000 mL	Dil. Factor:	3.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:		Detector	MS SCAN		

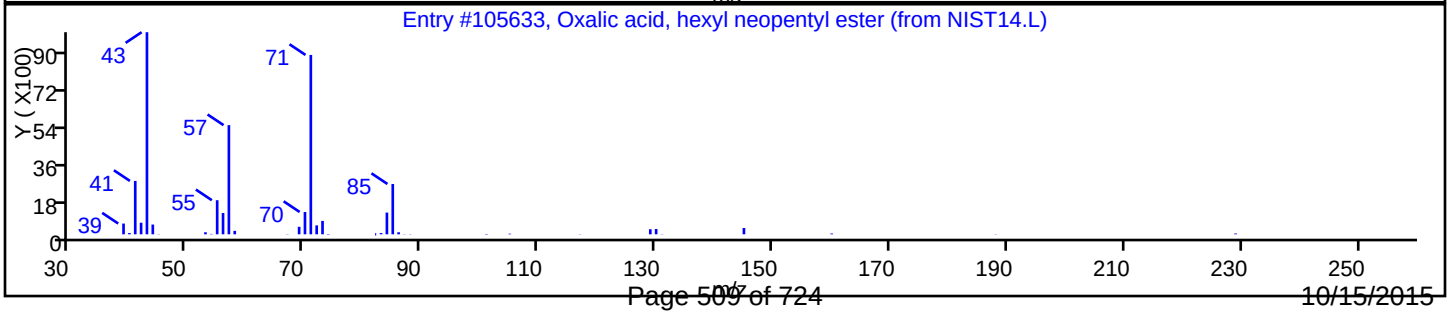
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Decane, 3,7-dimethyl-	17312-54-8	NIST14.L	39995	C12H26	170	58
Octane, 2,6-dimethyl-	2051-30-1	NIST14.L	19673	C10H22	142	53
Oxalic acid, hexyl neopentyl ester	1000309-73-1	NIST14.L	105633	C13H24O4	244	53











Report Date: 14-Oct-2015 08:06:12 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

Injection Date: 13-Oct-2015 23:57:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5

Client ID: SV-5

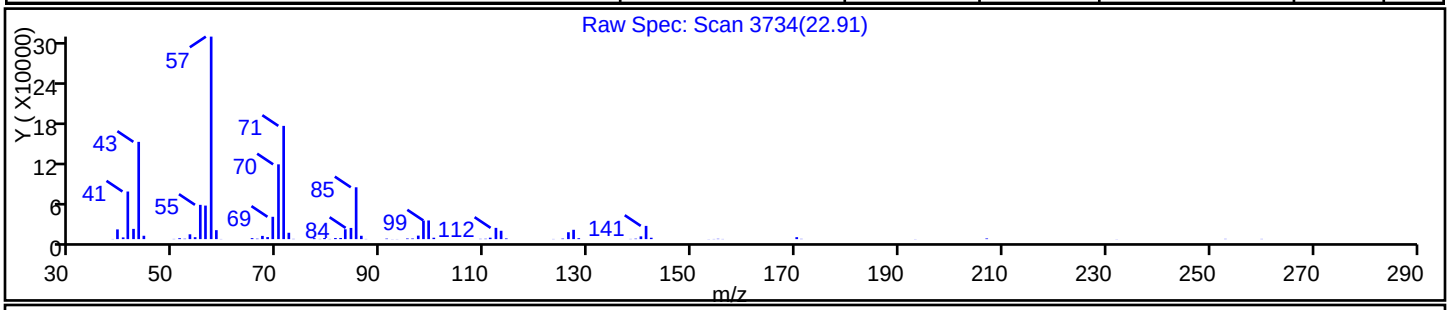
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 19

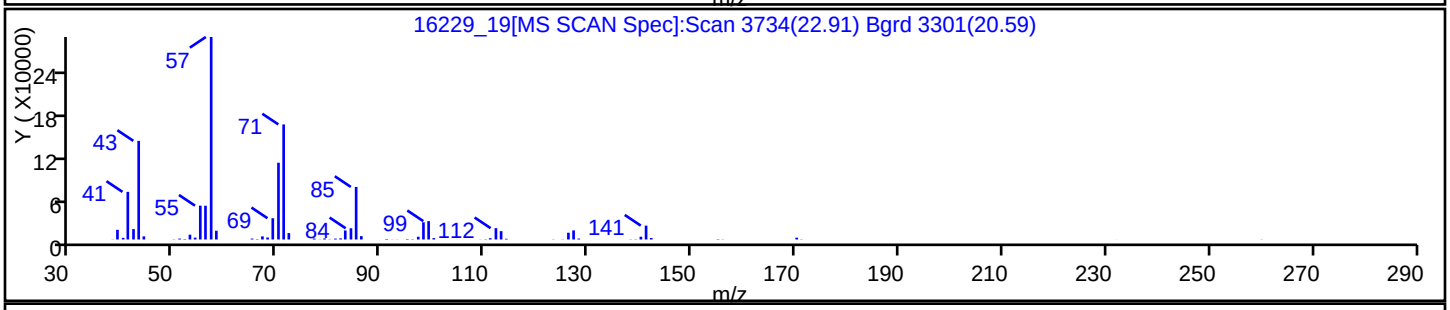
Purge Vol: 200.000 mL Dil. Factor: 3.0000

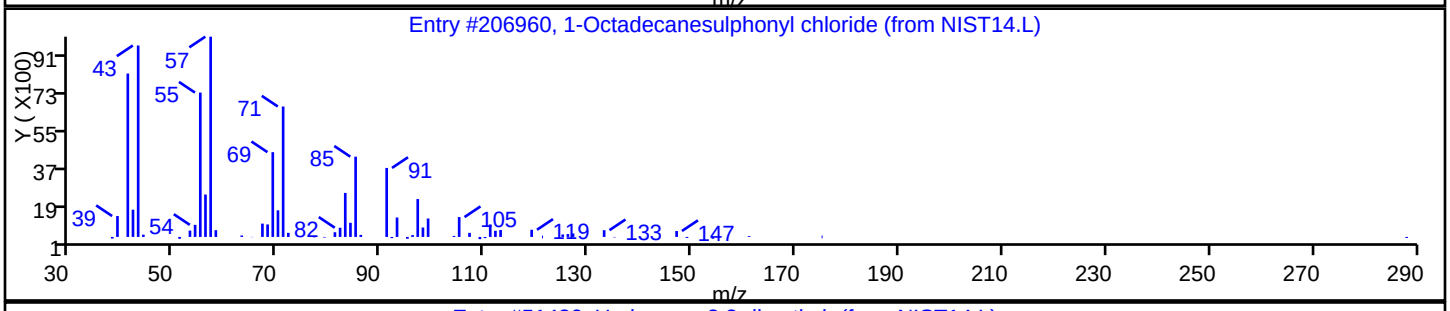
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

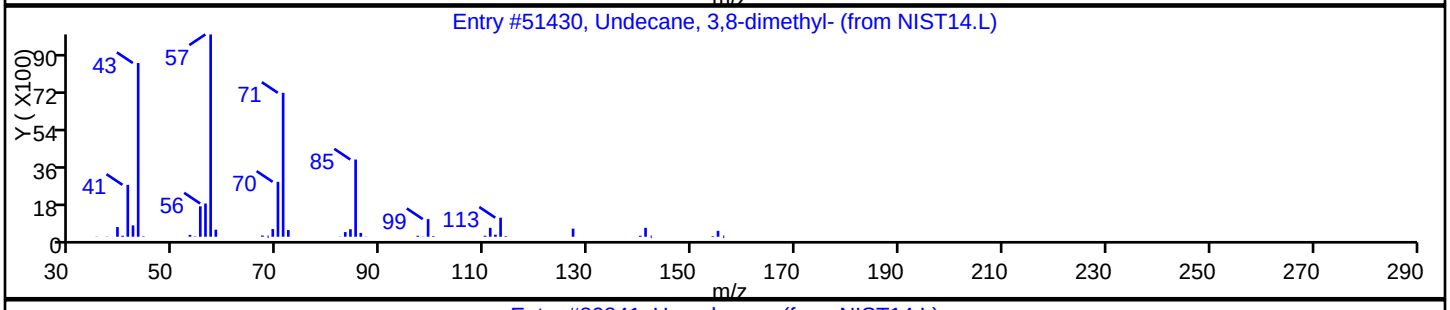
Column: Detector MS SCAN

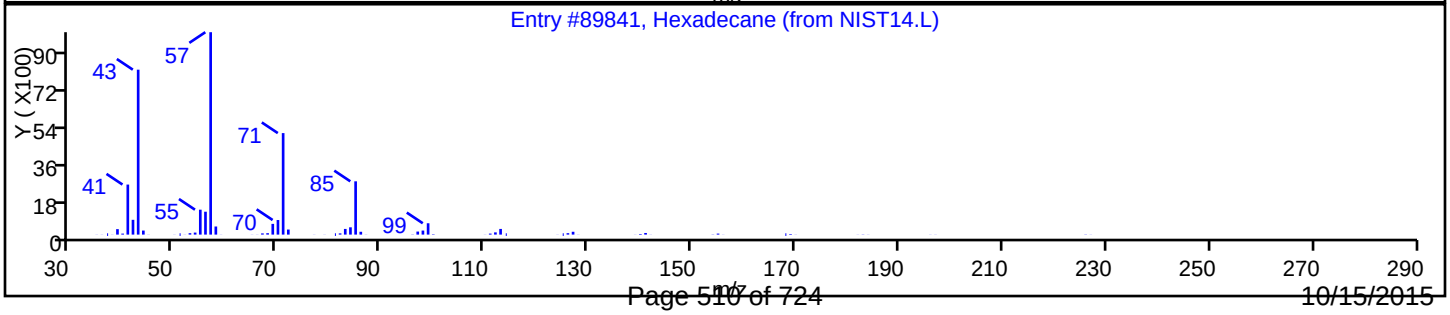
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
1-Octadecanesulphonyl chloride	1000342-70-4	NIST14.L	206960	C18H37ClO2S	352	64
Undecane, 3,8-dimethyl-	17301-30-3	NIST14.L	51430	C13H28	184	59
Hexadecane	544-76-3	NIST14.L	89841	C16H34	226	59











Report Date: 14-Oct-2015 08:06:12 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D

Injection Date: 13-Oct-2015 23:57:30 Instrument ID: CHX.i

Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5

Client ID: SV-5

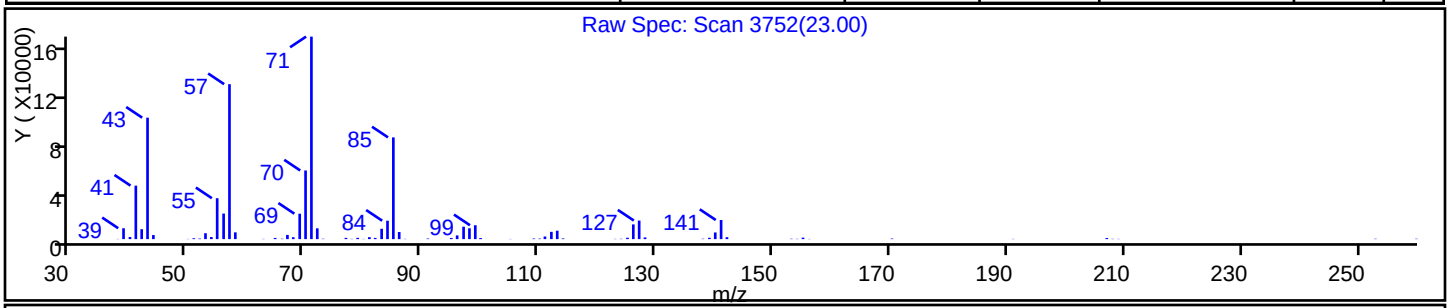
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 19

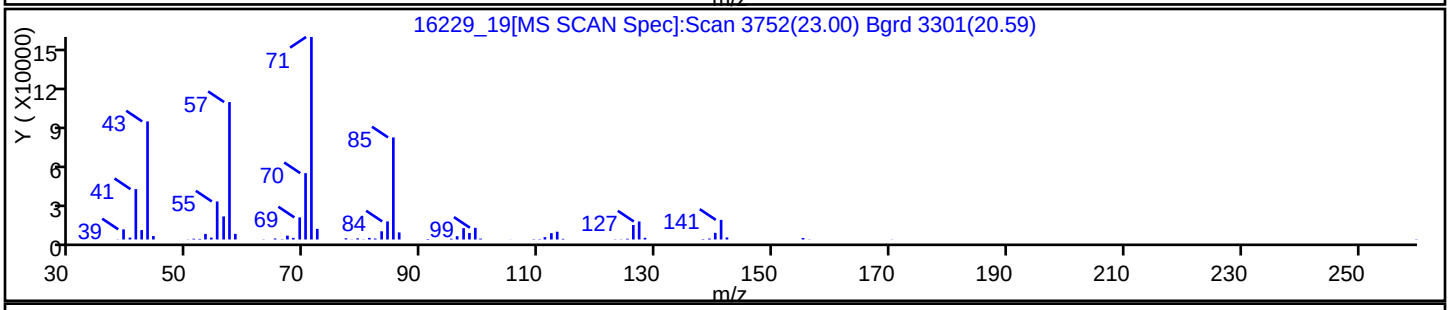
Purge Vol: 200.000 mL Dil. Factor: 3.0000

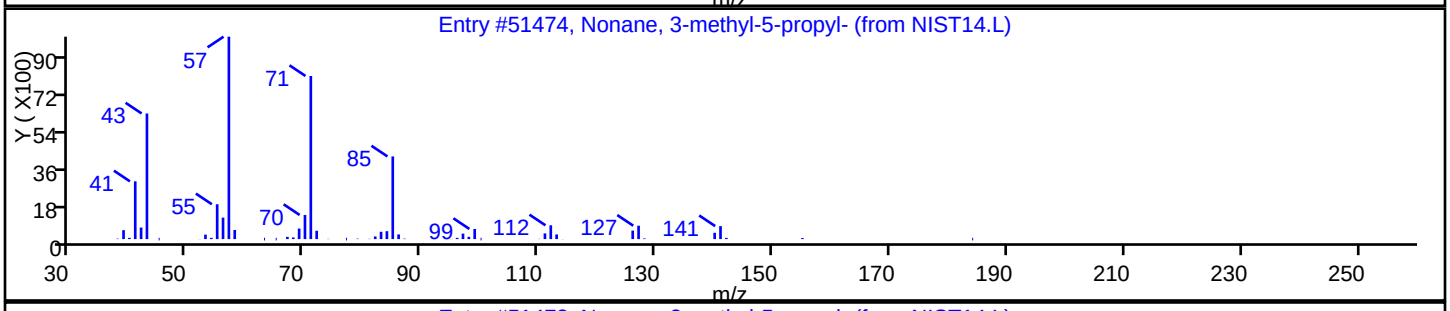
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL

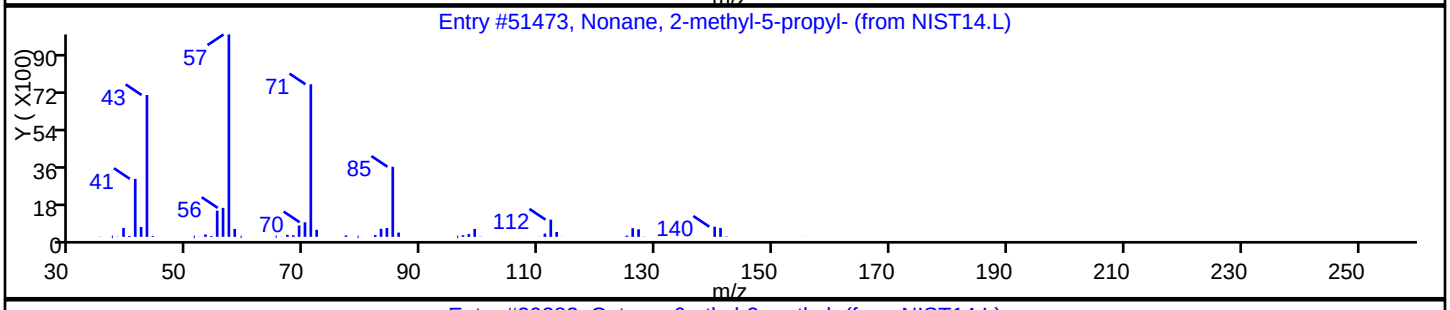
Column: Detector MS SCAN

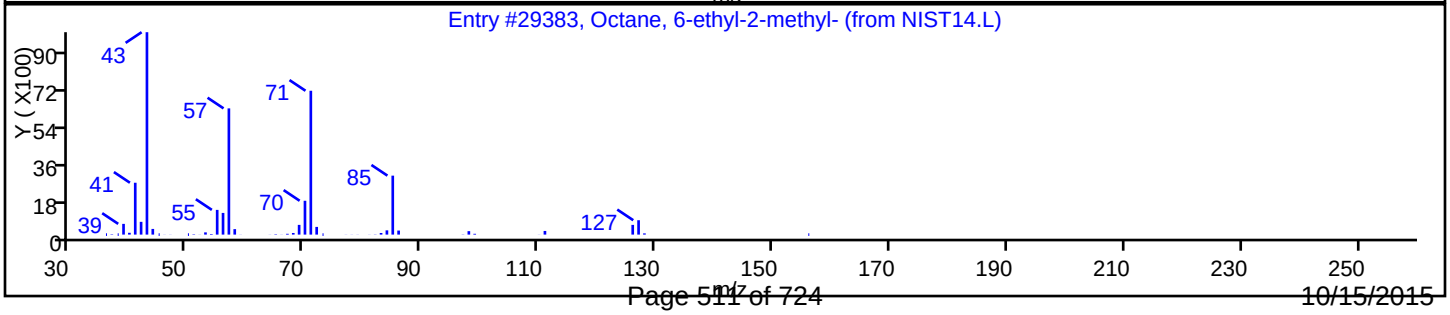
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Nonane, 3-methyl-5-propyl-	31081-18-2	NIST14.L	51474	C13H28	184	72
Nonane, 2-methyl-5-propyl-	31081-17-1	NIST14.L	51473	C13H28	184	72
Octane, 6-ethyl-2-methyl-	62016-19-7	NIST14.L	29383	C11H24	156	72







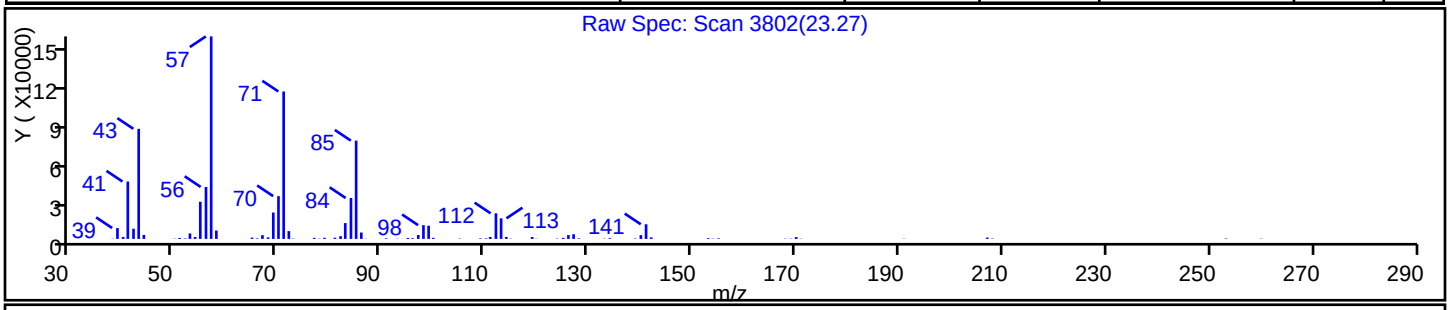


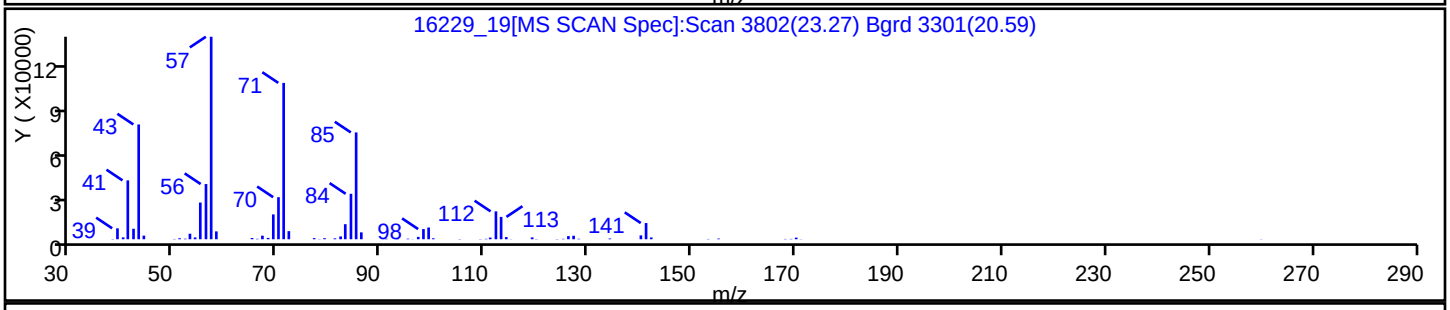


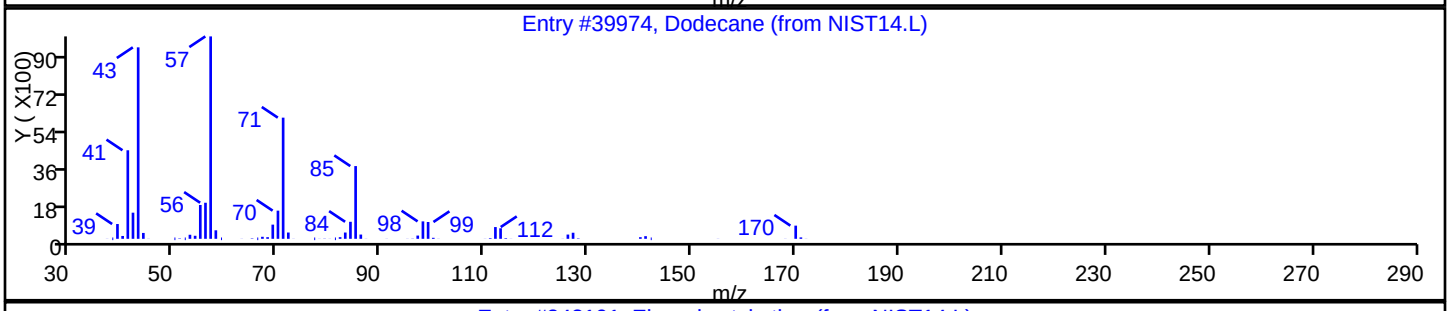
TestAmerica Burlington

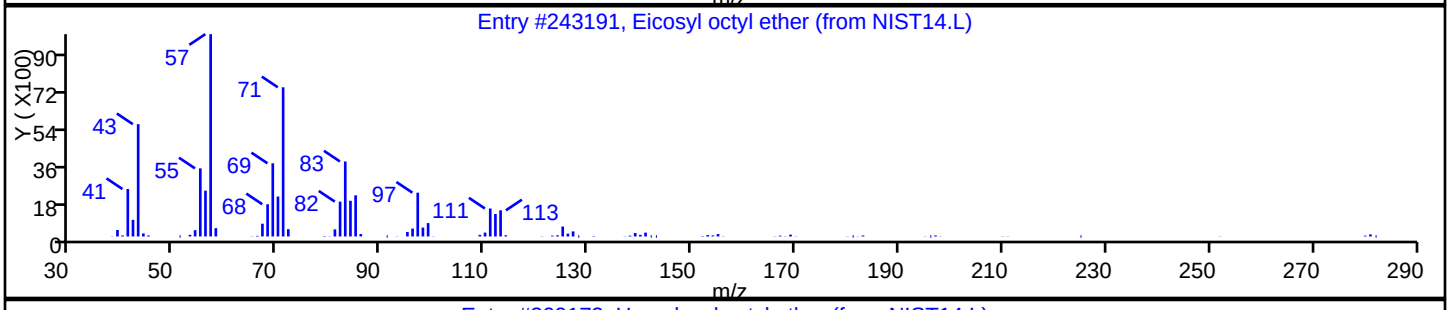
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_19.D
Injection Date: 13-Oct-2015 23:57:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 19
Purge Vol: 200.000 mL Dil. Factor: 3.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

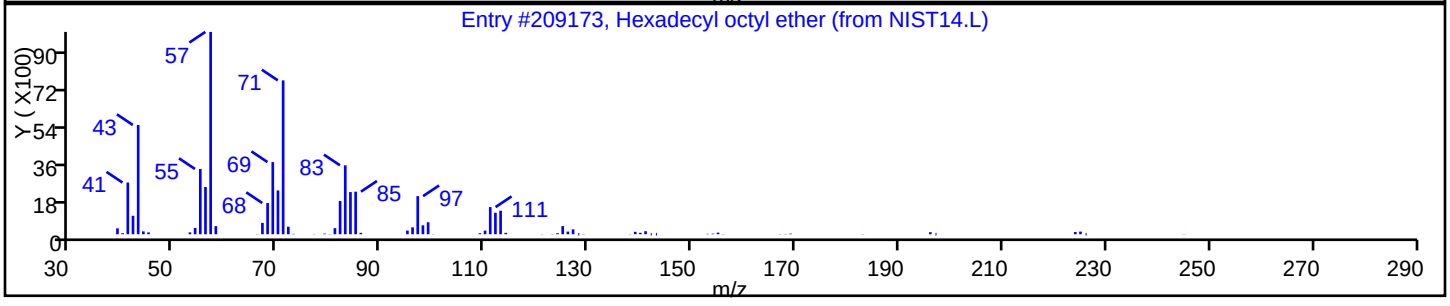
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Dodecane	112-40-3	NIST14.L	39974	C12H26	170	86
Eicosyl octyl ether	1000406-38-8	NIST14.L	243191	C28H58O	410	80
Hexadecyl octyl ether	1000406-38-6	NIST14.L	209173	C24H50O	354	78











FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 DL | Lab Sample ID: 200-30148-5 DL

Matrix: Air | Lab File ID: 16229_20.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 14:28

Sample wt/vol: 20(mL) | Date Analyzed: 10/14/2015 00:46

Soil Aliquot Vol: | Dilution Factor: 30

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	15	U	15	
75-45-6	Freon 22	86.47	15	U	15	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	6.0	U	6.0	
74-87-3	Chloromethane	50.49	15	U	15	
106-97-8	n-Butane	58.12	15	U	15	
75-01-4	Vinyl chloride	62.50	6.0	U	6.0	
106-99-0	1,3-Butadiene	54.09	6.0	U	6.0	
74-83-9	Bromomethane	94.94	6.0	U	6.0	
75-00-3	Chloroethane	64.52	15	U	15	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	6.0	U	6.0	
75-69-4	Trichlorofluoromethane	137.37	6.0	U	6.0	
76-13-1	Freon TF	187.38	6.0	U	6.0	
75-35-4	1,1-Dichloroethene	96.94	6.0	U	6.0	
67-64-1	Acetone	58.08	700	D	150	
67-63-0	Isopropyl alcohol	60.10	150	U	150	
75-15-0	Carbon disulfide	76.14	15	U	15	
107-05-1	3-Chloropropene	76.53	15	U	15	
75-09-2	Methylene Chloride	84.93	15	U	15	
75-65-0	tert-Butyl alcohol	74.12	150	U	150	
1634-04-4	Methyl tert-butyl ether	88.15	6.0	U	6.0	
156-60-5	trans-1,2-Dichloroethene	96.94	6.0	U	6.0	
110-54-3	n-Hexane	86.17	6.0	U	6.0	
75-34-3	1,1-Dichloroethane	98.96	6.0	U	6.0	
78-93-3	Methyl Ethyl Ketone	72.11	15	U	15	
156-59-2	cis-1,2-Dichloroethene	96.94	6.0	U	6.0	
540-59-0	1,2-Dichloroethene, Total	96.94	12	U	12	
67-66-3	Chloroform	119.38	6.0	U	6.0	
109-99-9	Tetrahydrofuran	72.11	150	U	150	
71-55-6	1,1,1-Trichloroethane	133.41	6.0	U	6.0	
110-82-7	Cyclohexane	84.16	6.0	U	6.0	
56-23-5	Carbon tetrachloride	153.81	6.0	U	6.0	
540-84-1	2,2,4-Trimethylpentane	114.23	6.0	U	6.0	
71-43-2	Benzene	78.11	6.0	U	6.0	
107-06-2	1,2-Dichloroethane	98.96	6.0	U	6.0	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 DL | Lab Sample ID: 200-30148-5 DL

Matrix: Air | Lab File ID: 16229_20.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 14:28

Sample wt/vol: 20(mL) | Date Analyzed: 10/14/2015 00:46

Soil Aliquot Vol: | Dilution Factor: 30

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	6.0	U	6.0	
79-01-6	Trichloroethene	131.39	6.0	U	6.0	
80-62-6	Methyl methacrylate	100.12	15	U	15	
78-87-5	1,2-Dichloropropane	112.99	6.0	U	6.0	
123-91-1	1,4-Dioxane	88.11	150	U	150	
75-27-4	Bromodichloromethane	163.83	6.0	U	6.0	
10061-01-5	cis-1,3-Dichloropropene	110.97	6.0	U	6.0	
108-10-1	methyl isobutyl ketone	100.16	15	U	15	
108-88-3	Toluene	92.14	6.0	U	6.0	
10061-02-6	trans-1,3-Dichloropropene	110.97	6.0	U	6.0	
79-00-5	1,1,2-Trichloroethane	133.41	6.0	U	6.0	
127-18-4	Tetrachloroethene	165.83	6.0	U	6.0	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	15	U	15	
124-48-1	Dibromochloromethane	208.29	6.0	U	6.0	
106-93-4	1,2-Dibromoethane	187.87	6.0	U	6.0	
108-90-7	Chlorobenzene	112.56	6.0	U	6.0	
100-41-4	Ethylbenzene	106.17	6.0	U	6.0	
179601-23-1	m,p-Xylene	106.17	15	U	15	
95-47-6	Xylene, o-	106.17	6.0	U	6.0	
1330-20-7	Xylene (total)	106.17	21	U	21	
100-42-5	Styrene	104.15	6.0	U	6.0	
75-25-2	Bromoform	252.75	6.0	U	6.0	
98-82-8	Cumene	120.19	6.0	U	6.0	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	6.0	U	6.0	
103-65-1	n-Propylbenzene	120.19	6.0	U	6.0	
622-96-8	4-Ethyltoluene	120.20	6.0	U	6.0	
108-67-8	1,3,5-Trimethylbenzene	120.20	6.0	U	6.0	
95-49-8	2-Chlorotoluene	126.59	6.0	U	6.0	
98-06-6	tert-Butylbenzene	134.22	6.0	U	6.0	
95-63-6	1,2,4-Trimethylbenzene	120.20	6.0	U	6.0	
135-98-8	sec-Butylbenzene	134.22	6.0	U	6.0	
99-87-6	4-Isopropyltoluene	134.22	6.0	U	6.0	
541-73-1	1,3-Dichlorobenzene	147.00	6.0	U	6.0	
106-46-7	1,4-Dichlorobenzene	147.00	6.0	U	6.0	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 DL Lab Sample ID: 200-30148-5 DL

Matrix: Air Lab File ID: 16229_20.D

Analysis Method: TO-15 Date Collected: 10/05/2015 14:28

Sample wt/vol: 20(mL) Date Analyzed: 10/14/2015 00:46

Soil Aliquot Vol: Dilution Factor: 30

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*6.0*	*U*	*6.0*	
104-51-8	*n-Butylbenzene*	*134.22*	*6.0*	*U*	*6.0*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*6.0*	*U*	*6.0*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*15*	*U*	*15*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*6.0*	*U*	*6.0*	
91-20-3	*Naphthalene*	*128.17*	*15*	*U*	*15*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 DL | Lab Sample ID: 200-30148-5 DL

Matrix: Air | Lab File ID: 16229_20.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 14:28

Sample wt/vol: 20(mL) | Date Analyzed: 10/14/2015 00:46

Soil Aliquot Vol: | Dilution Factor: 30

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	74	U	74	
75-45-6	Freon 22	86.47	53	U	53	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	42	U	42	
74-87-3	Chloromethane	50.49	31	U	31	
106-97-8	n-Butane	58.12	36	U	36	
75-01-4	Vinyl chloride	62.50	15	U	15	
106-99-0	1,3-Butadiene	54.09	13	U	13	
74-83-9	Bromomethane	94.94	23	U	23	
75-00-3	Chloroethane	64.52	40	U	40	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	26	U	26	
75-69-4	Trichlorofluoromethane	137.37	34	U	34	
76-13-1	Freon TF	187.38	46	U	46	
75-35-4	1,1-Dichloroethene	96.94	24	U	24	
67-64-1	Acetone	58.08	1700	D	360	
67-63-0	Isopropyl alcohol	60.10	370	U	370	
75-15-0	Carbon disulfide	76.14	47	U	47	
107-05-1	3-Chloropropene	76.53	47	U	47	
75-09-2	Methylene Chloride	84.93	52	U	52	
75-65-0	tert-Butyl alcohol	74.12	450	U	450	
1634-04-4	Methyl tert-butyl ether	88.15	22	U	22	
156-60-5	trans-1,2-Dichloroethene	96.94	24	U	24	
110-54-3	n-Hexane	86.17	21	U	21	
75-34-3	1,1-Dichloroethane	98.96	24	U	24	
78-93-3	Methyl Ethyl Ketone	72.11	44	U	44	
156-59-2	cis-1,2-Dichloroethene	96.94	24	U	24	
540-59-0	1,2-Dichloroethene, Total	96.94	48	U	48	
67-66-3	Chloroform	119.38	29	U	29	
109-99-9	Tetrahydrofuran	72.11	440	U	440	
71-55-6	1,1,1-Trichloroethane	133.41	33	U	33	
110-82-7	Cyclohexane	84.16	21	U	21	
56-23-5	Carbon tetrachloride	153.81	38	U	38	
540-84-1	2,2,4-Trimethylpentane	114.23	28	U	28	
71-43-2	Benzene	78.11	19	U	19	
107-06-2	1,2-Dichloroethane	98.96	24	U	24	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 DL | Lab Sample ID: 200-30148-5 DL

Matrix: Air | Lab File ID: 16229_20.D

Analysis Method: TO-15 | Date Collected: 10/05/2015 14:28

Sample wt/vol: 20(mL) | Date Analyzed: 10/14/2015 00:46

Soil Aliquot Vol: | Dilution Factor: 30

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 95422 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	25	U	25	
79-01-6	Trichloroethene	131.39	32	U	32	
80-62-6	Methyl methacrylate	100.12	61	U	61	
78-87-5	1,2-Dichloropropane	112.99	28	U	28	
123-91-1	1,4-Dioxane	88.11	540	U	540	
75-27-4	Bromodichloromethane	163.83	40	U	40	
10061-01-5	cis-1,3-Dichloropropene	110.97	27	U	27	
108-10-1	methyl isobutyl ketone	100.16	61	U	61	
108-88-3	Toluene	92.14	23	U	23	
10061-02-6	trans-1,3-Dichloropropene	110.97	27	U	27	
79-00-5	1,1,2-Trichloroethane	133.41	33	U	33	
127-18-4	Tetrachloroethene	165.83	41	U	41	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	61	U	61	
124-48-1	Dibromochloromethane	208.29	51	U	51	
106-93-4	1,2-Dibromoethane	187.87	46	U	46	
108-90-7	Chlorobenzene	112.56	28	U	28	
100-41-4	Ethylbenzene	106.17	26	U	26	
179601-23-1	m,p-Xylene	106.17	65	U	65	
95-47-6	Xylene, o-	106.17	26	U	26	
1330-20-7	Xylene (total)	106.17	91	U	91	
100-42-5	Styrene	104.15	26	U	26	
75-25-2	Bromoform	252.75	62	U	62	
98-82-8	Cumene	120.19	29	U	29	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	41	U	41	
103-65-1	n-Propylbenzene	120.19	29	U	29	
622-96-8	4-Ethyltoluene	120.20	29	U	29	
108-67-8	1,3,5-Trimethylbenzene	120.20	29	U	29	
95-49-8	2-Chlorotoluene	126.59	31	U	31	
98-06-6	tert-Butylbenzene	134.22	33	U	33	
95-63-6	1,2,4-Trimethylbenzene	120.20	29	U	29	
135-98-8	sec-Butylbenzene	134.22	33	U	33	
99-87-6	4-Isopropyltoluene	134.22	33	U	33	
541-73-1	1,3-Dichlorobenzene	147.00	36	U	36	
106-46-7	1,4-Dichlorobenzene	147.00	36	U	36	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 DL Lab Sample ID: 200-30148-5 DL

Matrix: Air Lab File ID: 16229_20.D

Analysis Method: TO-15 Date Collected: 10/05/2015 14:28

Sample wt/vol: 20(mL) Date Analyzed: 10/14/2015 00:46

Soil Aliquot Vol: Dilution Factor: 30

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	*Benzyl chloride*	*126.58*	*31*	*U*	*31*	
104-51-8	*n-Butylbenzene*	*134.22*	*33*	*U*	*33*	
95-50-1	*1,2-Dichlorobenzene*	*147.00*	*36*	*U*	*36*	
120-82-1	*1,2,4-Trichlorobenzene*	*181.45*	*110*	*U*	*110*	
87-68-3	*Hexachlorobutadiene*	*260.76*	*64*	*U*	*64*	
91-20-3	*Naphthalene*	*128.17*	*79*	*U*	*79*	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: SV-5 DL Lab Sample ID: 200-30148-5 DL

Matrix: Air Lab File ID: 16229_20.D

Analysis Method: TO-15 Date Collected: 10/05/2015 14:28

Sample wt/vol: 20(mL) Date Analyzed: 10/14/2015 00:46

Soil Aliquot Vol: Dilution Factor: 30

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 1 TIC Result Total: 39

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown	23.27	39	D J

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_20.D
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Sample Type: Client
Inject. Date: 14-Oct-2015 00:46:30 ALS Bottle#: 13 Worklist Smp#: 20
Purge Vol: 200.000 mL Dil. Factor: 30.0000
Sample Info: 200-0016229-020
Misc. Info.: 30148-5
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 08:08:40 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 14-Oct-2015 08:08:40

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
2 Dichlorodifluoromethane	85	3.177	3.177	0.000	98	6583	0.1925	
3 Chlorodifluoromethane	51		3.231				ND	
4 1,2-Dichloro-1,1,2,2-tetra	85		3.445				ND	
5 Chloromethane	50		3.579				ND	
6 Butane	43		3.777				ND	
7 Vinyl chloride	62		3.819				ND	
8 Butadiene	54		3.894				ND	
9 Bromomethane	94		4.563				ND	
10 Chloroethane	64		4.793				ND	
12 Vinyl bromide	106		5.167				ND	
13 Trichlorofluoromethane	101	5.253	5.264	-0.011	32	3090	0.0819	
18 1,1,2-Trichloro-1,2,2-trif	101		6.307				ND	
20 1,1-Dichloroethene	96		6.355				ND	
21 Acetone	43	6.617	6.623	-0.006	88	360847	23.5	
22 Carbon disulfide	76		6.751				ND	
23 Isopropyl alcohol	45	7.110	6.949	0.161	97	2235	0.1533	
24 3-Chloro-1-propene	41		7.125				ND	
26 Methylene Chloride	49	7.409	7.414	-0.005	77	2014	0.1555	
28 2-Methyl-2-propanol	59	7.880	7.735	0.145	99	8076	0.3456	
29 Methyl tert-butyl ether	73		7.837				ND	
30 trans-1,2-Dichloroethene	61		7.842				ND	
32 Hexane	57		8.211				ND	
33 1,1-Dichloroethane	63		8.714				ND	
35 cis-1,2-Dichloroethene	96		9.822				ND	
36 2-Butanone (MEK)	72	9.988	9.881	0.107	83	2668	0.3268	
S 38 1,2-Dichloroethene, Total	61		10.000				ND	
* 40 Chlorobromomethane	128	10.282	10.287	-0.005	73	175772	10.0	
39 Tetrahydrofuran	42		10.314				ND	
41 Chloroform	83		10.416				ND	
42 Cyclohexane	84		10.656				ND	
43 1,1,1-Trichloroethane	97		10.694				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
44 Carbon tetrachloride	117		10.934				ND	
45 Isooctane	57		11.373				ND	
46 Benzene	78	11.405	11.416	-0.011	39	2333	0.0409	
47 1,2-Dichloroethane	62		11.609				ND	
48 n-Heptane	43	11.748	11.764	-0.016	48	1933	0.0702	
* 50 1,4-Difluorobenzene	114	12.256	12.267	-0.011	91	977700	10.0	
52 Trichloroethene	95		12.748				ND	
53 1,2-Dichloropropane	63		13.336				ND	
54 Methyl methacrylate	69		13.502				ND	
55 1,4-Dioxane	88		13.588				ND	
57 Dichlorobromomethane	83		13.909				ND	
58 cis-1,3-Dichloropropene	75		14.872				ND	
61 4-Methyl-2-pentanone (MIBK	43		15.198				ND	
62 Toluene	92	15.476	15.482	-0.006	91	9375	0.1862	
67 trans-1,3-Dichloropropene	75		16.097				ND	
68 1,1,2-Trichloroethane	83		16.487				ND	
69 Tetrachloroethene	166		16.584				ND	
70 2-Hexanone	43	17.012	16.958	0.054	93	1693	0.0453	
71 Chlorodibromomethane	129		17.269				ND	
72 Ethylene Dibromide	107		17.547				ND	
* 73 Chlorobenzene-d5	117	18.446	18.451	-0.005	81	988946	10.0	
74 Chlorobenzene	112		18.510				ND	
75 Ethylbenzene	91	18.654	18.654	0.000	93	5716	0.0527	
77 m-Xylene & p-Xylene	106	18.895	18.906	-0.011	98	8659	0.1891	
78 o-Xylene	106	19.713	19.719	-0.006	96	3309	0.0731	
79 Styrene	104		19.772				ND	
S 80 Xylenes, Total	106				0		0.2623	
81 Bromoform	173		20.179				ND	
82 Isopropylbenzene	105		20.355				ND	
85 1,1,2,2-Tetrachloroethane	83		20.981				ND	
86 N-Propylbenzene	91	21.035	21.040	-0.005	96	2732	0.0182	
89 4-Ethyltoluene	105	21.217	21.217	0.000	96	4222	0.0324	
90 2-Chlorotoluene	91		21.238				ND	
91 1,3,5-Trimethylbenzene	105		21.318				ND	
93 tert-Butylbenzene	119		21.789				ND	
94 1,2,4-Trimethylbenzene	105	21.875	21.880	-0.005	96	8123	0.0753	
95 sec-Butylbenzene	105		22.105				ND	
96 4-Isopropyltoluene	119		22.297				ND	
97 1,3-Dichlorobenzene	146		22.345				ND	
98 1,4-Dichlorobenzene	146		22.484				ND	
99 Benzyl chloride	91		22.688				ND	
101 n-Butylbenzene	91		22.886				ND	
102 1,2-Dichlorobenzene	146		23.041				ND	
104 1,2,4-Trichlorobenzene	180		25.673				ND	
105 Hexachlorobutadiene	225		25.855				ND	
106 Naphthalene	128		26.197				ND	

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

TestAmerica Burlington
Tentatively Identified Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_20.D				
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Sample Type:	Client				
Inject. Date:	14-Oct-2015 00:46:30	ALS Bottle#:	13	Worklist Smp#:	20
Purge Vol:	200.000 mL	Dil. Factor:	30.0000		
Sample Info:	200-0016229-020				
Misc. Info.:	30148-5				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	14-Oct-2015 08:08:40	Calib Date:	17-Aug-2015 23:52:30		
Tic RT Window:	0.000 -0.000	Response:	area		
Quant By:	Nearest ISTD	Quant LOD:	10.00000		
MS Library:	\\ChromNA\Burlington\Database\NIST14.L				
Min. Match:	1				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK013				
First Level Reviewer: desjardinsb		Date:	14-Oct-2015 08:08:40		

Tentative Identified Compound Results

RT	Area	Amount ppb v/v	Quant Cpnd	Qual	Lib Entry	Molecular Formula	Mol. Weight	Flags
	Unknown							
23.271	413837	1.29	83	0	0		0	

Quantitation Compounds

Compound	RT	Area	Amount ppb v/v
* 83 4-Bromofluorobenzene	20.714	3211282	10.0

QC Flag Legend

Processing Flags

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

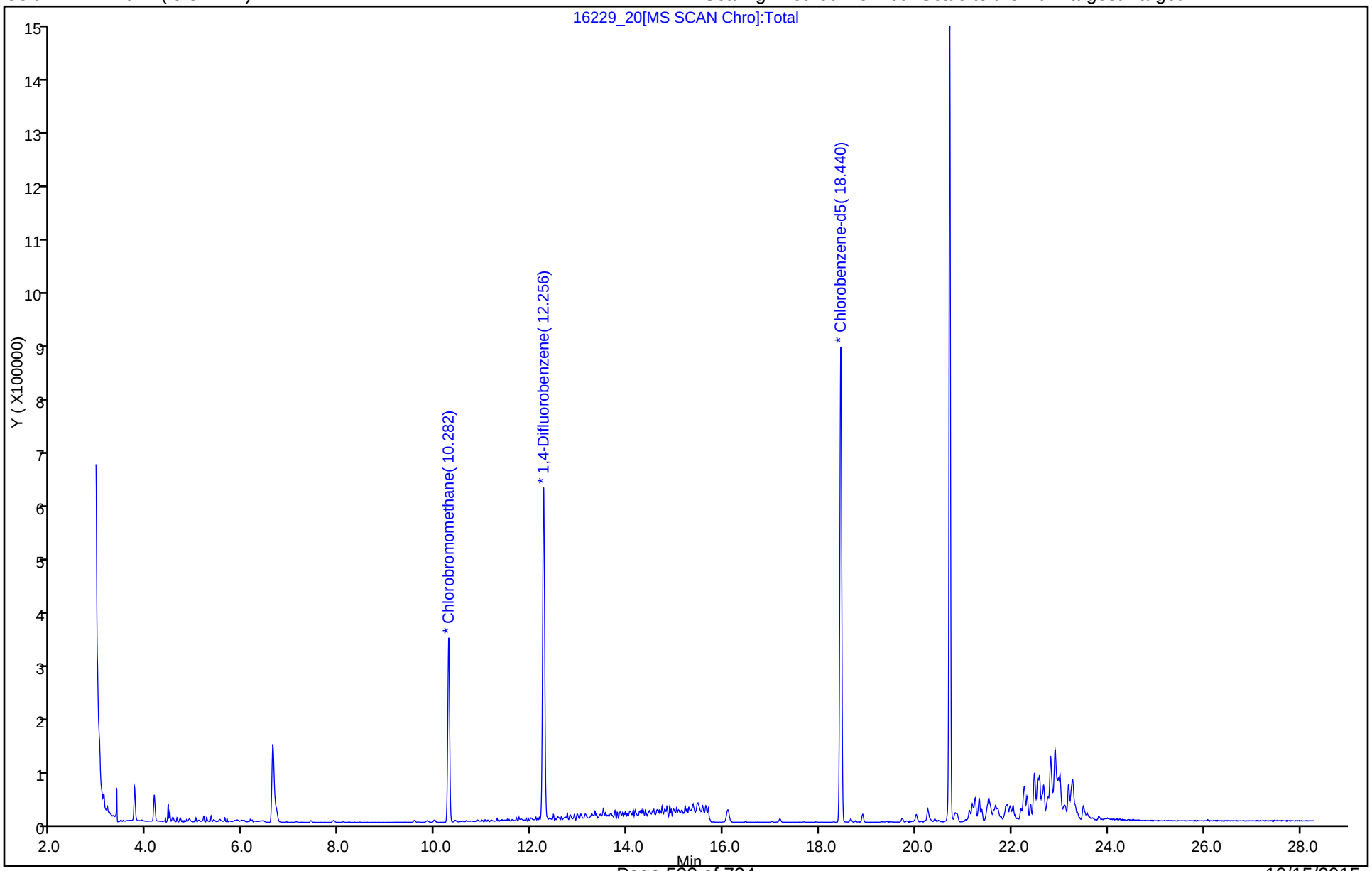
Report Date: 14-Oct-2015 08:08:40 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_20.D

Injection Date:	14-Oct-2015 00:46:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5	Worklist Smp#:	20
Client ID:	SV-5				
Purge Vol:	200.000 mL	Dil. Factor:	30.0000	ALS Bottle#:	13
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

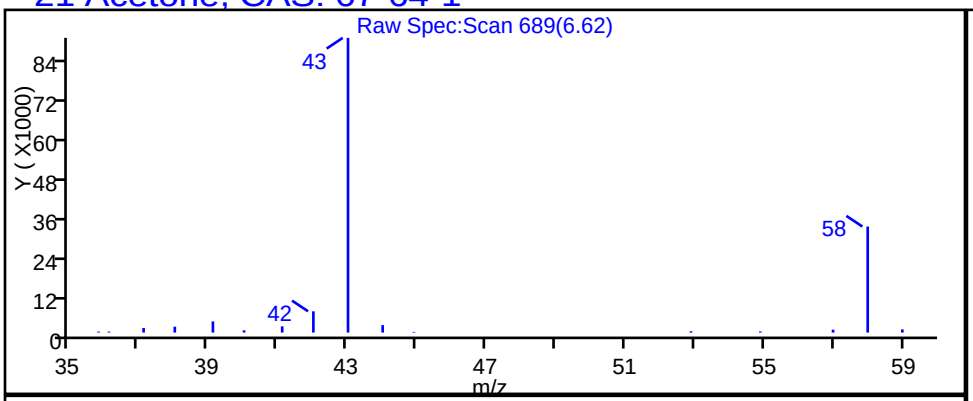
Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1

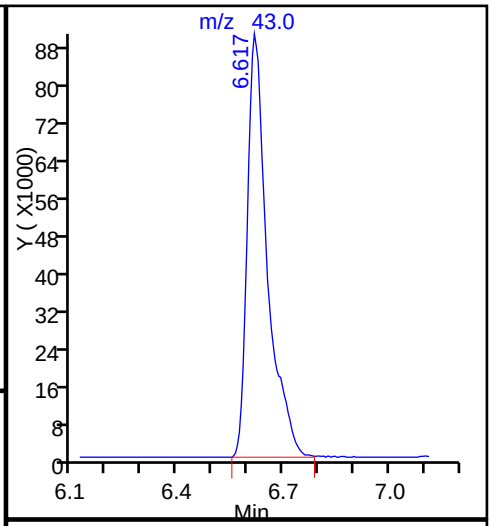


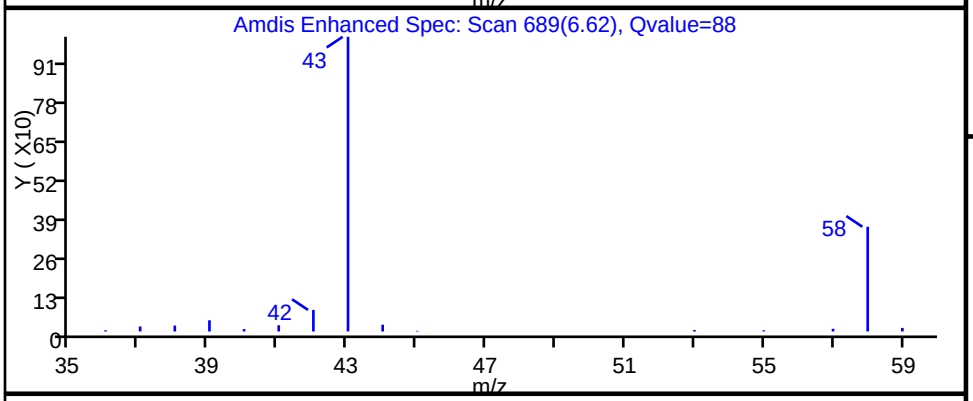
TestAmerica Burlington

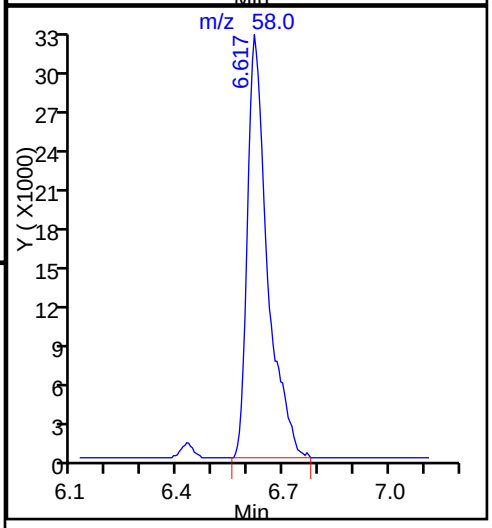
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_20.D				
Injection Date:	14-Oct-2015 00:46:30	Instrument ID:	CHX.i		
Lims ID:	200-30148-A-5	Lab Sample ID:	200-30148-5		
Client ID:	SV-5				
Operator ID:	wrd	ALS Bottle#:	13	Worklist Smp#:	20
Purge Vol:	200.000 mL	Dil. Factor:	30.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

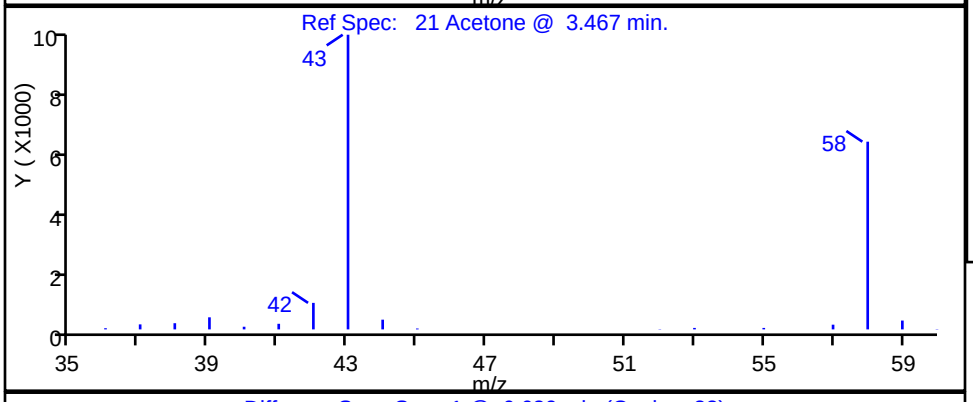
21 Acetone, CAS: 67-64-1

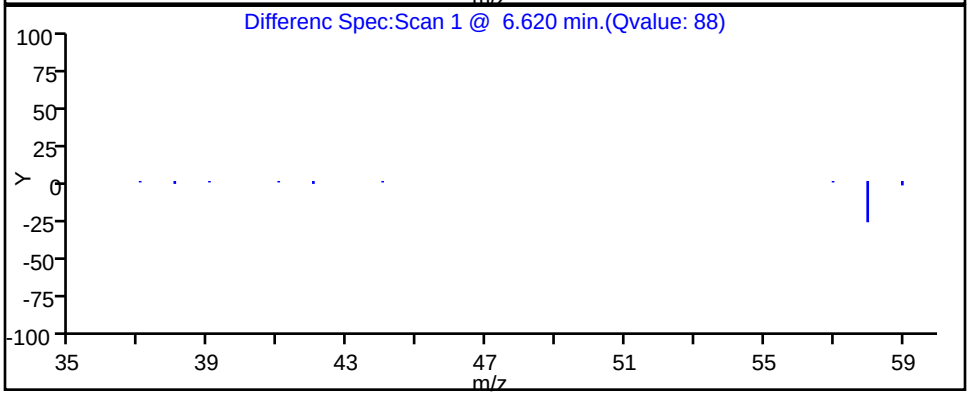








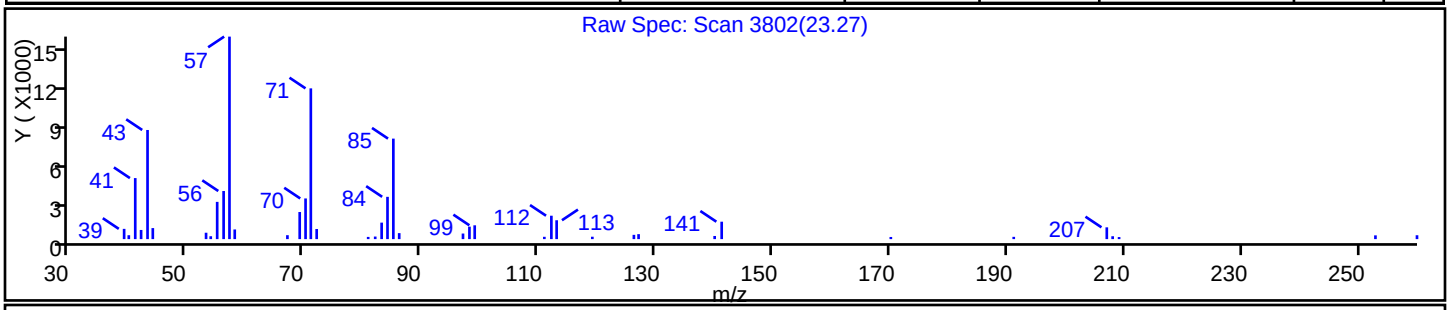


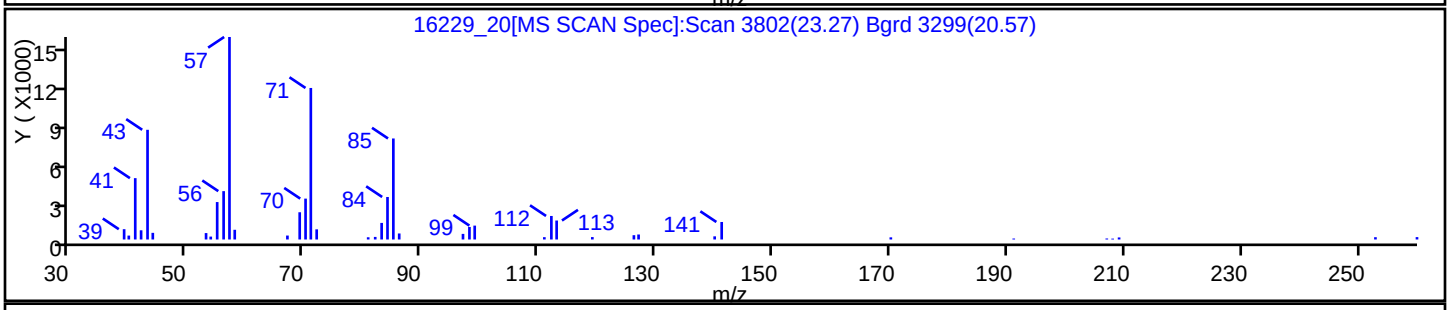


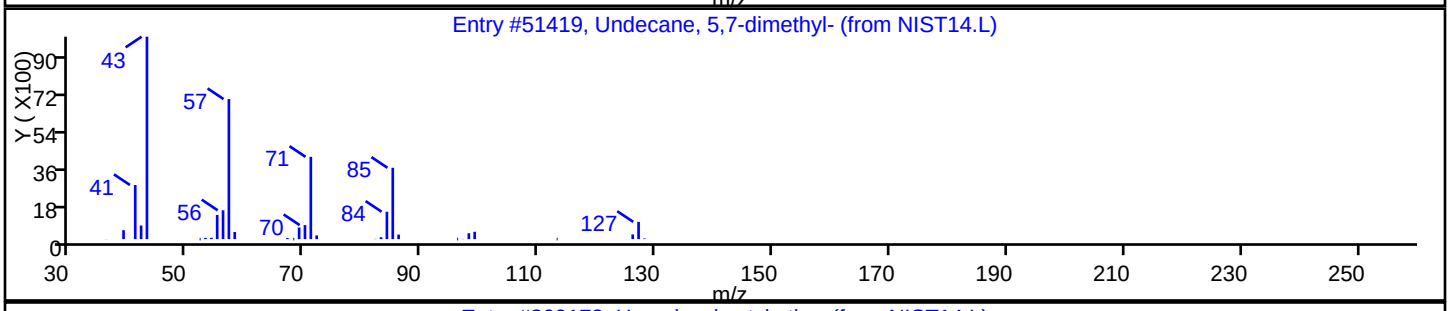
TestAmerica Burlington

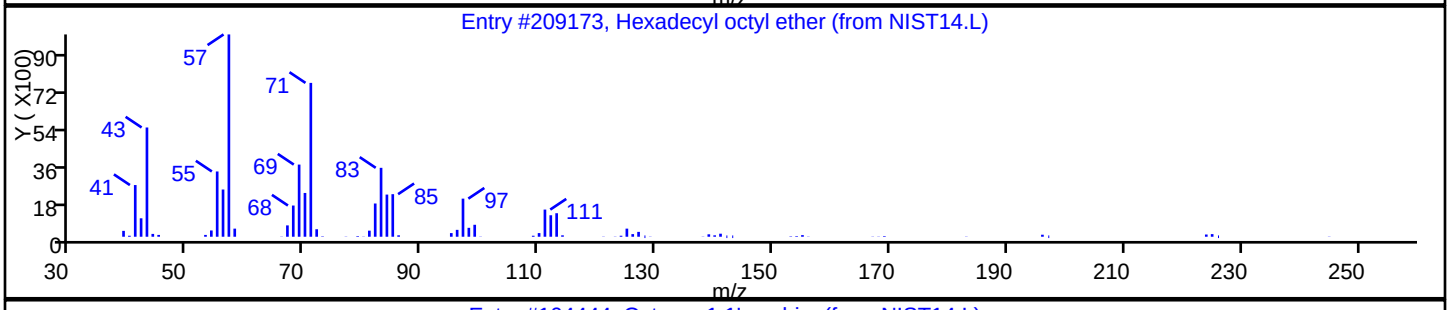
Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_20.D
Injection Date: 14-Oct-2015 00:46:30 Instrument ID: CHX.i
Lims ID: 200-30148-A-5 Lab Sample ID: 200-30148-5
Client ID: SV-5
Operator ID: wrd ALS Bottle#: 13 Worklist Smp#: 20
Purge Vol: 200.000 mL Dil. Factor: 30.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: Detector MS SCAN

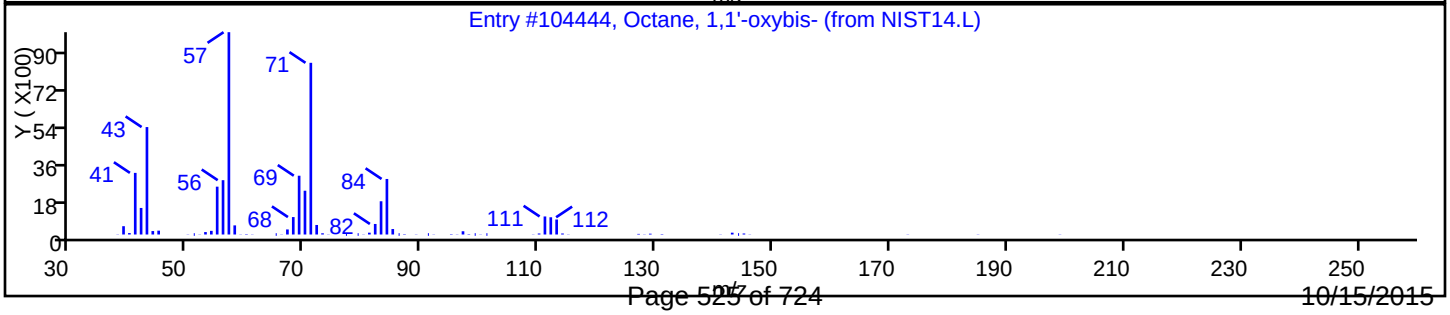
Library Search Compound Match	CAS#	Library	Entry	Formula	Weight	Q
Unknown						
Undecane, 5,7-dimethyl-	17312-83-3	NIST14.L	51419	C13H28	184	72
Hexadecyl octyl ether	1000406-38-6	NIST14.L	209173	C24H50O	354	72
Octane, 1,1'-oxybis-	629-82-3	NIST14.L	104444	C16H34O	242	72











FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-92823/4	15313_04.D
Level 2	IC 200-92823/5	15313_05.D
Level 3	IC 200-92823/6	15313_06.D
Level 4	IC 200-92823/7	15313_07.D
Level 5	ICIS 200-92823/8	15313_08.D
Level 6	IC 200-92823/9	15313_09.D
Level 7	IC 200-92823/10	15313_10.D
Level 8	IC 200-92823/11	15313_11.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Propylene	+++++ 0.4217	+++++ 0.3861	+++++ 0.3746	0.4479	0.4467	Ave		0.4154				8.2		30.0			
Dichlorodifluoromethane	+++++ 1.9562	+++++ 1.8005	2.0724 1.8099	1.9718	2.0597	Ave		1.9451				6.1		30.0			
Freon 22	+++++ 0.9410	+++++ 0.8557	1.0308 0.8605	0.9525	1.0039	Ave		0.9407				7.7		30.0			
1,2-Dichlorotetrafluoroethane	+++++ 1.9844	2.0400 1.8229	2.0816 1.8362	1.9869	2.0916	Ave		1.9777				5.5		30.0			
Chloromethane	+++++ 0.5508	+++++ 0.4994	0.6023 0.5030	0.5512	0.5775	Ave		0.5474				7.4		30.0			
n-Butane	+++++ 0.8734	+++++ 0.7902	1.1420 0.7819	0.8761	0.9311	Ave		0.8991				14.7		30.0			
Vinyl chloride	0.5581 0.7177	0.7646 0.6507	0.7298 0.6553	0.7013	0.7448	Ave		0.6903				9.7		30.0			
1,3-Butadiene	+++++ 0.4961	0.5033 0.4509	0.5612 0.4522	0.4897	0.5172	Ave		0.4958				7.7		30.0			
Bromomethane	+++++ 0.7801	0.8013 0.7302	0.8346 0.7434	0.7722	0.8096	Ave		0.7816				4.7		30.0			
Chloroethane	+++++ 0.3505	+++++ 0.3215	0.3698 0.3273	0.3552	0.3673	Ave		0.3486				5.8		30.0			
Isopentane	+++++ 0.6007	0.8096 0.5414	0.7583 0.5449	0.6175	0.6326	Ave		0.6436				16.0		30.0			
Bromoethene(Vinyl Bromide)	+++++ 0.9084	0.9255 0.8384	0.9448 0.8566	0.8923	0.9492	Ave		0.9022				4.7		30.0			
Trichlorofluoromethane	+++++ 2.1493	2.2362 1.9805	2.2729 2.0076	2.1260	2.2453	Ave		2.1454				5.4		30.0			
n-Pentane	+++++ 1.0004	+++++ 0.9129	1.2363 0.9048	1.0239	1.0635	Ave		1.0236				11.9		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Ethanol	+++++ 0.2153	+++++ 0.1993	0.2086 0.1896	0.2564	0.2184	Ave		0.2146				10.7		30.0			
Ethyl ether	+++++ 0.4678	0.4216 0.4300	0.4611 0.4279	0.4617	0.4828	Ave		0.4504				5.2		30.0			
Acrolein	+++++ 0.2039	+++++ 0.1495	+++++ 0.0733	0.1874	0.2330	Ave		0.1694				36.4	*	30.0			
Freon TF	+++++ 1.7251	1.8538 1.5853	1.7882 1.6059	1.6847	1.7794	Ave		1.7175				5.7		30.0			
1,1-Dichloroethene	+++++ 0.8111	0.8057 0.7557	0.8391 0.7625	0.7969	0.8486	Ave		0.8028				4.4		30.0			
Acetone	+++++ 0.8945	+++++ 0.8691	+++++ 0.7725	0.9799	0.8602	Ave		0.8752				8.5		30.0			
Carbon disulfide	+++++ 2.0561	+++++ 1.9250	2.1426 1.9277	2.0418	2.1464	Ave		2.0399				4.8		30.0			
Isopropyl alcohol	+++++ 0.9015	+++++ 0.8445	+++++ 0.7980	0.8261	0.7772	Ave		0.8295				5.8		30.0			
3-Chloropropene	+++++ 0.6898	0.7607 0.6184	0.7406 0.5672	0.6548	0.7111	Ave		0.6775				10.1		30.0			
Acetonitrile	+++++ 0.4303	+++++ 0.3963	+++++ 0.3857	0.4481	0.4141	Ave		0.4149				6.1		30.0			
Methylene Chloride	+++++ 0.7001	+++++ 0.6428	0.9791 0.6297	0.7290	0.7416	Ave		0.7371				17.2		30.0			
tert-Butyl alcohol	+++++ 1.4245	+++++ 1.3250	+++++ 1.2854	1.3257	1.2875	Ave		1.3296				4.2		30.0			
Methyl tert-butyl ether	+++++ 2.2289	2.3168 2.0695	2.3239 2.0734	2.1930	2.3362	Ave		2.2202				5.2		30.0			
trans-1,2-Dichloroethene	+++++ 1.0293	1.0861 0.9475	1.0975 0.9441	1.0238	1.0883	Ave		1.0310				6.3		30.0			
Acrylonitrile	+++++ 0.4856	+++++ 0.4458	0.4987 0.4492	0.4896	0.5015	Ave		0.4784				5.2		30.0			
n-Hexane	+++++ 1.0634	1.2098 0.9715	1.2602 0.9725	1.0648	1.1212	Ave		1.0948				10.1		30.0			
1,1-Dichloroethane	1.5382 1.3849	1.3885 1.2679	1.4587 1.2764	1.3738	1.4475	Ave		1.3920				6.5		30.0			
Vinyl acetate	+++++ 1.6812	+++++ 1.5077	+++++ 1.5101	1.6852	1.7752	Ave		1.6319				7.3		30.0			
cis-1,2-Dichloroethene	+++++ 1.0202	1.0647 0.9430	1.0522 0.9562	0.9956	1.0590	Ave		1.0130				4.9		30.0			
Methyl Ethyl Ketone	+++++ 0.4413	+++++ 0.4131	0.6426 0.4061	0.4467	0.4371	Ave		0.4645				19.1		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Ethyl acetate	+++++ 0.0763	+++++ 0.0706	+++++ 0.0702	0.0734	0.0770	Ave		0.0735				4.3		30.0			
Tetrahydrofuran	+++++ 0.1456	+++++ 0.1387	+++++ 0.1368	0.1439	0.1473	Ave		0.1425				3.2		30.0			
Chloroform	+++++ 1.8556	1.9677 1.7173	1.9648 1.7285	1.8364	1.9374	Ave		1.8582				5.7		30.0			
Cyclohexane	+++++ 0.2503	0.2614 0.2414	0.2588 0.2423	0.2416	0.2563	Ave		0.2503				3.5		30.0			
1,1,1-Trichloroethane	+++++ 0.3672	0.3668 0.3531	0.3747 0.3590	0.3543	0.3770	Ave		0.3646				2.6		30.0			
Carbon tetrachloride	0.3526 0.4060	0.3676 0.3394	0.3802 0.3995	0.3772	0.4163	Ave		0.3798				7.0		30.0			
2,2,4-Trimethylpentane	+++++ 0.8394	0.8585 0.8064	0.8614 0.7969	0.8267	0.8661	Ave		0.8365				3.3		30.0			
Benzene	+++++ 0.5800	0.6142 0.5583	0.6179 0.5588	0.5650	0.5925	Ave		0.5838				4.3		30.0			
1,2-Dichloroethane	+++++ 0.2057	0.2124 0.1970	0.2101 0.1977	0.1998	0.2117	Ave		0.2049				3.3		30.0			
n-Heptane	+++++ 0.2782	0.2970 0.2631	0.3064 0.2589	0.2776	0.2909	Ave		0.2817				6.2		30.0			
n-Butanol	+++++ 0.1065	+++++ 0.1015	+++++ 0.1011	0.0934	0.0831	Ave		0.0971				9.4		30.0			
Trichloroethene	0.3441 0.2794	0.2994 0.2916	0.2963 0.2732	0.2670	0.3026	Ave		0.2942				8.1		30.0			
1,2-Dichloropropane	+++++ 0.2234	0.2240 0.2155	0.2260 0.2160	0.2183	0.2299	Ave		0.2219				2.4		30.0			
Methyl methacrylate	+++++ 0.2250	+++++ 0.2165	0.2229 0.2185	0.2157	0.2280	Ave		0.2211				2.2		30.0			
1,4-Dioxane	+++++ 0.1176	+++++ 0.1179	+++++ 0.1091	0.1077	0.0960	Ave		0.1097				8.2		30.0			
Dibromomethane	+++++ 0.3388	0.3994 0.3610	0.3784 0.3428	0.3179	0.3380	Ave		0.3538				7.8		30.0			
Bromodichloromethane	+++++ 0.4338	0.3914 0.4029	0.4077 0.4202	0.4152	0.4459	Ave		0.4167				4.5		30.0			
cis-1,3-Dichloropropene	+++++ 0.3553	0.3367 0.3450	0.3436 0.3491	0.3408	0.3671	Ave		0.3482				2.9		30.0			
methyl isobutyl ketone	+++++ 0.3868	+++++ 0.3668	0.3983 0.3610	0.3809	0.3961	Ave		0.3817				4.0		30.0			
Toluene	+++++ 0.5051	0.5341 0.4972	0.5296 0.4915	0.4901	0.5166	Ave		0.5092				3.5		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
n-Octane	+++++ 0.4270	0.4721 0.4004	0.4763 0.3858	0.4286	0.4460	Ave		0.4337				7.8		30.0			
trans-1,3-Dichloropropene	+++++ 0.3582	0.3895 0.3419	0.3985 0.3458	0.3417	0.3665	Ave		0.3631				6.4		30.0			
1,1,2-Trichloroethane	+++++ 0.2392	0.2492 0.2312	0.2406 0.2317	0.2283	0.2428	Ave		0.2376				3.1		30.0			
Tetrachloroethene	0.5710 0.5011	0.4954 0.4946	0.5091 0.5007	0.4736	0.5113	Ave		0.5071				5.6		30.0			
Methyl Butyl Ketone (2-Hexanone)	+++++ 0.3841	+++++ 0.3654	0.3897 0.3577	0.3804	0.3913	Ave		0.3781				3.6		30.0			
Dibromochloromethane	+++++ 0.5375	0.4313 0.4642	0.4293 0.5194	0.5012	0.5551	Ave		0.4912				10.3		30.0			
1,2-Dibromoethane	+++++ 0.4791	0.4546 0.4647	0.4653 0.4681	0.4535	0.4856	Ave		0.4673				2.5		30.0			
Chlorobenzene	+++++ 0.7297	0.7256 0.7132	0.7409 0.7191	0.7020	0.7447	Ave		0.7250				2.1		30.0			
Ethylbenzene	+++++ 1.1032	1.1096 1.0737	1.1265 1.0765	1.0662	1.1287	Ave		1.0978				2.3		30.0			
n-Nonane	+++++ 0.4676	0.4993 0.4478	0.5022 0.4373	0.4603	0.4843	Ave		0.4713				5.3		30.0			
m,p-Xylene	+++++ 0.4668	0.4714 0.4553	0.4656 0.4546	0.4504	0.4764	Ave		0.4629				2.1		30.0			
Xylene, o-	+++++ 0.4606	0.4648 0.4489	0.4655 0.4506	0.4419	0.4705	Ave		0.4575				2.3		30.0			
Styrene	+++++ 0.7256	0.7048 0.6961	0.7105 0.7162	0.7015	0.7438	Ave		0.7141				2.3		30.0			
Bromoform	+++++ 0.5560	0.3350 0.3882	0.3410 0.5041	0.4937	0.5955	Ave		0.4591				22.8		30.0			
Cumene	+++++ 1.3228	1.3259 1.2755	1.3199 1.2897	1.2647	1.3374	Ave		1.3051				2.2		30.0			
1,1,2,2-Tetrachloroethane	+++++ 0.6397	0.6338 0.5688	0.6221 0.6070	0.6139	0.6132	Ave		0.6141				3.8		30.0			
n-Propylbenzene	+++++ 1.5353	1.5493 1.4866	1.5448 1.4748	1.4868	1.5698	Ave		1.5211				2.5		30.0			
1,2,3-Trichloropropane	+++++ 0.4724	+++++ 0.4514	0.4989 0.4471	0.4578	0.4826	Ave		0.4684				4.3		30.0			
n-Decane	+++++ 0.6069	+++++ 0.5702	0.6512 0.5192	0.6006	0.6278	Ave		0.5960				7.8		30.0			
4-Ethyltoluene	+++++ 1.3381	1.3541 1.2907	1.3495 1.2618	1.2779	1.3605	Ave		1.3190				3.1		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
2-Chlorotoluene	+++++ 1.0354	1.0757 1.0002	1.0640 0.9864	1.0022	1.0587	Ave		1.0318				3.5		30.0			
1,3,5-Trimethylbenzene	+++++ 1.1059	1.1096 1.0703	1.1128 1.0341	1.0592	1.1288	Ave		1.0887				3.2		30.0			
Alpha Methyl Styrene	+++++ 0.6047	0.5522 0.5310	0.5708 0.5680	0.5710	0.6196	Ave		0.5739				5.2		30.0			
tert-Butylbenzene	+++++ 1.0994	1.1337 1.0613	1.1213 1.0105	1.0516	1.1174	Ave		1.0850				4.1		30.0			
1,2,4-Trimethylbenzene	+++++ 1.1128	1.1049 1.0775	1.1264 1.0182	1.0659	1.1340	Ave		1.0914				3.7		30.0			
sec-Butylbenzene	+++++ 1.6220	1.6031 1.5643	1.6414 1.4620	1.5637	1.6495	Ave		1.5866				4.1		30.0			
4-Isopropyltoluene	+++++ 1.4308	1.4178 1.3520	1.4261 1.3437	1.3613	1.4478	Ave		1.3971				3.1		30.0			
1,3-Dichlorobenzene	+++++ 0.8507	0.8559 0.8409	0.8573 0.7894	0.8132	0.8679	Ave		0.8393				3.3		30.0			
1,4-Dichlorobenzene	+++++ 0.8572	0.8741 0.8499	0.8638 0.7949	0.8290	0.8776	Ave		0.8495				3.4		30.0			
Benzyl chloride	+++++ 0.9506	0.8526 0.8276	0.8441 0.8771	0.8705	0.9975	Ave		0.8886				7.0		30.0			
n-Undecane	+++++ 0.6292	+++++ 0.5931	+++++ 0.5467	0.6360	0.6547	Ave		0.6119				7.0		30.0			
n-Butylbenzene	+++++ 1.1559	1.2884 1.0253	1.2600 1.1014	1.1698	1.2281	Ave		1.1756				7.9		30.0			
1,2-Dichlorobenzene	+++++ 0.8072	0.8192 0.7905	0.8151 0.7523	0.7657	0.8194	Ave		0.7956				3.4		30.0			
n-Dodecane	+++++ 0.5858	+++++ 0.5673	+++++ 0.3894	0.6344	0.6166	Ave		0.5587				17.6		30.0			
1,2,4-Trichlorobenzene	+++++ 0.7226	+++++ 0.7720	0.7348 0.7485	0.7000	0.7277	Ave		0.7342				3.3		30.0			
Hexachlorobutadiene	+++++ 0.6939	0.7003 0.6812	0.7237 0.6616	0.6426	0.6796	Ave		0.6833				3.9		30.0			
Naphthalene	+++++ 1.2948	+++++ 1.4968	1.2878 1.4524	1.3528	1.5517	Ave		1.4061				7.8		30.0			
1,2,3-Trichlorobenzene	+++++ 0.6764	0.6735 0.7170	0.6661 0.6369	0.6750	0.7061	Ave		0.6787				3.9		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-92823/4	15313_04.D
Level 2	IC 200-92823/5	15313_05.D
Level 3	IC 200-92823/6	15313_06.D
Level 4	IC 200-92823/7	15313_07.D
Level 5	ICIS 200-92823/8	15313_08.D
Level 6	IC 200-92823/9	15313_09.D
Level 7	IC 200-92823/10	15313_10.D
Level 8	IC 200-92823/11	15313_11.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Propylene	BCM	Ave	+++++ 115606	+++++ 147627	+++++ 293103	39568	79619	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Dichlorodifluoromethane	BCM	Ave	+++++ 536300	+++++ 688331	18447 1416178	174200	367128	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Freon 22	BCM	Ave	+++++ 257975	+++++ 327136	9175 673303	84151	178941	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,2-Dichlorotetrafluoroethane	BCM	Ave	+++++ 544022	7340 696918	18529 1436768	175537	372804	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chloromethane	BCM	Ave	+++++ 151010	+++++ 190924	5361 393541	48700	102928	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Butane	BCM	Ave	+++++ 239444	+++++ 302089	10165 611813	77403	165953	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Vinyl chloride	BCM	Ave	406 196764	2751 248778	6496 512756	61956	132763	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3-Butadiene	BCM	Ave	+++++ 135999	1811 172388	4995 353849	43265	92194	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromomethane	BCM	Ave	+++++ 213878	2883 279157	7429 581679	68219	144302	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chloroethane	BCM	Ave	+++++ 96102	+++++ 122905	3292 256075	31384	65465	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Isopentane	BCM	Ave	+++++ 164678	2913 206973	6750 426323	54555	112761	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromoethene(Vinyl Bromide)	BCM	Ave	+++++ 249053	3330 320535	8410 670234	78834	169183	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Trichlorofluoromethane	BCM	Ave	+++++ 589227	8046 757146	20232 1570842	187826	400212	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Pentane	BCM	Ave	+++++ 274252	+++++ 348993	11005 707953	90462	189558	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Ethanol	BCM	Ave	+++++ 78878	+++++ 152414	18594 370809	45333	58425	+++++ 20.0	+++++ 40.0	5.01 100.0	9.99	15.0

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Ethyl ether	BCM	Ave	+++++ 128246	1517 164407	4104 334842	40793	86055	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acrolein	BCM	Ave	+++++ 55901	+++++ 57144	+++++ 57386	16554	41527	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Freon TF	BCM	Ave	+++++ 472941	6670 606055	15917 1256523	148836	317169	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1-Dichloroethene	BCM	Ave	+++++ 222376	2899 288899	7469 596610	70402	151254	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acetone	BCM	Ave	+++++ 245235	+++++ 332279	+++++ 604454	86571	153320	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Carbon disulfide	BCM	Ave	+++++ 563694	+++++ 735941	19072 1508299	180387	382581	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Isopropyl alcohol	BCM	Ave	+++++ 247161	+++++ 322857	+++++ 624384	72980	138526	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
3-Chloropropene	BCM	Ave	+++++ 189105	2737 236424	6592 443769	57849	126757	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acetonitrile	BCM	Ave	+++++ 117962	+++++ 151523	+++++ 301814	39587	73804	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Methylene Chloride	BCM	Ave	+++++ 191942	+++++ 245762	8715 492671	64407	132185	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
tert-Butyl alcohol	BCM	Ave	+++++ 390536	+++++ 506551	+++++ 1005737	117126	229496	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Methyl tert-butyl ether	BCM	Ave	+++++ 611053	8336 791200	20686 1622319	193747	416407	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
trans-1,2-Dichloroethene	BCM	Ave	+++++ 282198	3908 362220	9769 738694	90452	193989	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acrylonitrile	BCM	Ave	+++++ 133120	+++++ 170432	4439 351437	43254	89386	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Hexane	BCM	Ave	+++++ 291527	4353 371423	11217 760933	94069	199848	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1-Dichloroethane	BCM	Ave	1119 379683	4996 484720	12984 998726	121376	258006	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Vinyl acetate	BCM	Ave	+++++ 460901	+++++ 576389	+++++ 1181596	148881	316412	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
cis-1,2-Dichloroethene	BCM	Ave	+++++ 279699	3831 360505	9366 748190	87958	188750	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Methyl Ethyl Ketone	BCM	Ave	+++++ 120992	+++++ 157943	5720 317730	39469	77903	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Ethyl acetate	BCM	Ave	+++++ 20908	+++++ 26996	+++++ 54940	6481	13732	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Tetrahydrofuran	DFB	Ave	+++++ 213592	+++++ 271947	+++++ 550582	69181	142545	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Chloroform	BCM	Ave	+++++ 508708	7080 656531	17489 1352467	162241	345321	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Cyclohexane	DFB	Ave	+++++ 367117	5156 473473	12595 974894	116145	247969	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,1-Trichloroethane	DFB	Ave	+++++ 538511	7236 692478	18231 1444367	170319	364721	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Carbon tetrachloride	DFB	Ave	1411 595426	7250 665674	18498 1607404	181327	402821	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
2,2,4-Trimethylpentane	DFB	Ave	+++++ 1231099	16933 1581525	41917 3206482	397447	838004	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Benzene	DFB	Ave	+++++ 850668	12116 1094952	30066 2248333	271621	573241	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichloroethane	DFB	Ave	+++++ 301746	4190 386358	10225 795366	96043	204801	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Heptane	DFB	Ave	+++++ 408033	5858 515909	14909 1041893	133436	281469	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Butanol	DFB	Ave	+++++ 156227	+++++ 199142	+++++ 406800	44914	80367	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Trichloroethene	DFB	Ave	1377 409861	5905 571789	14420 1099379	128372	292790	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichloropropane	DFB	Ave	+++++ 327591	4419 422687	10996 869152	104929	222412	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Methyl methacrylate	DFB	Ave	+++++ 329938	+++++ 424575	10846 879348	103716	220565	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,4-Dioxane	DFB	Ave	+++++ 172495	+++++ 231199	+++++ 438987	51754	92901	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Dibromomethane	DFB	Ave	+++++ 496840	7879 707881	18413 1379467	152819	327060	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromodichloromethane	DFB	Ave	+++++ 636254	7721 790218	19837 1690582	199622	431391	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
cis-1,3-Dichloropropene	DFB	Ave	+++++ 521087	6642 676517	16721 1404582	163830	355200	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
methyl isobutyl ketone	DFB	Ave	+++++ 567275	+++++ 719425	19380 1452676	183126	383249	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Toluene	CBZ	Ave	+++++ 727136	10378 957398	25278 1950494	231255	489691	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Octane	DFB	Ave	+++++ 626206	9312 785212	23178 1552346	206063	431541	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
trans-1,3-Dichloropropene	DFB	Ave	+++++ 525377	7682 670483	19391 1391292	164265	354582	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,2-Trichloroethane	CBZ	Ave	+++++ 344310	4842 445240	11485 919569	107712	230143	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Tetrachloroethene	CBZ	Ave	2234 721350	9626 952351	24300 1986893	223437	484640	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Methyl Butyl Ketone (2-Hexanone)	CBZ	Ave	+++++ 552940	+++++ 703504	18600 1419344	179506	370855	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Dibromochloromethane	CBZ	Ave	+++++ 773759	8380 893824	20490 2061192	236482	526159	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dibromoethane	CBZ	Ave	+++++ 689606	8833 894793	22207 1857346	213957	460295	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chlorobenzene	CBZ	Ave	+++++ 1050334	14098 1373195	35363 2853671	331246	705853	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Ethylbenzene	CBZ	Ave	+++++ 1587982	21560 2067415	53766 4271792	503072	1069819	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Nonane	CBZ	Ave	+++++ 673141	9701 862327	23969 1735272	217187	459000	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
m,p-Xylene	CBZ	Ave	+++++ 1343786	18319 1753357	44443 3608247	424990	903046	+++++ 30.0	0.400 40.0	1.00 80.0	9.99	20.0
Xylene, o-	CBZ	Ave	+++++ 663048	9032 864306	22217 1787948	208525	445933	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Styrene	CBZ	Ave	+++++ 1044542	13694 1340404	33909 2842089	330977	704947	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromoform	CBZ	Ave	+++++ 800301	6509 747541	16277 2000470	232957	564392	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Cumene	CBZ	Ave	+++++ 1904124	25764 2455967	62997 5117881	596746	1267613	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,2,2-Tetrachloroethane	CBZ	Ave	+++++ 920841	12316 1095183	29690 2408856	289659	581197	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Propylbenzene	CBZ	Ave	+++++ 2210049	30105 2862524	73727 5852479	701499	1487902	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2,3-Trichloropropane	CBZ	Ave	+++++ 680056	+++++ 869202	23812 1774249	216002	457424	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Decane	CBZ	Ave	+++++ 873541	+++++ 1097936	31078 2060487	283369	595025	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
4-Ethyltoluene	CBZ	Ave	+++++ 1926124	26312 2485215	64410 5007218	602938	1289537	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
2-Chlorotoluene	CBZ	Ave	+++++ 1490410	20902 1925859	50782 3914379	472878	1003429	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3,5-Trimethylbenzene	CBZ	Ave	+++++ 1591961	21561 2060828	53113 4103368	499768	1069946	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Alpha Methyl Styrene	CBZ	Ave	+++++ 870386	10730 1022373	27241 2253838	269421	587298	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
tert-Butylbenzene	CBZ	Ave	+++++ 1582555	22029 2043539	53515 4010081	496200	1059064	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-30148-1 Analy Batch No.: 92823

SDG No.: 200-30148

Instrument ID: CHX.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/17/2015 18:04 Calibration End Date: 08/17/2015 23:52 Calibration ID: 31716

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
1,2,4-Trimethylbenzene	CBZ	Ave	+++++ 1601792	21469 2074788	53761 4040427	502925	1074809	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
sec-Butylbenzene	CBZ	Ave	+++++ 2334756	31149 3012184	78341 5801638	737805	1563449	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
4-Isopropyltoluene	CBZ	Ave	+++++ 2059610	27549 2603395	68063 5332076	642290	1372257	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3-Dichlorobenzene	CBZ	Ave	+++++ 1224566	16631 1619152	40915 3132687	383696	822626	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,4-Dichlorobenzene	CBZ	Ave	+++++ 1233878	16984 1636540	41228 3154352	391164	831794	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Benzyl chloride	CBZ	Ave	+++++ 1368379	16566 1593524	40288 3480432	410726	945439	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Undecane	CBZ	Ave	+++++ 905738	+++++ 1142006	+++++ 2169541	300072	620516	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
n-Butylbenzene	CBZ	Ave	+++++ 1663811	25035 1974285	60138 4370458	551929	1164033	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichlorobenzene	CBZ	Ave	+++++ 1161892	15918 1522188	38902 2985410	361270	776660	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Dodecane	CBZ	Ave	+++++ 843183	+++++ 1092276	+++++ 1545129	299345	584392	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
1,2,4-Trichlorobenzene	CBZ	Ave	+++++ 1040101	+++++ 1486418	35069 2970105	330266	689770	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Hexachlorobutadiene	CBZ	Ave	+++++ 998827	13607 1311617	34540 2625229	303192	644122	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Naphthalene	CBZ	Ave	+++++ 1863786	+++++ 2882160	61461 5763656	638299	1470735	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,2,3-Trichlorobenzene	CBZ	Ave	+++++ 973583	13086 1380654	31792 2527390	318508	669275	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

Curve Type Legend:
Ave = Average ISTD

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_04.D
Lims ID: ic
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 17-Aug-2015 18:04:30 ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-004
Misc. Info.: ic-01
Operator ID: pad Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:24 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 09:13:22

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.097	3.092	0.005	72	1904	0.0401	0.2526	
2 Dichlorodifluoromethane	85	3.167	3.161	0.006	95	1706	0.0401	0.0483	
3 Chlorodifluoromethane	51	3.220	3.209	0.011	96	727	0.0401	0.0426	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.429	3.423	0.006	86	1688	0.0401	0.0470	
5 Chloromethane	50	3.568	3.563	0.005	86	522	0.0401	0.0526	
6 Butane	43	3.761	3.755	0.006	92	792	0.0401	0.0485	
7 Vinyl chloride	62	3.809	3.803	0.006	91	406	0.0401	0.0324	M
8 Butadiene	54	3.889	3.878	0.011	78	403	0.0401	0.0448	
9 Bromomethane	94	4.547	4.547	0.000	89	716	0.0401	0.0505	
10 Chloroethane	64		4.777				ND	ND	
11 2-Methylbutane	43	4.831	4.841	-0.010	27	423	0.0401	0.0362	
12 Vinyl bromide	106	5.157	5.157	0.000	94	644	0.0401	0.0393	
13 Trichlorofluoromethane	101	5.259	5.248	0.011	92	1788	0.0401	0.0459	
14 Pentane	43	5.387	5.376	0.011	40	976	0.0401	0.0525	
15 Ethanol	45	5.826	5.804	0.022	0	127	0.0802	0.0326	
16 Ethyl ether	59		5.895				ND	ND	
17 Acrolein	56		6.280				ND	ND	
18 1,1,2-Trichloro-1,2,2-trif	101	6.291	6.286	0.005	89	1267	0.0401	0.0407	
20 1,1-Dichloroethene	96	6.339	6.344	-0.005	86	556	0.0401	0.0382	
21 Acetone	43	6.617	6.585	0.032	86	6178	0.0401	0.3890	
22 Carbon disulfide	76	6.746	6.740	0.006	98	2116	0.0401	0.0572	
23 Isopropyl alcohol	45	6.928	6.863	0.065	96	962	0.0401	0.0639	
24 3-Chloro-1-propene	41	7.110	7.115	-0.005	1	256	0.0401	0.0208	
25 Acetonitrile	41		7.265				ND	ND	
26 Methylene Chloride	49	7.415	7.409	0.006	79	1458	0.0401	0.1090	
28 2-Methyl-2-propanol	59	7.730	7.639	0.091	91	1219	0.0401	0.0505	
29 Methyl tert-butyl ether	73	7.864	7.800	0.064	33	1895	0.0401	0.0470	
30 trans-1,2-Dichloroethene	61	7.837	7.837	0.000	78	819	0.0401	0.0438	
31 Acrylonitrile	53	8.019	8.003	0.016	11	165	0.0401	0.0190	
32 Hexane	57	8.212	8.201	0.011	55	680	0.0401	0.0342	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.709	8.709	0.000	3	1119	0.0401	0.0443	M
34 Vinyl acetate	43	8.773	8.773	0.000	98	1348	0.0401	0.0455	
35 cis-1,2-Dichloroethene	96	9.806	9.816	-0.010	92	606	0.0401	0.0330	
36 2-Butanone (MEK)	72	9.897	9.865	0.032	96	652	0.0401	0.0774	
37 Ethyl acetate	88		9.897				ND	ND	
S 38 1,2-Dichloroethene, Total	61				0		0.0802	0.0767	
* 40 Chlorobromomethane	128	10.282	10.282	0.000	77	181467	10.0	10.0	
39 Tetrahydrofuran	42	10.346	10.287	0.059	74	612	0.0401	0.0430	
41 Chloroform	83	10.410	10.410	0.000	80	1745	0.0401	0.0517	
42 Cyclohexane	84	10.662	10.656	0.006	57	636	0.0401	0.0255	
43 1,1,1-Trichloroethane	97	10.683	10.688	-0.005	50	1071	0.0401	0.0294	
44 Carbon tetrachloride	117	10.929	10.934	-0.005	87	1411	0.0401	0.0372	
45 Isooctane	57		11.362				ND	ND	
46 Benzene	78	11.411	11.416	-0.005	1	1563	0.0401	0.0268	
47 1,2-Dichloroethane	62		11.609				ND	ND	
48 n-Heptane	43	11.748	11.753	-0.005	20	1374	0.0401	0.0489	
* 50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	93	998265	10.0	10.0	
51 n-Butanol	56		12.668				ND	ND	
52 Trichloroethene	95	12.743	12.743	0.000	88	1377	0.0401	0.0469	M
53 1,2-Dichloropropane	63		13.336				ND	ND	
54 Methyl methacrylate	69		13.492				ND	ND	
55 1,4-Dioxane	88	13.626	13.567	0.059	44	1120	0.0401	0.1023	
56 Dibromomethane	174	13.610	13.609	0.001	86	1534	0.0401	0.0434	
57 Dichlorobromomethane	83	13.909	13.909	0.000	91	1663	0.0401	0.0400	
58 cis-1,3-Dichloropropene	75	14.877	14.877	0.000	1	1018	0.0401	0.0293	
A 59 Total Hydrocarbons	1	14.971	(3.054-26.887)		0	756084	NC	NC	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	756084	0.0401	14.9	
61 4-Methyl-2-pentanone (MIBK	43	15.209	15.177	0.032	91	1847	0.0401	0.0485	
A 63 Toluene Range	1		(15.472-15.492)				NC	ND	
62 Toluene	92	15.477	15.482	-0.005	92	2483	0.0401	0.0500	
A 65 GRO	1	15.514	(15.514-15.514)		0	13651	0.0401	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.514	15.514	0.000	76	2181	0.0401	0.0504	
67 trans-1,3-Dichloropropene	75	16.102	16.102	0.000	88	1470	0.0401	0.0406	
68 1,1,2-Trichloroethane	83		16.487				ND	ND	
69 Tetrachloroethene	166	16.584	16.589	-0.005	81	2234	0.0401	0.0451	M
70 2-Hexanone	43	16.974	16.942	0.032	94	1338	0.0401	0.0363	
71 Chlorodibromomethane	129	17.269	17.269	0.000	88	1689	0.0401	0.0352	
72 Ethylene Dibromide	107	17.547	17.552	-0.005	94	1830	0.0401	0.0401	
* 73 Chlorobenzene-d5	117	18.456	18.456	0.000	82	975999	10.0	10.0	
74 Chlorobenzene	112	18.515	18.520	-0.005	82	3603	0.0401	0.0509	
75 Ethylbenzene	91	18.654	18.659	-0.005	93	5546	0.0401	0.0518	
76 n-Nonane	57	18.756	18.761	-0.005	88	2199	0.0401	0.0478	
77 m-Xylene & p-Xylene	106	18.916	18.911	0.005	97	4088	0.0802	0.0905	
78 o-Xylene	106	19.719	19.729	-0.010	92	1993	0.0401	0.0446	
79 Styrene	104	19.778	19.778	0.000	92	2384	0.0401	0.0342	
S 80 Xylenes, Total	106				0		0.1203	0.1351	
81 Bromoform	173	20.190	20.189	0.001	87	1346	0.0401	0.0300	
82 Isopropylbenzene	105	20.366	20.361	0.005	92	6153	0.0401	0.0483	
* 83 4-Bromofluorobenzene	95	20.719	20.724	-0.005	98	658976	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.981	20.992	-0.011	96	2854	0.0401	0.0476	
86 N-Propylbenzene	91	21.046	21.045	0.001	99	6953	0.0401	0.0468	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.083	21.088	-0.005	93	2835	0.0401	0.0620	
88 n-Decane	57	21.190	21.190	0.000	83	3004	0.0401	0.0516	
89 4-Ethyltoluene	105	21.228	21.227	0.001	98	6154	0.0401	0.0478	
90 2-Chlorotoluene	91	21.244	21.243	0.001	85	5021	0.0401	0.0499	
91 1,3,5-Trimethylbenzene	105	21.324	21.324	0.000	92	5141	0.0401	0.0484	
92 Alpha Methyl Styrene	118	21.688	21.682	0.006	83	836	0.0401	0.0149	
93 tert-Butylbenzene	119	21.795	21.800	-0.005	95	5083	0.0401	0.0480	
94 1,2,4-Trimethylbenzene	105	21.891	21.891	0.000	94	5028	0.0401	0.0472	
95 sec-Butylbenzene	105	22.110	22.110	0.000	97	7298	0.0401	0.0471	
96 4-Isopropyltoluene	119	22.308	22.308	0.000	96	6434	0.0401	0.0472	
97 1,3-Dichlorobenzene	146	22.351	22.356	-0.005	94	4160	0.0401	0.0508	
98 1,4-Dichlorobenzene	146	22.495	22.495	0.000	95	4031	0.0401	0.0486	
99 Benzyl chloride	91	22.699	22.698	0.001	94	2572	0.0401	0.0297	
100 Undecane	57	22.902	22.896	0.006	74	2768	0.0401	0.0463	
101 n-Butylbenzene	91	22.897	22.902	-0.005	95	5461	0.0401	0.0476	
102 1,2-Dichlorobenzene	146	23.052	23.052	0.000	95	4028	0.0401	0.0519	
103 Dodecane	57	24.550	24.549	0.001	35	1882	0.0401	0.0345	
104 1,2,4-Trichlorobenzene	180	25.689	25.689	0.000	89	3413	0.0401	0.0476	
105 Hexachlorobutadiene	225	25.871	25.871	0.000	94	3338	0.0401	0.0501	
106 Naphthalene	128	26.219	26.219	0.000	98	6367	0.0401	0.0464	
107 1,2,3-Trichlorobenzene	180	26.727	26.727	0.000	94	3084	0.0401	0.0466	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Review Flags

M - Manually Integrated

Reagents:

ATTO15CAL1w_00142	Amount Added:	40.00	Units: mL	
ATTO15GIS_00009	Amount Added:	20.00	Units: mL	Run Reagent

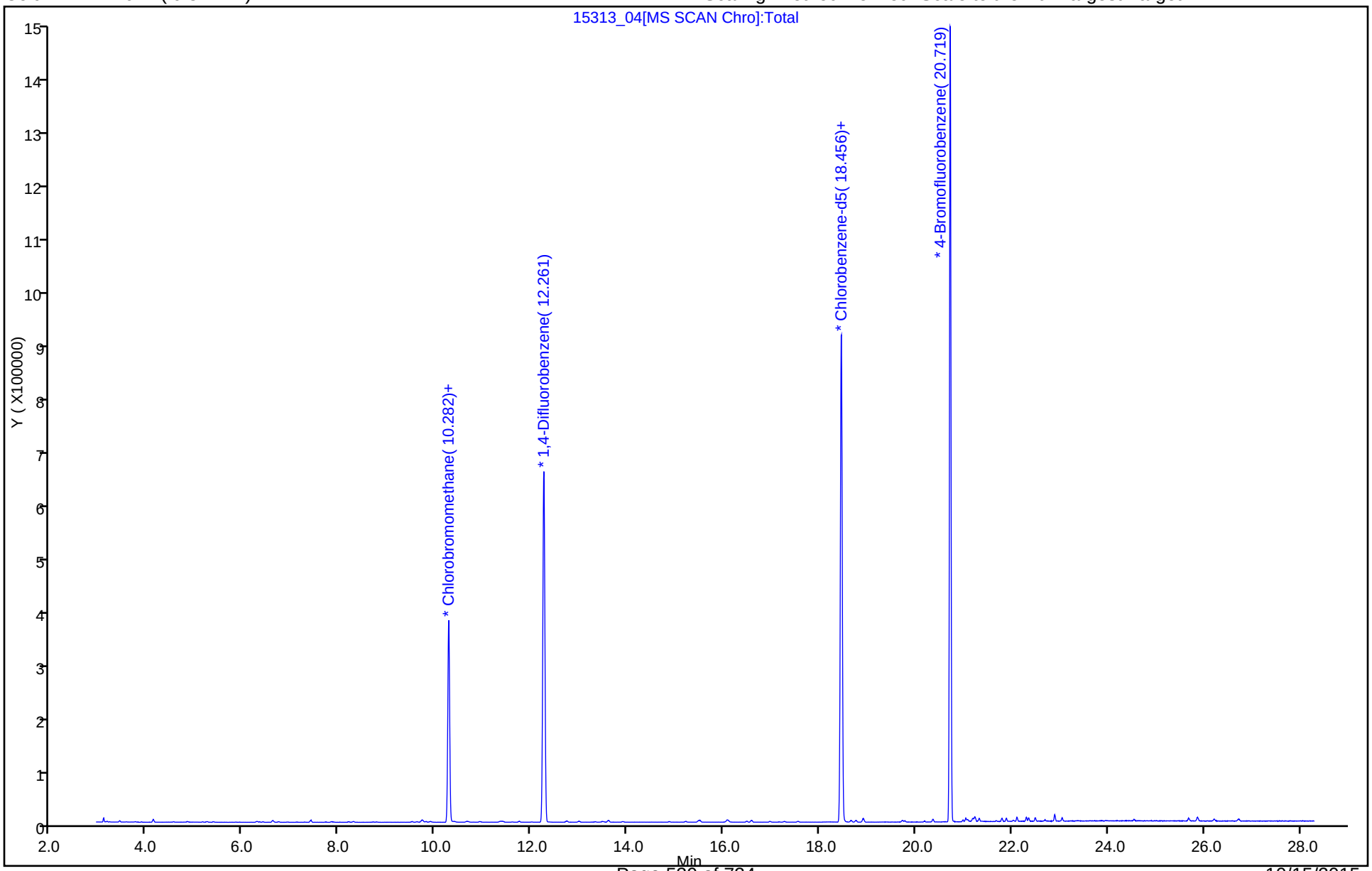
Report Date: 18-Aug-2015 11:12:24 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_04.D

Injection Date:	17-Aug-2015 18:04:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	ic			Worklist Smp#:	4
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Manual Integration/User Assign Peak Report

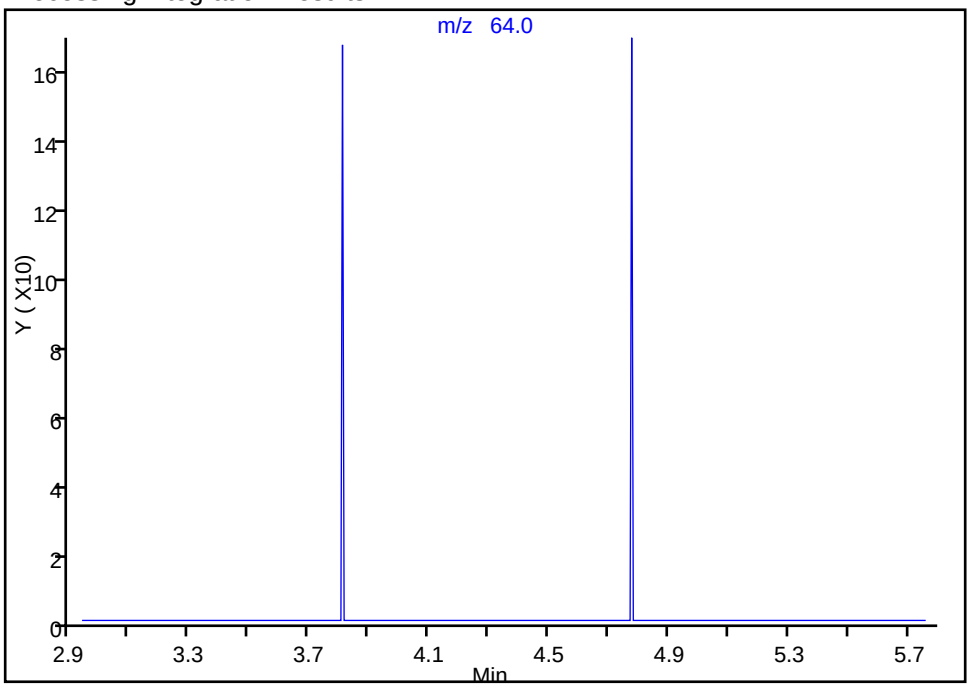
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_04.D
Injection Date: 17-Aug-2015 18:04:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

7 Vinyl chloride, CAS: 75-01-4

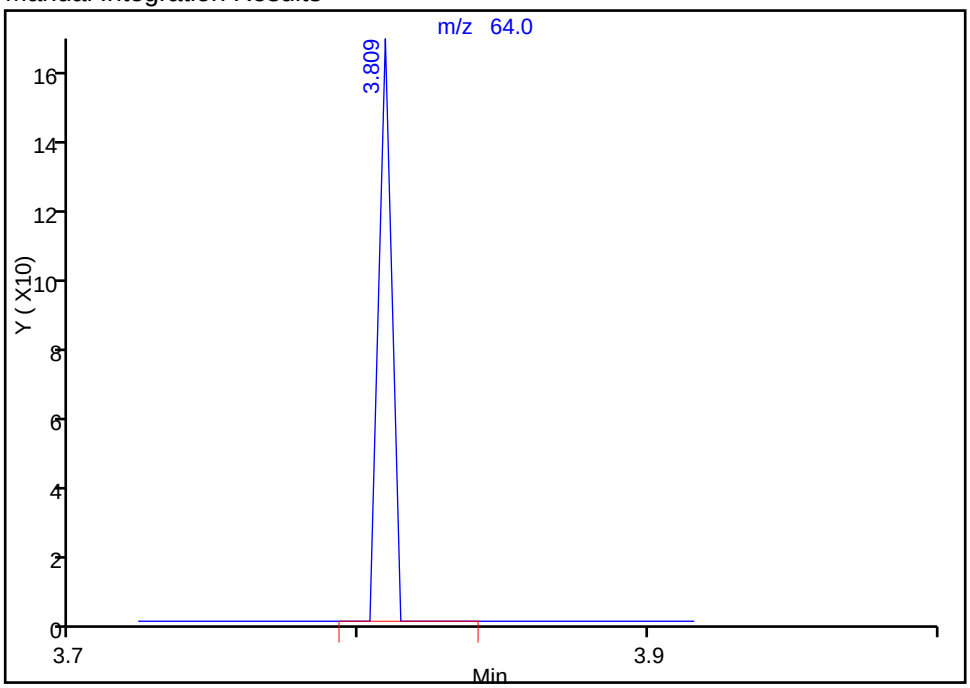
Processing Integration Results

RT: 3.76
Area: 0
Amount: 0.032411
Amount Units: ppb v/v



Manual Integration Results

RT: 3.81
Area: 52
Amount: 0.032411
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:13:22
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

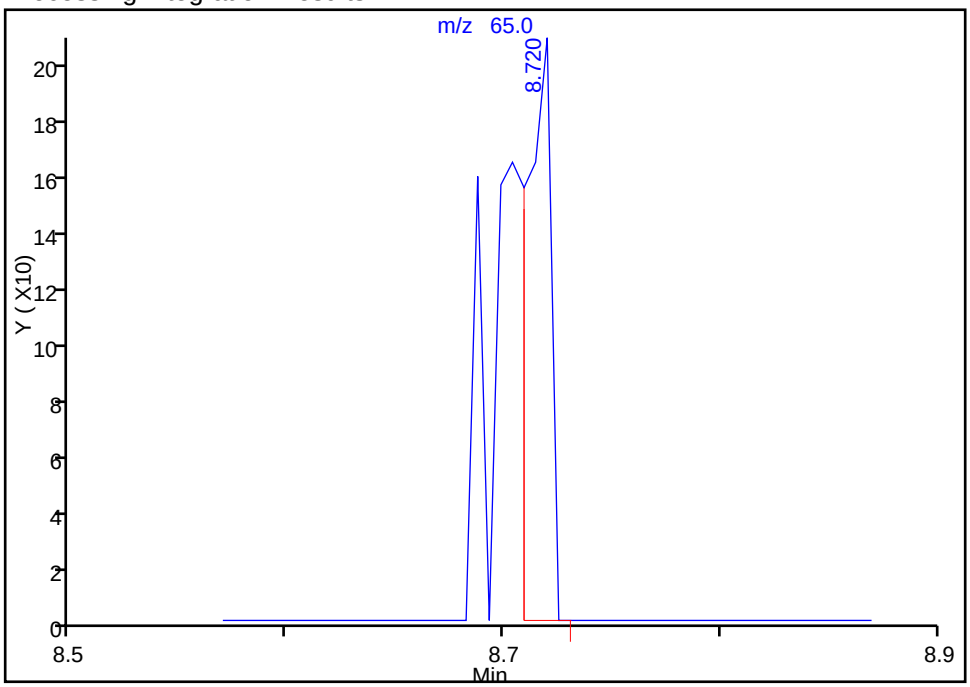
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_04.D
Injection Date: 17-Aug-2015 18:04:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

33 1,1-Dichloroethane, CAS: 75-34-3

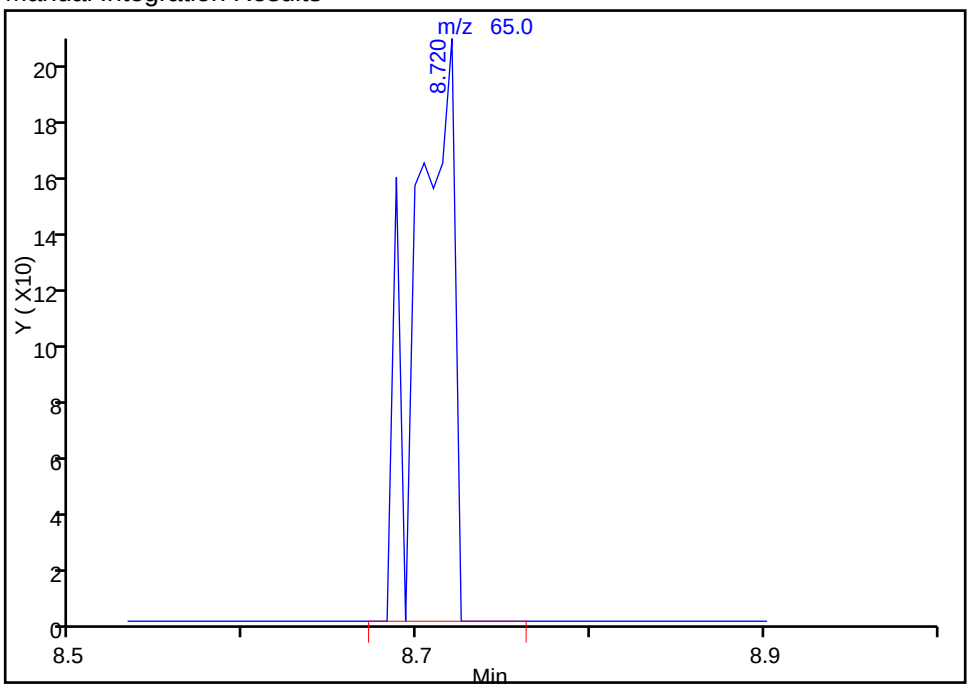
Processing Integration Results

RT: 8.72
Area: 167
Amount: 0.044299
Amount Units: ppb v/v



Manual Integration Results

RT: 8.72
Area: 319
Amount: 0.044299
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:13:22
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

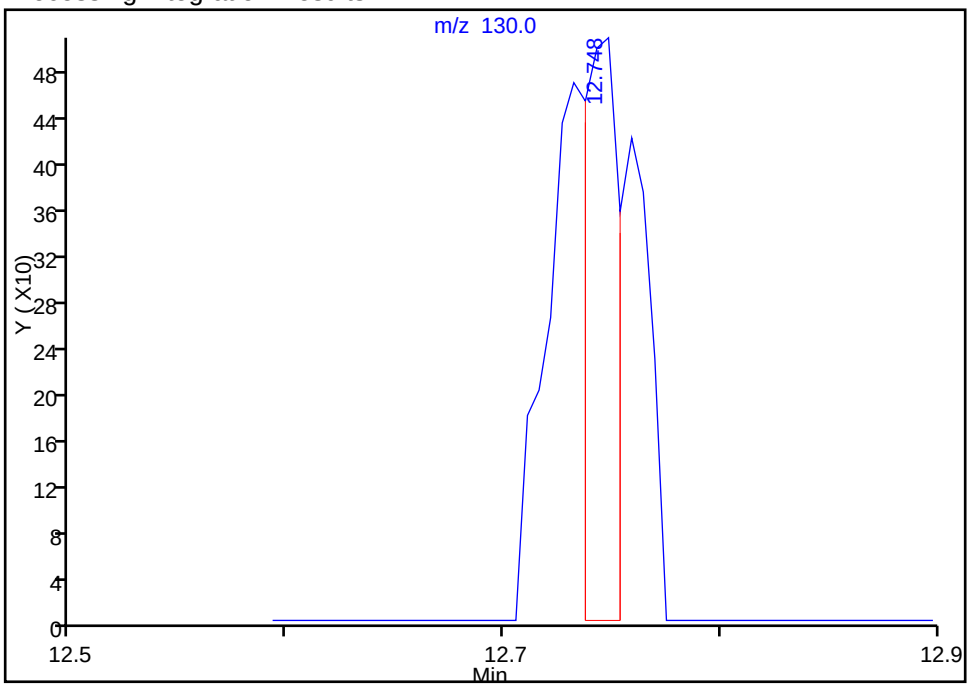
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_04.D
Injection Date: 17-Aug-2015 18:04:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

52 Trichloroethene, CAS: 79-01-6

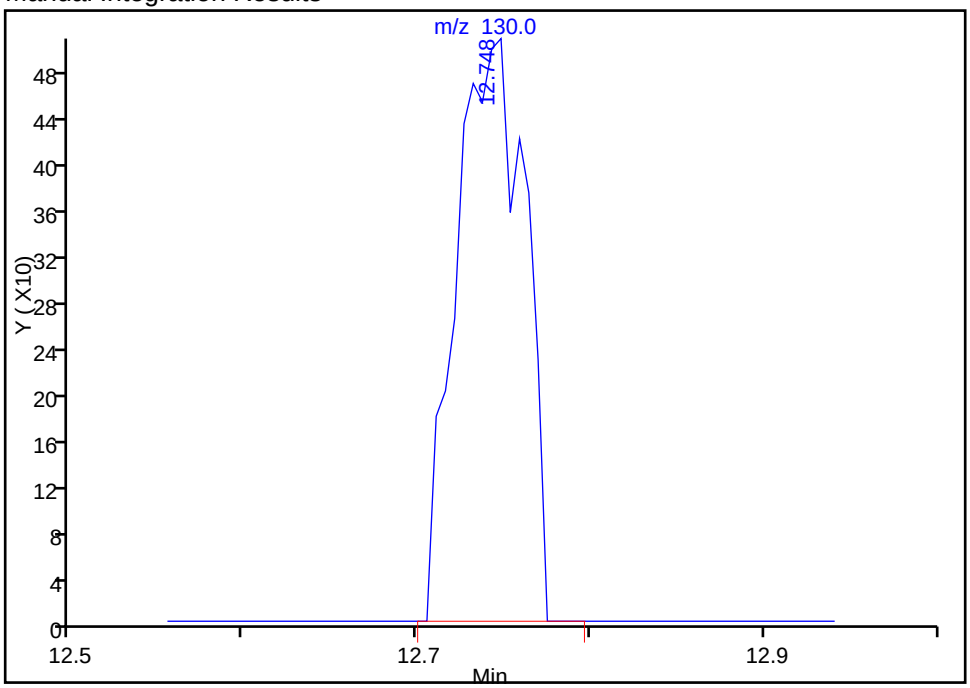
Processing Integration Results

RT: 12.75
Area: 581
Amount: 0.046885
Amount Units: ppb v/v



Manual Integration Results

RT: 12.75
Area: 1402
Amount: 0.046885
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:13:22
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

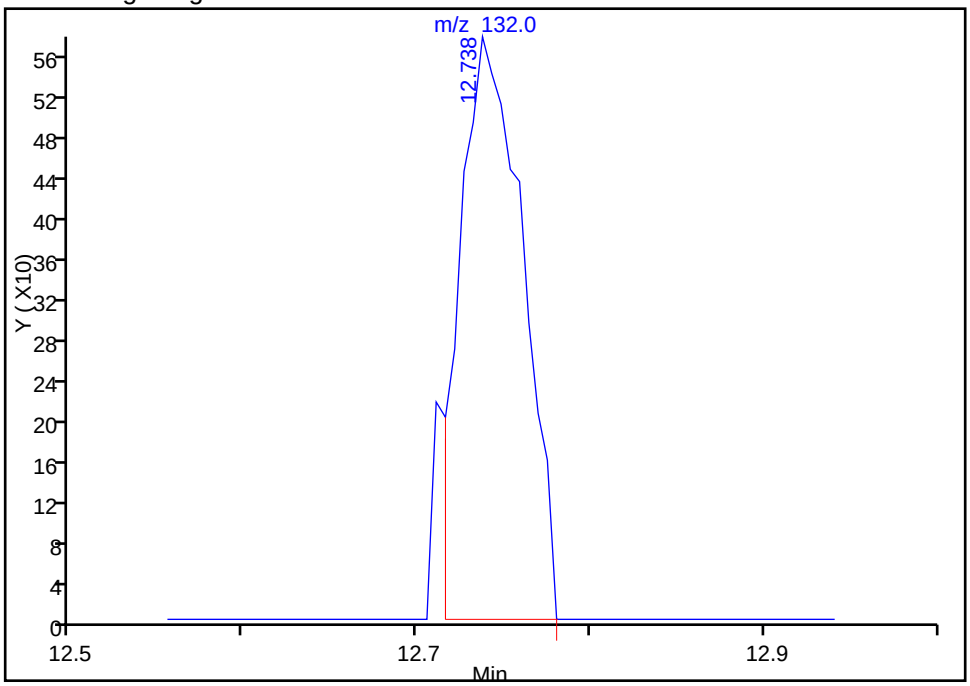
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_04.D
Injection Date: 17-Aug-2015 18:04:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

52 Trichloroethene, CAS: 79-01-6

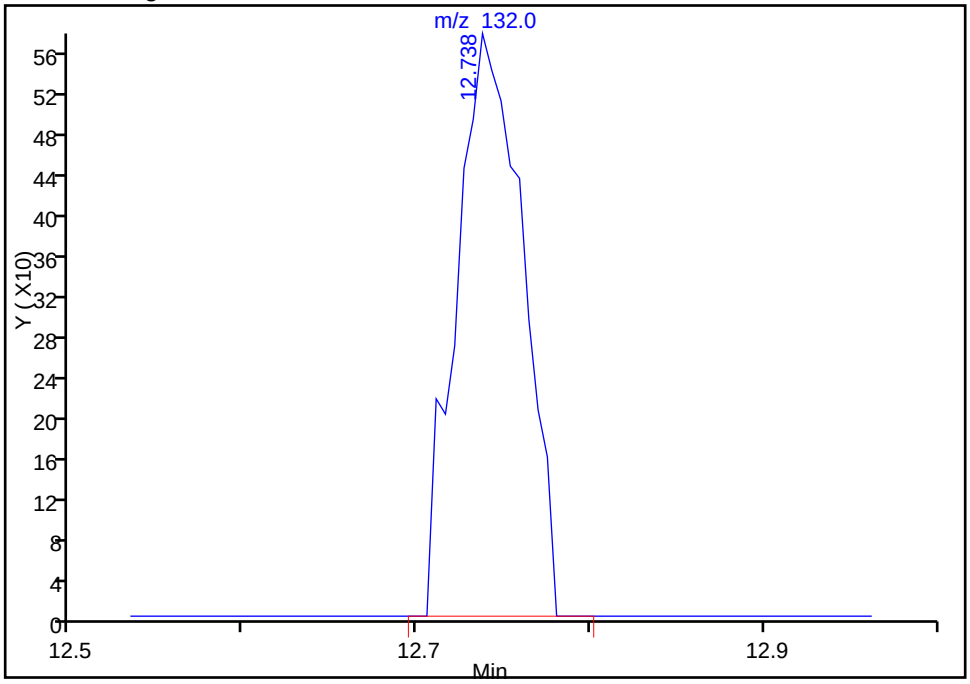
Processing Integration Results

RT: 12.74
Area: 1450
Amount: 0.046885
Amount Units: ppb v/v



Manual Integration Results

RT: 12.74
Area: 1519
Amount: 0.046885
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:13:22
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

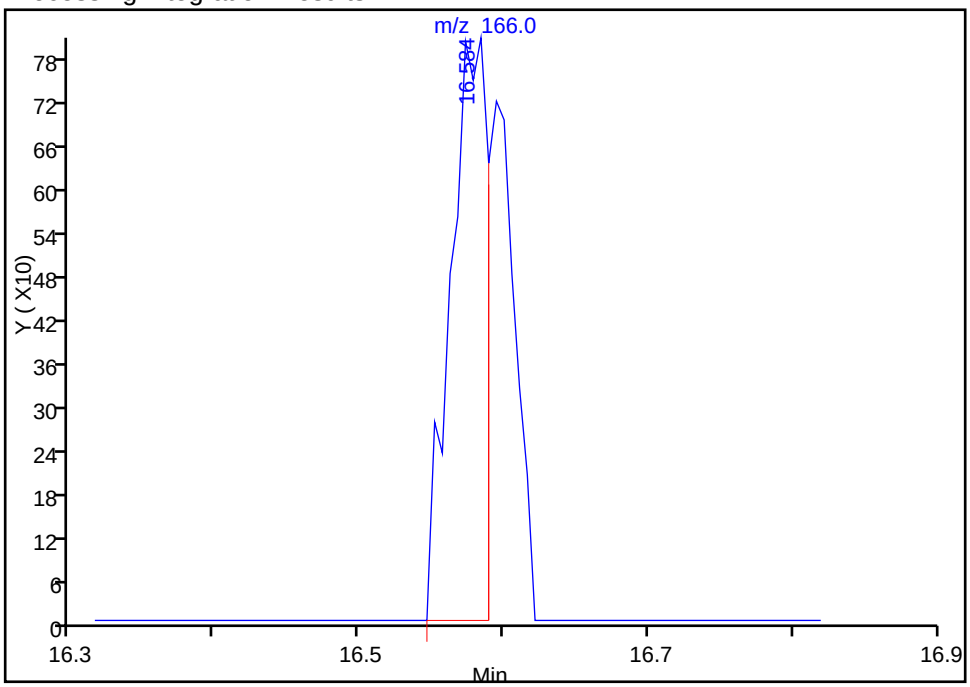
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_04.D				
Injection Date:	17-Aug-2015 18:04:30	Instrument ID:	CHX.i		
Lims ID:	ic				
Client ID:					
Operator ID:	pad	ALS Bottle#:	3	Worklist Smp#:	4
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

69 Tetrachloroethene, CAS: 127-18-4

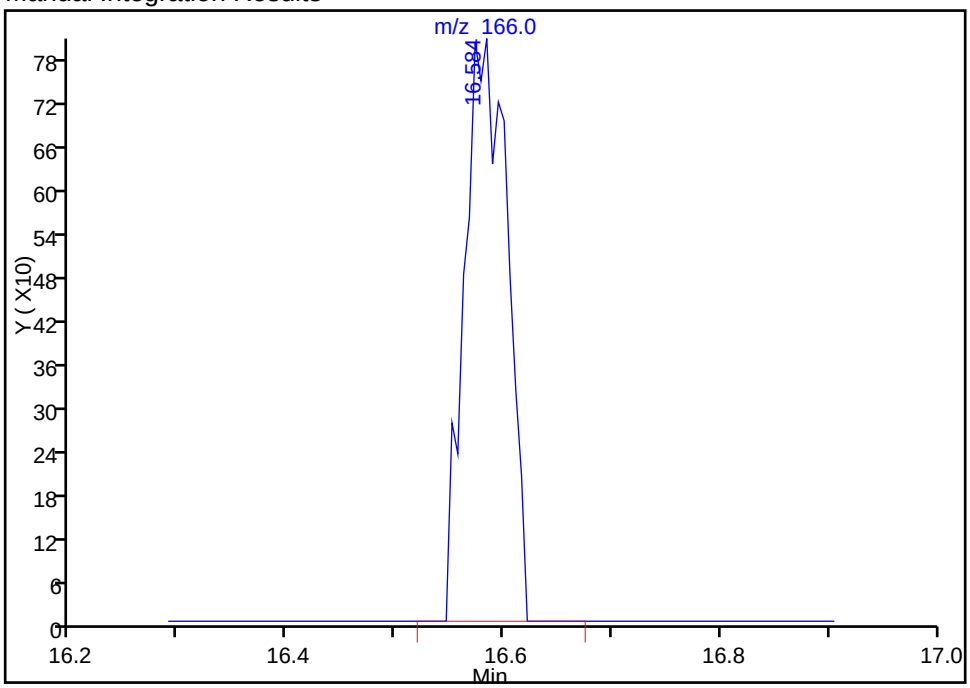
Processing Integration Results

RT: 16.58
Area: 1458
Amount: 0.030973
Amount Units: ppb v/v



Manual Integration Results

RT: 16.58
Area: 2234
Amount: 0.045138
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:13:22
Audit Action: Manually Integrated
Audit Reason: Baseline

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Lims ID: ic
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Aug-2015 18:54:30 ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-005
Misc. Info.: ic-02
Operator ID: pad Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:26 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 09:17:28

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.092	3.092	0.000	84	3764	0.2002	0.5041	
2 Dichlorodifluoromethane	85	3.167	3.161	0.006	98	7712	0.2002	0.2206	
3 Chlorodifluoromethane	51	3.215	3.209	0.006	95	3790	0.2002	0.2241	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.424	3.423	0.001	89	7340	0.2002	0.2065	
5 Chloromethane	50	3.568	3.563	0.005	97	2366	0.2002	0.2405	
6 Butane	43	3.761	3.755	0.006	99	4324	0.2002	0.2676	
7 Vinyl chloride	62	3.803	3.803	0.000	95	2751	0.2002	0.2217	
8 Butadiene	54	3.878	3.878	0.000	92	1811	0.2002	0.2032	
9 Bromomethane	94	4.547	4.547	0.000	95	2883	0.2002	0.2052	
10 Chloroethane	64	4.777	4.777	0.000	82	1187	0.2002	0.1894	
11 2-Methylbutane	43	4.841	4.841	0.000	83	2913	0.2002	0.2518	
12 Vinyl bromide	106	5.157	5.157	0.000	94	3330	0.2002	0.2054	
13 Trichlorofluoromethane	101	5.248	5.248	0.000	96	8046	0.2002	0.2087	
14 Pentane	43	5.376	5.376	0.000	93	4490	0.2002	0.2440	
15 Ethanol	45	5.831	5.804	0.027	99	7513	2.00	1.95	
16 Ethyl ether	59	5.922	5.895	0.027	85	1517	0.2002	0.1874	
17 Acrolein	56	6.296	6.280	0.016	44	754	0.2002	0.2476	
18 1,1,2-Trichloro-1,2,2-trif	101	6.286	6.286	0.000	92	6670	0.2002	0.2161	
20 1,1-Dichloroethene	96	6.339	6.344	-0.005	86	2899	0.2002	0.2009	
21 Acetone	43	6.612	6.585	0.027	91	8413	0.2002	0.5348	
22 Carbon disulfide	76	6.735	6.740	-0.005	97	7868	0.2002	0.2146	
23 Isopropyl alcohol	45	6.922	6.863	0.059	43	3912	0.2002	0.2624	
24 3-Chloro-1-propene	41	7.115	7.115	0.000	91	2737	0.2002	0.2248	M
25 Acetonitrile	41	7.275	7.265	0.010	95	1972	0.2002	0.2644	M
26 Methylene Chloride	49	7.409	7.409	0.000	83	4786	0.2002	0.3613	
28 2-Methyl-2-propanol	59	7.698	7.639	0.059	95	5316	0.2002	0.2224	M
29 Methyl tert-butyl ether	73	7.858	7.800	0.058	96	8336	0.2002	0.2089	
30 trans-1,2-Dichloroethene	61	7.832	7.837	-0.005	87	3908	0.2002	0.2109	
31 Acrylonitrile	53	8.008	8.003	0.005	95	1820	0.2002	0.2117	M
32 Hexane	57	8.206	8.201	0.005	89	4353	0.2002	0.2212	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.709	8.709	0.000	97	4996	0.2002	0.1997	
34 Vinyl acetate	43	8.779	8.773	0.006	99	6316	0.2002	0.2153	
35 cis-1,2-Dichloroethene	96	9.811	9.816	-0.005	91	3831	0.2002	0.2104	M
36 2-Butanone (MEK)	72	9.891	9.865	0.026	96	2092	0.2002	0.2506	
37 Ethyl acetate	88		9.897				ND	ND	
S 38 1,2-Dichloroethene, Total	61				0		0.4004	0.4213	
* 40 Chlorobromomethane	128	10.282	10.282	0.000	77	179741	10.0	10.0	
39 Tetrahydrofuran	42	10.325	10.287	0.038	88	3096	0.2002	0.2205	
41 Chloroform	83	10.400	10.410	-0.010	98	7080	0.2002	0.2120	
42 Cyclohexane	84	10.651	10.656	-0.005	86	5156	0.2002	0.2090	M
43 1,1,1-Trichloroethane	97	10.688	10.688	0.000	95	7236	0.2002	0.2014	M
44 Carbon tetrachloride	117	10.924	10.934	-0.010	94	7250	0.2002	0.1937	
45 Isooctane	57	11.357	11.362	-0.005	99	16933	0.2002	0.2054	
46 Benzene	78	11.421	11.416	0.005	93	12116	0.2002	0.2106	
47 1,2-Dichloroethane	62	11.603	11.609	-0.006	95	4190	0.2002	0.2075	M
48 n-Heptane	43	11.742	11.753	-0.011	85	5858	0.2002	0.2110	M
* 50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	92	985358	10.0	10.0	
51 n-Butanol	56	12.716	12.668	0.048	81	2386	0.2002	0.2493	M
52 Trichloroethene	95	12.737	12.743	-0.006	94	5905	0.2002	0.2037	
53 1,2-Dichloropropane	63	13.331	13.336	-0.005	94	4419	0.2002	0.2021	M
54 Methyl methacrylate	69	13.502	13.492	0.010	80	4430	0.2002	0.2033	
55 1,4-Dioxane	88	13.609	13.567	0.042	49	3290	0.2002	0.3045	
56 Dibromomethane	174	13.604	13.609	-0.005	88	7879	0.2002	0.2260	
57 Dichlorobromomethane	83	13.904	13.909	-0.005	96	7721	0.2002	0.1880	M
58 cis-1,3-Dichloropropene	75	14.872	14.877	-0.005	87	6642	0.2002	0.1936	
A 59 Total Hydrocarbons	1	14.971	(3.054-26.887)		0	2916096	NC	NC	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	2916096	0.2002	58.1	
61 4-Methyl-2-pentanone (MIBK	43	15.214	15.177	0.037	91	7779	0.2002	0.2068	
A 63 Toluene Range	1		(15.472-15.492)				NC	ND	
62 Toluene	92	15.482	15.482	0.000	95	10378	0.2002	0.2100	M
A 65 GRO	1	15.514	(15.514-15.514)		0	71308	0.2002	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.514	15.514	0.000	85	9312	0.2002	0.2179	M
67 trans-1,3-Dichloropropene	75	16.102	16.102	0.000	91	7682	0.2002	0.2147	M
68 1,1,2-Trichloroethane	83	16.493	16.487	0.006	95	4842	0.2002	0.2100	
69 Tetrachloroethene	166	16.584	16.589	-0.005	95	9626	0.2002	0.1956	
70 2-Hexanone	43	16.969	16.942	0.027	93	6341	0.2002	0.1728	
71 Chlorodibromomethane	129	17.269	17.269	0.000	96	8380	0.2002	0.1758	
72 Ethylene Dibromide	107	17.552	17.552	0.000	97	8833	0.2002	0.1948	
* 73 Chlorobenzene-d5	117	18.456	18.456	0.000	82	970659	10.0	10.0	
74 Chlorobenzene	112	18.515	18.520	-0.005	97	14098	0.2002	0.2003	
75 Ethylbenzene	91	18.660	18.659	0.001	97	21560	0.2002	0.2023	
76 n-Nonane	57	18.761	18.761	0.000	84	9701	0.2002	0.2121	
77 m-Xylene & p-Xylene	106	18.911	18.911	0.000	99	18319	0.4004	0.4077	
78 o-Xylene	106	19.724	19.729	-0.005	94	9032	0.2002	0.2034	
79 Styrene	104	19.778	19.778	0.000	98	13694	0.2002	0.1976	
S 80 Xylenes, Total	106				0		0.6005	0.6111	
81 Bromoform	173	20.190	20.189	0.001	98	6509	0.2002	0.1461	
82 Isopropylbenzene	105	20.361	20.361	0.000	94	25764	0.2002	0.2034	
* 83 4-Bromofluorobenzene	95	20.719	20.724	-0.005	99	654784	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.987	20.992	-0.005	98	12316	0.2002	0.2066	
86 N-Propylbenzene	91	21.046	21.045	0.001	99	30105	0.2002	0.2039	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.083	21.088	-0.005	96	9873	0.2002	0.2172	
88 n-Decane	57	21.190	21.190	0.000	85	12741	0.2002	0.2202	
89 4-Ethyltoluene	105	21.227	21.227	0.000	98	26312	0.2002	0.2055	
90 2-Chlorotoluene	91	21.243	21.243	0.000	96	20902	0.2002	0.2087	
91 1,3,5-Trimethylbenzene	105	21.324	21.324	0.000	95	21561	0.2002	0.2040	
92 Alpha Methyl Styrene	118	21.682	21.682	0.000	91	10730	0.2002	0.1926	
93 tert-Butylbenzene	119	21.800	21.800	0.000	96	22029	0.2002	0.2092	
94 1,2,4-Trimethylbenzene	105	21.891	21.891	0.000	96	21469	0.2002	0.2027	
95 sec-Butylbenzene	105	22.110	22.110	0.000	99	31149	0.2002	0.2023	
96 4-Isopropyltoluene	119	22.308	22.308	0.000	98	27549	0.2002	0.2032	
97 1,3-Dichlorobenzene	146	22.356	22.356	0.000	98	16631	0.2002	0.2041	
98 1,4-Dichlorobenzene	146	22.490	22.495	-0.005	97	16984	0.2002	0.2060	
99 Benzyl chloride	91	22.699	22.698	0.001	100	16566	0.2002	0.1921	
100 Undecane	57	22.897	22.896	0.000	74	14318	0.2002	0.2411	
101 n-Butylbenzene	91	22.902	22.902	0.000	95	25035	0.2002	0.2194	
102 1,2-Dichlorobenzene	146	23.052	23.052	0.000	99	15918	0.2002	0.2061	
103 Dodecane	57	24.550	24.549	0.001	93	12925	0.2002	0.2383	
104 1,2,4-Trichlorobenzene	180	25.689	25.689	0.000	93	14009	0.2002	0.1966	
105 Hexachlorobutadiene	225	25.871	25.871	0.000	97	13607	0.2002	0.2052	
106 Naphthalene	128	26.219	26.219	0.000	99	25490	0.2002	0.1868	
107 1,2,3-Trichlorobenzene	180	26.732	26.727	0.005	95	13086	0.2002	0.1986	

QC Flag Legend

Processing Flags
- NC - Not Calibrated
- ND - Not Detected or Marked ND

Review Flags
- M - Manually Integrated

Reagents:

ATTO15CAL2w_00192	Amount Added:	80.00	Units: mL	
ATTO15GIS_00009	Amount Added:	20.00	Units: mL	Run Reagent

Report Date: 18-Aug-2015 11:12:26 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

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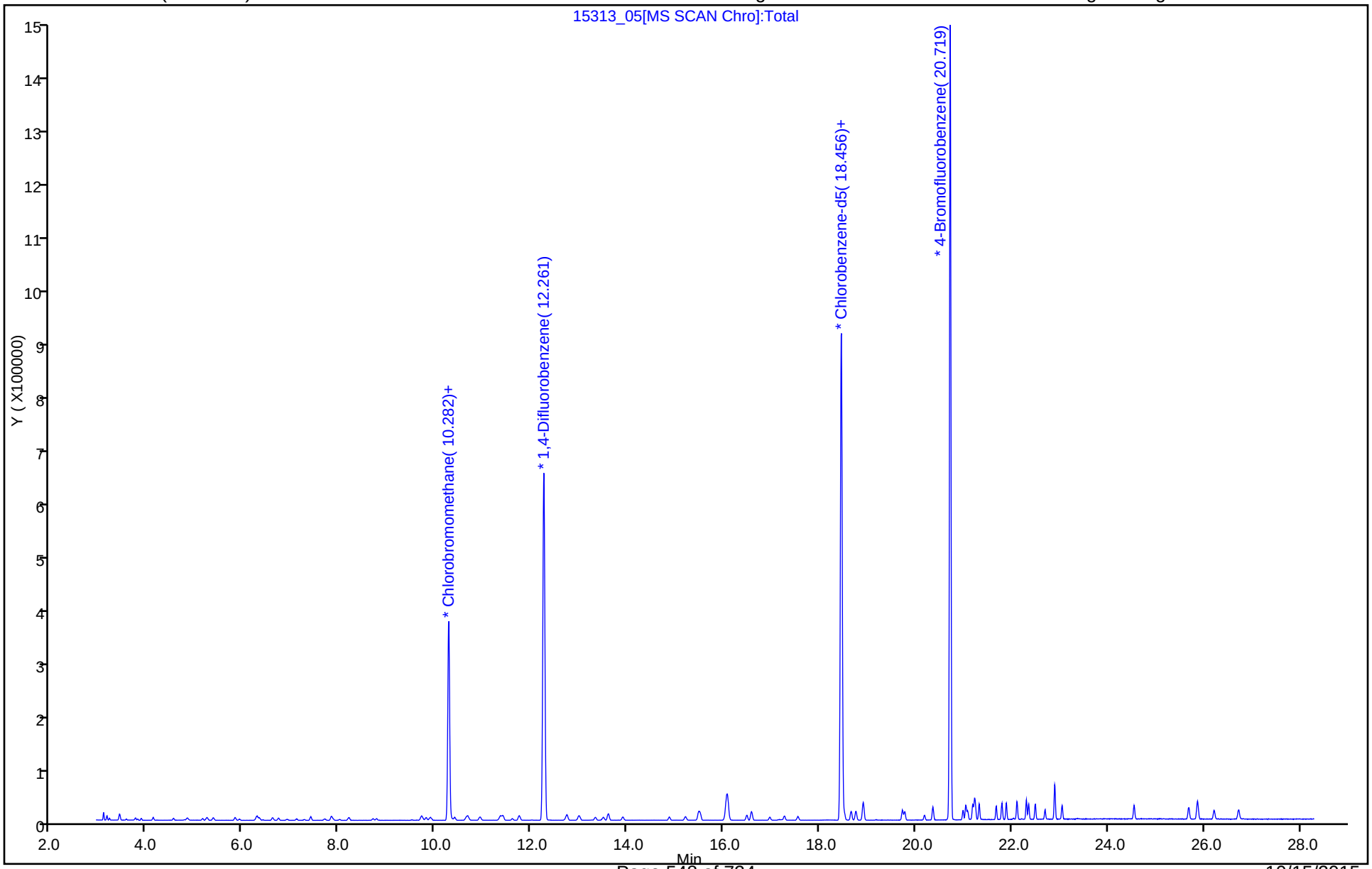
Injection Date:	17-Aug-2015 18:54:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	ic			Worklist Smp#:	5
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



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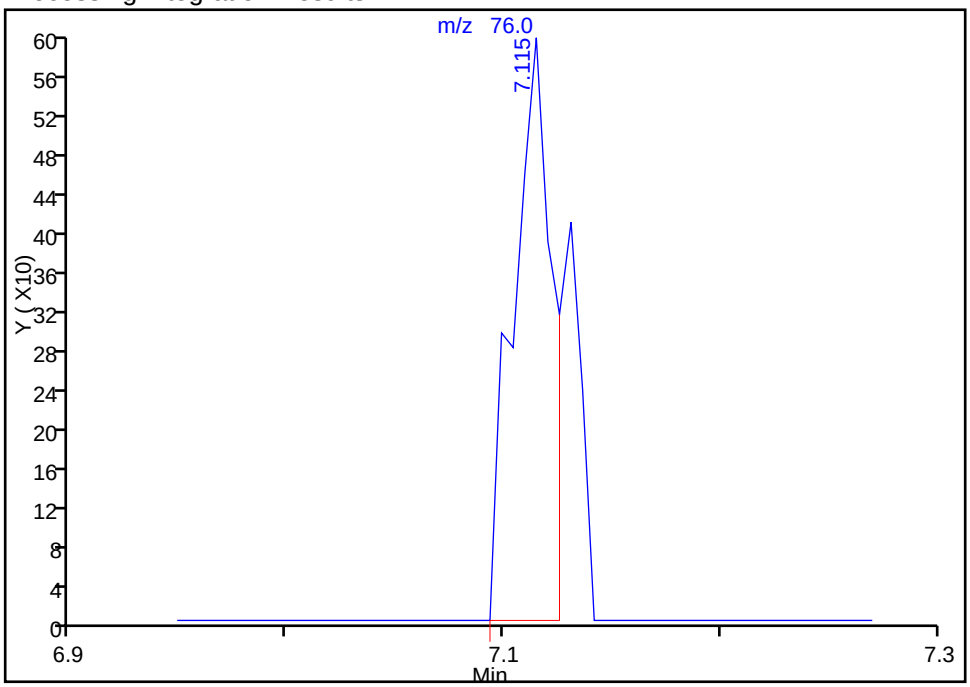
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

24 3-Chloro-1-propene, CAS: 107-05-1

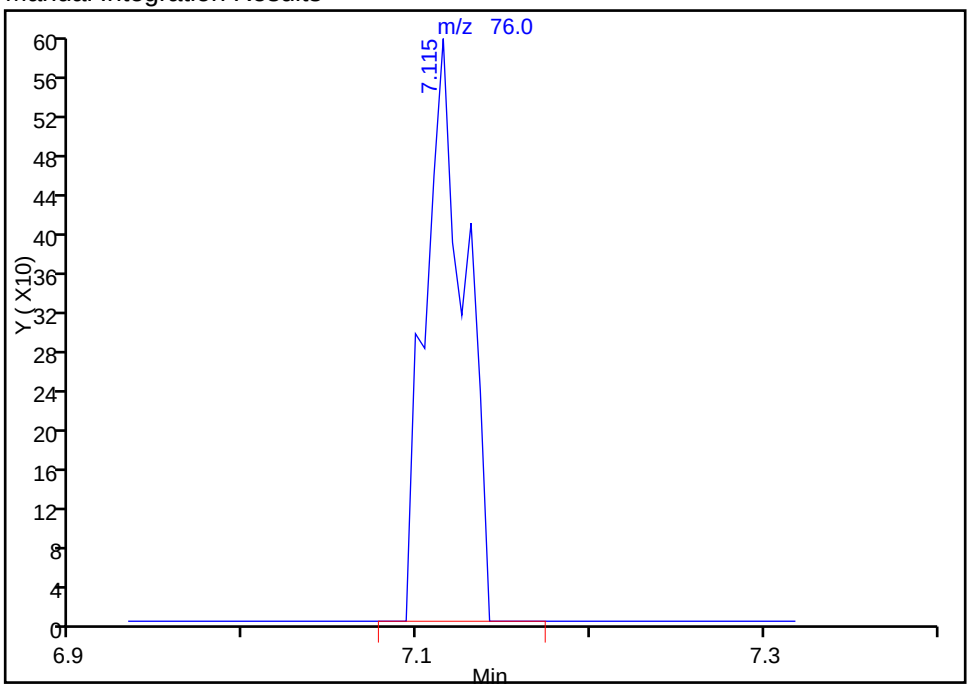
Processing Integration Results

RT: 7.11
Area: 751
Amount: 0.224758
Amount Units: ppb v/v



Manual Integration Results

RT: 7.11
Area: 959
Amount: 0.224758
Amount Units: ppb v/v



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Audit Reason: Baseline

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Lims ID: ic
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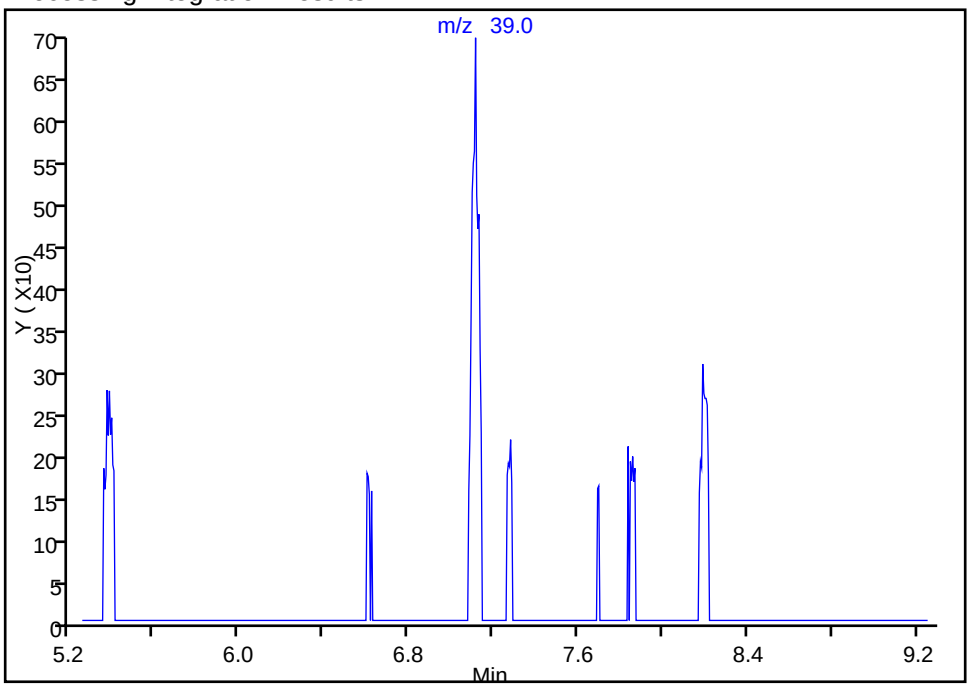
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

25 Acetonitrile, CAS: 75-05-8

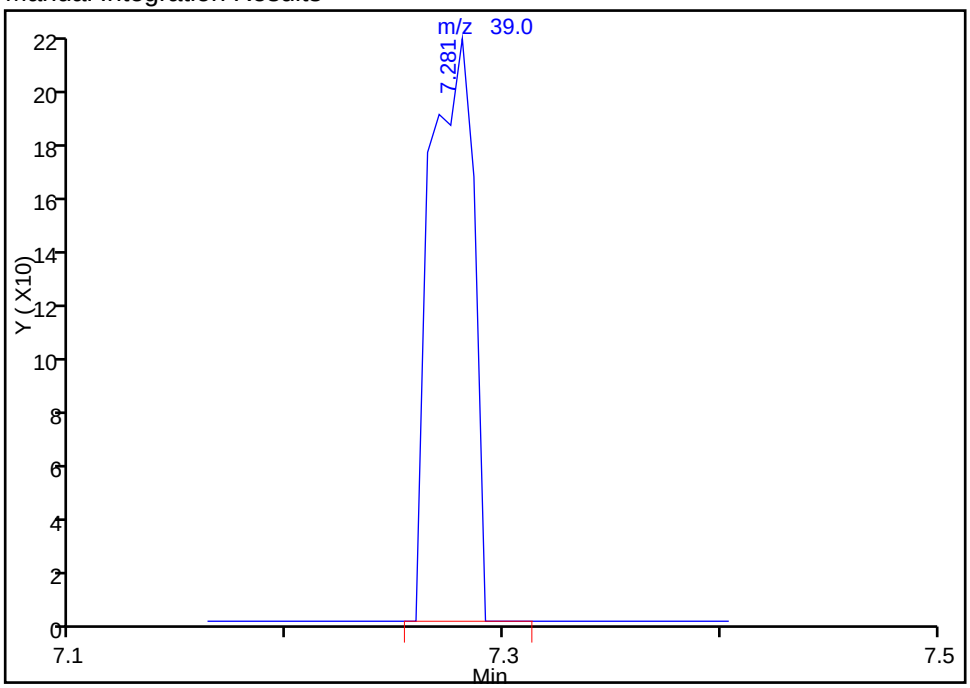
Processing Integration Results

RT: 7.25
Area: 0
Amount: 0.264435
Amount Units: ppb v/v



Manual Integration Results

RT: 7.28
Area: 296
Amount: 0.264435
Amount Units: ppb v/v



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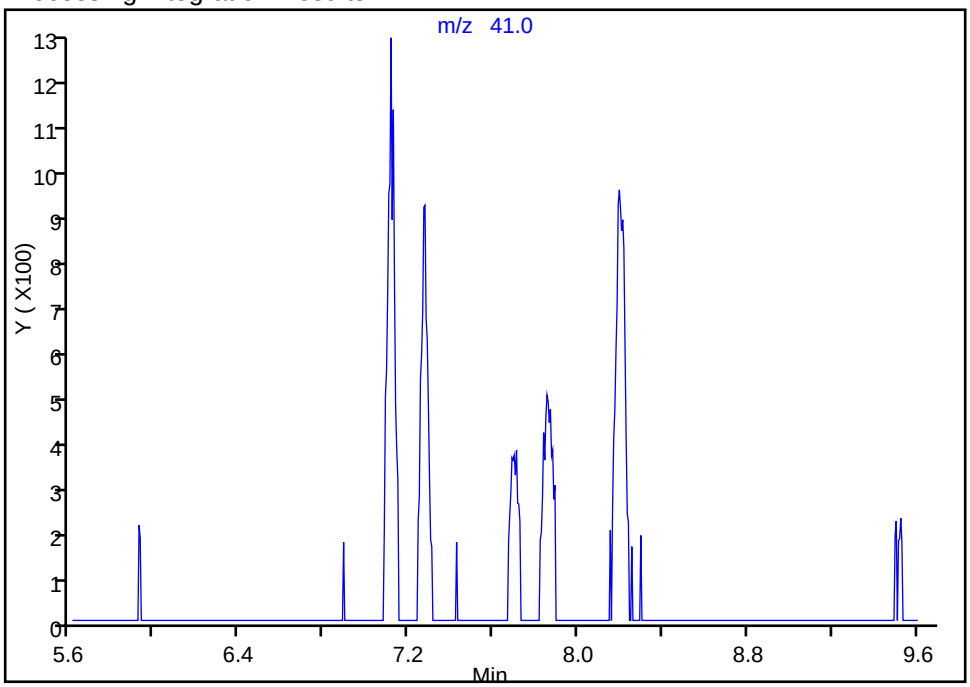
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

28 2-Methyl-2-propanol, CAS: 75-65-0

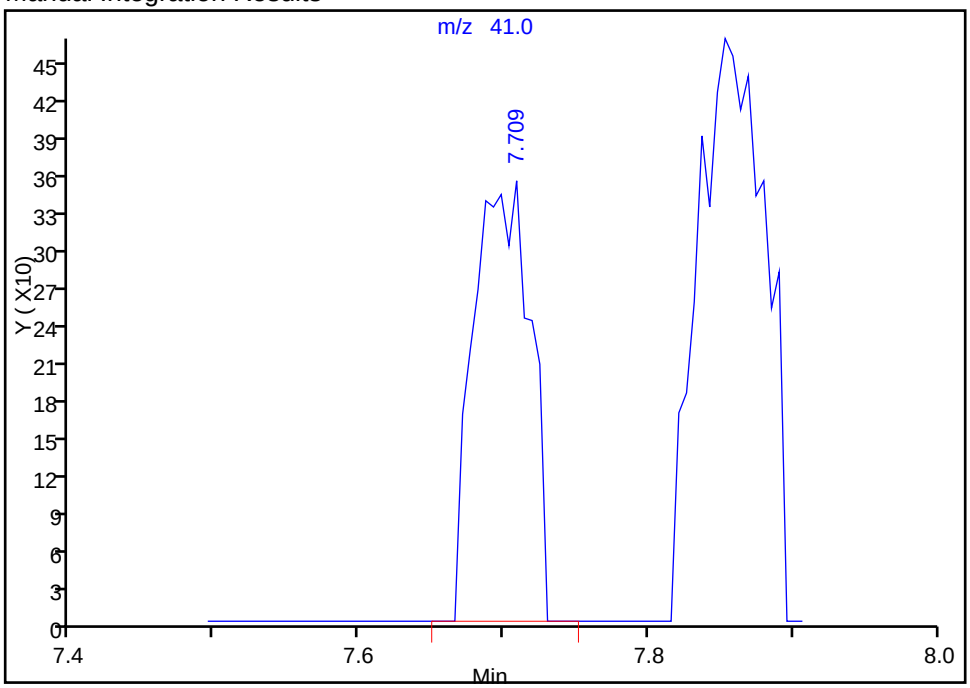
Processing Integration Results

RT: 7.61
Area: 0
Amount: 0.222437
Amount Units: ppb v/v



Manual Integration Results

RT: 7.71
Area: 965
Amount: 0.222437
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

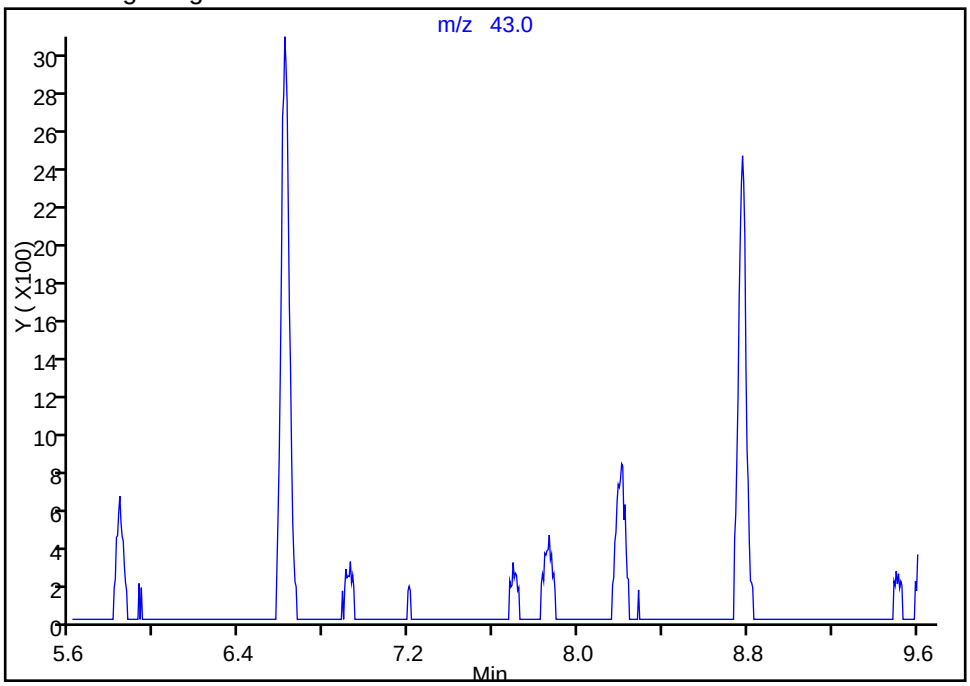
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D				
Injection Date:	17-Aug-2015 18:54:30	Instrument ID:	CHX.i		
Lims ID:	ic				
Client ID:					
Operator ID:	pad	ALS Bottle#:	4	Worklist Smp#:	5
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

28 2-Methyl-2-propanol, CAS: 75-65-0

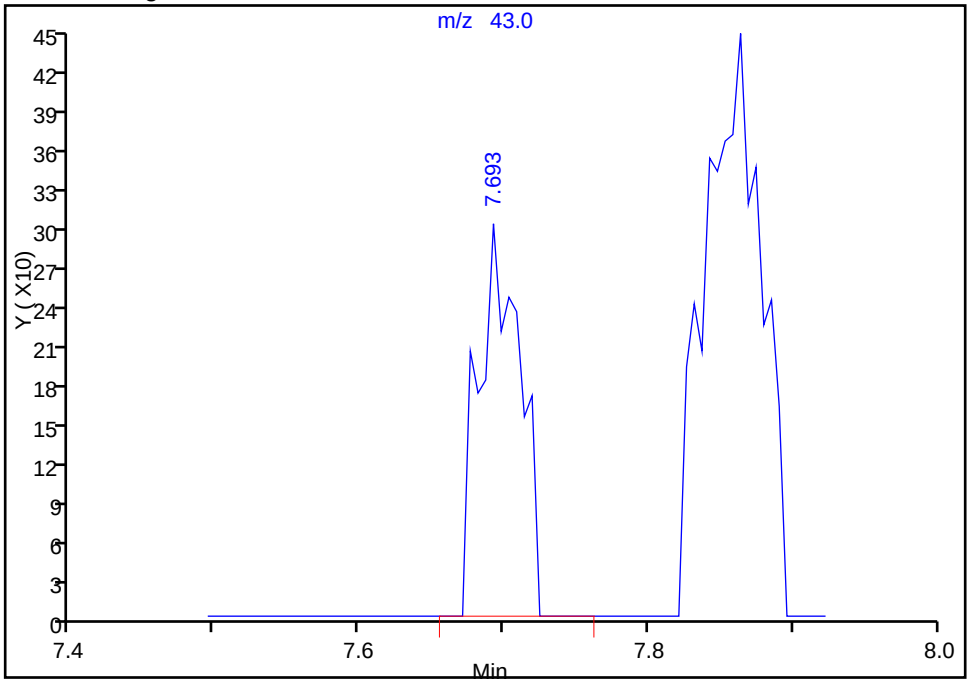
Processing Integration Results

RT: 7.61
Area: 0
Amount: 0.222437
Amount Units: ppb v/v



Manual Integration Results

RT: 7.69
Area: 598
Amount: 0.222437
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

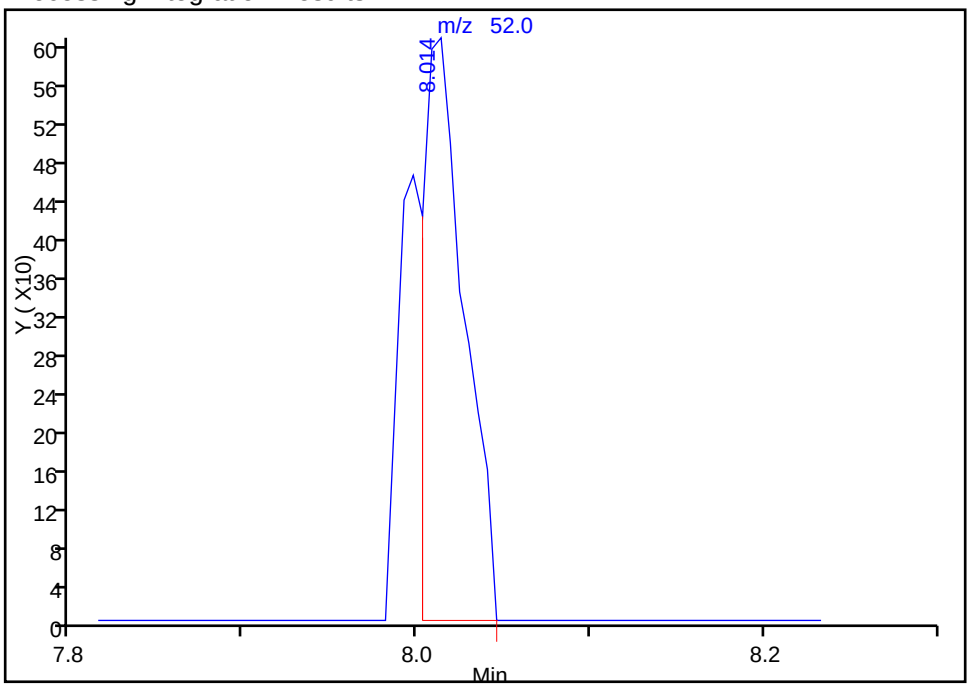
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

31 Acrylonitrile, CAS: 107-13-1

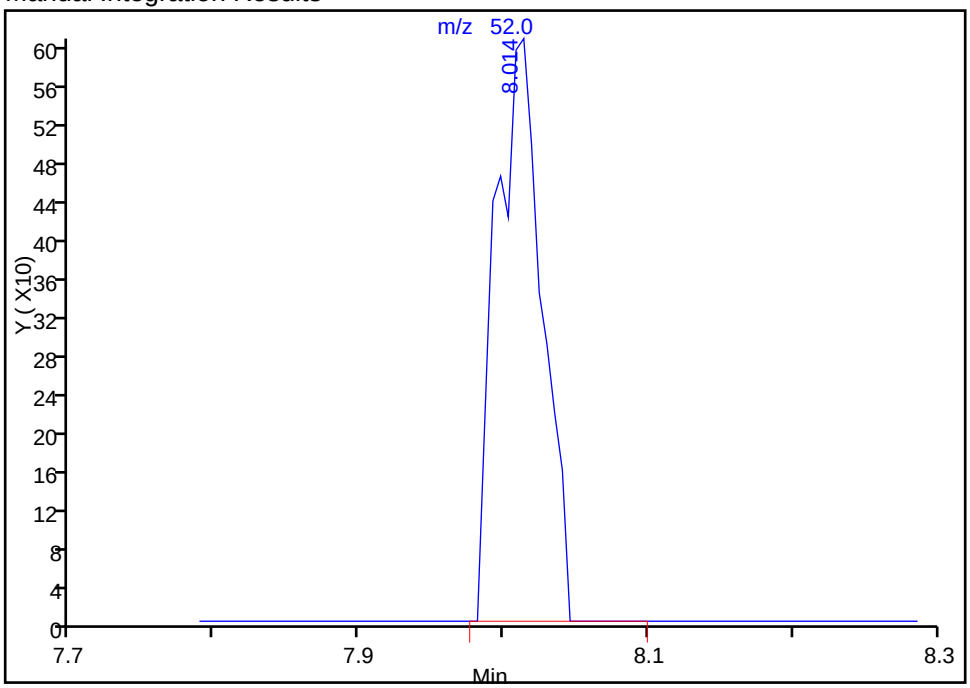
Processing Integration Results

RT: 8.01
Area: 1008
Amount: 0.211666
Amount Units: ppb v/v



Manual Integration Results

RT: 8.01
Area: 1370
Amount: 0.211666
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
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Audit Reason: Baseline

Manual Integration/User Assign Peak Report

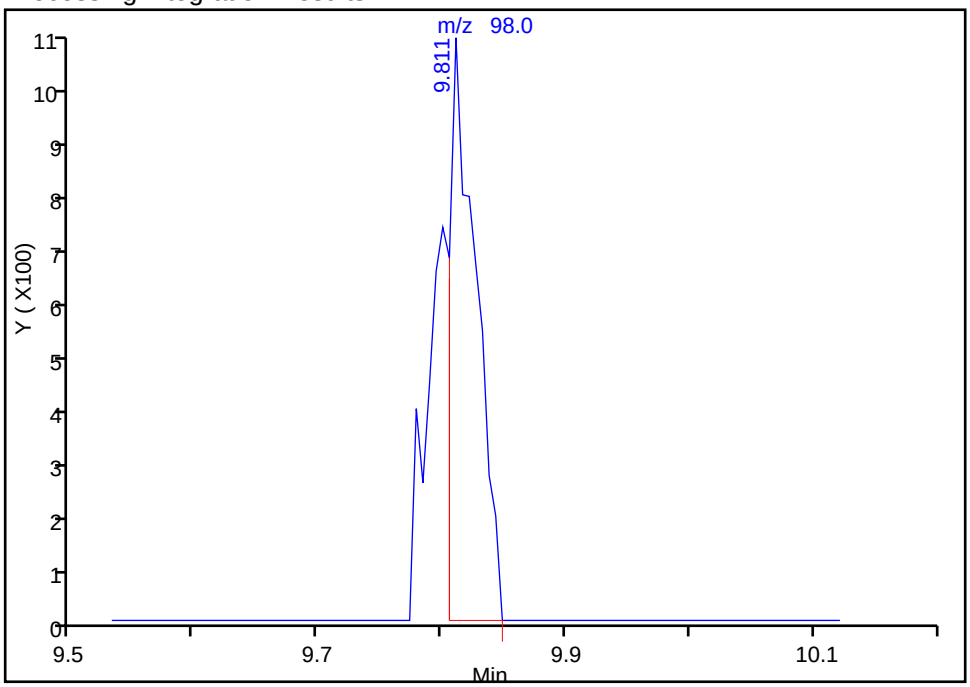
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

35 cis-1,2-Dichloroethene, CAS: 156-59-2

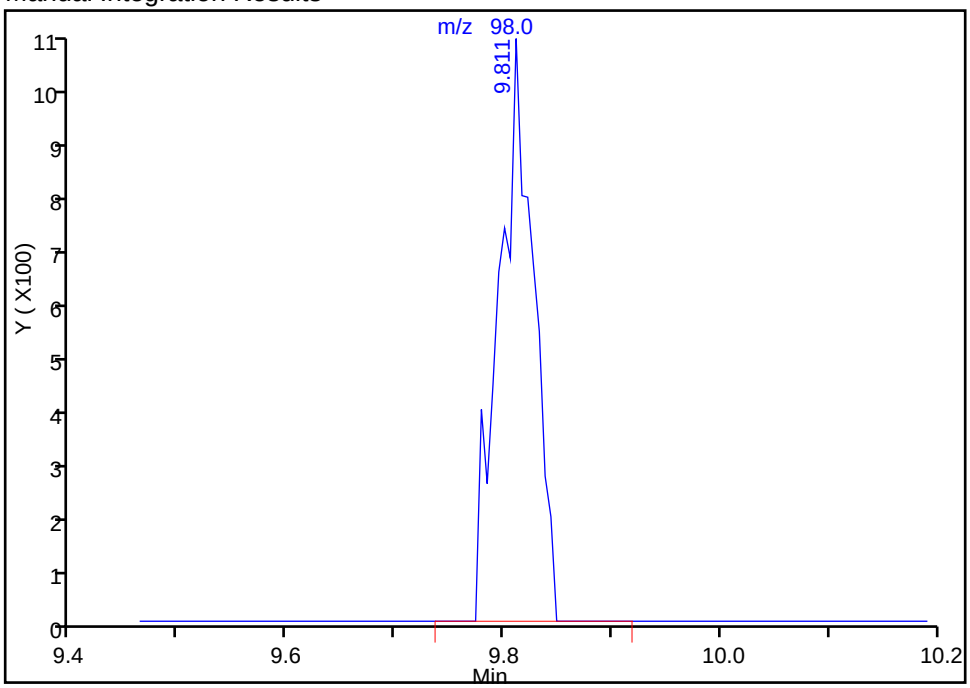
Processing Integration Results

RT: 9.81
Area: 1594
Amount: 0.210408
Amount Units: ppb v/v



Manual Integration Results

RT: 9.81
Area: 2382
Amount: 0.210408
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
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Audit Reason: Baseline

Manual Integration/User Assign Peak Report

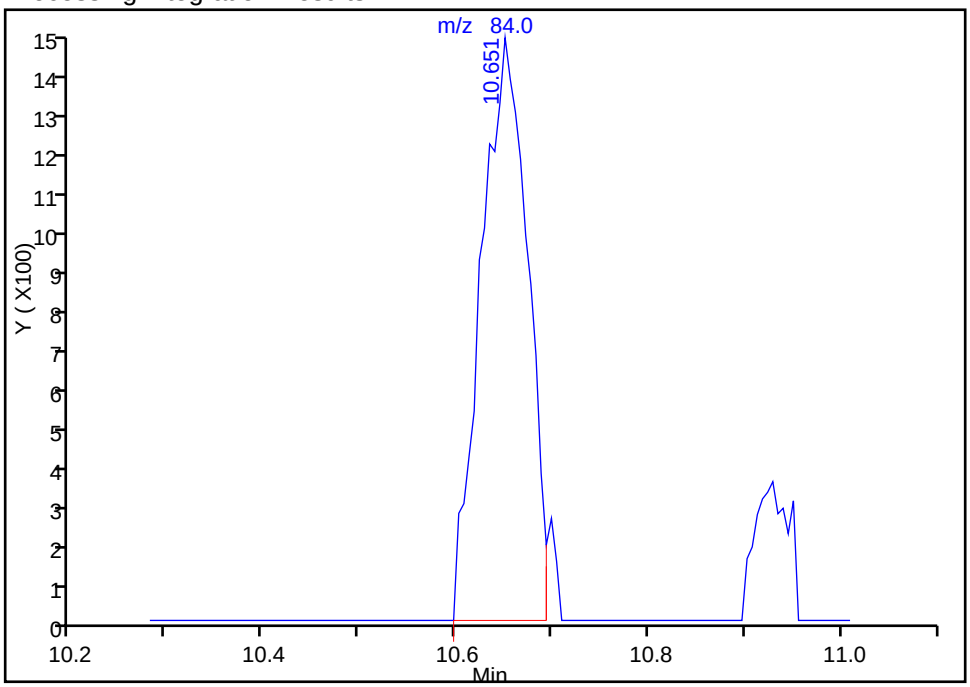
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

42 Cyclohexane, CAS: 110-82-7

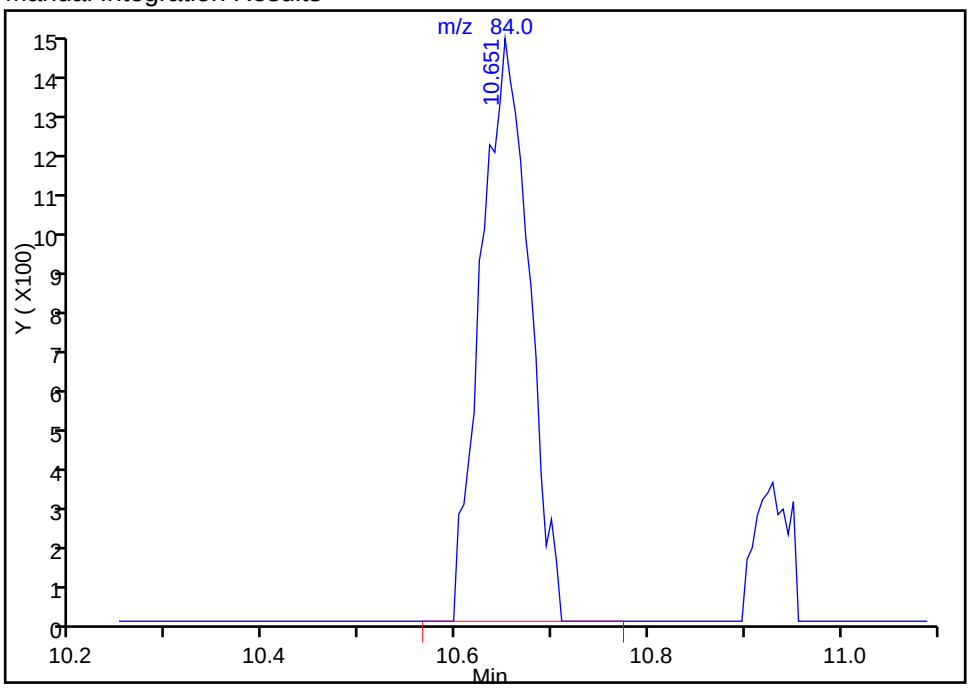
Processing Integration Results

RT: 10.65
Area: 5023
Amount: 0.216315
Amount Units: ppb v/v



Manual Integration Results

RT: 10.65
Area: 5156
Amount: 0.209049
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

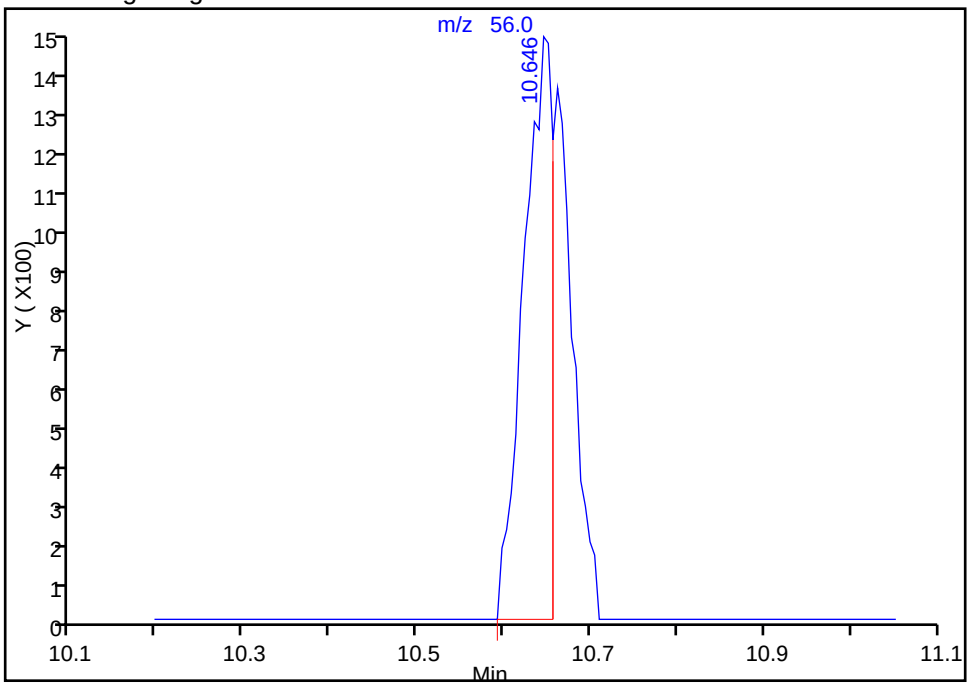
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

42 Cyclohexane, CAS: 110-82-7

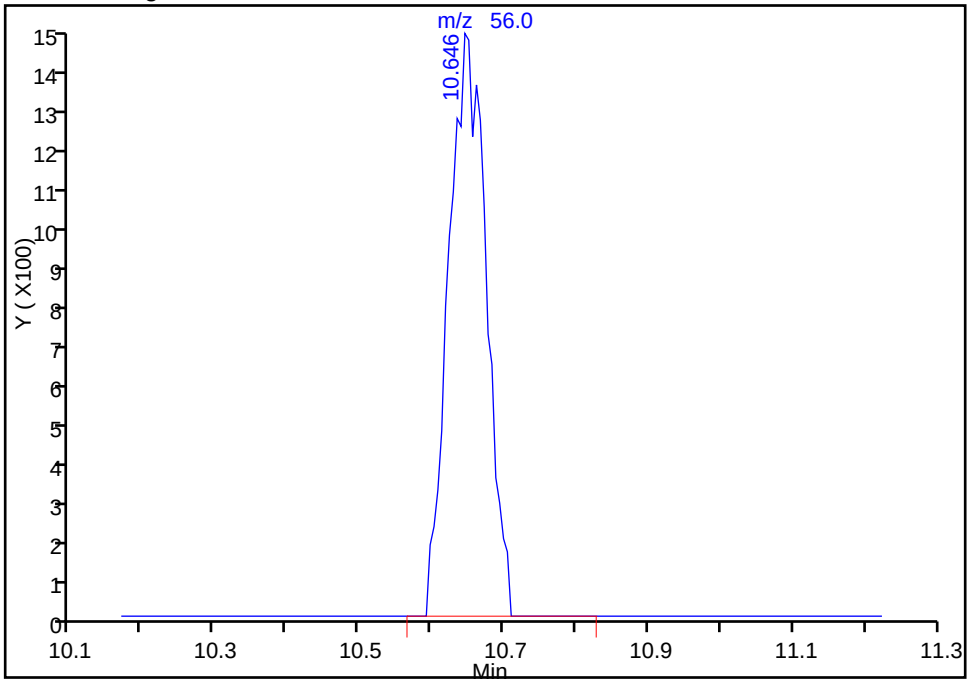
Processing Integration Results

RT: 10.65
Area: 3262
Amount: 0.216315
Amount Units: ppb v/v



Manual Integration Results

RT: 10.65
Area: 5091
Amount: 0.209049
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
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Audit Reason: Baseline

Manual Integration/User Assign Peak Report

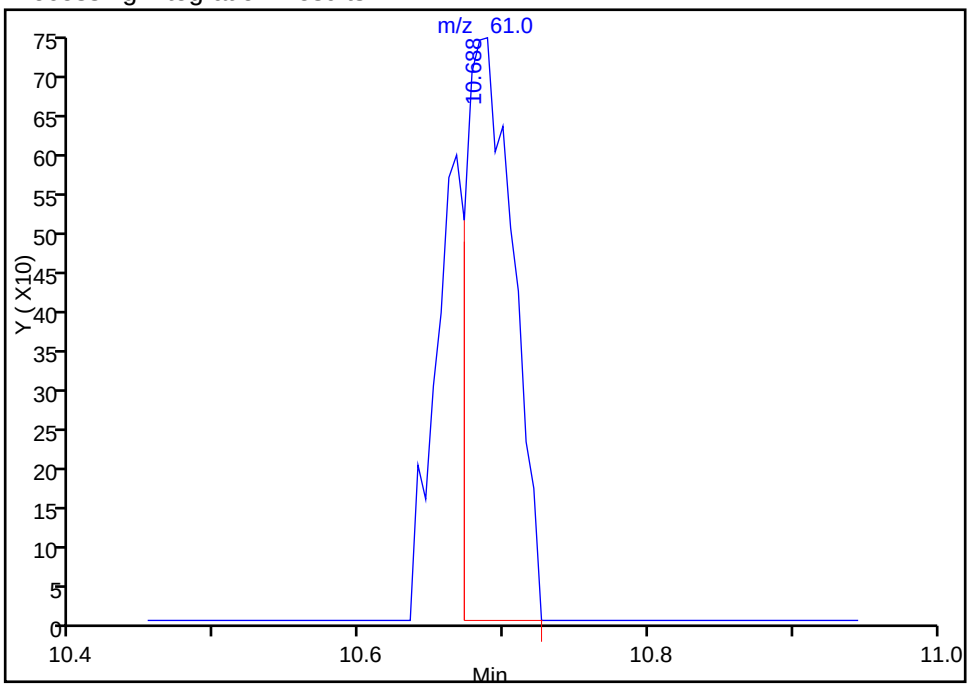
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

43 1,1,1-Trichloroethane, CAS: 71-55-6

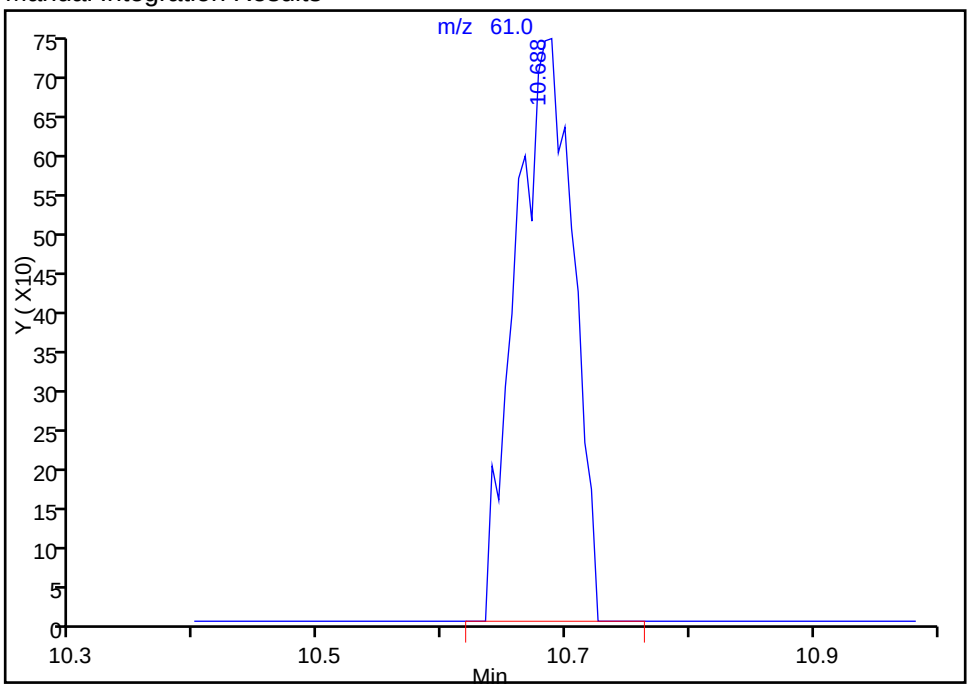
Processing Integration Results

RT: 10.69
Area: 1697
Amount: 0.201430
Amount Units: ppb v/v



Manual Integration Results

RT: 10.69
Area: 2410
Amount: 0.201430
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

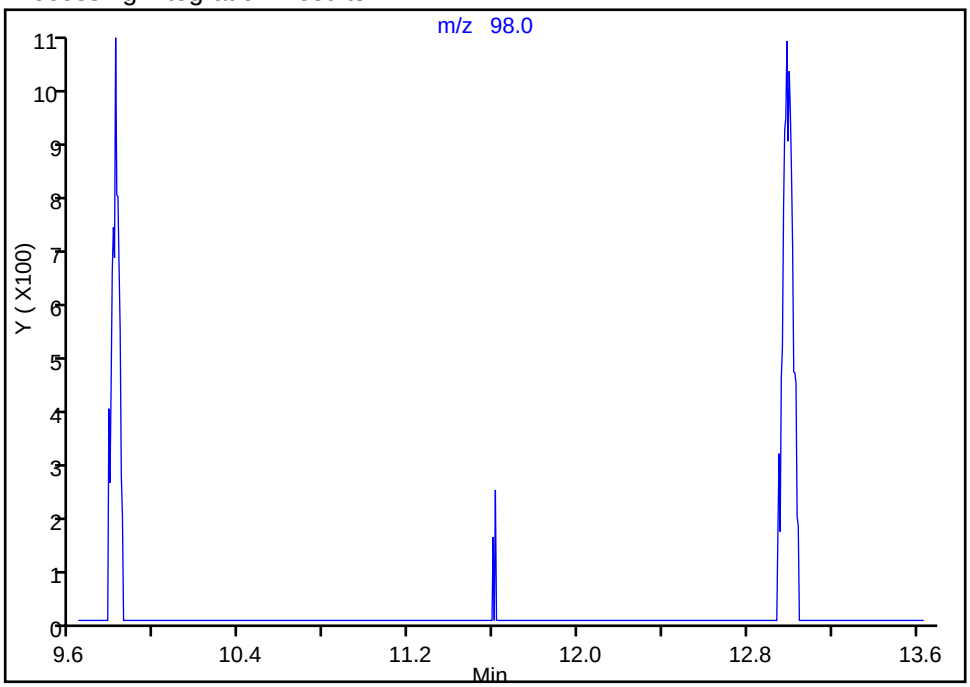
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

47 1,2-Dichloroethane, CAS: 107-06-2

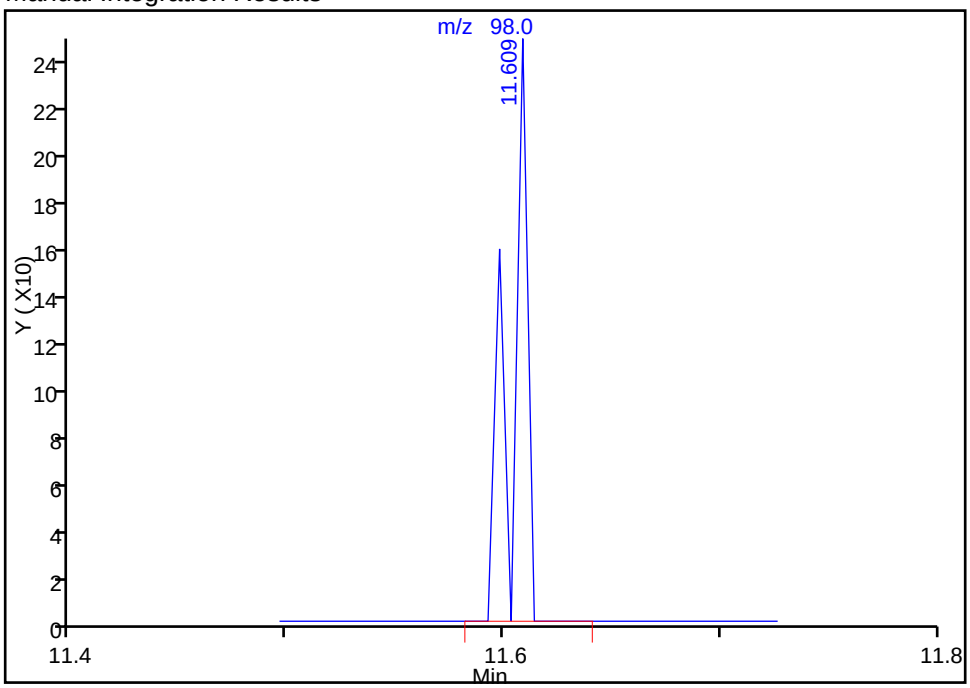
Processing Integration Results

RT: 11.64
Area: 0
Amount: 0.207511
Amount Units: ppb v/v



Manual Integration Results

RT: 11.61
Area: 127
Amount: 0.207511
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
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Audit Reason: Baseline

Manual Integration/User Assign Peak Report

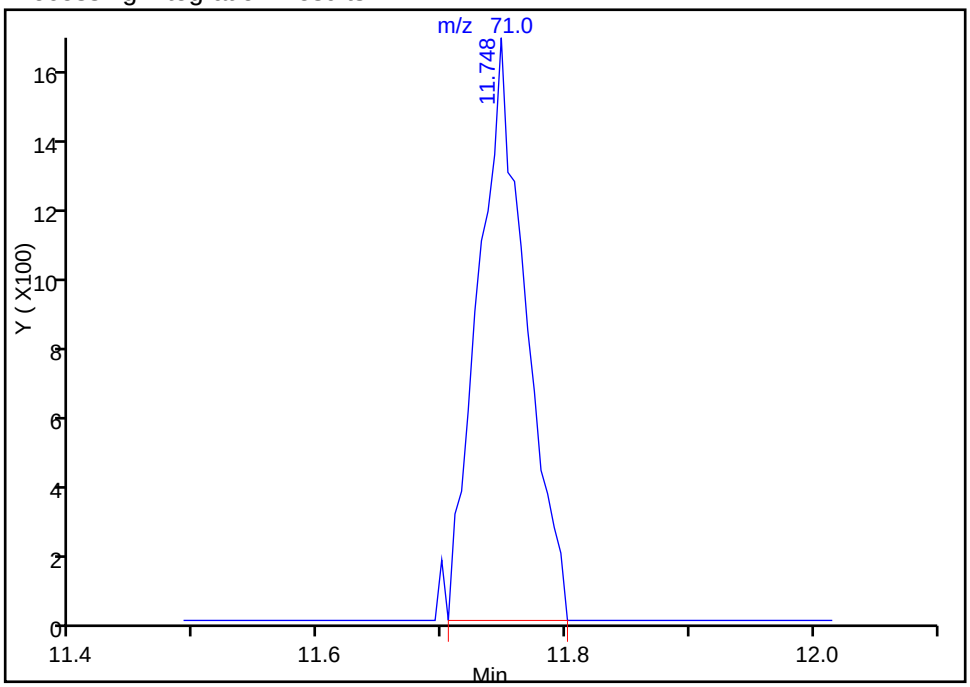
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

48 n-Heptane, CAS: 142-82-5

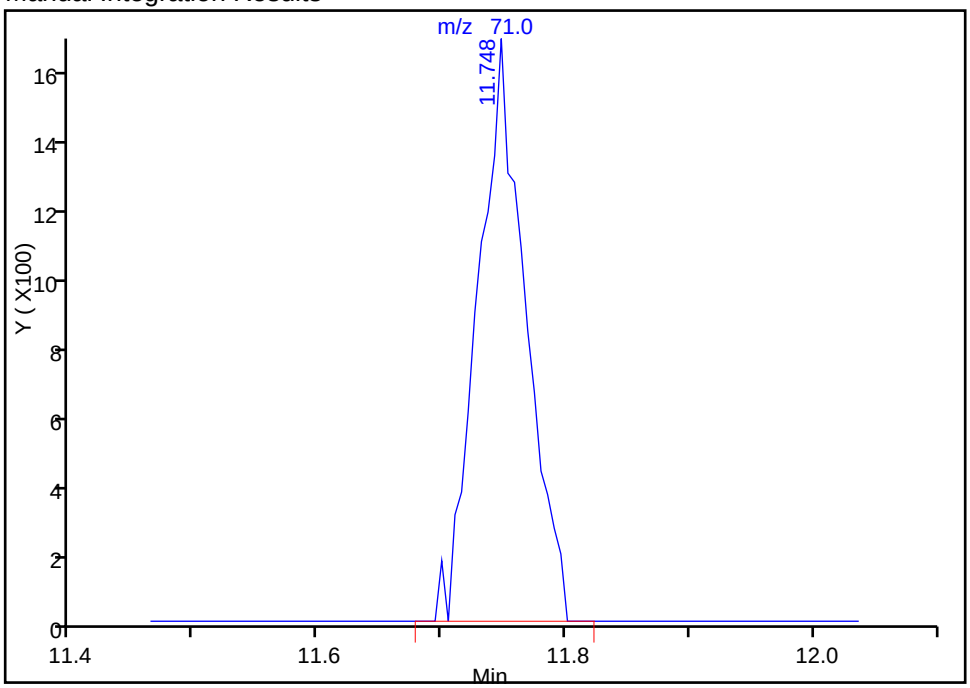
Processing Integration Results

RT: 11.75
Area: 4264
Amount: 0.211024
Amount Units: ppb v/v



Manual Integration Results

RT: 11.75
Area: 4318
Amount: 0.211024
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

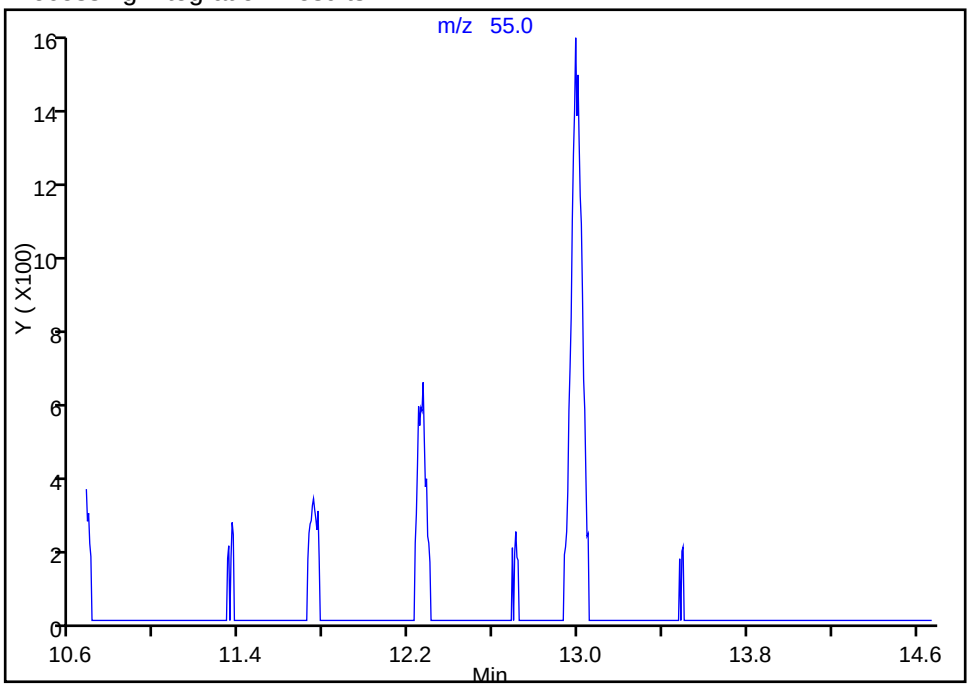
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

51 n-Butanol, CAS: 71-36-3

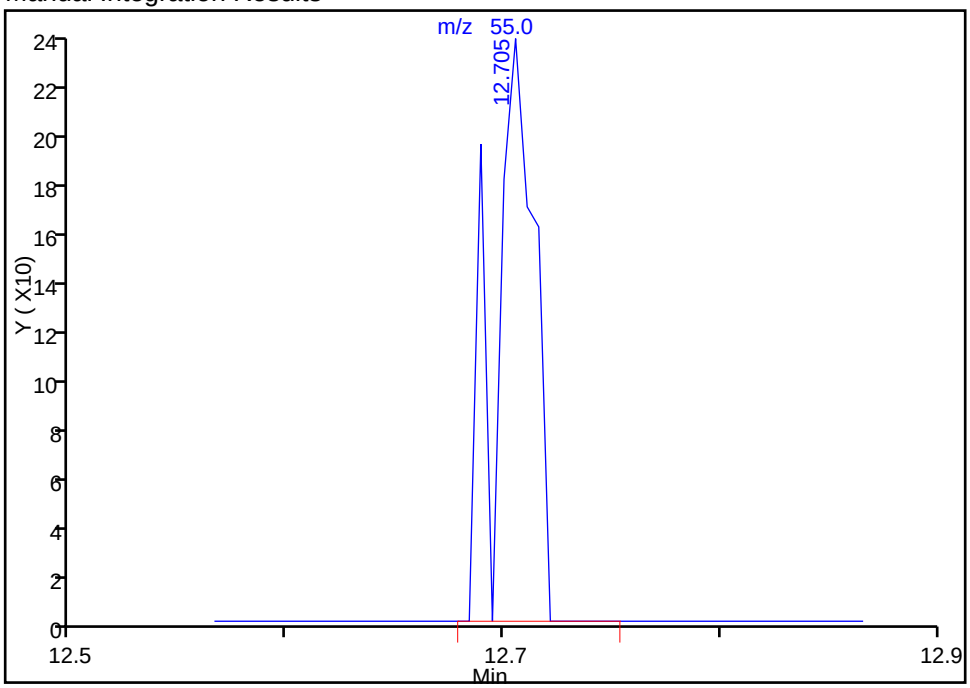
Processing Integration Results

RT: 12.67
Area: 0
Amount: 0.249299
Amount Units: ppb v/v



Manual Integration Results

RT: 12.71
Area: 295
Amount: 0.249299
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
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Audit Reason: Baseline

Manual Integration/User Assign Peak Report

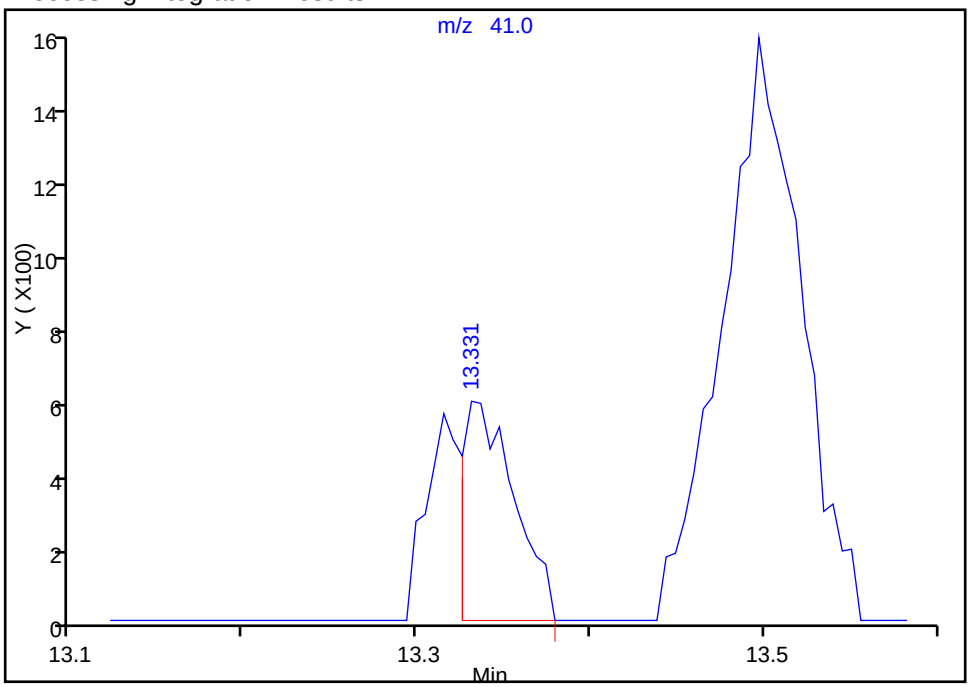
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

53 1,2-Dichloropropane, CAS: 78-87-5

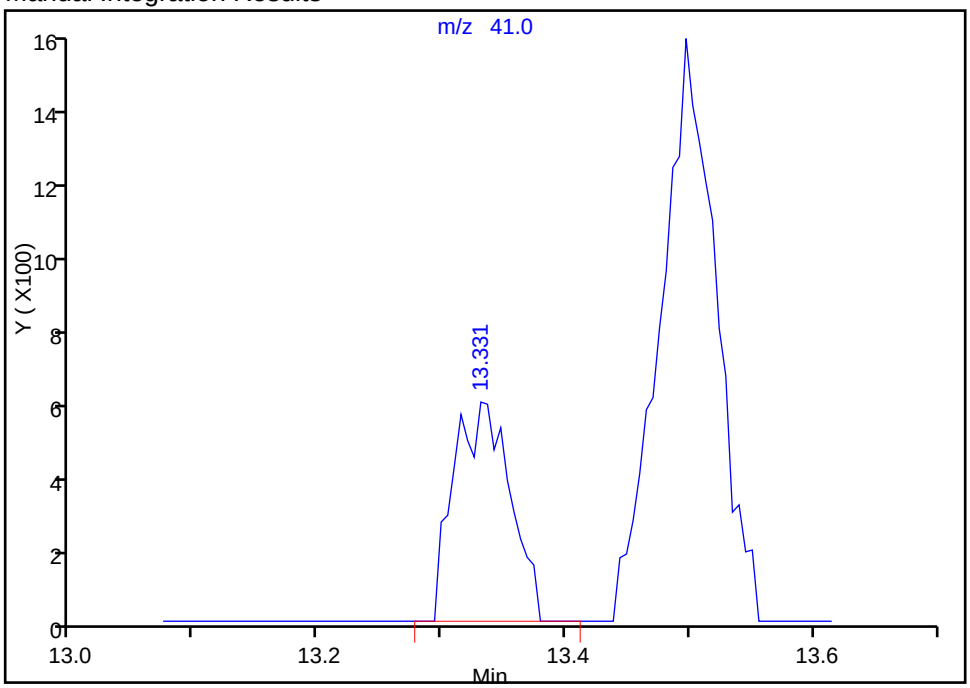
Processing Integration Results

RT: 13.33
Area: 1240
Amount: 0.202136
Amount Units: ppb v/v



Manual Integration Results

RT: 13.33
Area: 1894
Amount: 0.202136
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
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Audit Reason: Baseline

Manual Integration/User Assign Peak Report

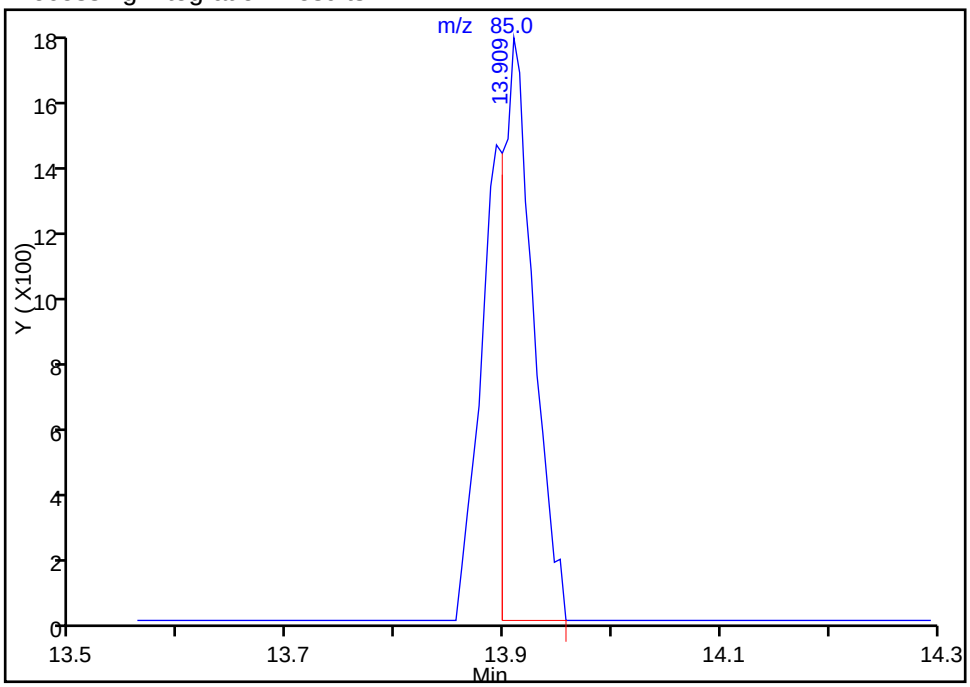
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

57 Dichlorobromomethane, CAS: 75-27-4

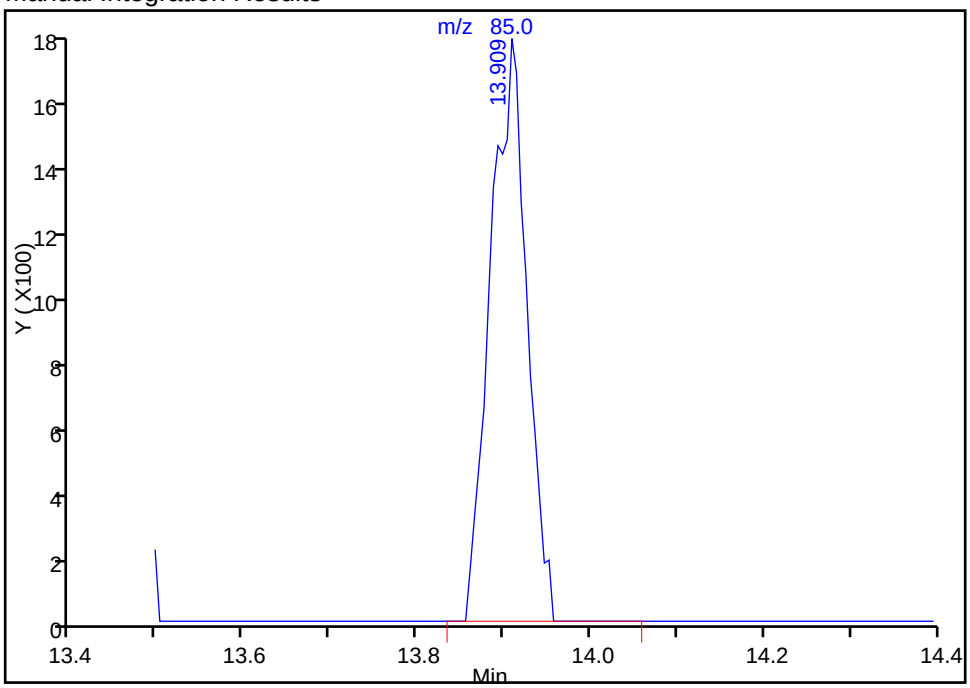
Processing Integration Results

RT: 13.91
Area: 3363
Amount: 0.188029
Amount Units: ppb v/v



Manual Integration Results

RT: 13.91
Area: 5056
Amount: 0.188029
Amount Units: ppb v/v



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Audit Reason: Baseline

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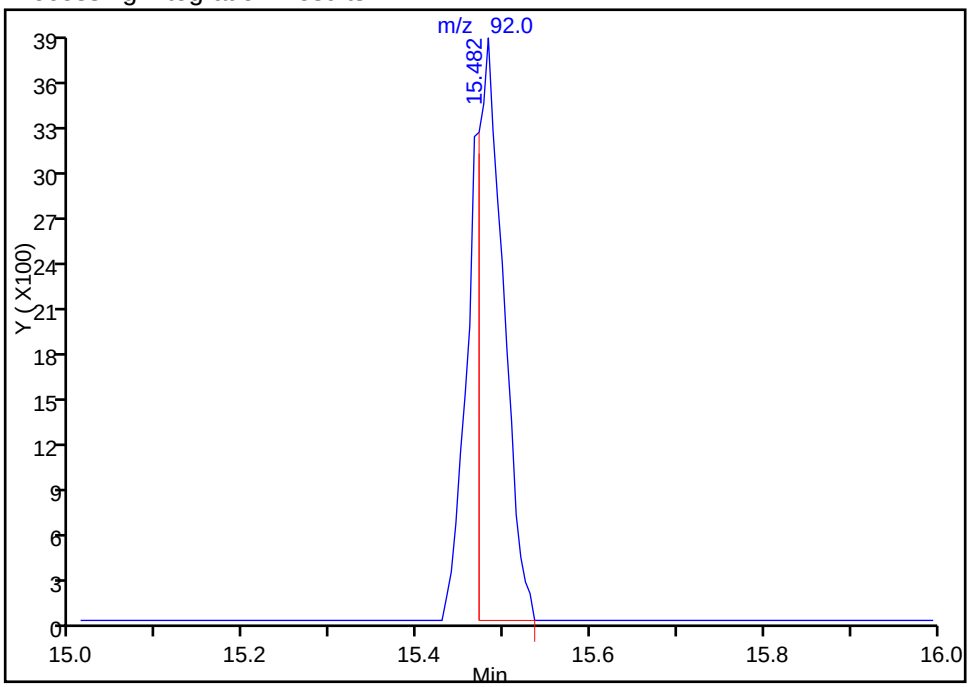
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

62 Toluene, CAS: 108-88-3

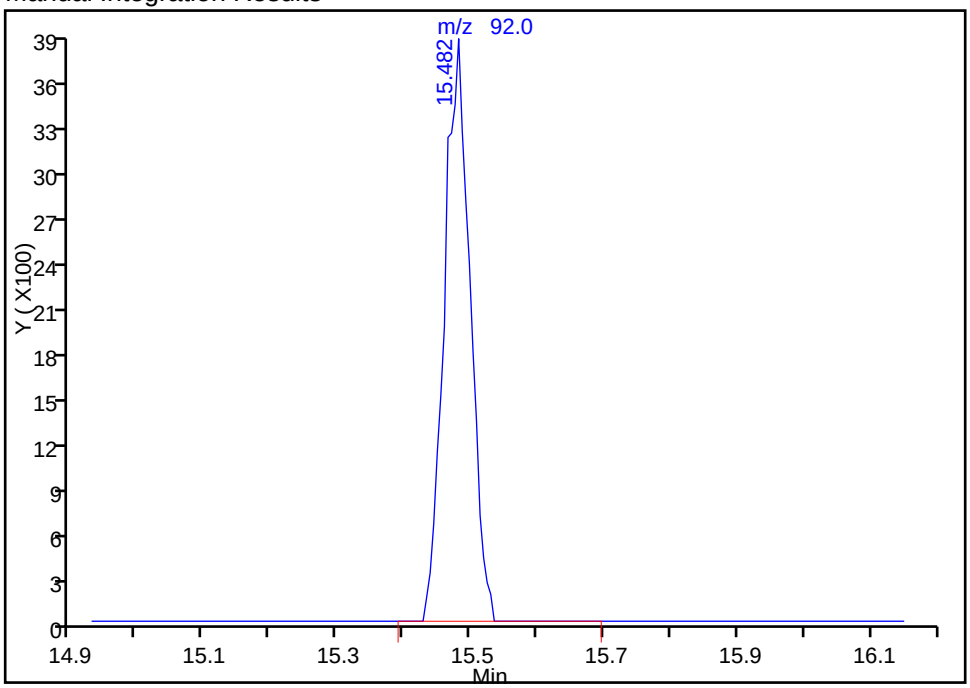
Processing Integration Results

RT: 15.48
Area: 7536
Amount: 0.158995
Amount Units: ppb v/v



Manual Integration Results

RT: 15.48
Area: 10378
Amount: 0.209971
Amount Units: ppb v/v



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Audit Reason: Baseline

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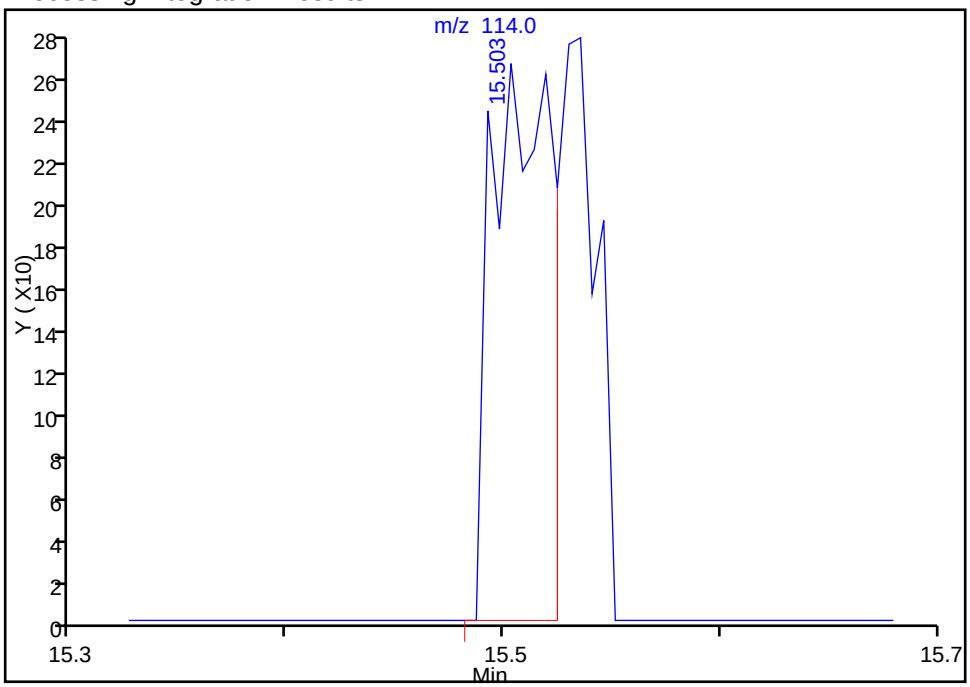
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

66 n-Octane, CAS: 111-65-9

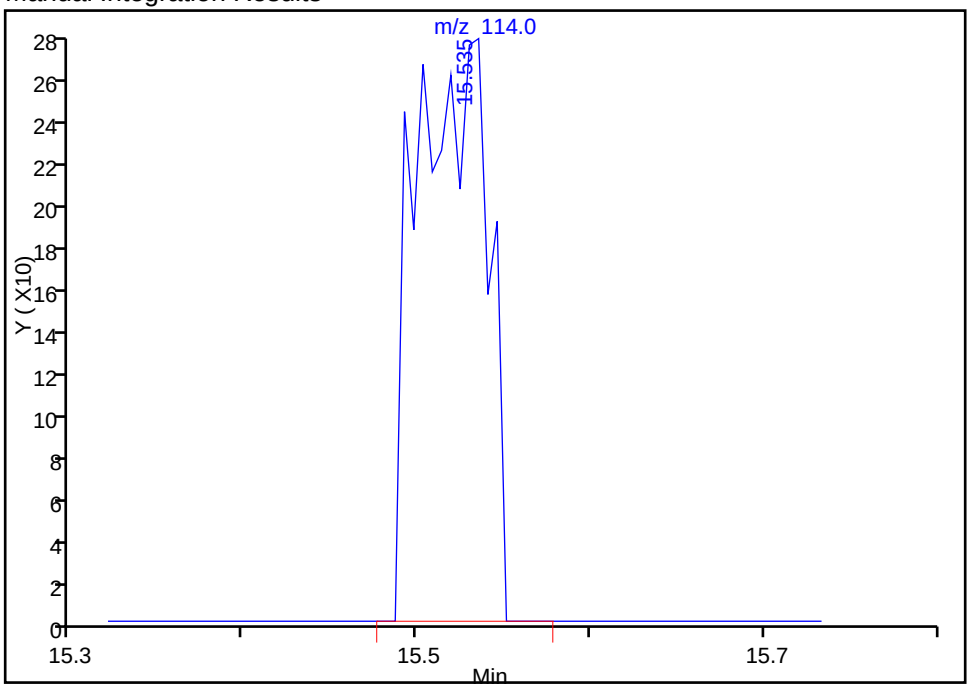
Processing Integration Results

RT: 15.50
Area: 501
Amount: 0.217878
Amount Units: ppb v/v



Manual Integration Results

RT: 15.54
Area: 783
Amount: 0.217878
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

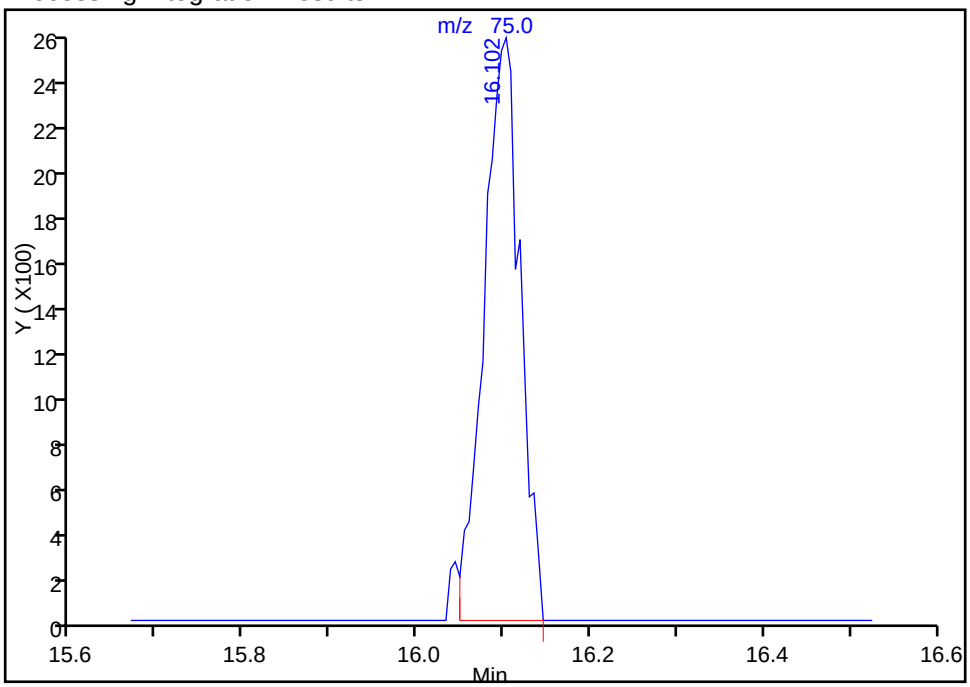
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_05.D
Injection Date: 17-Aug-2015 18:54:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

67 trans-1,3-Dichloropropene, CAS: 10061-02-6

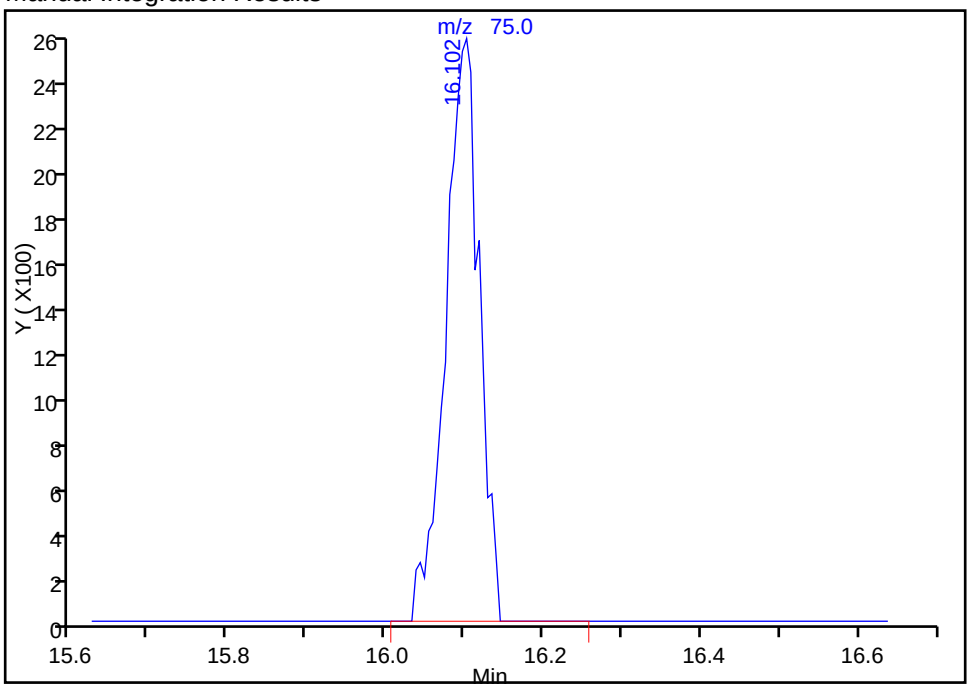
Processing Integration Results

RT: 16.10
Area: 7525
Amount: 0.210958
Amount Units: ppb v/v



Manual Integration Results

RT: 16.10
Area: 7682
Amount: 0.214685
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:17:28
Audit Action: Manually Integrated
Audit Reason: Baseline

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_06.D
Lims ID: ic
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Aug-2015 19:44:30 ALS Bottle#: 5 Worklist Smp#: 6
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-006
Misc. Info.: ic-03
Operator ID: pad Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:28 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 09:20:28

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.097	3.092	0.005	88	6617	0.5005	0.8956	
2 Dichlorodifluoromethane	85	3.161	3.161	0.000	99	18447	0.5005	0.5332	
3 Chlorodifluoromethane	51	3.215	3.209	0.006	97	9175	0.5005	0.5483	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.429	3.423	0.006	90	18529	0.5005	0.5268	
5 Chloromethane	50	3.568	3.563	0.005	97	5361	0.5005	0.5507	
6 Butane	43	3.760	3.755	0.005	98	10165	0.5005	0.6356	
7 Vinyl chloride	62	3.803	3.803	0.000	97	6496	0.5005	0.5291	
8 Butadiene	54	3.878	3.878	0.000	91	4995	0.5005	0.5664	
9 Bromomethane	94	4.547	4.547	0.000	98	7429	0.5005	0.5344	
10 Chloroethane	64	4.777	4.777	0.000	97	3292	0.5005	0.5309	
11 2-Methylbutane	43	4.836	4.841	-0.005	89	6750	0.5005	0.5897	
12 Vinyl bromide	106	5.157	5.157	0.000	99	8410	0.5005	0.5241	
13 Trichlorofluoromethane	101	5.248	5.248	0.000	97	20232	0.5005	0.5302	
14 Pentane	43	5.376	5.376	0.000	95	11005	0.5005	0.6044	
15 Ethanol	45	5.820	5.804	0.016	97	18594	5.01	4.87	
16 Ethyl ether	59	5.916	5.895	0.021	92	4104	0.5005	0.5123	
17 Acrolein	56	6.291	6.280	0.011	38	2068	0.5005	0.6863	
18 1,1,2-Trichloro-1,2,2-trif	101	6.291	6.286	0.005	93	15917	0.5005	0.5211	
20 1,1-Dichloroethene	96	6.344	6.344	0.000	92	7469	0.5005	0.5231	
21 Acetone	43	6.607	6.585	0.021	89	20789	0.5005	1.34	
22 Carbon disulfide	76	6.735	6.740	-0.005	98	19072	0.5005	0.5256	
23 Isopropyl alcohol	45	6.911	6.863	0.048	99	9499	0.5005	0.6439	
24 3-Chloro-1-propene	41	7.120	7.115	0.005	89	6592	0.5005	0.5470	
25 Acetonitrile	41	7.270	7.265	0.005	99	4979	0.5005	0.6747	
26 Methylene Chloride	49	7.409	7.409	0.000	83	8715	0.5005	0.6648	
28 2-Methyl-2-propanol	59	7.682	7.639	0.043	98	13152	0.5005	0.5561	
29 Methyl tert-butyl ether	73	7.842	7.800	0.042	96	20686	0.5005	0.5238	
30 trans-1,2-Dichloroethene	61	7.832	7.837	-0.005	91	9769	0.5005	0.5328	
31 Acrylonitrile	53	8.008	8.003	0.005	93	4439	0.5005	0.5217	
32 Hexane	57	8.201	8.201	0.000	88	11217	0.5005	0.5761	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.704	8.709	-0.005	99	12984	0.5005	0.5244	
34 Vinyl acetate	43	8.773	8.773	0.000	99	15511	0.5005	0.5344	
35 cis-1,2-Dichloroethene	96	9.811	9.816	-0.005	96	9366	0.5005	0.5198	
36 2-Butanone (MEK)	72	9.875	9.865	0.010	99	5720	0.5005	0.6924	
37 Ethyl acetate	88	9.907	9.897	0.010	95	627	0.5005	0.4796	
S 38 1,2-Dichloroethene, Total	61				0		1.00	1.05	
* 40 Chlorobromomethane	128	10.282	10.282	0.000	77	177864	10.0	10.0	
39 Tetrahydrofuran	42	10.319	10.287	0.032	86	7598	0.5005	0.5485	
41 Chloroform	83	10.405	10.410	-0.005	98	17489	0.5005	0.5291	
42 Cyclohexane	84	10.646	10.656	-0.010	85	12595	0.5005	0.5175	M
43 1,1,1-Trichloroethane	97	10.688	10.688	0.000	97	18231	0.5005	0.5143	
44 Carbon tetrachloride	117	10.934	10.934	0.000	97	18498	0.5005	0.5009	
45 Isooctane	57	11.357	11.362	-0.005	99	41917	0.5005	0.5154	
46 Benzene	78	11.411	11.416	-0.005	93	30066	0.5005	0.5297	
47 1,2-Dichloroethane	62	11.603	11.609	-0.006	95	10225	0.5005	0.5132	
48 n-Heptane	43	11.742	11.753	-0.011	86	14909	0.5005	0.5443	
* 50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	92	972301	10.0	10.0	
51 n-Butanol	56	12.700	12.668	0.032	85	5859	0.5005	0.6204	
52 Trichloroethene	95	12.737	12.743	-0.006	93	14420	0.5005	0.5041	
53 1,2-Dichloropropane	63	13.326	13.336	-0.010	94	10996	0.5005	0.5097	M
54 Methyl methacrylate	69	13.497	13.492	0.005	81	10846	0.5005	0.5045	
55 1,4-Dioxane	88	13.593	13.567	0.026	91	6814	0.5005	0.6391	
56 Dibromomethane	174	13.599	13.609	-0.010	90	18413	0.5005	0.5353	
57 Dichlorobromomethane	83	13.903	13.909	-0.006	98	19837	0.5005	0.4896	
58 cis-1,3-Dichloropropene	75	14.872	14.877	-0.005	88	16721	0.5005	0.4939	
A 59 Total Hydrocarbons	1	14.971	(3.054-26.887)		0	7091811	NC	NC	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	7091811	0.5005	143.2	
61 4-Methyl-2-pentanone (MIBK	43	15.198	15.177	0.021	93	19380	0.5005	0.5222	
A 63 Toluene Range	1		(15.472-15.492)				NC	ND	
62 Toluene	92	15.476	15.482	-0.006	93	25278	0.5005	0.5205	
A 65 GRO	1	15.514	(15.514-15.514)		0	183909	0.5005	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.508	15.514	-0.006	86	23178	0.5005	0.5496	
67 trans-1,3-Dichloropropene	75	16.102	16.102	0.000	93	19391	0.5005	0.5492	
68 1,1,2-Trichloroethane	83	16.487	16.487	0.000	96	11485	0.5005	0.5069	
69 Tetrachloroethene	166	16.584	16.589	-0.005	96	24300	0.5005	0.5025	
70 2-Hexanone	43	16.964	16.942	0.022	92	18600	0.5005	0.5158	
71 Chlorodibromomethane	129	17.263	17.269	-0.006	97	20490	0.5005	0.4374	
72 Ethylene Dibromide	107	17.552	17.552	0.000	99	22207	0.5005	0.4983	
* 73 Chlorobenzene-d5	117	18.456	18.456	0.000	82	953679	10.0	10.0	
74 Chlorobenzene	112	18.515	18.520	-0.005	97	35363	0.5005	0.5114	
75 Ethylbenzene	91	18.659	18.659	0.000	96	53766	0.5005	0.5136	
76 n-Nonane	57	18.761	18.761	0.000	85	23969	0.5005	0.5333	
77 m-Xylene & p-Xylene	106	18.911	18.911	0.000	99	44443	1.00	1.01	
78 o-Xylene	106	19.729	19.729	0.000	95	22217	0.5005	0.5092	
79 Styrene	104	19.777	19.778	-0.001	97	33909	0.5005	0.4979	
S 80 Xylenes, Total	106				0		1.50	1.52	
81 Bromoform	173	20.184	20.189	-0.005	99	16277	0.5005	0.3718	
82 Isopropylbenzene	105	20.361	20.361	0.000	94	62997	0.5005	0.5061	
* 83 4-Bromofluorobenzene	95	20.719	20.724	-0.005	99	645812	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.987	20.992	-0.006	98	29690	0.5005	0.5070	
86 N-Propylbenzene	91	21.045	21.045	0.000	100	73727	0.5005	0.5082	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.083	21.088	-0.005	97	23812	0.5005	0.5331	
88 n-Decane	57	21.190	21.190	0.000	84	31078	0.5005	0.5468	
89 4-Ethyltoluene	105	21.227	21.227	0.000	98	64410	0.5005	0.5121	
90 2-Chlorotoluene	91	21.249	21.243	0.006	95	50782	0.5005	0.5161	
91 1,3,5-Trimethylbenzene	105	21.324	21.324	0.000	94	53113	0.5005	0.5116	
92 Alpha Methyl Styrene	118	21.682	21.682	0.000	92	27241	0.5005	0.4977	
93 tert-Butylbenzene	119	21.800	21.800	0.000	96	53515	0.5005	0.5172	
94 1,2,4-Trimethylbenzene	105	21.891	21.891	0.000	96	53761	0.5005	0.5165	
95 sec-Butylbenzene	105	22.110	22.110	0.000	99	78341	0.5005	0.5178	
96 4-Isopropyltoluene	119	22.308	22.308	0.000	98	68063	0.5005	0.5108	
97 1,3-Dichlorobenzene	146	22.356	22.356	0.000	99	40915	0.5005	0.5111	
98 1,4-Dichlorobenzene	146	22.495	22.495	0.000	97	41228	0.5005	0.5089	
99 Benzyl chloride	91	22.698	22.698	0.000	100	40288	0.5005	0.4754	
100 Undecane	57	22.896	22.896	0.000	73	33330	0.5005	0.5711	
101 n-Butylbenzene	91	22.896	22.902	-0.006	96	60138	0.5005	0.5364	
102 1,2-Dichlorobenzene	146	23.051	23.052	-0.001	98	38902	0.5005	0.5127	
103 Dodecane	57	24.549	24.549	0.000	94	33156	0.5005	0.6223	
104 1,2,4-Trichlorobenzene	180	25.689	25.689	0.000	93	35069	0.5005	0.5008	
105 Hexachlorobutadiene	225	25.871	25.871	0.000	98	34540	0.5005	0.5301	
106 Naphthalene	128	26.213	26.219	-0.006	99	61461	0.5005	0.4583	
107 1,2,3-Trichlorobenzene	180	26.727	26.727	0.000	95	31792	0.5005	0.4912	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Review Flags

M - Manually Integrated

Reagents:

ATTO15CAL2w_00192	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

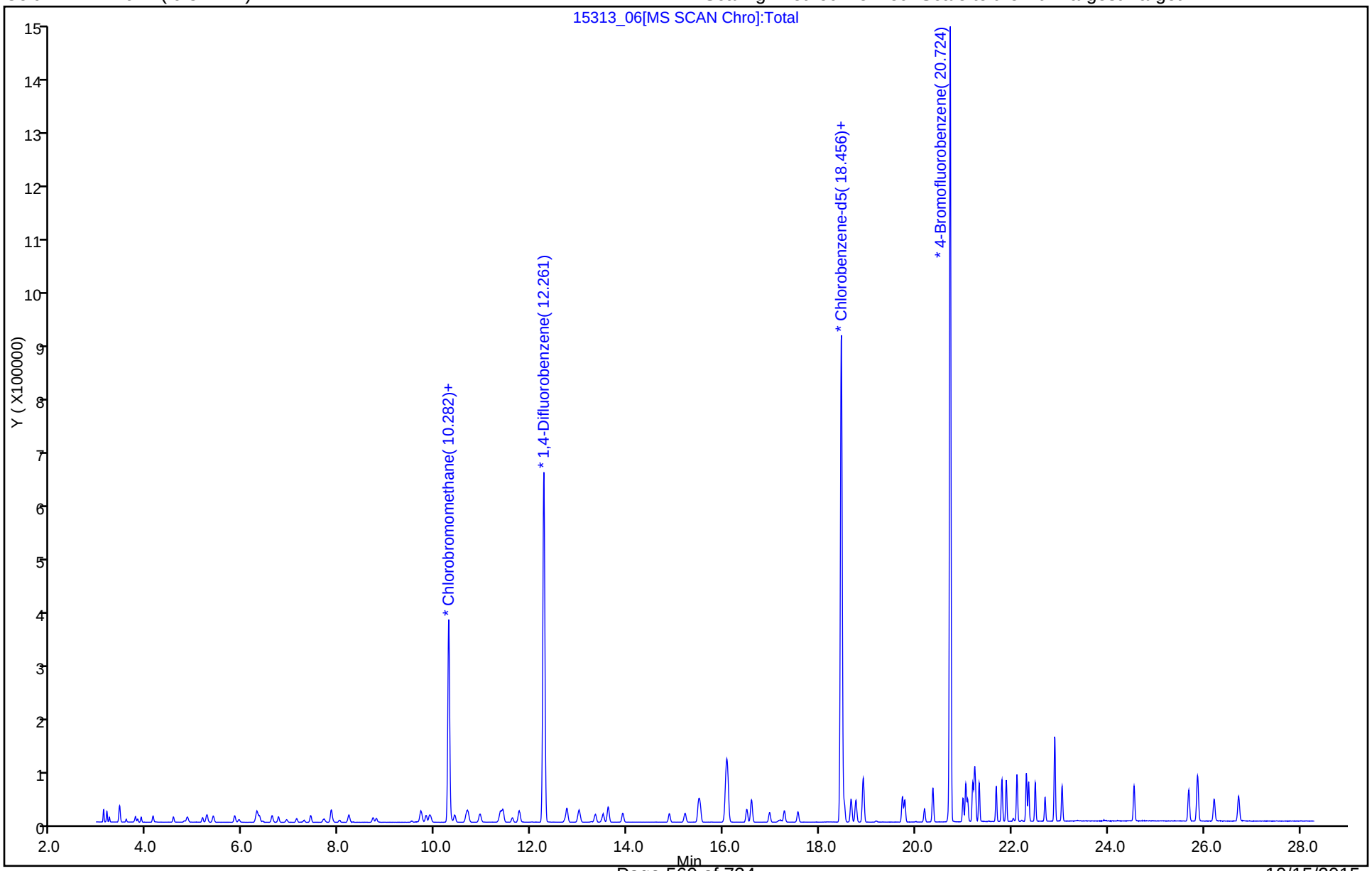
Report Date: 18-Aug-2015 11:12:28 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_06.D

Injection Date:	17-Aug-2015 19:44:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	ic			Worklist Smp#:	6
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Manual Integration/User Assign Peak Report

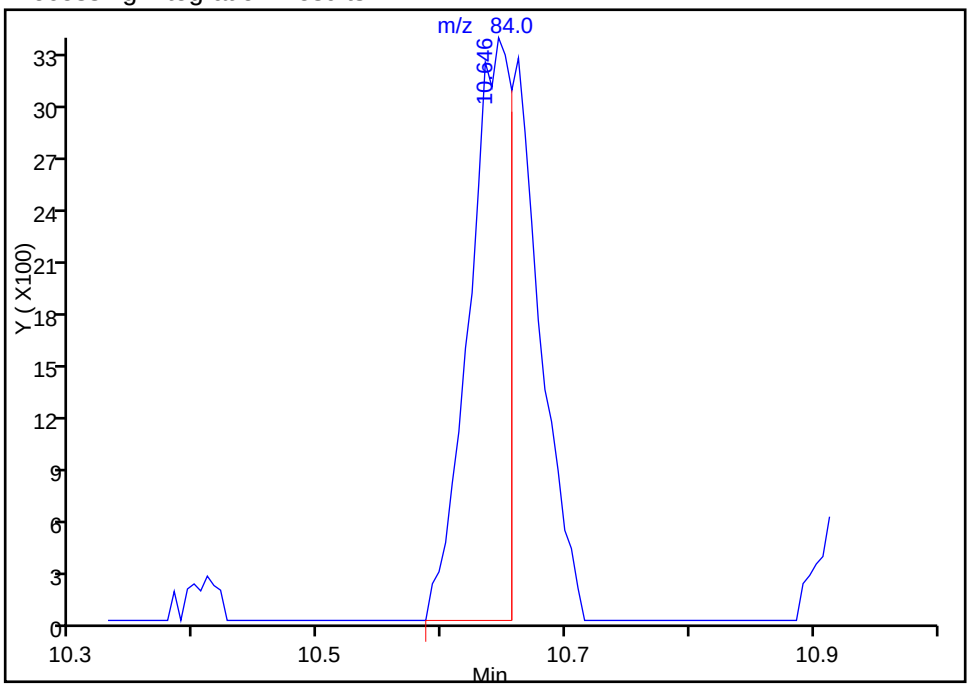
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_06.D
Injection Date: 17-Aug-2015 19:44:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 5 Worklist Smp#: 6
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

42 Cyclohexane, CAS: 110-82-7

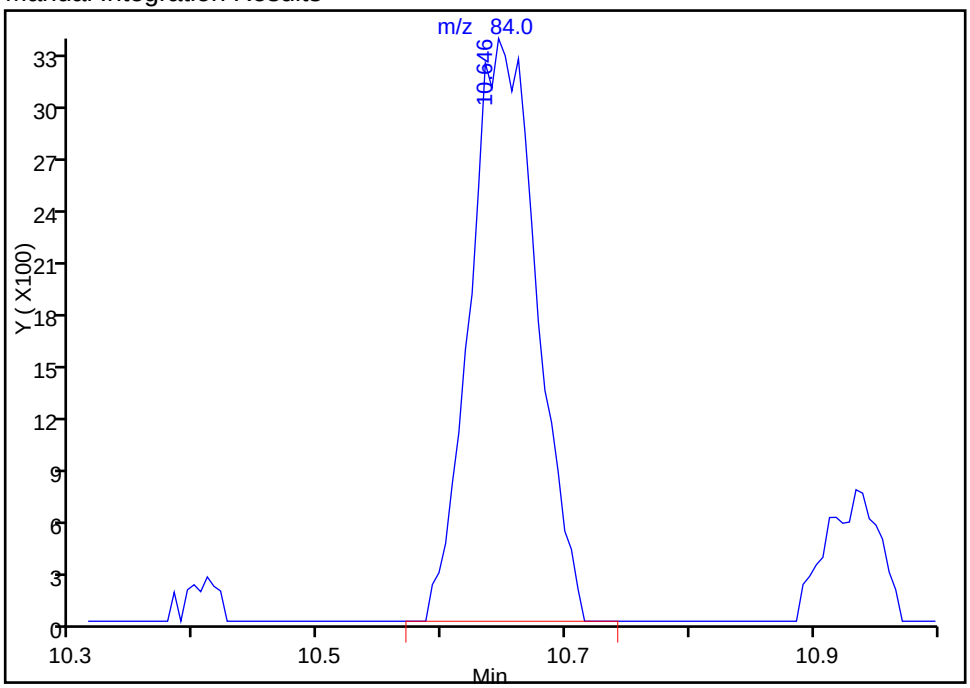
Processing Integration Results

RT: 10.65
Area: 7934
Amount: 0.344855
Amount Units: ppb v/v



Manual Integration Results

RT: 10.65
Area: 12595
Amount: 0.517519
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:20:28
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

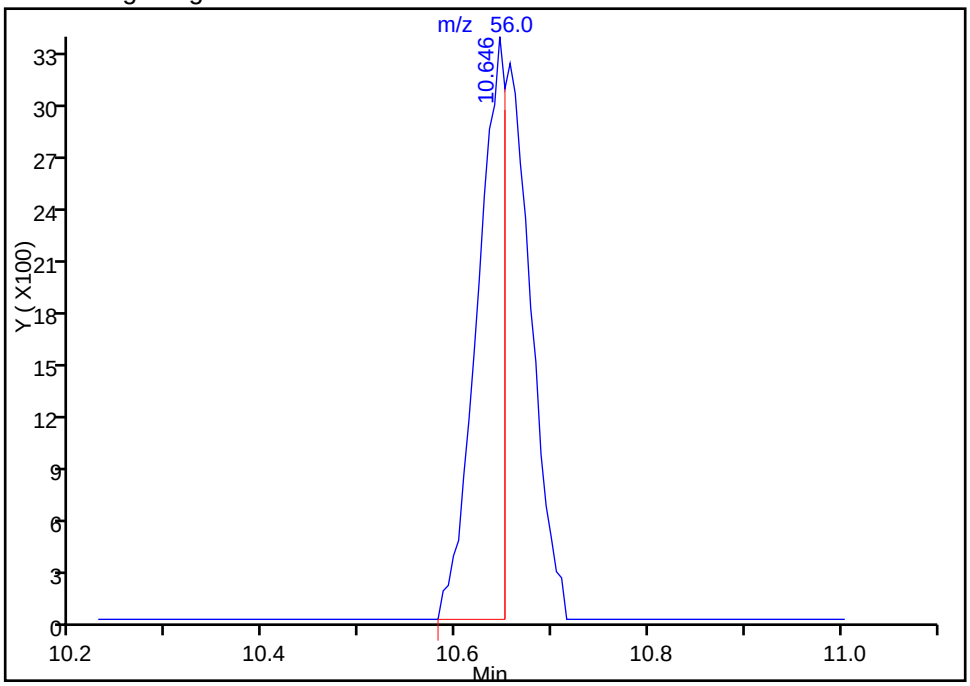
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_06.D
Injection Date: 17-Aug-2015 19:44:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 5 Worklist Smp#: 6
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

42 Cyclohexane, CAS: 110-82-7

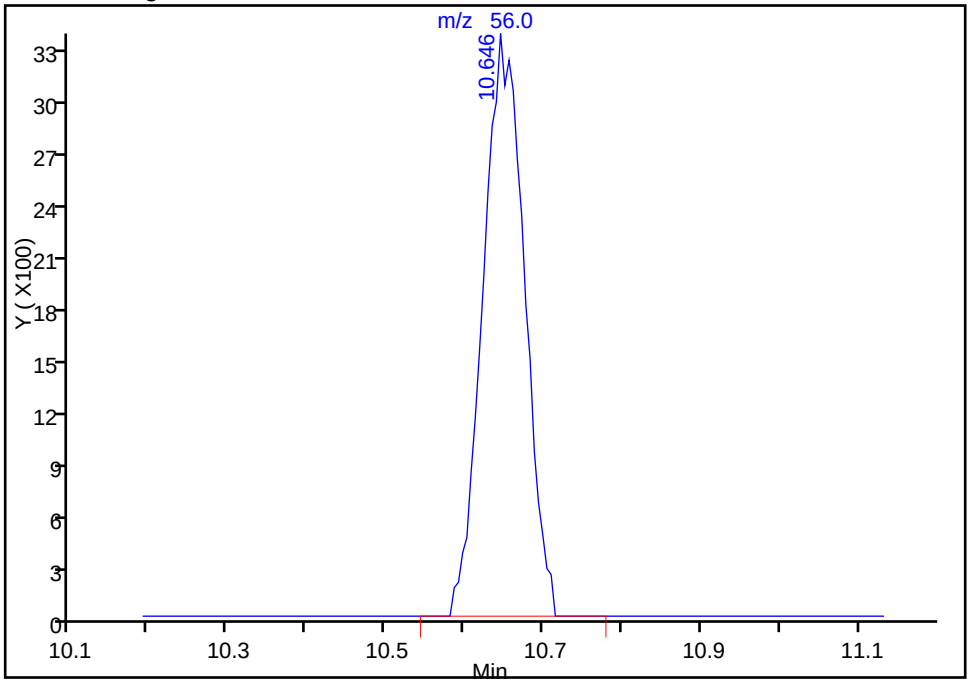
Processing Integration Results

RT: 10.65
Area: 6915
Amount: 0.344855
Amount Units: ppb v/v



Manual Integration Results

RT: 10.65
Area: 12449
Amount: 0.517519
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:20:28
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

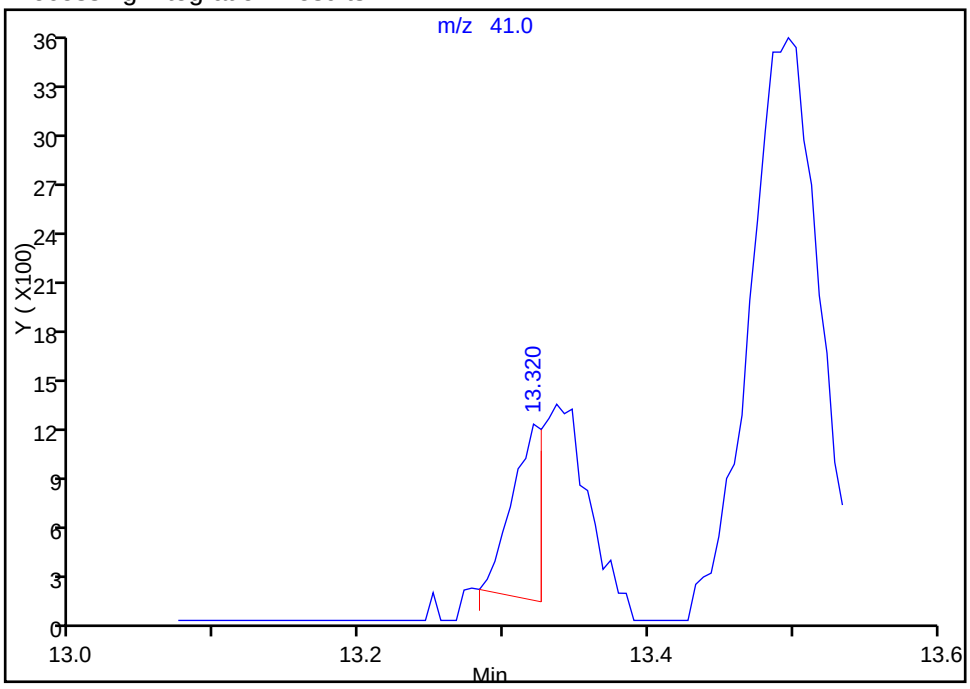
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_06.D
Injection Date: 17-Aug-2015 19:44:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 5 Worklist Smp#: 6
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

53 1,2-Dichloropropane, CAS: 78-87-5

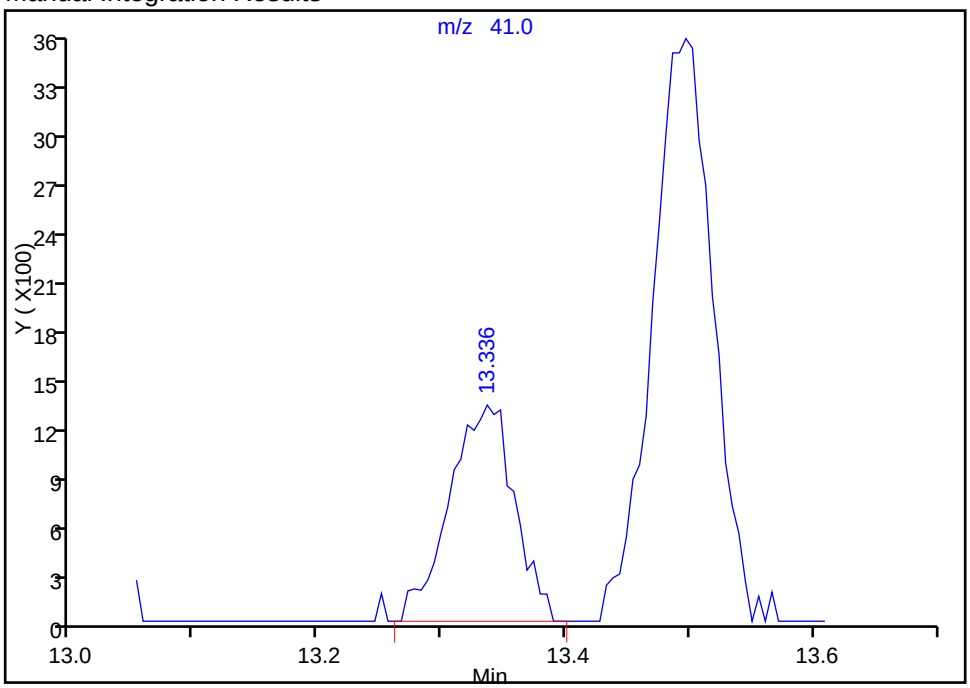
Processing Integration Results

RT: 13.32
Area: 1594
Amount: 0.509739
Amount Units: ppb v/v



Manual Integration Results

RT: 13.34
Area: 4837
Amount: 0.509739
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:20:28
Audit Action: Manually Integrated
Audit Reason: Baseline

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_07.D
Lims ID: ic
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Aug-2015 20:33:30 ALS Bottle#: 6 Worklist Smp#: 7
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-007
Misc. Info.: ic-04
Operator ID: pad Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:29 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 09:29:00

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.092	3.092	0.000	98	39568	4.99	5.38	
2 Dichlorodifluoromethane	85	3.161	3.161	0.000	99	174200	4.99	5.06	
3 Chlorodifluoromethane	51	3.210	3.209	0.001	97	84151	4.99	5.06	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.424	3.423	0.001	96	175537	4.99	5.02	
5 Chloromethane	50	3.563	3.563	0.000	99	48700	4.99	5.03	
6 Butane	43	3.755	3.755	0.000	98	77403	4.99	4.86	
7 Vinyl chloride	62	3.803	3.803	0.000	97	61956	4.99	5.07	
8 Butadiene	54	3.878	3.878	0.000	93	43265	4.99	4.93	
9 Bromomethane	94	4.547	4.547	0.000	99	68219	4.99	4.93	
10 Chloroethane	64	4.772	4.777	-0.005	99	31384	4.99	5.09	
11 2-Methylbutane	43	4.841	4.841	0.000	91	54555	4.99	4.79	
12 Vinyl bromide	106	5.152	5.157	-0.005	99	78834	4.99	4.94	
13 Trichlorofluoromethane	101	5.248	5.248	0.000	98	187826	4.99	4.95	
14 Pentane	43	5.376	5.376	0.000	96	90462	4.99	4.99	
15 Ethanol	45	5.810	5.804	0.006	99	45333	10.0	11.9	
16 Ethyl ether	59	5.900	5.895	0.005	94	40793	4.99	5.12	
17 Acrolein	56	6.286	6.280	0.006	37	16554	4.99	5.52	
18 1,1,2-Trichloro-1,2,2-trif	101	6.280	6.286	-0.006	95	148836	4.99	4.90	
20 1,1-Dichloroethene	96	6.339	6.344	-0.005	94	70402	4.99	4.96	
21 Acetone	43	6.591	6.585	0.006	89	86571	4.99	5.59	
22 Carbon disulfide	76	6.740	6.740	0.000	98	180387	4.99	5.00	
23 Isopropyl alcohol	45	6.874	6.863	0.011	99	72980	4.99	4.97	
24 3-Chloro-1-propene	41	7.115	7.115	0.000	92	57849	4.99	4.83	
25 Acetonitrile	41	7.259	7.265	-0.006	99	39587	4.99	5.39	
26 Methylene Chloride	49	7.409	7.409	0.000	86	64407	4.99	4.94	
28 2-Methyl-2-propanol	59	7.650	7.639	0.011	99	117126	4.99	4.98	
29 Methyl tert-butyl ether	73	7.805	7.800	0.005	96	193747	4.99	4.93	
30 trans-1,2-Dichloroethene	61	7.832	7.837	-0.005	90	90452	4.99	4.96	
31 Acrylonitrile	53	8.003	8.003	0.000	95	43254	4.99	5.11	
32 Hexane	57	8.201	8.201	0.000	89	94069	4.99	4.86	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.709	8.709	0.000	99	121376	4.99	4.93	
34 Vinyl acetate	43	8.768	8.773	-0.005	99	148881	4.99	5.16	
35 cis-1,2-Dichloroethene	96	9.811	9.816	-0.005	95	87958	4.99	4.91	
36 2-Butanone (MEK)	72	9.865	9.865	0.000	100	39469	4.99	4.80	
37 Ethyl acetate	88	9.891	9.897	-0.006	99	6481	4.99	4.98	
S 38 1,2-Dichloroethene, Total	61				0		9.99	9.86	
* 40 Chlorobromomethane	128	10.282	10.282	0.000	79	176959	10.0	10.0	
39 Tetrahydrofuran	42	10.293	10.287	0.006	91	69181	4.99	5.04	
41 Chloroform	83	10.405	10.410	-0.005	99	162241	4.99	4.93	
42 Cyclohexane	84	10.651	10.656	-0.005	86	116145	4.99	4.82	
43 1,1,1-Trichloroethane	97	10.683	10.688	-0.005	97	170319	4.99	4.85	
44 Carbon tetrachloride	117	10.935	10.934	0.001	96	181327	4.99	4.96	
45 Isooctane	57	11.363	11.362	0.001	100	397447	4.99	4.93	
46 Benzene	78	11.416	11.416	0.000	94	271621	4.99	4.83	
47 1,2-Dichloroethane	62	11.609	11.609	0.000	97	96043	4.99	4.87	
48 n-Heptane	43	11.748	11.753	-0.005	88	133436	4.99	4.92	
* 50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	92	962941	10.0	10.0	
51 n-Butanol	56	12.679	12.668	0.011	84	44914	4.99	4.80	
52 Trichloroethene	95	12.748	12.743	0.005	94	128372	4.99	4.53	
53 1,2-Dichloropropane	63	13.331	13.336	-0.005	95	104929	4.99	4.91	
54 Methyl methacrylate	69	13.486	13.492	-0.006	83	103716	4.99	4.87	
55 1,4-Dioxane	88	13.561	13.567	-0.006	88	51754	4.99	4.90	
56 Dibromomethane	174	13.604	13.609	-0.005	90	152819	4.99	4.49	
57 Dichlorobromomethane	83	13.904	13.909	-0.005	98	199622	4.99	4.97	
58 cis-1,3-Dichloropropene	75	14.872	14.877	-0.005	88	163830	4.99	4.89	
A 59 Total Hydrocarbons	1	14.971	(3.054-26.887)		0	61201985	NC	NC	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	61201985	4.99	1248.2	
61 4-Methyl-2-pentanone (MIBK	43	15.182	15.177	0.005	93	183126	4.99	4.98	
A 63 Toluene Range	1		(15.472-15.492)				NC	ND	
62 Toluene	92	15.482	15.482	0.000	93	231255	4.99	4.81	
A 65 GRO	1	15.514	(15.514-15.514)		0	1697990	4.99	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.514	15.514	0.000	87	206063	4.99	4.93	
67 trans-1,3-Dichloropropene	75	16.102	16.102	0.000	93	164265	4.99	4.70	
68 1,1,2-Trichloroethane	83	16.488	16.487	0.001	96	107712	4.99	4.80	
69 Tetrachloroethene	166	16.584	16.589	-0.005	95	223437	4.99	4.66	
70 2-Hexanone	43	16.948	16.942	0.006	93	179506	4.99	5.02	
71 Chlorodibromomethane	129	17.269	17.269	0.000	98	236482	4.99	5.09	
72 Ethylene Dibromide	107	17.552	17.552	0.000	98	213957	4.99	4.85	
* 73 Chlorobenzene-d5	117	18.456	18.456	0.000	82	945071	10.0	10.0	
74 Chlorobenzene	112	18.520	18.520	0.000	98	331246	4.99	4.83	
75 Ethylbenzene	91	18.660	18.659	0.001	97	503072	4.99	4.85	
76 n-Nonane	57	18.761	18.761	0.000	86	217187	4.99	4.88	
77 m-Xylene & p-Xylene	106	18.911	18.911	0.000	99	424990	9.99	9.71	
78 o-Xylene	106	19.724	19.729	-0.005	95	208525	4.99	4.82	
79 Styrene	104	19.778	19.778	0.000	98	330977	4.99	4.90	
S 80 Xylenes, Total	106				0		15.0	14.5	
81 Bromoform	173	20.190	20.189	0.001	99	232957	4.99	5.37	
82 Isopropylbenzene	105	20.361	20.361	0.000	94	596746	4.99	4.84	
* 83 4-Bromofluorobenzene	95	20.725	20.724	0.001	98	639954	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.987	20.992	-0.005	98	289659	4.99	4.99	
86 N-Propylbenzene	91	21.046	21.045	0.001	100	701499	4.99	4.88	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.083	21.088	-0.005	96	216002	4.99	4.88	
88 n-Decane	57	21.190	21.190	0.000	86	283369	4.99	5.03	
89 4-Ethyltoluene	105	21.227	21.227	0.000	97	602938	4.99	4.84	
90 2-Chlorotoluene	91	21.243	21.243	0.000	96	472878	4.99	4.85	
91 1,3,5-Trimethylbenzene	105	21.324	21.324	0.000	94	499768	4.99	4.86	
92 Alpha Methyl Styrene	118	21.682	21.682	0.000	92	269421	4.99	4.97	
93 tert-Butylbenzene	119	21.800	21.800	0.000	96	496200	4.99	4.84	
94 1,2,4-Trimethylbenzene	105	21.891	21.891	0.000	96	502925	4.99	4.88	
95 sec-Butylbenzene	105	22.110	22.110	0.000	99	737805	4.99	4.92	
96 4-Isopropyltoluene	119	22.308	22.308	0.000	98	642290	4.99	4.86	
97 1,3-Dichlorobenzene	146	22.356	22.356	0.000	99	383696	4.99	4.84	
98 1,4-Dichlorobenzene	146	22.495	22.495	0.000	97	391164	4.99	4.87	
99 Benzyl chloride	91	22.699	22.698	0.001	100	410726	4.99	4.89	
100 Undecane	57	22.897	22.896	0.000	71	300072	4.99	5.19	
101 n-Butylbenzene	91	22.897	22.902	-0.006	96	551929	4.99	4.97	
102 1,2-Dichlorobenzene	146	23.052	23.052	0.000	99	361270	4.99	4.80	
103 Dodecane	57	24.550	24.549	0.001	94	299345	4.99	5.67	
104 1,2,4-Trichlorobenzene	180	25.689	25.689	0.000	93	330266	4.99	4.76	M
105 Hexachlorobutadiene	225	25.871	25.871	0.000	99	303192	4.99	4.70	M
106 Naphthalene	128	26.219	26.219	0.000	99	638299	4.99	4.80	M
107 1,2,3-Trichlorobenzene	180	26.727	26.727	0.000	96	318508	4.99	4.97	

QC Flag Legend

Processing Flags
- NC - Not Calibrated
- ND - Not Detected or Marked ND

Review Flags
- M - Manually Integrated

Reagents:

ATTO15CAL3w_00152	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

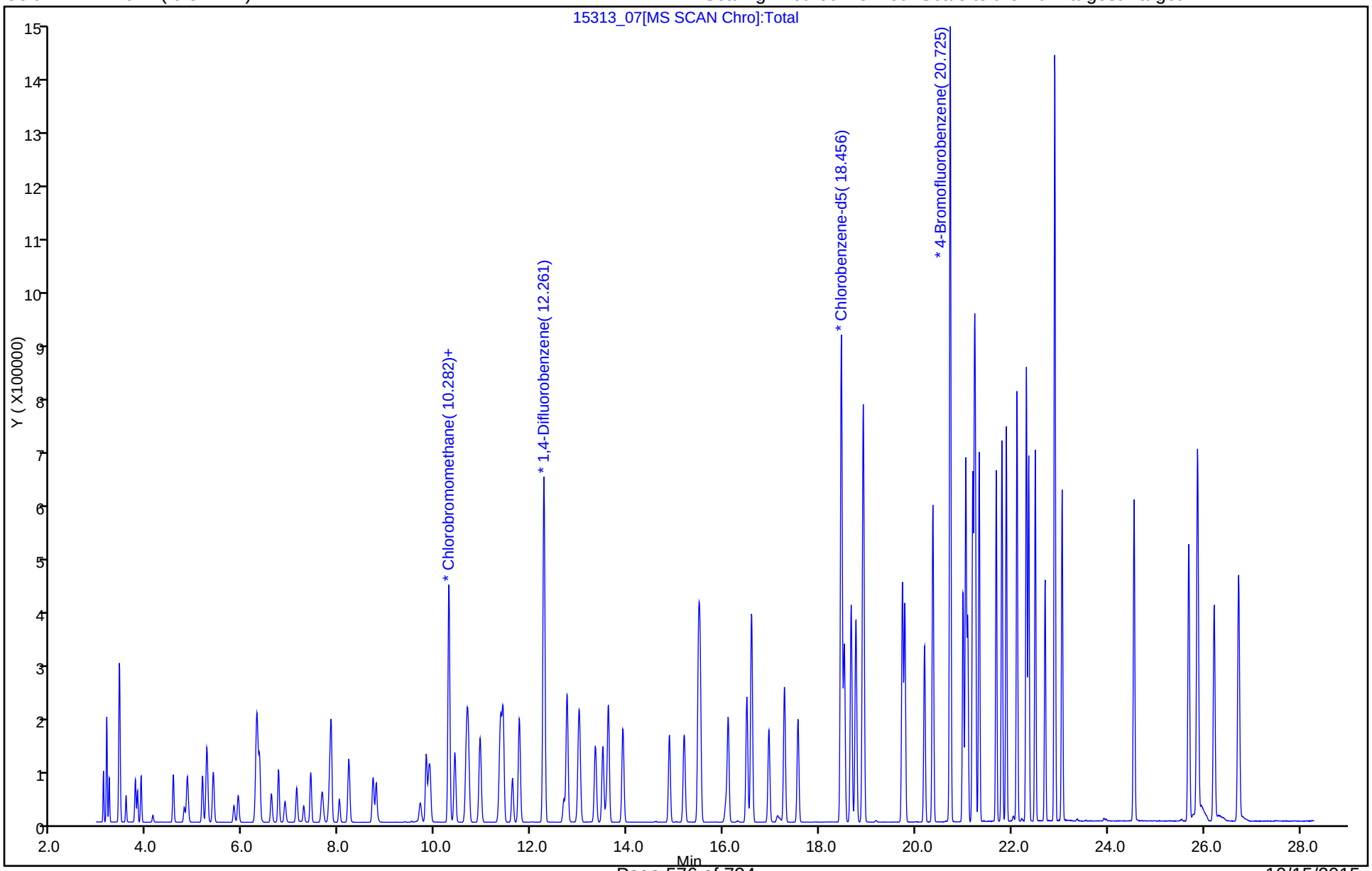
Report Date: 18-Aug-2015 11:12:30 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_07.D

Injection Date:	17-Aug-2015 20:33:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	ic			Worklist Smp#:	7
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Manual Integration/User Assign Peak Report

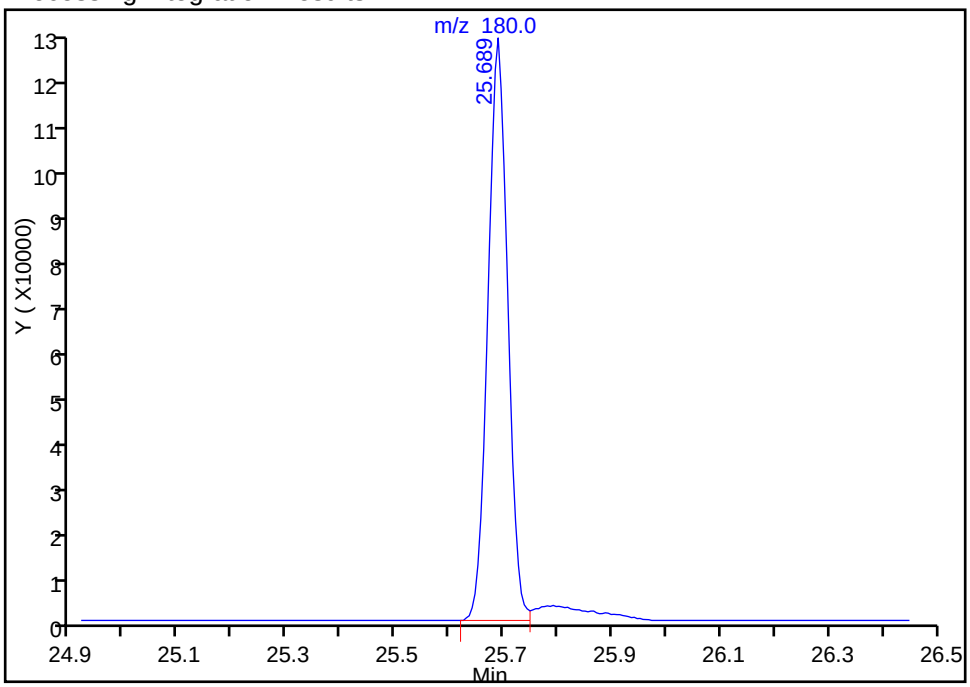
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_07.D
Injection Date: 17-Aug-2015 20:33:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 6 Worklist Smp#: 7
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

104 1,2,4-Trichlorobenzene, CAS: 120-82-1

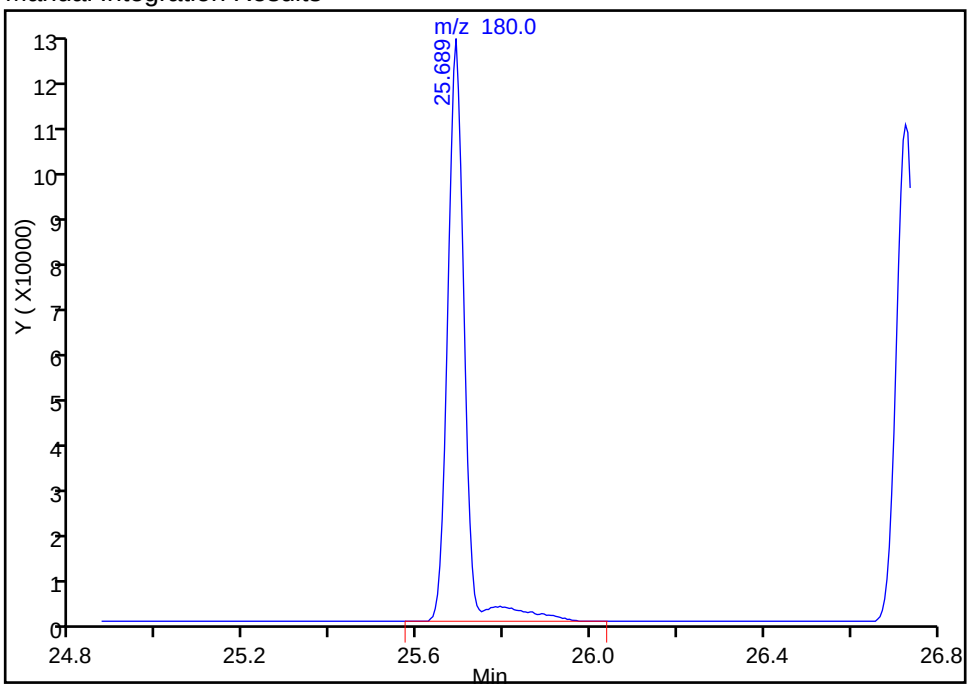
Processing Integration Results

RT: 25.69
Area: 307043
Amount: 4.474790
Amount Units: ppb v/v



Manual Integration Results

RT: 25.69
Area: 330266
Amount: 4.759463
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:29:00
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

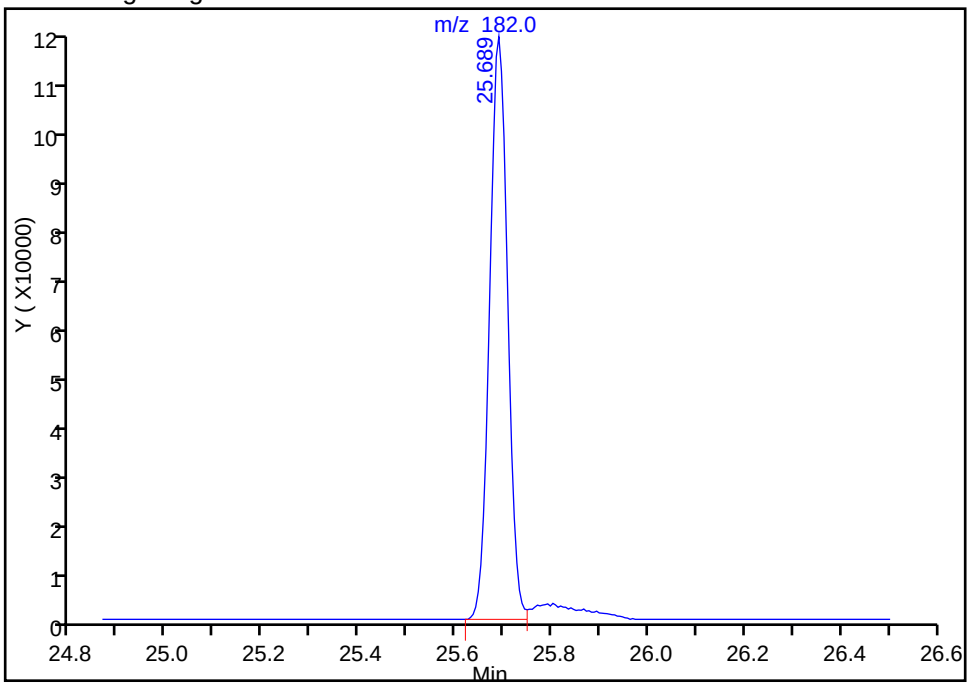
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_07.D
Injection Date: 17-Aug-2015 20:33:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 6 Worklist Smp#: 7
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

104 1,2,4-Trichlorobenzene, CAS: 120-82-1

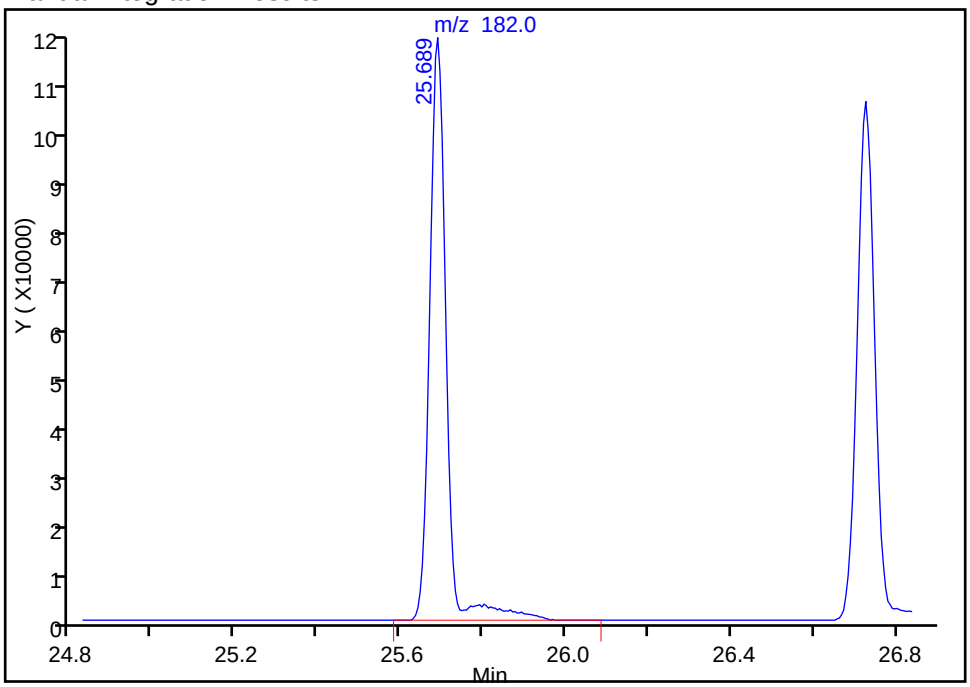
Processing Integration Results

RT: 25.69
Area: 293590
Amount: 4.474790
Amount Units: ppb v/v



Manual Integration Results

RT: 25.69
Area: 315839
Amount: 4.759463
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:29:00
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

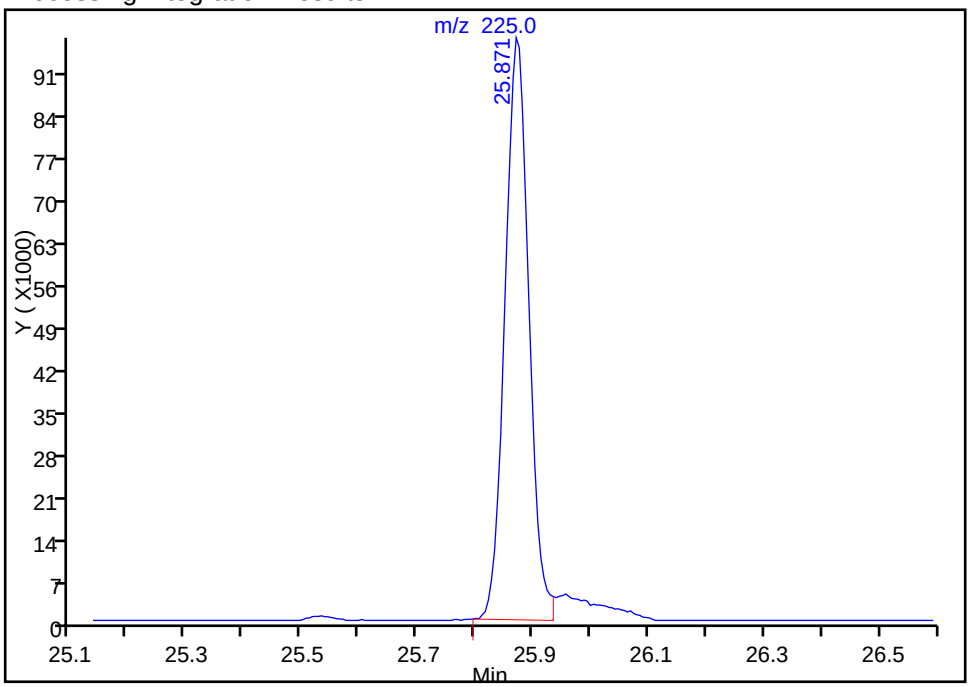
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_07.D
Injection Date: 17-Aug-2015 20:33:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 6 Worklist Smp#: 7
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

105 Hexachlorobutadiene, CAS: 87-68-3

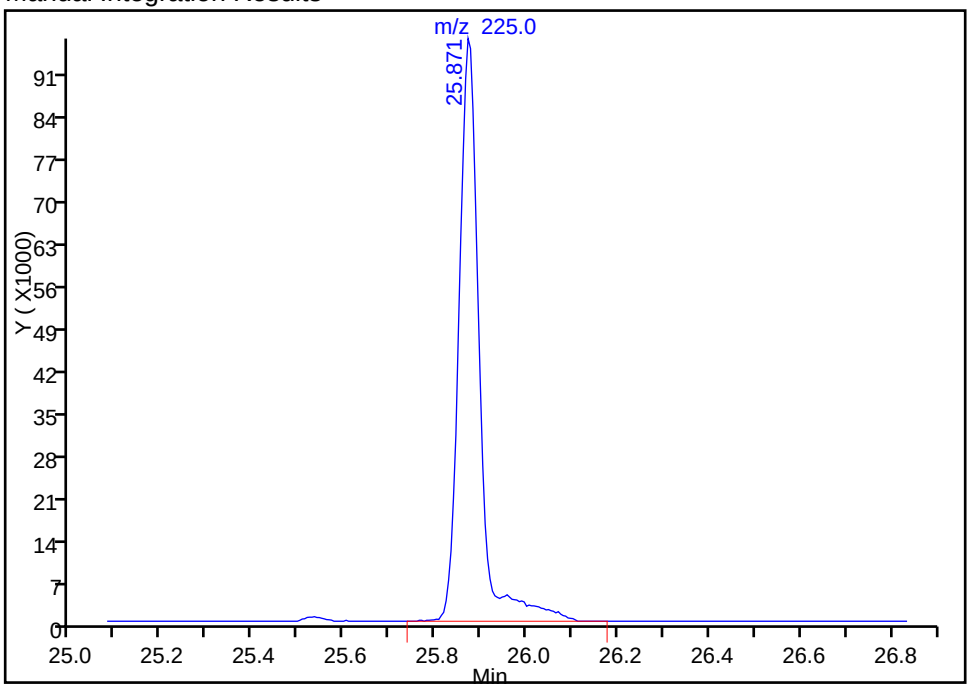
Processing Integration Results

RT: 25.87
Area: 277876
Amount: 4.352161
Amount Units: ppb v/v



Manual Integration Results

RT: 25.87
Area: 303192
Amount: 4.695394
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:29:00
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

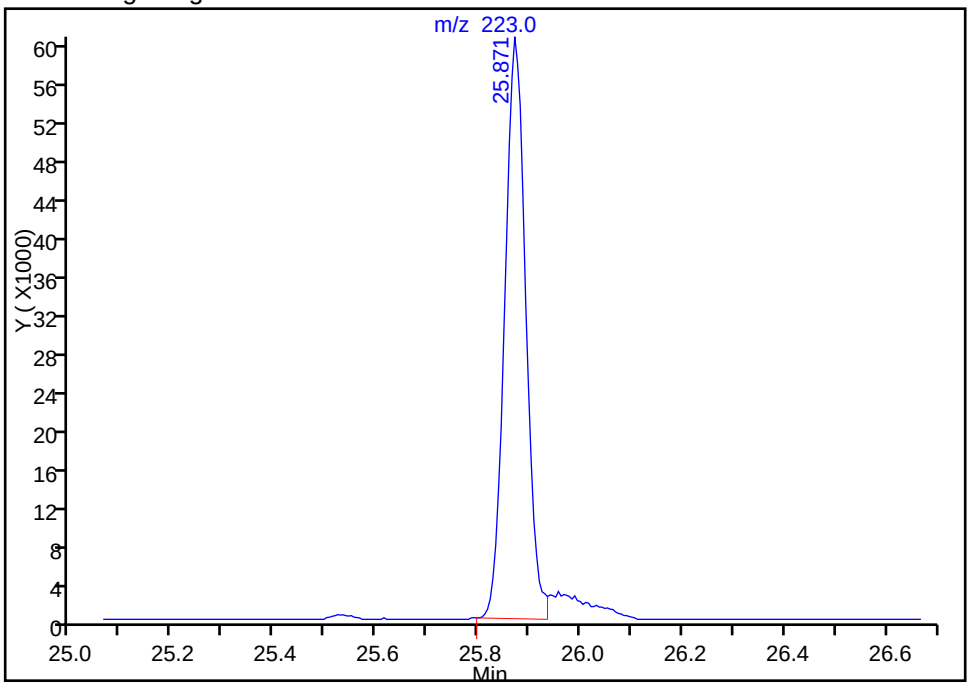
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_07.D
Injection Date: 17-Aug-2015 20:33:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 6 Worklist Smp#: 7
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

105 Hexachlorobutadiene, CAS: 87-68-3

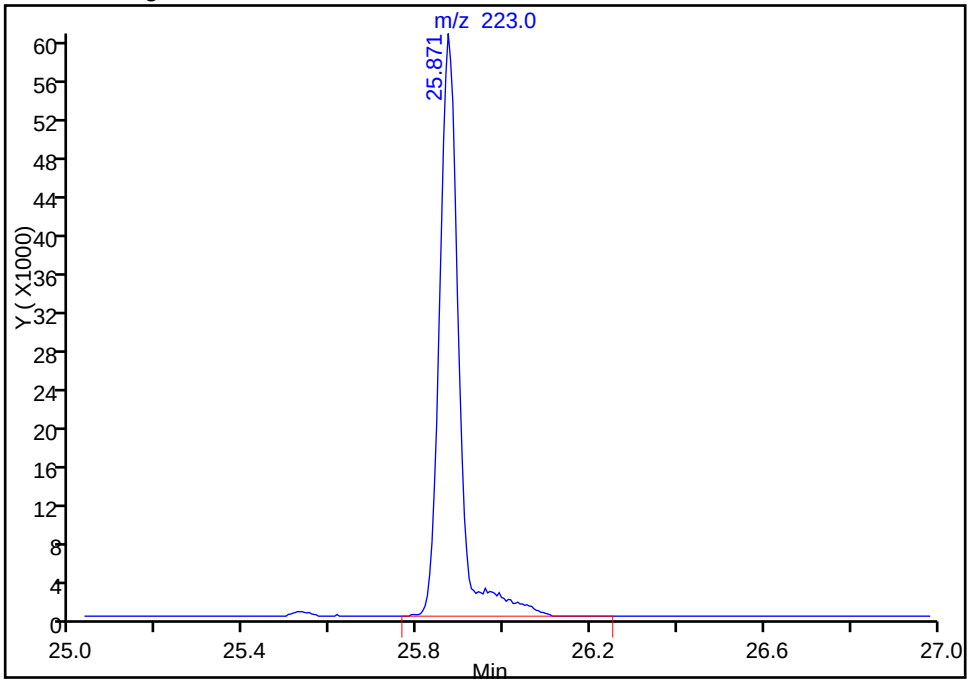
Processing Integration Results

RT: 25.87
Area: 172611
Amount: 4.352161
Amount Units: ppb v/v



Manual Integration Results

RT: 25.87
Area: 188655
Amount: 4.695394
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:29:00
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

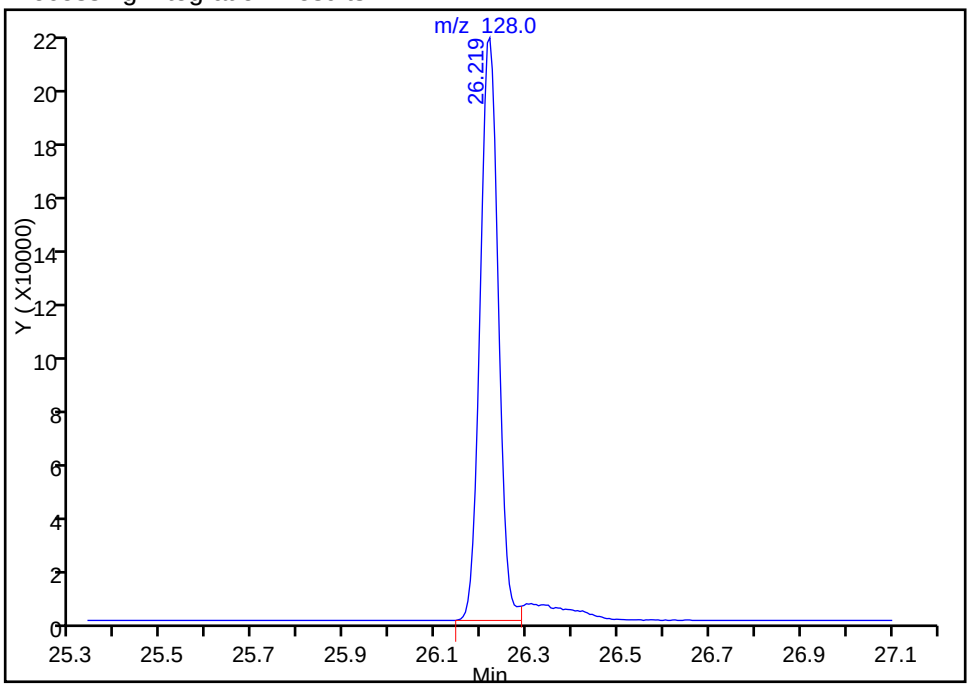
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_07.D
Injection Date: 17-Aug-2015 20:33:30 Instrument ID: CHX.i
Lims ID: ic
Client ID:
Operator ID: pad ALS Bottle#: 6 Worklist Smp#: 7
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Column: RTX-624 (0.32 mm) Detector MS SCAN

106 Naphthalene, CAS: 91-20-3

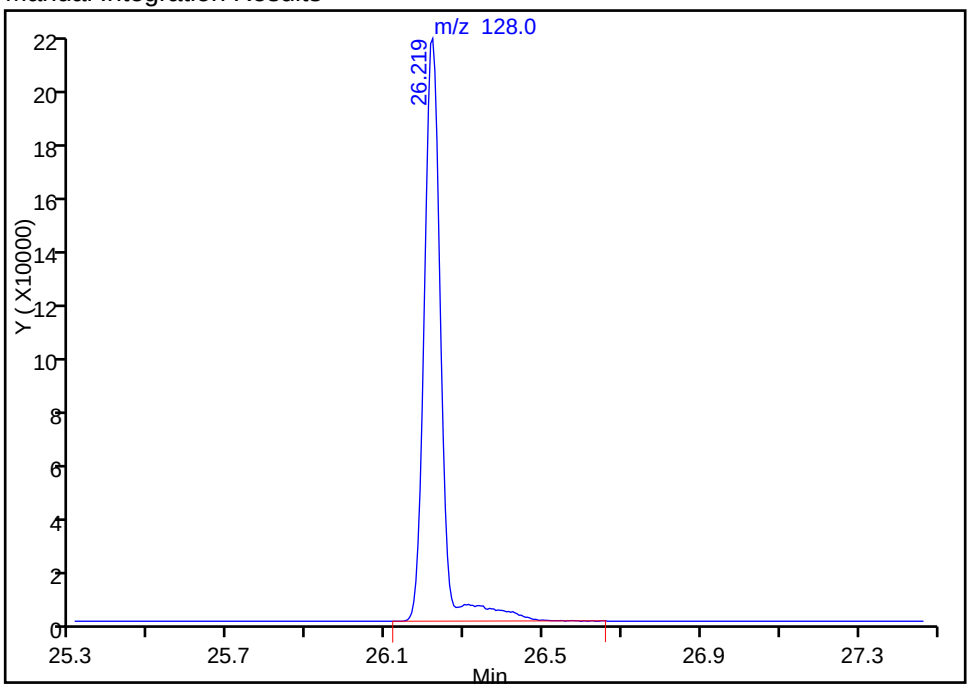
Processing Integration Results

RT: 26.22
Area: 594871
Amount: 4.526070
Amount Units: ppb v/v



Manual Integration Results

RT: 26.22
Area: 638299
Amount: 4.803507
Amount Units: ppb v/v



Reviewer: daiglep, 18-Aug-2015 09:29:00
Audit Action: Manually Integrated
Audit Reason: Baseline

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_08.D
Lims ID: icis
Client ID:
Sample Type: ICIS Calib Level: 5
Inject. Date: 17-Aug-2015 21:23:30 ALS Bottle#: 7 Worklist Smp#: 8
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-008
Misc. Info.: icis-05
Operator ID: pad Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:31 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 09:24:45

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.092	3.092	0.000	99	79619	10.0	10.8	
2 Dichlorodifluoromethane	85	3.161	3.161	0.000	99	367128	10.0	10.6	
3 Chlorodifluoromethane	51	3.209	3.209	0.000	97	178941	10.0	10.7	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.423	3.423	0.000	93	372804	10.0	10.6	
5 Chloromethane	50	3.563	3.563	0.000	99	102928	10.0	10.5	
6 Butane	43	3.755	3.755	0.000	99	165953	10.0	10.4	
7 Vinyl chloride	62	3.803	3.803	0.000	98	132763	10.0	10.8	
8 Butadiene	54	3.878	3.878	0.000	93	92194	10.0	10.4	
9 Bromomethane	94	4.547	4.547	0.000	99	144302	10.0	10.4	
10 Chloroethane	64	4.777	4.777	0.000	99	65465	10.0	10.5	
11 2-Methylbutane	43	4.841	4.841	0.000	91	112761	10.0	9.83	
12 Vinyl bromide	106	5.157	5.157	0.000	99	169183	10.0	10.5	
13 Trichlorofluoromethane	101	5.248	5.248	0.000	98	400212	10.0	10.5	
14 Pentane	43	5.376	5.376	0.000	96	189558	10.0	10.4	
15 Ethanol	45	5.804	5.804	0.000	99	58425	15.0	15.3	
16 Ethyl ether	59	5.895	5.895	0.000	95	86055	10.0	10.7	
17 Acrolein	56	6.280	6.280	0.000	95	41527	10.0	13.7	
18 1,1,2-Trichloro-1,2,2-trif	101	6.286	6.286	0.000	95	317169	10.0	10.4	
20 1,1-Dichloroethene	96	6.344	6.344	0.000	93	151254	10.0	10.6	
21 Acetone	43	6.585	6.585	0.000	89	153320	10.0	9.83	
22 Carbon disulfide	76	6.740	6.740	0.000	98	382581	10.0	10.5	
23 Isopropyl alcohol	45	6.863	6.863	0.000	99	138526	10.0	9.37	
24 3-Chloro-1-propene	41	7.115	7.115	0.000	92	126757	10.0	10.5	
25 Acetonitrile	41	7.265	7.265	0.000	99	73804	10.0	9.98	
26 Methylene Chloride	49	7.409	7.409	0.000	85	132185	10.0	10.1	
28 2-Methyl-2-propanol	59	7.639	7.639	0.000	99	229496	10.0	9.68	
29 Methyl tert-butyl ether	73	7.800	7.800	0.000	96	416407	10.0	10.5	
30 trans-1,2-Dichloroethene	61	7.837	7.837	0.000	90	193989	10.0	10.6	
31 Acrylonitrile	53	8.003	8.003	0.000	96	89386	10.0	10.5	
32 Hexane	57	8.201	8.201	0.000	89	199848	10.0	10.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.709	8.709	0.000	99	258006	10.0	10.4	
34 Vinyl acetate	43	8.773	8.773	0.000	99	316412	10.0	10.9	
35 cis-1,2-Dichloroethene	96	9.816	9.816	0.000	95	188750	10.0	10.5	
36 2-Butanone (MEK)	72	9.865	9.865	0.000	99	77903	10.0	9.41	
37 Ethyl acetate	88	9.897	9.897	0.000	99	13732	10.0	10.5	
S 38 1,2-Dichloroethene, Total	61				0		20.0	21.0	
* 40 Chlorobromomethane	128	10.282	10.282	0.000	82	178277	10.0	10.0	
39 Tetrahydrofuran	42	10.287	10.287	0.000	87	142545	10.0	10.3	
41 Chloroform	83	10.410	10.410	0.000	99	345321	10.0	10.4	
42 Cyclohexane	84	10.656	10.656	0.000	85	247969	10.0	10.2	
43 1,1,1-Trichloroethane	97	10.688	10.688	0.000	97	364721	10.0	10.3	
44 Carbon tetrachloride	117	10.934	10.934	0.000	96	402821	10.0	11.0	
45 Isooctane	57	11.362	11.362	0.000	99	838004	10.0	10.4	
46 Benzene	78	11.416	11.416	0.000	93	573241	10.0	10.1	
47 1,2-Dichloroethane	62	11.609	11.609	0.000	97	204801	10.0	10.3	
48 n-Heptane	43	11.753	11.753	0.000	87	281469	10.0	10.3	
* 50 1,4-Difluorobenzene	114	12.267	12.267	0.000	92	967745	10.0	10.0	
51 n-Butanol	56	12.668	12.668	0.000	84	80367	10.0	8.55	
52 Trichloroethene	95	12.743	12.743	0.000	94	292790	10.0	10.3	
53 1,2-Dichloropropane	63	13.336	13.336	0.000	95	222412	10.0	10.4	
54 Methyl methacrylate	69	13.492	13.492	0.000	83	220565	10.0	10.3	
55 1,4-Dioxane	88	13.567	13.567	0.000	87	92901	10.0	8.75	
56 Dibromomethane	174	13.609	13.609	0.000	90	327060	10.0	9.55	
57 Dichlorobromomethane	83	13.909	13.909	0.000	98	431391	10.0	10.7	
58 cis-1,3-Dichloropropene	75	14.877	14.877	0.000	88	355200	10.0	10.5	
A 59 Total Hydrocarbons	1	14.971	(3.054-26.887)		0	130098641	NC	NC	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	130345960	10.0	2645.1	
61 4-Methyl-2-pentanone (MIBK	43	15.177	15.177	0.000	93	383249	10.0	10.4	
A 63 Toluene Range	1		(15.472-15.492)				ND	ND	
62 Toluene	92	15.482	15.482	0.000	93	489691	10.0	10.1	
A 65 GRO	1	15.514	(15.514-15.514)		0	3568677	10.0	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.514	15.514	0.000	88	431541	10.0	10.3	
67 trans-1,3-Dichloropropene	75	16.102	16.102	0.000	93	354582	10.0	10.1	
68 1,1,2-Trichloroethane	83	16.487	16.487	0.000	96	230143	10.0	10.2	
69 Tetrachloroethene	166	16.589	16.589	0.000	95	484640	10.0	10.1	
70 2-Hexanone	43	16.942	16.942	0.000	92	370855	10.0	10.3	
71 Chlorodibromomethane	129	17.269	17.269	0.000	98	526159	10.0	11.3	
72 Ethylene Dibromide	107	17.552	17.552	0.000	98	460295	10.0	10.4	
* 73 Chlorobenzene-d5	117	18.456	18.456	0.000	82	948006	10.0	10.0	
74 Chlorobenzene	112	18.520	18.520	0.000	98	705853	10.0	10.3	
75 Ethylbenzene	91	18.659	18.659	0.000	96	1069819	10.0	10.3	
76 n-Nonane	57	18.761	18.761	0.000	85	459000	10.0	10.3	
77 m-Xylene & p-Xylene	106	18.911	18.911	0.000	99	903046	20.0	20.6	
78 o-Xylene	106	19.729	19.729	0.000	96	445933	10.0	10.3	
79 Styrene	104	19.778	19.778	0.000	98	704947	10.0	10.4	
S 80 Xylenes, Total	106				0		30.0	30.9	
81 Bromoform	173	20.189	20.189	0.000	100	564392	10.0	13.0	
82 Isopropylbenzene	105	20.361	20.361	0.000	94	1267613	10.0	10.2	
* 83 4-Bromofluorobenzene	95	20.724	20.724	0.000	98	634785	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.992	20.992	0.000	98	581197	10.0	9.98	
86 N-Propylbenzene	91	21.045	21.045	0.000	100	1487902	10.0	10.3	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.088	21.088	0.000	96	457424	10.0	10.3	
88 n-Decane	57	21.190	21.190	0.000	84	595025	10.0	10.5	
89 4-Ethyltoluene	105	21.227	21.227	0.000	98	1289537	10.0	10.3	
90 2-Chlorotoluene	91	21.243	21.243	0.000	96	1003429	10.0	10.3	
91 1,3,5-Trimethylbenzene	105	21.324	21.324	0.000	94	1069946	10.0	10.4	
92 Alpha Methyl Styrene	118	21.682	21.682	0.000	92	587298	10.0	10.8	
93 tert-Butylbenzene	119	21.800	21.800	0.000	96	1059064	10.0	10.3	
94 1,2,4-Trimethylbenzene	105	21.891	21.891	0.000	96	1074809	10.0	10.4	
95 sec-Butylbenzene	105	22.110	22.110	0.000	99	1563449	10.0	10.4	
96 4-Isopropyltoluene	119	22.308	22.308	0.000	98	1372257	10.0	10.4	
97 1,3-Dichlorobenzene	146	22.356	22.356	0.000	99	822626	10.0	10.3	
98 1,4-Dichlorobenzene	146	22.495	22.495	0.000	97	831794	10.0	10.3	
99 Benzyl chloride	91	22.698	22.698	0.000	100	945439	10.0	11.2	
100 Undecane	57	22.896	22.896	0.000	71	620516	10.0	10.7	
101 n-Butylbenzene	91	22.902	22.902	0.000	96	1164033	10.0	10.4	
102 1,2-Dichlorobenzene	146	23.052	23.052	0.000	99	776660	10.0	10.3	
103 Dodecane	57	24.549	24.549	0.000	93	584392	10.0	11.0	
104 1,2,4-Trichlorobenzene	180	25.689	25.689	0.000	93	689770	10.0	9.91	
105 Hexachlorobutadiene	225	25.871	25.871	0.000	99	644122	10.0	9.94	
106 Naphthalene	128	26.219	26.219	0.000	99	1470735	10.0	11.0	
107 1,2,3-Trichlorobenzene	180	26.727	26.727	0.000	95	669275	10.0	10.4	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Reagents:

ATTO15CAL4w_00478	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

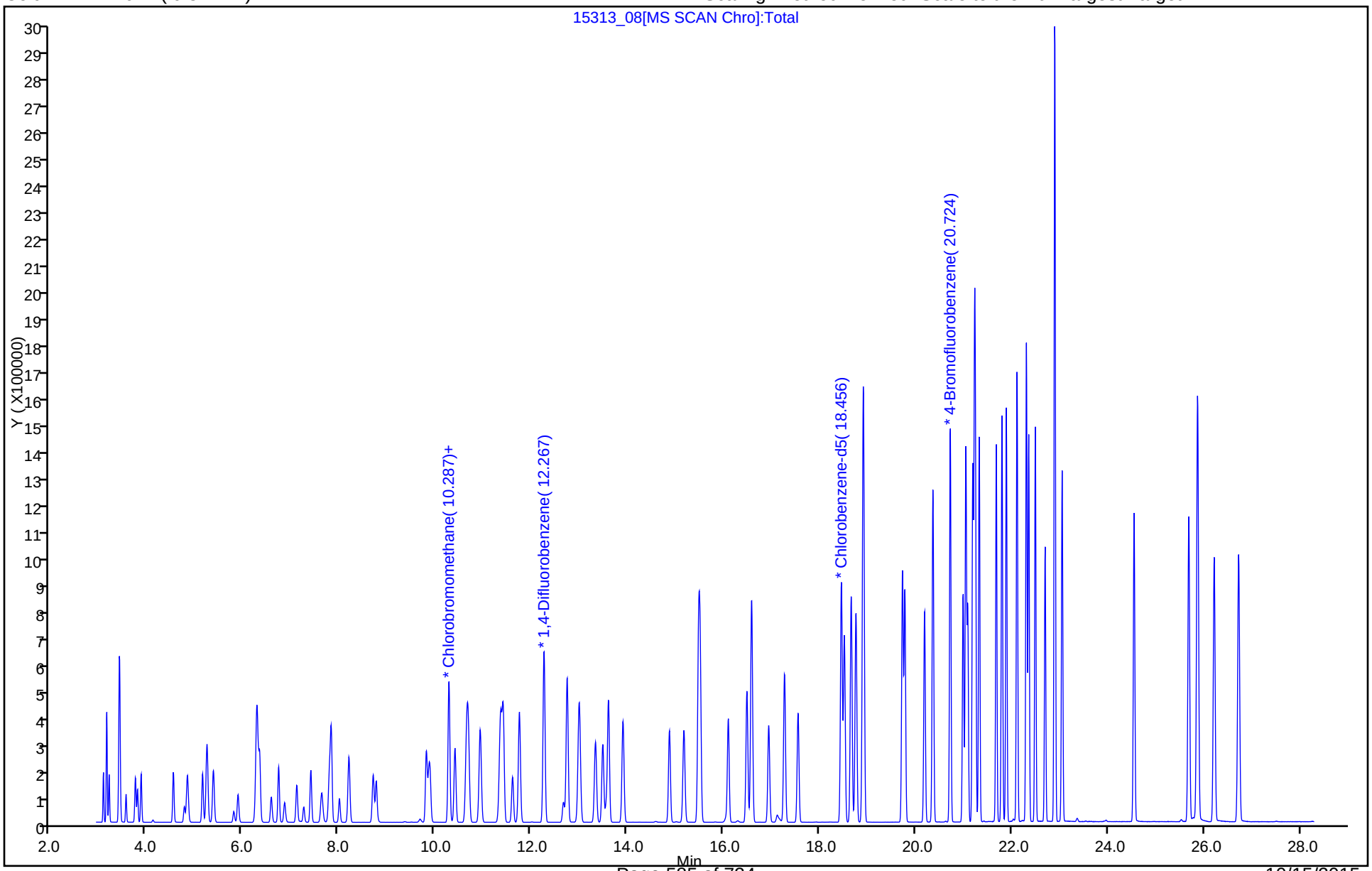
Report Date: 18-Aug-2015 11:12:31 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_08.D

Injection Date:	17-Aug-2015 21:23:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	icis			Worklist Smp#:	8
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_09.D
Lims ID: ic
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Aug-2015 22:13:30 ALS Bottle#: 8 Worklist Smp#: 9
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-009
Misc. Info.: ic-06
Operator ID: pad Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:32 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 09:25:50

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.092	3.092	0.000	99	115606	15.0	15.2	
2 Dichlorodifluoromethane	85	3.162	3.161	0.001	99	536300	15.0	15.1	
3 Chlorodifluoromethane	51	3.210	3.209	0.001	97	257975	15.0	15.0	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.424	3.423	0.001	96	544022	15.0	15.1	
5 Chloromethane	50	3.563	3.563	0.000	99	151010	15.0	15.1	
6 Butane	43	3.755	3.755	0.000	99	239444	15.0	14.6	
7 Vinyl chloride	62	3.803	3.803	0.000	98	196764	15.0	15.6	
8 Butadiene	54	3.878	3.878	0.000	94	135999	15.0	15.0	
9 Bromomethane	94	4.547	4.547	0.000	99	213878	15.0	15.0	
10 Chloroethane	64	4.777	4.777	0.000	99	96102	15.0	15.1	
11 2-Methylbutane	43	4.841	4.841	0.000	91	164678	15.0	14.0	
12 Vinyl bromide	106	5.157	5.157	0.000	99	249053	15.0	15.1	
13 Trichlorofluoromethane	101	5.248	5.248	0.000	98	589227	15.0	15.0	
14 Pentane	43	5.382	5.376	0.006	96	274252	15.0	14.7	
15 Ethanol	45	5.804	5.804	0.000	98	78878	20.0	20.1	
16 Ethyl ether	59	5.890	5.895	-0.005	94	128246	15.0	15.6	
17 Acrolein	56	6.280	6.280	0.000	96	55901	15.0	18.1	
18 1,1,2-Trichloro-1,2,2-trif	101	6.291	6.286	0.005	95	472941	15.0	15.1	
20 1,1-Dichloroethene	96	6.345	6.344	0.001	93	222376	15.0	15.2	
21 Acetone	43	6.585	6.585	0.000	89	245235	15.0	15.3	
22 Carbon disulfide	76	6.740	6.740	0.000	98	563694	15.0	15.1	
23 Isopropyl alcohol	45	6.858	6.863	-0.005	99	247161	15.0	16.3	
24 3-Chloro-1-propene	41	7.115	7.115	0.000	92	189105	15.0	15.3	
25 Acetonitrile	41	7.265	7.265	0.000	100	117962	15.0	15.6	
26 Methylene Chloride	49	7.409	7.409	0.000	84	191942	15.0	14.3	
28 2-Methyl-2-propanol	59	7.629	7.639	-0.010	99	390536	15.0	16.1	
29 Methyl tert-butyl ether	73	7.805	7.800	0.005	96	611053	15.0	15.1	
30 trans-1,2-Dichloroethene	61	7.837	7.837	0.000	90	282198	15.0	15.0	
31 Acrylonitrile	53	8.003	8.003	0.000	95	133120	15.0	15.2	
32 Hexane	57	8.201	8.201	0.000	89	291527	15.0	14.6	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.709	8.709	0.000	99	379683	15.0	14.9	
34 Vinyl acetate	43	8.773	8.773	0.000	99	460901	15.0	15.5	
35 cis-1,2-Dichloroethene	96	9.817	9.816	0.001	94	279699	15.0	15.1	
36 2-Butanone (MEK)	72	9.859	9.865	-0.006	100	120992	15.0	14.3	
37 Ethyl acetate	88	9.897	9.897	0.000	97	20908	15.0	15.6	
S 38 1,2-Dichloroethene, Total	61				0		30.0	30.1	
* 40 Chlorobromomethane	128	10.287	10.282	0.005	77	182726	10.0	10.0	
39 Tetrahydrofuran	42	10.282	10.287	-0.005	95	213592	15.0	15.3	
41 Chloroform	83	10.410	10.410	0.000	99	508708	15.0	15.0	
42 Cyclohexane	84	10.651	10.656	-0.005	85	367117	15.0	15.0	
43 1,1,1-Trichloroethane	97	10.689	10.688	0.001	97	538511	15.0	15.1	
44 Carbon tetrachloride	117	10.940	10.934	0.006	96	595426	15.0	16.0	
45 Isooctane	57	11.363	11.362	0.001	99	1231099	15.0	15.1	
46 Benzene	78	11.416	11.416	0.000	93	850668	15.0	14.9	
47 1,2-Dichloroethane	62	11.614	11.609	0.005	97	301746	15.0	15.1	
48 n-Heptane	43	11.753	11.753	0.000	87	408033	15.0	14.8	
* 50 1,4-Difluorobenzene	114	12.267	12.267	0.000	92	977549	10.0	10.0	
51 n-Butanol	56	12.663	12.668	-0.005	83	156227	15.0	16.5	
52 Trichloroethene	95	12.748	12.743	0.005	94	409861	15.0	14.3	
53 1,2-Dichloropropane	63	13.337	13.336	0.001	95	327591	15.0	15.1	
54 Methyl methacrylate	69	13.486	13.492	-0.006	83	329938	15.0	15.3	
55 1,4-Dioxane	88	13.556	13.567	-0.011	86	172495	15.0	16.1	
56 Dibromomethane	174	13.610	13.609	0.001	90	496840	15.0	14.4	
57 Dichlorobromomethane	83	13.909	13.909	0.000	98	636254	15.0	15.6	
58 cis-1,3-Dichloropropene	75	14.877	14.877	0.000	87	521087	15.0	15.3	
A 59 Total Hydrocarbons	1	14.971	(3.054-26.887)		0	192696159	NC	NC	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	192696159	15.0	3871.2	
61 4-Methyl-2-pentanone (MIBK	43	15.172	15.177	-0.005	93	567275	15.0	15.2	
A 63 Toluene Range	1		(15.472-15.492)				ND	ND	
62 Toluene	92	15.482	15.482	0.000	93	727136	15.0	14.9	
A 65 GRO	1	15.514	(15.514-15.514)		0	5270307	15.0	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.514	15.514	0.000	88	626206	15.0	14.8	
67 trans-1,3-Dichloropropene	75	16.102	16.102	0.000	93	525377	15.0	14.8	
68 1,1,2-Trichloroethane	83	16.488	16.487	0.001	96	344310	15.0	15.1	
69 Tetrachloroethene	166	16.589	16.589	0.000	95	721350	15.0	14.8	
70 2-Hexanone	43	16.942	16.942	0.000	92	552940	15.0	15.2	
71 Chlorodibromomethane	129	17.274	17.269	0.005	98	773759	15.0	16.4	
72 Ethylene Dibromide	107	17.552	17.552	0.000	99	689606	15.0	15.4	
* 73 Chlorobenzene-d5	117	18.456	18.456	0.000	82	959414	10.0	10.0	
74 Chlorobenzene	112	18.521	18.520	0.001	98	1050334	15.0	15.1	
75 Ethylbenzene	91	18.660	18.659	0.001	96	1587982	15.0	15.1	
76 n-Nonane	57	18.761	18.761	0.000	85	673141	15.0	14.9	
77 m-Xylene & p-Xylene	106	18.916	18.911	0.005	99	1343786	30.0	30.3	
78 o-Xylene	106	19.730	19.729	0.001	95	663048	15.0	15.1	
79 Styrene	104	19.778	19.778	0.000	98	1044542	15.0	15.2	
S 80 Xylenes, Total	106				0		45.0	45.4	
81 Bromoform	173	20.190	20.189	0.001	100	800301	15.0	18.2	
82 Isopropylbenzene	105	20.361	20.361	0.000	94	1904124	15.0	15.2	
* 83 4-Bromofluorobenzene	95	20.725	20.724	0.001	98	639878	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.992	20.992	0.000	98	920841	15.0	15.6	
86 N-Propylbenzene	91	21.046	21.045	0.001	100	2210049	15.0	15.1	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.088	21.088	0.000	96	680056	15.0	15.1	
88 n-Decane	57	21.190	21.190	0.000	83	873541	15.0	15.3	
89 4-Ethyltoluene	105	21.227	21.227	0.000	98	1926124	15.0	15.2	
90 2-Chlorotoluene	91	21.249	21.243	0.006	96	1490410	15.0	15.1	
91 1,3,5-Trimethylbenzene	105	21.324	21.324	0.000	95	1591961	15.0	15.2	
92 Alpha Methyl Styrene	118	21.682	21.682	0.000	92	870386	15.0	15.8	
93 tert-Butylbenzene	119	21.800	21.800	0.000	96	1582555	15.0	15.2	
94 1,2,4-Trimethylbenzene	105	21.891	21.891	0.000	96	1601792	15.0	15.3	
95 sec-Butylbenzene	105	22.116	22.110	0.006	99	2334756	15.0	15.3	
96 4-Isopropyltoluene	119	22.308	22.308	0.000	98	2059610	15.0	15.4	
97 1,3-Dichlorobenzene	146	22.356	22.356	0.000	99	1224566	15.0	15.2	
98 1,4-Dichlorobenzene	146	22.495	22.495	0.000	97	1233878	15.0	15.1	
99 Benzyl chloride	91	22.699	22.698	0.001	100	1368379	15.0	16.1	
100 Undecane	57	22.897	22.896	0.001	71	905738	15.0	15.4	
101 n-Butylbenzene	91	22.902	22.902	0.000	96	1663811	15.0	14.8	
102 1,2-Dichlorobenzene	146	23.052	23.052	0.000	99	1161892	15.0	15.2	
103 Dodecane	57	24.550	24.549	0.001	93	843183	15.0	15.7	
104 1,2,4-Trichlorobenzene	180	25.689	25.689	0.000	93	1040101	15.0	14.8	
105 Hexachlorobutadiene	225	25.871	25.871	0.000	99	998827	15.0	15.2	
106 Naphthalene	128	26.219	26.219	0.000	99	1863786	15.0	13.8	
107 1,2,3-Trichlorobenzene	180	26.727	26.727	0.000	96	973583	15.0	15.0	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Reagents:

ATTO15CAL5w_00055	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

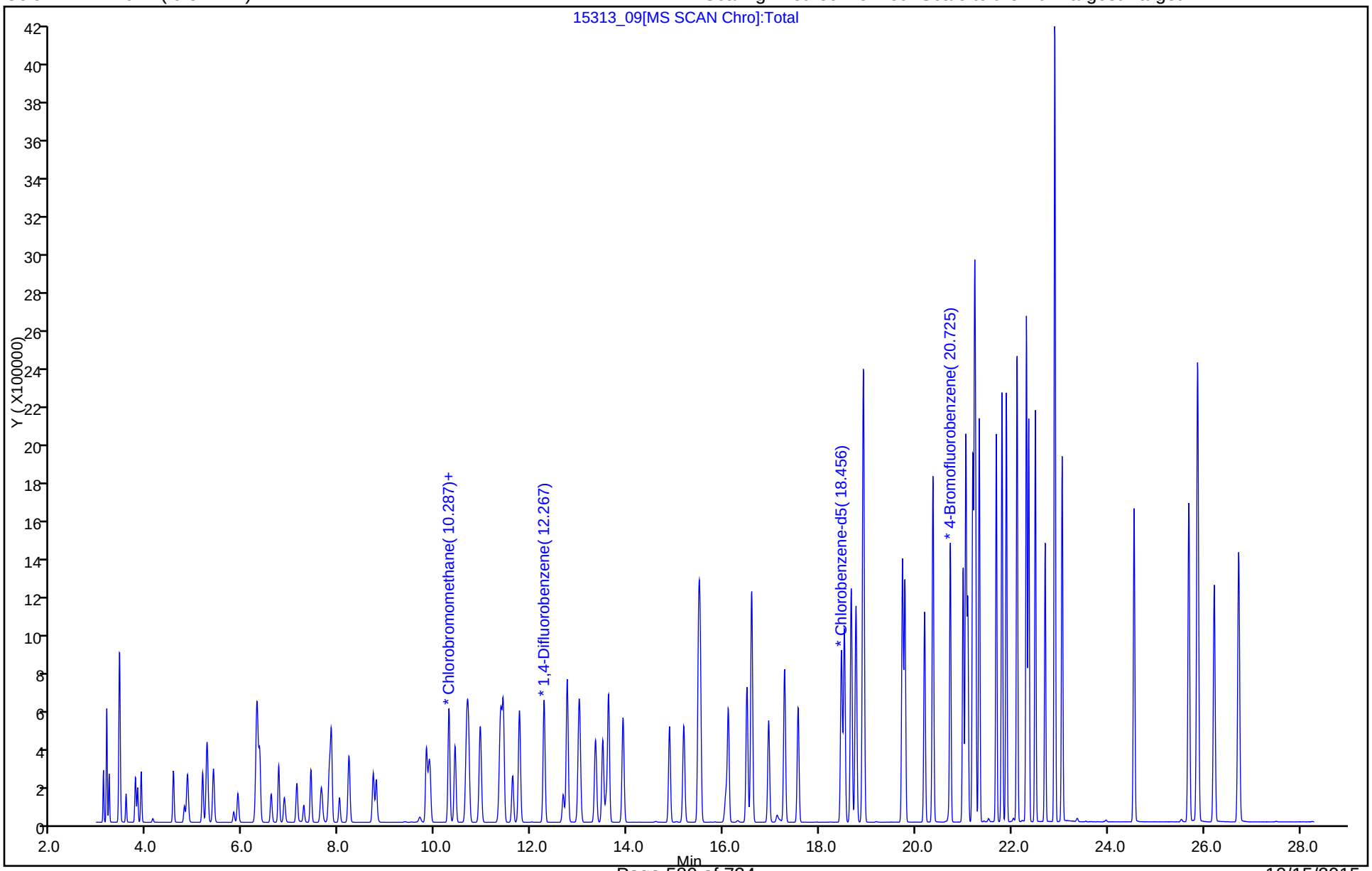
Report Date: 18-Aug-2015 11:12:33 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_09.D

Injection Date:	17-Aug-2015 22:13:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	ic			Worklist Smp#:	9
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_10.D
Lims ID: ic
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 17-Aug-2015 23:02:30 ALS Bottle#: 9 Worklist Smp#: 10
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-010
Misc. Info.: ic-07
Operator ID: pad Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:34 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 09:26:44

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.092	3.092	0.000	99	147627	20.0	18.6	
2 Dichlorodifluoromethane	85	3.161	3.161	0.000	99	688331	20.0	18.5	
3 Chlorodifluoromethane	51	3.210	3.209	0.001	97	327136	20.0	18.2	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.429	3.423	0.006	93	696918	20.0	18.4	
5 Chloromethane	50	3.563	3.563	0.000	99	190924	20.0	18.2	
6 Butane	43	3.761	3.755	0.006	99	302089	20.0	17.6	
7 Vinyl chloride	62	3.803	3.803	0.000	98	248778	20.0	18.8	
8 Butadiene	54	3.878	3.878	0.000	93	172388	20.0	18.2	
9 Bromomethane	94	4.552	4.547	0.005	99	279157	20.0	18.7	
10 Chloroethane	64	4.777	4.777	0.000	99	122905	20.0	18.4	
11 2-Methylbutane	43	4.841	4.841	0.000	90	206973	20.0	16.8	
12 Vinyl bromide	106	5.157	5.157	0.000	99	320535	20.0	18.6	
13 Trichlorofluoromethane	101	5.248	5.248	0.000	98	757146	20.0	18.5	
14 Pentane	43	5.382	5.376	0.006	96	348993	20.0	17.8	
15 Ethanol	45	5.804	5.804	0.000	97	152414	40.0	37.1	
16 Ethyl ether	59	5.890	5.895	-0.005	94	164407	20.0	19.1	
17 Acrolein	56	6.280	6.280	0.000	97	57144	20.0	17.6	
18 1,1,2-Trichloro-1,2,2-trif	101	6.291	6.286	0.005	95	606055	20.0	18.5	
20 1,1-Dichloroethene	96	6.345	6.344	0.000	93	288899	20.0	18.8	
21 Acetone	43	6.585	6.585	0.000	89	332279	20.0	19.9	
22 Carbon disulfide	76	6.740	6.740	0.000	98	735941	20.0	18.9	
23 Isopropyl alcohol	45	6.858	6.863	-0.005	99	322857	20.0	20.4	
24 3-Chloro-1-propene	41	7.120	7.115	0.005	91	236424	20.0	18.3	
25 Acetonitrile	41	7.265	7.265	0.000	100	151523	20.0	19.1	
26 Methylene Chloride	49	7.414	7.409	0.005	84	245762	20.0	17.4	
28 2-Methyl-2-propanol	59	7.628	7.639	-0.011	99	506551	20.0	19.9	
29 Methyl tert-butyl ether	73	7.800	7.800	0.000	96	791200	20.0	18.6	
30 trans-1,2-Dichloroethene	61	7.837	7.837	0.000	90	362220	20.0	18.4	
31 Acrylonitrile	53	8.008	8.003	0.005	95	170432	20.0	18.6	
32 Hexane	57	8.206	8.201	0.005	88	371423	20.0	17.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.709	8.709	0.000	99	484720	20.0	18.2	
34 Vinyl acetate	43	8.773	8.773	0.000	99	576389	20.0	18.5	
35 cis-1,2-Dichloroethene	96	9.816	9.816	0.000	94	360505	20.0	18.6	
36 2-Butanone (MEK)	72	9.865	9.865	0.000	100	157943	20.0	17.8	
37 Ethyl acetate	88	9.891	9.897	-0.006	97	26996	20.0	19.2	
S 38 1,2-Dichloroethene, Total	61				0		40.0	37.0	
* 40 Chlorobromomethane	128	10.287	10.282	0.005	77	191191	10.0	10.0	
39 Tetrahydrofuran	42	10.282	10.287	-0.005	89	271947	20.0	19.5	
41 Chloroform	83	10.416	10.410	0.006	99	656531	20.0	18.5	
42 Cyclohexane	84	10.656	10.656	0.000	85	473473	20.0	19.3	
43 1,1,1-Trichloroethane	97	10.694	10.688	0.006	97	692478	20.0	19.4	
44 Carbon tetrachloride	117	10.940	10.934	0.006	96	665674	20.0	17.9	
45 Isooctane	57	11.363	11.362	0.001	99	1581525	20.0	19.3	
46 Benzene	78	11.421	11.416	0.005	93	1094952	20.0	19.1	
47 1,2-Dichloroethane	62	11.614	11.609	0.005	97	386358	20.0	19.2	
48 n-Heptane	43	11.753	11.753	0.000	86	515909	20.0	18.7	
* 50 1,4-Difluorobenzene	114	12.267	12.267	0.000	92	980749	10.0	10.0	
51 n-Butanol	56	12.668	12.668	0.000	82	199142	20.0	20.9	
52 Trichloroethene	95	12.748	12.743	0.005	93	571789	20.0	19.8	
53 1,2-Dichloropropane	63	13.337	13.336	0.001	95	422687	20.0	19.4	
54 Methyl methacrylate	69	13.486	13.492	-0.006	83	424575	20.0	19.6	
55 1,4-Dioxane	88	13.561	13.567	-0.006	86	231199	20.0	21.5	
56 Dibromomethane	174	13.609	13.609	0.000	89	707881	20.0	20.4	
57 Dichlorobromomethane	83	13.909	13.909	0.000	98	790218	20.0	19.3	
58 cis-1,3-Dichloropropene	75	14.877	14.877	0.000	87	676517	20.0	19.8	
A 59 Total Hydrocarbons	1	14.971	(3.054-26.887)		0	247590119	NC	NC	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	247590119	20.0	4957.8	
61 4-Methyl-2-pentanone (MIBK	43	15.177	15.177	0.000	92	719425	20.0	19.2	
A 63 Toluene Range	1		(15.472-15.492)				ND	ND	
62 Toluene	92	15.482	15.482	0.000	93	957398	20.0	19.5	
A 65 GRO	1	15.514	(15.514-15.514)		0	6820846	20.0	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.514	15.514	0.000	86	785212	20.0	18.5	
67 trans-1,3-Dichloropropene	75	16.102	16.102	0.000	93	670483	20.0	18.8	
68 1,1,2-Trichloroethane	83	16.493	16.487	0.006	96	445240	20.0	19.5	
69 Tetrachloroethene	166	16.589	16.589	0.000	95	952351	20.0	19.5	
70 2-Hexanone	43	16.937	16.942	-0.005	92	703504	20.0	19.3	
71 Chlorodibromomethane	129	17.274	17.269	0.005	98	893824	20.0	18.9	
72 Ethylene Dibromide	107	17.557	17.552	0.005	98	894793	20.0	19.9	
* 73 Chlorobenzene-d5	117	18.456	18.456	0.000	81	962947	10.0	10.0	
74 Chlorobenzene	112	18.520	18.520	0.000	99	1373195	20.0	19.7	
75 Ethylbenzene	91	18.660	18.659	0.001	96	2067415	20.0	19.6	
76 n-Nonane	57	18.761	18.761	0.000	85	862327	20.0	19.0	
77 m-Xylene & p-Xylene	106	18.916	18.911	0.005	99	1753357	40.0	39.3	
78 o-Xylene	106	19.729	19.729	0.000	96	864306	20.0	19.6	
79 Styrene	104	19.778	19.778	0.000	98	1340404	20.0	19.5	
S 80 Xylenes, Total	106				0		60.0	59.0	
81 Bromoform	173	20.190	20.189	0.001	99	747541	20.0	16.9	
82 Isopropylbenzene	105	20.361	20.361	0.000	94	2455967	20.0	19.5	
* 83 4-Bromofluorobenzene	95	20.725	20.724	0.000	98	639653	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.992	20.992	0.000	98	1095183	20.0	18.5	
86 N-Propylbenzene	91	21.051	21.045	0.006	100	2862524	20.0	19.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.088	21.088	0.000	96	869202	20.0	19.3	
88 n-Decane	57	21.190	21.190	0.000	83	1097936	20.0	19.1	
89 4-Ethyltoluene	105	21.227	21.227	0.000	98	2485215	20.0	19.6	
90 2-Chlorotoluene	91	21.249	21.243	0.006	96	1925859	20.0	19.4	
91 1,3,5-Trimethylbenzene	105	21.329	21.324	0.005	95	2060828	20.0	19.7	
92 Alpha Methyl Styrene	118	21.682	21.682	0.000	92	1022373	20.0	18.5	
93 tert-Butylbenzene	119	21.800	21.800	0.000	96	2043539	20.0	19.6	
94 1,2,4-Trimethylbenzene	105	21.891	21.891	0.000	95	2074788	20.0	19.7	
95 sec-Butylbenzene	105	22.115	22.110	0.005	99	3012184	20.0	19.7	
96 4-Isopropyltoluene	119	22.308	22.308	0.000	98	2603395	20.0	19.4	
97 1,3-Dichlorobenzene	146	22.356	22.356	0.000	99	1619152	20.0	20.0	
98 1,4-Dichlorobenzene	146	22.495	22.495	0.000	97	1636540	20.0	20.0	
99 Benzyl chloride	91	22.699	22.698	0.001	100	1593524	20.0	18.6	
100 Undecane	57	22.896	22.896	0.000	73	1142006	20.0	19.4	
101 n-Butylbenzene	91	22.902	22.902	0.000	96	1974285	20.0	17.4	
102 1,2-Dichlorobenzene	146	23.052	23.052	0.000	99	1522188	20.0	19.9	
103 Dodecane	57	24.550	24.549	0.001	93	1092276	20.0	20.3	
104 1,2,4-Trichlorobenzene	180	25.689	25.689	0.000	93	1486418	20.0	21.0	
105 Hexachlorobutadiene	225	25.876	25.871	0.005	99	1311617	20.0	19.9	
106 Naphthalene	128	26.219	26.219	0.000	99	2882160	20.0	21.3	
107 1,2,3-Trichlorobenzene	180	26.727	26.727	0.000	95	1380654	20.0	21.1	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Reagents:

ATTO15CAL6w_00111	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

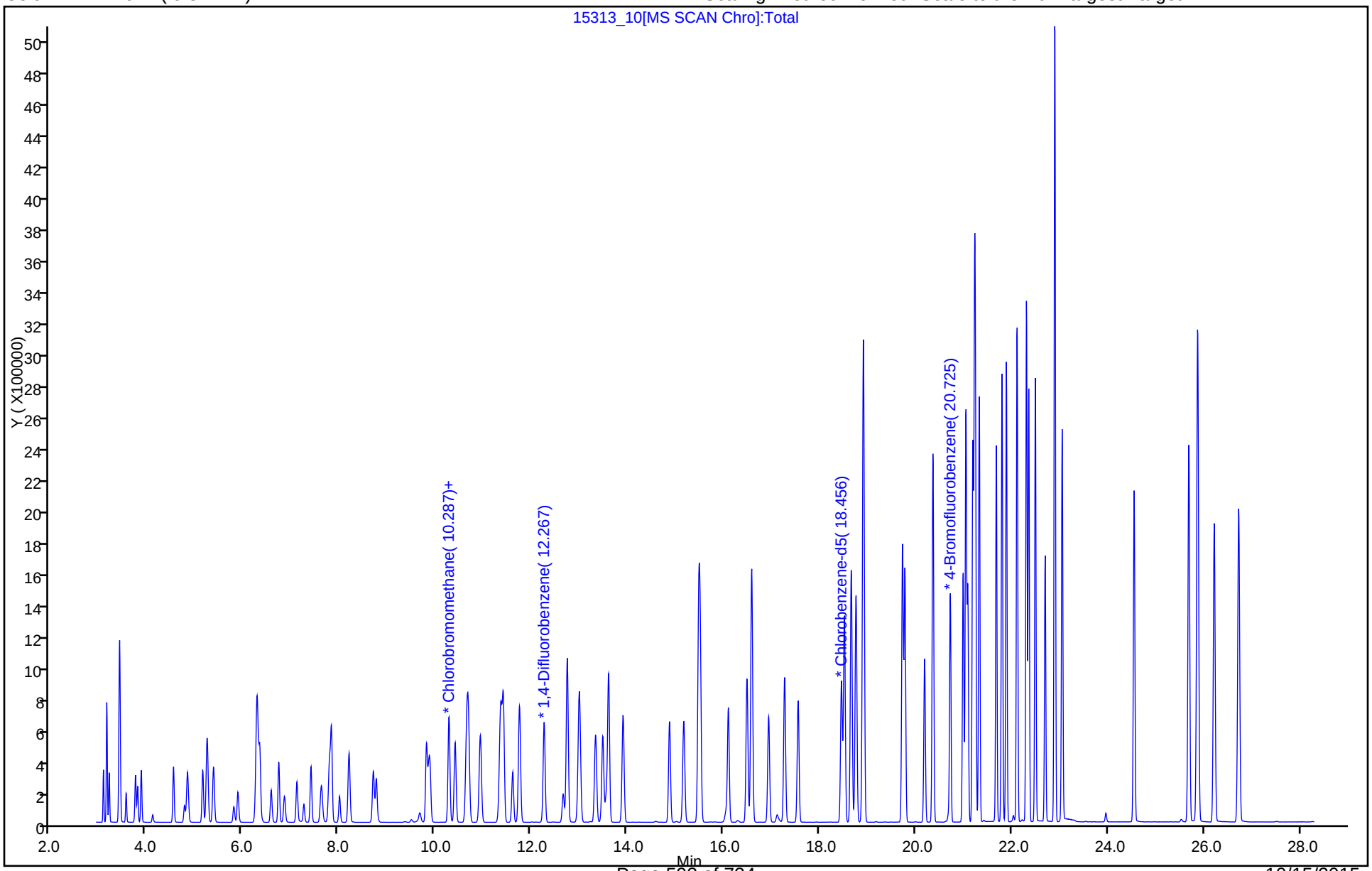
Report Date: 18-Aug-2015 11:12:34 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_10.D

Injection Date:	17-Aug-2015 23:02:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	ic			Worklist Smp#:	10
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D
Lims ID: ic
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 17-Aug-2015 23:52:30 ALS Bottle#: 10 Worklist Smp#: 11
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-011
Misc. Info.: ic-08
Operator ID: pad Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:36 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 09:27:40

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.092	3.092	0.000	99	293103	40.0	36.1	
2 Dichlorodifluoromethane	85	3.161	3.161	0.000	99	1416178	40.0	37.2	
3 Chlorodifluoromethane	51	3.209	3.209	0.000	97	673303	40.0	36.6	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.429	3.423	0.006	94	1436768	40.0	37.1	
5 Chloromethane	50	3.568	3.563	0.005	99	393541	40.0	36.7	
6 Butane	43	3.760	3.755	0.005	98	611813	40.0	34.8	
7 Vinyl chloride	62	3.809	3.803	0.006	98	512756	40.0	38.0	
8 Butadiene	54	3.884	3.878	0.006	93	353849	40.0	36.5	
9 Bromomethane	94	4.552	4.547	0.005	99	581679	40.0	38.0	
10 Chloroethane	64	4.782	4.777	0.005	99	256075	40.0	37.5	
11 2-Methylbutane	43	4.846	4.841	0.005	90	426323	40.0	33.9	
12 Vinyl bromide	106	5.162	5.157	0.005	99	670234	40.0	38.0	
13 Trichlorofluoromethane	101	5.253	5.248	0.005	98	1570842	40.0	37.4	
14 Pentane	43	5.387	5.376	0.011	96	707953	40.0	35.3	
15 Ethanol	45	5.815	5.804	0.011	97	370809	100.0	88.3	
16 Ethyl ether	59	5.890	5.895	-0.005	92	334842	40.0	38.0	
17 Acrolein	56	6.286	6.280	0.006	57	57386	40.0	17.3	
18 1,1,2-Trichloro-1,2,2-trif	101	6.296	6.286	0.010	94	1256523	40.0	37.4	
20 1,1-Dichloroethene	96	6.350	6.344	0.006	93	596610	40.0	38.0	
21 Acetone	43	6.585	6.585	0.000	89	604454	40.0	35.3	
22 Carbon disulfide	76	6.746	6.740	0.006	98	1508299	40.0	37.8	
23 Isopropyl alcohol	45	6.869	6.863	0.006	99	624384	40.0	38.5	
24 3-Chloro-1-propene	41	7.120	7.115	0.005	91	443769	40.0	33.5	
25 Acetonitrile	41	7.270	7.265	0.005	100	301814	40.0	37.2	
26 Methylene Chloride	49	7.414	7.409	0.005	83	492671	40.0	34.2	
28 2-Methyl-2-propanol	59	7.634	7.639	-0.005	99	1005737	40.0	38.7	
29 Methyl tert-butyl ether	73	7.800	7.800	0.000	95	1622319	40.0	37.3	
30 trans-1,2-Dichloroethene	61	7.842	7.837	0.005	89	738694	40.0	36.6	
31 Acrylonitrile	53	8.014	8.003	0.011	95	351437	40.0	37.5	
32 Hexane	57	8.206	8.201	0.005	88	760933	40.0	35.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.714	8.709	0.005	99	998726	40.0	36.7	
34 Vinyl acetate	43	8.779	8.773	0.006	99	1181596	40.0	37.0	
35 cis-1,2-Dichloroethene	96	9.822	9.816	0.006	93	748190	40.0	37.8	
36 2-Butanone (MEK)	72	9.865	9.865	-0.001	100	317730	40.0	35.0	
37 Ethyl acetate	88	9.891	9.897	-0.006	98	54940	40.0	38.2	
S 38 1,2-Dichloroethene, Total	61				0		80.0	74.4	
* 40 Chlorobromomethane	128	10.292	10.282	0.010	81	195650	10.0	10.0	
39 Tetrahydrofuran	42	10.282	10.287	-0.005	88	550582	40.0	38.4	
41 Chloroform	83	10.416	10.410	0.006	99	1352467	40.0	37.2	
42 Cyclohexane	84	10.662	10.656	0.006	84	974894	40.0	38.7	
43 1,1,1-Trichloroethane	97	10.694	10.688	0.006	96	1444367	40.0	39.4	
44 Carbon tetrachloride	117	10.940	10.934	0.006	96	1607404	40.0	42.1	
45 Isooctane	57	11.368	11.362	0.006	99	3206482	40.0	38.1	
46 Benzene	78	11.421	11.416	0.005	93	2248333	40.0	38.3	
47 1,2-Dichloroethane	62	11.614	11.609	0.005	97	795366	40.0	38.6	
48 n-Heptane	43	11.758	11.753	0.005	85	1041893	40.0	36.8	
* 50 1,4-Difluorobenzene	114	12.272	12.267	0.005	92	1006086	10.0	10.0	
51 n-Butanol	56	12.662	12.668	-0.006	83	406800	40.0	41.6	
52 Trichloroethene	95	12.748	12.743	0.005	93	1099379	40.0	37.1	
53 1,2-Dichloropropane	63	13.342	13.336	0.006	95	869152	40.0	38.9	
54 Methyl methacrylate	69	13.492	13.492	0.000	81	879348	40.0	39.5	
55 1,4-Dioxane	88	13.561	13.567	-0.006	86	438987	40.0	39.8	
56 Dibromomethane	174	13.615	13.609	0.006	89	1379467	40.0	38.8	
57 Dichlorobromomethane	83	13.914	13.909	0.005	98	1690582	40.0	40.3	
58 cis-1,3-Dichloropropene	75	14.883	14.877	0.006	87	1404582	40.0	40.1	
A 59 Total Hydrocarbons	1	14.971	(3.054-26.887)		0	505294747	NC	NC	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	505294747	40.0	9863.3	
61 4-Methyl-2-pentanone (MIBK	43	15.177	15.177	0.000	91	1452676	40.0	37.8	
A 63 Toluene Range	1		(15.472-15.492)				ND	ND	
62 Toluene	92	15.487	15.482	0.005	93	1950494	40.0	38.6	
A 65 GRO	1	15.514	(15.514-15.514)		0	13768992	40.0	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.519	15.514	0.005	84	1552346	40.0	35.6	
67 trans-1,3-Dichloropropene	75	16.108	16.102	0.006	92	1391292	40.0	38.1	
68 1,1,2-Trichloroethane	83	16.493	16.487	0.006	96	919569	40.0	39.0	
69 Tetrachloroethene	166	16.594	16.589	0.005	94	1986893	40.0	39.5	
70 2-Hexanone	43	16.942	16.942	0.000	91	1419344	40.0	37.8	
71 Chlorodibromomethane	129	17.279	17.269	0.010	98	2061192	40.0	42.3	
72 Ethylene Dibromide	107	17.557	17.552	0.005	98	1857346	40.0	40.1	
* 73 Chlorobenzene-d5	117	18.461	18.456	0.005	81	992254	10.0	10.0	
74 Chlorobenzene	112	18.520	18.520	0.000	99	2853671	40.0	39.7	
75 Ethylbenzene	91	18.665	18.659	0.006	96	4271792	40.0	39.2	
76 n-Nonane	57	18.761	18.761	0.000	84	1735272	40.0	37.1	
77 m-Xylene & p-Xylene	106	18.916	18.911	0.005	99	3608247	80.0	78.6	
78 o-Xylene	106	19.735	19.729	0.006	96	1787948	40.0	39.4	
79 Styrene	104	19.783	19.778	0.005	98	2842089	40.0	40.1	
S 80 Xylenes, Total	106				0		120.0	117.9	
81 Bromoform	173	20.189	20.189	0.000	99	2000470	40.0	43.9	
82 Isopropylbenzene	105	20.366	20.361	0.005	94	5117881	40.0	39.5	
* 83 4-Bromofluorobenzene	95	20.724	20.724	0.000	98	653208	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.992	20.992	0.000	98	2408856	40.0	39.5	
86 N-Propylbenzene	91	21.051	21.045	0.006	100	5852479	40.0	38.8	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.088	21.088	0.000	96	1774249	40.0	38.2	
88 n-Decane	57	21.195	21.190	0.005	82	2060487	40.0	34.8	
89 4-Ethyltoluene	105	21.233	21.227	0.006	98	5007218	40.0	38.3	
90 2-Chlorotoluene	91	21.249	21.243	0.006	96	3914379	40.0	38.2	
91 1,3,5-Trimethylbenzene	105	21.329	21.324	0.005	94	4103368	40.0	38.0	
92 Alpha Methyl Styrene	118	21.687	21.682	0.005	92	2253838	40.0	39.6	
93 tert-Butylbenzene	119	21.805	21.800	0.005	96	4010081	40.0	37.2	
94 1,2,4-Trimethylbenzene	105	21.896	21.891	0.005	96	4040427	40.0	37.3	
95 sec-Butylbenzene	105	22.115	22.110	0.005	99	5801638	40.0	36.9	
96 4-Isopropyltoluene	119	22.313	22.308	0.005	98	5332076	40.0	38.5	
97 1,3-Dichlorobenzene	146	22.361	22.356	0.005	99	3132687	40.0	37.6	
98 1,4-Dichlorobenzene	146	22.501	22.495	0.005	97	3154352	40.0	37.4	
99 Benzyl chloride	91	22.698	22.698	0.000	100	3480432	40.0	39.5	
100 Undecane	57	22.902	22.896	0.006	89	2169541	40.0	35.7	
101 n-Butylbenzene	91	22.902	22.902	0.000	96	4370458	40.0	37.5	
102 1,2-Dichlorobenzene	146	23.057	23.052	0.005	99	2985410	40.0	37.8	
103 Dodecane	57	24.549	24.549	0.000	93	1545129	40.0	27.9	
104 1,2,4-Trichlorobenzene	180	25.694	25.689	0.005	93	2970105	40.0	40.8	
105 Hexachlorobutadiene	225	25.876	25.871	0.005	99	2625229	40.0	38.7	
106 Naphthalene	128	26.224	26.219	0.005	99	5763656	40.0	41.3	
107 1,2,3-Trichlorobenzene	180	26.732	26.727	0.005	96	2527390	40.0	37.5	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Reagents:

ATTO15CAL7w_00056	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

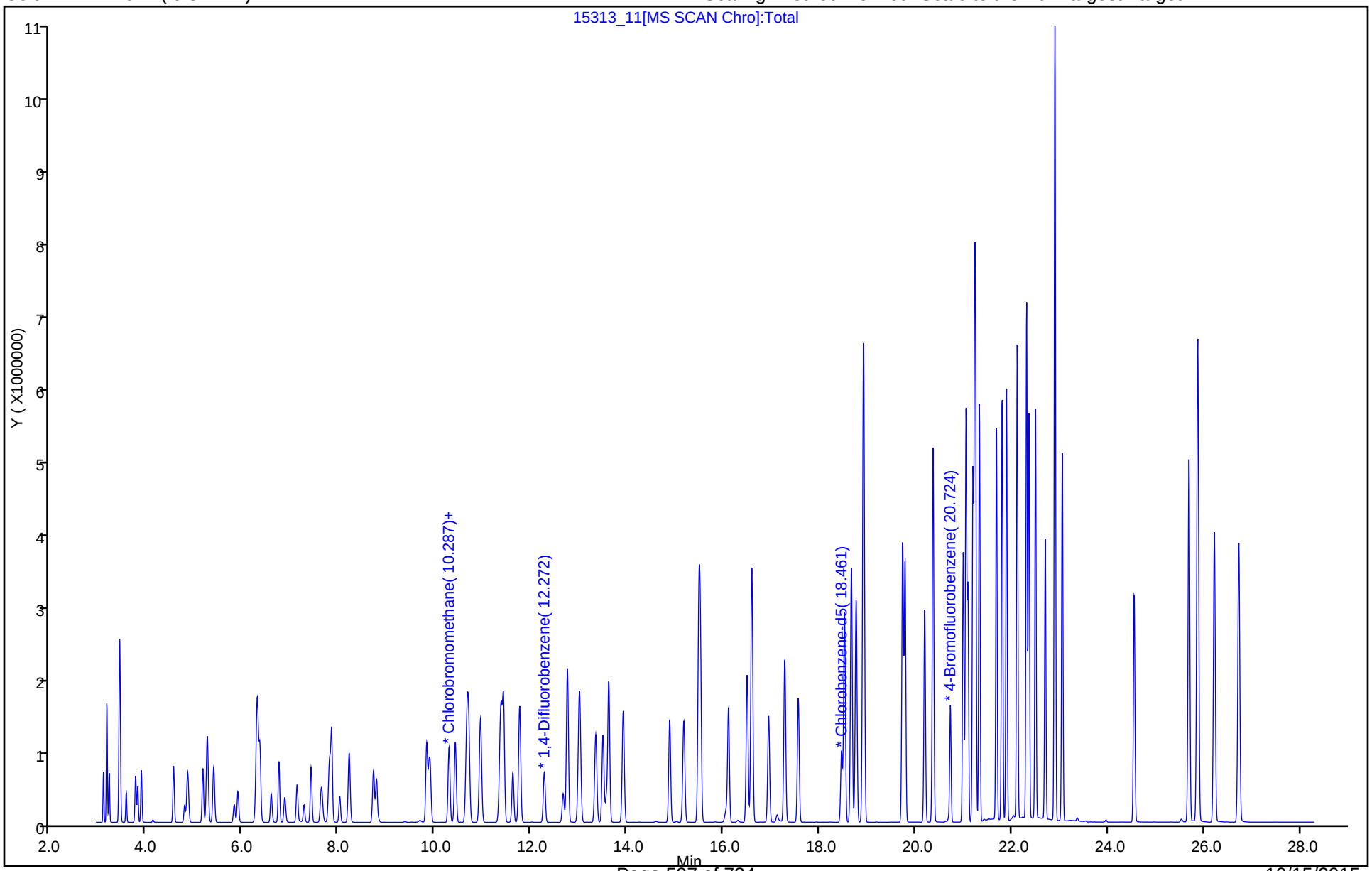
Report Date: 18-Aug-2015 11:12:36 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Injection Date:	17-Aug-2015 23:52:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	ic			Worklist Smp#:	11
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab Sample ID: ICV 200-92823/15 Calibration Date: 08/18/2015 03:10

Instrument ID: CHX.i Calib Start Date: 08/17/2015 18:04

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/17/2015 23:52

Lab File ID: 15313_15.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Propylene	Ave	0.4154	0.3798		9.14	10.0	-8.6	30.0
Dichlorodifluoromethane	Ave	1.945	1.851		9.51	10.0	-4.9	30.0
Freon 22	Ave	0.9407	0.8859		9.42	10.0	-5.8	30.0
1,2-Dichlorotetrafluoroethane	Ave	1.978	2.134		10.8	10.0	7.9	30.0
Chloromethane	Ave	0.5474	0.4991		9.12	10.0	-8.8	30.0
n-Butane	Ave	0.8991	0.8056		8.96	10.0	-10.4	30.0
Vinyl chloride	Ave	0.6903	0.6589		9.54	10.0	-4.6	30.0
1,3-Butadiene	Ave	0.4958	0.4498		9.07	10.0	-9.3	30.0
Bromomethane	Ave	0.7816	0.7548		9.65	10.0	-3.4	30.0
Chloroethane	Ave	0.3486	0.3253		9.33	10.0	-6.7	30.0
Isopentane	Ave	0.6436	0.6084		9.45	10.0	-5.5	30.0
Bromoethene(Vinyl Bromide)	Ave	0.9022	0.8684		9.62	10.0	-3.7	30.0
Trichlorofluoromethane	Ave	2.145	2.029		9.46	10.0	-5.4	30.0
n-Pentane	Ave	1.024	1.032		10.1	10.0	0.8	30.0
Ethanol	Ave	0.2146	0.2115		14.8	15.0	-1.5	30.0
Ethyl ether	Ave	0.4504	0.4932		10.9	10.0	9.5	30.0
Acrolein	Ave	0.1694	0.2041		12.0	10.0	20.5	30.0
Freon TF	Ave	1.717	1.670		9.72	10.0	-2.8	30.0
1,1-Dichloroethene	Ave	0.8028	0.7759		9.66	10.0	-3.4	30.0
Acetone	Ave	0.8752	0.8520		9.73	10.0	-2.7	30.0
Carbon disulfide	Ave	2.040	2.267		11.1	10.0	11.1	30.0
Isopropyl alcohol	Ave	0.8295	0.6747		8.13	10.0	-18.7	30.0
3-Chloropropene	Ave	0.6775	0.5474		8.08	10.0	-19.2	30.0
Acetonitrile	Ave	0.4149	0.4102		9.88	10.0	-1.1	30.0
Methylene Chloride	Ave	0.7371	0.6617		8.98	10.0	-10.2	30.0
tert-Butyl alcohol	Ave	1.330	1.177		8.85	10.0	-11.5	30.0
Methyl tert-butyl ether	Ave	2.220	2.130		9.59	10.0	-4.1	30.0
trans-1,2-Dichloroethene	Ave	1.031	1.047		10.2	10.0	1.6	30.0
Acrylonitrile	Ave	0.4784	0.4692		9.81	10.0	-1.9	30.0
n-Hexane	Ave	1.095	1.081		9.87	10.0	-1.2	30.0
1,1-Dichloroethane	Ave	1.392	1.328		9.54	10.0	-4.6	30.0
Vinyl acetate	Ave	1.632	1.567		9.60	10.0	-4.0	30.0
cis-1,2-Dichloroethene	Ave	1.013	0.9678		9.55	10.0	-4.5	30.0
Methyl Ethyl Ketone	Ave	0.4645	0.4282		9.22	10.0	-7.8	30.0
Ethyl acetate	Ave	0.0735	0.0803		10.9	10.0	9.2	30.0
Tetrahydrofuran	Ave	0.1425	0.1363		9.57	10.0	-4.3	30.0
Chloroform	Ave	1.858	1.788		9.62	10.0	-3.8	30.0
Cyclohexane	Ave	0.2503	0.2425		9.69	10.0	-3.1	30.0
1,1,1-Trichloroethane	Ave	0.3646	0.3519		9.65	10.0	-3.5	30.0
Carbon tetrachloride	Ave	0.3798	0.3903		10.3	10.0	2.8	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab Sample ID: ICV 200-92823/15 Calibration Date: 08/18/2015 03:10

Instrument ID: CHX.i Calib Start Date: 08/17/2015 18:04

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/17/2015 23:52

Lab File ID: 15313_15.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,2,4-Trimethylpentane	Ave	0.8365	0.7874		9.41	10.0	-5.9	30.0
Benzene	Ave	0.5838	0.5577		9.55	10.0	-4.5	30.0
1,2-Dichloroethane	Ave	0.2049	0.1946		9.50	10.0	-5.0	30.0
n-Heptane	Ave	0.2817	0.2584		9.17	10.0	-8.3	30.0
n-Butanol	Ave	0.0971	0.0898		9.25	10.0	-7.5	30.0
Trichloroethene	Ave	0.2942	0.2687		9.13	10.0	-8.7	30.0
1,2-Dichloropropane	Ave	0.2219	0.2093		9.43	10.0	-5.6	30.0
Methyl methacrylate	Ave	0.2211	0.2177		9.84	10.0	-1.5	30.0
1,4-Dioxane	Ave	0.1097	0.0961		8.76	10.0	-12.4	30.0
Dibromomethane	Ave	0.3538	0.3195		9.03	10.0	-9.7	30.0
Bromodichloromethane	Ave	0.4167	0.4064		9.75	10.0	-2.5	30.0
cis-1,3-Dichloropropene	Ave	0.3482	0.3395		9.75	10.0	-2.5	30.0
methyl isobutyl ketone	Ave	0.3817	0.3573		9.36	10.0	-6.4	30.0
Toluene	Ave	0.5092	0.4937		9.69	10.0	-3.0	30.0
n-Octane	Ave	0.4337	0.3997		9.21	10.0	-7.8	30.0
trans-1,3-Dichloropropene	Ave	0.3631	0.3291		9.06	10.0	-9.4	30.0
1,1,2-Trichloroethane	Ave	0.2376	0.2320		9.76	10.0	-2.4	30.0
Tetrachloroethene	Ave	0.5071	0.4945		9.75	10.0	-2.5	30.0
Methyl Butyl Ketone (2-Hexanone)	Ave	0.3781	0.3671		9.71	10.0	-2.9	30.0
Dibromochloromethane	Ave	0.4912	0.5066		10.3	10.0	3.1	30.0
1,2-Dibromoethane	Ave	0.4673	0.4565		9.77	10.0	-2.3	30.0
Chlorobenzene	Ave	0.7250	0.7085		9.77	10.0	-2.3	30.0
Ethylbenzene	Ave	1.098	1.066		9.71	10.0	-2.9	30.0
n-Nonane	Ave	0.4713	0.4474		9.49	10.0	-5.1	30.0
m,p-Xylene	Ave	0.4629	0.4498		19.4	20.0	-2.8	30.0
Xylene, o-	Ave	0.4575	0.4368		9.54	10.0	-4.5	30.0
Styrene	Ave	0.7141	0.6872		9.62	10.0	-3.8	30.0
Bromoform	Ave	0.4591	0.5348		11.6	10.0	16.5	30.0
Cumene	Ave	1.305	1.256		9.62	10.0	-3.8	30.0
1,1,2,2-Tetrachloroethane	Ave	0.6141	0.6153		10.0	10.0	0.2	30.0
n-Propylbenzene	Ave	1.521	1.455		9.56	10.0	-4.4	30.0
1,2,3-Trichloropropane	Ave	0.4684	0.4416		9.43	10.0	-5.7	30.0
n-Decane	Ave	0.5960	0.5725		9.60	10.0	-3.9	30.0
4-Ethyltoluene	Ave	1.319	1.301		9.86	10.0	-1.3	30.0
2-Chlorotoluene	Ave	1.032	0.9857		9.55	10.0	-4.5	30.0
1,3,5-Trimethylbenzene	Ave	1.089	1.056		9.70	10.0	-3.0	30.0
Alpha Methyl Styrene	Ave	0.5739	0.5831		10.2	10.0	1.6	30.0
tert-Butylbenzene	Ave	1.085	1.049		9.66	10.0	-3.3	30.0
1,2,4-Trimethylbenzene	Ave	1.091	1.055		9.66	10.0	-3.3	30.0
sec-Butylbenzene	Ave	1.587	1.538		9.69	10.0	-3.1	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab Sample ID: ICV 200-92823/15 Calibration Date: 08/18/2015 03:10

Instrument ID: CHX.i Calib Start Date: 08/17/2015 18:04

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/17/2015 23:52

Lab File ID: 15313_15.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Isopropyltoluene	Ave	1.397	1.359		9.72	10.0	-2.7	30.0
1,3-Dichlorobenzene	Ave	0.8393	0.8052		9.59	10.0	-4.1	30.0
1,4-Dichlorobenzene	Ave	0.8495	0.8000		9.42	10.0	-5.8	30.0
Benzyl chloride	Ave	0.8886	0.7955		8.95	10.0	-10.5	30.0
n-Butylbenzene	Ave	1.176	1.136		9.66	10.0	-3.4	30.0
n-Undecane	Ave	0.6119	0.6147		10.0	10.0	0.5	30.0
1,2-Dichlorobenzene	Ave	0.7956	0.7670		9.64	10.0	-3.6	30.0
n-Dodecane	Ave	0.5587	0.6001		10.7	10.0	7.4	30.0
1,2,4-Trichlorobenzene	Ave	0.7342	0.6152		8.38	10.0	-16.2	30.0
Hexachlorobutadiene	Ave	0.6833	0.6492		9.50	10.0	-5.0	30.0
Naphthalene	Ave	1.406	1.188		8.45	10.0	-15.5	30.0
1,2,3-Trichlorobenzene	Ave	0.6787	0.6036		8.89	10.0	-11.1	30.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_15.D
Lims ID: icv
Client ID:
Sample Type: ICV
Inject. Date: 18-Aug-2015 03:10:30 ALS Bottle#: 14 Worklist Smp#: 15
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015313-015
Misc. Info.: lcs
Operator ID: pad Instrument ID: CHX.i
Sublist:

Method: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 18-Aug-2015 11:12:36 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK048

First Level Reviewer: daiglep Date: 18-Aug-2015 10:02:53

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.092	3.092	0.000	99	71637	10.0	9.14	
2 Dichlorodifluoromethane	85	3.161	3.161	0.000	99	349026	10.0	9.51	
3 Chlorodifluoromethane	51	3.210	3.209	0.001	97	167072	10.0	9.42	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.424	3.423	0.001	94	402537	10.0	10.8	
5 Chloromethane	50	3.563	3.563	0.000	99	94123	10.0	9.12	
6 Butane	43	3.755	3.755	0.000	98	151941	10.0	8.96	
7 Vinyl chloride	62	3.803	3.803	0.000	98	124263	10.0	9.54	
8 Butadiene	54	3.878	3.878	0.000	91	84838	10.0	9.07	
9 Bromomethane	94	4.547	4.547	0.000	99	142347	10.0	9.65	
10 Chloroethane	64	4.777	4.777	0.000	99	61343	10.0	9.33	
11 2-Methylbutane	43	4.841	4.841	0.000	90	114732	10.0	9.45	
12 Vinyl bromide	106	5.157	5.157	0.000	99	163776	10.0	9.62	
13 Trichlorofluoromethane	101	5.248	5.248	0.000	98	382728	10.0	9.46	
14 Pentane	43	5.382	5.376	0.006	96	194577	10.0	10.1	
15 Ethanol	45	5.804	5.804	0.000	98	59852	15.0	14.8	
16 Ethyl ether	59	5.895	5.895	0.000	95	93010	10.0	10.9	
$ 19 BFB									
17 Acrolein	56	6.280	6.280	0.000	95	38488	10.0	12.0	
18 1,1,2-Trichloro-1,2,2-trif	101	6.291	6.286	0.005	95	314928	10.0	9.72	
20 1,1-Dichloroethene	96	6.344	6.344	0.000	93	146329	10.0	9.66	
21 Acetone	43	6.585	6.585	0.000	89	160692	10.0	9.73	
22 Carbon disulfide	76	6.740	6.740	0.000	98	427607	10.0	11.1	
23 Isopropyl alcohol	45	6.863	6.863	0.000	99	127251	10.0	8.13	
24 3-Chloro-1-propene	41	7.115	7.115	0.000	91	103241	10.0	8.08	
25 Acetonitrile	41	7.265	7.265	0.000	99	77363	10.0	9.88	
26 Methylene Chloride	49	7.409	7.409	0.000	83	124788	10.0	8.98	
28 2-Methyl-2-propanol	59	7.634	7.639	-0.005	99	222003	10.0	8.85	
29 Methyl tert-butyl ether	73	7.805	7.800	0.005	95	401647	10.0	9.59	
30 trans-1,2-Dichloroethene	61	7.837	7.837	0.000	89	197542	10.0	10.2	
31 Acrylonitrile	53	8.003	8.003	0.000	95	88480	10.0	9.81	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
32 Hexane	57	8.201	8.201	0.000	88	203900	10.0	9.87	
33 1,1-Dichloroethane	63	8.709	8.709	0.000	99	250395	10.0	9.54	
34 Vinyl acetate	43	8.773	8.773	0.000	99	295476	10.0	9.60	
35 cis-1,2-Dichloroethene	96	9.816	9.816	0.000	94	182527	10.0	9.55	
36 2-Butanone (MEK)	72	9.859	9.865	-0.006	100	80752	10.0	9.22	
37 Ethyl acetate	88	9.891	9.897	-0.006	99	15134	10.0	10.9	
S 38 1,2-Dichloroethene, Total	61				0		20.0	19.7	
* 40 Chlorobromomethane	128	10.287	10.282	0.005	78	188633	10.0	10.0	
39 Tetrahydrofuran	42	10.287	10.287	0.000	87	138795	10.0	9.57	
41 Chloroform	83	10.410	10.410	0.000	99	337207	10.0	9.62	
42 Cyclohexane	84	10.656	10.656	0.000	84	246939	10.0	9.69	
43 1,1,1-Trichloroethane	97	10.688	10.688	0.000	97	358283	10.0	9.65	
44 Carbon tetrachloride	117	10.935	10.934	0.001	96	397377	10.0	10.3	
45 Isooctane	57	11.363	11.362	0.000	99	801659	10.0	9.41	
46 Benzene	78	11.416	11.416	0.000	93	567789	10.0	9.55	
47 1,2-Dichloroethane	62	11.609	11.609	0.000	97	198148	10.0	9.50	
48 n-Heptane	43	11.748	11.753	-0.005	86	263129	10.0	9.17	
* 50 1,4-Difluorobenzene	114	12.267	12.267	0.000	92	1018364	10.0	10.0	
51 n-Butanol	56	12.668	12.668	0.000	83	91476	10.0	9.25	
52 Trichloroethene	95	12.743	12.743	0.000	93	273605	10.0	9.13	
53 1,2-Dichloropropane	63	13.337	13.336	0.001	95	213147	10.0	9.43	
54 Methyl methacrylate	69	13.486	13.492	-0.006	82	221633	10.0	9.84	
55 1,4-Dioxane	88	13.561	13.567	-0.006	87	97822	10.0	8.76	
56 Dibromomethane	174	13.609	13.609	0.000	89	325322	10.0	9.03	
57 Dichlorobromomethane	83	13.909	13.909	0.000	98	413825	10.0	9.75	
58 cis-1,3-Dichloropropene	75	14.877	14.877	0.000	87	345686	10.0	9.75	
A 60 TVOC as Toluene	1	14.971	(3.054-26.887)		0	123839694	10.0	2388.2	
61 4-Methyl-2-pentanone (MIBK	43	15.177	15.177	0.000	92	363816	10.0	9.36	
A 63 Toluene Range	1		(15.472-15.492)				ND	ND	
62 Toluene	92	15.476	15.482	-0.006	93	488227	10.0	9.69	
A 65 GRO	1	15.514	(15.514-15.514)		0	3483281	10.0	0	
A 64 C8 Range	1		(15.504-15.524)				ND	ND	
66 n-Octane	43	15.514	15.514	0.000	86	407003	10.0	9.21	
67 trans-1,3-Dichloropropene	75	16.097	16.102	-0.005	93	335101	10.0	9.06	
68 1,1,2-Trichloroethane	83	16.488	16.487	0.001	96	229387	10.0	9.76	
69 Tetrachloroethene	166	16.584	16.589	-0.005	95	489000	10.0	9.75	
70 2-Hexanone	43	16.942	16.942	0.000	92	363024	10.0	9.71	
71 Chlorodibromomethane	129	17.269	17.269	0.000	98	500982	10.0	10.3	
72 Ethylene Dibromide	107	17.552	17.552	0.000	99	451470	10.0	9.77	
* 73 Chlorobenzene-d5	117	18.456	18.456	0.000	81	989108	10.0	10.0	
74 Chlorobenzene	112	18.515	18.520	-0.005	99	700607	10.0	9.77	
75 Ethylbenzene	91	18.660	18.659	0.001	96	1054451	10.0	9.71	
76 n-Nonane	57	18.761	18.761	0.000	85	442481	10.0	9.49	
77 m-Xylene & p-Xylene	106	18.911	18.911	0.000	99	889686	20.0	19.4	
78 o-Xylene	106	19.724	19.729	-0.005	95	431929	10.0	9.54	
79 Styrene	104	19.778	19.778	0.000	98	679602	10.0	9.62	
S 80 Xylenes, Total	106				0		30.0	29.0	
81 Bromoform	173	20.190	20.189	0.001	99	528868	10.0	11.6	
82 Isopropylbenzene	105	20.361	20.361	0.000	94	1242028	10.0	9.62	
* 83 4-Bromofluorobenzene	95	20.719	20.724	-0.005	98	654126	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.987	20.992	-0.005	98	608429	10.0	10.0	
86 N-Propylbenzene	91	21.045	21.045	0.000	100	1438685	10.0	9.56	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
87 1,2,3-Trichloropropane	75	21.083	21.088	-0.005	96	436735	10.0	9.43	
88 n-Decane	57	21.190	21.190	0.000	83	566178	10.0	9.60	
89 4-Ethyltoluene	105	21.227	21.227	0.000	98	1286908	10.0	9.86	
90 2-Chlorotoluene	91	21.243	21.243	0.000	96	974728	10.0	9.55	
91 1,3,5-Trimethylbenzene	105	21.324	21.324	0.000	95	1044411	10.0	9.70	
92 Alpha Methyl Styrene	118	21.682	21.682	0.000	92	576644	10.0	10.2	
93 tert-Butylbenzene	119	21.800	21.800	0.000	96	1037099	10.0	9.66	
94 1,2,4-Trimethylbenzene	105	21.891	21.891	0.000	96	1043164	10.0	9.66	
95 sec-Butylbenzene	105	22.110	22.110	0.000	99	1520675	10.0	9.69	
96 4-Isopropyltoluene	119	22.308	22.308	0.000	98	1343792	10.0	9.72	
97 1,3-Dichlorobenzene	146	22.356	22.356	0.000	99	796260	10.0	9.59	
98 1,4-Dichlorobenzene	146	22.495	22.495	0.000	97	791123	10.0	9.42	
99 Benzyl chloride	91	22.699	22.698	0.001	100	786700	10.0	8.95	
100 Undecane	57	22.896	22.896	0.000	71	607911	10.0	10.0	
101 n-Butylbenzene	91	22.896	22.902	-0.006	96	1122971	10.0	9.66	
102 1,2-Dichlorobenzene	146	23.052	23.052	0.000	99	758480	10.0	9.64	
103 Dodecane	57	24.550	24.549	0.001	93	593419	10.0	10.7	
104 1,2,4-Trichlorobenzene	180	25.689	25.689	0.000	93	608346	10.0	8.38	
105 Hexachlorobutadiene	225	25.871	25.871	0.000	99	641979	10.0	9.50	
106 Naphthalene	128	26.219	26.219	0.000	99	1174789	10.0	8.45	
107 1,2,3-Trichlorobenzene	180	26.727	26.727	0.000	95	596882	10.0	8.89	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

7 - Failed Limit of Detection

Reagents:

ATTO15LCSW_00504	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

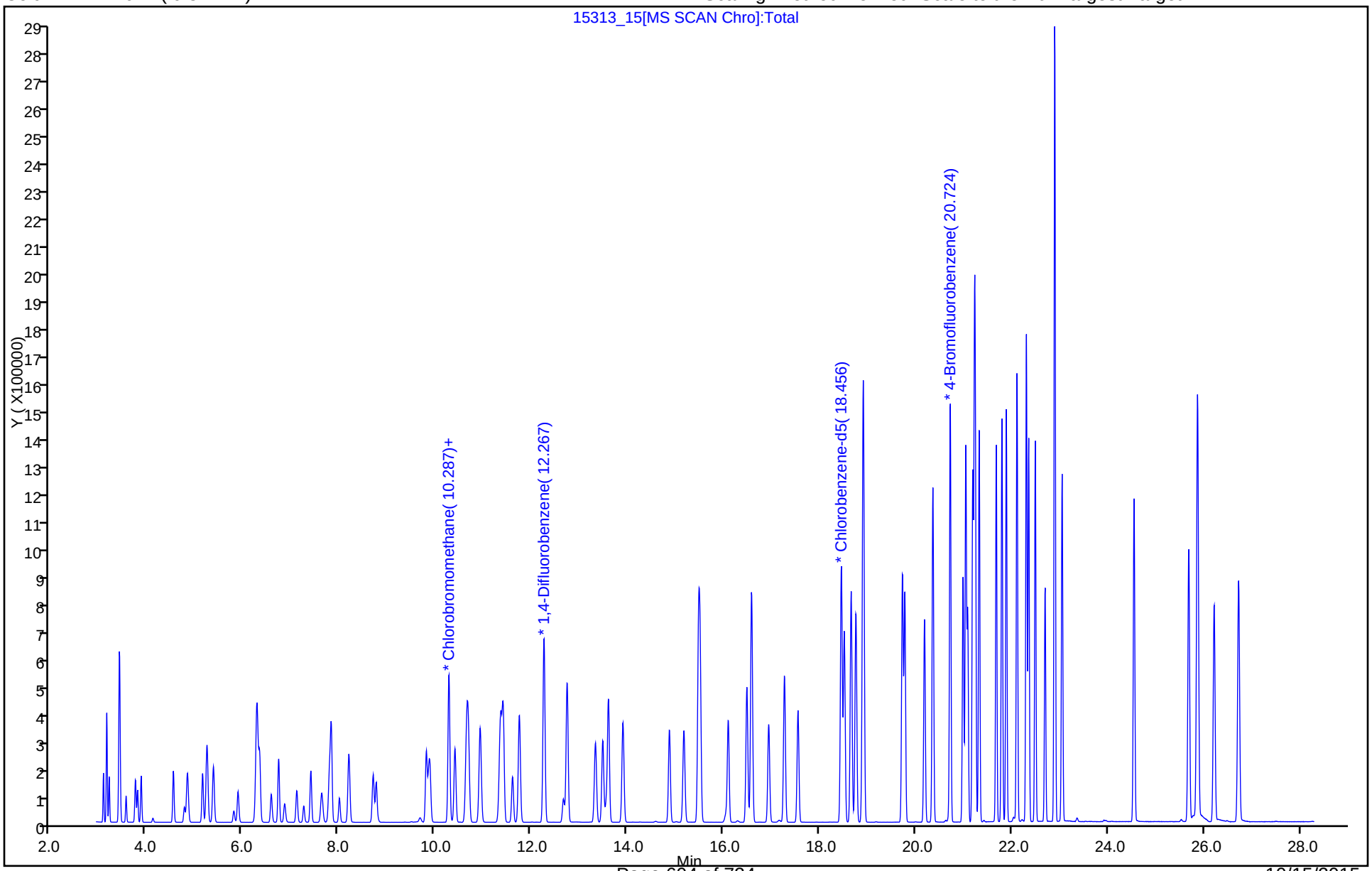
Report Date: 18-Aug-2015 11:12:48 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_15.D

Injection Date:	18-Aug-2015 03:10:30	Instrument ID:	CHX.i	Operator ID:	pad
Lims ID:	icv			Worklist Smp#:	15
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	14
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab Sample ID: CCVIS 200-95422/3 Calibration Date: 10/13/2015 10:38

Instrument ID: CHX.i Calib Start Date: 08/17/2015 18:04

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/17/2015 23:52

Lab File ID: 16229_03.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Propylene	Ave	0.4154	0.3835		9.23	10.0	-7.7	30.0
Dichlorodifluoromethane	Ave	1.945	1.964		10.1	10.0	1.0	30.0
Freon 22	Ave	0.9407	0.9435		10.0	10.0	0.3	30.0
1,2-Dichlorotetrafluoroethane	Ave	1.978	2.155		10.9	10.0	9.0	30.0
Chloromethane	Ave	0.5474	0.4975		9.09	10.0	-9.1	30.0
n-Butane	Ave	0.8991	0.8294		9.22	10.0	-7.8	30.0
Vinyl chloride	Ave	0.6903	0.6695		9.70	10.0	-3.0	30.0
1,3-Butadiene	Ave	0.4958	0.4575		9.22	10.0	-7.7	30.0
Bromomethane	Ave	0.7816	0.7619		9.75	10.0	-2.5	30.0
Chloroethane	Ave	0.3486	0.3212		9.21	10.0	-7.9	30.0
Isopentane	Ave	0.6436	0.6054		9.40	10.0	-5.9	30.0
Bromoethene(Vinyl Bromide)	Ave	0.9022	0.8550		9.48	10.0	-5.2	30.0
Trichlorofluoromethane	Ave	2.145	2.146		10.0	10.0	0.0	30.0
n-Pentane	Ave	1.024	1.019		9.96	10.0	-0.4	30.0
Ethanol	Ave	0.2146	0.1812		12.7	15.0	-15.6	30.0
Ethyl ether	Ave	0.4504	0.4695		10.4	10.0	4.2	30.0
Freon TF	Ave	1.717	1.665		9.69	10.0	-3.0	30.0
Acrolein	Ave	0.1694	0.2034		12.0	10.0	20.1	30.0
1,1-Dichloroethene	Ave	0.8028	0.7687		9.57	10.0	-4.2	30.0
Acetone	Ave	0.8752	0.8487		9.69	10.0	-3.0	30.0
Carbon disulfide	Ave	2.040	2.233		10.9	10.0	9.5	30.0
Isopropyl alcohol	Ave	0.8295	0.6624		7.98	10.0	-20.1	30.0
3-Chloropropene	Ave	0.6775	0.6008		8.87	10.0	-11.3	30.0
Acetonitrile	Ave	0.4149	0.3950		9.52	10.0	-4.8	30.0
Methylene Chloride	Ave	0.7371	0.6623		8.98	10.0	-10.1	30.0
tert-Butyl alcohol	Ave	1.330	1.200		9.02	10.0	-9.8	30.0
trans-1,2-Dichloroethene	Ave	1.031	1.038		10.1	10.0	0.6	30.0
Methyl tert-butyl ether	Ave	2.220	2.122		9.55	10.0	-4.4	30.0
Acrylonitrile	Ave	0.4784	0.4549		9.51	10.0	-4.9	30.0
n-Hexane	Ave	1.095	1.042		9.52	10.0	-4.8	30.0
1,1-Dichloroethane	Ave	1.392	1.320		9.48	10.0	-5.2	30.0
Vinyl acetate	Ave	1.632	1.584		9.70	10.0	-2.9	30.0
cis-1,2-Dichloroethene	Ave	1.013	0.9735		9.61	10.0	-3.9	30.0
Methyl Ethyl Ketone	Ave	0.4645	0.4043		8.70	10.0	-13.0	30.0
Ethyl acetate	Ave	0.0735	0.0765		10.4	10.0	4.0	30.0
Tetrahydrofuran	Ave	0.1425	0.1371		9.62	10.0	-3.8	30.0
Chloroform	Ave	1.858	1.863		10.0	10.0	0.3	30.0
Cyclohexane	Ave	0.2503	0.2357		9.41	10.0	-5.8	30.0
1,1,1-Trichloroethane	Ave	0.3646	0.3691		10.1	10.0	1.2	30.0
Carbon tetrachloride	Ave	0.3798	0.4106		10.8	10.0	8.1	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab Sample ID: CCVIS 200-95422/3 Calibration Date: 10/13/2015 10:38

Instrument ID: CHX.i Calib Start Date: 08/17/2015 18:04

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/17/2015 23:52

Lab File ID: 16229_03.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,2,4-Trimethylpentane	Ave	0.8365	0.7828		9.36	10.0	-6.4	30.0
Benzene	Ave	0.5838	0.5547		9.50	10.0	-5.0	30.0
1,2-Dichloroethane	Ave	0.2049	0.2083		10.2	10.0	1.6	30.0
n-Heptane	Ave	0.2817	0.2672		9.48	10.0	-5.2	30.0
n-Butanol	Ave	0.0971	0.0884		9.10	10.0	-9.0	30.0
Trichloroethene	Ave	0.2942	0.2804		9.53	10.0	-4.7	30.0
1,2-Dichloropropane	Ave	0.2219	0.2222		10.0	10.0	0.2	30.0
Methyl methacrylate	Ave	0.2211	0.2264		10.2	10.0	2.4	30.0
1,4-Dioxane	Ave	0.1097	0.0964		8.79	10.0	-12.1	30.0
Dibromomethane	Ave	0.3538	0.3653		10.3	10.0	3.2	30.0
Bromodichloromethane	Ave	0.4167	0.4415		10.6	10.0	5.9	30.0
cis-1,3-Dichloropropene	Ave	0.3482	0.3615		10.4	10.0	3.8	30.0
methyl isobutyl ketone	Ave	0.3817	0.3228		8.46	10.0	-15.4	30.0
Toluene	Ave	0.5092	0.4953		9.73	10.0	-2.7	30.0
n-Octane	Ave	0.4337	0.4483		10.3	10.0	3.4	30.0
trans-1,3-Dichloropropene	Ave	0.3631	0.3630		9.99	10.0	-0.0	30.0
1,1,2-Trichloroethane	Ave	0.2376	0.2361		9.94	10.0	-0.6	30.0
Tetrachloroethene	Ave	0.5071	0.5244		10.3	10.0	3.4	30.0
Methyl Butyl Ketone (2-Hexanone)	Ave	0.3781	0.3753		9.92	10.0	-0.7	30.0
Dibromochloromethane	Ave	0.4912	0.5163		10.5	10.0	5.1	30.0
1,2-Dibromoethane	Ave	0.4673	0.4758		10.2	10.0	1.8	30.0
Chlorobenzene	Ave	0.7250	0.7229		9.97	10.0	-0.3	30.0
Ethylbenzene	Ave	1.098	1.083		9.86	10.0	-1.4	30.0
n-Nonane	Ave	0.4713	0.4521		9.59	10.0	-4.1	30.0
m,p-Xylene	Ave	0.4629	0.4564		19.7	20.0	-1.4	30.0
Xylene, o-	Ave	0.4575	0.4437		9.70	10.0	-3.0	30.0
Styrene	Ave	0.7141	0.7032		9.85	10.0	-1.5	30.0
Bromoform	Ave	0.4591	0.5731		12.5	10.0	24.8	30.0
Cumene	Ave	1.305	1.190		9.11	10.0	-8.8	30.0
1,1,2,2-Tetrachloroethane	Ave	0.6141	0.5334		8.69	10.0	-13.1	30.0
n-Propylbenzene	Ave	1.521	1.143		7.51	10.0	-24.8	30.0
1,2,3-Trichloropropane	Ave	0.4684	0.3705		7.91	10.0	-20.9	30.0
n-Decane	Ave	0.5960	0.5905		9.91	10.0	-0.9	30.0
4-Ethyltoluene	Ave	1.319	1.222		9.26	10.0	-7.3	30.0
2-Chlorotoluene	Ave	1.032	0.9241		8.95	10.0	-10.4	30.0
1,3,5-Trimethylbenzene	Ave	1.089	1.068		9.80	10.0	-1.9	30.0
Alpha Methyl Styrene	Ave	0.5739	0.5963		10.4	10.0	3.9	30.0
tert-Butylbenzene	Ave	1.085	1.071		9.87	10.0	-1.3	30.0
1,2,4-Trimethylbenzene	Ave	1.091	1.087		9.96	10.0	-0.4	30.0
sec-Butylbenzene	Ave	1.587	1.604		10.1	10.0	1.1	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Lab Sample ID: CCVIS 200-95422/3 Calibration Date: 10/13/2015 10:38

Instrument ID: CHX.i Calib Start Date: 08/17/2015 18:04

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/17/2015 23:52

Lab File ID: 16229_03.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Isopropyltoluene	Ave	1.397	1.405		10.1	10.0	0.6	30.0
1,3-Dichlorobenzene	Ave	0.8393	0.8836		10.5	10.0	5.3	30.0
1,4-Dichlorobenzene	Ave	0.8495	0.8881		10.5	10.0	4.5	30.0
Benzyl chloride	Ave	0.8886	0.9024		10.2	10.0	1.6	30.0
n-Undecane	Ave	0.6119	0.6405		10.5	10.0	4.7	30.0
n-Butylbenzene	Ave	1.176	1.207		10.3	10.0	2.7	30.0
1,2-Dichlorobenzene	Ave	0.7956	0.8461		10.6	10.0	6.3	30.0
n-Dodecane	Ave	0.5587	0.5630		10.1	10.0	0.8	30.0
1,2,4-Trichlorobenzene	Ave	0.7342	0.7387		10.1	10.0	0.6	30.0
Hexachlorobutadiene	Ave	0.6833	0.7209		10.5	10.0	5.5	30.0
Naphthalene	Ave	1.406	1.255		8.92	10.0	-10.8	30.0
1,2,3-Trichlorobenzene	Ave	0.6787	0.6304		9.29	10.0	-7.1	30.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_03.D
Lims ID: ccvis
Client ID:
Sample Type: CCVIS
Inject. Date: 13-Oct-2015 10:38:30 ALS Bottle#: 2 Worklist Smp#: 3
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0016229-003
Misc. Info.: lcs
Operator ID: wrd Instrument ID: CHX.i
Sublist: chrom-TO15_LLNJ_TO3_CHX.i.m*sub3

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 14-Oct-2015 10:28:08 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK013

First Level Reviewer: desjardinsb Date: 13-Oct-2015 11:51:48

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.119	3.119	0.000	98	60066	10.0	9.23	
2 Dichlorodifluoromethane	85	3.188	3.188	0.000	99	307610	10.0	10.1	
3 Chlorodifluoromethane	51	3.236	3.236	0.000	97	147766	10.0	10.0	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.450	3.450	0.000	93	337556	10.0	10.9	
5 Chloromethane	50	3.589	3.589	0.000	99	77916	10.0	9.09	
6 Butane	43	3.782	3.782	0.000	98	129896	10.0	9.22	
7 Vinyl chloride	62	3.830	3.830	0.000	98	104851	10.0	9.70	
8 Butadiene	54	3.905	3.905	0.000	95	71647	10.0	9.22	
9 Bromomethane	94	4.574	4.574	0.000	98	119329	10.0	9.75	
10 Chloroethane	64	4.804	4.804	0.000	99	50311	10.0	9.21	
11 2-Methylbutane	43	4.868	4.868	0.000	89	94816	10.0	9.40	
12 Vinyl bromide	106	5.178	5.178	0.000	99	133914	10.0	9.48	
13 Trichlorofluoromethane	101	5.269	5.269	0.000	98	336131	10.0	10.0	
14 Pentane	43	5.408	5.408	0.000	96	159663	10.0	9.96	
15 Ethanol	45	5.922	5.922	0.000	99	42593	15.0	12.7	M
16 Ethyl ether	59	5.949	5.949	0.000	94	73526	10.0	10.4	
18 1,1,2-Trichloro-1,2,2-trif	101	6.318	6.318	0.000	94	260808	10.0	9.69	
17 Acrolein	56	6.323	6.323	0.000	96	31854	10.0	12.0	
20 1,1-Dichloroethene	96	6.366	6.366	0.000	94	120391	10.0	9.57	
$ 19 BFB									
21 Acetone	43	6.639	6.639	0.000	88	132923	10.0	9.69	
22 Carbon disulfide	76	6.756	6.756	0.000	98	349755	10.0	10.9	
23 Isopropyl alcohol	45	6.970	6.970	0.000	98	103743	10.0	7.98	
24 3-Chloro-1-propene	41	7.136	7.136	0.000	89	94093	10.0	8.87	
25 Acetonitrile	41	7.291	7.291	0.000	99	61863	10.0	9.52	
26 Methylene Chloride	49	7.420	7.420	0.000	84	103721	10.0	8.98	
28 2-Methyl-2-propanol	59	7.762	7.762	0.000	99	187872	10.0	9.02	
29 Methyl tert-butyl ether	73	7.853	7.853	0.000	95	332300	10.0	9.55	
30 trans-1,2-Dichloroethene	61	7.848	7.848	0.000	90	162515	10.0	10.1	
31 Acrylonitrile	53	8.035	8.035	0.000	95	71247	10.0	9.51	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
32 Hexane	57	8.222	8.222	0.000	89	163263	10.0	9.52	
33 1,1-Dichloroethane	63	8.720	8.720	0.000	99	206678	10.0	9.48	
34 Vinyl acetate	43	8.800	8.800	0.000	99	248053	10.0	9.70	
35 cis-1,2-Dichloroethene	96	9.822	9.822	0.000	95	152470	10.0	9.61	
36 2-Butanone (MEK)	72	9.897	9.897	0.000	100	63318	10.0	8.70	
37 Ethyl acetate	88	9.929	9.929	0.000	99	11973	10.0	10.4	
S 38 1,2-Dichloroethene, Total	61				0		20.0	19.7	
* 40 Chlorobromomethane	128	10.293	10.293	0.000	75	156650	10.0	10.0	
39 Tetrahydrofuran	42	10.319	10.319	0.000	87	117305	10.0	9.62	
41 Chloroform	83	10.421	10.421	0.000	99	291772	10.0	10.0	
42 Cyclohexane	84	10.662	10.662	0.000	85	201642	10.0	9.41	
43 1,1,1-Trichloroethane	97	10.699	10.699	0.000	96	315736	10.0	10.1	
44 Carbon tetrachloride	117	10.945	10.945	0.000	96	351267	10.0	10.8	
45 Isooctane	57	11.384	11.384	0.000	99	669733	10.0	9.36	
46 Benzene	78	11.427	11.427	0.000	94	474542	10.0	9.50	
47 1,2-Dichloroethane	62	11.619	11.619	0.000	97	178194	10.0	10.2	
48 n-Heptane	43	11.764	11.764	0.000	88	228564	10.0	9.48	
* 50 1,4-Difluorobenzene	114	12.272	12.272	0.000	92	855684	10.0	10.0	
51 n-Butanol	56	12.737	12.737	0.000	85	75651	10.0	9.10	
52 Trichloroethene	95	12.753	12.753	0.000	93	239908	10.0	9.53	
53 1,2-Dichloropropane	63	13.342	13.342	0.000	94	190115	10.0	10.0	
54 Methyl methacrylate	69	13.513	13.513	0.000	83	193713	10.0	10.2	
55 1,4-Dioxane	88	13.599	13.599	0.000	88	82453	10.0	8.79	
56 Dibromomethane	174	13.615	13.615	0.000	89	312475	10.0	10.3	
57 Dichlorobromomethane	83	13.914	13.914	0.000	98	377669	10.0	10.6	
58 cis-1,3-Dichloropropene	75	14.877	14.877	0.000	88	309289	10.0	10.4	
A 60 TVOC as Toluene	1	14.976	(3.086-26.791)		0	111780555	10.0	2565.5	
A 59 Total Hydrocarbons	1		(3.086-26.791)				ND	ND	
61 4-Methyl-2-pentanone (MIBK	43	15.209	15.209	0.000	94	276169	10.0	8.46	
62 Toluene	92	15.487	15.487	0.000	93	435733	10.0	9.73	
A 63 Toluene Range	1		(15.477-15.497)				ND	ND	
66 n-Octane	43	15.519	15.519	0.000	88	383529	10.0	10.3	
A 64 C8 Range	1		(15.509-15.529)				ND	ND	
A 65 GRO	1	15.514	(15.519-15.519)		0	3155002	10.0	0	
67 trans-1,3-Dichloropropene	75	16.102	16.102	0.000	93	310550	10.0	10.0	
68 1,1,2-Trichloroethane	83	16.488	16.488	0.000	96	207722	10.0	9.94	
69 Tetrachloroethene	166	16.589	16.589	0.000	94	461320	10.0	10.3	
70 2-Hexanone	43	16.969	16.969	0.000	94	330160	10.0	9.92	
71 Chlorodibromomethane	129	17.269	17.269	0.000	98	454152	10.0	10.5	
72 Ethylene Dibromide	107	17.552	17.552	0.000	98	418559	10.0	10.2	
* 73 Chlorobenzene-d5	117	18.451	18.451	0.000	81	879882	10.0	10.0	
74 Chlorobenzene	112	18.515	18.515	0.000	98	635964	10.0	9.97	
75 Ethylbenzene	91	18.654	18.654	0.000	97	952645	10.0	9.86	
76 n-Nonane	57	18.756	18.756	0.000	87	397698	10.0	9.59	
77 m-Xylene & p-Xylene	106	18.911	18.911	0.000	99	802935	20.0	19.7	
78 o-Xylene	106	19.724	19.724	0.000	96	390324	10.0	9.70	
79 Styrene	104	19.772	19.772	0.000	98	618608	10.0	9.85	
S 80 Xylenes, Total	106				0		30.0	29.4	
81 Bromoform	173	20.184	20.184	0.000	99	504129	10.0	12.5	
82 Isopropylbenzene	105	20.355	20.355	0.000	94	1046721	10.0	9.11	
* 83 4-Bromofluorobenzene	95	20.719	20.719	0.000	97	569726	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.981	20.981	0.000	98	469267	10.0	8.69	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
86 N-Propylbenzene	91	21.040	21.040	0.000	100	1005733	10.0	7.51	
87 1,2,3-Trichloropropane	75	21.078	21.078	0.000	96	325913	10.0	7.91	
88 n-Decane	57	21.185	21.185	0.000	88	519481	10.0	9.91	
89 4-Ethyltoluene	105	21.217	21.217	0.000	98	1075163	10.0	9.26	
90 2-Chlorotoluene	91	21.238	21.238	0.000	96	812949	10.0	8.95	
91 1,3,5-Trimethylbenzene	105	21.318	21.318	0.000	95	939232	10.0	9.80	
92 Alpha Methyl Styrene	118	21.677	21.677	0.000	92	524595	10.0	10.4	
93 tert-Butylbenzene	119	21.794	21.794	0.000	96	942294	10.0	9.87	
94 1,2,4-Trimethylbenzene	105	21.885	21.885	0.000	96	956392	10.0	9.96	
95 sec-Butylbenzene	105	22.105	22.105	0.000	99	1411043	10.0	10.1	
96 4-Isopropyltoluene	119	22.303	22.303	0.000	98	1236069	10.0	10.1	
97 1,3-Dichlorobenzene	146	22.351	22.351	0.000	99	777290	10.0	10.5	
98 1,4-Dichlorobenzene	146	22.485	22.485	0.000	97	781311	10.0	10.5	
99 Benzyl chloride	91	22.688	22.688	0.000	100	793806	10.0	10.2	
100 Undecane	57	22.886	22.886	0.000	94	563420	10.0	10.5	
101 n-Butylbenzene	91	22.891	22.891	0.000	96	1061844	10.0	10.3	
102 1,2-Dichlorobenzene	146	23.046	23.046	0.000	100	744328	10.0	10.6	
103 Dodecane	57	24.533	24.533	0.000	95	495270	10.0	10.1	
104 1,2,4-Trichlorobenzene	180	25.673	25.673	0.000	92	649817	10.0	10.1	
105 Hexachlorobutadiene	225	25.855	25.855	0.000	99	634199	10.0	10.5	
106 Naphthalene	128	26.197	26.197	0.000	99	1103852	10.0	8.92	
107 1,2,3-Trichlorobenzene	180	26.705	26.705	0.000	95	554579	10.0	9.29	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

Reagents:

ATTO15CAL4w_00492	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

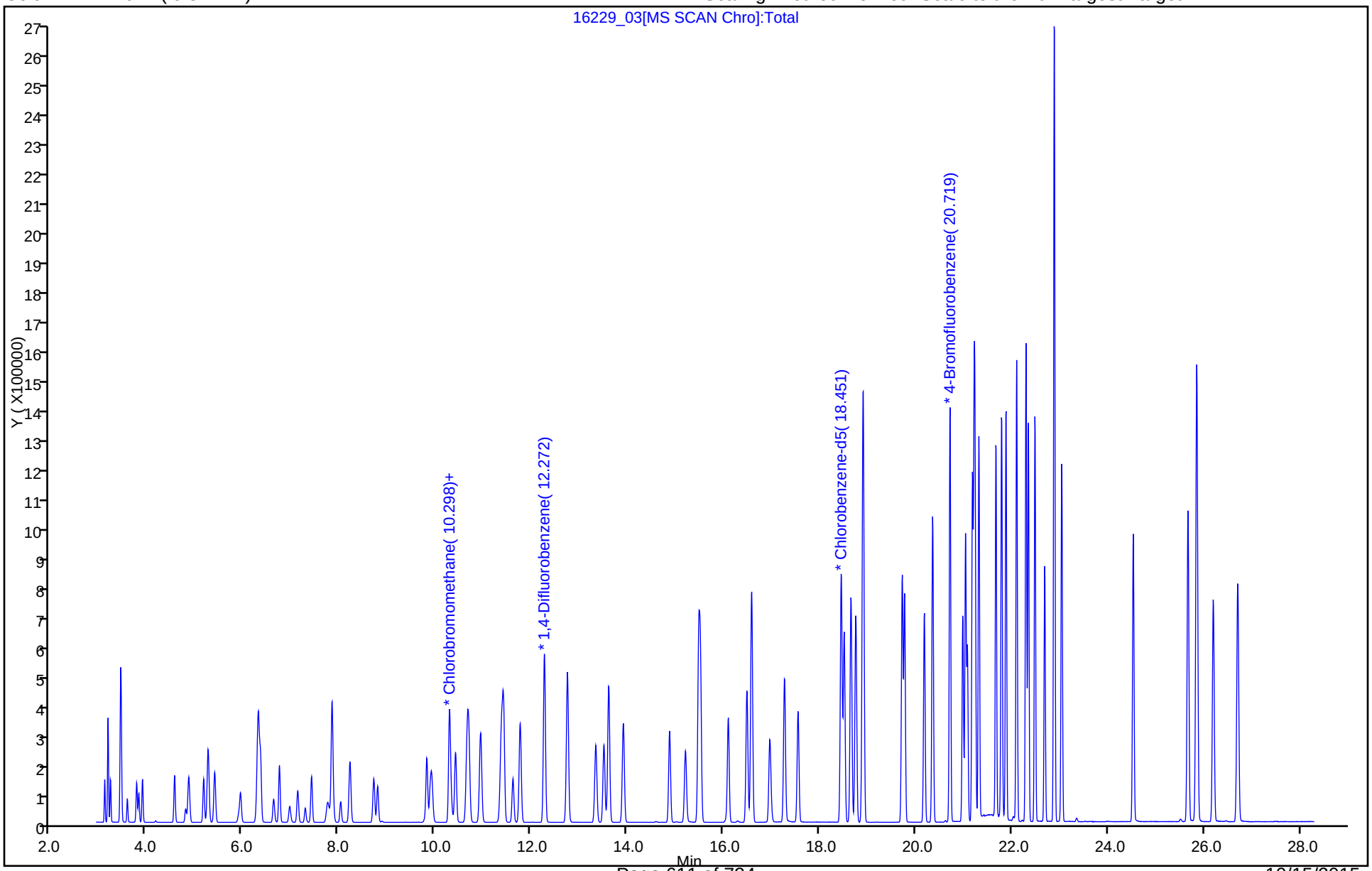
Report Date: 14-Oct-2015 10:28:08 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_03.D

Injection Date:	13-Oct-2015 10:38:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	ccvis			Worklist Smp#:	3
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Manual Integration/User Assign Peak Report

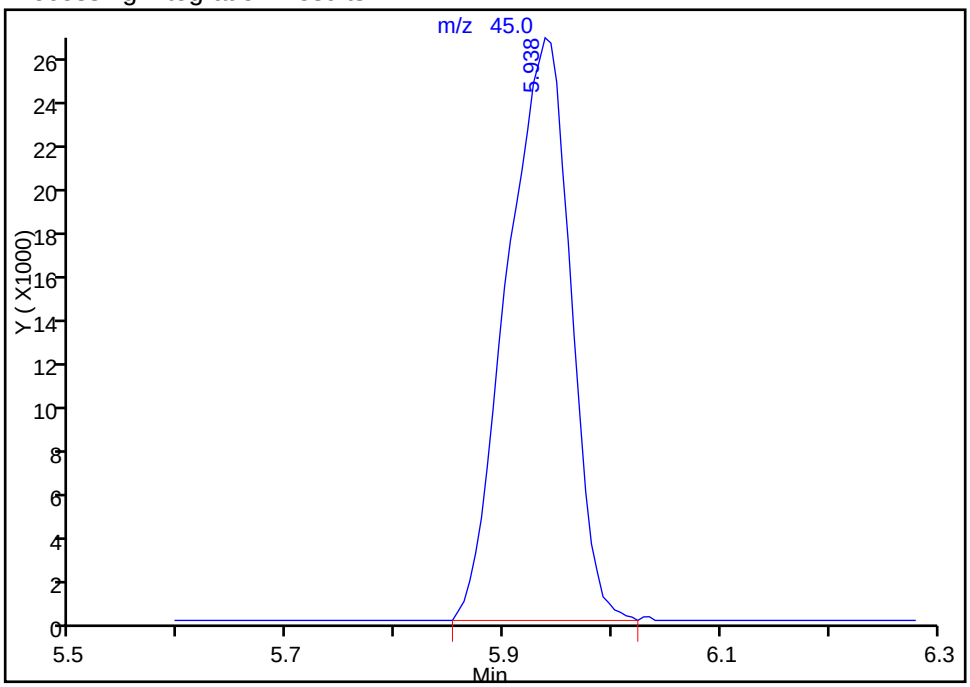
TestAmerica Burlington

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_03.D				
Injection Date:	13-Oct-2015 10:38:30	Instrument ID:	CHX.i		
Lims ID:	ccvis				
Client ID:					
Operator ID:	wrd	ALS Bottle#:	2	Worklist Smp#:	3
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

15 Ethanol, CAS: 64-17-5

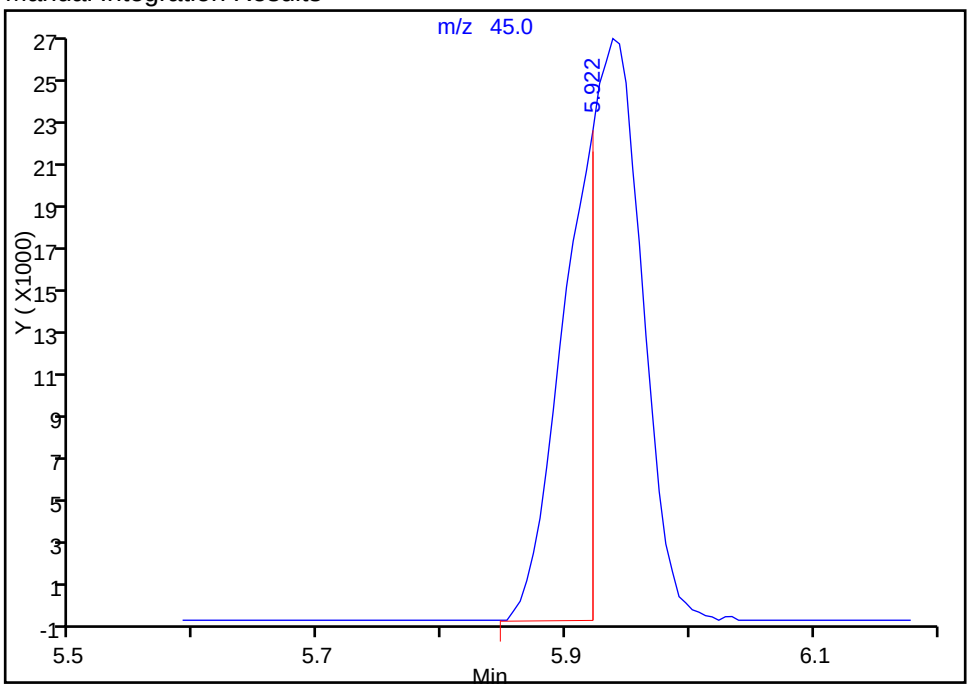
Processing Integration Results

RT: 5.94
Area: 106514
Amount: 31.683344
Amount Units: ppb v/v



Manual Integration Results

RT: 5.92
Area: 42593
Amount: 12.669589
Amount Units: ppb v/v



Reviewer: desjardinsb, 13-Oct-2015 11:51:48
Audit Action: Manually Integrated
Audit Reason: Baseline

TestAmerica Burlington
Target Compound Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_01.D				
Lims ID:	bfb				
Client ID:					
Sample Type:	BFB				
Inject. Date:	17-Aug-2015 15:35:30	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	0.0 mL	Dil. Factor:	1.0000		
Sample Info:	200-0015313-001				
Misc. Info.:	bfb				
Operator ID:	pad	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	18-Aug-2015 11:12:19	Calib Date:	17-Aug-2015 23:52:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK048				
First Level Reviewer: daiglep		Date:	18-Aug-2015 10:52:24		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
$ 19 BFB									
* 40 Chlorobromomethane	128		10.282				10.0	ND	
* 50 1,4-Difluorobenzene	114		12.267				10.0	ND	
* 73 Chlorobenzene-d5	117		18.456				10.0	ND	
* 83 4-Bromofluorobenzene	95		20.724				10.0	ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

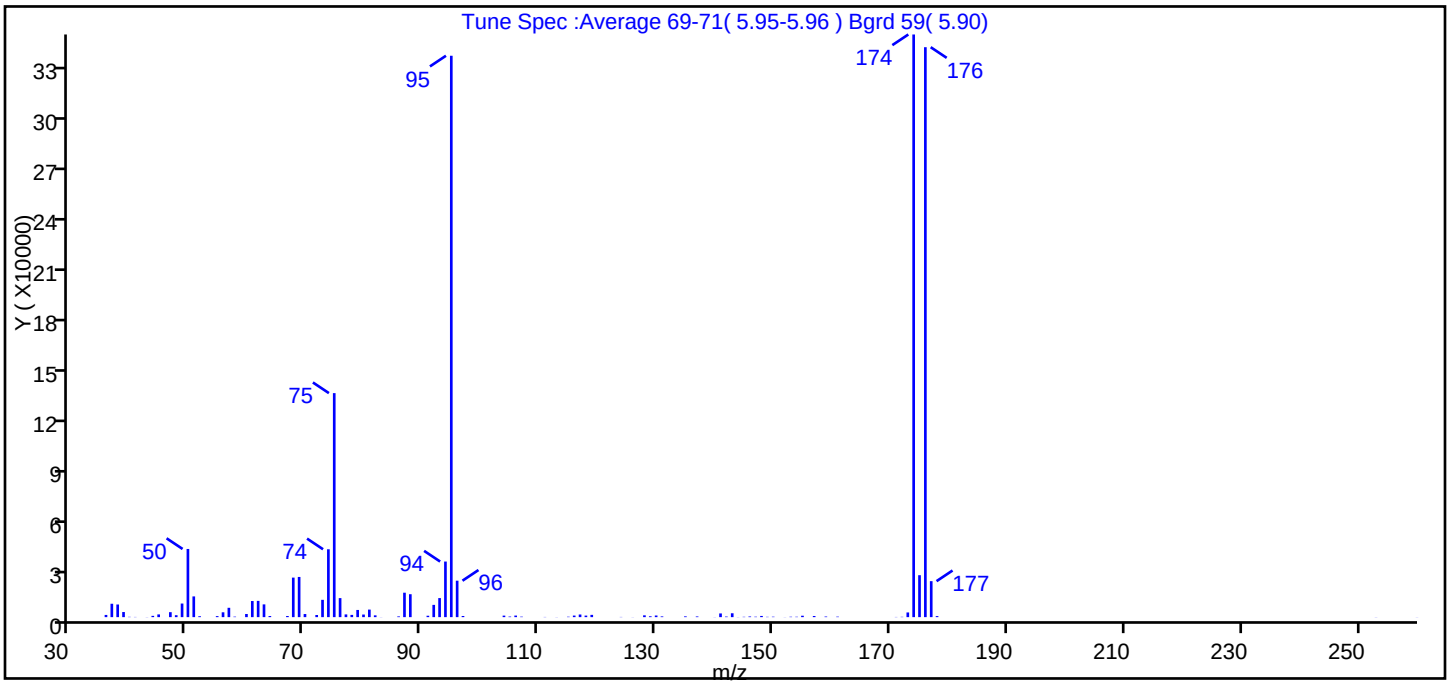
ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

MS Tune Report

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_01.D
Injection Date: 17-Aug-2015 15:35:30 Instrument ID: CHX.i
Lims ID: bfb
Client ID:
Operator ID: pad ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 0.0 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Tune Method: BFB Method TO-15

$ 19 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base Peak, 100 Percent Relative Abundance	100.0
50	8.0 to 40.0 Percent of m/e 95	12.1
75	30.0 to 66.0 Percent of m/e 95	39.9
96	5.0 to 9.0 Percent of m/e 95	6.5
173	Less than 2.0 Percent of m/e 174	0.8 (0.8)
174	50.0 to 120.0 Percent of m/e 95	103.8
175	4.0 to 9.0 Percent of m/e 174	7.5 (7.2)
176	93.0 to 101.0 Percent of m/e 174	101.5 (97.8)
177	5.0 to 9.0 Percent of m/e 176	6.4 (6.3)

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_01.D\TO15_LLNJ_TO3_CHX.i.m.rslt\
Injection Date: 17-Aug-2015 15:35:30
Spectrum: Tune Spec :Average 69-71(5.95-5.96) Bgrd 59(5.90)
Base Peak: 174.00
Minimum % Base Peak: 0
Number of Points: 97

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1320	68.00	23664	104.00	911	146.00	396
37.00	8013	69.00	24056	105.00	352	147.00	265
38.00	7570	70.00	1864	106.00	942	148.00	718
39.00	3059	72.00	1283	107.00	294	149.00	186
40.00	183	73.00	10367	111.00	117	150.00	262
41.00	120	74.00	40624	113.00	67	152.00	56
43.00	72	75.00	134080	115.00	255	153.00	242
44.00	768	76.00	11395	116.00	945	154.00	237
45.00	1632	77.00	1634	117.00	1575	155.00	846
47.00	2979	78.00	1344	118.00	931	157.00	674
48.00	1163	79.00	4301	119.00	1365	159.00	369
49.00	8147	80.00	1560	124.00	121	161.00	297
50.00	40800	81.00	4520	126.00	57	171.00	113
51.00	12410	82.00	1071	128.00	1085	172.00	187
52.00	532	83.00	60	129.00	515	173.00	2802
55.00	616	86.00	437	130.00	978	174.00	348736
56.00	2904	87.00	14630	131.00	439	175.00	25104
57.00	5595	88.00	13725	135.00	465	176.00	341120
58.00	297	91.00	841	137.00	419	177.00	21536
60.00	1888	92.00	7346	140.00	65	178.00	620
61.00	9643	93.00	11407	141.00	2220	253.00	66
62.00	9739	94.00	33280	142.00	342	260.00	54
63.00	7639	95.00	336000	143.00	2323		
64.00	654	96.00	21816	144.00	66		
67.00	676	97.00	685	145.00	200		

TestAmerica Burlington
Target Compound Quantitation Report

Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_01.D				
Lims ID:	bfb				
Client ID:					
Sample Type:	BFB				
Inject. Date:	13-Oct-2015 08:59:30	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	0.0 mL	Dil. Factor:	1.0000		
Sample Info:	200-0016229-001				
Misc. Info.:	bfb				
Operator ID:	wrd	Instrument ID:	CHX.i		
Method:	\\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m				
Limit Group:	AI_TO15_ICAL				
Last Update:	13-Oct-2015 09:28:14	Calib Date:	17-Aug-2015 23:52:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D				
Column 1 :	RTX-624 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK053				
First Level Reviewer: desjardinsb		Date:	13-Oct-2015 09:28:14		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
$ 19 BFB									
* 40 Chlorobromomethane	128		10.282				10.0	ND	
* 50 1,4-Difluorobenzene	114		12.256				10.0	ND	
* 73 Chlorobenzene-d5	117		18.446				10.0	ND	
* 83 4-Bromofluorobenzene	95		20.709				10.0	ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

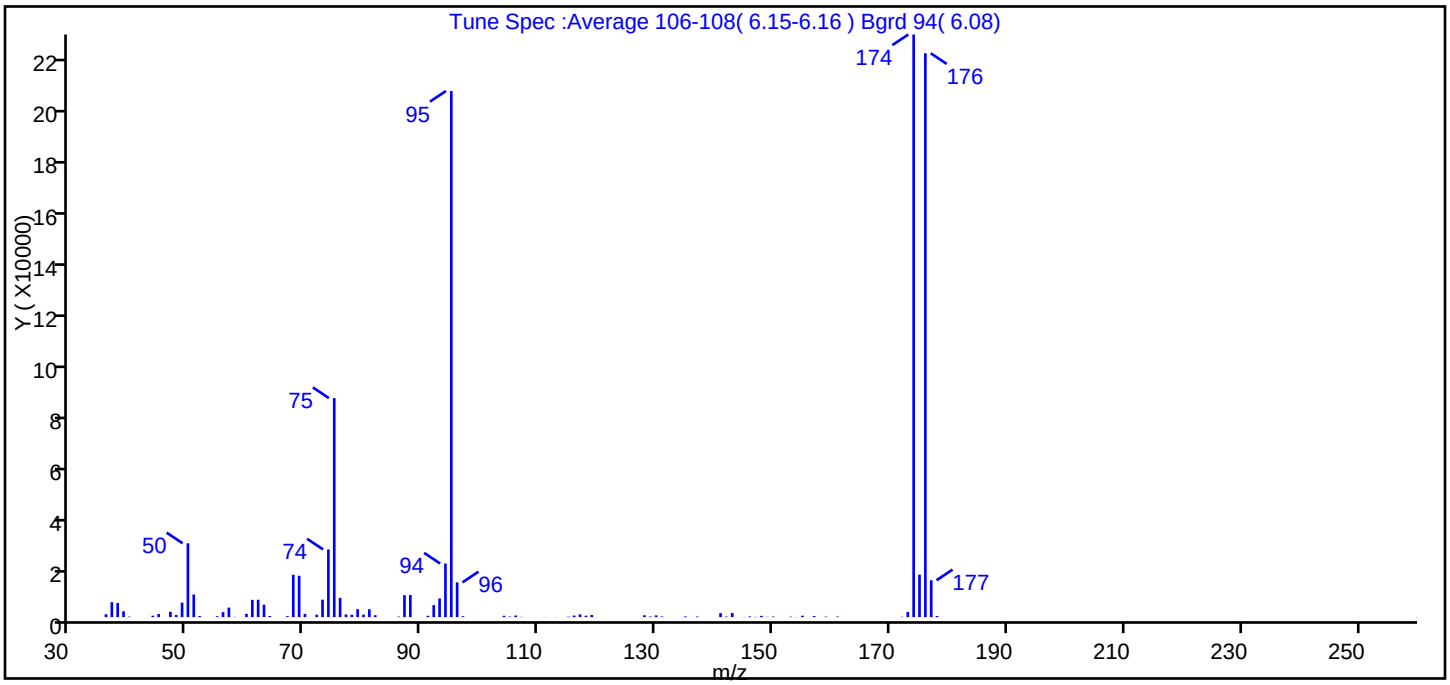
ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

MS Tune Report

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_01.D
Injection Date: 13-Oct-2015 08:59:30 Instrument ID: CHX.i
Lims ID: bfb
Client ID:
Operator ID: wrd ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 0.0 mL Dil. Factor: 1.0000
Method: TO15_LLNJ_TO3_CHX.i.m Limit Group: AI_TO15_ICAL
Tune Method: BFB Method TO-15

$ 19 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base Peak, 100 Percent Relative Abundance	100.0
50	8.0 to 40.0 Percent of m/e 95	14.0
75	30.0 to 66.0 Percent of m/e 95	41.6
96	5.0 to 9.0 Percent of m/e 95	6.6
173	Less than 2.0 Percent of m/e 174	1.0 (0.9)
174	50.0 to 120.0 Percent of m/e 95	110.7
175	4.0 to 9.0 Percent of m/e 174	8.1 (7.3)
176	93.0 to 101.0 Percent of m/e 174	107.2 (96.8)
177	5.0 to 9.0 Percent of m/e 176	7.0 (6.5)

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_01.D\TO15_LLNJ_TO3_CHX.i.m.rslt\
Injection Date: 13-Oct-2015 08:59:30
Spectrum: Tune Spec :Average 106-108(6.15-6.16) Bgrd 94(6.08)
Base Peak: 174.00
Minimum % Base Peak: 0
Number of Points: 87

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1106	67.00	375	95.00	200896	143.00	1602
37.00	5722	68.00	16160	96.00	13284	145.00	57
38.00	5400	69.00	15805	97.00	354	146.00	284
39.00	2232	70.00	1254	104.00	539	147.00	114
40.00	199	72.00	939	105.00	230	148.00	496
44.00	561	73.00	6666	106.00	614	149.00	125
45.00	1186	74.00	25856	107.00	119	150.00	234
47.00	2027	75.00	83632	111.00	57	153.00	185
48.00	824	76.00	7354	113.00	55	154.00	67
49.00	5547	77.00	1032	115.00	177	155.00	551
50.00	28200	78.00	900	116.00	603	157.00	415
51.00	8664	79.00	3057	117.00	1048	159.00	203
52.00	427	80.00	953	118.00	551	161.00	241
55.00	354	81.00	2999	119.00	829	172.00	143
56.00	1908	82.00	739	128.00	716	173.00	2002
57.00	3648	86.00	216	129.00	245	174.00	222464
58.00	107	87.00	8400	130.00	669	175.00	16238
60.00	1282	88.00	8476	131.00	257	176.00	215296
61.00	6585	91.00	519	135.00	300	177.00	14091
62.00	6646	92.00	4591	137.00	263	178.00	426
63.00	4755	93.00	7132	141.00	1551	260.00	56
64.00	444	94.00	20472	142.00	237		

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: MB 200-95422/5

Matrix: Air Lab File ID: 16229_05.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 12:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	0.50	U	0.50	
75-45-6	Freon 22	86.47	0.50	U	0.50	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	0.20	U	0.20	
74-87-3	Chloromethane	50.49	0.50	U	0.50	
106-97-8	n-Butane	58.12	0.50	U	0.50	
75-01-4	Vinyl chloride	62.50	0.20	U	0.20	
106-99-0	1,3-Butadiene	54.09	0.20	U	0.20	
74-83-9	Bromomethane	94.94	0.20	U	0.20	
75-00-3	Chloroethane	64.52	0.50	U	0.50	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.20	U	0.20	
75-69-4	Trichlorofluoromethane	137.37	0.20	U	0.20	
76-13-1	Freon TF	187.38	0.20	U	0.20	
75-35-4	1,1-Dichloroethene	96.94	0.20	U	0.20	
67-64-1	Acetone	58.08	5.0	U	5.0	
67-63-0	Isopropyl alcohol	60.10	5.0	U	5.0	
75-15-0	Carbon disulfide	76.14	0.50	U	0.50	
107-05-1	3-Chloropropene	76.53	0.50	U	0.50	
75-09-2	Methylene Chloride	84.93	0.50	U	0.50	
75-65-0	tert-Butyl alcohol	74.12	5.0	U	5.0	
1634-04-4	Methyl tert-butyl ether	88.15	0.20	U	0.20	
156-60-5	trans-1,2-Dichloroethene	96.94	0.20	U	0.20	
110-54-3	n-Hexane	86.17	0.20	U	0.20	
75-34-3	1,1-Dichloroethane	98.96	0.20	U	0.20	
78-93-3	Methyl Ethyl Ketone	72.11	0.50	U	0.50	
156-59-2	cis-1,2-Dichloroethene	96.94	0.20	U	0.20	
540-59-0	1,2-Dichloroethene, Total	96.94	0.40	U	0.40	
67-66-3	Chloroform	119.38	0.20	U	0.20	
109-99-9	Tetrahydrofuran	72.11	5.0	U	5.0	
71-55-6	1,1,1-Trichloroethane	133.41	0.20	U	0.20	
110-82-7	Cyclohexane	84.16	0.20	U	0.20	
56-23-5	Carbon tetrachloride	153.81	0.20	U	0.20	
540-84-1	2,2,4-Trimethylpentane	114.23	0.20	U	0.20	
71-43-2	Benzene	78.11	0.20	U	0.20	
107-06-2	1,2-Dichloroethane	98.96	0.20	U	0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: MB 200-95422/5

Matrix: Air Lab File ID: 16229_05.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 12:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	0.20	U	0.20	
79-01-6	Trichloroethene	131.39	0.20	U	0.20	
80-62-6	Methyl methacrylate	100.12	0.50	U	0.50	
78-87-5	1,2-Dichloropropane	112.99	0.20	U	0.20	
123-91-1	1,4-Dioxane	88.11	5.0	U	5.0	
75-27-4	Bromodichloromethane	163.83	0.20	U	0.20	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.20	U	0.20	
108-10-1	methyl isobutyl ketone	100.16	0.50	U	0.50	
108-88-3	Toluene	92.14	0.20	U	0.20	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.20	U	0.20	
79-00-5	1,1,2-Trichloroethane	133.41	0.20	U	0.20	
127-18-4	Tetrachloroethene	165.83	0.20	U	0.20	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	0.50	U	0.50	
124-48-1	Dibromochloromethane	208.29	0.20	U	0.20	
106-93-4	1,2-Dibromoethane	187.87	0.20	U	0.20	
108-90-7	Chlorobenzene	112.56	0.20	U	0.20	
100-41-4	Ethylbenzene	106.17	0.20	U	0.20	
179601-23-1	m,p-Xylene	106.17	0.50	U	0.50	
95-47-6	Xylene, o-	106.17	0.20	U	0.20	
1330-20-7	Xylene (total)	106.17	0.70	U	0.70	
100-42-5	Styrene	104.15	0.20	U	0.20	
75-25-2	Bromoform	252.75	0.20	U	0.20	
98-82-8	Cumene	120.19	0.20	U	0.20	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.20	U	0.20	
103-65-1	n-Propylbenzene	120.19	0.20	U	0.20	
622-96-8	4-Ethyltoluene	120.20	0.20	U	0.20	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.20	U	0.20	
95-49-8	2-Chlorotoluene	126.59	0.20	U	0.20	
98-06-6	tert-Butylbenzene	134.22	0.20	U	0.20	
95-63-6	1,2,4-Trimethylbenzene	120.20	0.20	U	0.20	
135-98-8	sec-Butylbenzene	134.22	0.20	U	0.20	
99-87-6	4-Isopropyltoluene	134.22	0.20	U	0.20	
541-73-1	1,3-Dichlorobenzene	147.00	0.20	U	0.20	
106-46-7	1,4-Dichlorobenzene	147.00	0.20	U	0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: MB 200-95422/5

Matrix: Air Lab File ID: 16229_05.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 12:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	0.20	U	0.20	
104-51-8	n-Butylbenzene	134.22	0.20	U	0.20	
95-50-1	1,2-Dichlorobenzene	147.00	0.20	U	0.20	
120-82-1	1,2,4-Trichlorobenzene	181.45	0.50	U	0.50	
87-68-3	Hexachlorobutadiene	260.76	0.20	U	0.20	
91-20-3	Naphthalene	128.17	0.50	U	0.50	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: MB 200-95422/5

Matrix: Air Lab File ID: 16229_05.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 12:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	2.5	U	2.5	
75-45-6	Freon 22	86.47	1.8	U	1.8	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	1.4	U	1.4	
74-87-3	Chloromethane	50.49	1.0	U	1.0	
106-97-8	n-Butane	58.12	1.2	U	1.2	
75-01-4	Vinyl chloride	62.50	0.51	U	0.51	
106-99-0	1,3-Butadiene	54.09	0.44	U	0.44	
74-83-9	Bromomethane	94.94	0.78	U	0.78	
75-00-3	Chloroethane	64.52	1.3	U	1.3	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	0.87	U	0.87	
75-69-4	Trichlorofluoromethane	137.37	1.1	U	1.1	
76-13-1	Freon TF	187.38	1.5	U	1.5	
75-35-4	1,1-Dichloroethene	96.94	0.79	U	0.79	
67-64-1	Acetone	58.08	12	U	12	
67-63-0	Isopropyl alcohol	60.10	12	U	12	
75-15-0	Carbon disulfide	76.14	1.6	U	1.6	
107-05-1	3-Chloropropene	76.53	1.6	U	1.6	
75-09-2	Methylene Chloride	84.93	1.7	U	1.7	
75-65-0	tert-Butyl alcohol	74.12	15	U	15	
1634-04-4	Methyl tert-butyl ether	88.15	0.72	U	0.72	
156-60-5	trans-1,2-Dichloroethene	96.94	0.79	U	0.79	
110-54-3	n-Hexane	86.17	0.70	U	0.70	
75-34-3	1,1-Dichloroethane	98.96	0.81	U	0.81	
78-93-3	Methyl Ethyl Ketone	72.11	1.5	U	1.5	
156-59-2	cis-1,2-Dichloroethene	96.94	0.79	U	0.79	
540-59-0	1,2-Dichloroethene, Total	96.94	1.6	U	1.6	
67-66-3	Chloroform	119.38	0.98	U	0.98	
109-99-9	Tetrahydrofuran	72.11	15	U	15	
71-55-6	1,1,1-Trichloroethane	133.41	1.1	U	1.1	
110-82-7	Cyclohexane	84.16	0.69	U	0.69	
56-23-5	Carbon tetrachloride	153.81	1.3	U	1.3	
540-84-1	2,2,4-Trimethylpentane	114.23	0.93	U	0.93	
71-43-2	Benzene	78.11	0.64	U	0.64	
107-06-2	1,2-Dichloroethane	98.96	0.81	U	0.81	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: MB 200-95422/5

Matrix: Air Lab File ID: 16229_05.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 12:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	0.82	U	0.82	
79-01-6	Trichloroethene	131.39	1.1	U	1.1	
80-62-6	Methyl methacrylate	100.12	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	112.99	0.92	U	0.92	
123-91-1	1,4-Dioxane	88.11	18	U	18	
75-27-4	Bromodichloromethane	163.83	1.3	U	1.3	
10061-01-5	cis-1,3-Dichloropropene	110.97	0.91	U	0.91	
108-10-1	methyl isobutyl ketone	100.16	2.0	U	2.0	
108-88-3	Toluene	92.14	0.75	U	0.75	
10061-02-6	trans-1,3-Dichloropropene	110.97	0.91	U	0.91	
79-00-5	1,1,2-Trichloroethane	133.41	1.1	U	1.1	
127-18-4	Tetrachloroethene	165.83	1.4	U	1.4	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	2.0	U	2.0	
124-48-1	Dibromochloromethane	208.29	1.7	U	1.7	
106-93-4	1,2-Dibromoethane	187.87	1.5	U	1.5	
108-90-7	Chlorobenzene	112.56	0.92	U	0.92	
100-41-4	Ethylbenzene	106.17	0.87	U	0.87	
179601-23-1	m,p-Xylene	106.17	2.2	U	2.2	
95-47-6	Xylene, o-	106.17	0.87	U	0.87	
1330-20-7	Xylene (total)	106.17	3.0	U	3.0	
100-42-5	Styrene	104.15	0.85	U	0.85	
75-25-2	Bromoform	252.75	2.1	U	2.1	
98-82-8	Cumene	120.19	0.98	U	0.98	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	1.4	U	1.4	
103-65-1	n-Propylbenzene	120.19	0.98	U	0.98	
622-96-8	4-Ethyltoluene	120.20	0.98	U	0.98	
108-67-8	1,3,5-Trimethylbenzene	120.20	0.98	U	0.98	
95-49-8	2-Chlorotoluene	126.59	1.0	U	1.0	
98-06-6	tert-Butylbenzene	134.22	1.1	U	1.1	
95-63-6	1,2,4-Trimethylbenzene	120.20	0.98	U	0.98	
135-98-8	sec-Butylbenzene	134.22	1.1	U	1.1	
99-87-6	4-Isopropyltoluene	134.22	1.1	U	1.1	
541-73-1	1,3-Dichlorobenzene	147.00	1.2	U	1.2	
106-46-7	1,4-Dichlorobenzene	147.00	1.2	U	1.2	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: MB 200-95422/5

Matrix: Air Lab File ID: 16229_05.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 12:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	1.0	U	1.0	
104-51-8	n-Butylbenzene	134.22	1.1	U	1.1	
95-50-1	1,2-Dichlorobenzene	147.00	1.2	U	1.2	
120-82-1	1,2,4-Trichlorobenzene	181.45	3.7	U	3.7	
87-68-3	Hexachlorobutadiene	260.76	2.1	U	2.1	
91-20-3	Naphthalene	128.17	2.6	U	2.6	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: MB 200-95422/5

Matrix: Air Lab File ID: 16229_05.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 12:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_05.D
Lims ID: mb
Client ID:
Sample Type: MB
Inject. Date: 13-Oct-2015 12:18:30 ALS Bottle#: 3 Worklist Smp#: 5
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0016229-005
Misc. Info.: mb
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 13-Oct-2015 13:57:29 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK053

First Level Reviewer: desjardinsb Date: 13-Oct-2015 13:57:29

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41		3.113					ND	
2 Dichlorodifluoromethane	85		3.177					ND	
3 Chlorodifluoromethane	51		3.231					ND	
4 1,2-Dichloro-1,1,2,2-tetra	85		3.445					ND	
5 Chloromethane	50		3.579					ND	
6 Butane	43		3.777					ND	
7 Vinyl chloride	62		3.819					ND	
8 Butadiene	54		3.894					ND	
9 Bromomethane	94		4.563					ND	
10 Chloroethane	64		4.793					ND	
11 2-Methylbutane	43		4.863					ND	
12 Vinyl bromide	106		5.167					ND	
13 Trichlorofluoromethane	101		5.264					ND	
14 Pentane	43		5.398					ND	
15 Ethanol	45		5.895					ND	
16 Ethyl ether	59		5.933					ND	
17 Acrolein	56		6.307					ND	
18 1,1,2-Trichloro-1,2,2-trif	101		6.307					ND	
20 1,1-Dichloroethene	96		6.355					ND	
21 Acetone	43		6.623					ND	
22 Carbon disulfide	76		6.751					ND	
23 Isopropyl alcohol	45		6.949					ND	
24 3-Chloro-1-propene	41		7.125					ND	
25 Acetonitrile	41		7.286					ND	
26 Methylene Chloride	49	7.425	7.414	0.011	79	1717		0.1373	
T 27 Methyl Acetate TIC	43		7.568					ND	
28 2-Methyl-2-propanol	59		7.735					ND	
29 Methyl tert-butyl ether	73		7.837					ND	
30 trans-1,2-Dichloroethene	61		7.842					ND	
31 Acrylonitrile	53		8.019					ND	
32 Hexane	57		8.211					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63		8.714					ND	
34 Vinyl acetate	43		8.789					ND	
35 cis-1,2-Dichloroethene	96		9.822					ND	
36 2-Butanone (MEK)	72		9.881					ND	
37 Ethyl acetate	88		9.923					ND	
S 38 1,2-Dichloroethene, Total	61		10.000					ND	
* 40 Chlorobromomethane	128	10.287	10.287	0.000	74	169691	10.0	10.0	
39 Tetrahydrofuran	42		10.314					ND	
41 Chloroform	83		10.416					ND	
42 Cyclohexane	84		10.656					ND	
43 1,1,1-Trichloroethane	97		10.694					ND	
44 Carbon tetrachloride	117		10.934					ND	
45 Isooctane	57		11.373					ND	
46 Benzene	78		11.416					ND	
47 1,2-Dichloroethane	62		11.609					ND	
48 n-Heptane	43		11.764					ND	
T 49 Methyl cyclohexane TIC	55		11.965					ND	
* 50 1,4-Difluorobenzene	114	12.267	12.267	0.000	92	941292	10.0	10.0	
51 n-Butanol	56		12.727					ND	
52 Trichloroethene	95		12.748					ND	
53 1,2-Dichloropropane	63		13.336					ND	
54 Methyl methacrylate	69		13.502					ND	
55 1,4-Dioxane	88		13.588					ND	
56 Dibromomethane	174		13.609					ND	
57 Dichlorobromomethane	83		13.909					ND	
58 cis-1,3-Dichloropropene	75		14.872					ND	
A 59 Total Hydrocarbons	1	14.939	(3.086-26.791)		0	242662			NC
A 60 TVOC as Toluene	1		(3.086-26.791)					ND	
61 4-Methyl-2-pentanone (MIBK	43		15.198					ND	
62 Toluene	92		15.482					ND	
A 63 Toluene Range	1		(15.477-15.497)					ND	
66 n-Octane	43		15.514					ND	
A 65 GRO	1		(15.519-15.519)					ND	
A 64 C8 Range	1		(15.509-15.529)					ND	
67 trans-1,3-Dichloropropene	75		16.097					ND	
68 1,1,2-Trichloroethane	83		16.487					ND	
69 Tetrachloroethene	166		16.584					ND	
70 2-Hexanone	43		16.958					ND	
71 Chlorodibromomethane	129		17.269					ND	
72 Ethylene Dibromide	107		17.547					ND	
* 73 Chlorobenzene-d5	117	18.446	18.451	-0.005	81	941378	10.0	10.0	
74 Chlorobenzene	112		18.510					ND	
75 Ethylbenzene	91		18.654					ND	
76 n-Nonane	57		18.750					ND	
77 m-Xylene & p-Xylene	106		18.906					ND	
78 o-Xylene	106		19.719					ND	
79 Styrene	104		19.772					ND	
S 80 Xylenes, Total	106		20.000					ND	
81 Bromoform	173		20.179					ND	
82 Isopropylbenzene	105		20.355					ND	
* 83 4-Bromofluorobenzene	95	20.714	20.714	0.000	97	587978	10.0	10.0	
T 84 1,2-Dibromo-3-Chloropropan	75		20.846					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
85 1,1,2,2-Tetrachloroethane	83		20.981					ND	
86 N-Propylbenzene	91		21.040					ND	
87 1,2,3-Trichloropropane	75		21.078					ND	
88 n-Decane	57		21.185					ND	
89 4-Ethyltoluene	105		21.217					ND	
90 2-Chlorotoluene	91		21.238					ND	
91 1,3,5-Trimethylbenzene	105		21.318					ND	
92 Alpha Methyl Styrene	118		21.671					ND	
93 tert-Butylbenzene	119		21.789					ND	
94 1,2,4-Trimethylbenzene	105		21.880					ND	
95 sec-Butylbenzene	105		22.105					ND	
96 4-Isopropyltoluene	119		22.297					ND	
97 1,3-Dichlorobenzene	146		22.345					ND	
98 1,4-Dichlorobenzene	146		22.484					ND	
99 Benzyl chloride	91		22.688					ND	
101 n-Butylbenzene	91		22.886					ND	
100 Undecane	57		22.886					ND	
102 1,2-Dichlorobenzene	146		23.041					ND	
103 Dodecane	57		24.533					ND	
104 1,2,4-Trichlorobenzene	180	25.662	25.673	-0.011	84	1543		0.0223	
105 Hexachlorobutadiene	225		25.855					ND	
106 Naphthalene	128	26.197	26.197	0.000	96	3526		0.0266	
107 1,2,3-Trichlorobenzene	180	26.706	26.705	0.001	87	1676		0.0262	
T 108 1,1,1,2-Tetrachloroethane	1		0.000					ND	
T 109 Methyl acetylene TIC	1		0.000					ND	
T 117 1,3-Dichloropropane TIC	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

ATTO15GIS_00009 Amount Added: 20.00 Units: mL Run Reagent

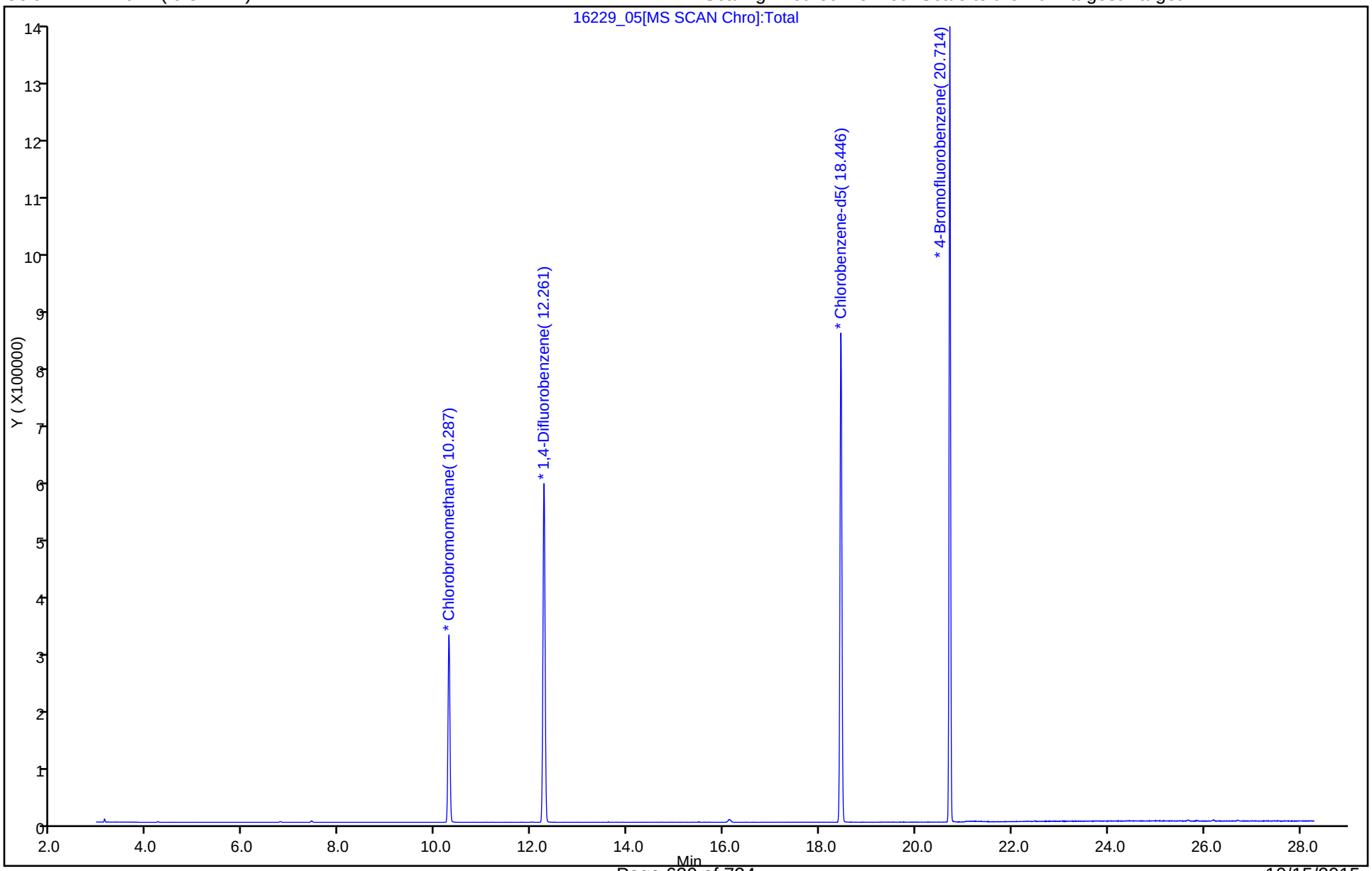
Report Date: 13-Oct-2015 13:57:30 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_05.D

Injection Date:	13-Oct-2015 12:18:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	mb			Worklist Smp#:	5
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: LCS 200-95422/4

Matrix: Air Lab File ID: 16229_04.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 11:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
75-71-8	Dichlorodifluoromethane	120.91	9.78		0.50	
75-45-6	Freon 22	86.47	9.52		0.50	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	10.6		0.20	
74-87-3	Chloromethane	50.49	8.79		0.50	
106-97-8	n-Butane	58.12	8.89		0.50	
75-01-4	Vinyl chloride	62.50	9.35		0.20	
106-99-0	1,3-Butadiene	54.09	9.01		0.20	
74-83-9	Bromomethane	94.94	9.54		0.20	
75-00-3	Chloroethane	64.52	9.23		0.50	
593-60-2	Bromoethene(Vinyl Bromide)	106.96	9.41		0.20	
75-69-4	Trichlorofluoromethane	137.37	9.72		0.20	
76-13-1	Freon TF	187.38	9.49		0.20	
75-35-4	1,1-Dichloroethene	96.94	9.45		0.20	
67-64-1	Acetone	58.08	9.73		5.0	
67-63-0	Isopropyl alcohol	60.10	8.23		5.0	
75-15-0	Carbon disulfide	76.14	10.9		0.50	
107-05-1	3-Chloropropene	76.53	8.55		0.50	
75-09-2	Methylene Chloride	84.93	8.64		0.50	
75-65-0	tert-Butyl alcohol	74.12	8.80		5.0	
1634-04-4	Methyl tert-butyl ether	88.15	9.32		0.20	
156-60-5	trans-1,2-Dichloroethene	96.94	9.83		0.20	
110-54-3	n-Hexane	86.17	9.31		0.20	
75-34-3	1,1-Dichloroethane	98.96	9.27		0.20	
78-93-3	Methyl Ethyl Ketone	72.11	8.60		0.50	
156-59-2	cis-1,2-Dichloroethene	96.94	9.54		0.20	
540-59-0	1,2-Dichloroethene, Total	96.94	19.4		0.40	
67-66-3	Chloroform	119.38	9.88		0.20	
109-99-9	Tetrahydrofuran	72.11	9.21		5.0	
71-55-6	1,1,1-Trichloroethane	133.41	9.88		0.20	
110-82-7	Cyclohexane	84.16	9.34		0.20	
56-23-5	Carbon tetrachloride	153.81	10.6		0.20	
540-84-1	2,2,4-Trimethylpentane	114.23	9.11		0.20	
71-43-2	Benzene	78.11	9.41		0.20	
107-06-2	1,2-Dichloroethane	98.96	9.84		0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: LCS 200-95422/4

Matrix: Air Lab File ID: 16229_04.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 11:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
142-82-5	n-Heptane	100.21	9.09		0.20	
79-01-6	Trichloroethene	131.39	9.32		0.20	
80-62-6	Methyl methacrylate	100.12	10.0		0.50	
78-87-5	1,2-Dichloropropane	112.99	9.84		0.20	
123-91-1	1,4-Dioxane	88.11	9.36		5.0	
75-27-4	Bromodichloromethane	163.83	10.2		0.20	
10061-01-5	cis-1,3-Dichloropropene	110.97	10.1		0.20	
108-10-1	methyl isobutyl ketone	100.16	9.70		0.50	
108-88-3	Toluene	92.14	9.63		0.20	
10061-02-6	trans-1,3-Dichloropropene	110.97	9.75		0.20	
79-00-5	1,1,2-Trichloroethane	133.41	9.76		0.20	
127-18-4	Tetrachloroethene	165.83	10.3		0.20	
591-78-6	Methyl Butyl Ketone (2-Hexanone)	100.20	8.75		0.50	
124-48-1	Dibromochloromethane	208.29	10.4		0.20	
106-93-4	1,2-Dibromoethane	187.87	9.99		0.20	
108-90-7	Chlorobenzene	112.56	9.91		0.20	
100-41-4	Ethylbenzene	106.17	9.75		0.20	
179601-23-1	m,p-Xylene	106.17	19.4		0.50	
95-47-6	Xylene, o-	106.17	9.63		0.20	
1330-20-7	Xylene (total)	106.17	29.0		0.70	
100-42-5	Styrene	104.15	9.69		0.20	
75-25-2	Bromoform	252.75	12.4		0.20	
98-82-8	Cumene	120.19	9.59		0.20	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	10.2		0.20	
103-65-1	n-Propylbenzene	120.19	9.66		0.20	
622-96-8	4-Ethyltoluene	120.20	9.68		0.20	
108-67-8	1,3,5-Trimethylbenzene	120.20	8.12		0.20	
95-49-8	2-Chlorotoluene	126.59	9.62		0.20	
98-06-6	tert-Butylbenzene	134.22	7.90		0.20	
95-63-6	1,2,4-Trimethylbenzene	120.20	8.58		0.20	
135-98-8	sec-Butylbenzene	134.22	9.25		0.20	
99-87-6	4-Isopropyltoluene	134.22	9.90		0.20	
541-73-1	1,3-Dichlorobenzene	147.00	8.54		0.20	
106-46-7	1,4-Dichlorobenzene	147.00	8.77		0.20	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Client Sample ID: Lab Sample ID: LCS 200-95422/4

Matrix: Air Lab File ID: 16229_04.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 10/13/2015 11:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 95422 Units: ppb v/v

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
100-44-7	Benzyl chloride	126.58	9.56		0.20	
104-51-8	n-Butylbenzene	134.22	10.1		0.20	
95-50-1	1,2-Dichlorobenzene	147.00	9.94		0.20	
120-82-1	1,2,4-Trichlorobenzene	181.45	9.93		0.50	
87-68-3	Hexachlorobutadiene	260.76	10.4		0.20	
91-20-3	Naphthalene	128.17	8.88		0.50	

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_04.D
Lims ID: lcs
Client ID:
Sample Type: LCS
Inject. Date: 13-Oct-2015 11:28:30 ALS Bottle#: 2 Worklist Smp#: 4
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0016229-004
Misc. Info.: lcs
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\TO15_LLNJ_TO3_CHX.i.m.m
Limit Group: AI_TO15_ICAL
Last Update: 13-Oct-2015 11:04:44 Calib Date: 17-Aug-2015 23:52:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20150817-15313.b\15313_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK053

First Level Reviewer: desjardinsb Date: 13-Oct-2015 13:56:34

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41	3.108	3.113	-0.005	98	61950	10.0	8.94	
2 Dichlorodifluoromethane	85	3.177	3.177	0.000	99	317547	10.0	9.78	
3 Chlorodifluoromethane	51	3.226	3.231	-0.005	97	149413	10.0	9.52	
4 1,2-Dichloro-1,1,2,2-tetra	85	3.440	3.445	-0.005	93	350001	10.0	10.6	
5 Chloromethane	50	3.579	3.579	0.000	98	80268	10.0	8.79	
6 Butane	43	3.771	3.777	-0.006	98	133421	10.0	8.89	
7 Vinyl chloride	62	3.814	3.819	-0.005	98	107706	10.0	9.35	
8 Butadiene	54	3.894	3.894	0.000	94	74539	10.0	9.01	
9 Bromomethane	94	4.563	4.563	0.000	99	124493	10.0	9.54	
10 Chloroethane	64	4.793	4.793	0.000	98	53717	10.0	9.23	
11 2-Methylbutane	43	4.852	4.863	-0.011	90	100508	10.0	9.36	
12 Vinyl bromide	106	5.168	5.167	0.001	99	141639	10.0	9.41	
13 Trichlorofluoromethane	101	5.259	5.264	-0.006	98	348068	10.0	9.72	
14 Pentane	43	5.392	5.398	-0.006	96	164200	10.0	9.61	
15 Ethanol	45	5.874	5.895	-0.021	98	66313	15.0	18.5	
16 Ethyl ether	59	5.922	5.933	-0.010	89	77386	10.0	10.3	
17 Acrolein	56	6.302	6.307	-0.005	97	34285	10.0	12.1	
18 1,1,2-Trichloro-1,2,2-trif	101	6.302	6.307	-0.005	97	272013	10.0	9.49	
20 1,1-Dichloroethene	96	6.350	6.355	-0.005	93	126617	10.0	9.45	
$ 19 BFB									
21 Acetone	43	6.612	6.623	-0.011	88	142050	10.0	9.73	
22 Carbon disulfide	76	6.746	6.751	-0.005	98	369365	10.0	10.9	
23 Isopropyl alcohol	45	6.933	6.949	-0.016	99	113963	10.0	8.23	
24 3-Chloro-1-propene	41	7.126	7.125	0.001	90	96635	10.0	8.55	
25 Acetonitrile	41	7.275	7.286	-0.011	99	64512	10.0	9.32	
26 Methylene Chloride	49	7.414	7.414	0.000	83	106273	10.0	8.64	
28 2-Methyl-2-propanol	59	7.719	7.735	-0.016	99	195331	10.0	8.80	
29 Methyl tert-butyl ether	73	7.826	7.837	-0.011	95	345169	10.0	9.32	
30 trans-1,2-Dichloroethene	61	7.837	7.842	-0.005	89	169084	10.0	9.83	
31 Acrylonitrile	53	8.014	8.019	-0.005	94	74928	10.0	9.39	
32 Hexane	57	8.212	8.211	0.001	89	170058	10.0	9.31	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63	8.709	8.714	-0.005	99	215318	10.0	9.27	
34 Vinyl acetate	43	8.779	8.789	-0.010	99	256042	10.0	9.40	
35 cis-1,2-Dichloroethene	96	9.816	9.822	-0.006	94	161255	10.0	9.54	
36 2-Butanone (MEK)	72	9.875	9.881	-0.006	100	66622	10.0	8.60	
37 Ethyl acetate	88	9.913	9.923	-0.010	99	12643	10.0	10.3	
S 38 1,2-Dichloroethene, Total	61				0		20.0	19.4	
* 40 Chlorobromomethane	128	10.282	10.287	-0.005	75	166871	10.0	10.0	
39 Tetrahydrofuran	42	10.303	10.314	-0.011	87	119446	10.0	9.21	
41 Chloroform	83	10.410	10.416	-0.006	99	306450	10.0	9.88	
42 Cyclohexane	84	10.651	10.656	-0.005	85	212776	10.0	9.34	
43 1,1,1-Trichloroethane	97	10.688	10.694	-0.006	96	327985	10.0	9.88	
44 Carbon tetrachloride	117	10.935	10.934	0.001	96	365619	10.0	10.6	
45 Isooctane	57	11.368	11.373	-0.005	99	693822	10.0	9.11	
46 Benzene	78	11.416	11.416	0.000	94	500175	10.0	9.41	
47 1,2-Dichloroethane	62	11.609	11.609	0.000	97	183444	10.0	9.84	
48 n-Heptane	43	11.753	11.764	-0.011	88	233125	10.0	9.09	
* 50 1,4-Difluorobenzene	114	12.261	12.267	-0.006	92	910178	10.0	10.0	
51 n-Butanol	56	12.716	12.727	-0.011	84	74206	10.0	8.39	
52 Trichloroethene	95	12.743	12.748	-0.005	93	249591	10.0	9.32	
53 1,2-Dichloropropane	63	13.331	13.336	-0.005	95	198780	10.0	9.84	
54 Methyl methacrylate	69	13.497	13.502	-0.005	83	201165	10.0	10.0	
55 1,4-Dioxane	88	13.577	13.588	-0.011	87	93433	10.0	9.36	
56 Dibromomethane	174	13.604	13.609	-0.005	87	332504	10.0	10.3	
57 Dichlorobromomethane	83	13.904	13.909	-0.005	98	388016	10.0	10.2	
58 cis-1,3-Dichloropropene	75	14.872	14.872	0.000	87	320650	10.0	10.1	
A 60 TVOC as Toluene	1	14.939	(3.086-26.791)		0	114771780	10.0	2476.4	
61 4-Methyl-2-pentanone (MIBK	43	15.193	15.198	-0.005	93	337021	10.0	9.70	
62 Toluene	92	15.476	15.482	-0.006	93	455706	10.0	9.63	
A 63 Toluene Range	1	15.487	(15.477-15.497)		0	3267248	NC	NC	
66 n-Octane	43	15.514	15.514	0.000	88	389990	10.0	9.88	
A 65 GRO	1	15.519	(15.519-15.519)		0	3267248	10.0	0	
A 64 C8 Range	1		(15.509-15.529)				ND	ND	
67 trans-1,3-Dichloropropene	75	16.097	16.097	0.000	93	322355	10.0	9.75	
68 1,1,2-Trichloroethane	83	16.482	16.487	-0.005	95	215539	10.0	9.76	
69 Tetrachloroethene	166	16.584	16.584	0.000	94	484887	10.0	10.3	
70 2-Hexanone	43	16.953	16.958	-0.005	93	307515	10.0	8.75	
71 Chlorodibromomethane	129	17.263	17.269	-0.006	98	473906	10.0	10.4	
72 Ethylene Dibromide	107	17.547	17.547	0.000	99	433892	10.0	9.99	
* 73 Chlorobenzene-d5	117	18.451	18.451	0.000	81	929691	10.0	10.0	
74 Chlorobenzene	112	18.510	18.510	0.000	99	668165	10.0	9.91	
75 Ethylbenzene	91	18.649	18.654	-0.005	96	995325	10.0	9.75	
76 n-Nonane	57	18.750	18.750	0.000	86	411552	10.0	9.39	
77 m-Xylene & p-Xylene	106	18.906	18.906	0.000	99	834770	20.0	19.4	
78 o-Xylene	106	19.719	19.719	0.000	95	409673	10.0	9.63	
79 Styrene	104	19.767	19.772	-0.005	98	643323	10.0	9.69	
S 80 Xylenes, Total	106				0		30.0	29.0	
81 Bromoform	173	20.179	20.179	0.000	99	527265	10.0	12.4	
82 Isopropylbenzene	105	20.355	20.355	0.000	94	1164026	10.0	9.59	
* 83 4-Bromofluorobenzene	95	20.714	20.714	0.000	97	606096	10.0	10.0	
85 1,1,2,2-Tetrachloroethane	83	20.981	20.981	0.000	98	583295	10.0	10.2	
86 N-Propylbenzene	91	21.040	21.040	0.000	100	1366580	10.0	9.66	
87 1,2,3-Trichloropropane	75	21.078	21.078	0.000	96	414233	10.0	9.51	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
88 n-Decane	57	21.179	21.185	-0.005	84	526402	10.0	9.50	
89 4-Ethyltoluene	105	21.217	21.217	0.000	98	1186675	10.0	9.68	
90 2-Chlorotoluene	91	21.238	21.238	0.000	96	922899	10.0	9.62	
91 1,3,5-Trimethylbenzene	105	21.318	21.318	0.000	95	822109	10.0	8.12	
92 Alpha Methyl Styrene	118	21.671	21.671	0.000	92	460458	10.0	8.63	
93 tert-Butylbenzene	119	21.789	21.789	0.000	96	797167	10.0	7.90	
94 1,2,4-Trimethylbenzene	105	21.880	21.880	0.000	96	870789	10.0	8.58	
95 sec-Butylbenzene	105	22.105	22.105	0.000	99	1363918	10.0	9.25	
96 4-Isopropyltoluene	119	22.297	22.297	0.000	98	1285585	10.0	9.90	
97 1,3-Dichlorobenzene	146	22.345	22.345	0.000	99	666363	10.0	8.54	
98 1,4-Dichlorobenzene	146	22.485	22.484	0.001	98	692283	10.0	8.77	
99 Benzyl chloride	91	22.688	22.688	0.000	100	789778	10.0	9.56	
101 n-Butylbenzene	91	22.886	22.886	0.000	96	1101468	10.0	10.1	
100 Undecane	57	22.886	22.886	0.000	93	571325	10.0	10.0	
102 1,2-Dichlorobenzene	146	23.041	23.041	0.000	100	735246	10.0	9.94	
103 Dodecane	57	24.534	24.533	0.001	94	507393	10.0	9.77	
104 1,2,4-Trichlorobenzene	180	25.673	25.673	0.000	92	677810	10.0	9.93	
105 Hexachlorobutadiene	225	25.855	25.855	0.000	98	660644	10.0	10.4	
106 Naphthalene	128	26.197	26.197	0.000	99	1161331	10.0	8.88	
107 1,2,3-Trichlorobenzene	180	26.705	26.705	0.000	95	578424	10.0	9.17	

QC Flag Legend

Processing Flags

NC - Not Calibrated
ND - Not Detected or Marked ND
7 - Failed Limit of Detection

Reagents:

ATTO15LCSW_00529	Amount Added: 200.00	Units: mL	
ATTO15GIS_00009	Amount Added: 20.00	Units: mL	Run Reagent

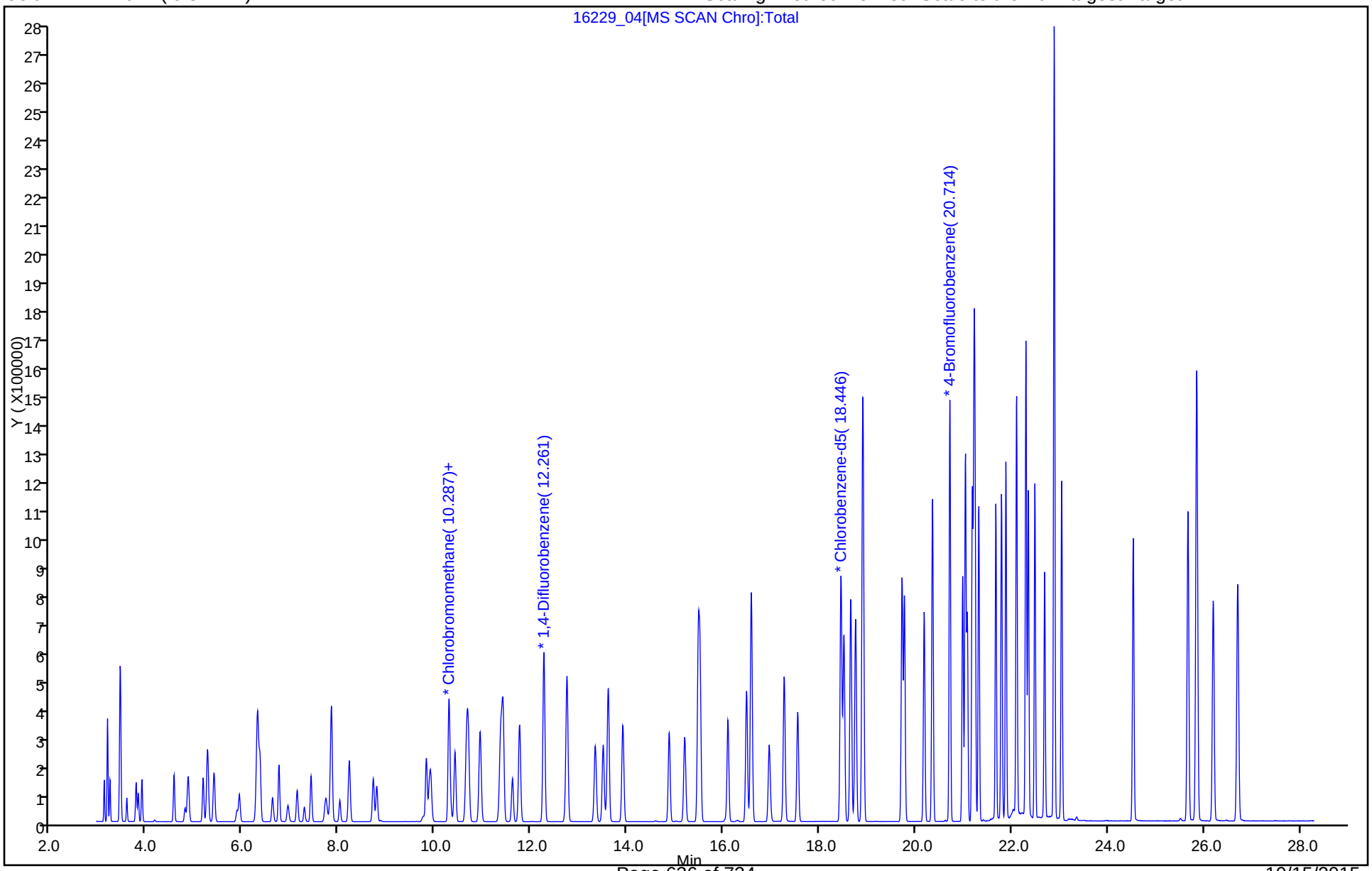
Report Date: 13-Oct-2015 13:56:35 Chrom Revision: 2.2 08-Oct-2015 07:17:48

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20151013-16229.b\16229_04.D

Injection Date:	13-Oct-2015 11:28:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	lcs			Worklist Smp#:	4
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	TO15_LLNJ_TO3_CHX.i.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



AIR - GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Instrument ID: CHX.i Start Date: 08/17/2015 15:35

Analysis Batch Number: 92823 End Date: 08/18/2015 04:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 200-92823/1		08/17/2015 15:35	1	15313_01.D	RTX-624 0.32(mm)
VIBLK 200-92823/2		08/17/2015 16:25	1		RTX-624 0.32(mm)
VIBLK 200-92823/3		08/17/2015 17:14	1		RTX-624 0.32(mm)
IC 200-92823/4		08/17/2015 18:04	1	15313_04.D	RTX-624 0.32(mm)
IC 200-92823/5		08/17/2015 18:54	1	15313_05.D	RTX-624 0.32(mm)
IC 200-92823/6		08/17/2015 19:44	1	15313_06.D	RTX-624 0.32(mm)
IC 200-92823/7		08/17/2015 20:33	1	15313_07.D	RTX-624 0.32(mm)
ICIS 200-92823/8		08/17/2015 21:23	1	15313_08.D	RTX-624 0.32(mm)
IC 200-92823/9		08/17/2015 22:13	1	15313_09.D	RTX-624 0.32(mm)
IC 200-92823/10		08/17/2015 23:02	1	15313_10.D	RTX-624 0.32(mm)
IC 200-92823/11		08/17/2015 23:52	1	15313_11.D	RTX-624 0.32(mm)
VIBLK 200-92823/12		08/18/2015 00:42	1		RTX-624 0.32(mm)
VIBLK 200-92823/13		08/18/2015 01:31	1		RTX-624 0.32(mm)
ZZZZZ		08/18/2015 02:21	1		RTX-624 0.32(mm)
ICV 200-92823/15		08/18/2015 03:10	1	15313_15.D	RTX-624 0.32(mm)
ZZZZZ		08/18/2015 04:00	1		RTX-624 0.32(mm)

AIR - GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 200-30148-1

SDG No.: 200-30148

Instrument ID: CHX.i Start Date: 10/13/2015 08:59

Analysis Batch Number: 95422 End Date: 10/14/2015 08:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 200-95422/1		10/13/2015 08:59	1	16229_01.D	RTX-624 0.32(mm)
CCVIS 200-95422/2		10/13/2015 09:48	1		RTX-624 0.32(mm)
CCVIS 200-95422/3		10/13/2015 10:38	1	16229_03.D	RTX-624 0.32(mm)
LCS 200-95422/4		10/13/2015 11:28	1	16229_04.D	RTX-624 0.32(mm)
MB 200-95422/5		10/13/2015 12:18	1	16229_05.D	RTX-624 0.32(mm)
ZZZZZ		10/13/2015 13:08	1		RTX-624 0.32(mm)
ZZZZZ		10/13/2015 13:58	1		RTX-624 0.32(mm)
ZZZZZ		10/13/2015 14:55	0.2		RTX-624 0.32(mm)
ZZZZZ		10/13/2015 15:44	1		RTX-624 0.32(mm)
ZZZZZ		10/13/2015 16:33	1		RTX-624 0.32(mm)
200-30148-1	SV-1	10/13/2015 17:23	1	16229_11.D	RTX-624 0.32(mm)
200-30148-1 DL	SV-1 DL	10/13/2015 18:12	4	16229_12.D	RTX-624 0.32(mm)
200-30148-2	SV-2	10/13/2015 19:01	1	16229_13.D	RTX-624 0.32(mm)
200-30148-2 DL	SV-2 DL	10/13/2015 19:51	4	16229_14.D	RTX-624 0.32(mm)
200-30148-3	SV-3	10/13/2015 20:40	3	16229_15.D	RTX-624 0.32(mm)
200-30148-3 DL	SV-3 DL	10/13/2015 21:29	30	16229_16.D	RTX-624 0.32(mm)
200-30148-4	SV-4	10/13/2015 22:18	2	16229_17.D	RTX-624 0.32(mm)
200-30148-4 DL	SV-4 DL	10/13/2015 23:08	20	16229_18.D	RTX-624 0.32(mm)
200-30148-5	SV-5	10/13/2015 23:57	3	16229_19.D	RTX-624 0.32(mm)
200-30148-5 DL	SV-5 DL	10/14/2015 00:46	30	16229_20.D	RTX-624 0.32(mm)
ZZZZZ		10/14/2015 01:36	1		RTX-624 0.32(mm)
ZZZZZ		10/14/2015 02:25	1		RTX-624 0.32(mm)
ZZZZZ		10/14/2015 03:14	1		RTX-624 0.32(mm)
ZZZZZ		10/14/2015 04:04	1		RTX-624 0.32(mm)
ZZZZZ		10/14/2015 04:53	1		RTX-624 0.32(mm)
ZZZZZ		10/14/2015 05:42	1		RTX-624 0.32(mm)
ZZZZZ		10/14/2015 06:32	1		RTX-624 0.32(mm)
ZZZZZ		10/14/2015 07:21	1		RTX-624 0.32(mm)
ZZZZZ		10/14/2015 08:10	1		RTX-624 0.32(mm)

Post-Sampling Air Canister Pressure Check Record

Login # (w/ Location Code)	Date	Time (Military)	Lab BP ("Hg)	Lab Temp (℃)	Pressure Gauge ID	Analyst
200-30148	10/09/15	11:15	29.5	22	G15	CGC

Sampling Information and Return Equipment Check	Yes	N o	Comments
(1) Is a Field Test Data Sheet (FTDS) or similar sampling documentation present?	Yes		
(2) Is the flow controller ID used for each canister recorded?	Yes		
(3) MA MCP & NJ DKQP: Check return flow rate for flow controllers		N o	
(4) Is visible sign of damage to canister and/or flow controller (FC) present?		N o	
If damage observed, list equipment IDs and describe condition:			

Post-Sampling Return Pressure Check

Lab ID	Canister ID	Pressure[1] ("Hg)	Anomaly[2] (Y/N)	FC ID[3]	FC Check[4] Reference	FC Return (Y/N)	Can Cert Batch ID	Comments
200-30148-A-1	4927	-4.2	N	2581	66/95	Y	4313 15622	
200-30148-A-2	2968	-8.0	N	4754	66/95	Y	5150 15528	
200-30148-A-3	3460	-3.9	N	3993	66/95	Y	4313 15622	
200-30148-A-4	3253	-4.0	N	4185	66/95	Y	4313 15622	
200-30148-A-5	4285	-7.4	N	5207	66/95	Y	4313 15622	

[1] Criteria: Return Pressure should be between -1 and -10 ("Hg)

[2] If return pressure is not within criteria, initiate anomaly report.

[3] Record the ID of the FC used for sampling if information is provided, otherwise leave blank.

[4] Record the Flow Controller Set Flow Rate Logbook ID and Page number in which the original FC Check was recorded

Summa Canister Dilution Worksheet

Client: AKRF Inc

Job No.: 200-30148-1
SDG No.: 200-30148

Lab Sample ID	Canister Volume (L)	Preadjusted Pressure ("Hg)	Preadjusted Pressure (atm)	Preadjusted Volume (L)	Adjusted Pressure (psig)	Adjusted Pressure (atm)	Adjusted Volume (L)	Initial Volume (mL)	Dilution Factor	Final Dilution Factor	Date	Analyst
200-30148-3	6	-3.7	0.88	5.26	24	2.63	15.80		3.00	3.00	10/12/15 14:13	Desjardins, William R
200-30148-4	6	-4.2	0.86	5.16	10.6	1.72	10.33		2.00	2.00	10/12/15 14:21	Desjardins, William R
200-30148-5	6	-7.2	0.76	4.56	18.8	2.28	13.67		3.00	3.00	10/12/15 14:26	Desjardins, William R

Formulae:

Preadjusted Volume (L) = (Preadjusted Pressure ("Hg) + 29.92 "Hg * Vol L) / 29.92 "Hg
Adjusted Volume (L) = (Adjusted Pressure (psig) + 14.7 psig * Vol L) / 14.7 psig
Dilution Factor = Adjusted Volume (L) / Preadjusted Volume (L)

Where:

29.92 "Hg = Standard atmospheric pressure in inches of Mercury (“Hg)
14.7 psig = Standard atmospheric pressure in pounds per square inch gauge (psig)

200-29497-A-10
5150
Location: Air-Storage
Bottle: Summa Canister 6L
Sampled: 8/28/2015 12:00 AM 200-833558

Loc: 200
29497
#10
A

Pre-Shipment Clean Canister Certification Repo

Certification Type: ☒ Batch ☐ Individual

Canister Cleaning & Pre-Shipment Leak Test

System ID	# Cycles	Cleaning Date	Technician	Canister Size		
TOP	25	8/28/15	MC	(6L)	1L	3L

Leak Test

Port	Can ID	Initial[1] ("Hg)	Final ("Hg)	Adjusted Initial[2] ("Hg)	Difference[3]	Initial Reading	Final Reading	Final Reading
1	2968	-9	-29.6	-29.4	-0.1	Gauge ID: 69	Gauge ID: 69	69
2	5106		-29.8		-0.4	Date: 8/28/15	Date: 9/9/15	9/11/15
(A) 3	5687	-9.18	-30.0	-29.9	-0.1	Time: 930	Time: 1448	900
4	5163		-29.9		-0.5	Tech: MS	Tech: MS	MS
5	2669		-29.1		+0.3	BP: 29.8 ("Hg)	BP: 29.4	29.5 ("Hg)
6	4287		-29.8		-0.4	Temp 21 (°C)	Temp: 22	23 (°C)
7	3488		-29.7		-0.3	[3]Acceptance Criteria:		
8	4150		-29.5		-0.1	(1) The difference must be less than or equal to + 0.5		
9	3725		-29.7		-0.3	(2) Pressure readings must be at least 24 hours apart.		
10	5150	-29.8	29.6	-29.5	-0.1	If time frame was not met, the PM must authorize shipment of canister:		
11	5114		-29.7		-0.3	*PM Authorization:*		
12	5075		-29.7		-0.2	Signature	Date	

[1] Batch Certification: The reading is taken on the "batch" canister and this value is used as the initial pressure for all canisters in the batch.

[2] To calculate Adjusted Initial Pressure, subtract Final BP from Initial BP and add the result (positive or negative) to the initial pressure reading.

[3] To calculate Difference, subtract the Adjusted Initial Pressure from the Final Pressure (See Acceptance Criteria)

Clean Canister Certification Analysis & Authorization of Release to Inventory

Test Method: ☐ TO15 Routine ☐ TO15 LL ☐ NJDEP-LL TO15

Can ID	Date	Sequence	Analyst	Inventory Level 1	2	3	4	Limited	Secondary Review: Review Date	Reviewer
950	9/01/15	15528	PAD		✓				9/2/15	ANI

Inventory Level 1: Individual Canister Certification Only. Certified clean to RLs listed in laboratory SOP for LLTO15.

Inventory Level 2: Individual or Batch Certification. Certified clean to 0.04 ppbv.

Inventory Level 3: Individual or Batch Certification. Certified clean to 0.20 ppbv.

Inventory Level 4: Individual or Batch Certification. Certified clean following procedures and RLs listed in laboratory SOP NJDEP-LLTO15.

Inventory Level Limited Use: Canisters may only be used for certain projects.

Comments: Routine

(A) BP2 29.9 Temp = 22 9/5/15 @ 1330 MS

200-29619-A-9
4313
Location: Air-Storage
Bottle: Summa Canister 6L
Sampled: 9/3/2015 12:00 AM 200-836149

Loc: 200
29619
#9
A

Pre-Shipment Clean Canister Certification Rep

Certification Type: ☒ Batch ☐ Individual

Canister Cleaning & Pre-Shipment Leak Test					
System ID	# Cycles	Cleaning Date	Technician	Canister Size	
Qtm 3/4	20	9/3/15	MC	(6L)	1L 3L

Port	Can ID	Leak Test: Initial[1] ("Hg)	Final ("Hg)	Adjusted Initial[2] ("Hg)	Difference[3]
1	3460		-29.4	-29.5	+0.1
2	3253		-29.6		-0.1
3	4321		-29.6		-0.1
4	4927		-29.4		+0.1
5	3604		-29.4		+0.1
6	4210		-29.6		-0.1
7	4285		-29.1		+0.4
8	2784		-29.5		0
9	4313	-29.8	-29.4		+0.1
10	3574		-29.7		-0.2
11	3707		-29.5		0
12	5463	↓	-29.7	↓	-0.2

Initial Reading	Final Reading
Gauge ID: G9	Gauge ID: G9
Date: 9/4/15	Date: 9/4/15
Time: 1700	Time: 930
Tech: MC	Tech: MC
BP: 29.8 ("Hg)	BP: 29.9 ("Hg)
Temp 22 (℃)	Temp: 23 (℃)

[3]Acceptance Criteria:
(1) The difference must be less than or equal to + 0.5
(2) Pressure readings must be at least 24 hours apart.
If time frame was not met, the PM must authorize shipment of canister:
PM Authorization:

Signature Date

[1] Batch Certification: The reading is taken on the "batch" canister and this value is used as the initial pressure for all canisters in the batch.

[2] To calculate Adjusted Initial Pressure, subtract Final BP from Initial BP and add the result (positive or negative) to the initial pressure reading.

[3] To calculate Difference, subtract the Adjusted Initial Pressure from the Final Pressure (See Acceptance Criteria)

Clean Canister Certification Analysis & Authorization of Release to Inventory

Test Method: ☐ TO15 Routine ☐ TO15 LL ☐ NJDEP-LL TO15

Can ID	Date	Sequence	Analyst	Inventory Level 1	2	3	4	Limited	Secondary Review: Review Date	Reviewer
4313	9/4/15	15622	LMP		✓				9/8/15	AMH

Inventory Level 1: Individual Canister Certification Only. Certified clean to RLs listed in laboratory SOP for LLTO15.

Inventory Level 2: Individual or Batch Certification. Certified clean to 0.04 ppbv.

Inventory Level 3: Individual or Batch Certification. Certified clean to 0.20 ppbv.

Inventory Level 4: Individual or Batch Certification. Certified clean following procedures and RLs listed in laboratory SOP NJDEP-LLTO15.

Inventory Level Limited Use: Canisters may only be used for certain projects.

Comments: Routine

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 15528_03.D

Lab ID: LCS 200-93391/3 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Propylene	10.0	7.73	77	70-130	
Dichlorodifluoromethane	10.0	10.2	102	70-130	
Freon 22	10.0	9.10	91	70-130	
1,2-Dichlorotetrafluoroethane	10.0	10.4	104	70-130	
Chloromethane	10.0	7.47	75	70-130	
n-Butane	10.0	7.68	77	70-130	
Vinyl chloride	10.0	7.96	80	70-130	
1,3-Butadiene	10.0	7.78	78	70-130	
Bromomethane	10.0	9.51	95	70-130	
Chloroethane	10.0	8.60	86	70-130	
Bromoethene(Vinyl Bromide)	10.0	9.98	100	70-130	
Trichlorofluoromethane	10.0	11.5	115	70-130	
Ethanol	15.0	13.0	87	70-130	
Freon TF	10.0	10.7	107	70-130	
1,1-Dichloroethene	10.0	10.1	101	70-130	
Acetone	10.0	9.41	94	70-130	
Isopropyl alcohol	10.0	8.07	81	70-130	
Carbon disulfide	10.0	11.0	110	70-130	
3-Chloropropene	10.0	9.15	92	70-130	
Methylene Chloride	10.0	8.66	87	70-130	
tert-Butyl alcohol	10.0	9.47	95	70-130	
Methyl tert-butyl ether	10.0	10.5	105	70-130	
trans-1,2-Dichloroethene	10.0	10.2	102	70-130	
n-Hexane	10.0	9.65	96	70-130	
1,1-Dichloroethane	10.0	9.43	94	70-130	
Vinyl acetate	10.0	8.97	90	70-130	
Ethyl acetate	10.0	10.5	105	70-130	
Methyl Ethyl Ketone	10.0	9.15	92	70-130	
cis-1,2-Dichloroethene	10.0	9.79	98	70-130	
Chloroform	10.0	10.6	106	70-130	
Tetrahydrofuran	10.0	8.82	88	70-130	
1,1,1-Trichloroethane	10.0	11.5	115	70-130	
Cyclohexane	10.0	10.0	100	70-130	
Carbon tetrachloride	10.0	13.2	132	70-130	*
2,2,4-Trimethylpentane	10.0	9.11	91	70-130	
Benzene	10.0	9.52	95	70-130	
1,2-Dichloroethane	10.0	11.2	112	70-130	
n-Heptane	10.0	8.54	85	70-130	
Trichloroethene	10.0	10.4	104	70-130	
Methyl methacrylate	10.0	9.93	99	70-130	
1,2-Dichloropropane	10.0	8.93	89	70-130	
1,4-Dioxane	10.0	9.37	94	70-130	

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 15528_03.D

Lab ID: LCS 200-93391/3 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Bromodichloromethane	10.0	11.0	111	70-130	
cis-1,3-Dichloropropene	10.0	10.1	101	70-130	
methyl isobutyl ketone	10.0	8.86	89	70-130	
Toluene	10.0	9.96	100	70-130	
trans-1,3-Dichloropropene	10.0	10.7	107	70-130	
1,1,2-Trichloroethane	10.0	9.99	100	70-130	
Tetrachloroethene	10.0	10.6	106	70-130	
Methyl Butyl Ketone (2-Hexanone)	10.0	9.16	92	70-130	
Dibromochloromethane	10.0	11.9	119	70-130	
1,2-Dibromoethane	10.0	10.7	107	70-130	
Chlorobenzene	10.0	10.2	102	70-130	
Ethylbenzene	10.0	10.3	103	70-130	
m,p-Xylene	20.0	20.6	103	70-130	
Xylene, o-	10.0	10.1	101	70-130	
Styrene	10.0	10.4	104	70-130	
Bromoform	10.0	13.9	139	70-130	*
Cumene	10.0	10.5	105	70-130	
1,1,2,2-Tetrachloroethane	10.0	10.1	101	70-130	
n-Propylbenzene	10.0	10.2	102	70-130	
4-Ethyltoluene	10.0	10.9	109	70-130	
1,3,5-Trimethylbenzene	10.0	10.6	106	70-130	
2-Chlorotoluene	10.0	10.5	105	70-130	
tert-Butylbenzene	10.0	10.9	109	70-130	
1,2,4-Trimethylbenzene	10.0	10.7	107	70-130	
sec-Butylbenzene	10.0	10.5	105	70-130	
4-Isopropyltoluene	10.0	11.0	110	70-130	
1,3-Dichlorobenzene	10.0	10.9	109	70-130	
1,4-Dichlorobenzene	10.0	10.9	109	70-130	
Benzyl chloride	10.0	11.0	110	70-130	
n-Butylbenzene	10.0	10.7	107	70-130	
1,2-Dichlorobenzene	10.0	10.8	108	70-130	
1,2,4-Trichlorobenzene	10.0	9.49	95	70-130	
Hexachlorobutadiene	10.0	10.1	101	70-130	
Naphthalene	10.0	9.37	94	70-130	

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 15622_003.d

Lab ID: LCS 200-93630/3 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Propylene	10.0	9.47	95	70-130	
Dichlorodifluoromethane	10.0	10.6	106	70-130	
Freon 22	10.0	9.94	99	70-130	
1,2-Dichlorotetrafluoroethane	10.0	11.3	113	70-130	
Chloromethane	10.0	9.26	93	70-130	
n-Butane	10.0	8.44	84	70-130	
Vinyl chloride	10.0	8.61	86	70-130	
1,3-Butadiene	10.0	7.62	76	70-130	
Bromomethane	10.0	7.92	79	70-130	
Chloroethane	10.0	8.66	87	70-130	
Bromoethene(Vinyl Bromide)	10.0	10.3	103	70-130	
Trichlorofluoromethane	10.0	10.7	107	70-130	
Ethanol	15.0	13.9	93	70-130	
Freon TF	10.0	10.5	105	70-130	
1,1-Dichloroethene	10.0	10.2	102	70-130	
Acetone	10.0	9.70	97	70-130	
Isopropyl alcohol	10.0	8.46	85	70-130	
Carbon disulfide	10.0	11.6	116	70-130	
3-Chloropropene	10.0	10.0	100	70-130	
Methylene Chloride	10.0	9.58	96	70-130	
tert-Butyl alcohol	10.0	9.35	93	70-130	
Methyl tert-butyl ether	10.0	10.3	103	70-130	
trans-1,2-Dichloroethene	10.0	10.6	106	70-130	
n-Hexane	10.0	10.2	102	70-130	
1,1-Dichloroethane	10.0	10.1	101	70-130	
Vinyl acetate	10.0	9.89	99	70-130	
Ethyl acetate	10.0	11.0	110	70-130	
Methyl Ethyl Ketone	10.0	9.62	96	70-130	
cis-1,2-Dichloroethene	10.0	9.92	99	70-130	
Chloroform	10.0	10.5	105	70-130	
Tetrahydrofuran	10.0	9.92	99	70-130	
1,1,1-Trichloroethane	10.0	11.0	110	70-130	
Cyclohexane	10.0	10.4	104	70-130	
Carbon tetrachloride	10.0	12.0	120	70-130	
2,2,4-Trimethylpentane	10.0	9.84	98	70-130	
Benzene	10.0	10.1	101	70-130	
1,2-Dichloroethane	10.0	10.7	107	70-130	
n-Heptane	10.0	9.61	96	70-130	
Trichloroethene	10.0	10.6	106	70-130	
Methyl methacrylate	10.0	10.5	105	70-130	
1,2-Dichloropropane	10.0	9.86	99	70-130	
1,4-Dioxane	10.0	9.55	96	70-130	

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM III
AIR - GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Matrix: Air Level: Low Lab File ID: 15622_003.d

Lab ID: LCS 200-93630/3 Client ID:

COMPOUND	SPIKE ADDED (ppb v/v)	LCS CONCENTRATION (ppb v/v)	LCS % REC	QC LIMITS REC	#
Bromodichloromethane	10.0	10.9	109	70-130	
cis-1,3-Dichloropropene	10.0	10.5	105	70-130	
methyl isobutyl ketone	10.0	9.76	98	70-130	
Toluene	10.0	10.4	104	70-130	
trans-1,3-Dichloropropene	10.0	11.0	110	70-130	
1,1,2-Trichloroethane	10.0	10.6	106	70-130	
Tetrachloroethene	10.0	11.1	111	70-130	
Methyl Butyl Ketone (2-Hexanone)	10.0	9.89	99	70-130	
Dibromochloromethane	10.0	11.9	119	70-130	
1,2-Dibromoethane	10.0	10.8	108	70-130	
Chlorobenzene	10.0	10.6	106	70-130	
Ethylbenzene	10.0	10.6	106	70-130	
m,p-Xylene	20.0	21.2	106	70-130	
Xylene, o-	10.0	10.5	105	70-130	
Styrene	10.0	10.7	107	70-130	
Bromoform	10.0	14.4	144	70-130	*
Cumene	10.0	10.7	107	70-130	
1,1,2,2-Tetrachloroethane	10.0	11.0	110	70-130	
n-Propylbenzene	10.0	10.8	108	70-130	
4-Ethyltoluene	10.0	11.2	112	70-130	
1,3,5-Trimethylbenzene	10.0	10.9	109	70-130	
2-Chlorotoluene	10.0	10.8	108	70-130	
tert-Butylbenzene	10.0	11.0	110	70-130	
1,2,4-Trimethylbenzene	10.0	10.9	109	70-130	
sec-Butylbenzene	10.0	10.9	109	70-130	
4-Isopropyltoluene	10.0	11.0	110	70-130	
1,3-Dichlorobenzene	10.0	11.1	111	70-130	
1,4-Dichlorobenzene	10.0	11.1	111	70-130	
Benzyl chloride	10.0	11.9	119	70-130	
n-Butylbenzene	10.0	10.8	108	70-130	
1,2-Dichlorobenzene	10.0	11.0	110	70-130	
1,2,4-Trichlorobenzene	10.0	10.2	102	70-130	
Hexachlorobutadiene	10.0	10.6	106	70-130	
Naphthalene	10.0	9.84	98	70-130	

Column to be used to flag recovery and RPD values

FORM III TO-15

FORM IV
AIR - GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab File ID: 15528_04.D Lab Sample ID: MB 200-93391/4

Matrix: Air Heated Purge:(Y/N) N

Instrument ID: CHB.i Date Analyzed: 08/31/2015 11:55

GC Column: RTX-624 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 200-93391/3	15528_03.D	08/31/2015 10:58
5150	200-29497-10	15528_07.D	08/31/2015 15:55

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 200-93391/4

Matrix: Air Lab File ID: 15528_04.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 08/31/2015 11:55

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93391 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
115-07-1	Propylene	5.0	U	5.0	5.0
75-71-8	Dichlorodifluoromethane	0.50	U	0.50	0.50
75-45-6	Freon 22	0.50	U	0.50	0.50
76-14-2	1,2-Dichlorotetrafluoroethane	0.20	U	0.20	0.20
74-87-3	Chloromethane	0.50	U	0.50	0.50
106-97-8	n-Butane	0.50	U	0.50	0.50
75-01-4	Vinyl chloride	0.20	U	0.20	0.20
106-99-0	1,3-Butadiene	0.20	U	0.20	0.20
74-83-9	Bromomethane	0.20	U	0.20	0.20
75-00-3	Chloroethane	0.50	U	0.50	0.50
593-60-2	Bromoethene(Vinyl Bromide)	0.20	U	0.20	0.20
75-69-4	Trichlorofluoromethane	0.20	U	0.20	0.20
64-17-5	Ethanol	5.0	U	5.0	5.0
76-13-1	Freon TF	0.20	U	0.20	0.20
75-35-4	1,1-Dichloroethene	0.20	U	0.20	0.20
67-64-1	Acetone	5.0	U	5.0	5.0
67-63-0	Isopropyl alcohol	5.0	U	5.0	5.0
75-15-0	Carbon disulfide	0.50	U	0.50	0.50
107-05-1	3-Chloropropene	0.50	U	0.50	0.50
75-09-2	Methylene Chloride	0.50	U	0.50	0.50
75-65-0	tert-Butyl alcohol	5.0	U	5.0	5.0
1634-04-4	Methyl tert-butyl ether	0.20	U	0.20	0.20
156-60-5	trans-1,2-Dichloroethene	0.20	U	0.20	0.20
110-54-3	n-Hexane	0.20	U	0.20	0.20
75-34-3	1,1-Dichloroethane	0.20	U	0.20	0.20
108-05-4	Vinyl acetate	5.0	U	5.0	5.0
141-78-6	Ethyl acetate	5.0	U	5.0	5.0
78-93-3	Methyl Ethyl Ketone	0.50	U	0.50	0.50
156-59-2	cis-1,2-Dichloroethene	0.20	U	0.20	0.20
540-59-0	1,2-Dichloroethene, Total	0.40	U	0.40	0.40
67-66-3	Chloroform	0.20	U	0.20	0.20
109-99-9	Tetrahydrofuran	5.0	U	5.0	5.0
71-55-6	1,1,1-Trichloroethane	0.20	U	0.20	0.20
110-82-7	Cyclohexane	0.20	U	0.20	0.20
56-23-5	Carbon tetrachloride	0.20	U	0.20	0.20
540-84-1	2,2,4-Trimethylpentane	0.20	U	0.20	0.20

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-29497-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 200-93391/4

Matrix: Air | Lab File ID: 15528_04.D

Analysis Method: TO-15 | Date Collected:

Sample wt/vol: 200(mL) | Date Analyzed: 08/31/2015 11:55

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 93391 | Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
71-43-2	Benzene	0.20	U	0.20	0.20
107-06-2	1,2-Dichloroethane	0.20	U	0.20	0.20
142-82-5	n-Heptane	0.20	U	0.20	0.20
79-01-6	Trichloroethene	0.20	U	0.20	0.20
80-62-6	Methyl methacrylate	0.50	U	0.50	0.50
78-87-5	1,2-Dichloropropane	0.20	U	0.20	0.20
123-91-1	1,4-Dioxane	5.0	U	5.0	5.0
75-27-4	Bromodichloromethane	0.20	U	0.20	0.20
10061-01-5	cis-1,3-Dichloropropene	0.20	U	0.20	0.20
108-10-1	methyl isobutyl ketone	0.50	U	0.50	0.50
108-88-3	Toluene	0.20	U	0.20	0.20
10061-02-6	trans-1,3-Dichloropropene	0.20	U	0.20	0.20
79-00-5	1,1,2-Trichloroethane	0.20	U	0.20	0.20
127-18-4	Tetrachloroethene	0.20	U	0.20	0.20
591-78-6	Methyl Butyl Ketone (2-Hexanone)	0.50	U	0.50	0.50
124-48-1	Dibromochloromethane	0.20	U	0.20	0.20
106-93-4	1,2-Dibromoethane	0.20	U	0.20	0.20
108-90-7	Chlorobenzene	0.20	U	0.20	0.20
100-41-4	Ethylbenzene	0.20	U	0.20	0.20
179601-23-1	m,p-Xylene	0.50	U	0.50	0.50
95-47-6	Xylene, o-	0.20	U	0.20	0.20
1330-20-7	Xylene (total)	0.70	U	0.70	0.70
100-42-5	Styrene	0.20	U	0.20	0.20
75-25-2	Bromoform	0.20	U	0.20	0.20
98-82-8	Cumene	0.20	U	0.20	0.20
79-34-5	1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.20
103-65-1	n-Propylbenzene	0.20	U	0.20	0.20
622-96-8	4-Ethyltoluene	0.20	U	0.20	0.20
108-67-8	1,3,5-Trimethylbenzene	0.20	U	0.20	0.20
95-49-8	2-Chlorotoluene	0.20	U	0.20	0.20
98-06-6	tert-Butylbenzene	0.20	U	0.20	0.20
95-63-6	1,2,4-Trimethylbenzene	0.20	U	0.20	0.20
135-98-8	sec-Butylbenzene	0.20	U	0.20	0.20
99-87-6	4-Isopropyltoluene	0.20	U	0.20	0.20
541-73-1	1,3-Dichlorobenzene	0.20	U	0.20	0.20
106-46-7	1,4-Dichlorobenzene	0.20	U	0.20	0.20

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 200-93391/4

Matrix: Air Lab File ID: 15528_04.D

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 08/31/2015 11:55

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93391 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
100-44-7	Benzyl chloride	0.20	U	0.20	0.20
104-51-8	n-Butylbenzene	0.20	U	0.20	0.20
95-50-1	1,2-Dichlorobenzene	0.20	U	0.20	0.20
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.50	0.50
87-68-3	Hexachlorobutadiene	0.20	U	0.20	0.20
91-20-3	Naphthalene	0.50	U	0.50	0.50

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHB.i\20150831-15528.b\15528_04.D
Lims ID: mb
Client ID:
Sample Type: MB
Inject. Date: 31-Aug-2015 11:55:30 ALS Bottle#: 5 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015528-004
Misc. Info.: mb
Operator ID: pad Instrument ID: CHB.i

Method: \\ChromNA\Burlington\ChromData\CHB.i\20150831-15528.b\TO15_LLNJ_TO3.m
Limit Group: AI_TO15_ICAL
Last Update: 01-Sep-2015 13:21:45 Calib Date: 04-Aug-2015 11:14:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHB.i\20150803-15073.b\15073_20.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK022

First Level Reviewer: daiglep Date: 01-Sep-2015 13:17:10

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41		3.160					ND	
2 Dichlorodifluoromethane	85		3.219					ND	
3 Chlorodifluoromethane	51		3.256					ND	
4 1,2-Dichloro-1,1,2,2-tetra	85		3.443					ND	
5 Chloromethane	50		3.576					ND	
6 Butane	43		3.752					ND	
7 Vinyl chloride	62		3.795					ND	
8 Butadiene	54		3.859					ND	
10 Bromomethane	94		4.553					ND	
11 Chloroethane	64		4.788					ND	
12 2-Methylbutane	43		4.868					ND	
13 Vinyl bromide	106		5.209					ND	
14 Trichlorofluoromethane	101		5.305					ND	
15 Pentane	43		5.439					ND	
16 Ethanol	45		5.775					ND	
17 Ethyl ether	59		5.919					ND	
18 Acrolein	56		6.309					ND	
19 1,1,2-Trichloro-1,2,2-trif	101		6.341					ND	
20 1,1-Dichloroethene	96		6.415					ND	
21 Acetone	43		6.586					ND	
22 Isopropyl alcohol	45		6.784					ND	
23 Carbon disulfide	76		6.848					ND	
24 3-Chloro-1-propene	41		7.131					ND	
T 25 Methyl Acetate TIC	43		7.200					ND	
26 Acetonitrile	41		7.216					ND	
27 Methylene Chloride	49		7.392					ND	
28 2-Methyl-2-propanol	59		7.488					ND	
29 Methyl tert-butyl ether	73		7.728					ND	
30 trans-1,2-Dichloroethene	61		7.798					ND	
31 Acrylonitrile	53		7.888					ND	
32 Hexane	57		8.118					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 1,1-Dichloroethane	63		8.550					ND	
34 Vinyl acetate	43		8.550					ND	
36 2-Butanone (MEK)	72		9.447					ND	
35 Ethyl acetate	88		9.452					ND	
37 cis-1,2-Dichloroethene	96		9.452					ND	
* 39 Chlorobromomethane	128	9.826	9.826	0.000	91	102582	10.0	10.0	
38 Tetrahydrofuran	42		9.826					ND	
40 Chloroform	83		9.895					ND	
S 41 1,2-Dichloroethene, Total	61		10.000					ND	
42 1,1,1-Trichloroethane	97		10.151					ND	
43 Cyclohexane	84		10.157					ND	
44 Carbon tetrachloride	117		10.354					ND	
45 Isooctane	57		10.626					ND	
46 Benzene	78		10.685					ND	
47 1,2-Dichloroethane	62		10.792					ND	
48 n-Heptane	43		10.877					ND	
A 49 GRO	1	10.946	(4.858-17.035)		0	235837		0	
* 50 1,4-Difluorobenzene	114	11.224	11.229	-0.005	98	562590	10.0	10.0	
51 n-Butanol	56		11.400					ND	
T 52 Methyl cyclohexane TIC	55		11.500					ND	
53 Trichloroethene	95		11.592					ND	
54 1,2-Dichloropropane	63		11.971					ND	
55 Methyl methacrylate	69		11.998					ND	
56 1,4-Dioxane	88		12.094					ND	
57 Dibromomethane	174		12.158					ND	
58 Dichlorobromomethane	83		12.329					ND	
A 59 TVOC as Toluene	1	12.588	(3.150-22.025)		0	353495		0	
60 cis-1,3-Dichloropropene	75		12.953					ND	
61 4-Methyl-2-pentanone (MIBK	43		13.103					ND	
A 62 C8 Range	1	13.337	(13.303-13.383)		0	1652		NC	
63 n-Octane	43		13.353					ND	
64 Toluene	92		13.380					ND	
A 65 Toluene Range	1	13.395	(13.370-13.420)		0	429		NC	
66 trans-1,3-Dichloropropene	75		13.748					ND	
67 1,1,2-Trichloroethane	83		14.021					ND	
68 Tetrachloroethene	166		14.149					ND	
69 2-Hexanone	43		14.271					ND	
70 Chlorodibromomethane	129		14.570					ND	
71 Ethylene Dibromide	107		14.773					ND	
* 72 Chlorobenzene-d5	117	15.323	15.323	0.000	97	466242	10.0	10.0	
73 Chlorobenzene	112		15.365					ND	
74 Ethylbenzene	91		15.429					ND	
75 n-Nonane	57		15.435					ND	
76 m-Xylene & p-Xylene	106		15.574					ND	
S 77 Xylenes, Total	106		16.000					ND	
78 o-Xylene	106		16.081					ND	
79 Styrene	104		16.107					ND	
80 Bromoform	173		16.401					ND	
81 Isopropylbenzene	105		16.492					ND	
* 82 4-Bromofluorobenzene	95	16.753	16.753	0.000	77	338682	10.0	10.0	
83 1,1,2,2-Tetrachloroethane	83		16.902					ND	
84 N-Propylbenzene	91		16.966					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
85 1,2,3-Trichloropropane	75		16.988					ND	
86 n-Decane	57		17.025					ND	
87 4-Ethyltoluene	105		17.089					ND	
88 2-Chlorotoluene	91		17.137					ND	
89 1,3,5-Trimethylbenzene	105		17.159					ND	
90 Alpha Methyl Styrene	118		17.431					ND	
91 tert-Butylbenzene	119		17.538					ND	
92 1,2,4-Trimethylbenzene	105		17.607					ND	
93 sec-Butylbenzene	105		17.794					ND	
94 4-Isopropyltoluene	119		17.948					ND	
95 1,3-Dichlorobenzene	146		18.034					ND	
96 1,4-Dichlorobenzene	146		18.146					ND	
97 Benzyl chloride	91		18.301					ND	
98 Undecane	57		18.413					ND	
99 n-Butylbenzene	91		18.461					ND	
100 1,2-Dichlorobenzene	146		18.637					ND	
T 101 1,2-Dibromo-3-Chloropropan	75		19.300					ND	
102 Dodecane	57		19.891					ND	
103 1,2,4-Trichlorobenzene	180		21.039					ND	
104 Hexachlorobutadiene	225		21.199					ND	
105 Naphthalene	128		21.535					ND	
106 1,2,3-Trichlorobenzene	180		22.015					ND	
T 107 Methyl acetylene TIC	1		0.000					ND	
T 108 1,1,1,2-Tetrachloroethane	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

ATTO15BISs_00006 Amount Added: 20.00 Units: mL Run Reagent

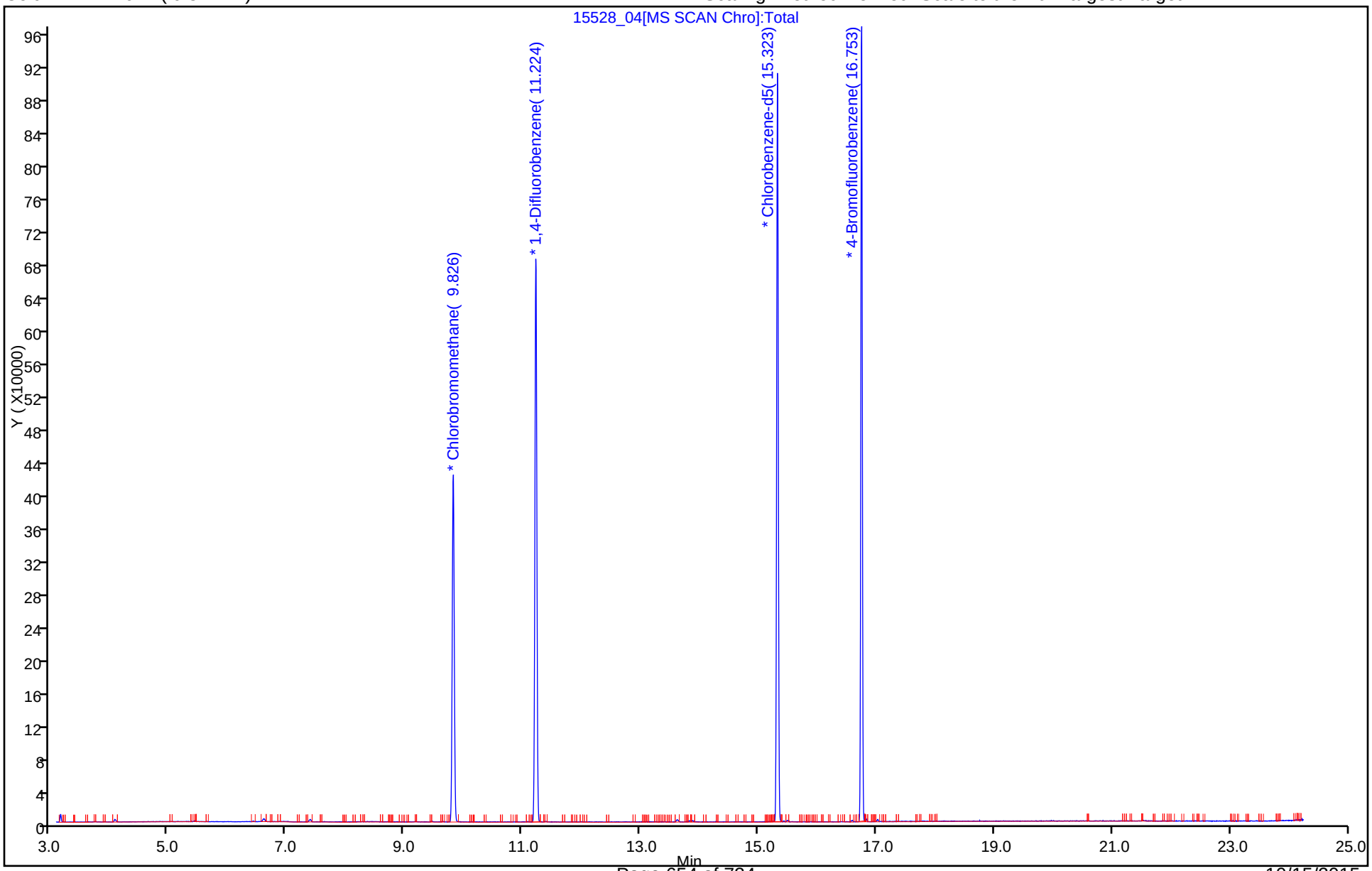
Report Date: 01-Sep-2015 13:21:48 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHB.i\20150831-15528.b\15528_04.D

Injection Date:	31-Aug-2015 11:55:30	Instrument ID:	CHB.i	Operator ID:	pad
Lims ID:	mb			Worklist Smp#:	4
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	TO15_LLNJ_TO3	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM IV
AIR - GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab File ID: 15622_004.d Lab Sample ID: MB 200-93630/4

Matrix: Air Heated Purge:(Y/N) N

Instrument ID: CHW.i Date Analyzed: 09/04/2015 11:59

GC Column: RTX-624 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 200-93630/3	15622_003.d	09/04/2015 11:10
4313	200-29619-9	15622_026.d	09/05/2015 06:35

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 200-93630/4

Matrix: Air Lab File ID: 15622_004.d

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 09/04/2015 11:59

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93630 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
115-07-1	Propylene	5.0	U	5.0	5.0
75-71-8	Dichlorodifluoromethane	0.50	U	0.50	0.50
75-45-6	Freon 22	0.50	U	0.50	0.50
76-14-2	1,2-Dichlorotetrafluoroethane	0.20	U	0.20	0.20
74-87-3	Chloromethane	0.50	U	0.50	0.50
106-97-8	n-Butane	0.50	U	0.50	0.50
75-01-4	Vinyl chloride	0.20	U	0.20	0.20
106-99-0	1,3-Butadiene	0.20	U	0.20	0.20
74-83-9	Bromomethane	0.20	U	0.20	0.20
75-00-3	Chloroethane	0.50	U	0.50	0.50
593-60-2	Bromoethene(Vinyl Bromide)	0.20	U	0.20	0.20
75-69-4	Trichlorofluoromethane	0.20	U	0.20	0.20
64-17-5	Ethanol	5.0	U	5.0	5.0
76-13-1	Freon TF	0.20	U	0.20	0.20
75-35-4	1,1-Dichloroethene	0.20	U	0.20	0.20
67-64-1	Acetone	5.0	U	5.0	5.0
67-63-0	Isopropyl alcohol	5.0	U	5.0	5.0
75-15-0	Carbon disulfide	0.50	U	0.50	0.50
107-05-1	3-Chloropropene	0.50	U	0.50	0.50
75-09-2	Methylene Chloride	0.50	U	0.50	0.50
75-65-0	tert-Butyl alcohol	5.0	U	5.0	5.0
1634-04-4	Methyl tert-butyl ether	0.20	U	0.20	0.20
156-60-5	trans-1,2-Dichloroethene	0.20	U	0.20	0.20
110-54-3	n-Hexane	0.20	U	0.20	0.20
75-34-3	1,1-Dichloroethane	0.20	U	0.20	0.20
108-05-4	Vinyl acetate	5.0	U	5.0	5.0
141-78-6	Ethyl acetate	5.0	U	5.0	5.0
78-93-3	Methyl Ethyl Ketone	0.50	U	0.50	0.50
156-59-2	cis-1,2-Dichloroethene	0.20	U	0.20	0.20
540-59-0	1,2-Dichloroethene, Total	0.40	U	0.40	0.40
67-66-3	Chloroform	0.20	U	0.20	0.20
109-99-9	Tetrahydrofuran	5.0	U	5.0	5.0
71-55-6	1,1,1-Trichloroethane	0.20	U	0.20	0.20
110-82-7	Cyclohexane	0.20	U	0.20	0.20
56-23-5	Carbon tetrachloride	0.20	U	0.20	0.20
540-84-1	2,2,4-Trimethylpentane	0.20	U	0.20	0.20

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 200-93630/4

Matrix: Air Lab File ID: 15622_004.d

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 09/04/2015 11:59

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93630 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
71-43-2	Benzene	0.20	U	0.20	0.20
107-06-2	1,2-Dichloroethane	0.20	U	0.20	0.20
142-82-5	n-Heptane	0.20	U	0.20	0.20
79-01-6	Trichloroethene	0.20	U	0.20	0.20
80-62-6	Methyl methacrylate	0.50	U	0.50	0.50
78-87-5	1,2-Dichloropropane	0.20	U	0.20	0.20
123-91-1	1,4-Dioxane	5.0	U	5.0	5.0
75-27-4	Bromodichloromethane	0.20	U	0.20	0.20
10061-01-5	cis-1,3-Dichloropropene	0.20	U	0.20	0.20
108-10-1	methyl isobutyl ketone	0.50	U	0.50	0.50
108-88-3	Toluene	0.20	U	0.20	0.20
10061-02-6	trans-1,3-Dichloropropene	0.20	U	0.20	0.20
79-00-5	1,1,2-Trichloroethane	0.20	U	0.20	0.20
127-18-4	Tetrachloroethene	0.20	U	0.20	0.20
591-78-6	Methyl Butyl Ketone (2-Hexanone)	0.50	U	0.50	0.50
124-48-1	Dibromochloromethane	0.20	U	0.20	0.20
106-93-4	1,2-Dibromoethane	0.20	U	0.20	0.20
108-90-7	Chlorobenzene	0.20	U	0.20	0.20
100-41-4	Ethylbenzene	0.20	U	0.20	0.20
179601-23-1	m,p-Xylene	0.50	U	0.50	0.50
95-47-6	Xylene, o-	0.20	U	0.20	0.20
1330-20-7	Xylene (total)	0.70	U	0.70	0.70
100-42-5	Styrene	0.20	U	0.20	0.20
75-25-2	Bromoform	0.20	U	0.20	0.20
98-82-8	Cumene	0.20	U	0.20	0.20
79-34-5	1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.20
103-65-1	n-Propylbenzene	0.20	U	0.20	0.20
622-96-8	4-Ethyltoluene	0.20	U	0.20	0.20
108-67-8	1,3,5-Trimethylbenzene	0.20	U	0.20	0.20
95-49-8	2-Chlorotoluene	0.20	U	0.20	0.20
98-06-6	tert-Butylbenzene	0.20	U	0.20	0.20
95-63-6	1,2,4-Trimethylbenzene	0.20	U	0.20	0.20
135-98-8	sec-Butylbenzene	0.20	U	0.20	0.20
99-87-6	4-Isopropyltoluene	0.20	U	0.20	0.20
541-73-1	1,3-Dichlorobenzene	0.20	U	0.20	0.20
106-46-7	1,4-Dichlorobenzene	0.20	U	0.20	0.20

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 200-93630/4

Matrix: Air Lab File ID: 15622_004.d

Analysis Method: TO-15 Date Collected:

Sample wt/vol: 200(mL) Date Analyzed: 09/04/2015 11:59

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93630 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
100-44-7	Benzyl chloride	0.20	U	0.20	0.20
104-51-8	n-Butylbenzene	0.20	U	0.20	0.20
95-50-1	1,2-Dichlorobenzene	0.20	U	0.20	0.20
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.50	0.50
87-68-3	Hexachlorobutadiene	0.20	U	0.20	0.20
91-20-3	Naphthalene	0.50	U	0.50	0.50

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHW.i\20150904-15622.b\15622_004.d
Lims ID: mb
Client ID:
Sample Type: MB
Inject. Date: 04-Sep-2015 11:59:30 ALS Bottle#: 4 Worklist Smp#: 4
Purge Vol: 200.000 mL Dil. Factor: 1.0000
Sample Info: 200-0015622-004
Misc. Info.: mb
Operator ID: wrd Instrument ID: CHW.i

Method: \\ChromNA\Burlington\ChromData\CHW.i\20150904-15622.b\TO15_MasterMethod_(v1).m
Limit Group: AI_TO15_ICAL
Last Update: 04-Sep-2015 12:40:45 Calib Date: 13-Aug-2015 23:55:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHW.i\20150813-15276.b\15276_012.d

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK033

First Level Reviewer: desjardinsb Date: 04-Sep-2015 12:40:45

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
1 Propene	41		4.313					ND	
2 Dichlorodifluoromethane	85		4.415					ND	
3 Chlorodifluoromethane	51		4.490					ND	
4 1,2-Dichloro-1,1,2,2-tetra	85		4.795					ND	
5 Chloromethane	50		4.998					ND	
6 Butane	43		5.282					ND	
7 Vinyl chloride	62		5.341					ND	
8 Butadiene	54		5.448					ND	
10 Bromomethane	94		6.362					ND	
11 Chloroethane	64		6.667					ND	
12 2-Methylbutane	43		6.758					ND	
13 Vinyl bromide	106		7.170					ND	
14 Trichlorofluoromethane	101		7.288					ND	
16 Pentane	43		7.459					ND	
17 Ethanol	45		7.951					ND	
18 Ethyl ether	59		8.090					ND	
T 15 Methyl Acetate TIC	43		8.501					ND	
19 Acrolein	56		8.582					ND	
20 1,1,2-Trichloro-1,2,2-trif	101		8.593					ND	
21 1,1-Dichloroethene	96		8.668					ND	
22 Acetone	43		8.946					ND	
23 Carbon disulfide	76		9.160					ND	
24 Isopropyl alcohol	45		9.224					ND	
25 3-Chloro-1-propene	41		9.594					ND	
26 Acetonitrile	41		9.759					ND	
27 Methylene Chloride	49		9.931					ND	
28 2-Methyl-2-propanol	59		10.123					ND	
S 30 1,2-Dichloroethene, Total	61		10.200					ND	
29 Methyl tert-butyl ether	73		10.375					ND	
31 trans-1,2-Dichloroethene	61		10.433					ND	
32 Acrylonitrile	53		10.621					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 Hexane	57		10.856					ND	
34 1,1-Dichloroethane	63		11.429					ND	
35 Vinyl acetate	43		11.477					ND	
T 36 Methyl cyclohexane TIC	55		11.500					ND	
37 cis-1,2-Dichloroethene	96		12.622					ND	
38 2-Butanone (MEK)	72		12.659					ND	
39 Ethyl acetate	88		12.670					ND	
* 40 Chlorobromomethane	128	13.108	13.114	-0.006	70	282913	10.0	10.0	
41 Tetrahydrofuran	42		13.119					ND	
42 Chloroform	83		13.221					ND	
43 Cyclohexane	84		13.515					ND	
44 1,1,1-Trichloroethane	97		13.536					ND	
45 Carbon tetrachloride	117		13.788					ND	
46 Isooctane	57		14.189					ND	
47 Benzene	78		14.253					ND	
48 1,2-Dichloroethane	62		14.424					ND	
49 n-Heptane	43		14.537					ND	
A 51 GRO	1	14.919	(6.748-23.090)		0	4286194		0	
* 50 1,4-Difluorobenzene	114	15.018	15.018	0.000	92	1348723	10.0	10.0	
52 n-Butanol	56		15.302					ND	
53 Trichloroethene	95		15.484					ND	
54 1,2-Dichloropropane	63		16.019					ND	
55 Methyl methacrylate	69		16.104					ND	
56 1,4-Dioxane	88		16.200					ND	
57 Dibromomethane	174		16.259					ND	
58 Dichlorobromomethane	83		16.505					ND	
A 59 TVOC as Toluene	92	16.837	(4.303-29.371)		0	4574747		47.0	
60 cis-1,3-Dichloropropene	75		17.383					ND	
61 4-Methyl-2-pentanone (MIBK	43		17.629					ND	
64 n-Octane	43		17.939					ND	
A 62 C8 Range	1	17.961	(17.933-17.989)		0	1418		NC	
65 Toluene	92		17.961					ND	
A 63 Toluene Range	92	17.961	(17.921-18.001)		0	13253		0.1504	
66 trans-1,3-Dichloropropene	75		18.490					ND	
67 1,1,2-Trichloroethane	83		18.865					ND	
68 Tetrachloroethene	166		18.993					ND	
T 70 1,2-Dibromo-3-Chloropropan	75		19.141					ND	
69 2-Hexanone	43		19.266					ND	
71 Chlorodibromomethane	129		19.624					ND	
72 Ethylene Dibromide	107		19.919					ND	
S 73 Xylenes, Total	106		20.100					ND	
* 74 Chlorobenzene-d5	117	20.737	20.737	0.000	81	1222155	10.0	10.0	
75 Chlorobenzene	112		20.791					ND	
76 Ethylbenzene	91		20.903					ND	
77 n-Nonane	57		20.946					ND	
78 m-Xylene & p-Xylene	106		21.112					ND	
79 o-Xylene	106		21.802					ND	
80 Styrene	104		21.839					ND	
81 Bromoform	173		22.208					ND	
$ 83 4-Bromofluorobenzene	95		22.214				ND	ND	
82 Isopropylbenzene	105		22.353					ND	
84 1,1,2,2-Tetrachloroethane	83		22.898					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
85 N-Propylbenzene	91		22.979					ND	
86 1,2,3-Trichloropropane	75		23.005					ND	
87 n-Decane	57		23.080					ND	
88 4-Ethyltoluene	105		23.144					ND	
89 2-Chlorotoluene	91		23.176					ND	
90 1,3,5-Trimethylbenzene	105		23.235					ND	
91 Alpha Methyl Styrene	118		23.588					ND	
92 tert-Butylbenzene	119		23.722					ND	
93 1,2,4-Trimethylbenzene	105		23.813					ND	
94 sec-Butylbenzene	105		24.059					ND	
95 4-Isopropyltoluene	119		24.268					ND	
96 1,3-Dichlorobenzene	146		24.337					ND	
97 1,4-Dichlorobenzene	146		24.487					ND	
98 Benzyl chloride	91		24.707					ND	
99 Undecane	57		24.894					ND	
100 n-Butylbenzene	91		24.926					ND	
101 1,2-Dichlorobenzene	146		25.113					ND	
102 Dodecane	57		26.782					ND	
103 1,2,4-Trichlorobenzene	180	28.162	28.136	0.026	87	4111		0.0314	
104 Hexachlorobutadiene	225		28.350					ND	
105 Naphthalene	128	28.778	28.772	0.006	94	4926		0.0198	
106 1,2,3-Trichlorobenzene	180	29.382	29.361	0.021	91	3139		0.0264	
T 107 Methyl acetylene TIC	1		0.000					ND	
T 108 1,1,1,2-Tetrachloroethane	1		0.000					ND	
T 109 1,3-Dichloropropane TIC	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Reagents:

ATTO15WISs_00003 Amount Added: 20.00 Units: mL Run Reagent

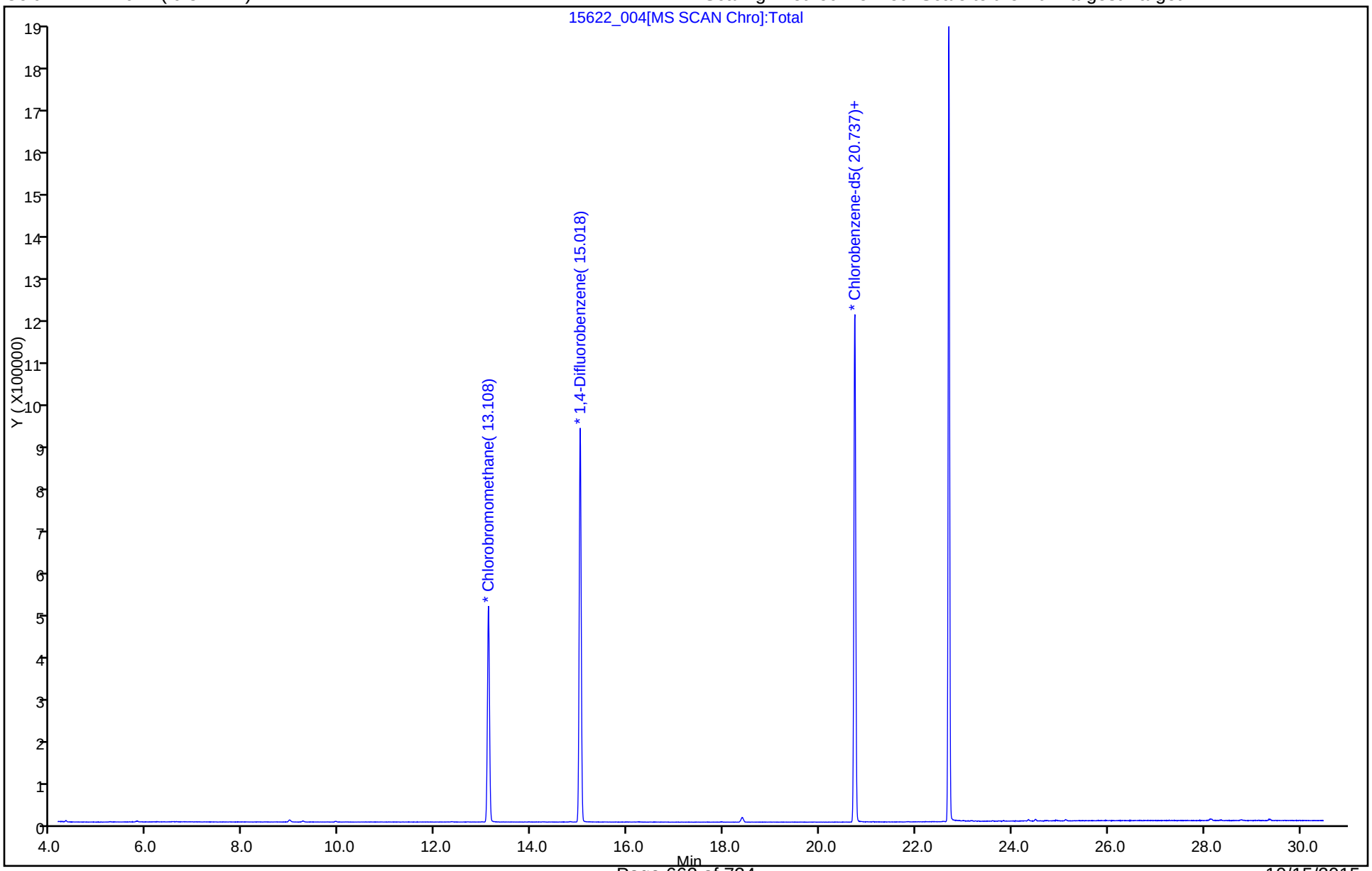
Report Date: 04-Sep-2015 12:40:45 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHW.i\20150904-15622.b\15622_004.d

Injection Date:	04-Sep-2015 11:59:30	Instrument ID:	CHW.i	Operator ID:	wrd
Lims ID:	mb			Worklist Smp#:	4
Client ID:					
Purge Vol:	200.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	TO15_MasterMethod_(v1)	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab File ID: 15073_01.D BFB Injection Date: 08/03/2015

Instrument ID: CHB.i BFB Injection Time: 15:34

Analysis Batch No.: 92213

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	25.0	
75	30.0 - 66.0% of mass 95	54.3	
95	Base peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	6.7	
173	Less than 2.0% of mass 174	0.0	(0.0)1
174	50.0 - 120.0% of mass 95	66.1	
175	4.0 - 9.0 % of mass 174	5.1	(7.7)1
176	93.0 - 101.0% of mass 174	63.9	(96.6)1
177	5.0 - 9.0% of mass 176	4.2	(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 200-92213/5	15073_05.D	08/03/2015	19:01
	IC 200-92213/6	15073_06.D	08/03/2015	19:54
	IC 200-92213/7	15073_07.D	08/03/2015	20:46
	IC 200-92213/9	15073_09.D	08/03/2015	22:30
	IC 200-92213/10	15073_10.D	08/03/2015	23:22
	IC 200-92213/11	15073_11.D	08/04/2015	00:14
	IC 200-92213/19	15073_19.D	08/04/2015	10:21
	ICIS 200-92213/20	15073_20.D	08/04/2015	11:14
	ICV 200-92213/24	15073_24.D	08/04/2015	14:48

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab File ID: 15528_01.D BFB Injection Date: 08/31/2015

Instrument ID: CHB.i BFB Injection Time: 09:12

Analysis Batch No.: 93391

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	25.1	
75	30.0 - 66.0% of mass 95	56.7	
95	Base peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	6.6	
173	Less than 2.0% of mass 174	0.0	(0.0)1
174	50.0 - 120.0% of mass 95	71.0	
175	4.0 - 9.0 % of mass 174	5.5	(7.8)1
176	93.0 - 101.0% of mass 174	69.3	(97.6)1
177	5.0 - 9.0% of mass 176	4.7	(6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 200-93391/2	15528_02.D	08/31/2015	10:06
	LCS 200-93391/3	15528_03.D	08/31/2015	10:58
	MB 200-93391/4	15528_04.D	08/31/2015	11:55
5150	200-29497-10	15528_07.D	08/31/2015	15:55

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab File ID: 15276_001.d BFB Injection Date: 08/13/2015

Instrument ID: CHW.i BFB Injection Time: 14:44

Analysis Batch No.: 92714

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	12.2	
75	30.0 - 66.0% of mass 95	41.6	
95	Base peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	6.7	
173	Less than 2.0% of mass 174	0.5	(0.4)1
174	50.0 - 120.0% of mass 95	113.4	
175	4.0 - 9.0 % of mass 174	8.0	(7.0)1
176	93.0 - 101.0% of mass 174	110.8	(97.7)1
177	5.0 - 9.0% of mass 176	7.4	(6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 200-92714/4	15276_004.d	08/13/2015	17:16
	IC 200-92714/6	15276_006.d	08/13/2015	18:52
	IC 200-92714/7	15276_007.d	08/13/2015	19:42
	IC 200-92714/8	15276_008.d	08/13/2015	20:32
	ICIS 200-92714/9	15276_009.d	08/13/2015	21:22
	IC 200-92714/10	15276_010.d	08/13/2015	22:14
	IC 200-92714/11	15276_011.d	08/13/2015	23:05
	IC 200-92714/12	15276_012.d	08/13/2015	23:55
	ICV 200-92714/15	15276_015.d	08/14/2015	02:21

FORM V
AIR - GC/MS VOA INSTRUMENT PERFORMANCE CHECK

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab File ID: 15622_001.d BFB Injection Date: 09/04/2015

Instrument ID: CHW.i BFB Injection Time: 09:28

Analysis Batch No.: 93630

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	12.5	
75	30.0 - 66.0% of mass 95	41.9	
95	Base peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	6.7	
173	Less than 2.0% of mass 174	0.5	(0.5)1
174	50.0 - 120.0% of mass 95	105.9	
175	4.0 - 9.0 % of mass 174	7.6	(7.1)1
176	93.0 - 101.0% of mass 174	103.4	(97.6)1
177	5.0 - 9.0% of mass 176	7.0	(6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 200-93630/2	15622_002.d	09/04/2015	10:18
	LCS 200-93630/3	15622_003.d	09/04/2015	11:10
	MB 200-93630/4	15622_004.d	09/04/2015	11:59
4313	200-29619-9	15622_026.d	09/05/2015	06:35

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Sample No.: ICIS 200-92213/20 Date Analyzed: 08/04/2015 11:14

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm)

Lab File ID (Standard): 15073_20.D Heated Purge: (Y/N) N

Calibration ID: 31632

		BCM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		161513	9.84	875815	11.24	753282	15.33
UPPER LIMIT		226118	10.17	1226141	11.57	1054595	15.66
LOWER LIMIT		96908	9.51	525489	10.91	451969	15.00
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 200-92213/24		166747	9.84	898468	11.24	783149	15.33

BCM = Bromochloromethane
DFB = 1,4-Difluorobenzene
CBZ = Chlorobenzene-d5

Area Limit = 60%-140% of internal standard area
RT Limit = ± 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII TO-15

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Sample No.: CCVIS 200-93391/2 Date Analyzed: 08/31/2015 10:06

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm)

Lab File ID (Standard): 15528_02.D Heated Purge: (Y/N) N

Calibration ID: 31632

		BCM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		104289	9.83	547066	11.23	466355	15.32
UPPER LIMIT		146005	10.16	765892	11.56	652897	15.65
LOWER LIMIT		62573	9.50	328240	10.90	279813	14.99
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 200-93391/3		103624	9.83	546310	11.23	469922	15.33
MB 200-93391/4		102582	9.83	562590	11.22	466242	15.32
200-29497-10	5150	99404	9.82	541862	11.22	454773	15.32

BCM = Bromochloromethane
DFB = 1,4-Difluorobenzene
CBZ = Chlorobenzene-d5

Area Limit = 60%-140% of internal standard area
RT Limit = ± 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII TO-15

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Sample No.: ICIS 200-92714/9 Date Analyzed: 08/13/2015 21:22

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm)

Lab File ID (Standard): 15276_009.d Heated Purge: (Y/N) N

Calibration ID: 31735

		BCM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		215023	13.12	1048635	15.02	973083	20.74
UPPER LIMIT		301032	13.45	1468089	15.35	1362316	21.07
LOWER LIMIT		129014	12.79	629181	14.69	583850	20.41
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 200-92714/15		237144	13.12	1153973	15.02	1065618	20.74

BCM = Bromochloromethane
DFB = 1,4-Difluorobenzene
CBZ = Chlorobenzene-d5

Area Limit = 60%-140% of internal standard area
RT Limit = ± 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII TO-15

FORM VIII
AIR - GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Sample No.: CCVIS 200-93630/2 Date Analyzed: 09/04/2015 10:18

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm)

Lab File ID (Standard): 15622_002.d Heated Purge: (Y/N) N

Calibration ID: 31735

		BCM		DFB		CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		279949	13.11	1296575	15.02	1192580	20.74
UPPER LIMIT		391929	13.44	1815205	15.35	1669612	21.07
LOWER LIMIT		167969	12.78	777945	14.69	715548	20.41
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 200-93630/3		289918	13.11	1351611	15.02	1247764	20.74
MB 200-93630/4		282913	13.11	1348723	15.02	1222155	20.74
200-29619-9	4313	265370	13.11	1261941	15.02	1150094	20.74

BCM = Bromochloromethane
DFB = 1,4-Difluorobenzene
CBZ = Chlorobenzene-d5

Area Limit = 60%-140% of internal standard area
RT Limit = ± 0.33 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII TO-15

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-29497-1

SDG No.:

Client Sample ID: 5150 | Lab Sample ID: 200-29497-10

Matrix: Air | Lab File ID: 15528_07.D

Analysis Method: TO-15 | Date Collected: 08/28/2015 00:00

Sample wt/vol: 1000(mL) | Date Analyzed: 08/31/2015 15:55

Soil Aliquot Vol: | Dilution Factor: 0.2

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 93391 | Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
115-07-1	Propylene	1.0	U	1.0	1.0
75-71-8	Dichlorodifluoromethane	0.10	U	0.10	0.10
75-45-6	Freon 22	0.10	U	0.10	0.10
76-14-2	1,2-Dichlorotetrafluoroethane	0.040	U	0.040	0.040
74-87-3	Chloromethane	0.10	U	0.10	0.10
106-97-8	n-Butane	0.10	U	0.10	0.10
75-01-4	Vinyl chloride	0.040	U	0.040	0.040
106-99-0	1,3-Butadiene	0.040	U	0.040	0.040
74-83-9	Bromomethane	0.040	U	0.040	0.040
75-00-3	Chloroethane	0.10	U	0.10	0.10
593-60-2	Bromoethene(Vinyl Bromide)	0.040	U	0.040	0.040
75-69-4	Trichlorofluoromethane	0.040	U	0.040	0.040
64-17-5	Ethanol	1.0	U	1.0	1.0
76-13-1	Freon TF	0.040	U	0.040	0.040
75-35-4	1,1-Dichloroethene	0.040	U	0.040	0.040
67-64-1	Acetone	1.0	U	1.0	1.0
67-63-0	Isopropyl alcohol	1.0	U	1.0	1.0
75-15-0	Carbon disulfide	0.10	U	0.10	0.10
107-05-1	3-Chloropropene	0.10	U	0.10	0.10
75-09-2	Methylene Chloride	0.10	U	0.10	0.10
75-65-0	tert-Butyl alcohol	1.0	U	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.040	U	0.040	0.040
156-60-5	trans-1,2-Dichloroethene	0.040	U	0.040	0.040
110-54-3	n-Hexane	0.040	U	0.040	0.040
75-34-3	1,1-Dichloroethane	0.040	U	0.040	0.040
108-05-4	Vinyl acetate	1.0	U	1.0	1.0
141-78-6	Ethyl acetate	1.0	U	1.0	1.0
78-93-3	Methyl Ethyl Ketone	0.10	U	0.10	0.10
156-59-2	cis-1,2-Dichloroethene	0.040	U	0.040	0.040
540-59-0	1,2-Dichloroethene, Total	0.080	U	0.080	0.080
67-66-3	Chloroform	0.040	U	0.040	0.040
109-99-9	Tetrahydrofuran	1.0	U	1.0	1.0
71-55-6	1,1,1-Trichloroethane	0.040	U	0.040	0.040
110-82-7	Cyclohexane	0.040	U	0.040	0.040
56-23-5	Carbon tetrachloride	0.040	U *	0.040	0.040
540-84-1	2,2,4-Trimethylpentane	0.040	U	0.040	0.040

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Client Sample ID: 5150 Lab Sample ID: 200-29497-10

Matrix: Air Lab File ID: 15528_07.D

Analysis Method: TO-15 Date Collected: 08/28/2015 00:00

Sample wt/vol: 1000(mL) Date Analyzed: 08/31/2015 15:55

Soil Aliquot Vol: Dilution Factor: 0.2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93391 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
71-43-2	Benzene	0.040	U	0.040	0.040
107-06-2	1,2-Dichloroethane	0.040	U	0.040	0.040
142-82-5	n-Heptane	0.040	U	0.040	0.040
79-01-6	Trichloroethene	0.040	U	0.040	0.040
80-62-6	Methyl methacrylate	0.10	U	0.10	0.10
78-87-5	1,2-Dichloropropane	0.040	U	0.040	0.040
123-91-1	1,4-Dioxane	1.0	U	1.0	1.0
75-27-4	Bromodichloromethane	0.040	U	0.040	0.040
10061-01-5	cis-1,3-Dichloropropene	0.040	U	0.040	0.040
108-10-1	methyl isobutyl ketone	0.10	U	0.10	0.10
108-88-3	Toluene	0.040	U	0.040	0.040
10061-02-6	trans-1,3-Dichloropropene	0.040	U	0.040	0.040
79-00-5	1,1,2-Trichloroethane	0.040	U	0.040	0.040
127-18-4	Tetrachloroethene	0.040	U	0.040	0.040
591-78-6	Methyl Butyl Ketone (2-Hexanone)	0.10	U	0.10	0.10
124-48-1	Dibromochloromethane	0.040	U	0.040	0.040
106-93-4	1,2-Dibromoethane	0.040	U	0.040	0.040
108-90-7	Chlorobenzene	0.040	U	0.040	0.040
100-41-4	Ethylbenzene	0.040	U	0.040	0.040
179601-23-1	m,p-Xylene	0.10	U	0.10	0.10
95-47-6	Xylene, o-	0.040	U	0.040	0.040
1330-20-7	Xylene (total)	0.14	U	0.14	0.14
100-42-5	Styrene	0.040	U	0.040	0.040
75-25-2	Bromoform	0.040	U *	0.040	0.040
98-82-8	Cumene	0.040	U	0.040	0.040
79-34-5	1,1,2,2-Tetrachloroethane	0.040	U	0.040	0.040
103-65-1	n-Propylbenzene	0.040	U	0.040	0.040
622-96-8	4-Ethyltoluene	0.040	U	0.040	0.040
108-67-8	1,3,5-Trimethylbenzene	0.040	U	0.040	0.040
95-49-8	2-Chlorotoluene	0.040	U	0.040	0.040
98-06-6	tert-Butylbenzene	0.040	U	0.040	0.040
95-63-6	1,2,4-Trimethylbenzene	0.040	U	0.040	0.040
135-98-8	sec-Butylbenzene	0.040	U	0.040	0.040
99-87-6	4-Isopropyltoluene	0.040	U	0.040	0.040
541-73-1	1,3-Dichlorobenzene	0.040	U	0.040	0.040
106-46-7	1,4-Dichlorobenzene	0.040	U	0.040	0.040

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Client Sample ID: 5150 Lab Sample ID: 200-29497-10

Matrix: Air Lab File ID: 15528_07.D

Analysis Method: TO-15 Date Collected: 08/28/2015 00:00

Sample wt/vol: 1000(mL) Date Analyzed: 08/31/2015 15:55

Soil Aliquot Vol: Dilution Factor: 0.2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93391 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
100-44-7	Benzyl chloride	0.040	U	0.040	0.040
104-51-8	n-Butylbenzene	0.040	U	0.040	0.040
95-50-1	1,2-Dichlorobenzene	0.040	U	0.040	0.040
120-82-1	1,2,4-Trichlorobenzene	0.10	U	0.10	0.10
87-68-3	Hexachlorobutadiene	0.040	U	0.040	0.040
91-20-3	Naphthalene	0.10	U	0.10	0.10

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHB.i\20150831-15528.b\15528_07.D
Lims ID: 200-29497-A-10 Lab Sample ID: 200-29497-10
Client ID: 5150
Sample Type: Client
Inject. Date: 31-Aug-2015 15:55:30 ALS Bottle#: 8 Worklist Smp#: 7
Purge Vol: 5.000 mL Dil. Factor: 0.2000
Sample Info: 200-0015528-007
Misc. Info.: 29497-10
Operator ID: pad Instrument ID: CHB.i

Method: \\ChromNA\Burlington\ChromData\CHB.i\20150831-15528.b\TO15_LLNJ_TO3.m
Limit Group: AI_TO15_ICAL
Last Update: 01-Sep-2015 13:21:45 Calib Date: 04-Aug-2015 11:14:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHB.i\20150803-15073.b\15073_20.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK022

First Level Reviewer: daiglep Date: 01-Sep-2015 13:20:22

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
1 Propene	41		3.160				ND	
2 Dichlorodifluoromethane	85		3.219				ND	
3 Chlorodifluoromethane	51		3.256				ND	
4 1,2-Dichloro-1,1,2,2-tetra	85		3.443				ND	
5 Chloromethane	50		3.576				ND	
6 Butane	43		3.752				ND	
7 Vinyl chloride	62		3.795				ND	
8 Butadiene	54		3.859				ND	
10 Bromomethane	94		4.553				ND	
11 Chloroethane	64		4.788				ND	
13 Vinyl bromide	106		5.209				ND	
14 Trichlorofluoromethane	101		5.305				ND	
16 Ethanol	45		5.775				ND	
19 1,1,2-Trichloro-1,2,2-trif	101		6.341				ND	
20 1,1-Dichloroethene	96		6.415				ND	
21 Acetone	43		6.586				ND	
22 Isopropyl alcohol	45		6.784				ND	
23 Carbon disulfide	76		6.848				ND	
24 3-Chloro-1-propene	41		7.131				ND	
27 Methylene Chloride	49		7.392				ND	
28 2-Methyl-2-propanol	59		7.488				ND	
29 Methyl tert-butyl ether	73		7.728				ND	
30 trans-1,2-Dichloroethene	61		7.798				ND	
32 Hexane	57		8.118				ND	
33 1,1-Dichloroethane	63		8.550				ND	
34 Vinyl acetate	43		8.550				ND	
36 2-Butanone (MEK)	72		9.447				ND	
35 Ethyl acetate	88		9.452				ND	
37 cis-1,2-Dichloroethene	96		9.452				ND	
* 39 Chlorobromomethane	128	9.820	9.826	-0.006	90	99404	10.0	
38 Tetrahydrofuran	42		9.826				ND	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	40 Chloroform	83		9.895				ND	
S	41 1,2-Dichloroethene, Total	61		10.000				ND	
	42 1,1,1-Trichloroethane	97		10.151				ND	
	43 Cyclohexane	84		10.157				ND	
	44 Carbon tetrachloride	117		10.354				ND	
	45 Isooctane	57		10.626				ND	
	46 Benzene	78		10.685				ND	
	47 1,2-Dichloroethane	62		10.792				ND	
	48 n-Heptane	43		10.877				ND	
*	50 1,4-Difluorobenzene	114	11.224	11.229	-0.005	98	541862	10.0	
	53 Trichloroethene	95	11.592	11.592	0.000	86	1804	0.0846	
	54 1,2-Dichloropropane	63		11.971				ND	
	55 Methyl methacrylate	69		11.998				ND	
	56 1,4-Dioxane	88		12.094				ND	
	57 Dibromomethane	174		12.158				ND	
	58 Dichlorobromomethane	83		12.329				ND	
	60 cis-1,3-Dichloropropene	75		12.953				ND	
	61 4-Methyl-2-pentanone (MIBK	43		13.103				ND	
	64 Toluene	92		13.380				ND	
	66 trans-1,3-Dichloropropene	75		13.748				ND	
	67 1,1,2-Trichloroethane	83		14.021				ND	
	68 Tetrachloroethene	166		14.149				ND	
	69 2-Hexanone	43		14.271				ND	
	70 Chlorodibromomethane	129		14.570				ND	
	71 Ethylene Dibromide	107		14.773				ND	
*	72 Chlorobenzene-d5	117	15.323	15.323	0.000	96	454773	10.0	
	73 Chlorobenzene	112		15.365				ND	
	74 Ethylbenzene	91		15.429				ND	
	76 m-Xylene & p-Xylene	106		15.574				ND	
S	77 Xylenes, Total	106		16.000				ND	
	78 o-Xylene	106		16.081				ND	
	79 Styrene	104		16.107				ND	
	80 Bromoform	173		16.401				ND	
	81 Isopropylbenzene	105		16.492				ND	
	83 1,1,2,2-Tetrachloroethane	83		16.902				ND	
	84 N-Propylbenzene	91		16.966				ND	
	87 4-Ethyltoluene	105		17.089				ND	
	88 2-Chlorotoluene	91		17.137				ND	
	89 1,3,5-Trimethylbenzene	105		17.159				ND	
	91 tert-Butylbenzene	119		17.538				ND	
	92 1,2,4-Trimethylbenzene	105		17.607				ND	
	93 sec-Butylbenzene	105		17.794				ND	
	94 4-Isopropyltoluene	119		17.948				ND	
	95 1,3-Dichlorobenzene	146		18.034				ND	
	96 1,4-Dichlorobenzene	146		18.146				ND	
	97 Benzyl chloride	91		18.301				ND	
	99 n-Butylbenzene	91		18.461				ND	
	100 1,2-Dichlorobenzene	146		18.637				ND	
	103 1,2,4-Trichlorobenzene	180		21.039				ND	
	104 Hexachlorobutadiene	225		21.199				ND	
	105 Naphthalene	128		21.535				ND	

Reagents:

ATTO15BISs_00006 Amount Added: 20.00 Units: mL Run Reagent

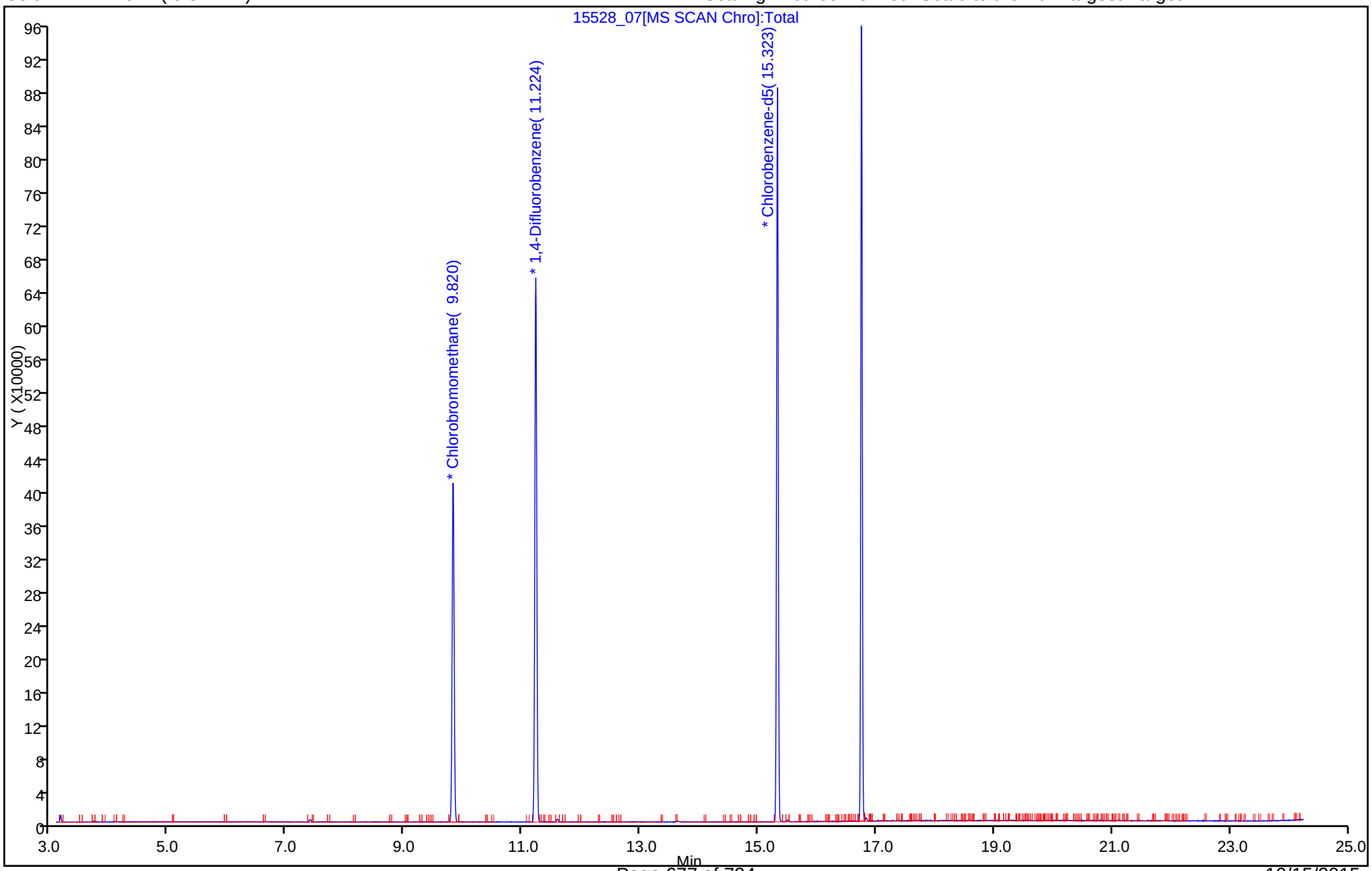
Report Date: 01-Sep-2015 13:21:51 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHB.i\20150831-15528.b\15528_07.D

Injection Date:	31-Aug-2015 15:55:30	Instrument ID:	CHB.i	Operator ID:	pad
Lims ID:	200-29497-A-10	Lab Sample ID:	200-29497-10	Worklist Smp#:	7
Client ID:	5150				
Purge Vol:	5.000 mL	Dil. Factor:	0.2000	ALS Bottle#:	8
Method:	TO15_LLNJ_TO3	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington | Job No.: 200-29619-1

SDG No.:

Client Sample ID: 4313 | Lab Sample ID: 200-29619-9

Matrix: Air | Lab File ID: 15622_026.d

Analysis Method: TO-15 | Date Collected: 09/03/2015 00:00

Sample wt/vol: 1000(mL) | Date Analyzed: 09/05/2015 06:35

Soil Aliquot Vol: | Dilution Factor: 0.2

Soil Extract Vol.: | GC Column: RTX-624 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 93630 | Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
115-07-1	Propylene	1.0	U	1.0	1.0
75-71-8	Dichlorodifluoromethane	0.10	U	0.10	0.10
75-45-6	Freon 22	0.10	U	0.10	0.10
76-14-2	1,2-Dichlorotetrafluoroethane	0.040	U	0.040	0.040
74-87-3	Chloromethane	0.10	U	0.10	0.10
106-97-8	n-Butane	0.10	U	0.10	0.10
75-01-4	Vinyl chloride	0.040	U	0.040	0.040
106-99-0	1,3-Butadiene	0.040	U	0.040	0.040
74-83-9	Bromomethane	0.040	U	0.040	0.040
75-00-3	Chloroethane	0.10	U	0.10	0.10
593-60-2	Bromoethene(Vinyl Bromide)	0.040	U	0.040	0.040
75-69-4	Trichlorofluoromethane	0.040	U	0.040	0.040
64-17-5	Ethanol	1.0	U	1.0	1.0
76-13-1	Freon TF	0.040	U	0.040	0.040
75-35-4	1,1-Dichloroethene	0.040	U	0.040	0.040
67-64-1	Acetone	1.0	U	1.0	1.0
67-63-0	Isopropyl alcohol	1.0	U	1.0	1.0
75-15-0	Carbon disulfide	0.10	U	0.10	0.10
107-05-1	3-Chloropropene	0.10	U	0.10	0.10
75-09-2	Methylene Chloride	0.10	U	0.10	0.10
75-65-0	tert-Butyl alcohol	1.0	U	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.040	U	0.040	0.040
156-60-5	trans-1,2-Dichloroethene	0.040	U	0.040	0.040
110-54-3	n-Hexane	0.040	U	0.040	0.040
75-34-3	1,1-Dichloroethane	0.040	U	0.040	0.040
108-05-4	Vinyl acetate	1.0	U	1.0	1.0
141-78-6	Ethyl acetate	1.0	U	1.0	1.0
78-93-3	Methyl Ethyl Ketone	0.10	U	0.10	0.10
156-59-2	cis-1,2-Dichloroethene	0.040	U	0.040	0.040
540-59-0	1,2-Dichloroethene, Total	0.080	U	0.080	0.080
67-66-3	Chloroform	0.040	U	0.040	0.040
109-99-9	Tetrahydrofuran	1.0	U	1.0	1.0
71-55-6	1,1,1-Trichloroethane	0.040	U	0.040	0.040
110-82-7	Cyclohexane	0.040	U	0.040	0.040
56-23-5	Carbon tetrachloride	0.040	U	0.040	0.040
540-84-1	2,2,4-Trimethylpentane	0.040	U	0.040	0.040

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Client Sample ID: 4313 Lab Sample ID: 200-29619-9

Matrix: Air Lab File ID: 15622_026.d

Analysis Method: TO-15 Date Collected: 09/03/2015 00:00

Sample wt/vol: 1000(mL) Date Analyzed: 09/05/2015 06:35

Soil Aliquot Vol: Dilution Factor: 0.2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93630 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
71-43-2	Benzene	0.040	U	0.040	0.040
107-06-2	1,2-Dichloroethane	0.040	U	0.040	0.040
142-82-5	n-Heptane	0.040	U	0.040	0.040
79-01-6	Trichloroethene	0.040	U	0.040	0.040
80-62-6	Methyl methacrylate	0.10	U	0.10	0.10
78-87-5	1,2-Dichloropropane	0.040	U	0.040	0.040
123-91-1	1,4-Dioxane	1.0	U	1.0	1.0
75-27-4	Bromodichloromethane	0.040	U	0.040	0.040
10061-01-5	cis-1,3-Dichloropropene	0.040	U	0.040	0.040
108-10-1	methyl isobutyl ketone	0.10	U	0.10	0.10
108-88-3	Toluene	0.040	U	0.040	0.040
10061-02-6	trans-1,3-Dichloropropene	0.040	U	0.040	0.040
79-00-5	1,1,2-Trichloroethane	0.040	U	0.040	0.040
127-18-4	Tetrachloroethene	0.040	U	0.040	0.040
591-78-6	Methyl Butyl Ketone (2-Hexanone)	0.10	U	0.10	0.10
124-48-1	Dibromochloromethane	0.040	U	0.040	0.040
106-93-4	1,2-Dibromoethane	0.040	U	0.040	0.040
108-90-7	Chlorobenzene	0.040	U	0.040	0.040
100-41-4	Ethylbenzene	0.040	U	0.040	0.040
179601-23-1	m,p-Xylene	0.10	U	0.10	0.10
95-47-6	Xylene, o-	0.040	U	0.040	0.040
1330-20-7	Xylene (total)	0.14	U	0.14	0.14
100-42-5	Styrene	0.040	U	0.040	0.040
75-25-2	Bromoform	0.040	U *	0.040	0.040
98-82-8	Cumene	0.040	U	0.040	0.040
79-34-5	1,1,2,2-Tetrachloroethane	0.040	U	0.040	0.040
103-65-1	n-Propylbenzene	0.040	U	0.040	0.040
622-96-8	4-Ethyltoluene	0.040	U	0.040	0.040
108-67-8	1,3,5-Trimethylbenzene	0.040	U	0.040	0.040
95-49-8	2-Chlorotoluene	0.040	U	0.040	0.040
98-06-6	tert-Butylbenzene	0.040	U	0.040	0.040
95-63-6	1,2,4-Trimethylbenzene	0.040	U	0.040	0.040
135-98-8	sec-Butylbenzene	0.040	U	0.040	0.040
99-87-6	4-Isopropyltoluene	0.040	U	0.040	0.040
541-73-1	1,3-Dichlorobenzene	0.040	U	0.040	0.040
106-46-7	1,4-Dichlorobenzene	0.040	U	0.040	0.040

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Client Sample ID: 4313 Lab Sample ID: 200-29619-9

Matrix: Air Lab File ID: 15622_026.d

Analysis Method: TO-15 Date Collected: 09/03/2015 00:00

Sample wt/vol: 1000(mL) Date Analyzed: 09/05/2015 06:35

Soil Aliquot Vol: Dilution Factor: 0.2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 93630 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
100-44-7	Benzyl chloride	0.040	U	0.040	0.040
104-51-8	n-Butylbenzene	0.040	U	0.040	0.040
95-50-1	1,2-Dichlorobenzene	0.040	U	0.040	0.040
120-82-1	1,2,4-Trichlorobenzene	0.10	U	0.10	0.10
87-68-3	Hexachlorobutadiene	0.040	U	0.040	0.040
91-20-3	Naphthalene	0.10	U	0.10	0.10

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHW.i\20150904-15622.b\15622_026.d
Lims ID: 200-29619-A-9 Lab Sample ID: 200-29619-9
Client ID: 4313
Sample Type: Client
Inject. Date: 05-Sep-2015 06:35:30 ALS Bottle#: 6 Worklist Smp#: 26
Purge Vol: 200.000 mL Dil. Factor: 0.2000
Sample Info: 200-0015622-026
Misc. Info.: 29619-9
Operator ID: wrd Instrument ID: CHW.i

Method: \\ChromNA\Burlington\ChromData\CHW.i\20150904-15622.b\TO15_MasterMethod_(v1).m
Limit Group: AI_TO15_ICAL
Last Update: 08-Sep-2015 12:37:20 Calib Date: 13-Aug-2015 23:55:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHW.i\20150813-15276.b\15276_012.d

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK006

First Level Reviewer: desjardinsb Date: 08-Sep-2015 12:38:13

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
1	Propene	41		4.313				ND	
2	Dichlorodifluoromethane	85		4.415				ND	
3	Chlorodifluoromethane	51		4.490				ND	
4	1,2-Dichloro-1,1,2,2-tetra	85		4.795				ND	
5	Chloromethane	50		4.998				ND	
6	Butane	43		5.282				ND	
7	Vinyl chloride	62		5.341				ND	
8	Butadiene	54		5.448				ND	
10	Bromomethane	94		6.362				ND	
11	Chloroethane	64		6.667				ND	
13	Vinyl bromide	106		7.170				ND	
14	Trichlorofluoromethane	101		7.288				ND	
17	Ethanol	45		7.951				ND	
20	1,1,2-Trichloro-1,2,2-trif	101		8.593				ND	
21	1,1-Dichloroethene	96		8.668				ND	
22	Acetone	43		8.946				ND	
23	Carbon disulfide	76		9.160				ND	
24	Isopropyl alcohol	45	9.246	9.224	0.022	55	3870	0.1301	
25	3-Chloro-1-propene	41		9.594				ND	
27	Methylene Chloride	49		9.931				ND	
28	2-Methyl-2-propanol	59		10.123				ND	
S 30	1,2-Dichloroethene, Total	61		10.200				ND	
29	Methyl tert-butyl ether	73		10.375				ND	
31	trans-1,2-Dichloroethene	61		10.433				ND	
33	Hexane	57		10.856				ND	
34	1,1-Dichloroethane	63		11.429				ND	
35	Vinyl acetate	43		11.477				ND	
37	cis-1,2-Dichloroethene	96		12.622				ND	
38	2-Butanone (MEK)	72		12.659				ND	
39	Ethyl acetate	88		12.670				ND	
* 40	Chlorobromomethane	128	13.108	13.114	-0.006	71	265370	10.0	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	41 Tetrahydrofuran	42		13.119				ND	
	42 Chloroform	83		13.221				ND	
	43 Cyclohexane	84		13.515				ND	
	44 1,1,1-Trichloroethane	97		13.536				ND	
	45 Carbon tetrachloride	117		13.788				ND	
	46 Isooctane	57		14.189				ND	
	47 Benzene	78		14.253				ND	
	48 1,2-Dichloroethane	62		14.424				ND	
	49 n-Heptane	43		14.537				ND	
*	50 1,4-Difluorobenzene	114	15.018	15.018	0.000	92	1261941	10.0	
	53 Trichloroethene	95		15.484				ND	
	54 1,2-Dichloropropane	63		16.019				ND	
	55 Methyl methacrylate	69		16.104				ND	
	56 1,4-Dioxane	88		16.200				ND	
	57 Dibromomethane	174		16.259				ND	
	58 Dichlorobromomethane	83		16.505				ND	
	60 cis-1,3-Dichloropropene	75		17.383				ND	
	61 4-Methyl-2-pentanone (MIBK	43		17.629				ND	
	65 Toluene	92		17.961				ND	
	66 trans-1,3-Dichloropropene	75		18.490				ND	
	67 1,1,2-Trichloroethane	83		18.865				ND	
	68 Tetrachloroethene	166		18.993				ND	
	69 2-Hexanone	43		19.266				ND	
	71 Chlorodibromomethane	129		19.624				ND	
	72 Ethylene Dibromide	107		19.919				ND	
S	73 Xylenes, Total	106		20.100				ND	
*	74 Chlorobenzene-d5	117	20.737	20.737	0.000	82	1150094	10.0	
	75 Chlorobenzene	112		20.791				ND	
	76 Ethylbenzene	91		20.903				ND	
	78 m-Xylene & p-Xylene	106		21.112				ND	
	79 o-Xylene	106		21.802				ND	
	80 Styrene	104		21.839				ND	
	81 Bromoform	173		22.208				ND	
	82 Isopropylbenzene	105		22.353				ND	
	84 1,1,2,2-Tetrachloroethane	83		22.898				ND	
	85 N-Propylbenzene	91		22.979				ND	
	88 4-Ethyltoluene	105		23.144				ND	
	89 2-Chlorotoluene	91		23.176				ND	
	90 1,3,5-Trimethylbenzene	105		23.235				ND	
	92 tert-Butylbenzene	119		23.722				ND	
	93 1,2,4-Trimethylbenzene	105		23.813				ND	
	94 sec-Butylbenzene	105		24.059				ND	
	95 4-Isopropyltoluene	119		24.268				ND	
	96 1,3-Dichlorobenzene	146		24.337				ND	
	97 1,4-Dichlorobenzene	146		24.487				ND	
	98 Benzyl chloride	91		24.707				ND	
	100 n-Butylbenzene	91		24.926				ND	
	101 1,2-Dichlorobenzene	146		25.113				ND	
	103 1,2,4-Trichlorobenzene	180		28.136				ND	
	104 Hexachlorobutadiene	225		28.350				ND	
	105 Naphthalene	128		28.772				ND	

Reagents:

ATTO15WISs_00003 Amount Added: 20.00 Units: mL Run Reagent

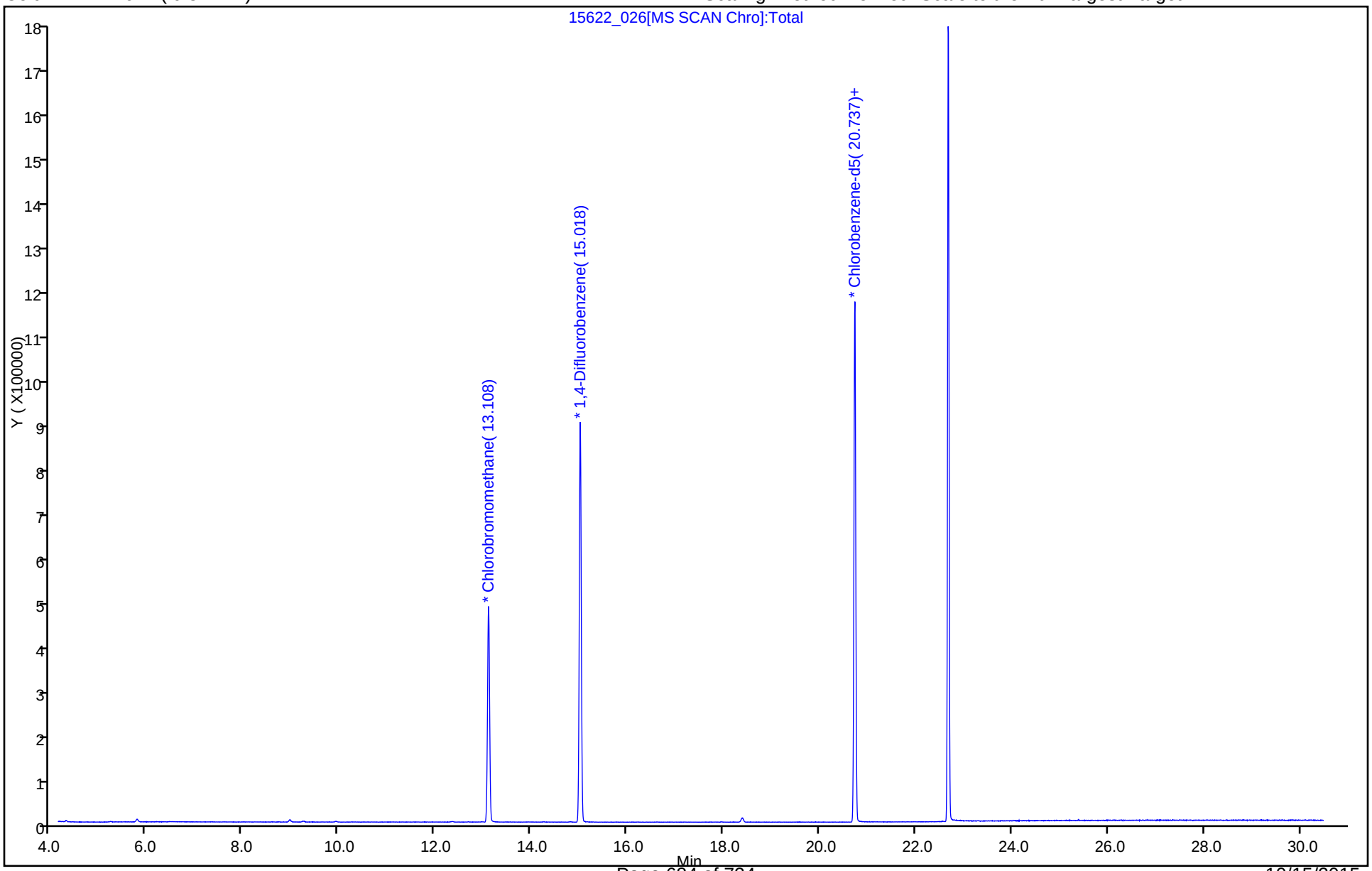
Report Date: 08-Sep-2015 12:38:13 Chrom Revision: 2.2 23-Jul-2015 08:26:08

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHW.i\20150904-15622.b\15622_026.d

Injection Date:	05-Sep-2015 06:35:30	Instrument ID:	CHW.i	Operator ID:	wrd
Lims ID:	200-29619-A-9	Lab Sample ID:	200-29619-9	Worklist Smp#:	26
Client ID:	4313				
Purge Vol:	200.000 mL	Dil. Factor:	0.2000	ALS Bottle#:	6
Method:	TO15_MasterMethod_(v1)	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-92213/19	15073_19.D
Level 2	IC 200-92213/5	15073_05.D
Level 3	IC 200-92213/6	15073_06.D
Level 4	IC 200-92213/7	15073_07.D
Level 5	ICIS 200-92213/20	15073_20.D
Level 6	IC 200-92213/9	15073_09.D
Level 7	IC 200-92213/10	15073_10.D
Level 8	IC 200-92213/11	15073_11.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Propylene	+++++ 1.1526	+++++ 0.9868	+++++ 0.9519	1.2185	1.1253	Ave		1.0870				10.4		30.0			
Dichlorodifluoromethane	+++++ 3.3341	+++++ 2.8131	3.8790 2.7763	3.5179	3.3536	Ave		3.2790				12.9		30.0			
Freon 22	+++++ 2.3006	+++++ 1.9552	2.7139 1.9236	2.3654	2.2555	Ave		2.2524				12.9		30.0			
1,2-Dichlorotetrafluoroethane	+++++ 3.0115	3.3439 2.5720	3.3781 2.5205	3.1525	3.0728	Ave		3.0073				11.4		30.0			
Chloromethane	+++++ 1.3797	+++++ 1.1778	1.6963 1.1541	1.4353	1.3709	Ave		1.3690				14.4		30.0			
n-Butane	+++++ 2.8828	+++++ 2.5209	3.5032 2.3315	2.9513	2.8018	Ave		2.8319				14.3		30.0			
Vinyl chloride	1.6434 1.5787	1.6638 1.3707	1.7906 1.3114	1.5919	1.5657	Ave		1.5645				10.0		30.0			
1,3-Butadiene	+++++ 1.3453	1.3648 1.1560	1.4357 1.1055	1.3470	1.3255	Ave		1.2971				9.2		30.0			
Bromomethane	+++++ 1.3218	1.3563 1.1616	1.3730 1.1875	1.2762	1.3470	Ave		1.2890				6.5		30.0			
Chloroethane	+++++ 1.0753	+++++ 0.9481	1.0944 0.9539	1.0265	1.0745	Ave		1.0288				6.3		30.0			
Isopentane	+++++ 3.1746	3.6599 2.7655	3.6461 2.7131	3.0882	3.1063	Ave		3.1648				11.9		30.0			
Bromoethene(Vinyl Bromide)	+++++ 1.2671	1.2736 1.1302	1.3023 1.1569	1.2073	1.3013	Ave		1.2341				5.7		30.0			
Trichlorofluoromethane	+++++ 3.7528	3.9205 3.3227	3.8528 3.4149	3.6185	3.8242	Ave		3.6724				6.2		30.0			
n-Pentane	+++++ 5.0713	+++++ 4.4476	5.5613 4.4223	4.7714	4.9630	Ave		4.8728				8.8		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Ethanol	+++++ 1.1067	+++++ 0.9611	1.0412 0.9282	1.2721	1.0836	Ave		1.0655				11.5		30.0			
Ethyl ether	+++++ 1.5322	1.4168 1.3653	1.4792 1.3870	1.4197	1.5275	Ave		1.4468				4.6		30.0			
Acrolein	+++++ 0.7440	+++++ 0.5471	+++++ 0.2772	0.6247	0.7924	Ave		0.5971				34.0	*	30.0			
Freon TF	+++++ 2.6816	2.7833 2.3995	2.7636 2.4902	2.5431	2.7520	Ave		2.6305				5.8		30.0			
1,1-Dichloroethene	+++++ 1.3521	1.3750 1.2086	1.3620 1.2579	1.2697	1.3841	Ave		1.3156				5.2		30.0			
Acetone	+++++ 4.2339	+++++ 3.9066	+++++ 3.5809	4.4388	3.8945	Ave		4.0109				8.3		30.0			
Isopropyl alcohol	+++++ 4.3419	+++++ 3.9160	+++++ 3.7678	3.8950	3.6438	Ave		3.9129				6.7		30.0			
Carbon disulfide	+++++ 4.5477	+++++ 4.0784	4.6319 4.1640	4.3041	4.6970	Ave		4.4039				5.9		30.0			
3-Chloropropene	+++++ 3.7050	3.8412 3.1855	3.7855 2.9694	3.2535	3.5310	Ave		3.4673				9.7		30.0			
Acetonitrile	+++++ 2.4528	+++++ 2.1558	+++++ 2.0928	2.3161	2.2188	Ave		2.2473				6.3		30.0			
Methylene Chloride	+++++ 2.8546	+++++ 2.5433	3.7261 2.4969	2.7625	2.8167	Ave		2.8666				15.5		30.0			
tert-Butyl alcohol	+++++ 4.6239	+++++ 4.1603	+++++ 4.1647	4.1136	4.0895	Ave		4.2304				5.3		30.0			
Methyl tert-butyl ether	+++++ 5.4046	5.2342 4.8406	5.2499 4.9962	5.0057	5.4281	Ave		5.1656				4.3		30.0			
trans-1,2-Dichloroethene	+++++ 3.0427	2.9557 2.7117	3.1808 2.7661	2.8292	3.0463	Ave		2.9332				5.8		30.0			
Acrylonitrile	+++++ 1.8579	+++++ 1.6298	1.7948 1.6670	1.7313	1.8158	Ave		1.7494				5.1		30.0			
n-Hexane	+++++ 3.5840	3.5500 3.1785	3.6603 3.2086	3.3509	3.5778	Ave		3.4443				5.7		30.0			
1,1-Dichloroethane	4.0880 3.8386	4.0161 3.4006	3.9088 3.4158	3.6428	3.8350	Ave		3.7682				6.9		30.0			
Vinyl acetate	+++++ 8.0153	+++++ 6.9410	+++++ 6.8872	7.5600	7.7868	Ave		7.4381				6.8		30.0			
Methyl Ethyl Ketone	+++++ 1.0060	+++++ 0.9093	1.1770 0.8951	0.9373	0.9865	Ave		0.9852				10.5		30.0			
cis-1,2-Dichloroethene	+++++ 1.5789	1.5791 1.4098	1.6103 1.4315	1.4982	1.6105	Ave		1.5312				5.5		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Ethyl acetate	+++++ 0.1393	+++++ 0.1220	+++++ 0.1276	0.1207	0.1390	Ave		0.1297				6.9		30.0			
Tetrahydrofuran	+++++ 0.6754	+++++ 0.6348	+++++ 0.6125	0.6428	0.6484	Ave		0.6428				3.5		30.0			
Chloroform	+++++ 3.5160	3.5126 3.1559	3.6033 3.2450	3.3356	3.5548	Ave		3.4176				5.0		30.0			
1,1,1-Trichloroethane	+++++ 0.6266	0.6239 0.5942	0.6294 0.6033	0.5858	0.6273	Ave		0.6129				3.0		30.0			
Cyclohexane	+++++ 0.4350	0.4306 0.4135	0.4354 0.4161	0.4074	0.4366	Ave		0.4249				2.9		30.0			
Carbon tetrachloride	0.3630 0.5812	0.5136 0.4991	0.5399 0.5718	0.5347	0.5931	Ave		0.5246				13.9		30.0			
2,2,4-Trimethylpentane	+++++ 2.2787	2.1278 2.1528	2.2258 2.1194	2.1226	2.2597	Ave		2.1838				3.2		30.0			
Benzene	+++++ 1.0595	1.1077 1.0068	1.1030 1.0176	1.0019	1.0673	Ave		1.0520				4.2		30.0			
1,2-Dichloroethane	+++++ 0.5208	0.5009 0.4909	0.5269 0.4943	0.4881	0.5121	Ave		0.5049				3.0		30.0			
n-Heptane	+++++ 1.1002	1.1047 1.0257	1.1384 0.9895	1.0454	1.0736	Ave		1.0682				4.8		30.0			
n-Butanol	+++++ 0.3093	+++++ 0.2955	+++++ 0.2929	0.2750	0.2514	Ave		0.2848				7.8		30.0			
Trichloroethene	0.4037 0.3977	0.3906 0.3984	0.4045 0.3857	0.3691	0.3985	Ave		0.3935				3.0		30.0			
1,2-Dichloropropane	+++++ 0.4891	0.4913 0.4608	0.4980 0.4561	0.4582	0.4869	Ave		0.4772				3.8		30.0			
Methyl methacrylate	+++++ 0.4386	+++++ 0.4178	0.3874 0.4234	0.4009	0.4334	Ave		0.4169				4.7		30.0			
1,4-Dioxane	+++++ 0.1699	+++++ 0.1678	+++++ 0.1608	0.1534	0.1424	Ave		0.1589				7.1		30.0			
Dibromomethane	+++++ 0.2641	0.2917 0.2757	0.2923 0.2635	0.2535	0.2671	Ave		0.2725				5.4		30.0			
Bromodichloromethane	+++++ 0.7420	0.6725 0.6778	0.6927 0.7096	0.6867	0.7419	Ave		0.7033				4.1		30.0			
cis-1,3-Dichloropropene	+++++ 0.6272	0.5940 0.5980	0.5934 0.6092	0.5754	0.6210	Ave		0.6026				3.0		30.0			
methyl isobutyl ketone	+++++ 1.4321	+++++ 1.3288	1.3584 1.2936	1.3449	1.3722	Ave		1.3550				3.4		30.0			
n-Octane	+++++ 1.5534	1.5047 1.4314	1.5839 1.3327	1.5001	1.5272	Ave		1.4905				5.7		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Toluene	+++++ 0.7902	0.8289 0.7676	0.8070 0.7608	0.7439	0.8008	Ave		0.7856				3.8		30.0			
trans-1,3-Dichloropropene	+++++ 0.6421	0.5625 0.6088	0.5969 0.6227	0.5806	0.6379	Ave		0.6074				4.9		30.0			
1,1,2-Trichloroethane	+++++ 0.4211	0.4016 0.4031	0.4184 0.4057	0.3890	0.4228	Ave		0.4088				3.0		30.0			
Tetrachloroethene	0.5114 0.4642	0.4954 0.4473	0.4839 0.4544	0.4424	0.4787	Ave		0.4722				5.2		30.0			
Methyl Butyl Ketone (2-Hexanone)	+++++ 1.6052	+++++ 1.5031	1.4698 1.4609	1.4955	1.5334	Ave		1.5113				3.5		30.0			
Dibromochloromethane	+++++ 0.6454	0.5426 0.5493	0.5319 0.6207	0.5935	0.6784	Ave		0.5945				9.5		30.0			
1,2-Dibromoethane	+++++ 0.6309	0.5942 0.6052	0.6069 0.6128	0.5788	0.6404	Ave		0.6099				3.4		30.0			
Chlorobenzene	+++++ 0.9276	0.9534 0.8881	0.9375 0.8979	0.8792	0.9479	Ave		0.9188				3.3		30.0			
Ethylbenzene	+++++ 1.8065	1.7743 1.7092	1.7961 1.6281	1.7101	1.8442	Ave		1.7526				4.2		30.0			
n-Nonane	+++++ 1.2970	1.2922 1.2069	1.3026 1.0877	1.2256	1.3021	Ave		1.2449				6.4		30.0			
m,p-Xylene	+++++ 0.6297	0.5845 0.6013	0.6106 0.5861	0.5990	0.6451	Ave		0.6080				3.7		30.0			
Xylene, o-	+++++ 0.6214	0.6090 0.5972	0.6131 0.5994	0.5834	0.6357	Ave		0.6085				2.8		30.0			
Styrene	+++++ 1.0241	0.9151 0.9697	0.9413 0.9865	0.9498	1.0474	Ave		0.9763				4.8		30.0			
Bromoform	+++++ 0.5413	0.3522 0.3693	0.3445 0.4945	0.4884	0.6150	Ave		0.4579				22.9		30.0			
Cumene	+++++ 1.8629	1.8042 1.7799	1.7807 1.7704	1.7567	1.9060	Ave		1.8087				3.0		30.0			
1,1,2,2-Tetrachloroethane	+++++ 1.1074	1.0481 0.9998	1.0745 1.0301	1.0419	1.1185	Ave		1.0601				4.0		30.0			
n-Propylbenzene	+++++ 2.5268	2.4706 2.3937	2.4741 2.2617	2.3840	2.5532	Ave		2.4377				4.1		30.0			
1,2,3-Trichloropropane	+++++ 0.9650	+++++ 0.9160	0.9547 0.8699	0.9040	0.9582	Ave		0.9280				4.1		30.0			
n-Decane	+++++ 1.7054	+++++ 1.5241	1.6632 1.3910	1.6124	1.6983	Ave		1.5991				7.6		30.0			
4-Ethyltoluene	+++++ 1.8814	1.7507 1.7948	1.8223 1.6971	1.7945	1.9243	Ave		1.8093				4.2		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
2-Chlorotoluene	+++++ 1.7230	1.6387 1.6264	1.6504 1.5972	1.6098	1.7396	Ave		1.6550				3.3		30.0			
1,3,5-Trimethylbenzene	+++++ 1.5859	1.5617 1.4966	1.5666 1.4187	1.4990	1.6161	Ave		1.5349				4.4		30.0			
Alpha Methyl Styrene	+++++ 0.7377	0.6545 0.6593	0.6496 0.6702	0.6957	0.7536	Ave		0.6887				6.1		30.0			
tert-Butylbenzene	+++++ 1.3762	1.3165 1.2970	1.3502 1.2343	1.3132	1.4109	Ave		1.3283				4.3		30.0			
1,2,4-Trimethylbenzene	+++++ 1.5939	1.5544 1.4911	1.5340 1.4151	1.5270	1.6251	Ave		1.5344				4.5		30.0			
sec-Butylbenzene	+++++ 2.2856	2.2232 2.1044	2.2556 2.0104	2.1920	2.3397	Ave		2.2016				5.1		30.0			
4-Isopropyltoluene	+++++ 1.7642	1.7396 1.5448	1.7457 1.5835	1.7189	1.8337	Ave		1.7044				6.0		30.0			
1,3-Dichlorobenzene	+++++ 0.8812	0.8707 0.8286	0.8703 0.7817	0.8638	0.9109	Ave		0.8582				4.8		30.0			
1,4-Dichlorobenzene	+++++ 0.8777	0.8615 0.8168	0.8586 0.7710	0.8613	0.9083	Ave		0.8507				5.2		30.0			
Benzyl chloride	+++++ 1.5594	1.4165 1.2952	1.4115 1.3763	1.4453	1.5930	Ave		1.4425				7.2		30.0			
n-Undecane	+++++ 1.6676	+++++ 1.6352	+++++ 1.6068	1.8312	1.7347	Ave		1.6951				5.3		30.0			
n-Butylbenzene	+++++ 1.9045	1.9250 1.6451	1.9725 1.7883	1.9503	2.0314	Ave		1.8882				6.9		30.0			
1,2-Dichlorobenzene	+++++ 0.8302	0.8278 0.7450	0.8345 0.7477	0.8114	0.8600	Ave		0.8081				5.5		30.0			
n-Dodecane	+++++ 1.6785	+++++ 1.6245	+++++ 1.5699	1.5587	1.6385	Ave		1.6140				3.1		30.0			
1,2,4-Trichlorobenzene	+++++ 0.5766	+++++ 0.6303	0.4993 0.6503	0.5851	0.5565	Ave		0.5830				9.2		30.0			
Hexachlorobutadiene	+++++ 0.5442	0.5695 0.5373	0.5620 0.5602	0.4971	0.5098	Ave		0.5400				5.1		30.0			
Naphthalene	+++++ 1.3444	+++++ 1.6213	1.1039 1.6554	1.4497	1.4068	Ave		1.4302				14.1		30.0			
1,2,3-Trichlorobenzene	+++++ 0.5309	0.3594 0.5666	0.4061 0.5833	0.4766	0.5096	Ave		0.4904				16.8		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-92213/19	15073_19.D
Level 2	IC 200-92213/5	15073_05.D
Level 3	IC 200-92213/6	15073_06.D
Level 4	IC 200-92213/7	15073_07.D
Level 5	ICIS 200-92213/20	15073_20.D
Level 6	IC 200-92213/9	15073_09.D
Level 7	IC 200-92213/10	15073_10.D
Level 8	IC 200-92213/11	15073_11.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Propylene	BCM	Ave	+++++ 263836	+++++ 342406	+++++ 684684	87576	181710	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Dichlorodifluoromethane	BCM	Ave	+++++ 763212	+++++ 976139	27018 1996924	252829	541546	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Freon 22	BCM	Ave	+++++ 526638	+++++ 678453	18903 1383650	170001	364229	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,2-Dichlorotetrafluoroethane	BCM	Ave	+++++ 689367	9830 892450	23529 1812952	226569	496193	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chloromethane	BCM	Ave	+++++ 315820	+++++ 408685	11815 830101	103156	221376	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Butane	BCM	Ave	+++++ 659897	+++++ 874732	24401 1677033	212107	452440	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Vinyl chloride	BCM	Ave	1085 361389	4891 475616	12472 943303	114408	252828	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3-Butadiene	BCM	Ave	+++++ 307958	4012 401137	10000 795151	96805	214049	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromomethane	BCM	Ave	+++++ 302565	3987 403063	9563 854172	91722	217509	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chloroethane	BCM	Ave	+++++ 246141	+++++ 328991	7623 686140	73776	173520	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Isopentane	BCM	Ave	+++++ 726701	10759 959621	25396 1951470	221946	501612	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromoethene(Vinyl Bromide)	BCM	Ave	+++++ 290057	3744 392171	9071 832154	86766	210133	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Trichlorofluoromethane	BCM	Ave	+++++ 859064	11525 1152947	26836 2456296	260063	617546	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Pentane	BCM	Ave	+++++ 1160879	+++++ 1543291	38736 3180866	342915	801426	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Ethanol	BCM	Ave	+++++ 338518	+++++ 667091	72612 1669061	182969	262595	+++++ 20.0	+++++ 40.0	5.01 100.0	9.99	15.0

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Ethyl ether	BCM	Ave	+++++ 350733	4165 473741	10303 997683	102031	246657	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acrolein	BCM	Ave	+++++ 170308	+++++ 189835	+++++ 199420	44898	127950	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Freon TF	BCM	Ave	+++++ 613851	8182 832626	19249 1791131	182770	444400	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1-Dichloroethene	BCM	Ave	+++++ 309512	4042 419358	9487 904752	91251	223514	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acetone	BCM	Ave	+++++ 969183	+++++ 1355555	+++++ 2575675	319013	628892	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Isopropyl alcohol	BCM	Ave	+++++ 993915	+++++ 1358825	+++++ 2710122	279930	588402	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Carbon disulfide	BCM	Ave	+++++ 1041012	+++++ 1415186	32262 2995133	309336	758485	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
3-Chloropropene	BCM	Ave	+++++ 848108	11292 1105335	26367 2135815	233829	570197	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acetonitrile	BCM	Ave	+++++ 561471	+++++ 748055	+++++ 1505318	166455	358293	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Methylene Chloride	BCM	Ave	+++++ 653441	+++++ 882502	25953 1795953	198536	454839	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
tert-Butyl alcohol	BCM	Ave	+++++ 1058450	+++++ 1443589	+++++ 2995589	295639	660382	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Methyl tert-butyl ether	BCM	Ave	+++++ 1237162	15387 1679647	36567 3593719	359759	876545	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
trans-1,2-Dichloroethene	BCM	Ave	+++++ 696506	8689 940928	22155 1989635	203336	491929	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acrylonitrile	BCM	Ave	+++++ 425291	+++++ 565526	12501 1199028	124428	293216	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Hexane	BCM	Ave	+++++ 820426	10436 1102926	25495 2307925	240827	577751	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1-Dichloroethane	BCM	Ave	2699 878705	11806 1179972	27226 2456934	261808	619281	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Vinyl acetate	BCM	Ave	+++++ 1834796	+++++ 2408470	+++++ 4953858	543335	1257419	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Methyl Ethyl Ketone	BCM	Ave	+++++ 230288	+++++ 315522	8198 643831	67360	159304	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
cis-1,2-Dichloroethene	BCM	Ave	+++++ 361432	4642 489207	11216 1029633	107675	260064	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Ethyl acetate	BCM	Ave	+++++ 31880	+++++ 42342	+++++ 91801	8676	22453	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Tetrahydrofuran	DFB	Ave	+++++ 833180	+++++ 1112187	+++++ 2261111	251249	567779	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Chloroform	BCM	Ave	+++++ 804853	10326 1095073	25098 2334070	239729	574032	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,1-Trichloroethane	DFB	Ave	+++++ 772938	10011 1041124	23909 2227112	228991	549317	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Cyclohexane	DFB	Ave	+++++ 536627	6909 724473	16537 1536057	159225	382290	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Carbon tetrachloride	DFB	Ave	1320 716973	8241 874530	20507 2111081	209004	519349	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
2,2,4-Trimethylpentane	DFB	Ave	+++++ 2810908	34144 3771936	84546 7824572	829683	1978720	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Benzene	DFB	Ave	+++++ 1306886	17775 1764080	41895 3756737	391602	934546	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichloroethane	DFB	Ave	+++++ 642454	8037 860172	20012 1824934	190788	448427	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Heptane	DFB	Ave	+++++ 1357104	17726 1797120	43243 3653119	408629	940099	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Butanol	DFB	Ave	+++++ 381574	+++++ 517732	+++++ 1081375	107508	220161	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Trichloroethene	DFB	Ave	1468 490642	6268 698065	15364 1423865	144267	348937	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichloropropane	DFB	Ave	+++++ 603378	7884 807449	18916 1683855	179104	426371	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Methyl methacrylate	DFB	Ave	+++++ 541053	+++++ 731977	14715 1563171	156718	379514	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,4-Dioxane	DFB	Ave	+++++ 209580	+++++ 293957	+++++ 593611	59965	124708	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Dibromomethane	DFB	Ave	+++++ 325730	4680 483034	11104 972699	99095	233906	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromodichloromethane	DFB	Ave	+++++ 915333	10791 1187528	26310 2619551	268431	649598	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
cis-1,3-Dichloropropene	DFB	Ave	+++++ 773651	9531 1047802	22540 2248963	224897	543737	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
methyl isobutyl ketone	DFB	Ave	+++++ 1766615	+++++ 2328259	51596 4775862	525692	1201541	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Octane	DFB	Ave	+++++ 1916183	24145 2508076	60165 4920138	586360	1337266	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Toluene	CBZ	Ave	+++++ 844437	11498 1159715	26802 2425843	254832	603115	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
trans-1,3-Dichloropropene	DFB	Ave	+++++ 792086	9026 1066721	22672 2299014	226951	558550	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,2-Trichloroethane	CBZ	Ave	+++++ 449971	5571 608996	13897 1293703	133246	318396	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Tetrachloroethene	CBZ	Ave	1597 496002	6872 675890	16071 1448798	151532	360558	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Methyl Butyl Ketone (2-Hexanone)	CBZ	Ave	+++++ 1715256	+++++ 2271126	48818 4658094	512288	1154858	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Dibromochloromethane	CBZ	Ave	+++++ 689610	7526 830018	17666 1979086	203313	510894	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dibromoethane	CBZ	Ave	+++++ 674119	8242 914433	20158 1953773	198261	482284	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chlorobenzene	CBZ	Ave	+++++ 991200	13225 1341832	31138 2862733	301176	713864	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Ethylbenzene	CBZ	Ave	+++++ 1930366	24612 2582412	59656 5190924	585827	1388952	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Nonane	CBZ	Ave	+++++ 1385927	17924 1823518	43265 3468128	419834	980677	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
m,p-Xylene	CBZ	Ave	+++++ 1345761	16216 1816933	40558 3737723	410406	971699	+++++ 30.0	0.400 40.0	1.00 80.0	9.99	20.0
Xylene, o-	CBZ	Ave	+++++ 663990	8447 902302	20363 1911240	199854	478765	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Styrene	CBZ	Ave	+++++ 1094341	12694 1465142	31265 3145244	325364	788864	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromoform	CBZ	Ave	+++++ 578463	4885 558043	11442 1576719	167289	463168	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Cumene	CBZ	Ave	+++++ 1990622	25027 2689213	59143 5644739	601775	1435490	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,2,2-Tetrachloroethane	CBZ	Ave	+++++ 1183328	14538 1510647	35689 3284499	356929	842403	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Propylbenzene	CBZ	Ave	+++++ 2700038	34270 3616663	82174 7211244	816655	1922914	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2,3-Trichloropropane	CBZ	Ave	+++++ 1031124	+++++ 1384045	31710 2773692	309686	721657	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Decane	CBZ	Ave	+++++ 1822389	+++++ 2302743	55241 4435006	552347	1279033	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
4-Ethyltoluene	CBZ	Ave	+++++ 2010399	24285 2711824	60526 5411110	614722	1449224	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
2-Chlorotoluene	CBZ	Ave	+++++ 1841128	22731 2457360	54815 5092605	551435	1310178	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3,5-Trimethylbenzene	CBZ	Ave	+++++ 1694614	21663 2261217	52032 4523473	513483	1217131	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Alpha Methyl Styrene	CBZ	Ave	+++++ 788297	9079 996133	21576 2136871	238319	567538	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
tert-Butylbenzene	CBZ	Ave	+++++ 1470532	18262 1959717	44846 3935597	449835	1062635	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29497-1 Analy Batch No.: 92213

SDG No.:

Instrument ID: CHB.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/03/2015 19:01 Calibration End Date: 08/04/2015 11:14 Calibration ID: 31632

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
1,2,4-Trimethylbenzene	CBZ	Ave	+++++ 1703160	21561 2252964	50949 4511810	523093	1223934	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
sec-Butylbenzene	CBZ	Ave	+++++ 2442335	30839 3179561	74918 6409999	750878	1762095	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
4-Isopropyltoluene	CBZ	Ave	+++++ 1885167	24131 2334078	57981 5048922	588827	1381054	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3-Dichlorobenzene	CBZ	Ave	+++++ 941607	12077 1251974	28907 2492464	295897	686068	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,4-Dichlorobenzene	CBZ	Ave	+++++ 937867	11950 1234140	28518 2458180	295042	684086	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Benzyl chloride	CBZ	Ave	+++++ 1666350	19648 1956955	46882 4388212	495099	1199736	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Undecane	CBZ	Ave	+++++ 1781934	+++++ 2470608	+++++ 5123235	627279	1306468	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
n-Butylbenzene	CBZ	Ave	+++++ 2035059	26702 2485585	65514 5701860	668091	1529943	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichlorobenzene	CBZ	Ave	+++++ 887134	11482 1125676	27718 2383991	277954	647676	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Dodecane	CBZ	Ave	+++++ 1793646	+++++ 2454557	+++++ 5005493	533947	1234038	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
1,2,4-Trichlorobenzene	CBZ	Ave	+++++ 616187	+++++ 952360	16583 2073512	200422	419116	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Hexachlorobutadiene	CBZ	Ave	+++++ 581476	7900 811773	18665 1786014	170271	383943	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Naphthalene	CBZ	Ave	+++++ 1436580	+++++ 2449724	36663 5278179	496592	1059495	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,2,3-Trichlorobenzene	CBZ	Ave	+++++ 567348	4985 856117	13489 1859882	163254	383774	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

Curve Type Legend:
Ave = Average ISTD

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-92714/4	15276_004.d
Level 2	IC 200-92714/6	15276_006.d
Level 3	IC 200-92714/7	15276_007.d
Level 4	IC 200-92714/8	15276_008.d
Level 5	ICIS 200-92714/9	15276_009.d
Level 6	IC 200-92714/10	15276_010.d
Level 7	IC 200-92714/11	15276_011.d
Level 8	IC 200-92714/12	15276_012.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Propylene	+++++ 0.6297	+++++ 0.6282	+++++ 0.5401	0.6681	0.6705	Ave		0.6273				8.4		30.0			
Dichlorodifluoromethane	+++++ 3.1633	+++++ 3.2010	3.6516 2.7992	3.1951	3.3199	Ave		3.2217				8.5		30.0			
Freon 22	+++++ 1.4054	+++++ 1.4066	1.7295 1.2350	1.4481	1.4794	Ave		1.4507				11.1		30.0			
1,2-Dichlorotetrafluoroethane	+++++ 3.0923	3.5614 3.0954	3.6266 2.6663	3.1277	3.2560	Ave		3.2037				10.1		30.0			
Chloromethane	+++++ 0.8103	+++++ 0.8120	1.0030 0.7211	0.8168	0.8540	Ave		0.8362				11.1		30.0			
n-Butane	+++++ 1.1331	+++++ 1.1435	1.6103 1.0038	1.2054	1.2179	Ave		1.2190				16.9		30.0			
Vinyl chloride	0.8576 0.9338	1.0884 0.9504	1.0973 0.8498	0.9694	0.9943	Ave		0.9676				9.5		30.0			
1,3-Butadiene	+++++ 0.6334	0.7336 0.6430	0.7692 0.5728	0.6619	0.6760	Ave		0.6700				9.7		30.0			
Bromomethane	+++++ 0.9551	1.1786 0.9692	1.1826 0.8528	0.9930	1.0033	Ave		1.0192				11.8		30.0			
Chloroethane	+++++ 0.6022	+++++ 0.6106	0.6992 0.5476	0.6063	0.6299	Ave		0.6159				8.0		30.0			
Isopentane	+++++ 0.9745	1.2314 0.9685	1.1707 0.8392	0.9974	1.0305	Ave		1.0303				12.8		30.0			
Bromoethene(Vinyl Bromide)	+++++ 1.4145	1.5195 1.4482	1.5144 1.2950	1.3653	1.4611	Ave		1.4312				5.6		30.0			
Trichlorofluoromethane	+++++ 3.4223	3.9353 3.4996	3.8777 3.1421	3.3994	3.5659	Ave		3.5489				7.8		30.0			
n-Pentane	+++++ 1.4588	+++++ 1.4487	1.8707 1.2558	1.5097	1.5439	Ave		1.5146				13.3		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Ethanol	+++++ 0.2892	+++++ 0.2882	0.3008 0.2487	0.3254	0.3030	Ave		0.2925				8.7		30.0			
Ethyl ether	+++++ 0.7214	0.7675 0.7375	0.8000 0.6498	0.7253	0.7542	Ave		0.7365				6.4		30.0			
Acrolein	+++++ 0.2769	+++++ 0.2247	+++++ 0.0951	0.2420	0.3152	Ave		0.2308				36.1	*	30.0			
Freon TF	+++++ 2.6013	2.9159 2.6401	2.9186 2.3323	2.5880	2.7059	Ave		2.6717				7.6		30.0			
1,1-Dichloroethene	+++++ 1.2992	1.4001 1.3209	1.4131 1.1796	1.2577	1.3468	Ave		1.3168				6.2		30.0			
Acetone	+++++ 1.2831	+++++ 1.3846	+++++ 1.1067	1.4659	1.2464	Ave		1.2973				10.6		30.0			
Carbon disulfide	+++++ 3.0625	+++++ 3.1259	3.4660 2.7608	3.0566	3.1841	Ave		3.1093				7.3		30.0			
Isopropyl alcohol	+++++ 1.2012	+++++ 1.2165	+++++ 1.0664	1.0467	1.0759	Ave		1.1213				7.2		30.0			
3-Chloropropene	+++++ 0.9535	1.0942 0.9465	1.0803 0.7744	0.9051	0.9736	Ave		0.9611				11.3		30.0			
Acetonitrile	+++++ 0.5900	+++++ 0.6033	+++++ 0.5261	0.6198	0.5867	Ave		0.5852				6.1		30.0			
Methylene Chloride	+++++ 0.9560	+++++ 0.9784	1.2763 0.8438	0.9918	1.0106	Ave		1.0095				14.2		30.0			
tert-Butyl alcohol	+++++ 1.8987	+++++ 1.9267	+++++ 1.7446	1.5854	1.7315	Ave		1.7774				7.8		30.0			
Methyl tert-butyl ether	+++++ 3.4172	3.4740 3.4774	3.5741 3.1091	3.3212	3.5372	Ave		3.4157				4.6		30.0			
trans-1,2-Dichloroethene	+++++ 1.4618	1.6793 1.4823	1.6645 1.2905	1.4903	1.5502	Ave		1.5170				8.7		30.0			
Acrylonitrile	+++++ 0.6960	+++++ 0.7056	0.7234 0.6252	0.6882	0.7129	Ave		0.6919				5.0		30.0			
n-Hexane	+++++ 1.5695	1.8239 1.5772	1.8441 1.3594	1.5944	1.6597	Ave		1.6326				10.2		30.0			
1,1-Dichloroethane	1.9498 1.9152	2.2298 1.9312	2.1805 1.6960	1.9301	2.0055	Ave		1.9798				8.4		30.0			
Vinyl acetate	+++++ 2.0151	+++++ 1.9368	+++++ 1.7721	2.0114	2.0767	Ave		1.9624				6.0		30.0			
cis-1,2-Dichloroethene	+++++ 1.4765	1.6473 1.5003	1.6453 1.3215	1.4509	1.5328	Ave		1.5106				7.5		30.0			
Methyl Ethyl Ketone	+++++ 0.6245	+++++ 0.6464	0.8725 0.5349	0.6259	0.6282	Ave		0.6554				17.3		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Ethyl acetate	+++++ 0.1183	+++++ 0.1207	+++++ 0.1055	0.1146	0.1198	Ave		0.1158				5.4		30.0			
Tetrahydrofuran	+++++ 0.1975	+++++ 0.2234	+++++ 0.1782	0.1982	0.2016	Ave		0.1998				8.0		30.0			
Chloroform	+++++ 2.5529	2.9217 2.6172	2.8623 2.3225	2.5330	2.6478	Ave		2.6368				7.7		30.0			
Cyclohexane	+++++ 0.3804	0.3994 0.4273	0.4199 0.3369	0.3716	0.3906	Ave		0.3895				7.9		30.0			
1,1,1-Trichloroethane	+++++ 0.5875	0.6299 0.6670	0.6401 0.5494	0.5633	0.5995	Ave		0.6052				7.0		30.0			
Carbon tetrachloride	0.5149 0.6352	0.6222 0.6320	0.6420 0.6141	0.5877	0.6495	Ave		0.6122				7.1		30.0			
2,2,4-Trimethylpentane	+++++ 1.0833	1.1812 1.2013	1.2169 0.9347	1.0987	1.1335	Ave		1.1214				8.6		30.0			
Benzene	+++++ 0.8128	0.9562 0.9105	0.9604 0.7292	0.8108	0.8423	Ave		0.8603				9.9		30.0			
1,2-Dichloroethane	+++++ 0.2984	0.3228 0.3402	0.3428 0.2837	0.2920	0.3093	Ave		0.3127				7.4		30.0			
n-Heptane	+++++ 0.3323	0.3854 0.3671	0.4034 0.2821	0.3431	0.3503	Ave		0.3520				11.2		30.0			
n-Butanol	+++++ 0.1270	+++++ 0.1419	+++++ 0.1193	0.1020	0.1039	Ave		0.1188				14.0		30.0			
Trichloroethene	0.3351 0.3960	0.4272 0.4752	0.4436 0.3632	0.3787	0.4139	Ave		0.4041				11.2		30.0			
1,2-Dichloropropane	+++++ 0.2678	0.2949 0.2998	0.2997 0.2417	0.2652	0.2777	Ave		0.2781				7.8		30.0			
Methyl methacrylate	+++++ 0.2863	+++++ 0.3217	0.2910 0.2616	0.2751	0.2928	Ave		0.2881				7.0		30.0			
1,4-Dioxane	+++++ 0.1521	+++++ 0.1755	+++++ 0.1369	0.1317	0.1286	Ave		0.1450				13.3		30.0			
Dibromomethane	+++++ 0.4889	0.5524 0.6067	0.5679 0.4629	0.4569	0.4916	Ave		0.5182				11.1		30.0			
Bromodichloromethane	+++++ 0.5943	0.5974 0.6435	0.6135 0.5486	0.5749	0.6143	Ave		0.5981				5.1		30.0			
cis-1,3-Dichloropropene	+++++ 0.4478	0.4399 0.5036	0.4491 0.4164	0.4257	0.4550	Ave		0.4482				6.2		30.0			
methyl isobutyl ketone	+++++ 0.4358	+++++ 0.4841	0.4725 0.3791	0.4413	0.4519	Ave		0.4441				8.3		30.0			
n-Octane	+++++ 0.4365	0.5316 0.4688	0.5591 0.3351	0.4807	0.4749	Ave		0.4695				15.4		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Toluene	+++++ 0.6915	0.8022 0.7353	0.8335 0.5707	0.6915	0.7224	Ave		0.7210				11.8		30.0			
trans-1,3-Dichloropropene	+++++ 0.4544	0.4258 0.5086	0.4452 0.4240	0.4299	0.4625	Ave		0.4501				6.6		30.0			
1,1,2-Trichloroethane	+++++ 0.3246	0.3569 0.3509	0.3615 0.2961	0.3170	0.3346	Ave		0.3345				7.1		30.0			
Tetrachloroethene	0.7317 0.7769	0.8167 0.8493	0.8501 0.7093	0.7298	0.7900	Ave		0.7817				7.0		30.0			
Methyl Butyl Ketone (2-Hexanone)	+++++ 0.4597	+++++ 0.4903	0.4977 0.4015	0.4543	0.4679	Ave		0.4619				7.4		30.0			
Dibromochloromethane	+++++ 0.8007	0.6886 0.7678	0.7326 0.7222	0.7440	0.8298	Ave		0.7551				6.4		30.0			
1,2-Dibromoethane	+++++ 0.6756	0.6925 0.7254	0.7275 0.6234	0.6372	0.6887	Ave		0.6815				5.9		30.0			
Chlorobenzene	+++++ 1.0389	1.1555 1.1127	1.1837 0.9289	1.0046	1.0636	Ave		1.0697				8.3		30.0			
Ethylbenzene	+++++ 1.5271	1.6888 1.6140	1.7406 1.2837	1.5233	1.5949	Ave		1.5675				9.5		30.0			
n-Nonane	+++++ 0.5488	0.6262 0.5664	0.6819 0.4283	0.5796	0.5849	Ave		0.5737				13.6		30.0			
m,p-Xylene	+++++ 0.6312	0.7033 0.6530	0.7484 0.4888	0.6506	0.6697	Ave		0.6493				12.5		30.0			
Xylene, o-	+++++ 0.6668	0.6865 0.7005	0.7366 0.5539	0.6534	0.6895	Ave		0.6696				8.6		30.0			
Styrene	+++++ 1.0268	1.0126 1.0645	1.1115 0.8530	1.0254	1.0804	Ave		1.0249				8.1		30.0			
Bromoform	+++++ 0.8365	0.5543 0.6546	0.5679 0.6912	0.7556	0.9125	Ave		0.7104				18.8		30.0			
Cumene	+++++ 1.8853	1.9852 1.9762	2.1201 1.5558	1.8694	1.9626	Ave		1.9078				9.2		30.0			
1,1,2,2-Tetrachloroethane	+++++ 0.8827	0.9636 0.8795	0.9908 0.7404	0.8651	0.8915	Ave		0.8877				9.0		30.0			
n-Propylbenzene	+++++ 2.1725	2.3091 2.2583	2.4809 1.6850	2.1906	2.2875	Ave		2.1977				11.3		30.0			
1,2,3-Trichloropropane	+++++ 0.6463	+++++ 0.6752	0.7573 0.5334	0.6424	0.6697	Ave		0.6540				11.1		30.0			
n-Decane	+++++ 0.7638	+++++ 0.7835	0.9317 0.5754	0.8008	0.8162	Ave		0.7786				14.9		30.0			
4-Ethyltoluene	+++++ 1.9372	2.0408 2.0335	2.1735 1.5442	1.9347	2.0336	Ave		1.9568				10.2		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
2-Chlorotoluene	+++++ 1.5409	1.6505 1.6255	1.7543 1.2944	1.5354	1.6051	Ave		1.5723				9.1		30.0			
1,3,5-Trimethylbenzene	+++++ 1.6550	1.7371 1.7517	1.8169 1.3785	1.6197	1.7113	Ave		1.6672				8.6		30.0			
Alpha Methyl Styrene	+++++ 0.9252	0.8106 0.9098	0.8997 0.7973	0.8797	0.9562	Ave		0.8826				6.7		30.0			
tert-Butylbenzene	+++++ 1.6604	1.7518 1.7557	1.8403 1.3815	1.6292	1.7270	Ave		1.6780				8.8		30.0			
1,2,4-Trimethylbenzene	+++++ 1.6625	1.7227 1.7701	1.8412 1.3999	1.6495	1.7338	Ave		1.6828				8.4		30.0			
sec-Butylbenzene	+++++ 2.3718	2.5277 2.4835	2.7160 1.8910	2.3877	2.4999	Ave		2.4111				10.6		30.0			
4-Isopropyltoluene	+++++ 2.1189	2.1821 2.2219	2.3209 1.7191	2.1042	2.2125	Ave		2.1256				9.1		30.0			
1,3-Dichlorobenzene	+++++ 1.2978	1.2890 1.4061	1.3871 1.1274	1.2526	1.3511	Ave		1.3016				7.3		30.0			
1,4-Dichlorobenzene	+++++ 1.3037	1.2617 1.4204	1.3621 1.1406	1.2476	1.3522	Ave		1.2983				7.1		30.0			
Benzyl chloride	+++++ 1.3661	0.9546 1.3618	1.0969 1.2520	1.2294	1.4416	Ave		1.2432				13.7		30.0			
n-Undecane	+++++ 0.8140	+++++ 0.8176	+++++ 0.5803	0.8968	0.8898	Ave		0.7997				16.1		30.0			
n-Butylbenzene	+++++ 1.7005	1.8635 1.7620	2.0207 1.3037	1.7618	1.8118	Ave		1.7463				12.6		30.0			
1,2-Dichlorobenzene	+++++ 1.2523	1.3007 1.3590	1.3479 1.1035	1.1990	1.2843	Ave		1.2638				7.1		30.0			
n-Dodecane	+++++ 0.7955	+++++ 0.8168	+++++ 0.6593	0.8647	0.8713	Ave		0.8015				10.7		30.0			
1,2,4-Trichlorobenzene	+++++ 1.0509	+++++ 1.2567	0.9410 1.0706	1.0044	1.1109	Ave		1.0724				10.0		30.0			
Hexachlorobutadiene	+++++ 1.0238	1.0183 1.1143	1.0715 0.9105	0.9549	1.0194	Ave		1.0161				6.7		30.0			
Naphthalene	+++++ 1.8726	+++++ 2.4344	1.6320 2.0197	2.0035	2.2749	Ave		2.0395				14.0		30.0			
1,2,3-Trichlorobenzene	+++++ 0.9656	0.7906 1.1547	0.9291 0.9983	0.9497	1.0152	Ave		0.9719				11.2		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-92714/4	15276_004.d
Level 2	IC 200-92714/6	15276_006.d
Level 3	IC 200-92714/7	15276_007.d
Level 4	IC 200-92714/8	15276_008.d
Level 5	ICIS 200-92714/9	15276_009.d
Level 6	IC 200-92714/10	15276_010.d
Level 7	IC 200-92714/11	15276_011.d
Level 8	IC 200-92714/12	15276_012.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Propylene	BCM	Ave	+++++ 209835	+++++ 274180	+++++ 521681	69003	144139	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Dichlorodifluoromethane	BCM	Ave	+++++ 1054120	+++++ 1396999	35374 2703886	329986	713719	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Freon 22	BCM	Ave	+++++ 468329	+++++ 613877	16754 1192942	149563	318046	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,2-Dichlorotetrafluoroethane	BCM	Ave	+++++ 1030472	13573 1350936	35132 2575583	323034	699988	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chloromethane	BCM	Ave	+++++ 270017	+++++ 354380	9716 696513	84362	183586	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Butane	BCM	Ave	+++++ 377584	+++++ 499065	15599 969594	124496	261833	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Vinyl chloride	BCM	Ave	654 311165	4148 414789	10630 820912	100124	213749	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3-Butadiene	BCM	Ave	+++++ 211054	2796 280643	7451 553275	68366	145332	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromomethane	BCM	Ave	+++++ 318282	4492 423006	11456 823763	102554	215686	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chloroethane	BCM	Ave	+++++ 200659	+++++ 266487	6773 528940	62614	135406	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Isopentane	BCM	Ave	+++++ 324737	4693 422682	11341 810667	103009	221543	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromoethene(Vinyl Bromide)	BCM	Ave	+++++ 471367	5791 632044	14670 1250968	141010	314111	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Trichlorofluoromethane	BCM	Ave	+++++ 1140409	14998 1527343	37564 3035146	351092	766595	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Pentane	BCM	Ave	+++++ 486122	+++++ 632256	18122 1213058	155926	331919	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Ethanol	BCM	Ave	+++++ 128790	+++++ 251582	29171 600504	67256	97766	+++++ 20.0	+++++ 40.0	5.01 100.0	9.99	15.0

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Ethyl ether	BCM	Ave	+++++ 240391	2925 321855	7750 627657	74904	162135	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acrolein	BCM	Ave	+++++ 92284	+++++ 98076	+++++ 91886	24995	67757	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Freon TF	BCM	Ave	+++++ 866852	11113 1152206	28273 2252940	267293	581721	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1-Dichloroethene	BCM	Ave	+++++ 432923	5336 576461	13689 1139431	129899	289544	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acetone	BCM	Ave	+++++ 427581	+++++ 604299	+++++ 1068988	151394	267942	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Carbon disulfide	BCM	Ave	+++++ 1020518	+++++ 1364234	33576 2666879	315689	684512	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Isopropyl alcohol	BCM	Ave	+++++ 400274	+++++ 530925	+++++ 1030103	108104	231294	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
3-Chloropropene	BCM	Ave	+++++ 317728	4170 413059	10465 748083	93475	209305	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acetonitrile	BCM	Ave	+++++ 196606	+++++ 263305	+++++ 508183	64014	126121	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Methylene Chloride	BCM	Ave	+++++ 318565	+++++ 427001	12364 815105	102431	217260	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
tert-Butyl alcohol	BCM	Ave	+++++ 632712	+++++ 840880	+++++ 1685183	163739	372231	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Methyl tert-butyl ether	BCM	Ave	+++++ 1138713	13240 1517641	34623 3003289	343015	760441	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
trans-1,2-Dichloroethene	BCM	Ave	+++++ 487128	6400 646926	16124 1246573	153917	333266	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Acrylonitrile	BCM	Ave	+++++ 231945	+++++ 307931	7008 603919	71081	153252	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Hexane	BCM	Ave	+++++ 522999	6951 688353	17864 1313175	164669	356815	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1-Dichloroethane	BCM	Ave	1487 638211	8498 842839	21123 1638280	199338	431147	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Vinyl acetate	BCM	Ave	+++++ 671483	+++++ 845280	+++++ 1711826	207738	446450	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
cis-1,2-Dichloroethene	BCM	Ave	+++++ 492018	6278 654772	15938 1276507	149854	329520	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Methyl Ethyl Ketone	BCM	Ave	+++++ 208118	+++++ 282125	8452 516671	64644	135049	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Ethyl acetate	BCM	Ave	+++++ 39422	+++++ 52656	+++++ 101894	11836	25750	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Tetrahydrofuran	DFB	Ave	+++++ 316492	+++++ 421720	+++++ 801644	100440	211402	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Chloroform	BCM	Ave	+++++ 850713	11135 1142229	27728 2243486	261604	569228	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Cyclohexane	DFB	Ave	+++++ 609621	7523 806709	19802 1515327	188279	409537	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,1-Trichloroethane	DFB	Ave	+++++ 941524	11864 1259081	30189 2471015	285399	628557	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Carbon tetrachloride	DFB	Ave	1945 1018011	11719 1193119	30279 2762013	297759	680939	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
2,2,4-Trimethylpentane	DFB	Ave	+++++ 1736112	22249 2267728	57392 4203811	556689	1188416	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Benzene	DFB	Ave	+++++ 1302611	18011 1718838	45295 3279727	410787	883108	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichloroethane	DFB	Ave	+++++ 478257	6080 642187	16167 1276033	147931	324258	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Heptane	DFB	Ave	+++++ 532492	7259 693047	19024 1268672	173856	367244	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Butanol	DFB	Ave	+++++ 203589	+++++ 267814	+++++ 536554	51665	108969	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Trichloroethene	DFB	Ave	1266 634617	8046 897007	20921 1633744	191880	433905	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichloropropane	DFB	Ave	+++++ 429237	5555 565892	14134 1087282	134365	291192	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Methyl methacrylate	DFB	Ave	+++++ 458839	+++++ 607350	13722 1176764	139386	306948	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,4-Dioxane	DFB	Ave	+++++ 243769	+++++ 331243	+++++ 615570	66729	134831	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
Dibromomethane	DFB	Ave	+++++ 783538	10404 1145271	26785 2081971	231479	515452	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromodichloromethane	DFB	Ave	+++++ 952439	11252 1214747	28934 2467262	291312	644026	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
cis-1,3-Dichloropropene	DFB	Ave	+++++ 717607	8286 950761	21182 1872953	215681	477011	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
methyl isobutyl ketone	DFB	Ave	+++++ 698397	+++++ 913934	22283 1704858	223586	473802	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Octane	DFB	Ave	+++++ 699564	10013 884985	26367 1507021	243561	497889	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Toluene	CBZ	Ave	+++++ 1025039	14081 1343520	36219 2359560	327992	702810	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
trans-1,3-Dichloropropene	DFB	Ave	+++++ 728194	8020 960080	20994 1907122	217810	484946	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,2-Trichloroethane	CBZ	Ave	+++++ 481224	6264 641097	15707 1224354	150341	325560	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Tetrachloroethene	CBZ	Ave	2391 1151596	14335 1551765	36937 2932419	346125	768567	0.0401 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Methyl Butyl Ketone (2-Hexanone)	CBZ	Ave	+++++ 681426	+++++ 895863	21625 1659944	215475	455188	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Dibromochloromethane	CBZ	Ave	+++++ 1186805	12086 1402884	31834 2986098	352853	807279	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dibromoethane	CBZ	Ave	+++++ 1001463	12155 1325446	31610 2577546	302232	669996	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Chlorobenzene	CBZ	Ave	+++++ 1539925	20281 2033034	51435 3840624	476470	1034786	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Ethylbenzene	CBZ	Ave	+++++ 2263601	29642 2949030	75631 5307379	722494	1551624	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Nonane	CBZ	Ave	+++++ 813467	10991 1034931	29630 1770844	274889	569088	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
m,p-Xylene	CBZ	Ave	+++++ 1871339	24688 2386158	65037 4041521	617108	1303023	+++++ 30.0	0.400 40.0	1.00 80.0	9.99	20.0
Xylene, o-	CBZ	Ave	+++++ 988432	12050 1279986	32008 2290088	309899	670837	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Styrene	CBZ	Ave	+++++ 1521972	17774 1945065	48295 3526694	486346	1051117	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Bromoform	CBZ	Ave	+++++ 1239942	9730 1195993	24675 2857600	358359	887762	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Cumene	CBZ	Ave	+++++ 2794513	34844 3610817	92123 6432377	886634	1909383	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,1,2,2-Tetrachloroethane	CBZ	Ave	+++++ 1308428	16913 1607081	43052 3061094	410301	867352	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Propylbenzene	CBZ	Ave	+++++ 3220222	40529 4126295	107799 6966554	1038986	2225538	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2,3-Trichloropropane	CBZ	Ave	+++++ 957966	+++++ 1233704	32908 2205203	304682	651501	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
n-Decane	CBZ	Ave	+++++ 1132148	+++++ 1431651	40484 2378840	379833	794090	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
4-Ethyltoluene	CBZ	Ave	+++++ 2871493	35820 3715597	94444 6384319	917599	1978518	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
2-Chlorotoluene	CBZ	Ave	+++++ 2284086	28970 2970158	76229 5351577	728222	1561560	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3,5-Trimethylbenzene	CBZ	Ave	+++++ 2453261	30489 3200687	78947 5699544	768213	1664875	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Alpha Methyl Styrene	CBZ	Ave	+++++ 1371484	14227 1662288	39094 3296589	417252	930244	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
tert-Butylbenzene	CBZ	Ave	+++++ 2461166	30748 3207969	79963 5711849	772702	1680211	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 200-29619-1 Analy Batch No.: 92714

SDG No.:

Instrument ID: CHW.i GC Column: RTX-624 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2015 17:16 Calibration End Date: 08/13/2015 23:55 Calibration ID: 31735

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PPB V/V)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
1,2,4-Trimethylbenzene	CBZ	Ave	+++++ 2464364	30237 3234351	80004 5787658	782333	1686769	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
sec-Butylbenzene	CBZ	Ave	+++++ 3515688	44367 4537880	118013 7818430	1132470	2432109	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
4-Isopropyltoluene	CBZ	Ave	+++++ 3140766	38301 4059785	100846 7107410	998006	2152514	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,3-Dichlorobenzene	CBZ	Ave	+++++ 1923711	22625 2569141	60273 4661209	594109	1314439	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,4-Dichlorobenzene	CBZ	Ave	+++++ 1932505	22146 2595414	59187 4715714	591727	1315529	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Benzyl chloride	CBZ	Ave	+++++ 2024995	16756 2488213	47661 5176306	583095	1402490	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Undecane	CBZ	Ave	+++++ 1206568	+++++ 1493888	+++++ 2399411	425338	865643	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
n-Butylbenzene	CBZ	Ave	+++++ 2520706	32708 3219480	87802 5390064	835591	1762644	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
1,2-Dichlorobenzene	CBZ	Ave	+++++ 1856239	22830 2483221	58570 4562315	568673	1249513	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
n-Dodecane	CBZ	Ave	+++++ 1179227	+++++ 1492377	+++++ 2725678	410123	847707	+++++ 15.0	+++++ 20.0	+++++ 40.0	4.99	10.00
1,2,4-Trichlorobenzene	CBZ	Ave	+++++ 1557789	+++++ 2296197	40886 4426412	476397	1080798	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
Hexachlorobutadiene	CBZ	Ave	+++++ 1517640	17873 2036016	46557 3764432	452904	991765	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00
Naphthalene	CBZ	Ave	+++++ 2775791	+++++ 4448149	70912 8350211	950237	2213222	+++++ 15.0	+++++ 20.0	0.500 40.0	4.99	10.00
1,2,3-Trichlorobenzene	CBZ	Ave	+++++ 1431231	13877 2109856	40371 4127577	450442	987650	+++++ 15.0	0.200 20.0	0.500 40.0	4.99	10.00

Curve Type Legend:
Ave = Average ISTD

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab Sample ID: ICV 200-92213/24 Calibration Date: 08/04/2015 14:48

Instrument ID: CHB.i Calib Start Date: 08/03/2015 19:01

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/04/2015 11:14

Lab File ID: 15073_24.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Propylene	Ave	1.087	0.9858		9.07	10.0	-9.3	30.0
Dichlorodifluoromethane	Ave	3.279	3.020		9.21	10.0	-7.9	30.0
Freon 22	Ave	2.252	2.054		9.12	10.0	-8.8	30.0
1,2-Dichlorotetrafluoroethane	Ave	3.007	3.080		10.2	10.0	2.4	30.0
Chloromethane	Ave	1.369	1.189		8.68	10.0	-13.2	30.0
n-Butane	Ave	2.832	2.513		8.87	10.0	-11.3	30.0
Vinyl chloride	Ave	1.565	1.379		8.81	10.0	-11.9	30.0
1,3-Butadiene	Ave	1.297	1.148		8.85	10.0	-11.5	30.0
Bromomethane	Ave	1.289	1.239		9.61	10.0	-3.9	30.0
Chloroethane	Ave	1.029	0.9766		9.49	10.0	-5.1	30.0
Isopentane	Ave	3.165	3.069		9.70	10.0	-3.0	30.0
Bromoethene(Vinyl Bromide)	Ave	1.234	1.185		9.60	10.0	-4.0	30.0
Trichlorofluoromethane	Ave	3.672	3.489		9.50	10.0	-5.0	30.0
n-Pentane	Ave	4.873	5.002		10.3	10.0	2.7	30.0
Ethanol	Ave	1.065	1.080		15.2	15.0	1.4	30.0
Ethyl ether	Ave	1.447	1.593		11.0	10.0	10.1	30.0
Acrolein	Ave	0.5971	0.7480		12.5	10.0	25.3	30.0
Freon TF	Ave	2.630	2.584		9.82	10.0	-1.8	30.0
1,1-Dichloroethene	Ave	1.316	1.288		9.79	10.0	-2.1	30.0
Acetone	Ave	4.011	4.025		10.0	10.0	0.3	30.0
Isopropyl alcohol	Ave	3.913	3.287		8.40	10.0	-16.0	30.0
Carbon disulfide	Ave	4.404	4.979		11.3	10.0	13.1	30.0
3-Chloropropene	Ave	3.467	2.872		8.28	10.0	-17.2	30.0
Acetonitrile	Ave	2.247	2.295		10.2	10.0	2.1	30.0
Methylene Chloride	Ave	2.867	2.627		9.16	10.0	-8.4	30.0
tert-Butyl alcohol	Ave	4.230	3.844		9.09	10.0	-9.1	30.0
Methyl tert-butyl ether	Ave	5.166	5.109		9.89	10.0	-1.1	30.0
trans-1,2-Dichloroethene	Ave	2.933	3.028		10.3	10.0	3.2	30.0
Acrylonitrile	Ave	1.749	1.781		10.2	10.0	1.8	30.0
n-Hexane	Ave	3.444	3.595		10.4	10.0	4.4	30.0
1,1-Dichloroethane	Ave	3.768	3.626		9.62	10.0	-3.8	30.0
Vinyl acetate	Ave	7.438	7.281		9.79	10.0	-2.1	30.0
Methyl Ethyl Ketone	Ave	0.9852	0.9651		9.79	10.0	-2.0	30.0
cis-1,2-Dichloroethene	Ave	1.531	1.489		9.72	10.0	-2.8	30.0
Ethyl acetate	Ave	0.1297	0.1432		11.0	10.0	10.4	30.0
Tetrahydrofuran	Ave	0.6428	0.6224		9.68	10.0	-3.2	30.0
Chloroform	Ave	3.418	3.362		9.84	10.0	-1.6	30.0
1,1,1-Trichloroethane	Ave	0.6129	0.5965		9.73	10.0	-2.7	30.0
Cyclohexane	Ave	0.4249	0.4208		9.90	10.0	-1.0	30.0
Carbon tetrachloride	Ave	0.5246	0.5579		10.6	10.0	6.4	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab Sample ID: ICV 200-92213/24 Calibration Date: 08/04/2015 14:48

Instrument ID: CHB.i Calib Start Date: 08/03/2015 19:01

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/04/2015 11:14

Lab File ID: 15073_24.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,2,4-Trimethylpentane	Ave	2.184	2.117		9.69	10.0	-3.1	30.0
Benzene	Ave	1.052	1.013		9.63	10.0	-3.7	30.0
1,2-Dichloroethane	Ave	0.5049	0.4844		9.59	10.0	-4.1	30.0
n-Heptane	Ave	1.068	1.004		9.39	10.0	-6.0	30.0
n-Butanol	Ave	0.2848	0.2655		9.32	10.0	-6.8	30.0
Trichloroethene	Ave	0.3935	0.3830		9.73	10.0	-2.7	30.0
1,2-Dichloropropane	Ave	0.4772	0.4525		9.48	10.0	-5.2	30.0
Methyl methacrylate	Ave	0.4169	0.4255		10.2	10.0	2.0	30.0
1,4-Dioxane	Ave	0.1589	0.1449		9.12	10.0	-8.8	30.0
Dibromomethane	Ave	0.2725	0.2506		9.19	10.0	-8.0	30.0
Bromodichloromethane	Ave	0.7033	0.6922		9.84	10.0	-1.6	30.0
cis-1,3-Dichloropropene	Ave	0.6026	0.5912		9.81	10.0	-1.9	30.0
methyl isobutyl ketone	Ave	1.355	1.279		9.44	10.0	-5.6	30.0
n-Octane	Ave	1.490	1.418		9.51	10.0	-4.8	30.0
Toluene	Ave	0.7856	0.7563		9.62	10.0	-3.7	30.0
trans-1,3-Dichloropropene	Ave	0.6074	0.5964		9.82	10.0	-1.8	30.0
1,1,2-Trichloroethane	Ave	0.4088	0.3985		9.75	10.0	-2.5	30.0
Tetrachloroethene	Ave	0.4722	0.4487		9.50	10.0	-5.0	30.0
Methyl Butyl Ketone (2-Hexanone)	Ave	1.511	1.494		9.88	10.0	-1.2	30.0
Dibromochloromethane	Ave	0.5945	0.5990		10.1	10.0	0.8	30.0
1,2-Dibromoethane	Ave	0.6099	0.5966		9.78	10.0	-2.2	30.0
Chlorobenzene	Ave	0.9188	0.8847		9.63	10.0	-3.7	30.0
Ethylbenzene	Ave	1.753	1.709		9.75	10.0	-2.5	30.0
n-Nonane	Ave	1.245	1.208		9.70	10.0	-3.0	30.0
m,p-Xylene	Ave	0.6080	0.5971		19.6	20.0	-1.8	30.0
Xylene, o-	Ave	0.6085	0.5820		9.56	10.0	-4.3	30.0
Styrene	Ave	0.9763	0.9497		9.73	10.0	-2.7	30.0
Bromoform	Ave	0.4579	0.5125		11.2	10.0	11.9	30.0
Cumene	Ave	1.809	1.745		9.65	10.0	-3.5	30.0
1,1,2,2-Tetrachloroethane	Ave	1.060	1.052		9.92	10.0	-0.8	30.0
n-Propylbenzene	Ave	2.438	2.333		9.57	10.0	-4.3	30.0
1,2,3-Trichloropropane	Ave	0.9280	0.8811		9.49	10.0	-5.1	30.0
n-Decane	Ave	1.599	1.565		9.79	10.0	-2.1	30.0
4-Ethyltoluene	Ave	1.809	1.809		10.0	10.0	0.0	30.0
2-Chlorotoluene	Ave	1.655	1.592		9.62	10.0	-3.8	30.0
1,3,5-Trimethylbenzene	Ave	1.535	1.495		9.74	10.0	-2.6	30.0
Alpha Methyl Styrene	Ave	0.6887	0.7056		10.2	10.0	2.5	30.0
tert-Butylbenzene	Ave	1.328	1.300		9.78	10.0	-2.2	30.0
1,2,4-Trimethylbenzene	Ave	1.534	1.496		9.75	10.0	-2.5	30.0
sec-Butylbenzene	Ave	2.202	2.142		9.73	10.0	-2.7	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab Sample ID: ICV 200-92213/24 Calibration Date: 08/04/2015 14:48

Instrument ID: CHB.i Calib Start Date: 08/03/2015 19:01

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/04/2015 11:14

Lab File ID: 15073_24.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Isopropyltoluene	Ave	1.704	1.682		9.87	10.0	-1.3	30.0
1,3-Dichlorobenzene	Ave	0.8582	0.8294		9.66	10.0	-3.4	30.0
1,4-Dichlorobenzene	Ave	0.8507	0.8208		9.65	10.0	-3.5	30.0
Benzyl chloride	Ave	1.442	1.320		9.15	10.0	-8.5	30.0
n-Undecane	Ave	1.695	1.702		10.0	10.0	0.4	30.0
n-Butylbenzene	Ave	1.888	1.876		9.94	10.0	-0.6	30.0
1,2-Dichlorobenzene	Ave	0.8081	0.7883		9.75	10.0	-2.5	30.0
n-Dodecane	Ave	1.614	1.556		9.64	10.0	-3.6	30.0
1,2,4-Trichlorobenzene	Ave	0.5830	0.4774		8.19	10.0	-18.1	30.0
Hexachlorobutadiene	Ave	0.5400	0.4560		8.44	10.0	-15.5	30.0
Naphthalene	Ave	1.430	1.131		7.90	10.0	-21.0	30.0
1,2,3-Trichlorobenzene	Ave	0.4904	0.4055		8.27	10.0	-17.3	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab Sample ID: CCVIS 200-93391/2 Calibration Date: 08/31/2015 10:06

Instrument ID: CHB.i Calib Start Date: 08/03/2015 19:01

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/04/2015 11:14

Lab File ID: 15528_02.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Propylene	Ave	1.087	0.8780		8.08	10.0	-19.2	30.0
Dichlorodifluoromethane	Ave	3.279	3.422		10.4	10.0	4.4	30.0
Freon 22	Ave	2.252	2.054		9.12	10.0	-8.8	30.0
1,2-Dichlorotetrafluoroethane	Ave	3.007	2.768		9.20	10.0	-8.0	30.0
Chloromethane	Ave	1.369	1.006		7.35	10.0	-26.5	30.0
n-Butane	Ave	2.832	2.096		7.40	10.0	-26.0	30.0
Vinyl chloride	Ave	1.565	1.212		7.75	10.0	-22.5	30.0
1,3-Butadiene	Ave	1.297	0.9948		7.67	10.0	-23.3	30.0
Bromomethane	Ave	1.289	1.230		9.54	10.0	-4.6	30.0
Chloroethane	Ave	1.029	0.8934		8.68	10.0	-13.2	30.0
Isopentane	Ave	3.165	2.361		7.46	10.0	-25.4	30.0
Bromoethene(Vinyl Bromide)	Ave	1.234	1.251		10.1	10.0	1.4	30.0
Trichlorofluoromethane	Ave	3.672	4.268		11.6	10.0	16.2	30.0
n-Pentane	Ave	4.873	3.894		7.99	10.0	-20.1	30.0
Ethanol	Ave	1.065	1.059		14.9	15.0	-0.6	30.0
Ethyl ether	Ave	1.447	1.335		9.22	10.0	-7.8	30.0
Acrolein	Ave	0.5971	0.6676		11.2	10.0	11.8	30.0
Freon TF	Ave	2.630	2.785		10.6	10.0	5.9	30.0
1,1-Dichloroethene	Ave	1.316	1.316		10.0	10.0	0.0	30.0
Acetone	Ave	4.011	3.528		8.79	10.0	-12.0	30.0
Isopropyl alcohol	Ave	3.913	3.055		7.81	10.0	-21.9	30.0
Carbon disulfide	Ave	4.404	4.218		9.58	10.0	-4.2	30.0
3-Chloropropene	Ave	3.467	3.136		9.04	10.0	-9.5	30.0
Acetonitrile	Ave	2.247	1.768		7.87	10.0	-21.3	30.0
Methylene Chloride	Ave	2.867	2.437		8.50	10.0	-15.0	30.0
tert-Butyl alcohol	Ave	4.230	3.816		9.02	10.0	-9.8	30.0
Methyl tert-butyl ether	Ave	5.166	5.273		10.2	10.0	2.1	30.0
trans-1,2-Dichloroethene	Ave	2.933	2.779		9.47	10.0	-5.2	30.0
Acrylonitrile	Ave	1.749	1.465		8.37	10.0	-16.3	30.0
n-Hexane	Ave	3.444	3.021		8.77	10.0	-12.3	30.0
1,1-Dichloroethane	Ave	3.768	3.442		9.13	10.0	-8.7	30.0
Vinyl acetate	Ave	7.438	6.413		8.62	10.0	-13.8	30.0
Methyl Ethyl Ketone	Ave	0.9852	0.8579		8.71	10.0	-12.9	30.0
cis-1,2-Dichloroethene	Ave	1.531	1.520		9.92	10.0	-0.7	30.0
Ethyl acetate	Ave	0.1297	0.1298		10.0	10.0	0.0	30.0
Tetrahydrofuran	Ave	0.6428	0.5362		8.34	10.0	-16.6	30.0
Chloroform	Ave	3.418	3.528		10.3	10.0	3.2	30.0
1,1,1-Trichloroethane	Ave	0.6129	0.6913		11.3	10.0	12.8	30.0
Cyclohexane	Ave	0.4249	0.4170		9.81	10.0	-1.9	30.0
Carbon tetrachloride	Ave	0.5246	0.6844		13.0	10.0	30.5*	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab Sample ID: CCVIS 200-93391/2 Calibration Date: 08/31/2015 10:06

Instrument ID: CHB.i Calib Start Date: 08/03/2015 19:01

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/04/2015 11:14

Lab File ID: 15528_02.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,2,4-Trimethylpentane	Ave	2.184	1.962		8.98	10.0	-10.1	30.0
Benzene	Ave	1.052	0.9839		9.35	10.0	-6.5	30.0
1,2-Dichloroethane	Ave	0.5049	0.5524		10.9	10.0	9.4	30.0
n-Heptane	Ave	1.068	0.8880		8.31	10.0	-16.9	30.0
n-Butanol	Ave	0.2848	0.2197		7.71	10.0	-22.9	30.0
Trichloroethene	Ave	0.3935	0.3952		10.0	10.0	0.4	30.0
1,2-Dichloropropane	Ave	0.4772	0.4200		8.80	10.0	-12.0	30.0
Methyl methacrylate	Ave	0.4169	0.3898		9.35	10.0	-6.5	30.0
1,4-Dioxane	Ave	0.1589	0.1341		8.44	10.0	-15.6	30.0
Dibromomethane	Ave	0.2725	0.2739		10.0	10.0	0.5	30.0
Bromodichloromethane	Ave	0.7033	0.7675		10.9	10.0	9.1	30.0
cis-1,3-Dichloropropene	Ave	0.6026	0.5854		9.71	10.0	-2.8	30.0
methyl isobutyl ketone	Ave	1.355	1.186		8.75	10.0	-12.4	30.0
n-Octane	Ave	1.490	1.269		8.51	10.0	-14.9	30.0
Toluene	Ave	0.7856	0.7649		9.73	10.0	-2.6	30.0
trans-1,3-Dichloropropene	Ave	0.6074	0.6276		10.3	10.0	3.3	30.0
1,1,2-Trichloroethane	Ave	0.4088	0.3986		9.75	10.0	-2.5	30.0
Tetrachloroethene	Ave	0.4722	0.4944		10.5	10.0	4.7	30.0
Methyl Butyl Ketone (2-Hexanone)	Ave	1.511	1.352		8.94	10.0	-10.5	30.0
Dibromochloromethane	Ave	0.5945	0.7254		12.2	10.0	22.0	30.0
1,2-Dibromoethane	Ave	0.6099	0.6334		10.4	10.0	3.9	30.0
Chlorobenzene	Ave	0.9188	0.9237		10.1	10.0	0.5	30.0
Ethylbenzene	Ave	1.753	1.761		10.0	10.0	0.5	30.0
n-Nonane	Ave	1.245	1.106		8.88	10.0	-11.2	30.0
m,p-Xylene	Ave	0.6080	0.6231		20.5	20.0	2.5	30.0
Xylene, o-	Ave	0.6085	0.6164		10.1	10.0	1.3	30.0
Styrene	Ave	0.9763	1.006		10.3	10.0	3.0	30.0
Bromoform	Ave	0.4579	0.6470		14.1	10.0	41.3*	30.0
Cumene	Ave	1.809	1.907		10.5	10.0	5.4	30.0
1,1,2,2-Tetrachloroethane	Ave	1.060	1.036		9.77	10.0	-2.3	30.0
n-Propylbenzene	Ave	2.438	2.490		10.2	10.0	2.1	30.0
1,2,3-Trichloropropane	Ave	0.9280	0.9026		9.72	10.0	-2.7	30.0
n-Decane	Ave	1.599	1.471		9.20	10.0	-8.0	30.0
4-Ethyltoluene	Ave	1.809	1.928		10.7	10.0	6.5	30.0
2-Chlorotoluene	Ave	1.655	1.713		10.3	10.0	3.5	30.0
1,3,5-Trimethylbenzene	Ave	1.535	1.620		10.6	10.0	5.6	30.0
Alpha Methyl Styrene	Ave	0.6887	0.7475		10.9	10.0	8.5	30.0
tert-Butylbenzene	Ave	1.328	1.448		10.9	10.0	9.0	30.0
1,2,4-Trimethylbenzene	Ave	1.534	1.637		10.7	10.0	6.7	30.0
sec-Butylbenzene	Ave	2.202	2.319		10.5	10.0	5.3	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Lab Sample ID: CCVIS 200-93391/2 Calibration Date: 08/31/2015 10:06

Instrument ID: CHB.i Calib Start Date: 08/03/2015 19:01

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/04/2015 11:14

Lab File ID: 15528_02.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Isopropyltoluene	Ave	1.704	1.876		11.0	10.0	10.1	30.0
1,3-Dichlorobenzene	Ave	0.8582	0.9289		10.8	10.0	8.2	30.0
1,4-Dichlorobenzene	Ave	0.8507	0.9283		10.9	10.0	9.1	30.0
Benzyl chloride	Ave	1.442	1.643		11.4	10.0	13.9	30.0
n-Undecane	Ave	1.695	1.520		8.97	10.0	-10.3	30.0
n-Butylbenzene	Ave	1.888	2.019		10.7	10.0	6.9	30.0
1,2-Dichlorobenzene	Ave	0.8081	0.8707		10.8	10.0	7.8	30.0
n-Dodecane	Ave	1.614	1.466		9.08	10.0	-9.2	30.0
1,2,4-Trichlorobenzene	Ave	0.5830	0.5727		9.82	10.0	-1.8	30.0
Hexachlorobutadiene	Ave	0.5400	0.5341		9.89	10.0	-1.1	30.0
Naphthalene	Ave	1.430	1.454		10.2	10.0	1.6	30.0
1,2,3-Trichlorobenzene	Ave	0.4904	0.5196		10.6	10.0	6.0	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab Sample ID: ICV 200-92714/15 Calibration Date: 08/14/2015 02:21

Instrument ID: CHW.i Calib Start Date: 08/13/2015 17:16

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/13/2015 23:55

Lab File ID: 15276_015.d Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Propylene	Ave	0.6273	0.5898		9.40	10.0	-6.0	30.0
Dichlorodifluoromethane	Ave	3.222	3.055		9.48	10.0	-5.2	30.0
Freon 22	Ave	1.451	1.352		9.32	10.0	-6.8	30.0
1,2-Dichlorotetrafluoroethane	Ave	3.204	3.368		10.5	10.0	5.1	30.0
Chloromethane	Ave	0.8362	0.7570		9.05	10.0	-9.5	30.0
n-Butane	Ave	1.219	1.112		9.12	10.0	-8.8	30.0
Vinyl chloride	Ave	0.9676	0.9081		9.38	10.0	-6.2	30.0
1,3-Butadiene	Ave	0.6700	0.6096		9.10	10.0	-9.0	30.0
Bromomethane	Ave	1.019	0.9410		9.23	10.0	-7.7	30.0
Chloroethane	Ave	0.6159	0.5868		9.52	10.0	-4.7	30.0
Isopentane	Ave	1.030	1.024		9.94	10.0	-0.6	30.0
Bromoethene(Vinyl Bromide)	Ave	1.431	1.362		9.51	10.0	-4.8	30.0
Trichlorofluoromethane	Ave	3.549	3.313		9.33	10.0	-6.7	30.0
n-Pentane	Ave	1.515	1.554		10.3	10.0	2.6	30.0
Ethanol	Ave	0.2925	0.2382		12.2	15.0	-18.6	30.0
Ethyl ether	Ave	0.7365	0.7710		10.5	10.0	4.7	30.0
Acrolein	Ave	0.2308	0.3528		15.3	10.0	52.9*	30.0
Freon TF	Ave	2.672	2.562		9.59	10.0	-4.1	30.0
1,1-Dichloroethene	Ave	1.317	1.256		9.54	10.0	-4.6	30.0
Acetone	Ave	1.297	1.161		8.95	10.0	-10.5	30.0
Carbon disulfide	Ave	3.109	3.419		11.0	10.0	10.0	30.0
Isopropyl alcohol	Ave	1.121	0.9342		8.33	10.0	-16.7	30.0
3-Chloropropene	Ave	0.9611	0.9571		9.96	10.0	-0.4	30.0
Acetonitrile	Ave	0.5852	0.5504		9.40	10.0	-5.9	30.0
Methylene Chloride	Ave	1.009	0.9304		9.21	10.0	-7.8	30.0
tert-Butyl alcohol	Ave	1.777	1.596		8.98	10.0	-10.2	30.0
Methyl tert-butyl ether	Ave	3.416	3.298		9.65	10.0	-3.5	30.0
trans-1,2-Dichloroethene	Ave	1.517	1.519		10.0	10.0	0.2	30.0
Acrylonitrile	Ave	0.6919	0.6850		9.90	10.0	-1.0	30.0
n-Hexane	Ave	1.633	1.646		10.1	10.0	0.8	30.0
1,1-Dichloroethane	Ave	1.980	1.886		9.53	10.0	-4.7	30.0
Vinyl acetate	Ave	1.962	1.879		9.57	10.0	-4.3	30.0
cis-1,2-Dichloroethene	Ave	1.511	1.427		9.44	10.0	-5.5	30.0
Methyl Ethyl Ketone	Ave	0.6554	0.5931		9.05	10.0	-9.5	30.0
Ethyl acetate	Ave	0.1158	0.1240		10.7	10.0	7.1	30.0
Tetrahydrofuran	Ave	0.1998	0.1884		9.43	10.0	-5.7	30.0
Chloroform	Ave	2.637	2.511		9.52	10.0	-4.8	30.0
Cyclohexane	Ave	0.3895	0.3738		9.60	10.0	-4.0	30.0
1,1,1-Trichloroethane	Ave	0.6052	0.5690		9.40	10.0	-6.0	30.0
Carbon tetrachloride	Ave	0.6122	0.6225		10.2	10.0	1.7	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab Sample ID: ICV 200-92714/15 Calibration Date: 08/14/2015 02:21

Instrument ID: CHW.i Calib Start Date: 08/13/2015 17:16

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/13/2015 23:55

Lab File ID: 15276_015.d Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,2,4-Trimethylpentane	Ave	1.121	1.044		9.31	10.0	-6.9	30.0
Benzene	Ave	0.8603	0.7952		9.24	10.0	-7.6	30.0
1,2-Dichloroethane	Ave	0.3127	0.2923		9.34	10.0	-6.5	30.0
n-Heptane	Ave	0.3520	0.3205		9.11	10.0	-8.9	30.0
n-Butanol	Ave	0.1188	0.1051		8.84	10.0	-11.6	30.0
Trichloroethene	Ave	0.4041	0.3849		9.52	10.0	-4.8	30.0
1,2-Dichloropropane	Ave	0.2781	0.2548		9.16	10.0	-8.4	30.0
Methyl methacrylate	Ave	0.2881	0.2791		9.69	10.0	-3.1	30.0
1,4-Dioxane	Ave	0.1450	0.1173		8.09	10.0	-19.1	30.0
Dibromomethane	Ave	0.5182	0.4610		8.89	10.0	-11.0	30.0
Bromodichloromethane	Ave	0.5981	0.5684		9.50	10.0	-5.0	30.0
cis-1,3-Dichloropropene	Ave	0.4482	0.4309		9.61	10.0	-3.9	30.0
methyl isobutyl ketone	Ave	0.4441	0.3962		8.92	10.0	-10.8	30.0
n-Octane	Ave	0.4695	0.4379		9.32	10.0	-6.7	30.0
Toluene	Ave	0.7210	0.6875		9.53	10.0	-4.6	30.0
trans-1,3-Dichloropropene	Ave	0.4501	0.4423		9.83	10.0	-1.7	30.0
1,1,2-Trichloroethane	Ave	0.3345	0.3192		9.54	10.0	-4.6	30.0
Tetrachloroethene	Ave	0.7817	0.7615		9.74	10.0	-2.6	30.0
Methyl Butyl Ketone (2-Hexanone)	Ave	0.4619	0.4030		8.72	10.0	-12.7	30.0
Dibromochloromethane	Ave	0.7551	0.7718		10.2	10.0	2.2	30.0
1,2-Dibromoethane	Ave	0.6815	0.6575		9.65	10.0	-3.5	30.0
Chlorobenzene	Ave	1.070	1.019		9.53	10.0	-4.7	30.0
Ethylbenzene	Ave	1.567	1.515		9.66	10.0	-3.4	30.0
n-Nonane	Ave	0.5737	0.5461		9.52	10.0	-4.8	30.0
m,p-Xylene	Ave	0.6493	0.6289		19.4	20.0	-3.1	30.0
Xylene, o-	Ave	0.6696	0.6466		9.65	10.0	-3.4	30.0
Styrene	Ave	1.025	1.014		9.89	10.0	-1.1	30.0
Bromoform	Ave	0.7104	0.8923		12.6	10.0	25.6	30.0
Cumene	Ave	1.908	1.839		9.64	10.0	-3.6	30.0
1,1,2,2-Tetrachloroethane	Ave	0.8877	0.8787		9.90	10.0	-1.0	30.0
n-Propylbenzene	Ave	2.198	2.129		9.69	10.0	-3.1	30.0
1,2,3-Trichloropropane	Ave	0.6540	0.6227		9.52	10.0	-4.8	30.0
n-Decane	Ave	0.7786	0.7572		9.72	10.0	-2.7	30.0
4-Ethyltoluene	Ave	1.957	1.948		9.95	10.0	-0.5	30.0
2-Chlorotoluene	Ave	1.572	1.503		9.56	10.0	-4.4	30.0
1,3,5-Trimethylbenzene	Ave	1.667	1.615		9.68	10.0	-3.1	30.0
Alpha Methyl Styrene	Ave	0.8826	0.9134		10.3	10.0	3.5	30.0
tert-Butylbenzene	Ave	1.678	1.620		9.65	10.0	-3.5	30.0
1,2,4-Trimethylbenzene	Ave	1.683	1.622		9.64	10.0	-3.6	30.0
sec-Butylbenzene	Ave	2.411	2.339		9.70	10.0	-3.0	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab Sample ID: ICV 200-92714/15 Calibration Date: 08/14/2015 02:21

Instrument ID: CHW.i Calib Start Date: 08/13/2015 17:16

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/13/2015 23:55

Lab File ID: 15276_015.d Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Isopropyltoluene	Ave	2.126	2.078		9.77	10.0	-2.3	30.0
1,3-Dichlorobenzene	Ave	1.302	1.272		9.77	10.0	-2.3	30.0
1,4-Dichlorobenzene	Ave	1.298	1.277		9.83	10.0	-1.7	30.0
Benzyl chloride	Ave	1.243	1.347		10.8	10.0	8.3	30.0
n-Undecane	Ave	0.7997	0.8302		10.4	10.0	3.8	30.0
n-Butylbenzene	Ave	1.746	1.680		9.62	10.0	-3.8	30.0
1,2-Dichlorobenzene	Ave	1.264	1.222		9.67	10.0	-3.3	30.0
n-Dodecane	Ave	0.8015	0.7843		9.78	10.0	-2.2	30.0
1,2,4-Trichlorobenzene	Ave	1.072	0.9909		9.24	10.0	-7.6	30.0
Hexachlorobutadiene	Ave	1.016	0.9561		9.41	10.0	-5.9	30.0
Naphthalene	Ave	2.040	1.835		9.00	10.0	-10.0	30.0
1,2,3-Trichlorobenzene	Ave	0.9719	0.8826		9.08	10.0	-9.2	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab Sample ID: CCVIS 200-93630/2 Calibration Date: 09/04/2015 10:18

Instrument ID: CHW.i Calib Start Date: 08/13/2015 17:16

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/13/2015 23:55

Lab File ID: 15622_002.d Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Propylene	Ave	0.6273	0.6837		10.9	10.0	9.0	30.0
Dichlorodifluoromethane	Ave	3.222	3.624		11.2	10.0	12.5	30.0
Freon 22	Ave	1.451	1.579		10.9	10.0	8.8	30.0
1,2-Dichlorotetrafluoroethane	Ave	3.204	3.430		10.7	10.0	7.0	30.0
Chloromethane	Ave	0.8362	0.8751		10.5	10.0	4.7	30.0
n-Butane	Ave	1.219	1.085		8.90	10.0	-11.0	30.0
Vinyl chloride	Ave	0.9676	0.8803		9.10	10.0	-9.0	30.0
1,3-Butadiene	Ave	0.6700	0.5665		8.45	10.0	-15.4	30.0
Bromomethane	Ave	1.019	0.8932		8.76	10.0	-12.4	30.0
Chloroethane	Ave	0.6159	0.6371		10.3	10.0	3.4	30.0
Isopentane	Ave	1.030	1.007		9.77	10.0	-2.3	30.0
Bromoethene(Vinyl Bromide)	Ave	1.431	1.482		10.4	10.0	3.5	30.0
Trichlorofluoromethane	Ave	3.549	3.818		10.8	10.0	7.6	30.0
n-Pentane	Ave	1.515	1.485		9.80	10.0	-1.9	30.0
Ethanol	Ave	0.2925	0.3399		17.4	15.0	16.2	30.0
Ethyl ether	Ave	0.7365	0.7316		9.93	10.0	-0.7	30.0
Acrolein	Ave	0.2308	0.2999		13.0	10.0	29.9	30.0
Freon TF	Ave	2.672	2.763		10.3	10.0	3.4	30.0
1,1-Dichloroethene	Ave	1.317	1.347		10.2	10.0	2.3	30.0
Acetone	Ave	1.297	1.218		9.39	10.0	-6.1	30.0
Carbon disulfide	Ave	3.109	3.154		10.1	10.0	1.4	30.0
Isopropyl alcohol	Ave	1.121	1.011		9.01	10.0	-9.9	30.0
3-Chloropropene	Ave	0.9611	1.013		10.5	10.0	5.4	30.0
Acetonitrile	Ave	0.5852	0.5311		9.07	10.0	-9.2	30.0
Methylene Chloride	Ave	1.009	0.9822		9.73	10.0	-2.7	30.0
tert-Butyl alcohol	Ave	1.777	1.693		9.52	10.0	-4.8	30.0
Methyl tert-butyl ether	Ave	3.416	3.480		10.2	10.0	1.9	30.0
trans-1,2-Dichloroethene	Ave	1.517	1.531		10.1	10.0	0.9	30.0
Acrylonitrile	Ave	0.6919	0.6667		9.63	10.0	-3.6	30.0
n-Hexane	Ave	1.633	1.562		9.56	10.0	-4.3	30.0
1,1-Dichloroethane	Ave	1.980	1.977		9.99	10.0	-0.1	30.0
Vinyl acetate	Ave	1.962	1.931		9.84	10.0	-1.6	30.0
cis-1,2-Dichloroethene	Ave	1.511	1.492		9.88	10.0	-1.2	30.0
Methyl Ethyl Ketone	Ave	0.6554	0.6030		9.20	10.0	-8.0	30.0
Ethyl acetate	Ave	0.1158	0.1158		10.0	10.0	0.0	30.0
Tetrahydrofuran	Ave	0.1998	0.1953		9.77	10.0	-2.3	30.0
Chloroform	Ave	2.637	2.711		10.3	10.0	2.8	30.0
Cyclohexane	Ave	0.3895	0.3941		10.1	10.0	1.2	30.0
1,1,1-Trichloroethane	Ave	0.6052	0.6559		10.8	10.0	8.4	30.0
Carbon tetrachloride	Ave	0.6122	0.7296		11.9	10.0	19.2	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab Sample ID: CCVIS 200-93630/2 Calibration Date: 09/04/2015 10:18

Instrument ID: CHW.i Calib Start Date: 08/13/2015 17:16

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/13/2015 23:55

Lab File ID: 15622_002.d Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,2,4-Trimethylpentane	Ave	1.121	1.122		10.0	10.0	0.0	30.0
Benzene	Ave	0.8603	0.8638		10.0	10.0	0.4	30.0
1,2-Dichloroethane	Ave	0.3127	0.3355		10.7	10.0	7.3	30.0
n-Heptane	Ave	0.3520	0.3464		9.84	10.0	-1.6	30.0
n-Butanol	Ave	0.1188	0.1033		8.69	10.0	-13.1	30.0
Trichloroethene	Ave	0.4041	0.4223		10.4	10.0	4.5	30.0
1,2-Dichloropropane	Ave	0.2781	0.2788		10.0	10.0	0.2	30.0
Methyl methacrylate	Ave	0.2881	0.2912		10.1	10.0	1.1	30.0
1,4-Dioxane	Ave	0.1450	0.1312		9.05	10.0	-9.5	30.0
Dibromomethane	Ave	0.5182	0.5275		10.2	10.0	1.8	30.0
Bromodichloromethane	Ave	0.5981	0.6513		10.9	10.0	8.9	30.0
cis-1,3-Dichloropropene	Ave	0.4482	0.4648		10.4	10.0	3.7	30.0
methyl isobutyl ketone	Ave	0.4441	0.4433		9.98	10.0	-0.2	30.0
n-Octane	Ave	0.4695	0.4650		9.90	10.0	-1.0	30.0
Toluene	Ave	0.7210	0.7456		10.3	10.0	3.4	30.0
trans-1,3-Dichloropropene	Ave	0.4501	0.4908		10.9	10.0	9.1	30.0
1,1,2-Trichloroethane	Ave	0.3345	0.3458		10.3	10.0	3.4	30.0
Tetrachloroethene	Ave	0.7817	0.8489		10.9	10.0	8.6	30.0
Methyl Butyl Ketone (2-Hexanone)	Ave	0.4619	0.4703		10.2	10.0	1.8	30.0
Dibromochloromethane	Ave	0.7551	0.9217		12.2	10.0	22.1	30.0
1,2-Dibromoethane	Ave	0.6815	0.7254		10.6	10.0	6.4	30.0
Chlorobenzene	Ave	1.070	1.127		10.5	10.0	5.4	30.0
Ethylbenzene	Ave	1.567	1.658		10.6	10.0	5.8	30.0
n-Nonane	Ave	0.5737	0.5894		10.3	10.0	2.7	30.0
m,p-Xylene	Ave	0.6493	0.6930		21.3	20.0	6.7	30.0
Xylene, o-	Ave	0.6696	0.7163		10.7	10.0	7.0	30.0
Styrene	Ave	1.025	1.119		10.9	10.0	9.2	30.0
Bromoform	Ave	0.7104	1.045		14.7	10.0	47.1*	30.0
Cumene	Ave	1.908	2.072		10.9	10.0	8.6	30.0
1,1,2,2-Tetrachloroethane	Ave	0.8877	0.9771		11.0	10.0	10.1	30.0
n-Propylbenzene	Ave	2.198	2.432		11.1	10.0	10.7	30.0
1,2,3-Trichloropropane	Ave	0.6540	0.7238		11.1	10.0	10.7	30.0
n-Decane	Ave	0.7786	0.8504		10.9	10.0	9.2	30.0
4-Ethyltoluene	Ave	1.957	2.192		11.2	10.0	12.0	30.0
2-Chlorotoluene	Ave	1.572	1.737		11.0	10.0	10.5	30.0
1,3,5-Trimethylbenzene	Ave	1.667	1.861		11.2	10.0	11.6	30.0
Alpha Methyl Styrene	Ave	0.8826	1.032		11.7	10.0	17.0	30.0
tert-Butylbenzene	Ave	1.678	1.889		11.3	10.0	12.6	30.0
1,2,4-Trimethylbenzene	Ave	1.683	1.883		11.2	10.0	11.9	30.0
sec-Butylbenzene	Ave	2.411	2.699		11.2	10.0	12.0	30.0

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Lab Sample ID: CCVIS 200-93630/2 Calibration Date: 09/04/2015 10:18

Instrument ID: CHW.i Calib Start Date: 08/13/2015 17:16

GC Column: RTX-624 ID: 0.32(mm) Calib End Date: 08/13/2015 23:55

Lab File ID: 15622_002.d Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Isopropyltoluene	Ave	2.126	2.401		11.3	10.0	13.0	30.0
1,3-Dichlorobenzene	Ave	1.302	1.489		11.4	10.0	14.4	30.0
1,4-Dichlorobenzene	Ave	1.298	1.495		11.5	10.0	15.1	30.0
Benzyl chloride	Ave	1.243	1.640		13.2	10.0	31.9*	30.0
n-Undecane	Ave	0.7997	0.9212		11.5	10.0	15.2	30.0
n-Butylbenzene	Ave	1.746	1.962		11.2	10.0	12.4	30.0
1,2-Dichlorobenzene	Ave	1.264	1.432		11.3	10.0	13.3	30.0
n-Dodecane	Ave	0.8015	0.8963		11.2	10.0	11.8	30.0
1,2,4-Trichlorobenzene	Ave	1.072	1.197		11.2	10.0	11.7	30.0
Hexachlorobutadiene	Ave	1.016	1.103		10.9	10.0	8.6	30.0
Naphthalene	Ave	2.040	2.382		11.7	10.0	16.8	30.0
1,2,3-Trichlorobenzene	Ave	0.9719	1.087		11.2	10.0	11.9	30.0

AIR - GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Instrument ID: CHB.i Start Date: 08/03/2015 15:34

Analysis Batch Number: 92213 End Date: 08/04/2015 14:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 200-92213/1		08/03/2015 15:34	1	15073_01.D	RTX-624 0.32(mm)
VIBLK 200-92213/2		08/03/2015 16:24	1		RTX-624 0.32(mm)
VIBLK 200-92213/3		08/03/2015 17:17	1		RTX-624 0.32(mm)
ZZZZZ		08/03/2015 18:09	1		RTX-624 0.32(mm)
IC 200-92213/5		08/03/2015 19:01	1	15073_05.D	RTX-624 0.32(mm)
IC 200-92213/6		08/03/2015 19:54	1	15073_06.D	RTX-624 0.32(mm)
IC 200-92213/7		08/03/2015 20:46	1	15073_07.D	RTX-624 0.32(mm)
ZZZZZ		08/03/2015 21:38	1		RTX-624 0.32(mm)
IC 200-92213/9		08/03/2015 22:30	1	15073_09.D	RTX-624 0.32(mm)
IC 200-92213/10		08/03/2015 23:22	1	15073_10.D	RTX-624 0.32(mm)
IC 200-92213/11		08/04/2015 00:14	1	15073_11.D	RTX-624 0.32(mm)
VIBLK 200-92213/12		08/04/2015 01:06	1		RTX-624 0.32(mm)
VIBLK 200-92213/13		08/04/2015 01:58	1		RTX-624 0.32(mm)
ZZZZZ		08/04/2015 02:51	1		RTX-624 0.32(mm)
ZZZZZ		08/04/2015 03:43	1		RTX-624 0.32(mm)
ZZZZZ		08/04/2015 04:35	1		RTX-624 0.32(mm)
ZZZZZ		08/04/2015 05:27	1		RTX-624 0.32(mm)
VIBLK 200-92213/18		08/04/2015 09:29	1		RTX-624 0.32(mm)
IC 200-92213/19		08/04/2015 10:21	1	15073_19.D	RTX-624 0.32(mm)
ICIS 200-92213/20		08/04/2015 11:14	1	15073_20.D	RTX-624 0.32(mm)
ZZZZZ		08/04/2015 12:08	1		RTX-624 0.32(mm)
VIBLK 200-92213/22		08/04/2015 13:00	1		RTX-624 0.32(mm)
ZZZZZ		08/04/2015 13:52	1		RTX-624 0.32(mm)
ICV 200-92213/24		08/04/2015 14:48	1	15073_24.D	RTX-624 0.32(mm)

AIR - GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 200-29497-1

SDG No.:

Instrument ID: CHB.i Start Date: 08/31/2015 09:12

Analysis Batch Number: 93391 End Date: 08/31/2015 18:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 200-93391/1		08/31/2015 09:12	1	15528_01.D	RTX-624 0.32(mm)
CCVIS 200-93391/2		08/31/2015 10:06	1	15528_02.D	RTX-624 0.32(mm)
LCS 200-93391/3		08/31/2015 10:58	1	15528_03.D	RTX-624 0.32(mm)
MB 200-93391/4		08/31/2015 11:55	1	15528_04.D	RTX-624 0.32(mm)
ZZZZZ		08/31/2015 13:51	1		RTX-624 0.32(mm)
ZZZZZ		08/31/2015 14:53	0.2		RTX-624 0.32(mm)
200-29497-10	5150	08/31/2015 15:55	0.2	15528_07.D	RTX-624 0.32(mm)
ZZZZZ		08/31/2015 16:58	0.2		RTX-624 0.32(mm)
ZZZZZ		08/31/2015 18:00	0.2		RTX-624 0.32(mm)

AIR - GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Instrument ID: CHW.i Start Date: 08/13/2015 14:44

Analysis Batch Number: 92714 End Date: 08/14/2015 04:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 200-92714/1		08/13/2015 14:44	1	15276_001.d	RTX-624 0.32(mm)
VIBLK 200-92714/2		08/13/2015 15:39	1		RTX-624 0.32(mm)
VIBLK 200-92714/3		08/13/2015 16:27	1		RTX-624 0.32(mm)
IC 200-92714/4		08/13/2015 17:16	1	15276_004.d	RTX-624 0.32(mm)
ZZZZZ		08/13/2015 18:04	1		RTX-624 0.32(mm)
IC 200-92714/6		08/13/2015 18:52	1	15276_006.d	RTX-624 0.32(mm)
IC 200-92714/7		08/13/2015 19:42	1	15276_007.d	RTX-624 0.32(mm)
IC 200-92714/8		08/13/2015 20:32	1	15276_008.d	RTX-624 0.32(mm)
ICIS 200-92714/9		08/13/2015 21:22	1	15276_009.d	RTX-624 0.32(mm)
IC 200-92714/10		08/13/2015 22:14	1	15276_010.d	RTX-624 0.32(mm)
IC 200-92714/11		08/13/2015 23:05	1	15276_011.d	RTX-624 0.32(mm)
IC 200-92714/12		08/13/2015 23:55	1	15276_012.d	RTX-624 0.32(mm)
VIBLK 200-92714/13		08/14/2015 00:44	1		RTX-624 0.32(mm)
VIBLK 200-92714/14		08/14/2015 01:33	1		RTX-624 0.32(mm)
ICV 200-92714/15		08/14/2015 02:21	1	15276_015.d	RTX-624 0.32(mm)
ZZZZZ		08/14/2015 03:11	1		RTX-624 0.32(mm)
ZZZZZ		08/14/2015 04:00	1		RTX-624 0.32(mm)

AIR - GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 200-29619-1

SDG No.:

Instrument ID: CHW.i Start Date: 09/04/2015 09:28

Analysis Batch Number: 93630 End Date: 09/05/2015 07:46

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 200-93630/1		09/04/2015 09:28	1	15622_001.d	RTX-624 0.32(mm)
CCVIS 200-93630/2		09/04/2015 10:18	1	15622_002.d	RTX-624 0.32(mm)
LCS 200-93630/3		09/04/2015 11:10	1	15622_003.d	RTX-624 0.32(mm)
MB 200-93630/4		09/04/2015 11:59	1	15622_004.d	RTX-624 0.32(mm)
ZZZZZ		09/04/2015 13:09	1		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 13:59	1		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 14:50	1		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 15:38	1.5		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 16:27	1.5		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 17:14	53.6		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 18:02	18.8		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 18:50	18.8		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 19:38	2.99		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 20:26	199		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 21:14	199		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 22:02	10		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 22:50	10		RTX-624 0.32(mm)
ZZZZZ		09/04/2015 23:39	10		RTX-624 0.32(mm)
ZZZZZ		09/05/2015 00:29	1		RTX-624 0.32(mm)
ZZZZZ		09/05/2015 01:16	2.99		RTX-624 0.32(mm)
ZZZZZ		09/05/2015 02:04	28.1		RTX-624 0.32(mm)
ZZZZZ		09/05/2015 02:57	1		RTX-624 0.32(mm)
ZZZZZ		09/05/2015 03:46	1		RTX-624 0.32(mm)
ZZZZZ		09/05/2015 04:37	1		RTX-624 0.32(mm)
ZZZZZ		09/05/2015 05:27	1		RTX-624 0.32(mm)
200-29619-9	4313	09/05/2015 06:35	0.2	15622_026.d	RTX-624 0.32(mm)
ZZZZZ		09/05/2015 07:46	0.2		RTX-624 0.32(mm)

Shipping and Receiving Documents

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Becky Kingl	Samples Collected By: E MAtamoros	1 of 1 COCs
Company: AKRF	Phone: 914 922 2362		
Address: 34 South Broadway Ste 401	Email: RKINAL@AKRF.COM		
City/State/Zip White Plains, NY 10601			
Phone: 914 922 2362	Site Contact: E MAtamoros		
FAX:	TA Contact:		
Project Name: Amys Kitchen	Analysis Turnaround Time		
Site: Yer Hage	Standard (Specify) X		
PO # 40525 - 200 AB	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	MA-APH	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SV-1	10/5/15	1530	1727	-30	-5	2581	4927	X											
SV-2	10/5/15	1555	1742	-29	-7	4754	2968	X											
SV-3	10/5/15	1150	1348	-30	-6	3993	3460	X											
SV-4	10/5/15	1315	1515	-30	-5	3253	4185	X											
SV-5	10/5/15	1233	1428	-30	-9	5207	4285	X											

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (inches of Hg)	Interior	Ambient	
Start			
Stop			

200-30148 Chain of Custody

Special Instructions/QC Requirements & Comments:

Samples Shipped by:	Date/Time:	Samples Received by:	10/5 10/9/15
Samples Relinquished by: Nancy C. Green	Date/Time: 10/8/15 1125	Received by: Albert Kramsky	
Relinquished by: Nancy Albert Kramsky	Date/Time: 10/8/15 1500	Received by:	

Lab Use Only Shipper Name: Opened by: Condition:

10/15/2015

ORIGIN ID:OXCA (203) 929-8140
JACKIE TRUDELL
TESTAMERICA
12 PROGRESS DRIVE

SHELTON, CT 06484
UNITED STATES US

SHIP DATE: 08OCT15
ACTWGT: 33.6 LB
CAD: 688819/CAFE2807

BILL RECIPIENT

TO SAMPLE RECEIVING
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 660-1990 REF:
INV:
PO: DEPT:

FedEx Express

1 of 2

TRK# 0201 4501 3071 5919

FRI - 09 OCT AA
STANDARD OVERNIGHT

MASTER

E6 BTVA

05403
VT-US BTV

Part # 156148-434 NRIT V3 06-09

ORIGIN ID:OXCA (203) 929-8140
JACKIE TRUDELL
TESTAMERICA
12 PROGRESS DRIVE

SHELTON, CT 06484
UNITED STATES US

SHIP DATE: 08OCT15
ACTWGT: 27.6 LB
CAD: 688819/CAFE2807

BILL RECIPIENT

SAMPLE RECEIVING
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 660-1990 REF:
INV:
PO: DEPT:

FedEx Express

2 of 2

MPS# 0263 4501 3071 5920

FRI - 09 OCT AA
STANDARD OVERNIGHT

Mstr# 4501 3071 5919 0201

E6 BTVA

05403
VT-US BTV

Part # 156148-434 NRIT V3 06-09

Login Sample Receipt Checklist

Client: AKRF Inc

Job Number: 200-30148-1
SDG Number: 200-30148

Login Number: 30148
List Number: 1
Creator: Callahan, Christopher G

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	282921, 920
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	Thermal preservation not required.
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lipoff Wells Property
Goshen, New York

Phase I Environmental Site Assessment

AKRF Project Number: 40525

Prepared for:

Amy's Kitchen, Inc.
1650 Corporate Circle, Suite 200
Petaluma, CA 94955

Prepared by:

AKRF, Inc.
34 South Broadway, Suite 314
White Plains, NY 10601
914-949-7336

APRIL 2016

EXECUTIVE SUMMARY

AKRF, Inc. (AKRF) was retained by Amy's Kitchen Inc. to perform a Phase I Environmental Site Assessment (ESA) of an approximately 71.1-acre undeveloped property located at 12 Echo Lake Road, Goshen, Orange County, New York (the Subject Property or the Property). The Town of Goshen identified the Subject Property as Parcel Number 12-1-1.41. The Subject Property is zoned by the Town of Goshen as Rural (RU). The Wallkill River is located west of the Subject Property. Echo Lake Road followed by the Orange County Heritage Trail, the Ver Hage Property, and the former Al Turi Landfill are located south of the Subject Property. The Strong Farm Property is located north of the Subject Property. Private residences are located east of the Subject Property. The greater surrounding area site is predominantly forested, agricultural, and residential. This Phase I ESA was performed in accordance with customary principles and practices in the environmental consulting industry, and in conformance with the scope and limitations of ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, this practice are described in Sections 9.0, 10.0, and 11.0 of this report.

The main objective of the Phase I ESA is to identify recognized environmental conditions (RECs) and environmental concerns associated with the Subject Property resulting from past or current site usage and usage of neighboring properties. RECs are defined in ASTM International (ASTM) Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property. Note that controlled recognized environmental conditions (CRECs) are considered to be RECs and are listed in the Executive Summary and Conclusions of this Phase I ESA. The regulatory databases, historical aerial photographs, and visual site inspection have indicated that the subject property parcel has historically been and is currently vacant.

This Phase I ESA has revealed the following *de minimis* Condition associated with the Subject Property:

On-Site De Minimis Condition:

- Disturbance was noted on the northern portion of the Property in 1940 and 1942 aerial photographs, and some refuse was noted to be dumped on the southern portion of the Subject Property along Echo Lake Road during the site reconnaissance. Fill of unknown origin and potential further dumping may be associated with these activities.

Other on-site Environmental Concerns (ECs) (outside the scope of 1527-13)

- A review of the New York State Department of Health database indicated that the average level of radon found in basements in the Town of Goshen is 5.16 picocuries/liter, above the USEPA recommended action level is 4.0 picocuries/liter.

It is our understanding that the Property is being considered for a potential conservation easement as part of the proposed Amy's Kitchen/Science of the Soul Development planned for parcels south of Echo Lake Road. Based on the findings of this Phase I ESA and the proposed use of the Property, no further investigation is recommended.

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FIGURES

Figure 1 – Property Location
Figure 2 – Property Detail

APPENDICES

Appendix A – Photographic Documentation
Appendix B – Historical Topographic Maps/Historical Aerial Photographs
Appendix C – Regulatory Records Review
Appendix D – Supporting Documentation
Appendix E – State and Local Records

1.0 INTRODUCTION

AKRF, Inc. (AKRF) was retained by Amy's Kitchen Inc. to perform a Phase I Environmental Site Assessment (ESA) of an approximately 11.8-acre property located at 12 Echo Lake Road, Goshen, Orange County, New York (the Subject Property or the Property). The Town of Goshen identifies the Property as Parcel Number 12-1-1.41. The Subject Property is zoned by the Town of Goshen as Rural (RU). Orange County tax records list the current Property owner as Hudson Valley Area LLC. The Property consists of vacant vegetated land, and is generally bounded by the Wallkill River to the west, Echo Lake Road to the south, the Strong Farm Property to the north, and private residences to the east. The greater surrounding area Subject Property is predominantly forested, agricultural, and residential, with some light industrial uses to the southeast. The scope of services for this assessment included the following:

- Visual observations of the Subject Property and surrounding property were made to identify potential sources or indications of chemical contamination. In addition, readily-observable portions of the properties immediately adjacent to the Subject Property were viewed from public rights-of-way to identify or determine the likelihood of any of the aforementioned potential sources of contamination being present.
- Published geological and groundwater information was obtained from available sources to determine the possibility of contamination from off-site sources.
- A visual inspection of the Subject Property was conducted to identify and evaluate the condition of suspect asbestos-containing materials (ACMs) on-site. No samples of suspect materials were collected for analysis as part of this assessment.
- The property was evaluated for the potential presence of lead-based paint, and the condition of painted surfaces was assessed. No samples were collected for analysis as part of this assessment.
- Historical aerial photographs for the Subject Property and adjacent properties were reviewed to evaluate previous land use.
- The following federal regulatory databases that were reviewed to determine the regulatory status of the Subject Property, adjacent properties, and properties within a predetermined study area include, but were not limited to: National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Resource Conservation and Recovery Act (RCRA) Information System; and RCRA Corrective Action Activity (CORRACTS).
- The following state regulatory databases that were reviewed to determine the regulatory status of the Subject Property, adjacent properties, and properties within a predetermined study area include, but were not limited to: State Hazardous Waste Sites (SHWS); Site Discovery and Assessment Database (SDADB); Leaking Underground Storage Tank (LUST); Leachate and Waste Water Discharge Inventory (CT LWDS); Underground Storage Tank (UST); and Facility and Manifest Data (MANIFEST).
- Freedom of Information Law (FOIL) requests were submitted to the Goshen Town Clerk, Orange County Department of Health, New York State Department of Health (NYSDOH) and New York State Department of Environmental Conservation (NYSDEC) to obtain information likely to be pertinent to this assessment.

2.0 PHYSICAL SITE DESCRIPTION

On June 2, 2015, Ms. Elizabeth Matamoros of AKRF performed a visual inspection of the Subject Property and adjacent properties. At the time of the inspection, the weather was overcast and approximately 65º F with light rain. The Subject Property was inspected for the presence of stained surfaces and soil, drums, leaking pipes, dumping, transformers, and other evidence of hazardous material usage and storage on-site. The Subject Property inspection included an inventory of any active or inactive storage tanks and other stored materials. A Subject Property location map is included as Figure 1. Photographs documenting the Subject Property inspection are included in *Appendix A*.

2.1 General Site Conditions

The Subject Property consists of an approximately 12-acre vacant wooded parcel. Access to the Property was gained by a main entrance gate facing Hartley Road near the southeastern corner of the Subject Property. The Wallkill River is located west of the Subject Property. Echo Lake Road is located south of the Property. The Strong Farm Property (consisting of farmland with related barn structures and a single-family residence) is located north of the Subject Property. Private residences are located east of the Subject Property. The greater surrounding area is predominantly forested, agricultural, and residential, with some light industrial uses to the southeast.

At the time of the Subject Property inspection, the Subject Property was vacant, undeveloped land. High tension transmission lines were observed traversing the Property, generally from the northwest to the southeast, and crossing Echo Lake Road. The Cheechunk Creek, a tributary of the Wallkill River, was noted traversing the Property from the western portion to the southeast. The southeastern area fronting Hartley Road was lined with trees. No access point to the Property was observed along Echo Lake Road, and low barricades separated the Property from the road. No fill ports, vents, or evidence of tanks were observed in visible areas. Evidence of refuse materials, including food wrappers and cans, was noted on the southern portion of the Property along Echo Lake Road. At the time of inspection, the Property was difficult to access due to very wet conditions and a steep drop off from Echo Lake Road. No paths or access points were observed.

2.2 Topography, Geology, and Hydrogeology

Based on reports compiled by the U.S. Geological Survey Goshen and Middletown Quadrangles, the elevation at the Subject Property ranges from approximately 350 feet to 400 feet above the National Geodetic Vertical Datum of 1929 (an approximation of mean sea level) sloping gradually up to the east, and with low points along the Wallkill River to the west, and along the Cheechunk Creek, which traverses the property. Bedrock at the Property is mapped as shale and siltstone. Overlying the bedrock are unconsolidated sediments including alluvium and outwash sand and gravel. The Cheechunk Creek flows through the Property from the southeast corner to the western boundary, where it connects to the Wallkill River. Based on a groundwater resources evaluation conducted at the Property by Miller Hydrogeologic, Inc. in October 2015, groundwater is expected to flow in a westerly direction toward the Wallkill River and Cheechunk Creek. The depth to groundwater is expected to range from approximately 15 to 20 feet below ground surface, with shallower depths adjacent to the River and Creek and at localized topographic lows. Actual water table depth and groundwater flow direction can be affected by many factors including subsurface openings or obstructions, current or past pumping of groundwater (for potable or non-potable uses), past filling, and other factors beyond the scope of this assessment.

2.3 Storage Tanks

No petroleum storage tanks were observed or reported to be present at the Subject Property.

2.4 Polychlorinated Biphenyls (PCBs) and Mercury

Prior to 1979, polychlorinated biphenyls (PCBs) were widely used for their cooling properties in electrical equipment such as transformers, capacitors, switches, voltage regulators, and hydraulic equipment. No suspect PCB-containing materials were observed during inspection.

2.5 Lead-Based Paint

The use of lead-based paint was banned for residential use by the Consumer Products Safety Commission in 1977. The use of lead-based paint in commercial structures was severely restricted by the Consumer Products Safety Commission in 1977. Lead-based paint is potentially hazardous when in a deteriorating condition (i.e., chipped, broken, crumbling, pulverized). Lead is potentially harmful to humans, particularly children, if ingested, inhaled or otherwise absorbed.

No structures that might contain LBP were observed at the Property during the inspection..

2.6 Utilities

Electricity and gas do not currently serve the site; however, high tension power lines traverse the Subject Property. The area is not provided with municipal water and sewer services.

2.7 Waste Management and Chemical Handling

No waste generation or chemical handling and/or storage were noted to be associated with the Subject Property at the time of inspection. Some dumped materials, including cans and miscellaneous trash, were noted alongside Echo Lake Road.

2.8 Radon

Radon is a colorless, odorless gas produced by the radioactive decay of certain elements. The most common sources of radon are igneous and metamorphic rocks containing uranium (such as pitchblende), granite, shale, or phosphate, as well as soils or sediments derived from these parent materials. Radon may also be found in soils contaminated with certain industrial wastes (such as uranium or phosphate mine tailings) or in earth-derived building products which include industrial wastes that contain phosphate slag. In areas where the potential for radon accumulation is high, special ventilation systems may offset potential health hazards.

A review of New York State Department of Health on-line data (https://www.health.ny.gov/environmental/radiological/radon/towns.htm) indicates that the average level of radon found in basements in the Town of Goshen is 5.16 picocuries/liter, which exceeds the USEPA recommended action level is 4.0 picocuries/liter. Of the 74 homes screened in Goshen, 27 had basement radon levels exceeding the USEPA action level.

3.0 ASBESTOS-CONTAINING MATERIALS (ACM)

Asbestos, a known human carcinogen, is a generic name assigned to a group of naturally occurring minerals exhibiting high tensile strength and possessing excellent fire resistance and insulating properties. These minerals include chrysotile, amosite, crocidolite, actinolite, tremolite, and anthophyllite. Asbestos is commonly found as a component of building materials including: thermal system insulation (TSI), pipe insulation, spray-applied fireproofing, spray- or trowel-applied surfacing materials, vinyl asbestos floor

tiles and sheeting, plaster, sheetrock/joint compound, ceiling tiles, fire door fill, roofing materials, thermal gaskets, mastics, caulks and a range of other products.

No suspect ACM were observed during the reconnaissance.

4.0 ADJACENT LAND USE

The Wallkill River is located west of the Subject Property. Echo Lake Road followed by the Orange County Heritage Trail and the Ver Hage Property (vacant land) are located south of the Subject Property. The Strong Farm Property is located north of the Subject Property. Private residences are located east of the Subject Property. The greater surrounding area site is predominantly forested and residential. The former Al Turi Landfill (a closed landfill and Inactive Hazardous Waste Site) is located approximately one-half mile south of the Subject Property

5.0 USER PROVIDED INFORMATION

The user of this Phase I report indicated that this Property is being considered for a potential conservation easement as part of the proposed Amy's Kitchen/Science of the Soul Development planned for parcels south of Echo Lake Road.

6.0 SITE HISTORY AND RECORDS REVIEW

6.1 Prior Ownership and Usage

Historical aerial photographs, USGS topographical maps, city directories, property tax files, recorded land title records, and records were reviewed to determine site history, prior ownership, and usage.

6.1.1 Historical Maps

A search for historical fire insurance maps for the Subject Property and adjoining properties was conducted by EDR. No Sanborn Fire Insurance maps were available for review.

6.1.2 Historical Aerial Photographs

Historical aerial photographs were reviewed for indications of industrial usage or other evidence suggesting the use or disposal of hazardous materials on or adjacent to the subject property. Specifically, aerial photographs from 1940, 1942, 1975, 1981, 1984, 1991, 1994, 2006, 2009, and 2011 were reviewed. Copies of the aerial photographs are included in *Appendix B*. Details of these photographs are discussed below:

1940

The Subject Property appeared to be undeveloped land. A small water body (pond) was noted in the northeast corner of the Subject Property. An access road was observed from Cheechunk Road to the east of the site, with some disturbance noted on the Subject Property north of the Cheechunk Creek. Hartley Road, Echo Lake Road, and Cheechunk Road appear to be developed. A smaller stream (the Cheechunk Creek) was noted running through the Property, connecting to the Wallkill River in the northwest corner of the site. The Wallkill River was noted running north-south west of the Subject Property. Apparent railroad tracks are noted just south of Echo Lake Road. Surrounding land consisted of additional agricultural fields with few small structures including residences on the east-adjacent parcels.

1942

Due to the poor resolution of the photograph, details of the Subject Property could not clearly be identified. The Subject Property appears similar to the 1940 photograph. No significant changes were noted in the surrounding area from the 1940 photograph.

1975

The water body noted on previous photographs is not visible. Cheechunk Creek is lined with trees. The disturbance previously noted north of the Creek is no longer shown, although the access road from Cheechunk Road is still shown. No structures were shown on the site. A large area of disturbance is noted south of the Subject Property on the Ver Hage Property. No further significant changes were noted from the 1942 photograph.

1981

Due to the poor resolution of the photograph, details of the Subject Property could not be clearly identified; however, the site and surrounding areas appeared generally similar to the 1975 photograph.

1984

The water body previously noted on the 1940 photograph is visible. A large excavation is noted on the Ver Hage Property, south of the Subject Property. The surrounding area appeared generally similar to the 1975 photograph.

1991

The Subject Property appears similar to the 1984 photograph. The area of soil disturbance and excavations on the Ver Hage Property and Al Turi Landfill Property has expanded compared to previous photographs indicating potential soil mining or landfill activities. The surrounding area appeared generally similar to the 1984 photograph.

1994

The Subject Property remained similar to the 1991 photograph. Significant disturbance was still noted on the Ver Hage Property, but the Al Turi Landfill appears to be capped. No significant changes were noted in the surrounding area.

2006-2011

The Subject Property appeared to be fully vegetated and vacant. The former railroad tracks north-adjacent to the site are no longer present, and appear to have been replaced by a trailway. The disturbance noted on previous photographs is no longer shown. The surrounding area is largely vegetated with few small structures.

To summarize, the Subject Property was occupied by undeveloped land and trees. Some disturbance and possible excavation was observed in the northern portion of the site in the 1940 through 1942 photographs. Land disturbance indicative of potential landfilling was also noted properties south of Echo Lake Road. The greater surrounding area consisted of large cleared parcels or agricultural fields, with some small structures on them.

6.1.3 Historical USGS Topographic Maps

USGS Topographic Maps from 1908 (Goshen Quadrangle) and 1942, 1969, and 1976 (Middletown Quadrangle) and adjacent maps from 1942, 1979, and 1957 (Goshen Quadrangle) were reviewed. The USGS maps are included in *Appendix B.*

1908: Goshen Quadrangle 1:62500

Subject Property: The Subject Property was shown as undeveloped land. A stream was shown running through the site. The elevation on site ranges from approximately 360 feet to 400 feet above sea level, sloping up gradually east.

Surrounding Properties: The Wallkill River flows north-south, west-adjacent to the Subject Property. The east-west trending Erie Railroad was shown south of the Subject Property. Three small structures were shown east of the Subject Property fronting Echo Lake Road. The wider area surrounding the Subject Property contained sparse unspecified development and vacant land. Some wetlands are shown approximately two-miles east of the Subject Property. Some clusters of structures were shown at the intersection of roads, with larger developments around Goshen and Middletown, approximately 2.5 miles east and 2.5 miles northwest respectively.

1942: Goshen Quadrangle 1:24000

Subject Property: The western portion of the Subject Property was not shown. A transmission line was shown running through the Property from the northwest to southeast. The Subject Property otherwise appears similar to the 1908 map.

Surrounding Properties: Route 6 and 17 were shown running east-west approximately one-mile south of the Subject Property. A Sewage Disposal Plant was shown approximately 1.25 miles east of the Subject Property. The main town 2 miles east appears further developed with more and larger buildings, a hospital, and the US Coast and Geodetic Survey Dome being shown. No further significant changes were noted from the 1908 map.

1949: Goshen Quadrangle 1:25000

Subject Property: The western portion of the Subject Property was not shown. The Subject Property appears similar to the 1942 map.

Surrounding Properties: No significant changes were noted from the 1942 map.

1957: Goshen Quadrangle 1:24000

Subject Property: The western portion of the Subject Property was not shown. The Subject Property appears similar to the 1949 map.

Surrounding Properties: No significant changes were noted from the 1949 map.

1969: Middletown Quadrangle 1:24000

Subject Property: The eastern portion of the Subject Property was not shown. The transmission line was shown crossing the Wallkill River and entering the Property in the center of the western site boundary.

Surrounding Properties: Echo Lake was shown approximately ¼ mile west of the Property. Water tanks were shown approximately 1 mile west of the Subject Property. The area west of the Subject Property had been further developed with small structures,

and the New Hampton Training School was shown approximately 1.5 miles west of the Subject Property. A gravel pit was shown approximately 1.5 miles southwest of the Subject Property. The Interstate 84 Interchange was shown approximately 2.5 miles west of the Subject Property.

1976: Middletown Quadrangle 1:24000

Subject Property: The eastern portion of the Subject Property was not shown. The Subject Property appears similar to the 1969 map.

Surrounding Properties: No significant changes were noted from the 1969 map.

To summarize, an electrical transmission line was shown traversing the Property beginning in 1942; the Property was otherwise vacant. The immediate surrounding area was very sparsely developed, and contained vegetation.

6.1.4 City Directories

A City Directory prepared by Environmental Data Resource, Inc. was reviewed as part of this Phase I ESA. The City Directory consisted of the names of businesses located on-site and for adjacent properties, compiled from city and reverse telephone directories for the years including 1999, 2003, 2008, and 2013.

The Subject Property was not listed in commercial directories provided. The names of listings on Echo Lake Road, the road south-adjacent to the Subject Property, appeared to be residential tenants.

Copies of the directories provided by EDR are included in *Appendix D*.

6.1.5 Property Tax Files and Zoning Records

Based on information provided by Orange County, the tax lots containing the Subject Property is zoned as RU (Rural). Much of the site is overlain by the Stream Corridor and Reservoir Watershed Overlay as well as the Floodplain and Ponding Area Overlay. A watershed boundary and a stream run through the Property. The Property owner was listed as Hudson Valley Area LLC. The legal lot size is listed on the Tax Map as 11.80 acres for the parcel. The records reviewed are provided in *Appendix E*.

6.1.6 Recorded Land Title Records

Based on title records obtained from Orange County and the Town of Goshen, the property was formerly owned by Al Turi Landfill Inc. and was transferred to the current owner (Hudson Valley Area LLC) in June 2015. No other sales information was available. The records reviewed are provided in *Appendix E*. No Building Department or Health Department violations were found for the Property, as reported by the Orange County Department of Health, and the Town of Goshen building department.

6.2 Regulatory Review

Toxics Targeting was contracted to obtain information regarding the regulatory status of the Subject Property and the surrounding area. This information included records from databases maintained by the USEPA and the NYSDEC. AKRF reviewed these records to identify the use, generation, storage, treatment and/or disposal of hazardous material and chemicals, or releases of such materials, which may impact the Subject Property. All applicable regulatory databases meet ASTM guidelines requesting utilization of information within 90 days' receipt from the

appropriate agency. Copies of the pertinent sections of the EDR report are included in *Appendix C.*

6.2.1 Federal

Federal ASTM standard records reviewed included: the National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned (CERCLIS-NFRAP); CORRACTS (Corrective Actions Report); RCRIS (Resource Conservation and Recovery Information System); and Emergency Response Notification System (ERNS).

Federal ASTM supplemental records reviewed included: CONSENT (Superfund Consent Decrees); and Delisted NPL (National priority List Deletions).

National Priority List (NPL)

The NPL is the USEPA's database of some of the most serious uncontrolled or abandoned hazardous waste sites identified for probable remedial action under the Superfund Program. These sites may constitute an immediate threat to human health and the environment. Due to the amount of public attention focused on NPL sites, they pose a significant risk of stigmatizing surrounding properties and potentially impacting property values.

The Subject Property was not listed in the NPL database, and no NPL sites were identified within a one-mile radius of the Subject Property.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

CERCLIS is a compilation of known or suspected, uncontrolled or abandoned hazardous waste sites which the USEPA has investigated, or plans to investigate, for a release, or threatened release, of hazardous substances pursuant to the Superfund Act of 1980 (CERCLA). Some of these sites may constitute a potential threat to human health and the environment. While it has been determined by the USEPA that some CERCLIS sites require no action, others could pose a real or perceived environmental threat to neighboring properties, thus affecting property values.

The Subject Property was not listed in the CERCLIS database, and no CERCLIS sites were identified within a half-mile radius of the Subject Property.

Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned (CERCLIS-NFRAP)

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" have been removed from CERCLIS. NFRAP sites may be sites where, following an investigation, no contamination was discovered, contamination was removed quickly without the need for the Subject Property to be place on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

No CERCLIS NFRAP sites were identified within a half-mile radius of the Subject Property.

CORRACTS (Corrective Actions Report)

The CORRACTS database identifies hazardous waste handlers with RCRA corrective action activity.

The Subject Property was not listed in the CORRACTS database and no CORRACTS sites were identified within a one-mile radius of the Subject Property.

Emergency Response Notification System (ERNS)

This federal database, compiled by the Emergency Response Notification System, records and stores information on reported releases of petroleum and other potentially hazardous substances.

The Subject Property was not listed in the ERNS database.

Toxic Chemical Release Inventory System (TRIS)

This federal database, compiled by the EPA, identifies facilities that release chemicals to the air, water, and land in reportable quantities.

The Subject Property was not listed in the TRIS database and no TRIS sites were identified within one-quarter mile of the Subject Property.

CONSENT (Superfund Consent Decrees)

Superfund consent decrees are major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. These decrees are periodically released by the United States District Courts after settlement by parties to litigation matters.

The Subject Property was not listed in the CONSENT database, and no CONSENT sites were identified within a one-mile radius of the Subject Property.

Delisted NPL (National Priority List Deletions)

This database described former NPL sites that are removed from the NPL list by the US EPA. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establish the criteria used by the EPA to delist sites where no further federal response is needed.

The Subject Property was not listed in the delisted NPL database, and no delisted NPL sites were identified within a one-mile radius of the Subject Property.

6.2.2 State

The state records reviewed included the listings of hazardous material spills (SPILLS); Resource Conservation and Recovery Act Notifiers (RCRA); Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal Sites (SHWS); Major Oil Storage Facilities (MOSF); Brownfield Sites; and Historic Utility Sites.

New York SPILLS Database

The New York SPILLS database includes a list of releases reported to NYSDEC, including those attributed to tank test failures and tank failures. The tank test failures list only covers tanks that are below ground, while the tank failures list includes tanks that are either below or above ground. This database also lists spills that occur during the transportation of chemicals.

One active spill and two closed spills were reported within a half-mile radius of the Subject Property. No spills were listed for the Subject Property.

- An active tank test failure was reported in February 2015 at a private residence located 0.4-mile east-northeast of the Subject Property at 51 Owens Road. A #2 Fuel Oil tank failed and the tank was subsequently removed. According to the listing, cleanup was ongoing.
- A closed-status spill was reported in 2012 for 138 Cheechunk Road, approximately 0.2-mile east of the Property. An oil line was damaged by a lightning strike causing approximately 40-gallons of oil to leak. Affected soil was removed, and sidewall samples were taken, well below cleanup guidance values. The spill was closed in 2013.
- A closed-status spill was reported in October 2014 for 160 Hartley Road, at the O&R right of way 0.15-mile southeast of the Property. Three gallons of hydraulic oil was spilled when a hydraulic line failed on a bucket truck. The spill affected stone and dirt, and the spill was cleaned with a spill kit, and closed the next day.

Based on the spill details and their distance from the Subject Property, these spill listings are not expected to have impacted the site subsurface. Details from all spills are included in *Appendix C.*

RCRA (Resource Conservation and Recovery Act Notifiers

The Resource Conservation and Recovery Act Notifiers database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste defined by the Resource Conservation and Recovery Act (RCRA).

No RCRA sites were identified within a half-mile radius of the Subject Property.

Chemical Bulk Storage (CBS) Database

The New York CBS is a list of facilities that store regulated non-petroleum substances in aboveground tanks with capacities greater than 185 gallons and/or in underground tanks of any size.

No CBS facilities were listed within a one-quarter mile radius of the Subject Property.

Solid Waste Facilities/Landfill Sites (SWF/LF)

This database includes certain landfills, incinerators, transfer stations, recycling centers, and other sites which manage solid waste.

No were identified within a half-mile radius of the Subject Property.

Petroleum Bulk Storage (PBS) Database

This database lists facilities that registered having either aboveground or underground petroleum tanks with total storage exceeding 1,100 gallons. Facilities with more than 400,000 gallons appear on the Major Oil Storage Facilities (MOSF) database (see below).

No PBS facilities were identified within a one-quarter mile radius of the Property.

State Inactive Hazardous Waste Disposal Site Registry (SHWS)

This program (also known as State Superfund) lists information regarding a variety of sites likely requiring cleanup.

One State Inactive Hazardous Waste Disposal Site was reported within a one-mile radius of the Subject Property. The Old Al Turi Landfill, located 0.6-mile south of the Subject Property at 73 Hartley Road, was listed for hazardous waste disposal from 1968 to 1983. The unlined landfill has been capped with a geomembrane, a barrier protection layer of soil, and top soil capable of sustaining vegetative cover; and landfill gas collection and monitoring systems have been installed. There is an adjoining solid waste landfill, also owned by Al Turi, that also has been closed. The database listing indicates that at least 230 tons of waste solvents, allyl isothiocyanate, and still bottom residue were disposed at this site in the 1970's. Confirmed wastes disposed include chlorinated volatile organic compounds (VOCs) and metals of unknown quantities. A Remedial Investigation was completed in 1996 and a Record of Decision (ROD) was issued in March 1996. In addition to capping the landfill, a groundwater monitoring program was established and a deed restriction was placed on the Old Al Turi Landfill property pursuant to the ROD. The database listing indicates that construction of the remedy was completed in 2001 and that subsequent groundwater monitoring indicates that the implemented remedy has been effective in decreasing leachate-related groundwater quality impacts at the Old Al Turi Landfill property. A May 25, 2010 letter from the NYSDEC to Mr. Joseph Gambino of Al Turi Landfill Inc. (obtained from a FOIL request submitted to the NYSDEC) indicates that the classification of the landfill was changed from Class 2 to 4 based on the remedy completed and groundwater monitoring results.

State Hazardous Substance Waste Disposal Site Study (SHSWDS)

This database tracks certain sites that were not listed on the SHWS, but may still require investigation and/or cleanup.

No SHSWDSs were identified within a half-mile radius of the Subject Property.

Major Oil Storage Facilities (MOSF) Database

These facilities have petroleum storage of 400,000 gallons or more.

No Major Oil Storage Facilities were reported within a one-eighth mile radius of the Subject Property.

Environmental Restoration Program

These sites (which are generally municipally-owned) are receiving New York State funding for site investigation and remediation. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No ERP sites were identified within a half-mile radius of the Subject Property.

Voluntary Cleanup Program

The Voluntary Cleanup Program is a NYSDEC program for investigation and remediation of (generally) privately-owned sites. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No Voluntary Cleanup Program sites were identified within a half-mile radius of the Subject Property.

Brownfield Cleanup Program

This NYSDEC program is the successor to the Voluntary Cleanup Program. Some sites have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No Brownfield Cleanup Program sites were identified within a half-mile radius of the Subject Property.

6.2.3 Local

Records available from the Orange County Department of Health and the Town of Goshen were requested in FOIL requests on June 11, 2015. The Orange County Department of Health provided a faxed response on June 18, 2015 indicating that they did not have any records on file for the Subject Property. The Town of Goshen records department responded by email on June 16, 2015 indicating that the Property is vacant land. No records were provided. .

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7.0 INTERVIEWS

7.1 Interview with Owner

An Environmental Site Assessment Questionnaire was submitted to the user of this report to forward along to the former property owner (Al Turi Landfill, Inc.) As of the date of this report, no response has been received.

7.2 Interview with Site Manager

A site manager was not available for interview.

7.3 Interview with Occupants

The Subject Property is currently vacant.

7.4 Interview with Local Government Officials

Federal, state, and local regulatory databases were consulted for identifying recognized environmental conditions (RECs) on the Subject Property due to on-site or off-site conditions. The files obtained for the Subject Property are included in *Appendix E*.

8.0 PREVIOUS STUDIES

Groundwater Resource Evaluation, Amy's Kitchen Inc., Lipoff Well Site, Town of Goshen, Orange County, New York. Prepared by Miller Hydrogeologic, Inc., October 2015

Miller Hydrogeologic, Inc. (Miller) conducted a 72-hour aquifer test on a pre-existing supply well at the Subject Property (with another existing supply well used as a monitoring point during the test). The supply wells were reportedly installed in the 1970s as part of a proposed apartment complex, but the complex was never completed and the supply wells were not put into use. The purpose of Miller's study was evaluate the well as a potential water supply source for the proposed Amy's Kitchen food processing

facility to be constructed south of the Subject Property (at the Ver Hage Property). As part the assessment, a water quality sample was collected from the well in August 2015 and analyzed for NYSDOH Part 5.0 water quality parameters for drinking water quality (including herbicides, pesticides, volatile organic compounds, and semivolatile organic compounds), microbiological parameters, target analyte list (TAL) metals, and dissolved solids. Analytical results indicated that none of the test parameters were present at concentrations above the NYSDOH drinking water standards.

9.0 LIMITATIONS

This assessment met the requirements of the American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-13. The following limitations should be noted:

- Results of this investigation are valid as of the dates on which the investigation was performed.
- No sampling was performed as part of this assessment.
- Not all areas of the Subject Property were available for inspection due to overgrown vegetation.
- The property area history review was not conducted in five-year intervals. However, sufficient information about the history of the Site and surrounding area could be obtained from the available aerial photographs, topographic maps, city directories, and local records, and this data gap is not likely to alter the conclusions of this report.

10.0 DEVIATIONS

The User did not request any deviations from the ASTM Standard, and no deviations from the Standard were made while performing the assessment.

11.0 DATA GAPS

Section 3.3.20 of ASTM Standard E 1527-13 defines a data gap as the inability to obtain information required by the ASTM Standard despite good faith efforts to obtain applicable data. Data gaps may result from incompleteness in any of the activities required by the ASTM Standard. While limitations to this report are described in Section 9.0, there were no data gaps identified where the absence of information would materially change the findings of the assessment.

12.0 CONCLUSIONS

This Phase I Environmental Site Assessment was performed in accordance with customary principles and practices in the environmental consulting industry, and in conformance with the scope and limitations of ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, these practices are described in Sections 9.0, 10.0, and 11.0 of this report.

The main objective of the Phase I ESA is to identify recognized environmental conditions (RECs) and environmental concerns associated with the Subject Property resulting from past or current site usage and usage of neighboring properties. RECs are defined in ASTM International (ASTM) Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property. The Standard also includes definitions of Historic REC (HREC), Controlled REC (CREC), and *de minimis* Condition. A *de minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action. Note that controlled recognized environmental conditions (CRECs) are considered to be RECs and are listed in the Executive Summary and Conclusions of this Phase I ESA. The regulatory databases, historical aerial photographs, and visual site inspection have indicated that the subject property parcel has historically and is currently vacant.

This Phase I ESA has revealed the following *de minimis* Condition associated with the Site:

On-Site De Minimis Condition:

- Disturbance was noted on the northern portion of the property in 1940 and 1942 aerial photographs, and some refuse was noted to be dumped on the southern portion of the Subject Property along Echo Lake Road during the site reconnaissance. Fill of unknown origin and potential further dumping may be associated with these activities.

Other on-site Environmental Concerns (ECs) (outside the scope of 1527-13)

- A review of the New York State Department of Health database indicated that the average level of radon found in basements in the Town of Goshen is 5.16 picocuries/liter, above the USEPA recommended action level is 4.0 picocuries/liter.

It is our understanding that the Property is being considered for a potential conservation easement as part of the proposed Amy's Kitchen/Science of the Soul Development planned for parcels south of Echo Lake Road. Based on the findings of this Phase I ESA and the proposed use of the Property, no further investigation is recommended

13.0 SIGNATURE PAGE

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have performed all the appropriate inquiries in conformance with standards and practices set forth in 40 CFR Part 312.

Marc S. Godick, LEP
Senior Vice President

14.0 QUALIFICATIONS

The purpose of this assessment was to convey a professional opinion about the potential presence or absence of contamination, or possible sources of contamination on the Subject Property, and to identify existing and/or potential environmental problems associated with the Subject Property.

The assessment was performed in accordance with customary principles and practices in the environmental consulting industry, and in accordance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice.* It is intended for use as a supplement to the Subject Property appraisal, and is only to be used as a guide in determining the possible presence or absence of hazardous materials on the subject property at the time of the inspection. This assessment is based upon the review of readily available records relating to previous use of both the Subject Property and the surrounding area, as well as a visual inspection of the current condition of the Subject Property. Environmental characteristics at this site and surrounding sites may be subject to change in the future.

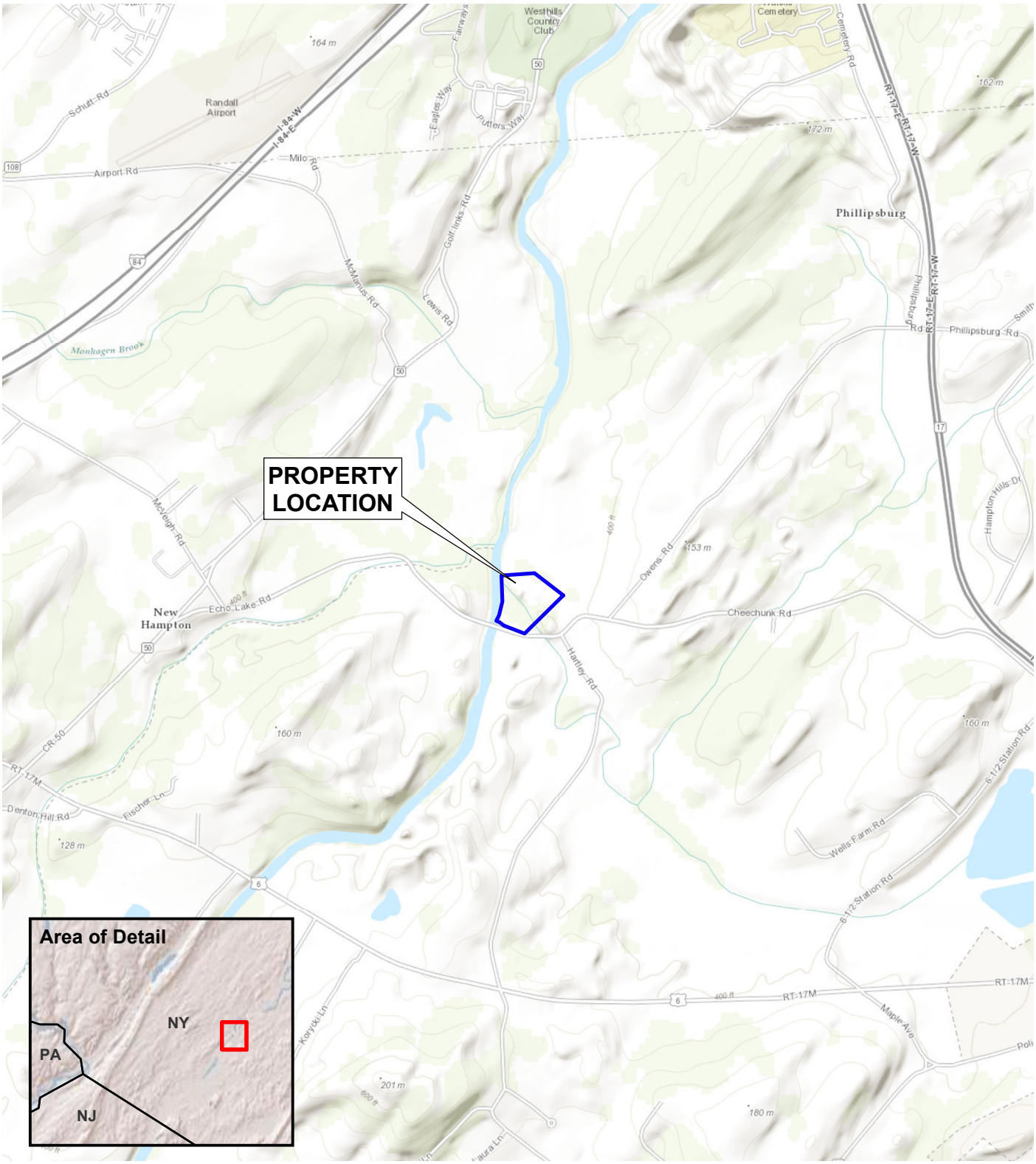
This Phase I Assessment is not, and should not be construed as, a guarantee, warranty, or certification of the presence or absence of hazardous substances, which can be made only with testing, and contains no formal plans or recommendations to rectify or remediate the presence of any hazardous substances which may be subject to regulatory approval. This report is not a regulatory compliance audit.

This report is based on services performed by AKRF, Inc. professional staff and observation of the Subject Property and its surrounding area. We represent that observations made in this assessment are accurate to the best of our knowledge, and that no findings or observations concerning the potential presence of hazardous substances have been withheld or amended. The research and inspections have been carried to a level that meets accepted industry and professional standards. Nevertheless, AKRF and the undersigned shall have no liability or obligation to any party other than Amy's Kitchen, Inc. and their successors or assignees, and AKRF's obligations and liabilities to the above, their successors or assignees is limited to fraudulent statements made, or negligent or willful acts or omissions.

15.0 REFERENCES

1. Toxics Targeting Inc, Inc.; Amy's Kitchen Lipoff Wells, Goshen, New York; Regulatory Radius Search; June 1, 2015.
2. Environmental Data Resources, Inc.; Amy's Kitchen Hartley Road/Cheechunk Road, Goshen, New York; Topographic Map Report; May 28, 2015.
3. Environmental Data Resources, Inc.; Amy's Kitchen Hartley Road/Cheechunk Road, Goshen, New York; Aerial Photograph Report; May 28, 2015.
4. U.S. Geological Survey; Geohydrology and Water Quality of the Wallkill River Valley Near Middletown, New York; Open File Report 97-241; 1998.
5. Miller Hydrogoeologic Incorporated; Groundwater Resources Evaluation of Amy's Kitchen Inc., Lipoff Well Site, Town of Goshen, Orange County, New York; October 2015.

FIGURES



SOURCE
USGS 7.5 Minute Topographic Map
MIDDLETOWN and GOSHEN Quads 2011

0 1,000 2,000
Feet

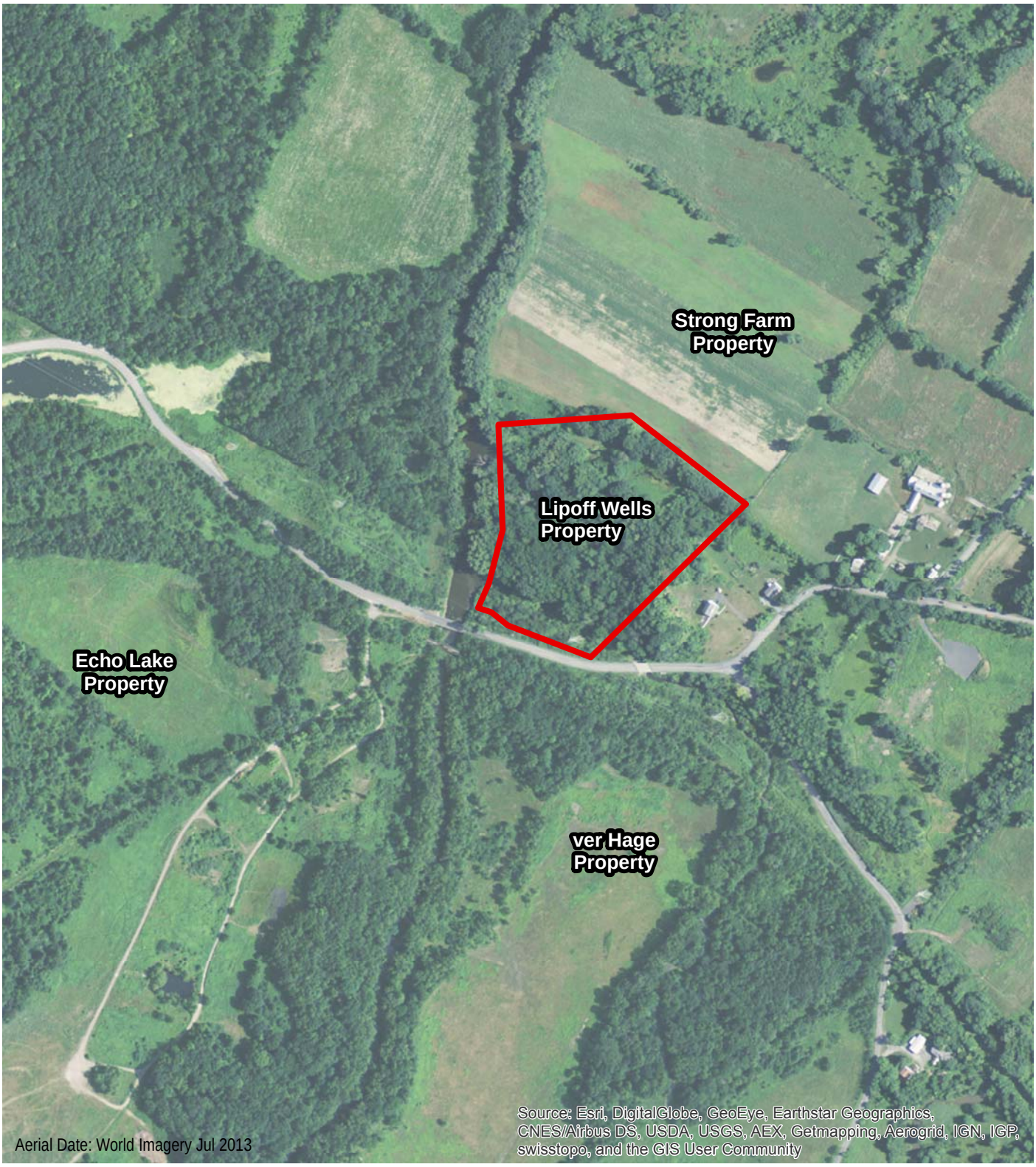
Amy's Kitchen Lipoff Wells Property
Goshen, New York

PROPERTY LOCATION

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
7/17/2015
PROJECT No.
40525
FIGURE
1

©2014 AKRF, Inc. Environmental Consultants Q:\Projects\40525 - AMY'S KITCHEN GOSHEN\Technical\GIS and Graphics\Hazmat\40525 Fig 1 prop location Lipoff - Copy.mxd



Legend

Property Boundary Lipoff

0 250 500 1,000

Feet

Amy's Kitchen Lipoff Wells Property

Goshen, New York

PROPERTY DETAIL

AKRF

Environmental Consultants

440 Park Avenue South, New York, N.Y. 10016

DATE 7/17/2015

PROJECT No. 40525

FIGURE 2

©2015 AKRF, Inc. Environmental Consultants Q:\Projects\40525 - AMYS KITCHEN GOSHEN\Technical\GIS and Graphics\Hazmat\40525 Fig 2 Property Detail Lipoff.mxd

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

Photograph 1: View of site from Echo Lake Road.

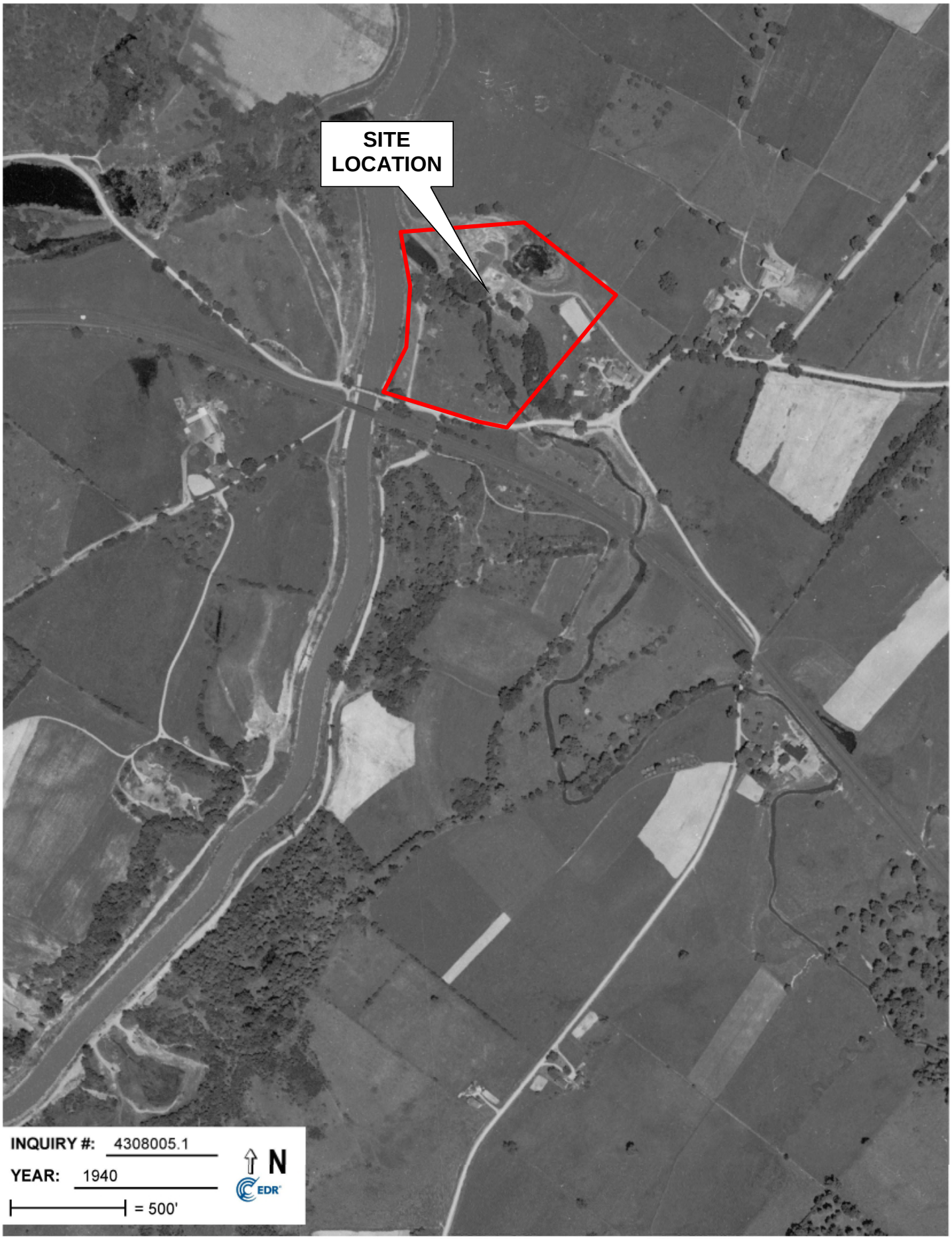
Photograph 2: High tension transmission lines traversing the southern part of the Property.

Photograph 3: Dense vegetation and Cheechunk Creek in the southeastern corner of the Property.

Photograph 4: Evidence of dumping along Echo Lake Road.

APPENDIX B

HISTORICAL TOPOGRAPHIC MAPS/HISTORICAL AERIAL PHOTOGRAPHS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N
EDR

SITE
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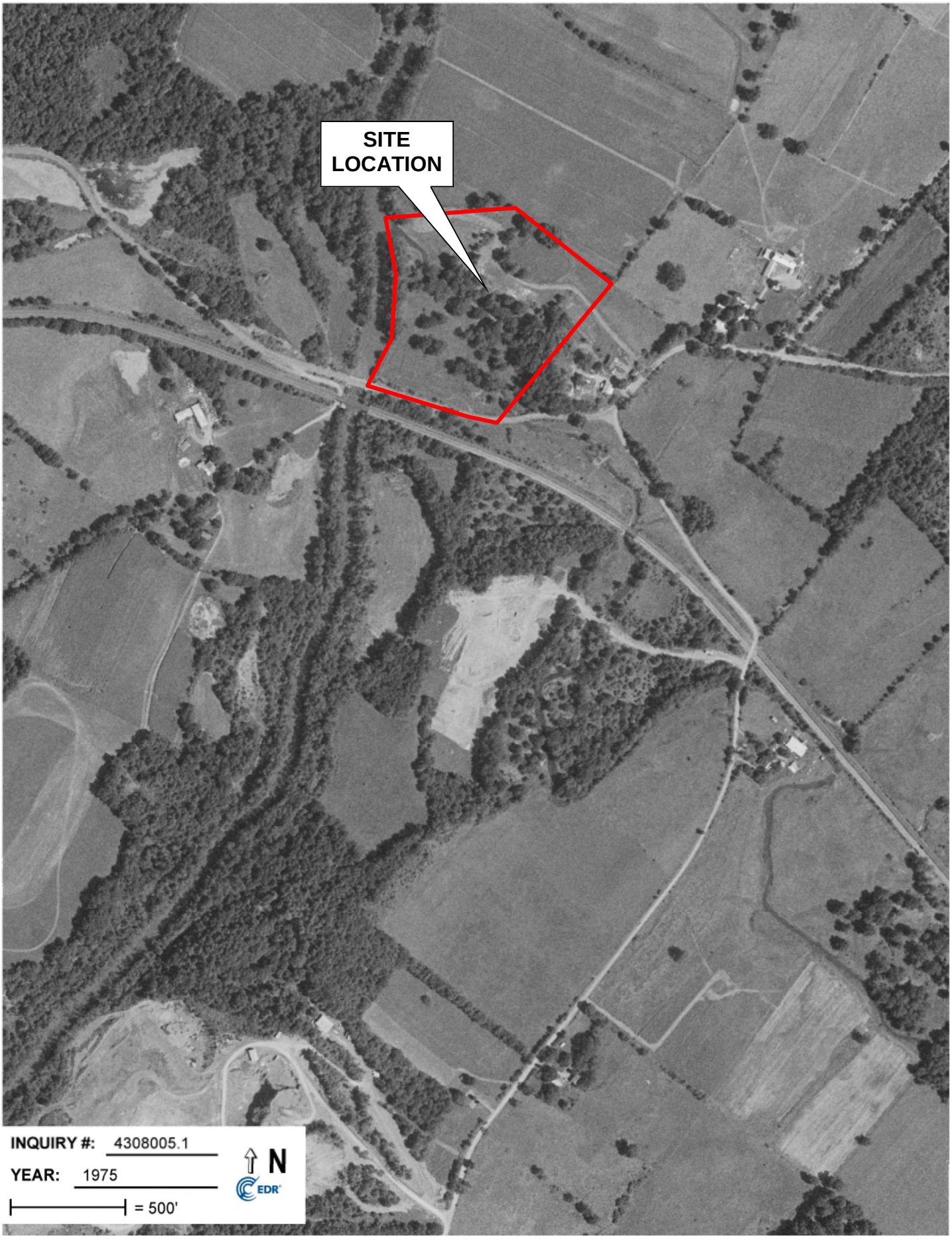
YEAR: 1942
= 500'
N
EDR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YEAR: 1975
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N
EDR

SITE
LOCATION
INQUIRY #: 4308005.1
YEAR: 1981
= 1000'
N
EDR

SITE
LOCATION
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YEAR: 1984
= 500'
N
EDR

SITE
LOCATION
INQUIRY #: 4308005.1
YEAR: 1991
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N
EDR

SITE
LOCATION
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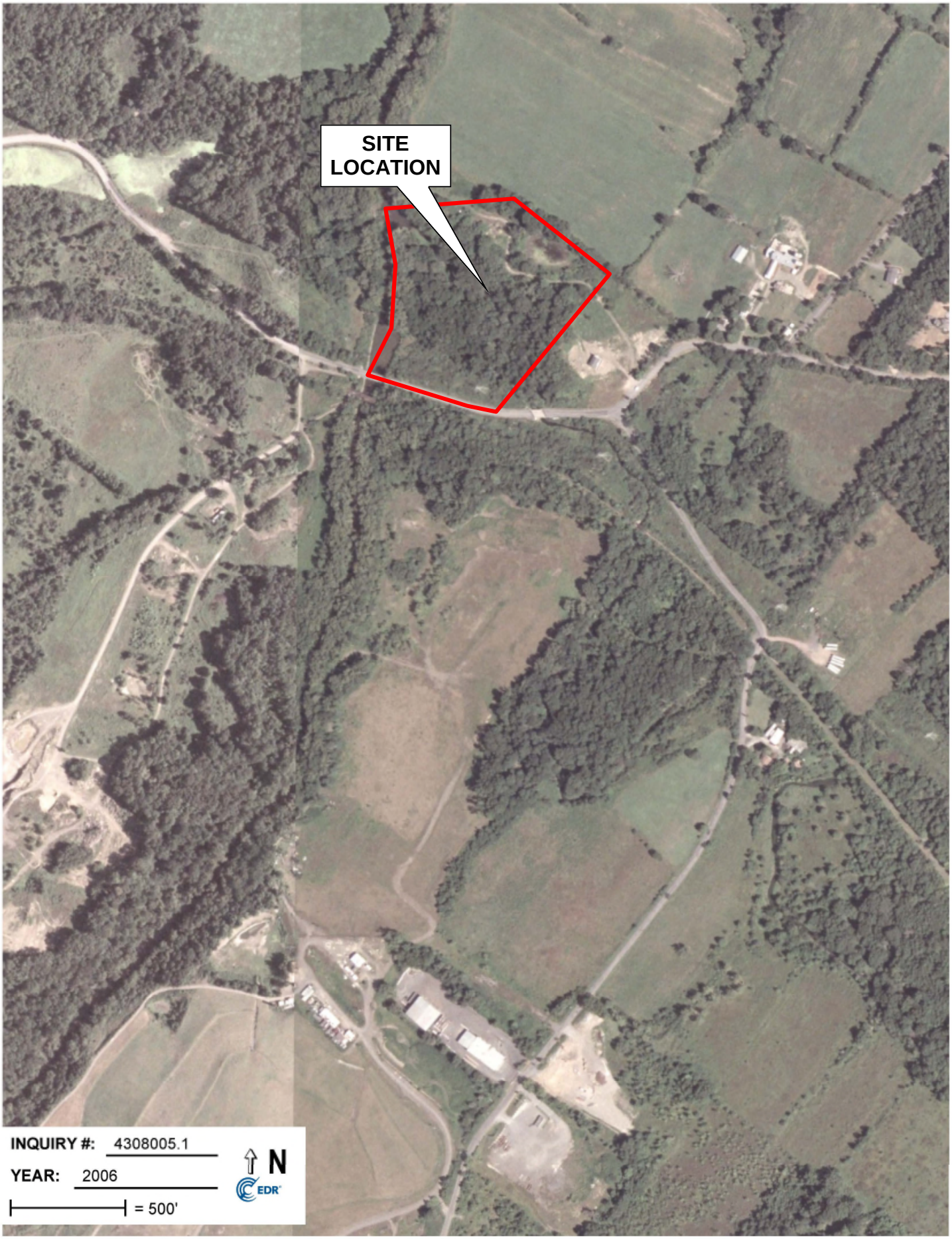
YEAR: 1994
= 500'
N
EDR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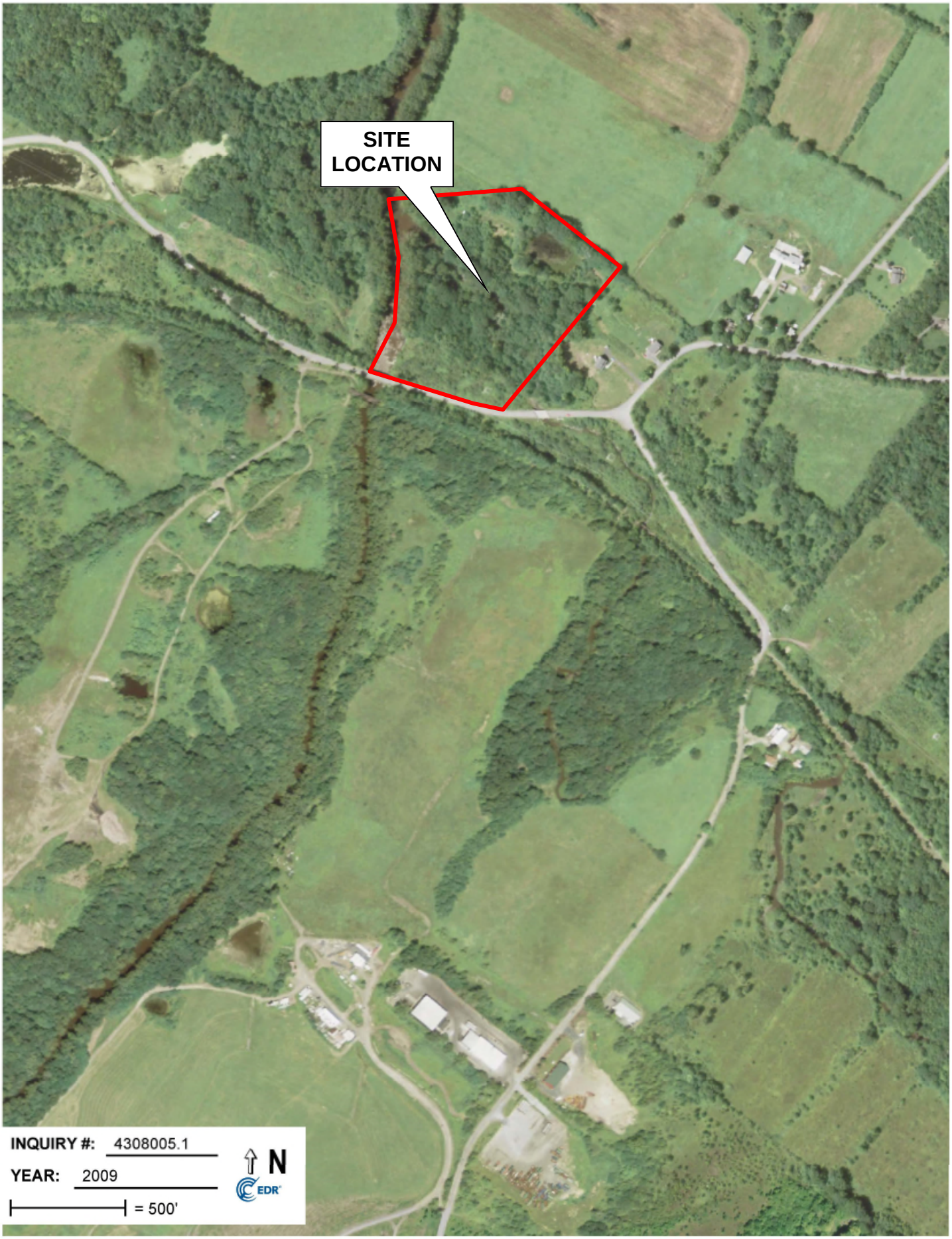
EDR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LOCATION
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YEAR: 2009
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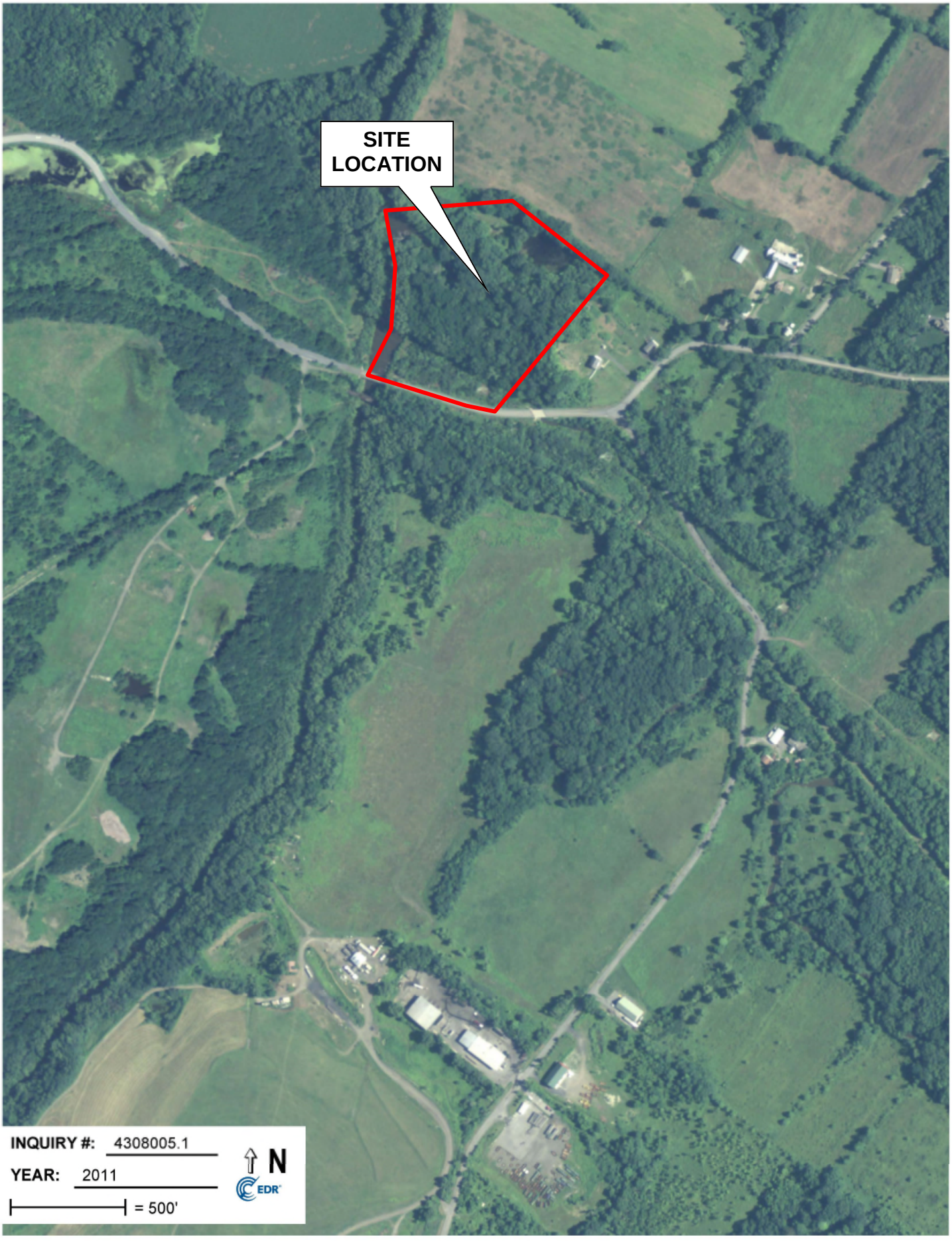
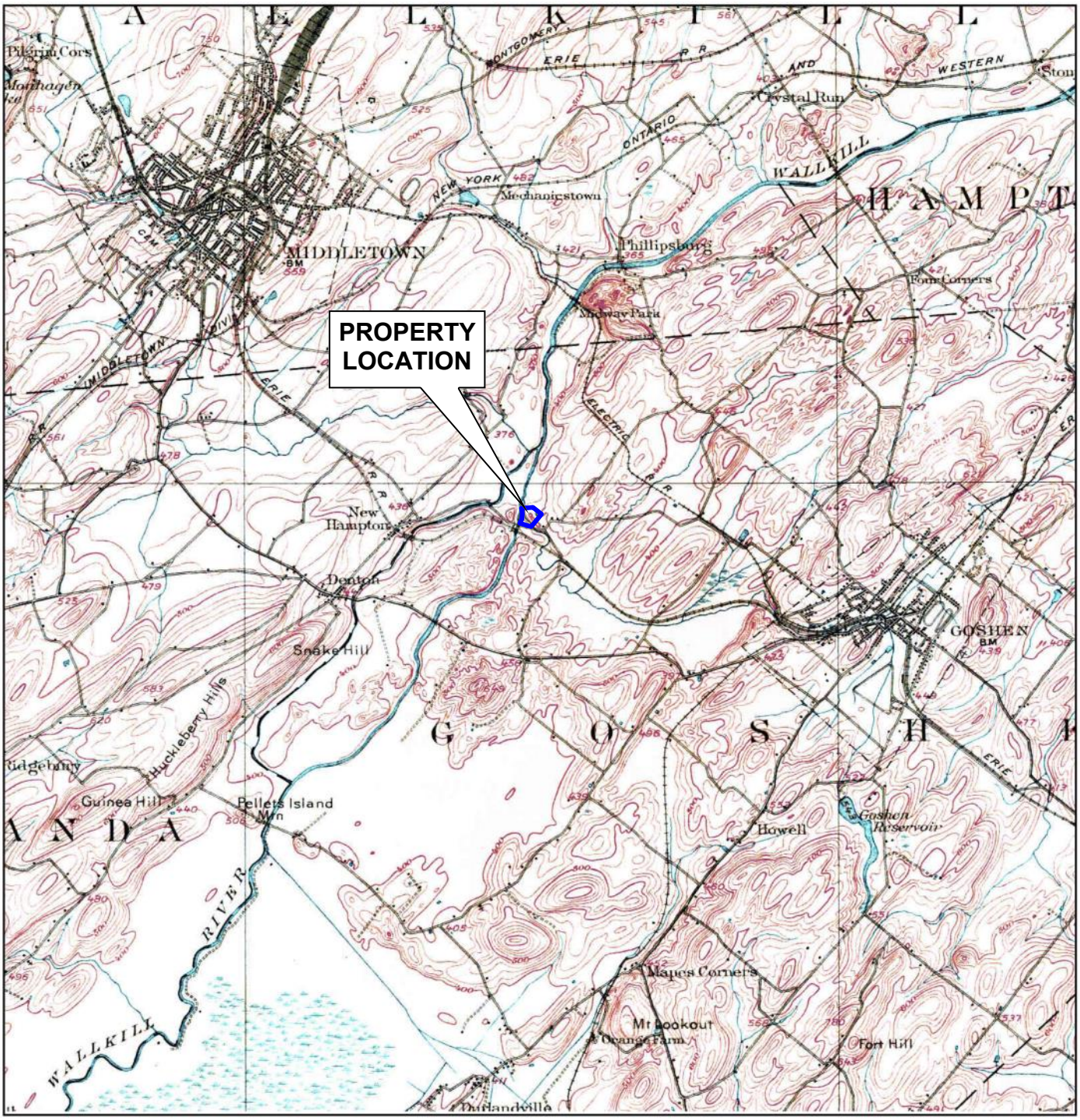
N
EDR

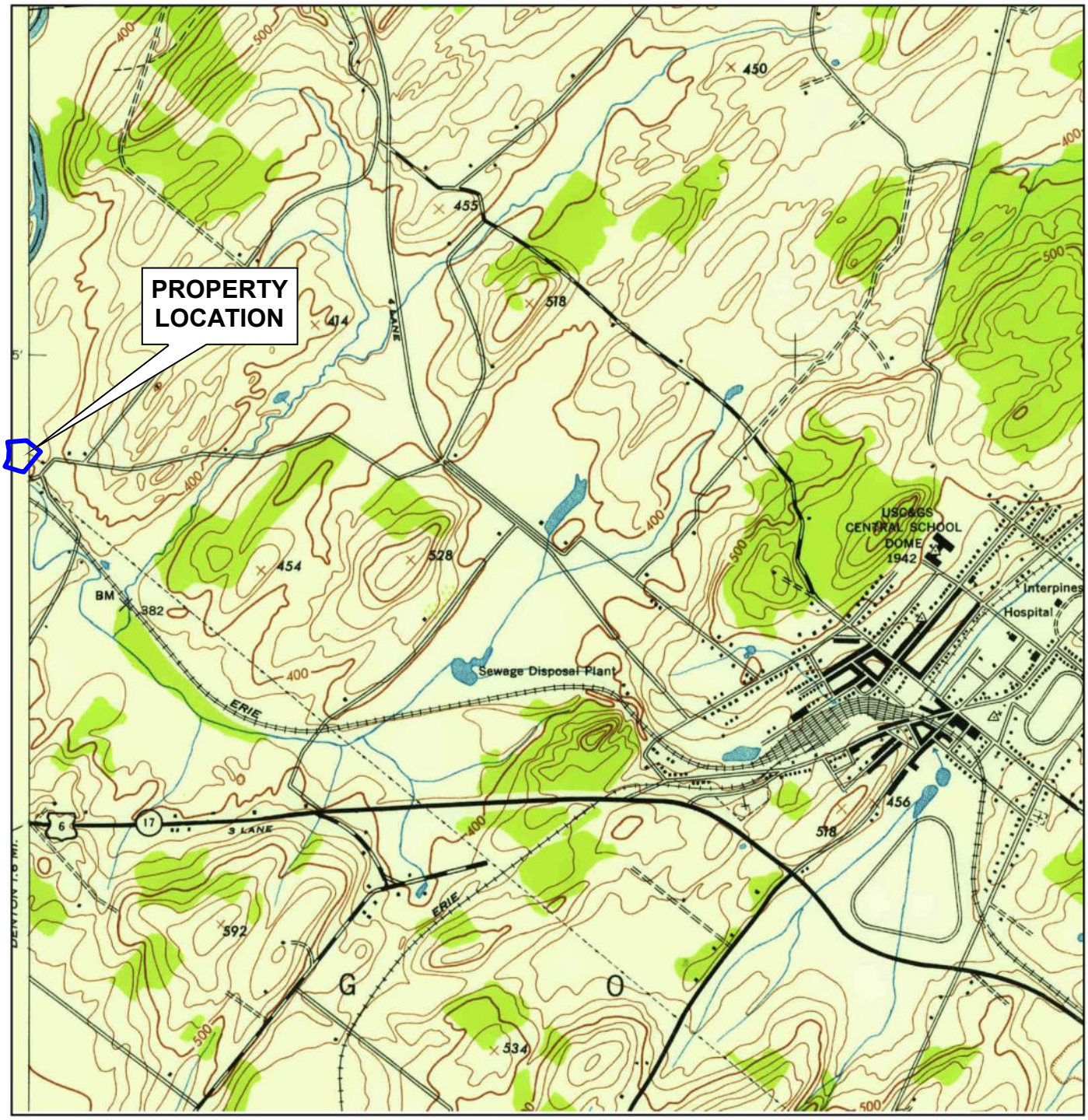

SITE
LOCATION
INQUIRY #: 4308005.1
YEAR: 2011
= 500'
N
EDR

Historical Topographic Map



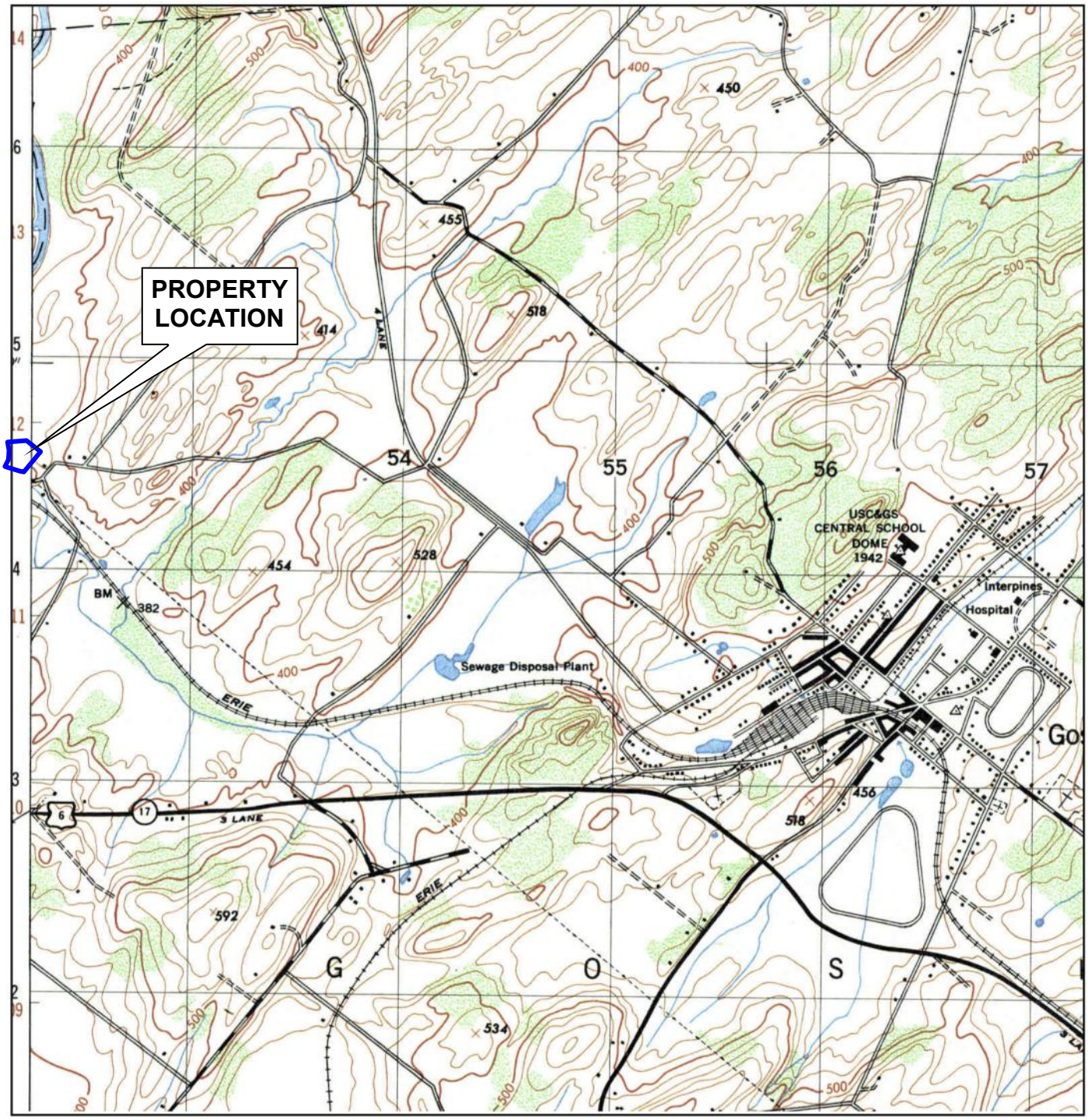
N	TARGET QUAD NAME: GOSHEN MAP YEAR: 1908 SERIES: 15 SCALE: 1:62500	SITE NAME: Amys Kitchen ADDRESS: Hartley Road/Cheechunk Road Goshen, NY 10924 LAT/LONG: 41.4083 / -74.3751	CLIENT: AKRF, Inc. CONTACT: Elizabeth Matamoros INQUIRY#: 4308005.4 RESEARCH DATE: 05/28/2015

Historical Topographic Map



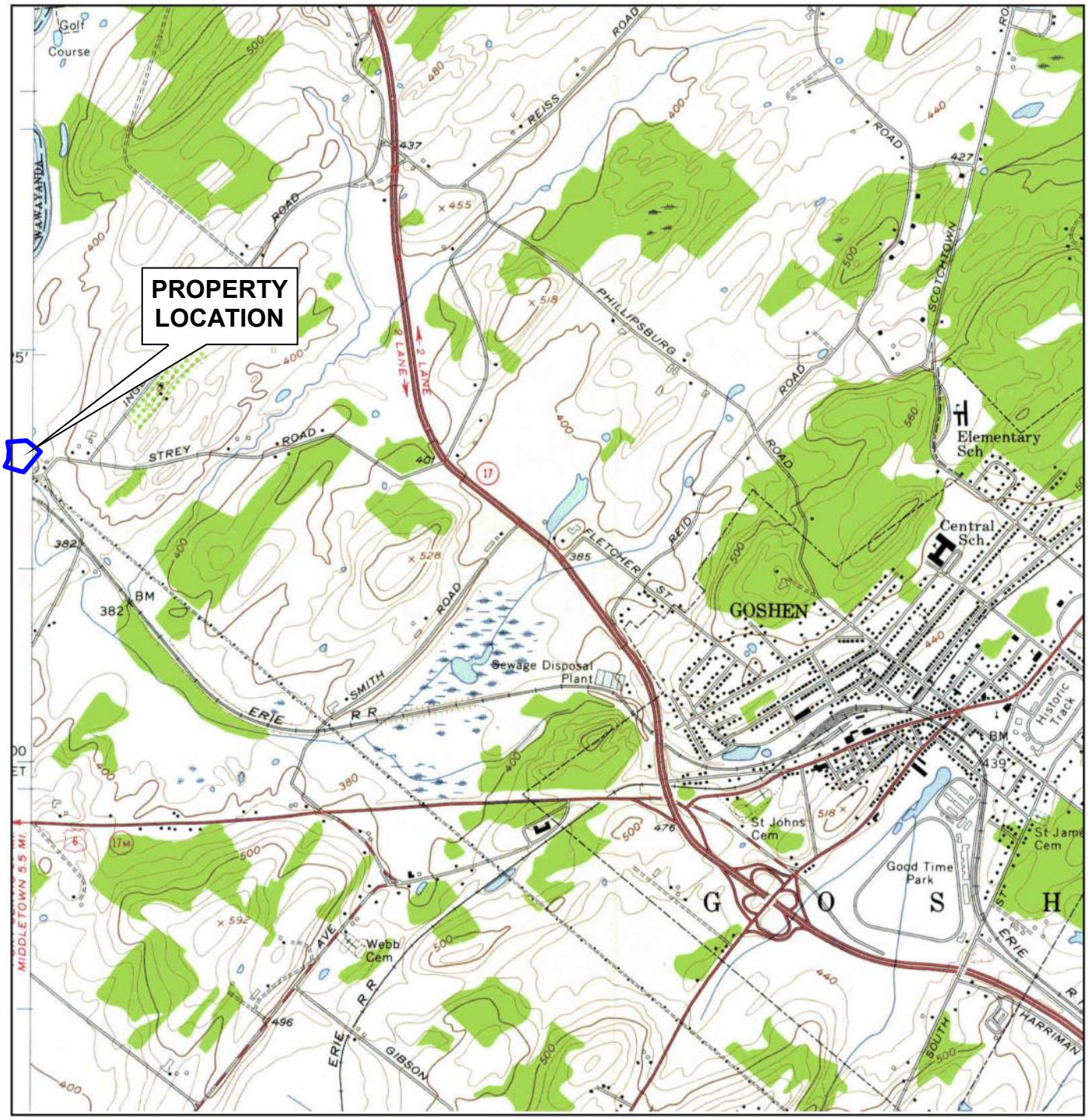
N	ADJOINING QUAD					
	NAME:	GOSHEN	SITE NAME:	Amys Kitchen	CLIENT:	AKRF, Inc.
	MAP YEAR:	1942	ADDRESS:	Hartley Road/Cheechunk Road Goshen, NY 10924	CONTACT:	Elizabeth Matamoros
					INQUIRY#:	4308005.4
	SERIES:	7.5	LAT/LONG:	41.4083 / -74.3751	RESEARCH DATE:	05/28/2015
	SCALE:	1:24000				

Historical Topographic Map



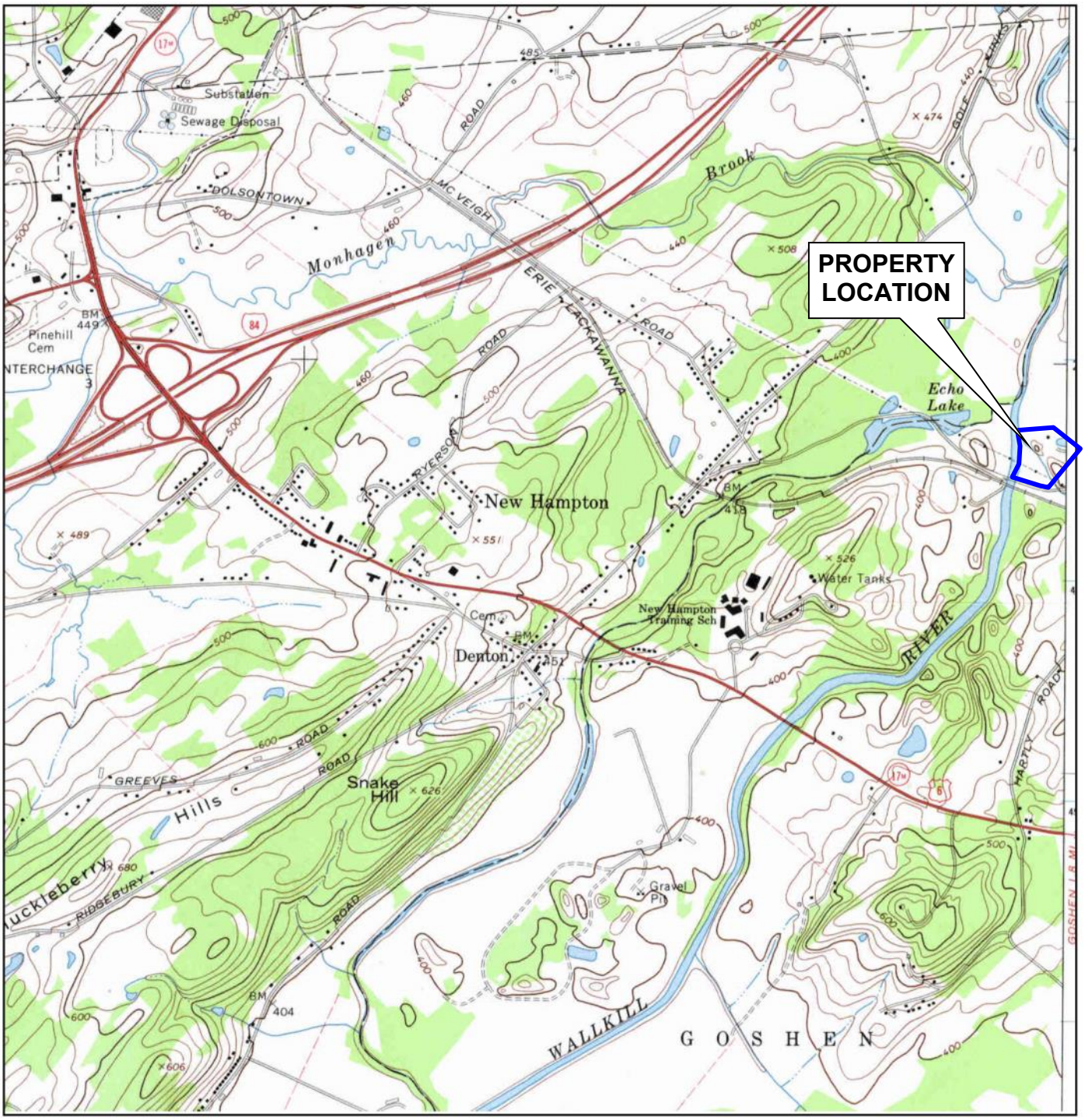
N	ADJOINING QUAD NAME: GOSHEN MAP YEAR: 1949 SERIES: 7.5 SCALE: 1:25000	SITE NAME: Amys Kitchen ADDRESS: Hartley Road/Cheechunk Road Goshen, NY 10924 LAT/LONG: 41.4083 / -74.3751	CLIENT: AKRF, Inc. CONTACT: Elizabeth Matamoros INQUIRY#: 4308005.4 RESEARCH DATE: 05/28/2015

Historical Topographic Map



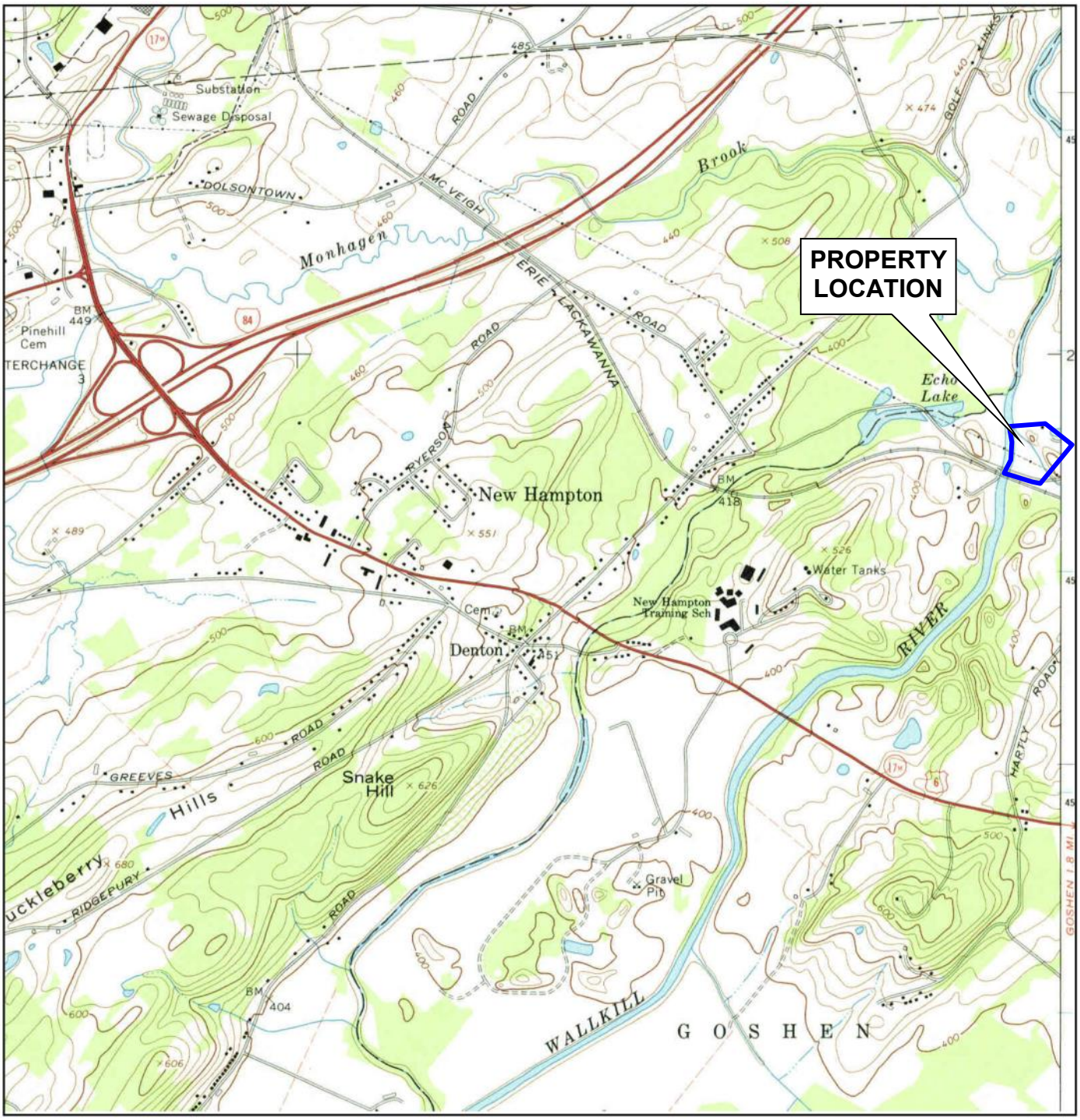
N	ADJOINING QUAD					
	NAME:	GOSHEN	SITE NAME:	Amys Kitchen	CLIENT:	AKRF, Inc.
	MAP YEAR:	1957	ADDRESS:	Hartley Road/Cheechunk Road	CONTACT:	Elizabeth Matamoros
				Goshen, NY 10924	INQUIRY#:	4308005.4
	SERIES:	7.5	LAT/LONG:	41.4083 / -74.3751	RESEARCH DATE:	05/28/2015
	SCALE:	1:24000				

Historical Topographic Map



N	TARGET QUAD NAME: MIDDLETOWN MAP YEAR: 1969 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Amys Kitchen ADDRESS: Hartley Road/Cheechunk Road Goshen, NY 10924 LAT/LONG: 41.4083 / -74.3751	CLIENT: AKRF, Inc. CONTACT: Elizabeth Matamoros INQUIRY#: 4308005.4 RESEARCH DATE: 05/28/2015

Historical Topographic Map



N	TARGET QUAD NAME: MIDDLETOWN MAP YEAR: 1976 PHOTOINSPECTED FROM : 1969 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Amys Kitchen ADDRESS: Hartley Road/Cheechunk Road Goshen, NY 10924 LAT/LONG: 41.4083 / -74.3751	CLIENT: AKRF, Inc. CONTACT: Elizabeth Matamoros INQUIRY#: 4308005.4 RESEARCH DATE: 05/28/2015

APPENDIX C
REGULATORY RECORDS REVIEW

TOXICS TARGETING

Phase I
Environmental Database Report

Amy`s Kitchen - Lipoff Wells
Goshen, NY 10924

June 01, 2015

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PLEASE REFER TO PAGES ONE AND FIVE FOR A DESCRIPTION OF SOME OF THE LIMITATIONS OF THIS ENVIRONMENTAL REPORT.

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- *How to Use Your Report*
- *Toxic Site Databases Analyzed In Your Report*
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- *Table Two: Identified Toxic Sites By Direction*
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- *Unmappable Sites*
- *Hazardous Waste Codes*
- *How Toxic Sites Are Mapped*
- *Information Source Guide*

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Introduction

Toxics Targeting has combined environmental database searches, extensive regulatory analysis and sophisticated mapping techniques to produce your *Environmental Report.* It checks for the presence of 21 categories of government-reported toxic sites and provides detailed, up-to-date information on each identified site. The findings of your report are presented in an easy-to-understand format that:

1. ***Maps*** the approximate locations of selected government-reported toxic sites identified on or near a specified target address.

2. ***Estimates*** the distance and direction between the target address and each identified toxic site.

3. ***Reports*** air and water permit non-compliance and other regulatory violations.

4. ***Profiles*** some aspects of the usage, manufacture, storage, handling, transport or disposal of toxic chemicals at individual sites.

5. ***Summarizes*** some potential health effect information and drinking water standards for selected chemicals reported at individual sites.

The Three Sections Of Your Report

The first section highlights your report's findings by summarizing identified sites according to: **a)** distance intervals, **b)** direction, **c)** proximity to the target address and **d)** individual site categories. In addition, the locations of all identified toxic sites are illustrated on individual maps for each radius search distance used in your report. A close-up map illustrates the locations of all identified toxic sites, at the shortest radius search distance used in your report. Finally, a map of tax parcels and a table of selected information about those parcels are included.

The second section of your report contains *Toxic Site Profiles* that provide detailed information on each identified toxic site. The information in each *Toxic Site Profile* varies according to its source. Some toxic site categories have extensive information, some have limited information. All the information is updated on a regular basis.

The third section of the report contains appendices that identify: **1)** on-site spills reported to the national Emergency Response Notification System (ERNS), **2)** various toxic sites that cannot be mapped due to incomplete or erroneous addresses or other mapping problems, **3)** codes that characterize hazardous wastes reported at various facilities, **4)** methods used to map toxic sites identified in your report and **5)** information sources used in your report.

How to Use Your Report

- Check Table One to see the number of identified sites by distance intervals.

- Check Table Two to see identified sites sorted by direction.

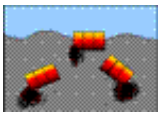
- Check Table Three to see identified sites sorted by site categories.

- Check Table Four to see identified sites ranked by proximity to the target address.

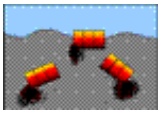
- Use Table Five to get info for the subject parcel and every parcel found on the Tax Parcel Map
- Refer to the various maps to see the locations of identified toxic sites. Refer to the *Toxic Site Profile* and *Appendix* sections for additional information.

Toxic Site Databases Analyzed In Your Report

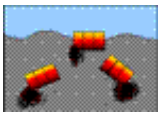
Search Radius

One-Mile 

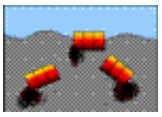
1) ***National Priority List for Federal Superfund Cleanup****:* a listing of sites known to pose environmental or health hazards that are being investigated or cleaned up under the Federal Superfund program.

Half-Mile 

2) ***Delisted National Priority List Sites****:* a listing of NPL sites that have been removed from the National Priority List.

One-Mile 

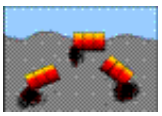
3) ***New York Inactive Hazardous Waste Disposal Site Registry****:* a state listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

One-Mile 

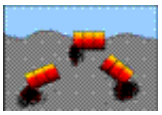
4) ***New York Inactive Hazardous Waste Disposal Site Registry Qualifying****:* a state listing of sites that qualify for possible inclusion to the NYDEC Inactive Haz. Waste Disposal Site Registry.

One-Mile

5) ***RCRA Corrective Action Activity (CORRACTS):*** waste facilities with RCRA corrective action activity reported by the USEPA.

Half-Mile 

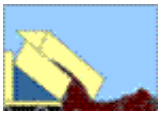
6) ***CERCLIS*** (Comprehensive Environmental Response, Compensation and Liability Information System): a federal listing of Non-NFRAP sites that can pose environmental or public health hazards requiring investigation or clean up.

Half-Mile 

7) ***CERCLIS NFRAP:*** a federal listing of CERCLIS sites that have no further remedial action planned.

Half-Mile

8) ***New York State Brownfield Cleanup Sites****:* a listing of sites that are abandoned, idled or under-used industrial and commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.

Half-Mile 

9) ***New York Solid Waste Facilities Registry****:* active and inactive landfills, incinerators, transfer stations or other solid waste management facilities.

Half-Mile

10) ***New York and Federal Hazardous Waste Treatment, Storage or Disposal Facilities****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRIS). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act..

Half-Mile

11) ***Toxic Spills: active and inactive or closed*** spills reported to state environmental authorities, including *remediated* and *unremediated* leaking underground storage tanks. This database includes the following categories:

- Tank Failures
- Tank Test Failures
- Unknown Spill Cause or Other Spill Causes
- Miscellaneous Spill Causes

Quarter-Mile

12) ***New York State Major Oil Storage Facilities****:* sites with more than a 400,000-gallon capacity for storing petroleum products.

Quarter-Mile

13) ***New York and Local Petroleum Bulk Storage Facilities****:* sites with more than a 1,100-gallon capacity for storing petroleum products.

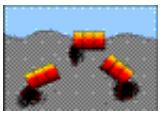
Quarter-Mile

14) ***New York and Federal Hazardous Waste Generators and Transporters****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRA). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.

Quarter-Mile

15) ***New York Chemical Bulk Storage Facilities****:* sites storing hazardous substances listed in 6 NYCRR Part 597 in aboveground tanks with capacities of 185 gallons or more and/or underground tanks of any size

Half-Mile 

16) ***New York Hazardous Substance Disposal Site Draft Study****:* a state listing of sites contaminated with toxic substances that can pose environmental or public health hazards. These sites are not eligible for state clean up funding programs.

Quarter-Mile

17) ***Federal Toxic Release Inventory Facilities****:* discharges of selected toxic chemicals to air, land, water or treatment facilities.

Quarter-Mile

18) ***Federal Air Discharges****:* Air pollution point sources monitored by U.S. EPA and/or state and local air regulatory agencies.

Quarter-Mile

19) ***Federal Permit Compliance System Toxic Wastewater Discharges:*** permitted toxic wastewater discharges.

Quarter-Mile

20) ***Federal Civil and Administrative Enforcement Docket****:* judiciary cases filed on behalf of the U. S. Environmental Protection Agency by the Department of Justice.

Property only

21) ***ERNS: Federal Emergency Response Notification System Spills****:* a listing of federally reported spills.

Limitations Of The Information In Your Report

The information presented in your *Environmental Report* has been obtained from various local, state and federal government agencies. Please be aware that: **1)** additional information on individual sites may be available, **2)** newly discovered sites are continually reported and **3)** all map locations are approximate. As a result, this report is intended to be the FIRST STEP in the process of identifying and evaluating possible environmental threats to specific properties and can only serve as a guide for conducting on-site visits or additional, more detailed toxic hazard research.

Toxics Targeting tries to ensure that the information in your report is presented accurately and with minimal alteration. The only systematic changes that are made correct obvious address errors in order to allow sites to be mapped. Any address changes that are made are noted in the map information section at the top of each corresponding *Toxic Site Profile*. Since the information presented in your report is not edited, please be aware that it can contain reporting errors or typographical mistakes made by the site owners/operators or government agencies that produced the information. Please be aware of some other limitations of the information in your report:

- The map used by *Toxics Targeting* is the same one used by the U. S. Census. While the map is generally accurate, no map is perfect. In addition, *Toxics Targeting's* mapping methods estimate where toxic site addresses are located if the address is not specifically designated on the Census map. FOR THESE REASONS, ALL MAP LOCATIONS OF ADDRESSES AND REPORTED TOXIC SITES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY ON-SITE VISITS;

- UNDISCOVERED, UNREPORTED OR UNMAPPABLE TOXIC SITES MIGHT NOT BE IDENTIFIED BY THIS REPORT'S CHECK OF 21 TOXIC SITE CATEGORIES. TOXIC SITES REPORTED IN OTHER GOVERNMENT DATABASES MIGHT ALSO EXIST. FOR THESE REASONS, YOUR REPORT MIGHT NOT IDENTIFY ALL THE TOXIC SITES THAT EXIST IN THE AREA IT SEARCHES;

- The appendix of your report contains a listing of sites that could not be mapped due to incomplete or erroneous address information or other mapping problems. This listing includes unmappable toxic sites in zip code areas within one mile of the target address as well as toxic sites without zip codes reported in the same county. IF YOU WOULD LIKE INFORMATION ON ANY OF THE LISTED SITES, PLEASE CONTACT *TOXICS TARGETING AND REFER TO THE SITE ID NUMBER.*

- Some toxic sites identified in your report may be classified as **known hazards**. Most of the toxic sites identified in your report involve **potential hazards** related to the on-site use, manufacture, handling, storage, transport or disposal of toxic chemicals. Some of the toxic sites identified in your report may be the addresses of parties responsible for toxic sites located elsewhere. YOU SHOULD ONLY CONCLUDE THAT TOXIC HAZARDS ACTUALLY EXIST AT A SPECIFIC SITE WHEN GOVERNMENT AUTHORITIES MAKE THAT DETERMINATION OR WHEN THAT CONCLUSION IS FULLY DOCUMENTED BY THE FINDINGS OF AN APPROPRIATE SITE INVESTIGATION UNDERTAKEN BY LICENSED PROFESSIONALS;

- Compass directions and distances are approximate. Compass directions are calculated from the subject property address to the mapped location of each identified toxic site. The compass direction does not necessarily refer to the closest property boundary of an identified toxic site. The compass direction also can vary substantially for toxic sites that are located very close to the subject property address.

- The information presented in your report is a summary of the information that *Toxics Targeting* obtains from government agencies on reported toxic sites. YOU MAY BE ABLE TO OBTAIN ADDITIONAL INFORMATION ABOUT REPORTED SITES WITH THE FREEDOM OF INFORMATION REQUEST FORM LETTERS THAT ARE PROVIDED ON THE INSIDE OF THE BACK COVER.

Section One:

Report Summary

- *Table One: Number of Identified Toxic Sites By Distance Interval*
- *Table Two: Identified Toxic Sites By Direction*
- *Table Three: Identified Toxic Sites By Category*
- *Table Four: Identified Toxic Sites By Proximity*
- *Map One: One-Mile Radius Map*
- *Map Two: Half-Mile Radius Map*
- *Map Three: Quarter-Mile Radius Map*
- *Map Four: Quarter-Mile Radius Close up Map*

NUMBER OF IDENTIFIED SITES BY DISTANCE INTERVAL

Database Searched	0 − 100 ft	100 ft − 1/8 mi	1/8 mi − 1/4 mi	1/4 mi − 1/2 mi	1/2 mi − 1 mi	Site Category Totals
ASTM−Required 1 Mile Search						
National Priority List (NPL) Sites	0	0	0	0	0	0
NYS Inactive Hazardous Waste Disposal Site Registry	0	0	0	0	1	1
NYS Inactive Haz Waste Disposal Site Registry Qualifying	0	0	0	0	0	0
RCRA Corrective Action (CORRACTS) Sites	0	0	0	0	0	0
ASTM−Required 1/2 Mile Search						
Delisted National Priority List (NPL) Sites	0	0	0	0	Not searched	0
CERCLIS Superfund Non−NFRAP Sites	0	0	0	0	Not searched	0
CERCLIS Superfund NFRAP Sites	0	0	0	0	Not searched	0
Brownfields Sites						
Voluntary Cleanup Program	0	0	0	0	Not searched	0
Environmental Restoration Program	0	0	0	0	Not searched	0
Brownfield Cleanup Program	0	0	0	0	Not searched	0
NYSDEC Solid Waste Facilities / Landfills	0	0	0	0	Not searched	0
RCRA Hazardous Waste Treatment, Storage, Disposal Sites	0	0	0	0	Not searched	0
NYS Toxic Spills						
Active Tank Failures	0	0	0	0	Not searched	0
Active Tank Test Failures	0	0	0	1	Not searched	1
Active Spills − Unknown / Other Causes	0	0	0	0	Not searched	0
Active Spills − Miscellaneous Causes	0	0	0	0	Not searched	0
Closed Tank Failures	0	0	0	0	Not searched	0
Closed Tank Test Failures	0	0	0	0	Not searched	0
Closed Spills − Unknown / Other Causes	0	0	0	0	Not searched	0
Closed Spills − Miscellaneous Causes	0	0	2	0	Not searched	2
ASTM−Required Property & Adjacent Property (1/4 Mile Search)						
NYS Major Oil Storage Facilities	0	0	0	Not searched	Not searched	0
Local & State Petroleum Bulk Storage Sites	0	0	0	Not searched	Not searched	0
RCRA Hazardous Waste Generators & Transporters	0	0	0	Not searched	Not searched	0
NYS Chemical Bulk Storage Sites	0	0	0	Not searched	Not searched	0
Emergency Response Notification System (ERNS)	0	Not searched	Not searched	Not searched	Not searched	0
Institutional Controls / Engineering Controls (IC/EC)	See databases for NPL, CERCLIS, Inactive Hazardous Waste Disposal Site Registry and Brownfield Sites.					
ASTM−Required Databases Distance Interval Totals	**0**	**0**	**2**	**1**	**1**	**4(0)**

Numbers in ( ) indicate spills not mapped and profiled in this report, and are listed at the end of the active and closed spills sections. See these lists for a description of the parameters involved with identifying these spills.

NOTE: Table continues on next page.

Non−ASTM Databases 1/2 Mile Search						
Hazardous Substance Waste Disposal Sites	0	0	0	0	Not searched	0
Non−ASTM Databases 1/4 Mile Search						
Toxic Release Inventory Sites (TRI)	0	0	0	Not searched	Not searched	0
Permit Compliance System (PCS) Toxic Wastewater Discharges	0	0	0	Not searched	Not searched	0
Air Discharges	0	0	0	Not searched	Not searched	0
Civil & Administrative Enforcement Docket Facilities	0	0	0	Not searched	Not searched	0
Non−ASTM Databases Distance Interval Totals	**0**	**0**	**0**	**0**	**Not Searched**	**0**
Distance Interval Totals	***0***	***0***	***2***	***1***	***1***	***4(0)***

Numbers in ( ) indicate spills not mapped and profiled in this report, and are listed at the end of the active and closed spills sections. See these lists for a description of the parameters involved with identifying these spills.

Identified Toxic Sites by Direction

Amy‘s Kitchen − Lipoff Wells
Goshen, NY 10924

* Compass directions can vary substantially for sites located very close to the subject property address.

Sites less than 100 feet from subject property sorted by distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
No sites found less than 100 feet from subject property				

Sites between 100 ft and 660 ft from the subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
No sites found between 100 feet and 660 feet				

Sites equal to or greater than 660 ft from subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
2	ANN BLAKE RESIDENCE	51 OWENS RD	2035 feet to the ENE	Active Tank Test Failure
4	BASEMENT CONCRETE FLOOR	138 CHEECHUNK ROAD	1124 feet to the E	Closed Status Spill (Misc. Spill Cause)
3	POWER LINE RIGHT−OF−WAY	160 HARTLEY RD	828 feet to the SE	Closed Status Spill (Misc. Spill Cause)
1	OLD AL TURI LANDFILL	73 HARTLEY ROAD	3044 feet to the S	NYSDEC Inactive Haz Waste Disposal Site

Identified Toxic Sites by Category

Amy‘s Kitchen − Lipoff Wells
Goshen, NY 10924

* Compass directions can vary substantially for sites located very close to the subject property address.

NYSDEC Inactive Haz. Waste Disposal Site Registry −− Total Sites − 1

Database searched at 1 MILE − ASTM required search distance: 1 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
1	336016	OLD AL TURI LANDFILL	73 HARTLEY ROAD	3044 feet to the S

Active Tank Test Failures −− Total Sites − 1

Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
2	1411004	ANN BLAKE RESIDENCE	51 OWENS RD	2035 feet to the ENE

Closed Status Spills (Miscellaneous Spill Causes) −− Total Sites − 2

Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
3	1407791	POWER LINE RIGHT−OF−WAY	160 HARTLEY RD	828 feet to the SE
4	1206546	BASEMENT CONCRETE FLOOR	138 CHEECHUNK ROAD	1124 feet to the E

Identified Toxic Sites by Proximity

Amy‘s Kitchen − Lipoff Wells, Goshen, NY 10924

* Compass directions can vary substantially for sites located very close to the subject property address.

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
3	POWER LINE RIGHT−OF−WAY	160 HARTLEY RD	828 feet to the SE	Closed Status Spill (Misc. Spill Cause)
4	BASEMENT CONCRETE FLOOR	138 CHEECHUNK ROAD	1124 feet to the E	Closed Status Spill (Misc. Spill Cause)
2	ANN BLAKE RESIDENCE	51 OWENS RD	2035 feet to the ENE	Active Tank Test Failure
1	OLD AL TURI LANDFILL	73 HARTLEY ROAD	3044 feet to the S	NYSDEC Inactive Haz Waste Disposal Site

Toxics Targeting
1 Mile Buffer Search Map

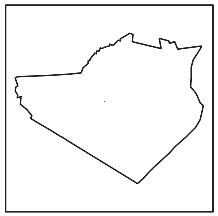
Amy's Kitchen - Lipoff Wells

Goshen, NY 10924

N

W E

S



Orange County

National Priority List (NPL)

Inactive Hazardous Waste Disposal Registry Site

Inact. Haz Waste Disp. Registry Qualifying

RCRA Corrective Action Facility

Subject Area

Waterbody

County Border

Railroad Tracks

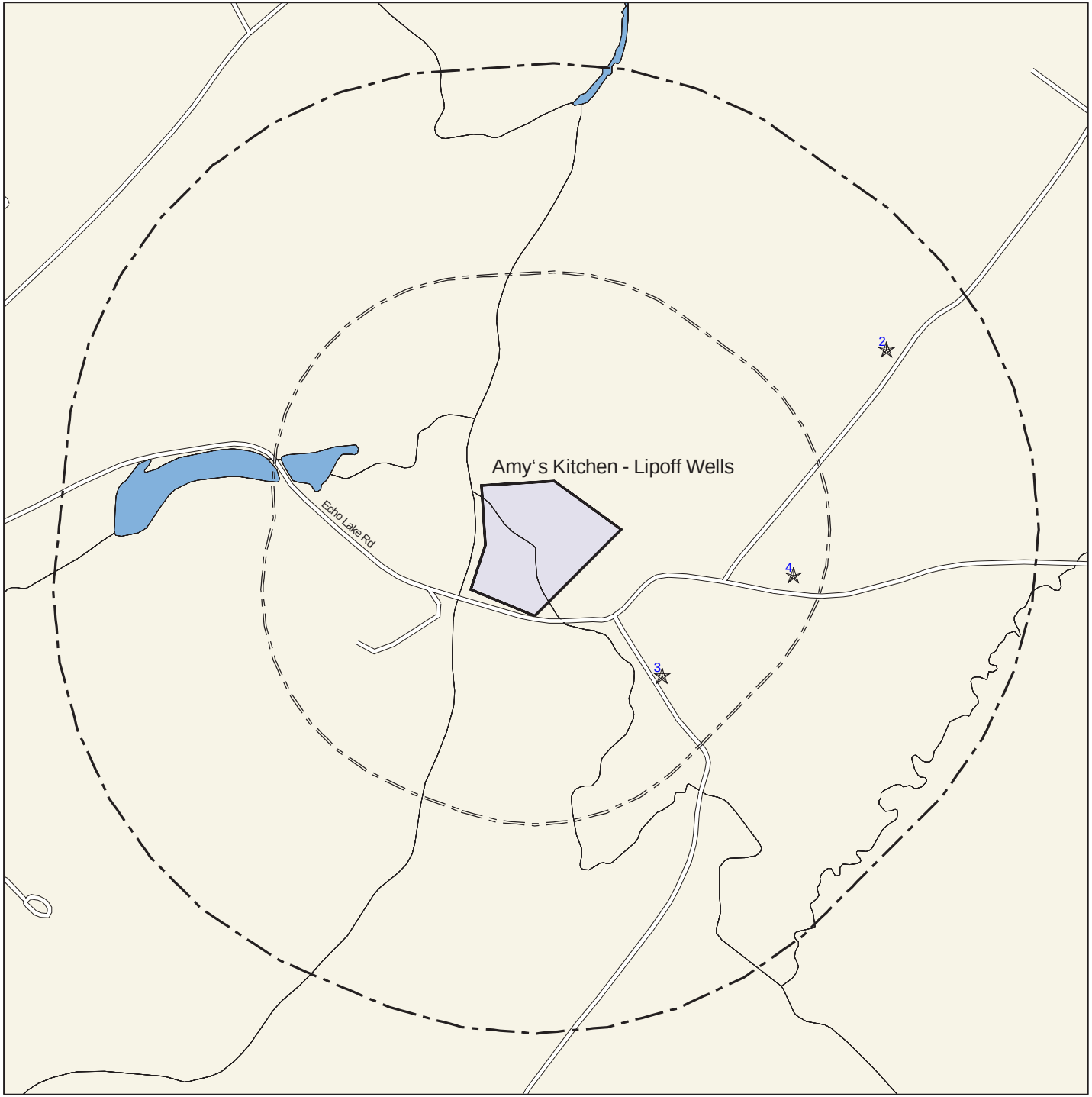
1 Mile Radius

1/2 Mile Radius

1/4 Mile Radius

1/8 Mile Radius

Scale: 1 inch = 1717 feet



Toxics Targeting
1/2 Mile Buffer Search Map

Amy‘s Kitchen - Lipoff Wells

Goshen, NY 10924

N
W
E
S

Orange County

Delisted NPL Site

CERCLIS Superfund Non-NFRAP Site

CERCLIS Superfund NFRAP Site

Hazardous Waste Treater, Storer, Disposer

Hazardous Substance Waste Disposal Site

Solid Waste Facility

Brownfields Site

Hazardous Material Spill

Subject Area

Waterbody

County Border

Railroad Tracks

1 Mile Radius

1/2 Mile Radius

1/4 Mile Radius

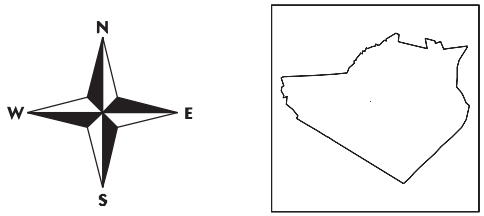
1/8 Mile Radius

Scale: 1 inch = 929 feet

Toxics Targeting
1/4 Mile Buffer Search Map

Amy‘s Kitchen - Lipoff Wells

Goshen, NY 10924



Orange County

- Major Oil Storage Facility
- Chemical Storage Facility
- Toxic Release
- Wastewater Discharge
- Enforcement Docket Facility
- Air Release
- Petroleum Bulk Storage Facility
- Hazardous Waste Generator, Transp.

- Subject Area
- County Border
- 1/4 Mile Radius
- Waterbody
- Railroad Tracks
- 1/8 Mile Radius

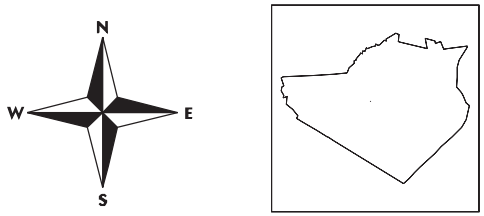
Scale: 1 inch = 535 feet

Toxics Targeting
1/4 Mile Buffer Closeup Map

Amy's Kitchen - Lipoff Wells

Goshen, NY 10924

Scale: 1 inch = 535 feet



Orange County

- National Priority List (NPL) *
- Delisted NPL Site **
- CERCLIS Superfund Non-NFRAP Site **
- CERCLIS Superfund NFRAP Site **
- Inactive Hazardous Waste Disposal Registry Site *
- Inact. Haz Waste Disp. Registry Qualifying *
- Hazardous Waste Treater, Storer, Disposer **
- RCRA Corrective Action Facility *
- Hazardous Substance Waste Disposal Site **
- Solid Waste Facility **
- Major Oil Storage Facility ***
- Brownfields Site **
- Chemical Storage Facility ***
- Hazardous Material Spill **
- Toxic Release ***
- Wastewater Discharge ***
- Petroleum Bulk Storage Facility ***
- Enforcement Docket Facility ***
- Hazardous Waste Generator, Transp. ***
- Air Release ***
- Remediation Site Borders

- Subject Area
- Waterbody
- County Border
- Railroad Tracks
- 1/4 Mile Radius
- 1/8 Mile Radius

* 1 Mile Search Radius

** 1/2 Mile Search Radius

*** 1/4 Mile Search Radius

Section Two: Toxic Site Profiles

The heading of each *Toxic Site Profile* refers to the site's map location and details:

- The facility name, address, city, state, and zip code.
- Any changes that were made to a site's address in order to map its location.
- The site mapping method that was used (see ***How Sites are Located***, at the end of this section for more information).

Toxic Site Profiles summarize information provided by site owners or operators and government agencies regarding various toxic chemical activities reported at each site, such as:

- Whether chemicals were stored, produced, transported, discharged or disposed of.
- The name of chemicals and their Chemical Abstract Series (CAS) numbers.
- The amount of chemicals and the units (gallons/pounds) the chemical was measured in.
- Whether the site or storage tanks at the site are currently active or inactive.
- Special codes used by government agencies to regulate hazardous waste activities at some sites, or a complete description of the codes follows the profiles section.

For selected individual chemicals reported at various toxic sites, some potential health effect summary information appears below the site profile. Each potential health effect summary identifies chemicals by name and by Chemical Abstract Series (CAS) Number. An "x" under each potential health effect heading indicates positive toxicity testing results reported by the National Institute of Occupational Safety and Health's Registry of Toxic Effects of Chemical Substances (RTECS). Some chemicals (mostly appearing in profiles of Hazardous Waste facilities), are reported as mixtures, and RTECS health effect information is only available for individual chemicals. In addition, RTECS only provides information on approximately 100,000 common chemicals. Consequently, the absence of potential health effect summary information for a particular chemical identified in a Toxic Site Profile does not necessarily mean that the chemical does not pose potential health effects.

The Maximum Contaminant Level (MCL) in drinking water allowed for selected chemicals is also noted. In most cases, the only applicable MCL has been set by the New York State Department of Health (NYSDOH). Where NYSDOH has not set an MCL, the federal standard, if one exists, is listed and is marked by an asterisk.

Presented below are column headings that describe the health effect definitions used in RTECS and applicable New York State and federal drinking water standards. Reference sources for information presented in this section are also provided.

ACUTE TOX: **Acute Toxicity**: Short-term exposure to this chemical can cause lethal and non-lethal toxicity effects not included in the following four categories.

TUMOR TOX: **Tumorigenic Toxicity**: The chemical can cause an increase in the incidence of tumors.

MUTAG TOX: **Mutagenic Toxicity**: The chemical can cause genetic alterations that are passed from one generation to the next.

REPRO TOX: **Reproductive Toxicity**: May signify one of the following effects: maternal effects, paternal effects, effects on fertility, effects on the embryo or fetus, specific developmental abnormalities, tumorigenic effects, or effects on the newborn (only positive reproductive effects data for mammalian species are referenced).

IRRIT TOX: **Primary Irritant**: The chemical can cause eye or skin irritation.

MCL: **Drinking Water Standard - Maximum Contaminant Level** (MCL) listed under Drinking Water Supplies, 10 NYCRR Part 5, Subparts 1.51(f),(g), and (h) for NYDOH MCL's and under the Safe Drinking Water Act, 40 CFR 141, Subparts B and G, (* indicates value for total trihalomethanes) for federal MCL's.

Reference Source for Toxicity Information: Registry of Toxic Effects of Chemical Substances (RTECS), NIOSH (on-line database); For further information, contact: NIOSH, 4676 Columbia Parkway, Cincinnati, OH, 45226, 800/35-NIOSH.

Reference Source for Drinking Water Standards: New York State Department of Health, Bureau of Toxic Substances Assessment, 2 University Place, Room 240, Albany, NY 12203, 518/458-6373.

U.S. Environmental Protection Agency, Office of Drinking Water, 401 M St SW, Mailstop WH-556, Washington, DC, 20460, 202/260-5700.

Inactive Hazardous Waste Disposal Site Classifications:

1 -- Causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or the environment -- immediate action required;
2 -- Significant threat to the public health or environment -- action required;
3 -- Does not Present a significant threat to the environment or public health -- action may be deferred;
4 -- Site properly closed --requires continued management;
5 -- Site properly closed, no evidence of present or potential adverse impact -- no further action required;
2a -- This temporary classification has been assigned to sites where there is inadequate data to assign them to the five classifications specified by law;
A -- Work underway and not yet complete;
P -- Potential Site;
$D_{1, 2, 3}$ -- Delisted Site (1: hazardous waste not found; 2: remediated; 3: consolidated site or site incorrectly listed);
C -- Remediation Complete (formerly D2).

NO NATIONAL PRIORITIES LIST (NPL) SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

INACTIVE HAZ WASTE DISPOSAL REGISTRY OR REGISTRY−QUALIFYING SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 1 **OLD AL TURI LANDFILL** **Facility Id: 336016**
73 HARTLEY ROAD GOSHEN, NY 10924 TT−Id: 120A−0004−885

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 3044 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Special Note: This site is one of 421 Inactive Hazardous Waste Disposal Sites that reportedly are being reinvestigated for chlorinated solvents that may pose soil gas vapor intrusion hazards. Prior to 2003, many of these sites were determined to be cleaned up or not to pose hazards.

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 336016
CLASSIFICATION CODE: 04 REGION: 3 DEC ID: 56005
CLASSIFICATION CODE DESCRIPTION:
Site is properly closed - requires continued management.

NAME OF SITE: Old Al Turi Landfill
STREET ADDRESS: 73 Hartley Road TOWN: Goshen
CITY: Goshen ZIP: 10924 COUNTY: Orange

ESTIMATED SIZE: 43.5 Acres
SITE TYPE: Dump- Structure- Lagoon- Landfill-X Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
Ground Water Use Restriction
Cover System
Deed Restriction

CROSS REFERENCES:

IDENTIFIER	SOURCE
36-S-04	Muni. Waste ID

Deed control No County Recording Identifier
NYD980506190 EPA Site ID
W3-00777-87-06 Agreement/Consent Order Number

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:
CURRENT OWNER(S):

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:
NAME: AL TURI LANDFILL, INC. Operator Type: PRP - Class 2 HazSubs
JOSEPH GAMBINO
ADDRESS: 73 HARTLEY ROAD
GOSHEN, NY 10924

HAZARDOUS WASTE DISPOSAL PERIOD: from 1968 to 1983

SITE DESCRIPTION:
Location Description: This 44 acre site is a privately owned, inactive and unlined landfill located west of the Village of Goshen in Orange County. The landfill is bordered on the west by a man-made diversion of the Wallkill River known as the Cheechunk Canal, to the east by Hartley Road, to the south by Route 17M, and to the north by a meadow owned by the Al Turi Landfill.

Site Features: The landfill has been capped with geo-membrane, a barrier protection layer of soil and top soil capable of sustaining a vegetative cover. There is a gas collection and monitoring system installed on-site and the gas is used to generate electricity or is flared when the generator is not operational. An adjoining solid waste landfill, also owned by Al Turi, Inc., has also been closed.

Current Use: The site is not in use.

Surrounding Uses: The area is primarily industrial with scattered residential development. To the west of the site is the Hudson Psychiatric Center. Commercial and mixed use establishments exist north and south of the site.

Historical Sources of Contamination: The landfill accepted wastes from municipal, commercial and industrial sources from 1968 to 1981. Right-to-know reports indicate that at least 230 tons of still bottom residue, waste solvents and allyl isothiocyanate waste were disposed of at this site during the 1970’s from Hercules, Inc.

Investigation/Actions completed to date: Groundwater monitoring has been conducted at the site since 1979. A Remedial Investigation/ Feasibility was completed in 1996 and a Record of Decision (ROD) was issued in March 1996. Pursuant to the ROD, the landfill was capped in accordance with Part 360, a groundwater monitoring network was established and institutional controls in the form of a deed restriction were put in place. Construction of the remedy was completed in August 2001. A contingency plan to address any significant impact to the Wallkill River, also required by the ROD, is in place.

The potential for soil vapor intrusion was evaluated by the NYSDOH and the NYSDEC, and no further actions were deemed necessary in July 2008.

Current Status: Groundwater and landfill gas are monitored periodically. A 2009 review of the semi-annual analytical results for the years 2006 to 2008 indicates that the Ground Water Trigger Levels (GWTLs) have not been exceeded. The decrease in the median concentration of ammonia since the capping of the landfill in 2001 indicates that the implemented remedy has been effective in decreasing leachate-related groundwater quality impact at the site.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
VINYL CHLORIDE	UNKNOWN
CHLOROETHYLENE	UNKNOWN
ETHYLIDENE DICHLORIDE	UNKNOWN
CYANIDES(SOLUBLE CYANIDE SALTS)	UNKNOWN
BARIUM	UNKNOWN
MAGNESIUM	UNKNOWN
MANGANESE	UNKNOWN
IRON	UNKNOWN
BENZENE	UNKNOWN
DICHLOROETHYLENE	UNKNOWN
TRICHLOROETHENE (TCE)	UNKNOWN
1,1-DICHLOROETHANE	UNKNOWN
TRICHLOROMONOFLUOROMETHANE	UNKNOWN
1,2-DICHLOROETHANE	UNKNOWN
DICHLORODIFLUOROMETHANE	UNKNOWN
CHROMIUM	UNKNOWN
ZINC	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Nature and Extent of Contamination: The contaminants of concern identified at this site include inorganics (metals) and volatile organic compounds.

Unknown quantities of the following volatile organic compounds (VOCs) are suspected to have been disposed at the site: vinyl chloride, benzene, dichlorodifluoromethane, cis-1,2-dichloroethene, and 1,1-dichloroethane.

Extent of contamination: Groundwater in the vicinity of the landfill has been impacted. Since the groundwater discharges to the nearby Wallkill River, the potential for impact to the Wallkill River is being monitored to ensure that the thresholds levels established in the contingency plan for the various contaminants of concern are not exceeded.

For each of the thirteen groundwater wells that are monitored as a part of the contingency plan, groundwater trigger levels for the contaminants of concern have been established.

ASSESSMENT OF HEALTH PROBLEMS:

Contact with contaminated soils is not likely because the soils are consolidated, covered by clean fill, and a fence surrounds the site. Drinking contaminated groundwater is not expected since there are no private water supplies downgradient from the site.

PROJECT COMPLETIONS:
Operable Unit 01 - REMEDIAL PROGRAM

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Investigation		03/01/1996	Actual
Remedial Design		07/01/1998	Actual
Remedial Action		08/15/2001	Actual

The New York State Department of Environmental Conservation has not publicly updated the following fields since 2003:

ANALYTICAL DATA AVAILABLE FOR:	Air-X	Surface Water-X	Groundwater-X	Soil-X	Sediment-X
APPLICABLE STANDARDS EXCEEDED IN:	Groundwater-X	Drinking Water-	Surface Water-	Air-	

GEOTECHNICAL INFORMATION:

SOIL/ROCK TYPE:	Intermixed sand-rich and silt-rich loam over till.			
GROUNDWATER DEPTH:	Range: 10 to 70 feet.			
LEGAL ACTION:	Type: Consent Order		State-X	Federal-
STATUS:	Negotiation in Progress-		Order Signed-X	
REMEDIAL ACTION:	Proposed-	Under Design-X	In Progress-	Completed-X
NATURE OF ACTION:	Cap.			

NO RCRA CORRECTIVE ACTION SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

NO CERCLIS SUPERFUND SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO BROWNFIELDS SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO SOLID WASTE FACILITIES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSERS IDENTIFIED WITHIN THE 1/2 MILE SEARCH RADIUS

HAZARDOUS MATERIAL SPILLS INTRODUCTION

The Hazardous Material Spills in this section are divided into eight spill cause groupings. These include:

Active Spills Section: Spills with incomplete paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

1) Tank Failures
2) Tank Test Failures
3) Unknown Spill Cause or Other Spill Cause Hazardous Spills
4) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, Vandalism and Storms.

Closed Status Spills Section: Spills with completed paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

5) Tank Failures
6) Tank Test Failures
7) Unknown Spill Cause or Other Spill Cause Hazardous Spills
8) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, Vandalism and Storms.

All spills within each spill cause category are presented in order of proximity to the subject site address.

Please note that spills reported within 0.25 mile (or one−eighth mile in New York City) are mapped and profiled.

Between 0.25 mile (or one−eighth mile in New York City) and 0.5 mile, only the following spills are mapped and profiled:

* Tank Failures;

* Tank Test Failures;

* Unknown Spill Cause or Other Spill Cause;

* Spills greater than 100 units of quantity; and

* Spills reported in the NYSDEC Fall 1998 MTBE Survey.

A table at the end of each section presents a listing of reported Miscellanous Spills with less than 100 units located between 0.25 mile (or one−eighth mile in Manhattan) and 0.5 mile. These spills are neither mapped nor profiled.

NO ACTIVE TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

ACTIVE TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 2 **ANN BLAKE RESIDENCE** **Spill Number: 1411004** **Close Date:**
51 OWENS RD GOSHEN, NY TT−Id: 520A−0307−398

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2035 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	PRIVATE DWELLING	Spiller:	KATHY BLAKE − ANN BLAKE RESIDENCE	Spiller Phone:	
Notifier Type:	Tank Tester	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	DXWEITZ	Contact for more spill info:	KATHY BLAKE	Contact Person Phone:	(845) 294−5294

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/19/2015		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

test failure

DEC Investigator Remarks:

2/19/15− Spoke to Kathy, sister of owner. She has had tank removed already. Bud Going is consultant involved with removal/cleanup. She will be notifying her Ins. Co. DT

NO ACTIVE UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 mile. Between 1/4 mile and 1/2 mile search radius, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

THE FOLLOWING ACTIVE SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE SEARCH RADIUS FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM, OR STORMS. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY

No dropped spills found for this category

NO CLOSED STATUS TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO CLOSED STATUS TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO CLOSED STATUS UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

CLOSED STATUS HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/4 mile. Between 1/4 mile and 1/2 mile search radius, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 3 **POWER LINE RIGHT−OF−WAY** **Spill Number: 1407791** **Close Date: 10/29/2014**
160 HARTLEY RD GOSHEN, NY TT−Id: 520A−0303−867

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 828 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	NORTH LINE UTILITIES	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	MBMASTRO	Contact for more spill info:	MIKE	Contact Person Phone:	5853297127

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/28/2014		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	3.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Hydraulic line failed on bucket truck on O&R right of way. Spill was to stone and dirt. Clean up started with spill kit, further clean up pending until bucket, which is stuck extended, can be moved. Estimated 2−3 gallons lost.

DEC Investigator Remarks:

Spill from boom on truck. Oil on the ground is soaked up and pads down to catch drips. Machine will be fixed tonight, mechanic is on his way. Remainder of material will be cleaned up after machine is repaired and moved, nfa..m

Map Identification Number 4 **BASEMENT CONCRETE FLOOR** **Spill Number: 1206546** **Close Date: 09/19/2013**
138 CHEECHUNK ROAD GOSHEN, NY TT−Id: 520A−0279−481

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 1124 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill:	PRIVATE DWELLING	Spiller:	DONNA ALLEN − HOMEOWNER	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxtraver	Contact for more spill info:	DONNA ALLEN	Contact Person Phone:	(347) 672−6315

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/02/2012		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

Lightning strike. Clean up done.

DEC Investigator Remarks:

10/2/12− Spoke to owner, Donna Allen. She reports spill occurred on 7/26/12. Oil line damaged by lightning strike. Oil line on top of floor with burn hole that caused some 30−40 gals. of oil to leak. She conducted initial cleanup herself with kitty liter, then a cleanup company known as Belfor completed cleanup and left ventilation fans in place. Her Ins. Co. is Travelers.
She reports there still are odors, but not that noticeable.
She will not be available to meet on site until Monday, 10/8/12. DT

Belfor− White Plains, NY ; Philip Smith, 914−798−1440.

10/15/12− Site inspection with owner. Inspected basement of home where line leak occurred. 2 ventilation fans in place from Belfor. Noted where core drills were placed thru slab in basement. Report of findings of this work performed by Hygenix, Inc. provided by owner.
DEC to review report and comment. DT

11/2/12− Sent email to Hygenix approving RAP with comments. DT

3/5/13− Site inspection with owners, Hygenix, Belfor, and Travelers. Inspected basement where some floor removal and excavation work has been performed. Excavation is some 3 feet deep by 2 feet wide. Hygenix reports that soil samples from sidewalls of excavation still exceed cleanup guidance criteria. Owners report that groundwater did enter excavation during recent heavy rain event.
Hygenix proposed to delineate soil impacts under floor by installing additional core borings around current excavation;
DEC/owners found this acceptable. Work to be conducted today and samples collected. Findings to be reported by end of next week with proposal for additional work.
Owners had concerns of oil odors in residence. No odors detected by PID meter in entire residence. DEC recommended that excavation be covered with plastic at end of work days to eliminate any potential for odors. Belfor to arrange for removal of some 10 drums of excavated soil from property. DT

3/19/13− Discussed recent findings with Art Morris of Hygenix. He proposes to saw cut slab and do limited soil removal from trench to one boring location that has SVOC impact. He will email proposal to DEC.
DEC received email proposal and approved. DT

8/14/13− Spoke to Art Morris of Hygenix. site work has been completed and floor restred with subslab piping. Indoor air sampling tentatively scheduled for early September.
DEC required report of work to date up including floor restration/subslab piping. DT

8/28/13− Received report of cleanup activity to date. Additional sub slab soils removed since site inspection of 3/5/13. Postex samples well below cleanup guidance values. Area backfilled with sub slab piping installed. Indoor air sampling is proposed for Sept./Oct. DT

9/18/13− Spoke to owner, Donna Allen. Advised her of proposed air sampling by Hygenix. She reported she has no concerns in regards to indoor air quality. DEC/DOH (spoke to Steve Gagnon) to not require indoor air sampling based upon resident/owner statement and previous inspections where odors were not noted.
Contacted Hygenix, Art Morris, in regards to indoor air sampling and no concern from owner of odors. DEC to not require indoor air sampling and will close spill. NFA DT

THE FOLLOWING CLOSED SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/4 MILE AND 1/2 MILE FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM OR STORMS. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY

No dropped spills found for this category

NO OIL STORAGE FACILITIES LARGER THAN 400,000 GALLONS IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO PETROLEUM BULK STORAGE FACILITIES LESS THAN 400,000 GALLONS IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO HAZARDOUS WASTE GENERATORS/TRANSPORTERS IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

NO CHEMICAL STORAGE FACILITIES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO HAZARDOUS SUBSTANCE WASTE DISPOSAL SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO TOXIC AIR, LAND AND WATER RELEASES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO WASTEWATER DISCHARGES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO AIR DISCHARGE FACILITIES IDENTIFIED WITHIN 1/4 MILE SEARCH RADIUS

NO CIVIL & ADMINISTRATIVE ENFORCEMENT DOCKET FACILITIES IDENTIFIED WITHIN THE 1/4 MILE SEARCH RADIUS

U.S. EPA EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) SPILLS
AT THE LOCATION OR POTENTIALLY AT THE LOCATION OF
Amy's Kitchen - Lipoff Wells
Goshen, NY 10924

* Any ERNS Spills listed below are NOT mapped in this report *

ONSITE ERNS (A count of these spills can be found in the distance interval table):
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

POTENTIALLY ONSITE ERNS:
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

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Unmappable facilities for 'Orange' County

NPL/CERCLIS/NYSDEC Inactive Haz. Waste or Reg. Qual. Sites

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
336040	MONTGOMERY OVERALL SERVICE	336040 MONTGOMERY OVERALL SERVICE		UNKNOWN
336047	REVERE SMELTING & REFINING CORP. OF NJ			UNKNOWN
NYD980506190	AL TURI LF	HARTLEY RD	GOSHEN	10924

Solid Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
36E04	ALTURI GAS RECOVERY			10924
36S12	CEJWIN'S CAMPS			UNKNOWN
36S13	CNTRAL HUDSON GAS & ELEC.			UNKNOWN
36W02	TAYLOR RECYCLING FACILITY			UNKNOWN
36W06	NEW WINSOR EQUIPMENT RENT			UNKNOWN
36W07	MAYBROOK MATERIALS			UNKNOWN
36X01	SYNCOR NUCLEAR PHARMACY S			UNKNOWN
36Y03	NEAL ALDER'S TOPSOIL			UNKNOWN
36F02	MIDDLETOWN LFG, LTD. (AT)	AL TURI LANDFILL	GOSHEN	10924
36S04	AL TURI LF, INC.	73 HARTLEY ROAD	GOSHEN	10924
NY00000002387	AL TURI LF, INC.	73 HARTLEY ROAD	GOSHEN	10924
NY00000002403	AMERESCO - FORMERLY MIDDLETOWN LFG, LTD.	AL TURI LANDFILL	GOSHEN	10924
NY40000010514	GOSHEN RECYCLING CENTER	GOSHEN RECYCLING CENTER	GOSHEN	10924
NY00000002401	LITTLE BRITTAIN SITE	UNKNOWN	UNKNOWN	UNKNOWN

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
1410487	ORANGE COUNTY EM. RES.	21 SOUTH PUTT CORNERS ROAD		UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
1208165	ORANGE COUNTY HURRICANE SANDY	ALL OF ORANGE COUNTY	NEWBURGH	UNKNOWN

Hazardous Spills - TANK FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9416349	MARKEL RESIDENCE	ECHO LAKE ROAD	NEW HAMPTON	UNKNOWN
9410311	DOUHERTY RESIDENCE	RD 4 BOX 390	WAWAYANDA	10973

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9612574	SPILL NUMBER 9612574	RD 1 BOX 499		UNKNOWN
9315557	111111111111	UNKNOWN		UNKNOWN
9314382	111111111	UNKNOWN		UNKNOWN
9312516	111111111	UNKNOWN		UNKNOWN
9307357	11111111111111111111	UNKNOWN		UNKNOWN
9307010	11111111111111	UNKNOWN		UNKNOWN
9306124	11111111111	UNKNOWN		UNKNOWN
9305931	1111111111	UNKNOWN		UNKNOWN
9305322	111111111111	UNKNOWN		UNKNOWN
9303425	11111111111	UNKNOWN		UNKNOWN
9303357	1111111111	UNKNOWN		UNKNOWN
9303329	1111111111	UNKNOWN		UNKNOWN
9301341	11111111111	UNKNOWN		UNKNOWN
9300671	11111111111	UNKNOWN		UNKNOWN
9214241	111111111	UNKNOWN		UNKNOWN
9213074	1111111	UNKNOWN		UNKNOWN
9205774	1111111111111	UNKNOWN		UNKNOWN

9202836	11111111111	UNKNOWN		UNKNOWN
1106445	ORANGE IRENE	ALL OF ORANGE COUNTY		UNKNOWN
9814382	GOSHEN SECURE CENTER	CROSSROAD	GOSHEN	10924
8700999	DEC DUMP	ROUTE 17 M	GOSHEN	10924
9905488	RESIDENCE	OLD DENTION HILL ROAD	WAWAYANDA	UNKNOWN
8100682			WAYANDA	10973

Hazardous Spills - MISC. SPILL CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9912574	POLE 49278-51483	CHEECHUNK RD	GOSHEN	10924
9505676	RD 3 PO BOX 452	RD 3 PO BOX 452	GOSHEN	10924
9402129	LOGGING COMPANY	ROVALENE ST. DEAD END	GOSHEN	10924
9000484	EXXON S/S	P.O. BOX 702	GOSHEN	UNKNOWN
8909638	ALTERI LANDFILL	RT 17M	GOSHEN	UNKNOWN
8709311	MC BRIDE	MCBRIDE TERMINAL	GOSHEN	10924
8706108	MCBRIDE	MCBRIDE TERMINAL	GOSHEN	10924
1500285	AL TURI LANDFILL	17 M HARTLEY RD	GOSHEN	10924
1000001	POLE 49653-49841	MELBOURNE RD	GOSHEN	10924
0709268	KWON HOME	12 FRAN ROAD NORTH	GOSHEN	10924
0607693	AMARESCO LANDFILL/GAS SIG	73 HARTLEY RD	GOSHEN	10924
0205065	SPILL NUMBER 0205065	354 FAIRWELLS TRAILS	GOSHEN	UNKNOWN
1305069	OUTFLOW	P.O. BOX 158	NEW HAMPTON	10958
0106558	ABANDONED DRUMS	ECHO LAKE RD	NEW HAMPTON	10958
9912412	GERCZAK RESIDENCE	GERCZAK RESIDENCE	UNKNOWN	UNKNOWN
9416346	MARKEL RESIDENCE	ECHO LAKE ROAD	WAWAYANDA	10973

Petroleum Bulk Storage Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
3-457825	AL TURI LANDFILL	73 HARTLEY ROAD	GOSHEN	10924
3-173452	PIERCE WELL DRLL, CO INC	RD BOX 192	NEW HAMPTON	10958

Hazardous Waste Generation or Transport Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYN30003A508	032299-DELISTED			UNKNOWN
NYD982184673	P P G INDUSTRIES INCORPORATED	LOC #1273 WEST GATE IND PK	GOSHEN	10924
NYD982792194	JW OPERATING CO	ALTERI LANDFILL/ROUTE 17	GOSHEN	10924
NYD986895118	AL TURI LANDFILL INC	RTE 17M & HARTLEY RD	GOSHEN	10924
NYN000036S04	AL TURI LANDFILL	RR1 BOX 14 HARTLEY RD	GOSHEN	10924
NYN300000009	ORANGE COUNTY DEPT. OF PUBLIC WORKS	P.O. BOX 509	GOSHEN	UNKNOWN
NYN300000079	DYKSHOORN FARM	RD 2 BOX 105	GOSHEN	UNKNOWN
NYN30003A470	AL TURI LANDFILL INC.	RD #1 BOX 14 HARTLEY ROAD	GOSHEN	10924
NYR000125633	SORRENTO CHEESE	1 SORRENTO DR RTE 17A RTE 17A	GOSHEN	10924
NYD002015360	GOLZ ENTERPRISES INC	RD 1 BOX 673	NEW HAMPTON	UNKNOWN

Wastewater Discharges

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NY0145157	BLUE BEACON OF MONTGOMERY			UNKNOWN
NY0165255	IDC SOILS RECLAMATION			UNKNOWN
NY0208345	WESTWOOD CHEMICAL CORP			UNKNOWN
NY0218693	FEDERAL BLOCK CORP			UNKNOWN
NY0219843	MILL POND STP			UNKNOWN
NY0233617	AGWAY PETROLEUM CORP			UNKNOWN
NY0234117	ROLLING HILLS SD			UNKNOWN
NY0235423	MOBIL S/S 06-LYZ REM PROJ			UNKNOWN
NY0248011	ADVANCED FUEL INC			UNKNOWN
NY0250384	FRANKIE'S SUNOCO REM PROJ			UNKNOWN
NYG997901				UNKNOWN
NYP080080				10940
NYP080090				UNKNOWN
NYP080100				UNKNOWN

NYP080140				UNKNOWN
NYP080260				10940
NYU300060	AAR BROOKS			UNKNOWN
NYU300089				UNKNOWN
NYU300101				UNKNOWN
NY0005622	MACK BROTHERS LTD	PO BOX 431	GOSHEN	10924
NY0166511	AL TURI LANDFILL	73 HARTLEY ROAD	GOSHEN	10924

Air Releases

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
3607100150	MIDDLETOWN LFG/JW OPERATING CORP	ROUTE 17M & HARTLEY ROAD	GOSHEN	10924
3607100153	AL TURI INC (LANDFILL)	RD1 BOX 14	GOSHEN	10924

Hazardous waste codes presented in individual Toxic Information Profiles are defined below.

Source: U. S. Environmental Protection Agency

How Toxic Site Locations Are Mapped

Toxics Targeting maps toxic site locations on a digital version of the U. S. Census map or those used by local authorities using addresses and map coordinates provided by site owners/operators or government agencies. In order to allow site locations to be verified independently, the information used to map each site is presented in the first section of each Toxic Site Profile, along with a description of the mapping technique used and any address corrections that were made in order to locate toxic sites with incomplete or inadequate site location information. The mapping process is explained below.

Map Identification Number: 12 Site Name: Acme World Manufacturing, Inc.

Site Address: 55 Main Street Anytown, NY 11797

MAP LOCATION INFORMATION

Site location mapped by:

Address Matching

1) Most toxic sites are mapped by matching addresses provided by site owners/operators or government agencies with locations on a digital version of the street or parcel map. These site locations are identified with the method used to map them.

Note: Some sites have an address match location and a map coordinate location. Both locations are mapped because they can be equally correct.

or Map Coordinate

2) Some toxic sites are located using map coordinates provided by site owners/ operators or government agencies. These site locations are identified "map coordinate." Map coordinates for Toxic Wastewater Discharges, Toxic Release Inventory sites and Major Oil Storage Facilities should be considered suspect.

or Manual Mapping

or Site Visit

3) Incomplete addresses or map coordinates require some site locations to be determined by commercial street maps (manual mapping), site visits, map coordinates from other databases and address location services. Application of any of these methods is identified accordingly.

ADDRESS CHANGE INFORMATION

Revised Street: NO CHANGE

Revised zip code: NO CHANGE

4) Site addresses are sometimes corrected to eliminate obvious errors that prevent sites from being mapped. All address corrections are noted here.

Information Source Guide

Toxics Targeting's Environmental Reports contain government and other information compiled on 18 categories of reported known or potential toxic sites. Each toxic site database is described below with information detailing a) the source of the information, b) the date when each database is covered to and c) when *Toxics Targeting* obtained the information..

1) **National Priority List for Federal Superfund Cleanup:** Toxic sites nominated for cleanup under the Federal Superfund program. Annual compilation of special two-page detailed profiles of NPL sites. Also includes delisted NPL sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated from: 2/09/2015. Data obtained by Toxics Targeting: 2/09/2015.
New Facilities updated through: 2/09/2015. Data obtained by Toxics Targeting: 2/09/2015.

2) **Inactive Hazardous Waste Disposal Site Registry:** New York State database that maintains information and aids decision making regarding the investigation and cleanup of toxic sites. The Registry's data includes two-page profiles noting site name, ID number, description, classification, cleanup status, types of cleanup, owner information, types and quantities of contaminants, and assessment of health and environmental problems. Also included are sites that qualify for possible inclusion on the Registry. These Registry Qualifying sites may or may not be on the Site Registry.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 5/08/2015. Data obtained by Toxics Targeting: 5/08/2015.
New Facilities updated to: 5/08/2015. Data obtained by Toxics Targeting: 5/08/2015.

3) **Corrective Action Activity (CORRACTS):** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]
Data attributes updated through: 5/12/2015. Data obtained by Toxics Targeting: 5/14/2015.
New facilities updated through: 5/12/2015. Data obtained by Toxics Targeting: 5/14/2015.

4) **CERCLIS:** Toxic sites listed in the Federal Comprehensive Environmental Response, Compensation and Liability Information System. Includes Active and No Further Remedial Action Planned (NFRAP) sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated through: 10/25/2013. Data obtained by Toxics Targeting: 1/7/2014.
New Facilities updated through: 10/25/2013. Data obtained by Toxics Targeting: 1/7/2014.

5) **Brownfield Programs:** NYS programs for sites that are abandoned, idled or under-used industrial and/or commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.
ASTM required.* Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 5/08/2015. Data obtained by Toxics Targeting: 5/08/2015.
New Facilities updated to: 5/08/2015. Data obtained by Toxics Targeting: 5/08/2015.

(a) **Brownfield Cleanup Program (BCP)**
(b) **Voluntary Cleanup Program (VCP)**
(c) **Environmental Restoration Program (ERP)**

6) **Solid Waste Facilities: NYS Solid Waste Registry**, including, but not limited to, landfills, incinerators, transfer stations, recycling centers.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated to: 4/1/2013. Data obtained by Toxics Targeting: 4/1/2013.

7) **RCRA Hazardous Waste Treatment, Storage or Disposal Facility Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the DEC's Division of Environmental Remediation pursuant to NYS Law and the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 4/28/2015. New facilities obtained by Toxics Targeting: 5/18/2015.
Manifest transactions data updated to: 4/28/2015. Manifest transactions data obtained by Toxics Targeting: 5/18/2015.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 5/12/2015. Data obtained by Toxics Targeting: 5/14/2015.
Data attributes updated through: 5/12/2015. Data obtained by Toxics Targeting: 5/14/2015.

8) **Spills Information Database:** Spills reported to the DEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from Petroleum Bulk Storage Regulations) or 6 NYCRR Section 595.2 (from Chemical Bulk Storage Regulations). This database includes both *active* and *closed* spills.
ASTM required.* Fannie Mae.** Source: NYS Department of Environmental Conservation.[2]

New spills through: 4/24/2015 New spills data obtained by Toxics Targeting: 4/24/2015
Spill attribute data through: 4/24/2015 Spill attribute data obtained by Toxics Targeting: 4/24/2015

Active spills: paperwork not completed. Closed spills: paperwork completed.
Both active and closed spills may or may not have been cleaned up (see Date Cleanup Ceased in spill profiles).

9) **Major Oil Storage Facilities:** NYS database of facilities licensed pursuant to Article 12 of the Navigation Law, 6NYCRR Parts 610 and 17NYCRR Part 30, such as onshore facilities or vessels, with petroleum storage capacities equal to or greater than 400,000 gallons. **Tank and other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

Data updated through: 5/11/2015. Data obtained by Toxics Targeting: 5/11/2015.

10) **Petroleum Bulk Storage Facilities:** County or State databases of aboveground and underground petroleum storage facilities.
ASTM required.* Fannie Mae required.**

All New York Counties except Cortland, Nassau, Rockland, Suffolk:
NYS Petroleum Bulk Storage Database. This includes all New York State counties except Cortland, Nassau, Rockland, Suffolk, and Westchester. ASTM required.* Fannie Mae required.**
Source: NYS Department of Environmental Conservation.[2]
New facilities updated through: 5/11/2015. Data obtained by Toxics Targeting: 5/11/2015.
Tank data updated through: 5/11/2015. Data obtained by Toxics Targeting: 5/11/2015.

Westchester County: Data updated through 10/1/1998

Cortland County: **Cortland County Health Dept. Tank database**.
Source: Cortland County Health Department[7]
Data updated through: 7/15/2004 Data obtained by Toxics Targeting: 7/23/2004

Nassau County: a compilation of the following 2 databases:
Heat producing products and other products:
Source: Nassau County Department of Health.[3]
NOTE: This data is being withheld by the Nassau County DOH
Data updated through: 4/1/2001. Data obtained by Toxics Targeting: 1/2/2002

Generally non-heat producing products:
Source: Nassau County Fire Marshal.[4]
Data updated through: 8/6/2009. Data obtained by Toxics Targeting: 9/22/2009

Rockland County: **Rockland County Dept. of Health Tank database.**
Source: Rockland County Department of Health.[5]
Data updated through: 4/13/2004. Data obtained by Toxics Targeting: 4/16/2004.

Suffolk County: **Suffolk County Dept. of Health Article 12 database**
Source: Suffolk County Department of Health Services.[6]
Data updated through: 1/30/2014. Data obtained by Toxics Targeting: 7/22/2014.

11) **RCRA Hazardous Waste Generators and/or Transporters Databases:**
(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the NYS Department of Environmental Conservation's Division of Environmental Remediation pursuant to New York State Law.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 4/28/2015. New facilities obtained by Toxics Targeting: 5/18/2015.
Manifest transactions data updated to: 4/28/2015. Manifest transactions data obtained by Toxics Targeting: 5/18/2015.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]

New facilities updated through:	5/12/2015.	Data obtained by Toxics Targeting:	5/14/2015.
Data attributes updated through:	5/12/2015.	Data obtained by Toxics Targeting:	5/14/2015.

12) **Chemical Bulk Storage Facilities:** New York State database of facilities compiled pursuant to 6NYCRR Part 596 that store regulated substances listed in 6NYCRR Part 597 in aboveground tanks with capacities greater than 185 gallons and /or in underground tanks of any size. **Tank and other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated through: 5/11/2015. Data obtained by Toxics Targeting: 5/11/2015.

13) **Hazardous Substance Waste Disposal Site Study:** NYS database of waste disposal sites that may pose threats to public health or the environment, but could not be remediated using monies from the Hazardous Waste Remedial Fund.
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 5/16/2000. Data obtained by Toxics Targeting: 5/16/2000.

14) **Toxic Release Inventory (TRI):** Federal database of manufacturing facilities required under Section 313 of the Federal Emergency Planning and Community Right-to-Know Act to report releases to the air, water and land of any specifically listed toxic chemical. See Fannie Mae requirement** below.
Source: U. S. Environmental Protection Agency.[1] / NYS Department of Environmental Conservation[2]
Data updated through: 3/8/2004. Data obtained by Toxics Targeting: 3/25/2004

15) **Toxic Wastewater Discharges (Permit Compliance System):** Federal database of discharges of wastewater to surface waters and groundwaters. See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 6/17/2004. Data obtained by Toxics Targeting: 7/19/2004.

16) **Air Discharge Facilities:** EPA AIRS database containing address information on each air emission facility and the type of air pollutant emission it is. Compliance information is also provided on each pollutant as well as the facility itself.
See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency[1]
Data updated through: 11/24/1999. Data obtained by Toxics Targeting: 1/6/2000

17) **Civil Enforcement & Administrative Docket:** This database is the U. S. EPA's system for tracking administrative and civil judiciary cases filed on behalf of the agency by the Department of Justice. Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
New Sites through: 10/14/1999.
Data updated through: 10/14/1999. Data obtained by Toxics Targeting: 11/18/1999.

18) **Emergency Response Notification System (ERNS):** Federal database of spills compiled by the Emergency Response Notification System. On-site searches only.
ASTM required.* See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 1/31/2000. Data obtained by Toxics Targeting: 2/15/2000

* American Society of Testing Materials: Standard Practice on Environmental Site Assessments: Phase I Environmental Site Assessment Process (E1527-05).
** Fannie Mae's Part X Environmental Hazards Management Procedures specify 1.0 mile searches for "any state or Federal list of hazardous waste sites (e.g. CERCLIS, HWDMS etc.)." Searches for the property and adjacent properties are specified for "chemical manufacturing plants," "obvious high risk neighbors engaging in storing or transporting hazardous waste, chemicals or substances" and "...any documented or visible evidence of dangerous waste handling... (e.g. stressed vegetation, stained soil, open or leaking containers, foul fumes or smells, oily ponds, etc." Searches for property and adjacent properties can include sites up to a quarter mile away (W. Hayward, Director, Multi-Family Business Planning and Control, Fannie Mae, personal communication, 5/94).

[1]U. S. Environmental Protection Agency, 290 Broadway, NY, NY 10007-1866.

[2]NYS Department of Environmental Conservation, 625 Broadway, Albany, NY 12233.

[3]Nassau County Department of Health, Bureau of Land Resources Management, 240 Old Country Road, Mineola, NY 11501.

[4]Nassau County Fire Commission, Office of the Fire Marshal, 899 Jerusalem Avenue, P. O. Box 128, Uniondale, NY 11553.

[5]Rockland County Department of Health, The Dr. Robert Yeager Health Center, Building D, Sanitorium Road, Pomona, NY 10970.

[6]Suffolk County Department of Health, Hazardous Materials Management, 15 Horseblock Place, Farmingville, NY 11738-1220.

[7]Cortland County Department of Health, 60 Central Avenue, Cortland, NY 13045-2746

APPENDIX D

SUPPORTING DOCUMENTATION

Amys Kitchen Lipoff Wells
12 ECHO LAKE RD
Goshen, NY 10924

Inquiry Number: 4312039.1
June 03, 2015

The EDR-City Directory Image Report

Environmental Data Resources Inc
6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☑	☐	Cole Information Services
2008	☑	☐	Cole Information Services
2003	☑	☐	Cole Information Services
1999	☑	☐	Cole Information Services

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

12 ECHO LAKE RD
Goshen, NY 10924

Year	*CD Image*	*Source*
ECHO LAKE RD		
2013	pg A1	Cole Information Services
2008	pg A2	Cole Information Services
2003	pg A3	Cole Information Services
1999	pg A4	Cole Information Services

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

ECHO LAKE RD 2013

254	MICHAEL PALONE
262	MICHELLE BLENDY
286	TANYA SCHOONMAKER
300	TERENCE REYNOLDS
326	OCCUPANT UNKNOWN
332	JOYCE COSGROVE
338	OCCUPANT UNKNOWN
339	HOWARD BULSON
343	DAVID SCHULTZ

Target Street	Cross Street	Source
✓	-	Cole Information Services

ECHO LAKE RD 2008

286	TANYA SCHOONMAKER
300	TERENCE REYNOLDS
326	MAX TYACK
331	WILLIAM PRICKETT
332	MICHAEL COSGROVE
338	EVERETT MARKLE
339	HOWARD BULSON
343	DAVID SCHULTZ

Target Street	Cross Street	Source
✓	-	Cole Information Services

ECHO LAKE RD 2003

276	EDWARD WHITE
286	TANYA SCHOONMAKER
326	JAMES TYACK
331	WILLIAM PRICKETT
332	MICHAEL COSGROVE
338	HARRY MANN
339	HOWARD BULSON
343	DAVID SCHULTZ

Target Street	Cross Street	Source
✓	-	Cole Information Services

ECHO LAKE RD 1999

326 JAMES TYACK

APPENDIX E
STATE AND LOCAL RECORDS

T O W N OF G O S H E N
TOWN CLERK'S OFFICE

VALMA EISMA
TOWN CLERK

PRISCILLA GERSBECK
DEPUTY TOWN CLERK

Request for Access to Public Records

Freedom of Information Law (Section 89 - Public Officers Law)

Applicant's Name Elizabeth Matamoros Phone: 914-922-2397
Applicant's Address 34 South Broadway, #401, White Plains, NY 10601
Is Applicant applying on his/her own behalf? ____ yes X___ no
If NO, Organization/Principal's Name AKRF Inc. Phone: 914-922-2350
Organization/Principal's Address 34 South Broadway, #401, White Plains NY 10601

Please list the RECORDS which you wish to examine or have copied. **PHOTOCOPY CHARGE IS $0.25 PER PAGE.**
THIS AGENCY HAS 5 BUSINESS DAYS TO GRANT ACCESS TO RECORDS, DENY ACCESS IN WRITING, OR ACKNOWLEDGE THE RECEIPT OF A REQUEST & GIVE APPROXIMATE DATE RESPONSE CAN BE EXPECTED.

ITEM	Approximate DATE of Document	*CLERK* | ***Pick-up/Mailed*** | ***Date & Signature***
1. Please see attached letter		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

These documents will not be used for commercial or fund raising purposed (Section 88, Subdivision 3d).

_____ _____
Applicant's Signature Date signed

Clerk's Date Stamp:	Copy sent to Town Department(s) of:	Date Document Returned:	Documents Reviewed By:
	_____	_____	_____
	_____	_____	
	_____	_____	# of pages _____
	_____	_____	copy/postage fee $ _____
	_____	_____	date $ rec'd _____

Location: 41 Webster Avenue, Goshen, New York **Mail**: P.O. Box 217, Goshen, New York 10924 **Telephone**: 845-294-6250
FAX: 845-291-3673 **E-mail**: veisma@townofgoshen.org

AKRF, Inc.
34 South Broadway
White Plains, NY 10601
Phone: 914-922-2397
Fax: 914-949-7559
www.akrf.com

June 11, 2015

Records Access Office
Town of Goshen Clerks Office Sent-by-email
41 Webster Avenue
Goshen, New York 10924
845-294-6250 (fax)

Re: **FOIL Request**
Project No.: 40525
73-121 Hartley Road, Goshen, NY Tax ID 12-1-1.222 and 12-1-19.2
12 Echo Lake Road, Goshen, NY Tax ID 12-1-1.41

Dear Sir or Madam:

Pursuant to the Freedom of Information Law, we are requesting information regarding underground storage tanks (USTs), spill records, remediation sites, dump sites, soil and groundwater remediation, storage of hazardous materials and/or hazardous materials activities for the above referenced site. Additionally, land title records, building violations, and certificates of occupancy. Your response can either be faxed to (914) 949-7559 or mailed to the address identified above as soon as possible. Please notify me if there are any costs associated with processing this request. In addition, please indicate AKRF's project number AKRF's project number (40525) on all correspondence. If you have any questions, please call me at (914) 922-2397.

Thank you in advance for your assistance and cooperation

Sincerely,
AKRF, Inc.

Elizabeth Matamoros
Environmental Scientist

FOIL REQUESTS
ORANGE COUNTY REAL PROPERTY TAX SERVICE AGENCY

CHARGE: _____

REQUESTED BY: Elizabeth Matamoros

ADDRESS: 34 South Broadway
White Plains, NY, 10601

TELEPHONE: 914-922-2397

DATE: 06/11/2015

DESCRIPTION OF REQUEST:

records pertaining to: underground storage tanks (USTs), spill records, remediation sites, dump sites, soil and groundwater remediation, storage of hazardous materials and/or hazardous materials activities for:

Tax Lot 12-1-1.222 and 12-1-19.2: 73-121 Hartley Road, Goshen

and Tax Lot 12-1-1.41: 12 Echo Lake Road, Goshen

Additionally, land title records for the above properties

AKRF, Inc.
34 South Broadway
White Plains, NY 10601
Phone: 914-922-2397
Fax: 914-949-7559
www.akrf.com

June 11, 2015

Records Access Office
Orange County Department of Health Sent-by-fax
124 Main Street
Goshen, New York 10924
845-291-2499 (fax)

Re: **FOIL Request**
Project No.: 40525
73-121 Hartley Road, Goshen, NY Tax ID 12-1-1.222 and 12-1-19.2
12 Echo Lake Road, Goshen, NY Tax ID 12-1-1.41

Dear Sir or Madam:

Pursuant to the Freedom of Information Law, we are requesting information regarding underground storage tanks (USTs), spill records, remediation sites, dump sites, soil and groundwater remediation, storage of hazardous materials and/or hazardous materials activities for the above referenced site. Additionally, land title records, building violations, and certificates of occupancy. Your response can either be faxed to (914) 949-7559 or mailed to the address identified above as soon as possible. Please notify me if there are any costs associated with processing this request. In addition, please indicate AKRF's project number AKRF's project number (40525) on all correspondence. If you have any questions, please call me at (914) 922-2397.

Thank you in advance for your assistance and cooperation

Sincerely,
AKRF, Inc.

Elizabeth Matamoros
Environmental Scientist

AKRF, Inc.
34 South Broadway
White Plains, NY 10601
Phone: 914-922-2397
Fax: 914-949-7559
www.akrf.com

June 11, 2015

Records Access Office
New York State Department of Health
Corning Tower Room 2364
Albany, New York 12237-0044
518-486-9144 (fax)

Sent-by-email

Re: **FOIL Request**
Project No.: 40525
12 Echo Lake Road, Goshen, NY Tax ID 12-1-1.41

Dear Sir or Madam:

Pursuant to the Freedom of Information Law, we are requesting information regarding underground storage tanks (USTs), spill records, remediation sites, dump sites, soil and groundwater remediation, storage of hazardous materials and/or hazardous materials activities for the above referenced site. Your response can either be faxed to (914) 949-7559 or mailed to the address identified above as soon as possible. Please notify me if there are any costs associated with processing this request. In addition, please indicate AKRF's project number AKRF's project number (40525) on all correspondence. If you have any questions, please call me at (914) 922-2397.

Thank you in advance for your assistance and cooperation

Sincerely,
AKRF, Inc.

Elizabeth Matamoros
Environmental Scientist

New York State Department of Environmental Conservation
APPLICATION FOR ACCESS TO RECORDS
Pursuant to New York State Freedom of Information Law (FOIL)

Please complete all applicable fields

Records Requested

Whenever possible, please provide specific facility name(s), owner(s), address(es), permit/spill/PBS/incident number(s).

records pertaining to: underground storage tanks (USTs), spill records, remediation sites, dump sites, soil and groundwater remediation, storage of hazardous materials and/or hazardous materials activities.

for: 12 Echo Lake Road, Goshen, NY Tax Lot 1.41-11.8A

Time Period for Records Sought

From _____ To: _____ Not Applicable: ☒

Requestor Contact Information

Name: Elizabeth Matamoros Company (if applicable): AKRF Inc.

Phone: (914) 922-2397 Fax: (914) 949-7559 Email: ematamoros@akrf.com

Mailing Address 34 South Broadway #401, White Plains, NY 10601

Date Submitted: 6/11/15

Electronic copies preferred ☒

All requests must be in writing and may be submitted to the New York State Department of Environmental Conservation (NYSDEC) via:

Email: access.records@dec.ny.gov
Fax: (518) 402-9018
Mail: Records Access Officer
NYSDEC, 625 Broadway, Albany, NY 12233-1500
For more information go to http://www.dec.ny.gov/public/373.html

EPA United States Environmental Protection Agency

MyPropertyInfo -*Powered by FRS*

Property Search Results

Report an Error

A search of the databases did not locate any environmental records using the search criteria provided below.

Search Criteria
Street Number: 12
Street Name: ECHO LAKE
City Name: GOSHEN
State: NY
Zip Code: 10924
Query executed at: Thu 11-Jun-2015 13:20:37

Databases Searched

Please contact appropriate state agency(s) who may have additional information.

Disclaimer
This summary report is provided solely for informational purposes. It does not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person. EPA maintains the application to enhance public access to environmental information. This service has continual data updates, and we will correct errors brought to our attention, as appropriate.

Last updated on 6/11/2015

Property Description Report For: 12 Echo Lake Rd, Municipality of Goshen

No Photo Available

		Status:	Active
		Roll Section:	Taxable
		Swis:	333089
		Tax Map ID #:	12-1-1.41
		Property Class:	322 - Rural vac>10
		Site:	RES 1
		In Ag. District:	No
		Site Property Class:	322 - Rural vac>10
		Zoning Code:	01092
		Neighborhood Code:	00006
Total Acreage/Size:	11.80	**School District:**	Goshen
Land Assessment:	2015 - $95,492	**Total Assessment:**	2015 - $95,492
Full Market Value:	2015 - $145,800		
Equalization Rate:	----	**Legal Property Desc:**	
Deed Book:	13912	**Deed Page:**	328
Grid East:	526643	**Grid North:**	939398

Area

Living Area:	0 sq. ft.	**First Story Area:**	0 sq. ft.
Second Story Area:	0 sq. ft.	**Half Story Area:**	0 sq. ft.
Additional Story Area:	0 sq. ft.	**3/4 Story Area:**	0 sq. ft.
Finished Basement:	0 sq. ft.	**Number of Stories:**	0
Finished Rec Room	0 sq. ft.		

Structure

Building Style:	0	**Bathrooms (Full - Half):**	0 - 0
Bedrooms:	0	**Kitchens:**	0
Fireplaces:	0	**Basement Type:**	0
Porch Type:	0	**Porch Area:**	0.00
Basement Garage Cap:	0	**Attached Garage Cap:**	0.00 sq. ft.
Overall Condition:	0	**Overall Grade:**	
Year Built:			

Owners

Hudson Valley Area LLC
P.O. Box 4759
1650 Corporate Cir
Petaluma CA 94955

% Mark Rudolph
1650 Corporate Cir
Petaluma CA 94955

Sales

Sale Date	Price	Property Class	Sale Type	Prior Owner	Value Usable	Arms Length	Addl. Parcels	Deed Book and Page

6/24/2015	$95,000	322 - Rural vac>10	Land Only	Al Turi Landfill Inc	Yes	Yes	No	13912/328

Utilities

Sewer Type:	None	**Water Supply:**	None
Utilities:	Electric	**Heat Type:**	0
Fuel Type:	0	**Central Air:**	No

Improvements

Structure	Size	Grade	Condition	Year

Land Types

Type	Size
Undeveloped	0.92 acres
Residual	10.88 acres

Special Districts for 2015

Description	Units	Percent	Type	Value
FD017-Goshen fire 1	0	0%		0
OPN30-Open Space	0	0%		0

Exemptions

Year	Description	Amount	Exempt %	Start Yr	End Yr	V Flag	H Code	Own %

Taxes

Year	Description	Amount
2016	County	$1,436.96
2015	County	$1,435.34
2015	School	$3,380.34

***Taxes may not reflect exemptions or changes in assessment**

William L. Going & Associates, Inc.
Environmental Site Investigation-Remediation

5 Stella Drive
Gardiner, New York 12525
Tel. 845-895-1744
Fax. 845-895-1744
E-mail: budgoing@gmail.com

April 24, 2015

Mr. Peter G. Botti, Esq.
14 Scotchtown Avenue
Goshen, New York 10924

RE: **Phase I Environmental Site Assessment: Strong Farm S-B-Ls 10-1-11.2 and 9…Main House, Tenant House, Barns and Approx. 110 Acres Of Farmland, And S-B-L 10-1-11.1…Single-Family Residence and Associated 2.9 Acres, Town Of Goshen, New York**

Dear Mr. Botti:

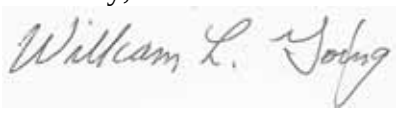
William L. Going & Associates, Inc. is pleased to submit this Phase I Environmental Site Assessment of subject farm property situated at the corner of Cheechunk Road and Owens Road and along Owens Road, Town Of Goshen, New York.

The purpose of this assessment was to identify potential or known recognized environmental conditions (RECs) as defined by ASTM E 1527-13; the methodology employed is consistent with the requirements of ASTM E 1527-13.

Based on the information obtained during the performance of this Phase I ESA, one "*recognized environmental condition*" has been identified at this property. The single-family residence at 51 Owens Road utilizes a 550 gal. underground fuel oil storage tank; this tank was tested and failed the tightness test and was subsequently removed.

The comprehensive findings of this environmental site assessment are included herein. If you have technical questions or require additional support, please feel free to contact the undersigned at 845-895-1744. Thank you for the opportunity to be of service.

Sincerely,



William L. Going, Principal

Phase I Environmental Site Assessment: Strong Farm S-B-Ls 10-1-11.2 and 9…Main House, Tenant House, Barns and Approx. 110 Acres Of Farmland, And S-B-L 10-1-11.1…Single-Family Residence and Associated 2.9 Acres, Town Of Goshen, New York

William L. Going & Associates, Inc. is pleased to submit this Phase I Environmental Site Assessment of subject farm property situated at the corner of Cheechunk Road and Owens Road and along Owens Road, Town Of Goshen, New York.. The objective of this assessment was to investigate "recognized environmental conditions" associated with a range of contaminants within the scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. This assessment is intended to permit the user to satisfy one of the requirements to qualify for the "innocent landowner defense" to CERCLA liability. The term "recognized environmental conditions" means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment, 2) under conditions indicative of a release to the environment, or 3) under conditions that pose a material threat of a release to the environment. This assessment is not intended to address *de minimis* conditions that generally do not represent a material risk of harm to public health or the environment and generally would not be the subject of enforcement action if brought to the attention of appropriate regulatory agencies. The methodology employed for the performance of this Phase I ESA is consistent with the requirements of ASTM E 1527-13. This ESA has been conducted by a qualified "environmental professional" with the required level of education in an environmental field of study and experience in the performance of ESAs and ASTM Standard requirements. The Phase I ESA process has been guided and reviewed by a qualified environmental professional with the required years of ESA experience. These qualifications are consistent with environmental professional requirements referenced in the ASTM E 1527-13 standard.

We have assembled photographs of the property, municipal tax map, portion of Assessor's files, historical USGS topographic maps and aerial photographs, historical city directories, an environmental database compiled by EDR™ (February 2015), documentation of the removal of asbestos pipe insulation [*from basement of main house on Cheechunk Road*], documentation of the removal of a 550 gal. underground fuel oil storage tank [*from residence at 51 Owens Road*], and the results of well water analysis from each well on subject property (April 2015).

Phase I Site Inspection [January-April 2015]

Subject farm property is situated at the corner of Cheechunk Road and Owens Road and along Owens Road, Town Of Goshen, New York [topographic map, tax map and photos]. Subject tax parcels 10-1-11.2 and 9 (main house, tenant house, barns and approx. 110 acres of farmland) and tax parcel 10-1-11.1 (single-family residence and associated 2.9 acres) are situated on the northwest side of Owens Road, and feature gently rolling wooded hillsides and open agricultural fields that slope from approximately 450 along the road to approximately 380 ft. msl at the Wallkill River. According to "Web Soil Survey"

published by USDA, the natural soil across the property includes Mardin gravelly silt loam and Erie gravelly silt loam, which are usually situated on drumlinoid ridges, hills and till plains and are derived from siltstone, sandstone, shale and limestone; Madalin silt loam, which is usually situated on toeslopes and are clayey silty glaciolacustrine deposits; and Middlebury silt loam and Tioga silt loam, which are usually situated on or near floodplains and are loamy alluvium derived from sandstone, siltstone and shale.

According to the New York State Department of Environmental Conservation's (NYSDEC) Environmental Resource Mapper, there are no unique geological features, state regulated wetlands, significant natural communities, rare plants or rare animals on subject property.

No portion of subject property is federal, state or tribal land.

Adjacent land use and improvements include similar farm property, private residences, and a small electrical substation in a very rural setting. No ″recognized environmental conditions″ could be positively identified on adjacent land based on visual survey.

Subject parcel 10-1-11.2 is classified as dairy farm (112) in Town assessment files. The site, address 212 Cheechunk Road, features the "main house", which is a 2-story wood-frame home constructed above a full unfinished basement, and a "tenant house", which is a smaller 2-story wood-frame constructed above a basement. The houses are served by onsite well and septic, and they are heated with fuel oil. The main house utilizes two 275 gal. aboveground storage tanks, which are situated in the basement on concrete floor; there is no evidence of drips or spills. The tenant house utilizes one 275 gal. aboveground storage tank, which is situated in the basement on concrete floor; there is no evidence of drips or spills. This site also features a large dairy barn, an equipment barn, a three-sided pole barn, two small garages, and a small storage shed. The barns were essentially empty except for some personal belongings and some yard equipment. There was no sign of aboveground or underground fuel storage tanks inside or in the vicinity of the barns. The property includes approximately 96 acres of agricultural fields and wooded hillsides. Some of the agricultural fields show evidence of having recently been farmed, while some were fallow. We did not find any evidence of an old farm dump, although the ground was covered with 3-6 inches of recent snow. We did observe numerous old discarded tires in a pile behind the dairy barn. Subject parcel 10-1-9 is classified as vacant farmland (105). The site, address 117 Owens Road, features approximately 14.2 acres of vacant, wooded, apparently landlocked property (an overhead power line traverses the parcel). Subject 10-1-11.1 is classified as 1-family residence (210). The site, address 51 Owens Road, features a 2-story wood-frame home constructed above a basement and several small storage sheds on 2.9 acres of mostly open fallow land. This home is also served by onsite well and septic, and is also heated with fuel oil. The fuel oil is stored in a 550 gal. underground storage tank, which was situated alongside the garage near the front right corner of the house. This tank [*reportedly installed in about 1987*] was tested for integrity on February 19, 2015 by US Tank Tech; the tank failed the tightness test, apparently due to a loose pipe fitting at the top of the tank. The tank test

failure was reported to the NYSDEC and was assigned Spill No. 1411004. The tank was removed on April 13, 2015 by Crossriver Environmental Inc. No evidence of soil contamination was discovered; the NYSDEC Spill file will be closed (report attached).

Well water samples were collected from each well on the property [i.e. from one well near barn at 212 Cheechunk Road and from one well near residence at 51 Owens Road] on March 11, 2015 and on April 3, 2015; these samples were analyzed by Envirotest Laboratories for bacteria and for volatile (VOC) and semi-volatile organic compounds (SVOC) and by Pace Analytical for pesticides and PCBs. No bacteria or VOC or SVOC or pesticides or PCBs were detected in the samples (data are attached).

The main house and the tenant house were reportedly constructed in the late 1800s and could contain some asbestos. In fact, asbestos-containing pipe insulation was observed in the basement of the main house and was subsequently removed by FF Contracting NY, Inc. on March 22, 2015 (see attached documentation). Interior painted surfaces probably contain some lead (although the buildings are very well maintained). The residence at 51 Owens Road was constructed in approx. 1987 and, therefore, is not likely to contain any asbestos or lead paint. (Private interior living space was only casually examined.)

We did not observe any hazardous chemicals or hazardous chemical waste onsite. We did not observe any evidence of dry wells, lagoons, or dumps, and we did not observe any evidence of generation or storage or use of hazardous chemicals or any “dumping or landfilling” anywhere on the property.

Site History and Other Relevant Information

We interviewed a member of the Strong family (Kathie [Strong] Jorgensen), we examined Assessor’s records, Building Department records, historical city directories, historical USGS topographical maps, historical aerial photographs, and all of the appropriate environmental regulatory databases, we witnessed a tightness test applied to the 550 gal. UST situated at the single-family residence located at 51 Owens Road, we reviewed documentation associated with the subsequent removal of the UST, we reviewed documentation associated with the removal of pipe insulation from the basement of the main house situated at 212 Cheechunk Road, and we sampled and analyzed drinking water from both of the wells on subject property.

According to Kathie [Strong] Jorgensen, the Strong family has owned the property and has operated a dairy farm at the property for more than 200 years. Field crops have included corn and alfalfa and possibly some rye. There have been no orchards on subject property. A portion of the land is still leased to Soons Orchard for growing and harvesting sweet corn. There is no evidence of a farm dump on the property, although there are some old tires piled behind the dairy barn that were once used to hold down silage. There are no aboveground or underground storage tanks in or near any of the barns, although a small portable aboveground gasoline storage tank was once situated

beside the stone garage building near the main house; this tank was reportedly removed about 30 years ago.

City directories were consulted and examined (1952-2013). Subject address is identified as William and/or Jean Strong property in directories circa 1999-2013. There are no listings prior to 1999; however, it has been established that the Strong family has owned and farmed the property for more than 200 years.

Historical USGS topographic maps were examined (1908, 1942, 1949, 1957). These topographic maps indicate that subject property is situated in a rural area on the northwest side of Owens Road, and features gently rolling wooded hillsides and open agricultural fields that slope from approximately 450 ft. msl. along the road to approximately 380 ft. msl. at the Wallkill River. Two structures are denoted on maps circa 1942 and 1949; the main farmhouse, tenant house and 3 dairy barns are denoted on the map circa 1957. No additional site specific detail is available from these maps

Historic aerial photos (1940, 1942, 1968, 1975, 1980, 1984, 1994, 2006, 2009, 2011) were carefully reviewed. Subject property, including main farm house, tenant house and barns are depicted in aerial photos circa 1940-1984; woodland can be seen to encroach upon edges of agricultural fields during these years. The aerial photo circa 1994 depicts a new barn and the new single-family residence at 51 Owens Road. Aerial photos circa 2006-2011 depict subject property as it can be seen today, with more encroachment of woods along edges of fields and river.

We contacted the local Building Department. Files do not contain any records of environmental violations or chemical tanks or hazardous chemical spills or any other environmental problems associated with subject property.

Mr. Peter Botti, Esq. (the intended recipient of this report) is not aware of AULs, such as engineering controls, land use restrictions, or institutional controls that could have been put in place at subject property specifically and/or have been filed or recorded in a registry under federal, tribal, state, or local law; he does not have specialized knowledge pertaining to the environmental history of subject property; and he has not identified obvious indicators that point to the presence or likely presence of contamination at the property.

The regulatory agency sources listed below were reviewed per ASTM E 1527-13.

Standard ASTM Environmental Record Sources

Database	Radius
USEPA NPL Site List *(NPL)*	1.0 mile
USEPA Delisted NPL Site *(NPL Delisted)*	0.5 mile

USEPA CERCLIS List *(CERCLIS)*	0.5 mile
USEPA CERCLIS NFRAP List *(NFRAP)*	0.5 mile
USEPA RCRA CORRACTS Facilities List *(RCRA COR ACT)*	1.0 mile
USEPA RCRA non-CORRACTS TSD Facilities List *(RCRA TSD)*	0.5 mile
USEPA RCRA Generators List *(RCRA GEN)*	site & adjoining
USEPA Institutional Control/ Engineering Control Registries *(Federal IC/EC)*	site only
USEPA Emergency Response Notification System List *(ERNS)*	site only
NYSDEC and Tribal Registries of Inactive Hazardous Waste Disposal Sites *(State/Tribal Sites)*	1.0 mile
NYSDEC and Tribal Registry of Active and Inactive State Landfills and Solid Waste Disposal Facilities List *(State/Tribal SWF)*	0.5 mile
NYSDEC and Tribal Spills Database - Leaking Underground Storage Tank Events *(State/Tribal LUST)*	0.5 mile
NYSDEC and Tribal Petroleum Bulk Storage Database *(State/Tribal UST/AST)*	site & adjoining
NYSDEC Chemical Bulk Storage Database *(State/Tribal UST/AST)*	site & adjoining
NYSDEC Major Oil Storage Facilities *(State Other)*	site & adjoining
NYSDEC and Tribal Institutional Control/ Engineering Control Registries *(State/Tribal IC & State/Tribal EC)*	site only
NYSDEC and Tribal Voluntary Cleanup Sites *(State/Tribal VCP)*	0.5 mile
NYSDEC and Tribal Brownfield Sites *(State/Tribal Brownfield)*	0.5 mile

The supplemental databases listed below were also reviewed.

Supplemental Non-ASTM Environmental Record Sources

Database	Radius
USEPA RCRA Generators No Longer Regulated List *(RCRA NLR)*	site & adjoining
USDOI & USBIA *(Tribal Lands)*	1.0 mile

NYSDEC Spills Information Database *(State Spills 90 & State Spills 80)*	0.50 mile
NYSDEC & NYSOFPRHP & USFWS Areas of Critical Environmental Concern *(State ACEC)*	0.5 miles
USDOC Sensitive Receptors *(Receptors)*	0.5 miles
USEPA The National Pollution Discharge Elimination System *(NPDES)*	0.25 mile
USEPA Facility Index System *(FINDS)*/Facility Registry System *(FRS)*	0.25 mile
USEPA Toxic Release Inventory System *(TRIS)*	0.25 mile
USDOT Hazardous Materials Incident Response System *(HMIRS)*	0.25 mile
USEPA National Compliance Data Base System *(NCDB)*	0.25 mile
USEPA Database of PCB Handlers *(PADS)*	0.25 mile
USEPA Aerometric Information Retrieval System *(AIRS)*	0.25 mile
USEPA Integrated Compliance Information System *(DOCKET)*	0.25 mile
USEPA & USNRC Permitted Nuclear Facilities *(Nuclear Permits)*	0.5 miles
USEPA Emergency Response Notification System (Releases)	0.25 mile
USEPA Vapor Intrusion Database *(Federal Other)*	0.25 mile
USEPA Section Seven Tracking System *(Federal Other)*	0.25 mile
USEPA Potentially Responsible Parties *(SETS PRP)*	0.15 mile
NYSDEC Pollution Discharge Elimination System *(State Permits)*	0.25 mile
USDOC National Technical Informational System Nation Radon Database (RADON)	1.0 mile

These databases have been thoroughly examined for reports of hazardous chemical spills or releases within one mile of subject property, and for potential sites that may have impacted subject property. There is only 1 report of a spill within one-half mile of subject property. This spill occurred at the Allen residence (138 Cheechunk Road); this incident occurred in a basement on a concrete floor and was investigated and reviewed and closed by New York State Department of Environmental Conservation (NYSDEC) in 2013. Also, one former NYS Hazardous Waste Site [former Al Turi Landfill] is reportedly located at 73 Hartley Road more than ½ mile from subject property; this site has also been investigated, reviewed and closed (*with continued monitoring*) by NYSDEC. Therefore, it is our opinion, based on review of regulatory databases and also due to distance and significant change in topography and gradient, that neither of these sites has impacted the environment of subject property.

Subject property is not listed or mentioned in any of the environmental databases.

The EDR environmental profile indicates that there are neither environmental liens against the property nor any Activity and Use Limitations (AULs) associated with subject property. Subject was not in listed in the NYSDEC Voluntary Cleanup Program or the Brownfields Program or any other environmental database. The environmental profile is included in Attachment A.

Conclusions and Recommendations

The property has served as a dairy farm for more than 200 years. There is no historical record or evidence of generation or disposal of hazardous waste or release of hazardous chemical waste to the environment at subject property.

However, the single-family residence at 51 Owens Road utilized a 550 gal. underground fuel oil storage tank which was [recently] tested and failed a tightness test and was subsequently removed; relevant documentation is included herein.

There are no other *"recognized environmental conditions"* or data gaps that require additional investigation or clarification.

There was asbestos-containing pipe insulation in the basement of the main house, but it has been removed and relevant documentation is included herein. More information concerning potential asbestos-containing materials in the main house and the tenant house could be obtained by conducting a thorough asbestos bulk survey.

The environmental assessment that we have completed conforms to industry-wide standards. *Investigations and direct observations notwithstanding, we do not warrant that there are absolutely no toxic or hazardous chemical contamination at the subject property, nor do we accept any liability if such are found at some future time, or could have been found if additional sampling had been conducted.* In view of the rapidly changing status of environmental laws, regulations and guidelines, we cannot be responsible for changes in laws, regulations or guidelines that occur after the study has been completed and which may affect the subject property.

Per the agreed-upon scope of services, this Phase I ESA did not include an assessment for indoor air quality, biological agents, mold, radon, lead-based paint (LBP), asbestos, lead in drinking water, wetlands, regulatory or zoning compliance, cultural or historic resources, industrial hygiene, ecological resources or endangered species.

William Going & Associates, Inc. has prepared this report for Mr. Peter Botti, Esq. (Client), although it is based in part on information obtained from third parties not within the control of either client or William Going & Associates. While it is believed that the third-party information contained herein is reliable, we do not guarantee its accuracy.

William Going personally performed the inspection of subject property and the review of all relevant environmental databases. I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 C.F.R. Section 312.10. I have specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiry in conformance with applicable standards and practices.

Our website [http://www.williamgoingassociates.com] presents the author's resume. If there are questions pertaining to this report, please contact William Going & Associates.

ATTACHMENT A

- Municipal Tax Map
- Photographs of Subject Property
- Portions of Assessor's Files…Building Dept. Files
- Historical City Directories (1952-2013)
- Historical USGS Topo Maps (1908, 1942, 1949, 1957)
- Historical Aerial Photos (1940, 1942, 1968, 1975, 1980, 1984, 1994, 2006, 2009, 2011)
- EDR™ ASTM Environmental/Statistical Profile (February 2015)
- Documentation Of Asbestos Removal (FF Contracting, March 2015)
- Documentation of UST Removal, 51 Owens Rd. (Crossriver Env., April 2015)
- Well Water Analyses (Envirotest Laboratories/Pace Analytical, April 2015)

Strong Farm, Associated Holdings and Improvements, Town of Goshen, NY
(S-B-L 10-1-11.1 and 11.2…and 10-1-9)

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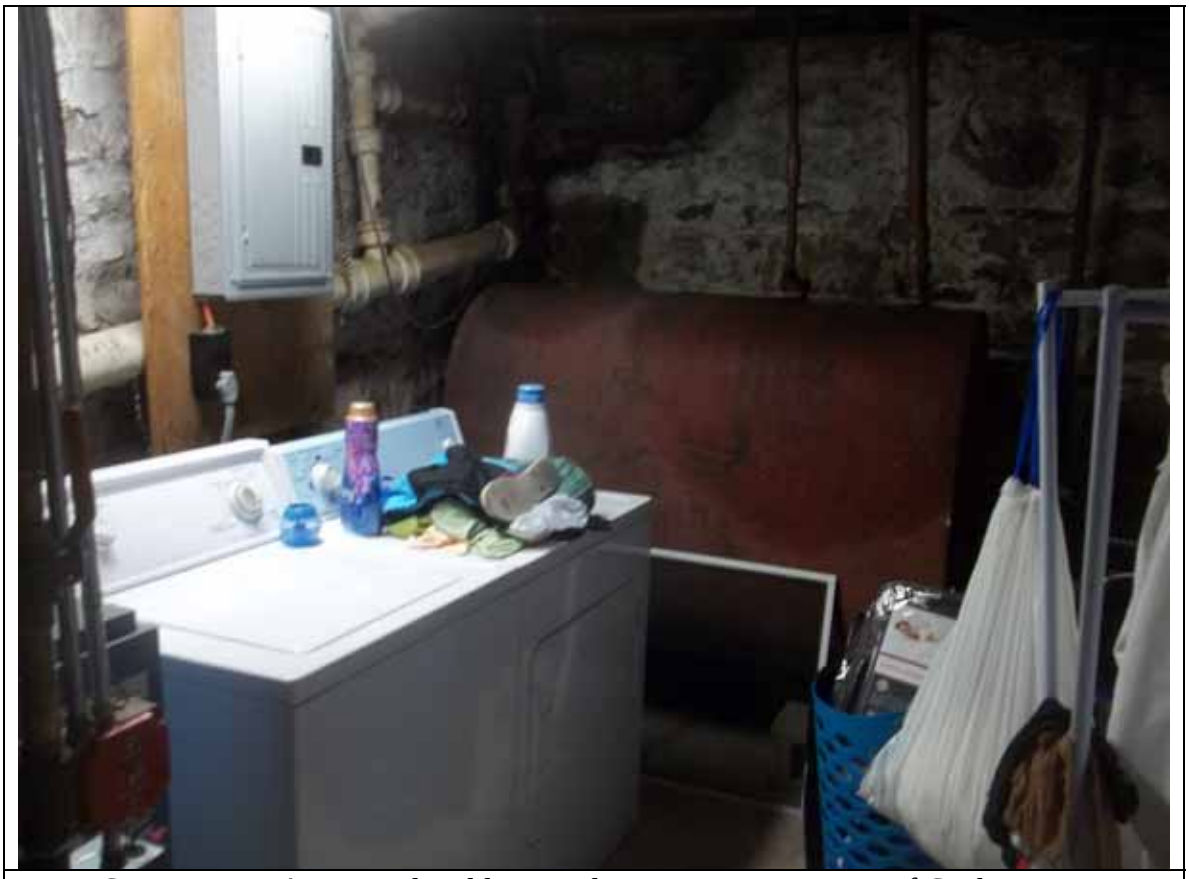

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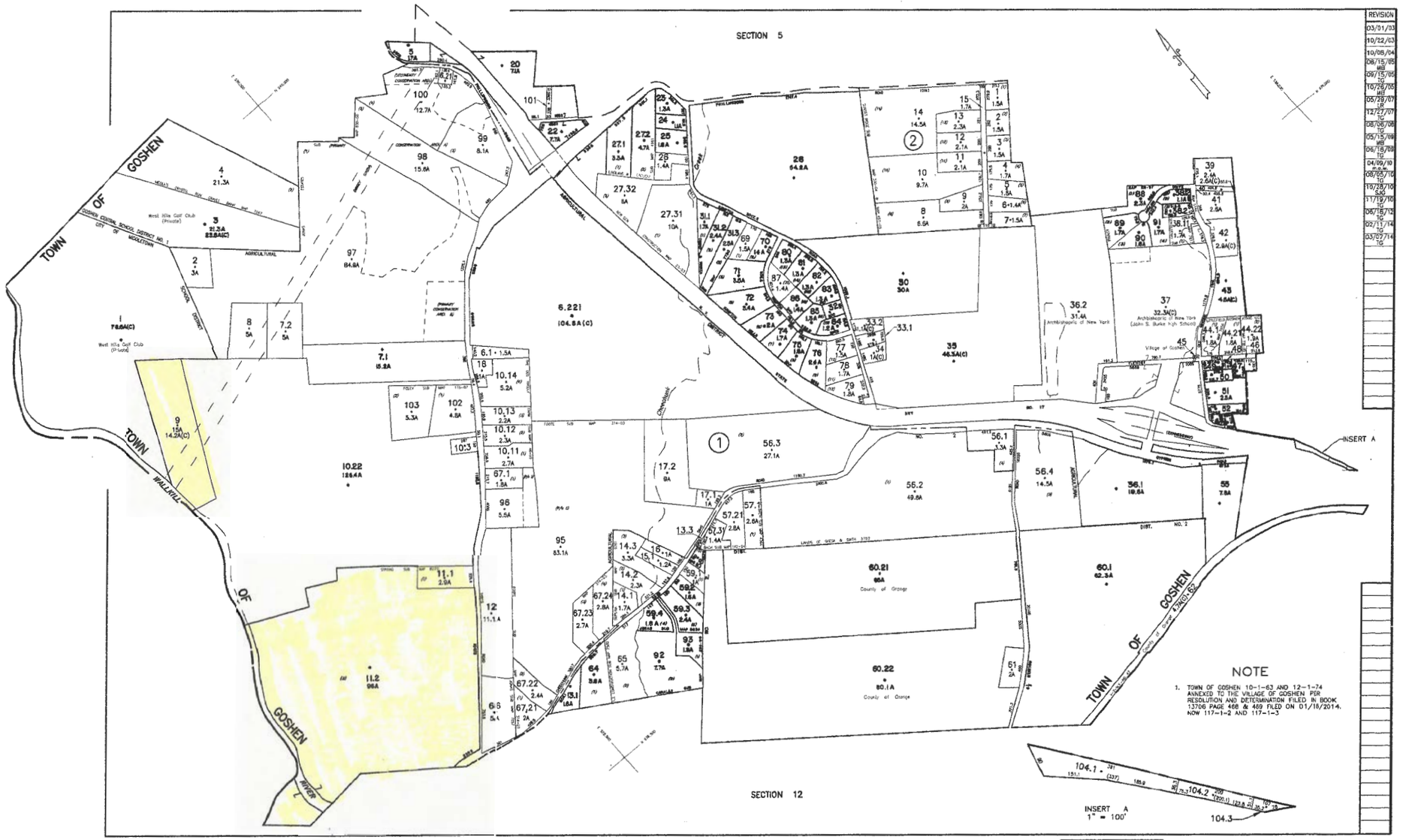

LEGEND

STATE OR COUNTY LINE	FILED PLAN LOT LINE	TAX MAP BLOCK NO.	(4)	FILED PLAN BLOCK NO.	(2)
CITY TOWN OR VILLAGE	EASEMENT LINE	TAX MAP PARCEL NO.	32	FILED PLAN LOT NO.	(3) or (P/o 2)
BLOCK OR SECTION LINE	MATCH LINE	AREAS	(NEW) 11.1A or (CALCULATED) 11.4A(C)	STATE HIGHWAYS	N Y STATE HWY NO 17
SPECIAL DISTRICT LINE	WATER FEATURES	DIMENSIONS	(NEW) 66 or (CALCULATED) 193	COUNTY HIGHWAYS	COUNTY ROAD NO 4
PROPERTY LINE	GRID COORDINATE/CENTROID	PORTION OF TAX LOT	P/o 1-1-1	TOWN ROADS	TOWN ROAD 1

ORANGE COUNTY–NEW YORK

Prepared by
Orange County Tax Map Department
124 Main Street, Goshen, N.Y. 10924
Phone 845.291.2498 Fax 845.291.2449

NOTICE
MAINTENANCE, ALTERATION, SALE OR DISTRIBUTION OF ANY PORTION OF THE ORANGE COUNTY TAX MAP IS PROHIBITED WITHOUT WRITTEN PERMISSION OF THE O.C. REAL PROPERTY TAX SERVICE AGENCY

NOT TO BE REPRODUCED FOR COMMERCIAL PURPOSES FOR TAX PURPOSES ONLY
NOT TO BE USED FOR CONVEYANCE

ADJOINING REFERENCE

333089
TOWN OF GOSHEN

Scale 1" = 400' Section No. 10

TAX YEAR 2014

Image Mate Online

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Residential

Property Info
Owner/Sales
Inventory
Improvements

Tax Info

Report
Comparables

Res. Sites

< 1 >

Municipality of Goshen

SWIS:	333089	Tax ID:	10-1-11.2

Tax Map ID / Property Data

Status:	Active	Roll Section:	Taxable
Address:	212 Cheechunk Rd		
Property Class:	112 - Dairy farm	Site Property Class:	112 - Dairy farm
Ownership Code:			
Site:	Res 1	In Ag. District:	Yes (2)
Zoning Code:	01092 -	Bldg. Style:	0
Neighborhood:	00006 -	School District:	Goshen
Legal Property Description:	212 CHEECHUNK-MAIN HSE 1 OWENS RD-TENANT LT2 STRONG MP8270		
Total Acreage/Size:	96.00	Equalization Rate:	---
Land Assessment:	2014 - $119,500	Total Assessment:	2014 - $472,700
Full Market Value:	2014 - $705,500		
Deed Book:	13718	Deed Page:	701
Grid East:	0	Grid North:	0
Bank Code:	N/A		

Special Districts for 2014

Description	Units	Percent	Type	Value
FD017-Goshen fire 1	0	0%		0
OPN30-Open Space	0	0%		0

Photographs

(Click on photo to enlarge it.)

212 Cheechunk Rd - Main House

Photo 1 of 4 →

Pictometry LiveLink

No Pictometry imagery exists for this property.

Documents

No documents found for this parcel

Maps

View Tax Map
View in Google Maps
View in Bing Maps

Map Disclaimer

Image Mate Online

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Residential

- Property Info
- Owner/Sales
- Inventory
- Improvements
- Tax Info
- Report
- Comparables

Res. Sites

< 1 >

Municipality of Goshen

SWIS:	333089	Tax ID:	10-1-11.2

Improvements

Structure	Size	Grade	Condition	Year
Barn-1.0 dairy	21 × 70	Economy	Fair	1900
Barn-2.0 dairy	48 × 92	Economy	Fair	1900
Barn-1.0 gen	16 × 36	Economy	Fair	1900
Barn-1.5 gen	24 × 39	Economy	Fair	1900
Barn-2.0 gen	17 x 24	Economy	Poor	1900
Barn-pole	40 x 60	Average	Normal	1992
Shed-machine	13 x 18	Economy	Fair	1900
Shed-machine	10 x 14	Economy	Fair	1900
Shed-machine	14 x 18	Economy	Poor	1900
Gar-1.0 det	22 x 22	Average	Fair	1900

Photographs

(Click on photo to enlarge it.)

212 Cheechunk Rd - Main House

Photo 1 of 4 →

Pictometry LiveLink

No Pictometry imagery exists for this property.

Documents

No documents found for this parcel

Maps

View Tax Map

View in Google Maps

View in Bing Maps

Map Disclaimer

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Residential

- Property Info
- Owner/Sales
- Inventory
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- Tax Info
- Report
- Comparables

Res. Sites

< 1 >

Municipality of Goshen

SWIS:	333089	Tax ID:	10-1-11.2

Ownership Information

Name	Address
Jean B Strong Irrevocable Trst	212 Cheechunk Rd Goshen NY 10924

Sale Information

Sale Date	Price	Property Class	Sale Type	Prior Owner
2/11/2014	$1	112 - Dairy farm	Land Only	Strong, Jean B
	Value Usable	Arms Length	Deed Book	Deed Page
	No	No	13718	701

Additional Parcels Involved in Sale	10-1-9 in Goshen

Sale Date	Price	Property Class	Sale Type	Prior Owner
6/18/2008	$1	112 - Dairy farm	Land & Building	Strong, William
	Value Usable	Arms Length	Deed Book	Deed Page
	No	No	12731	12320

Photographs

(Click on photo to enlarge it.)

212 Cheechunk Rd - Main House

Photo 1 of 4 →

Pictometry LiveLink

No Pictometry imagery exists for this property.

Documents

No documents found for this parcel

Maps

View Tax Map

View in Google Maps

View in Bing Maps

Map Disclaimer

Property Description Report For: 212 Cheechunk Rd, Municipality of Goshen

Status:	Active
Roll Section:	Taxable
Swis:	333089
Tax Map ID #:	10-1-11.2
Property Class:	112 - Dairy farm
Site:	RES 1
In Ag. District:	Yes (2)
Site Property Class:	112 - Dairy farm
Zoning Code:	01092
Neighborhood Code:	00006

Total Acreage/Size:	96.00	**School District:**	Goshen
Land Assessment:	2014 - $119,500	**Total Assessment:**	2014 - $472,700
Full Market Value:	2014 - $705,500		
Equalization Rate:	----	**Legal Property Desc:**	212 CHEECHUNK-MAIN HSE 1 OWENS RD-TENANT LT2 STRONG MP8270
Deed Book:	13718	**Deed Page:**	701
Grid East:	0	**Grid North:**	0

Area

Living Area:	0 sq. ft.	**First Story Area:**	0 sq. ft.
Second Story Area:	0 sq. ft.	**Half Story Area:**	0 sq. ft.
Additional Story Area:	0 sq. ft.	**3/4 Story Area:**	0 sq. ft.
Finished Basement:	0 sq. ft.	**Number of Stories:**	0
Finished Rec Room	0 sq. ft.		

Structure

Building Style:	0	**Bathrooms (Full - Half):**	0 - 0
Bedrooms:	0	**Kitchens:**	0
Fireplaces:	0	**Basement Type:**	0
Porch Type:	0	**Porch Area:**	0.00
Basement Garage Cap:	0	**Attached Garage Cap:**	0.00 sq. ft.
Overall Condition:	0	**Overall Grade:**	
Year Built:			

Owners

Jean B Strong Irrevocable Trst

212 Cheechunk Rd
Goshen NY 10924

Sales

Sale Date	Price	Property Class	Sale Type	Prior Owner	Value Usable	Arms Length	Addl. Parcels	Deed Book and Page
2/11/2014	$1	112 - Dairy farm	Land Only	Strong, Jean B	No	No	Yes	13718/701
6/18/2008	$1	112 - Dairy farm	Land & Building	Strong, William	No	No	No	12731/12320

Utilities

Sewer Type:	Private	**Water Supply:**	Private
Utilities:	Electric	**Heat Type:**	0
Fuel Type:	0	**Central Air:**	No

Improvements

Structure	Size	Grade	Condition	Year
Barn-1.0 dairy	21 x 70	Economy	Fair	1900
Barn-2.0 dairy	48 x 92	Economy	Fair	1900
Barn-1.0 gen	16 x 36	Economy	Fair	1900
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Shed-machine	10 x 14	Economy	Fair	1900
Shed-machine	14 x 18	Economy	Poor	1900
Gar-1.0 det	22 x 22	Average	Fair	1900

Taxes

Year	Description	Amount
2015	County	$6,485.44
2014	County	$6,469.81
2014	School	$15,285.30

***Taxes may not reflect exemptions or changes in assessment**

Image Mate Online

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Residential

Property Info
Owner/Sales
Inventory
Improvements

Tax Info

Report
Comparables

Municipality of Goshen

SWIS:	333089	Tax ID:	10-1-9

Tax Map ID / Property Data

Status:	Active	Roll Section:	Taxable
Address:	117 Owens Rd		
Property Class:	105 - Vac farmland	Site Property Class:	105 - Vac farmland
Ownership Code:			
Site:	Res 1	In Ag. District:	Yes (2)
Zoning Code:	01092 -	Bldg. Style:	0
Neighborhood:	00006 -	School District:	Goshen
Legal Property Description:	Legal description not given for property		
Total Acreage/Size:	14.20	Equalization Rate:	----
Land Assessment:	2014 - $25,300	Total Assessment:	2014 - $25,300
Full Market Value:	2014 - $37,800		
Deed Book:	13718	Deed Page:	701
Grid East:	0	Grid North:	0
Bank Code:	N/A		

Special Districts for 2014

Description	Units	Percent	Type	Value
FD017-Goshen fire 1	0	0%		0
OPN30-Open Space	0	0%		0

Photographs

No Photo Available

Pictometry LiveLink

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No documents found for this parcel

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View Tax Map
View in Google Maps
View in Bing Maps
Map Disclaimer

Michael Bluestein 29 0011 rep seller - 6296896
Dave Hawkins Broker

SDG
Image Mate Online

Navigation Tax Maps | DTF Links Help Log In

Residential

Property Info
Owner/Sales
Inventory
Improvements

Tax Info

Report
Comparables

Municipality of Goshen

SWIS:	333089	Tax ID:	10-1-11.1

Tax Map ID / Property Data

Status:	Active	Roll Section:	Taxable
Address:	51 Owens Rd		
Property Class:	210 - 1 Family Res	Site Property Class:	210 - 1 Family Res
Ownership Code:			
Site:	Res 1	In Ag. District:	Yes (2)
Zoning Code:	01092 -	Bldg. Style:	Colonial
Neighborhood:	00006 -	School District:	Goshen
Legal Property Description:	LT1 STRONG MP8270		
Total Acreage/Size:	2.90	Equalization Rate:	----
Land Assessment:	2014 - $81,700	Total Assessment:	2014 - $230,700
Full Market Value:	2014 - $344,300		
Deed Book:	12840	Deed Page:	1585
Grid East:	0	Grid North:	0
Bank Code:	N/A		

Special Districts for 2014

Description	Units	Percent	Type	Value
FD017-Goshen fire 1	0	0%		0
OPN30-Open Space	0	0%		0

Land Types

Photographs

(Click on photo to enlarge it.)

51 Owens Rd

Pictometry LiveLink

No Pictometry imagery exists for this property.

Documents

No documents found for this parcel

Maps

View Tax Map
View in Google Maps
View in Bing Maps
Map Disclaimer

Soons orchard is uncle
available
Sweet corn on meadow

Image Mate Online

Navigation Tax Maps | DTF Links Help Log In

Residential

- Property Info
- Owner/Sales
- Inventory
- Improvements
- Tax Info
- Report
- Comparables

Municipality of Goshen

SWIS:	333089	Tax ID:	10-1-11.1

Structure

Building Style:	Colonial
Number of Baths:	2 (Full) - 1(Half)
Number of Bedrooms:	3
Number of Kitchens:	1
Number of Fireplaces:	1
Overall Condition:	Normal
Overall Grade:	Average
Porch Type:	
Porch Area:	
Year Built:	1987
Basement Type:	Partial
Basement Garage Cap.:	0
Attached Garage Cap.:	484 sq. ft.

Area

Living Area:	2,756 sq. ft.
First Story Area:	1,572 sq. ft.
Second Story Area:	1,184 sq. ft.
Half Story Area:	0 sq. ft.
Additional Story Area:	0 sq. ft.
Three-Quarter Story Area:	0 sq. ft.
Finished Basement:	0 sq. ft.

Photographs

(Click on photo to enlarge it.)

51 Owens Rd

Pictometry LiveLink

No Pictometry imagery exists for this property.

Documents

No documents found for this parcel

Maps

View Tax Map

View in Google Maps

View in Bing Maps

Map Disclaimer

Finished Rec Room:	0 sq. ft.
Number of Stories:	2

Utilities

Sewer Type:	Private
Water Supply:	Private
Utilities:	Electric
Heat Type:	Hot wtr/stm
Fuel Type:	Oil
Central Air:	No

Image Mate Online

Navigation Tax Maps | DTF Links Help Log In

Residential

- Property Info
- Owner/Sales
- Inventory
- Improvements
- Tax Info
- Report
- Comparables

Municipality of Goshen

SWIS:	333089	Tax ID:	10-1-11.1

Improvements

Structure	Size	Grade	Condition	Year
Shed-machine	16 × 16	Average	Normal	1990
Gar-1.0 att	22 × 22	Average	Normal	1987
Porch-open/deck	14 × 22	Average	Normal	1987
Porch-open/deck	10 × 12	Average	Normal	1990
Porch-coverd	432 sq. ft.	Average	Normal	1987
Porch-screen	15 x 14	Average	Normal	1987

Photographs

(Click on photo to enlarge it.)

51 Owens Rd

Pictometry LiveLink

No Pictometry imagery exists for this property.

Documents

No documents found for this parcel

Maps

View Tax Map

View in Google Maps

View in Bing Maps

Map Disclaimer

Strong Farm
212 Cheechunk Road
Middletown, NY 10940

Inquiry Number: 4196141.3
February 02, 2015

EDR Historical Topographic Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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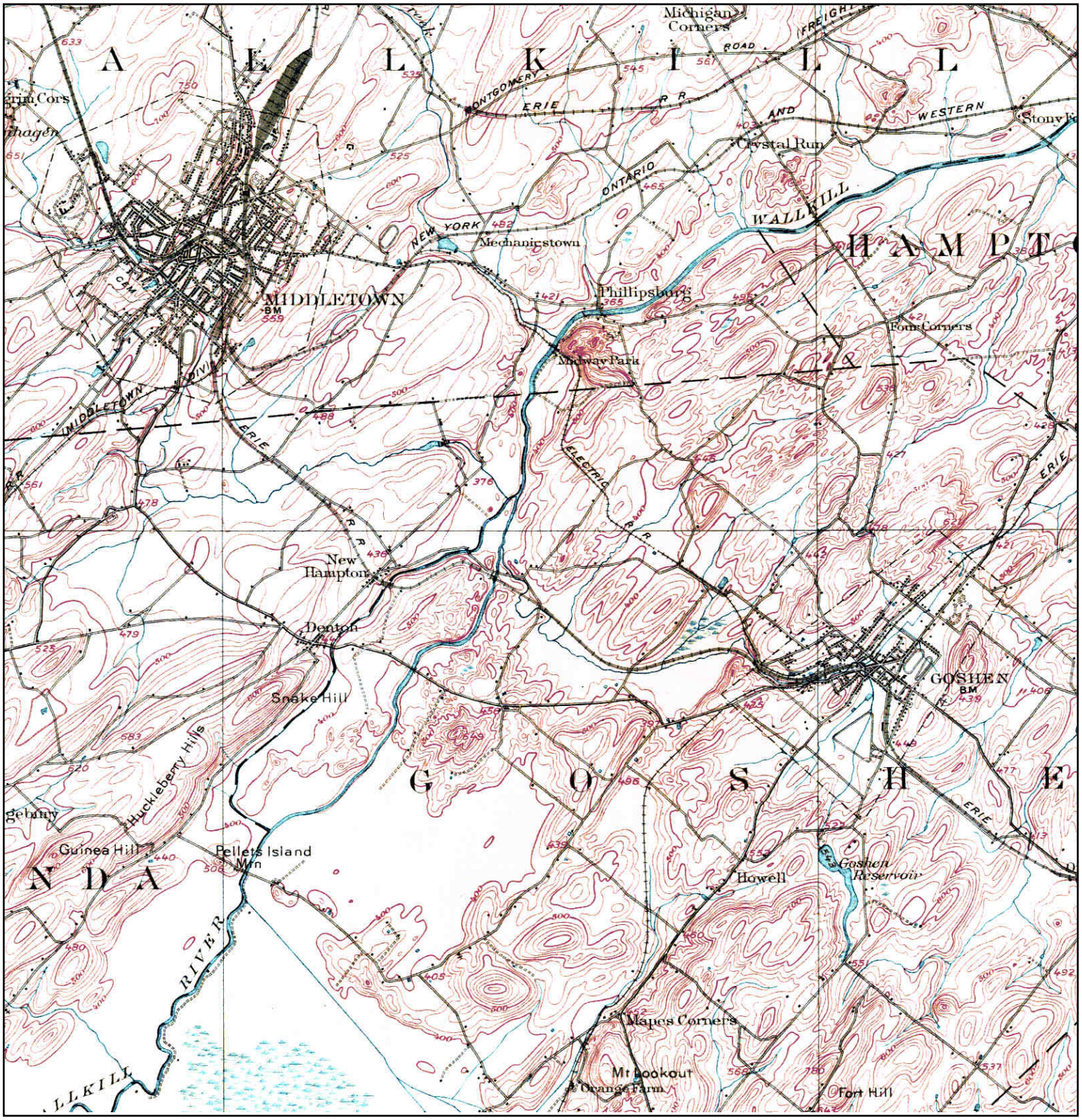
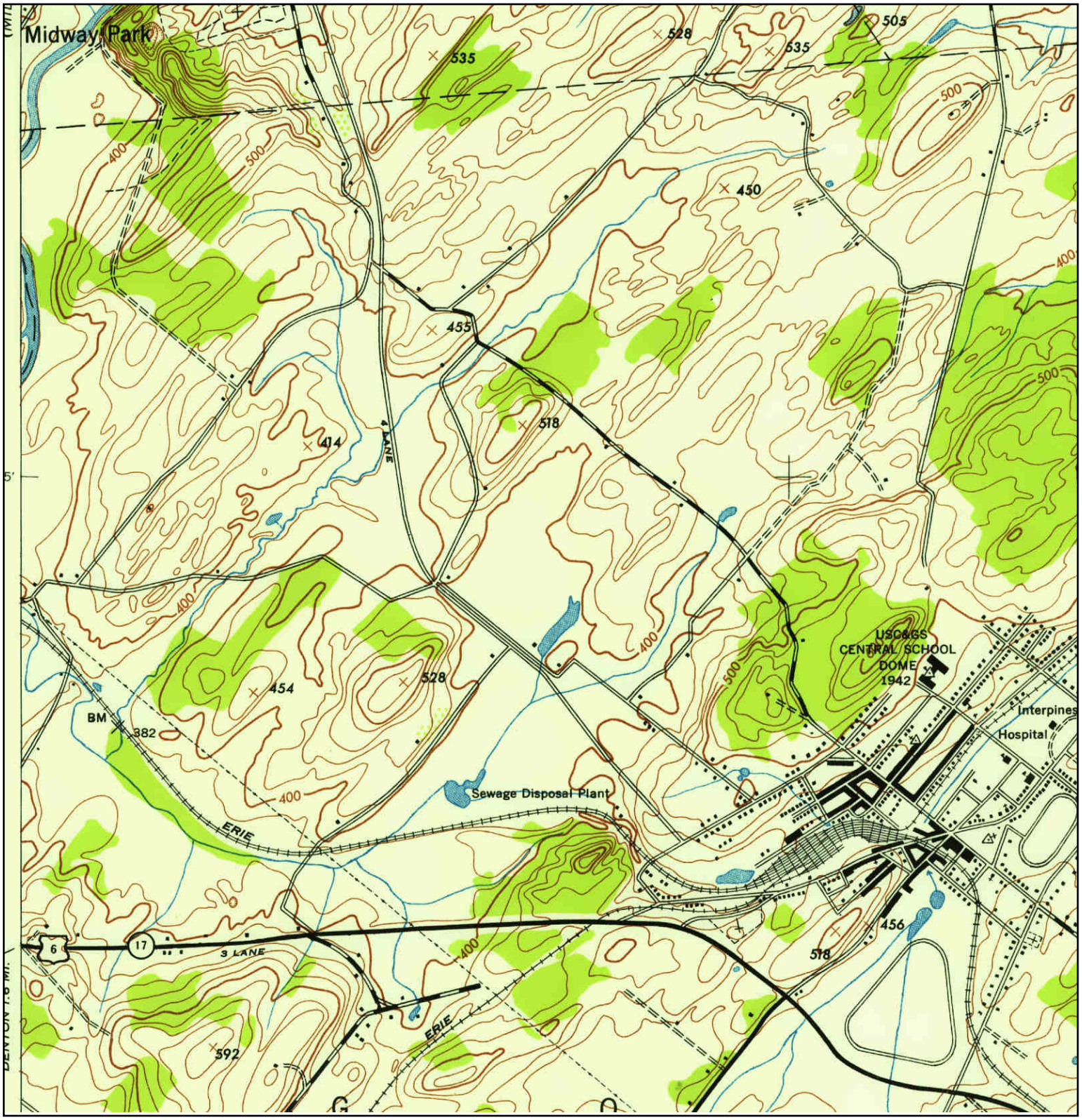
Historical Topographic Map



N	TARGET QUAD NAME: GOSHEN MAP YEAR: 1908 SERIES: 15 SCALE: 1:62500	SITE NAME: Strong Farm ADDRESS: 212 Cheechunk Road Middletown, NY 10940 LAT/LONG: 41.4133 / -74.372	CLIENT: William Going & Associates CONTACT: Bud Going INQUIRY#: 4196141.3 RESEARCH DATE: 02/02/2015

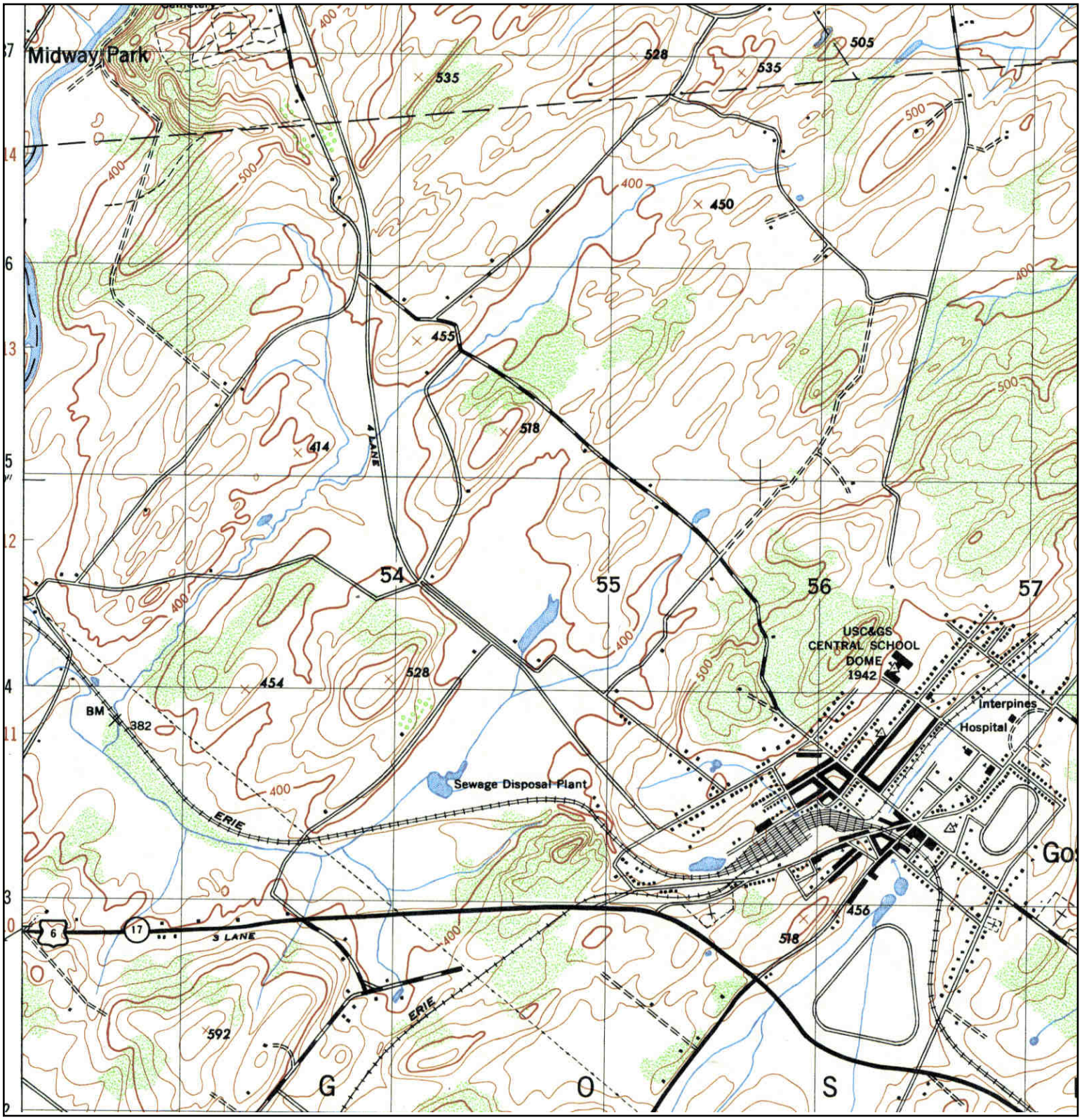
Historical Topographic Map



N	TARGET QUAD			
	NAME:	GOSHEN	SITE NAME:	Strong Farm
	MAP YEAR:	1942	ADDRESS:	212 Cheechunk Road
				Middletown, NY 10940
	SERIES:	7.5	LAT/LONG:	41.4133 / -74.372
	SCALE:	1:24000		

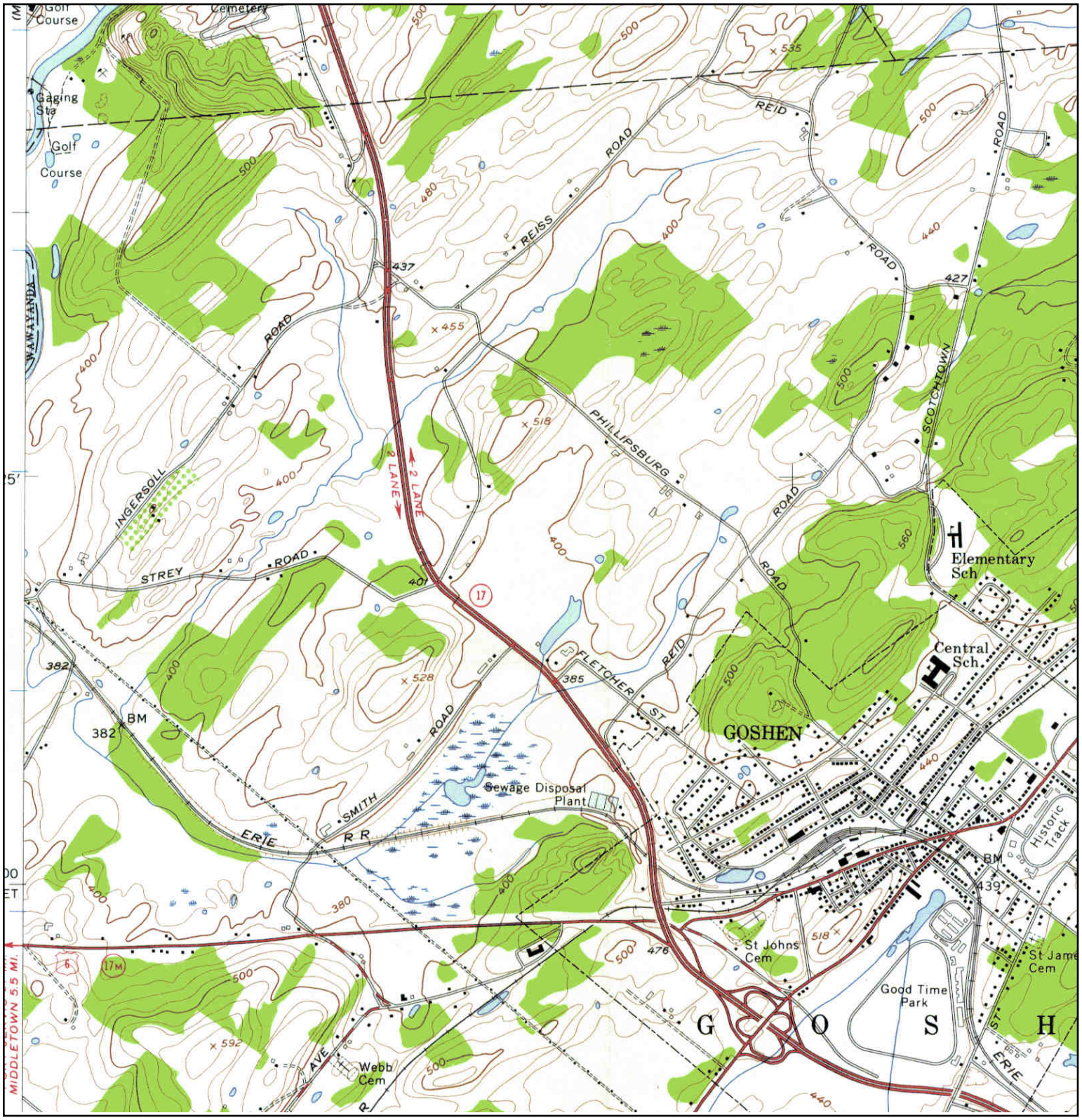
CLIENT:	William Going & Associates
CONTACT:	Bud Going
INQUIRY#:	4196141.3
RESEARCH DATE:	02/02/2015

Historical Topographic Map



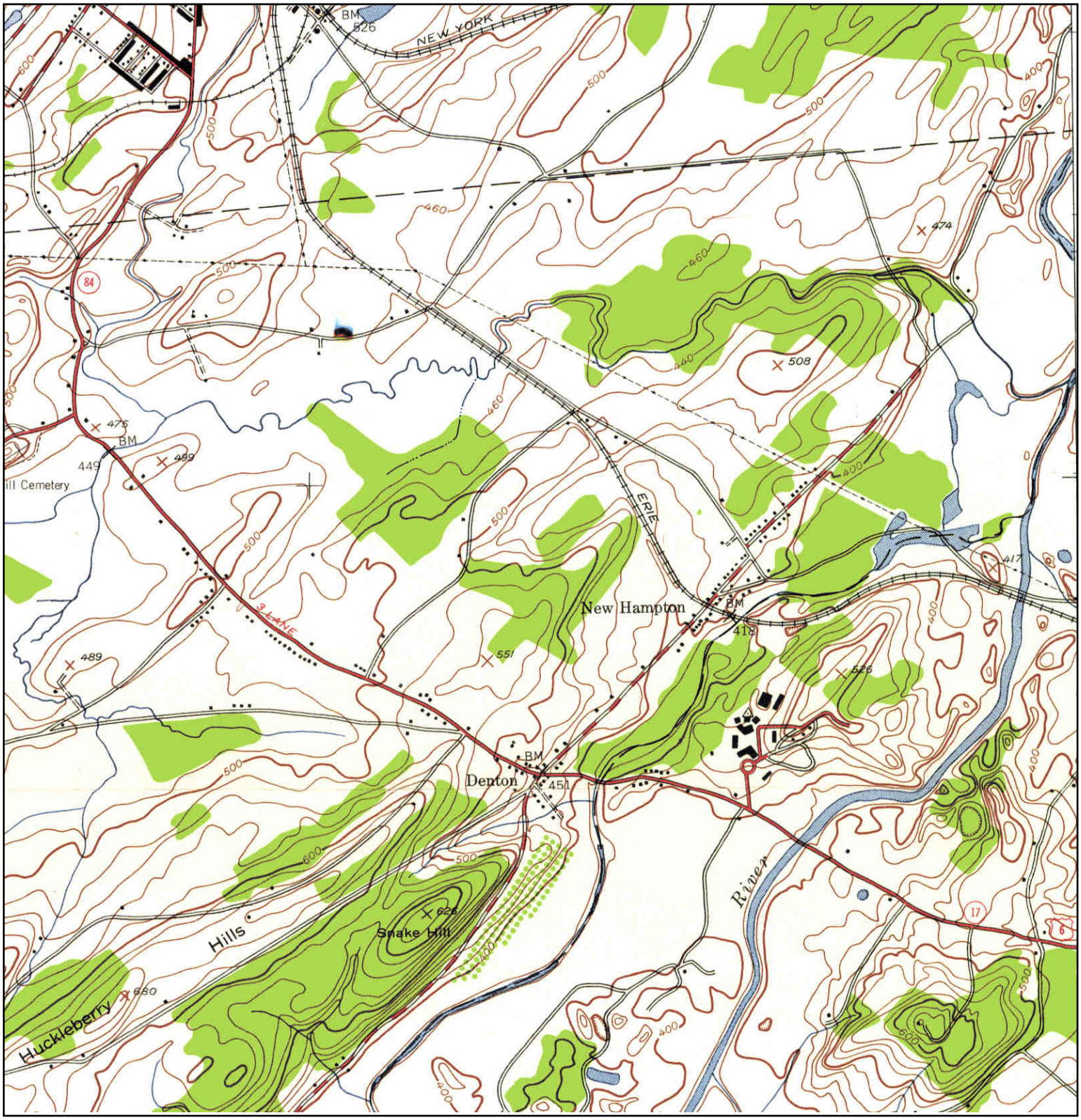
N	TARGET QUAD NAME: GOSHEN MAP YEAR: 1949 SERIES: 7.5 SCALE: 1:25000	SITE NAME: Strong Farm ADDRESS: 212 Cheechunk Road Middletown, NY 10940 LAT/LONG: 41.4133 / -74.372	CLIENT: William Going & Associates CONTACT: Bud Going INQUIRY#: 4196141.3 RESEARCH DATE: 02/02/2015

Historical Topographic Map



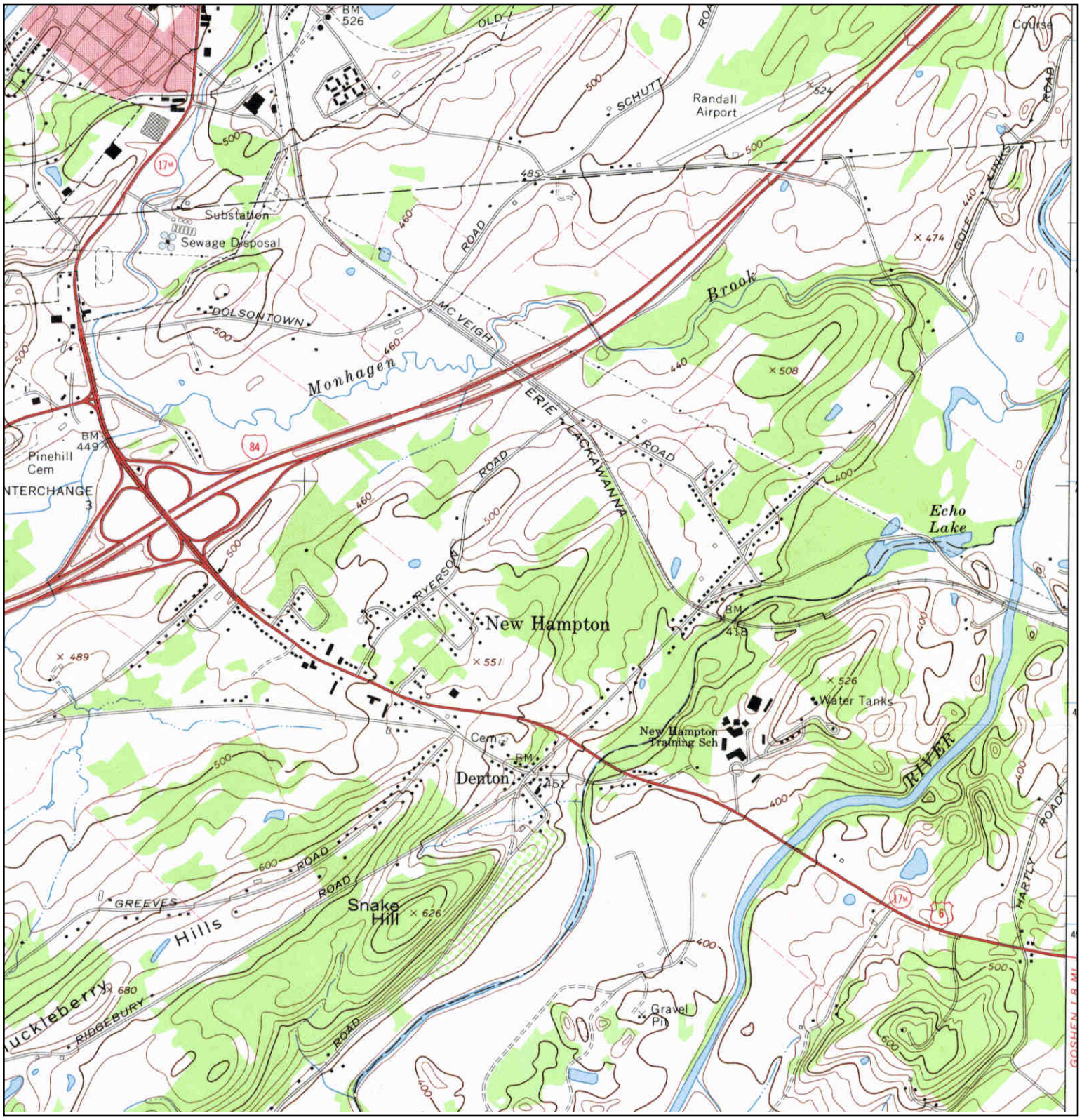
N	TARGET QUAD NAME: GOSHEN MAP YEAR: 1957 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Strong Farm ADDRESS: 212 Cheechunk Road Middletown, NY 10940 LAT/LONG: 41.4133 / -74.372	CLIENT: William Going & Associates CONTACT: Bud Going INQUIRY#: 4196141.3 RESEARCH DATE: 02/02/2015

Historical Topographic Map



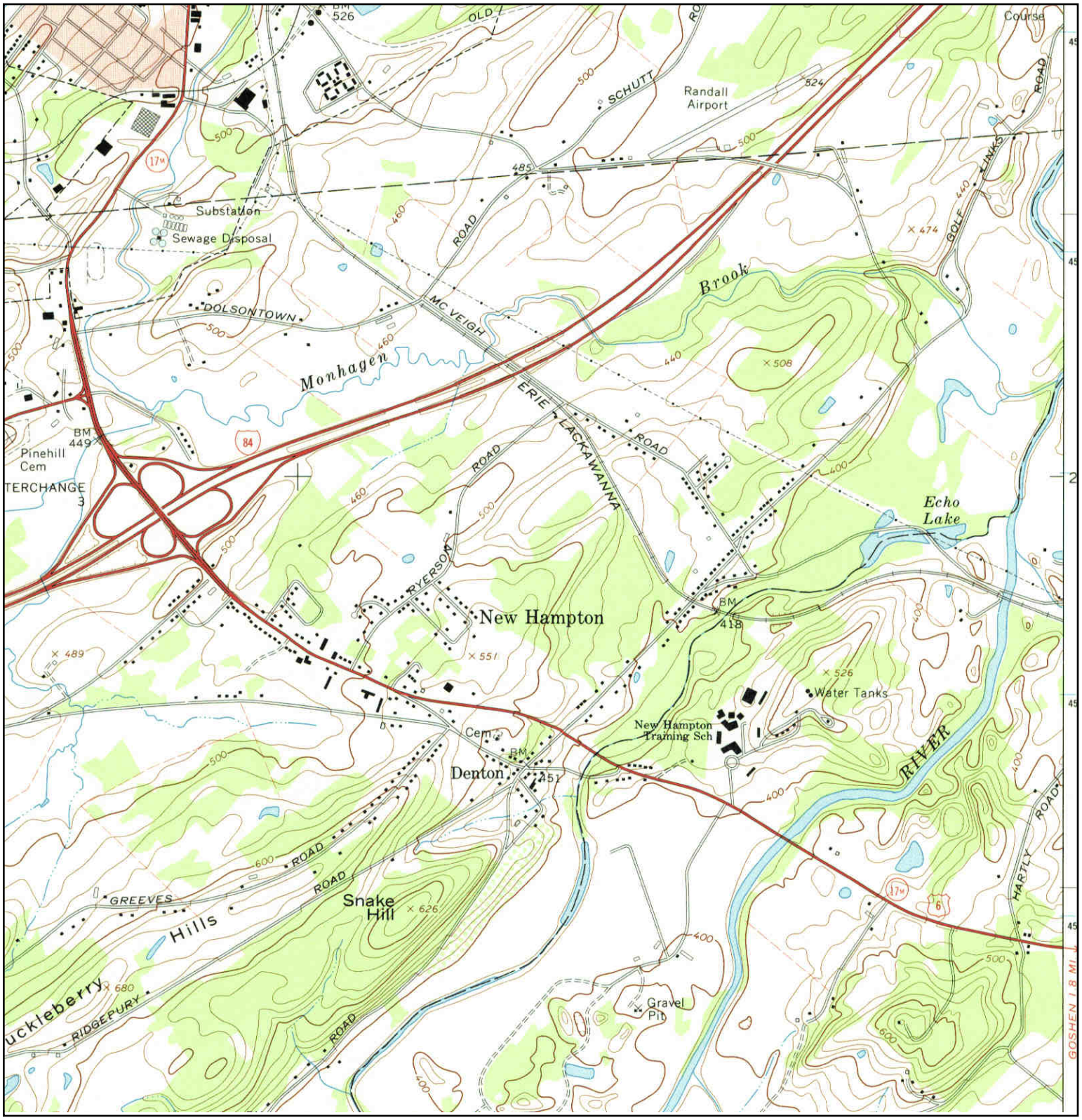
N	ADJOINING QUAD					
	NAME:	MIDDLETOWN	SITE NAME:	Strong Farm	CLIENT:	William Going & Associates
	MAP YEAR:	1942	ADDRESS:	212 Cheechunk Road Middletown, NY 10940	CONTACT:	Bud Going
					INQUIRY#:	4196141.3
	SERIES:	7.5	LAT/LONG:	41.4133 / -74.372	RESEARCH DATE:	02/02/2015
	SCALE:	1:24000				

Historical Topographic Map



N	ADJOINING QUAD NAME: MIDDLETOWN MAP YEAR: 1969 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Strong Farm ADDRESS: 212 Cheechunk Road Middletown, NY 10940 LAT/LONG: 41.4133 / -74.372	CLIENT: William Going & Associates CONTACT: Bud Going INQUIRY#: 4196141.3 RESEARCH DATE: 02/02/2015

Historical Topographic Map



N	ADJOINING QUAD		
	NAME: MIDDLETOWN	SITE NAME: Strong Farm	CLIENT: William Going & Associates
	MAP YEAR: 1976	ADDRESS: 212 Cheechunk Road	CONTACT: Bud Going
	PHOTOINSPECTED FROM : 1969	Middletown, NY 10940	INQUIRY#: 4196141.3
	SERIES: 7.5	LAT/LONG: 41.4133 / -74.372	RESEARCH DATE: 02/02/2015
	SCALE: 1:24000		

Strong Farm
212 Cheechunk Road
Middletown, NY 10940

Inquiry Number: 4196141.6
February 02, 2015

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

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Date EDR Searched Historical Sources:

Aerial Photography February 02, 2015

Target Property:

212 Cheechunk Road

Middletown, NY 10940

Year	***Scale***	***Details***	***Source***
1940	Aerial Photograph. Scale: 1"=500'	Flight Date: June 07, 1940	EDR Proprietary Aerial Viewpoint
1942	Aerial Photograph. Scale: 1"=500'	Flight Date: January 01, 1942	FirstSearch
1968	Aerial Photograph. Scale: 1"=500'	Flight Date: May 07, 1968	EDR
1975	Aerial Photograph. Scale: 1"=500'	Flight Date: August 09, 1975	USGS
1981	Aerial Photograph. Scale: 1"=1000'	Flight Date: April 07, 1981	EDR
1984	Aerial Photograph. Scale: 1"=500'	Flight Date: March 26, 1984	EDR
1984	Aerial Photograph. Scale: 1"=500'	Flight Date: March 26, 1984	USGS
1994	Aerial Photograph. Scale: 1"=500'	DOQQ - acquisition dates: April 23, 1994	USGS/DOQQ
1994	Aerial Photograph. Scale: 1"=500'	Flight Date: April 23, 1994	USGS
2006	Aerial Photograph. Scale: 1"=500'	Flight Year: 2006	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2011	Aerial Photograph. Scale: 1"=500'	Flight Year: 2011	USDA/NAIP

INQUIRY #: 4196141.6
YEAR: 1940
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 1942
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 1968
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 1975
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 1981
= 1000'
N
EDR

INQUIRY #: 4196141.6
YEAR: 1984
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 1984
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 1994
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 1994
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 2006
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 2009
= 500'
N
EDR

INQUIRY #: 4196141.6
YEAR: 2011
= 500'
N
EDR

Strong Farm
212 Cheechunk Road
Middletown, NY 10940

Inquiry Number: 4196141.5
February 04, 2015

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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City Directory Images

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☐	☑	Cole Information Services
1992	☐	☐	Cole Information Services
1967	☐	☐	Price & Lee's City Directory
1964	☐	☐	Price & Lee's City Directory
1959	☐	☐	Price & Lee's City Directory
1952	☐	☐	Price & Lee's City Directory

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FINDINGS

TARGET PROPERTY STREET

212 Cheechunk Road
Middletown, NY 10940

Year	*CD Image*	*Source*	
CHEECHUNK RD			
2013	pg A1	Cole Information Services	
2008	pg A3	Cole Information Services	
2003	pg A5	Cole Information Services	
1999	pg A7	Cole Information Services	
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1967	-	Price & Lee's City Directory	Street not listed in Source
1964	-	Price & Lee's City Directory	Street not listed in Source
1959	-	Price & Lee's City Directory	Street not listed in Source
1952	-	Price & Lee's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
OWENS RD			
2013	pg. A2	Cole Information Services	
2008	pg. A4	Cole Information Services	
2003	pg. A6	Cole Information Services	
1999	pg. A8	Cole Information Services	
1995	pg. A9	Cole Information Services	
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1967	-	Price & Lee's City Directory	Street not listed in Source
1964	-	Price & Lee's City Directory	Street not listed in Source
1959	-	Price & Lee's City Directory	Street not listed in Source
1952	-	Price & Lee's City Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

CHEECHUNK RD 2013

113	BRUCE JOHNSON
115	ALANA BUONO
116	FRED VANDERHEIDE
117	GABRIEL PATZUK
118	WILLIAM KAHN
120	FRANK FLANIGAN
121	RYAN REED
123	GEORG ROBERTSON
124	BRIAN BURROW
126	HARRY FOOTE
127	DANNY LAI
128	STEVEN NEIL
129	MELODY MIKULEWICZ
131	OCCUPANT UNKNOWN
132	BRIAN FOOTE
	FOOTES AMISH SHEDS
133	CHUNWEN LIANG
136	ANDREW PEDEN
138	DONNA ALLEN
212	JEAN STRONG
214	DANIEL RONGA
216	RICHARD FUCCI

Target Street	Cross Street	Source
-	✓	Cole Information Services

OWENS RD 2013

26	WALTER ROSE
32	BRUCE WIEGAND
34	JOHN MAYO
51	ANN BLAKE
108	OCCUPANT UNKNOWN
109	STEVEN LIBOLD
110	OCCUPANT UNKNOWN
112	GREG VENDITTO
114	TIM STICKLEY
115	THOMAS FOLEY
116	JENNIFER OVEREEM
118	OCCUPANT UNKNOWN
119	WALTER ROSE
120	VIRGINIA MODICA
122	ANDY PAPADIMITROPOULOS
139	JOHN GERACE

Target Street	Cross Street	Source
✓	-	Cole Information Services

CHEECHUNK RD 2008

113	BRUCE JOHNSON
115	ALANA BUONO
116	FRED VANDERHEIDE
117	GABRIEL PATZUK
118	ERNEST KAHN
119	HENRY ANDRYSHAK
120	ELIZABETH RAFFA
121	JOHN LYONS
123	OCCUPANT UNKNOWN
124	BRIAN BURROW
126	HARRY FOOTE
127	DANNY LAI
	TQM ASSOCIATES INC
128	STEVEN NEIL
129	MELODY MIKULEWICZ
131	HAROLD BIEN
132	FOOTES AMISH SHEDS
133	CHUNWEN LIANG
136	ANDREW PEDEN
138	DONNA ALLEN
212	JEAN STRONG
214	GARY ODOWD
216	RICHARD FUCCI

Target Street	Cross Street	Source
-	✓	Cole Information Services

OWENS RD 2008

1	OCCUPANT UNKNOWN
22	EVERETT BLAKE
26	WALTER ROSE
32	BRUCE WENGAND
34	JOHN MAYO
51	BLAKE EVERETT JR
	OCCUPANT UNKNOWN
108	OCCUPANT UNKNOWN
109	STEVEN IBOLD
110	VICTOR PASQUINI
112	KEITH KHAN
114	TIM STICKLEY
115	THOMAS FOLEY
116	OCCUPANT UNKNOWN
117	GERRIT OVEREEM
118	VIRGINIA GACHENY
119	WALTER ROSE
120	VIRGINIA MODICA

Target Street	Cross Street	Source
✓	-	Cole Information Services

CHEECHUNK RD 2003

113	SHIRLEY JOHNSON
115	ALANA BUONO
116	FRED VANDERHEIDE
117	GABRIEL PATZUK
118	MARIANNE KAHN
119	JOHN NEW
120	ELIZABETH RAFFA
121	GLENN MURPHY
123	GEORGE ROBERTSON
124	GREGG COSTA
126	MARRY FOOTE
	ORANGE COUNTY LAND IMPROVEMENT
127	PETER LAI
131	ROBERT MIKULEWICZ
133	CHUN LIANG
212	JEAN STRONG

Target Street	Cross Street	Source
-	✓	Cole Information Services

OWENS RD 2003

1	OCCUPANT UNKNOWN
31	ROBERT HUFCUT
32	DANIEL JONAS
34	JOHN MAYO
51	BLAKE EVERETT JR
	EVERETT BLAKE
94	RICHARD LOSEY
108	MICJAEL DERCOLE
109	MONCURE COREY
110	VICTOR PASQUINI
112	ASSICK KHAN
114	OCCUPANT UNKNOWN
	TIM STICKLEY
115	OCCUPANT UNKNOWN
116	GERRIT OVEREEM
118	ADA HEMM
119	ROSEWOOD ENTERPRISES
	WALTER ROSE
120	ALFRED NICOLI

Target Street	Cross Street	Source
✓	-	Cole Information Services

CHEECHUNK RD 1999

116	FRED VANDERHEIDE
118	E KAHN
124	DEANNA SUPLINA
127	PETER LAI
206	ROBERT HUFCUT
212	WILLIAM STRONG

Target Street	Cross Street	Source
-	✓	Cole Information Services

OWENS RD 1999

22	BLAKE EVERETT
	EVERETT BLAKE
94	OCCUPANT UNKNOWN
109	ANGELO CASTELONIA
119	WALTER ROSE

Target Street	Cross Street	Source
-	✓	Cole Information Services

OWENS RD 1995

22 BLAKE ROOFING & SIDING

s7 Analytics

a division of s7 environmental health & safety solutions

Air Sampling Analysis Report

Background Level: NA
Sampled By: Client

NYSDOH ELAP # 12026
NIOSH 7400 Method

Client: Hudson River Valley Environmental
Project Description: 212 Cheechunk Road
Project Location: Goshen, NY
Client Contact: Kristofer Landell

Project #: s7-15A-11
Sampling Phase: FAC
Date Sampled: 3/22/15
Date Received at Lab: 3/23/15

Report #: 1037
Date Analyzed: 3/23/15
Date Reported: 3/23/15

Sample #	Lab ID #	Sample Description	Average Flow Rate (l/min.)	Total Time (Minutes)	Total Volume of Air Filtered (liters)	Fiber Concentration (f/cc)	Fiber Density (f/mm2)
1	7244	Furnace Room Tent	15	60	900	0.003	7.643
2	7245	Tent #2	15	60	900	0.003	7.643
3	7246	Basement	15	60	900	0.004	9.554
4	7247	Field Blank 1	NA	NA	NA	NA	<7.006
5	7248	Field Blank 2	NA	NA	NA	NA	<7.006

Analyzed By: Kristofer S. Landell
Analyst

Reported By: David J. Serino
Technical Laboratory Director

Disclaimer:

All Air Samples are Collected and Analyzed in Accordance with the NIOSH 7400 A Counting Rules Method. Please note that Phase Contrast Microscopy (PCM), using the NIOSH 7400 Method as a means of analysis for fiber counting, is not specific for the analysis of airborne asbestos fibers. The analytical results presented and the associated laboratory procedures are considered to be accuruate and relaible for the samples analyzed. This report may not be reproduced without the expressed written consent of s7 Analytics. If reproduced, the contents of this report shall be reproduced in full.

Relative Standard Deviations: As per the NIOSH 7400 A Counting Rules Method, s7 Analytics is required to report estimated intra-laboratory precision for each analyst. Analyst: David Serino: 5-20 fibers (RSD = 0.120); 21-50 fibers (RSD = .057); 51-100 fibers (RSD = .024). Analyst: Kris Landell: 5-20 fibers (RSD = 0.074); 21-50 fibers (RSD = .096); 51-100 fibers (RSD = .037).

Note: Highlighted Type indicates elevated airborne fiber concentrations.

Microscope Used: Olympus CX31 (Serial #: 5C02891).

S7-15A-11 1037
Page 2 of 2

Hudson River Valley Environmental
72 Highwoods Road
Saugerties, NY 12477
Phone: (845) 853-9938
Fax: (845) 810-7637
HRVEnvironmental@Gmail.Com
WWW.HRVEnvironmental.Com

Air Sampling Data Sheet / Chain of Custody

Project Name: 212 Chechunk Rd-	Client:	Date: 3/22/15	
Project Location: Goshen, NY	Client Contact:	Project Number:	Report Number:

Lab ID #	Field ID #	Sample Location	Sample Description	Pump Number	Flow Rate (Start)	Flow Rate (Stop)	Average Flow Rate (l/m)	Start Time	Stop Time	Total Time	Volume (liters)	Fibers / Field	Fibers / cc	Fibers / mm²
7244	1	DR	Furnace Rm Tank		.5	15	15	1002	1102	60	900			
7245	2	↓	Tank #2		15	15	15	1102	1102	60	900			
7246	3	DR	Basement		15	15	15	1002	1102	60	900			
7247	4	Blank												
7248	5													

Project Phase	Phase IB		Phase IIA		Phase IIB		Phase IIC		Phase IIC		TWA/ STEL		
	Backgrounds		Work Area Preparation		Asbestos Handling		Final Cleaning		Clearance Airs		OSHA		Ambient

PCM Chain of Custody	Print Name	Sign Name	Date	Time
Sampled by:	Seth Pike		3/22/15	
Relinquished by:	Seth Pike		3/22/15	
Received by:	Kris Cahill		3/23/15	
Received at lab by:	Kris Cahill		3/23/15	
Rotameter #:	Calibration Expiration Date:	Cassette Lot #:	Sketch of Sample Locations On Back? (Y/N)	
Turnaround requested	Rush / 12 Hour / 24 Hour	48 Hour OTHER:		

Proposal

Page No. of Pages

FF CONTRACTING NY, INC.

P.O. BOX 604
GOSHEN, NEW YORK 10924
(845) 294-7148 FAX (845) 294-7279
CELL (845) 590-6224

PROPOSAL SUBMITTED TO	PHONE	DATE
CATHY STRONG FOR JEAN STRONG	1-805-886-8488 294-5294	3-18-2015
STREET: 212 CHEECHUNK RD.	JOB NAME:	
CITY, STATE and ZIP CODE: GOSHEN NY 10924	JOB LOCATION:	
ARCHITECT:	DATE OF PLANS:	JOB PHONE: BASEMENT

We hereby submit specifications and estimates for:

(1) REMOVE ALL ASBESTOS PIPE INSULATION FROM HEAT PIPES IN BASEMENT (AIR CELL) USING TENTS / GLOVEBAG / NEGATIVE AIR SYSTEM

(2) CLEAN FLOOR - HEPA VACUUM - DIRT PORT TO BE CLEANED BY HAND SCRAPE AND HEPA VACUUM - TWO LARGE ITEMS IN BACK BASEMENT TO BE CLEANED & REMOVED TO OUTSIDE

(3) ENCAPSULATE PIPES AFTER REMOVAL (PAINT)

AIR MONITORING TO BE PAID BY HOME OWNER - ARRANGED BY FF CONTRACTING NY INC

PRICE INCLUDES ALL LABOR - MATERIAL - DISPOSAL

PAID IN FULL CK# 1295
3-23-2015 $2250.00
THANK YOU

RECEIVED DEPOSIT CK# 1292 / $2250.00
3-19-2015 THANK YOU

We Propose hereby to furnish material and labor — complete in accordance with above specifications, for the sum of:

FOUR THOUSAND FIVE HUNDRED DOLLARS & 00/100 — dollars ($ 4500.00).

Payment to be made as follows:

50% DEPOSIT - BALANCE UPON COMPLETION & SATISFACTORY AIR RESULTS

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workman's Compensation Insurance.

Authorized Signature _____

Note: This proposal may be withdrawn by us if not accepted within 60 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Date of Acceptance: 3-19-2015

Signature _____

Signature _____

ANALYTICAL REPORT

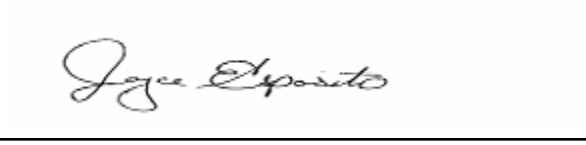
Job Number: 420-88091-1

SDG Number: Strong Farm Goshen

Job Description: William Going

For:
William L. Going & Associates
5 Stella Drive
Gardiner, NY 12525

Attention: Mr. William L Going



Joyce M Esposito
Senior Customer Service Representative
jesposito@envirotestlaboratories.com
04/08/2015
Revision: 1

NYSDOH ELAP does not certify for all parameters. EnviroTest Laboratories does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Pursuant to NELAP, this report may not be reproduced, except in full, without written approval of the laboratory. EnviroTest Laboratories Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our laboratory. All questions regarding this report should be directed to the EnviroTest Customer Service Representative.

EnviroTest Laboratories, Inc. Certifications and Approvals: NYSDOH 10142, NJDEP NY015, CTDOPH PH-0554

METHOD SUMMARY

Client: William L. Going & Associates

Job Number: 420-88091-1
SDG Number: Strong Farm Goshen

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS	EnvTest	SW846 8260C	
Purge and Trap for Aqueous Samples	EnvTest		SW846 5030C
Semivolatile Compounds by GC/MS	EnvTest	SW846 8270D	
Separatory Funnel Liquid-Liquid Extraction	EnvTest		SW846 3510C
Total Coliform and Escherichia coli by Colilert - Presence/Absence	EnvTest	SMWW SM 9223	

Lab References:

EnvTest = EnviroTest

Method References:

SMWW = "Standard Methods for the Examination of Water and Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: William L. Going & Associates

Job Number: 420-88091-1
SDG Number: Strong Farm Goshen

Method	Analyst	Analyst ID
SW846 8260C	Andersen, Eric C	ECA
SW846 8270D	Labare, Alicia M	AML
SMWW SM 9223	Travis, Lyndsey	LT

SAMPLE SUMMARY

Client: William L. Going & Associates

Job Number: 420-88091-1
SDG Number: Strong Farm Goshen

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
420-88091-1	Strong Farm Goshen, Owens House	Drinking Water	03/11/2015 1400	03/11/2015 1520
420-88091-2	Strong Farm Goshen, Main House	Drinking Water	03/11/2015 1415	03/11/2015 1520

Mr. William L Going
William L. Going & Associates
5 Stella Drive
Gardiner, NY 12525

Job Number: 420-88091-1
Sdg Number: Strong Farm Goshen

Client Sample ID: **Strong Farm Goshen, Owens House**
Lab Sample ID: **420-88091-1**

Date Sampled: 03/11/2015 1400
Date Received: 03/11/2015 1520
Client Matrix: Drinking Water
Percent Solids:

Analyte	Result/Qualifier	Unit	NONE	Dilution
Method: SM 9223		Date Analyzed:	03/11/2015 1759	
Coliform, Total	Absent	CFU/100mL		1.0
Escherichia coli	Absent	CFU/100mL		1.0

Mr. William L Going
William L. Going & Associates
5 Stella Drive
Gardiner, NY 12525

Job Number: 420-88091-1
Sdg Number: Strong Farm Goshen

Client Sample ID: **Strong Farm Goshen, Owens House**
Lab Sample ID: **420-88091-1**

Date Sampled: 03/11/2015 1400
Date Received: 03/11/2015 1520
Client Matrix: Drinking Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: 8260C			Date Analyzed:		03/12/2015 1421	
Prep Method: 5030C			Date Prepared:		03/12/2015 1421	
1,2,4-Trimethylbenzene	1.0	U	ug/L	0.12	1.0	1.0
1,3,5-Trimethylbenzene	1.0	U	ug/L	0.11	1.0	1.0
Benzene	1.0	U	ug/L	0.12	1.0	1.0
Ethylbenzene	1.0	U	ug/L	0.16	1.0	1.0
Isopropylbenzene	1.0	U	ug/L	0.090	1.0	1.0
n-Butylbenzene	1.0	U	ug/L	0.10	1.0	1.0
N-Propylbenzene	1.0	U	ug/L	0.10	1.0	1.0
Naphthalene	5.0	U	ug/L	0.15	5.0	1.0
sec-Butylbenzene	1.0	U	ug/L	0.11	1.0	1.0
tert-Butylbenzene	1.0	U	ug/L	0.10	1.0	1.0
Toluene	1.0	U	ug/L	0.12	1.0	1.0
4-Isopropyltoluene	1.0	U	ug/L	0.12	1.0	1.0
Methyl tert-butyl ether	1.0	U	ug/L	0.13	1.0	1.0
Xylenes, Total	1.0	U	ug/L	0.17	1.0	1.0
Surrogate					Acceptance Limits	
Toluene-d8 (Surr)	105		%		74 - 129	
1,2-Dichloroethane-d4 (Surr)	98		%		77 - 117	
4-Bromofluorobenzene	96		%		74 - 119	
Method: 8270D			Date Analyzed:		03/17/2015 1446	
Prep Method: 3510C			Date Prepared:		03/17/2015 1000	
Naphthalene	10	U	ug/L	1.8	10	1.0
Anthracene	10	U	ug/L	1.9	10	1.0
Fluorene	10	U	ug/L	3.2	10	1.0
Phenanthrene	10	U	ug/L	1.2	10	1.0
Pyrene	10	U	ug/L	1.9	10	1.0
Acenaphthene	10	U	ug/L	2.4	10	1.0
Benzo[a]anthracene	10	U	ug/L	1.1	10	1.0
Fluoranthene	10	U	ug/L	1.6	10	1.0
Benzo[b]fluoranthene	10	U	ug/L	0.78	10	1.0
Benzo[k]fluoranthene	10	U	ug/L	1.1	10	1.0
Chrysene	10	U	ug/L	0.98	10	1.0
Benzo[a]pyrene	10	U	ug/L	1.4	10	1.0
Benzo[g,h,i]perylene	10	U	ug/L	1.9	10	1.0
Indeno[1,2,3-cd]pyrene	10	U	ug/L	1.7	10	1.0
Dibenz(a,h)anthracene	10	U	ug/L	1.8	10	1.0
Surrogate					Acceptance Limits	
Nitrobenzene-d5	33		%		10 - 120	

Mr. William L Going
William L. Going & Associates
5 Stella Drive
Gardiner, NY 12525

Job Number: 420-88091-1
Sdg Number: Strong Farm Goshen

Client Sample ID: **Strong Farm Goshen, Owens House**
Lab Sample ID: **420-88091-1**

Date Sampled: 03/11/2015 1400
Date Received: 03/11/2015 1520
Client Matrix: Drinking Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Surrogate				Acceptance Limits	
Terphenyl-d14	53	%		10 - 120	
2-Fluorobiphenyl	42	%		10 - 120	

Mr. William L Going
William L. Going & Associates
5 Stella Drive
Gardiner, NY 12525

Job Number: 420-88091-1
Sdg Number: Strong Farm Goshen

Client Sample ID: **Strong Farm Goshen, Main House**
Lab Sample ID: **420-88091-2**

Date Sampled: 03/11/2015 1415
Date Received: 03/11/2015 1520
Client Matrix: Drinking Water
Percent Solids:

Analyte	Result/Qualifier	Unit	NONE	Dilution
Method: SM 9223		Date Analyzed:	03/11/2015 1759	
Coliform, Total	Absent	CFU/100mL		1.0
Escherichia coli	Absent	CFU/100mL		1.0

Mr. William L Going
William L. Going & Associates
5 Stella Drive
Gardiner, NY 12525

Job Number: 420-88091-1
Sdg Number: Strong Farm Goshen

Client Sample ID: **Strong Farm Goshen, Main House**
Lab Sample ID: **420-88091-2**

Date Sampled: 03/11/2015 1415
Date Received: 03/11/2015 1520
Client Matrix: Drinking Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: 8260C			Date Analyzed:		03/12/2015 1450	
Prep Method: 5030C			Date Prepared:		03/12/2015 1450	
1,2,4-Trimethylbenzene	1.0	U	ug/L	0.12	1.0	1.0
1,3,5-Trimethylbenzene	1.0	U	ug/L	0.11	1.0	1.0
Benzene	1.0	U	ug/L	0.12	1.0	1.0
Ethylbenzene	1.0	U	ug/L	0.16	1.0	1.0
Isopropylbenzene	1.0	U	ug/L	0.090	1.0	1.0
n-Butylbenzene	1.0	U	ug/L	0.10	1.0	1.0
N-Propylbenzene	1.0	U	ug/L	0.10	1.0	1.0
Naphthalene	5.0	U	ug/L	0.15	5.0	1.0
sec-Butylbenzene	1.0	U	ug/L	0.11	1.0	1.0
tert-Butylbenzene	1.0	U	ug/L	0.10	1.0	1.0
Toluene	1.0	U	ug/L	0.12	1.0	1.0
4-Isopropyltoluene	1.0	U	ug/L	0.12	1.0	1.0
Methyl tert-butyl ether	1.0	U	ug/L	0.13	1.0	1.0
Xylenes, Total	1.0	U	ug/L	0.17	1.0	1.0
Surrogate					Acceptance Limits	
Toluene-d8 (Surr)	106		%		74 - 129	
1,2-Dichloroethane-d4 (Surr)	96		%		77 - 117	
4-Bromofluorobenzene	97		%		74 - 119	
Method: 8270D			Date Analyzed:		03/17/2015 1519	
Prep Method: 3510C			Date Prepared:		03/17/2015 1000	
Naphthalene	12	U	ug/L	2.1	12	1.0
Anthracene	12	U	ug/L	2.2	12	1.0
Fluorene	12	U	ug/L	3.6	12	1.0
Phenanthrene	12	U	ug/L	1.3	12	1.0
Pyrene	12	U	ug/L	2.2	12	1.0
Acenaphthene	12	U	ug/L	2.8	12	1.0
Benzo[a]anthracene	12	U	ug/L	1.2	12	1.0
Fluoranthene	12	U	ug/L	1.9	12	1.0
Benzo[b]fluoranthene	12	U	ug/L	0.89	12	1.0
Benzo[k]fluoranthene	12	U	ug/L	1.2	12	1.0
Chrysene	12	U	ug/L	1.1	12	1.0
Benzo[a]pyrene	12	U	ug/L	1.6	12	1.0
Benzo[g,h,i]perylene	12	U	ug/L	2.2	12	1.0
Indeno[1,2,3-cd]pyrene	12	U	ug/L	1.9	12	1.0
Dibenz(a,h)anthracene	12	U	ug/L	2.1	12	1.0
Surrogate					Acceptance Limits	
Nitrobenzene-d5	39		%		10 - 120	

Mr. William L Going
William L. Going & Associates
5 Stella Drive
Gardiner, NY 12525

Job Number: 420-88091-1
Sdg Number: Strong Farm Goshen

Client Sample ID: **Strong Farm Goshen, Main House**
Lab Sample ID: **420-88091-2**

Date Sampled: 03/11/2015 1415
Date Received: 03/11/2015 1520
Client Matrix: Drinking Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Surrogate				Acceptance Limits	
Terphenyl-d14	40	%		10 - 120	
2-Fluorobiphenyl	48	%		10 - 120	

DATA REPORTING QUALIFIERS

Client: William L. Going & Associates

Job Number: 420-88091-1
Sdg Number: Strong Farm Goshen

Lab Section	Qualifier	Description
GC/MS VOA		
	U	The analyte was analyzed for but not detected at or above the lowest stated limit.
GC/MS Semi VOA		
	U	The analyte was analyzed for but not detected at or above the lowest stated limit.

Definitions and Glossary

Client: William L. Going & Associates

Job Number: 420-88091-1

Sdg Number: Strong Farm Goshen

Abbreviation	These commonly used abbreviations may or may not be present in this report.
%R	Percent Recovery
DL, RA, RE	Indicates a Dilution, Reanalysis or Reextraction.
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit - an estimate of the minimum amount of a substance that an analytical process can reliably detect. A MDL is analyte- and matrix-specific and may be laboratory-dependent.
ND	Not detected at the reporting limit (or MDL if shown).
QC	Quality Control
RL	Reporting Limit - the minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence.
RPD	Relative Percent Difference - a measure of the relative difference between two points.

EnviroTest Laboratories Inc.

CHAIN OF CUSTODY

88091

315 Fullerton Avenue
Newburgh, NY 12550
TEL (845) 562-0890
FAX (845) 562-0841

CUSTOMER NAME: William Colby & Assoc.
ADDRESS: 5 Stella Drive
CITY, STATE, ZIP: Gardiner NY 12525
NAME OF CONTACT: PHONE NO.
PROJECT LOCATION: Strong Farm Goshen
PROJECT NUMBER / PO NO.:

REPORT TYPE
STANDARD ☑ ISRA ☐
NJ REG ☐
NYASP A ☐ B ☐ CLP ☐
OTHER ____

TURNAROUND
☑ NORMAL ____
☐ QUICK ____
☐ VERBAL ____

REPORT # (Lab Use Only)

SAMPLE TEMP. 4.8 C
SAMPLE REC'D ON ICE ☑ Y ☐ N
ph CHECK ☐ Y ☐ N
CHLORINE (RESIDUAL) ☐ Y ☐ N
REVIEWED BY: ____

NY PUBLIC WATER SUPPLIES
SOURCE ID ____
ELAP TYPE ____
FEDERAL ID ____

NOTE: SAMPLE TEMPERATURE UPON RECEIPT MUST BE 4° ± 2°C.

Matrix
DW = DRINKING WATER S = SOIL O = OIL
WW = WASTE WATER SL = SLUDGE GW = GROUND WATER

ETL #	SAMPLING DATE	SAMPLING TIME AM PM	COMP	GRAB	MATRIX	CLIENT I.D.	Total Number of Containers	40ml Glass HCL	Liter Amber HCL	250ml Amber Sulfuric	Liter Amber Organic Washed	250ml Plastic Nitric Acid	250ml Plastic Sodium Hydroxide	Liter Plastic	250ml Plastic Sulfuric Acid	250ml Plastic	125ml Plastic Sterile	250ml Plastic NAOH/ZN ACC	40ml Glass Sulfuric	40ml Glass	DO	ANALYSIS REQUESTED
	3/10/15	4:00		✓	dw	Owens House	4	2			1						1					8260 STARS, 8270BN STARS / Bact.
	3/10/15	4:15		✓	dw	Main House	4	2			1						1					" " "

LAB USE ONLY

SAMPLES SUBMITTED FOR ANALYSIS WILL BE SUBJECT TO THE ETL TERMS AND CONDITIONS OF SALE UNLESS ALTERNATE TERMS ARE AGREED IN WRITING.

RELINQUISHED BY: William Colby	COMPANY	DATE 3/11/15	TIME 320	RECEIVED BY: Karl Ottmer	COMPANY ETL	DATE 3/11/15	TIME 320
SAMPLED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

COMMENTS ____

LOGIN SAMPLE RECEIPT CHECK LIST

Client: William L. Going & Associates

Job Number: 420-88091-1
SDG Number: Strong Farm Goshen

Login Number: **88091**

Question	T/F/NA	Comment
Samples were collected by ETL employee as per SOP-SAM-1	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is recorded.	True	4.8 C
Cooler Temp. is within method specified range.(0-6 C PW, 0-8 C NPW, or BAC <10 C	True	
If false, was sample received on ice within 6 hours of collection.	NA	
Based on above criteria cooler temperature is acceptable.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	NA	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

April 07, 2015

Ron Bayer
EnviroTest Laboratories Inc.
315 Fullerton Avenue
Newburgh, NY 12550

RE: Project: 42001615
Pace Project No.: 35182455

Dear Ron Bayer:
Enclosed are the analytical results for sample(s) received by the laboratory on April 04, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Bo Garcia
bo.garcia@pacelabs.com
Project Manager

Enclosures

cc: Debra Bayer, EnviroTest Laboratories Inc.
Renee Cusack, EnviroTest Laboratories Inc.
Joyce Esposito, EnviroTest Laboratories Inc.
Janine Rader, EnviroTest Laboratories Inc.
Meredith Ruthven, EnviroTest Laboratories Inc.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

CERTIFICATIONS

Project: 42001615
Pace Project No.: 35182455

Ormond Beach Certification IDs
8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE SUMMARY

Project: 42001615
Pace Project No.: 35182455

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35182455001	**Strong Main House Well(420-888**	Drinking Water	04/03/15 11:00	04/04/15 11:00

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE ANALYTE COUNT

Project: 42001615
Pace Project No.: 35182455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35182455001	**Strong Main House Well(420-888**	EPA 508.1	JTJ	25	PASI-O

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: 42001615
Pace Project No.: 35182455

Sample: Strong Main House Well(420-888 **Lab ID: 35182455001** Collected: 04/03/15 11:00 Received: 04/04/15 11:00 Matrix: Drinking Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
508.1 GCS Pesticides	Analytical Method: EPA 508.1 Preparation Method: EPA 508.1								
Alachlor	**<0.034**	ug/L	0.20	0.034	1	04/06/15 13:30	04/07/15 00:45	15972-60-8	
Atrazine	**<0.021**	ug/L	0.10	0.021	1	04/06/15 13:30	04/07/15 00:45	1912-24-9	
gamma-BHC (Lindane)	**<0.0030**	ug/L	0.020	0.0030	1	04/06/15 13:30	04/07/15 00:45	58-89-9	
Butachlor	**<0.015**	ug/L	0.10	0.015	1	04/06/15 13:30	04/07/15 00:45	23184-66-9	
Chlordane (Technical)	**<0.047**	ug/L	0.20	0.047	1	04/06/15 13:30	04/07/15 00:45	57-74-9	
Dieldrin	**<0.014**	ug/L	0.10	0.014	1	04/06/15 13:30	04/07/15 00:45	60-57-1	
Endrin	**<0.0020**	ug/L	0.010	0.0020	1	04/06/15 13:30	04/07/15 00:45	72-20-8	
Heptachlor	**<0.0060**	ug/L	0.040	0.0060	1	04/06/15 13:30	04/07/15 00:45	76-44-8	
Heptachlor epoxide	**<0.0030**	ug/L	0.020	0.0030	1	04/06/15 13:30	04/07/15 00:45	1024-57-3	
Hexachlorobenzene	**<0.011**	ug/L	0.10	0.011	1	04/06/15 13:30	04/07/15 00:45	118-74-1	
Hexachlorocyclopentadiene	**<0.032**	ug/L	0.10	0.032	1	04/06/15 13:30	04/07/15 00:45	77-47-4	
Methoxychlor	**<0.014**	ug/L	0.10	0.014	1	04/06/15 13:30	04/07/15 00:45	72-43-5	
Metolachlor	**<0.011**	ug/L	0.10	0.011	1	04/06/15 13:30	04/07/15 00:45	51218-45-2	
PCB-1016 (Aroclor 1016)	**<0.080**	ug/L	0.10	0.080	1	04/06/15 13:30	04/07/15 00:45	12674-11-2	
PCB-1221 (Aroclor 1221)	**<0.029**	ug/L	0.10	0.029	1	04/06/15 13:30	04/07/15 00:45	11104-28-2	
PCB-1232 (Aroclor 1232)	**<0.029**	ug/L	0.10	0.029	1	04/06/15 13:30	04/07/15 00:45	11141-16-5	
PCB-1242 (Aroclor 1242)	**<0.051**	ug/L	0.10	0.051	1	04/06/15 13:30	04/07/15 00:45	53469-21-9	
PCB-1248 (Aroclor 1248)	**<0.062**	ug/L	0.10	0.062	1	04/06/15 13:30	04/07/15 00:45	12672-29-6	
PCB-1254 (Aroclor 1254)	**<0.023**	ug/L	0.10	0.023	1	04/06/15 13:30	04/07/15 00:45	11097-69-1	
PCB-1260 (Aroclor 1260)	**<0.066**	ug/L	0.10	0.066	1	04/06/15 13:30	04/07/15 00:45	11096-82-5	
PCB, Total	**<0.080**	ug/L	0.10	0.080	1	04/06/15 13:30	04/07/15 00:45	1336-36-3	
Propachlor	**<0.010**	ug/L	0.10	0.010	1	04/06/15 13:30	04/07/15 00:45	1918-16-7	
Simazine	**<0.044**	ug/L	0.070	0.044	1	04/06/15 13:30	04/07/15 00:45	122-34-9	
Toxaphene	**<0.61**	ug/L	1.0	0.61	1	04/06/15 13:30	04/07/15 00:45	8001-35-2	
Surrogates									
Decachlorobiphenyl (S)	118	%	70-130		1	04/06/15 13:30	04/07/15 00:45	2051-24-3	

REPORT OF LABORATORY ANALYSIS

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8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: 42001615
Pace Project No.: 35182455

QC Batch: OEXT/21688
QC Batch Method: EPA 508.1
Analysis Method: EPA 508.1
Analysis Description: 508 GCS Pesticide
Associated Lab Samples: 35182455001

METHOD BLANK: 1175033
Matrix: Water
Associated Lab Samples: 35182455001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alachlor	ug/L	<0.034	0.20	04/06/15 21:16	
Atrazine	ug/L	<0.021	0.10	04/06/15 21:16	
Butachlor	ug/L	<0.015	0.10	04/06/15 21:16	
Chlordane (Technical)	ug/L	<0.047	0.20	04/06/15 21:16	
Dieldrin	ug/L	<0.014	0.10	04/06/15 21:16	
Endrin	ug/L	<0.0020	0.010	04/06/15 21:16	
gamma-BHC (Lindane)	ug/L	<0.0030	0.020	04/06/15 21:16	
Heptachlor	ug/L	<0.0060	0.040	04/06/15 21:16	
Heptachlor epoxide	ug/L	<0.0030	0.020	04/06/15 21:16	
Hexachlorobenzene	ug/L	<0.011	0.10	04/06/15 21:16	
Hexachlorocyclopentadiene	ug/L	<0.032	0.10	04/06/15 21:16	
Methoxychlor	ug/L	<0.014	0.10	04/06/15 21:16	
Metolachlor	ug/L	<0.011	0.10	04/06/15 21:16	
PCB, Total	ug/L	<0.080	0.10	04/06/15 21:16	
PCB-1016 (Aroclor 1016)	ug/L	<0.080	0.10	04/06/15 21:16	
PCB-1221 (Aroclor 1221)	ug/L	<0.029	0.10	04/06/15 21:16	
PCB-1232 (Aroclor 1232)	ug/L	<0.029	0.10	04/06/15 21:16	
PCB-1242 (Aroclor 1242)	ug/L	<0.051	0.10	04/06/15 21:16	
PCB-1248 (Aroclor 1248)	ug/L	<0.062	0.10	04/06/15 21:16	
PCB-1254 (Aroclor 1254)	ug/L	<0.023	0.10	04/06/15 21:16	
PCB-1260 (Aroclor 1260)	ug/L	<0.066	0.10	04/06/15 21:16	
Propachlor	ug/L	<0.010	0.10	04/06/15 21:16	
Simazine	ug/L	<0.044	0.070	04/06/15 21:16	
Toxaphene	ug/L	<0.61	1.0	04/06/15 21:16	
Decachlorobiphenyl (S)	%	103	70-130	04/06/15 21:16	

LABORATORY CONTROL SAMPLE: 1175034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alachlor	ug/L	1	1.0	103	70-130	
Atrazine	ug/L	1.2	1.3	103	70-130	
Butachlor	ug/L	.5	0.50	101	70-130	
Dieldrin	ug/L	.5	0.52	104	70-130	
Endrin	ug/L	.05	0.052	104	70-130	
gamma-BHC (Lindane)	ug/L	.1	0.10	100	70-130	
Heptachlor	ug/L	.2	0.21	105	70-130	
Heptachlor epoxide	ug/L	.1	0.11	114	70-130	
Hexachlorobenzene	ug/L	.5	0.45	91	70-130	
Hexachlorocyclopentadiene	ug/L	.5	0.50	99	70-130	
Methoxychlor	ug/L	.5	0.54	108	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 42001615
Pace Project No.: 35182455

LABORATORY CONTROL SAMPLE: 1175034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Metolachlor	ug/L	.5	0.50	99	70-130	
Propachlor	ug/L	.5	0.49	98	70-130	
Simazine	ug/L	.88	0.95	109	70-130	
Decachlorobiphenyl (S)	%			103	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1175134 1175135

Parameter	Units	35182455001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alachlor	ug/L	<0.034	2	2	2.0	1.9	102	95	65-135	7	40	
Atrazine	ug/L	<0.021	2.5	2.5	2.5	2.4	99	98	65-135	1	40	
Butachlor	ug/L	<0.015	1	1	1.0	0.95	101	95	65-135	7	40	
Dieldrin	ug/L	<0.014	1	1	1.1	0.98	105	98	65-135	8	40	
Endrin	ug/L	<0.0020	.1	.1	0.10	0.097	104	97	65-135	8	40	
gamma-BHC (Lindane)	ug/L	<0.0030	.2	.2	0.20	0.18	102	92	65-135	10	40	
Heptachlor	ug/L	<0.0060	.4	.4	0.42	0.38	105	96	65-135	9	40	
Heptachlor epoxide	ug/L	<0.0030	.2	.2	0.24	0.22	119	109	65-135	8	40	
Hexachlorobenzene	ug/L	<0.011	1	1	0.91	0.82	91	82	65-135	11	40	
Hexachlorocyclopentadiene	ug/L	<0.032	1	1	1.1	0.95	107	95	65-135	12	40	
Methoxychlor	ug/L	<0.014	1	1	1.1	1.0	110	101	65-135	8	40	
Metolachlor	ug/L	<0.011	1	1	1.0	0.94	101	94	65-135	7	40	
Propachlor	ug/L	<0.010	1	1	0.98	0.91	98	91	65-135	7	40	
Simazine	ug/L	<0.044	1.8	1.8	1.6	1.7	94	99	65-135	5	40	
Decachlorobiphenyl (S)	%						107	104	70-130		40	

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(386)672-5668

QUALIFIERS

Project: 42001615
Pace Project No.: 35182455

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

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8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 42001615
Pace Project No.: 35182455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35182455001	**Strong Main House Well(420-888**	EPA 508.1	OEXT/21688	EPA 508.1	GCSV/14175

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EnviroTest Laboratories, Inc.
315 Fullerton Avenue
Newburgh, NY 12550
Phone (845) 562-0890 Fax (845) 562-0841

WO# : 35182455
35182455

Chain of Custody Record

EnviroTest Laboratories Inc.

Client Information (Sub Contract Lab)			Carrier Tracking No(s):	COC No: 420-7522.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jesposito@envirotestlaboratories.com		Page: Page 1 of 1
Company: Pace Analytical Ormond Beach				STL Job #: 420-88868-1
Address: 8 East Tower Circle, ,	Due Date Requested: 4/7/2015		Analysis Requested	
City: Ormond Beach	TAT Requested (days):			
State, Zip: FL, 32174				
Phone: 111-222-3333(Tel)	PO #:			
Email:	WO #:			
Project Name: William Going	Project #: 42001615			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT/ 508	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Strong Main House Well (420-88868-1)	4/3/15	11:00		Water			X	2	

Due 4/7/15 end of Day

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: J Marciano	Date/Time: 4/3/15 1630	Company: ETL	Received by: BB	Date/Time: 4/4/15 1100	Company: PACE
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.1 T-198

Pace Analytical	Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 06	Document Revised: August 11, 2014 Issuing Authority: Pace Florida Quality Office

Sample Condition Upon Receipt Form (SCUR)

Table Number: _____

Client Name: EnviroTest Project # 35182455

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other _____

Tracking # 7732 8975 6886

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used T-198 Type of Ice: (Wet) Blue None

Cooler Temperature °C 3.1 (Visual) 0.0 (Correction Factor) 3.1 (Actual)

Date and Initials of person examining contents: BD 4/4/15

(Temp should be above freezing to 6°C). If below 0°C, then was sample frozen? ☐Yes ☐No

Receipt of samples satisfactory: ☐Yes ☐No Rush TAT requested on COC:

If yes, then all conditions below were met:	If no, then mark box & describe issue (use comments area if necessary):
Chain of Custody Present	☐
Chain of Custody Filled Out	☐
Relinquished Signature & Sampler Name COC	☐
Samples Arrived within Hold Time	☐
Sufficient Volume	☐
Correct Containers Used	☐
Containers Intact	☐
Sample Labels match COC (sample IDs & date/time of collection)	☐ No Labels: ☐ No Time/Date on Labels: ☐
All containers needing preservation are found to be in compliance with EPA recommendation.	☐
No Headspace in VOA Vials (>6mm):	☐

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments): _____

Project Manager Review: _____ Date: 4/6/15

Finished Product Information Only

F.P. Sample ID: _____

Production Code: _____

Date/Time Opened: _____

Number of Unopened Bottles Remaining: _____

Extra Sample in Shed: Yes No

Size & Qty of Bottles Received

_____ x 5 Gal
_____ x 2.5 Gal
_____ x 1 Gal
_____ x 1 Liter
_____ x 500 mL
_____ x 250 mL
_____ x Other: _____

Crossriver Environmental, Inc.

11 Fischer Drive
Monroe, N.Y. 10950
Tel: (845) 222-4402 Fax: (845) 782-6919

April 20, 2015

Mr. David Weitz
NYSDEC – Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1696

RE:	Site	Blake
	Spill Number	1411004
	Street Address	51 Owens Rd.
	City, State	Goshen, NY 10924
	County	Orange

Dear Mr. Weitz,

This letter is to inform you that the remediation work for the subject spill site has been completed. The project entailed the removal of a 550-Gallon Underground Storage Tanks (UST). The UST failed a tank test and a spill was reported with the NYSDEC (February 19, 2015). Our company Crossriver Environmental, Inc. removed the tank.

The tank was removed on April 13, 2015. The tank was found to be in good condition and free of any holes. After the tank was removed field screening was performed by Crossriver Environmental, Inc. utilizing a calibrated Photo Ionization Detector (PID) to determine if soil contamination exists. No soil contamination was found.

A total of 2 end point samples were taken. One 4 side wall composite sample and a separate base sample. The samples were sent to Phoenix Environmental Laboratories, Inc. to confirm field results. Following the tank removal the excavation was backfilled with clean soil and returned to initial grade level.

Soil samples were taken via methods 8260 and 8270 in accordance with NYSDEC Petroleum Contaminated Soil Guidance Policy and forwarded to a NYS Certified Laboratory for analysis. The samples all returned Non-Detect, or below NYSDEC CP-51 guidelines. The results are included for your review.

The residence utilizes a potable well located 50 plus feet from the excavation; therefore a water sample was obtained. The results were Non-Detect, and are included for your review.

Crossriver Environmental, Inc. recommends that no further action be conducted at this area of concern and is respectfully requesting that the New York Department of Environmental Conservation remove this spill number from your active spill database**.**

Sincerely,

Scott Fischer
President,
Crossriver Environmental, Inc.

cc: Ms. Blake: via e-mail
Town of Goshen: via e-mail

Tank Closure/Site Assessment Activity Report

Non-PBS Sites

Spill #: 1411004 Site Identification Name: BLAKE

Date of Tank Removal: 4 / 13 / 2015 Time: 3:00 County: ORANGE

Property Owner: ANN BLAKE

Site Address: 51 OWENS RD

Town: GOSHEN NY Zip: 10924

Phone number: 845-294-6865

Contractor: CROSSRIVER ENVIRONMENTAL

Phone Number: 845-222-4402

Consultant or Insurance Representative:

NONE

Phone Number:

Is site serviced by Municipal Water? NO Town/City:

Receptors Nearby: [X] Private Well(s) [ ] Storm Drains [ ] Lake/Pond [ ] Municipal Well

Other Distance 50+'

Other Spill Numbers Associated with this site: NO

Reason: [ ] Tank Test Failure [ ] Site Assessment [ ] Other:

Contaminated Soil Found? [ ] Yes [X] No Extent: [ ] Heavy [ ] Moderate [ ] Slight [X] None

Stockpiled on Site? [ ] Yes [X] No Placed on Plastic and Covered? [ ] Yes [X] No tons

Date Removed off site: / / Disposal Facility:

Water in Excavation? [ ] Yes [X] No Depth to Water: Ft. [ ] Sheen [ ] Free Product

Pumped out: / / Amount: Gals. Hauler:

Monitoring Wells/Recovery Sumps Installed: NO Location:

Type of Soil Noted: [ ] Sandy [ ] Loam [X] Clay [ ] Rocky [ ] Debris [ ] Other

Sampling Conducted:

PID Readings: Bottom ppm North ppm South ppm

East ppm West ppm Other ppm

Soil Sample Locations: BASE---4 SIDE WALL COMP

Ground Water/Sample Locations: NONE

									Rem/Aban
Size	550	Product	#2	Tank Type	STEEL	Holes	NO	Cleaned	YES	REM
Size		Product		Tank Type		Holes		Cleaned		
Size		Product		Tank Type		Holes		Cleaned		
Size		Product		Tank Type		Holes		Cleaned		

Comments:

On Site Representative: SCOTT FISCHER Company: CROSSRIVER ENVIRO

NYSDEC Representative: DAVID WEITZ

form dw1408

Form PBST31

Tank Closure Report Review Sheet

(Homeownew Tank Version)

Spill #: 1411004

Facility Reviewed: BLAKE--- 51 OWENS ROAD GOSHEN NY

Contractor: CROSSRIVER ENVIRONMENTAL, INC.

Forms:

_____ Tank Test Report
Date Tested:_____ Pass/Fail:_____ County:___ ORANGE

X Tank Closure/Site Assessment Activity Report (PBST30) Report Date:_____ 4.13.15

Maps:

X General Location Of Site
X Potential Receptors in Vacinity_____
X Tank Location
_____ Excavation Boundaries
_____ Sample Locations
X On-site Drinking Water and/or Monitoring Wells

Potential Receptor(s)	Distance
POTABLE WELL	50+'

Disposal Records:

X Record of Disposal for tank(s)
X Record of Disposal for soil
_____ Record of Disposal for water evacuated from tank excavation
_____ Record of Disposal for the product/waste removed from the tank(s)

Sampling:

X Actual Laboratory Sample Results
_____ Chain-Of-Custody for samples collected

Other:

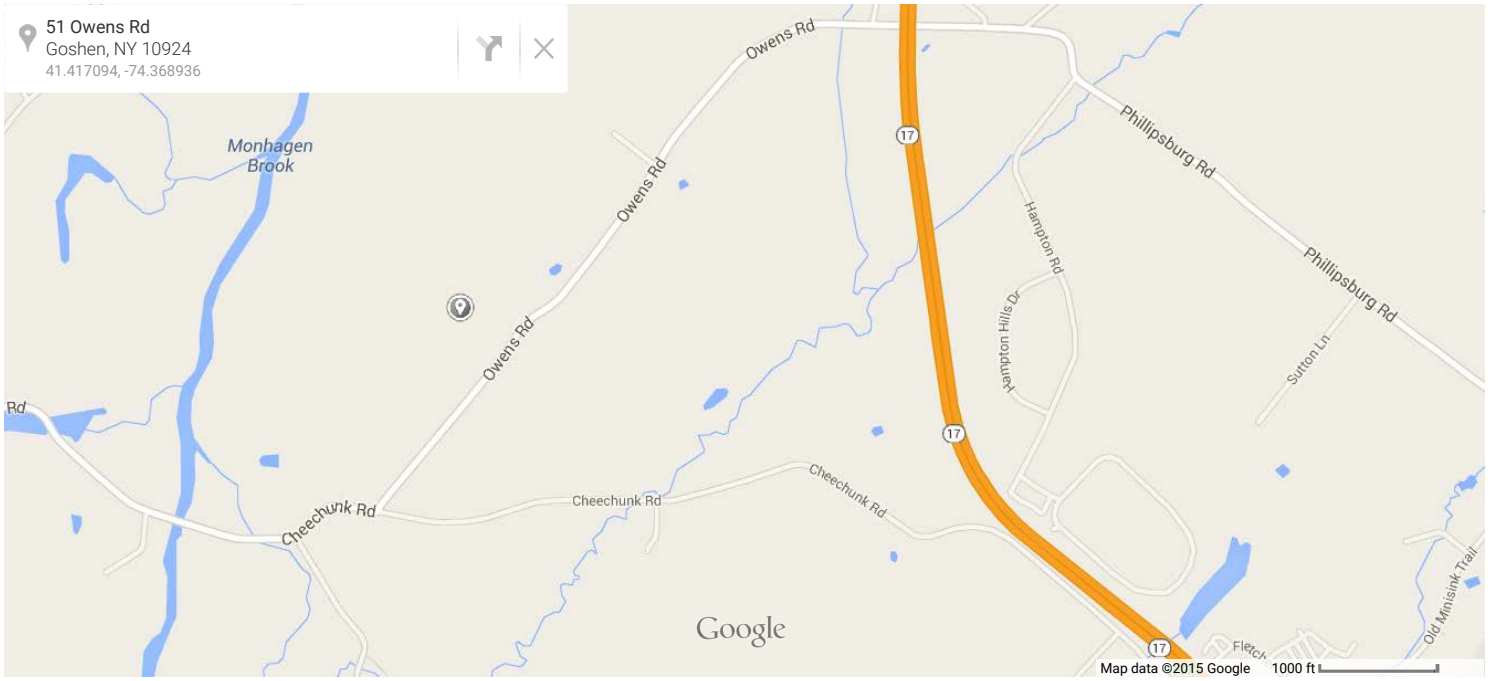
_____ Proposal or recommendation for additional work

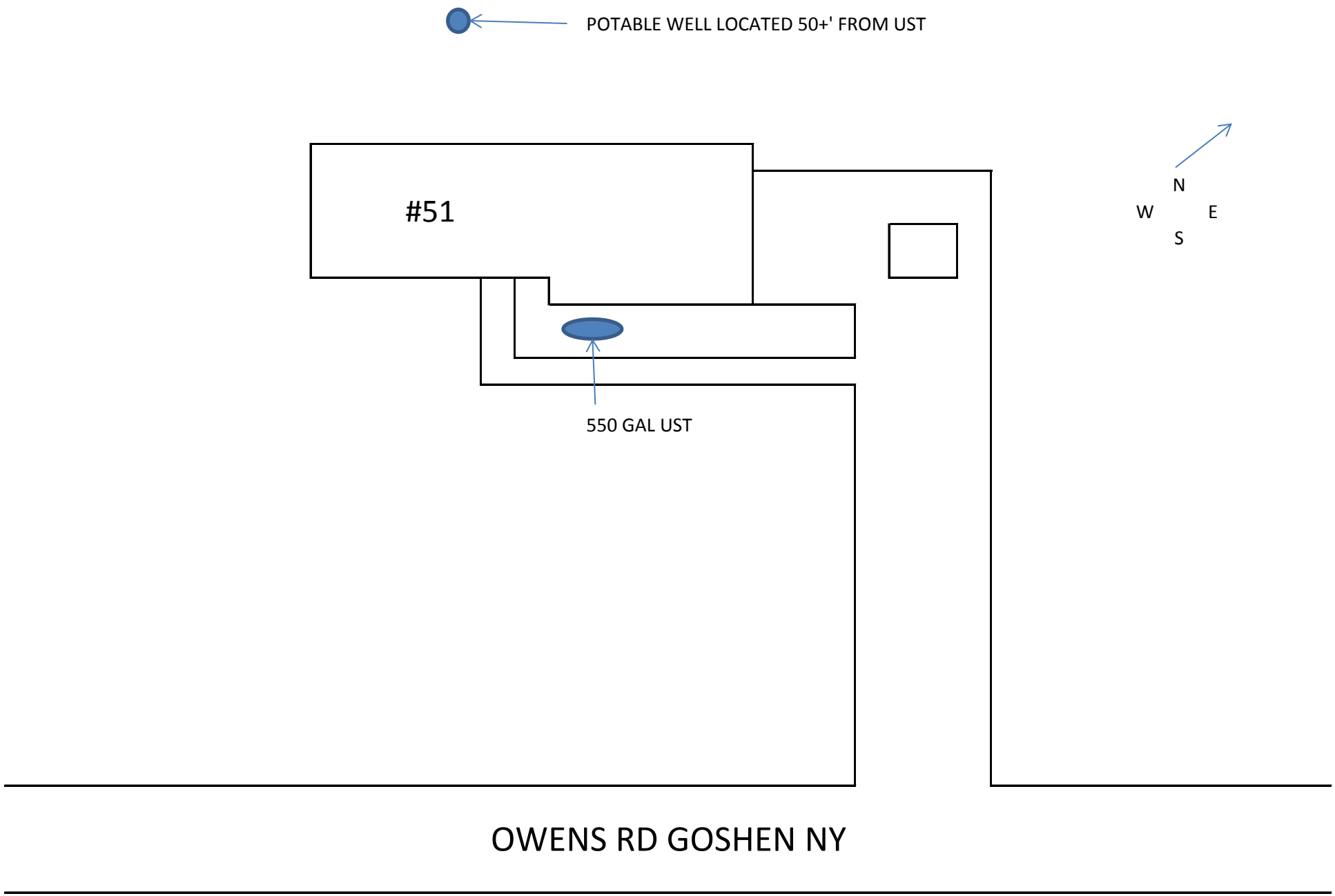
Comments:

Mailing: Closure Letter Recipients

Recommend No Further Action? ___ YES

Reviewers Initials: _____ Reviewer: _____ Reviewed:_____ Received:_____


51 Owens Rd
Goshen, NY 10924
41.417094, -74.368936
Monhagen Brook
Owens Rd
Owens Rd
Owens Rd
Phillipsburg Rd
Phillipsburg Rd
Hampton Rd
Hampton Hills Dr
Sutton Ln
Rd
Cheechunk Rd
Cheechunk Rd
Cheechunk Rd
17
17
17
Old Minisink Trail
Google
Map data ©2015 Google
1000 ft


POTABLE WELL LOCATED 50+' FROM UST
#51
N
W
E
S
550 GAL UST
OWENS RD GOSHEN NY

PHOENIX
Environmental Laboratories, Inc.

Thursday, April 16, 2015

Attn: Mr.Scott Fischer
Crossriver
11 Fischer Dr.
Monroe, NY 10950

Project ID: BLAKE
Sample ID#s: BJ02391 - BJ02393

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller

Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

April 16, 2015

FOR: Attn: Mr.Scott Fischer
Crossriver
11 Fischer Dr.
Monroe, NY 10950

Sample Information		Custody Information		Date	Time
Matrix:	DRINKING WATER	Collected by:		04/13/15	16:00
Location Code:	CROSSRV	Received by:	LPB	04/14/15	17:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBJ02391
Phoenix ID: BJ02391

Project ID: BLAKE
Client ID: POTABLE WELL

Parameter	Result	RL/ PQL	DIL	Units	DW MCL	Sec Goal	Date/Time	By	Reference	
Volatile Library Search	Completed						04/15/15	MH		1
Volatiles										
1,1,1,2-Tetrachloroethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,1,1-Trichloroethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,1,2,2-Tetrachloroethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,1,2-Trichloroethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,1-Dichloroethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,1-Dichloroethene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,1-Dichloropropene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,2,3-Trichlorobenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,2,3-Trichloropropane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,2,4-Trichlorobenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,2,4-Trimethylbenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,2-Dichlorobenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,2-Dichloroethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,2-Dichloropropane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,3,5-Trimethylbenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,3-Dichlorobenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,3-Dichloropropane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
1,4-Dichlorobenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
2,2-Dichloropropane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
2-Chlorotoluene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
4-Chlorotoluene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
Benzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
Bromobenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
Bromochloromethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2	
Bromodichloromethane	ND	0.50	1	ug/L			04/15/15	MH	E524.2	

Project ID: BLAKE
Client ID: POTABLE WELL

Phoenix I.D.: BJ02391

Parameter	Result	RL/ PQL	DIL	Units	DW MCL	Sec Goal	Date/Time	By	Reference
Bromoform	ND	0.50	1	ug/L			04/15/15	MH	E524.2
Bromomethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Carbon tetrachloride	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Chlorobenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Chloroethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Chloroform	ND	0.50	1	ug/L			04/15/15	MH	E524.2
Chloromethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
cis-1,2-Dichloroethene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
cis-1,3-Dichloropropene	ND	0.40	1	ug/L	5		04/15/15	MH	E524.2
Dibromochloromethane	ND	0.50	1	ug/L			04/15/15	MH	E524.2
Dibromomethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Dichlorodifluoromethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Ethylbenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Hexachlorobutadiene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Isopropylbenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
m&p-Xylene	ND	1.0	1	ug/L			04/15/15	MH	E524.2
Methyl t-butyl ether (MTBE)	ND	0.50	1	ug/L	10		04/15/15	MH	E524.2
Methylene chloride	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Naphthalene	ND	0.50	1	ug/L			04/15/15	MH	E524.2
n-Butylbenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
n-Propylbenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
o-Xylene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
p-Isopropyltoluene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
sec-Butylbenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Styrene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
tert-Butylbenzene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Tetrachloroethene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Toluene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Total Trihalomethanes	ND	1.0	1	ug/L	80		04/15/15	MH	E524.2
Total Xylenes	ND	1.0	1	ug/L	10000		04/15/15	MH	E524.2
trans-1,2-Dichloroethene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
trans-1,3-Dichloropropene	ND	0.40	1	ug/L	5		04/15/15	MH	E524.2
Trichloroethene	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Trichlorofluoromethane	ND	0.50	1	ug/L	5		04/15/15	MH	E524.2
Vinyl chloride	ND	0.50	1	ug/L	2		04/15/15	MH	E524.2
QA/QC Surrogates									
% 1,2-dichlorobenzene-d4	90		1	%			04/15/15	MH	70 - 130 %
% Bromofluorobenzene	90		1	%			04/15/15	MH	70 - 130 %

Parameter	Result	RL/ PQL	DIL	Units	DW MCL	Sec Goal	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level DIL=Dilution (analysis required diluting to evaluate) ND=Not Detected
BRL=Below Reporting Level (less than the reporting level, the lowest amount the laboratory can detect and report.)
MCL = Maximum Contaminant Level MCLG = Maximum Contaminant Level Goal

Comments:

Maximum Contaminant Level (Lower of): 40 CFR Part 141; Public Health Law, Section 225 Part 5, Subpart 5-1. The highest level of a contaminant that is allowed in drinking water. MCLs are enforceable standards.

Secondary DW Maximum Contaminant Level Goal (MCLG): 40 CFR Part 143. The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are non-enforceable public health goals.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
April 16, 2015
Reviewed and Released by: Kathleen Cressia, QA/QC Officer

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

April 16, 2015

FOR: Attn: Mr.Scott Fischer
Crossriver
11 Fischer Dr.
Monroe, NY 10950

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/13/15	16:00
Location Code:	CROSSRV	Received by:	LPB	04/14/15	17:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBJ02391
Phoenix ID: BJ02392

Project ID: BLAKE
Client ID: BASE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	88		%		04/14/15	I	SW846-%Solid
Soil Extraction SVOA PAH	Completed				04/14/15	JJ/VH	SW3545A
Volatiles- STARS/CP-51							
1,2,4-Trimethylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
1,3,5-Trimethylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
Benzene	ND	2.1	ug/Kg	1	04/15/15	JLI	SW8260C
Ethylbenzene	ND	2.1	ug/Kg	1	04/15/15	JLI	SW8260C
Isopropylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
m&p-Xylene	ND	2.1	ug/Kg	1	04/15/15	JLI	SW8260C
Methyl t-Butyl Ether (MTBE)	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
Naphthalene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
n-Butylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
n-Propylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
o-Xylene	ND	2.1	ug/Kg	1	04/15/15	JLI	SW8260C
p-Isopropyltoluene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
sec-Butylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
tert-Butylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
Toluene	ND	2.1	ug/Kg	1	04/15/15	JLI	SW8260C
Total Xylenes	ND	2.1	ug/Kg	1	04/15/15	JLI	SW8260C
QA/QC Surrogates							
% 1,2-Dichlorobenzene-d4	98		%	1	04/15/15	JLI	70 - 130 %
% Bromofluorobenzene	99		%	1	04/15/15	JLI	70 - 130 %
% Dibromofluoromethane	103		%	1	04/15/15	JLI	70 - 130 %
% Toluene-d8	96		%	1	04/15/15	JLI	70 - 130 %
Semivolatiles-STARS/CP-51							
Acenaphthene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D

Project ID: BLAKE
Client ID: BASE

Phoenix I.D.: BJ02392

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Acenaphthylene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Anthracene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Benz(a)anthracene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Benzo(a)pyrene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Benzo(b)fluoranthene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Benzo(ghi)perylene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Benzo(k)fluoranthene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Chrysene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Dibenz(a,h)anthracene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Fluoranthene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Fluorene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Naphthalene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Phenanthrene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
Pyrene	ND	260	ug/Kg	1	04/15/15	DD	SW8270D
QA/QC Surrogates							
% 2-Fluorobiphenyl	62		%	1	04/15/15	DD	30 - 130 %
% Nitrobenzene-d5	60		%	1	04/15/15	DD	30 - 130 %
% Terphenyl-d14	105		%	1	04/15/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
April 16, 2015
Reviewed and Released by: Kathleen Cressia, QA/QC Officer

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

April 16, 2015

FOR: Attn: Mr.Scott Fischer
Crossriver
11 Fischer Dr.
Monroe, NY 10950

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		04/13/15	16:00
Location Code:	CROSSRV	Received by:	LPB	04/14/15	17:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBJ02391
Phoenix ID: BJ02393

Project ID: BLAKE
Client ID: 4 SIDE WALL COMP

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	84		%		04/14/15	I	SW846-%Solid
Soil Extraction SVOA PAH	Completed				04/14/15	JJ/VH	SW3545A
Volatiles- STARS/CP-51							
1,2,4-Trimethylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
1,3,5-Trimethylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
Benzene	ND	2.0	ug/Kg	1	04/15/15	JLI	SW8260C
Ethylbenzene	ND	2.0	ug/Kg	1	04/15/15	JLI	SW8260C
Isopropylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
m&p-Xylene	ND	2.0	ug/Kg	1	04/15/15	JLI	SW8260C
Methyl t-Butyl Ether (MTBE)	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
Naphthalene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
n-Butylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
n-Propylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
o-Xylene	ND	2.0	ug/Kg	1	04/15/15	JLI	SW8260C
p-Isopropyltoluene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
sec-Butylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
tert-Butylbenzene	ND	1.0	ug/Kg	1	04/15/15	JLI	SW8260C
Toluene	ND	2.0	ug/Kg	1	04/15/15	JLI	SW8260C
Total Xylenes	ND	2.0	ug/Kg	1	04/15/15	JLI	SW8260C
QA/QC Surrogates							
% 1,2-Dichlorobenzene-d4	98		%	1	04/15/15	JLI	70 - 130 %
% Bromofluorobenzene	93		%	1	04/15/15	JLI	70 - 130 %
% Dibromofluoromethane	96		%	1	04/15/15	JLI	70 - 130 %
% Toluene-d8	95		%	1	04/15/15	JLI	70 - 130 %
Semivolatiles-STARS/CP-51							
Acenaphthene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D

Project ID: BLAKE
Client ID: 4 SIDE WALL COMP

Phoenix I.D.: BJ02393

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Acenaphthylene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Anthracene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Benz(a)anthracene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Benzo(a)pyrene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Benzo(b)fluoranthene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Benzo(ghi)perylene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Benzo(k)fluoranthene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Chrysene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Dibenz(a,h)anthracene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Fluoranthene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Fluorene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Indeno(1,2,3-cd)pyrene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Naphthalene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Phenanthrene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
Pyrene	ND	270	ug/Kg	1	04/15/15	DD	SW8270D
QA/QC Surrogates							
% 2-Fluorobiphenyl	69		%	1	04/15/15	DD	30 - 130 %
% Nitrobenzene-d5	70		%	1	04/15/15	DD	30 - 130 %
% Terphenyl-d14	114		%	1	04/15/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
April 16, 2015
Reviewed and Released by: Kathleen Cressia, QA/QC Officer

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT ID

POTABLE WELL

Lab Name: Phoenix Environmental Labs Client: CROSSRV

Lab Code: Phoenix Case No.: SAS No.: SDG No.: GBJ02391

Matrix:(soil/water) WATER Lab Sample ID: BJ02391

Sample wt/vol: 5 (g/mL) mL Lab File ID: 0414_56.D

Level: (low/med) Date Received: 04/14/15

% Moisture: not dec. 100 Date Analyzed: 04/15/15

GC Column: rtx-vms ID: 0.18 (mm) Dilution Factor: 1

Purge Volume 5000 (uL) Soil Aliquot Vol (uL): n.a.

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/KG) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

QA/QC Report

April 16, 2015

QA/QC Data

SDG I.D.: GBJ02391

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 304428 (ug/kg), QC Sample No: BJ01769 (BJ02392, BJ02393)										
Polynuclear Aromatic HC - Soil										
Acenaphthene	ND	230	84	87	3.5	83	84	1.2	30 - 130	30
Acenaphthylene	ND	230	82	85	3.6	81	82	1.2	30 - 130	30
Anthracene	ND	230	87	90	3.4	95	94	1.1	30 - 130	30
Benz(a)anthracene	ND	230	90	94	4.3	86	86	0.0	30 - 130	30
Benzo(a)pyrene	ND	230	89	93	4.4	88	88	0.0	30 - 130	30
Benzo(b)fluoranthene	ND	230	97	102	5.0	96	95	1.0	30 - 130	30
Benzo(ghi)perylene	ND	230	68	70	2.9	74	72	2.7	30 - 130	30
Benzo(k)fluoranthene	ND	230	95	100	5.1	94	96	2.1	30 - 130	30
Chrysene	ND	230	90	94	4.3	92	92	0.0	30 - 130	30
Dibenz(a,h)anthracene	ND	230	70	73	4.2	75	72	4.1	30 - 130	30
Fluoranthene	ND	230	95	103	8.1	104	107	2.8	30 - 130	30
Fluorene	ND	230	84	87	3.5	81	81	0.0	30 - 130	30
Indeno(1,2,3-cd)pyrene	ND	230	59	60	1.7	60	58	3.4	30 - 130	30
Naphthalene	ND	230	74	77	4.0	76	76	0.0	30 - 130	30
Phenanthrene	ND	230	86	89	3.4	92	91	1.1	30 - 130	30
Pyrene	ND	230	99	107	7.8	111	114	2.7	30 - 130	30
% 2-Fluorobiphenyl	52	%	80	82	2.5	82	84	2.4	30 - 130	30
% Nitrobenzene-d5	48	%	67	70	4.4	72	69	4.3	30 - 130	30
% Terphenyl-d14	65	%	100	107	6.8	111	113	1.8	30 - 130	30
QA/QC Batch 304730 (ug/L), QC Sample No: BJ02228 (BJ02391)										
Volatiles - Drinking Water										
1,1,1,2-Tetrachloroethane	ND	0.50	98	104	5.9	89	104	15.5	70 - 130	30
1,1,1-Trichloroethane	ND	0.50	107	101	5.8	104	106	1.9	70 - 130	30
1,1,2,2-Tetrachloroethane	ND	0.50	98	96	2.1	99	101	2.0	70 - 130	30
1,1,2-Trichloroethane	ND	0.50	103	101	2.0	100	102	2.0	70 - 130	30
1,1-Dichloroethane	ND	0.50	103	102	1.0	97	97	0.0	70 - 130	30
1,1-Dichloroethene	ND	0.50	104	101	2.9	97	102	5.0	70 - 130	30
1,1-Dichloropropene	ND	0.40	102	98	4.0	96	99	3.1	70 - 130	30
1,2,3-Trichlorobenzene	ND	0.50	108	103	4.7	99	101	2.0	70 - 130	30
1,2,3-Trichloropropane	ND	0.50	101	98	3.0	100	100	0.0	70 - 130	30
1,2,4-Trichlorobenzene	ND	0.50	106	101	4.8	96	97	1.0	70 - 130	30
1,2,4-Trimethylbenzene	ND	0.50	110	106	3.7	102	104	1.9	70 - 130	30
1,2-Dichlorobenzene	ND	0.50	104	101	2.9	100	101	1.0	70 - 130	30
1,2-Dichloroethane	ND	0.50	101	98	3.0	101	102	1.0	70 - 130	30
1,2-Dichloropropane	ND	0.50	100	95	5.1	94	96	2.1	70 - 130	30
1,3,5-Trimethylbenzene	ND	0.50	107	104	2.8	101	103	2.0	70 - 130	30
1,3-Dichlorobenzene	ND	0.50	106	102	3.8	99	101	2.0	70 - 130	30
1,3-Dichloropropane	ND	0.50	103	101	2.0	100	101	1.0	70 - 130	30
1,4-Dichlorobenzene	ND	0.50	106	102	3.8	99	99	0.0	70 - 130	30
2,2-Dichloropropane	ND	0.50	105	100	4.9	73	73	0.0	70 - 130	30
2-Chlorotoluene	ND	0.50	104	100	3.9	97	100	3.0	70 - 130	30

QA/QC Data

SDG I.D.: GBJ02391

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
4-Chlorotoluene	ND	0.50	110	104	5.6	99	101	2.0	70 - 130	30
Benzene	ND	0.50	100	98	2.0	96	98	2.1	70 - 130	30
Bromobenzene	ND	0.50	105	101	3.9	99	100	1.0	70 - 130	30
Bromochloromethane	ND	0.50	102	101	1.0	98	101	3.0	70 - 130	30
Bromodichloromethane	ND	0.50	105	103	1.9	101	103	2.0	70 - 130	30
Bromoform	ND	0.50	114	113	0.9	105	111	5.6	70 - 130	30
Bromomethane	ND	0.50	105	102	2.9	89	95	6.5	70 - 130	30
Carbon tetrachloride	ND	0.50	107	104	2.8	102	103	1.0	70 - 130	30
Chlorobenzene	ND	0.50	95	104	9.0	84	98	15.4	70 - 130	30
Chloroethane	ND	0.50	107	101	5.8	96	98	2.1	70 - 130	30
Chloroform	ND	0.50	102	100	2.0	99	100	1.0	70 - 130	30
Chloromethane	ND	0.50	112	107	4.6	92	95	3.2	70 - 130	30
cis-1,2-Dichloroethene	ND	0.50	102	98	4.0	97	98	1.0	70 - 130	30
cis-1,3-Dichloropropene	ND	0.40	106	103	2.9	95	98	3.1	70 - 130	30
Dibromochloromethane	ND	0.50	119	115	3.4	110	113	2.7	70 - 130	30
Dibromomethane	ND	0.50	102	100	2.0	96	99	3.1	70 - 130	30
Dichlorodifluoromethane	ND	0.50	127	124	2.4	102	104	1.9	70 - 130	30
Ethylbenzene	ND	0.50	93	103	10.2	83	99	17.6	70 - 130	30
Hexachlorobutadiene	ND	0.40	104	99	4.9	95	95	0.0	70 - 130	30
Isopropylbenzene	ND	0.50	106	104	1.9	95	100	5.1	70 - 130	30
m&p-Xylene	ND	0.50	107	103	3.8	91	102	11.4	70 - 130	30
Methyl t-butyl ether (MTBE)	ND	0.50	99	96	3.1	96	100	4.1	70 - 130	30
Methylene chloride	ND	0.50	98	97	1.0	93	98	5.2	70 - 130	30
Naphthalene	ND	0.50	107	103	3.8	100	104	3.9	70 - 130	30
n-Butylbenzene	ND	0.50	108	106	1.9	100	102	2.0	70 - 130	30
n-Propylbenzene	ND	0.50	107	105	1.9	100	101	1.0	70 - 130	30
o-Xylene	ND	0.50	104	103	1.0	100	101	1.0	70 - 130	30
p-Isopropyltoluene	ND	0.50	110	107	2.8	101	104	2.9	70 - 130	30
sec-Butylbenzene	ND	0.50	107	104	2.8	102	103	1.0	70 - 130	30
Styrene	ND	0.50	105	103	1.9	101	103	2.0	70 - 130	30
tert-Butylbenzene	ND	0.50	109	106	2.8	101	103	2.0	70 - 130	30
Tetrachloroethene	ND	0.50	103	100	3.0	98	100	2.0	70 - 130	30
Toluene	ND	0.50	102	98	4.0	94	97	3.1	70 - 130	30
trans-1,2-Dichloroethene	ND	0.50	101	98	3.0	96	99	3.1	70 - 130	30
trans-1,3-Dichloropropene	ND	0.40	106	100	5.8	96	100	4.1	70 - 130	30
Trichloroethene	ND	0.50	105	104	1.0	98	100	2.0	70 - 130	30
Trichlorofluoromethane	ND	0.50	116	112	3.5	106	105	0.9	70 - 130	30
Vinyl chloride	ND	0.50	99	97	2.0	96	99	3.1	70 - 130	30
% 1,2-dichlorobenzene-d4	92	%	102	102	0.0	104	105	1.0	70 - 130	30
% Bromofluorobenzene	96	%	101	101	0.0	101	102	1.0	70 - 130	30

Comment:

A blank MS/MSD was analyzed with this batch.

QA/QC Batch 304710 (ug/kg), QC Sample No: BJ02392 (BJ02392, BJ02393)

Volatiles - Soil

1,2,4-Trimethylbenzene	ND	1.0	95	96	1.0	104	104	0.0	70 - 130	30
1,3,5-Trimethylbenzene	ND	1.0	99	101	2.0	103	103	0.0	70 - 130	30
Benzene	ND	1.0	100	107	6.8	101	102	1.0	70 - 130	30
Ethylbenzene	ND	1.0	100	105	4.9	103	103	0.0	70 - 130	30
Isopropylbenzene	ND	1.0	102	105	2.9	102	103	1.0	70 - 130	30
m&p-Xylene	ND	2.0	97	102	5.0	104	103	1.0	70 - 130	30
Methyl t-butyl ether (MTBE)	ND	1.0	101	106	4.8	95	96	1.0	70 - 130	30
Naphthalene	ND	5.0	105	105	0.0	98	103	5.0	70 - 130	30

QA/QC Data

SDG I.D.: GBJ02391

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
n-Butylbenzene	ND	1.0	93	98	5.2	111	110	0.9	70 - 130	30
n-Propylbenzene	ND	1.0	95	99	4.1	107	107	0.0	70 - 130	30
o-Xylene	ND	2.0	101	105	3.9	105	104	1.0	70 - 130	30
p-Isopropyltoluene	ND	1.0	99	102	3.0	106	107	0.9	70 - 130	30
sec-Butylbenzene	ND	1.0	102	106	3.8	103	103	0.0	70 - 130	30
tert-Butylbenzene	ND	1.0	102	105	2.9	104	104	0.0	70 - 130	30
Toluene	ND	1.0	101	107	5.8	104	105	1.0	70 - 130	30
% 1,2-dichlorobenzene-d4	97	%	102	101	1.0	102	100	2.0	70 - 130	30
% Bromofluorobenzene	99	%	102	101	1.0	103	98	5.0	70 - 130	30
% Dibromofluoromethane	101	%	98	95	3.1	100	96	4.1	70 - 130	30
% Toluene-d8	95	%	102	101	1.0	102	102	0.0	70 - 130	30

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
April 16, 2015

Sample Criteria Exceedences Report

GBJ02391 - CROSSRV

Criteria: NY: GW

State: NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
BJ02391	$524WMR	1,2,3-Trichloropropane	NY / TOGS - Water Quality / GA Criteria	ND	0.50	0.04	0.04	ug/L

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY Temperature Narration

April 16, 2015

SDG I.D.: GBJ02391

The samples in this delivery group were received at 4°C.
(Note acceptance criteria is above freezing up to 6°C)

Coolant: Cooler: Yes ☐ No ☐ / IPK ☑ ICE ☐ No ☐

Temp 4 °C Pg of

PHOENIX
Environmental Laboratories, Inc.

NY/NJ CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Contact Options:
☐ Fax:
☐ Phone:
☐ Email:

Customer: Crossriver
Address: 51 Owens Rd
Goshen N.Y.

Project: Blake
Report to: Crossriver
Invoice to: Crossriver

Project P.O: Blake

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature _____ Date: _____

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	8260 Stars	8270	624.2 w/MTBE	Soil VOA Vials [X] methanol [X] H2O	GL Soil container (2) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [X] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle
02391	Potable well	DW	4/13	4:00			X						2				
02392	Base	S	4/13	4:00	X	X			3	1							
02393	N Side wall comp	S	4/13	4:00	X	X			3	1							

Relinquished by:	Accepted by:	Date:	Time:
Scott Fish	Bradley Coffman	4-14-15	14:21
Bradley Coffman		4-14-15	1750

Comments, Special Requirements or Regulations:

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ 5 Days
☐ 10 Days
☐ Other
* SURCHARGE APPLIES

NJ
☐ Res. Criteria
☐ Non-Res. Criteria
☐ Impact to GW Soil Cleanup Criteria
☐ GW Criteria

NY
☐ TAGM 4046 GW
☒ TAGM 4046 SOIL
☐ NY375 Unrestricted Use Soil
☐ NY375 Residential Soil
☐ Restricted/Residential
☐ Commercial
☐ Industrial

Data Format
☐ Phoenix Std Report
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ NJ Hazsite EDD
☐ NY EZ EDD (ASP)
☐ Other

Data Package
☐ NJ Reduced Deliv. *
☐ NY Enhanced (ASP B) *
☐ Other

State where samples were collected: N.Y.

WEIGHMASTER CERTIFICATE
TRUCK SCALE

SIMS METAL MANAGEMENT

SIMS METAL MANAGEMENT
820 Rt 211 East
Middletown, NY 10941
(845) 692-4640
NYS DMV# 7107477

Ticket #: T6HTRV

Purchased From: CP066P
PAUL T MOELLER
253 NORTH MAIN ST
MONROE, NY 10950

SHIP DATE: 04/20/15

MIDDLETOWN, NY

DL/ID # 206863323 (NY)

Veh # TK T6HTRV ID # GNDUMP

SHPMNT#	COMMODITY	GROSS	TARE	NET	ADJ	REASON	PD WT	CBK	FRT	PRICE	TOTAL AMT
T6HTRV	#1 Unprepared	11920a	10720b	1200	0		120D		0.00		

55045T 51 owens Rd Goshen N.Y.

ALL WEIGHTS ARE REPORTED IN POUNDS UNLESS OTHERWISE INDICATED. ALL NON-POUND WEIGHTS ARE ASSUMED TO BE MANUAL WEIGHTS

TOTALS	1200	0	1200	0.00	66.96

WEIGHMASTER SIGNATURE (Timothy Zdrojeski)

CUSTOMER SIGNATURE

a=SCALE 1 b=SCALE 2 c=SCALE 3 d=SCALE 4 m=MANUAL WEIGHT

GRS Date 04/20/15	GROSS TONS
GRS Time 12:16	0.5357
TRE Date 04/20/15	
TRE Time 12:23	

This is to certify, that the following described merchandise was weighed by a Public Weighmaster Customer Copy prescribed by the Public Weighmaster Law, NRS Chapter 582

CFC Removal Verification

In consideration of purchase of this material, seller certifies that to the best of his knowledge, all refrigerant (including but not limited to chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), as defined in Paragraph 608 of the Clean Air Act and 40 CFR Part 82) - [Check One]

☐ that had not leaked previously has been recovered from the appliance/automobiles/air conditioners or shipment of appliances/automobiles/air conditioners delivered under this sale. The refrigerant has been removed by:

Name _____
Address _____
Date of Removal _____

☐ has leaked previously from the appliance/automobiles/air conditioners or shipment of appliances/automobiles/air conditioners delivered under this sale.

☑ Not applicable. The scrap delivered under this sale has never contained refrigerant of any kind.

_____ SIGNATURE

_____ DATE

Strong Farm
212 Cheechunk Road
Middletown, NY 10940

Inquiry Number: 4196141.2s
February 02, 2015

FirstSearch Report

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Search Summary Report

TARGET SITE **212 CHEECHUNK ROAD**
MIDDLETOWN, NY 10940

Category	Sel	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	Y	0	0	0	0	0	0	0
NPL Delisted	Y	0	0	0	0	0	0	0
CERCLIS	Y	0	0	0	0	-	0	0
NFRAP	Y	0	0	0	0	-	0	0
RCRA COR ACT	Y	0	0	0	0	0	0	0
RCRA TSD	Y	0	0	0	0	-	0	0
RCRA GEN	Y	0	0	0	-	-	0	0
Federal IC / EC	Y	0	0	0	0	-	0	0
ERNS	Y	0	-	-	-	-	0	0
State/Tribal CERCLIS	Y	0	0	0	0	1	0	1
State/Tribal SWL	Y	0	0	0	0	-	0	0
State/Tribal LTANKS	Y	0	0	0	0	-	0	0
State/Tribal Tanks	Y	0	0	0	-	-	0	0
State/Tribal IC / EC	Y	0	0	0	0	-	0	0
State/Tribal VCP	Y	0	0	0	0	-	0	0
ST/Tribal Brownfields	Y	0	0	0	0	-	0	0
US Brownfields	Y	0	0	0	0	-	0	0
Other Haz Sites	Y	0	-	-	-	-	0	0
Other Tanks	Y	0	0	0	-	-	0	0
Spills	Y	0	1	-	-	-	0	1
Other	Y	0	0	0	-	-	0	0
	- Totals --	0	1	0	0	1	0	2

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Search Summary Report

TARGET SITE: **212 CHEECHUNK ROAD**
MIDDLETOWN, NY 10940

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	NPL	09/29/2014	1.000	0	0	0	0	0	0	0
	Proposed NPL	09/29/2014	1.000	0	0	0	0	0	0	0
NPL Delisted	Delisted NPL	09/29/2014	1.000	0	0	0	0	0	0	0
CERCLIS	CERCLIS	10/25/2013	0.500	0	0	0	0	-	0	0
NFRAP	CERC-NFRAP	10/25/2013	0.500	0	0	0	0	-	0	0
RCRA COR ACT	CORRACTS	12/09/2014	1.000	0	0	0	0	0	0	0
RCRA TSD	RCRA-TSDF	12/09/2014	0.500	0	0	0	0	-	0	0
RCRA GEN	RCRA-LQG	12/09/2014	0.250	0	0	0	-	-	0	0
	RCRA-SQG	12/09/2014	0.250	0	0	0	-	-	0	0
	RCRA-CESQG	12/09/2014	0.250	0	0	0	-	-	0	0
Federal IC / EC	US ENG CONTROLS	09/18/2014	0.500	0	0	0	0	-	0	0
	US INST CONTROL	09/18/2014	0.500	0	0	0	0	-	0	0
ERNS	ERNS	09/29/2014	TP	0	-	-	-	-	0	0
State/Tribal CERCLIS	SHWS	11/18/2014	1.000	0	0	0	0	1	0	1
State/Tribal SWL	SWF/LF	01/06/2015	0.500	0	0	0	0	-	0	0
State/Tribal LTANKS	LTANKS	11/18/2014	0.500	0	0	0	0	-	0	0
	HIST LTANKS	01/01/2002	0.500	0	0	0	0	-	0	0
	INDIAN LUST	02/01/2013	0.500	0	0	0	0	-	0	0
State/Tribal Tanks	TANKS	12/29/2014	0.250	0	0	0	-	-	0	0
	UST	12/29/2014	0.250	0	0	0	-	-	0	0
	CBS UST	01/01/2002	0.250	0	0	0	-	-	0	0
	MOSF UST	01/01/2002	0.500	0	0	0	0	-	0	0
	AST	12/29/2014	0.250	0	0	0	-	-	0	0
	CBS AST	01/01/2002	0.250	0	0	0	-	-	0	0
	MOSF AST	01/01/2002	0.500	0	0	0	0	-	0	0
	MOSF	12/29/2014	0.500	0	0	0	0	-	0	0
	CBS	12/29/2014	0.250	0	0	0	-	-	0	0
	INDIAN UST	02/01/2013	0.250	0	0	0	-	-	0	0

Search Summary Report

TARGET SITE: **212 CHEECHUNK ROAD**
MIDDLETOWN, NY 10940

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
State/Tribal IC / EC	ENG CONTROLS	11/18/2014	0.500	0	0	0	0	-	0	0
	INST CONTROL	11/18/2014	0.500	0	0	0	0	-	0	0
	RES DECL	11/18/2010	0.180	0	0	0	-	-	0	0
State/Tribal VCP	VCP	11/18/2014	0.500	0	0	0	0	-	0	0
ST/Tribal Brownfields	ERP	11/18/2014	0.500	0	0	0	0	-	0	0
	BROWNFIELDS	11/18/2014	0.500	0	0	0	0	-	0	0
US Brownfields	US BROWNFIELDS	12/22/2014	0.500	0	0	0	0	-	0	0
Other Haz Sites	US CDL	07/25/2014	TP	0	-	-	-	-	0	0
Other Tanks	HIST UST	01/01/2002	0.250	0	0	0	-	-	0	0
	HIST AST	01/01/2002	0.250	0	0	0	-	-	0	0
Spills	HMIRS	09/30/2014	TP	0	-	-	-	-	0	0
	NY Spills	11/18/2014	0.125	0	1	-	-	-	0	1
	NY Hist Spills	01/01/2002	0.125	0	0	-	-	-	0	0
	SPILLS 80	11/02/2010	0.125	0	0	-	-	-	0	0
	SPILLS 90	12/14/2012	0.125	0	0	-	-	-	0	0
Other	RCRA NonGen / NLR	12/09/2014	0.250	0	0	0	-	-	0	0
	TRIS	12/31/2011	TP	0	-	-	-	-	0	0
	TSCA	12/31/2012	TP	0	-	-	-	-	0	0
	FTTS	04/09/2009	TP	0	-	-	-	-	0	0
	SSTS	12/31/2009	TP	0	-	-	-	-	0	0
	ICIS	07/31/2014	TP	0	-	-	-	-	0	0
	PADS	07/01/2014	TP	0	-	-	-	-	0	0
	MLTS	12/29/2014	TP	0	-	-	-	-	0	0
	RADINFO	10/07/2014	TP	0	-	-	-	-	0	0
	FINDS	08/16/2014	TP	0	-	-	-	-	0	0
	RAATS	04/17/1995	TP	0	-	-	-	-	0	0
	HSWDS	01/01/2003	0.250	0	0	0	-	-	0	0
	MANIFEST	11/01/2014	0.250	0	0	0	-	-	0	0
	DRYCLEANERS	01/12/2015	0.250	0	0	0	-	-	0	0
	SPDES	11/06/2014	0.250	0	0	0	-	-	0	0
	INDIAN RESERV	12/31/2005	1.000	0	0	0	0	0	0	0
	PRP	10/25/2013	TP	0	-	-	-	-	0	0
	US AIRS	10/16/2014	TP	0	-	-	-	-	0	0
	- Totals --			0	1	0	0	1	0	2

Site Information Report

Request Date: FEBRUARY 2, 2015
Search Type: COORD
Request Name: BUD GOING
Job Number: NA

Target Site: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)	UTMs	
Longitude:	74.372000	74.3720000 - 74° 22' 19.20''	Easting:	552486.0
Latitude:	41.413300	41.4133000 - 41° 24' 47.88''	Northing:	4584616.5
Elevation:	407 ft. above sea level		Zone:	Zone 18

Demographics

Sites: 2 **Non-Geocoded:** 0 **Population:** N/A

RADON

Federal EPA Radon Zone for ORANGE County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for ORANGE COUNTY, NY

Number of sites tested: 268

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area	1.270 pCi/L	91%	8%	1%
Basement	2.370 pCi/L	73%	26%	2%

State Database: NY Radon

Radon Test Results

County	Town	Num Tests	Avg Result	Geo Mean	Max Result

Site Information Report

RADON

ORANGE	BLOOMING GR.	77	4.48	2.32	70.2
ORANGE	CHESTER	62	5.27	2.5	48
ORANGE	CORNWALL	104	5.83	3.42	63.6
ORANGE	CRAWFORD	32	3.48	2.26	19.2
ORANGE	DEER PARK	19	3.45	2.46	9.3
ORANGE	GOSHEN	68	5.37	3.02	41.5
ORANGE	GREENVILLE	16	6.36	3.58	35.6
ORANGE	HAMPTONBURGH	49	6.88	5.02	30.4
ORANGE	HIGHLANDS	72	6.91	4.94	35.2
ORANGE	MIDDLETOWN	205	4.09	2.44	40.6
ORANGE	MINISINK	17	8.76	3.08	71.5
ORANGE	MONROE	317	3.3	2.06	34.4
ORANGE	MONTGOMERY	139	6.5	3.17	143.6
ORANGE	MT. HOPE	20	4.6	3.44	15.3
ORANGE	NEW WINDSOR	88	4.05	2.34	31.4
ORANGE	NEWBURGH	263	5.64	3.32	120.6
ORANGE	PORT JERVIS	61	4.53	2.79	25.5
ORANGE	TUXEDO	53	6.26	3.58	28.5
ORANGE	WALLKILL	103	5.17	3.06	50.5
ORANGE	WARWICK	369	7.61	3.96	160.8
ORANGE	WAWAYANDA	42	4.48	2.88	36.1
ORANGE	WOODBURY	97	3.68	2.35	25

Target Site Summary Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

TOTAL: 2 GEOCODED: 2 NON GEOCODED: 0

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.

No sites found for target address

Sites Summary Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

TOTAL: 2 GEOCODED: 2 NON GEOCODED: 0

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.
1	NY Spills --1206546 / 9/19/2013	BASEMENT CONCRETE FLOOR	138 CHEECHUNK ROAD GOSHEN, NY	0.08 SSE	+ 6	1
2	SHWS --Site is properly closed - requires continued management.	OLD AL TURI LANDFILL	73 HARTLEY ROAD GOSHEN, NY 10924	0.91 SW	- 38	4

Site Detail Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

NY Spills

EDR ID: S112227069 **DIST/DIR:** 0.076 SSE **ELEVATION:** 413 **MAP ID:** 1

NAME: BASEMENT CONCRETE FLOOR
Rev: 11/18/2014
ID/Status: 1206546 / 9/19/2013

ADDRESS: 138 CHEECHUNK ROAD
GOSHEN, NY
ORANGE

SOURCE: NY Department of Environmental Conservation

SPILLS:
Facility ID: 1206546
Facility Type: ER
DER Facility ID: 423853
Site ID: 469550
DEC Region: 3
Spill Date: 10/2/2012
Spill Number/Closed Date: 1206546 / 9/19/2013
Spill Cause: Equipment Failure
Spill Class: Known release with minimal potential for fire or hazard. DEC Response. Willing Responsible Party. Corrective action taken.
SWIS: 3630
Investigator: dxtraver
Referred To: Not reported
Reported to Dept: 10/2/2012
CID: Not reported
Water Affected: Not reported
Spill Source: Private Dwelling
Spill Notifier: Other
Cleanup Ceased: Not reported
Cleanup Meets Std: True
Last Inspection: Not reported
Recommended Penalty: False
UST Trust: False
Remediation Phase: 0
Date Entered In Computer: 10/2/2012
Spill Record Last Update: 9/19/2013
Spiller Name: DONNA ALLEN
Spiller Company: HOMEOWNER
Spiller Address: 138 CHEECHUNK ROAD
Spiller City,St,Zip: GOSHEN, NY
Spiller Company: 999
Contact Name: DONNA ALLEN
Contact Phone: (347) 672-6315
DEC Memo: 10/2/12- Spoke to owner, Donna Allen. She reports spill occurred on 7/26/12. Oil line damaged by lightning strike. Oil line on top of floor with burn hole that caused some 30-40 gals. of oil to leak. She conducted initial cleanup herself with kitty liter, then a cleanup company known as Belfor completed cleanup and left ventilation fans in place. Her Ins. Co. is Travelers.She reports there still are odors, but not that noticeable.She will not be available to meet on site until Monday, 10/8/12. DTBelfor- White Plains, NY ; Philip Smith, 914-798-1440.10/15/12- Site inspection with owner. Inspected basement of home where line leak occurred. 2 ventilation fans in

- Continued on next page -

Site Detail Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

NY Spills

EDR ID: S112227069 **DIST/DIR:** 0.076 SSE **ELEVATION:** 413 **MAP ID:** 1

NAME: BASEMENT CONCRETE FLOOR
ADDRESS: 138 CHEECHUNK ROAD
GOSHEN, NY
ORANGE
SOURCE: NY Department of Environmental Conservation

Rev: 11/18/2014
ID/Status: 1206546 / 9/19/2013

place from Belfor. Noted where core drills were placed thru slab in basement. Report of findings of this work performed by Hygenix, Inc. provided by owner.DEC to review report and comment. DT11/2/12- Sent email to Hygenix approving RAP with comments. DT3/5/13- Site inspection with owners, Hygenix, Belfor, and Travelers. Inspected basement where some floor removal and excavation work has been performed. Excavation is some 3 feet deep by 2 feet wide. Hygenix reports that soil samples from sidewalls of excavation still exceed cleanup guidance criteria. Owners report that groundwater did enter excavation during recent heavy rain event. Hygenix proposed to delineate soil impacts under floor by installing additional core borings around current excavation; DEC/owners found this acceptable. Work to be conducted today and samples collected. Findings to be reported by end of next week with proposal for additional work.Owners had concerns of oil odors in residence. No odors detected by PID meter in entire residence. DEC recommended that excavation be covered with plastic at end of work days to eliminate any potential for odors. Belfor to arrange for removal of some 10 drums of excavated soil from property. DT3/19/13- Discussed recent findings with Art Morris of Hygenix. He proposes to saw cut slab and do limited soil removal from trench to one boring location that has SVOC impact. He will email proposal to DEC. DEC received email proposal and approved. DT8/14/13- Spoke to Art Morris of Hygenix. site work has been completed and floor restred with subslab piping. Indoor air sampling tentatively scheduled for early September.DEC required report of work to date up including floor restration/subslab piping. DT8/28/13- Received report of cleanup activity to date. Additional sub slab soils removed since site inspection of 3/5/13. Postex samples well below cleanup guidance values. Area backfilled with sub slab piping installed. Indoor air sampling is proposed for Sept./Oct. DT9/18/13- Spoke to owner, Donna Allen. Advised her of proposed air sampling by Hygenix. She reported she has no concerns in regards to indoor air quality. DEC/DOH (spoke to Steve Gagnon) to not require indoor air sampling based upon resident/owner statement and previous inspections where odors were not noted. Contacted Hygenix, Art Morris, in regards to indoor air sampling and no concern from owner of odors. DEC to not require indoor air sampling and will close spill. NFA DT

Remarks: Lightning strike. Clean up done.

Material:
Site ID: 469550
Operable Unit ID: 1219444
Operable Unit: 01
Material ID: 2217948
Material Code: 0001A

- Continued on next page -

Site Detail Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

NY Spills

EDR ID: S112227069 **DIST/DIR:** 0.076 SSE **ELEVATION:** 413 **MAP ID:** 1

NAME: BASEMENT CONCRETE FLOOR

ADDRESS: 138 CHEECHUNK ROAD
GOSHEN, NY
ORANGE

SOURCE: NY Department of Environmental Conservation

Rev: 11/18/2014
ID/Status: 1206546 / 9/19/2013

Material Name: #2 Fuel Oil
Case No.: Not reported
Material FA: Petroleum
Quantity: Not reported
Units: Not reported
Recovered: Not reported
Resource Affected: Not reported
Oxygenate: False

Tank Test:

Site Detail Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

SHWS

EDR ID: S108294743 **DIST/DIR:** 0.905 SW **ELEVATION:** 369 **MAP ID:** 2

NAME: OLD AL TURI LANDFILL

ADDRESS: 73 HARTLEY ROAD
GOSHEN, NY 10924
ORANGE

SOURCE: NY Department of Environmental Conservation

Rev: 11/18/2014
ID/Status: Site is properly closed - requires continued

SHWS:
Program: HW
Site Code: 56005
Classification: Site is properly closed - requires continued management.
Region: 3
Acres: 43.500
HW Code: 336016
Record Add: 11/18/1999
Record Upd: 06/15/2010
Updated By: ELMOORE
Site Description: Location Description: This 44 acre site is a privately owned, inactive and unlined landfill located west of the Village of Goshen in Orange County. The landfill is bordered on the west by a man-made diversion of the Wallkill River known as the Cheechunk Canal, to the east by Hartley Road, to the south by Route 17M, and to the north by a meadow owned by the Al Turi Landfill. Site Features: The landfill has been capped with geo-membrane, a barrier protection layer of soil and top soil capable of sustaining a vegetative cover. There is a gas collection and monitoring system installed on-site and the gas is used to generate electricity or is flared when the generator is not operational. An adjoining solid waste landfill, also owned by Al Turi, Inc., has also been closed. Current Use: The site is not in use. Surrounding Uses: The area is primarily industrial with scattered residential development. To the west of the site is the Hudson Psychiatric Center. Commercial and mixed use establishments exist north and south of the site. Historical Sources of Contamination: The landfill accepted wastes from municipal, commercial and industrial sources from 1968 to 1981. Right-to-know reports indicate that at least 230 tons of still bottom residue, waste solvents and allyl isothiocyanate waste were disposed of at this site during the 1970's from Hercules, Inc. Investigation/Actions completed to date: Groundwater monitoring has been conducted at the site since 1979. A Remedial Investigation/ Feasibility was completed in 1996 and a Record of Decision (ROD) was issued in March 1996. Pursuant to the ROD, the landfill was capped in accordance with Part 360, a groundwater monitoring network was established and institutional controls in the form of a deed restriction were put in place. Construction of the remedy was completed in August 2001. A contingency plan to address any significant impact to the Wallkill River, also required by the ROD, is in place.The potential for soil vapor intrusion was evaluated by the NYSDOH and the NYSDEC, and no further actions were deemed necessary in July 2008. Current Status: Groundwater and landfill gas are monitored periodically. A 2009 review of the semi-annual analytical results for the years 2006 to

- Continued on next page -

Site Detail Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

SHWS

EDR ID: S108294743 **DIST/DIR:** 0.905 SW **ELEVATION:** 369 **MAP ID:** 2

NAME: OLD AL TURI LANDFILL
ADDRESS: 73 HARTLEY ROAD
GOSHEN, NY 10924
ORANGE
SOURCE: NY Department of Environmental Conservation

Rev: 11/18/2014
ID/Status: Site is properly closed - requires continued

2008 indicates that the Ground Water Trigger Levels (GWTLs) have not been exceeded. The decrease in the median concentration of ammonia since the capping of the landfill in 2001 indicates that the implemented remedy has been effective in decreasing leachate-related groundwater quality impact at the site.
Env Problem: Nature and Extent of Contamination: The contaminants of concern identified at this site include inorganics (metals) and volatile organic compounds.Unknown quantities of the following volatile organic compounds (VOCs) are suspected to have been disposed at the site: vinyl chloride, benzene, dichlorodifluoromethane, cis-1,2-dichloroethene, and 1,1-dichloroethane. Extent of contamination: Groundwater in the vicinity of the landfill has been impacted. Since the groundwater discharges to the nearby Wallkill River, the potential for impact to the Wallkill River is being monitored to ensure that the thresholds levels established in the contingency plan for the various contaminants of concern are not exceeded. For each of the thirteen groundwater wells that are monitored as a part of the contingency plan, groundwater trigger levels for the contaminants of concern have been established.
Health Problem: Contact with contaminated soils is not likely because the soils are consolidated, covered by clean fill, and a fence surrounds the site. Drinking contaminated groundwater is not expected since there are no private water supplies downgradient from the site.
Dump: False
Structure: False
Lagoon: False
Landfill: True
Pond: False
Disp Start: 1968
Disp Term: 1983
Lat/Long: 41:24:13:0 / 74:22:43:0
Dell: False
Record Add: 11/18/1999 12:00:00 PM
Record Upd: 5/18/2010 9:46:00 AM
Updated By: wabuskey
Own Op: On-Site Operator
Sub Type: 01
Owner Name: JOSEPH GAMBINO
Owner Company: AL TURI LANDFILL, INC.
Owner Address: 73 HARTLEY ROAD
Owner Addr2: Not reported
Owner City,St,Zip: GOSHEN, NY 10924
Owner Country: United States of America
HW Code: 336016
Waste Type: DICHLOROETHYLENE

- Continued on next page -

Site Detail Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

SHWS

EDR ID: S108294743 **DIST/DIR:** 0.905 SW **ELEVATION:** 369 **MAP ID:** 2

NAME: OLD AL TURI LANDFILL

ADDRESS: 73 HARTLEY ROAD
GOSHEN, NY 10924
ORANGE

SOURCE: NY Department of Environmental Conservation

Rev: 11/18/2014
ID/Status: Site is properly closed - requires continued

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: 1,1-DICHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: TRICHLOROMONOFLUOROMETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: 1,2-DICHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: DICHLORODIFLUOROMETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: CHROMIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: ZINC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: CHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: ETHYLIDENE DICHLORIDE
Waste Quantity: UNKNOWN

- Continued on next page -

Site Detail Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

SHWS

EDR ID: S108294743 **DIST/DIR:** 0.905 SW **ELEVATION:** 369 **MAP ID:** 2

NAME: OLD AL TURI LANDFILL

ADDRESS: 73 HARTLEY ROAD
GOSHEN, NY 10924
ORANGE

SOURCE: NY Department of Environmental Conservation

Rev: 11/18/2014
ID/Status: Site is properly closed - requires continued

Waste Code: Not reported
HW Code: 336016
Waste Type: CYANIDES(SOLUBLE CYANIDE SALTS)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: BARIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: MAGNESIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: MANGANESE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: IRON
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 336016
Waste Type: BENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 36-S-04
Cross Ref Type Code: 07
Cross Ref Type: Muni. Waste ID
Record Added Date: 11/18/1999 12:00:00 PM
Record Updated: 2/24/2005 3:54:00 PM
Updated By: INITIAL
Crossref ID: NYD980506190
Cross Ref Type Code: 05
Cross Ref Type: EPA Site ID
Record Added Date: 11/18/1999 12:00:00 PM
Record Updated: 5/10/2001 4:31:00 PM
Updated By: REGTRANS
Crossref ID: W3-00777-87-06
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 6/2/2009 8:38:00 AM
Record Updated: 6/2/2009 8:38:00 AM
Updated By: RRPERGAD
Crossref ID: Deed control No. 51681
Cross Ref Type Code: 25

- Continued on next page -

Site Detail Report

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

SHWS

EDR ID: S108294743 **DIST/DIR:** 0.905 SW **ELEVATION:** 369 **MAP ID:** 2

NAME: OLD AL TURI LANDFILL

ADDRESS: 73 HARTLEY ROAD
GOSHEN, NY 10924
ORANGE

SOURCE: NY Department of Environmental Conservation

Rev: 11/18/2014
ID/Status: Site is properly closed - requires continued

Cross Ref Type: County Recording Identifier
Record Added Date: 5/28/2009 3:18:00 PM
Record Updated: 5/28/2009 3:18:00 PM
Updated By: RRPERGAD

Database Descriptions

NPL: NPL National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices. NPL - National Priority List Proposed NPL - Proposed National Priority List Sites.

NPL Delisted: DELISTED NPL The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. DELISTED NPL - National Priority List Deletions

CERCLIS: CERCLIS CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL. CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System

NFRAP: CERCLIS-NFRAP Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site. CERCLIS-NFRAP - CERCLIS No Further Remedial Action Planned

RCRA COR ACT: CORRACTS CORRACTS identifies hazardous waste handlers with RCRA corrective action activity. CORRACTS - Corrective Action Report

RCRA TSD: RCRA-TSDF RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste. RCRA-TSDF - RCRA - Treatment, Storage and Disposal

RCRA GEN: RCRA-LQG RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. RCRA-LQG - RCRA - Large Quantity Generators RCRA-SQG - RCRA - Small Quantity Generators. RCRA-CESQG - RCRA - Conditionally Exempt Small Quantity Generators.

Federal IC / EC: US ENG CONTROLS A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. US ENG CONTROLS - Engineering Controls Sites List US INST CONTROL - Sites with Institutional Controls.

ERNS: ERNS Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances. ERNS - Emergency Response Notification System

Database Descriptions

State/Tribal CERCLIS: SHWS Referred to as the State Superfund Program, the Inactive Hazardous Waste Disposal Site Remedial Program is the cleanup program for inactive hazardous waste sites and now includes hazardous substance sites SHWS - Inactive Hazardous Waste Disposal Sites in New York State

State/Tribal SWL: SWF/LF Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites. SWF/LF - Facility Register

State/Tribal LTANKS: LTANKS Leaking Storage Tank Incident Reports. These records contain an inventory of reported leaking storage tank incidents reported from 4/1/86 through the most recent update. They can be either leaking underground storage tanks or leaking aboveground storage tanks. The causes of the incidents are tank test failures, tank failures or tank overfills. LTANKS - Spills Information Database HIST LTANKS - Listing of Leaking Storage Tanks. INDIAN LUST R5 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R7 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R9 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R6 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R4 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R1 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R8 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R10 - Leaking Underground Storage Tanks on Indian Land.

State/Tribal Tanks: TANKS This database contains records of facilities that are or have been regulated under Bulk Storage Program. Tank information for these facilities may not be releasable by the state agency. TANKS - Storage Tank Faciliy Listing UST - Petroleum Bulk Storage (PBS) Database. CBS UST - Chemical Bulk Storage Database. MOSF UST - Major Oil Storage Facilities Database. AST - Petroleum Bulk Storage. CBS AST - Chemical Bulk Storage Database. MOSF AST - Major Oil Storage Facilities Database. CBS - Chemical Bulk Storage Site Listing. MOSF - Major Oil Storage Facility Site Listing. INDIAN UST R1 - Underground Storage Tanks on Indian Land. INDIAN UST R10 - Underground Storage Tanks on Indian Land. INDIAN UST R7 - Underground Storage Tanks on Indian Land. INDIAN UST R8 - Underground Storage Tanks on Indian Land. INDIAN UST R9 - Underground Storage Tanks on Indian Land. INDIAN UST R4 - Underground Storage Tanks on Indian Land. INDIAN UST R5 - Underground Storage Tanks on Indian Land. INDIAN UST R6 - Underground Storage Tanks on Indian Land.

State/Tribal IC / EC: ENG CONTROLS Environmental Remediation sites that have engineering controls in place. ENG CONTROLS - Registry of Engineering Controls INST CONTROL - Registry of Institutional Controls. ENV RES DECL - Environmental Restrictive Declarations. RES DECL - Restrictive Declarations Listing.

State/Tribal VCP: VCP New York established its Voluntary Cleanup Program (VCP) to address the environmental, legal and financial barriers that often hinder the redevelopment and reuse of contaminated properties. The Voluntary Cleanup Program was developed to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on "greenfield" sites. VCP - Voluntary Cleanup Agreements

ST/Tribal Brownfields: ERP In an effort to spur the cleanup and redevelopment of brownfields, New Yorkers approved a $200 million Environmental Restoration or Brownfields Fund as part of the $1.75 billion Clean Water/Clean Air Bond Act of 1996 (1996 Bond Act). Enhancements to the program were enacted on October 7, 2003. Under the Environmental Restoration Program, the State provides grants to municipalities to reimburse up to 90 percent of on-site eligible costs and 100% of off-site eligible costs for site investigation and remediation activities. Once remediated, the property may then be reused for commercial, industrial, residential or public use. ERP - Environmental Restoration Program Listing BROWNFIELDS - Brownfields Site List.

US Brownfields: US BROWNFIELDS Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs. US BROWNFIELDS - A Listing of Brownfields Sites

Database Descriptions

Other Haz Sites: US CDL A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. US CDL - Clandestine Drug Labs

Other Tanks: CORTLAND CO. UST A listing of underground storage tank sites located in Cortland County. CORTLAND CO. UST - Cortland County Storage Tank Listing WESTCHESTER CO. UST - Listing of Storage Tanks. NASSAU CO. UST - Registered Tank Database. ROCKLAND CO. UST - Petroleum Bulk Storage Database. SUFFOLK CO. UST - Storage Tank Database. NCFM UST - Storage Tank Database. HIST UST - Historical Petroleum Bulk Storage Database. CORTLAND CO. AST - Cortland County Storage Tank Listing. WESTCHESTER CO. AST - Listing of Storage Tanks. NASSAU CO. AST - Registered Tank Database. ROCKLAND CO. AST - Petroleum Bulk Storage Database. SUFFOLK CO. AST - Storage Tank Database. NCFM AST - Storage Tank Database. HIST AST - Historical Petroleum Bulk Storage Database.

Spills: HMIRS Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT. HMIRS - Hazardous Materials Information Reporting System SPILLS - Spills Information Database. HIST SPILLS - SPILLS Database. SPILLS 80 - SPILLS80 data from FirstSearch. SPILLS 90 - SPILLS90 data from FirstSearch.

Other: RCRA NonGen / NLR RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste. RCRA NonGen / NLR - RCRA - Non Generators TRIS - Toxic Chemical Release Inventory System. TSCA - Toxic Substances Control Act. FTTS - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act). FTTS INSP - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act). SSTS - Section 7 Tracking Systems. ICIS - Integrated Compliance Information System. PADS - PCB Activity Database System. MLTS - Material Licensing Tracking System. RADINFO - Radiation Information Database. FINDS - Facility Index System/Facility Registry System. RAATS - RCRA Administrative Action Tracking System. BRS - Biennial Reporting System. HSWDS - Hazardous Substance Waste Disposal Site Inventory. NY MANIFEST - Facility and Manifest Data. DRYCLEANERS - Registered Drycleaners. SPDES - State Pollutant Discharge Elimination System. INDIAN RESERV - Indian Reservations. US AIRS MINOR - Air Facility System Data. US AIRS (AFS) - Aerometric Information Retrieval System Facility Subsystem (AFS). PRP - Potentially Responsible Parties. FEDLAND - Federal and Indian Lands.

Database Sources

NPL: EPA

Updated Quarterly

NPL Delisted: EPA

Updated Quarterly

CERCLIS: EPA

Updated Quarterly

NFRAP: EPA

Updated Quarterly

RCRA COR ACT: EPA

Updated Quarterly

RCRA TSD: Environmental Protection Agency

Updated Quarterly

RCRA GEN: Environmental Protection Agency

Updated Quarterly

Federal IC / EC: Environmental Protection Agency

Varies

ERNS: National Response Center, United States Coast Guard

Updated Annually

State/Tribal CERCLIS: Department of Environmental Conservation

Updated Annually

State/Tribal SWL: Department of Environmental Conservation

Updated Semi-Annually

State/Tribal LTANKS: Department of Environmental Conservation

Varies

State/Tribal Tanks: Department of Environmental Conservation

Updated Quarterly

Database Sources

State/Tribal IC / EC: Department of Environmental Conservation

Updated Quarterly

State/Tribal VCP: Department of Environmental Conservation

Updated Semi-Annually

ST/Tribal Brownfields: Department of Environmental Conservation

Updated Quarterly

US Brownfields: Environmental Protection Agency

Updated Semi-Annually

Other Haz Sites: Drug Enforcement Administration

Updated Quarterly

Other Tanks: Cortland County Health Department

Updated Quarterly

Spills: U.S. Department of Transportation

Updated Annually

Other: Environmental Protection Agency

Varies

Street Name Report for Streets near the Target Property

Target Property: 212 CHEECHUNK ROAD
MIDDLETOWN, NY 10940

JOB: NA

Street Name	Dist/Dir	Street Name	Dist/Dir
Cheechunk Rd	0.06 South		
Echo Lake Rd	0.07 SW		
Hartley Rd	0.15 SW		
Owens Rd	0.06 SE		

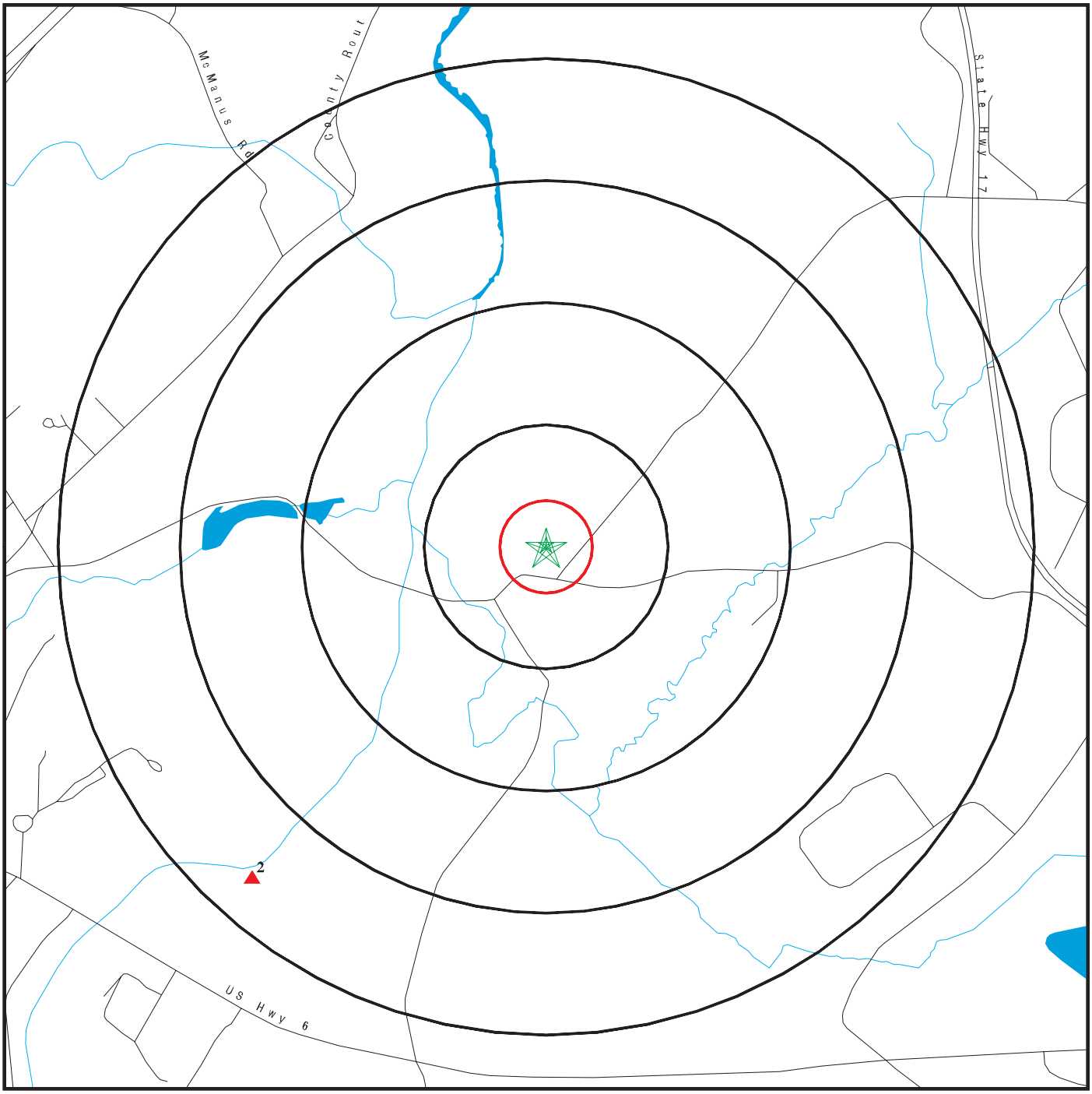
Environmental FirstSearch

1.000 Mile Radius

ASTM MAP: NPL, RCRACOR, STATES Sites

EDR® Environmental Data Resources Inc

212 CHEECHUNK ROAD MIDDLETOWN, NY 10940



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 41.4133 Longitude: 74.372)

▲ Identified Sites

National Priority List Sites

Indian Reservations BIA

EDR Reference Code (EDR internal use only): 4196141.2s

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15-02-02.09:54:16.Mon

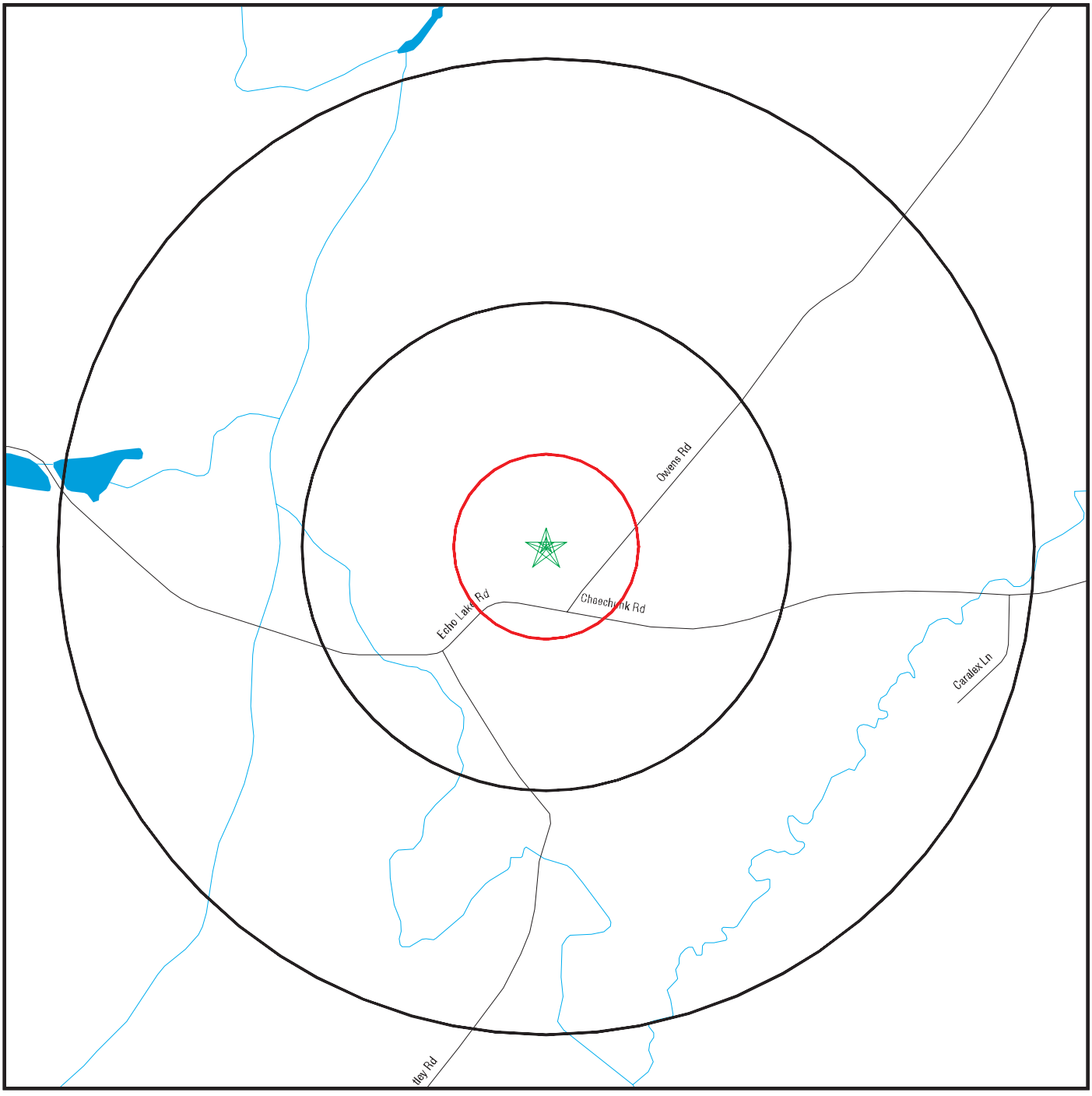
Environmental FirstSearch

0.500 Mile Radius

ASTM MAP: CERCLIS, RCRATSD, LUST, SWL

EDR® Environmental Data Resources Inc

212 CHEECHUNK ROAD MIDDLETOWN, NY 10940



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 41.4133 Longitude: 74.372)

▲ Identified Sites

National Priority List Sites

Indian Reservations BIA

EDR Reference Code (EDR Internal use only): 4196141.2s

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15-02-02.09:54:45.Mon

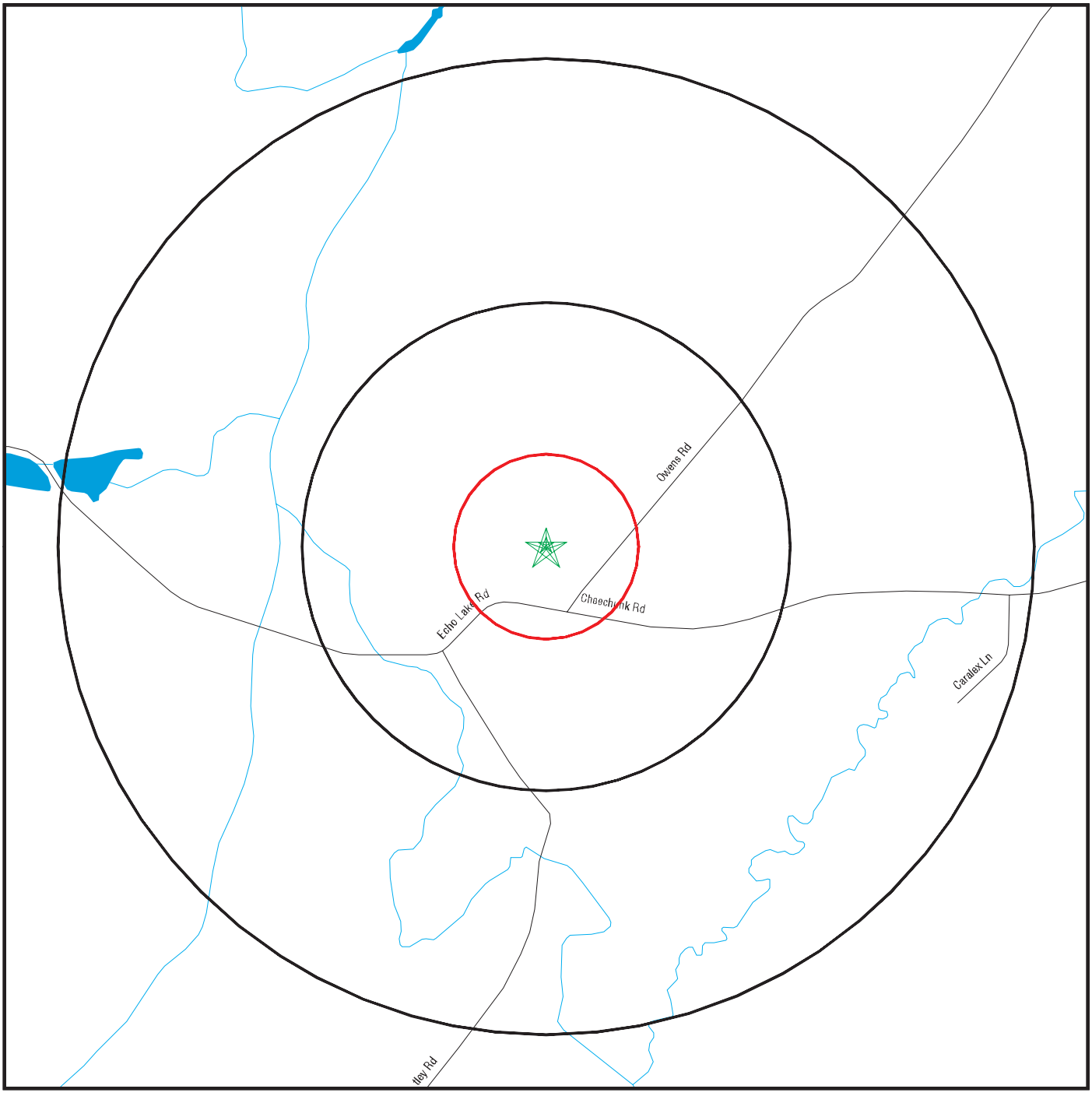
Environmental FirstSearch

0.500 Mile Radius

ASTM MAP: RCRAGEN, ERNS, UST, FED IC/EC, METH LABS

EDR® Environmental Data Resources Inc

212 CHEECHUNK ROAD MIDDLETOWN, NY 10940



Black Rings Represent Qtr. Mile Radius; **Red Ring Represents 500 ft. Radius**

★ **Target Property (Latitude: 41.4133 Longitude: 74.372)**

▲ **Identified Sites**

National Priority List Sites

Indian Reservations BIA

EDR Reference Code (EDR Internal use only): 4196141.2s

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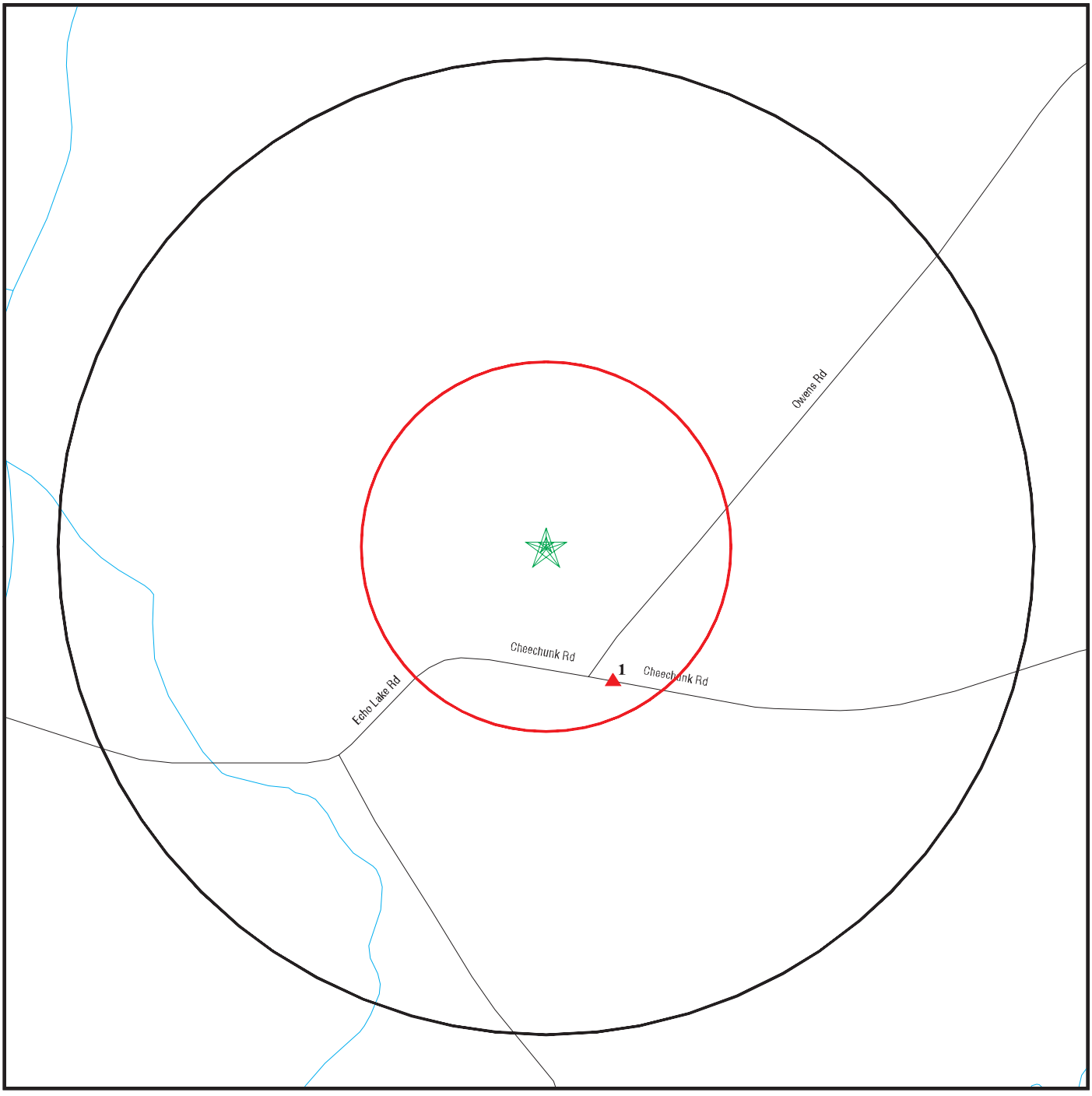
15-02-02.09:55:10.Mon

Environmental FirstSearch

0.25 Mile Radius
Non ASTM Map, Spills, FINDS

EDR® Environmental Data Resources Inc

212 CHEECHUNK ROAD MIDDLETOWN, NY 10940



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 41.4133 Longitude: 74.372)

▲ Identified Sites

Sensitive Receptors

National Priority List Sites

Indian Reservations BIA

EDR Reference Code (EDR Internal use only): 4196141.2s
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15-02-02.09:55:36.Mon

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT
FOR THE
ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN AND TOWN OF WAWAYANDA
ORANGE COUNTY, NEW YORK

Prepared For:

AMY'S KITCHEN, INC.
300 DUTTON AVENUE
SANTA ROSA, CALIFORNIA 09407

Prepared By:

ENVIRONMENTAL COMPLIANCE SERVICES, INC.
26 SOUTH STREET
MIDDLETOWN, NEW YORK 10940

DECEMBER 2013

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT
ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN/TOWN OF WAWAYANDA,
ORANGE COUNTY, NEW YORK

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1.0 INTRODUCTION

On October 22, 2013, Amy's Kitchen, Inc. (AKI) of Santa Rosa, California retained Environmental Compliance Services, Inc. (ECSI) of Middletown, New York to conduct a Phase I Environmental Site Assessment for the Echo Lake Industrial Site. AKI is interested in evaluating site conditions as part of considering the possible purchase of the property. The subject property, herein referred to as "the site", is located along Echo Lake Road, Orange County, Goshen, New York (Figure 1-1, Site Location Map). Figure 1-2 Site and Vicinity, presents the site and vicinity, as well as nearby land use which are detailed under Section 3.2, Surrounding Land Uses and Zoning.

During November and December 2013, Anthony P. Russo of ECSI performed inspections of the site, as well as observed conditions at adjoining parcels. Information gathered while conducting inspections is contained herein. In addition, ECSI retained Environmental Data Resources, Inc. (EDR) of Milford, Connecticut, to conduct a search of available environmental records to facilitate evaluation of potentials for environmental risk and liability for the site, as well as immediately surrounding parcels. The search was conducted in accordance with the requirements of ASTM E 1527-05 ("Standard Practice for Environmental Site Assessments"). ECSI also contacted representatives in the Towns of Goshen and Wawayanda and obtained available records pertaining to property ownership for the subject site and immediately surrounding parcels.

In order to obtain past site use information, ECSI conducted interviews with several individuals familiar with the history and uses of the property, as well as obtained information from a variety of sources (Section 3.0, Information Sources). The findings of the site inspections, supplemented with the information obtained on the history/land use, is presented within this report.

1.1 Scope of Services

The objective of the Phase I Assessment completed for the site was to determine, to the extent feasible and practicable, if any recognized suspect environmental conditions exist on the site, or in the immediately surrounding vicinity, that could result in environmental risk and liability for AKI.

As outlined in ECSI's proposal agreement with AKI (dated October 22, 2013), the scope of services performed under the Phase I Environmental Site Assessment included the following activities:

- Conduct site inspections (reconnaissance) to visually assess the presence of actual or potential internal/external sources of toxic contamination and related contaminant pathways..

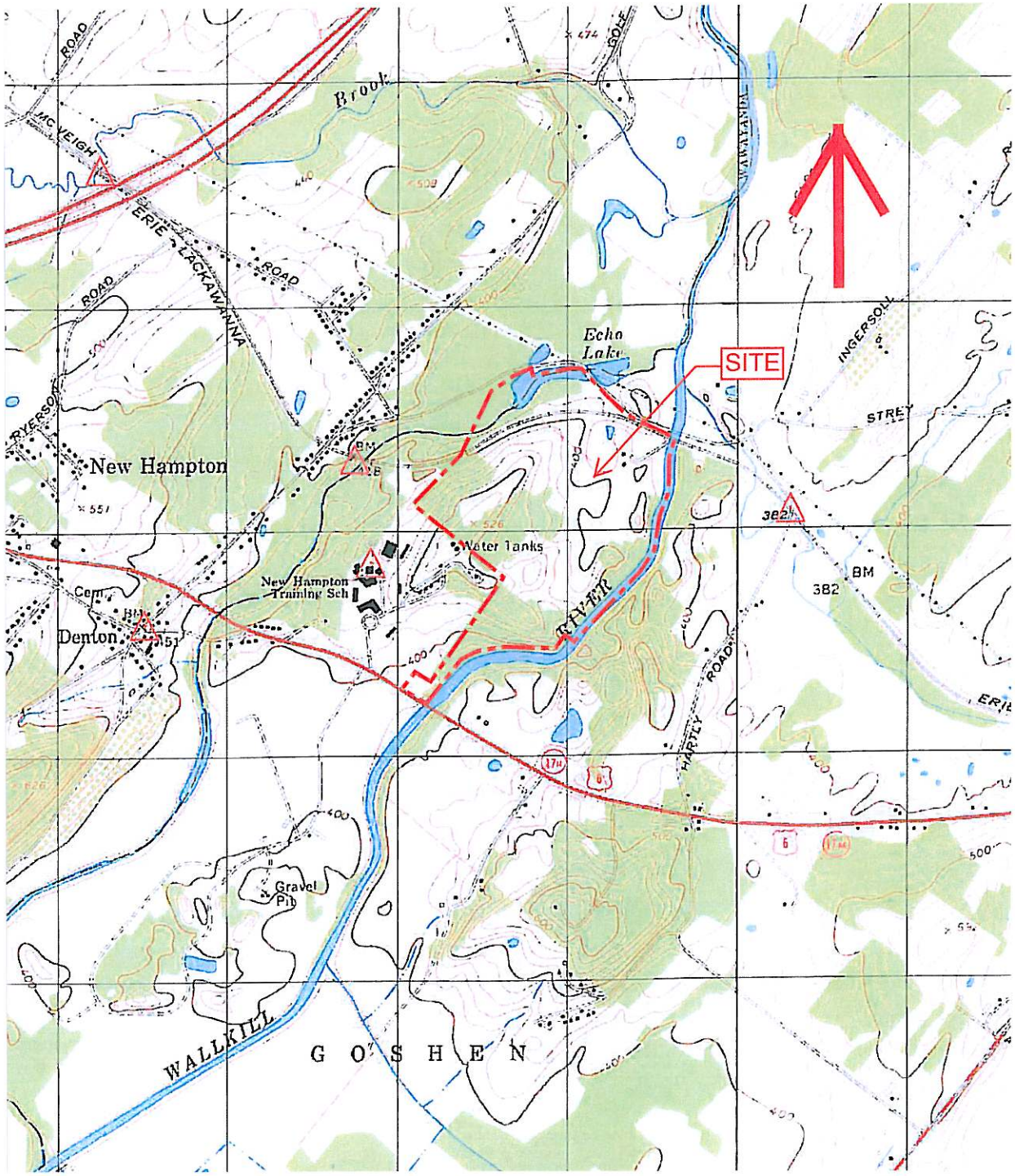


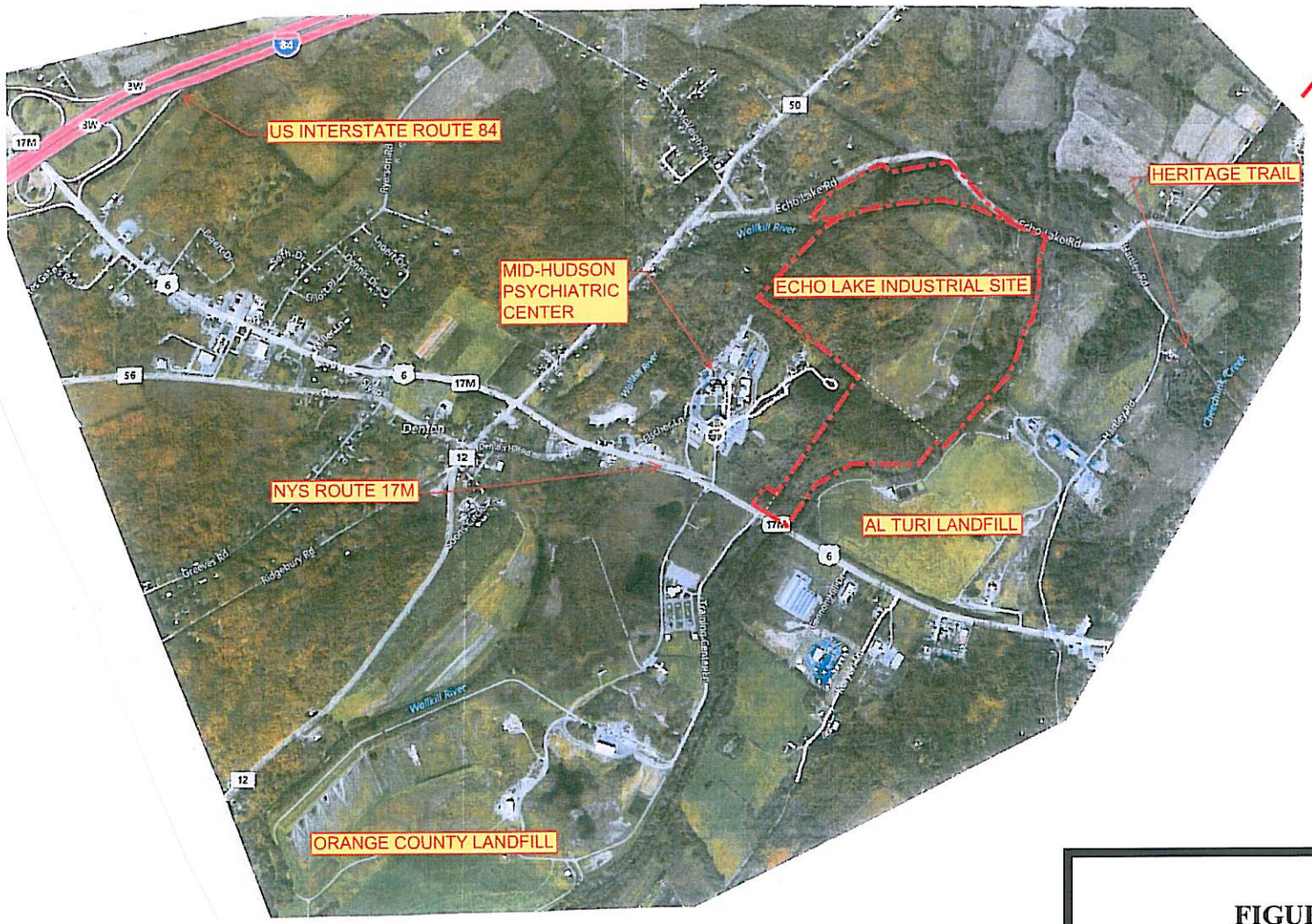
FIGURE 1-1

SITE LOCATION MAP

ECHO LAKE INDUSTRIAL SITE
ORANGE COUNTY, NEW YORK

SCALE: 1 INCH = 2,000 FEET

SOURCE: USGS TOPOGRAPHIC MAP; PRINTED/REVISED: 1968/1976



SOURCE: BING MAPS 2013

FIGURE 1-2

SITE AND VICINITY

ECHO LAKE INDUSTRIAL SITE
ORANGE COUNTY, NEW YORK

- Conduct interviews with the current property owner, operator, and/or anyone designated by the owner familiar with past and present property uses and operations.

- Review available information on the subject property site (i.e. history and past land uses), information primarily maintained by the Town of Goshen and the Town of Wawayanda Building and Zoning offices, Department of Public Works and the Tax Assessor's Offices.

- Review available Federal, State, and local records of spills and releases for the site and immediately adjacent properties, including available files maintained by the US Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), and the Towns of Goshen and Wawayanda.

- Retain Environmental Data Resources (EDR) of Milford, Connecticut, a search firm qualified to perform environmental and lien searches and review/report records in accordance with ASTM E 1527-05 standards; EDR's services include publication of a EDR Radius Map Report (with Geo-Check^{R}), presentation of available historical topographic maps and aerials, Sanborn and Building Permit search reports, and the results of an environmental lien search.

- Review available files maintained by local agencies, or authorities, on current and historic property ownership and compliance matters.

- Prepare a Phase I Environmental Site Assessment (ESA) Report.

1.2 Methodology

The Phase I Environmental Site Assessment completed for the site was performed in accordance with recognized industry standards published by the American Society for Testing Methods (ASTM). ASTM is a private, not-for-profit, standards-writing organization that publishes specifications, test methods, guides, and practices concerning engineering materials, manufactured products, and the environment. Standards are written by voluntary members who hail from commercial organizations, government bodies, and academic institutions to ensure that all interests have a voice and consensus on developed standards.

ECSI reviewed historical topographic mapping, the Soil Survey of Orange County, and historic aerial photographs to determine if the site's landscape configuration has changed over time. As noted, the ASTM completed by EDR aided ECSI in the evaluation of potential spills and releases associated with leaking above ground and underground storage tanks (and other environmental potentials) for the site and vicinity. Minimum and maximum search radii of 1/8 mile and 1 mile, respectively, were selected so that potential impacts near the site, and immediately surrounding the site, could be confirmed and evaluated.

In addition, telephone interviews with past property owners/operators, local historical sources, record searches and site inspections conducted under the Phase I Assessment by ECSI, were performed in accordance with the procedures defined under ASTM E 1527-05, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". The EDR search included, but not limited to, completion of an EDR Radius Map With Geo-Check^{R}, historic topographic mapping and aerial photograph searches, a Sanborn (Fire Safety) map search, a building permit search, an EDR Environmental LienSearch report, and an EDR Directory City Image report to provide source documentation for the images obtained.

It is important to note that this assessment process necessitated contacting several information sources, including three prior property owners/operators, representatives of the New York State Department of Environmental Conservation (NYSDEC), Divisions of Habitat Protection, Solid and Hazardous Waste Management, and Mine Land Reclamation, as well as the New York State Historic Preservation Office (NYS-SHPO). The extra effort made to obtain information about past land uses, and regulatory matters, served best to adhere to ASTM standards, as well as ensure the basis for recommending that a Phase II Environmental Site Assessment be performed to confirm suspect areas of concern.

2.0 INFORMATION SOURCES

Information about past uses/operations, ownership and physical features and structures at the Echo Lake Industrial Site property was obtained from the following individuals, State and local contacts:

SOURCE	*DATE*	*INFORMATION*
John E. Bach, Kimberly Land Co. *Goshen, New York 10924* *(845) 294-5110*	*11/27/13* *12/18/13*	*Site Conditions, Structures and Past Land Uses*
Elmer Budd, Goshen Fire District *Goshen, New York 12701* *(845) 742-3147*	*11/25/13*	*Structure Fire Incident Report of 1990*
BING MAPS.com	*11/15/13*	*Aerial Photograph (2007 to 2009; 2012)*
Cornelia Bush, Orange County Historian *Goshen, New York 10924* *(845) 291-2388*	*07/19/13*	*Historical Site Information & Contacts*
Mark Davin, NYSDEC *Mine Land Reclamation* *New Paltz, New York 12561* *845-256-3128*	*12/27/13*	*Town of Wallkill Mine; Prior Site Violations & Stump Storage; Cultural Resource Survey of 1994*
Helina Duda, NYSDEC *Mine Land Reclamation* *New Paltz, New York 12561* *845-256-3064*	*11/25/13*	*Mine Site Violations; Status of Current Mine Land Reclamation Permit*
Environmental Data Resources, Inc. (EDR) *440 Wheelers Farms Road* *Milford, Connecticut 06460* *(800) 352-0050*	*10/25/13*	*ASTM Database Search and Radius Map Report with GeoCheck*
	10/24/13 10/29/13	*Building Permit Search, Tax Map & City Directory Reports*
	10/25/13 *10/29/13*	*Historical Aerial & Topographic Maps (1908, 1942, 1968, 1969, 1974, 1976, 1984, 1991, 1994, 2006, 2009 & 2011)*
	10/25/13	*Historical Sanborn Map Report*
Environmental Data Resources, Inc.	*11/20/13*	*Environmental Lien Search Report*
Kyle Forester, NYSDEC *Division of Solid Waste* *New Paltz, New York 12561* *845-256-3051*	*11/22/13*	*Guidance for Farm Waste Exemption of 1970's*

(INFORMATION SOURCES CONTINUED)

SOURCE	DATE	INFORMATION
Doug Gaugler, NYSDEC *Habitat Group* *New Paltz, New York 12561* *(845) 256-3057*	*12/03/13*	*Jurisdiction Confirmation for the Wallkill River as "Waters of the State"*
Carl Hoffman, NYSDEC *Albany, New York* *(518) 402-9813*	*12/13/13*	*Status of the OC Landfill pursuant to Division of Environmental Remediation*
John Lippert, Town of Wallkill *Deputy Commissioner of Public Works* *NYS Route 17 M* *Middletown, New York 10940* *845-361-1106*	*12/02/13*	*Past Mining Operations by the Town of Wallkill, Site Features and Fuel Uses*
William Norton, Surveyor *Mercurio, Norton Tarolli* *Pine Bush, New York 12566* *845-744-3620*	*12/04/13*	*Property Line/Deed Line Information Along the Wallkill River*
NYSDEC Spill Database *Online Publication* *845-256-3000*	*11/22/13*	*ECSI Search of Reported Spills In The Site Vicinity*
Panco Fuel *Goshen , New York 12754* *(845) 429-9120*	*11/19/13*	*Past On-site Tank* Fueling
Steven J. Oberon, Columbia Heritage *Chatham, New York* *(914) 213-1942*	*12/24/13*	*Cultural Resource Survey of 1994*
Philip Perazio, NYS SHPO *Waterford, New York 12188* *(518) 237-8643*	*11/27/13*	*Record of Cultural Resource Survey*
David Pollock, NYSDEC *Division of Solid Waste* *New Paltz, New York 12561* *(845) 256-3138*	*11/18/13*	*Farm Waste Exemption of 1970's*
Quinn Fuel Oil *Goshen, New York 1o924* *(845) 291-1961*	*11/19/13*	*Past On-site Tank Fueling*
Robert Somers, NYS Ag-Markets *Albany, New York 12235* *(518) 457-2713*	*11/22/13*	*Ag & Markets Law/Site Applicability*

(INFORMATION SOURCES CONTINUED)

SOURCE	*DATE*	*INFORMATION*
Gary Tetz, Concrete Properties, LLC *Middletown, New York 10941* *(845) 692-4486*	*11/19/13*	*Recent & Past Site Uses and Features*
Town of Goshen Tax Assessor *Town Hall* *Goshen, New York 10924* *(845)*	*11/18/13*	*Property Ownership Records & Zoning for Permitted Uses*
Town of Wawayanda *Town Hall* *Slate Hill, New York* *(845) 355-5700*	*11/18/13*	*Property Ownership Records & Zoning for Permitted Uses*
Wallace Oil *Middletown , New York 12754* *(845) 343-6909*	*11/19/13*	*Past On-site Tank Fueling*

Information obtained from the above listed sources depended largely on the cooperation of these sources and the accuracy of the information provided to ECSI.

3.0 PARCEL DESCRIPTIONS AND PAST USES

The Echo Lake Industrial Site is approximately 212 acres in size and is comprised of four parcels; the majority of the site is located within the Town of Goshen (41 Echo Lake Road, Goshen, New York 10924). A small amount of land, approximately 12.1 acres, is situated within the Town of Wawayanda, Orange County, New York. Essentially, the northwestern portion of the 212 acre site is bisected by a Town of Goshen and Town of Wawayanda boundary line. Figure 3-1, Site Parcels, presents an aerial image of the four parcels and vicinity, as well as the approximate boundaries of the site, in relation to Echo Lake Road and NYS Route 17M. Appendix A, Site Plans, contains a "Survey and Topographic Map" which was prepared for Concrete Properties, LLC (the current owner of record) by Mercurio, Norton, Tarolli Land Surveying-Engineering P.C. (dated May 2009). This Plan presents the boundaries of the site and parcels, acreage and water resources. Appendix B, Site Photographs, contains photographs of the site, which were obtained by ECSI during October, November and December 2013 as part of performing site reconnaissance, pursuant to ASTM standards. These photographs are referenced throughout the report to document site conditions and explain site conditions and features.

3.1 Site Parcels

Information pertaining to each of the four parcels, municipality, acreage and tax lot identification, is as follows:

PARCEL	TAX MAP INFORMATION	MUNICIPALITY	APPROXIMATE ACREAGE *
Parcel I (pacial)	1-1-40	Town of Wawayanda	12.1
Parcel I (parcial)	12-1-24.2	Town of Goshen	27.7
Parcel II	12-1-24.2	Town of Goshen	149.2
Parcel A	12-1-23.2	Town of Goshen	21.7
Parcel B	12-1-101	Town of Goshen	1.3
		TOTAL	212

* Approximate acreage obtained from available tax map information and Survey & Topographic Map", prepared by Mercurio, Norton,Tarolli, Land Surveying-Engineering, P.C. (dated May 21, 2009).

Parcel I

Parcel I lies within the Towns of Goshen and Wawayanda; these parcels are sized approximately 27.7 acres and 12.1 acres, respectively, totaling approximately 39.8 acres (Photo No. 1). The current record of owner of Parcel I is Concrete Properties, LLC. This parcel is mostly comprised of a large (greater than 12.4 acres) freshwater wetland; the wetland is essentially a section of the former Wallkill River (Cheechunk Canal), which is known locally as Echo Lake. The subject wetland is designated by the NYSDEC as State jurisdictional Wetland MD-24. This designation includes a 100 foot adjacent (buffer) area, all of which are regarded as "Waters of the State". The adjacent area is regulated by the State as an important component of a designated wetland, whereby most actions related to land use development are restricted, or are

SOURCE: BING MAPS 2013

FIGURE 3-1

SITE PARCELS

ECHO LAKE INDUSTRIAL SITE
ORANGE COUNTY, NEW YORK

allowed by way of a Letter of Permission, or under the issuance of a State Freshwater Wetland Permit.

The physical limits of the wetland are also regarded by the US Army Corps of Engineers (USACE) as "Waters of the United States", and thus, the wetland is regarded as a State and Federal jurisdictional wetland. (Actions within the wetland, as well as certain actions upgradient which may have bearing on the quantity and quality of wetland conditions, are regulated by the USACE.) No evidence of past land use development exists within the boundary limits of Parcel I.

Parcel II

Parcel II is the largest of the four parcels (approximately 149 acres); a gated entrance provides secure access near the northeastern corner of the parcel, which fronts along Echo Lake Road (Photo Nos. 2 through 4). An original entrance to the site is comprised of a dirt road which still can be seen slightly east and north of the existing entrance; a portion of this dirt road can be observed below an existing, abandoned rail bridge (Photo No. 5). This road was constructed and utilized by prior owners of the parcel to access preexisting, farmstead structures. These structures included two hillside barn sections (with ancillary structures), a farm house and a tenant house, situated immediately south of the north-central boundary of the parcel, south of Echo Lake Road. According to available historical aerial photographs and other information sources (i.e. Town of Goshen property ownership records), prior uses of Parcel II included farming. Specifically, this parcel was once a dairy farm which included the practice of farming for hay and corn to support dairy operations, from the late 1920s through the mid 1960's. Approximately 65 percent of Parcel II was utilized for farming; an upland, hardwood forested area, located within the southwestern portion of Parcel II, was not utilized for farming; however, cultivation practices did extend up a portion of the northern slope of this area.

In more recent years, the mining of sand and gravel was conducted by the Town of Wallkill which owned the property from 1989 to 2009. The majority of mining was performed within the southeastern portions of Parcel II during the approximately period of 1994/1995 through 2008 (Photo No. 6). Evidence of the prior existence of two small mines, near the original entrance to the property and south, are believed to have been excavated by prior owners of the property. Remnants of the old Erie Lakawanna rail bed traverses the property, south of Echo Lake Road; the rail bed originates just east of the original dirt road entrance. From this location, the rail bed travels west and southwest towards NYS Route 17M, and then westerly towards the City of Middletown. The rail bed separates Parcel I and Parcel II. This rail bed is scheduled to be transformed by the Orange County Department of Parks, Recreation and Conservation as an extension of the existing Heritage Trail, which presently terminates at Hartley Road, approximately 1,200 feet of Parcel II. Appendix C, Documentation, contains a publication entitled "Orange County Heritage Trail Extension", which explains the County Plans for extending the trail.

The current record of owner of Parcel II is Concrete Properties, LLC, which purchased the property (Parcels I and II) from the Town of Wallkill in 2009. Concrete Properties, LLC possesses a NYSDEC Mine Land Reclamation Permit for mining within the southeastern limits

of Parcel II, as well as Parcel A, which abuts the southeastern boundary of Parcel II. According to Gary Tetz representative of Concrete Properties, LLC (Personal Communications, November 19, 2013), very little mining has been performed at the site while under their ownership. The permit utilized by the Town of Wallkill was transferred to E. Tetz & Sons, Inc. and has recently been renewed (March 11, 2013), effective through to January 31, 2018. An on-site utility pole (Photo No. 5) lies approximately 80 feet south of Echo Lake Road near the northeast corner of the parcel; power lines attached to the pole connect with the overhead electric power grid located along the south side of Echo Road. Power lines extend from a pole along Echo Lake Road and to the on-site utility pole (30,000 volts); a line travels down the south side of the pole and then underground line, presumably to a pad mounted 4,800 volt transformer located along the original access road, opposite the remains of the farm house foundation. From the transformer pad, it is believed that underground lines travel to the northwest corner of an existing on-site fenced enclosure which provided power for a construction trailer previously utilized within the enclosure by the Town of Wallkill. A utility tag attached to the pole notes that the power was shut down in 2010. An above ground petroleum storage tank was located within the northeastern corner of the enclosure, which may have been powered for fueling Town owned and operated mining equipment. Heavy equipment, believed to be a motorized scraper, lies outside the west side of the enclosure.

Parcel A

Parcel A (approximately 21.7 acres) abuts the southeastern corner of Parcel II. This parcel provides a contiguous property connection from Echo Lake Road (north) to the NYS Route 17M transportation corridor located south (Photo No. 7). This parcel fronts along NYS Route 17M and consists of an oak/maple/ash hardwood forest with no evidence of land use development. Remnants of a former dirt access road exists from NYS Route 17M and to a point near the Wallkill River (east, and outside the boundary of Parcel A). The road was constructed during the early 1990's by Al Turi Landfill, Inc., the former owner of the parcel, to facilitate the installation of a groundwater monitoring well couplet (well W-15 S&D; shallow and deep wells) once used to confirm that no landfill derived groundwater contamination exists off-site, west of the landfill. Al Turi Landfill, Inc. conveyed the land to Concrete Properties, LLC in 2009.

Parcel B

Parcel B is approximately 1.3 acres in size and abuts the southwestern limits of Parcel A, which also fronts along NYS Route 17M (Photo No. 7). This parcel is vacant with old field vegetation existing throughout. No evidence of land use development exists upon this parcel. Parcel B was conveyed to Concrete Properties, LLC in 2009 by the State of New York; this parcel was once a portion of the Mid-Hudson Psychiatric Center property which abuts Parcel A and the southern property boundary of Parcel II (Figure 1-1).

3.2 Surrounding Land Uses and Zoning

The boundaries of the site abut residential properties west and northwest, the Al Turi Landfill east of the Wallkill River and the Mid-Hudson Psychiatric Center, southwest. The

Orange County Landfill lies approximately 0.8 miles south of NYS Route 17M (Figure 1-1). In general, current land uses and zoning in the immediate vicinity of the site consist of industrial, commercial (including highway commercial), residential and rural/agricultural. The Al Turi Landfill is a privately owned and maintained facility; the owner of record is Al Turi Landfill, Inc. The Orange County Landfill is a publicly owned facility, owned and maintained by the County. Both facilities are under "post-closure care" and each landfill has been capped with a state-of-the-art cover system, complete with a landfill gas collection and vent/landfill gas flare and/or utilization plant.

4.0 OBSERVED PHYSICAL SITE FEATURES

North and northwestern portions of the property front along Echo Lake Road; as noted, a portion also fronts along NYS Route 17M to the south (Figure 3-1). Visual evidence of past dairy farming and mining were observed within the limits of Parcel II, as well as observed remnants of past farmstead structures. Historic aerials provided by EDR and reviewed by ECSI, clearly show areas of Parcel II where farming and mining were performed. In addition, the succession of the hardwood forested hillside within the southwestern portion of the site, is clearly depicted over time. Appendix D, EDR Reports, contains all report and record search information generated by EDR, as referenced within this report section and throughout the remainder of the document.

4.1 On-site Natural Resources

As noted, the majority of Parcel I consists of a NYSDEC (including a 100 foot adjacent area) and USACE jurisdictional (regulated) wetland. A NYSDEC protected stream (a Class B Stream, known as the Wallkill River) flows through the wetland and connects with the Wallkill River approximately 1,300 feet northeast of the site. The section of the Wallkill River which flows along the eastern boundary of the site is a man-made diversion of the stream which flows through the northwestern portion of the property (also known as the Cheechunck Canal), and is classified by the NYSDEC as a Class C Stream. The classification of the River changes to a Class B status at the confluence of the Class B Stream which connects with the man-made portion of the Wallkill River, approximately 1,300 feet northeast of the site.

According to applicable NYSDEC regulations, a stream classification of AA or A is assigned to waters used as a source of drinking water. Classification B indicates a best usage for swimming and other contact recreation, but not for drinking water. Classification C is for waters supporting fisheries and suitable for non - contact activities. The lowest classification and standard is D. As such, the Wallkill River (a Class C Stream) is not regarded as a protected stream. The NYSDEC has issued certain water quality standards which are enforced for all Waters of the State. Certain waters within the State are protected on the basis of their classification; streams and small water bodies located within the course of a stream with a Classification of AA, A, or B, or with a classification of C with a standard of (T) or (TS), are designated by the NYSDEC as "protected streams". Such streams are subject to the stream protection provisions of "Protection of Waters" regulations (NYSCRR Part 608). The Wallkill

River is also regarded as "Waters of the United States" by the USACE and thus, actions performed within the River (below the ordinary high water mark) are regulated by the USACE. As noted, Appendix A contains a Survey and Topographic Map of the site; also contained within this appendix is a plan sheet entitled "Color Feasibility Study Map Prepared for the Echo Lake Industrial Site", which was prepared by Lanc & Tully, Engineering and Surveying, P.C. for Concrete Properties, LLC during 2009 (later modified in 2010 and 2013). Combined, these plans depict on-site wetlands and watercourses, including those are considered to be State and Federal jurisdictional, as well as the floodplain.

It is important to note that during 2008, Concrete Properties, LLC retained the services of Terrestrial Environmental Specialists, Inc. (TES) of Phoenix, New York, to map on-site wetland and watercourses and determine the State and Federal jurisdictional status of each. TES determined that eleven (11) wetlands/watercourses exist within the boundaries of the site (Appendix A). Of the eleven wetlands/watercourses, TES determined that three (3) were regarded as being State and/or Federal jurisdictional wetlands/watercourses; Wetland A, B, J (flags numbered J109 to J119), Wetland K and the on-site portion of the Wallkill River (flags numbered J1 through J43) situated below the ordinary high water mark. Wetlands A and B are both State and Federal jurisdictional wetlands; Wetlands K, J and areas below the ordinary high water mark of the Wallkill River, are Federal jurisdictional wetlands Waters of the United States (Parcel I and Parcel B).

Subsequent to completing their field work, TES on behalf of Concrete Properties, LLC, obtained a jurisdictional determination from the USACE. On April 2, 2010, the USACE provided TES with correspondence indicating that actions undertaken within the three above noted Federal jurisdictional wetlands are regulated by the USACE (Appendix C).

The eastern boundary of the site lies along the approximate centerline of the Wallkill River (Personal Communications, William Norton, Mercurio, Norton, Tarolli, December 4, 2013). A "deed line" lies inside the eastern boundary of the site, which traverses the northeastern portions of the site (Parcel II). Floodplain elevations exist along the Wallkill River, the limits of which encroach upon portions of the eastern site (Appendix A). In addition, floodplains exist within the northwestern boundaries of the site (Parcel I), adjacent to NYSDEC Wetland MD-24 (FEMA Flood Insurance Maps dated August 3, 2009).

Soils information published by the Natural Resource Conservation Services (NRCS) indicates that areas mined on site consist of Riverhead Sandy Loam soils (RnB 3 to 8 percent slopes, RhC 8 to 15 percent slopes and RhD 15 to 25 percent slopes); these areas lie at the south and southeastern portions of Parcel II, as well as in areas along the eastern portion of the site, approximately 100 feet west of the Wallkill River. The remaining portions of the site are comprised of a variety of silt and stony loams (primarily Mardin and Erie soils). Appendix E contains a soils map and listing published by the NRCS.

During April 1981, the Kimberly Land Company received a Department of Agriculture and Markets Soil Group Worksheet from a representative of the local Soil Conservation Services.

A copy of the worksheet is contained in Appendix E. The worksheet presents a breakdown of on-site soil groups, which totaled 118.1 acres.

4.2 Evidence of Past Mining

The eastern portion of Parcel II, from Echo Lake Road to its southeastern corner, displays evidence of disturbed soil and vegetation associated with past mining practices performed at the site since the late 1960's. The south/southeastern portion of the site has been mined significantly by the prior owner, the Town of Wallkill; the Town commenced mining some time in the mid 1990's to 2008/2009. Little material has been removed by Concrete Properties, LLC since their purchase of the property from the Town in 2009 (Personal Communications, Gary Tetz, Concrete Properties, LLC., November 19, 2013 and John Lippert, Town of Wallkill Department of Public Works, December 2, 2013). Two smaller areas (Farmer's Mines) were mined for sand and gravel by owners/occupants of the property which date back to the 1960's and 1970's when the site was operated as a dairy farm (Personal Communications, John E. Bach, Kimberly Land Company, November 27 and December 18, 2013).

Based on available historical aerials and telephone interviews with John E. Bach, (Kimberly Land Company November 27 and December 18, 2013), ECSI learned that two former mine sites existed along the east-central limits of the site, just west of the Wallkill River. Mining was practiced by farmers as a source of extra income when marketable materials and area demands for the material existed. No other information exists to determine how long the mines were utilized. The limits of these mines can be determined in the field due to differences in surrounding grades and the presence of the types of vegetation (Poplar and Sumac) known to take hold in areas of significantly disturbed soils. No information exists to confirm the type of back fill used to bring the final grade of these small mined areas to meet surrounding grade. Aerial images dated 1968, 1974, 2006 and 2011, as provided by EDR (Appendix D), depict on-site mined areas, as well as what appear to be well traveled dirt roads to and from each mine (ECSI has labeled features on these aerials to aid in describing and locating preexisting farmstead structures and conditions; these aerials are also contained within Appendix D).

Based on available soil survey information published by the National Resource Conservation Services (NRCS), the limits of these mine sites overlie the approximate limits of sandy loam soils previously mapped by the NRCS (Parcel II, north and south). Essentially, the historical aerials provided by EDR depict access roads and land disturbance within the areas mapped by the NRCS as Riverhead Sandy Loam (Appendix D and E).

As noted, the southwestern hillside portion of the site consists of a oak/maple/ash hardwood forest; this portion of Parcel II displays the greatest topographic relief at a maximum elevation of 551 feet msl (mean-sea-level). compared to the other three parcels which make up the 212 acre site. Portions of the lower, eastern slope of this hillside adjoins the southeastern area of Parcel II which was mined extensively by the Town of Wallkill. Clear evidence of mining and disturbance exists along the lower slope of the adjoining hillside. Loam soil material (Mardin soil series) mapped within the eastern slope of the forested hillside was removed and utilized by the Town of Wallkill as back fill to reclaim the adjoining sand and gravel mine

(Personal Communications, Gary Tetz, Concrete Properties, LLC., November 19, 2013 and John Lippert, Town of Wallkill Department of Public Works, December 2, 2013. Based on available online aerial photographic images (BING MAPS, 2012) several stockpiles of tree stumps and limbs once existed immediately east of the Town of Wallkill active sand and gravel mine. In addition, a construction trailer and an above ground storage tank (approximately 300 gallons in volume) once existed within the fenced enclosure located near the former farm house foundation. Only the fenced enclosure remains. It was expressed by the current property owner that the Town of Wallkill once considered using the stumps/tree limbs as back fill as part of reclaiming the mine. According to Mark Davin, NYSDEC Mine Land Reclamation (Personal Commutations, December 27, 2013), the State found the Town's practice of storing these materials, within the limits of the permitted mine, to be in violation of applicable regulations, as the materials were not derived on-site. Such materials, as well as other types of materials including ditch diggings, can sometimes be found within the limits of municipal owned and operated mine sites, and are typically utilized for back fill. The State provided the Town with guidance to chip and utilize the stumps/limbs as mulch to help stabilize graded soil surface areas as part of mine reclamation activities. The mine was reclaimed before Concrete Properties, LLC took ownership of the site (Personal Communications, Gary Tetz, Concrete Properties, LLC, November 2013; John Lippert, Town of Wallkill DPW, December 2013).

Available online images reviewed by ECSI also depict a man-made sedimentation basin located in proximity to the former Town of Wallkill mine, as well as a pond/wetland northeast of the basin. The sedimentation basin was utilized by the Town to contain sediment laden runoff generated by past mining activities (Personal Communications, John Lippert, Town of Wallkill Department of Public Works, December 2, 2013) . The pond/wetland situated northeast lies within a low area of the site and is surrounded (north, east and south) by areas previously mined during the 1960's and 1970's (farmer's mines). Runoff generated from these areas, as well as nearby disturbed portions of the Town of Wallkill mine, flow to the pond/wetland.

5.0 SITE HISTORY

For more than 60-years, the majority of the site (Parcels I and II) was established and operated as a dairy farm. In 1923, Daniel Webster Hoch purchased the property from Julia Denton Mills. In 1965, the Kimberly Land Company purchased 179 acres of the property (Parcels I and II) from Earl Hoch; the farm was later leased by the Kimberly Land Company, to the Brundage family who also utilized the site as a farm (Personal Communications, John E. Bach, November 27 and December 18, 2013).

The majority of Parcel II was farmed. Presently, abandoned agricultural fields are located within the northwestern, western and east-central portions of the property which were either used as pasture, or to farm hay and corn. Timber for fencing and heating was likely obtained from the forested hillside located within the southwestern portion of the site.

During 1989, the Town of Wallkill purchased the property from the Kimberly Land Company and later (1994/1995) applied for and obtained a Mine Land Reclamation Permit from the NYSDEC to mine the south and southeastern portions of the property. Extracted materials were primarily utilized for the closure of the Tarbell Landfill, owned and operated by the Town. In addition, mined sand was used for ice control and Town road construction projects. The Town Department of Public Works operated the mine under a NYSDEC Mine Land Reclamation permit through to 2009, for roughly 14 years (Personal Communications, John Lippert, Town of Wallkill DPW, December 2, 2013; Mark Davin, NYSDEC Mine Land Reclamation, December 27, 2013).

5.1 Farmstead Description

The information presented below is based on field inspections conducted by ECSI (November and December 2013), in conjunction with information presented on available historical aerial photographic images, telephone conversations with individuals familiar with past uses of the site, and review property ownership records maintained by the Town of Goshen.

The former farmstead consisted of two hillside barn sections (totaling 4,706 square feet) with ancillary structures (i.e. poultry pens; sheds), a two-story farm house (2,761 square feet; built in 1835), and a single-story tenant house (936 square feet; built in 1954). The farm house was located approximately 300 feet south of the existing site entrance, and was accessed by the original dirt road which originates below the existing rail bridge, near the northeastern corner of the site (Photo No. 5). The two barn sections were located at the base of a small hill situated immediately west of the existing site entrance and the former farm house. Remnants of a concrete block/stone silo, and stone support walls, lie within the lower slope of the hill where the barns existed (Photo No. 8). The tenant house is believed to have been located between the barns and the farm house, or immediately southeast of the farm house. Remnants of a concrete/stone foundation marks the location of the farm house (Photo No. 9; Appendix D). The foundation of the former farm house was confirmed in the field in conjunction with ECSI's review of aerial images published by BING MAPS (dated 2012) and property ownership records maintained by the Town of Goshen (Appendix C).

Based on a 1990 Town of Goshen Fire Incident report on file at the Town of Goshen Tax Assessor's Office (Appendix C), one of the on-site houses burned down. ECSI contacted the Goshen Fire District Chief and attempted to determine which structure and how it burned; unfortunately, no records exist to supplement the information contained on the incident report (Personal Communications, Budd, Fire Chief, November 25, 2013). Information provided by John Lippert, Town of Wallkill Department of Public Works, suggests that perhaps the structures were burned as part of fire training, about the time the Town of Wallkill purchased Parcels I and II .

A concrete lined well vault exists immediately east of the farm house foundation (Photo Nos. 10 and 11). This well is reported to be a "deep well" (see property ownership records, Appendix C) and is believed to have serviced the farm house and tenant house, as well as dairy operations. The well vault consists of a rectangular, concrete block structure which extends above the surrounding grade by approximately 3 feet. The depth of the structure could not be determined by ECSI; a heavy wood/metal cover prevents access. It appears that the top of a well, pump and storage tank is partially submerged. The top of the vault structure was likely enclosed within a wooden/metal structure which sat atop the vault.

The farm house, tenant house and barn structures are reported to have been heated with hot water oil heat ("hot water fuel oil conversion") on property ownership records maintained by the Town of Goshen (Appendix C). Property records do not indicate that a fireplace existed within the tenant and farm houses; however, based on a photograph attached to the property records two sizable chimneys existed on each side of the farm house. These chimneys were likely used to burn wood for heat, in addition to oil heat. A photograph reviewed by ECSI (property record photograph) depicts a small chimney on the tenant house, which is typical of fuel fired heating systems used during the 1950's. An upright portion of a tank vent, or fill port pipe, was observed adjacent to the foundation of the farm house (Photo No. 12). In addition, several types of discarded materials (wood, glass, iron) exist within the limits of the foundation.

An approximate 1,000 gallon above ground storage tank (a corroded and partially on-ground tank) lies near the remains of the two hillside barn sections (Photo No. 13). A petroleum product odor (likely fuel oil) was observed while standing upgradient of a connected tank vent; the tank was likely utilized to store fuel oil for heating the barn structures. No visible evidence of a release exists at the surface; however, the ground surface is irregular and thus, the former grade of the tank is covered with soil.

Based on Town records, a partial basement existed below the farm house and a full basement existed within the tenant house. No surface remains of the tenant house exist to indicate the location of this structure. ECSI could not determine the location of the tenant house by way telephone interviews with John E. Bach, representative of the Kimberly Land Company (Personal Conversations, November 27 and December 18, 2013). It is important to note that Town of Goshen property records do not note any information describing the type (above ground or underground), location and size of on-site petroleum storage tanks, which likely contained fuel oil for heating the farm house and tenant house. The implications of possible on-site tank usage is provided by the notation, "hot water fuel oil conversion", as indicated on the property records

developed for each structure; a vent/fill port pipe section observed by ECSI along the farm house foundation, and the existence of a discarded approximate 1,000 gallon above ground petroleum storage tank, also implies evidence of on-site storage tank use for space heating purposes.

5.2 Dump Sites

As part of conducting site inspections in accordance with ASTM standards, ECSI identified three (3) areas where various types of waste materials were buried and/or scattered across the surface. These materials were primarily household items and house construction debris dating back to the 1950's and late 1960's. Objects identified by ECSI included cars, white goods (i.e. stoves and electric heaters), assorted direct drive (motor driven; tractor power takeoff) farm equipment (i.e. hay bailer, thresher), disc plows, vehicle chassis, empty rusted 55-gallon drums, identifiable and unidentifiable buried and bagged waste, glass, wood of various dimensions, plastics and a large assortment of metal objects including galvanized bulk milk tanks, bed frames, corrugated roofing materials, piping and hot water tanks, plastic toys, several tires and wheels and asbestos shingles. Discarded materials exist at the base of the hill where the two hillside barn sections existed; buried materials also exist on portions of the top of the hill, as well as below grade along the north, west and east edges of the hilltop (Photo Nos. 14 through 16). Buried waste is evident as waste materials protrude from what appears to be an 12 to 18 inch soil cover. The above noted motor driven farm equipment implies that gasoline was likely utilized on-site to operate motors/tractor (power takeoff) to run this equipment. The empty rusted 55-gallon encountered by ECSI were severely corroded/weathered and thus, labels indicating the types of substances previously contained in the drums (i.e. perticides/herbicides; hydraulic or motor oils) were not observed.

A dump site also exists within the east-central limits of the property, approximately 200 feet west of the Wallkill River (Appendix D; Photo No. 17). Metal objects, glass, plastics and parts of vehicles/farm equipment are scattered across the surface, some of which are partially buried. This area also depicts evidence of past mining whereby immediately adjoining grades are steep; vegetation within the approximate limits of the area consists of the type commonly found in areas of disturbed soils. Overall, an abrupt change in surface grades and vegetation serves to delineate where previously disturbed and natural conditions exist. Historical aerials depict this area as being open with dirt road access. No records of preexisting structures near this area were found on file with the Town of Goshen.

Approximately 250 feet northeast of the second dump lies a third dump site, which is situated along the Wallkill River, and within the floodplain of the River. Some of the waste observed (metals, tires/wheels, white goods; farm equipment), include bagged recognizable and unrecognizable wastes, which are exposed below and above the ordinary high watermark of the riverbank (Photo Nos. 18 through 20). Given that this area lies within the floodplain of the Wallkill River, it is susceptible to the rise and fall of high velocity flood waters, conditions of which are evident by torn garbage bags and severely eroded riverbank. Historical aerials (1974) depict unrecognizable objects near the area of the River dump site (possibly material deposition) and dirt access road which connect this area with the central-eastern portions of the property, as well as one of the two mines utilized by prior farmers depicted on a historical aerial dated 1968

(Appendix D). Further, an abrupt change in surface grades and vegetation serve to delineate areas previously disturbed by dumping, compared to adjoining natural conditions, north and south.

No information regarding past dumping practices could be obtained by way of telephone interviews conducted by ECSI (i.e. NYSDEC personnel, past property owners and/or owner representatives).

5.3 Historical Records Review

Historical topographic maps are a valuable resource when documenting the prior use of a property and its surrounding area. EDR conducted a search of available public and private color historical topographic map collections and identified maps of the site for the following years: 1908, 1942, 1969 and 1976 (Photorevised). As noted, copies of the entire search reports and data gathered by EDR are contained in Appendix D, including the historical topographic maps (see Historical Topographic Map Report; October 25, 2013); the findings of the topographic map review are presented below.

1908 Topographic Map

The 1908 topographic map depicts a single structure in the vicinity of where the on-site farm house may have once existed. The Erie Lakawanna rail bed approximates the current day route of the line. An unfinished road appears to connect with the rail bed near the southwestern corner of Parcel II. This road travels south across Route 17M and to a land area in the vicinity of the Orange County Landfill property. The Wallkill River is depicted east and appears to be similar in shape and orientation to that of the current day watercourse. Mapped contour elevations for the majority of the site (except past mined areas), and that of the surrounding area, appear to be approximately the same as current day elevations.

1942 Topographic Map

Additional structures are depicted off-site, south, which comprise some of the current day facility buildings utilized by the Mid-Hudson Psychiatric Center. The rail bed, the flow pattern of the Wallkill River and on-site topographic features (except past mined areas) are similar to that of the 1908 map. No on-site structures are depicted. The topographic features of immediately surrounding properties are the same as those depicted on the 1908 map.

1969 Topographic Map

The 1969 topographic map depicts the approximately location of the former on-site farm and tenant houses. A small pond appears north, which approximates the location of a current day wetland (delineated in 2008 by TES as Wetland E). Two water tanks and additional structures appear on the Mid-Hudson Psychiatric

Center to the south. The rail bed, the flow pattern of the Wallkill River and on-site topographic features (except past mined areas) are similar to that of the 1942 map. In addition, the topographic features of immediately surrounding properties are the same as those depicted on the 1942 map. A sizable off-site pond exists southeast of the site within a land area developed as the Al Turi Landfill.

1976 Topographic Map

As with the 1969 map, the approximately locations of the former farm and tenant houses are depicted; the small pond (north) is also depicted. The two water tanks and the same number of structures exist at the Mid-Hudson Psychiatric Center property, south. The rail bed, the flow pattern of the Wallkill River and on-site topographic features (except past mined areas) are similar to that of the 1969 map. Further, the topographic features of immediately surrounding properties are the same as those depicted on the 1969 map. A sizable off-site pond exists southeast of the site within a land area later developed as the Al Turi Landfill.

Historical aerial photographs, also a valuable tool for environmental assessment, were obtained by EDR for the subject site and vicinity. Available aerials are dated 1942, 1968, 1974, 1984, 1991, 1994, 2006, 2009 and 2011 (Appendix D). As noted, Appendix D also contains aerial images labeled by ECSI to present site features and conditions; the findings of the aerial photograph review are presented below.

1942 Aerial Photograph

This aerial image is blurred; however, internal access roads and evidence of agriculture activity can be seen. The pattern of the Wallkill River is similar to the current day flow pattern. The Erie Lakawanna rail bed lies north and west and the water resources within the limits of Parcel I can be seen (northwest). The area presumed to be one of three on-site dumps appears to be cleared (east-central). Also, a pond/wetland lies north, immediately west of the hillside barn sections. There is no possible direct visible evidence of environmental risks or liabilities associated with the site, or immediately surrounding area in this photograph.

1968 Aerial Photograph

This photograph depicts five (5) agricultural fields, the farmstead structures (north), the pond (north) and internal access roads, including the original dirt access road. One of the two farmer's mines is depicted east, just west of the Wallkill River; an access road leading to/from the mine is also depicted. A pond/wetland lies immediately west of this mine. The pattern and configuration of the Wallkill River is similar to the current day flow pattern. A small cleared forest area lies southwest of the small mine area (also east-central) and approximates the area observed in the field to consist of a former mine/dump area. The Erie Lakawanna rail bed is depicted north and west. The hill located within

the southwest portion of Parcel II is vegetated with trees and shrubs. Buildings owned and maintained by the Mid-Hudson Psychiatric Center are depicted, along with two water towers. The water resources within Parcel I are also depicted. No visual evidence of landfill development exists on the Al Turi Landfill property, east. Visible evidence of suspect environmental risks/liabilities appear in this photograph, primarily related to visual evidence past mining and dumping.

1974 Aerial Photograph

As with the 1968 photograph, this photograph depicts five agricultural fields, the farmstead structures (north), internal access roads (including the original access road), the on-site pond (north). The second of the two farmer's mine area is depicted near the entrance of the site, southeast of the original access road. The nearby pond/wetland (south) can be seen and the east-central forested area observed to be cleared in the 1968 photograph, appears to be idle and vegetated. Unidentifiable objects appear at the end of the above noted access road leading to and from the mine, in close proximity of the Wallkill River, (near the observed dump site along the Wallkill River). The pattern and configuration of the Wallkill River is similar to the current day pattern. The Erie Lakawanna rail bed is depicted north and west. The hill located within the southwest portion of Parcel II is further vegetated with trees and shrubs. Buildings owned and maintained by the Mid-Hudson Psychiatric Center are depicted, along with two water towers. Water resources within the limits of Parcel I can also be seen. Landfill development (the Old Al Turi Landfill) is depicted on the Al Turi Landfill property, southeast. Visible evidence of suspect environmental risks/liabilities appear in this photograph, primarily related to visual evidence of past mining and dumping, as well as the development of the Old Al Turi Landfill (east).

1984 Aerial Photograph

This photograph depicts five agricultural fields, the farmstead structures (north), internal access roads (including the original driveway access). The pattern and configuration of the Wallkill River is similar to the current day conditions. The two former farmer's mines appear to have been discontinued with some vegetative cover depicted across the surface of each. The pond/wetland located west of the Wallkill River is depicted. The eastern portion of Parcel II continues to appear to be utilized for farming. The Erie Lakawanna rail bed is depicted north and west. The hill located within the southwest portion of Parcel II is further vegetated and additional buildings can be seen (including land clearing) at the Mid-Hudson Psychiatric Center property, including two water towers. Water resources within the limits of Parcel I can also be seen. Landfill development at the Al Turi Landfill has continued (south/southeast); a leachate storage lagoon is depicted near the Wallkill River, opposite Parcel A. The Old Al Turi Landfill appears to have been covered with a soil cap; a land area immediately north of the landfill depicts land clearing. Other than the ongoing development (expansion) of the Al

Turi Landfill, no possible direct visible evidence of environmental risks or liabilities exist for the site, or immediately surrounding areas.

1991 Aerial Photograph

This photograph represents an inferred (slightly blurred) image of the site and surrounding areas. Some of the same features noted above can be seen (less the farmstead structures; it appears that the on-site structures may have been raised), along with evidence of the continued expansion of the Al Turi Landfill. In addition, a mine operation owned and operated by the Al Turi Landfill, Inc. is depicted north, and opposite the site. This mine was utilized to obtain material for landfill construction and cover in support of the continued operation/closure of the landfill. A leachate treatment plant can also be seen next to the previously noted leachate storage lagoon. Land clearing activities are also depicted south of Al Turi Landfill, along the south side of NYS Route 17M. Other than the ongoing operations of the Al Turi Landfill, no possible direct visible evidence of environmental risks, or liabilities associated with the site, or immediately surrounding areas, is depicted in this photograph.

1994 Aerial Photograph

This photograph also represents an inferred image of the site and surrounding areas. The majority of features noted above can be seen (less the farmstead structures), along with evidence of the continued expansion of the Al Turi Landfill. Two areas within the southeastern portions of the site (Parcel II) depict lighter surfaces, which are difficult to distinguish. The mine operation owned and operated by Al Turi Landfill, Inc. continues and a second leachate storage lagoon has been constructed next to the first. Portions of the landfill are being closed and a plastic liner cap is depicted. The Site II landfill gas recovery facility, (owned and operated by J-W Operating Company), is also depicted along the northern edge of the Old Al Turi Landfill. Additional buildings have been added to the Mid-Hudson Psychiatric Center complex. Other than the ongoing operation of the Al Turi Landfill, no possible direct visible evidence of environmental risks, or liabilities associated with the site, or immediately surrounding area, is depicted in this photograph.

2006 Aerial Photograph

This photograph depicts abandoned agricultural fields; the farmstead structures (north) are no longer depicted. Additional access roads can be seen, likely constructed to access the Town of Wallkill sand and gravel operation depicted at the south/southeastern portions of the site (Parcel II). The current day fenced enclosure appears where the former farmstead structures existed and a construction trailer can be seen within the enclosure. A sedimentation basin lies east/central, used to collect and control sediment laden storm water generated by

mining operations. The pattern and configuration of the Wallkill River is similar to the current day conditions and the on-site pond (northeast) has succeeded to an emergent marsh. The two former farmer's mines are well vegetated. The hill located within the southwest portion of Parcel II is densely vegetated and current day buildings can be seen at the Mid-Hudson Psychiatric Center. Water resources within the limits of Parcel I can also be seen. Landfill operations at the Al Turi Landfill have discontinued and the site is fully capped/closed (presumably post-closure status); the leachate treatment plant (including the two storage lagoons) and Site II and Site III gas recovery facilities are depicted along the edge and north of the Old Landfill, respectively. Also, a storm water control basin appears at the northeastern section of the landfill. There is no direct visible evidence of environmental risks or liabilities associated with the site, or immediately surrounding areas, appear in this photograph.

2009 Aerial Photograph

As with the 2006 photograph, this photograph depicts abandoned agricultural fields; the farmstead structures (north) are no longer depicted and the additional access roads can be seen presumably used to access the Town of Wallkill mine at the south/southeastern portions of the site (Parcel II). Town mining activities appear to have been discontinued and the mine depicts evidence of early reclamation. The current day fenced enclosure appears where the former farmstead structures existed and a construction trailer can be seen within the enclosure. The sedimentation basin which lies central-east, continues to be used to collect and control sediment laden storm water generated by prior mining activities. The pattern of the Wallkill River is similar to the current day conditions. The two former farmer's mines are well vegetated. The hill located within the southwest portion of Parcel II is densely vegetated and some current day buildings can be seen at the Mid-Hudson Psychiatric Center. Water resources within the limits of Parcel I can also be seen. Landfill operations at the Al Turi Landfill have discontinued and the site is in post-closure status; the leachate treatment plant including the two storage lagoons, and Site II/Site III gas recovery facilities, are depicted north of the Old Landfill. Also, a storm water control basin appears at the northeastern section of the landfill. There is no direct visible evidence of environmental risks or liabilities associated with the site, or immediately surrounding areas in this photograph.

2011 Aerial Photograph

This photograph depicts most of the same conditions shown in the 2009 photograph. A good vegetation cover exists across the former Town of Wallkill mine, as well as the eastern portions of the site (Parcel II). The Site II landfill gas recovery facility (now owned by Ameresco Power) has been raised; Site III remains in operation. Water resources within the limits of Parcel I can also be seen. There is no direct visible

evidence of environmental risks or liabilities associated with the site, or immediately surrounding areas in this photograph.

5.4 Cultural Resource Survey

ECSI determined that as part of the State Environmental Quality Review (SEQR) process performed by the NYSDEC for considering the issuance of a Mine Land Reclamation Permit to the Town of Wallkill, the NYSDEC required that a Cultural Resource Survey be performed for the project site, primarily areas proposed for mining. During 1994, Columbia Heritage, Ltd. of Chatham, New York completed a survey and report (Orange County # 218) on behalf of the Town. ECSI contacted a representative of the State Historic Preservation Office (SHPO) and requested information pertaining to possible prehistoric sensitivity for the site. The State indicated that multiple pre-contact sites were identified by Steve Oberon, Columbia Heritage, Ltd. Further, the report predates current guidelines (dated 2005) which require greater field coverage for conducting field surveys and thus, the mapping is insufficient to clearly define what areas were subjected to systemic examination. In addition, no information exists with SHPO to clarify whether or not the remainder of the site (Parcel II) was ever surveyed by way of archaeological field investigation.

The State representative further noted that given the site's proximity to the Wallkill River and to a number of previously identified area archaeological sites, the portions of the property not evaluated (other than disturbed by mining) have a moderate to high probability of containing archeological sites. As such, the SHPO would recommend that an archaeological survey of the undisturbed portions of the site be performed prior to any new ground-braking activities planned for the site (Personal Communications, Philip Parasio, Division of Historic Preservation, New York State Office of Parks, Recreation and Historic Preservation, December 18, 2013).

ECSI contacted Steve Oberon and requested information pertaining to the work performed and confirmation as to which areas of the site were investigated. ECSI anticipates receiving information from Mr. Oberon in the near future (Personal Communications, Steven J. Oberon, Columbia Heritage, Ltd., December 24, 2013).

5.5 Sanborn Fire Insurance Map Review

EDR performed a search of its Sanborn fire insurance map collection which presents historical development of area property structures and ancillary buildings. EDR determined that no maps exist for the area.

6.0 ENVIRONMENTAL RECORDS REVIEW

EDR searched available environmental records to facilitate evaluation of potentials for environmental risk and liability for the site, as well as immediately surrounding parcels (ASTM E 1527-05, "Standard Practice for Environmental Site Assessments"). EDR's reports includes records gathered within a 1/8 mile radius of the center point of the site. The information presented in their report centers on the use and past closure (removal and abandonment in-place) of underground storage tanks at the Mid-Hudson Psychiatric Center, and information about the Orange County and Al Turi landfills (Appendix D).

Two other facilities, the Ameresco Landfill Gas Recovery Facility (LGRF) located along the north boundary of the Old Al Turi Landfill, and the Waste Management Systems facility (formerly All-Waste, Inc., an active waste transfer facility located along Hartley Road), are approximately 0.5 miles east of the site (Figure 1-1). With the exception of the Mid-Hudson Psychiatric Center, the other facilities are located at lower elevations (i.e. downgradient) of the site.

A summary of the information contained in the EDR Radius Map Report (with GeoCheck^R) is presented below. ECSI has provided supplemental information about the status of the Old Al Turi Landfill; this is based on past and continued services ECSI provides to Al Turi Landfill, Inc. as part of maintaining compliance with applicable State and Federal solid and hazardous waste management regulations. ECSI also obtained supplemental information about the status of the Orange County Landfill by way of telephone interviews with representatives of the NYSDEC.

6.1 EDR Radius Map Report With Geo-Check^R

As shown on the GeoCheck^R Overview Map prepared by EDR, four (4) records of either petroleum-based releases from leaking storage tanks, surface releases, petroleum bulk storage tank registrations, or regulated State Hazardous Waste Sites (SHWS) were reported within an approximate 0.125 mile (1/8 mile) radius distance of the site (Appendix D). It is important to note that several available State and Federal environmental records were searched by EDR, as listed in their "Radius Map Report", in order to provide ECSI with the maximum amount of information available and the most current status of potential spills/releases, and landfill/waste facility activities.

As noted, three of the four record searches involve property locations which are at a lower topographic elevation than that of the site and thus, these records consist of past actions which are "downgradient" of the site. Records of tank failure/possible releases at the Mid-Hudson Psyciatric Center are reported to have been "closed", thereby reflecting State involvement for the typical satisfactory closure/remediation of leaking underground tanks, or notice of facility (tank system) closure. The following records were identified in EDR's environmental record search as being within 0.125 mile distance (1/8-mile distance) from the center of the subject site, including the site which is denoted as the "Target Site":

Echo Lake Industrial Site, 41 Echo Lake Road, Goshen, New York 10924
Target Site

This report relates to the "target site". Based on EDR's search of possible records for the site, no records maintained by the information sources searched were identified.

Mid-Hudson Psychiatric Center 2834 NYS Route 17M, New Hampton, New York
(West/Southwest; Distance 1,720 feet; Higher Elevation at 522 feet msl)

Records published for this site revealed that in 1996 and 1997, representatives of the Center closed (in-place) and/or removed seven (7) underground storage tanks at this facility. The size and substances stored in these tanks included 500 gallon (#2 fuel oil) and 15,000 gallon (#6 fuel oil storage tanks) underground tanks. A 2,000 gallon underground gasoline tank was also removed (closed). No records of any reported spills, or releases exist.

Old Al Turi Landfill, 73 Hartley Road, Goshen, New York
Former Privately Operated Solid Waste Management Facility
(South; Distance 500 feet; Lower Elevation at 369 feet msl)

This landfill (a State Hazardous Waste Site, SHWS) consists of a 44 acre landfill which is bounded on the west by the Wallkill River, and Hartley Road, east. A former mine site and a meadow area, (owned and maintained as buffer lands by Al Turi Landfill, Inc.), is situated north of the Old Al Turi Landfill. An additional landfill area, (approximately 76 acres) previously operated immediately south of the Old Al Turi Landfill, known as the "Operation Landfill".

No liner system exists below the base of the Old Al Turi Landfill; tight till soils are reported to comprise the base of the landfill. Landfill activities began at this portion of the Al Turi Landfill in the late 1960's. During the period of 1968 and 1981, the landfill accepted hazardous materials in the form of 230 tons of still bottom residues, waste solvents, alkyl isothiocyanate waste (used for mustard flavoring) from Hercules, Inc., a flavor manufacturer located in Middletown, New York. This action resulted in the NYSDEC requiring that Al Turi Landfill, Inc., the "responsible party", conduct a Remedial Investigation/Feasibility Study (RI/FS) of the Old Al Trui Landfill. The RI/FS process included evaluation of groundwater data available for the landfill since 1979, as well as health implications of potential landfill gas emissions associated with operations. In 1996, the NYSDEC issued a Record of Decision (ROD) which outlined the types of engineering and institutional controls which must be implemented to safeguard the environment and public health. The construction of a NYCRR Part 360 cap was completed for the Old Landfill in 2001; the institutional control recorded at

the County Offices required that groundwater be restricted from consumptive use within the meadow's north of the landfill. The ROD also required that a contingency plan and a separate and very specific groundwater monitoring program be developed and implemented to monitor groundwater conditions around the Old Landfill. In addition, surface water within the Wallkill River was required to be monitored. Currently, groundwater and surface water (the Wallkill River) is monitored for various organic compounds associated with past waste accepted at the landfill.

The contingency plan required by the State includes a pump and treat system including the construction of a slurry wall along the River, with the installation of groundwater extraction wells designed to remove groundwater behind the wall and direct potentially contaminated water to an on-site treatment process. The contingency plan is require to be implemented if certain groundwater trigger values are found to be exceeded in monitoring wells along the Wallkill River. To date, no groundwater trigger values have been exceeded and the cap has and continues to function to reduce potentials infiltration and leachate generation below the Old Landfill. The Part 360 cap is comprised of a landfill gas collection and clay layer with geo-membrane atop these layers, as well as a drainage layer to route clean runoff to surrounding sedimentation basins.

Landfill gas generated by the Old Al Turi Landfill is collected by a network of vertical and horizontal piping system deigned to route gas to an on-site utilization plant (Ameresco), as well as to control odors. The Old Landfill has been classified by the NYSDEC as a Class 2 Hazardous Waste site; Class 2 implies that the site presents a potential significant threat to public health, or the environment, whereby action is required. During 2010, the NYSDEC reclassified the site as Class 4, a site that is properly closed, is under required and continued management, and does not present a significant threat to public health or the environment.

As noted, the Operational Landfill lies south of the Old Al Turi Landfill; this landfill was constructed to meet base-liner regulations developed by the NYSDEC over time which included single and double composite liner systems (primary and secondary liner systems) which are monitored for potential releases to this day. This landfill was closed and capped during the early 2000's (a state-of-the-art Part 360 cap) and both groundwater and surface waters within the Wallkill River are monitored in conjunction with the monitoring program implemented for the Old Al Turi Landfill. To date, water quality monitoring has not indicated any impacts to the Wallkiill River and no significant release of leachate has ever been observed for the landfill. Further, the part 360 cap installed across the landfill have functioned to reduce infiltration potentials and thus, the generation of landfill leachate has significantly reduced since closure (capping); nearby private wells monitored by Al Turi Landfill, Inc. have not been impacted by past landfill operations.

The entire landfill is regulated by USEPA under a Title V Air Permit, which requires that the landfill cap, and gas collection systems, be maintained and monitored for emissions (including odors); the on-site Ameresco LGRF operates under a separate Title V permit which requires monitoring emissions produced by two (2) engine generators operated to produce power for the local grid. In addition, a separate enclosed contingency flare is required to be monitored and maintained; this flare is used only when the engine generators experience downtime (i.e. during maintenance) and for other contingencies, as necessary.

In addition to the Title V permit, Al Turi Landfill, Inc. possesses a State Pollution Discharge Elimination Systems (SPDES) permit for the storage and treatment of leachate generated by the landfill. This facility is currently being considered for closure as the amount of leachate has diminished to a level where maintenance and continued use of the Plant is no longer feasible. Al Turi Landfill, Inc. is currently in the process of arranging to haul and treat their on-site leachate at the City of Beacon Wastewater Plant located in Dutchess County, New York. No odors, nor any threats of off-site landfill gas migration exist for the landfill.

All Waste Systems, Inc., Hartley Road, Goshen, New York 10924
(Spill No. 9813685; 02/09/99; former solid waste transfer facility)
(Southeast; Distance 2,598 feet; Lower Elevation at 399 feet msl)

During February 1999, a tank test failure was reported to the NYSDEC; the records indicate that two (2) underground gasoline storage tanks were removed and contaminated soils excavated. Corrective actions were implemented by the responsible party and the release was reported to be minimal for fire and hazards. This site is located a large distance and downgradient of the Echo Lake Industrial Site and does not pose a threat to the site.

Ameresco LGRF, 95 Hartley Road, Goshen, New York 10924
(Southeast; Distance 2,771 feet; Lower Elevation at 409 feet msl)

This facility is a separate entity which receives and utilizes landfill gas generated by the Al Turi Landfill (120 acres, Old and Operational landfills). The facility operates under a NYSDEC Solid Waste management Facility permit and in accordance with a gas-rights-agreement with Al Turi Landfill, Inc. This agreement requires that Ameresco must utilize landfill gas and maintain a contingency flare on-site to ensure proper and full control of the amount of landfill gas generated at any time by the entire landfill.

The Amereco facility (formerly owned and operated by J-W Operating of Dallas, Texas) has experienced surface and subsurface releases of virgin motor

(lubricating) oils, #2 fuel oil and ethylene glycol (antifreeze) as part of their operations. In addition, the facility has managed aboveground storage tanks which have periodically released petroleum product and impacted on-site soils. ECSI was previously retained by J-W Operating Company (since 1991) and Ameresco (2001 through to 2012) to respond to each release and clean up spills/releases reported over time. The most significant cleanup was the excavation and removal of over 8,600 tons of contaminated soil and concrete resulting with the demolition and closure of their former Site II LGRF. In each spill case, the site owners responded promptly to address releases and properly addressed each. At no time were groundwater resources impact as a result of past facility releases. This facility is located at a lower elevation than that of the Echo lake industrial Site and overall, it is downgradient of the site.

Orange County Landfill, NYS Route 17M, Goshen, New York 10924
Former Permitted NYSDEC Solid Waste Management Facility
(South; Distance 3,096 feet; Lower Elevation at 416 feet msl)

This facility is reported to be "inactive", and under post-closure care. While an active facility, the landfill accepted County generated solid waste materials for disposal. While not reported by EDR as a hazardous waste landfill, such materials were accepted at this site to the extent that the site is classified by the NYSDEC as a Class 2 Hazardous Waste Site. This landfill has been closed and monitored (groundwater, surface water and landfill gas) for more than 20 years. The NYSDEC plans to reclassify the landfill as a Class 4 site; however, the eastern portion of the landfill has recently experienced slope failure and leachate outbreaks which have postponed reclassification. Further, the State has required the County to promptly address these problems and monitor conditions.

The landfill has had a reputation for not generating enough landfill gas to operate engine generators for power generation. A Part 360 cap was constructed across the landfill, which is monitored per USEPA Title V requirements for landfill related emissions. Over time, passive vents have been installed within the cap to vent landfill gas. No odors, nor any threats of off-site landfill gas migration exist (Personal Communications, Carl Hoffman, NYSDEC Division of Site Remediation, December 13, 2013).

A list of "orphan sites" which may, or may not pose, a potential threat to the site, was provided by EDR. ECSI reviewed this list and confirmed that the locations listed are either downgradient, or at lower elevations and distances which do not pose environmental risks or liabilities for the site.

In addition to the records searches performed by EDR, ECSI reviewed available NYSDEC records of petroleum spills (NYSDEC Spills Database) for the period of 1985 to 2013,

for the site and immediately surrounding properties. No record of any petroleum releases exist for the site and immediately surrounding properties.

As noted, during a period when the Town Wallkill Department of Public Works operated their mine, a representative of the NYSDEC Mine Land Reclamation group had found the Town in violation of their permit for storing stumps/tree limbs which originated from off-site locations. The State was concerned that the Town may utilize these materials as back fill. Applicable regulations allow the burial of stumps/trees on a given mine site, if these materials originate from on-site areas; however, the State required that the Town remove, or recycle, the stumps/tree limbs stored on-site and not utilize these materials as back fill. Eventually, the stumps and tree limbs observed by the State were chipped for use in stabilizing reclaimed areas of the mine and to promote vegetation growth.

In addition, the Town was found by the State to be in violation of mining beyond the approved elevation (depth) of their mine. This was corrected as part of a permit renewal process to ensure that excessive mining be discontinued and in preparation for reclaiming areas excavated beyond the approved depth of the mine.

6.2 EDR City Directory Abstract

EDR's City Directory Abstract is a screening tool used for evaluating "potential liability on a target property, resulting from past activities". EDR's City Directory Abstract includes a search and abstract of available City directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals. Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1989 through 2013. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property. The summary of the information obtained is provided in greater detail within the EDR Radius Map Report with GeoCheck for documentation purposes (Appendix D).

6.3 EDR Building Permit Report

This report typically provides records of environmental conditions, based on available information published through a local municipality. EDR has indicated that they have searched their complete collection of information and as of 10/24/13, EDR does not have access to Town of Goshen building permits in the locality of the target property site (Appendix D).

In addition to the EDR search, ECSI has attempted to speak with the Town of Goshen Building Inspector to determine if problem conditions exist on-site and if any violations, (based on past land use) were issued by the Town for the site. Unfortunately, the Inspector has not as yet responded to ECSI's request for information.

6.4 Certified Sanborn Map Report

Sanborn maps (and Fire Insurance Maps) are regarded as being a helpful tool for determining historical property features, as communities grow over time. EDR has performed a search of Sanborn maps for the site and immediate areas; no maps are available for the site and surrounding areas (Appendix D).

6.5 EDR Property Tax Map Report

Tax maps are regarded as being a useful tool for determining property boundaries and other characteristics. EDR has performed a search of possible tax maps for the site and immediate areas and has indicated "no coverage" (Appendix D). Tax maps maintained by the Town of Goshen and the Town of Wawayanda were inspected by ECSI to confirm parcel boundaries, designations (Section, Lot, Block) and acreage.

6.6 EDR Environmental LienSearch Report

ECSI retained EDR to perform an Environmental Lien Search of the four parcels which make up the site (Parcels I, II, A and B). On November 20, 2013, EDR reported that no environmental liens were found for the approximate 212 acre property site. Available land title records were reviewed for environmental cleanup liens and other activities/use limitations, as well as listings of engineering and institutional controls. This was completed to satisfy the USEPA "all appropriate inquiry rule", as well as meet the ASTM standard for deterring if "activity and use limitations" (AULs) exist for the property site (Appendix D).

7.0 GEO-CHECK PHYSICAL SETTING SOURCE ADDENDUM

EDR also provided ECSI with brief descriptions of physical settings to aid ECSI in evaluating if contaminant pathways may exist on-site, relative to possible suspect conditions. A site's physical settings can imply contaminant direction and migration potentials, based on conditions.

7.1 Site Topography and Surface/Subsurface Drainage Patterns

The general topographic gradient of the site is east/northeast, as such groundwater flow direction is likely to be east northeast for most of the site. Groundwater flow at the extreme southwestern limits of the site likely occurs in a westerly direction, as well as north and east. An elevation profile provided by EDR for the site indicates that the northern limits of the property along Echo Lake Road lie at approximately 398 feet msl; the greatest elevation occurs near the southern site boundary south at 551 feet msl. Across this relief, a minimum elevation of 371 feet msl occurs north-central. From east to west, the site topography is 410 feet msl near the Wallkill River and 455 feet msl at the western limits of the property. A maximum east-west elevation occurs at 516 feet msl, within the west-central region of the property.

7.2 Flood Plains, Wetlands and Watercourses

Floodplain maps published for the site and vicinity (FEMA Food Insurance Maps; Panel 36071C) depicts 100- and 500-year flood limits along the Wallkill River, as well as northwest along portions of Parcel I. Available National Wetland Inventory mapping presents surrounding jurisdictional areas, which are outside the boundaries of the site. As noted, TES identified eleven wetlands/watercourses on-site, including the Wallkill River, which represent site specific conditions beyond those able to be determined by EDR. Two on-site wetlands/watercourses were identified by TES on Parcel A which are regarded as being Federal jurisdictional wetlands as they connect with the Wallkill River, also "Waters of the United States". The northwest portion of the site (Parcel I) consists of both State and Federal jurisdictional wetlands.

7.3 Soils

According to EDR reported information as well as information published within the Soil Survey of Orange County, New York (NRCS 2013), the majority of the site is comprised of Mardin, Erie and Riverhead soils (Mardin Gravelly Silt Loam, MdB, MdC and MdD; Erie Gravelly Silt Loam, ErA and ErB; and Riverhead Sandy Loam RhB, RhC and RhD); soil texture for these soils is reported to be gravelly, sandy loam and silt loam (Appendix E). A Hydrologic Classification of B and C (moderate to slow infiltration rates) applies and seasonal high water table can be a limitation on sites for dwellings with basements (i.e. Erie soils). Further, the subsoil of Erie soils can present limitations on sites for septic tank absorption fields. The seasonal high water table, slope, the erosion hazard, and moderate potential frost action for Erie soils are listed in the Survey as limitations for intensive development. Erie soils are located within the north/northwestern portions of the site (Parcels I and II).

As noted, the Kimberly Land Company received a soil group assessment (April 1981), which was performed by a representative of the local Soil Conservation Services office. The assessment identified on-site agricultural soil groups and total acreage (Parcels I and II). Based on the local SCS assessment (Appendix E) soil groups 2, 4, 6 and 7 were reported to exist within the boundaries of these parcels, which made up a total of 118.1 acres. These soil groups are regarded by the New York State Agriculture and Markets (NYS-A&M) to be suitable and ideal agricultural soils. The mission of the NYS-A&M is to promote agricultural industry and forester agricultural environmental awareness within the State. According to Town of Goshen the site (Parcel II) lies within Agriculture District #2.

7.4 Radon

Radon gas is an odorless, natural radioactive gas found in soils, rock and water throughout the Unitized States which over time, can cause lung cancer for occupants of affected buildings. The US Environmental Protection Agency (USEPS) has issued a health based radon threshold of 4.0 pCi/l (pico-curies per liter) for protection of building occupants. Based on EDR's Radius Map Report, the average radon level for living areas in Orange County is 1.270 pCi/l, based on 91% of the sample obtained; the average for basement areas is 2.370 pCi/l (73% of the sample obtained). Given that no near surface, or bedrock outcrops exist at the site, radon levels are expected to be below the health based regulatory threshold of 4.0 pCi/l for the site.

7.5 Private and Public Water Supply Wells

Based on the results of the ASTM search performed by EDR, privately owned wells and groundwater monitoring wells exist within 1/4 to 1/2 mile of the center of the site (see Physical Source Setting Map in EDR Radius Map Report, Appendix D). Two wells are noted to exist on the nearby Mid-Hudson Psychiatric Center property which likely provide water supply for facility operations. Two other private wells exist beyond the northeastern corner of the site and on the opposite side (east) of the Wallkill River. No public water supply wells are indicated to exist within 1/4 to 1/2 mile of the center of the site. While no private wells are noted along Echo Lake Road west of the site, private wells likely exist on residential properties west of the road.

Two water supply test wells exist on-site (PW-1 and PW-2), near the northeastern corner of the property within 5 acre, rectangular easement area. During 1987 to 1989, the wells were installed by EA Science & Technology as possible public water supply well sources for the Town of Wallkill. During November 2013, Miller Hydrogeologic Incorporated (MHI) was retained by AKI to perform an investigation to confirm and determine the individual yield rates of the two test wells, as well as obtain water samples from each well and have each sample analyzed for New York State Department of Health (NYSDOH) drinking water parameters (Part 5). A report has been prepared by MHI under separate cover.

Based on the investigation performed and results generated by MHI, well PW-1 is capable of meeting water volume needs of Amy's Kitchen for possible on-site plant operations. Well PW-2 can supply approximately one-third of the demand for plant operations. Water quality test data reported for each well indicate that no laboratory reported parameter

concentrations exceeded NYSDOH drinking water standards. Representatives of Amy's Kitchen, Inc. have recently retained MHI to investigate other sources of water on-site for use in plant operations.

7.6 Groundwater Quality Data

As part of the Phase I assessment, ECSI was able to obtain groundwater sample results for the shallow well (well W-15S) located near the eastern boundary of Parcel A along the Wallkill River; analytical results obtained for this well (dated 1994) indicates that trace concentrations of heavy metals (including Iron) and Phenols were detected in shallow groundwater. Consultants for Al Turi Landfill, Inc. concluded that the reported trace concentrations are related to the upgradient water quality of the Wallkill River, which is highly influenced by farming operations, situated south of the landfill. This well has not been tested since 1994.

8.0 ZONING AND PERMITTED USES

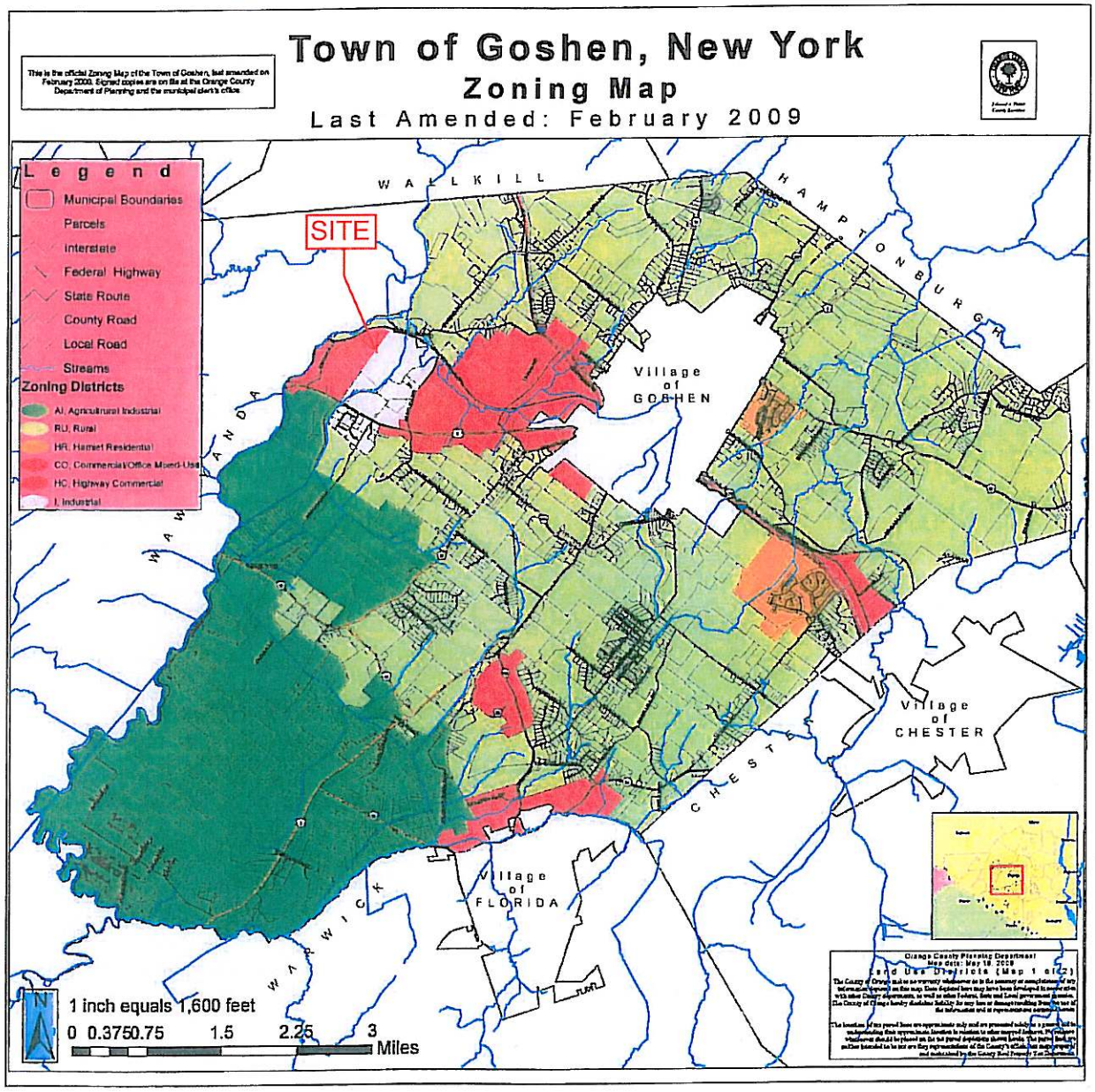
As noted, the majority of the site lies within the Town of Goshen. The Town of Goshen Zoning Map indicates that the western portion of the site lies within a Commercial/Office, Mixed Use zone (CO District); the eastern portion lies within an Industrial zone (I District). Figure 8-1 presents the "Town of Goshen Zoning Map", which was last amended in February 2009. The Town of Goshen also issued a Town of Goshen, New York Zoning Overlay Map, (last amended June 2004) which presents mapped areas of natural and scenic resources, as well as soil mines. Figure 8-2 presents the Zoning Overlay Map.

Uses permitted by the Town of Goshen under the CO District include large-scale commercial and other nonresidential uses. Business uses (by right) include agriculture and municipal; uses permitted by special permit approval include light industry, kennel, bed-and-breakfast, vet hospitals, recreational uses, educational, health care and wireless communication. Uses subject to site plan approval include multifamily dwellings, accessory apartments, retail and office space and service businesses. Uses permitted in the I District by right include agriculture, and municipal. Uses permitted by special permit approval include mining, public utilities, composting and junkyard facilities (Town Board Approval), services businesses, vet hospitals, warehouse, wholesale business, health care and wireless communication.

The Zone Overlay Map published by the Town of Goshen indicates that the south portion of the site (Parcel A) lies within a watershed area with an aquifer designation of AQ-3. The AQ-3 designation sets the maximum potential limit for density, or intensity of development upon a particular site. This is based primarily upon the findings of the Town-Wide Potable Water Planning Study, dated January 2003 (known as the "Potable Water Study"). Nonresidential uses which are not serviced by public sewer and public water supply must be evaluated on a case-by-case basis for their impact on groundwater supply and quality. Based on information presented in the EDR Radius Map Report, no public water supply wells are located within proximity of the site; however, private wells exist nearby at the Mid-Hudson Psychiatric Center and at residential properties along Echo Lake Road, west of the site.

The 12.1 acre portion of Parcel I which lies within the Town of Wawayanda is zoned Suburban Residential (SR District). Figure 8-3 presents the Town of Wawayanda Zoning Map which was adopted May 7, 2009. The primary uses permitted (by right) under this zone is residential; the zone allows for a range of housing types services by public water and sewer in areas of the Town easily access by regional transportation systems and planned for high-density residential development.

Appendix F contains published listings of permitted uses for both the Town of Goshen and the Town of Wawayanda.



SOURCE: TOWN OF GOSHEN ZONING CODE

FIGURE 8-1

TOWN OF GOSHEN ZONING MAP

ECHO LAKE INDUSTRIAL SITE
ORANGE COUNTY, NEW YORK

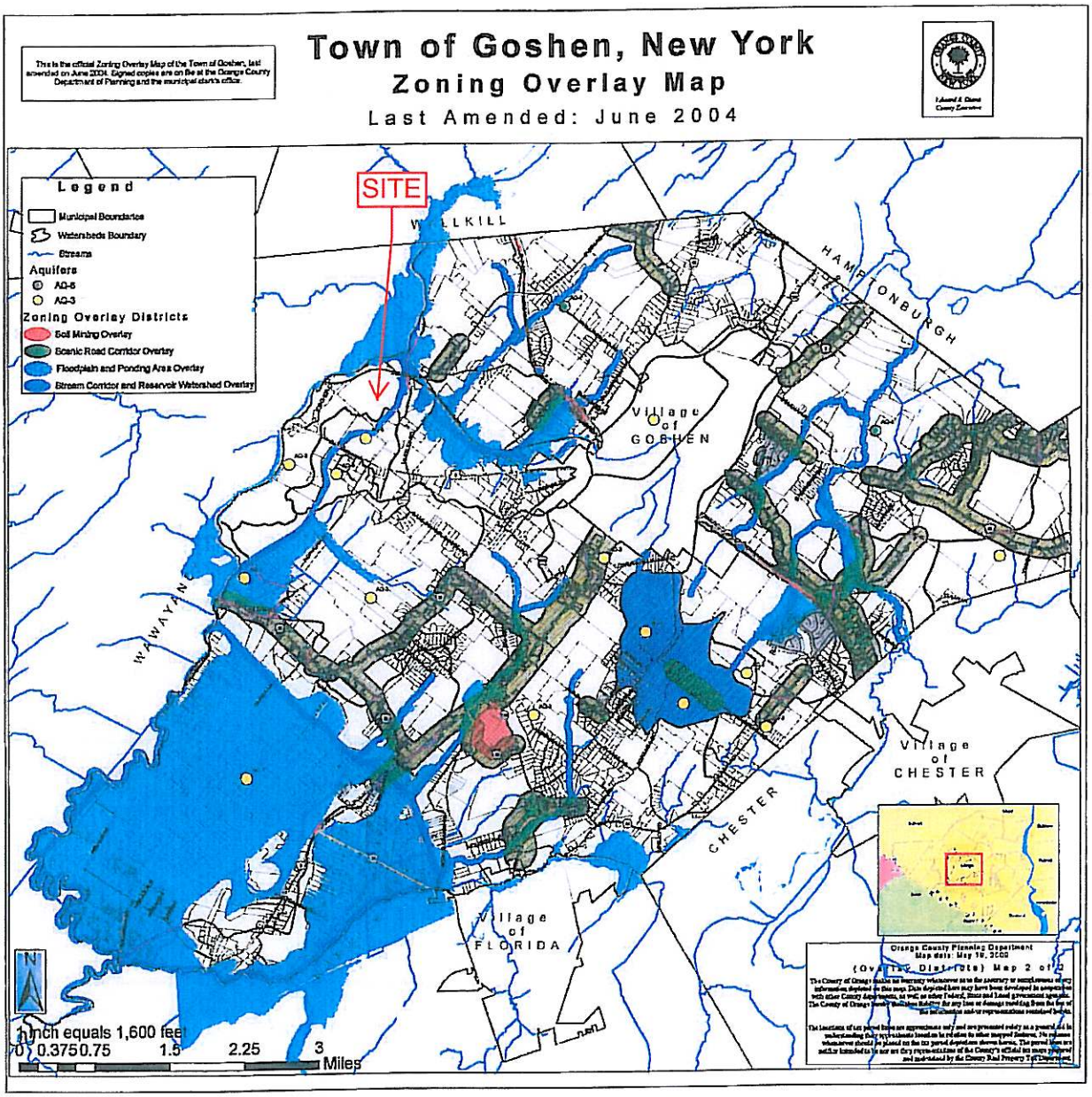
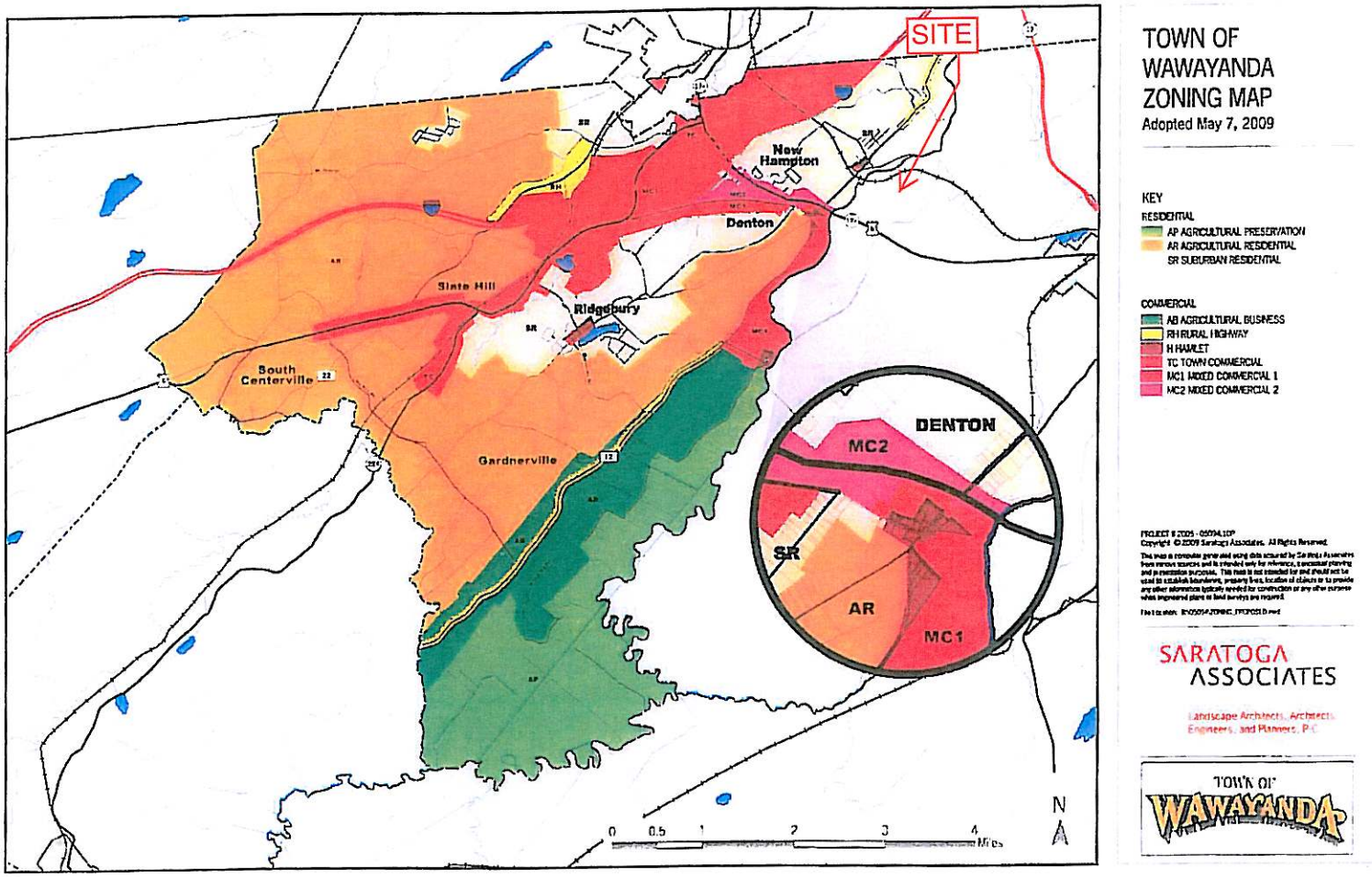


FIGURE 8-2

TOWN OF GOSHEN ZONING OVERLAY MAP

ECHO LAKE INDUSTRIAL SITE ORANGE COUNTY, NEW YORK

SOURCE: TOWN OF GOSHEN ZONING CODE



SOURCE: TOWN OF WAWAYANDA ZONING CODE

FIGURE 8-3

TOWN OF WAWAYANDA ZONING MAP

ECHO LAKE INDUSTRIAL SITE
ORANGE COUNTY, NEW YORK

9.0 CONCLUSIONS AND RECOMMENDATIONS

The objective of the Phase I Environmental Site Assessment is to determine to the fullest extent possible, if any environmental conditions exist on the Echo Lake Industrial Site, or in the surrounding vicinity, that could result in environmental risk and liability for Amy's Kitchen, Inc., the prospective buyer of the site. Information gathered as part of the Phase I Assessment revealed that suspect conditions exist on-site relative to the possible storage and use of fuel oil (records indicating "hot water oil conversions") and gasoline for space heating preexisting farmstead structures and operating farm equipment, respectively.

In addition, three dump sites were observed within the boundaries of the site (Parcel II). These areas contain various types of materials which were buried and/or scattered across the surface of each area. Buried waste is evident as waste materials were observed to protrude from below a 12 to 18 inch soil cover. Materials primarily consisted of household items and construction debris dating back to the late 1960's and early 1970's. Objects identified by ECSI included cars, white goods (i.e. stoves and electric heaters), assorted direct drive (motor driven; tractor power takeoff) farm equipment (i.e. hay bailer, thresher), disc plows, vehicle chassis, empty rusted 55-gallon drums, identifiable and unidentifiable buried and bagged waste, glass, wood of various dimensions, plastics and a large assortment of metal objects including galvanized bulk milk tanks, bed frames, corrugated roofing materials, piping and hot water tanks, plastic toys, several tires and wheels and asbestos shingles. Empty, rusted 55-gallon drums encountered in the field by ECSI were severely corroded/weathered; labels indicating the types of substances previously contained in the drums (i.e. perticides/herbicides; hydraulic or motor oils) were not observed.

Dump Sites

Waste materials were observed at the south base and atop the small hill which marks the location of two former barn sections, northwest of the former farm house foundation (Appendix D). A dump site also exists within a preexisting clearing, just west of the east-central limits of the property, and approximately 200 feet west of the Wallkill River. Metal objects, glass, plastics and parts of vehicles/farm equipment are scattered across the surface, some of which are partially buried. This area also depicts evidence of past mining whereby immediately adjoining grades are steep; vegetation within the approximate limits of the area consists of the type commonly found in areas of disturbed soils. Historical aerials depict this area as being open with dirt road access.

Approximately 250 feet northeast of the second dump lies a third dump site, situated along the Wallkill River, and within the floodplain of the River. Some of the waste observed (metals, tires/wheels, white goods; farm equipment), include bagged recognizable and unrecognizable wastes, which are exposed below and above the ordinary high watermark of the riverbank. Materials observed at the surface and buried waste are susceptible to the rise and fall of high velocity flood waters, of which is evident by torn garbage bags and severely eroded riverbank conditions. Historical aerials depict a dirt access road which connects this area with the central-eastern portions of the property, as well as one of the two mines utilized by prior

farmers, as depicted on a historical aerial image dated 1968. An abrupt change in surface grades and vegetation can be seen which serves to delineate where previously disturbed and natural conditions exist. Records of preexisting structures do not exist.

No information regarding past dumping practices could be obtained by way of telephone interviews conducted by ECSI (i.e. NYSDEC personnel, past property owners and/or owner representatives). Further, based on property ownership records and telephone interviews, the Town of Wallkill may have raised the preexisting farmstead structures.

Farmer's Mines

ECSI's review of historical aerial photographs obtained as part of EDR's ASTM records search, as well as by telephone conversations with prior owners of the property (ownership dating back to 1965), indicates that two "Farmer's Mines" were located along the eastern portion of the property, just west of the Wallkill River. These mines approximate areas of the same type of soils (Riverhead Sandy Loam) which were mined extensively in recent years by the Town of Wallkill Department of Public Works, at the south and southeastern portions of the property. During the time period when the smaller mines were excavated, no regulations existed to control the type of materials used as back fill. In addition, the dump site located approximately 200 feet west of the Wallkill River displays evidence of combined mining and dumping, whereby discarded waste materials can be observed on the surface and partially buried. Also, a historical aerial dated 1974 depicts unrecognizable objects near the location of the dump site ECSI observed along the Wallkill River. No evidence of preexisting structures exist near these areas to suggest that the materials originated by the raising of any structures. Further, it appears that access roads were established to access these areas, including areas where waste materials were observed. ECSI attempted to determine the type of soil material used as back fill in the Farmer's Mines; however, no information could be obtained.

Town of Wallkill Mine

The NYSDEC found the previous stockpiling of tree stumps and limbs within the eastern limits of the Town's mine in violation of Mine Land Reclamation regulations. The State was concerned that these materials were to be used to back fill areas of the active mine (south and southern portions of Parcel II). This area lies within a portion of the site AKI may consider for construction.

Persistent Organic Pollutants

As noted, the site was utilized as a dairy farm whereby hay and corn were grown to feed and care for livestock. ECSI also attempted to learn if other crops were grown on the farm as part of determining whether or not persistent organic pollutants (including/herbicides/ pesticides) could have been utilized as part of past farming practices, in order to control pests and disease. These chemicals are known to persist in agricultural soils which were treated with synthetic chemicals (DDT, Dioxins, PCBs) after World War II. While the farm was small and was not operated as a commercial farm, the possibility exists that some form of control may have been

utilized as several farmsteads across the Untied States use such chemicals to ensure crop yield year after year. As noted, empty, rusted 55-gallon drums observed by ECSI were severely corroded/weathered and no labels indicating the types of substances previously contained in the drums were displayed (i.e. pesticides/herbicides; hydraulic or motor oils).

9.1 Recommendations

Information gathered under the assessment resulted in a determination that suspect conditions may exist for the property relative to the possible existence of subsurface/underground petroleum storage tanks which may have been located in the vicinity of the former farm and tenant houses. The existence waste materials found within three on-site dumps should be confirmed (type and depth) to ensure no suspect hazardous conditions/contaminant pathways exist, as well as confirm soil quality below the waste mass. In addition, the type of back fill materials used within areas previously mined at the site (two former Farmer's Mines and portions of the Town of Wallkill mine, south and southeast) should be confirmed.

In light of these suspect conditions, it is recommended that AKI consider conducting a Phase II Environmental Site Assessment to further asses the subject site, in order to confirm whether the site is free of potential environmental risk and liability. These recommendations are based on the site inspections and telephone interviews conducted by ECSI, the results of EDR's ASTM records search and other information contained in additional documentation secured by ECSI. The following Phase II Assessment activities are provided for consideration by the perspective buyer, Amy's Kitchen, Inc.:

1) Implement a Test Pit Program to visually characterize the type of surface and subsurface waste materials which exist within the three small dump site areas. In addition, ECSI plans to place test pits within the two former Farmer's Mines to confirm the type of back fill used after sand/gravel was extracted. It is anticipated that 4 to 8 test pits will be placed within each of the three dump sites and 6 to 8 test pits within each of the former Farmer's Mines. As necessary, confirmatory soil samples, as well as discrete samples to characterize unidentifiable materials, will be obtained below the waste mass to determine soil quality. Samples will be analyzed for Heavy Metals, VOCs, Semi-VOCs, Herbicides and Pesticides, TPH (Total Petroleum Hydrocarbons) and as necessary, NYSDEC CP-51 parameters for gasoline and fuel oil (NYSDEC CP-52 Cleanup Guidance, dated October 2010; Tables 2 and 3).

2) Conduct Ground Penetrating Radar (GPR) within an area near the two hillside barns and the farm house to hopefully locate the foundation of the tenant house, including any underground petroleum storage tanks utilized for space heating purposes or for gasoline storage. This will be performed in conjunction with the placement of test pits to visually determine the possible presence of any underground tanks. If weather and ground conditions impair the use of GPR equipment, we will rely solely on the placement of test pits throughout the area. In addition to these activities, we will excavate and sample surface soils in the vicinity of the existing above ground storage tank located near the former hillside barns. As necessary, soil samples will be obtained and analyzed for the above parameters if encountered.

3) Obtain up to 6 soil samples within the limits of on-site agricultural fields previously, formerly used to grow hay and corn in support past dairy farm operations. These samples will be obtained from within the plow zone, approximately 18 inches below the surface. In general, sampled soils will be analyzed for heavy metals and/or persistent organic compounds which may originate from past crop farming performed on-site (including RCRA Heavy Metals, Volatile Organic Compounds (VOCs), Semi-VOCs, Herbicides and Pesticides). Information gained by soil sampling and analyses will determine if heavy metals and/or any chemicals of concern exist which could become airborne during building construction activities and therefore, require special attention and management to control and ensure worker health and safety.

4) Sample and analyze water contained in the existing on-site sedimentation basin; this area has and continues to receive storm water runoff from areas of the former Town of Wallkill mine. In addition, the pond/wetland (east) is a low collection point situated near the two former Farmer's Mines which also received storm water from former upgradient Town mine. This pond/wetland is also an expression of shallow groundwater for the immediate area. The on-site well should also be sampled to ensure that no petroleum based contaminants exist, based on information pertaining to the likely existence of leaking petroleum storage tanks on-site. This well likely receives surface runoff and is an expression of shallow groundwater. Samples should be analyzed for Heavy Metals, VOCs, Semi-VOCs, Herbicides and Pesticides, TPH and as necessary, NYSDEC CP-51 parameters for gasoline and fuel oil (Tables 2 and 3). ECSI anticipates that these samples will provide representative quality conditions of on-site surface waters and the upper water table (shallow groundwater) conditions, in consideration of past mining and most of all past farming practices. Information gathered from water sampling may aid in providing insight into designing the types of storm water controls necessary to ensure proper handling/treatment of contaminant discharge potentials.

5) Excavate surface soils to obtain confirmatory samples at two corners of the fenced enclosure (corners where objects were observed on historical photographs) once utilized by the Town of Wallkill for above ground fuel storage. These samples will be analyzed for Heavy Metals, VOCs, Semi-VOCs, TPH and NYSDEC CP-51 parameters for gasoline and fuel oil (Tables 2 and 3).

6) Place test pits in areas previously utilized by the Town of Wallkill to stockpile tree stumps/limbs, east of the prior active main area, as well as within portions of the active mine area (south/southeast). These test pits will be placed to confirm subsurface conditions for future construction; no soil sampling/analyses will be performed for these areas, unless suspect conditions are encountered.

Prior to conducting the Test Pit Program, representatives of "Dig Safely New York" must contacted to mark-out area utilities. As necessary, a "private" utility mark-out firm should be retained to confirm the location of on-site utilities.

It is important to note that prior to excavating test pits near/within the dump site located along the Wallkill River, a representative of the NYSDEC Division of Habitat Protection (Wetlands) should be contacted to arrange a field meeting to confirm the limits of "Waters of the

State" at this location. This should be completed to avoid potential impacts to the Wallkill River and any adjoining wetlands deemed jurisdictional. It is important to note that it is ECSI's understanding that there may be a discrepancy with the actual property boundary limits at this location, in light of the existence of a deed line survey notation which traverses just west of this area (Survey and Topographic Map, Appendix A). At this time, we assume that this area lies within the boundary of the property and thus, we have included the area under the Phase II work effort for investigation. Also prior to pacing test pits in this area, the actual boundary of the site must confirmed by Concrete Properties, LLC.

9.2 Other Issues

As reported by a representative of the NYS-OPR&P, multiple pre-contact sites were identified by Steve Oberon, Columbia Heritage, Ltd., as part of efforts by the Town of Wallkill to secure a mining permit for the site. While the report predates current guidelines (dated 2005) which require greater field coverage for conducting field surveys, the State representative noted that given the site's proximity to the Wallkill River and to a number of previously identified area archaeological sites, the portions of the property not evaluated (other than disturbed by mining) have a moderate to high probability of containing archeological sites. Further, the SHPO would recommend that an archaeological survey of the undisturbed portions of the site be performed prior to any new ground-braking activities planned for the site.

In light of this, ECSI recommends that AKI speak with a qualified cultural resource consultant and discuss the necessary processes likely to be involved for addressing this issue, as part of the SEQR process necessary planned site development.

In the interim, ECSI will contact Steve Oberon in the near future and attempt to obtain additional information pertaining to the work he performed and confirmation as to which areas of the site were investigated and found to possibly contain artifacts.

As noted, a utility pole lies on the property approximately 80 feet south of Echo Lake Road, near the northeast corner of the parcel (Parcel II). Whether or not a utility easement may exist should be a confirmed. Typically, such easements are "noticed" with the County. ECSI attempted to determine if an easement exists by contacting a representative of ConEdison. Despite two follow up attempts by ECSI with ConEdison, the representative has not as yet provided information.

In light of the plans to convert the on-site rail bed into an extension of the nearby Heritage Trail, AKI should at some point contact the Orange County Department of Parks, Recreation and Conservation the discuss the nature of their design plans for crossing an existing access road section which connects with Echo Lake Road. The Department can be contacted by way of the information presented on the publication entitled "Orange County Heritage Trail Extension" (Appendix C).

Some on-site soils are comprised of NYS Agriculture and Markets soil groups 1 through 4 (i.e. soil groups 2 and 4; the site lies in Agriculture District #2); however, these areas are

minimal in size, portions of which may have been disturbed by past mining. In light of the existence of these soil groups, representatives of AKI should confirm applicability to Agriculture and Markets Law, Article 25 AA, Agricultural Districts, Section 305(4), which requires projects which receive public funding/assistance to address certain aspects of the law, relative to planned site development. This process is a SEQR compliance issue which is typically addressed early on in the process.

It is important to note that the on-site well vault is deep, filled with water and is partially uncovered, as well as open on one side (east). These conditions are dangerous to anyone who may come close to and attempt to view the inside base of the well (i.e. an attractive nuisance). In light of this, this well should be properly abandoned (i.e. brought to grade, filled and covered).

Other than the above noted recommendations and issues, no others exist at this time for the Echo Lake Industrial Site.

10.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

ECSI declares that to the best of our professional knowledge and belief that we meet the definition of "environmental professional" as defined under Section 312.10 of 40 Code of Federal Regulations (CFR) Part 312, Innocent Landowners, Standards for Conducting All Appropriate Inquiries.

Anthony P. Russo has the specific qualifications to perform the site assessment and report the information herein. This is based on his education, professional training and more than 25 years experience for assessing properties of the nature, history and setting of the subject Echo Lake Industrial Site. Further, all appropriate inquires have been developed and performed in conformance with the standards and practices noted under 40 CFR Part 312.

Signature: _____ Date: _____

Qualified Environmental Professional
Anthony P. Russo, President

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT
ECHO LAKE INDUSTRIAL SITE

TOWN OF GOSHEN AND TOWN OF WAWAYANDA
ORANGE COUNTY, NEW YORK

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SEPTEMBER 2015

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT
ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN/TOWN OF WAWAYANDA,
ORANGE COUNTY, NEW YORK

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PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT
ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN/TOWN OF WAWAYANDA,
ORANGE COUNTY, NEW YORK

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1.0 INTRODUCTION

On October 22, 2013, Amy's Kitchen, Inc. (AKI) of Santa Rosa, California retained Environmental Compliance Services, Inc. (ECSI) of Middletown, New York to conduct a Phase I Environmental Site Assessment for the Echo Lake Industrial Site. The subject property, herein referred to as "the site", is located along Echo Lake Road, Orange County, Goshen, New York (Figure 1-1).

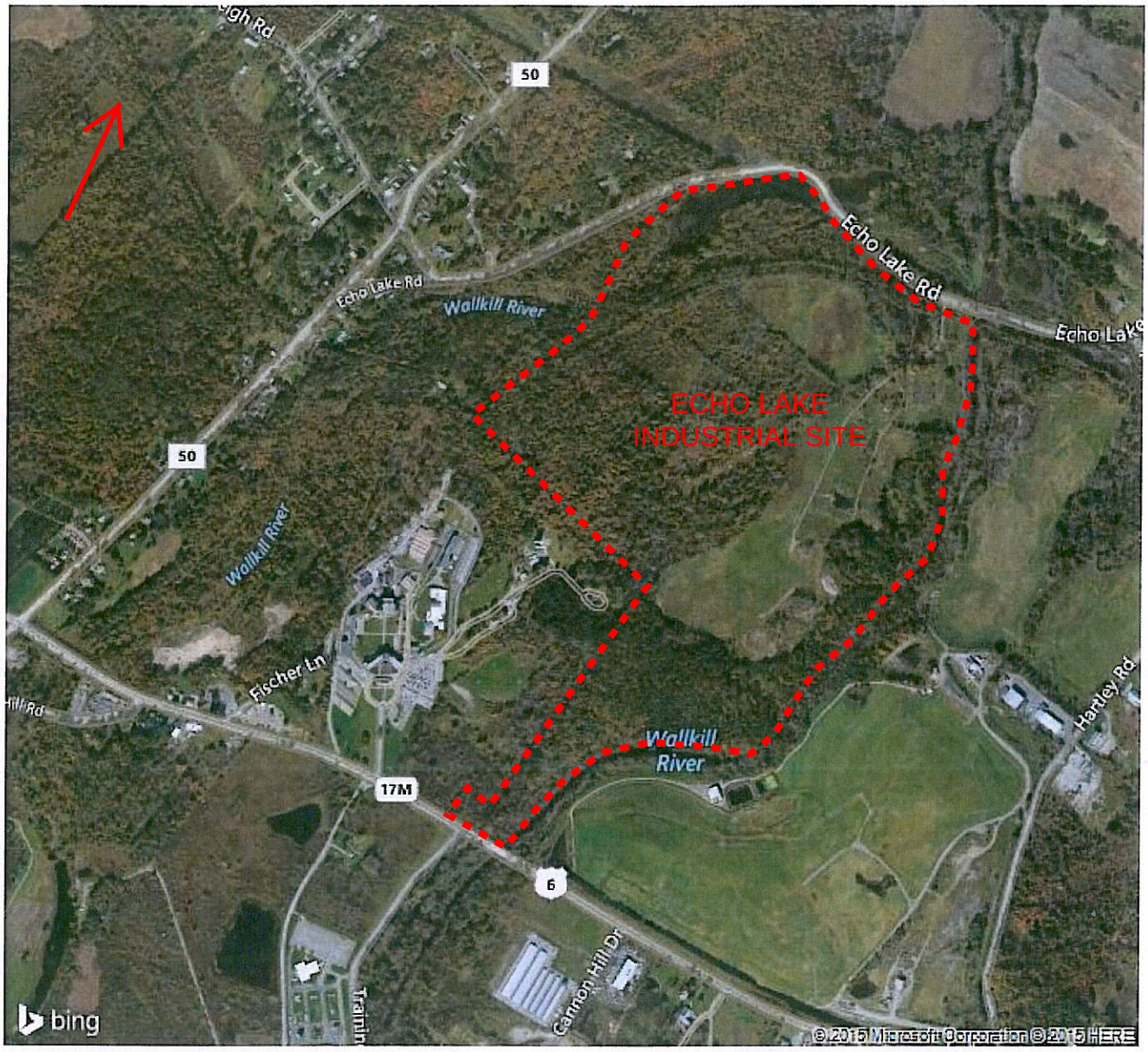
During November and December 2013, Anthony P. Russo of ECSI performed inspections of the site, as well as observed conditions at nearby adjoining parcels. In addition, ECSI retained Environmental Data Resources, Inc. (EDR) of Milford, Connecticut, to conduct a search of available environmental records to facilitate evaluation of potentials for environmental risk and liability for the site, including immediately surrounding parcels. The search was conducted in accordance with the requirements of ASTM E 1527-05 (“Standard Practice for Environmental Site Assessments”). ECSI also contacted representatives in the Towns of Goshen and Wawayanda and obtained available records pertaining to property ownership for the subject site and surrounding parcels.

In order to obtain past site use information, ECSI conducted interviews with several individuals familiar with the history and uses of the property, and obtained information from a variety of sources. In particular, key individuals were identified and interviewed and historical aerials and topographic mapping were reviewed in addition to the above. The findings of the site inspections, supplemented with the information obtained on the history/land use, is presented within the Phase I Environmental Site Assessment report, dated December 2015.

The Phase I work effort served to identify on-site areas of concern and a Phase II Environmental Site Assessment was recommended to further investigate these identified areas. The Phase II Assessment was initially performed from February to March 2014 during a period of time when sever harsh weather conditions were encountered, which in turn served to delay completion of the Phase II Assessment. The final stages of the Phase II work effort was completed June to July 2015 during favorable weather conditions. Prior to ECSI commencing the final stages of the Phase II work during June/July 2015, the former owner of the property (Concrete Properties, LLC.) removed accumulated waste from the bank of the Wallkill River and placed angular stone across the affected area to stabilize the River bank. ECSI excavated test pits across the top of the bank and behind the bank (west) to confirm that no waste remained, as well as screened excavated soils (using a Photoionization Detector) for Volatile Organic Compounds.

1.1 Phase I Scope of Services

As outlined in ECSI’s initial proposal agreement with AKI (dated October 22, 2013), the key scope of services performed under the Phase I Environmental Site Assessment included the following activities:



SCALE: **1 INCH = 2,000 FEET**

SOURCE: USGS TOPOGRAPHIC MAP; PRINTED/REVISED: 1968/1976

FIGURE 1-1

SITE LOCATION MAP

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK

- Conduct site inspections (reconnaissance) to visually assess the presence of actual or potential internal/external sources of toxic contamination and related contaminant pathways..

- Conduct interviews with the current property owner, operator, and/or anyone designated by the owner familiar with past and present property uses and operations.

- Review available information on the subject property site (i.e. history and past land uses), information primarily maintained by the Town of Goshen and the Town of Wawayanda Building and Zoning offices, Department of Public Works and the Tax Assessor's Offices.

- Review available Federal, State, and local records of spills and releases for the site and immediately adjacent properties, including available files maintained by the US Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), and the Towns of Goshen and Wawayanda.

- Retain Environmental Data Resources (EDR) of Milford, Connecticut, a search firm qualified to perform environmental and lien searches and review/report records in accordance with ASTM E 1527-05 standards; EDR's services include publication of a EDR Radius Map Report (with Geo-Check^{R}), presentation of available historical topographic maps and aerials, Sanborn and Building Permit search reports, and the results of an environmental lien search.

- Review available files maintained by local agencies, or authorities, on current and historic property ownership and compliance matters.

- Prepare a Phase I Environmental Site Assessment (ESA) Report.

1.2 Phase I Methodology

ECSI reviewed historical topographic mapping, the Soil Survey of Orange County, and historic aerial photographs to determine if the site's landscape configuration has changed over time. As noted, the ASTM completed by EDR aided ECSI in the evaluation of potential spills and releases associated with leaking above ground and underground storage tanks (and other environmental potentials) for the site and vicinity. Minimum and maximum search radii of 1/8 mile and 1 mile, respectively, were selected so that potential impacts near the site, and immediately surrounding the site, could be confirmed and evaluated.

In addition, telephone interviews with past property owners/operators, local historical sources, record searches and site inspections conducted under the Phase I

Assessment by ECSI, were performed in accordance with the procedures defined under ASTM E 1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". The EDR search included, but not limited to, completion of an EDR Radius Map With Geo-Check^{R}, historic topographic mapping and aerial photograph searches, a Sanborn (Fire Safety) map search, a building permit search, an EDR Environmental LienSearch report, and an EDR Directory City Image report to provide source documentation for the images obtained.

It is important to note that the Phase I assessment process necessitated contacting several information sources, including three prior property owners/operators, representatives of the New York State Department of Environmental Conservation (NYSDEC), Divisions of Habitat Protection, Solid and Hazardous Waste Management, and Mined Land Reclamation, as well as the New York State Historic Preservation Office (NYS-SHPO). The extra effort made to obtain information about past land uses, and site regulatory matters, served best to adhere to ASTM standards, as well as ensured the basis for recommending performance of a Phase II Environmental Site Assessment in order to confirm suspect areas of concern identified under the Phase I work effort.

2.0 PHASE I ASSESSMENT FINDINGS AND RECOMMENDATIONS

The objective of the Phase I Environmental Site Assessment was to determine to the fullest extent possible, if any suspect environmental conditions exist on the Echo Lake Industrial Site, or in the immediate surrounding vicinity, that could result in environmental risk and liability for Amy's Kitchen, Inc., the prospective buyer of the site.

Information gathered as part of the Phase I Assessment revealed that suspect conditions exist on-site relative to the possible storage and use of fuel oil for space heating at preexisting farmstead structures (records indicating "hot water oil conversions"), and the storage/use of gasoline for operating farm equipment. Three former structures existed at the site including a Farm House and Tenant House which were situated near the former access driveway leading from Echo Lake Road; two connecting barn structures existed at the base of a hillside situated immediately northwest of the Farm House.

In addition, three (3) abandoned surface mines (Former Farmer's Mines #1 through #3) were identified as being suspect for possible waste burial, one of which displayed evidence of surface dumping. Overall, three dump sites were observed within the boundaries of the site including the hillside dump area near the former barn sites and Farm House residence, the "Wallkill River Dump" located along the bank of the Wallkill River and upon the surface of identified Former Farmer's Mine #3, situated approximately 250 feet southeast of both the Wallkill River Dump. These areas contain various types of materials which were buried and/or scattered across the surface of each area. Past mining/dumping practices, as well as the above noted fuel oil and gasoline storage practices, took place within the limits of Parcel II; Parcel II is the largest of the parcels discussed in the Phase I ESA report (approximately 175 acres), which is accessed directly from Echo Lake Road. It is also important to note that two areas situated within the corners of an existing on-site fenced enclosure were targeting for possible diesel surface spills where above ground storage tanks were believed to be operated by the Town of Wallkill for fueling equipment during their use of their permitted mine area.

Common to the above noted on-site dump areas include various forms of buried waste observed to protrude from below an approximate 12 to 18 inch soil cover. Materials primarily consisted of household items and construction debris dating back to the late 1960's and early 1970's. Objects identified by ECSI included cars and assorted discarded farm equipment, white goods (i.e. stoves, washers, hot-water heaters and electric heaters), assorted direct drive (motor driven; tractor power takeoff) farm equipment (i.e. hay bailer, thresher), disc plows and various parts, vehicle chassis, empty rusted 55-gallon drums, identifiable and unidentifiable buried and bagged waste, glass, wood of various dimensions, plastics and a large assortment of metal objects including galvanized bulk milk tanks, bed frames, corrugated roofing and siding materials, plastic and metal piping, plastic toys, several tires and wheels and asbestos shingles. Empty, rusted and crushed 55-gallon drums encountered in the field by ECSI were severely corroded/weathered; labels indicating the types of substances previously contained in the drums (i.e. pesticides/herbicides; hydraulic or motor oils) could not be observed.

Photographs contained in the Phase I report depict the types of waste materials visually observed by ECSI during field inspections.

Two other areas, the former Town of Wallkill Mine and an adjacent stump/material surface storage area, were identified as potential areas of concern which were targeted to confirm post-reclamation soil conditions, as well as to confirm that no potential for past dumping existed within these areas. These areas were targeted based on an indication from the NYSDEC that previous stockpiling of tree stumps and limbs within the eastern limits of the Town's mine was found at one time to be in violation of Mined Land Reclamation regulations. The State was concerned that these materials were used with back fill to reclaim areas of the active Town mine (south and southern portions of Parcel II).

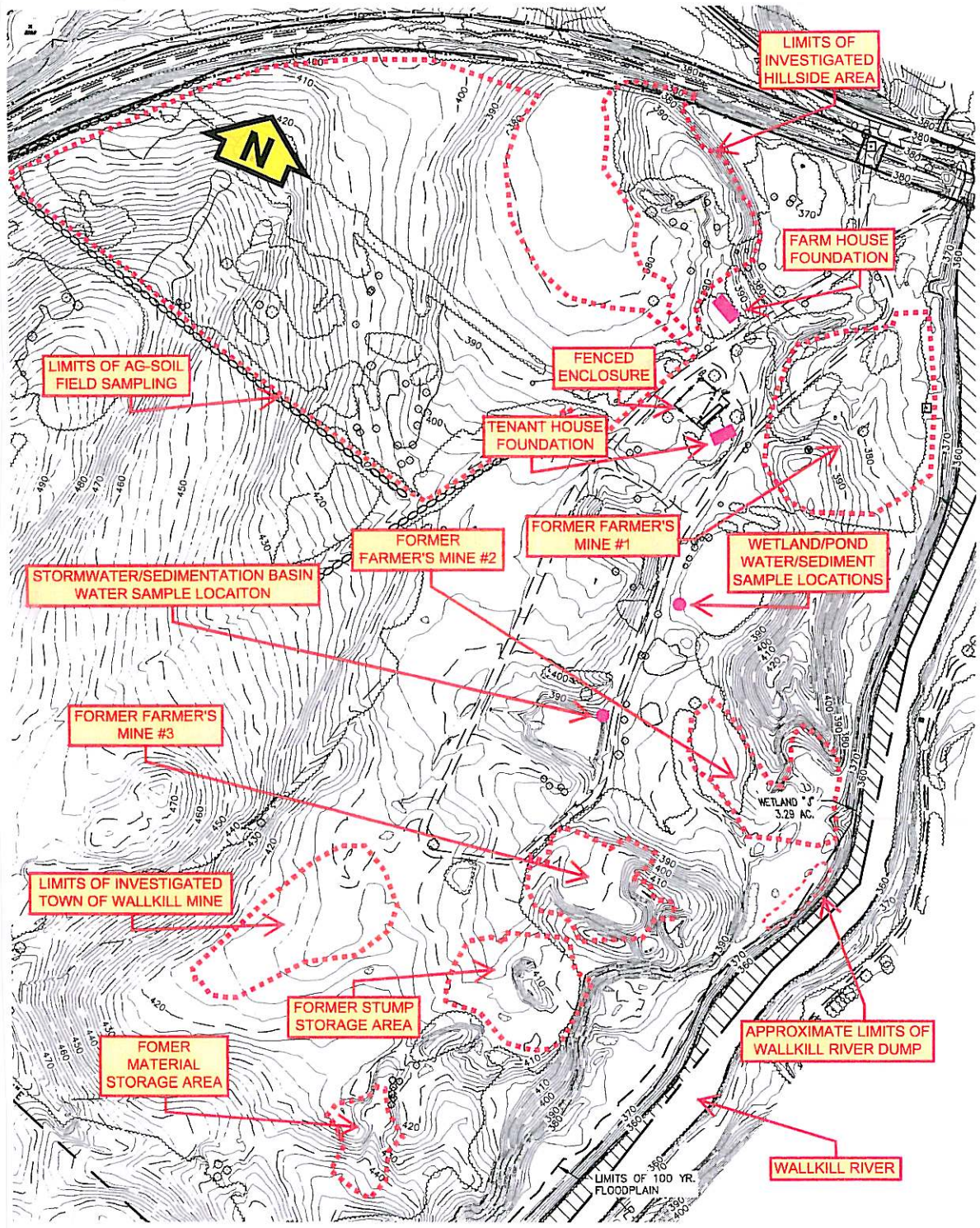
ECSI also recommended that soil samples be obtained from within the limits of on-site agricultural fields, formerly used to grow hay and corn in support past dairy farm operations. Such sampling would be obtained to determine if Heavy Metals and/or any chemicals of concern (i.e. arsenic associated with apple orchards) exist which could become airborne during building construction activities and therefore, require special attention and management to control and ensure construction worker health and safety

Figure 2-1 presents the approximate locations of each area investigated under the Phase II Assessment. The three Former Farmer's Mines and the limits of agricultural soil sampling are depicted, as well as the Tenant and Farm House foundations, the hillside area, portions of the Town of Wallkill Mine and adjacent storage areas and the sample locations where water and/or sediment samples were obtained at the Wetland/Pond and the Stormwater/Sedimentation Basin. Each of the areas of concern are discussed below.

2.1 Former On-site Structures

Waste materials observed atop and at the base of the hillside area which adjoins the approximate location of the two former barn sections, northwest of the former Farm House foundation, consisted of several pieces of household and building construction and demolition (C&D) waste throughout the surface of the hill top and along immediate down slope areas (north, west, south and northeast). The waste is comprised of abandoned farm equipment, vehicle parts (including a Volkswagen Beetle), tires/wheels, various plastics, glass, some white goods (washer, stove, electric heaters), water heater tank and milk storage tanks, structural support timbers, corrugated metal material, carpeting and rusted/perforated 55-gallon drums. An approximate 1,000-gallon above ground gasoline storage tank lies near the foundation of the former barn structures (southeast). A stone and concrete foundation situated at the base of the hill where two former connecting barns sections existed contains several tires/wheels, wood and a sizable volume of corrugated metal roofing/sheeting which was likely utilized as siding/roofing on the barn sections.

In addition, fuel oil use for space heating within the on-site living structures and gasoline storage practices for operating gasoline powered equipment were issues of



NOT-TO-SCALE

SOURCE: Topographic Survey Basemap Prepared by Lanc & Tully Engineering & Surveying, P.C (10/2013)

FIGURE 2-1

PHASE II ASSESSMENT AREAS

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK

concern noted in the Phase I Assessment report. The Phase II work effort revealed where the locations of the former Farm House and Tenant House foundations likely existed in close proximity to one another (Figure 2-1); fuel oil storage tanks utilized for space heating were suspected of being utilized in each structure and the 1,000-gallon above ground gasoline storage tank, situated near the former barn locations, was utilized for fueling gasoline powered farm equipment.

2.2 Identified Former Farmer's Mines/Dump Sites

Based on ECSI's site inspections and review of historical aerial photographs obtained as part of EDR's ASTM records search, and information gathered by telephone conversations/interviews with prior owners of the property (ownership dating back to 1965), three "Former Farmer's Mines" were located along the eastern portion of the property (Parcel II), just west of the Wallkill River. These mines display the same type of soils (Riverhead Sandy Loam) which were mined extensively in recent years by the Town of Wallkill Department of Public Works, at the larger NYSDEC permitted mine area located at the south and southeastern portions of the property (Parcel II, southeast).

During the time period when the smaller former farmer's mines were excavated, no regulations existed to control the type of materials used as back fill, or for site reclamation. In fact, each of the identified farmer's mines appears to have been abandoned and have not been restored. In addition, the dump site located approximately 250 feet west of the Wallkill River (Former Farmer's Mine #3) displays evidence of combined mining and dumping, whereby discarded waste materials (household trash) can be observed on the surface and is partially buried. Also, a historical aerial dated 1974 depicts unrecognizable objects near the location of the dump site ECSI observed along the bank of the Wallkill River (the "Wallkill River Dump" site). No evidence of preexisting structures exist near these areas to suggest that the materials originated by the raising of any structures. It appears that "dirt" access roads appear to have been established for vehicle access, including connection with areas where waste materials were observed. Such access routes are typical of areas where combined mining and dumping can take place once final mine grades are achieved.

A former surface mine site (Former Farmer's Mine #1) exists near the original entrance leading to the site, just south of the northeast corner of the property (Parcel II) and the existing rail bridge (Figure 2-1). After being mined, this area was abandoned; the ground surface is irregular throughout which is indicative of severe unreclaimed conditions.

A former surface mine site (Former Farmer's Mine #2) exists in close proximity of the Wallkill River, approximately 75 feet west of the River; a small circular wetland (surface pond) lies downgradient and west of this mine site (Wetland/Pond; Figure 2-1). This area depicts evidence of extensive mining whereby immediately adjoining grades are steep; vegetation within the approximate limits of the area consists of the type commonly found in areas of disturbed and poor soil conditions. Historical aerials depict this area as being open with a visible dirt access road connecting at the southeast entrance to the mine.

As noted above, a former mine/dump site (Former Farmer's Mine #3) lies immediately south of Former Farmer's Mine #2 and approximately 250 feet southwest of the Wallkill River Dump Site (Figure 2-1). This area also depicts evidence of past mining whereby immediately adjoining grades are steep; vegetation within the approximate limits of the area consists of the type commonly found in areas of disturbed soils. Historical aerials depict this area as being open with visible dirt road access. Metal objects, glass, plastics and parts of vehicles/farm equipment are scattered across the surface, some of which are partially buried.

Approximately 250 feet northeast of the second dump lies a third dump site, (the "Wallkill River Dump Site" situated along the Wallkill River), portions of which are within the flood plain of the River. Some of the waste observed (metals, tires/wheels, white goods; farm equipment, vehicle chassises and 55-gallon drums), include bagged recognizable and unrecognizable household wastes, which are exposed below and above the ordinary high watermark of the riverbank. Materials observed at the surface and buried waste were considered to be susceptible to the rise and fall of high velocity flood waters, which is evident by torn garbage bags and severely eroded riverbank conditions. Historical aerials depict a dirt access road which connects this area with the central-eastern portions of the property, as well as one of the two mines utilized by prior farmers (Former Farmer's Mine #2), as depicted on historical aerial images dated late 1960's and early 1970's.

It is important to note that no information regarding past dumping practices could be obtained by way of telephone interviews conducted by ECSI (i.e. NYSDEC personnel, past property owners and/or owner representatives). Further, based on property ownership records and telephone interviews, the Town of Wallkill may have raised and/or burned the preexisting farmstead structures. At one time, stockpiled tree stumps and limbs were encountered by the NYSDEC within the eastern limits of the Town's mine; the Town was found to be in violation of Mined Land Reclamation regulations. As noted, the State's primary concern was that these materials were used to back fill areas of the active Town mine, at the south and southern portions of Parcel II.

Overall common landscape features associated with each of the mines investigated consists of an abrupt change in surface grades and vegetation characteristics which served to delineate where transition of previously disturbed and natural conditions existed.

2.3 Sampling and Analysis Plan (SAP)

As determined under the Phase I Assessment work effort, the site was utilized as a dairy farm whereby hay and corn were grown to feed and care for livestock. ECSI also attempted to learn if other crops were grown on the farm as part of determining whether or not persistent organic pollutants (including those associated with herbicides/pesticides) could have been utilized as part of past farming practices (including demanding fruit tree farming), in order to control pests and disease. These chemicals are known to persist in agricultural soils which were treated with synthetic chemicals (DDT, Dioxins, and PCBs)

after World War II. While the farm was a mid-sized operation and was not operated as a commercial farm, the possibility that some form of control may have been utilized as several farmsteads across the United States used such chemicals to ensure crop yield year after year. Empty and rusted 55-gallon drums observed by ECSI within identified dump sites were severely corroded/weathered and no contents labels indicating the types of substances previously contained in the drums were displayed (i.e. pesticides/herbicides; hydraulic or motor oils).

Given that portions of Parcel II were once used for agricultural and mining practices, a Sampling and Analysis Plan (SAP) was developed to establish protocols for random soil sampling within on-site agricultural fields.

The SAP also included protocols to sample and analyze sediment and water within an on-site stormwater sedimentation basin operated in conjunction with the Town of Wallkill Mine, the wetland/pond at the east central portion of the site and water within a subsurface concrete block structure containing a well head, pump and storage tank accumulated at the base of the structure. Groundwater observed within the base of the concrete well structure was planned to be sampled as it was representative of immediate groundwater table conditions.

It is important to note that the above noted wetland/pond is situated within a topographic low drainage area ("sink-point") of the former Town of Wallkill Mine (south of Former Farmer's Mine #1, west of Former Farmer's Mine #2 and northeast of the Town of Wallkill Mine), which receives stormwater from contributory areas of the site north, west, southwest and southeast of previously mined areas (Figure 2-1).

The SAP also included sampling and analytical protocols for analyzing suspect substances if encountered within test pit excavations while investigating dump areas, the three Former Farmer's Mines, the Town of Wallkill Mine, two surface soil locations within the on-site fenced enclosure (suspect petroleum based), and soils below the above ground 1,000-gallon gasoline storage tank near the former hillside barn sites.

2.4 Recommended Phase II Assessment

In light of the suspect conditions identified under the Phase I Assessment, ECSI recommended that AKI consider conducting a Phase II Environmental Site Assessment to further asses the subject site, in order to confirm whether the site is free of potential environmental risk and liability. These recommendations are based on the site inspections and telephone interviews conducted by ECSI, the results of EDR's ASTM records search and other information contained in additional documentation secured by ECSI. The following detailed Phase II Assessment activities were recommended by ECSI and implemented by the perspective buyer, Amy's Kitchen, Inc., as subsequently performed by ECSI:

1) Implement a Test Pit Program to visually confirm and further characterize the types of surface and subsurface waste materials which exist within the three identified

dump sites of concern. In addition, excavate test pits within the three Former Farmer's Mines to confirm the type of back fill used after sand/gravel was extracted, as well as to confirm subsurface soil conditions. Discrete samples were planned to be obtained of suspect waste to characterize unidentifiable materials, if encountered below the waste mass. The protocol for analysis included Heavy Metals, VOCs, Semi-VOCs, Herbicides and Pesticides, TPH (Total Petroleum Hydrocarbons) and as necessary, NYSDEC CP-51 parameters for gasoline and fuel oil (NYSDEC CP-52 Cleanup Guidance, dated October 2010; Tables 2 and 3). While excavating test pits, continuous use of a Photoionization Detector (PID) was performed to screen subsurface soils for possible Volatile Organic Compounds (VOCs). Both background and incremental (with soil depth) meter readings were observed and recorded.

2) Perform Ground Penetrating Radar (GPR) within an area near the two hillside barns and in the vicinity of the former Farm House to locate the foundation of the Tenant House, including any underground petroleum storage tanks utilized for space heating purposes (both structures), or for gasoline storage. This was performed in conjunction with the placement of test pits to visually determine the possible presence of any underground tanks. As necessary, surface soils would be excavated and sampled in the vicinity of the existing above ground storage tank located near the former hillside barn area. Samples would be collected and analyzed for the above parameters if suspect conditions are encountered.

3) Obtain six (6) soil samples within the limits of on-site agricultural fields, formerly used to grow hay and corn in support past dairy farm operations. These samples should be collected from within the plow zone, approximately 18 to 36 inches below the surface. In general, sampled soils were analyzed for Heavy Metals and/or persistent organic compounds which may originate from past crop farming performed on-site (including RCRA Heavy Metals, Volatile Organic Compounds (VOCs), Semi-VOCs, Herbicides and Pesticides). Information gained by soil sampling and analyses would be utilized to determine if Heavy Metals and/or any chemicals of concern exist which could become airborne during building construction activities and therefore, require special attention and management to control and ensure construction worker health and safety.

4) Sample and analyze water contained in the existing on-site sedimentation basin; this basin has and continues to receive stormwater runoff from areas of the former (reclaimed) Town of Wallkill Mine. In addition, the wetland/pond (northeast) of the basin lies within a low topographic collection area situated downgradient of the basin, and Former Farmer's Mines #1 and #2. Essentially, this wetland/pond is an expression of shallow groundwater conditions for the immediate area. As noted above, the SAP included sampling of the on-site well believed to have serviced former on-site structures. Petroleum based contaminant analysis would be applied for this water sample as this point on the site likely receives surface runoff from immediately surrounding areas and is an expression of shallow groundwater conditions. Water samples would be analyzed for Heavy Metals, VOCs, Semi-VOCs, Herbicides and Pesticides, TPH and as necessary, NYSDEC CP-51 parameters for gasoline and fuel oil (Tables 2 and 3). Such samples would provide representative quality conditions of on-site surface waters and the upper

water table (shallow groundwater) conditions, in consideration of past mining and most of all past farming practices.

5) Excavate surface soils and collected confirmatory soil samples at two corners of the fenced enclosure, corners where tank storage objects were observed on historical photographs, as reported to be once utilized by the Town of Wallkill for above ground diesel fuel storage. The samples would be analyzed for Heavy Metals, VOCs, Semi-VOCs, TPH and NYSDEC CP-51 parameters for gasoline and fuel oil (Tables 2 and 3).

6) Excavate test pits in areas previously utilized by the Town of Wallkill to stockpile tree stumps/limbs, east and southeast of the prior active mine area, as well as within portions of the active mine area (stump & aggregate material storage areas, east and southeast). These test pits serve to confirm subsurface conditions; soil sampling/analyses would not be performed for these areas unless suspect conditions are encountered.

Prior to conducting the Test Pit Program, ECSI would ensure that representatives of "Dig Safely New York" were contacted by the excavation contractor retained for test pit activities. ECSI also planned to utilize Underground Survey Corp. to locate/confirm on-site underground utility lines prior to commencing the Test Pit Program.

During the spring of 2015, the property owner, Concrete Properties, LLC, removed waste and provided bank stabilization measures along the section of the Wallkill River identified by ECSI as a dump site under the Phase I Assessment effort. ECSI is of the understanding that no information was conveyed to AKI to explain the volume of waste removed from the affected River bank section, nor were any photographs provided to substantiate the extent the area was improved. In light of this, ECSI recommended to AKI that two test pits be placed behind the affected River bank (west), as well as three test pit excavations along the upper slope portion of the affected area, all of which is stabilized with angular stone. Due to loose observed slope conditions, excavations could not be advanced to the lower elevations of the bank slope.

3.0 PHASE II ASSESSMENT RESULTS

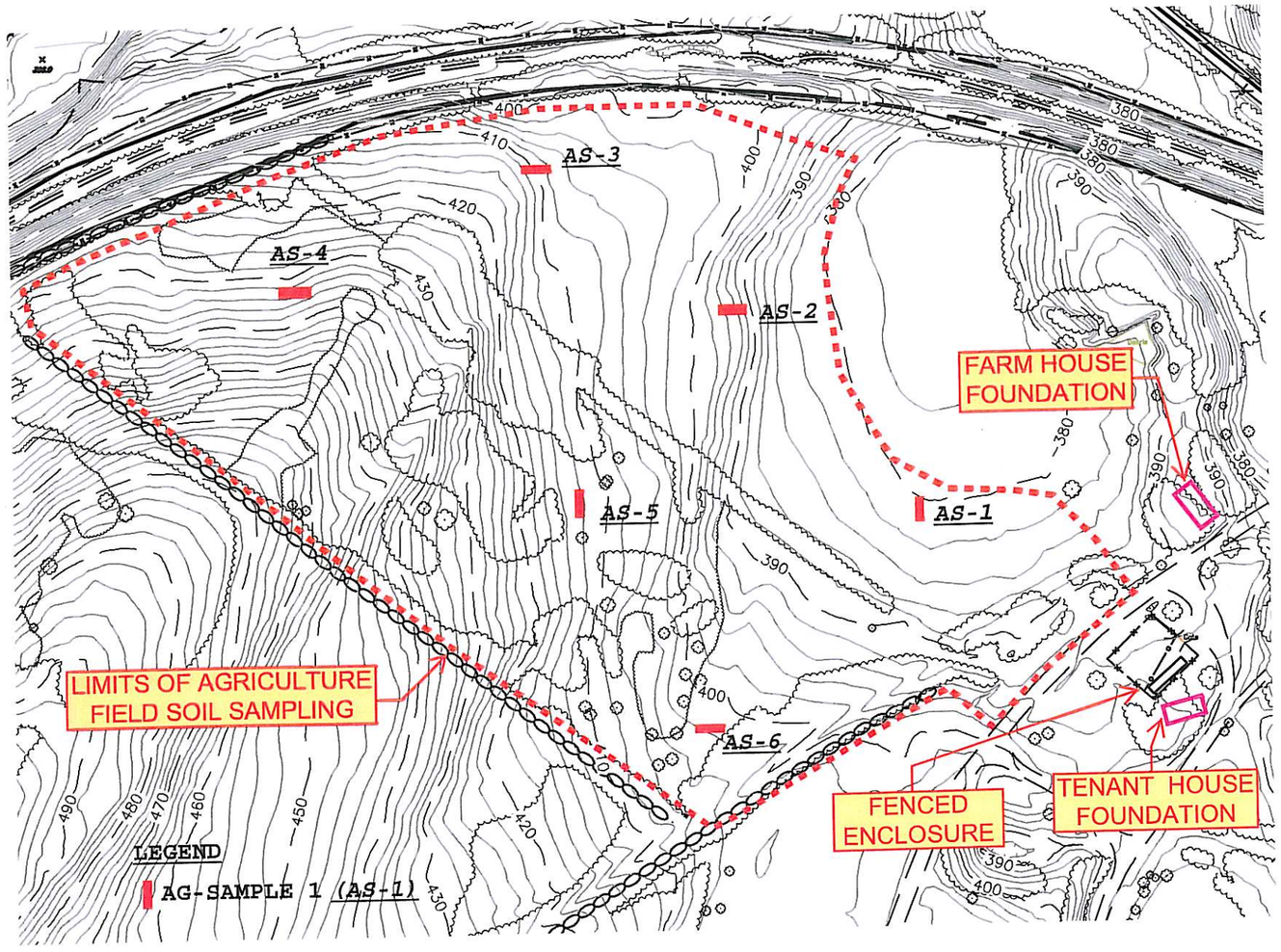
During the harsh winter of 2014 and early spring 2015, a considerable amount of preparation for field work was performed to achieve and maintain access to areas of concern. Once access was achieved, Phase II activities were performed. At times, work was postponed due to deep snow and/or freezing conditions whereby heavy equipment could not be operated, or when additional snow plowing was necessary to reestablish access. Further, a sediment sample could not be obtained from the on-site stormwater sedimentation basin due to frozen sediment conditions and GPR was only able to be performed when ground conditions were clear or well plowed. The water sample planned to be obtained from the subsurface concrete well structure could not be obtained as no water existed within the structure at the time Phase II field activities were performed. The results of Phase II activities are provided in the order the work was performed are discussed below.

3.1 Agricultural Field Soil Sampling

A total of six random test pit locations were excavated within open on-site fields where former agricultural practices were performed. Six soil samples were obtained below the surface, from 3 to 36 inches within the plow zone. A PID was utilized to screen excavated soils continuously; background PID levels were recorded prior to commencing test pit excavations. At no time were any stains or suspicious odors detected when sampling. These activities were performed during February 2014 when weather conditions were severe whereby significant snow accumulation and freezing conditions were encountered. Figure 3-1 presents the approximate locations of the test pit and agricultural soil sample locations labeled as AS-1 through AS-6.

Soil samples were analyzed for Volatile Organic Compounds, Semi-Volatile Organic Compounds, RCRA Metals, Pesticides and Herbicides, Total Petroleum Hydrocarbons and CP-51 parameters. In conjunction with obtaining samples, ECSI recorded soil conditions and categorized conditions using Munsell Soil Color Charts (dated 2000). Soil texture observed within the six test pit locations was consistent and overall conditions did not differ between the pits and thus, no evidence of suspect dumping/filling occurred within the field areas investigated. Further, observed soil conditions matched those published in the Soil Survey of Orange County, New York (dated October 1981). Munsell soil colors were either 10YR 5/4 between the surface and 6 to 18 inches within the profile and 10YR 6/6 from 6 to 36 inches within the profile. Photograph number 1 (Appendix A; Photo No. 1) depicts one of the six test pit excavations within the agricultural on-site fields; soil color and profile features are presented. The presence of moist and/or mottled soil conditions were observed at the base of each test pit excavation. Mottled soils were observed to be 2.5Y 7/8. Soil textures consisted of an organic loam soil near the surface to a sandy/silty loam at the base of the excavated profile.

PID readings were recorded to be 0.0 parts-per-million (ppm) for background conditions, as well as during continuous screening soils within each test pit location. At



NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-1

AG-SOIL SAMPLE LOCATIONS

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK

no time was groundwater encountered within the six test pit excavations. Appendix B contains the analytical reports generated by Phoenix Environmental Laboratories, Inc.

Based on the analytical reports prepared by Phoenix Environmental Laboratories, Inc., in comparison to NYSDEC Soil Cleanup and Technical Guidance Values for Site Investigation of Spills Cleanup, no contaminants of concern were detected in any of the six test pit/soil sample locations. Further, RCRA Metals detected in the samples were well below applicable State standards.

3.2 Wetland/Pond Surface Water and Sediment Sampling

ECSI was only able to obtain a water and sediment sample from the southwestern corner of the on-site wetland/pond as thick ice and slippery conditions made access and sampling difficult. A water sample was obtained from the northeast corner of the sedimentation basin used by the Town of Wallkill during the active life of their mine site (Figure 2-1). At no time were any stains or suspicious odors detected when sampling.

A sediment sample was obtained from the southwest corner of the wetland/pond samples where the approximate lowest elevation of the area was observed. A 4-inch hand auger was utilized to obtain a sediment sample; the sample consisted of a composite of four grab samples obtained from a profile depth of 8 to 18 inches of the surface. Subsequently, a water sample was obtained from the same auger hole placed to obtain a sediment sample, as well as water from another nearby surface penetration through ice. These samples were analyzed for RCRA Metals, Herbicides and Pesticides, Volatile Organic Compounds and Semi-Volatile Organic Compounds, TPH (GRO water) and TPH (GC sediment).

Based on the analytical reports prepared by Phoenix Environmental Laboratories, Inc., in comparison to NYSDEC Ambient Water Quality Standards, no significant contaminants of concern were detected within the water sample. A pesticide, Dieldren was detected at 0.004 parts-per-billion (ppb), as well as five Semi-Volatile Organic Compounds (Accenaphthylene, Benzo(a)anthracene, Benzo(b)pyrene, Benzo(b)floranthene, and Indeno(1,2,3-cd)pyrene). The detected concentrations are low and do not exceed State Water Quality Standards for Drinking Water Source (surface water) or Human Consumption of Fish. These concentrations are likely the result of vehicle operations and/or pesticide use on-site during past agricultural and mining operations. Further, it is well known that some organic substances (dissolved phase) can originate from the breakdown of organic vegetation typical of wetland/pond environments. Based on water sample results, no suspect conditions exist at this location.

Reported results for the sediment sample explains that all analyzed parameters, with the exception of TPH (GC), were non-detect. TPH is reported to be 260 ppm. This concentration is low and may be related to past vehicle use when mining operations were performed at the site. It is important to note that PID levels when screening samples during sampling activities were recorded as 0.0 ppm; background levels were also 0.0 ppm. No visible sheen or petroleum odor was observed within the samples during

sampling activities. Further, NYSDEC Spill Incident Database records reviewed by ECSI under the Phase I Assessment did not result in any indication s a release for the subject site. Based on sediment sample results, no suspect conditions exist at this location.

As noted, due to severe seasonal temperatures only a water sample was obtained from the northeastern corner of the on-site sedimentation basin previously utilized by the Town of Wallkill during the life of their gravel mine. The sample was analyzed for RCRA Metals, Herbicides and Pesticides, Volatile Organic Compounds and Semi-Volatile Organic Compounds, TPH (GRO water) and TPH (GC sediment). Based on analytical results reported by Phoenix Laboratories, metal concentrations were well below applicable State standards and all other parameters tested were non-detect. Based on these results, no suspect conditions exist for this sample location; based on these results, ECSI found it unnecessary to obtain a sediment sample.

3.3 Fenced Enclosure

Surface soil samples were obtained from the northeast and southwest corners of the enclosure from an approximate depth of 8 to 18 inches of the surface (Figure 2-1). Each sample consisted of a composite (grab) sample which was obtained from eight locations within the upper soil profile, over an approximate horizontal area of 80 square feet where past tank storage was believed to have occurred. At no time were any stains or suspicious odors detected when sampling. These samples were analyzed for RCRA Metals, CP-51 Volatile and Semi-Volatile Compounds and TPH (by GC) (Appendix B). Based on analytical results reported by Phoenix Laboratories, RCRA Metals concentrations were below applicable NYSDEC Soil Cleanup and Technical Guidance Values for Site Investigation of Spills Cleanup and the CP-51 and TPH analyses were reported as non-detect. As such, no evidence of contamination exists at these locations.

It is important to note that ECSI retained the services of Underground Survey Corp. of New Windsor, New York which included confirmation of possible on-site underground utilities prior to commencing any excavation activities (including adjoining areas where the Tenant House may exist, southeast and outside the enclosure). In addition, a GPR survey was conducted within the internal limits of the fenced enclosure. Based on GPR indications, evidence of large subsurface images were detected which prompted ECSI to place three (3) test pit excavations within the approximate center portions of the enclosure. The test pit excavations revealed that large rocks existed below portions of the surface, no evidence of past subsurface dumping or underground tank storage was determined. Photo No. 2 depicts surface marker flags placed within the fenced enclosure to guide excavations.

3.4 Former Farmer's Mines and Town of Wallkill Mine Areas

During February 2014, test pits were excavated within the approximate limits of Former Farmer's Mines #'s 1, 2 and 3, as well as within the limits of the Town of Wallkill Mine and adjoining material (stumps and mined aggregate) storage areas. Test

pit depths ranged from 4 to 8.5 feet based on observation of soil profile conditions necessary to confirm consistency (i.e. depth to virgin soils) and whether or not suspect fill or subsurface waste existed on-site. Test pit width and length averaged 2 feet and 8 feet, respectively.

Former Farmer's Mines

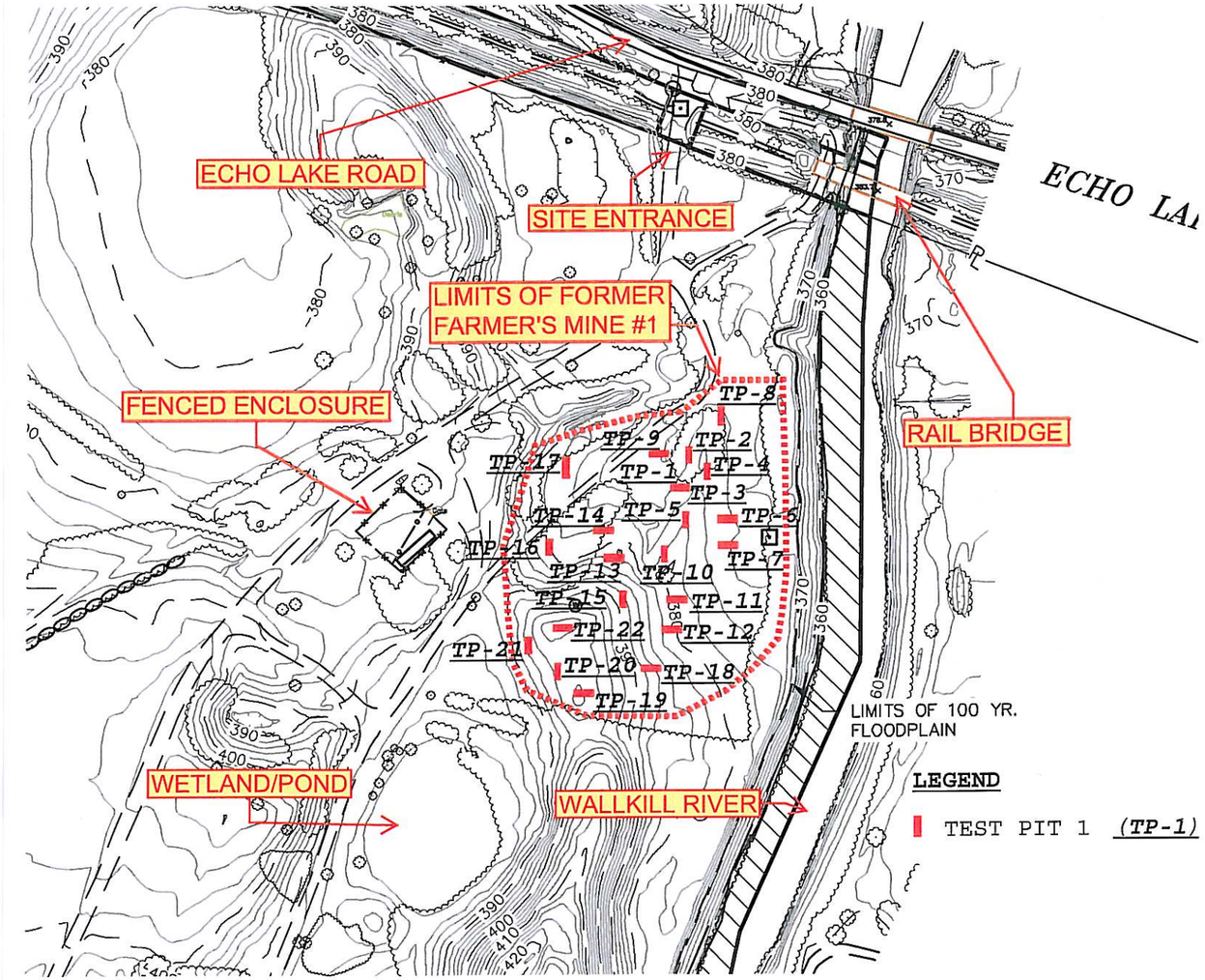
Former Farmer's Mine #1 was first investigated; this mine is located near the original driveway entrance of the site (just south of the rail bridge which crosses the Wallkill River) which once connected with Echo Lake Road. Surface conditions within this mine were observed to be highly irregular, whereby no formal restoration activities were performed and several high and low points in the topography required careful attention to ensure the investigation was complete. For these reasons, a total of 21 test pits were placed throughout the limits of this mine. Comparisons of observed soil conditions within each test pit served to determine that no unusual fill was placed within the limits of the investigated mine area, the area was essentially left abandoned after mining. Munsell color indicators and observed soil texture were similar to conditions encountered within the 6 test pit excavations placed within nearly agricultural fields. Photo No. 3 soil profile conditions (color and texture) within test pit number 7. Figure 3-2 presents the approximate locations of the 21 test pits excavated across the mine surface.

Within test pits 2 through 4, a small amount of household trash was encountered approximately 18 inches below the surface. The items encountered consisted of household waste including an area rug, bottles (plastic and glass), and various plastic items all of which when combined comprised of low volume. These materials were set aside for handling and disposal at a later date. Photo Nos. 4 and 5 depict the types of waste materials encountered in test pits 2 through 4.

While conducting test pit excavations, PID levels were 0.0 ppm, including background levels. At no time were any stains, suspicious odors or any other waste encountered beyond test pit excavations 2 through 4. In light of these conditions, soil sampling was not necessary. Observed soil conditions (texture, Munsell Chart Colors, moisture) within all 21 excavations were observed to be consistent; groundwater was not encountered during test pit excavation. No evidence of sediment and erosion potentials exists for this area.

Former Farmer's Mine #2 located southeast of mine #1 and east of the Wetland/Pond feature, was also not ever restored; however, surface conditions throughout the limits of the mine were fairly level. A total of 16 test pits were excavated within and in close vicinity of this mine area, including an unusually irregular surface area observed outside the immediate limits of the mine (northwest), and along a former dirt access road leading to the mine (test pit numbered TP-12 through TP-16). Figure 3-3 presents the approximate locations of each test pit excavation.

As with Farmer's Mine #1, PID levels measured during test pit activities were 0.0 ppm, including background levels, and at no time were any stains, suspicious odors or



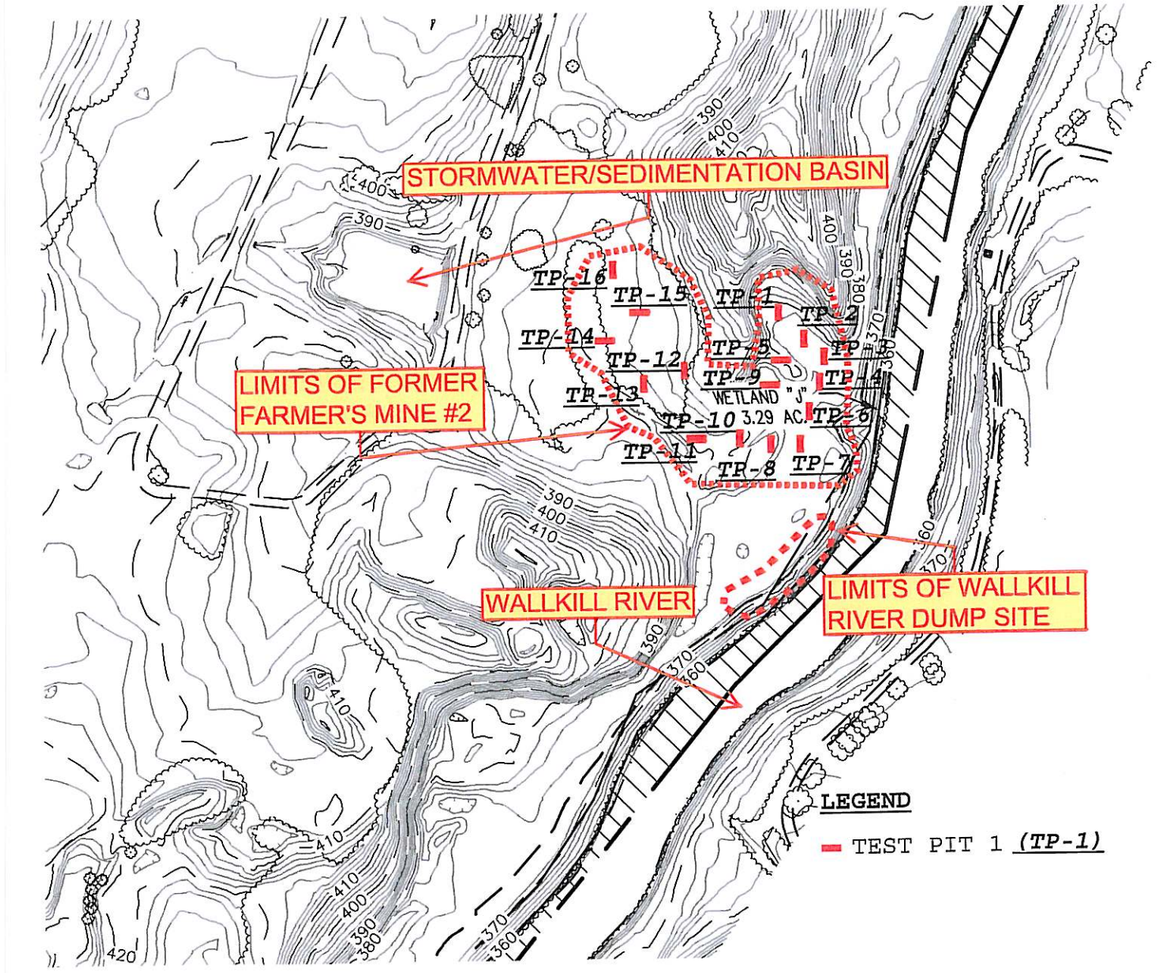
NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-2

FARMER'S MINE # 1
(TEST PITS 1 THROUGH 21)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



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SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-3

FARMER'S MINE # 2
(TEST PITS 1 THROUGH 16)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK

any waste encountered within test pit excavations 1 through 16. In light of these conditions, ECSI determined that soil sampling was not necessary.

Observed soil conditions (texture, Munsell Chart Colors, moisture) within all 16 excavations were observed to be consistent; groundwater was not encountered during test pit excavation. Munsell color indicators and observed soil texture were similar to conditions encountered within the 21 test pit excavations placed within nearly Farmer's Mine #1. Further, comparisons of observed soil conditions within each test pit served to determine that no unusual fill was placed within the limits of the investigated mine area, the area was essentially left abandoned. Further, no evidence of sediment and erosion potentials exists for this area. Photo No. 6 depicts soil profile conditions (color and texture) within test pit number 3.

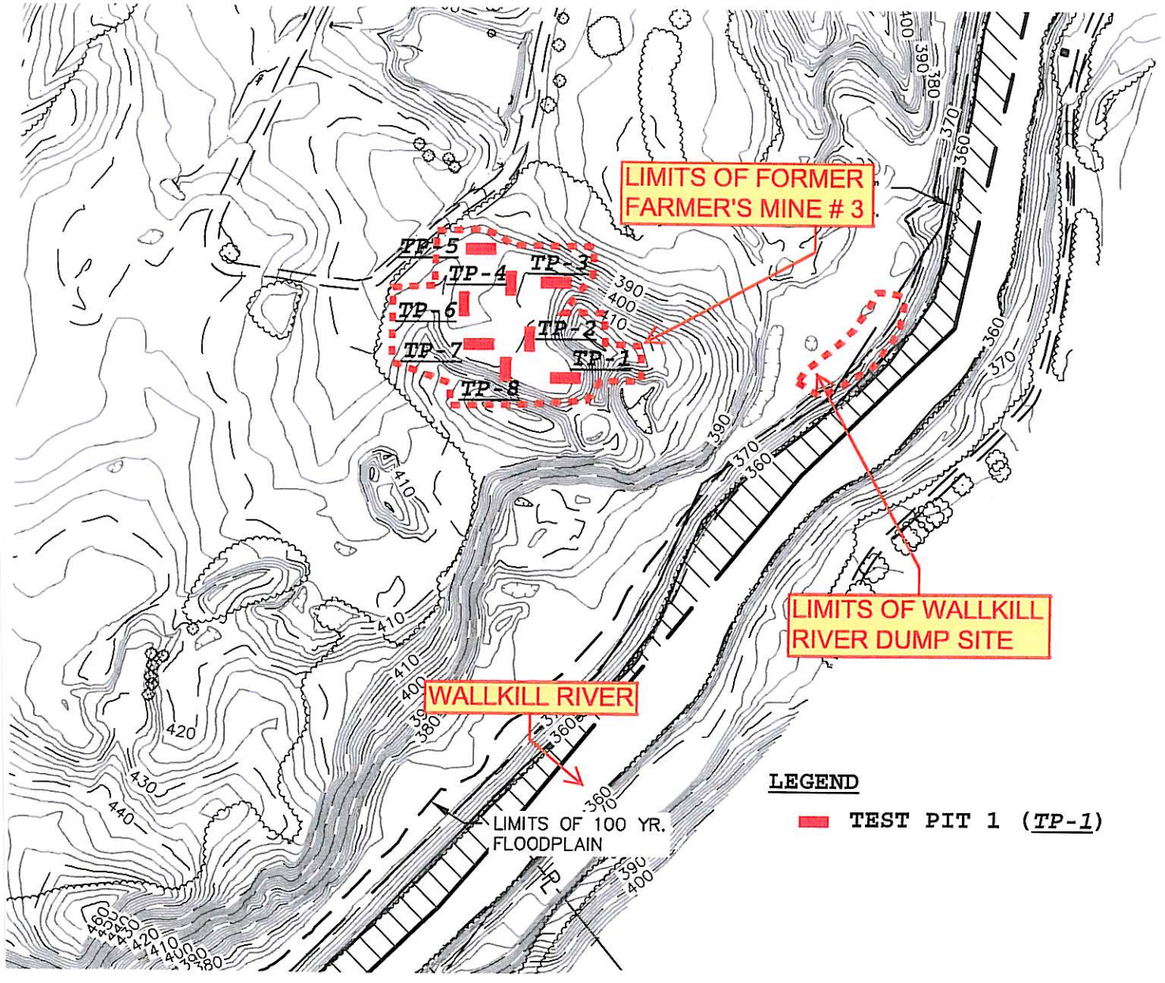
Former Farmer's Mine #3 located south of #2, and west of the Wallkill River Dump, was found to contain waste materials at or near the surface. A total of 8 test pits were excavated within this mine area; Figure 3-4 presents the approximate locations of each test pit excavation. The waste mostly consisted of some construction materials (assorted wood, wire fencing), small vehicle parts (car parts and farm equipment), plastic toys and plastic bottles (motor oil and antifreeze containers). These materials were estimated to be of low volume and set aside for later handling and disposal.

As with Former Farmer's Mines 1 and 2, PID levels measured during test pit activities were 0.0 ppm, including background levels, and at no time were any stains, suspicious odors or any significant waste encountered within test pit excavations 1 through 8. In light of these conditions, ECSI determined that soil sampling was not necessary.

Observed soil conditions (texture, Munsell Chart Colors, moisture) within all 8 excavations were observed to be consistent; groundwater was not encountered during test pit excavation. Munsell color indicators and observed soil texture were similar to conditions encountered within the 6 test pit excavations placed within nearly agricultural fields. Further, comparisons of observed soil conditions within each test pit served to determine that no unusual fill was placed within the limits of the investigated mine area, the area was essentially left abandoned. Photo No. 7 depicts soil profile conditions (color and texture) within test pit number 4. Further, no evidence of sediment and erosion potentials exists for this area.

Town of Wallkill Mine

During March 2014, mine material (aggregate) storage areas identified by ECSI were investigated after Former Farmer's Mines 1, 2 and 3. A total of 9 test pits were excavated within the mine storage area immediately south of Former Farmer's Mine #3; a total of 3 test pits were excavated within the storage area immediately southwest of the first. Figure 3-5 presents the approximate locations of the two storage areas and the 9 and 3 test pit locations, respectively. Very minimal waste was encountered along the northeast side of the stump storage area, which consisted of an approximate 30 foot



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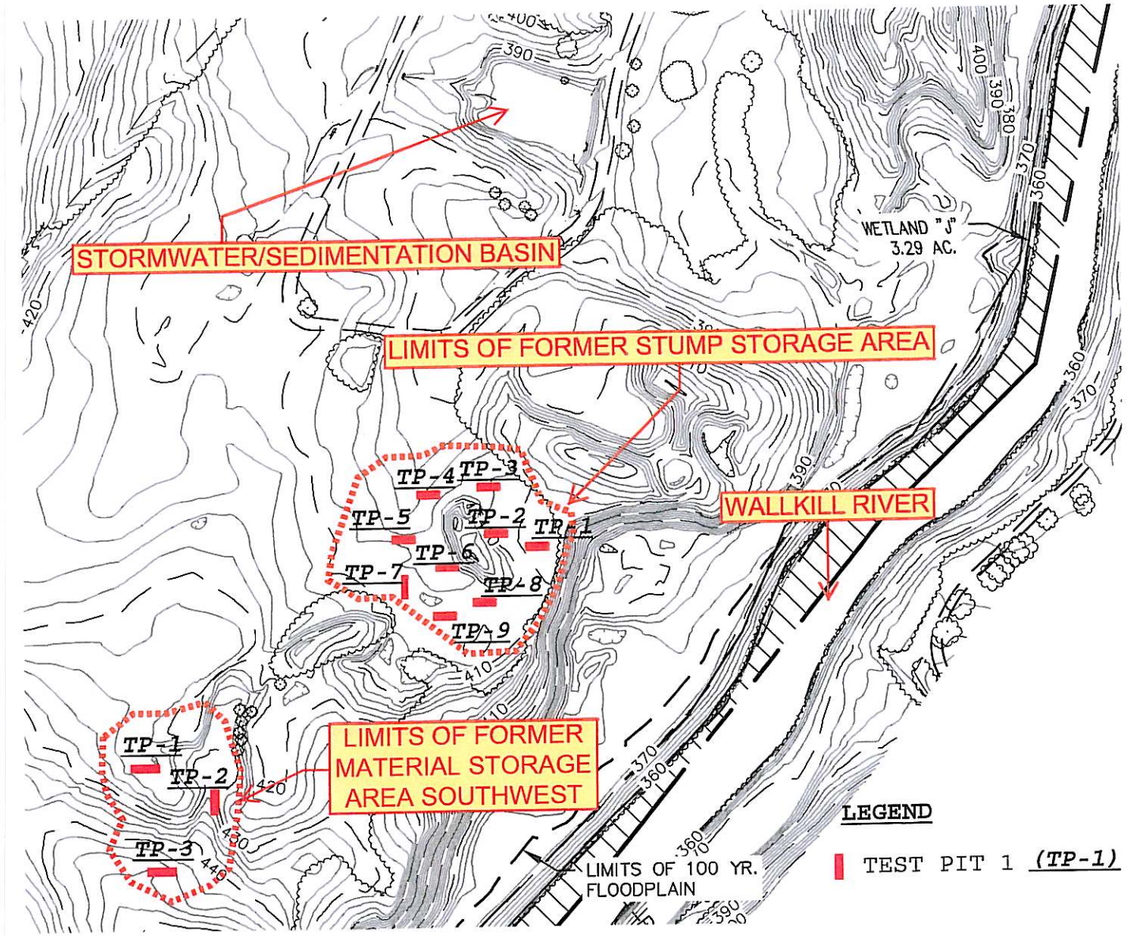
SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-4

FARMER'S MINE #3
(TEST PITS 1 THROUGH 8)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



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SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-5

FORMER STUMP & MATERIAL STORAGE AREAS

(TEST PITS 1 THROUGH 9 & 1 THROUGH 3)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK

section of stranded cable wire and a 15 foot section of fabric/rubber hose. These materials were set aside for later handling and disposal.

As with the Former Farmer's Mines #1 through #3, PID levels measured during test pit activities were 0.0 ppm, including background levels, and at no time were any stains, suspicious odors or any other types of waste encountered within test pit excavations. In light of these conditions, ECSI determined that soil sampling was not necessary.

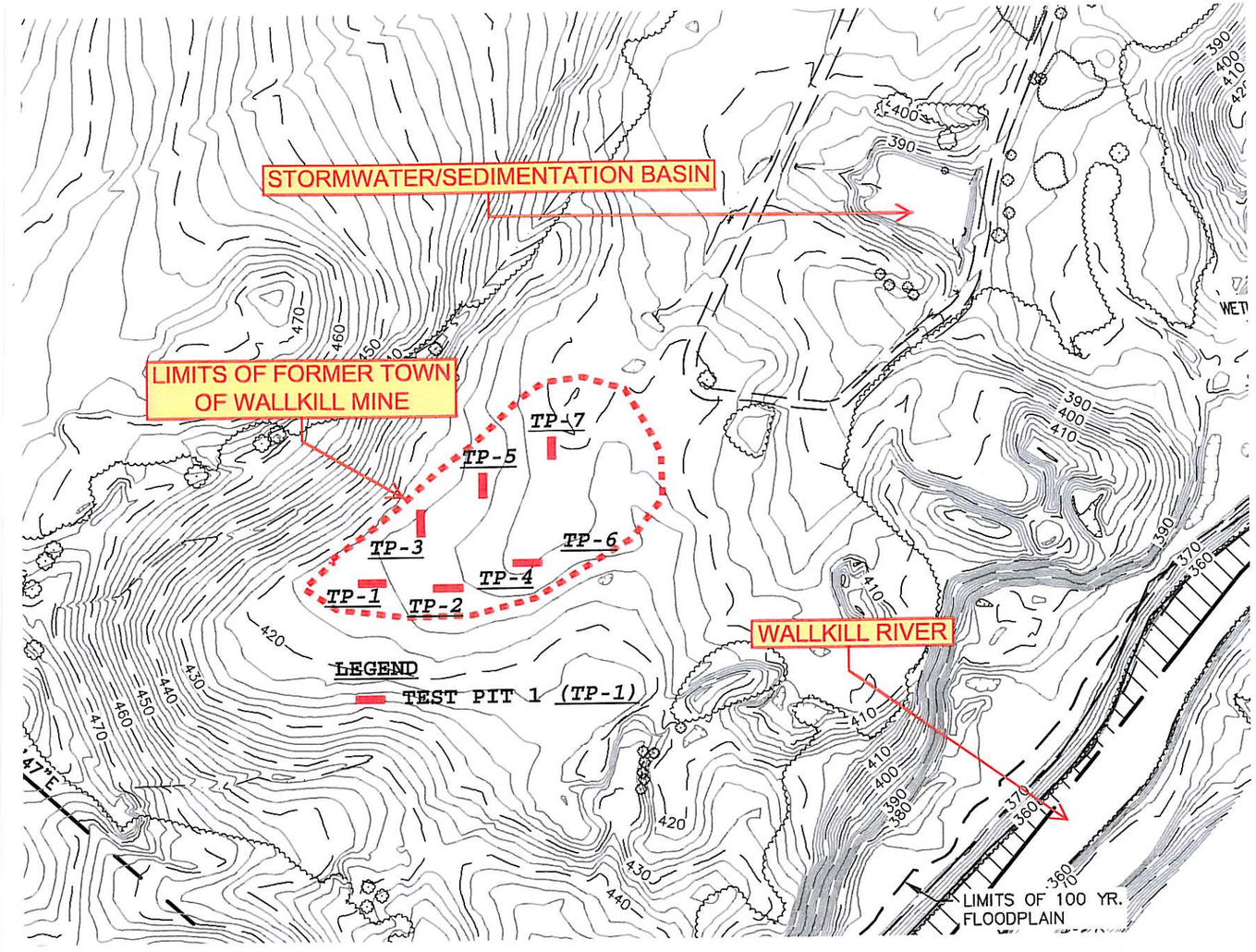
Observed soil conditions (texture, Munsell Chart Colors, moisture) were observed to be consistent; groundwater was not encountered during test pit excavation. Munsell color indicators and observed soil texture were similar to conditions encountered within test pit excavations placed throughout other investigated areas of the site. Further, comparisons of observed soil conditions within each test pit location served to determine that no unusual fill was placed within the limits of the investigated mine area, the area was essentially left somewhat reclaimed. Photo Nos. 8 and 9 depict soil profile conditions (color and texture) within test pits numbered 3 and 6. Minimal evidence of sediment and erosion potentials exists for this area.

The Town of Wallkill Mine, situated west and southwest of the two material storage areas is relatively level. A total of 7 test pit excavations were placed within the central/main portion of the mine to confirm that no suspect materials of any kind exist within this area. Figure 3-6 presents the approximate locations of each of the test pit excavations placed within the main mine area.

While conducting test pit excavations within the former Town mine, PID levels were 0.0 ppm, including background levels. At no time were any stains, suspicious odors or any other waste encountered. Observed soil conditions (texture, Munsell Chart Colors, moisture) within all 7 excavations were observed to be consistent; groundwater was not encountered during test pit excavation. Comparisons of observed soil conditions within each test pit served to determine that no unusual fill was placed within the limits of the investigated mine area, the area was essentially left abandoned. In light of these conditions, soil sampling was not necessary. Photo No. 10 depicts soil profile conditions (color and texture) within test pit numbered 5. No evidence of sedimentation and erosion potentials exists for this area.

3.5 Former Tenant and Farm House Sites

On March 2014, ECSI excavated within the limits of areas identified by Underground Survey Corp. to possibly be associated with the former tenant house. Initial excavations revealed the location of portions of the septic system; ongoing excavations exposed the foundation of the tenant structure, as well as the former earthen driveway and rear yard of the house site. Within the foundation, a considerable amount of waste (household trash) was encountered including rugs, construction and demolition waste materials (i.e. wood, sheet rock, appliances, metal and rubber piping and some furniture). It appears that the upper portions of the house were demolished and burned



NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-6

TOWN OF WALLKILL MINE
(TEST PITS 1 THROUGH 7)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK

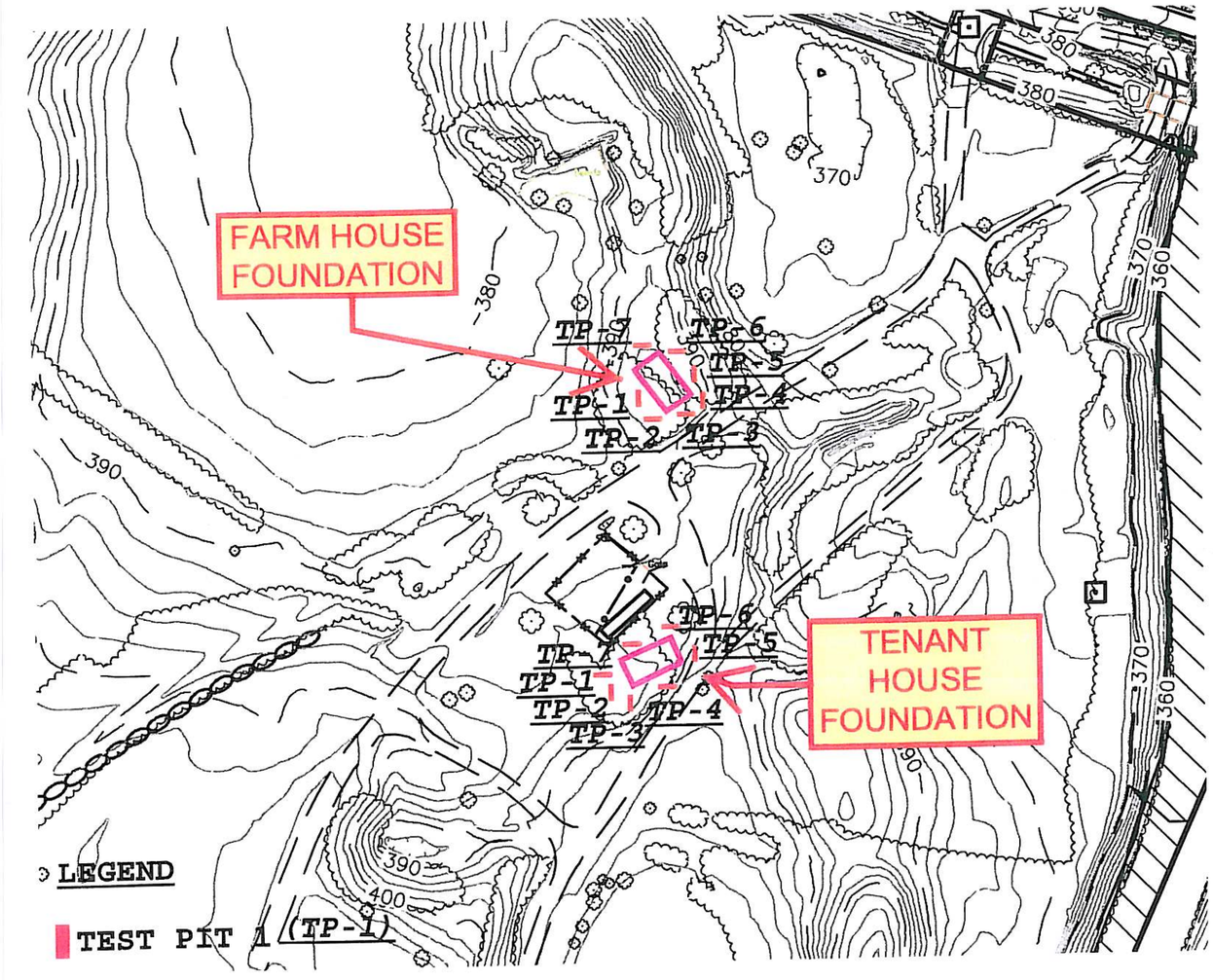
while the majority of the internal walls and contents were "bulldozed" into the foundation. Photo Nos. 11 and 12 depict the types of waste encountered within the foundation of the Tenant House. Figure 3-7 presents the approximate location of the Tenant House foundation; 7 test pit excavations were excavated around the foundation (north, south, west and east) to ensure that no trash or C&D waste was buried beyond the limits of the foundation.

A portion of a steel 275-gallon fuel oil storage tank was excavated from within the western corner of the foundation; a small volume of heating oil remains fully contained within the tank (10 to 20 gallons plus minimal sludge). Photo No. 13 presents an image of the 275-gallon heating oil tank amongst the waste within the foundation. Excavations placed around the foundation exposed additional but minimal C&D waste materials, as well as served to define the full limits of the structure foundation and accumulated waste.

No evidence of petroleum contaminated soils was observed and while conducting test pit excavations, PID levels were 0.0 ppm, including background levels. PID levels measured of the oil within the exposed 275-gallon storage tank; levels ranged from 5.5 to 7.0 ppm, which are indicative of low oil volatility. At no time were any stains, suspicious odors or any waste encountered other than described above. Observed soil conditions (texture, Munsell Chart Colors, moisture) within each test pit excavation were observed to be consistent; groundwater was not encountered during test pit excavation. In light of these conditions, soil sampling was not necessary. Photo No. 14 depicts soil profile conditions (color and texture) within test pit numbered 5.

Also during March 2014, ECSI placed 7 test pit excavations around the former Farm House foundation (Figure 3-7), portions of which are visible at the surface. Minimal metal and plastic piping, evident of a septic system, was encountered at the south side of the foundation. No waste was encountered within any of the other 6 test pits placed around the foundation (north, west, and east). Excavations within the foundation revealed that the house and its contents (i.e. appliance parts, metal bed frames and steam heat piping) were razed by fire (Photo Nos. 15 through 17). In fact the wood contained within the foundation is severely charred from fire. As determined under the Phase I Assessment, this structure was reported to be destroyed by fire.

A portion of a steel 275-gallon fuel oil storage tank was excavated from the burned waste within the northwest section of the foundation; as with the tenant house, minimal oil volume remains within the tank (Photo No. 18). PID levels measured of the oil within an exposed top section of the 275 gallon storage tank; levels ranged from 7.5 to 9.0 ppm, which are indicative of low oil volatility. At no time were any stains, suspicious odors or any waste encountered other than described above. Observed soil conditions (texture, Munsell Chart Colors, moisture) within each test pit excavation were observed to be consistent; groundwater was not encountered during test pit excavation. In light of these conditions, soil sampling was not necessary. Photo No. 19 depicts soil profile conditions (color and texture) within test pit numbered 5.



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SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-7

TENANT/FARM HOUSE FOUNDATION AND TEST PIT LOCATIONS

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK

When initially commencing Phase II activities, ECSI requested Utility Survey Corp. to conduct a GPR survey just south and west of the Former Farm House foundation to aid in determining if possible subsurface structures, buried waste, or underground tanks may exist by eventual excavation.

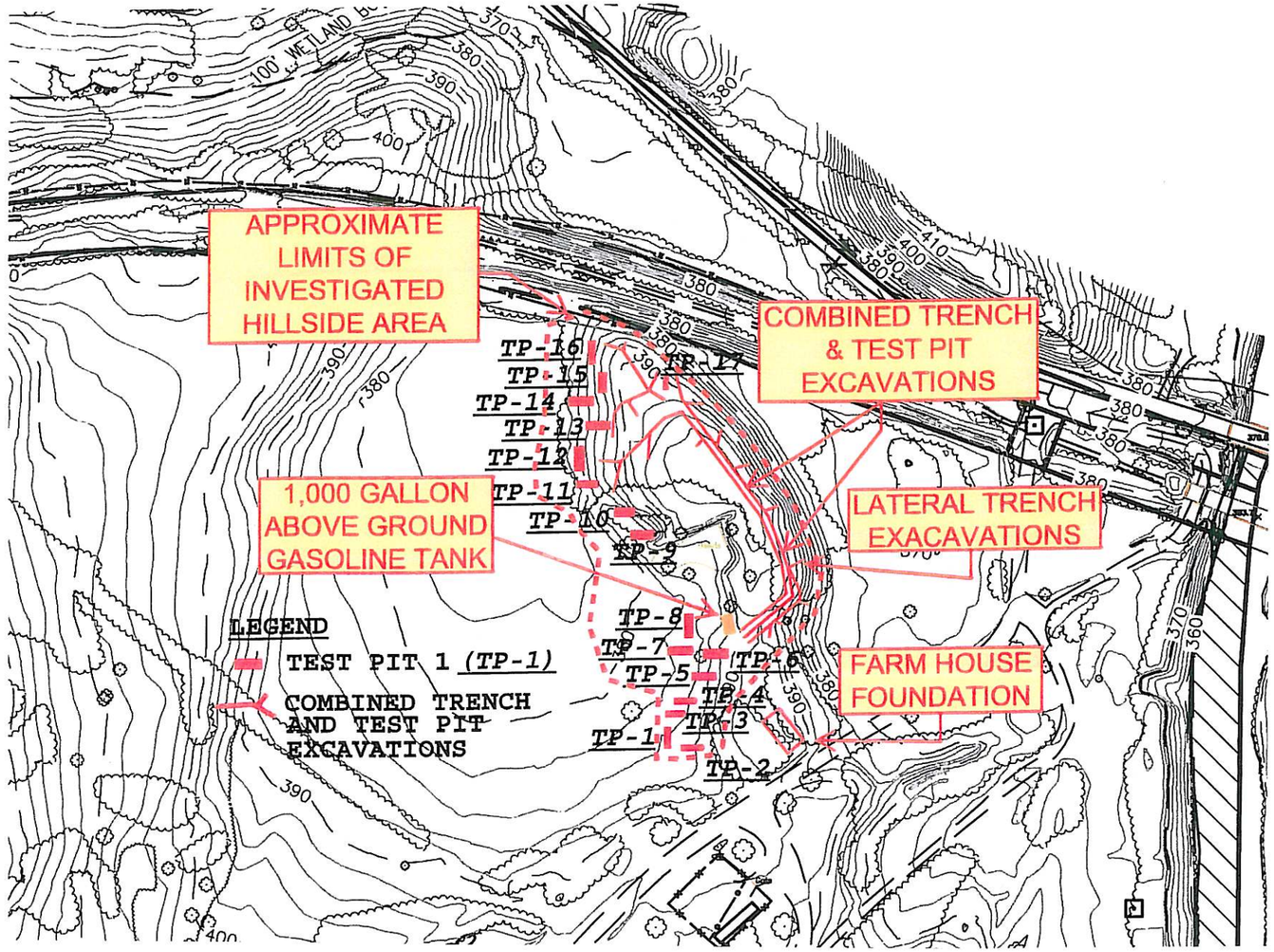
3.6 Hillside Area and Former Barn Sites

During March 2014, ECSI arranged to clear portions of the hillside and former barn sites in preparation for the placement of test pits necessary to visually inspect areas of the hillside northwest of the former farm house (Photo No. 20). In addition, an area surrounding the approximate 1,000 gallon above ground steel storage tank, located at the southeast corner of the hillside, were cleared for placement of test pit excavations necessary to confirm whether or not possible releases occurred over time. A considerable amount of care was applied to avoid relocation of waste materials previously identified at the surface under the Phase I Assessment process, as well as along the edge of the hillside area, north, south, west and east.

Subsequent to the clearing of the hillside and areas south in the vicinity of the barn sites (including the above ground storage tank), the property owner (Concrete Properties, LLC) requested that Phase II activities be discontinued in fear that cleared surface areas may present sedimentation potentials which may pose a compliance issue for the owner. While ECSI and the excavation firm retained for the project exercised extreme care in avoiding such potentials, Phase II field activities were postponed until a later date.

On July 2, 2015, ECSI commenced the remainder of Phase II field activities at the hillside and former barn site, including areas south and between the former Farm House foundation. No vegetation clearing was required and the surface was fully stabilized with a dense vegetative cover which became established during the growing season of 2014 and spring of 2015 after initial clearing in March 2014. Given that waste was previously observed near the surface on various portions of the hillside, ECSI excavated shallow trenches and test pits (on approximate 30 foot center within the trenching) at locations within the trenching. This combined excavation approach was found to provide more information and result in an exhaustive field assessment with greater level of confidence in determining and confirming waste types, depth and soil conditions in an area previously determined to contain a significant variety and volume of waste under the Phase I Assessment. In addition, lateral trenching and test pit excavations were utilized towards the north, west, east and south within the edge areas of the hillside to assess surface and buried waste characteristics Individual test pits were placed discretely as needed within some areas of the hillside in order to characterize waste materials, confirm waste depths and determine whether or not a need existed to obtain samples of suspect soils by way of visual observation and soil screening using a PID during excavation.

Trench depths ranged from 24 o 35 inches; test pit depths ranged from 36 to 96 inches. Photo Nos. 21 through 24 illustrate the trench and test pit excavations placed atop the hillside and some encountered waste. Figure 3-8 presents the approximate



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SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-8

HILLSIDE/BARN SITE INVESTIGATION AREAS

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK

locations where test pits and shallow trench excavations (combined with test pits at 30 foot center) were placed atop the hillside and edge areas, north, west, east and south; test pit excavations were also placed downgradient (5 test pits) and upgradient (2 test pits) of the above ground tank location.

While excavating atop the hillside and edge areas, observed soil conditions (observation of texture, Munsell Chart Colors, moisture) within each test pit and trench excavation were observed to be consistent with the types of conditions encountered in other test pit excavations throughout the site; groundwater was not encountered within any of excavated test pits and trenches. Munsell soil colors were either 10YR 5/4 between the surface and 6 to 12 inches within the profile and 10YR 6/6 from 12 to 32 inches within the base of the profile. No moisture or evidence of soil mottling was observed. Soil textures consisted of an organic loam soil near the surface to a sandy/silty loam throughout the profile and at the base of the excavation.

Excavations and trenching in areas where surface waste was observed revealed that waste depth did not extend beyond approximately 24 inches below the surface. Further, soil screening and visual observations of soils situated below and along the side of encountered waste materials did not display any evidence of contamination. Evidence of limited wood decomposition and rust from metal objects (comprised of steel and iron) was observed to be in close proximity of the waste. Further, PID levels observed during continuous soil screening did not result in any suspect conditions. Levels were 0.0 ppm for both immediate background soil conditions, as well as excavated soils, including within excavated trench sections and test pits. At no time were any suspicious odors detected.

It is important to note that 55-gallon drums observed on the surface along the edges of the hillside (primarily north) did not contain any liquids and visual inspection of areas along side and below the drums (via manual shovel digs) did not result in any observations of staining or odors. Further, use of a PID within shovel digs placed around each drum did not result in any suspect conditions; as a result, soil samples were not required to be obtained.

Six excavations were placed around the approximate 1,000 gallon, steel above ground storage tank to determine if any potential evidence of a release existed around the west, north, south and east sides of the tank (Photo Nos. 25 through 27). Continuous PID soil screening and visual observations made while excavations were advanced around the base of the tank did not result in any suspect conditions or evidence of a release. Care was directed at ensuring that the tank remained in place, and not be subject to dislodgment. A small diameter rubber fill hose and nozzle was encountered near the top of the tank within an adjoining flat soil embankment area which is believed to mark the location where rubber tired farm equipment was fueled with gasoline. This is based on the nearby observed hose and nozzle and observations of the type of gasoline powered farm equipment existing atop the hillside.

ECSI also observed several old vehicle (car and tractor) chassis' and body parts, tires and wheels within a large depression area mostly containing corrugated metal siding, wood and concrete remaining from what appears to be prior demolition of the former barn sections situated adjacent to the southern limits of the hillside. Essentially, the barn sections appear to have been originally construction into the hillside. Remnants of a concrete and concrete block silo lie within the approximate south-center of the hillside.

Photo Nos. 28 through 31 illustrate some of the various types of waste encountered within the trench and test pit excavations placed atop and along the west, north, east and south edges of the hillside area. While much of this waste has been documented and described within the Phase I Assessment report, the Phase II work effort served to confirm its limits, whether or not sever contamination existed and estimate eventual cleanup costs. Photo Nos. 32 through 34 provide an idea of the volume of corrugated metal siding tires/wheels and concrete support walls encountered within the surface depression which adjoins the approximate locations of the former barn sections.

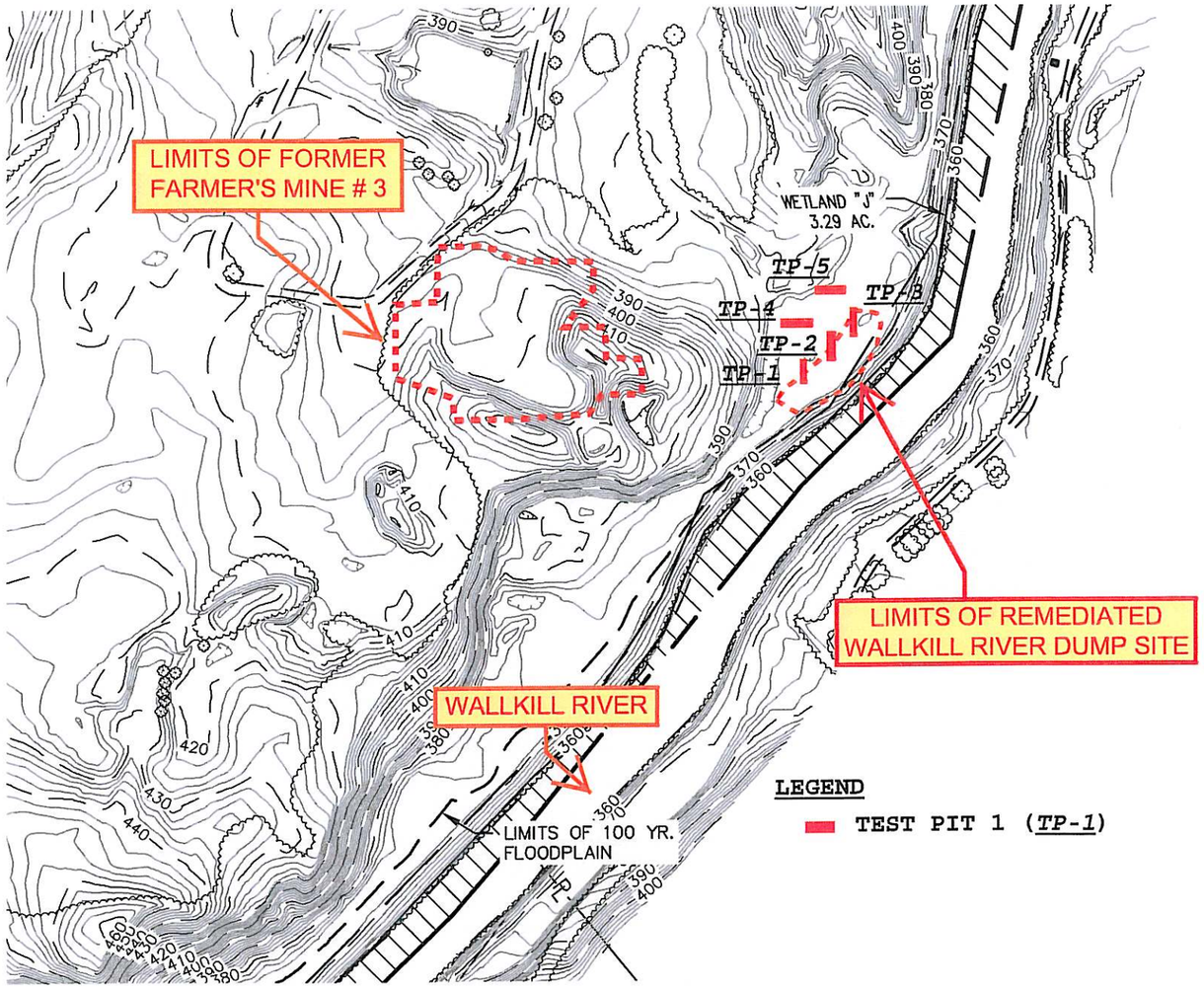
Test pit excavations placed within areas between the former barn sites and Farm House foundation revealed two small piles of surface waste comprised of asphalt shingles, wood of various dimension, wire fencing and corrugated metal; no subsurface waste was encountered and PID levels were measured to be 0.0 ppm during continuous soil screening and for background.

3.7 Wallkill River Dump Site

Final Phase II field activities were performed on July 6, 2015 with the placement of two test pits immediately west of the River bank dump and the placement of three shallow test pit excavations at the top edge of the remediated portions of the former dump area (Figure 3-9). The two test pits placed west of the River bank consisted of soils different than those of the nearby upgradient investigated mines. Sand and gravel was encountered lose to the surface (Munsell 10 YR 3/4) with sand and gravel throughout the remainder of the profile (Munsell 10YR 4/4). No waste was encountered within the two test pits, west (Photo Nos. 35 and 36). The depth of these test pits averaged 4 feet.

The three shallow test pits placed atop the edge of the River bank area previously remediated by the Concrete Properties, LLC displayed similar soil profile conditions to that of the upper portions of the excavations placed west of the bank. No waste was encountered within the first (south) and third (north) test pits; a minimal amount of trash was observed and removed from the upper portions of the second (middle) shallow test pit (Photo Nos. 37 through 39). ECSI ensured that excavations were advanced to virgin soil, 18 to 38 inches in depth, as well as horizontally (approximately 4 foot) before terminating each of the three test pits.

The amount of waste removed from the middle test pit amounted to less than 0.0198 cubic yards of waste, which is approximately equivalent to a 4 gallon bucket volume; the waste consisted of recognizable metal objects, small pieces of wood, glass



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SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-9

REMEDIATED WALLKILL RIVER DUMP (TEST PITS 1 THROUGH 5)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN. NEW YORK

bottles, paper cups, plastic bags and pieces of plastic toys. The waste was isolated away from the bank of the River for eventual transport and disposal at a later date; an additional small amount of waste observed on the surface west of the River bank was combined with the trash removed from the top-of-slope (Photo No. 40). At no time were VOC's detected during soil screening with a PID during excavation and removal of observed waste was measured at 0.0 ppm; background levels were also recorded as 0.0 ppm. At no time were any stains observed or suspicious odors detected within any of the five test pits excavated at this location.

Based on visual observations made by ECSI, it appears that the final slope grades along the remediated sections of the River bank indicate that a significant amount of waste was removed from the preexisting surface including large car and farm vehicle chassis' (including a Volkswagen Beetle, circa early 1970's), furniture (i.e. metal bed frames), white goods (washing machines), partially buried plastic bags filled with trash and a variety of sizable metal farm equipment parts dating back to the 1960's and 1970's. Essentially, these types of waste produced a very irregular surface, conditions which no longer exist at this location. The entire area is covered with angular stone which is favored for preventing slope failure. In addition, slope contours are somewhat terraced yet continuous from top-of-slope to mid-slope and beyond to the toe-of-slope along the lower banks of River.

Given the observed conditions and the information gathered from the five test pit excavations placed within this area, ECSI concludes that a significant remediation work effort was performed along the affected River bank.

3.8 Post-excavation Stabilization Practices

Given that both trench and test pit excavations were placed atop the hillside and surrounding edge areas, ECSI retained the excavation contractor to apply seed (construction mix) and hay across all areas of disturbance. Based on subsequent site inspections performed by ECSI, these practices have served well to establish vegetation and stabilize disturbed areas. The hillside and immediate adjoining areas do not display any erosion or sedimentation potentials.

3.9 Other Identified Phase I Assessment Issues and Recommendations

As noted in the Phase I Assessment report, ECSI provided recommendations for other issues related to planned construction and operations of a food plant and conference center. ECSI assumes that each has been considered and likely addressed by AKI as part of their ongoing SEQR review with the Town of Goshen as Lead Agency.

The types of "other issues" and recommendations discussed included the existence of site and surrounding cultural significance; the need to confirm a possible utility easement near a along Echo Lake Road; contact with the Orange County Department of Parks, Recreation and Conservation to discuss their design plans to convert the on-site rail bed into an extension of the nearby Heritage Trail; confirm

whether or not on-site soils are comprised of NYS Agriculture and Markets high quality soil groups 1 through 4 given that some on-site soils consist of groups 2 and 4 and the site lies in Agriculture District #2 (these areas are minimal in size, portions of which may have been disturbed by past mining) and abandonment of concrete well vault east of the former Farm House site as the upper structure of the vault appears to prensent a dangerous to anyone who may come close or attempt to view the inside base of the well (i.e. a possible attractive nuisance).

4.0 COST ESTIMATES FOR PHASE III CLEANUP

The removal, transport and disposal of the types of waste materials identified under the Phase II Assessment will be performed as a Phase III Remedial Cleanup effort. Activities should include excavation, segregation and loading of all identified waste materials including C&D, scrap metal (i.e. corrugated metal siding, abandoned farm equipment), tires, wheels and concrete walls and flooring from within the foundations identified for the former Tenant and Farm House sites and barns. These activities will require a qualified excavation firm with the right size and type of equipment necessary for waste segregation, handling and loading; further, special attachments may be needed such as a grapple thumb and/or hydraulic hammer to expedite waste handling/loading and to reduce concrete waste volume necessary for proper transport and disposal.

In addition, management and oversight by an Environmental Professional should be provided to properly document the Phase III cleanup effort, as well as prepare a Remedial Work Plan to include a Sampling & Analysis Plan necessary to obtain confirmatory (post-excavation) soil samples, as well as prepare a final Phase III Remediation Report. The Phase III Remediation Report should contain, at a minimum, a description of the type of waste segregation, handling, transport and disposal activities performed; photographic documentation and descriptions of waste type and volume loaded, transported and disposed, along with descriptions of disposal destinations and waste transport and disposal receipts.

Remaining soils within areas which contain significant volumes of waste (i.e. atop portions of the hillside area, some adjoining side slopes and below the 1,000 gallon above ground tank after removal) should be sampled and analyzed to confirm that no residual waste constituents exist after waste materials are removed. In addition, a 4 to 6 inch layer of soil may be required to be excavated from below the waste mass and tested for possible contamination and disposal if determined by preliminary confirmatory soil testing to contain waste residual constituents. Such soil samples should at least be analyzed for Heavy Metals, VOC and Semi-VOC, TPH and CP-51 constituents. Overall, the amount of samples obtained will depend upon project needs relating to the removal of waste materials and confirmation of remaining soil conditions, especially visual observations and indications resulting from soil screening using a PID. In addition, soil surrounding each house site foundation can be used to fill each foundation excavation after waste and support walls are removed for disposal; unaltered natural stone used as part foundation walls can be placed in the foundation excavation.

In order to develop preliminary cost estimates for the cleanup of the various waste materials encountered at the site, ECSI obtained quotes from two local area waste management firms, Sonny-Zito Sanitation of New Hampton, New York and Taylor Montgomery, LLC of Montgomery, New York. ECSI also contacted a representative at the Orange County Transfer Station to obtain an expectation of disposal costs for mixed

tires and wheels of all sizes. The breakdown of services and estimated disposal costs provided by each of the two disposal firms are as follows:

SONNY-ZITO SANITATION		
WASTE TYPE	**COST PER 30-YRD CONTAINER**	**COST PER 40-YRD CONTAINER**
C & D	$630 + Tax [1]	$730 + Tax [2]
Scrap Metal	At No Cost [3]	At No Cost [3]
Tires/Wheels	$600/ton [4]	$600/ton [4]
TALOR MONTGOMERY, LLC		
WASTE TYPE	**COST PER 30-YRD CONTAINER**	**COST PER 40-YRD CONTAINER**
C & D	$520 + Tax [5]	$600 + Tax [6]
Scrap Metal	At No Cost [3]	At No Cost [3]
Tires/Wheels	Does Not Accept	

Notes:

(1) 5-ton limit; $85/ton above 5 tons; (2) 6-ton limit; $85/ton above 6 tons;

(3) Will provide either a 30- or 40-yard container at no cost for transport & disposal of scrap;

(4) Mixed tires & wheels $200/ton up to 24 inches diameter, $600/ton greater than 24 inches diameter;

(5) 5-ton limit; $80/ton above 5 tons; (6) 4-ton limit; $80/ton above 4 tons;

Sonny-Zito will accept for transport and disposal, mixed tires and wheels, including tractor sized tires and wheels. Taylor Montgomery, LLC does not accept tires or wheels. Sonny-Zito will provide AKI with up to $17/ton for scrap material if more than 40 tons of scrap is generated. The cost for disposal of tires at the Orange County Transfer Station is the same as the above costs provided by Sonny-Zito. As noted, it is estimated that more than 150 tires and wheels of various sizes exist at the site; these materials will require segregation and loading necessary to facilitate acceptance at the Orange County Transfer Station.

The exact amount of scrap is difficult to assess in its present condition; however, ECSI estimates that up to six (6), 40-yard containers will likely be necessary to load, transport and dispose of this material. In addition, up to three (3), 30-yard containers would be required for the segregation, transport and disposal of mixed tires and wheels sized up to and greater than 24 inches. Given the amount of C&D and household waste observed on-site, ECSI estimates that up to (11), 40-yard containers will be required to load, transport and dispose of the C&D materials encountered, including the concrete

foundation and contents documented to exist at the Tenant and Farm House sites, as well as waste materials which exist on the hillside (including barn C&D material). The two, 275-gallon fuel oil tanks and the approximate 1,000-gallon gasoline tank will require special cleaning, handling, transport and disposal by a qualified tank removal and disposal firm. Based on the above, the following cost estimate for Phase III cleanup, using costs provided by Sonny-Zito, as well as typical industry costs for the removal and disposal of above ground storage tanks, is as follows:

ITEMS	ESTIMATED CLEANUP COSTS	NOTATIONS AND QUALIFICATIONS
Excavation, Waste & Soil Segregation, Loading, Final Grading & Stabilization (seed and hay)	$29,275	15 days @ $1,800/day + Tax includes dozer, excavator, 2 operators & 2 laborers for segregation, loading & access for container delivery, switch-out and pickup
C&D Transport & Disposal	$15,805	20, 40-yard containers @ $730 per container + Tax
Scrap Metal Transport & Disposal	__ __ __	Assumes no charge, and no gain
Transport and Disposal of Mixed Tires and Wheels	$2,370	Based on an estimated 3, 40-yard containers @ $600/ton + Tax for road weight concerns
Above Ground Tank Cleaning & Disposal	$5,415	Based on typical industry charges + Tax; includes tank, cleaning, loading, transport & disposal (with T&D receipts)
Environmental Professional	$18,800	Includes Remedial Work Plan with SAP included; coordination/mangement of cleanup activities, soil screening, field sampling, photographic documentation and preparation of Phase III Remediation Report
Estimated Laboratory Analytical Costs	$7,500	Assumes 10 composite confirmatory soil samples
TOTAL	**$79,165**	

In general, overall project costs may be less or more depending on actual project needs such as the number of soils samples required for confirmation of remaining soil quality, number of days Phase III activities are performed and actual number of roll-off containers required for cleanup.

5.0 CONCLUSIONS

The test pit program (including test pit and trenching excavations), sampling and analyses and soil screening activities performed under the Phase II Assessment served to substantiate that the various types of waste encountered on-site do not pose a serious or significant environmental risk or liability for AKI, nor is the surrounding environment and public welfare affected or at risk. At no time were any suspect odors or staining observed, in conjunction with the results of continuous soil screening with a PID, which confirmed that no suspect liquids or residue waste constituents exist within soils situated below the waste items identified and investigated.

Soil, water and sediment sampling and analysis did not result in any finding of significant contamination and observations made in proximity of the Wallkill River Dump identified by way of the Phase I Assessment, and investigated under the Phase II Assessment, confirmed that the affected area was remediated. Further, measures were taken to reduce slope failure, as well as reduce erosion and sedimentation potentials for the River bank.

Physical conditions within unreclaimed mine areas where test pit and trench excavations were performed are stable and do not pose any erosion or sedimentation potentials on-site, nor are nearby area natural resources at risk. The recommended Phase III Remedial Cleanup will result in the proper removal and disposal of identified waste materials previously discarded as part of past farming practices believed to have been conducted during the 1960's and 1970's.

Based on the extensive Phase II Assessment performed for the site, ECSI recommends that no further field investigations be performed at this time.

6.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

ECSI declares that to the best of our professional knowledge and findings associated with the Phase II Environmental Site Assessment that no further work is required to investigate prior issues and areas of concern identified under the assessment process.

Anthony P. Russo has utilized specific qualifications and experience necessary to perform the Phase II Assessment and report the information herein. This is based on his education, professional training and more than 25 years experience for assessing properties of the nature, history and setting of the subject Echo Lake Industrial Site owned by Amy's Kitchen, Inc.

Signature: _____ Date: September 25, 2015

Qualified Environmental Professional

Anthony P. Russo, President

APPENDICES

APPENDIX A

PHOTOGRAPHS

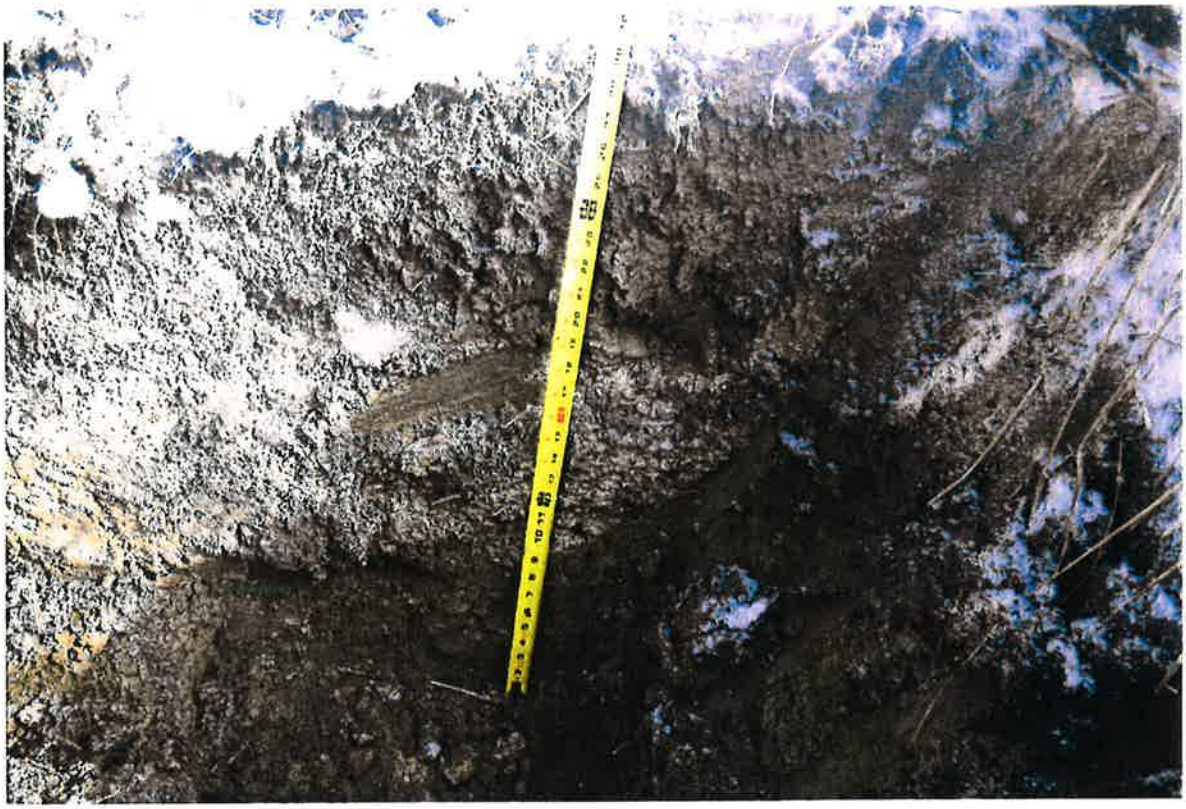


Photo No. 1: Example of soil profile conditions within one of the six test pits excavated in on-site agricultural fields.

Photo No. 2: Suspect area defined by Ground Penetrating Radar (GPR) flag mark-outs within fenced enclosure area.

Photo No. 3: Example of soil profile conditions within one of the 21 test pits excavated in the Former Farmer's Mine #1.

Photo No. 4: Close-up of waste (area rug) encountered at test pits 2 through 4 within Former Farmer's Mine #1.

Photo No. 5: View of tarp and other materials encountered in test pit 4 within Former Farmer's Mine #1.

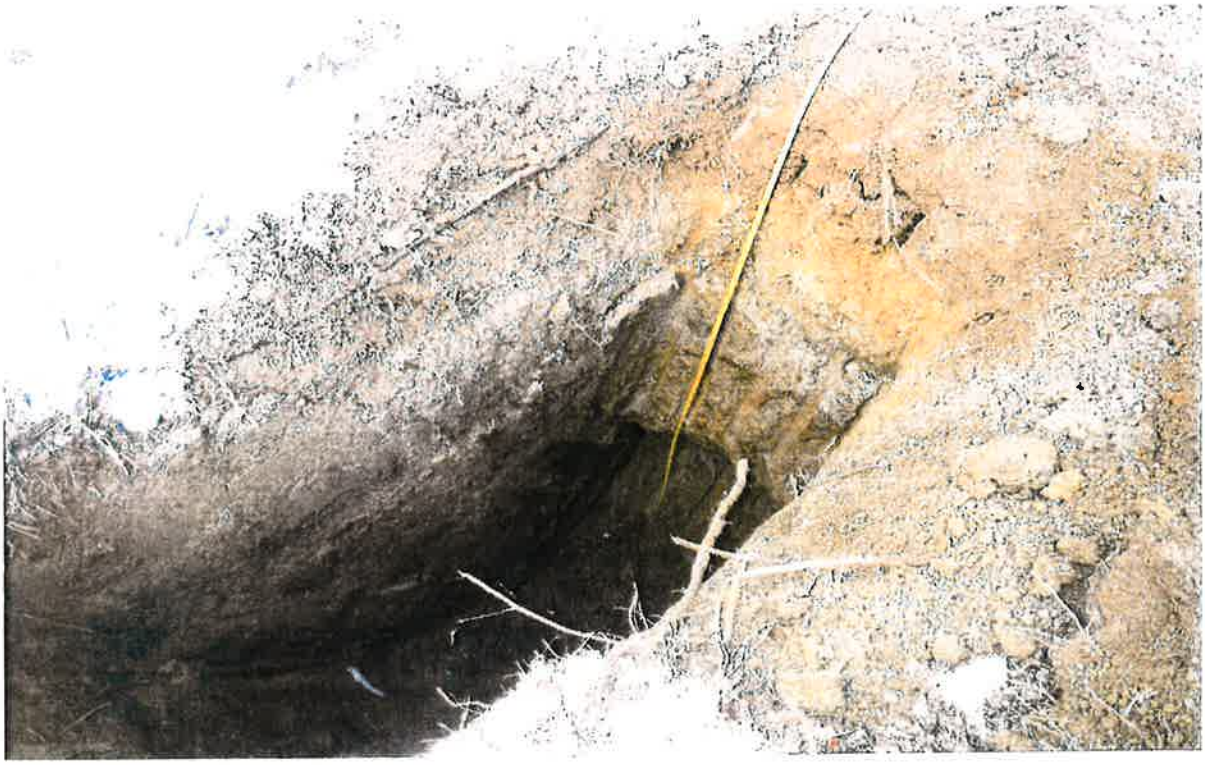


Photo No. 6: Example of soil profile conditions within one of the 16 test pits excavated in Former Farmer's Mine #2.

Photo No. 7: Example of soil profile conditions within one of the 8 test pits excavated in Former Farmer's Mine #3.

Photo No. 8: Example of soil profile conditions within one of the 7 test pits excavated in former Town of Wallkill Mine area.

Photo No. 9: Example of soil profile conditions within one of the 9 test pits excavated in former Town of Wallkill Mine stump storage area.

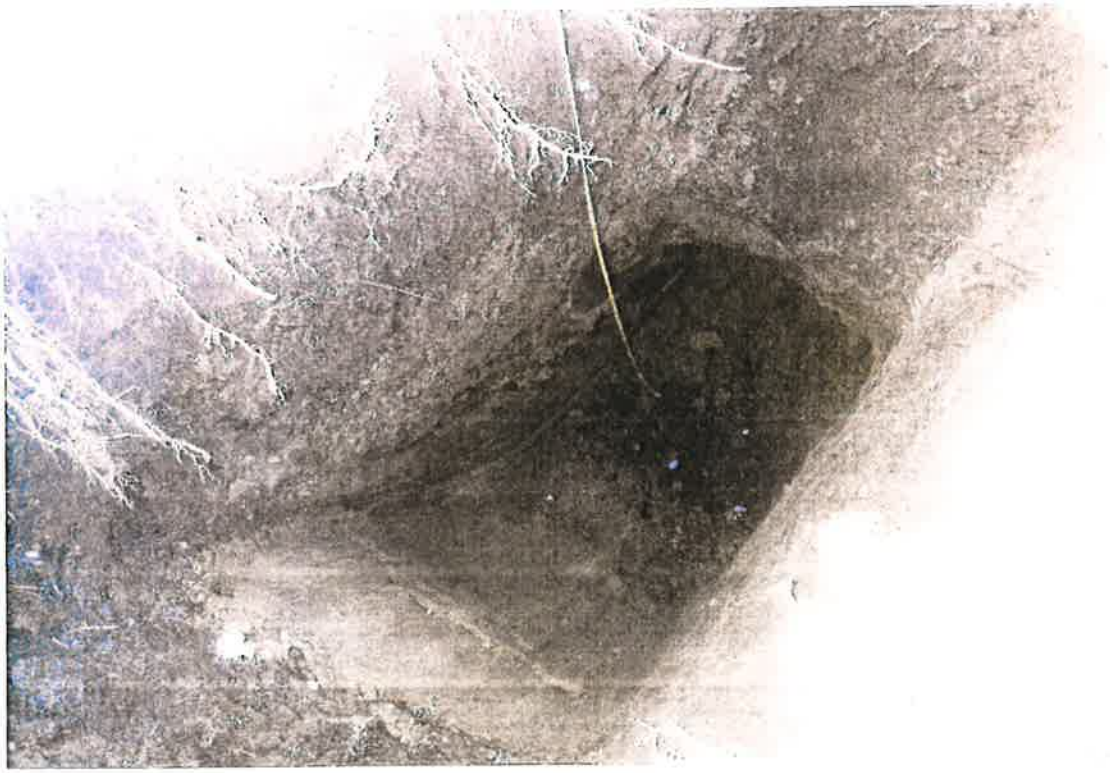


Photo No. 10: Example of soil profile conditions within one of the 3 test pits excavated in former Town of Wallkill Mine southeast material storage area.

Photo No. 11: View of the types of household trash and C&D waste materials within foundation of Tenant House.

Photo No. 12: Additional view of the types of household trash encountered within foundation of Tenant House.

Photo No. 13: View of abandoned 275-gallon fuel oil tank previously used for space heating within the Tenant House.

Photo No. 14: Example of soil profile conditions within one of 10 test pits excavated within close proximity to the Tenant House foundation.

Photo No. 15: View of the types of charred household trash and C&D waste materials within foundation of former Farm House.

Photo No. 16: Additional view of the types of charred household trash and C&D waste materials within foundation of former Farm House.

Photo No. 17: Additional view of charred remains of household trash and C&D waste materials within foundation of former Farm House, in proximity to an abandoned 275-gallon fuel oil tank.

Photo No. 18: View of abandoned 275-gallon fuel oil tank within foundation limits, previously used for space heating within the Farm House.

Photo No. 19: Example of soil profile conditions within one of 8 test pits excavated within close proximity to the Farm House foundation.

Photo No. 20: View of hillside after commencement of surface clearing activities in preparation for continued Phase II test pit excavations during March 2014.

Photo No. 21: Example of shallow trench and test pit excavations atop hillside area during July 2015.

Photo No. 22: Example of combination shallow trench with lateral trench (mid-ground right) extended to northern hillside area.

Photo No. 23: View of the lateral trench excavation depicting various types of waste (plastic electrical conduit, stranded metal cables and galvanized steel) along upper northeastern hillside slope.

Photo No. 24: Example of combined test pit and trench excavations placed atop hillside area.

Photo No. 25: View of three test pit excavations places along the south side of the 1000-gallon above ground gasoline storage tank near former barn site location.

Photo No. 26: View of fueling location adjacent to north side of 1,000-gallon storage tank where on-site farm vehicles were filled with gasoline near former barn site location.

Photo No. 27: View of exploratory test pit excavation near southwest end of 1,000-gallon above ground storage tank near former barn site location; no evidence of a release.

Photo No. 28: View of lateral trench and test pit excavation along mid-hillside slope section, north; vehicle chassis, C&D materials and abandoned farm equipment depicted, top center.

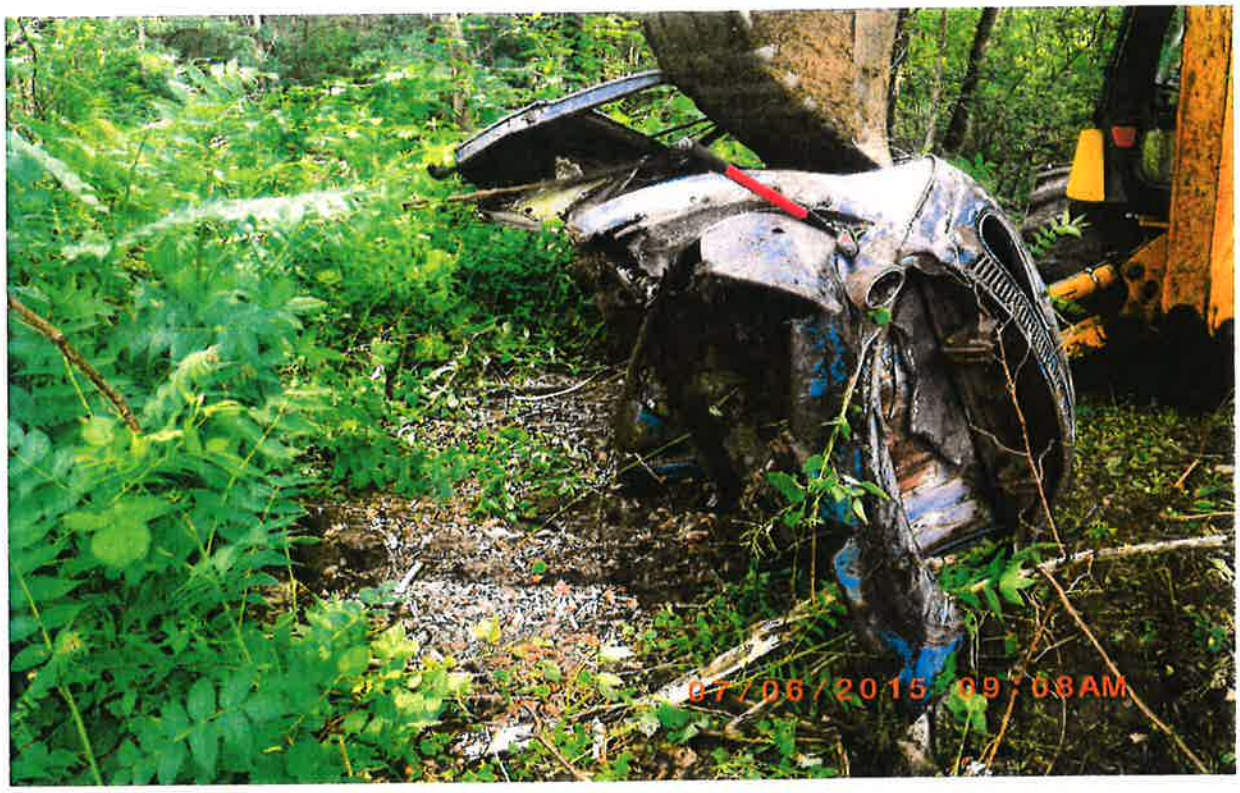


Photo No. 29: View of abandoned Volkswagen atop northwest section of hillside; no "liquids" were observed.

Photo No. 30: View of discarded waste materials (i.e. white goods, plastic sheeting, tires and wheels) along lateral trench excavation at a northwestern hillside slope facing northwest.

Photo No. 31: View of abandoned field thatcher hopper (right) with asphalt shingles and rubber baseboard (kickboards) removed from backfilled test pit excavation, left.

Photo No. 32: View of corrugated metal siding, wood and concrete support walls (east) within depression where C&D generated from the razing of nearby barn sections (base of mid-south and southeast sections of hillside) exists.

Photo No. 33: Additional view of discarded corrugated metal siding along the southern slope of the near by hillside (north).

Photo No. 34: View of test pit excavation at southwest hillside slope where tires, wheels, chain link fence sections and plastic sheeting (silo covering) were observed.

Photo No. 35: View of north test pit excavation west of Wallkill River bank; no waste encountered within test pit excavation.

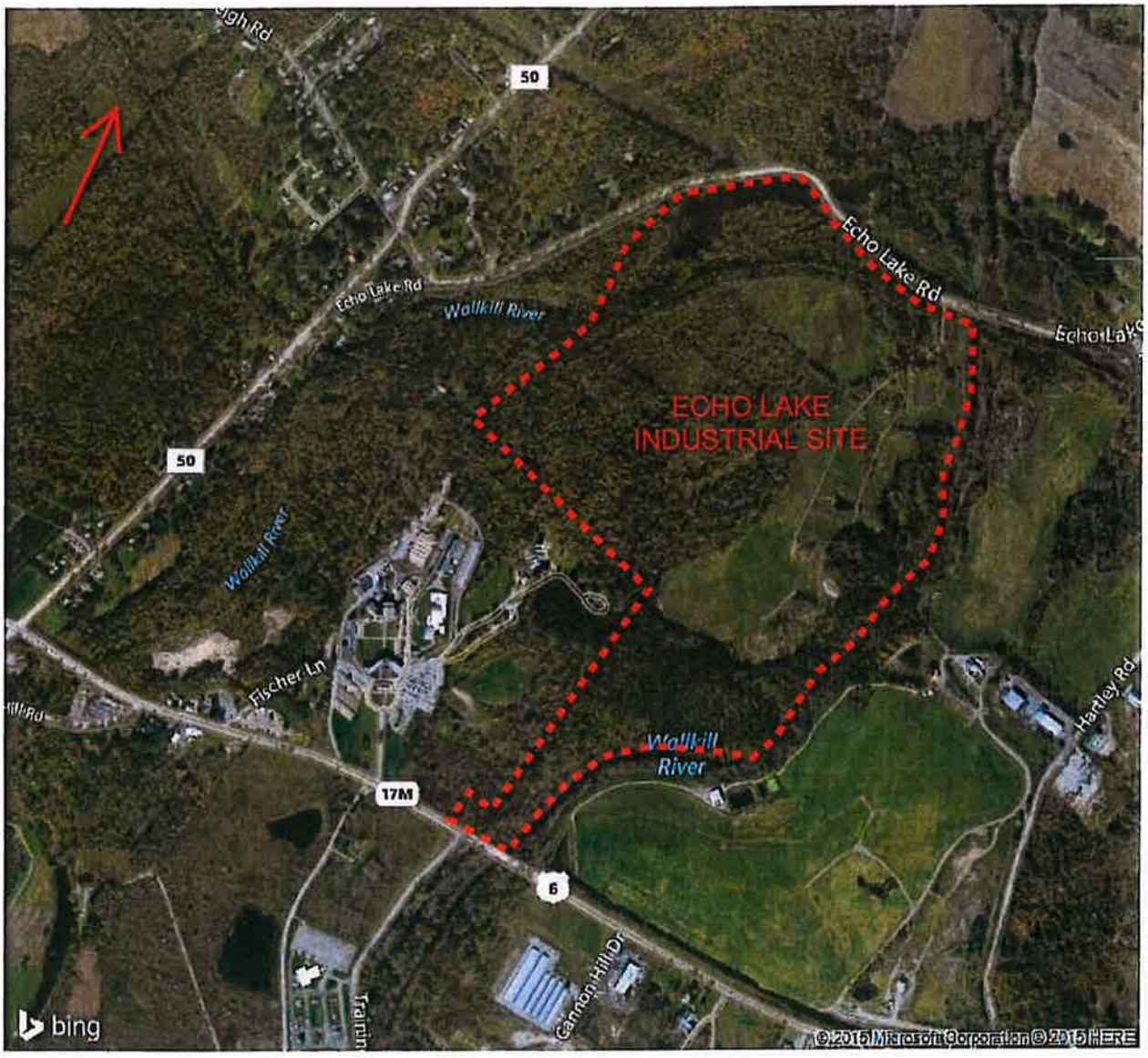
Photo No. 36: View of south test pit excavation west of Wallkill River bank; no waste encountered within test pit excavation.

Photo No. 37: One of three shallow test pit excavations placed along the top-of-slope at the southern end (Test Pit #1) of remediated River bank section.

Photo No. 38: View of shallow test pit excavation along the top-of-slope remediated River bank section; center (Test Pit #2).

Photo No. 39: View of shallow test pit excavation along the top-of-slope remediated River bank section; north (Test Pit #3).

Photo No. 40: View of waste volume west of remediated River bank; 0.0198 cubic yards removed from shallow Test Pit #2 with additional waste remaining after bank remediation.



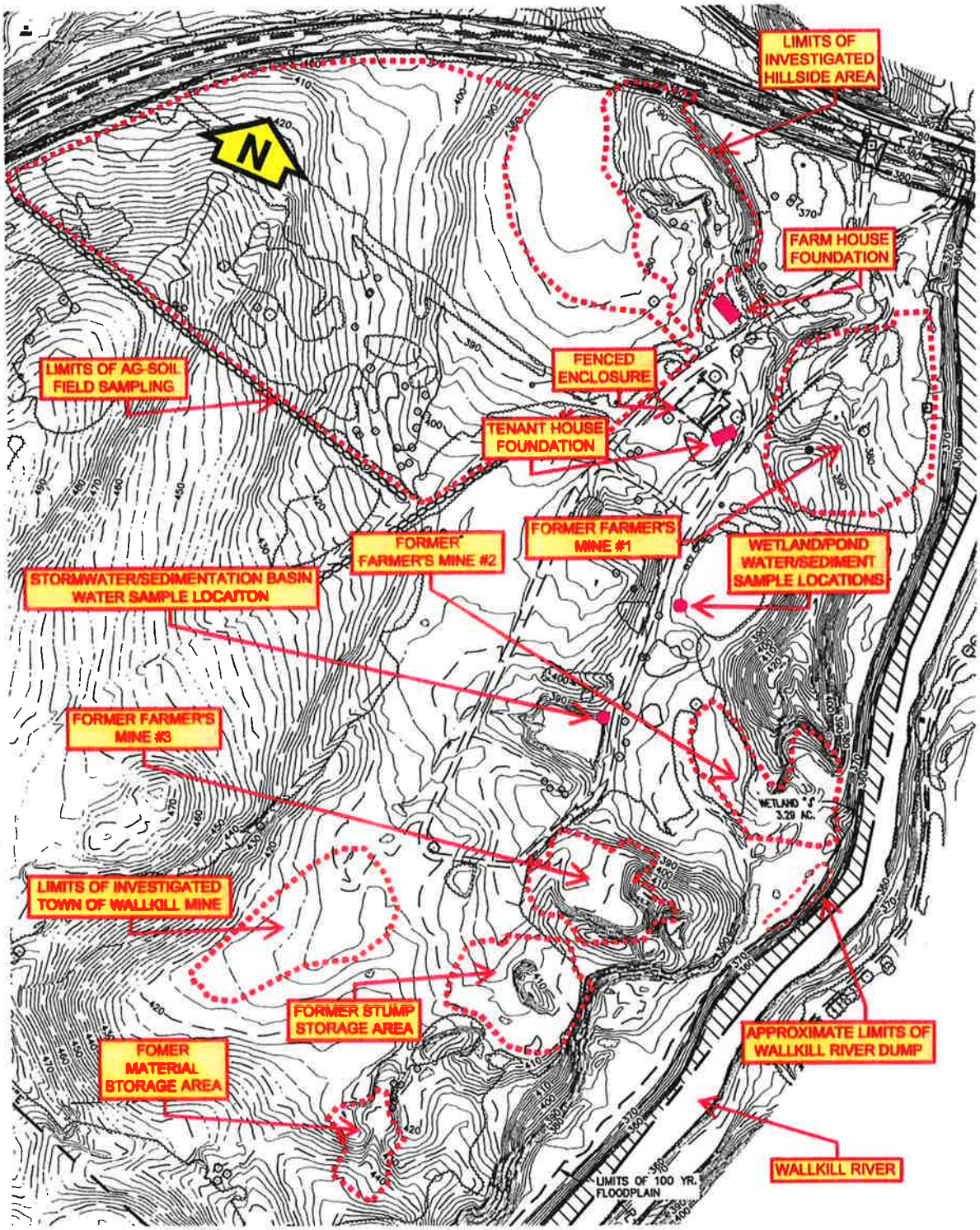
SCALE: 1 INCH = 2,000 FEET

SOURCE: USGS TOPOGRAPHIC MAP; PRINTED/REVISED: 1968/1976

FIGURE 1-1

SITE LOCATION MAP

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



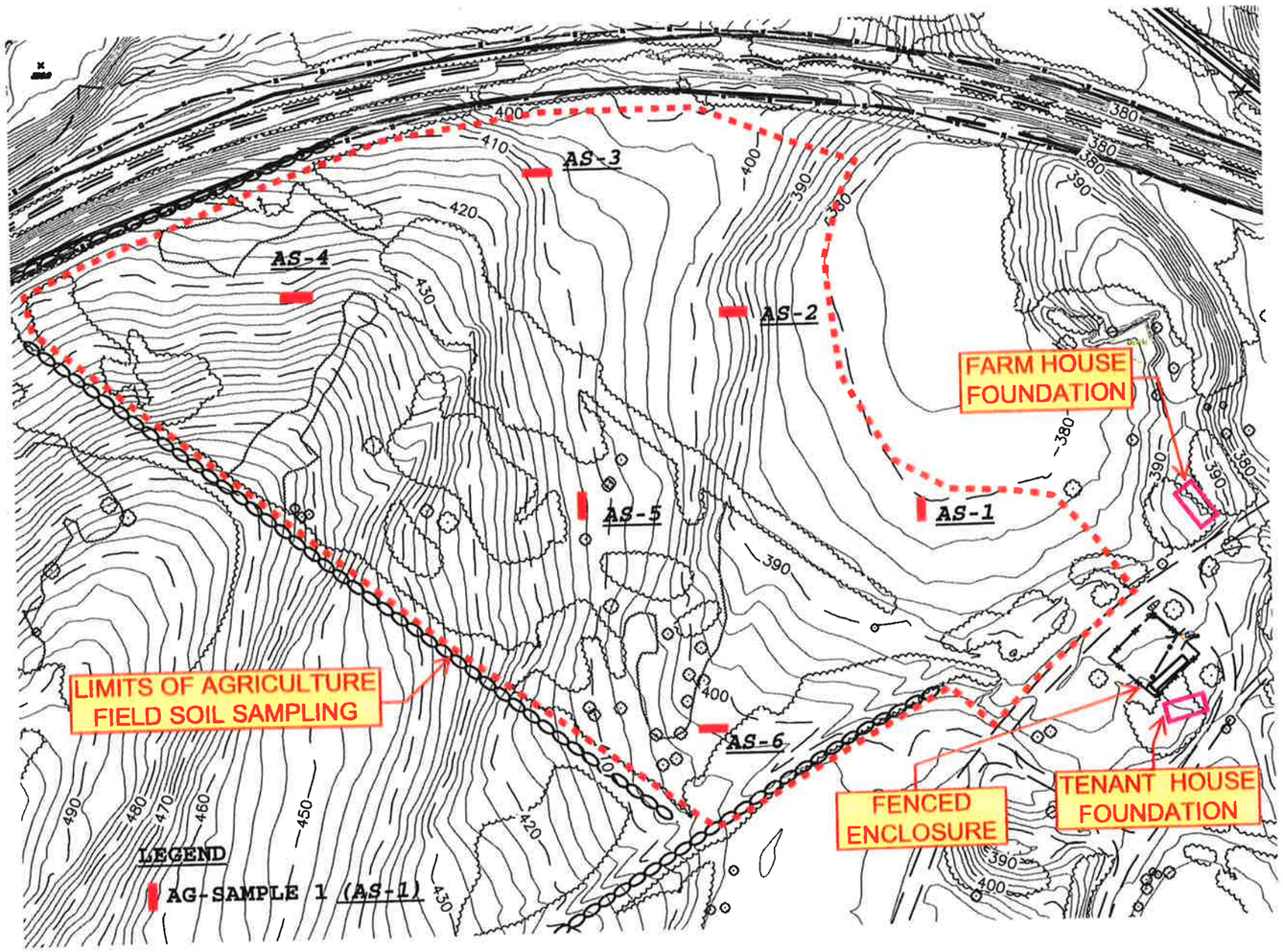
NOT-TO-SCALE

SOURCE: Topographic Survey Basemap Prepared by Lanc & Tully Engineering & Surveying, P.C (10/2013)

FIGURE 2-1

PHASE II ASSESSMENT AREAS

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



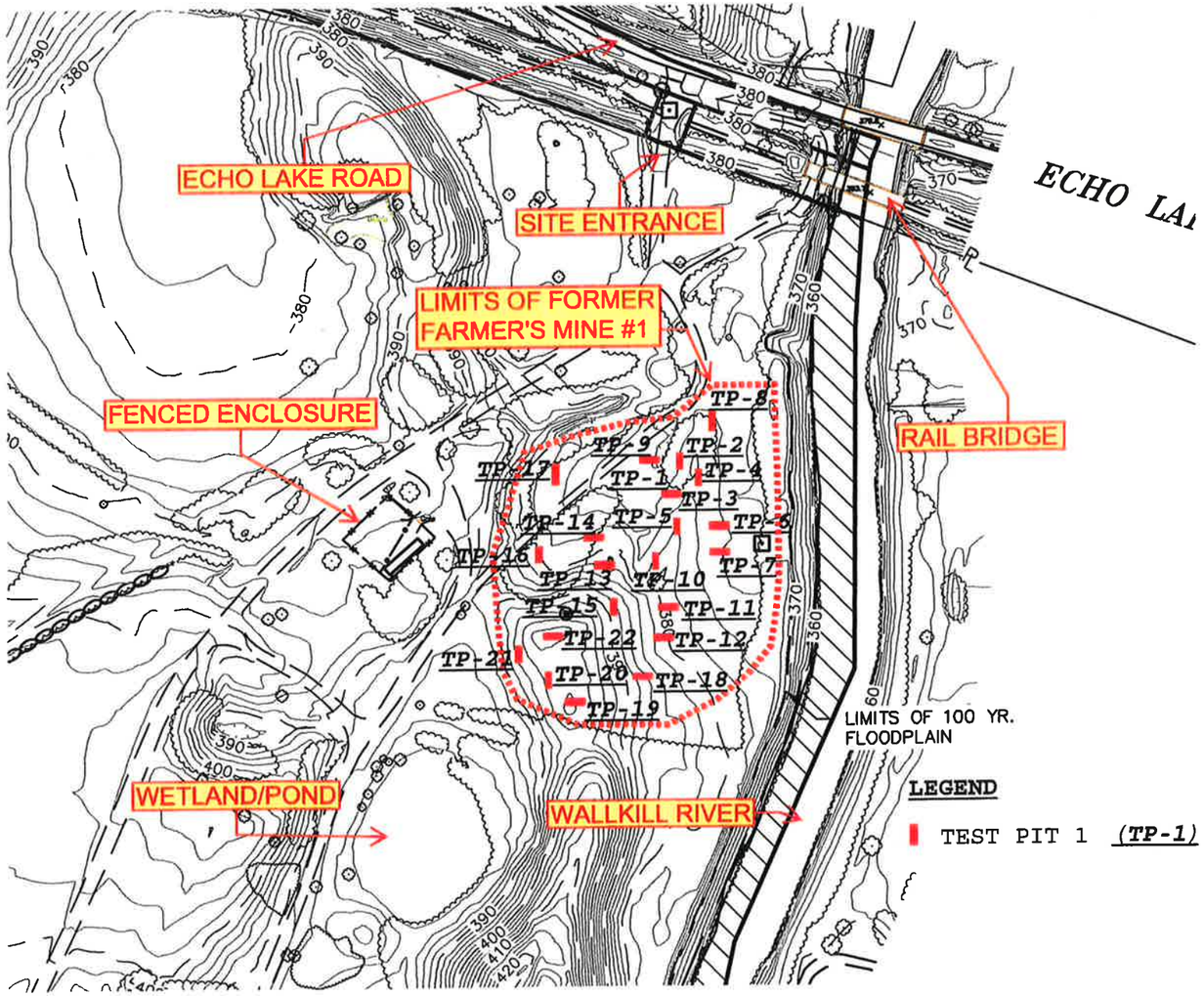
NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-1

AG-SOIL SAMPLE LOCATIONS

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



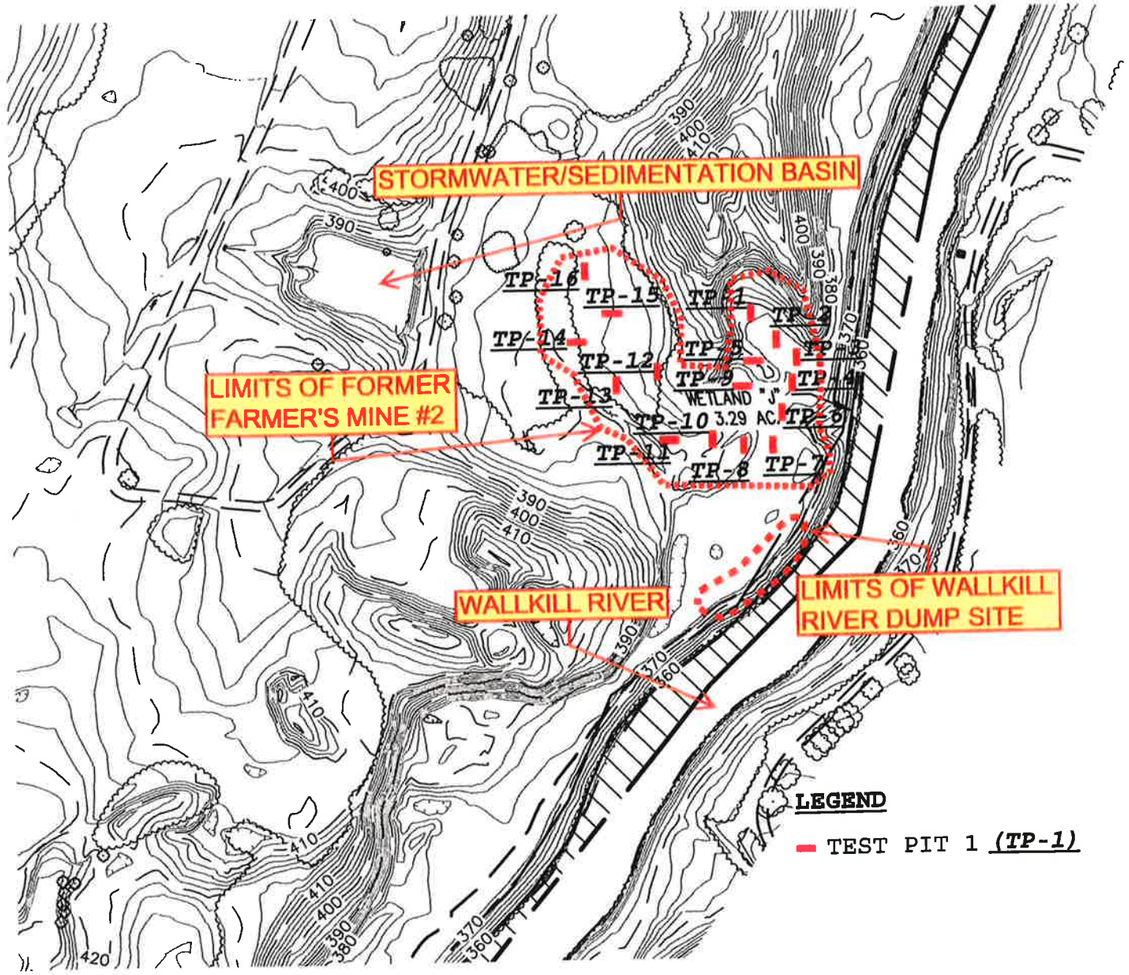
NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-2

FARMER'S MINE # 1
(TEST PITS 1 THROUGH 21)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



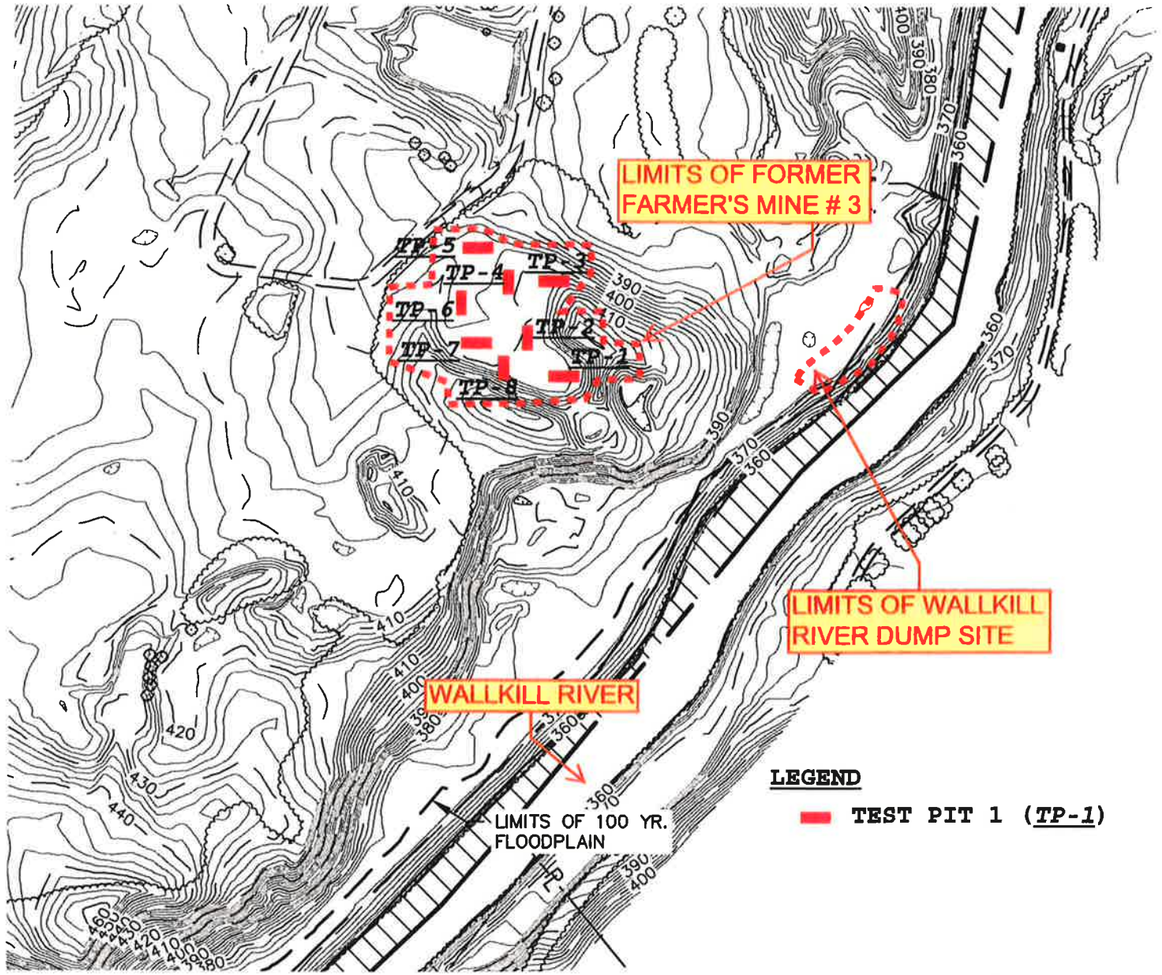
NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-3

FARMER'S MINE # 2
(TEST PITS 1 THROUGH 16)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



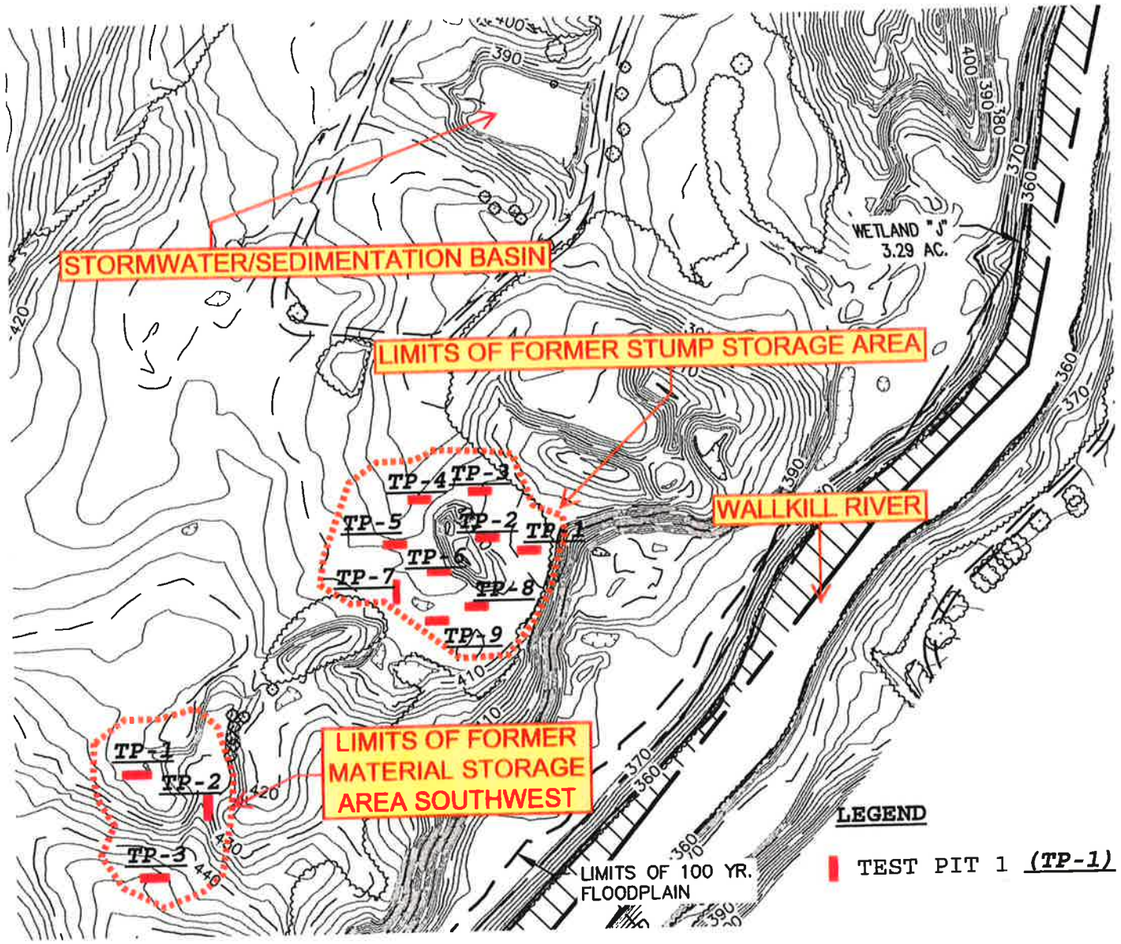
NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-4

FARMER'S MINE #3
(TEST PITS 1 THROUGH 8)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



NOT-TO-SCALE

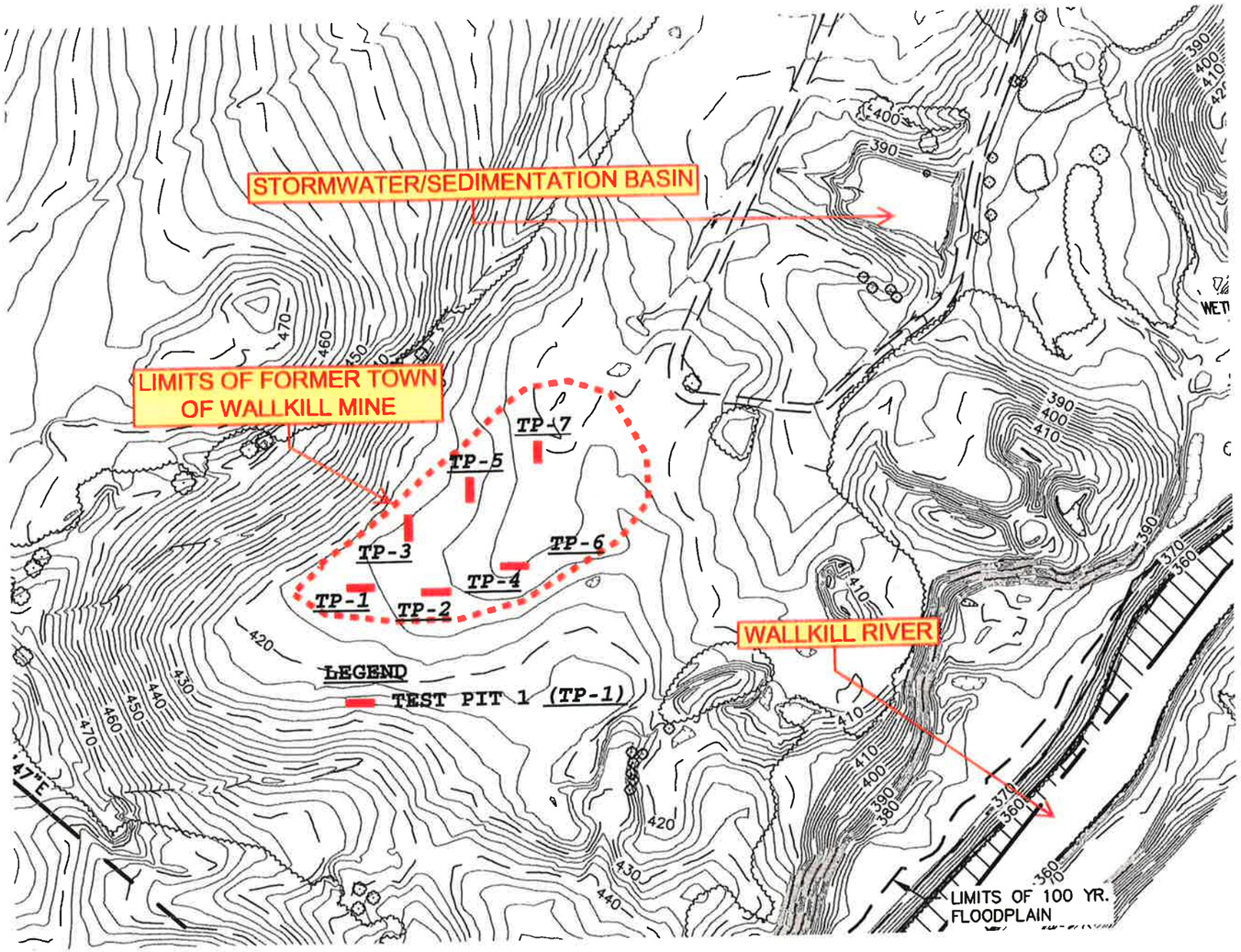
SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-5

FORMER STUMP & MATERIAL STORAGE AREAS

(TEST PITS 1 THROUGH 9 & 1 THROUGH 3)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



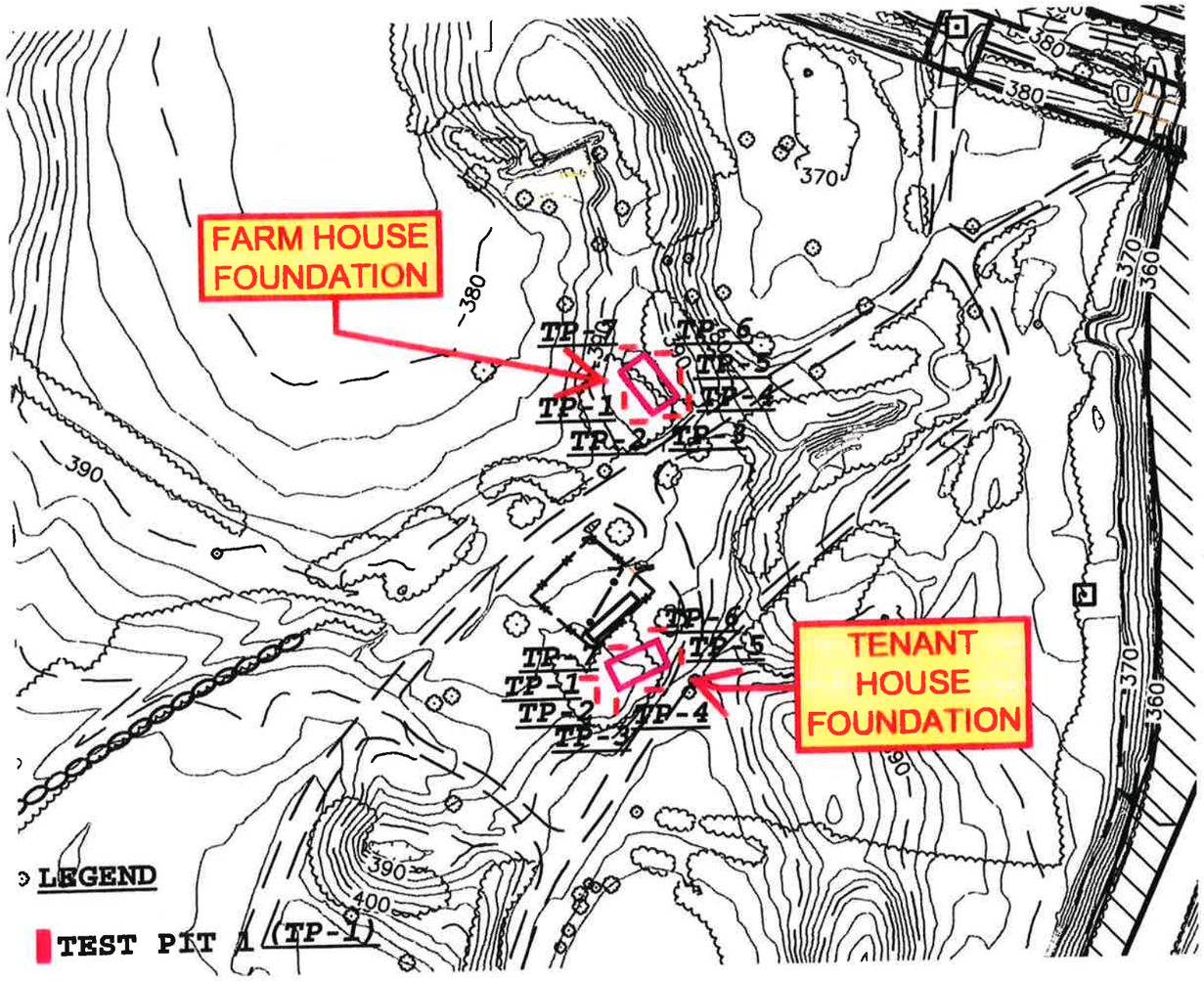
NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-6

TOWN OF WALLKILL MINE
(TEST PITS 1 THROUGH 7)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



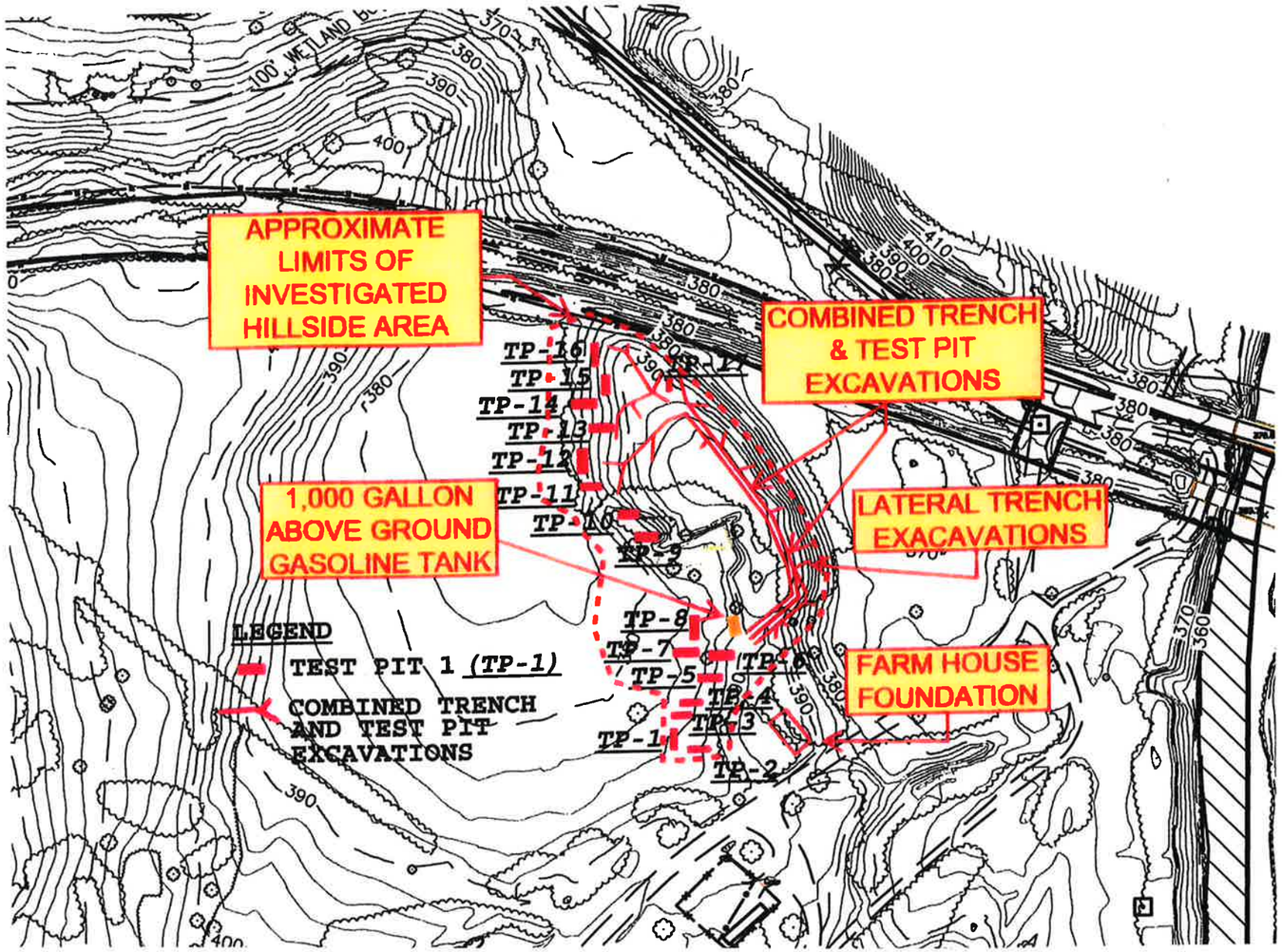
NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-7

TENANT/FARM HOUSE FOUNDATION AND TEST PIT LOCATIONS

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



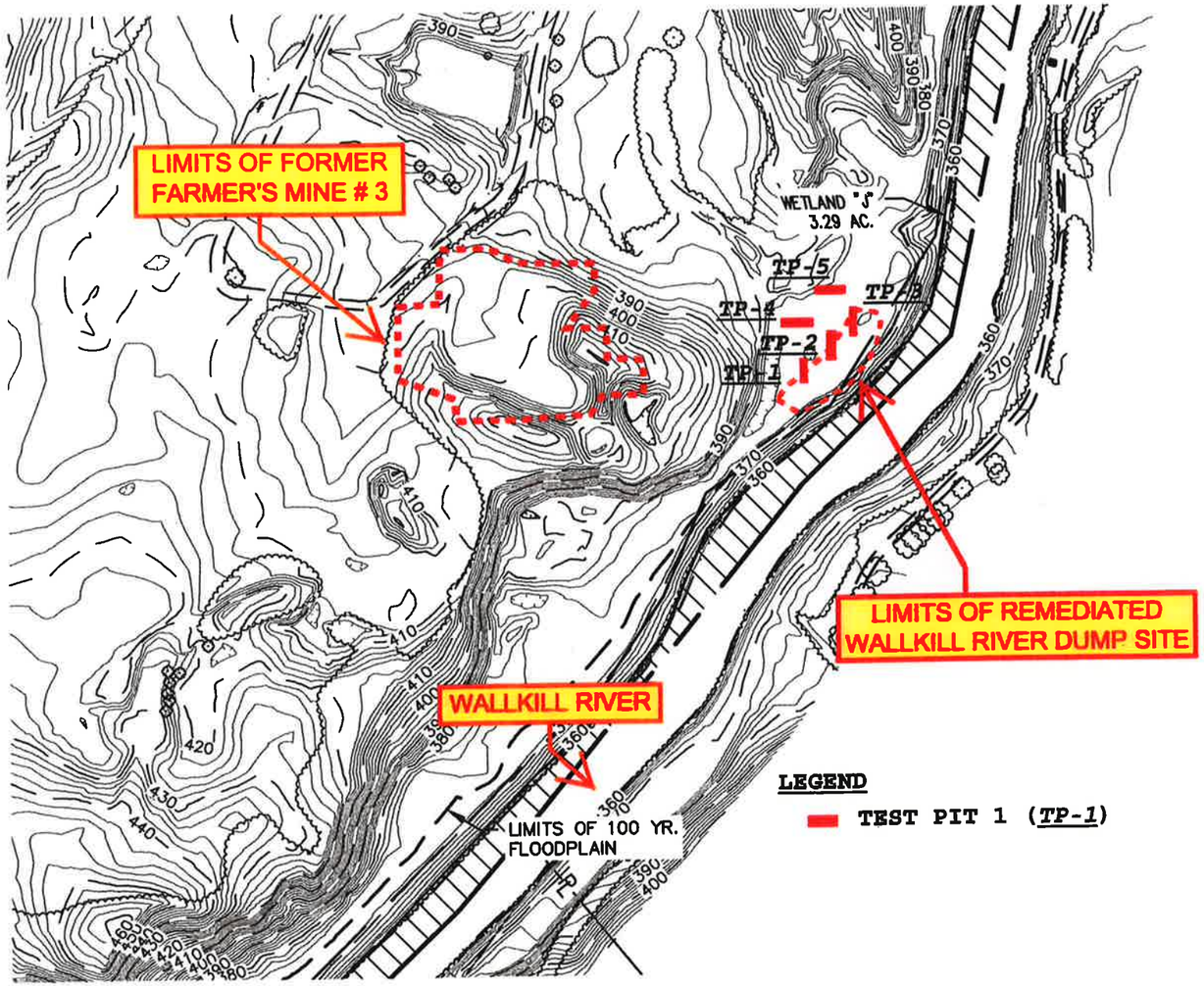
NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-8

HILLSIDE/BARN SITE INVESTIGATION AREAS

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN, NEW YORK



NOT-TO-SCALE

SOURCE: TOPOGRAPHIC SURVEY PREPARED BY LANC & TULLY ENGINEERING & SURVEYING, P.C. (OCTOBER 2013)

FIGURE 3-9

REMEDIATED WALLKILL RIVER DUMP
(TEST PITS 1 THROUGH 5)

ECHO LAKE INDUSTRIAL SITE
TOWN OF GOSHEN. NEW YORK

APPENDIX B

PHOENIX ENVIRONMENTAL LABORATORY ANALYTICAL REPORTS

PHOENIX
Environmental Laboratories, Inc.

Tuesday, March 11, 2014

Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Project ID: ECHO LAKE RD
Sample ID#s: BG13742 - BG13753

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller

Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

March 11, 2014

SDG I.D.: GBG13742

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

BG13743 - The pH in the preserved vial was greater than 2.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:	AR	02/26/14	13:47
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13742

Project ID: ECHO LAKE RD
Client ID: SED BSN WATER

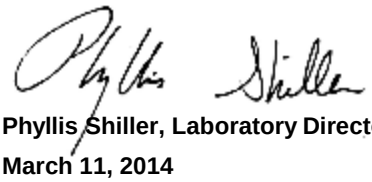
Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	02/28/14	LK	SW6010/E200.7
Arsenic	< 0.004	0.004	mg/L	02/28/14	LK	SW6010/E200.7
Barium	0.006	0.002	mg/L	02/28/14	LK	SW6010/E200.7
Beryllium	< 0.001	0.001	mg/L	02/28/14	LK	SW6010/E200.7
Cadmium	< 0.001	0.001	mg/L	02/28/14	LK	SW6010/E200.7
Chromium	< 0.001	0.001	mg/L	02/28/14	LK	SW6010/E200.7
Copper	0.011	0.005	mg/L	02/28/14	LK	SW6010/E200.7
Mercury	< 0.0002	0.0002	mg/L	02/28/14	RS	SW7470/245.1
Nickel	< 0.001	0.001	mg/L	02/28/14	LK	SW6010/E200.7
Lead	< 0.002	0.002	mg/L	02/28/14	LK	SW6010/E200.7
Antimony	< 0.005	0.005	mg/L	02/28/14	LK	SW6010/E200.7
Selenium	< 0.010	0.010	mg/L	02/28/14	LK	SW6010/E200.7
Thallium	< 0.002	0.002	mg/L	03/04/14	RS	SM3113B/SW70
Zinc	0.009	0.002	mg/L	02/28/14	LK	SW6010/E200.7
Mercury Digestion	Completed			02/28/14	I/I	SW7470/245.1
Total Metals Digestion	Completed			02/27/14	AG	SW846 - 3050

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.



Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:	AR	02/26/14	14:15
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13743

Project ID: ECHO LAKE RD
Client ID: WTLD-WTR

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Silver	< 0.001	0.001	mg/L	02/28/14	LK	SW6010/E200.7	
Arsenic	< 0.004	0.004	mg/L	02/28/14	LK	SW6010/E200.7	
Barium	0.014	0.002	mg/L	02/28/14	LK	SW6010/E200.7	
Beryllium	< 0.001	0.001	mg/L	02/28/14	LK	SW6010/E200.7	
Cadmium	< 0.001	0.001	mg/L	02/28/14	LK	SW6010/E200.7	
Chromium	0.002	0.001	mg/L	02/28/14	LK	SW6010/E200.7	
Copper	< 0.005	0.005	mg/L	02/28/14	LK	SW6010/E200.7	
Mercury	< 0.0002	0.0002	mg/L	02/28/14	RS	SW7470/245.1	
Nickel	0.003	0.001	mg/L	02/28/14	EK	SW6010/E200.7	
Lead	0.002	0.002	mg/L	02/28/14	LK	SW6010/E200.7	
Antimony	< 0.005	0.005	mg/L	02/28/14	LK	SW6010/E200.7	
Selenium	< 0.010	0.010	mg/L	02/28/14	LK	SW6010/E200.7	
Thallium	< 0.002	0.002	mg/L	03/04/14	RS	SM3113B/SW70	
Zinc	0.014	0.002	mg/L	02/28/14	LK	SW6010/E200.7	
Mercury Digestion	Completed			02/28/14	I/I	SW7470/245.1	
Extraction for Herbicide	Completed			02/28/14	W/D	SW8151	
Extraction for Pest (2 Liter)	Completed			02/27/14	LT	SW3510	
Semi-Volatile Extraction	Completed			02/27/14	E/K	SW3520	
Total Metals Digestion	Completed			02/27/14	AG	SW846 - 3050	
Gasoline Range Hydrocarbons							
GRO (C6-C10)	ND	100	ug/L	03/04/14	PL	8015 Mod	1
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	89		%	03/04/14	PL	70 - 130 %	
Chlorinated Herbicides							
2,4,5-T	ND	0.62	ug/L	03/04/14	CE	SW8151	
2,4,5-TP (Silvex)	ND	0.62	ug/L	03/04/14	CE	SW8151	

Project ID: ECHO LAKE RD
Client ID: WTLD-WTR

Phoenix I.D.: BG13743

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
2,4-D	ND	0.75	ug/L	03/04/14	CE	SW8151	
2,4-DB	ND	6.2	ug/L	03/04/14	CE	SW8151	
Dalapon	ND	0.62	ug/L	03/04/14	CE	SW8151	
Dicamba	ND	1.2	ug/L	03/04/14	CE	SW8151	
Dichloroprop	ND	0.62	ug/L	03/04/14	CE	SW8151	
Dinoseb	ND	1.2	ug/L	03/04/14	CE	SW8151	
QA/QC Surrogates							
% DCAA	Diluted Out		%	03/04/14	CE	30 - 150 %	
Pesticides							
4,4' -DDD	ND	0.050	ug/L	03/03/14	CE	SW8081	
4,4' -DDE	ND	0.050	ug/L	03/03/14	CE	SW8081	
4,4' -DDT	ND	0.050	ug/L	03/03/14	CE	SW8081	
a-BHC	ND	0.025	ug/L	03/03/14	CE	SW8081	
Alachlor	ND	0.075	ug/L	03/03/14	CE	SW8081	1
Aldrin	ND	0.002	ug/L	03/03/14	CE	SW8081	
b-BHC	ND	0.005	ug/L	03/03/14	CE	SW8081	
Chlordane	ND	0.30	ug/L	03/03/14	CE	SW8081	
d-BHC	ND	0.025	ug/L	03/03/14	CE	SW8081	
Dieldrin	0.004	0.002	ug/L	03/03/14	CE	SW8081	
Endosulfan I	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endosulfan II	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endosulfan Sulfate	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endrin	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endrin Aldehyde	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endrin ketone	ND	0.050	ug/L	03/03/14	CE	SW8081	
g-BHC (Lindane)	ND	0.025	ug/L	03/03/14	CE	SW8081	
Heptachlor	ND	0.025	ug/L	03/03/14	CE	SW8081	
Heptachlor epoxide	ND	0.025	ug/L	03/03/14	CE	SW8081	
Methoxychlor	ND	0.10	ug/L	03/03/14	CE	SW8081	
Toxaphene	ND	1.0	ug/L	03/03/14	CE	SW8081	
QA/QC Surrogates							
%DCBP (Surrogate Rec)	73		%	03/03/14	CE	30 - 150 %	
%TCMX (Surrogate Rec)	57		%	03/03/14	CE	30 - 150 %	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1,1-Trichloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	02/28/14	JLI	SW8260	
1,1,2-Trichloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1-Dichloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1-Dichloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1-Dichloropropene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2,3-Trichloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2,4-Trichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2-Dibromoethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2-Dichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	

Project ID: ECHO LAKE RD
Client ID: WTLD-WTR

Phoenix I.D.: BG13743

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,2-Dichloroethane	ND	0.60	ug/L	02/28/14	JLI	SW8260	
1,2-Dichloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,3-Dichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,3-Dichloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,4-Dichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
2,2-Dichloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
2-Chlorotoluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
2-Hexanone	ND	5.0	ug/L	02/28/14	JLI	SW8260	
2-Isopropyltoluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	1
4-Chlorotoluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
4-Methyl-2-pentanone	ND	5.0	ug/L	02/28/14	JLI	SW8260	
Acetone	ND	25	ug/L	02/28/14	JLI	SW8260	
Acrylonitrile	ND	5.0	ug/L	02/28/14	JLI	SW8260	
Benzene	ND	0.70	ug/L	02/28/14	JLI	SW8260	
Bromobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Bromochloromethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Bromodichloromethane	ND	0.50	ug/L	02/28/14	JLI	SW8260	
Bromoform	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Bromomethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Carbon Disulfide	ND	5.0	ug/L	02/28/14	JLI	SW8260	
Carbon tetrachloride	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Chlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Chloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Chloroform	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Chloromethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
cis-1,2-Dichloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
cis-1,3-Dichloropropene	ND	0.40	ug/L	02/28/14	JLI	SW8260	
Dibromochloromethane	ND	0.50	ug/L	02/28/14	JLI	SW8260	
Dibromomethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Dichlorodifluoromethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Ethylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Hexachlorobutadiene	ND	0.40	ug/L	02/28/14	JLI	SW8260	
Isopropylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
m&p-Xylene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Methyl ethyl ketone	ND	5.0	ug/L	02/28/14	JLI	SW8260	
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Methylene chloride	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Naphthalene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
n-Butylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
n-Propylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
o-Xylene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
p-Isopropyltoluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
sec-Butylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Styrene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
tert-Butylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Tetrachloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Tetrahydrofuran (THF)	ND	2.5	ug/L	02/28/14	JLI	SW8260	1
Toluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Total Xylenes	ND	2.0	ug/L	02/28/14	JLI	SW8260
trans-1,2-Dichloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260
trans-1,3-Dichloropropene	ND	0.40	ug/L	02/28/14	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	02/28/14	JLI	SW8260
Trichloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260
Trichlorofluoromethane	ND	1.0	ug/L	02/28/14	JLI	SW8260
Trichlorotrifluoroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260
Vinyl chloride	ND	1.0	ug/L	02/28/14	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	101		%	02/28/14	JLI	70 - 130 %
% Bromofluorobenzene	95		%	02/28/14	JLI	70 - 130 %
% Dibromofluoromethane	123		%	02/28/14	JLI	70 - 130 %
% Toluene-d8	98		%	02/28/14	JLI	70 - 130 %
Semivolatiles						
1,2,4-Trichlorobenzene	ND	5.0	ug/L	03/02/14	DD	SW8270
1,2-Dichlorobenzene	ND	2.5	ug/L	03/02/14	DD	SW8270
1,2-Diphenylhydrazine	ND	5.0	ug/L	03/02/14	DD	SW8270
1,3-Dichlorobenzene	ND	2.5	ug/L	03/02/14	DD	SW8270
1,4-Dichlorobenzene	ND	2.5	ug/L	03/02/14	DD	SW8270
2,4,5-Trichlorophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
2,4,6-Trichlorophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
2,4-Dichlorophenol	ND	10	ug/L	03/02/14	DD	SW8270
2,4-Dimethylphenol	ND	1.0	ug/L	03/02/14	DD	SW8270
2,4-Dinitrotoluene	ND	5.0	ug/L	03/02/14	DD	SW8270
2,6-Dinitrotoluene	ND	5.0	ug/L	03/02/14	DD	SW8270
2-Chloronaphthalene	ND	5.0	ug/L	03/02/14	DD	SW8270
2-Chlorophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
2-Methylnaphthalene	ND	5.0	ug/L	03/02/14	DD	SW8270
2-Methylphenol (o-cresol)	ND	1.0	ug/L	03/02/14	DD	SW8270
2-Nitroaniline	ND	5.0	ug/L	03/02/14	DD	SW8270
2-Nitrophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
3&4-Methylphenol (m&p-cresol)	ND	10	ug/L	03/02/14	DD	SW8270
3,3'-Dichlorobenzidine	ND	5.0	ug/L	03/02/14	DD	SW8270
3-Nitroaniline	ND	5.0	ug/L	03/02/14	DD	SW8270
4-Bromophenyl phenyl ether	ND	5.0	ug/L	03/02/14	DD	SW8270
4-Chloro-3-methylphenol	ND	20	ug/L	03/02/14	DD	SW8270
4-Chloroaniline	ND	5.0	ug/L	03/02/14	DD	SW8270
4-Chlorophenyl phenyl ether	ND	1.0	ug/L	03/02/14	DD	SW8270
4-Nitroaniline	ND	5.0	ug/L	03/02/14	DD	SW8270
4-Nitrophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
Acetophenone	ND	5.0	ug/L	03/02/14	DD	SW8270
Aniline	ND	5.0	ug/L	03/02/14	DD	SW8270
Anthracene	ND	5.0	ug/L	03/02/14	DD	SW8270
Benzidine	ND	50	ug/L	03/02/14	DD	SW8270
Benzoic acid	ND	50	ug/L	03/02/14	DD	SW8270
Benzyl butyl phthalate	ND	5.0	ug/L	03/02/14	DD	SW8270
Bis(2-chloroethoxy)methane	ND	5.0	ug/L	03/02/14	DD	SW8270
Bis(2-chloroethyl)ether	ND	1.0	ug/L	03/02/14	DD	SW8270
Bis(2-chloroisopropyl)ether	ND	5.0	ug/L	03/02/14	DD	SW8270

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Carbazole	ND	5.0	ug/L	03/02/14	DD	SW8270	
Dibenzofuran	ND	5.0	ug/L	03/02/14	DD	SW8270	
Diethyl phthalate	ND	5.0	ug/L	03/02/14	DD	SW8270	
Dimethylphthalate	ND	5.0	ug/L	03/02/14	DD	SW8270	
Di-n-butylphthalate	ND	5.0	ug/L	03/02/14	DD	SW8270	
Di-n-octylphthalate	ND	5.0	ug/L	03/02/14	DD	SW8270	
Fluoranthene	ND	5.0	ug/L	03/02/14	DD	SW8270	
Fluorene	ND	5.0	ug/L	03/02/14	DD	SW8270	
Hexachlorocyclopentadiene	ND	5.0	ug/L	03/02/14	DD	SW8270	
Isophorone	ND	5.0	ug/L	03/02/14	DD	SW8270	
Naphthalene	ND	5.0	ug/L	03/02/14	DD	SW8270	
N-Nitrosodimethylamine	ND	5.0	ug/L	03/02/14	DD	SW8270	
N-Nitrosodi-n-propylamine	ND	5.0	ug/L	03/02/14	DD	SW8270	
N-Nitrosodiphenylamine	ND	5.0	ug/L	03/02/14	DD	SW8270	
Phenol	ND	1.0	ug/L	03/02/14	DD	SW8270	
Pyrene	ND	5.0	ug/L	03/02/14	DD	SW8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	97		%	03/02/14	DD	15 - 110 %	
% 2-Fluorobiphenyl	83		%	03/02/14	DD	30 - 130 %	
% 2-Fluorophenol	64		%	03/02/14	DD	15 - 110 %	
% Nitrobenzene-d5	86		%	03/02/14	DD	30 - 130 %	
% Phenol-d5	58		%	03/02/14	DD	15 - 110 %	
% Terphenyl-d14	122		%	03/02/14	DD	30 - 130 %	
Semivolatiles							
1,2,4,5-Tetrachlorobenzene	ND	1.6	ug/L	02/28/14	DD	SW8270 (SIM)	
2,4-Dinitrophenol	ND	1.0	ug/L	02/28/14	DD	SW8270 (SIM)	
4,6-Dinitro-2-methylphenol	ND	1.0	ug/L	02/28/14	DD	SW8270 (SIM)	
Acenaphthene	ND	0.05	ug/L	02/28/14	DD	SW8270 (SIM)	
Acenaphthylene	0.08	0.05	ug/L	02/28/14	DD	SW8270 (SIM)	
Benz(a)anthracene	0.05	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Benzo(a)pyrene	0.06	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Benzo(b)fluoranthene	0.05	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Benzo(ghi)perylene	ND	3.0	ug/L	02/28/14	DD	SW8270 (SIM)	
Benzo(k)fluoranthene	ND	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Bis(2-ethylhexyl)phthalate	ND	1.6	ug/L	02/28/14	DD	SW8270 (SIM)	B
Chrysene	ND	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Dibenz(a,h)anthracene	ND	0.01	ug/L	02/28/14	DD	SW8270 (SIM)	
Hexachlorobenzene	ND	0.04	ug/L	02/28/14	DD	SW8270 (SIM)	
Hexachlorobutadiene	ND	0.50	ug/L	02/28/14	DD	SW8270 (SIM)	
Hexachloroethane	ND	2.4	ug/L	02/28/14	DD	SW8270 (SIM)	
Indeno(1,2,3-cd)pyrene	0.05	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Nitrobenzene	ND	0.40	ug/L	02/28/14	DD	SW8270 (SIM)	
Pentachloronitrobenzene	ND	0.10	ug/L	02/28/14	DD	SW8270 (SIM)	
Pentachlorophenol	ND	0.80	ug/L	02/28/14	DD	SW8270 (SIM)	
Phenanthrene	0.2	0.05	ug/L	02/28/14	DD	SW8270 (SIM)	
Pyridine	ND	0.50	ug/L	02/28/14	DD	SW8270 (SIM)	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	97		%	02/28/14	DD	15 - 110 %	
% 2-Fluorobiphenyl	83		%	02/28/14	DD	30 - 130 %	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% 2-Fluorophenol	64		%	02/28/14	DD	15 - 110 %
% Nitrobenzene-d5	86		%	02/28/14	DD	30 - 130 %
% Phenol-d5	58		%	02/28/14	DD	15 - 110 %
% Terphenyl-d14	122		%	02/28/14	DD	30 - 130 %

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.
B = Present in blank, no bias suspected.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

For Herbicides, due to matrix interference from non target compounds in the sample an elevated RL was reported.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	AR	02/26/14	14:45
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13744

Project ID: ECHO LAKE RD
Client ID: WTLD-SED

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.48	0.48	mg/Kg	02/28/14	LK	SW6010
Arsenic	5.6	1.0	mg/Kg	02/28/14	LK	SW6010
Barium	95.2	0.48	mg/Kg	02/28/14	LK	SW6010
Beryllium	0.83	0.38	mg/Kg	02/28/14	LK	SW6010
Cadmium	< 0.48	0.48	mg/Kg	02/28/14	LK	SW6010
Chromium	20.4	0.48	mg/Kg	02/28/14	LK	SW6010
Copper	29.8	0.48	mg/kg	02/28/14	LK	SW6010
Mercury	< 0.12	0.12	mg/Kg	02/28/14	RS	SW-7471
Nickel	22.8	0.48	mg/Kg	02/28/14	LK	SW6010
Lead	22.1	0.48	mg/Kg	02/28/14	LK	SW6010
Antimony	< 4.8	4.8	mg/Kg	02/28/14	LK	SW6010
Selenium	< 1.9	1.9	mg/Kg	02/28/14	LK	SW6010
Thallium	< 4.3	4.3	mg/Kg	02/28/14	LK	SW6010
Zinc	65.0	0.48	mg/Kg	02/28/14	LK	SW6010
Percent Solid	65		%	02/27/14	I	E160.3
Soil Extraction for Pesticide	Completed			02/27/14	BB/V	SW3545
Soil Extraction for SVOA	Completed			02/27/14	BJ/FV	SW3545
Mercury Digestion	Completed			02/28/14	I/I	SW7471
Soil Extraction for Herbicide	Completed			02/27/14	PP/D	SW8151
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050
Extraction of TPH SM	Completed			02/27/14	BS/F	3545/3550
Field Extraction	Completed			02/26/14		SW5035
Chlorinated Herbicides						
2,4,5-T	ND	63	ug/Kg	03/03/14	CE	SW8151
2,4,5-TP (Silvex)	ND	63	ug/Kg	03/03/14	CE	SW8151
2,4-D	ND	63	ug/Kg	03/03/14	CE	SW8151
2,4-DB	ND	630	ug/Kg	03/03/14	CE	SW8151

Project ID: ECHO LAKE RD
Client ID: WTLD-SED

Phoenix I.D.: BG13744

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Dalapon	ND	63	ug/Kg	03/03/14	CE	SW8151	
Dicamba	ND	130	ug/Kg	03/03/14	CE	SW8151	
Dichloroprop	ND	63	ug/Kg	03/03/14	CE	SW8151	
Dinoseb	ND	130	ug/Kg	03/03/14	CE	SW8151	
QA/QC Surrogates							
% DCAA	61		%	03/03/14	CE	30 - 150 %	
Pesticides							
4,4' -DDD	ND	9.8	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDE	ND	9.8	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDT	ND	9.8	ug/Kg	02/28/14	CE	SW8081	
a-BHC	ND	4.9	ug/Kg	02/28/14	CE	SW8081	
Alachlor	ND	4.9	ug/Kg	02/28/14	CE	SW8081	1
Aldrin	ND	1.5	ug/Kg	02/28/14	CE	SW8081	
b-BHC	ND	4.9	ug/Kg	02/28/14	CE	SW8081	
Chlordane	ND	15	ug/Kg	02/28/14	CE	SW8081	
d-BHC	ND	4.9	ug/Kg	02/28/14	CE	SW8081	
Dieldrin	ND	1.5	ug/Kg	02/28/14	CE	SW8081	
Endosulfan I	ND	4.9	ug/Kg	02/28/14	CE	SW8081	
Endosulfan II	ND	9.8	ug/Kg	02/28/14	CE	SW8081	
Endosulfan sulfate	ND	9.8	ug/Kg	02/28/14	CE	SW8081	
Endrin	ND	9.8	ug/Kg	02/28/14	CE	SW8081	
Endrin aldehyde	ND	9.8	ug/Kg	02/28/14	CE	SW8081	
Endrin ketone	ND	9.8	ug/Kg	02/28/14	CE	SW8081	
g-BHC	ND	1.5	ug/Kg	02/28/14	CE	SW8081	
Heptachlor	ND	3.1	ug/Kg	02/28/14	CE	SW8081	
Heptachlor epoxide	ND	4.9	ug/Kg	02/28/14	CE	SW8081	
Methoxychlor	ND	49	ug/Kg	02/28/14	CE	SW8081	
Toxaphene	ND	260	ug/Kg	02/28/14	CE	SW8081	
QA/QC Surrogates							
% DCBP	63		%	02/28/14	CE	30 - 150 %	
% TCMX	52		%	02/28/14	CE	30 - 150 %	
TPH by GC (Extractable Products)							
Fuel Oil #2 / Diesel Fuel	ND	75	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Fuel Oil #4	ND	75	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Fuel Oil #6	ND	75	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Kerosene	ND	75	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Motor Oil	ND	75	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Other Oil	**	75	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Unidentified	260	75	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
QA/QC Surrogates							
% n-Pentacosane	90		%	02/28/14	JRB	50 - 150 %	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,1,1-Trichloroethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,1,2,2-Tetrachloroethane	ND	4.6	ug/Kg	02/28/14	JLI	SW8260	
1,1,2-Trichloroethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,1-Dichloroethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	

Project ID: ECHO LAKE RD
Client ID: WTLD-SED

Phoenix I.D.: BG13744

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,1-Dichloroethene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,1-Dichloropropene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,2,3-Trichlorobenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
1,2,3-Trichloropropane	ND	410	ug/Kg	02/28/14	JLI	SW8260	
1,2,4-Trichlorobenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
1,2,4-Trimethylbenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dibromo-3-chloropropane	ND	410	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dibromoethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichlorobenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichloroethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichloropropane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,3,5-Trimethylbenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
1,3-Dichlorobenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
1,3-Dichloropropane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
1,4-Dichlorobenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
2,2-Dichloropropane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
2-Chlorotoluene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
2-Hexanone	ND	38	ug/Kg	02/28/14	JLI	SW8260	
2-Isopropyltoluene	ND	410	ug/Kg	02/28/14	JLI	SW8260	1
4-Chlorotoluene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
4-Methyl-2-pentanone	ND	38	ug/Kg	02/28/14	JLI	SW8260	
Acetone	ND	46	ug/Kg	02/28/14	JLI	SW8260	
Acrylonitrile	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Benzene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Bromobenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
Bromochloromethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Bromodichloromethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Bromoform	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Bromomethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Carbon Disulfide	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Carbon tetrachloride	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Chlorobenzene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Chloroethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Chloroform	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Chloromethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
cis-1,2-Dichloroethene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
cis-1,3-Dichloropropene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Dibromochloromethane	ND	4.6	ug/Kg	02/28/14	JLI	SW8260	
Dibromomethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Dichlorodifluoromethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Ethylbenzene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Hexachlorobutadiene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
Isopropylbenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
m&p-Xylene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Methyl Ethyl Ketone	ND	46	ug/Kg	02/28/14	JLI	SW8260	
Methyl t-butyl ether (MTBE)	ND	15	ug/Kg	02/28/14	JLI	SW8260	
Methylene chloride	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Naphthalene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
n-Butylbenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
n-Propylbenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
o-Xylene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
p-Isopropyltoluene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
sec-Butylbenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
Styrene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
tert-Butylbenzene	ND	410	ug/Kg	02/28/14	JLI	SW8260	
Tetrachloroethene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Tetrahydrofuran (THF)	ND	15	ug/Kg	02/28/14	JLI	SW8260	1
Toluene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Total Xylenes	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
trans-1,2-Dichloroethene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
trans-1,3-Dichloropropene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
trans-1,4-dichloro-2-butene	ND	810	ug/Kg	02/28/14	JLI	SW8260	
Trichloroethene	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Trichlorofluoromethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Trichlorotrifluoroethane	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
Vinyl chloride	ND	7.7	ug/Kg	02/28/14	JLI	SW8260	
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	98		%	02/28/14	JLI	70 - 130 %	
% Bromofluorobenzene	94		%	02/28/14	JLI	70 - 130 %	
% Dibromofluoromethane	96		%	02/28/14	JLI	70 - 130 %	
% Toluene-d8	92		%	02/28/14	JLI	70 - 130 %	
Semivolatiles							
1,2,4,5-Tetrachlorobenzene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
1,2,4-Trichlorobenzene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
1,2-Dichlorobenzene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
1,2-Diphenylhydrazine	ND	500	ug/Kg	02/28/14	DD	SW 8270	
1,3-Dichlorobenzene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
1,4-Dichlorobenzene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2,4,5-Trichlorophenol	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2,4,6-Trichlorophenol	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2,4-Dichlorophenol	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2,4-Dimethylphenol	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2,4-Dinitrophenol	ND	800	ug/Kg	02/28/14	DD	SW 8270	
2,4-Dinitrotoluene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2,6-Dinitrotoluene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2-Chloronaphthalene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2-Chlorophenol	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2-Methylnaphthalene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2-Methylphenol (o-cresol)	ND	350	ug/Kg	02/28/14	DD	SW 8270	
2-Nitroaniline	ND	800	ug/Kg	02/28/14	DD	SW 8270	
2-Nitrophenol	ND	350	ug/Kg	02/28/14	DD	SW 8270	
3&4-Methylphenol (m&p-cresol)	ND	500	ug/Kg	02/28/14	DD	SW 8270	
3,3'-Dichlorobenzidine	ND	350	ug/Kg	02/28/14	DD	SW 8270	
3-Nitroaniline	ND	800	ug/Kg	02/28/14	DD	SW 8270	
4,6-Dinitro-2-methylphenol	ND	1400	ug/Kg	02/28/14	DD	SW 8270	
4-Bromophenyl phenyl ether	ND	500	ug/Kg	02/28/14	DD	SW 8270	
4-Chloro-3-methylphenol	ND	350	ug/Kg	02/28/14	DD	SW 8270	
4-Chloroaniline	ND	350	ug/Kg	02/28/14	DD	SW 8270	

Project ID: ECHO LAKE RD
Client ID: WTLD-SED

Phoenix I.D.: BG13744

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
4-Chlorophenyl phenyl ether	ND	350	ug/Kg	02/28/14	DD	SW 8270	
4-Nitroaniline	ND	800	ug/Kg	02/28/14	DD	SW 8270	
4-Nitrophenol	ND	1400	ug/Kg	02/28/14	DD	SW 8270	
Acenaphthene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Acenaphthylene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Acetophenone	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Aniline	ND	1400	ug/Kg	02/28/14	DD	SW 8270	
Anthracene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Benz(a)anthracene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Benzidine	ND	600	ug/Kg	02/28/14	DD	SW 8270	
Benzo(a)pyrene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Benzo(b)fluoranthene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Benzo(ghi)perylene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Benzo(k)fluoranthene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Benzoic acid	ND	1400	ug/Kg	02/28/14	DD	SW 8270	1
Benzyl butyl phthalate	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethoxy)methane	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethyl)ether	ND	500	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroisopropyl)ether	ND	350	ug/Kg	02/28/14	DD	SW 8270	1
Bis(2-ethylhexyl)phthalate	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Carbazole	ND	750	ug/Kg	02/28/14	DD	SW 8270	
Chrysene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Dibenz(a,h)anthracene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Dibenzofuran	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Diethyl phthalate	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Dimethylphthalate	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Di-n-butylphthalate	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Di-n-octylphthalate	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Fluoranthene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Fluorene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobenzene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobutadiene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorocyclopentadiene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Hexachloroethane	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Indeno(1,2,3-cd)pyrene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Isophorone	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Naphthalene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Nitrobenzene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodimethylamine	ND	500	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodi-n-propylamine	ND	350	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodiphenylamine	ND	500	ug/Kg	02/28/14	DD	SW 8270	
Pentachloronitrobenzene	ND	500	ug/Kg	02/28/14	DD	SW 8270	
Pentachlorophenol	ND	500	ug/Kg	02/28/14	DD	SW 8270	
Phenanthrene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Phenol	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Pyrene	ND	350	ug/Kg	02/28/14	DD	SW 8270	
Pyridine	ND	500	ug/Kg	02/28/14	DD	SW 8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	71		%	02/28/14	DD	30 - 130 %	

Project ID: ECHO LAKE RD
Client ID: WTLD-SED

Phoenix I.D.: BG13744

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% 2-Fluorobiphenyl	57		%	02/28/14	DD	30 - 130 %
% 2-Fluorophenol	72		%	02/28/14	DD	30 - 130 %
% Nitrobenzene-d5	63		%	02/28/14	DD	30 - 130 %
% Phenol-d5	72		%	02/28/14	DD	30 - 130 %
% Terphenyl-d14	117		%	02/28/14	DD	30 - 130 %

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

Volatile Comment:
There was a suppression of the last internal standard in the low level analysis, all affected compounds are reported from the methanol preserved high level analysis which did not exhibit this interference.

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C9 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SEDIMENT	Collected by:	AR	02/26/14	13:07
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13745

Project ID: ECHO LAKE RD
Client ID: FENCE SW

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Silver	< 0.41	0.41	mg/Kg	02/28/14	EK	SW6010	
Arsenic	7.9	0.8	mg/Kg	02/28/14	EK	SW6010	
Barium	53.5	0.41	mg/Kg	02/28/14	EK	SW6010	
Beryllium	0.73	0.41	mg/Kg	02/28/14	EK	SW6010	
Cadmium	< 0.41	0.41	mg/Kg	02/28/14	EK	SW6010	
Chromium	23.7	0.41	mg/Kg	02/28/14	EK	SW6010	
Copper	37.2	0.41	mg/Kg	02/28/14	EK	SW6010	
Mercury	< 0.08	0.08	mg/kg	02/28/14	RS	SW-7471	
Nickel	27.2	0.41	mg/Kg	02/28/14	EK	SW6010	
Lead	18.6	0.41	mg/Kg	02/28/14	EK	SW6010	
Antimony	< 4.1	4.1	mg/Kg	02/28/14	EK	SW6010	
Selenium	< 2.0	2.0	mg/Kg	02/28/14	EK	SW6010	
Thallium	< 3.7	3.7	mg/Kg	02/28/14	EK	SW6010	
Zinc	84.0	0.41	mg/Kg	02/28/14	EK	SW6010	
Percent Solid	85		%	02/27/14	I	E160.3	
Total Solids @ 104C	83.0	0.1	%	03/03/14	KG/KDB	E160.3	1
Soil Extraction SVOA PAH	Completed			02/27/14	BJ/FV	SW3545	
Mercury Digestion	Completed			02/28/14	I/I	SW7471	
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050	
Extraction of TPH SM	Completed			02/27/14	BS/F	3545/3550	
TPH by GC (Extractable Products)							
Fuel Oil #2 / Diesel Fuel	ND	59	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Fuel Oil #4	ND	59	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Fuel Oil #6	ND	59	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Kerosene	ND	59	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Motor Oil	ND	59	mg/kg	02/28/14	JRB	8015M (C9-C36)	1
Other Oil	ND	59	mg/kg	02/28/14	JRB	8015M (C9-C36)	1

Project ID: ECHO LAKE RD
Client ID: FENCE SW

Phoenix I.D.: BG13745

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Unidentified	ND	59	mg/kg	02/28/14	JRB	8015M (C9-C36) 1
QA/QC Surrogates						
% n-Pentacosane	98		%	02/28/14	JRB	50 - 150 %
Gasoline Range Organics	< 20	20	mg/Kg	02/28/14	JRB	8015GRO
Volatiles- STARS/CP-51						
1,2,4-Trimethylbenzene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
1,3,5-Trimethylbenzene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
Benzene	ND	4.6	ug/Kg	02/28/14	HM	SW8260
Ethylbenzene	ND	4.6	ug/Kg	02/28/14	HM	SW8260
Isopropylbenzene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
m&p-Xylene	ND	4.6	ug/Kg	02/28/14	HM	SW8260
Methyl t-Butyl Ether (MTBE)	ND	2.3	ug/Kg	02/28/14	HM	SW8260
Naphthalene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
n-Butylbenzene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
n-Propylbenzene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
o-Xylene	ND	4.6	ug/Kg	02/28/14	HM	SW8260
p-Isopropyltoluene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
sec-Butylbenzene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
tert-Butylbenzene	ND	2.3	ug/Kg	02/28/14	HM	SW8260
Toluene	ND	4.6	ug/Kg	02/28/14	HM	SW8260
Total Xylenes	ND	4.6	ug/Kg	02/28/14	HM	SW8260
QA/QC Surrogates						
% 1,2-Dichlorobenzene-d4	99		%	02/28/14	HM	70 - 130 %
% Bromofluorobenzene	94		%	02/28/14	HM	70 - 130 %
% Dibromofluoromethane	98		%	02/28/14	HM	70 - 130 %
% Toluene-d8	99		%	02/28/14	HM	70 - 130 %
Semivolatiles-STARS/CP-51						
Acenaphthene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Acenaphthylene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Anthracene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Benz(a)anthracene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Benzo(a)pyrene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Benzo(b)fluoranthene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Benzo(ghi)perylene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Benzo(k)fluoranthene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Chrysene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Dibenz(a,h)anthracene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Fluoranthene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Fluorene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Naphthalene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Phenanthrene	ND	270	ug/Kg	02/28/14	DD	SW 8270
Pyrene	ND	270	ug/Kg	02/28/14	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	61		%	02/28/14	DD	30 - 130 %
% Nitrobenzene-d5	56		%	02/28/14	DD	30 - 130 %
% Terphenyl-d14	90		%	02/28/14	DD	30 - 130 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the volatile soil data as biased low.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SEDIMENT	Collected by:	AR	02/26/14	13:47
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13746

Project ID: ECHO LAKE RD
Client ID: SED BSN WTR

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Extraction for Herbicide	Completed			02/28/14	W/D	SW8151	
Extraction for Pest (2 Liter)	Completed			02/27/14	LT	SW3510	
Semi-Volatile Extraction	Completed			02/27/14	E/K	SW3520	
Extraction of TPH	Completed			02/27/14	E/K	3510/3520	
Gasoline Range Hydrocarbons							
GRO (C6-C10)	ND	100	ug/L	03/04/14	PL	8015 Mod	1
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	107		%	03/04/14	PL	70 - 130 %	
Chlorinated Herbicides							
2,4,5-T	ND	0.62	ug/L	03/04/14	CE	SW8151	
2,4,5-TP (Silvex)	ND	0.62	ug/L	03/04/14	CE	SW8151	
2,4-D	ND	0.62	ug/L	03/04/14	CE	SW8151	
2,4-DB	ND	6.2	ug/L	03/04/14	CE	SW8151	
Dalapon	ND	0.62	ug/L	03/04/14	CE	SW8151	
Dicamba	ND	1.2	ug/L	03/04/14	CE	SW8151	
Dichloroprop	ND	0.62	ug/L	03/04/14	CE	SW8151	
Dinoseb	ND	1.2	ug/L	03/04/14	CE	SW8151	
QA/QC Surrogates							
% DCAA	Diluted Out		%	03/04/14	CE	30 - 150 %	
Pesticides							
4,4' -DDD	ND	0.050	ug/L	03/03/14	CE	SW8081	
4,4' -DDE	ND	0.050	ug/L	03/03/14	CE	SW8081	
4,4' -DDT	ND	0.050	ug/L	03/03/14	CE	SW8081	
a-BHC	ND	0.030	ug/L	03/03/14	CE	SW8081	
Alachlor	ND	0.075	ug/L	03/03/14	CE	SW8081	1

Project ID: ECHO LAKE RD
Client ID: SED BSN WTR

Phoenix I.D.: BG13746

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Aldrin	ND	0.004	ug/L	03/03/14	CE	SW8081	
b-BHC	ND	0.005	ug/L	03/03/14	CE	SW8081	
Chlordane	ND	0.30	ug/L	03/03/14	CE	SW8081	
d-BHC	ND	0.025	ug/L	03/03/14	CE	SW8081	
Dieldrin	ND	0.002	ug/L	03/03/14	CE	SW8081	
Endosulfan I	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endosulfan II	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endosulfan Sulfate	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endrin	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endrin Aldehyde	ND	0.050	ug/L	03/03/14	CE	SW8081	
Endrin ketone	ND	0.050	ug/L	03/03/14	CE	SW8081	
g-BHC (Lindane)	ND	0.025	ug/L	03/03/14	CE	SW8081	
Heptachlor	ND	0.025	ug/L	03/03/14	CE	SW8081	
Heptachlor epoxide	ND	0.025	ug/L	03/03/14	CE	SW8081	
Methoxychlor	ND	0.10	ug/L	03/03/14	CE	SW8081	
Toxaphene	ND	1.0	ug/L	03/03/14	CE	SW8081	
QA/QC Surrogates							
%DCBP (Surrogate Rec)	78		%	03/03/14	CE	30 - 150 %	
%TCMX (Surrogate Rec)	65		%	03/03/14	CE	30 - 150 %	
TPH by GC (Extractable Products)							
Aviation Fuel/Kerosene	ND	0.50	mg/L	02/28/14	JRB	8015DRO	1
Fuel Oil #2/ Diesel Fuel	ND	0.50	mg/L	02/28/14	JRB	8015DRO	1
Fuel Oil #4	ND	0.50	mg/L	02/28/14	JRB	8015DRO	1
Fuel Oil #6	ND	0.50	mg/L	02/28/14	JRB	8015DRO	1
Motor Oil	ND	0.50	mg/L	02/28/14	JRB	8015DRO	1
Other Oil (Cutting & Lubricating)	ND	0.50	mg/L	02/28/14	JRB	8015DRO	1
Unidentified	ND	0.50	mg/L	02/28/14	JRB	8015DRO	1
QA/QC Surrogates							
% n-Pentacosane	138		%	02/28/14	JRB	8015DRO	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1,1-Trichloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	02/28/14	JLI	SW8260	
1,1,2-Trichloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1-Dichloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1-Dichloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,1-Dichloropropene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2,3-Trichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2,3-Trichloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2,4-Trichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2-Dibromoethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2-Dichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,2-Dichloroethane	ND	0.60	ug/L	02/28/14	JLI	SW8260	
1,2-Dichloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,3-Dichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	

Project ID: ECHO LAKE RD
Client ID: SED BSN WTR

Phoenix I.D.: BG13746

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,3-Dichloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
1,4-Dichlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
2,2-Dichloropropane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
2-Chlorotoluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
2-Hexanone	ND	5.0	ug/L	02/28/14	JLI	SW8260	
2-Isopropyltoluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	1
4-Chlorotoluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
4-Methyl-2-pentanone	ND	5.0	ug/L	02/28/14	JLI	SW8260	
Acetone	ND	25	ug/L	02/28/14	JLI	SW8260	
Acrylonitrile	ND	5.0	ug/L	02/28/14	JLI	SW8260	
Benzene	ND	0.70	ug/L	02/28/14	JLI	SW8260	
Bromobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Bromochloromethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Bromodichloromethane	ND	0.50	ug/L	02/28/14	JLI	SW8260	
Bromoform	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Bromomethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Carbon Disulfide	ND	5.0	ug/L	02/28/14	JLI	SW8260	
Carbon tetrachloride	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Chlorobenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Chloroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Chloroform	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Chloromethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
cis-1,2-Dichloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
cis-1,3-Dichloropropene	ND	0.40	ug/L	02/28/14	JLI	SW8260	
Dibromochloromethane	ND	0.50	ug/L	02/28/14	JLI	SW8260	
Dibromomethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Dichlorodifluoromethane	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Ethylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Hexachlorobutadiene	ND	0.40	ug/L	02/28/14	JLI	SW8260	
Isopropylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
m&p-Xylene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Methyl ethyl ketone	ND	5.0	ug/L	02/28/14	JLI	SW8260	
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Methylene chloride	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Naphthalene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
n-Butylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
n-Propylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
o-Xylene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
p-Isopropyltoluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
sec-Butylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Styrene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
tert-Butylbenzene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Tetrachloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Tetrahydrofuran (THF)	ND	2.5	ug/L	02/28/14	JLI	SW8260	1
Toluene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
Total Xylenes	ND	2.0	ug/L	02/28/14	JLI	SW8260	
trans-1,2-Dichloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260	
trans-1,3-Dichloropropene	ND	0.40	ug/L	02/28/14	JLI	SW8260	
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	02/28/14	JLI	SW8260	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Trichloroethene	ND	1.0	ug/L	02/28/14	JLI	SW8260
Trichlorofluoromethane	ND	1.0	ug/L	02/28/14	JLI	SW8260
Trichlorotrifluoroethane	ND	1.0	ug/L	02/28/14	JLI	SW8260
Vinyl chloride	ND	1.0	ug/L	02/28/14	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	98		%	02/28/14	JLI	70 - 130 %
% Bromofluorobenzene	94		%	02/28/14	JLI	70 - 130 %
% Dibromofluoromethane	99		%	02/28/14	JLI	70 - 130 %
% Toluene-d8	98		%	02/28/14	JLI	70 - 130 %
Semivolatiles						
1,2,4-Trichlorobenzene	ND	5.0	ug/L	03/02/14	DD	SW8270
1,2-Dichlorobenzene	ND	2.5	ug/L	03/02/14	DD	SW8270
1,2-Diphenylhydrazine	ND	5.0	ug/L	03/02/14	DD	SW8270
1,3-Dichlorobenzene	ND	2.5	ug/L	03/02/14	DD	SW8270
1,4-Dichlorobenzene	ND	2.5	ug/L	03/02/14	DD	SW8270
2,4,5-Trichlorophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
2,4,6-Trichlorophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
2,4-Dichlorophenol	ND	10	ug/L	03/02/14	DD	SW8270
2,4-Dimethylphenol	ND	1.0	ug/L	03/02/14	DD	SW8270
2,4-Dinitrotoluene	ND	5.0	ug/L	03/02/14	DD	SW8270
2,6-Dinitrotoluene	ND	5.0	ug/L	03/02/14	DD	SW8270
2-Chloronaphthalene	ND	5.0	ug/L	03/02/14	DD	SW8270
2-Chlorophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
2-Methylnaphthalene	ND	5.0	ug/L	03/02/14	DD	SW8270
2-Methylphenol (o-cresol)	ND	1.0	ug/L	03/02/14	DD	SW8270
2-Nitroaniline	ND	5.0	ug/L	03/02/14	DD	SW8270
2-Nitrophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
3&4-Methylphenol (m&p-cresol)	ND	10	ug/L	03/02/14	DD	SW8270
3,3'-Dichlorobenzidine	ND	5.0	ug/L	03/02/14	DD	SW8270
3-Nitroaniline	ND	5.0	ug/L	03/02/14	DD	SW8270
4-Bromophenyl phenyl ether	ND	5.0	ug/L	03/02/14	DD	SW8270
4-Chloro-3-methylphenol	ND	20	ug/L	03/02/14	DD	SW8270
4-Chloroaniline	ND	5.0	ug/L	03/02/14	DD	SW8270
4-Chlorophenyl phenyl ether	ND	1.0	ug/L	03/02/14	DD	SW8270
4-Nitroaniline	ND	5.0	ug/L	03/02/14	DD	SW8270
4-Nitrophenol	ND	1.0	ug/L	03/02/14	DD	SW8270
Acetophenone	ND	5.0	ug/L	03/02/14	DD	SW8270
Aniline	ND	5.0	ug/L	03/02/14	DD	SW8270
Anthracene	ND	5.0	ug/L	03/02/14	DD	SW8270
Benzidine	ND	50	ug/L	03/02/14	DD	SW8270
Benzoic acid	ND	50	ug/L	03/02/14	DD	SW8270
Benzyl butyl phthalate	ND	5.0	ug/L	03/02/14	DD	SW8270
Bis(2-chloroethoxy)methane	ND	5.0	ug/L	03/02/14	DD	SW8270
Bis(2-chloroethyl)ether	ND	1.0	ug/L	03/02/14	DD	SW8270
Bis(2-chloroisopropyl)ether	ND	5.0	ug/L	03/02/14	DD	SW8270
Carbazole	ND	5.0	ug/L	03/02/14	DD	SW8270
Dibenzofuran	ND	5.0	ug/L	03/02/14	DD	SW8270
Diethyl phthalate	ND	5.0	ug/L	03/02/14	DD	SW8270
Dimethylphthalate	ND	5.0	ug/L	03/02/14	DD	SW8270

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Di-n-butylphthalate	ND	5.0	ug/L	03/02/14	DD	SW8270	
Di-n-octylphthalate	ND	5.0	ug/L	03/02/14	DD	SW8270	
Fluoranthene	ND	5.0	ug/L	03/02/14	DD	SW8270	
Fluorene	ND	5.0	ug/L	03/02/14	DD	SW8270	
Hexachlorocyclopentadiene	ND	5.0	ug/L	03/02/14	DD	SW8270	
Isophorone	ND	5.0	ug/L	03/02/14	DD	SW8270	
Naphthalene	ND	5.0	ug/L	03/02/14	DD	SW8270	
N-Nitrosodimethylamine	ND	5.0	ug/L	03/02/14	DD	SW8270	
N-Nitrosodi-n-propylamine	ND	5.0	ug/L	03/02/14	DD	SW8270	
N-Nitrosodiphenylamine	ND	5.0	ug/L	03/02/14	DD	SW8270	
Phenol	ND	1.0	ug/L	03/02/14	DD	SW8270	
Pyrene	ND	5.0	ug/L	03/02/14	DD	SW8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	99		%	03/02/14	DD	15 - 110 %	
% 2-Fluorobiphenyl	86		%	03/02/14	DD	30 - 130 %	
% 2-Fluorophenol	67		%	03/02/14	DD	15 - 110 %	
% Nitrobenzene-d5	91		%	03/02/14	DD	30 - 130 %	
% Phenol-d5	62		%	03/02/14	DD	15 - 110 %	
% Terphenyl-d14	125		%	03/02/14	DD	30 - 130 %	
Semivolatiles							
1,2,4,5-Tetrachlorobenzene	ND	1.6	ug/L	02/28/14	DD	SW8270 (SIM)	
2,4-Dinitrophenol	ND	1.0	ug/L	02/28/14	DD	SW8270 (SIM)	
4,6-Dinitro-2-methylphenol	ND	1.0	ug/L	02/28/14	DD	SW8270 (SIM)	
Acenaphthene	ND	0.05	ug/L	02/28/14	DD	SW8270 (SIM)	
Acenaphthylene	ND	0.05	ug/L	02/28/14	DD	SW8270 (SIM)	
Benz(a)anthracene	ND	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Benzo(a)pyrene	ND	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Benzo(b)fluoranthene	ND	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Benzo(ghi)perylene	ND	3.0	ug/L	02/28/14	DD	SW8270 (SIM)	
Benzo(k)fluoranthene	ND	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Bis(2-ethylhexyl)phthalate	ND	1.6	ug/L	02/28/14	DD	SW8270 (SIM)	B
Chrysene	ND	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Dibenz(a,h)anthracene	ND	0.01	ug/L	02/28/14	DD	SW8270 (SIM)	
Hexachlorobenzene	ND	0.04	ug/L	02/28/14	DD	SW8270 (SIM)	
Hexachlorobutadiene	ND	0.50	ug/L	02/28/14	DD	SW8270 (SIM)	
Hexachloroethane	ND	2.4	ug/L	02/28/14	DD	SW8270 (SIM)	
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	02/28/14	DD	SW8270 (SIM)	
Nitrobenzene	ND	0.40	ug/L	02/28/14	DD	SW8270 (SIM)	
Pentachloronitrobenzene	ND	0.10	ug/L	02/28/14	DD	SW8270 (SIM)	
Pentachlorophenol	ND	0.80	ug/L	02/28/14	DD	SW8270 (SIM)	
Phenanthrene	0.06	0.05	ug/L	02/28/14	DD	SW8270 (SIM)	
Pyridine	ND	0.50	ug/L	02/28/14	DD	SW8270 (SIM)	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	99		%	02/28/14	DD	15 - 110 %	
% 2-Fluorobiphenyl	86		%	02/28/14	DD	30 - 130 %	
% 2-Fluorophenol	67		%	02/28/14	DD	15 - 110 %	
% Nitrobenzene-d5	91		%	02/28/14	DD	30 - 130 %	
% Phenol-d5	62		%	02/28/14	DD	15 - 110 %	
% Terphenyl-d14	125		%	02/28/14	DD	30 - 130 %	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.
B = Present in blank, no bias suspected.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

For Pesticides, due to matrix interference from non target compounds in the sample an elevated RL was reported.

For Herbicides, due to matrix interference from non target compounds in the sample an elevated RL was reported.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	AR	02/26/14	9:00
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13747

Project ID: ECHO LAKE RD
Client ID: AG-S1

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.47	0.47	mg/Kg	02/28/14	EK	SW6010
Arsenic	4.1	0.9	mg/Kg	02/28/14	EK	SW6010
Barium	187	0.47	mg/Kg	02/28/14	EK	SW6010
Beryllium	1.24	0.38	mg/Kg	02/28/14	EK	SW6010
Cadmium	< 0.47	0.47	mg/Kg	02/28/14	EK	SW6010
Chromium	21.0	0.47	mg/Kg	02/28/14	EK	SW6010
Copper	18.5	0.47	mg/kg	02/28/14	EK	SW6010
Mercury	< 0.10	0.10	mg/Kg	03/03/14	RS	SW-7471
Nickel	25.2	0.47	mg/Kg	02/28/14	EK	SW6010
Lead	20.3	0.47	mg/Kg	02/28/14	EK	SW6010
Antimony	< 4.7	4.7	mg/Kg	02/28/14	EK	SW6010
Selenium	< 1.9	1.9	mg/Kg	02/28/14	EK	SW6010
Thallium	< 4.2	4.2	mg/Kg	02/28/14	EK	SW6010
Zinc	93.9	0.47	mg/Kg	02/28/14	EK	SW6010
Percent Solid	71		%	02/27/14	I	E160.3
Soil Extraction for Pesticide	Completed			02/27/14	BB/V	SW3545
Soil Extraction for SVOA	Completed			02/27/14	BJ/FV	SW3545
Mercury Digestion	Completed			03/03/14	I/I	SW7471
Soil Extraction for Herbicide	Completed			02/27/14	PP/D	SW8151
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050
Field Extraction	Completed			02/26/14		SW5035
Chlorinated Herbicides						
2,4,5-T	ND	290	ug/Kg	03/04/14	CE	SW8151
2,4,5-TP (Silvex)	ND	290	ug/Kg	03/04/14	CE	SW8151
2,4-D	750	290	ug/Kg	03/04/14	CE	SW8151
2,4-DB	ND	2900	ug/Kg	03/04/14	CE	SW8151
Dalapon	ND	290	ug/Kg	03/04/14	CE	SW8151

Project ID: ECHO LAKE RD
Client ID: AG-S1

Phoenix I.D.: BG13747

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Dicamba	ND	580	ug/Kg	03/04/14	CE	SW8151	
Dichloroprop	ND	290	ug/Kg	03/04/14	CE	SW8151	
Dinoseb	ND	580	ug/Kg	03/04/14	CE	SW8151	
QA/QC Surrogates							
% DCAA	81		%	03/04/14	CE	30 - 150 %	
Pesticides							
4,4' -DDD	ND	8.9	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDE	ND	8.9	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDT	ND	8.9	ug/Kg	02/28/14	CE	SW8081	
a-BHC	ND	4.4	ug/Kg	02/28/14	CE	SW8081	
Alachlor	ND	4.4	ug/Kg	02/28/14	CE	SW8081	1
Aldrin	ND	1.4	ug/Kg	02/28/14	CE	SW8081	
b-BHC	ND	4.4	ug/Kg	02/28/14	CE	SW8081	
Chlordane	ND	14	ug/Kg	02/28/14	CE	SW8081	
d-BHC	ND	4.4	ug/Kg	02/28/14	CE	SW8081	
Dieldrin	ND	1.4	ug/Kg	02/28/14	CE	SW8081	
Endosulfan I	ND	4.4	ug/Kg	02/28/14	CE	SW8081	
Endosulfan II	ND	8.9	ug/Kg	02/28/14	CE	SW8081	
Endosulfan sulfate	ND	8.9	ug/Kg	02/28/14	CE	SW8081	
Endrin	ND	8.9	ug/Kg	02/28/14	CE	SW8081	
Endrin aldehyde	ND	8.9	ug/Kg	02/28/14	CE	SW8081	
Endrin ketone	ND	8.9	ug/Kg	02/28/14	CE	SW8081	
g-BHC	ND	1.4	ug/Kg	02/28/14	CE	SW8081	
Heptachlor	ND	2.8	ug/Kg	02/28/14	CE	SW8081	
Heptachlor epoxide	ND	4.4	ug/Kg	02/28/14	CE	SW8081	
Methoxychlor	ND	44	ug/Kg	02/28/14	CE	SW8081	
Toxaphene	ND	230	ug/Kg	02/28/14	CE	SW8081	
QA/QC Surrogates							
% DCBP	70		%	02/28/14	CE	30 - 150 %	
% TCMX	57		%	02/28/14	CE	30 - 150 %	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,1,1-Trichloroethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,1,2,2-Tetrachloroethane	ND	6.3	ug/Kg	03/01/14	HM	SW8260	
1,1,2-Trichloroethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,1-Dichloroethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,1-Dichloroethene	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,1-Dichloropropene	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,2,3-Trichlorobenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
1,2,3-Trichloropropane	ND	360	ug/Kg	03/03/14	HM	SW8260	
1,2,4-Trichlorobenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
1,2,4-Trimethylbenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
1,2-Dibromo-3-chloropropane	ND	360	ug/Kg	03/03/14	HM	SW8260	
1,2-Dibromoethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,2-Dichlorobenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
1,2-Dichloroethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,2-Dichloropropane	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,3,5-Trimethylbenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	

Project ID: ECHO LAKE RD
Client ID: AG-S1

Phoenix I.D.: BG13747

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,3-Dichlorobenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
1,3-Dichloropropane	ND	10	ug/Kg	03/01/14	HM	SW8260	
1,4-Dichlorobenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
2,2-Dichloropropane	ND	10	ug/Kg	03/01/14	HM	SW8260	
2-Chlorotoluene	ND	360	ug/Kg	03/03/14	HM	SW8260	
2-Hexanone	ND	52	ug/Kg	03/01/14	HM	SW8260	
2-Isopropyltoluene	ND	360	ug/Kg	03/03/14	HM	SW8260	1
4-Chlorotoluene	ND	360	ug/Kg	03/03/14	HM	SW8260	
4-Methyl-2-pentanone	ND	52	ug/Kg	03/01/14	HM	SW8260	
Acetone	ND	63	ug/Kg	03/01/14	HM	SW8260	
Acrylonitrile	ND	10	ug/Kg	03/01/14	HM	SW8260	
Benzene	ND	10	ug/Kg	03/01/14	HM	SW8260	
Bromobenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
Bromochloromethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
Bromodichloromethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
Bromoform	ND	10	ug/Kg	03/01/14	HM	SW8260	
Bromomethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
Carbon Disulfide	ND	10	ug/Kg	03/01/14	HM	SW8260	
Carbon tetrachloride	ND	10	ug/Kg	03/01/14	HM	SW8260	
Chlorobenzene	ND	10	ug/Kg	03/01/14	HM	SW8260	
Chloroethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
Chloroform	ND	10	ug/Kg	03/01/14	HM	SW8260	
Chloromethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
cis-1,2-Dichloroethene	ND	10	ug/Kg	03/01/14	HM	SW8260	
cis-1,3-Dichloropropene	ND	10	ug/Kg	03/01/14	HM	SW8260	
Dibromochloromethane	ND	6.3	ug/Kg	03/01/14	HM	SW8260	
Dibromomethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
Dichlorodifluoromethane	ND	10	ug/Kg	03/01/14	HM	SW8260	
Ethylbenzene	ND	10	ug/Kg	03/01/14	HM	SW8260	
Hexachlorobutadiene	ND	360	ug/Kg	03/03/14	HM	SW8260	
Isopropylbenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
m&p-Xylene	ND	10	ug/Kg	03/01/14	HM	SW8260	
Methyl Ethyl Ketone	ND	63	ug/Kg	03/01/14	HM	SW8260	
Methyl t-butyl ether (MTBE)	ND	21	ug/Kg	03/01/14	HM	SW8260	
Methylene chloride	ND	10	ug/Kg	03/01/14	HM	SW8260	
Naphthalene	ND	360	ug/Kg	03/03/14	HM	SW8260	
n-Butylbenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
n-Propylbenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
o-Xylene	ND	10	ug/Kg	03/01/14	HM	SW8260	
p-Isopropyltoluene	ND	360	ug/Kg	03/03/14	HM	SW8260	
sec-Butylbenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
Styrene	ND	10	ug/Kg	03/01/14	HM	SW8260	
tert-Butylbenzene	ND	360	ug/Kg	03/03/14	HM	SW8260	
Tetrachloroethene	ND	10	ug/Kg	03/01/14	HM	SW8260	
Tetrahydrofuran (THF)	ND	21	ug/Kg	03/01/14	HM	SW8260	1
Toluene	ND	10	ug/Kg	03/01/14	HM	SW8260	
Total Xylenes	ND	10	ug/Kg	03/01/14	HM	SW8260	
trans-1,2-Dichloroethene	ND	10	ug/Kg	03/01/14	HM	SW8260	
trans-1,3-Dichloropropene	ND	10	ug/Kg	03/01/14	HM	SW8260	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	710	ug/Kg	03/03/14	HM	SW8260
Trichloroethene	ND	10	ug/Kg	03/01/14	HM	SW8260
Trichlorofluoromethane	ND	10	ug/Kg	03/01/14	HM	SW8260
Trichlorotrifluoroethane	ND	10	ug/Kg	03/01/14	HM	SW8260
Vinyl chloride	ND	10	ug/Kg	03/01/14	HM	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	100		%	03/03/14	HM	70 - 130 %
% Bromofluorobenzene	96		%	03/03/14	HM	70 - 130 %
% Dibromofluoromethane	103		%	03/01/14	HM	70 - 130 %
% Toluene-d8	99		%	03/01/14	HM	70 - 130 %
Semivolatiles						
1,2,4,5-Tetrachlorobenzene	ND	320	ug/Kg	02/28/14	DD	SW 8270
1,2,4-Trichlorobenzene	ND	320	ug/Kg	02/28/14	DD	SW 8270
1,2-Dichlorobenzene	ND	320	ug/Kg	02/28/14	DD	SW 8270
1,2-Diphenylhydrazine	ND	460	ug/Kg	02/28/14	DD	SW 8270
1,3-Dichlorobenzene	ND	320	ug/Kg	02/28/14	DD	SW 8270
1,4-Dichlorobenzene	ND	320	ug/Kg	02/28/14	DD	SW 8270
2,4,5-Trichlorophenol	ND	320	ug/Kg	02/28/14	DD	SW 8270
2,4,6-Trichlorophenol	ND	320	ug/Kg	02/28/14	DD	SW 8270
2,4-Dichlorophenol	ND	320	ug/Kg	02/28/14	DD	SW 8270
2,4-Dimethylphenol	ND	320	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrophenol	ND	730	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrotoluene	ND	320	ug/Kg	02/28/14	DD	SW 8270
2,6-Dinitrotoluene	ND	320	ug/Kg	02/28/14	DD	SW 8270
2-Chloronaphthalene	ND	320	ug/Kg	02/28/14	DD	SW 8270
2-Chlorophenol	ND	320	ug/Kg	02/28/14	DD	SW 8270
2-Methylnaphthalene	ND	320	ug/Kg	02/28/14	DD	SW 8270
2-Methylphenol (o-cresol)	ND	320	ug/Kg	02/28/14	DD	SW 8270
2-Nitroaniline	ND	730	ug/Kg	02/28/14	DD	SW 8270
2-Nitrophenol	ND	320	ug/Kg	02/28/14	DD	SW 8270
3&4-Methylphenol (m&p-cresol)	ND	460	ug/Kg	02/28/14	DD	SW 8270
3,3'-Dichlorobenzidine	ND	320	ug/Kg	02/28/14	DD	SW 8270
3-Nitroaniline	ND	730	ug/Kg	02/28/14	DD	SW 8270
4,6-Dinitro-2-methylphenol	ND	1300	ug/Kg	02/28/14	DD	SW 8270
4-Bromophenyl phenyl ether	ND	460	ug/Kg	02/28/14	DD	SW 8270
4-Chloro-3-methylphenol	ND	320	ug/Kg	02/28/14	DD	SW 8270
4-Chloroaniline	ND	320	ug/Kg	02/28/14	DD	SW 8270
4-Chlorophenyl phenyl ether	ND	320	ug/Kg	02/28/14	DD	SW 8270
4-Nitroaniline	ND	730	ug/Kg	02/28/14	DD	SW 8270
4-Nitrophenol	ND	1300	ug/Kg	02/28/14	DD	SW 8270
Acenaphthene	ND	320	ug/Kg	02/28/14	DD	SW 8270
Acenaphthylene	ND	320	ug/Kg	02/28/14	DD	SW 8270
Acetophenone	ND	320	ug/Kg	02/28/14	DD	SW 8270
Aniline	ND	1300	ug/Kg	02/28/14	DD	SW 8270
Anthracene	ND	320	ug/Kg	02/28/14	DD	SW 8270
Benz(a)anthracene	ND	320	ug/Kg	02/28/14	DD	SW 8270
Benzidine	ND	550	ug/Kg	02/28/14	DD	SW 8270
Benzo(a)pyrene	ND	320	ug/Kg	02/28/14	DD	SW 8270
Benzo(b)fluoranthene	ND	320	ug/Kg	02/28/14	DD	SW 8270

Project ID: ECHO LAKE RD
Client ID: AG-S1

Phoenix I.D.: BG13747

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Benzo(ghi)perylene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Benzo(k)fluoranthene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Benzoic acid	ND	1300	ug/Kg	02/28/14	DD	SW 8270	1
Benzyl butyl phthalate	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethoxy)methane	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethyl)ether	ND	460	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroisopropyl)ether	ND	320	ug/Kg	02/28/14	DD	SW 8270	1
Bis(2-ethylhexyl)phthalate	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Carbazole	ND	690	ug/Kg	02/28/14	DD	SW 8270	
Chrysene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Dibenz(a,h)anthracene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Dibenzofuran	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Diethyl phthalate	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Dimethylphthalate	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Di-n-butylphthalate	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Di-n-octylphthalate	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Fluoranthene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Fluorene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobenzene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobutadiene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorocyclopentadiene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Hexachloroethane	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Indeno(1,2,3-cd)pyrene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Isophorone	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Naphthalene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Nitrobenzene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodimethylamine	ND	460	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodi-n-propylamine	ND	320	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodiphenylamine	ND	460	ug/Kg	02/28/14	DD	SW 8270	
Pentachloronitrobenzene	ND	460	ug/Kg	02/28/14	DD	SW 8270	
Pentachlorophenol	ND	460	ug/Kg	02/28/14	DD	SW 8270	
Phenanthrene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Phenol	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Pyrene	ND	320	ug/Kg	02/28/14	DD	SW 8270	
Pyridine	ND	460	ug/Kg	02/28/14	DD	SW 8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	47		%	02/28/14	DD	30 - 130 %	
% 2-Fluorobiphenyl	56		%	02/28/14	DD	30 - 130 %	
% 2-Fluorophenol	43		%	02/28/14	DD	30 - 130 %	
% Nitrobenzene-d5	67		%	02/28/14	DD	30 - 130 %	
% Phenol-d5	57		%	02/28/14	DD	30 - 130 %	
% Terphenyl-d14	109		%	02/28/14	DD	30 - 130 %	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the volatile soil data as biased low.

Volatile Comment:
There was a suppression of the last internal standard in the low level analysis, all affected compounds are reported from the methanol preserved high level analysis which did not exhibit this interference.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	AR	02/26/14	9:30
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13748

Project ID: ECHO LAKE RD
Client ID: AG-S2

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.39	0.39	mg/Kg	02/28/14	EK	SW6010
Arsenic	6.6	0.8	mg/Kg	02/28/14	EK	SW6010
Barium	63.5	0.39	mg/Kg	02/28/14	EK	SW6010
Beryllium	0.78	0.31	mg/Kg	02/28/14	EK	SW6010
Cadmium	< 0.39	0.39	mg/Kg	02/28/14	EK	SW6010
Chromium	22.3	0.39	mg/Kg	02/28/14	EK	SW6010
Copper	30.0	0.39	mg/kg	02/28/14	EK	SW6010
Mercury	< 0.09	0.09	mg/Kg	03/03/14	RS	SW-7471
Nickel	23.9	0.39	mg/Kg	02/28/14	EK	SW6010
Lead	17.3	0.39	mg/Kg	02/28/14	EK	SW6010
Antimony	< 3.9	3.9	mg/Kg	02/28/14	EK	SW6010
Selenium	< 1.6	1.6	mg/Kg	02/28/14	EK	SW6010
Thallium	< 3.5	3.5	mg/Kg	02/28/14	EK	SW6010
Zinc	81.3	0.39	mg/Kg	02/28/14	EK	SW6010
Percent Solid	82		%	02/27/14	I	E160.3
Soil Extraction for Pesticide	Completed			02/27/14	BB/V	SW3545
Soil Extraction for SVOA	Completed			02/27/14	BJ/FV	SW3545
Mercury Digestion	Completed			03/03/14	I/I	SW7471
Soil Extraction for Herbicide	Completed			02/27/14	PP/D	SW8151
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050
Field Extraction	Completed			02/26/14		SW5035
Chlorinated Herbicides						
2,4,5-T	ND	100	ug/Kg	03/04/14	CE	SW8151
2,4,5-TP (Silvex)	ND	100	ug/Kg	03/04/14	CE	SW8151
2,4-D	230	100	ug/Kg	03/04/14	CE	SW8151
2,4-DB	ND	1000	ug/Kg	03/04/14	CE	SW8151
Dalapon	ND	100	ug/Kg	03/04/14	CE	SW8151

Project ID: ECHO LAKE RD
Client ID: AG-S2

Phoenix I.D.: BG13748

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Dicamba	ND	200	ug/Kg	03/04/14	CE	SW8151	
Dichloroprop	ND	100	ug/Kg	03/04/14	CE	SW8151	
Dinoseb	ND	200	ug/Kg	03/04/14	CE	SW8151	
QA/QC Surrogates							
% DCAA	58		%	03/04/14	CE	30 - 150 %	
Pesticides							
4,4' -DDD	ND	7.7	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDE	ND	7.7	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDT	ND	7.7	ug/Kg	02/28/14	CE	SW8081	
a-BHC	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Alachlor	ND	3.8	ug/Kg	02/28/14	CE	SW8081	1
Aldrin	ND	1.2	ug/Kg	02/28/14	CE	SW8081	
b-BHC	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Chlordane	ND	12	ug/Kg	02/28/14	CE	SW8081	
d-BHC	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Dieldrin	ND	1.2	ug/Kg	02/28/14	CE	SW8081	
Endosulfan I	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Endosulfan II	ND	7.7	ug/Kg	02/28/14	CE	SW8081	
Endosulfan sulfate	ND	7.7	ug/Kg	02/28/14	CE	SW8081	
Endrin	ND	7.7	ug/Kg	02/28/14	CE	SW8081	
Endrin aldehyde	ND	7.7	ug/Kg	02/28/14	CE	SW8081	
Endrin ketone	ND	7.7	ug/Kg	02/28/14	CE	SW8081	
g-BHC	ND	1.2	ug/Kg	02/28/14	CE	SW8081	
Heptachlor	ND	2.4	ug/Kg	02/28/14	CE	SW8081	
Heptachlor epoxide	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Methoxychlor	ND	38	ug/Kg	02/28/14	CE	SW8081	
Toxaphene	ND	200	ug/Kg	02/28/14	CE	SW8081	
QA/QC Surrogates							
% DCBP	68		%	02/28/14	CE	30 - 150 %	
% TCMX	54		%	02/28/14	CE	30 - 150 %	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,1,1-Trichloroethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,1,2,2-Tetrachloroethane	ND	4.3	ug/Kg	02/28/14	JLI	SW8260	
1,1,2-Trichloroethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,1-Dichloroethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,1-Dichloroethene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,1-Dichloropropene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2,3-Trichlorobenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2,3-Trichloropropane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2,4-Trichlorobenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2,4-Trimethylbenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dibromo-3-chloropropane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dibromoethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichlorobenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichloroethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichloropropane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,3,5-Trimethylbenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	

Project ID: ECHO LAKE RD
Client ID: AG-S2

Phoenix I.D.: BG13748

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,3-Dichlorobenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,3-Dichloropropane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
1,4-Dichlorobenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
2,2-Dichloropropane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
2-Chlorotoluene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
2-Hexanone	ND	36	ug/Kg	02/28/14	JLI	SW8260	
2-Isopropyltoluene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	1
4-Chlorotoluene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
4-Methyl-2-pentanone	ND	36	ug/Kg	02/28/14	JLI	SW8260	
Acetone	ND	43	ug/Kg	02/28/14	JLI	SW8260	
Acrylonitrile	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Benzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Bromobenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Bromochloromethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Bromodichloromethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Bromoform	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Bromomethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Carbon Disulfide	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Carbon tetrachloride	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Chlorobenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Chloroethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Chloroform	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Chloromethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
cis-1,2-Dichloroethene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
cis-1,3-Dichloropropene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Dibromochloromethane	ND	4.3	ug/Kg	02/28/14	JLI	SW8260	
Dibromomethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Dichlorodifluoromethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Ethylbenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Hexachlorobutadiene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Isopropylbenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
m&p-Xylene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Methyl Ethyl Ketone	ND	43	ug/Kg	02/28/14	JLI	SW8260	
Methyl t-butyl ether (MTBE)	ND	14	ug/Kg	02/28/14	JLI	SW8260	
Methylene chloride	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Naphthalene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
n-Butylbenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
n-Propylbenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
o-Xylene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
p-Isopropyltoluene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
sec-Butylbenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Styrene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
tert-Butylbenzene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Tetrachloroethene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Tetrahydrofuran (THF)	ND	14	ug/Kg	02/28/14	JLI	SW8260	1
Toluene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
Total Xylenes	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
trans-1,2-Dichloroethene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	
trans-1,3-Dichloropropene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	14	ug/Kg	02/28/14	JLI	SW8260
Trichloroethene	ND	7.2	ug/Kg	02/28/14	JLI	SW8260
Trichlorofluoromethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260
Trichlorotrifluoroethane	ND	7.2	ug/Kg	02/28/14	JLI	SW8260
Vinyl chloride	ND	7.2	ug/Kg	02/28/14	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	102		%	02/28/14	JLI	70 - 130 %
% Bromofluorobenzene	85		%	02/28/14	JLI	70 - 130 %
% Dibromofluoromethane	102		%	02/28/14	JLI	70 - 130 %
% Toluene-d8	98		%	02/28/14	JLI	70 - 130 %
Semivolatiles						
1,2,4,5-Tetrachlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
1,2,4-Trichlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
1,2-Dichlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
1,2-Diphenylhydrazine	ND	400	ug/Kg	02/28/14	DD	SW 8270
1,3-Dichlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
1,4-Dichlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4,5-Trichlorophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4,6-Trichlorophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4-Dichlorophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4-Dimethylphenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrophenol	ND	640	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrotoluene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,6-Dinitrotoluene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Chloronaphthalene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Chlorophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Methylnaphthalene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Methylphenol (o-cresol)	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Nitroaniline	ND	640	ug/Kg	02/28/14	DD	SW 8270
2-Nitrophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
3&4-Methylphenol (m&p-cresol)	ND	400	ug/Kg	02/28/14	DD	SW 8270
3,3'-Dichlorobenzidine	ND	280	ug/Kg	02/28/14	DD	SW 8270
3-Nitroaniline	ND	640	ug/Kg	02/28/14	DD	SW 8270
4,6-Dinitro-2-methylphenol	ND	1200	ug/Kg	02/28/14	DD	SW 8270
4-Bromophenyl phenyl ether	ND	400	ug/Kg	02/28/14	DD	SW 8270
4-Chloro-3-methylphenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
4-Chloroaniline	ND	280	ug/Kg	02/28/14	DD	SW 8270
4-Chlorophenyl phenyl ether	ND	280	ug/Kg	02/28/14	DD	SW 8270
4-Nitroaniline	ND	640	ug/Kg	02/28/14	DD	SW 8270
4-Nitrophenol	ND	1200	ug/Kg	02/28/14	DD	SW 8270
Acenaphthene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Acenaphthylene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Acetophenone	ND	280	ug/Kg	02/28/14	DD	SW 8270
Aniline	ND	1200	ug/Kg	02/28/14	DD	SW 8270
Anthracene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Benz(a)anthracene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Benzidine	ND	480	ug/Kg	02/28/14	DD	SW 8270
Benzo(a)pyrene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Benzo(b)fluoranthene	ND	280	ug/Kg	02/28/14	DD	SW 8270

Project ID: ECHO LAKE RD
Client ID: AG-S2

Phoenix I.D.: BG13748

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Benzo(ghi)perylene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Benzo(k)fluoranthene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Benzoic acid	ND	1200	ug/Kg	02/28/14	DD	SW 8270	1
Benzyl butyl phthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethoxy)methane	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethyl)ether	ND	400	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroisopropyl)ether	ND	280	ug/Kg	02/28/14	DD	SW 8270	1
Bis(2-ethylhexyl)phthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Carbazole	ND	600	ug/Kg	02/28/14	DD	SW 8270	
Chrysene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Dibenz(a,h)anthracene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Dibenzofuran	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Diethyl phthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Dimethylphthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Di-n-butylphthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Di-n-octylphthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Fluoranthene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Fluorene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobutadiene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorocyclopentadiene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Hexachloroethane	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Indeno(1,2,3-cd)pyrene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Isophorone	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Naphthalene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Nitrobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodimethylamine	ND	400	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodi-n-propylamine	ND	280	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodiphenylamine	ND	400	ug/Kg	02/28/14	DD	SW 8270	
Pentachloronitrobenzene	ND	400	ug/Kg	02/28/14	DD	SW 8270	
Pentachlorophenol	ND	400	ug/Kg	02/28/14	DD	SW 8270	
Phenanthrene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Phenol	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Pyrene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Pyridine	ND	400	ug/Kg	02/28/14	DD	SW 8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	60		%	02/28/14	DD	30 - 130 %	
% 2-Fluorobiphenyl	61		%	02/28/14	DD	30 - 130 %	
% 2-Fluorophenol	61		%	02/28/14	DD	30 - 130 %	
% Nitrobenzene-d5	66		%	02/28/14	DD	30 - 130 %	
% Phenol-d5	67		%	02/28/14	DD	30 - 130 %	
% Terphenyl-d14	102		%	02/28/14	DD	30 - 130 %	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the volatile soil data as biased low.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	AR	02/26/14	10:09
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13749

Project ID: ECHO LAKE RD
Client ID: AG-S3

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.43	0.43	mg/Kg	02/28/14	EK	SW6010
Arsenic	4.7	0.9	mg/Kg	02/28/14	EK	SW6010
Barium	98.8	0.43	mg/Kg	02/28/14	EK	SW6010
Beryllium	0.95	0.34	mg/Kg	02/28/14	EK	SW6010
Cadmium	< 0.43	0.43	mg/Kg	02/28/14	EK	SW6010
Chromium	23.4	0.43	mg/Kg	02/28/14	EK	SW6010
Copper	22.3	0.43	mg/kg	02/28/14	EK	SW6010
Mercury	< 0.08	0.08	mg/Kg	03/03/14	RS	SW-7471
Nickel	23.3	0.43	mg/Kg	02/28/14	EK	SW6010
Lead	22.8	0.43	mg/Kg	02/28/14	EK	SW6010
Antimony	< 4.3	4.3	mg/Kg	02/28/14	EK	SW6010
Selenium	< 1.7	1.7	mg/Kg	02/28/14	EK	SW6010
Thallium	< 3.9	3.9	mg/Kg	02/28/14	EK	SW6010
Zinc	95.3	0.43	mg/Kg	02/28/14	EK	SW6010
Percent Solid	82		%	02/27/14	I	E160.3
Soil Extraction for Pesticide	Completed			02/27/14	BB/V	SW3545
Soil Extraction for SVOA	Completed			02/27/14	BJ/FV	SW3545
Mercury Digestion	Completed			03/03/14	I/I	SW7471
Soil Extraction for Herbicide	Completed			02/27/14	PP/D	SW8151
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050
Field Extraction	Completed			02/26/14		SW5035
Chlorinated Herbicides						
2,4,5-T	ND	51	ug/Kg	03/03/14	CE	SW8151
2,4,5-TP (Silvex)	ND	51	ug/Kg	03/03/14	CE	SW8151
2,4-D	68	51	ug/Kg	03/03/14	CE	SW8151
2,4-DB	ND	510	ug/Kg	03/03/14	CE	SW8151
Dalapon	ND	51	ug/Kg	03/03/14	CE	SW8151

Project ID: ECHO LAKE RD
Client ID: AG-S3

Phoenix I.D.: BG13749

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Dicamba	ND	100	ug/Kg	03/03/14	CE	SW8151	
Dichloroprop	ND	51	ug/Kg	03/03/14	CE	SW8151	
Dinoseb	ND	100	ug/Kg	03/03/14	CE	SW8151	
QA/QC Surrogates							
% DCAA	65		%	03/03/14	CE	30 - 150 %	
Pesticides							
4,4' -DDD	ND	7.6	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDE	ND	7.6	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDT	ND	7.6	ug/Kg	02/28/14	CE	SW8081	
a-BHC	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Alachlor	ND	3.8	ug/Kg	02/28/14	CE	SW8081	1
Aldrin	ND	1.2	ug/Kg	02/28/14	CE	SW8081	
b-BHC	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Chlordane	ND	12	ug/Kg	02/28/14	CE	SW8081	
d-BHC	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Dieldrin	ND	1.2	ug/Kg	02/28/14	CE	SW8081	
Endosulfan I	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Endosulfan II	ND	7.6	ug/Kg	02/28/14	CE	SW8081	
Endosulfan sulfate	ND	7.6	ug/Kg	02/28/14	CE	SW8081	
Endrin	ND	7.6	ug/Kg	02/28/14	CE	SW8081	
Endrin aldehyde	ND	7.6	ug/Kg	02/28/14	CE	SW8081	
Endrin ketone	ND	7.6	ug/Kg	02/28/14	CE	SW8081	
g-BHC	ND	1.2	ug/Kg	02/28/14	CE	SW8081	
Heptachlor	ND	2.4	ug/Kg	02/28/14	CE	SW8081	
Heptachlor epoxide	ND	3.8	ug/Kg	02/28/14	CE	SW8081	
Methoxychlor	ND	38	ug/Kg	02/28/14	CE	SW8081	
Toxaphene	ND	200	ug/Kg	02/28/14	CE	SW8081	
QA/QC Surrogates							
% DCBP	100		%	02/28/14	CE	30 - 150 %	
% TCMX	92		%	02/28/14	CE	30 - 150 %	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,1,1-Trichloroethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,1,2,2-Tetrachloroethane	ND	5.0	ug/Kg	02/28/14	JLI	SW8260	
1,1,2-Trichloroethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,1-Dichloroethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,1-Dichloroethene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,1-Dichloropropene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2,3-Trichlorobenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2,3-Trichloropropane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2,4-Trichlorobenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2,4-Trimethylbenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dibromo-3-chloropropane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dibromoethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichlorobenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichloroethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,2-Dichloropropane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,3,5-Trimethylbenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	

Project ID: ECHO LAKE RD
Client ID: AG-S3

Phoenix I.D.: BG13749

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,3-Dichlorobenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,3-Dichloropropane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
1,4-Dichlorobenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
2,2-Dichloropropane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
2-Chlorotoluene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
2-Hexanone	ND	41	ug/Kg	02/28/14	JLI	SW8260	
2-Isopropyltoluene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	1
4-Chlorotoluene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
4-Methyl-2-pentanone	ND	41	ug/Kg	02/28/14	JLI	SW8260	
Acetone	ND	50	ug/Kg	02/28/14	JLI	SW8260	
Acrylonitrile	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Benzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Bromobenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Bromochloromethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Bromodichloromethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Bromoform	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Bromomethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Carbon Disulfide	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Carbon tetrachloride	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Chlorobenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Chloroethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Chloroform	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Chloromethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
cis-1,2-Dichloroethene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
cis-1,3-Dichloropropene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Dibromochloromethane	ND	5.0	ug/Kg	02/28/14	JLI	SW8260	
Dibromomethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Dichlorodifluoromethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Ethylbenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Hexachlorobutadiene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Isopropylbenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
m&p-Xylene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Methyl Ethyl Ketone	ND	50	ug/Kg	02/28/14	JLI	SW8260	
Methyl t-butyl ether (MTBE)	ND	17	ug/Kg	02/28/14	JLI	SW8260	
Methylene chloride	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Naphthalene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
n-Butylbenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
n-Propylbenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
o-Xylene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
p-Isopropyltoluene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
sec-Butylbenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Styrene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
tert-Butylbenzene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Tetrachloroethene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Tetrahydrofuran (THF)	ND	17	ug/Kg	02/28/14	JLI	SW8260	1
Toluene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
Total Xylenes	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
trans-1,2-Dichloroethene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	
trans-1,3-Dichloropropene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260	

Project ID: ECHO LAKE RD
Client ID: AG-S3

Phoenix I.D.: BG13749

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	17	ug/Kg	02/28/14	JLI	SW8260
Trichloroethene	ND	8.3	ug/Kg	02/28/14	JLI	SW8260
Trichlorofluoromethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260
Trichlorotrifluoroethane	ND	8.3	ug/Kg	02/28/14	JLI	SW8260
Vinyl chloride	ND	8.3	ug/Kg	02/28/14	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	99		%	02/28/14	JLI	70 - 130 %
% Bromofluorobenzene	86		%	02/28/14	JLI	70 - 130 %
% Dibromofluoromethane	106		%	02/28/14	JLI	70 - 130 %
% Toluene-d8	98		%	02/28/14	JLI	70 - 130 %
Semivolatiles						
1,2,4,5-Tetrachlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
1,2,4-Trichlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
1,2-Dichlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
1,2-Diphenylhydrazine	ND	400	ug/Kg	02/28/14	DD	SW 8270
1,3-Dichlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
1,4-Dichlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4,5-Trichlorophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4,6-Trichlorophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4-Dichlorophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4-Dimethylphenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrophenol	ND	640	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrotoluene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2,6-Dinitrotoluene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Chloronaphthalene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Chlorophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Methylnaphthalene	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Methylphenol (o-cresol)	ND	280	ug/Kg	02/28/14	DD	SW 8270
2-Nitroaniline	ND	640	ug/Kg	02/28/14	DD	SW 8270
2-Nitrophenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
3&4-Methylphenol (m&p-cresol)	ND	400	ug/Kg	02/28/14	DD	SW 8270
3,3'-Dichlorobenzidine	ND	280	ug/Kg	02/28/14	DD	SW 8270
3-Nitroaniline	ND	640	ug/Kg	02/28/14	DD	SW 8270
4,6-Dinitro-2-methylphenol	ND	1200	ug/Kg	02/28/14	DD	SW 8270
4-Bromophenyl phenyl ether	ND	400	ug/Kg	02/28/14	DD	SW 8270
4-Chloro-3-methylphenol	ND	280	ug/Kg	02/28/14	DD	SW 8270
4-Chloroaniline	ND	280	ug/Kg	02/28/14	DD	SW 8270
4-Chlorophenyl phenyl ether	ND	280	ug/Kg	02/28/14	DD	SW 8270
4-Nitroaniline	ND	640	ug/Kg	02/28/14	DD	SW 8270
4-Nitrophenol	ND	1200	ug/Kg	02/28/14	DD	SW 8270
Acenaphthene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Acenaphthylene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Acetophenone	ND	280	ug/Kg	02/28/14	DD	SW 8270
Aniline	ND	1200	ug/Kg	02/28/14	DD	SW 8270
Anthracene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Benz(a)anthracene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Benzidine	ND	480	ug/Kg	02/28/14	DD	SW 8270
Benzo(a)pyrene	ND	280	ug/Kg	02/28/14	DD	SW 8270
Benzo(b)fluoranthene	ND	280	ug/Kg	02/28/14	DD	SW 8270

Project ID: ECHO LAKE RD
Client ID: AG-S3

Phoenix I.D.: BG13749

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Benzo(ghi)perylene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Benzo(k)fluoranthene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Benzoic acid	ND	1200	ug/Kg	02/28/14	DD	SW 8270	1
Benzyl butyl phthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethoxy)methane	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethyl)ether	ND	400	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroisopropyl)ether	ND	280	ug/Kg	02/28/14	DD	SW 8270	1
Bis(2-ethylhexyl)phthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Carbazole	ND	600	ug/Kg	02/28/14	DD	SW 8270	
Chrysene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Dibenz(a,h)anthracene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Dibenzofuran	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Diethyl phthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Dimethylphthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Di-n-butylphthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Di-n-octylphthalate	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Fluoranthene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Fluorene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobutadiene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorocyclopentadiene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Hexachloroethane	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Indeno(1,2,3-cd)pyrene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Isophorone	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Naphthalene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Nitrobenzene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodimethylamine	ND	400	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodi-n-propylamine	ND	280	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodiphenylamine	ND	400	ug/Kg	02/28/14	DD	SW 8270	
Pentachloronitrobenzene	ND	400	ug/Kg	02/28/14	DD	SW 8270	
Pentachlorophenol	ND	400	ug/Kg	02/28/14	DD	SW 8270	
Phenanthrene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Phenol	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Pyrene	ND	280	ug/Kg	02/28/14	DD	SW 8270	
Pyridine	ND	400	ug/Kg	02/28/14	DD	SW 8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	72		%	02/28/14	DD	30 - 130 %	
% 2-Fluorobiphenyl	67		%	02/28/14	DD	30 - 130 %	
% 2-Fluorophenol	71		%	02/28/14	DD	30 - 130 %	
% Nitrobenzene-d5	69		%	02/28/14	DD	30 - 130 %	
% Phenol-d5	70		%	02/28/14	DD	30 - 130 %	
% Terphenyl-d14	111		%	02/28/14	DD	30 - 130 %	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the volatile soil data as biased low.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

March 11, 2014

Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	AR	02/26/14	10:40
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13750

Project ID: ECHO LAKE RD
Client ID: AG-S4

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.43	0.43	mg/Kg	02/28/14	EK	SW6010
Arsenic	4.9	0.9	mg/Kg	02/28/14	EK	SW6010
Barium	75.1	0.43	mg/Kg	02/28/14	EK	SW6010
Beryllium	0.63	0.34	mg/Kg	02/28/14	EK	SW6010
Cadmium	< 0.43	0.43	mg/Kg	02/28/14	EK	SW6010
Chromium	19.5	0.43	mg/Kg	02/28/14	EK	SW6010
Copper	16.7	0.43	mg/kg	02/28/14	EK	SW6010
Mercury	< 0.10	0.10	mg/Kg	03/03/14	RS	SW-7471
Nickel	16.3	0.43	mg/Kg	02/28/14	EK	SW6010
Lead	19.0	0.43	mg/Kg	02/28/14	EK	SW6010
Antimony	< 4.3	4.3	mg/Kg	02/28/14	EK	SW6010
Selenium	< 1.7	1.7	mg/Kg	02/28/14	EK	SW6010
Thallium	< 3.8	3.8	mg/Kg	02/28/14	EK	SW6010
Zinc	66.6	0.43	mg/Kg	02/28/14	EK	SW6010
Percent Solid	70		%	02/27/14	I	E160.3
Soil Extraction for Pesticide	Completed			02/27/14	BB/V	SW3545
Soil Extraction for SVOA	Completed			02/27/14	BJ/FV	SW3545
Mercury Digestion	Completed			03/03/14	I/I	SW7471
Soil Extraction for Herbicide	Completed			02/27/14	PP/D	SW8151
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050
Field Extraction	Completed			02/26/14		SW5035
Chlorinated Herbicides						
2,4,5-T	ND	58	ug/Kg	03/03/14	CE	SW8151
2,4,5-TP (Silvex)	ND	58	ug/Kg	03/03/14	CE	SW8151
2,4-D	ND	58	ug/Kg	03/03/14	CE	SW8151
2,4-DB	ND	580	ug/Kg	03/03/14	CE	SW8151
Dalapon	ND	58	ug/Kg	03/03/14	CE	SW8151

Project ID: ECHO LAKE RD
Client ID: AG-S4

Phoenix I.D.: BG13750

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Dicamba	ND	120	ug/Kg	03/03/14	CE	SW8151	
Dichloroprop	ND	58	ug/Kg	03/03/14	CE	SW8151	
Dinoseb	ND	120	ug/Kg	03/03/14	CE	SW8151	
QA/QC Surrogates							
% DCAA	68		%	03/03/14	CE	30 - 150 %	
Pesticides							
4,4' -DDD	ND	9.0	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDE	ND	9.0	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDT	ND	9.0	ug/Kg	02/28/14	CE	SW8081	
a-BHC	ND	4.5	ug/Kg	02/28/14	CE	SW8081	
Alachlor	ND	4.5	ug/Kg	02/28/14	CE	SW8081	1
Aldrin	ND	1.4	ug/Kg	02/28/14	CE	SW8081	
b-BHC	ND	4.5	ug/Kg	02/28/14	CE	SW8081	
Chlordane	ND	14	ug/Kg	02/28/14	CE	SW8081	
d-BHC	ND	4.5	ug/Kg	02/28/14	CE	SW8081	
Dieldrin	ND	1.4	ug/Kg	02/28/14	CE	SW8081	
Endosulfan I	ND	4.5	ug/Kg	02/28/14	CE	SW8081	
Endosulfan II	ND	9.0	ug/Kg	02/28/14	CE	SW8081	
Endosulfan sulfate	ND	9.0	ug/Kg	02/28/14	CE	SW8081	
Endrin	ND	9.0	ug/Kg	02/28/14	CE	SW8081	
Endrin aldehyde	ND	9.0	ug/Kg	02/28/14	CE	SW8081	
Endrin ketone	ND	9.0	ug/Kg	02/28/14	CE	SW8081	
g-BHC	ND	1.4	ug/Kg	02/28/14	CE	SW8081	
Heptachlor	ND	2.8	ug/Kg	02/28/14	CE	SW8081	
Heptachlor epoxide	ND	4.5	ug/Kg	02/28/14	CE	SW8081	
Methoxychlor	ND	45	ug/Kg	02/28/14	CE	SW8081	
Toxaphene	ND	240	ug/Kg	02/28/14	CE	SW8081	
QA/QC Surrogates							
% DCBP	64		%	02/28/14	CE	30 - 150 %	
% TCMX	38		%	02/28/14	CE	30 - 150 %	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,1,1-Trichloroethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,1,2,2-Tetrachloroethane	ND	5.3	ug/Kg	02/28/14	HM	SW8260	
1,1,2-Trichloroethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloroethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloroethene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloropropene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2,3-Trichlorobenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2,3-Trichloropropane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2,4-Trichlorobenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2,4-Trimethylbenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2-Dibromo-3-chloropropane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2-Dibromoethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichlorobenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichloroethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichloropropane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,3,5-Trimethylbenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	

Project ID: ECHO LAKE RD
Client ID: AG-S4

Phoenix I.D.: BG13750

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,3-Dichlorobenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,3-Dichloropropane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
1,4-Dichlorobenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
2,2-Dichloropropane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
2-Chlorotoluene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
2-Hexanone	ND	44	ug/Kg	02/28/14	HM	SW8260	
2-Isopropyltoluene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	1
4-Chlorotoluene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
4-Methyl-2-pentanone	ND	44	ug/Kg	02/28/14	HM	SW8260	
Acetone	ND	53	ug/Kg	02/28/14	HM	SW8260	
Acrylonitrile	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Benzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Bromobenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Bromochloromethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Bromodichloromethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Bromoform	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Bromomethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Carbon Disulfide	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Carbon tetrachloride	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Chlorobenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Chloroethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Chloroform	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Chloromethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
cis-1,2-Dichloroethene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
cis-1,3-Dichloropropene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Dibromochloromethane	ND	5.3	ug/Kg	02/28/14	HM	SW8260	
Dibromomethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Dichlorodifluoromethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Ethylbenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Hexachlorobutadiene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Isopropylbenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
m&p-Xylene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Methyl Ethyl Ketone	ND	53	ug/Kg	02/28/14	HM	SW8260	
Methyl t-butyl ether (MTBE)	ND	18	ug/Kg	02/28/14	HM	SW8260	
Methylene chloride	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Naphthalene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
n-Butylbenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
n-Propylbenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
o-Xylene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
p-Isopropyltoluene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
sec-Butylbenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Styrene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
tert-Butylbenzene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Tetrachloroethene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Tetrahydrofuran (THF)	ND	18	ug/Kg	02/28/14	HM	SW8260	1
Toluene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
Total Xylenes	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
trans-1,2-Dichloroethene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	
trans-1,3-Dichloropropene	ND	8.8	ug/Kg	02/28/14	HM	SW8260	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	18	ug/Kg	02/28/14	HM	SW8260
Trichloroethene	ND	8.8	ug/Kg	02/28/14	HM	SW8260
Trichlorofluoromethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260
Trichlorotrifluoroethane	ND	8.8	ug/Kg	02/28/14	HM	SW8260
Vinyl chloride	ND	8.8	ug/Kg	02/28/14	HM	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	99		%	02/28/14	HM	70 - 130 %
% Bromofluorobenzene	98		%	02/28/14	HM	70 - 130 %
% Dibromofluoromethane	96		%	02/28/14	HM	70 - 130 %
% Toluene-d8	99		%	02/28/14	HM	70 - 130 %
Semivolatiles						
1,2,4,5-Tetrachlorobenzene	ND	330	ug/Kg	02/28/14	DD	SW 8270
1,2,4-Trichlorobenzene	ND	330	ug/Kg	02/28/14	DD	SW 8270
1,2-Dichlorobenzene	ND	330	ug/Kg	02/28/14	DD	SW 8270
1,2-Diphenylhydrazine	ND	470	ug/Kg	02/28/14	DD	SW 8270
1,3-Dichlorobenzene	ND	330	ug/Kg	02/28/14	DD	SW 8270
1,4-Dichlorobenzene	ND	330	ug/Kg	02/28/14	DD	SW 8270
2,4,5-Trichlorophenol	ND	330	ug/Kg	02/28/14	DD	SW 8270
2,4,6-Trichlorophenol	ND	330	ug/Kg	02/28/14	DD	SW 8270
2,4-Dichlorophenol	ND	330	ug/Kg	02/28/14	DD	SW 8270
2,4-Dimethylphenol	ND	330	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrophenol	ND	760	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrotoluene	ND	330	ug/Kg	02/28/14	DD	SW 8270
2,6-Dinitrotoluene	ND	330	ug/Kg	02/28/14	DD	SW 8270
2-Chloronaphthalene	ND	330	ug/Kg	02/28/14	DD	SW 8270
2-Chlorophenol	ND	330	ug/Kg	02/28/14	DD	SW 8270
2-Methylnaphthalene	ND	330	ug/Kg	02/28/14	DD	SW 8270
2-Methylphenol (o-cresol)	ND	330	ug/Kg	02/28/14	DD	SW 8270
2-Nitroaniline	ND	760	ug/Kg	02/28/14	DD	SW 8270
2-Nitrophenol	ND	330	ug/Kg	02/28/14	DD	SW 8270
3&4-Methylphenol (m&p-cresol)	ND	470	ug/Kg	02/28/14	DD	SW 8270
3,3'-Dichlorobenzidine	ND	330	ug/Kg	02/28/14	DD	SW 8270
3-Nitroaniline	ND	760	ug/Kg	02/28/14	DD	SW 8270
4,6-Dinitro-2-methylphenol	ND	1400	ug/Kg	02/28/14	DD	SW 8270
4-Bromophenyl phenyl ether	ND	470	ug/Kg	02/28/14	DD	SW 8270
4-Chloro-3-methylphenol	ND	330	ug/Kg	02/28/14	DD	SW 8270
4-Chloroaniline	ND	330	ug/Kg	02/28/14	DD	SW 8270
4-Chlorophenyl phenyl ether	ND	330	ug/Kg	02/28/14	DD	SW 8270
4-Nitroaniline	ND	760	ug/Kg	02/28/14	DD	SW 8270
4-Nitrophenol	ND	1400	ug/Kg	02/28/14	DD	SW 8270
Acenaphthene	ND	330	ug/Kg	02/28/14	DD	SW 8270
Acenaphthylene	ND	330	ug/Kg	02/28/14	DD	SW 8270
Acetophenone	ND	330	ug/Kg	02/28/14	DD	SW 8270
Aniline	ND	1400	ug/Kg	02/28/14	DD	SW 8270
Anthracene	ND	330	ug/Kg	02/28/14	DD	SW 8270
Benz(a)anthracene	ND	330	ug/Kg	02/28/14	DD	SW 8270
Benzidine	ND	570	ug/Kg	02/28/14	DD	SW 8270
Benzo(a)pyrene	ND	330	ug/Kg	02/28/14	DD	SW 8270
Benzo(b)fluoranthene	ND	330	ug/Kg	02/28/14	DD	SW 8270

Project ID: ECHO LAKE RD
Client ID: AG-S4

Phoenix I.D.: BG13750

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Benzo(ghi)perylene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Benzo(k)fluoranthene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Benzoic acid	ND	1400	ug/Kg	02/28/14	DD	SW 8270	1
Benzyl butyl phthalate	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethoxy)methane	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethyl)ether	ND	470	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroisopropyl)ether	ND	330	ug/Kg	02/28/14	DD	SW 8270	1
Bis(2-ethylhexyl)phthalate	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Carbazole	ND	710	ug/Kg	02/28/14	DD	SW 8270	
Chrysene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Dibenz(a,h)anthracene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Dibenzofuran	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Diethyl phthalate	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Dimethylphthalate	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Di-n-butylphthalate	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Di-n-octylphthalate	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Fluoranthene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Fluorene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobenzene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobutadiene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorocyclopentadiene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Hexachloroethane	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Indeno(1,2,3-cd)pyrene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Isophorone	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Naphthalene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Nitrobenzene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodimethylamine	ND	470	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodi-n-propylamine	ND	330	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodiphenylamine	ND	470	ug/Kg	02/28/14	DD	SW 8270	
Pentachloronitrobenzene	ND	470	ug/Kg	02/28/14	DD	SW 8270	
Pentachlorophenol	ND	470	ug/Kg	02/28/14	DD	SW 8270	
Phenanthrene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Phenol	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Pyrene	ND	330	ug/Kg	02/28/14	DD	SW 8270	
Pyridine	ND	470	ug/Kg	02/28/14	DD	SW 8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	62		%	02/28/14	DD	30 - 130 %	
% 2-Fluorobiphenyl	38		%	02/28/14	DD	30 - 130 %	
% 2-Fluorophenol	60		%	02/28/14	DD	30 - 130 %	
% Nitrobenzene-d5	60		%	02/28/14	DD	30 - 130 %	
% Phenol-d5	63		%	02/28/14	DD	30 - 130 %	
% Terphenyl-d14	109		%	02/28/14	DD	30 - 130 %	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the volatile soil data as biased low.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	AR	02/26/14	11:30
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13751

Project ID: ECHO LAKE RD
Client ID: AG-S5

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.44	0.44	mg/Kg	02/28/14	EK	SW6010
Arsenic	8.9	0.9	mg/Kg	02/28/14	EK	SW6010
Barium	92.7	0.44	mg/Kg	02/28/14	EK	SW6010
Beryllium	1.07	0.36	mg/Kg	02/28/14	EK	SW6010
Cadmium	< 0.44	0.44	mg/Kg	02/28/14	EK	SW6010
Chromium	20.8	0.44	mg/Kg	02/28/14	EK	SW6010
Copper	16.4	0.44	mg/kg	02/28/14	EK	SW6010
Mercury	< 0.08	0.08	mg/Kg	03/03/14	RS	SW-7471
Nickel	14.6	0.44	mg/Kg	02/28/14	EK	SW6010
Lead	24.5	0.44	mg/Kg	02/28/14	EK	SW6010
Antimony	< 4.4	4.4	mg/Kg	02/28/14	EK	SW6010
Selenium	< 1.8	1.8	mg/Kg	02/28/14	EK	SW6010
Thallium	< 4.0	4.0	mg/Kg	02/28/14	EK	SW6010
Zinc	64.8	0.44	mg/Kg	02/28/14	EK	SW6010
Percent Solid	74		%	02/27/14	I	E160.3
Soil Extraction for Pesticide	Completed			02/27/14	BB/V	SW3545
Soil Extraction for SVOA	Completed			02/27/14	JJ/FV	SW3545
Mercury Digestion	Completed			03/03/14	I/I	SW7471
Soil Extraction for Herbicide	Completed			02/27/14	PP/D	SW8151
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050
Field Extraction	Completed			02/26/14		SW5035
Chlorinated Herbicides						
2,4,5-T	ND	56	ug/Kg	03/04/14	KCA	SW8151
2,4,5-TP (Silvex)	ND	56	ug/Kg	03/04/14	KCA	SW8151
2,4-D	ND	80	ug/Kg	03/04/14	KCA	SW8151
2,4-DB	ND	560	ug/Kg	03/04/14	KCA	SW8151
Dalapon	ND	56	ug/Kg	03/04/14	KCA	SW8151

Project ID: ECHO LAKE RD
Client ID: AG-S5

Phoenix I.D.: BG13751

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Dicamba	ND	110	ug/Kg	03/04/14	KCA	SW8151	
Dichloroprop	ND	56	ug/Kg	03/04/14	KCA	SW8151	
Dinoseb	ND	110	ug/Kg	03/04/14	KCA	SW8151	
QA/QC Surrogates							
% DCAA	67		%	03/04/14	KCA	30 - 150 %	
Pesticides							
4,4' -DDD	ND	8.4	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDE	ND	8.4	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDT	ND	8.4	ug/Kg	02/28/14	CE	SW8081	
a-BHC	ND	4.2	ug/Kg	02/28/14	CE	SW8081	
Alachlor	ND	4.2	ug/Kg	02/28/14	CE	SW8081	1
Aldrin	ND	1.3	ug/Kg	02/28/14	CE	SW8081	
b-BHC	ND	4.2	ug/Kg	02/28/14	CE	SW8081	
Chlordane	ND	13	ug/Kg	02/28/14	CE	SW8081	
d-BHC	ND	4.2	ug/Kg	02/28/14	CE	SW8081	
Dieldrin	ND	1.3	ug/Kg	02/28/14	CE	SW8081	
Endosulfan I	ND	4.2	ug/Kg	02/28/14	CE	SW8081	
Endosulfan II	ND	8.4	ug/Kg	02/28/14	CE	SW8081	
Endosulfan sulfate	ND	8.4	ug/Kg	02/28/14	CE	SW8081	
Endrin	ND	8.4	ug/Kg	02/28/14	CE	SW8081	
Endrin aldehyde	ND	8.4	ug/Kg	02/28/14	CE	SW8081	
Endrin ketone	ND	8.4	ug/Kg	02/28/14	CE	SW8081	
g-BHC	ND	1.3	ug/Kg	02/28/14	CE	SW8081	
Heptachlor	ND	2.6	ug/Kg	02/28/14	CE	SW8081	
Heptachlor epoxide	ND	4.2	ug/Kg	02/28/14	CE	SW8081	
Methoxychlor	ND	42	ug/Kg	02/28/14	CE	SW8081	
Toxaphene	ND	220	ug/Kg	02/28/14	CE	SW8081	
QA/QC Surrogates							
% DCBP	83		%	02/28/14	CE	30 - 150 %	
% TCMX	72		%	02/28/14	CE	30 - 150 %	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,1,1-Trichloroethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,1,2,2-Tetrachloroethane	ND	5.5	ug/Kg	02/28/14	HM	SW8260	
1,1,2-Trichloroethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloroethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloroethene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloropropene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2,3-Trichlorobenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2,3-Trichloropropane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2,4-Trichlorobenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2,4-Trimethylbenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2-Dibromo-3-chloropropane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2-Dibromoethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichlorobenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichloroethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichloropropane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,3,5-Trimethylbenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	

Project ID: ECHO LAKE RD
Client ID: AG-S5

Phoenix I.D.: BG13751

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,3-Dichlorobenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,3-Dichloropropane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
1,4-Dichlorobenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
2,2-Dichloropropane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
2-Chlorotoluene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
2-Hexanone	ND	46	ug/Kg	02/28/14	HM	SW8260	
2-Isopropyltoluene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	1
4-Chlorotoluene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
4-Methyl-2-pentanone	ND	46	ug/Kg	02/28/14	HM	SW8260	
Acetone	ND	55	ug/Kg	02/28/14	HM	SW8260	
Acrylonitrile	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Benzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Bromobenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Bromochloromethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Bromodichloromethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Bromoform	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Bromomethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Carbon Disulfide	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Carbon tetrachloride	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Chlorobenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Chloroethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Chloroform	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Chloromethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
cis-1,2-Dichloroethene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
cis-1,3-Dichloropropene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Dibromochloromethane	ND	5.5	ug/Kg	02/28/14	HM	SW8260	
Dibromomethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Dichlorodifluoromethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Ethylbenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Hexachlorobutadiene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Isopropylbenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
m&p-Xylene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Methyl Ethyl Ketone	ND	55	ug/Kg	02/28/14	HM	SW8260	
Methyl t-butyl ether (MTBE)	ND	18	ug/Kg	02/28/14	HM	SW8260	
Methylene chloride	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Naphthalene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
n-Butylbenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
n-Propylbenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
o-Xylene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
p-Isopropyltoluene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
sec-Butylbenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Styrene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
tert-Butylbenzene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Tetrachloroethene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Tetrahydrofuran (THF)	ND	18	ug/Kg	02/28/14	HM	SW8260	1
Toluene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
Total Xylenes	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
trans-1,2-Dichloroethene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	
trans-1,3-Dichloropropene	ND	9.2	ug/Kg	02/28/14	HM	SW8260	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	18	ug/Kg	02/28/14	HM	SW8260
Trichloroethene	ND	9.2	ug/Kg	02/28/14	HM	SW8260
Trichlorofluoromethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260
Trichlorotrifluoroethane	ND	9.2	ug/Kg	02/28/14	HM	SW8260
Vinyl chloride	ND	9.2	ug/Kg	02/28/14	HM	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	96		%	02/28/14	HM	70 - 130 %
% Bromofluorobenzene	89		%	02/28/14	HM	70 - 130 %
% Dibromofluoromethane	99		%	02/28/14	HM	70 - 130 %
% Toluene-d8	98		%	02/28/14	HM	70 - 130 %
Semivolatiles						
1,2,4,5-Tetrachlorobenzene	ND	310	ug/Kg	02/28/14	DD	SW 8270
1,2,4-Trichlorobenzene	ND	310	ug/Kg	02/28/14	DD	SW 8270
1,2-Dichlorobenzene	ND	310	ug/Kg	02/28/14	DD	SW 8270
1,2-Diphenylhydrazine	ND	440	ug/Kg	02/28/14	DD	SW 8270
1,3-Dichlorobenzene	ND	310	ug/Kg	02/28/14	DD	SW 8270
1,4-Dichlorobenzene	ND	310	ug/Kg	02/28/14	DD	SW 8270
2,4,5-Trichlorophenol	ND	310	ug/Kg	02/28/14	DD	SW 8270
2,4,6-Trichlorophenol	ND	310	ug/Kg	02/28/14	DD	SW 8270
2,4-Dichlorophenol	ND	310	ug/Kg	02/28/14	DD	SW 8270
2,4-Dimethylphenol	ND	310	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrophenol	ND	710	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrotoluene	ND	310	ug/Kg	02/28/14	DD	SW 8270
2,6-Dinitrotoluene	ND	310	ug/Kg	02/28/14	DD	SW 8270
2-Chloronaphthalene	ND	310	ug/Kg	02/28/14	DD	SW 8270
2-Chlorophenol	ND	310	ug/Kg	02/28/14	DD	SW 8270
2-Methylnaphthalene	ND	310	ug/Kg	02/28/14	DD	SW 8270
2-Methylphenol (o-cresol)	ND	310	ug/Kg	02/28/14	DD	SW 8270
2-Nitroaniline	ND	710	ug/Kg	02/28/14	DD	SW 8270
2-Nitrophenol	ND	310	ug/Kg	02/28/14	DD	SW 8270
3&4-Methylphenol (m&p-cresol)	ND	440	ug/Kg	02/28/14	DD	SW 8270
3,3'-Dichlorobenzidine	ND	310	ug/Kg	02/28/14	DD	SW 8270
3-Nitroaniline	ND	710	ug/Kg	02/28/14	DD	SW 8270
4,6-Dinitro-2-methylphenol	ND	1300	ug/Kg	02/28/14	DD	SW 8270
4-Bromophenyl phenyl ether	ND	440	ug/Kg	02/28/14	DD	SW 8270
4-Chloro-3-methylphenol	ND	310	ug/Kg	02/28/14	DD	SW 8270
4-Chloroaniline	ND	310	ug/Kg	02/28/14	DD	SW 8270
4-Chlorophenyl phenyl ether	ND	310	ug/Kg	02/28/14	DD	SW 8270
4-Nitroaniline	ND	710	ug/Kg	02/28/14	DD	SW 8270
4-Nitrophenol	ND	1300	ug/Kg	02/28/14	DD	SW 8270
Acenaphthene	ND	310	ug/Kg	02/28/14	DD	SW 8270
Acenaphthylene	ND	310	ug/Kg	02/28/14	DD	SW 8270
Acetophenone	ND	310	ug/Kg	02/28/14	DD	SW 8270
Aniline	ND	1300	ug/Kg	02/28/14	DD	SW 8270
Anthracene	ND	310	ug/Kg	02/28/14	DD	SW 8270
Benz(a)anthracene	ND	310	ug/Kg	02/28/14	DD	SW 8270
Benzidine	ND	530	ug/Kg	02/28/14	DD	SW 8270
Benzo(a)pyrene	ND	310	ug/Kg	02/28/14	DD	SW 8270
Benzo(b)fluoranthene	ND	310	ug/Kg	02/28/14	DD	SW 8270

Project ID: ECHO LAKE RD
Client ID: AG-S5

Phoenix I.D.: BG13751

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Benzo(ghi)perylene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Benzo(k)fluoranthene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Benzoic acid	ND	1300	ug/Kg	02/28/14	DD	SW 8270	1
Benzyl butyl phthalate	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethoxy)methane	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethyl)ether	ND	440	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroisopropyl)ether	ND	310	ug/Kg	02/28/14	DD	SW 8270	1
Bis(2-ethylhexyl)phthalate	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Carbazole	ND	670	ug/Kg	02/28/14	DD	SW 8270	
Chrysene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Dibenz(a,h)anthracene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Dibenzofuran	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Diethyl phthalate	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Dimethylphthalate	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Di-n-butylphthalate	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Di-n-octylphthalate	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Fluoranthene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Fluorene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobenzene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobutadiene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorocyclopentadiene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Hexachloroethane	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Indeno(1,2,3-cd)pyrene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Isophorone	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Naphthalene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Nitrobenzene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodimethylamine	ND	440	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodi-n-propylamine	ND	310	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodiphenylamine	ND	440	ug/Kg	02/28/14	DD	SW 8270	
Pentachloronitrobenzene	ND	440	ug/Kg	02/28/14	DD	SW 8270	
Pentachlorophenol	ND	440	ug/Kg	02/28/14	DD	SW 8270	
Phenanthrene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Phenol	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Pyrene	ND	310	ug/Kg	02/28/14	DD	SW 8270	
Pyridine	ND	440	ug/Kg	02/28/14	DD	SW 8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	64		%	02/28/14	DD	30 - 130 %	
% 2-Fluorobiphenyl	50		%	02/28/14	DD	30 - 130 %	
% 2-Fluorophenol	59		%	02/28/14	DD	30 - 130 %	
% Nitrobenzene-d5	61		%	02/28/14	DD	30 - 130 %	
% Phenol-d5	63		%	02/28/14	DD	30 - 130 %	
% Terphenyl-d14	115		%	02/28/14	DD	30 - 130 %	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the volatile soil data as biased low.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	AR	02/26/14	11:58
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13752

Project ID: ECHO LAKE RD
Client ID: AG-S6

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.39	0.39	mg/Kg	02/28/14	EK	SW6010
Arsenic	9.1	0.8	mg/Kg	02/28/14	EK	SW6010
Barium	107	0.39	mg/Kg	02/28/14	EK	SW6010
Beryllium	1.19	0.31	mg/Kg	02/28/14	EK	SW6010
Cadmium	< 0.39	0.39	mg/Kg	02/28/14	EK	SW6010
Chromium	23.7	0.39	mg/Kg	02/28/14	EK	SW6010
Copper	15.4	0.39	mg/kg	02/28/14	EK	SW6010
Mercury	< 0.10	0.10	mg/Kg	03/03/14	RS	SW-7471
Nickel	16.8	0.39	mg/Kg	02/28/14	EK	SW6010
Lead	25.4	0.39	mg/Kg	02/28/14	EK	SW6010
Antimony	< 3.9	3.9	mg/Kg	02/28/14	EK	SW6010
Selenium	< 1.6	1.6	mg/Kg	02/28/14	EK	SW6010
Thallium	< 3.5	3.5	mg/Kg	02/28/14	EK	SW6010
Zinc	54.9	0.39	mg/Kg	02/28/14	EK	SW6010
Percent Solid	77		%	02/27/14	I	E160.3
Soil Extraction for Pesticide	Completed			02/27/14	BB/V	SW3545
Soil Extraction for SVOA	Completed			02/27/14	JJ/FV	SW3545
Mercury Digestion	Completed			03/03/14	I/I	SW7471
Soil Extraction for Herbicide	Completed			02/27/14	PP/D	SW8151
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050
Field Extraction	Completed			02/26/14		SW5035
Chlorinated Herbicides						
2,4,5-T	ND	54	ug/Kg	03/04/14	KCA	SW8151
2,4,5-TP (Silvex)	ND	54	ug/Kg	03/04/14	KCA	SW8151
2,4-D	ND	220	ug/Kg	03/04/14	KCA	SW8151
2,4-DB	ND	540	ug/Kg	03/04/14	KCA	SW8151
Dalapon	ND	54	ug/Kg	03/04/14	KCA	SW8151

Project ID: ECHO LAKE RD
Client ID: AG-S6

Phoenix I.D.: BG13752

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Dicamba	ND	110	ug/Kg	03/04/14	KCA	SW8151	
Dichloroprop	ND	54	ug/Kg	03/04/14	KCA	SW8151	
Dinoseb	ND	110	ug/Kg	03/04/14	KCA	SW8151	
QA/QC Surrogates							
% DCAA	62		%	03/04/14	KCA	30 - 150 %	
Pesticides							
4,4' -DDD	ND	8.3	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDE	ND	8.3	ug/Kg	02/28/14	CE	SW8081	
4,4' -DDT	ND	8.3	ug/Kg	02/28/14	CE	SW8081	
a-BHC	ND	4.1	ug/Kg	02/28/14	CE	SW8081	
Alachlor	ND	4.1	ug/Kg	02/28/14	CE	SW8081	1
Aldrin	ND	1.3	ug/Kg	02/28/14	CE	SW8081	
b-BHC	ND	4.1	ug/Kg	02/28/14	CE	SW8081	
Chlordane	ND	13	ug/Kg	02/28/14	CE	SW8081	
d-BHC	ND	4.1	ug/Kg	02/28/14	CE	SW8081	
Dieldrin	ND	1.3	ug/Kg	02/28/14	CE	SW8081	
Endosulfan I	ND	4.1	ug/Kg	02/28/14	CE	SW8081	
Endosulfan II	ND	8.3	ug/Kg	02/28/14	CE	SW8081	
Endosulfan sulfate	ND	8.3	ug/Kg	02/28/14	CE	SW8081	
Endrin	ND	8.3	ug/Kg	02/28/14	CE	SW8081	
Endrin aldehyde	ND	8.3	ug/Kg	02/28/14	CE	SW8081	
Endrin ketone	ND	8.3	ug/Kg	02/28/14	CE	SW8081	
g-BHC	ND	1.3	ug/Kg	02/28/14	CE	SW8081	
Heptachlor	ND	2.6	ug/Kg	02/28/14	CE	SW8081	
Heptachlor epoxide	ND	4.1	ug/Kg	02/28/14	CE	SW8081	
Methoxychlor	ND	41	ug/Kg	02/28/14	CE	SW8081	
Toxaphene	ND	220	ug/Kg	02/28/14	CE	SW8081	
QA/QC Surrogates							
% DCBP	84		%	02/28/14	CE	30 - 150 %	
% TCMX	72		%	02/28/14	CE	30 - 150 %	
Volatiles							
1,1,1,2-Tetrachloroethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,1,1-Trichloroethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,1,2,2-Tetrachloroethane	ND	5.5	ug/Kg	02/28/14	HM	SW8260	
1,1,2-Trichloroethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloroethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloroethene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,1-Dichloropropene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2,3-Trichlorobenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2,3-Trichloropropane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2,4-Trichlorobenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2,4-Trimethylbenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2-Dibromo-3-chloropropane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2-Dibromoethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichlorobenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichloroethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,2-Dichloropropane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,3,5-Trimethylbenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	

Project ID: ECHO LAKE RD
Client ID: AG-S6

Phoenix I.D.: BG13752

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
1,3-Dichlorobenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,3-Dichloropropane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
1,4-Dichlorobenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
2,2-Dichloropropane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
2-Chlorotoluene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
2-Hexanone	ND	45	ug/Kg	02/28/14	HM	SW8260	
2-Isopropyltoluene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	1
4-Chlorotoluene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
4-Methyl-2-pentanone	ND	45	ug/Kg	02/28/14	HM	SW8260	
Acetone	ND	55	ug/Kg	02/28/14	HM	SW8260	
Acrylonitrile	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Benzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Bromobenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Bromochloromethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Bromodichloromethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Bromoform	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Bromomethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Carbon Disulfide	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Carbon tetrachloride	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Chlorobenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Chloroethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Chloroform	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Chloromethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
cis-1,2-Dichloroethene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
cis-1,3-Dichloropropene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Dibromochloromethane	ND	5.5	ug/Kg	02/28/14	HM	SW8260	
Dibromomethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Dichlorodifluoromethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Ethylbenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Hexachlorobutadiene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Isopropylbenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
m&p-Xylene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Methyl Ethyl Ketone	ND	55	ug/Kg	02/28/14	HM	SW8260	
Methyl t-butyl ether (MTBE)	ND	18	ug/Kg	02/28/14	HM	SW8260	
Methylene chloride	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Naphthalene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
n-Butylbenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
n-Propylbenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
o-Xylene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
p-Isopropyltoluene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
sec-Butylbenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Styrene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
tert-Butylbenzene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Tetrachloroethene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Tetrahydrofuran (THF)	ND	18	ug/Kg	02/28/14	HM	SW8260	1
Toluene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
Total Xylenes	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
trans-1,2-Dichloroethene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	
trans-1,3-Dichloropropene	ND	9.1	ug/Kg	02/28/14	HM	SW8260	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	18	ug/Kg	02/28/14	HM	SW8260
Trichloroethene	ND	9.1	ug/Kg	02/28/14	HM	SW8260
Trichlorofluoromethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260
Trichlorotrifluoroethane	ND	9.1	ug/Kg	02/28/14	HM	SW8260
Vinyl chloride	ND	9.1	ug/Kg	02/28/14	HM	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	97		%	02/28/14	HM	70 - 130 %
% Bromofluorobenzene	88		%	02/28/14	HM	70 - 130 %
% Dibromofluoromethane	99		%	02/28/14	HM	70 - 130 %
% Toluene-d8	99		%	02/28/14	HM	70 - 130 %
Semivolatiles						
1,2,4,5-Tetrachlorobenzene	ND	300	ug/Kg	02/28/14	DD	SW 8270
1,2,4-Trichlorobenzene	ND	300	ug/Kg	02/28/14	DD	SW 8270
1,2-Dichlorobenzene	ND	300	ug/Kg	02/28/14	DD	SW 8270
1,2-Diphenylhydrazine	ND	430	ug/Kg	02/28/14	DD	SW 8270
1,3-Dichlorobenzene	ND	300	ug/Kg	02/28/14	DD	SW 8270
1,4-Dichlorobenzene	ND	300	ug/Kg	02/28/14	DD	SW 8270
2,4,5-Trichlorophenol	ND	300	ug/Kg	02/28/14	DD	SW 8270
2,4,6-Trichlorophenol	ND	300	ug/Kg	02/28/14	DD	SW 8270
2,4-Dichlorophenol	ND	300	ug/Kg	02/28/14	DD	SW 8270
2,4-Dimethylphenol	ND	300	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrophenol	ND	680	ug/Kg	02/28/14	DD	SW 8270
2,4-Dinitrotoluene	ND	300	ug/Kg	02/28/14	DD	SW 8270
2,6-Dinitrotoluene	ND	300	ug/Kg	02/28/14	DD	SW 8270
2-Chloronaphthalene	ND	300	ug/Kg	02/28/14	DD	SW 8270
2-Chlorophenol	ND	300	ug/Kg	02/28/14	DD	SW 8270
2-Methylnaphthalene	ND	300	ug/Kg	02/28/14	DD	SW 8270
2-Methylphenol (o-cresol)	ND	300	ug/Kg	02/28/14	DD	SW 8270
2-Nitroaniline	ND	680	ug/Kg	02/28/14	DD	SW 8270
2-Nitrophenol	ND	300	ug/Kg	02/28/14	DD	SW 8270
3&4-Methylphenol (m&p-cresol)	ND	430	ug/Kg	02/28/14	DD	SW 8270
3,3'-Dichlorobenzidine	ND	300	ug/Kg	02/28/14	DD	SW 8270
3-Nitroaniline	ND	680	ug/Kg	02/28/14	DD	SW 8270
4,6-Dinitro-2-methylphenol	ND	1200	ug/Kg	02/28/14	DD	SW 8270
4-Bromophenyl phenyl ether	ND	430	ug/Kg	02/28/14	DD	SW 8270
4-Chloro-3-methylphenol	ND	300	ug/Kg	02/28/14	DD	SW 8270
4-Chloroaniline	ND	300	ug/Kg	02/28/14	DD	SW 8270
4-Chlorophenyl phenyl ether	ND	300	ug/Kg	02/28/14	DD	SW 8270
4-Nitroaniline	ND	680	ug/Kg	02/28/14	DD	SW 8270
4-Nitrophenol	ND	1200	ug/Kg	02/28/14	DD	SW 8270
Acenaphthene	ND	300	ug/Kg	02/28/14	DD	SW 8270
Acenaphthylene	ND	300	ug/Kg	02/28/14	DD	SW 8270
Acetophenone	ND	300	ug/Kg	02/28/14	DD	SW 8270
Aniline	ND	1200	ug/Kg	02/28/14	DD	SW 8270
Anthracene	ND	300	ug/Kg	02/28/14	DD	SW 8270
Benz(a)anthracene	ND	300	ug/Kg	02/28/14	DD	SW 8270
Benzidine	ND	510	ug/Kg	02/28/14	DD	SW 8270
Benzo(a)pyrene	ND	300	ug/Kg	02/28/14	DD	SW 8270
Benzo(b)fluoranthene	ND	300	ug/Kg	02/28/14	DD	SW 8270

Project ID: ECHO LAKE RD
Client ID: AG-S6

Phoenix I.D.: BG13752

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference	
Benzo(ghi)perylene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Benzo(k)fluoranthene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Benzoic acid	ND	1200	ug/Kg	02/28/14	DD	SW 8270	1
Benzyl butyl phthalate	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethoxy)methane	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroethyl)ether	ND	430	ug/Kg	02/28/14	DD	SW 8270	
Bis(2-chloroisopropyl)ether	ND	300	ug/Kg	02/28/14	DD	SW 8270	1
Bis(2-ethylhexyl)phthalate	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Carbazole	ND	640	ug/Kg	02/28/14	DD	SW 8270	
Chrysene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Dibenz(a,h)anthracene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Dibenzofuran	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Diethyl phthalate	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Dimethylphthalate	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Di-n-butylphthalate	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Di-n-octylphthalate	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Fluoranthene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Fluorene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobenzene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorobutadiene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Hexachlorocyclopentadiene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Hexachloroethane	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Indeno(1,2,3-cd)pyrene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Isophorone	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Naphthalene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Nitrobenzene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodimethylamine	ND	430	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodi-n-propylamine	ND	300	ug/Kg	02/28/14	DD	SW 8270	
N-Nitrosodiphenylamine	ND	430	ug/Kg	02/28/14	DD	SW 8270	
Pentachloronitrobenzene	ND	430	ug/Kg	02/28/14	DD	SW 8270	
Pentachlorophenol	ND	430	ug/Kg	02/28/14	DD	SW 8270	
Phenanthrene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Phenol	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Pyrene	ND	300	ug/Kg	02/28/14	DD	SW 8270	
Pyridine	ND	430	ug/Kg	02/28/14	DD	SW 8270	
QA/QC Surrogates							
% 2,4,6-Tribromophenol	54		%	02/28/14	DD	30 - 130 %	
% 2-Fluorobiphenyl	51		%	02/28/14	DD	30 - 130 %	
% 2-Fluorophenol	41		%	02/28/14	DD	30 - 130 %	
% Nitrobenzene-d5	59		%	02/28/14	DD	30 - 130 %	
% Phenol-d5	52		%	02/28/14	DD	30 - 130 %	
% Terphenyl-d14	124		%	02/28/14	DD	30 - 130 %	

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the volatile soil data as biased low.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

March 11, 2014

FOR: Attn: Mr. Anthony Russo
Environmental Compliance
Services, Inc.
26 South Street
Middletown, NY 10940

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	AR	02/26/14	12:46
Location Code:	ECSI	Received by:	LDA	02/27/14	16:19
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBG13742
Phoenix ID: BG13753

Project ID: ECHO LAKE RD
Client ID: FENCE NE

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.34	0.34	mg/Kg	02/28/14	EK	SW6010
Arsenic	7.0	0.7	mg/Kg	02/28/14	EK	SW6010
Barium	54.5	0.34	mg/Kg	02/28/14	EK	SW6010
Beryllium	0.70	0.27	mg/Kg	02/28/14	EK	SW6010
Cadmium	0.41	0.34	mg/Kg	02/28/14	EK	SW6010
Chromium	21.5	0.34	mg/Kg	02/28/14	EK	SW6010
Copper	34.2	0.34	mg/kg	02/28/14	EK	SW6010
Mercury	< 0.08	0.08	mg/Kg	03/03/14	RS	SW-7471
Nickel	24.8	0.34	mg/Kg	02/28/14	EK	SW6010
Lead	26.8	0.34	mg/Kg	02/28/14	EK	SW6010
Antimony	< 3.4	3.4	mg/Kg	02/28/14	EK	SW6010
Selenium	< 1.4	1.4	mg/Kg	02/28/14	EK	SW6010
Thallium	< 3.0	3.0	mg/Kg	02/28/14	EK	SW6010
Zinc	89.8	0.34	mg/Kg	02/28/14	EK	SW6010
Percent Solid	87		%	02/27/14	I	E160.3
Soil Extraction SVOA PAH	Completed			02/27/14	BJ/FV	SW3545
Mercury Digestion	Completed			03/03/14	I/I	SW7471
Total Metals Digest	Completed			02/27/14	Z/AG	SW846 - 3050
Extraction of TPH SM	Completed			02/27/14	BS/F	3545/3550
TPH by GC (Extractable Products)						
Fuel Oil #2 / Diesel Fuel	ND	56	mg/kg	02/28/14	JRB	8015M (C9-C36) 1
Fuel Oil #4	ND	56	mg/kg	02/28/14	JRB	8015M (C9-C36) 1
Fuel Oil #6	ND	56	mg/kg	02/28/14	JRB	8015M (C9-C36) 1
Kerosene	ND	56	mg/kg	02/28/14	JRB	8015M (C9-C36) 1
Motor Oil	ND	56	mg/kg	02/28/14	JRB	8015M (C9-C36) 1
Other Oil	ND	56	mg/kg	02/28/14	JRB	8015M (C9-C36) 1
Unidentified	ND	56	mg/kg	02/28/14	JRB	8015M (C9-C36) 1

Project ID: ECHO LAKE RD
Client ID: FENCE NE

Phoenix I.D.: BG13753

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
QA/QC Surrogates						
% n-Pentacosane	97		%	02/28/14	JRB	50 - 150 %
Gasoline Range Organics	< 20	20	mg/Kg	02/28/14	JRB	8015GRO
Volatiles- STARS/CP-51						
1,2,4-Trimethylbenzene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
1,3,5-Trimethylbenzene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
Benzene	ND	3.0	ug/Kg	02/28/14	HM	SW8260
Ethylbenzene	ND	3.0	ug/Kg	02/28/14	HM	SW8260
Isopropylbenzene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
m&p-Xylene	ND	3.0	ug/Kg	02/28/14	HM	SW8260
Methyl t-Butyl Ether (MTBE)	ND	1.5	ug/Kg	02/28/14	HM	SW8260
Naphthalene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
n-Butylbenzene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
n-Propylbenzene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
o-Xylene	ND	3.0	ug/Kg	02/28/14	HM	SW8260
p-Isopropyltoluene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
sec-Butylbenzene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
tert-Butylbenzene	ND	1.5	ug/Kg	02/28/14	HM	SW8260
Toluene	ND	3.0	ug/Kg	02/28/14	HM	SW8260
Total Xylenes	ND	3.0	ug/Kg	02/28/14	HM	SW8260
QA/QC Surrogates						
% 1,2-Dichlorobenzene-d4	99		%	02/28/14	HM	70 - 130 %
% Bromofluorobenzene	88		%	02/28/14	HM	70 - 130 %
% Dibromofluoromethane	98		%	02/28/14	HM	70 - 130 %
% Toluene-d8	98		%	02/28/14	HM	70 - 130 %
Semivolatiles-STARS/CP-51						
Acenaphthene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Anthracene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Benz(a)anthracene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Benzo(a)pyrene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Benzo(b)fluoranthene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Chrysene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Fluoranthene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Fluorene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Naphthalene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Phenanthrene	ND	260	ug/Kg	02/28/14	DD	SW 8270
Pyrene	ND	260	ug/Kg	02/28/14	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	57		%	02/28/14	DD	30 - 130 %
% Nitrobenzene-d5	65		%	02/28/14	DD	30 - 130 %
% Terphenyl-d14	92		%	02/28/14	DD	30 - 130 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quanitation) ND=Not Detected
BRL=Below Reporting Level

Comments:

Please be advised that the NY unrestricted soil criteria for chromium is based on hexavalent chromium and trivalent chromium.

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the volatile soil data as biased low.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
March 11, 2014
Reviewed and Released by: Bobbi Aloisa, Vice President

PHOENIX

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587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

QA/QC Report

March 11, 2014

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 267567, QC Sample No: BG12774 (BG13742, BG13743)												
Thallium - Water	BRL		<0.002		95.5	97.8	2.4				75 - 125	20
QA/QC Batch 267726, QC Sample No: BG13477 (BG13742, BG13743)												
Mercury - Water	BRL	<0.0002	<0.0002	NC	111	112	0.9	111	112	0.9	70 - 130	20
Comment:												
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.												
QA/QC Batch 267709, QC Sample No: BG13620 (BG13742, BG13743)												
ICP Metals - Aqueous												
Antimony	BRL	<0.005	<0.005	NC	105	101	3.9	103	101	2.0	75 - 125	20
Arsenic	BRL	<0.004	<0.004	NC	101	98.9	2.1	101	98.2	2.8	75 - 125	20
Barium	BRL	<0.002	<0.002	NC	104	105	1.0	106	105	0.9	75 - 125	20
Beryllium	BRL	<0.001	<0.001	NC	103	103	0.0	104	102	1.9	75 - 125	20
Cadmium	BRL	<0.001	<0.001	NC	110	106	3.7	107	102	4.8	75 - 125	20
Chromium	BRL	<0.001	<0.001	NC	105	102	2.9	103	100	3.0	75 - 125	20
Copper	BRL	0.025	0.025	0	102	101	1.0	104	102	1.9	75 - 125	20
Lead	BRL	<0.002	<0.002	NC	107	104	2.8	105	101	3.9	75 - 125	20
Nickel	BRL	<0.001	0.001	NC	109	106	2.8	107	104	2.8	75 - 125	20
Selenium	BRL	<0.010	<0.010	NC	103	99.5	3.5	102	100	2.0	75 - 125	20
Silver	BRL	<0.001	<0.001	NC	101	100	1.0	102	99.2	2.8	75 - 125	20
Zinc	BRL	0.016	0.015	6.50	105	102	2.9	103	99.6	3.4	75 - 125	20
QA/QC Batch 267693, QC Sample No: BG13681 (BG13745, BG13747, BG13748, BG13749, BG13750, BG13751, BG13752, BG13753)												
ICP Metals - Soil												
Antimony	BRL	<1.5	<1.7	NC	99.7	101	1.3	96.0	96.8	0.8	75 - 125	30
Arsenic	BRL	0.9	0.80	NC	97.8	98.3	0.5	94.1	94.3	0.2	75 - 125	30
Barium	BRL	35.6	34.3	3.70	96.0	98.0	2.1	103	102	1.0	75 - 125	30
Beryllium	BRL	0.25	0.36	NC	98.9	99.5	0.6	99.2	99.5	0.3	75 - 125	30
Cadmium	BRL	0.30	0.26 B	NC	102	101	1.0	97.1	97.2	0.1	75 - 125	30
Chromium	BRL	11.1	9.13	19.5	104	104	0.0	107	107	0.0	75 - 125	30
Copper	BRL	11.1	9.61	14.4	94.4	94.1	0.3	104	102	1.9	75 - 125	30
Lead	BRL	2.9	2.90	NC	100	100	0.0	97.0	97.2	0.2	75 - 125	30
Nickel	BRL	7.83	7.67	2.10	93.5	93.6	0.1	92.5	93.9	1.5	75 - 125	30
Selenium	BRL	<1.2	<1.3	NC	93.1	91.8	1.4	81.9	81.8	0.1	75 - 125	30
Silver	BRL	<0.30	<0.32	NC	90.2	90.9	0.8	95.5	95.1	0.4	75 - 125	30
Thallium	BRL	<1.2	<2.9	NC	100	101	1.0	96.5	96.7	0.2	75 - 125	30
Zinc	BRL	15.8	16.1	1.90	100	101	1.0	97.9	98.9	1.0	75 - 125	30
QA/QC Batch 267725, QC Sample No: BG13681 (BG13744, BG13745)												
Mercury - Soil	BRL	<0.07	<0.07	NC	105	101	3.9	108	101	6.7	70 - 130	30
Comment:												
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.												

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 267684, QC Sample No: BG13744 (BG13744)												
ICP Metals - Soil												
Antimony	BRL	<4.8	<4.9	NC	113	103	9.3	82.8	82.2	0.7	75 - 125	30
Arsenic	BRL	5.6	6.26	11.1	106	93.2	12.9	91.8	90.2	1.8	75 - 125	30
Barium	BRL	95.2	109	13.5	110	95.6	14.0	119	115	3.4	75 - 125	30
Beryllium	BRL	0.83	0.89	NC	107	95.0	11.9	97.9	97.0	0.9	75 - 125	30
Cadmium	BRL	<0.48	<0.49	NC	105	94.1	10.9	93.6	92.8	0.9	75 - 125	30
Chromium	BRL	20.4	22.8	11.1	112	97.2	14.1	106	105	0.9	75 - 125	30
Copper	BRL	29.8	35.4	17.2	99.9	89.3	11.2	108	103	4.7	75 - 125	30
Lead	BRL	22.1	21.7	1.80	106	94.1	11.9	93.0	92.6	0.4	75 - 125	30
Nickel	BRL	22.8	26.1	13.5	101	90.1	11.4	94.2	94.2	0.0	75 - 125	30
Selenium	BRL	<1.9	<2.0	NC	99.6	86.3	14.3	80.3	79.4	1.1	75 - 125	30
Silver	BRL	<0.48	<0.49	NC	101	87.4	14.4	97.3	94.3	3.1	75 - 125	30
Thallium	BRL	<4.3	<4.4	NC	111	95.6	14.9	94.4	93.3	1.2	75 - 125	30
Zinc	BRL	65.0	78.6	18.9	107	94.4	12.5	102	95.7	6.4	75 - 125	30
QA/QC Batch 267847, QC Sample No: BG14279 (BG13747, BG13748, BG13749, BG13750, BG13751, BG13752, BG13753)												
Mercury - Soil	BRL	<0.07	<0.07	NC	117	107	8.9	114	112	1.8	70 - 130	30

Comment:

Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.

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NY # 11301

QA/QC Report

March 11, 2014

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 267910, QC Sample No: BG13745 (BG13745)												
Total Solids	BRL	83.0	86.5	4.10	100						85 - 115	30

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QA/QC Report

March 11, 2014

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 267314, QC Sample No: BG11579 (BG13743, BG13746)									
Chlorinated Herbicides - Water									
2,4,5-T	ND	79	74	6.5				40 - 140	20
2,4,5-TP (Silvex)	ND	78	77	1.3				40 - 140	20
2,4-D	ND	89	88	1.1				40 - 140	20
2,4-DB	ND	76	71	6.8				40 - 140	20
Dalapon	ND	68	67	1.5				40 - 140	20
Dicamba	ND	102	96	6.1				40 - 140	20
Dichloroprop	ND	74	72	2.7				40 - 140	20
Dinoseb	ND	76	74	2.7				40 - 140	20
% DCAA (Surrogate Rec)	63	65	62	4.7				30 - 150	20
QA/QC Batch 267999, QC Sample No: BG12627 (BG13743, BG13746)									
Volatiles - Water									
1,1,1,2-Tetrachloroethane	ND	104	98	5.9	94	99	5.2	70 - 130	30
1,1,1-Trichloroethane	ND	100	93	7.3	89	92	3.3	70 - 130	30
1,1,2,2-Tetrachloroethane	ND	99	98	1.0	101	104	2.9	70 - 130	30
1,1,2-Trichloroethane	ND	107	102	4.8	101	101	0.0	70 - 130	30
1,1-Dichloroethane	ND	101	96	5.1	94	97	3.1	70 - 130	30
1,1-Dichloroethene	ND	97	88	9.7	94	110	15.7	70 - 130	30
1,1-Dichloropropene	ND	103	96	7.0	97	99	2.0	70 - 130	30
1,2,3-Trichlorobenzene	ND	117	119	1.7	95	116	19.9	70 - 130	30
1,2,3-Trichloropropane	ND	100	94	6.2	93	97	4.2	70 - 130	30
1,2,4-Trichlorobenzene	ND	116	113	2.6	100	111	10.4	70 - 130	30
1,2,4-Trimethylbenzene	ND	110	106	3.7	99	103	4.0	70 - 130	30
1,2-Dibromo-3-chloropropane	ND	106	105	0.9	94	102	8.2	70 - 130	30
1,2-Dibromoethane	ND	102	101	1.0	95	99	4.1	70 - 130	30
1,2-Dichlorobenzene	ND	103	99	4.0	97	102	5.0	70 - 130	30
1,2-Dichloroethane	ND	100	96	4.1	89	89	0.0	70 - 130	30
1,2-Dichloropropane	ND	107	100	6.8	102	104	1.9	70 - 130	30
1,3,5-Trimethylbenzene	ND	107	100	6.8	99	104	4.9	70 - 130	30
1,3-Dichlorobenzene	ND	104	99	4.9	100	104	3.9	70 - 130	30
1,3-Dichloropropane	ND	103	99	4.0	96	102	6.1	70 - 130	30
1,4-Dichlorobenzene	ND	102	99	3.0	97	104	7.0	70 - 130	30
2,2-Dichloropropane	ND	111	102	8.5	78	79	1.3	70 - 130	30
2-Chlorotoluene	ND	103	99	4.0	101	108	6.7	70 - 130	30
2-Hexanone	ND	111	111	0.0	103	109	5.7	70 - 130	30
2-Isopropyltoluene	ND	106	102	3.8	101	103	2.0	70 - 130	30
4-Chlorotoluene	ND	105	104	1.0	102	107	4.8	70 - 130	30
4-Methyl-2-pentanone	ND	111	107	3.7	100	105	4.9	70 - 130	30
Acetone	ND	85	92	7.9	103	90	13.5	70 - 130	30
Acrylonitrile	ND	111	110	0.9	102	106	3.8	70 - 130	30
Benzene	ND	103	97	6.0	101	103	2.0	70 - 130	30
Bromobenzene	ND	102	100	2.0	101	105	3.9	70 - 130	30

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Bromochloromethane	ND	103	99	4.0	100	101	1.0	70 - 130	30	
Bromodichloromethane	ND	100	94	6.2	92	94	2.2	70 - 130	30	
Bromoform	ND	105	103	1.9	92	96	4.3	70 - 130	30	
Bromomethane	ND	107	100	6.8	49	69	33.9	70 - 130	30	m,r
Carbon Disulfide	ND	110	87	23.4	97	112	14.4	70 - 130	30	
Carbon tetrachloride	ND	100	91	9.4	90	92	2.2	70 - 130	30	
Chlorobenzene	ND	103	98	5.0	99	104	4.9	70 - 130	30	
Chloroethane	ND	101	91	10.4	91	88	3.4	70 - 130	30	
Chloroform	ND	99	93	6.3	90	92	2.2	70 - 130	30	
Chloromethane	ND	115	109	5.4	93	98	5.2	70 - 130	30	
cis-1,2-Dichloroethene	ND	107	101	5.8	101	106	4.8	70 - 130	30	
cis-1,3-Dichloropropene	ND	106	102	3.8	97	100	3.0	70 - 130	30	
Dibromochloromethane	ND	102	100	2.0	92	99	7.3	70 - 130	30	
Dibromomethane	ND	100	97	3.0	96	97	1.0	70 - 130	30	
Dichlorodifluoromethane	ND	102	100	2.0	86	88	2.3	70 - 130	30	
Ethylbenzene	ND	103	98	5.0	99	106	6.8	70 - 130	30	
Hexachlorobutadiene	ND	111	106	4.6	94	107	12.9	70 - 130	30	
Isopropylbenzene	ND	107	103	3.8	106	110	3.7	70 - 130	30	
m&p-Xylene	ND	103	97	6.0	101	103	2.0	70 - 130	30	
Methyl ethyl ketone	ND	95	94	1.1	96	94	2.1	70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	94	86	8.9	144	139	3.5	70 - 130	30	m
Methylene chloride	ND	92	79	15.2	94	91	3.2	70 - 130	30	
Naphthalene	ND	121	122	0.8	102	122	17.9	70 - 130	30	
n-Butylbenzene	ND	113	107	5.5	99	104	4.9	70 - 130	30	
n-Propylbenzene	ND	114	108	5.4	104	109	4.7	70 - 130	30	
o-Xylene	ND	101	97	4.0	101	105	3.9	70 - 130	30	
p-Isopropyltoluene	ND	110	104	5.6	101	106	4.8	70 - 130	30	
sec-Butylbenzene	ND	102	97	5.0	100	104	3.9	70 - 130	30	
Styrene	ND	104	98	5.9	99	105	5.9	70 - 130	30	
tert-Butylbenzene	ND	107	102	4.8	102	105	2.9	70 - 130	30	
Tetrachloroethene	ND	105	101	3.9	101	108	6.7	70 - 130	30	
Tetrahydrofuran (THF)	ND	107	103	3.8	99	102	3.0	70 - 130	30	
Toluene	ND	104	98	5.9	99	102	3.0	70 - 130	30	
trans-1,2-Dichloroethene	ND	96	90	6.5	140	102	31.4	70 - 130	30	m,r
trans-1,3-Dichloropropene	ND	103	100	3.0	92	94	2.2	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	118	116	1.7	87	88	1.1	70 - 130	30	
Trichloroethene	ND	106	99	6.8	99	105	5.9	70 - 130	30	
Trichlorofluoromethane	ND	88	74	17.3	75	76	1.3	70 - 130	30	
Trichlorotrifluoroethane	ND	108	89	19.3	85	104	20.1	70 - 130	30	
Vinyl chloride	ND	102	94	8.2	94	93	1.1	70 - 130	30	
% 1,2-dichlorobenzene-d4	102	101	101	0.0	99	98	1.0	70 - 130	30	
% Bromofluorobenzene	96	97	98	1.0	95	95	0.0	70 - 130	30	
% Dibromofluoromethane	100	103	96	7.0	99	96	3.1	70 - 130	30	
% Toluene-d8	102	99	98	1.0	99	98	1.0	70 - 130	30	

Comment:

A blank MS/MSD was analyzed with this batch.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 267594, QC Sample No: BG12917 (BG13744, BG13747, BG13749)

Chlorinated Herbicides - Soil

2,4,5-T	ND	57	64	11.6	47	52	10.1	40 - 140	30	
2,4,5-TP (Silvex)	ND	62	69	10.7	61	60	1.7	40 - 140	30	
2,4-D	ND	82	95	14.7	80	78	2.5	40 - 140	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
2,4-DB	ND	53	60	12.4	65	58	11.4	40 - 140	30	
Dalapon	ND	49	52	5.9	34	33	3.0	40 - 140	30	
Dicamba	ND	64	73	13.1	76	74	2.7	40 - 140	30	
Dichloroprop	ND	60	66	9.5	64	62	3.2	40 - 140	30	
Dinoseb	ND	55	71	25.4	69	65	6.0	40 - 140	30	
% DCAA (Surrogate Rec)	54	49	56	13.3	56	55	1.8	30 - 150	30	
QA/QC Batch 267573, QC Sample No: BG13367 (BG13744, BG13747, BG13748, BG13749, BG13750)										
Semivolatiles - Soil										
1,2,4,5-Tetrachlorobenzene	ND	73	79	7.9	77	76	1.3	30 - 130	30	
1,2,4-Trichlorobenzene	ND	73	78	6.6	78	78	0.0	30 - 130	30	
1,2-Dichlorobenzene	ND	71	76	6.8	75	75	0.0	30 - 130	30	
1,2-Diphenylhydrazine	ND	77	83	7.5	83	82	1.2	30 - 130	30	
1,3-Dichlorobenzene	ND	72	76	5.4	76	75	1.3	30 - 130	30	
1,4-Dichlorobenzene	ND	69	74	7.0	74	73	1.4	30 - 130	30	
2,4,5-Trichlorophenol	ND	84	92	9.1	92	89	3.3	30 - 130	30	
2,4,6-Trichlorophenol	ND	85	93	9.0	94	92	2.2	30 - 130	30	
2,4-Dichlorophenol	ND	77	84	8.7	83	81	2.4	30 - 130	30	
2,4-Dimethylphenol	ND	49	53	7.8	56	54	3.6	30 - 130	30	
2,4-Dinitrophenol	ND	17	44	88.5	<5	<5	NC	30 - 130	30	l,m,r
2,4-Dinitrotoluene	ND	80	90	11.8	87	85	2.3	30 - 130	30	
2,6-Dinitrotoluene	ND	81	88	8.3	88	86	2.3	30 - 130	30	
2-Chloronaphthalene	ND	79	85	7.3	87	86	1.2	30 - 130	30	
2-Chlorophenol	ND	73	79	7.9	79	79	0.0	30 - 130	30	
2-Methylnaphthalene	ND	75	81	7.7	81	79	2.5	30 - 130	30	
2-Methylphenol (o-cresol)	ND	65	71	8.8	70	69	1.4	30 - 130	30	
2-Nitroaniline	ND	130	148	12.9	136	134	1.5	30 - 130	30	l,m
2-Nitrophenol	ND	74	80	7.8	79	80	1.3	30 - 130	30	
3&4-Methylphenol (m&p-cresol)	ND	69	75	8.3	73	72	1.4	30 - 130	30	
3,3'-Dichlorobenzidine	ND	133	142	6.5	132	117	12.0	30 - 130	30	l,m
3-Nitroaniline	ND	110	124	12.0	116	112	3.5	30 - 130	30	
4,6-Dinitro-2-methylphenol	ND	55	79	35.8	59	58	1.7	30 - 130	30	r
4-Bromophenyl phenyl ether	ND	80	87	8.4	90	86	4.5	30 - 130	30	
4-Chloro-3-methylphenol	ND	77	84	8.7	81	80	1.2	30 - 130	30	
4-Chloroaniline	ND	60	66	9.5	63	60	4.9	30 - 130	30	
4-Chlorophenyl phenyl ether	ND	79	86	8.5	86	84	2.4	30 - 130	30	
4-Nitroaniline	ND	79	88	10.8	86	85	1.2	30 - 130	30	
4-Nitrophenol	ND	81	95	15.9	86	86	0.0	30 - 130	30	
Acenaphthene	ND	73	81	10.4	80	78	2.5	30 - 130	30	
Acenaphthylene	ND	77	83	7.5	84	83	1.2	30 - 130	30	
Acetophenone	ND	74	81	9.0	79	78	1.3	30 - 130	30	
Aniline	ND	89	98	9.6	93	86	7.8	30 - 130	30	
Anthracene	ND	77	85	9.9	85	83	2.4	30 - 130	30	
Benz(a)anthracene	ND	78	85	8.6	87	84	3.5	30 - 130	30	
Benzidine	ND	57	62	8.4	61	39	44.0	30 - 130	30	r
Benzo(a)pyrene	ND	72	80	10.5	81	78	3.8	30 - 130	30	
Benzo(b)fluoranthene	ND	84	91	8.0	96	92	4.3	30 - 130	30	
Benzo(ghi)perylene	ND	70	76	8.2	80	77	3.8	30 - 130	30	
Benzo(k)fluoranthene	ND	82	91	10.4	92	89	3.3	30 - 130	30	
Benzyl butyl phthalate	ND	74	81	9.0	91	85	6.8	30 - 130	30	
Bis(2-chloroethoxy)methane	ND	71	78	9.4	78	78	0.0	30 - 130	30	
Bis(2-chloroethyl)ether	ND	67	72	7.2	71	70	1.4	30 - 130	30	
Bis(2-chloroisopropyl)ether	ND	68	73	7.1	73	72	1.4	30 - 130	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Bis(2-ethylhexyl)phthalate	ND	79	85	7.3	92	89	3.3	30 - 130	30	
Carbazole	ND	100	112	11.3	114	110	3.6	30 - 130	30	
Chrysene	ND	80	87	8.4	88	85	3.5	30 - 130	30	
Dibenz(a,h)anthracene	ND	71	78	9.4	82	79	3.7	30 - 130	30	
Dibenzofuran	ND	78	85	8.6	85	84	1.2	30 - 130	30	
Diethyl phthalate	ND	81	88	8.3	88	87	1.1	30 - 130	30	
Dimethylphthalate	ND	80	86	7.2	88	86	2.3	30 - 130	30	
Di-n-butylphthalate	ND	81	89	9.4	98	91	7.4	30 - 130	30	
Di-n-octylphthalate	ND	79	83	4.9	83	80	3.7	30 - 130	30	
Fluoranthene	ND	86	98	13.0	110	104	5.6	30 - 130	30	
Fluorene	ND	79	86	8.5	86	84	2.4	30 - 130	30	
Hexachlorobenzene	ND	79	83	4.9	87	85	2.3	30 - 130	30	
Hexachlorobutadiene	ND	75	79	5.2	81	79	2.5	30 - 130	30	
Hexachlorocyclopentadiene	ND	56	60	6.9	53	52	1.9	30 - 130	30	
Hexachloroethane	ND	70	74	5.6	73	73	0.0	30 - 130	30	
Indeno(1,2,3-cd)pyrene	ND	70	77	9.5	81	78	3.8	30 - 130	30	
Isophorone	ND	78	85	8.6	86	84	2.4	30 - 130	30	
Naphthalene	ND	71	76	6.8	77	75	2.6	30 - 130	30	
Nitrobenzene	ND	71	77	8.1	75	75	0.0	30 - 130	30	
N-Nitrosodimethylamine	ND	65	71	8.8	71	69	2.9	30 - 130	30	
N-Nitrosodi-n-propylamine	ND	68	73	7.1	71	69	2.9	30 - 130	30	
N-Nitrosodiphenylamine	ND	105	114	8.2	113	112	0.9	30 - 130	30	
Pentachloronitrobenzene	ND	82	88	7.1	92	88	4.4	30 - 130	30	
Pentachlorophenol	ND	67	83	21.3	84	83	1.2	30 - 130	30	
Phenanthrene	ND	77	84	8.7	86	85	1.2	30 - 130	30	
Phenol	ND	73	79	7.9	78	77	1.3	30 - 130	30	
Pyrene	ND	89	102	13.6	118	111	6.1	30 - 130	30	
Pyridine	ND	63	68	7.6	66	63	4.7	30 - 130	30	
% 2,4,6-Tribromophenol	72	76	82	7.6	86	83	3.6	30 - 130	30	
% 2-Fluorobiphenyl	74	75	80	6.5	85	83	2.4	30 - 130	30	
% 2-Fluorophenol	71	70	73	4.2	76	75	1.3	30 - 130	30	
% Nitrobenzene-d5	69	69	73	5.6	73	72	1.4	30 - 130	30	
% Phenol-d5	71	71	75	5.5	76	75	1.3	30 - 130	30	
% Terphenyl-d14	84	99	112	12.3	136	126	7.6	30 - 130	30	m

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 267671, QC Sample No: BG13512 (BG13746)

TPH by GC (Extractable Products)

Ext. Petroleum HC	ND	71	77	8.1				60 - 120	30	
% n-Pentacosane	138	143	156	8.7				50 - 150	20	I

Comment:

Insufficient sample for MS/MSD.

QA/QC Batch 267673, QC Sample No: BG13627 (BG13743, BG13746)

Semivolatiles - Water

1,2,4,5-Tetrachlorobenzene	ND	86	84	2.4				30 - 130	20	
1,2,4-Trichlorobenzene	ND	83	84	1.2				30 - 130	20	
1,2-Dichlorobenzene	ND	72	71	1.4				30 - 130	20	
1,2-Diphenylhydrazine	ND	77	78	1.3				30 - 130	20	
1,3-Dichlorobenzene	ND	71	71	0.0				30 - 130	20	
1,4-Dichlorobenzene	ND	71	71	0.0				30 - 130	20	
2,4,5-Trichlorophenol	ND	86	88	2.3				30 - 130	20	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
2,4,6-Trichlorophenol	ND	91	90	1.1				30 - 130	20
2,4-Dichlorophenol	ND	88	87	1.1				30 - 130	20
2,4-Dimethylphenol	ND	54	52	3.8				30 - 130	20
2,4-Dinitrophenol	ND	86	88	2.3				30 - 130	20
2,4-Dinitrotoluene	ND	85	86	1.2				30 - 130	20
2,6-Dinitrotoluene	ND	85	85	0.0				30 - 130	20
2-Chloronaphthalene	ND	85	86	1.2				30 - 130	20
2-Chlorophenol	ND	73	73	0.0				30 - 130	20
2-Methylnaphthalene	ND	88	87	1.1				30 - 130	20
2-Methylphenol (o-cresol)	ND	63	62	1.6				30 - 130	20
2-Nitroaniline	ND	121	126	4.0				30 - 130	20
2-Nitrophenol	ND	80	79	1.3				30 - 130	20
3&4-Methylphenol (m&p-cresol)	ND	73	72	1.4				30 - 130	20
3,3'-Dichlorobenzidine	ND	106	105	0.9				30 - 130	20
3-Nitroaniline	ND	102	105	2.9				30 - 130	20
4,6-Dinitro-2-methylphenol	ND	101	103	2.0				30 - 130	20
4-Bromophenyl phenyl ether	ND	87	85	2.3				30 - 130	20
4-Chloro-3-methylphenol	ND	84	83	1.2				30 - 130	20
4-Chloroaniline	ND	61	60	1.7				30 - 130	20
4-Chlorophenyl phenyl ether	ND	85	85	0.0				30 - 130	20
4-Nitroaniline	ND	80	82	2.5				30 - 130	20
4-Nitrophenol	ND	93	97	4.2				15 - 130	20
Acenaphthene	ND	84	85	1.2				30 - 130	20
Acenaphthylene	ND	82	83	1.2				30 - 130	20
Acetophenone	ND	82	81	1.2				30 - 130	20
Aniline	ND	67	66	1.5				30 - 130	20
Anthracene	ND	85	84	1.2				30 - 130	20
Benz(a)anthracene	ND	91	91	0.0				30 - 130	20
Benzidine	ND	43	40	7.2				30 - 130	20
Benzo(a)pyrene	ND	78	77	1.3				30 - 130	20
Benzo(b)fluoranthene	ND	87	85	2.3				30 - 130	20
Benzo(ghi)perylene	ND	89	87	2.3				30 - 130	20
Benzo(k)fluoranthene	ND	91	90	1.1				30 - 130	20
Benzoic acid	ND	N/A	N/A	NC				30 - 130	20
Benzyl butyl phthalate	ND	99	99	0.0				30 - 130	20
Bis(2-chloroethoxy)methane	ND	82	82	0.0				30 - 130	20
Bis(2-chloroethyl)ether	ND	68	67	1.5				30 - 130	20
Bis(2-chloroisopropyl)ether	ND	66	66	0.0				30 - 130	20
Bis(2-ethylhexyl)phthalate	0.12 B	91	93	2.2				30 - 130	20
Carbazole	ND	106	106	0.0				30 - 130	20
Chrysene	ND	84	85	1.2				30 - 130	20
Dibenz(a,h)anthracene	ND	89	88	1.1				30 - 130	20
Dibenzofuran	ND	83	84	1.2				30 - 130	20
Diethyl phthalate	ND	83	83	0.0				30 - 130	20
Dimethylphthalate	ND	83	83	0.0				30 - 130	20
Di-n-butylphthalate	ND	92	93	1.1				30 - 130	20
Di-n-octylphthalate	ND	75	75	0.0				30 - 130	20
Fluoranthene	ND	99	100	1.0				30 - 130	20
Fluorene	ND	86	86	0.0				30 - 130	20
Hexachlorobenzene	ND	83	82	1.2				30 - 130	20
Hexachlorobutadiene	ND	80	80	0.0				30 - 130	20
Hexachlorocyclopentadiene	ND	66	66	0.0				30 - 130	20
Hexachloroethane	ND	74	73	1.4				30 - 130	20

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Indeno(1,2,3-cd)pyrene	ND	89	87	2.3				30 - 130	20	
Isophorone	ND	87	86	1.2				30 - 130	20	
Naphthalene	ND	86	86	0.0				30 - 130	20	
Nitrobenzene	ND	70	70	0.0				30 - 130	20	
N-Nitrosodimethylamine	ND	68	67	1.5				30 - 130	20	
N-Nitrosodi-n-propylamine	ND	74	74	0.0				30 - 130	20	
N-Nitrosodiphenylamine	ND	109	111	1.8				30 - 130	20	
Pentachloronitrobenzene	ND	88	85	3.5				30 - 130	20	
Pentachlorophenol	ND	99	101	2.0				30 - 130	20	
Phenanthrene	ND	87	86	1.2				30 - 130	20	
Phenol	ND	63	62	1.6				15 - 130	20	
Pyrene	ND	101	102	1.0				30 - 130	20	
Pyridine	ND	40	39	2.5				30 - 130	20	
% 2,4,6-Tribromophenol	82	87	85	2.3				15 - 110	20	
% 2-Fluorobiphenyl	77	85	86	1.2				30 - 130	20	
% 2-Fluorophenol	69	63	63	0.0				15 - 110	20	
% Nitrobenzene-d5	88	74	74	0.0				30 - 130	20	
% Phenol-d5	68	68	67	1.5				15 - 110	20	
% Terphenyl-d14	91	110	111	0.9				30 - 130	20	

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 267675, QC Sample No: BG13672 (BG13751)

Semivolatiles - Soil

1,2,4,5-Tetrachlorobenzene	ND	83	82	1.2	76	78	2.6	30 - 130	30	
1,2,4-Trichlorobenzene	ND	79	80	1.3	74	76	2.7	30 - 130	30	
1,2-Dichlorobenzene	ND	74	76	2.7	69	71	2.9	30 - 130	30	
1,2-Diphenylhydrazine	ND	85	85	0.0	81	83	2.4	30 - 130	30	
1,3-Dichlorobenzene	ND	74	77	4.0	68	70	2.9	30 - 130	30	
1,4-Dichlorobenzene	ND	71	75	5.5	66	70	5.9	30 - 130	30	
2,4,5-Trichlorophenol	ND	82	77	6.3	78	80	2.5	30 - 130	30	
2,4,6-Trichlorophenol	ND	89	87	2.3	84	88	4.7	30 - 130	30	
2,4-Dichlorophenol	ND	83	84	1.2	78	83	6.2	30 - 130	30	
2,4-Dimethylphenol	ND	49	48	2.1	42	46	9.1	30 - 130	30	
2,4-Dinitrophenol	ND	5.9	<5	NC	5.6	11	65.1	30 - 130	30	l,m,r
2,4-Dinitrotoluene	ND	85	86	1.2	82	83	1.2	30 - 130	30	
2,6-Dinitrotoluene	ND	84	83	1.2	79	82	3.7	30 - 130	30	
2-Chloronaphthalene	ND	87	87	0.0	82	84	2.4	30 - 130	30	
2-Chlorophenol	ND	76	79	3.9	70	75	6.9	30 - 130	30	
2-Methylnaphthalene	ND	83	83	0.0	77	80	3.8	30 - 130	30	
2-Methylphenol (o-cresol)	ND	71	74	4.1	65	68	4.5	30 - 130	30	
2-Nitroaniline	ND	139	142	2.1	133	134	0.7	30 - 130	30	l,m
2-Nitrophenol	ND	75	75	0.0	74	75	1.3	30 - 130	30	
3&4-Methylphenol (m&p-cresol)	ND	69	69	0.0	59	64	8.1	30 - 130	30	
3,3'-Dichlorobenzidine	ND	128	134	4.6	121	117	3.4	30 - 130	30	l
3-Nitroaniline	ND	148	>150	NC	140	139	0.7	30 - 130	30	l,m
4,6-Dinitro-2-methylphenol	ND	52	39	28.6	61	69	12.3	30 - 130	30	
4-Bromophenyl phenyl ether	ND	86	87	1.2	81	83	2.4	30 - 130	30	
4-Chloro-3-methylphenol	ND	79	79	0.0	75	76	1.3	30 - 130	30	
4-Chloroaniline	ND	69	73	5.6	64	60	6.5	30 - 130	30	
4-Chlorophenyl phenyl ether	ND	84	84	0.0	80	81	1.2	30 - 130	30	
4-Nitroaniline	ND	83	85	2.4	80	82	2.5	30 - 130	30	

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
4-Nitrophenol	ND	58	54	7.1	54	58	7.1	30 - 130	30	
Acenaphthene	ND	83	83	0.0	79	80	1.3	30 - 130	30	
Acenaphthylene	ND	82	83	1.2	79	80	1.3	30 - 130	30	
Acetophenone	ND	80	82	2.5	74	76	2.7	30 - 130	30	
Aniline	ND	101	107	5.8	92	93	1.1	30 - 130	30	
Anthracene	ND	84	83	1.2	80	82	2.5	30 - 130	30	
Benz(a)anthracene	ND	84	84	0.0	79	82	3.7	30 - 130	30	
Benzidine	ND	57	64	11.6	18	18	0.0	30 - 130	30	m
Benzo(a)pyrene	ND	81	82	1.2	75	77	2.6	30 - 130	30	
Benzo(b)fluoranthene	ND	99	94	5.2	88	92	4.4	30 - 130	30	
Benzo(ghi)perylene	ND	83	77	7.5	74	79	6.5	30 - 130	30	
Benzo(k)fluoranthene	ND	92	99	7.3	93	93	0.0	30 - 130	30	
Benzyl butyl phthalate	ND	83	83	0.0	76	80	5.1	30 - 130	30	
Bis(2-chloroethoxy)methane	ND	78	79	1.3	74	75	1.3	30 - 130	30	
Bis(2-chloroethyl)ether	ND	69	71	2.9	63	68	7.6	30 - 130	30	
Bis(2-chloroisopropyl)ether	ND	75	78	3.9	71	73	2.8	30 - 130	30	
Bis(2-ethylhexyl)phthalate	ND	82	81	1.2	75	78	3.9	30 - 130	30	
Carbazole	ND	130	133	2.3	123	124	0.8	30 - 130	30	l
Chrysene	ND	94	94	0.0	89	92	3.3	30 - 130	30	
Dibenz(a,h)anthracene	ND	82	78	5.0	75	79	5.2	30 - 130	30	
Dibenzofuran	ND	86	86	0.0	82	83	1.2	30 - 130	30	
Diethyl phthalate	ND	85	84	1.2	80	81	1.2	30 - 130	30	
Dimethylphthalate	ND	84	83	1.2	79	81	2.5	30 - 130	30	
Di-n-butylphthalate	ND	82	83	1.2	78	80	2.5	30 - 130	30	
Di-n-octylphthalate	ND	83	83	0.0	80	81	1.2	30 - 130	30	
Fluoranthene	ND	87	90	3.4	84	85	1.2	30 - 130	30	
Fluorene	ND	85	84	1.2	81	82	1.2	30 - 130	30	
Hexachlorobenzene	ND	87	86	1.2	81	84	3.6	30 - 130	30	
Hexachlorobutadiene	ND	80	82	2.5	74	77	4.0	30 - 130	30	
Hexachlorocyclopentadiene	ND	64	65	1.6	60	62	3.3	30 - 130	30	
Hexachloroethane	ND	74	76	2.7	70	72	2.8	30 - 130	30	
Indeno(1,2,3-cd)pyrene	ND	83	79	4.9	75	79	5.2	30 - 130	30	
Isophorone	ND	82	82	0.0	76	78	2.6	30 - 130	30	
Naphthalene	ND	77	79	2.6	73	75	2.7	30 - 130	30	
Nitrobenzene	ND	75	78	3.9	70	74	5.6	30 - 130	30	
N-Nitrosodimethylamine	ND	140	>150	NC	129	140	8.2	30 - 130	30	l,m
N-Nitrosodi-n-propylamine	ND	76	79	3.9	71	74	4.1	30 - 130	30	
N-Nitrosodiphenylamine	ND	117	116	0.9	110	112	1.8	30 - 130	30	
Pentachloronitrobenzene	ND	85	86	1.2	83	83	0.0	30 - 130	30	
Pentachlorophenol	ND	68	55	21.1	71	75	5.5	30 - 130	30	
Phenanthrene	ND	86	87	1.2	82	84	2.4	30 - 130	30	
Phenol	ND	88	87	1.1	79	83	4.9	30 - 130	30	
Pyrene	ND	89	92	3.3	86	89	3.4	30 - 130	30	
Pyridine	ND	121	136	11.7	104	121	15.1	30 - 130	30	l
% 2,4,6-Tribromophenol	78	82	81	1.2	80	82	2.5	30 - 130	30	
% 2-Fluorobiphenyl	85	80	79	1.3	74	77	4.0	30 - 130	30	
% 2-Fluorophenol	84	78	80	2.5	70	76	8.2	30 - 130	30	
% Nitrobenzene-d5	79	72	73	1.4	67	70	4.4	30 - 130	30	
% Phenol-d5	81	77	77	0.0	70	73	4.2	30 - 130	30	
% Terphenyl-d14	91	93	95	2.1	86	92	6.7	30 - 130	30	

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 267922, QC Sample No: BG13680 (BG13744)										
Volatiles - Soil										
1,1,1,2-Tetrachloroethane	ND	108	107	0.9	104	106	1.9	70 - 130	30	
1,1,1-Trichloroethane	ND	100	102	2.0	105	104	1.0	70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	104	102	1.9	92	92	0.0	70 - 130	30	
1,1,2-Trichloroethane	ND	103	99	4.0	90	88	2.2	70 - 130	30	
1,1-Dichloroethane	ND	101	100	1.0	98	101	3.0	70 - 130	30	
1,1-Dichloroethene	ND	97	98	1.0	94	99	5.2	70 - 130	30	
1,1-Dichloropropene	ND	100	100	0.0	108	108	0.0	70 - 130	30	
1,2-Dibromoethane	ND	102	99	3.0	87	86	1.2	70 - 130	30	
1,2-Dichloroethane	ND	101	100	1.0	95	94	1.1	70 - 130	30	
1,2-Dichloropropane	ND	102	103	1.0	101	102	1.0	70 - 130	30	
1,3-Dichloropropane	ND	107	103	3.8	94	96	2.1	70 - 130	30	
2,2-Dichloropropane	ND	99	101	2.0	101	101	0.0	70 - 130	30	
2-Hexanone	ND	96	91	5.3	66	69	4.4	70 - 130	30	m
4-Methyl-2-pentanone	ND	99	94	5.2	74	75	1.3	70 - 130	30	
Acetone	ND	95	91	4.3	34	30	12.5	70 - 130	30	m
Acrylonitrile	ND	91	92	1.1	72	69	4.3	70 - 130	30	m
Benzene	ND	101	100	1.0	104	104	0.0	70 - 130	30	
Bromochloromethane	ND	93	91	2.2	91	90	1.1	70 - 130	30	
Bromodichloromethane	ND	101	99	2.0	102	100	2.0	70 - 130	30	
Bromoform	ND	108	106	1.9	89	87	2.3	70 - 130	30	
Bromomethane	ND	108	103	4.7	77	82	6.3	70 - 130	30	
Carbon Disulfide	ND	92	93	1.1	92	96	4.3	70 - 130	30	
Carbon tetrachloride	ND	101	103	2.0	112	111	0.9	70 - 130	30	
Chlorobenzene	ND	109	109	0.0	108	113	4.5	70 - 130	30	
Chloroethane	ND	103	102	1.0	47	47	0.0	70 - 130	30	m
Chloroform	ND	96	97	1.0	99	100	1.0	70 - 130	30	
Chloromethane	ND	99	99	0.0	115	36	104.6	70 - 130	30	m,r
cis-1,2-Dichloroethene	ND	92	94	2.2	95	99	4.1	70 - 130	30	
cis-1,3-Dichloropropene	ND	103	102	1.0	99	99	0.0	70 - 130	30	
Dibromochloromethane	ND	108	106	1.9	99	97	2.0	70 - 130	30	
Dibromomethane	ND	100	99	1.0	91	89	2.2	70 - 130	30	
Dichlorodifluoromethane	ND	93	92	1.1	91	92	1.1	70 - 130	30	
Ethylbenzene	ND	109	108	0.9	114	118	3.4	70 - 130	30	
m&p-Xylene	ND	110	108	1.8	112	117	4.4	70 - 130	30	
Methyl ethyl ketone	ND	82	78	5.0	61	54	12.2	70 - 130	30	m
Methyl t-butyl ether (MTBE)	ND	91	77	16.7	82	82	0.0	70 - 130	30	
Methylene chloride	ND	91	91	0.0	84	87	3.5	70 - 130	30	
o-Xylene	ND	111	108	2.7	109	112	2.7	70 - 130	30	
Styrene	ND	113	107	5.5	105	108	2.8	70 - 130	30	
Tetrachloroethene	ND	111	109	1.8	115	119	3.4	70 - 130	30	
Tetrahydrofuran (THF)	ND	89	86	3.4	31	71	78.4	70 - 130	30	m,r
Toluene	ND	104	104	0.0	107	109	1.9	70 - 130	30	
trans-1,2-Dichloroethene	ND	97	95	2.1	96	98	2.1	70 - 130	30	
trans-1,3-Dichloropropene	ND	102	100	2.0	95	93	2.1	70 - 130	30	
Trichloroethene	ND	104	103	1.0	107	107	0.0	70 - 130	30	
Trichlorofluoromethane	ND	100	101	1.0	46	61	28.0	70 - 130	30	m
Trichlorotrifluoroethane	ND	102	101	1.0	100	103	3.0	70 - 130	30	
Vinyl chloride	ND	97	98	1.0	95	102	7.1	70 - 130	30	
% Dibromofluoromethane	94	96	94	2.1	95	92	3.2	70 - 130	30	
% Toluene-d8	97	99	99	0.0	101	101	0.0	70 - 130	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Comment:										
Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.										
QA/QC Batch 267676, QC Sample No: BG13681 (BG13752)										
Semivolatiles - Soil										
1,2,4,5-Tetrachlorobenzene	ND	80	82	2.5	90	90	0.0	30 - 130	30	
1,2,4-Trichlorobenzene	ND	79	78	1.3	86	85	1.2	30 - 130	30	
1,2-Dichlorobenzene	ND	74	72	2.7	79	78	1.3	30 - 130	30	
1,2-Diphenylhydrazine	ND	74	76	2.7	83	82	1.2	30 - 130	30	
1,3-Dichlorobenzene	ND	74	71	4.1	78	78	0.0	30 - 130	30	
1,4-Dichlorobenzene	ND	73	72	1.4	78	77	1.3	30 - 130	30	
2,4,5-Trichlorophenol	ND	78	83	6.2	92	92	0.0	30 - 130	30	
2,4,6-Trichlorophenol	ND	82	85	3.6	95	93	2.1	30 - 130	30	
2,4-Dichlorophenol	ND	82	83	1.2	94	93	1.1	30 - 130	30	
2,4-Dimethylphenol	ND	50	52	3.9	52	48	8.0	30 - 130	30	
2,4-Dinitrophenol	ND	<5	22	NC	18	32	56.0	30 - 130	30	l,m,r
2,4-Dinitrotoluene	ND	78	82	5.0	91	91	0.0	30 - 130	30	
2,6-Dinitrotoluene	ND	82	85	3.6	95	93	2.1	30 - 130	30	
2-Chloronaphthalene	ND	81	79	2.5	87	85	2.3	30 - 130	30	
2-Chlorophenol	ND	76	73	4.0	83	81	2.4	30 - 130	30	
2-Methylnaphthalene	ND	82	83	1.2	92	91	1.1	30 - 130	30	
2-Methylphenol (o-cresol)	ND	66	65	1.5	72	68	5.7	30 - 130	30	
2-Nitroaniline	ND	118	123	4.1	127	129	1.6	30 - 130	30	
2-Nitrophenol	ND	69	73	5.6	85	84	1.2	30 - 130	30	
3&4-Methylphenol (m&p-cresol)	ND	70	70	0.0	76	73	4.0	30 - 130	30	
3,3'-Dichlorobenzidine	ND	115	124	7.5	121	120	0.8	30 - 130	30	
3-Nitroaniline	ND	99	106	6.8	110	108	1.8	30 - 130	30	
4,6-Dinitro-2-methylphenol	ND	36	59	48.4	80	91	12.9	30 - 130	30	r
4-Bromophenyl phenyl ether	ND	83	84	1.2	92	89	3.3	30 - 130	30	
4-Chloro-3-methylphenol	ND	81	86	6.0	95	94	1.1	30 - 130	30	
4-Chloroaniline	ND	59	62	5.0	61	56	8.5	30 - 130	30	
4-Chlorophenyl phenyl ether	ND	80	82	2.5	91	89	2.2	30 - 130	30	
4-Nitroaniline	ND	78	78	0.0	87	87	0.0	30 - 130	30	
4-Nitrophenol	ND	71	79	10.7	90	93	3.3	30 - 130	30	
Acenaphthene	ND	74	75	1.3	83	82	1.2	30 - 130	30	
Acenaphthylene	ND	78	77	1.3	85	84	1.2	30 - 130	30	
Acetophenone	ND	78	78	0.0	87	87	0.0	30 - 130	30	
Aniline	ND	89	88	1.1	92	88	4.4	30 - 130	30	
Anthracene	ND	79	80	1.3	89	86	3.4	30 - 130	30	
Benz(a)anthracene	ND	84	87	3.5	95	94	1.1	30 - 130	30	
Benzidine	ND	59	57	3.4	23	12	62.9	30 - 130	30	m,r
Benzo(a)pyrene	ND	73	74	1.4	81	80	1.2	30 - 130	30	
Benzo(b)fluoranthene	ND	84	84	0.0	90	94	4.3	30 - 130	30	
Benzo(ghi)perylene	ND	78	81	3.8	90	89	1.1	30 - 130	30	
Benzo(k)fluoranthene	ND	82	82	0.0	91	84	8.0	30 - 130	30	
Benzyl butyl phthalate	ND	83	83	0.0	92	89	3.3	30 - 130	30	
Bis(2-chloroethoxy)methane	ND	77	76	1.3	86	84	2.4	30 - 130	30	
Bis(2-chloroethyl)ether	ND	69	67	2.9	75	75	0.0	30 - 130	30	
Bis(2-chloroisopropyl)ether	ND	66	64	3.1	71	71	0.0	30 - 130	30	
Bis(2-ethylhexyl)phthalate	ND	84	85	1.2	95	91	4.3	30 - 130	30	
Carbazole	ND	95	94	1.1	101	98	3.0	30 - 130	30	
Chrysene	ND	83	84	1.2	92	92	0.0	30 - 130	30	
Dibenz(a,h)anthracene	ND	80	83	3.7	92	92	0.0	30 - 130	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Dibenzofuran	ND	80	80	0.0	89	86	3.4	30 - 130	30
Diethyl phthalate	ND	78	81	3.8	89	87	2.3	30 - 130	30
Dimethylphthalate	ND	77	79	2.6	88	84	4.7	30 - 130	30
Di-n-butylphthalate	ND	79	80	1.3	86	82	4.8	30 - 130	30
Di-n-octylphthalate	ND	77	86	11.0	92	92	0.0	30 - 130	30
Fluoranthene	ND	84	79	6.1	89	84	5.8	30 - 130	30
Fluorene	ND	81	83	2.4	92	90	2.2	30 - 130	30
Hexachlorobenzene	ND	79	79	0.0	86	84	2.4	30 - 130	30
Hexachlorobutadiene	ND	81	79	2.5	85	86	1.2	30 - 130	30
Hexachlorocyclopentadiene	ND	61	62	1.6	70	74	5.6	30 - 130	30
Hexachloroethane	ND	72	70	2.8	77	76	1.3	30 - 130	30
Indeno(1,2,3-cd)pyrene	ND	79	82	3.7	91	91	0.0	30 - 130	30
Isophorone	ND	81	81	0.0	91	89	2.2	30 - 130	30
Naphthalene	ND	81	80	1.2	89	89	0.0	30 - 130	30
Nitrobenzene	ND	71	70	1.4	79	78	1.3	30 - 130	30
N-Nitrosodimethylamine	ND	72	64	11.8	74	72	2.7	30 - 130	30
N-Nitrosodi-n-propylamine	ND	71	70	1.4	79	80	1.3	30 - 130	30
N-Nitrosodiphenylamine	ND	105	110	4.7	119	117	1.7	30 - 130	30
Pentachloronitrobenzene	ND	78	80	2.5	88	86	2.3	30 - 130	30
Pentachlorophenol	ND	60	69	14.0	77	81	5.1	30 - 130	30
Phenanthrene	ND	81	82	1.2	91	87	4.5	30 - 130	30
Phenol	ND	74	72	2.7	81	80	1.2	30 - 130	30
Pyrene	ND	85	79	7.3	88	83	5.8	30 - 130	30
Pyridine	ND	66	64	3.1	64	63	1.6	30 - 130	30
% 2,4,6-Tribromophenol	67	75	77	2.6	86	81	6.0	30 - 130	30
% 2-Fluorobiphenyl	74	77	75	2.6	82	80	2.5	30 - 130	30
% 2-Fluorophenol	66	70	65	7.4	76	74	2.7	30 - 130	30
% Nitrobenzene-d5	68	69	68	1.5	76	75	1.3	30 - 130	30
% Phenol-d5	70	73	71	2.8	80	78	2.5	30 - 130	30
% Terphenyl-d14	73	91	84	8.0	93	87	6.7	30 - 130	30

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 267680, QC Sample No: BG13687 (BG13744, BG13747, BG13748, BG13749, BG13750, BG13751, BG13752)

Pesticides - Soil

4,4' -DDD	ND	114	119	4.3	117	119	1.7	40 - 140	30
4,4' -DDE	ND	95	101	6.1	98	101	3.0	40 - 140	30
4,4' -DDT	ND	106	116	9.0	112	116	3.5	40 - 140	30
a-BHC	ND	96	106	9.9	98	101	3.0	40 - 140	30
a-Chlordane	ND	96	101	5.1	96	98	2.1	40 - 140	30
Alachlor	ND	NA	NA	NC	NA	NA	NC	40 - 140	30
Aldrin	ND	91	96	5.3	91	93	2.2	40 - 140	30
b-BHC	ND	102	106	3.8	103	104	1.0	40 - 140	30
Chlordane	ND	NA	NA	NC	NA	NA	NC	40 - 140	30
d-BHC	ND	92	97	5.3	94	97	3.1	40 - 140	30
Dieldrin	ND	97	101	4.0	98	101	3.0	40 - 140	30
Endosulfan I	ND	97	100	3.0	100	101	1.0	40 - 140	30
Endosulfan II	ND	86	85	1.2	108	109	0.9	40 - 140	30
Endosulfan sulfate	ND	90	85	5.7	97	99	2.0	40 - 140	30
Endrin	ND	91	100	9.4	96	101	5.1	40 - 140	30
Endrin aldehyde	ND	94	82	13.6	122	119	2.5	40 - 140	30
Endrin ketone	ND	113	109	3.6	117	116	0.9	40 - 140	30

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
g-BHC	ND	101	105	3.9	102	104	1.9	40 - 140	30
g-Chlordane	ND	96	101	5.1	97	100	3.0	40 - 140	30
Heptachlor	ND	95	101	6.1	97	100	3.0	40 - 140	30
Heptachlor epoxide	ND	97	103	6.0	99	101	2.0	40 - 140	30
Methoxychlor	ND	117	121	3.4	124	123	0.8	40 - 140	30
Toxaphene	ND	NA	NA	NC	NA	NA	NC	40 - 140	30
% DCBP	98	95	99	4.1	96	97	1.0	30 - 150	30
% TCMX	96	96	98	2.1	97	95	2.1	30 - 150	30
QA/QC Batch 267669, QC Sample No: BG13693 (BG13744, BG13753)									
TPH by GC (Extractable Products) - Soil									
Ext. Petroleum HC	ND	64	76	17.1	69	65	6.0	60 - 120	30
% n-Pentacosane	89	84	98	15.4	86	81	6.0	50 - 150	30
QA/QC Batch 268086, QC Sample No: BG13743 (BG13743, BG13746)									
Gasoline Range Hydrocarbons - Water									
GRO (C6-C10)	ND	95	101	6.1	94	95	1.1	70 - 130	50
% 2,5-Dibromotoluene (FID)	92	111	110	0.9	109	107	1.9	70 - 130	50
Comment:									
A blank MS/MSD was analyzed with this batch.									
QA/QC Batch 267707, QC Sample No: BG13743 (BG13743, BG13746)									
Pesticides - Water									
4,4' -DDD	ND	125	121	3.3				40 - 140	20
4,4' -DDE	ND	98	104	5.9				40 - 140	20
4,4' -DDT	ND	106	106	0.0				40 - 140	20
a-BHC	ND	83	87	4.7				40 - 140	20
a-Chlordane	ND	90	91	1.1				40 - 140	20
Alachlor	ND	NA	NA	NC				40 - 140	20
Aldrin	ND	82	83	1.2				40 - 140	20
b-BHC	ND	87	90	3.4				40 - 140	20
Chlordane	ND	NA	NA	NC				40 - 140	20
d-BHC	ND	<40	<40	NC				40 - 140	20
Dieldrin	ND	90	90	0.0				40 - 140	20
Endosulfan I	ND	91	91	0.0				40 - 140	20
Endosulfan II	ND	94	95	1.1				40 - 140	20
Endosulfan sulfate	ND	72	72	0.0				40 - 140	20
Endrin	ND	86	89	3.4				40 - 140	20
Endrin aldehyde	ND	103	102	1.0				40 - 140	20
Endrin ketone	ND	107	106	0.9				40 - 140	20
g-BHC	ND	86	86	0.0				40 - 140	20
g-Chlordane	ND	91	91	0.0				40 - 140	20
Heptachlor	ND	88	88	0.0				40 - 140	20
Heptachlor epoxide	ND	88	88	0.0				40 - 140	20
Methoxychlor	ND	124	123	0.8				40 - 140	20
Toxaphene	ND	NA	NA	NC				40 - 140	20
% DCBP	85	97	98	1.0				30 - 150	20
% TCMX	69	92	94	2.2				30 - 150	20
Comment:									
A LCS and LCS duplicate were performed instead of a matrix spike and matrix spike duplicate, unless otherwise noted. Alpha and gamma chlordane were spiked and analyzed instead of technical chlordane.									

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 267711, QC Sample No: BG13745 (BG13745)										
TPH by GC (Extractable Products) - Sediment										
Ext. Petroleum HC	ND	70	69	1.4	58	57	1.7	60 - 120	30	
% n-Pentacosane	82	91	77	16.7	80	83	3.7	50 - 150	30	
QA/QC Batch 267692, QC Sample No: BG13748 (BG13748, BG13750, BG13751, BG13752)										
Chlorinated Herbicides - Soil										
2,4,5-T	ND	65	62	4.7	68	66	3.0	40 - 140	30	
2,4,5-TP (Silvex)	ND	73	69	5.6	84	66	24.0	40 - 140	30	
2,4-D	ND	79	97	20.5	NC	NC	NC	40 - 140	30	
2,4-DB	ND	55	49	11.5	63	58	8.3	40 - 140	30	
Dalapon	ND	73	51	35.5	32	22	37.0	40 - 140	30	m,r
Dicamba	ND	76	71	6.8	76	72	5.4	40 - 140	30	
Dichloroprop	ND	70	68	2.9	59	67	12.7	40 - 140	30	
Dinoseb	ND	78	84	7.4	73	69	5.6	40 - 140	30	
% DCAA (Surrogate Rec)	59	56	53	5.5	57	53	7.3	30 - 150	30	

Comment:

NC - No criteria due to the large amount of compound in the un-spiked sample. The MS/MSD for herbicides could not be reported due to matrix interference in the unspiked sample. LCS\LCSD recoveries were within QA/QC limits.

QA/QC Batch 267758, QC Sample No: BG13748 (BG13744 (36X) , BG13748, BG13749)										
Volatiles - Soil										
1,1,1,2-Tetrachloroethane	ND	99	99	0.0	106	102	3.8	70 - 130	30	
1,1,1-Trichloroethane	ND	96	95	1.0	98	96	2.1	70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	92	87	5.6	112	109	2.7	70 - 130	30	
1,1,2-Trichloroethane	ND	100	97	3.0	92	90	2.2	70 - 130	30	
1,1-Dichloroethane	ND	92	91	1.1	92	91	1.1	70 - 130	30	
1,1-Dichloroethene	ND	90	90	0.0	100	98	2.0	70 - 130	30	
1,1-Dichloropropene	ND	98	96	2.1	104	101	2.9	70 - 130	30	
1,2,3-Trichlorobenzene	ND	100	98	2.0	54	53	1.9	70 - 130	30	m
1,2,3-Trichloropropane	ND	96	94	2.1	113	110	2.7	70 - 130	30	
1,2,4-Trichlorobenzene	ND	100	97	3.0	60	59	1.7	70 - 130	30	m
1,2,4-Trimethylbenzene	ND	105	104	1.0	115	111	3.5	70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	109	98	10.6	110	101	8.5	70 - 130	30	
1,2-Dibromoethane	ND	100	97	3.0	87	87	0.0	70 - 130	30	
1,2-Dichlorobenzene	ND	96	94	2.1	88	87	1.1	70 - 130	30	
1,2-Dichloroethane	ND	95	94	1.1	90	90	0.0	70 - 130	30	
1,2-Dichloropropane	ND	94	94	0.0	94	94	0.0	70 - 130	30	
1,3,5-Trimethylbenzene	ND	102	101	1.0	122	120	1.7	70 - 130	30	
1,3-Dichlorobenzene	ND	97	94	3.1	93	93	0.0	70 - 130	30	
1,3-Dichloropropane	ND	98	96	2.1	99	96	3.1	70 - 130	30	
1,4-Dichlorobenzene	ND	96	93	3.2	90	87	3.4	70 - 130	30	
2,2-Dichloropropane	ND	99	95	4.1	98	95	3.1	70 - 130	30	
2-Chlorotoluene	ND	98	97	1.0	116	113	2.6	70 - 130	30	
2-Hexanone	ND	103	98	5.0	31	32	3.2	70 - 130	30	m
2-Isopropyltoluene	ND	106	104	1.9	123	122	0.8	70 - 130	30	
4-Chlorotoluene	ND	99	98	1.0	106	101	4.8	70 - 130	30	
4-Methyl-2-pentanone	ND	104	99	4.9	50	53	5.8	70 - 130	30	m
Acetone	ND	77	73	5.3	54	50	7.7	70 - 130	30	m
Acrylonitrile	ND	93	88	5.5	39	43	9.8	70 - 130	30	m
Benzene	ND	96	95	1.0	98	96	2.1	70 - 130	30	
Bromobenzene	ND	100	97	3.0	107	105	1.9	70 - 130	30	
Bromochloromethane	ND	94	94	0.0	93	91	2.2	70 - 130	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Bromodichloromethane	ND	95	92	3.2	95	92	3.2	70 - 130	30	
Bromoform	ND	105	104	1.0	96	94	2.1	70 - 130	30	
Bromomethane	ND	82	87	5.9	86	83	3.6	70 - 130	30	
Carbon Disulfide	ND	85	83	2.4	94	92	2.2	70 - 130	30	
Carbon tetrachloride	ND	99	97	2.0	103	103	0.0	70 - 130	30	
Chlorobenzene	ND	97	95	2.1	94	91	3.2	70 - 130	30	
Chloroethane	ND	85	85	0.0	98	96	2.1	70 - 130	30	
Chloroform	ND	92	91	1.1	93	92	1.1	70 - 130	30	
Chloromethane	ND	75	73	2.7	80	76	5.1	70 - 130	30	
cis-1,2-Dichloroethene	ND	96	96	0.0	94	91	3.2	70 - 130	30	
cis-1,3-Dichloropropene	ND	101	98	3.0	86	86	0.0	70 - 130	30	
Dibromochloromethane	ND	103	103	0.0	102	102	0.0	70 - 130	30	
Dibromomethane	ND	98	93	5.2	92	87	5.6	70 - 130	30	
Dichlorodifluoromethane	ND	62	60	3.3	75	73	2.7	70 - 130	30	l
Ethylbenzene	ND	97	97	0.0	105	100	4.9	70 - 130	30	
Hexachlorobutadiene	ND	110	107	2.8	95	99	4.1	70 - 130	30	
Isopropylbenzene	ND	108	106	1.9	138	133	3.7	70 - 130	30	m
m&p-Xylene	ND	100	98	2.0	104	98	5.9	70 - 130	30	
Methyl ethyl ketone	ND	97	95	2.1	58	54	7.1	70 - 130	30	m
Methyl t-butyl ether (MTBE)	ND	92	90	2.2	100	98	2.0	70 - 130	30	
Methylene chloride	ND	87	86	1.2	90	87	3.4	70 - 130	30	
Naphthalene	ND	108	103	4.7	56	53	5.5	70 - 130	30	m
n-Butylbenzene	ND	105	102	2.9	110	105	4.7	70 - 130	30	
n-Propylbenzene	ND	110	107	2.8	127	123	3.2	70 - 130	30	
o-Xylene	ND	99	97	2.0	107	102	4.8	70 - 130	30	
p-Isopropyltoluene	ND	107	105	1.9	122	118	3.3	70 - 130	30	
sec-Butylbenzene	ND	102	100	2.0	127	125	1.6	70 - 130	30	
Styrene	ND	99	97	2.0	86	84	2.4	70 - 130	30	
tert-Butylbenzene	ND	109	108	0.9	135	132	2.2	70 - 130	30	m
Tetrachloroethene	ND	105	102	2.9	118	111	6.1	70 - 130	30	
Tetrahydrofuran (THF)	ND	93	91	2.2	90	88	2.2	70 - 130	30	
Toluene	ND	97	96	1.0	96	92	4.3	70 - 130	30	
trans-1,2-Dichloroethene	ND	93	91	2.2	98	94	4.2	70 - 130	30	
trans-1,3-Dichloropropene	ND	97	95	2.1	81	82	1.2	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	100	96	4.1	87	83	4.7	70 - 130	30	
Trichloroethene	ND	101	101	0.0	102	97	5.0	70 - 130	30	
Trichlorofluoromethane	ND	85	85	0.0	94	93	1.1	70 - 130	30	
Trichlorotrifluoroethane	ND	102	99	3.0	108	106	1.9	70 - 130	30	
Vinyl chloride	ND	83	81	2.4	94	89	5.5	70 - 130	30	
% 1,2-dichlorobenzene-d4	103	101	101	0.0	101	97	4.0	70 - 130	30	
% Bromofluorobenzene	97	97	96	1.0	89	86	3.4	70 - 130	30	
% Dibromofluoromethane	107	100	99	1.0	102	98	4.0	70 - 130	30	
% Toluene-d8	98	99	99	0.0	97	99	2.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 267906, QC Sample No: BG13750 (BG13745, BG13750 (50, 1X) , BG13751, BG13752, BG13753)

Volatiles - Sediment, Soil

1,1,1,2-Tetrachloroethane	ND	106	106	0.0	89	89	0.0	70 - 130	30	
1,1,1-Trichloroethane	ND	99	99	0.0	91	90	1.1	70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	100	97	3.0	98	95	3.1	70 - 130	30	
1,1,2-Trichloroethane	ND	106	105	0.9	97	97	0.0	70 - 130	30	
1,1-Dichloroethane	ND	98	96	2.1	91	88	3.4	70 - 130	30	

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
1,1-Dichloroethene	ND	95	93	2.1	73	71	2.8	70 - 130	30	
1,1-Dichloropropene	ND	103	101	2.0	103	102	1.0	70 - 130	30	
1,2,3-Trichlorobenzene	ND	98	102	4.0	103	102	1.0	70 - 130	30	
1,2,3-Trichloropropane	ND	103	100	3.0	89	88	1.1	70 - 130	30	
1,2,4-Trichlorobenzene	ND	91	96	5.3	103	100	3.0	70 - 130	30	
1,2,4-Trimethylbenzene	ND	101	103	2.0	98	94	4.2	70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	110	104	5.6	90	88	2.2	70 - 130	30	
1,2-Dibromoethane	ND	107	106	0.9	99	99	0.0	70 - 130	30	
1,2-Dichlorobenzene	ND	98	99	1.0	99	97	2.0	70 - 130	30	
1,2-Dichloroethane	ND	103	101	2.0	93	93	0.0	70 - 130	30	
1,2-Dichloropropane	ND	103	102	1.0	98	97	1.0	70 - 130	30	
1,3,5-Trimethylbenzene	ND	98	98	0.0	97	95	2.1	70 - 130	30	
1,3-Dichlorobenzene	ND	96	98	2.1	102	100	2.0	70 - 130	30	
1,3-Dichloropropane	ND	103	102	1.0	97	96	1.0	70 - 130	30	
1,4-Dichlorobenzene	ND	94	96	2.1	99	96	3.1	70 - 130	30	
2,2-Dichloropropane	ND	99	96	3.1	88	87	1.1	70 - 130	30	
2-Chlorotoluene	ND	100	101	1.0	102	98	4.0	70 - 130	30	
2-Hexanone	ND	101	95	6.1	84	82	2.4	70 - 130	30	
2-Isopropyltoluene	ND	102	102	0.0	100	97	3.0	70 - 130	30	
4-Chlorotoluene	ND	100	101	1.0	100	98	2.0	70 - 130	30	
4-Methyl-2-pentanone	ND	107	102	4.8	96	94	2.1	70 - 130	30	
Acetone	ND	89	85	4.6	58	54	7.1	70 - 130	30	m
Acrylonitrile	ND	101	94	7.2	91	88	3.4	70 - 130	30	
Benzene	ND	100	100	0.0	97	96	1.0	70 - 130	30	
Bromobenzene	ND	103	103	0.0	102	101	1.0	70 - 130	30	
Bromochloromethane	ND	104	102	1.9	100	99	1.0	70 - 130	30	
Bromodichloromethane	ND	101	100	1.0	86	87	1.2	70 - 130	30	
Bromoform	ND	107	103	3.8	74	76	2.7	70 - 130	30	
Bromomethane	ND	93	89	4.4	56	56	0.0	70 - 130	30	m
Carbon Disulfide	ND	89	87	2.3	73	70	4.2	70 - 130	30	
Carbon tetrachloride	ND	102	100	2.0	84	84	0.0	70 - 130	30	
Chlorobenzene	ND	102	101	1.0	100	97	3.0	70 - 130	30	
Chloroethane	ND	94	91	3.2	33	31	6.3	70 - 130	30	m
Chloroform	ND	101	98	3.0	95	93	2.1	70 - 130	30	
Chloromethane	ND	103	102	1.0	94	95	1.1	70 - 130	30	
cis-1,2-Dichloroethene	ND	102	101	1.0	99	95	4.1	70 - 130	30	
cis-1,3-Dichloropropene	ND	100	100	0.0	93	92	1.1	70 - 130	30	
Dibromochloromethane	ND	109	108	0.9	82	84	2.4	70 - 130	30	
Dibromomethane	ND	103	102	1.0	96	96	0.0	70 - 130	30	
Dichlorodifluoromethane	ND	102	100	2.0	91	92	1.1	70 - 130	30	
Ethylbenzene	ND	102	100	2.0	100	98	2.0	70 - 130	30	
Hexachlorobutadiene	ND	99	99	0.0	105	100	4.9	70 - 130	30	
Isopropylbenzene	ND	103	102	1.0	100	98	2.0	70 - 130	30	
m&p-Xylene	ND	98	98	0.0	98	95	3.1	70 - 130	30	
Methyl ethyl ketone	ND	91	84	8.0	81	80	1.2	70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	96	94	2.1	92	90	2.2	70 - 130	30	
Methylene chloride	ND	90	88	2.2	86	82	4.8	70 - 130	30	
Naphthalene	ND	106	104	1.9	100	100	0.0	70 - 130	30	
n-Butylbenzene	ND	95	96	1.0	97	93	4.2	70 - 130	30	
n-Propylbenzene	ND	106	106	0.0	101	98	3.0	70 - 130	30	
o-Xylene	ND	94	93	1.1	98	95	3.1	70 - 130	30	
p-Isopropyltoluene	ND	98	98	0.0	99	95	4.1	70 - 130	30	
sec-Butylbenzene	ND	98	97	1.0	99	95	4.1	70 - 130	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Styrene	ND	95	94	1.1	98	95	3.1	70 - 130	30	
tert-Butylbenzene	ND	103	102	1.0	100	97	3.0	70 - 130	30	
Tetrachloroethene	ND	102	101	1.0	104	101	2.9	70 - 130	30	
Tetrahydrofuran (THF)	ND	106	99	6.8	96	94	2.1	70 - 130	30	
Toluene	ND	102	100	2.0	98	97	1.0	70 - 130	30	
trans-1,2-Dichloroethene	ND	94	91	3.2	90	87	3.4	70 - 130	30	
trans-1,3-Dichloropropene	ND	98	98	0.0	90	91	1.1	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	106	102	3.8	83	85	2.4	70 - 130	30	
Trichloroethene	ND	106	105	0.9	101	100	1.0	70 - 130	30	
Trichlorofluoromethane	ND	95	92	3.2	24	24	0.0	70 - 130	30	m
Trichlorotrifluoroethane	ND	97	94	3.1	75	70	6.9	70 - 130	30	
Vinyl chloride	ND	101	99	2.0	87	88	1.1	70 - 130	30	
% 1,2-dichlorobenzene-d4	100	100	99	1.0	101	101	0.0	70 - 130	30	
% Bromofluorobenzene	98	100	98	2.0	99	98	1.0	70 - 130	30	
% Dibromofluoromethane	100	102	101	1.0	97	101	4.0	70 - 130	30	
% Toluene-d8	100	99	99	0.0	98	98	0.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 267683, QC Sample No: BG13753 (BG13745, BG13753)

Polynuclear Aromatic HC - Sediment, Soil

Acenaphthene	ND	79	78	1.3	76	75	1.3	30 - 130	30	
Acenaphthylene	ND	77	77	0.0	75	74	1.3	30 - 130	30	
Anthracene	ND	79	79	0.0	77	77	0.0	30 - 130	30	
Benz(a)anthracene	ND	77	78	1.3	77	78	1.3	30 - 130	30	
Benzo(a)pyrene	ND	75	75	0.0	75	74	1.3	30 - 130	30	
Benzo(b)fluoranthene	ND	84	83	1.2	87	84	3.5	30 - 130	30	
Benzo(ghi)perylene	ND	81	83	2.4	84	87	3.5	30 - 130	30	
Benzo(k)fluoranthene	ND	87	84	3.5	84	85	1.2	30 - 130	30	
Chrysene	ND	86	87	1.2	85	85	0.0	30 - 130	30	
Dibenz(a,h)anthracene	ND	80	82	2.5	82	83	1.2	30 - 130	30	
Fluoranthene	ND	83	82	1.2	83	83	0.0	30 - 130	30	
Fluorene	ND	80	82	2.5	78	78	0.0	30 - 130	30	
Indeno(1,2,3-cd)pyrene	ND	79	82	3.7	81	84	3.6	30 - 130	30	
Naphthalene	ND	73	74	1.4	70	70	0.0	30 - 130	30	
Phenanthrene	ND	80	80	0.0	79	79	0.0	30 - 130	30	
Pyrene	ND	85	83	2.4	87	85	2.3	30 - 130	30	
% 2-Fluorobiphenyl	78	74	75	1.3	71	72	1.4	30 - 130	30	
% Nitrobenzene-d5	75	71	72	1.4	67	68	1.5	30 - 130	30	
% Terphenyl-d14	91	90	86	4.5	89	87	2.3	30 - 130	30	

QA/QC Batch 267985, QC Sample No: BG14156 (BG13747 (45X))

Volatiles - Soil

1,2,3-Trichlorobenzene	ND	103	104	1.0	95	91	4.3	70 - 130	30	
1,2,3-Trichloropropane	ND	95	91	4.3	91	88	3.4	70 - 130	30	
1,2,4-Trichlorobenzene	ND	100	100	0.0	91	86	5.6	70 - 130	30	
1,2,4-Trimethylbenzene	ND	100	99	1.0	41	45	9.3	70 - 130	30	m
1,2-Dibromo-3-chloropropane	ND	110	107	2.8	112	109	2.7	70 - 130	30	
1,2-Dichlorobenzene	ND	98	97	1.0	98	94	4.2	70 - 130	30	
1,3,5-Trimethylbenzene	ND	97	94	3.1	93	90	3.3	70 - 130	30	
1,3-Dichlorobenzene	ND	98	97	1.0	98	95	3.1	70 - 130	30	
1,4-Dichlorobenzene	ND	96	95	1.0	96	91	5.3	70 - 130	30	
2-Chlorotoluene	ND	98	96	2.1	100	97	3.0	70 - 130	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
2-Isopropyltoluene	ND	99	96	3.1	95	91	4.3	70 - 130	30	
4-Chlorotoluene	ND	99	98	1.0	90	88	2.2	70 - 130	30	
Bromobenzene	ND	100	99	1.0	102	98	4.0	70 - 130	30	
Hexachlorobutadiene	ND	99	97	2.0	66	65	1.5	70 - 130	30	m
Isopropylbenzene	ND	100	96	4.1	99	96	3.1	70 - 130	30	
Naphthalene	ND	103	102	1.0	110	105	4.7	70 - 130	30	
n-Butylbenzene	ND	97	95	2.1	85	81	4.8	70 - 130	30	
n-Propylbenzene	ND	106	102	3.8	96	93	3.2	70 - 130	30	
p-Isopropyltoluene	ND	98	95	3.1	92	89	3.3	70 - 130	30	
sec-Butylbenzene	ND	96	92	4.3	92	88	4.4	70 - 130	30	
tert-Butylbenzene	ND	99	95	4.1	96	93	3.2	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	103	100	3.0	94	92	2.2	70 - 130	30	
% 1,2-dichlorobenzene-d4	100	100	100	0.0	100	101	1.0	70 - 130	30	
% Bromofluorobenzene	97	98	98	0.0	97	97	0.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 267902, QC Sample No: BG14257 (BG13745, BG13753)

Gasoline Range Organics - Sediment, Soil

Gasoline Range Organics	BRL	72			86	84	2.4			

QA/QC Batch 267892, QC Sample No: BG14279 (BG13747)

Volatiles - Soil

1,1,1,2-Tetrachloroethane	ND	105	105	0.0	98	100	2.0	70 - 130	30	
1,1,1-Trichloroethane	ND	102	104	1.9	101	100	1.0	70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	87	86	1.2	85	84	1.2	70 - 130	30	
1,1,2-Trichloroethane	ND	98	94	4.2	86	90	4.5	70 - 130	30	
1,1-Dichloroethane	ND	94	94	0.0	90	90	0.0	70 - 130	30	
1,1-Dichloroethene	ND	97	101	4.0	100	99	1.0	70 - 130	30	
1,1-Dichloropropene	ND	107	103	3.8	104	106	1.9	70 - 130	30	
1,2-Dibromoethane	ND	96	95	1.0	87	91	4.5	70 - 130	30	
1,2-Dichloroethane	ND	105	100	4.9	92	97	5.3	70 - 130	30	
1,2-Dichloropropane	ND	93	94	1.1	90	90	0.0	70 - 130	30	
1,3-Dichloropropane	ND	97	97	0.0	91	92	1.1	70 - 130	30	
2,2-Dichloropropane	ND	105	106	0.9	97	95	2.1	70 - 130	30	
2-Hexanone	ND	91	91	0.0	70	74	5.6	70 - 130	30	
4-Methyl-2-pentanone	ND	94	93	1.1	83	85	2.4	70 - 130	30	
Acetone	ND	82	83	1.2	53	54	1.9	70 - 130	30	m
Acrylonitrile	ND	78	73	6.6	70	72	2.8	70 - 130	30	
Benzene	ND	97	96	1.0	95	96	1.0	70 - 130	30	
Bromochloromethane	ND	92	90	2.2	87	92	5.6	70 - 130	30	
Bromodichloromethane	ND	101	100	1.0	94	98	4.2	70 - 130	30	
Bromoform	ND	107	105	1.9	94	98	4.2	70 - 130	30	
Bromomethane	ND	92	94	2.2	101	98	3.0	70 - 130	30	
Carbon Disulfide	ND	91	92	1.1	98	98	0.0	70 - 130	30	
Carbon tetrachloride	ND	106	107	0.9	100	100	0.0	70 - 130	30	
Chlorobenzene	ND	101	102	1.0	93	95	2.1	70 - 130	30	
Chloroethane	ND	95	98	3.1	98	99	1.0	70 - 130	30	
Chloroform	ND	94	95	1.1	92	93	1.1	70 - 130	30	
Chloromethane	ND	72	76	5.4	78	78	0.0	70 - 130	30	
cis-1,2-Dichloroethene	ND	92	92	0.0	92	91	1.1	70 - 130	30	
cis-1,3-Dichloropropene	ND	101	100	1.0	96	97	1.0	70 - 130	30	
Dibromochloromethane	ND	110	106	3.7	97	101	4.0	70 - 130	30	

QA/QC Data

SDG I.D.: GBG13742

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Dibromomethane	ND	95	94	1.1	88	90	2.2	70 - 130	30	
Dichlorodifluoromethane	ND	76	79	3.9	93	91	2.2	70 - 130	30	
Ethylbenzene	ND	103	102	1.0	100	101	1.0	70 - 130	30	
m&p-Xylene	ND	106	105	0.9	97	97	0.0	70 - 130	30	
Methyl ethyl ketone	ND	72	72	0.0	63	68	7.6	70 - 130	30	m
Methyl t-butyl ether (MTBE)	ND	99	95	4.1	93	96	3.2	70 - 130	30	
Methylene chloride	ND	86	87	1.2	85	84	1.2	70 - 130	30	
o-Xylene	ND	102	103	1.0	98	99	1.0	70 - 130	30	
Styrene	ND	101	100	1.0	93	95	2.1	70 - 130	30	
Tetrachloroethene	ND	114	116	1.7	109	108	0.9	70 - 130	30	
Tetrahydrofuran (THF)	ND	80	80	0.0	73	76	4.0	70 - 130	30	
Toluene	ND	101	100	1.0	95	97	2.1	70 - 130	30	
trans-1,2-Dichloroethene	ND	100	99	1.0	98	99	1.0	70 - 130	30	
trans-1,3-Dichloropropene	ND	102	99	3.0	92	94	2.2	70 - 130	30	
Trichloroethene	ND	106	108	1.9	105	105	0.0	70 - 130	30	
Trichlorofluoromethane	ND	101	102	1.0	100	101	1.0	70 - 130	30	
Trichlorotrifluoroethane	ND	111	111	0.0	108	106	1.9	70 - 130	30	
Vinyl chloride	ND	84	87	3.5	92	92	0.0	70 - 130	30	
% Dibromofluoromethane	101	97	99	2.0	99	98	1.0	70 - 130	30	
% Toluene-d8	99	99	99	0.0	99	100	1.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

l = This parameter is outside laboratory lcs/lcsd specified recovery limits.
m = This parameter is outside laboratory ms/msd specified recovery limits.
r = This parameter is outside laboratory rpd specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
March 11, 2014

Sample Criteria Exceedences Report

GBG13742 - ECSI

Criteria: None

State: NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

NY Temperature Narration

March 11, 2014

SDG I.D.: GBG13742

The samples in this delivery group were received at 4°C.
(Note acceptance criteria is above freezing up to 6°C)

Amy's Kitchen Inc.

Heritage Trail Corridor

GOSHEN, WAWAYANDA, AND MIDDLETOWN, NEW YORK

Limited Environmental Review

AKRF Project Number: 40525

Prepared for:

Amy's Kitchen Inc.
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APRIL 2016

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FIGURES

FIGURE 1 Study Corridor Location
FIGURE 2 Study Corridor Detail

APPENDICES

APPENDIX A Historic Aerial Photographs
APPENDIX B Regulatory Database Reports

1.0 INTRODUCTION

AKRF, Inc. (AKRF) was retained by Amy's Kitchen Inc. to perform a limited environmental review of a regulatory database report and historical aerial photographs for an approximately 3.1-mile long corridor of land located in the Towns of Goshen and Wawayanda and the City of Middletown, New York. The study corridor extends from near the northeastern corner of the Amy's Kitchen proposed project site (defined below) to the west along the Orange County Heritage Trail (a former railroad alignment) for approximately 2.7 miles before turning to the southwest and ending at the Middletown Wastewater Treatment Plant. This corridor is the proposed route for water supply and wastewater conveyance for the proposed Amy's Kitchen food processing facility. See Figure 1 showing the location of the study corridor, which is described in further detail below.

The scope of services for this limited assessment included the following:

- Historical aerial photographs for the study corridor and adjacent properties were reviewed to evaluate previous land use.
- Federal regulatory databases were reviewed to determine the regulatory status of the study corridor, adjacent properties, and properties within ⅛ mile of the corridor including, but not limited to: National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Resource Conservation and Recovery Act (RCRA) Information System; and RCRA Corrective Action Activity (CORRACTS).
- State regulatory databases were reviewed to determine the regulatory status of the study corridor, adjacent properties, and properties within ⅛ mile of the corridor including, but not limited to: State Hazardous Waste Sites (SHWS); Site Discovery and Assessment Database (SDADB); Leaking Underground Storage Tank (LUST); Leachate and Waste Water Discharge Inventory (CT LWDS); Underground Storage Tank (UST); and Facility and Manifest Data (MANIFEST).

The main objective of this assessment was to identify environmental conditions resulting from past or current site usage and usage of neighboring properties that may have affected soil and/or groundwater along the route of the proposed utility corridor.

2.0 SITE DESCRIPTION

2.1 Study Corridor Description

The study corridor begins along the northern boundary of the Ver Hage Property located at 103-111 Hartley Road in the Town of Goshen, continues west crossing over the main channel of the Wallkill River (which is a dug canal) and the river's smaller original channel into the Town of Wawayanda. In Wawayada, the corridor crosses over County Road 50, then turns northwest and runs parallel to (south of) McVeigh Road, crossing under Interstate 84 and over the Monhagen Brook. The corridor continues along McVeigh Road for approximately 3,500 feet and then turns southwest terminating at the Middletown Wastewater Treatment Plant in the City of Middletown. See Figure 2 for a detailed map of the study corridor.

2.2 Topography and Hydrogeology

Based on reports compiled by the U.S. Geological Survey Middletown and Goshen Quadrangle maps, the elevation along the study corridor generally ranges from approximately 480 feet near the Middletown Wastewater Treatment Plant, sloping downward to approximately 360 feet at the Ver Hage Property. Groundwater along the corridor likely flows toward the Wallkill River

channels and the Monhagen Brook. Depth to groundwater varies across the corridor, measuring between approximately 15 to 20 feet below ground surface at the Ver Hage Property at the eastern end (based on data from a Phase II subsurface investigation and a geotechnical study for the proposed Amy's Kitchen project), and ranging between 1 and 10 feet below ground surface at the former Middletown Landfill located at the western end (based on details in regulatory database listings for the landfill). However, local variations in water table depth and groundwater flow direction can occur based on factors such as local variations in topography, subsurface openings or obstructions, underground utilities, current or past pumping of groundwater (for potable or non-potable uses), past filling, and other factors beyond the scope of this assessment.

3.0 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs were reviewed for indications of industrial usage or other evidence suggesting the use or disposal of hazardous materials on or adjacent to the study corridor. Specifically, aerial photographs from 1940, 1958, 1968, 1975, 1984, 1994, 2006, 2009, 2011 and 2013 were reviewed. Copies of the aerial photographs are included in Appendix A. Details of these photographs are discussed below:

1940

The study corridor appeared to be developed with railroad tracks with the exception of the western portion, which traverses undeveloped land or farmland. The surrounding land was largely undeveloped with some roads connecting apparent agricultural fields. Some structures were noted near Route 50. Structures and possible settling tanks associated with the wastewater treatment plant are noted at the western end of the study corridor. The study corridor appears to traverse two creeks or tributaries and the Wallkill River on the eastern portion.

1958

The study corridor appears similar to the 1940 photograph. Additional tank-like structures were noted at the western extent of the study corridor. No further significant changes were noted in the surrounding area from the 1940 photograph.

1968

The study corridor appears similar to the 1958 photograph. Additional development, likely residential, was noted along Route 50. A major road, likely Interstate 84, was noted crossing over the railroad tracks southeast of the Monhagen Brook. No further significant changes were noted from the 1958 photograph.

1975

The study corridor appears similar to the 1968 photograph. Additional development was noted near Route 50, and some soil disturbance was noted south of the corridor at the Ver Hage Site. No further significant changes were noted in the surrounding area from the 1968 photograph.

1984-1994

The study corridor appears similar to the 1975 photograph. Some formerly wooded areas surrounding the study corridor appear to have been cleared. An apparent electrical substation with a possible water tank and an apparent warehouse structure was noted north of the western end of the corridor. No other significant changes were noted in the surrounding area from the 1978 photograph.

2006-2011

The study corridor appears overgrown with vegetation indicating that the railroad tracks were no longer in use. Formerly cleared areas in the surrounding area appear fully vegetated. Additional commercial development was noted near the western end of the corridor. No further significant changes were noted from the 1994 photograph.

Summary

The majority of the subject corridor consisted of the roadbed for railroad tracks from before 1940 until approximately 1994, indicating the potential for contamination from track ballast, railroad ties, track maintenance operations, transformers, etc. The area surrounding most of the study corridor generally consisted of wooded land and agricultural fields, with some residential development near Route 50 and a wastewater treatment plant and apparent electrical substation near the western end.

4.0 REGULATORY DATABASE REVIEW

Regulatory database reports were obtained from Toxics Targeting, Inc. of Ithaca, New York and are provided in Appendix B. The main report includes summaries of the databases searched, their radii around the study corridor, and limitations of the data. Additional databases of unmapped sites and nearby areas of concern are also included in the Appendix. Due to the large size and irregular shape of the study corridor, the regulatory radii were restricted to focus on the areas within ⅛-mile of the study corridor for this assessment.

4.1 Federal

The federal databases searched included the National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Emergency Response Notification System (ERNS); Toxic Chemical Release Inventory System (TRIS); the Permit Compliance System of Toxic Wastewater Discharges (WWD); the USEPA Civil Enforcement Docket; and the Air Discharge Facilities (ADF). The federal listing of facilities which are subject to corrective action under the Resource Conservation and Recovery Act (CORRACTS) is discussed with the State databases of RCRA listings.

4.1.1 National Priority List (NPL)

The NPL is the USEPA's list of sites that probably require remedial action under the Superfund Program. Nearby NPL sites can sometimes pose a risk of stigmatizing surrounding properties and thus impacting sites values.

No NPL sites were identified within ⅛-mile of the study corridor.

4.1.2 Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

CERCLIS is a compilation of sites which the USEPA has investigated, or plans to investigate, pursuant to the Superfund Act of 1980 (CERCLA). As such, some of these sites may ultimately present concerns and others may not (but could still pose a perceived concern). Former CERCLIS sites that have been granted the status of No Further Remedial Action Planned (NFRAP) are also included in this database.

One CERCLIS site was identified within ⅛-mile of the study corridor. The former Middletown Dump, located on Dolson Avenue, adjacent to the western end of the study

corridor was listed in the CERCLIS-NFRAP database. According to the listing, this facility and an associated incinerator received municipal and commercial waste between approximately 1952 and 1969, including approximately 490 tons of hazardous materials (including toluene, benzene, and unspecified still bottoms). Most of these materials were reportedly incinerated and the ash was disposed of in the dump; however, a small amount of the waste may have been buried directly, without being incinerated first. During a preliminary site assessment conducted in 1993, the chlorinated solvent trichloroethane was detected at 5 parts per billion (ppb) in one surface water sample, and the chlorinated solvents 1,2-dichloroethene and trichloroethene were detected at concentrations of 34 and 36 ppb, respectively, in one groundwater sample. The database listing indicated that the contaminant levels did not represent a significant threat to the environment, and the site is listed with NFRAP status. This facility is also listed on some state regulatory databases, described later in this section..

4.1.3 Emergency Response Notification System (ERNS)

This federal database, compiled by the Emergency Response Notification System, records and stores information on certain reported releases of petroleum and other potentially hazardous substances.

The study corridor was not listed as an ERNS site.

4.1.4 Toxic Chemical Release Inventory System (TRIS)

The TRIS contains information reported to the USEPA and/or NYSDEC by a variety of industries on their annual estimated releases of certain chemicals to the environment. The TRIS was mandated by Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986. Available information includes the maximum amount of chemicals stored on-site; the estimated quantity emitted into the air, discharged into bodies of water, injected underground, or released to land; methods used in waste treatment and their efficiency; and data on the transfer of chemicals off-site.

No TRIS sites were identified within ⅛-mile of the study corridor.

4.1.5 Permit Compliance System of Toxic Wastewater Discharge (WWD)

This database includes certain sites which discharge wastewater containing potentially hazardous chemicals.

One WWD facility, the Middletown STP Dolson Avenue Extension, was reported within ⅛ mile of the study corridor. The Middletown STP is listed as an active major discharger into the Wallkill River, with an average design flow of 6 million gallons per day. The first permit was issued in 1977. No further information was provided. This facility was also listed in several State environmental regulatory databases as described later in this section.

4.1.6 United States Environmental Protection Agency Civil Enforcement Docket

This database tracks civil judiciary cases filed on behalf of the USEPA by the Department of Justice.

No facilities were listed in the USEPA's Civil Enforcement Docket within ⅛-mile of the study corridor.

4.1.7 Air Discharge Facilities (ADF) Index

This federal database includes information on certain air emission sources. Two active and one proposed facilities were listed within ⅛-mile radius of the study corridor. Details of the two active facilities are as follows:

- Genpak Corp (Facility ID 3607100127), located approximately 225 feet northwest of the study corridor, was listed as an operating and in compliance facility. This facility was also listed in the CBS, RCRA, Spills, and PBS databases.
- O&R Utilities- Shoemaker Gas Turbine (Facility ID 3607100082), located approximately 590 feet west-northwest of the study corridor was listed as an operating and in compliance facility.

Although air discharges from these facilities are unlikely to have affected the study corridor, potential subsurface discharges associated with other facility operations may have impacted soil and/or groundwater quality along the corridor.

4.2 State

The state records reviewed included listings of hazardous material spills; Resource Conservation and Recovery Act (RCRA) Notifiers; Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal sites (SHWS); State Hazardous Substance Waste Disposal Sites (SHSWDS); Major Oil Storage Facilities (MOSF); Brownfield Sites; Historic Utility sites; Environmental Restoration Program (ERP) Sites; Voluntary Cleanup Program (VCP) sites and Brownfield Cleanup Program (BCP) sites.

4.2.1 New York SPILLS Database

This database includes releases reported to the NYSDEC, including tank test failures (for USTs only) and tank failures. This database also lists spills that occur during the transportation of chemicals, or automotive accidents.

Fifty-seven closed-status spills were reported within ⅛-mile of the study corridor. In particular, the following spills have some potential to have affected the study corridor, based on proximity and nature and quantity of material released:

- Five closed-status spills are listed at a gas station located approximately 750 feet west of study corridor (and approximately 650 feet west of the wastewater treatment plant) at 154 Dolson Avenue in Middletown, (listed as both Hess and Sunoco Stations). A spill was reported in 1988 (Spill No. 8804001) when gasoline was discovered in the excavation during tank removal, and monitoring wells were installed. Spill listings included details about a monitoring program of three on-site monitoring wells between 2008 and 2015. On site remediation was conducted to reduce volatile organic compound (VOC) levels in groundwater, and the levels are expected to decrease below standards as there is no remaining contamination source. The remaining spill listings were minimal in nature. This facility was also listed in the PBS database.
- Two closed-status spills (Spill Nos. 9101019 and 9703520) are listed at Gen-Pak located at Republican Plaza in Middletown, approximately 550 feet north of the western end of the study corridor. Spill No. 9101019 was reported due to a tank test failure, with no further information provided. Spill No. 9703620 was reported in May 1997 when contamination was found during a No. 2 fuel oil tank removal. The listing

indicates that a remediation contractor was hired, and the spill was closed in July 1997. This facility was also listed in the ADF, RCRA, CBS, and PBS databases.

- Two closed-status spills (Spill Nos. 0304010 and 0309001) are listed for the City of Middletown Sewage Treatment Plant, located at the western end of the study corridor. Spill No. 0304010 was reported in July 2003 when numerous holes were noted in a 1,000-gallon diesel tank that was removed. No soil samples were collected due to high groundwater; however, a monitoring well was installed and sampled in 2004 and 2006. No compounds were detected in either sample and the spill was closed in March 2008. Spill No. 0309001, reported in November 2003, is duplicate listing of the same spill case, and was closed in May 2006. This facility was also listed in the WWD, RCRA, PBS, and CBS databases
- Thirty-one closed-status spills were reported at the O&R Utilities substation located at 71 Dolson Avenue in Middletown, north-adjacent to the study corridor. The majority of the listings were for small quantities (less than 10 gallons) of contained diesel, antifreeze, hydraulic oil, or transformer oil, or for tank test failures. This facility was also listed in the PBS database.
- Spill No. 0106244 was reported at an O&R substation located at 208 McVeigh Road (approximately 450 feet north of where the study corridor crosses Monhagen Brook) when coal tar pitch volatiles and "unknown petroleum" were encountered while installing a well. The listing indicates that the case was "not a spills issue" and the spill number was closed in August 2010. Additional information obtained from internet research[1] indicated that coal tar waste from a former manufactured gas plant (MGP) in Middletown was dumped at this location. The waste was reportedly removed and the site was restored in April 2010, and a Construction Completion Report was submitted to NYSDEC in July 2010. Spill No. 0909452 was reported at this site in November 2009 when a sheen was noted on Monhagen Brook, apparently caused by dewatering operations for the coal tar remediation. According to spill notes, the sheen was addressed by placing sorbent pads on the brook and replacing a faulty hose, and the spill was closed on the same day it was reported.

The above listings have the potential to impact the soil and groundwater quality beneath the study corridor. In addition to the above spills, other spills or unreported releases may have affected subsurface conditions. Details from all spills are included in Appendix B.

4.2.2 Resource Conservation and Recovery Act (RCRA) Notifiers Listings

This database lists sites that have filed notification forms regarding hazardous waste activity, including: treatment, storage and disposal facilities (TSDs); small-quantity (SQG) and large-quantity generators (LQG); and transporters regulated under RCRA. The discussion below includes any CORRACTS listings of facilities that are subject to corrective action under RCRA.

No CORRACTS facilities were listed within ⅛-mile of the study corridor.

[1] See http://www.recordonline.com/article/20091130/NEWS/911300318

Ten RCRA Generators/Transporters were identified within ⅛-mile of the study corridor. The following RCRA Generator listings have listing details that indicate significant hazardous waste activity or are listed on additional databases:

- Dutch Girl Cleaners, located at 125 Dolson Avenue, at the western end of the study corridor, was listed as a conditionally exempt small quantity generator (CESQG) and a historic LQG and SQG of spent halogenated solvents between 1986 and 2006.
- Genpack Co, located at Republic Plaza in Middletown, approximately 550 feet north of the study corridor, was listed as a CESQG and historic CESQG of several wastes including tetrachloroethene (PCE), spent halogenated solvents, mercury, ignitable and corrosive wastes, polychlorinated biphenyl (PCB) wastes, petroleum compounds and lead. This facility was also listed in the ADF, CBS, Spills, and PBS databases. Four violations were listed for the facility.
- The Middletown Sewage Treatment Plant, located at 159 Dolson Avenue, at the western end of the study corridor, was listed as a LQG of lead and corrosive solid wastes. This facility was also listed in the WWD, Spills, PBS, and CBS databases.

The remaining listings are not anticipated to affect the soil and groundwater quality at the study corridor based on the listing details.

4.2.3 Chemical Bulk Storage (CBS) Database

The New York CBS is a list of facilities that store regulated non-petroleum substances in aboveground tanks with capacities greater than 185 gallons and/or in underground tanks of any size.

Two CBS facilities were listed within ⅛-mile of the study corridor.

- Genpak Corporation, located near the western portion of the study corridor, was listed with a 3,300-gallon chlorodifluoromethane AST installed in 1982 and closed in place at an unknown date. This facility was also listed in the ADF, RCRA, Spills, and PBS databases.
- City of Middletown Wastewater Treatment Facility located at 159 Dolson Avenue was listed with a closed in place 10,000-gallon sodium hydroxide UST. This facility was also listed in the PBS, RCRA, Spills, and WWD databases.

4.2.4 Solid Waste Facilities (SWF)

This database includes certain landfills, incinerators, transfer stations, recycling centers, and other Sites that manage solid waste.

One Solid Waste Facility was identified within ⅛-mile of the study corridor. The Middletown Transfer Station, at 159 Dolson Avenue, was listed in the regulatory database with an activity type of transfer station, with a start date of 2002. Although this is a waste transfer station (no waste disposed of on-site), releases from other operations at this facility (wastewater treatment and former landfill operations) may have affected the subsurface of the corridor.

4.2.5 Petroleum Bulk Storage (PBS) Database

This database lists facilities that registered having either aboveground or underground petroleum tanks with total storage exceeding 1,100 gallons. Facilities with more than

400,000 gallons appear on the Major Oil Storage Facilities (MOSF) database (see below).

Ten PBS facilities were identified within ⅛-mile of the study corridor. Based on details listings, the following facilities have some potential to have affected subsurface conditions along the study corridor:

- The gasoline service station located at 154 Dolson Avenue was listed for three closed 8,000-gallon gasoline USTs, one closed 10,000-gallon diesel UST, three in-service 10,000-gallon gasoline USTs, and one in-service 10,000 gallon diesel UST. This facility was also listed in the Spills database.
- GenPak Corp. located at Republic Plaza was listed for one closed and removed 22,000-gallon UST with unknown content, and one closed and removed 10,000-gallon #2 fuel oil UST. This facility was also listed in the ADF, RCRA, Spills, and CBS databases.
- Shoemaker Gas Turbine Facility, located at the same address as the O&R substation (71 Dolson Avenue) was listed for two 216,000-gallon ASTs of unknown content, two 10,000-gallon gasoline USTs, one 10,000-gallon diesel UST, one in-service and one closed and removed 1,000-gallon used oil UST, and six additional ASTs ranging between 275- and 550-gallons with unknown contents. This facility was also listed in the Spills database.
- Middletown Wastewater Treatment Facility, located at 159 Dolson Avenue, was listed with an in- service 2,250-gallon diesel AST. This facility was also listed in the WWD, RCRA, Spills, and CBS databases.

Potential undocumented releases from these facilities may have impacted the study corridor subsurface. Based on listing details and/or their locations, releases from the remaining facilities are unlikely to have affected the study corridor subsurface.

4.2.6 State Inactive Hazardous Waste Disposal Site Registry (SHWS)

This program (also known as State Superfund) lists information regarding a variety of sites likely requiring cleanup.

One SHWS site was identified within ⅛-mile of the study corridor. The Middletown Dump, located on Dolson Avenue at the western end of the study corridor was listed as a 22 acre landfill, with hazardous disposal (municipal and commercial wastes) between 1952 and 1969. The site is not capped and is currently receiving construction and demolition debris from the Town. According to a preliminary site assessment completed in 1993, groundwater is located approximately 1 to 10 feet below ground surface, and chlorinated solvents were identified in surface and groundwater samples. Investigation of nearby drinking water supply wells in 2000 did not identify impacts from the landfill. This facility is also listed on the VCP, and CERCLIS NFRAP databases.

4.2.7 Major Oil Storage Facilities (MOSF) Database

These facilities have petroleum storage of 400,000 gallons or more. No MOSF were reported within ⅛-mile of the study corridor.

4.2.8 Environmental Restoration Program

These sites (which are generally municipally-owned) are receiving New York State funding for site investigation and remediation. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present. No ERP sites were identified within ⅛-mile of the study corridor.

4.2.9 Voluntary Cleanup Program

The Voluntary Cleanup Program (VCP) is a NYSDEC program for investigation and remediation of (generally) privately-owned Sites. Some Sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

One VCP site was identified within ⅛-mile of the study corridor. The Middletown Landfill (Site ID V00289, 336029), located at 159 Dolson Avenue, at the western end of the study corridor, was listed on the VCP database and was reported to the potential for contamination from prior landfilling activities leaching from the landfill. The facility is an uncapped landfill that received incinerator ash, municipal and commercial waste, and continues to receive construction and demolition debris. No cleanup information was included in the listing, and the facility is classified as "no further action." This facility is also listed on the SHWS, CERCLIS NFRAP, and Spills databases.

4.2.10 Brownfield Cleanup Program (BCP)

This NYSDEC program is the successor to the Voluntary Cleanup Program. Again, some sites have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present. No BCP sites were identified within ⅛-mile of the study corridor.

5.0 LIMITATIONS

The following limitations should be noted:

- Results of this investigation are valid as of the dates on which the investigation was performed.
- No interviews with on-site personnel or regulatory agencies were performed.
- No sampling was performed as part of this assessment.
- No local records review was performed as part of this assessment.
- No visual inspection of the corridor was performed as part of this assessment.
- No Sanborn Fire Insurance maps were available for review.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The objective of this limited scope review of the Toxics Targeting Inc. ⅛-mile radius regulatory database report and historical aerial photographs New York was to identify potential environmental conditions associated with the study corridor resulting from past or current site usage and usage of neighboring properties. The regulatory databases and historical photographs have indicated that the railroad tracks along the study corridor were constructed prior to 1940 and removed between 1994 and 2006. This limited review identified the following identified the on-site and off-site environmental conditions:

On-Site Condition

- The majority of the subject corridor consisted of the roadbed for railroad tracks from before 1940 until approximately 1994, indicating the potential for contamination from track ballast, railroad ties, track maintenance operations, transformers, etc. Typical soil and groundwater contaminants associated with railroad tracks include, but are not necessarily limited to, heavy metals, petroleum-related compounds, and polychlorinated biphenyls.

Off-Site Conditions

- The parcel containing the City of Middletown landfill, waste transfer station, and sewage treatment plant, located at the western end of the corridor was listed in several regulatory databases. In particular, several closed petroleum spills and documented hazardous waste generation were reported at the sewage treatment plant, and the former landfill was listed as a Federal Superfund site (with No Further Action Planned status) and in the NYSDEC Inactive Hazardous Waste Site and Voluntary Cleanup Program (VCP) databases. Depending on the final design of the proposed utility connections at this parcel, potential soil and/or groundwater contamination associated with these listings may be encountered during construction activities.
- An Orange and Rockland County (O&R) substation located north-adjacent to the western end of the utility corridor is listed in the Petroleum Bulk Storage (PBS) database with several underground storage tanks containing gasoline, diesel, and used oil. Several closed-status spills are also listed at this facility.
- Several additional facilities near the western end of the utility corridor, including a gasoline station, a dry cleaner, and GenPak Corporation (a food packaging manufacturer) were listed in the PBS, Spills, and/or hazardous waste generator databases. The information provided in the regulatory databases indicated documented subsurface contamination, some of which has been remediated, but residual contamination could remain. Additionally, undocumented releases from these facilities may have affected groundwater along the utility corridor.
- Dumped coal tar waste from a nearby former manufactured gas plant (MGP) was discovered at a small O&R substation located approximately 550 feet north of the central portion of the corridor (near where it crosses Monhangen Brook). The waste was reportedly removed and the site restored in April 2010 and a Construction Completion Report was submitted to NYSDEC in July 2010.
- Apparent agricultural fields were noted surrounding the study corridor on aerial photographs dated 1940 through 1975. Potential pesticides in stormwater run-off from the former agricultural fields could be present in shallow soil along the corridor.

Recommendations

- After design of the utility line connection is completed, targeted soil and groundwater sampling should be conducted along the Heritage Trail utility corridor to characterize subsurface materials that would be encountered during construction. The sampling parameters should be selected based on the

anticipated contaminants of concern associated with the environmental conditions identified in the vicinity of specific sample locations, and should include: metals, pesticides, PCBs, petroleum compounds associated with former railroad use [along the entire portion of the corridor that follows the former rail line]; chlorinated solvents associated with the nearby dry cleaner and waste disposal at the former Middletown landfill; and VOCs and semivolatile organic compounds associated with nearby petroleum spills.)

- A Construction-Phase Environmental Health and Safety Plan (CHASP) should be prepared and implemented to manage disturbance of soil and handling of dewatering fluids, and should include a contingency plan to address sources or areas of contamination, if any, identified during pre-construction sampling and/or encountered during future construction activities. Elements of the CHASP should include the following:
  - All soil and fill excavated as part of construction activities should be managed in accordance with all applicable regulations. All soil intended for off-site disposal should be tested in accordance with the requirements of the intended receiving facility. Transportation of all material leaving the study corridor for off-site disposal should be in accordance with Federal, State and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
  - If tanks, drums, or other sources of subsurface contamination are discovered during excavation activities, they should be removed in accordance with all applicable regulations. Any associated soil and groundwater contamination would be mitigated in accordance with the State, County, and local requirements.
- If dewatering is required, treatment and discharge of dewatering fluids should be conducted in accordance with all applicable regulations and guidance, including obtaining appropriate permits.
- Appropriate erosion and sediment controls should be implemented in accordance with a Stormwater Pollution Prevention Plan (SWPPP). This would minimize the potential of dust generation and sediment in stormwater during the soil disturbance activities.
- Surfaces coated with LBP may require abatement prior to disturbance (e.g., cutting or welding) that could generate lead-containing dust or vapors. Prior to construction or demolition, if lead-coated surfaces are to be disturbed, an exposure assessment must be performed to determine whether lead exposure would occur. Any activities with the potential to disturb lead-based paint must be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction) and other applicable regulatory requirements.
- Prior to any activities with the potential to disturb suspect ACM, an asbestos survey including the review of both elevated structures and roadway utilities should be conducted and if materials tested prove to contain asbestos, they should be properly removed and disposed of in accordance with all applicable local, state, and federal regulations.
- Unless there is labeling or test data that indicates that electrical equipment is not mercury- and/or PCB-containing, if disposal is required, it should be performed in accordance with applicable federal, state and local regulations and guidelines.

7.0 QUALIFICATIONS

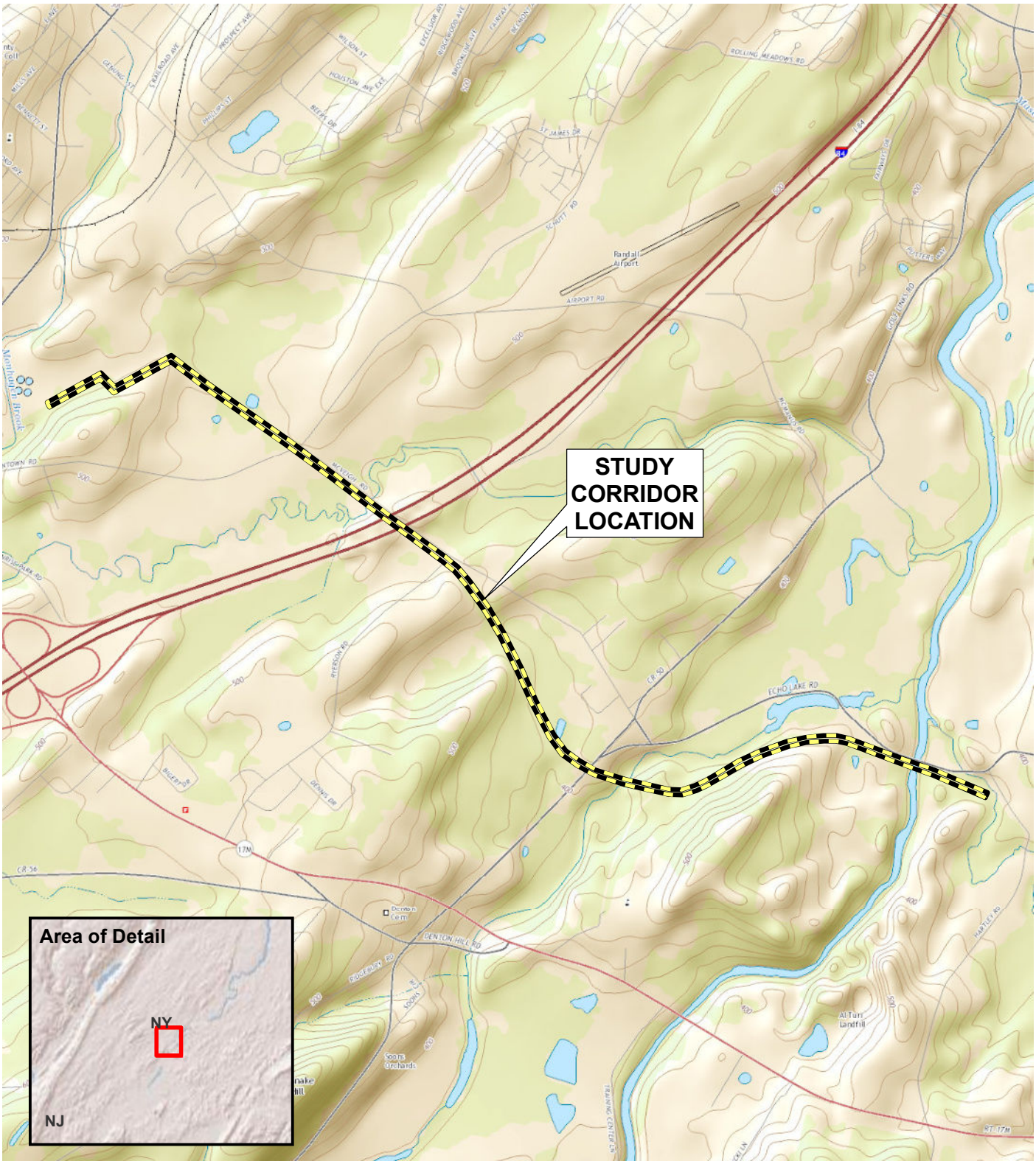
The purpose of this assessment was to convey a professional opinion about the potential presence or absence of contamination, or possible sources of contamination on the Study Corridor, and to identify existing and/or potential environmental problems associated with the corridor.

This assessment is not, and should not be construed as, a guarantee, warranty, or certification of the presence or absence of hazardous substances, which can be made only with testing, and contains no formal plans or recommendations to rectify or remediate the presence of any hazardous substances which may be subject to regulatory approval. This report is not a regulatory compliance audit.

8.0 REFERENCES

1. Toxics Targeting Inc., Amy's Heritage Trail, Goshen/Middletown, New York; 1/8 Mile Environmental Database Report; March 3, 2016.
2. Environmental Data Resources, Inc.; Orange County, NY, Hartley Road to Dolson Avenue, Middletown, New York; Aerial Photograph Decade Package; March 4, 2016.
3. U.S. Geological Survey; Geohydrology and Water Quality of the Wallkill River Valley Near Middletown, New York; Open File Report 97-241; 1998.
4. Environmental Data Resources, Inc.; Amy's Kitchen Hartley Road/Cheechunk Road, Goshen, New York, City Directories; May 28, 2015.
5. U.S. Geological Survey; *Middletown, New York*; 7.5 minute Series (Topographic); Scale 1:24,000; 1976.
6. U.S. Geological Survey; *Goshen, New York*; 7.5 minute Series (Topographic); Scale 1:24,000; 1976.
7. Phase I Environmental Site Assessment – Echo Lake Industrial Site, Goshen and Wawayanda, NY, Environmental Compliance Services, Inc., December 2013
8. Preliminary Geotechnical Engineering Report – Ver Hage Site, Town of Goshen, NY, AKRF Engineering, P.C., June 26, 2015
9. "Coal-tar Cleanup beginning at Monhagen Brook", Middletown Times Herald Record On-Line, November 30, 2009 (http://www.recordonline.com/article/20091130/NEWS/911300318).
10. State of New York Public Service Commission, Case 07-E-0949, MGP Site Investigation and Remediation Report, March 31, 2010.

FIGURES



SOURCE
USGS: Copyright:© 2014 Esri, USGS The National Map

0 1,500 3,000
Feet

Amy's Kitchen
Heritage Trail Utility Corridor
Orange County, New York

STUDY CORRIDOR LOCATION

AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

DATE
3/10/2016

PROJECT No.
40525

FIGURE
1

©2016 AKRF, Inc. Environmental Consultants Q:\Projects\40525 - AMY'S KITCHEN GOSHEN\Technical\GIS and Graphics\Hazmat\40525 Fig 1 Study Corridor.mxd

DRY CLEANER
GENPAK CORP.
O&R SUBSTATION
FORMER COAL TAR DISPOSAL AREA
MIDDLETOWN WASTEWATER TREATMENT PLANT, MIDDLETOWN TRANSFER STATION, FORMER MIDDLETOWN LANDFILL
GAS STATION
DOLSON AVE
GENUNG ST
SCHUTT RD
AIRPORT RD
MILO RD
PUTTERS WAY
MCMANUS RD
LEWIS RD
DOLSONTOWN RD
CASKEY LN
BROOK
MONHAGEN
INTERSTATE 84 W
INTERSTATE 84 E
84
SUNRISE PARK RD
ST RTE 17M
EXIT 3W OFF
EXIT 3W ON
EXIT 3E ON
RYERSON ROAD
MCVEIGH RD
LOREN LN
CO RTE 50
WALLKILL RIVER
RYERSON RD
KATHERINE LN
MASON PL
ECHO LAKE RD
Echo Lake
WALLKILL RIVER (Original Channel)
EVERETT CT
LIPPERT DR
SETH DR
DENNIS DR
ELLIOTT PL
DASSORI RD
MOHIN PK
BATES GATES RD
6
CO RTE 56
MILLER LN
SLY PL
FISCHER LN
HARTLEY RD

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Municipal Boundary
- Study Corridor Boundary

0 500 1,000 2,000
Feet

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

Amy's Kitchen
Heritage Trail Utility Corridor
Orange County, New York

STUDY CORRIDOR DETAIL

DATE
3/11/2016

PROJECT No.
40525

Appendix
2

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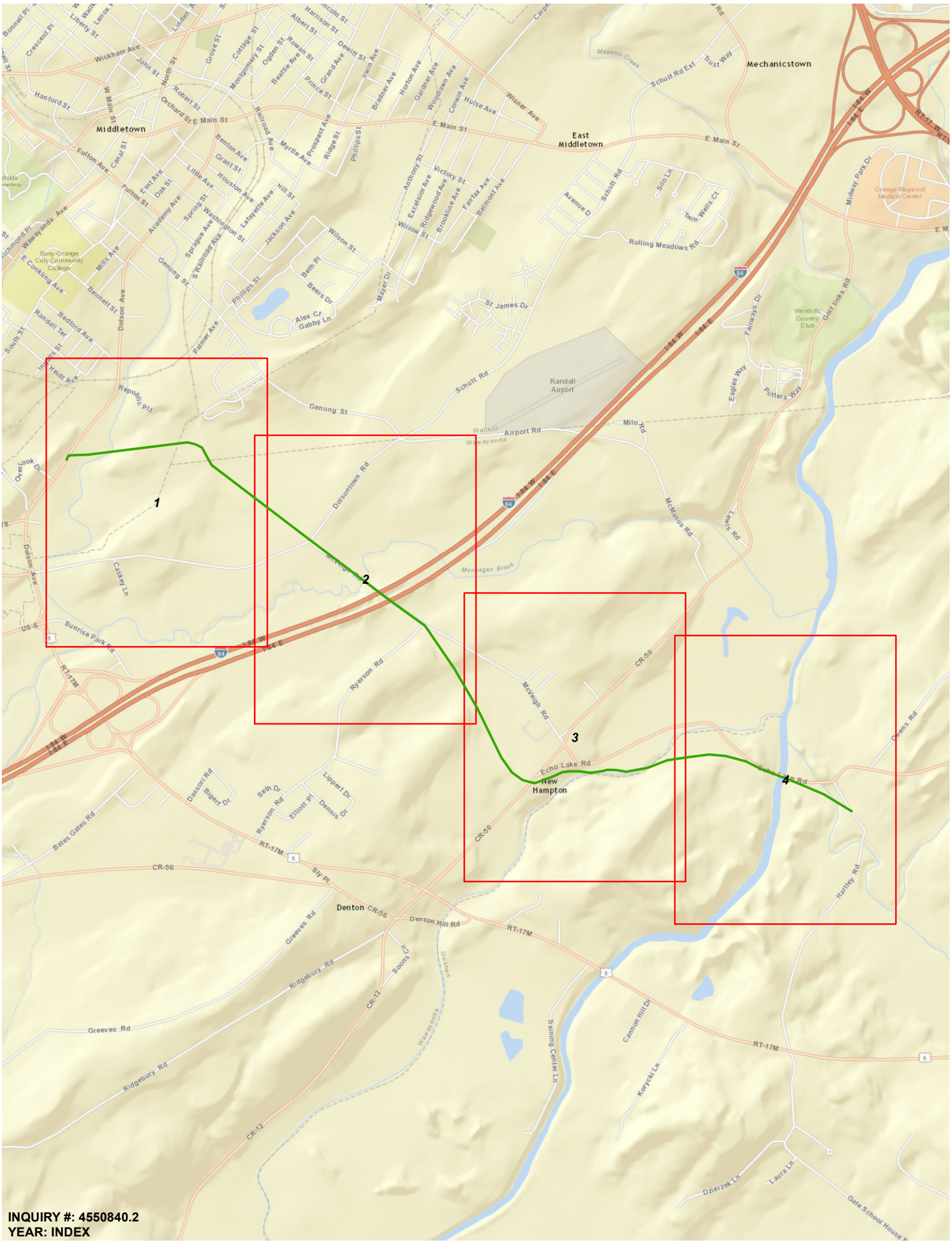
APPENDIX A
HISTORIC AERIAL PHOTOGRAPHS



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YEAR: 2013
SCALE: 1"=500'

INQUIRY #: 4550840.2
YEAR: 2013
SCALE: 1"=500'

INQUIRY #: 4550840.2
YEAR: 2013
SCALE: 1"=500'

APPENDIX B

REGULATORY DATABASE REPORTS

TOXICS TARGETING

1/8 Mile Search
Environmental Database Report

Amy`s Heritage Trail
Goshen/Middletown, NY

March 03, 2016

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PLEASE REFER TO PAGES ONE AND FIVE FOR A DESCRIPTION OF SOME OF THE LIMITATIONS OF THIS ENVIRONMENTAL REPORT.

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Introduction..... **1**

- *The Three Sections of Your Report*
- *How to Use Your Report*
- *Toxic Site Databases Analyzed In Your Report*
- *Limitations Of the Information In Your Report*

Section One: Your Report Summary..... **6**

- *Table One: Number of Identified Toxic Sites By Distance Interval*
- *Table Two: Identified Toxic Sites By Direction*
- *Table Three: Identified Toxic Sites By Category*
- *Table Four: Identified Toxic Sites By Proximity*
- *Map One: Eighth-Mile Radius Close-up Map*

Section Two: Toxic Site Profiles

Section Three: Appendices

- *USEPA ERNS Check*
- *Unmappable Sites*
- *Hazardous Waste Codes*
- *How Toxic Sites Are Mapped*
- *Information Source Guide*

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Introduction

Toxics Targeting has combined environmental database searches, extensive regulatory analysis and sophisticated mapping techniques to produce your *Computerized Environmental Report.* It checks for the presence of 21 categories of government-reported toxic sites and provides detailed, up-to-date information on each identified site. The findings of your report are presented in an easy-to-understand format that:

1. ***Maps*** the approximate locations of selected government-reported toxic sites identified on or near a specified target address.

2. ***Estimates*** the distance and direction between the target address and each identified toxic site.

3. ***Reports*** air and water permit non-compliance and other regulatory violations.

4. ***Profiles*** some aspects of the usage, manufacture, storage, handling, transport or disposal of toxic chemicals at individual sites.

5. ***Summarizes*** some potential health effect information and drinking water standards for selected chemicals reported at individual sites.

The Three Sections Of Your Report

The first section highlights your report's findings by summarizing identified sites according to: **a)** distance intervals, **b)** proximity to the target address and **c)** individual site categories. In addition, a map is provided of the target address and all the reported toxic sites that are identified within a eighth-mile search radius.

The second section of your report contains *Toxic Site Profiles* that provide detailed information on each identified toxic site. The information in each *Toxic Site Profile* varies according to its source. Some toxic site categories have extensive information, some have limited information. All the information is updated on a regular basis.

The third section of the report contains appendices that identify: **1)** on-site spills reported to the national Emergency Response Notification System (ERNS), **2)** various toxic sites that cannot be mapped due to incomplete or erroneous addresses or other mapping problems, **3)** codes that characterize hazardous wastes reported at various facilities, **4)** methods used to map toxic sites identified in your report and **5)** information sources used in your report.

How to Use Your Report

- Check Table One to see the number of identified sites by distance intervals.

- Check Table Two to see identified sites sorted by direction.

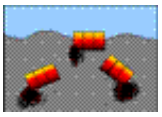
- Check Table Three to see identified sites sorted by site categories.

- Check Table Four to see identified sites ranked by proximity to the target address.

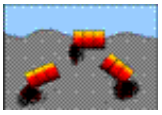
- Refer to the various maps to see the locations of identified toxic sites. Refer to the *Toxic Site Profile* and *Appendix* sections for additional information.

Toxic Site Databases Analyzed In Your Report

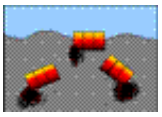
Search Radius

Eighth-Mile 

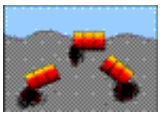
1) ***National Priority List for Federal Superfund Cleanup****:* a listing of sites known to pose environmental or health hazards that are being investigated or cleaned up under the Federal Superfund program.

Eighth-Mile 

2) ***Delisted National Priority List Sites****:* a listing of NPL sites that have been removed from the National Priority List.

Eighth-Mile 

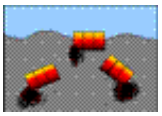
3) ***New York Inactive Hazardous Waste Disposal Site Registry****:* a state listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

Eighth-Mile 

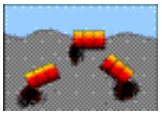
4) ***New York Inactive Hazardous Waste Disposal Site Registry Qualifying****:* a state listing of sites that qualify for possible inclusion to the NYS DEC Inactive Haz. Waste Disposal Site Registry.

Eighth-Mile

5) ***New York and Federal RCRA Corrective Action Activity (CORRACTS):*** waste facilities with RCRA corrective action activity reported by the USEPA and NYS DEC.

Eighth-Mile 

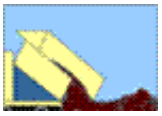
6) ***CERCLIS*** (Comprehensive Environmental Response, Compensation and Liability Information System): a federal listing of Non-NFRAP sites that can pose environmental or public health hazards requiring investigation or clean up.

Eighth-Mile 

7) ***CERCLIS NFRAP:*** a federal listing of CERCLIS sites that have no further remedial action planned.

Eighth-Mile

8) ***New York State Brownfield Cleanup Sites****:* a listing of sites that are abandoned, idled or under-used industrial and commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.

Eighth-Mile 

9) ***New York Solid Waste Facilities Registry****:* active and inactive landfills, incinerators, transfer stations or other solid waste management facilities.

Eighth-Mile

10) ***New York and Federal Hazardous Waste Treatment, Storage or Disposal Facilities****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRIS). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act..

Eighth-Mile

11) ***Toxic Spills: active and inactive or closed*** spills reported to state environmental authorities, including *remediated* and *unremediated* leaking underground storage tanks. This database includes the following categories:

- Tank Failures
- Tank Test Failures
- Unknown Spill Cause or Other Spill Causes
- Miscellaneous Spill Causes

Eighth-Mile

12) ***New York State Major Oil Storage Facilities****:* sites with more than a 400,000-gallon capacity for storing petroleum products.

Eighth-Mile

13) ***New York and Local Petroleum Bulk Storage Facilities****:* sites with more than a 1,100-gallon capacity for storing petroleum products.

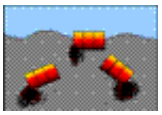
Eighth-Mile

14) ***New York and Federal Hazardous Waste Generators and Transporters****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRA). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.

Eighth-Mile

15) ***New York Chemical Bulk Storage Facilities****:* sites storing hazardous substances listed in 6 NYCRR Part 597 in aboveground tanks with capacities of 185 gallons or more and/or underground tanks of any size

Eighth-Mile 

16) ***New York Hazardous Substance Disposal Site Draft Study****:* a state listing of sites contaminated with toxic substances that can pose environmental or public health hazards. These sites are not eligible for state clean up funding programs.

Eighth-Mile

17) ***Federal Toxic Release Inventory Facilities****:* discharges of selected toxic chemicals to air, land, water or treatment facilities.

Eighth-Mile

18) ***Federal Air Discharges****:* Air pollution point sources monitored by U.S. EPA and/or state and local air regulatory agencies.

Eighth-Mile

19) ***Federal Permit Compliance System Toxic Wastewater Discharges:*** permitted toxic wastewater discharges.

Eighth-Mile

20) ***Federal Civil and Administrative Enforcement Docket****:* judiciary cases filed on behalf of the U. S. Environmental Protection Agency by the Department of Justice.

Property only

21) ***ERNS: Federal Emergency Response Notification System Spills****:* a listing of federally reported spills.

Limitations Of The Information In Your Report

The information presented in your *Computerized Environmental Report* has been obtained from various local, state and federal government agencies. Please be aware that: **1)** additional information on individual sites may be available, **2)** newly discovered sites are continually reported and **3)** all map locations are approximate. As a result, this report is intended to be the FIRST STEP in the process of identifying and evaluating possible environmental threats to specific properties and can only serve as a guide for conducting on-site visits or additional, more detailed toxic hazard research.

Toxics Targeting tries to ensure that the information in your report is presented accurately and with minimal alteration. The only systematic changes that are made correct obvious address errors in order to allow sites to be mapped. Any address changes that are made are noted in the map information section at the top of each corresponding *Toxic Site Profile*. Since the information presented in your report is not edited, please be aware that it can contain reporting errors or typographical mistakes made by the site owners/operators or government agencies that produced the information. Please be aware of some other limitations of the information in your report:

- The computerized map used by *Toxics Targeting* is the same one used by the U. S. Census. While the map is generally accurate, no map is perfect. In addition, *Toxics Targeting's* mapping methods estimate where toxic site addresses are located if the address is not specifically designated on the Census map. FOR THESE REASONS, ALL MAP LOCATIONS OF ADDRESSES AND REPORTED TOXIC SITES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY ON-SITE VISITS;

- UNDISCOVERED, UNREPORTED OR UNMAPPABLE TOXIC SITES MIGHT NOT BE IDENTIFIED BY THIS REPORT'S CHECK OF 21 TOXIC SITE CATEGORIES. TOXIC SITES REPORTED IN OTHER GOVERNMENT DATABASES MIGHT ALSO EXIST. FOR THESE REASONS, YOUR REPORT MIGHT NOT IDENTIFY ALL THE TOXIC SITES THAT EXIST IN THE AREA IT SEARCHES;

- The appendix of your report contains a listing of sites that could not be mapped due to incomplete or erroneous address information or other mapping problems. This listing includes unmappable toxic sites in zip code areas within one mile of the target address as well as toxic sites without zip codes reported in the same county. IF YOU WOULD LIKE INFORMATION ON ANY OF THE LISTED SITES, PLEASE CONTACT *TOXICS TARGETING AND REFER TO THE SITE ID NUMBER.*

- Some toxic sites identified in your report may be classified as **known hazards**. Most of the toxic sites identified in your report involve **potential hazards** related to the on-site use, manufacture, handling, storage, transport or disposal of toxic chemicals. Some of the toxic sites identified in your report may be the addresses of parties responsible for toxic sites located elsewhere. YOU SHOULD ONLY CONCLUDE THAT TOXIC HAZARDS ACTUALLY EXIST AT A SPECIFIC SITE WHEN GOVERNMENT AUTHORITIES MAKE THAT DETERMINATION OR WHEN THAT CONCLUSION IS FULLY DOCUMENTED BY THE FINDINGS OF AN APPROPRIATE SITE INVESTIGATION UNDERTAKEN BY LICENSED PROFESSIONALS;

- Compass directions and distances are approximate. Compass directions are calculated from the subject property address to the mapped location of each identified toxic site. The compass direction does not necessarily refer to the closest property boundary of an identified toxic site. The compass direction also can vary substantially for toxic sites that are located very close to the subject property address.

- The information presented in your report is a summary of the information that *Toxics Targeting* obtains from government agencies on reported toxic sites. YOU MAY BE ABLE TO OBTAIN ADDITIONAL INFORMATION ABOUT REPORTED SITES WITH THE FREEDOM OF INFORMATION REQUEST FORM LETTERS THAT ARE PROVIDED ON THE INSIDE OF THE BACK COVER.

Section One:

Report Summary

- *Table One: Number of Identified Toxic Sites By Distance Interval*
- *Table Two: Identified Toxic Sites By Direction*
- *Table Four: Identified Toxic Sites By Category*
- *Table Three: Identified Toxic Sites By Proximity*
- *Map One: Eighth-Mile Radius Close up Map*

NUMBER OF IDENTIFIED SITES BY DISTANCE INTERVAL

Database Searched	0 − 100 ft	100 ft − 1/8 mi	1/8 mi − 1/4 mi	1/4 mi − 1/2 mi	1/2 mi − 1 mi	Site Category Totals
ASTM−Required Databases						
National Priority List (NPL) Sites	0	0	Not searched	Not searched	Not searched	0
NYS Inactive Hazardous Waste Disposal Site Registry	0	1	Not searched	Not searched	Not searched	1
NYS Inactive Haz Waste Disposal Site Registry Qualifying	0	0	Not searched	Not searched	Not searched	0
RCRA Corrective Action (CORRACTS) Sites	0	0	Not searched	Not searched	Not searched	0
Delisted National Priority List (NPL) Sites	0	0	Not searched	Not searched	Not searched	0
CERCLIS Superfund Non−NFRAP Sites	0	0	Not searched	Not searched	Not searched	0
CERCLIS Superfund NFRAP Sites	0	1	Not searched	Not searched	Not searched	1
Brownfields Sites						
Voluntary Cleanup Program	0	1	Not searched	Not searched	Not searched	1
Environmental Restoration Program	0	0	Not searched	Not searched	Not searched	0
Brownfield Cleanup Program	0	0	Not searched	Not searched	Not searched	0
NYSDEC Solid Waste Facilities / Landfills	0	1	Not searched	Not searched	Not searched	1
RCRA Hazardous Waste Treatment, Storage, Disposal Sites	0	0	Not searched	Not searched	Not searched	0
NYS Toxic Spills						
Active Tank Failures	0	0	Not searched	Not searched	Not searched	0
Active Tank Test Failures	0	0	Not searched	Not searched	Not searched	0
Active Spills − Unknown / Other Causes	0	0	Not searched	Not searched	Not searched	0
Active Spills − Miscellaneous Causes	0	0	Not searched	Not searched	Not searched	0
Closed Tank Failures	1	4	Not searched	Not searched	Not searched	5
Closed Tank Test Failures	1	4	Not searched	Not searched	Not searched	5
Closed Spills − Unknown / Other Causes	1	11	Not searched	Not searched	Not searched	12
Closed Spills − Miscellaneous Causes	7	28	Not searched	Not searched	Not searched	35
NYS Major Oil Storage Facilities	0	0	Not searched	Not searched	Not searched	0
Local & State Petroleum Bulk Storage Sites	1	8	Not searched	Not searched	Not searched	9
RCRA Hazardous Waste Generators & Transporters	2	8	Not searched	Not searched	Not searched	10
NYS Chemical Bulk Storage Sites	0	2	Not searched	Not searched	Not searched	2
Emergency Response Notification System (ERNS)	0	Not searched	Not searched	Not searched	Not searched	0
Institutional Controls / Engineering Controls (IC/EC)	See databases for NPL, CERCLIS, Inactive Hazardous Waste Disposal Site Registry and Brownfield Sites.					
ASTM−Required Databases Distance Interval Totals	**13**	**69**	**0**	**0**	**0**	**82**
Non−ASTM Databases 1/8 Mile Search						
Hazardous Substance Waste Disposal Sites	0	0	Not searched	Not searched	Not searched	0
Toxic Release Inventory Sites (TRI)	0	0	Not searched	Not searched	Not searched	0
Permit Compliance System (PCS) Toxic Wastewater Discharges	0	1	Not searched	Not searched	Not searched	1
Air Discharges	0	3	Not searched	Not searched	Not searched	3
Civil & Administrative Enforcement Docket Facilities	0	0	Not searched	Not searched	Not searched	0
Non−ASTM Databases Distance Interval Totals	**0**	**4**	**Not Searched**	**Not Searched**	**Not Searched**	**4**
Distance Interval Totals	***13***	***73***	***0***	***0***	***0***	***86***

Identified Toxic Sites by Direction

Amy‘s Heritage Trail
Goshen/Middletown, NY

* Compass directions can vary substantially for sites located very close to the subject property address.

Sites less than 100 feet from subject property sorted by distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
27	I−84 OVERPASS	MCVEIGH ROAD	42 feet to the NW*	Closed Status Spill (Misc. Spill Cause)
71	NYSDOT	1−84	43 feet to the NW*	Hazardous Waste Generator/Transporter
72	NYSDOT BIN 1052501	I−84 WB OVER MCVEIGH RD	43 feet to the NW*	Hazardous Waste Generator/Transporter
28	MCVEIGH RD AT	145 MCVEIGH RD	63 feet to the ESE*	Closed Status Spill (Misc. Spill Cause)
62	CHESTNUT MART OF DOLSON AVENUE	154 DOLSON AVENUE	63 feet to the WNW*	Petroleum Bulk Storage Site
15	REMEDIATION SITE	MCVEIGH RD	70 feet to the NW*	Closed Status Spill (Unk/Other Cause)
5	HESS STATION #32302	154 DOLSON AVENUE	76 feet to the WNW*	Closed Status Tank Failure
10	SUNOCO DOLSEN AVE	154 DOLSEN AVE	76 feet to the WNW*	Closed Status Tank Test Failure
29	HESS STATION 32302	154 DOLSON AVE	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
30	HESS STATION	154 DOLSON AVE.	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
31	CHESTNUT SUNOCO GAS STATION	154 DOLSON AVE	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
32	SUNOCO	154 DOLSON AVENUE	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
33	SUNOCO STATION	154 DOLSON AVENUE	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)

Sites between 100 ft and 660 ft from the subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
34	POWER LINE RIGHT−OF−WAY	160 HARTLEY RD	206 feet to the ESE	Closed Status Spill (Misc. Spill Cause)
75	TAM ENTERPRISES INC	114 HARTLEY RD	255 feet to the ESE	Hazardous Waste Generator/Transporter
76	ORANGE COUNTY DPW CHEECHUNK BRIDGE	ECHO LAKE RD OVER WALLKILL RIV	586 feet to the ESE	Hazardous Waste Generator/Transporter
7	MARKEL RESIDENCE	ECHO LAKE ROAD	391 feet to the SE	Closed Status Tank Failure
45	MARKEL RESIDENCE	ECHO LAKE ROAD	391 feet to the SE	Closed Status Spill (Misc. Spill Cause)
46	POLE MOUNTED	569 RT 50‘	396 feet to the SSE	Closed Status Spill (Misc. Spill Cause)
73	DUTCH GIRL CLEANERS	125 DOLSON AVENUE	187 feet to the WNW*	Hazardous Waste Generator/Transporter
63	KIRK‘S NORTHERN TYRE	125−155 DOLSON AVE	216 feet to the WNW	Petroleum Bulk Storage Site
11	CAMPBELL PLAZA	125 DOLSON AVE	218 feet to the WNW	Closed Status Tank Test Failure
16	FLOOR DRAIN	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Unk/Other Cause)
17	CAMPBELL PLAZA	125 DOLSON AVENUE	218 feet to the WNW	Closed Status Spill (Unk/Other Cause)
18	DOLSON AVE NEAR	SHOP RITE	218 feet to the WNW	Closed Status Spill (Unk/Other Cause)
35	GOODYEAR AUTO SERVICE CTR	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
36	KIRKS GARAGE	CAMPBELL PLAZA 141 DOLSON	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)

37	TRANSFORMER POLE 47492/52093	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
38	SHOPPING CENTER CAMBELL PLAZZA	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
39	DOLSON AUTO & TIRE	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
40	CAMBELL PLAZA 14 STORES	125 DOLSEN AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
41	CONCRETE	125 DOLTON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
42	CAMPBELL PLAZA	DOLSEN AV	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
43	AUTO ZONE	150 DOLSON AVE	228 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
65	CONTINENTAL BAKING CO.	140 DOLSON AVE.	275 feet to the WNW	Petroleum Bulk Storage Site
44	MIDDLETOWN SAVINGS BANK	156 DOLSON AVE.	315 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
4	MIDDLETOWN (C) T.S.	159 DOLSON AVENUE	441 feet to the WNW	Solid Waste Facility
19	LEE'S QUALITY TIRE, INC.	1184 DOLSONTOWN ROAD	469 feet to the WNW	Closed Status Spill (Unk/Other Cause)
47	TRANSFORMER BANK @ POLE 47832/51846	1184 DOLSON TOWN RD	469 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
48	PARKING LOT	134 DOLSON AVE	482 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
1	MIDDLETOWN DUMP	DOLSON AVENUE (ROUTE 17M)	492 feet to the WNW	NYSDEC Inactive Haz Waste Disposal Site
2	MIDDLETOWN DUMP	DOLSON AVE	492 feet to the WNW	CERCLIS Superfund NFRAP Site
66	LEE'S QUALITY TIRE, INC.	1184 DOLSONTOWN ROAD	501 feet to the WNW	Petroleum Bulk Storage Site
13	O & R UTILITIES	71 DOLSON AVE.	535 feet to the WNW	Closed Status Tank Test Failure
20	SHOEMAKER FACILTY	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Unk/Other Cause)
49	SHOEMAKER SUB STATION	DOLSNE AV	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
50	O & R SITE(SHOEMAKER STA)	DOLSON AVE.	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
51	SHOEMAKER GAS TURBINE PL.	DOLSON AVE.	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
52	SHOEMAKER SUB STATION	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
53	SHOEMAKER SUB STATION	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
54	O&R SUBSTATION	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
55	O&R FACILITY − SCHUMAKER SUBSTATION	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
56	SHOEMAKER SUBSTATION	DORSON AVE & REPUBLIC PLAZA DR	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
57	SHOEMACHER SUBSTATION	DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
67	SHOEMAKER GAS TURBINE FACILITY	71 DOLSON AVENUE	536 feet to the WNW	Petroleum Bulk Storage Site
3	MIDDLETOWN LANDFILL	NEAR 159 DOLSON AVENUE	575 feet to the WNW	Brownfields Site
22	SPILL NUMBER 9608983	DOLSON AVE IFO MCDONALD	584 feet to the WNW	Closed Status Spill (Unk/Other Cause)
85	O & R UTILTIES−SHOEMAKER GAS TURBINE	71 DOLSON AVENUE	587 feet to the WNW	Air Discharge Site
86	PENCOR MASADA OXYNOL LLC	950 22ND STREET N. SUITE 850	625 feet to the WNW	Air Discharge Site
68	MIDDLETOWN WASTEWATER TREATMENT FACILITY	159 DOLSON AVENUE	626 feet to the WNW	Petroleum Bulk Storage Site
83	MIDDLETOWN (C) STP	DOLSON AVENUE EXTENSION	627 feet to the WNW	Wastewater Discharge Facility
69	MAVIS DISCOUNT TIRE #139	156 DOLSON AVENUE	630 feet to the WNW	Petroleum Bulk Storage Site
78	MIDDLETOWN CITY OF	159 DOLSON AVENUE	634 feet to the WNW	Hazardous Waste Generator/Transporter
79	MIDDLETOWN WATER TREATMENT PLANT	136 DOLSON AVENUE	634 feet to the WNW	Hazardous Waste Generator/Transporter
8	CITY MIDDLETOWN STP	159 DOLSON AVE	637 feet to the WNW	Closed Status Tank Failure
14	SEWER PLANT	DOLSON AVE EXT	637 feet to the WNW	Closed Status Tank Test Failure
24	MIDDLETOWN SEWAGE TREATME	DOLSON AV	637 feet to the WNW	Closed Status Spill (Unk/Other Cause)
80	FAMILY DOLLAR STORE 4582	156 DOLSON AVE	637 feet to the WNW	Hazardous Waste Generator/Transporter
82	CITY OF MIDDLETOWN WASTEWATER TREATMENT FACILITL	159 DOLSON AVENUE	645 feet to the WNW	Chemical Bulk Storage Facility
26	COLUMBIA DEVELOPMENT	181−191 DOLSON AVE	654 feet to the WNW	Closed Status Spill (Unk/Other Cause)
84	GENPAK CORP	REPUBLIC PLAZA	222 feet to the NW	Air Discharge Site
74	GENPACK CO	REPUBLIC PLAZA	224 feet to the NW	Hazardous Waste Generator/Transporter
6	GEN−PACK	REPLUBIC PLAZA	254 feet to the NW	Closed Status Tank Failure
12	GEN PAC	REPUBLIC PLAZA	254 feet to the NW	Closed Status Tank Test Failure
64	GENPAK CORPORATION	REPUBLIC PLAZA	254 feet to the NW	Petroleum Bulk Storage Site
81	GENPAK CORP.	REPUBLIC PLAZA	258 feet to the NW	Chemical Bulk Storage Facility
23	RATUNDO PROPERTY	1235 DOLSON TOWN RD	587 feet to the NW	Closed Status Spill (Unk/Other Cause)
77	WALLACE OIL	107−111 DOLSON AVE	616 feet to the NW	Hazardous Waste Generator/Transporter
70	DOLSON AVENUE VALERO	107−111 DOLSON AVE.	642 feet to the NW	Petroleum Bulk Storage Site

9	DOLSON AVE.MOBIL	107 DOLSON AVE.	647 feet to the NW	Closed Status Tank Failure
25	DOLSON AVENUE VALERO	107−111 DOLSON AVENUE	647 feet to the NW	Closed Status Spill (Unk/Other Cause)
61	POLE # 47524/52136	107 DOLSON AVE	647 feet to the NW	Closed Status Spill (Misc. Spill Cause)
21	NEW ORANGE & ROCKLAND	208 MCVEIGH RD	580 feet to the NNW	Closed Status Spill (Unk/Other Cause)
58	MIDDLETOWN TAP/PAD MOUNT	208 MCVAY AVE	580 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
59	MIDDLETOWN TAP SUBSTATION	208 MCVEIGH RD	580 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
60	MIDDLETOWN TAP STATION	208 MCVIEGH RD	580 feet to the NNW	Closed Status Spill (Misc. Spill Cause)

Identified Toxic Sites by Category

Amy‘s Heritage Trail
Goshen/Middletown, NY

* Compass directions can vary substantially for sites located very close to the subject property address.

NYSDEC Inactive Haz. Waste Disposal Site Registry −− Total Sites − 1 — **Database searched at 1/8 MILE − ASTM required search distance: 1 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
1	336029	MIDDLETOWN DUMP	DOLSON AVENUE (ROUTE 17M)	492 feet to the WNW

CERCLIS Superfund NFRAP Sites −− Total Sites − 1 — **Database searched at 1/8 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
2	NYD980507057	MIDDLETOWN DUMP	DOLSON AVE	492 feet to the WNW

Brownfields Sites −− Total Sites − 1 — **Database searched at 1/8 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
3	V00289	MIDDLETOWN LANDFILL	NEAR 159 DOLSON AVENUE	575 feet to the WNW

Solid Waste Facilities −− Total Sites − 1 — **Database searched at 1/8 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
4	NY00000002405	MIDDLETOWN (C) T.S.	159 DOLSON AVENUE	441 feet to the WNW

Closed Status Tank Failures −− Total Sites − 5 — **Database searched at 1/8 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
5	8804001	HESS STATION #32302	154 DOLSON AVENUE	76 feet to the WNW*
6	9703520	GEN−PACK	REPLUBIC PLAZA	254 feet to the NW
7	9416349	MARKEL RESIDENCE	ECHO LAKE ROAD	391 feet to the SE
8	0309001	CITY MIDDLETOWN STP	159 DOLSON AVE	637 feet to the WNW
9	9214016	DOLSON AVE.MOBIL	107 DOLSON AVE.	647 feet to the NW

Closed Status Tank Test Failures −− Total Sites − 5 — **Database searched at 1/8 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
10	0908379	SUNOCO DOLSEN AVE	154 DOLSEN AVE	76 feet to the WNW*
11	9011407	CAMPBELL PLAZA	125 DOLSON AVE	218 feet to the WNW
12	9101019	GEN PAC	REPUBLIC PLAZA	254 feet to the NW
13	9406021	O & R UTILITIES	71 DOLSON AVE.	535 feet to the WNW
14	0304010	SEWER PLANT	DOLSON AVE EXT	637 feet to the WNW

Closed Status Spills (Unknown Causes & Other Causes) −− Total Sites − 12 — **Database searched at 1/8 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
15	0909452	REMEDIATION SITE	MCVEIGH RD	70 feet to the NW*
16	1005856	FLOOR DRAIN	125 DOLSON AVE	218 feet to the WNW
17	0208156	CAMPBELL PLAZA	125 DOLSON AVENUE	218 feet to the WNW
18	0002783	DOLSON AVE NEAR	SHOP RITE	218 feet to the WNW
19	0850060	LEE‘S QUALITY TIRE, INC.	1184 DOLSONTOWN ROAD	469 feet to the WNW
20	0512772	SHOEMAKER FACILTY	71 DOLSON AVE	535 feet to the WNW
21	0106244	NEW ORANGE & ROCKLAND	208 MCVEIGH RD	580 feet to the NNW
22	9608983	SPILL NUMBER 9608983	DOLSON AVE IFO MCDONALD	584 feet to the WNW
23	0901438	RATUNDO PROPERTY	1235 DOLSON TOWN RD	587 feet to the NW
24	9913912	MIDDLETOWN SEWAGE TREATME	DOLSON AV	637 feet to the WNW
25	1300579	DOLSON AVENUE VALERO	107−111 DOLSON AVENUE	647 feet to the NW
26	0005809	COLUMBIA DEVELOPMENT	181−191 DOLSON AVE	654 feet to the WNW

Closed Status Spills (Miscellaneous Spill Causes) −− Total Sites − 35 **Database searched at 1/8 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
27	9207196	I−84 OVERPASS	MCVEIGH ROAD	42 feet to the NW*
28	0008425	MCVEIGH RD AT	145 MCVEIGH RD	63 feet to the ESE*
29	9702863	HESS STATION 32302	154 DOLSON AVE	76 feet to the WNW*
30	9202812	HESS STATION	154 DOLSON AVE.	76 feet to the WNW*
31	1301465	CHESTNUT SUNOCO GAS STATION	154 DOLSON AVE	76 feet to the WNW*
32	0707248	SUNOCO	154 DOLSON AVENUE	76 feet to the WNW*
33	0704736	SUNOCO STATION	154 DOLSON AVENUE	76 feet to the WNW*
34	1407791	POWER LINE RIGHT−OF−WAY	160 HARTLEY RD	206 feet to the ESE
35	9702663	GOODYEAR AUTO SERVICE CTR	125 DOLSON AVE	218 feet to the WNW
36	9613280	KIRKS GARAGE	CAMPBELL PLAZA 141 DOLSON	218 feet to the WNW
37	1403714	TRANSFORMER POLE 47492/52093	125 DOLSON AVE	218 feet to the WNW
38	1302915	SHOPPING CENTER CAMBELL PLAZZA	125 DOLSON AVE	218 feet to the WNW
39	1200632	DOLSON AUTO & TIRE	125 DOLSON AVE	218 feet to the WNW
40	1005727	CAMBELL PLAZA 14 STORES	125 DOLSEN AVE	218 feet to the WNW
41	0907334	CONCRETE	125 DOLTON AVE	218 feet to the WNW
42	0111422	CAMPBELL PLAZA	DOLSEN AV	218 feet to the WNW
43	0910592	AUTO ZONE	150 DOLSON AVE	228 feet to the WNW
44	9502427	MIDDLETOWN SAVINGS BANK	156 DOLSON AVE.	315 feet to the WNW
45	9416346	MARKEL RESIDENCE	ECHO LAKE ROAD	391 feet to the SE
46	0713701	POLE MOUNTED	569 RT 50‘	396 feet to the SSE
47	1311310	TRANSFORMER BANK @ POLE 47832/51846	1184 DOLSON TOWN RD	469 feet to the WNW
48	0901602	PARKING LOT	134 DOLSON AVE	482 feet to the WNW
49	9509073	SHOEMAKER SUB STATION	DOLSNE AV	535 feet to the WNW
50	9400668	O & R SITE(SHOEMAKER STA)	DOLSON AVE.	535 feet to the WNW
51	9010101	SHOEMAKER GAS TURBINE PL.	DOLSON AVE.	535 feet to the WNW
52	1311667	SHOEMAKER SUB STATION	71 DOLSON AVE	535 feet to the WNW
53	1305009	SHOEMAKER SUB STATION	71 DOLSON AVE	535 feet to the WNW
54	1202759	O&R SUBSTATION	71 DOLSON AVE	535 feet to the WNW
55	1112666	O&R FACILITY − SCHUMAKER SUBSTATION	71 DOLSON AVE	535 feet to the WNW
56	1012389	SHOEMAKER SUBSTATION	DORSON AVE & REPUBLIC PLAZA DR	535 feet to the WNW
57	0000344	SHOEMACHER SUBSTATION	DOLSON AVE	535 feet to the WNW
58	1500463	MIDDLETOWN TAP/PAD MOUNT	208 MCVAY AVE	580 feet to the NNW
59	1311453	MIDDLETOWN TAP SUBSTATION	208 MCVEIGH RD	580 feet to the NNW
60	0807535	MIDDLETOWN TAP STATION	208 MCVIEGH RD	580 feet to the NNW
61	1215054	POLE # 47524/52136	107 DOLSON AVE	647 feet to the NW

Petroleum Bulk Storage Sites −− Total Sites − 9 **Database searched at 1/8 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
62	3−180327	CHESTNUT MART OF DOLSON AVENUE	154 DOLSON AVENUE	63 feet to the WNW*
63	3−601189	KIRK‘S NORTHERN TYRE	125−155 DOLSON AVE	216 feet to the WNW
64	3−019542	GENPAK CORPORATION	REPUBLIC PLAZA	254 feet to the NW
65	3−451134	CONTINENTAL BAKING CO.	140 DOLSON AVE.	275 feet to the WNW
66	3−601762	LEE‘S QUALITY TIRE, INC.	1184 DOLSONTOWN ROAD	501 feet to the WNW
67	3−412643	SHOEMAKER GAS TURBINE FACILITY	71 DOLSON AVENUE	536 feet to the WNW
68	3−602100	MIDDLETOWN WASTEWATER TREATMENT FACILITY	159 DOLSON AVENUE	626 feet to the WNW
69	3−602249	MAVIS DISCOUNT TIRE #139	156 DOLSON AVENUE	630 feet to the WNW
70	3−078832	DOLSON AVENUE VALERO	107−111 DOLSON AVE.	642 feet to the NW

Hazardous Waste Generators, Transporters −− Total Sites − 10 — **Database searched at 1/8 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
71	NYD986994929	NYSDOT	1−84	43 feet to the NW*
72	NYR000165357	NYSDOT BIN 1052501	I−84 WB OVER MCVEIGH RD	43 feet to the NW*
73	NYD089759666	DUTCH GIRL CLEANERS	125 DOLSON AVENUE	187 feet to the WNW*
74	NYD096191192	GENPACK CO	REPUBLIC PLAZA	224 feet to the NW
75	NYR000186049	TAM ENTERPRISES INC	114 HARTLEY RD	255 feet to the ESE
76	NYR000195016	ORANGE COUNTY DPW CHEECHUNK BRIDGE	ECHO LAKE RD OVER WALLKILL RIV	586 feet to the ESE
77	NYD987034386	WALLACE OIL	107−111 DOLSON AVE	616 feet to the NW
78	NYD076681451	MIDDLETOWN CITY OF	159 DOLSON AVENUE	634 feet to the WNW
79	NYD986908986	MIDDLETOWN WATER TREATMENT PLANT	136 DOLSON AVENUE	634 feet to the WNW
80	NYR000216671	FAMILY DOLLAR STORE 4582	156 DOLSON AVE	637 feet to the WNW

Chemical Bulk Storage Facilities −− Total Sites − 2 — **Database searched at 1/8 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
81	3−000099	GENPAK CORP.	REPUBLIC PLAZA	258 feet to the NW
82	3−000263	CITY OF MIDDLETOWN WASTEWATER TREATMENT FACILIT	159 DOLSON AVENUE	645 feet to the WNW

Wastewater Discharge Facilities −− Total Sites − 1 — **Database searched at 1/8 MILE − Non−ASTM Database**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
83	NY0026328	MIDDLETOWN (C) STP	DOLSON AVENUE EXTENSION	627 feet to the WNW

Air Discharge Sites −− Total Sites − 3 — **Database searched at 1/8 MILE − Non−ASTM Database**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
84	3607100127	GENPAK CORP	REPUBLIC PLAZA	222 feet to the NW
85	3607100082	O & R UTILTIES−SHOEMAKER GAS TURBINE	71 DOLSON AVENUE	587 feet to the WNW
86	3607100155	PENCOR MASADA OXYNOL LLC	950 22ND STREET N. SUITE 850	625 feet to the WNW

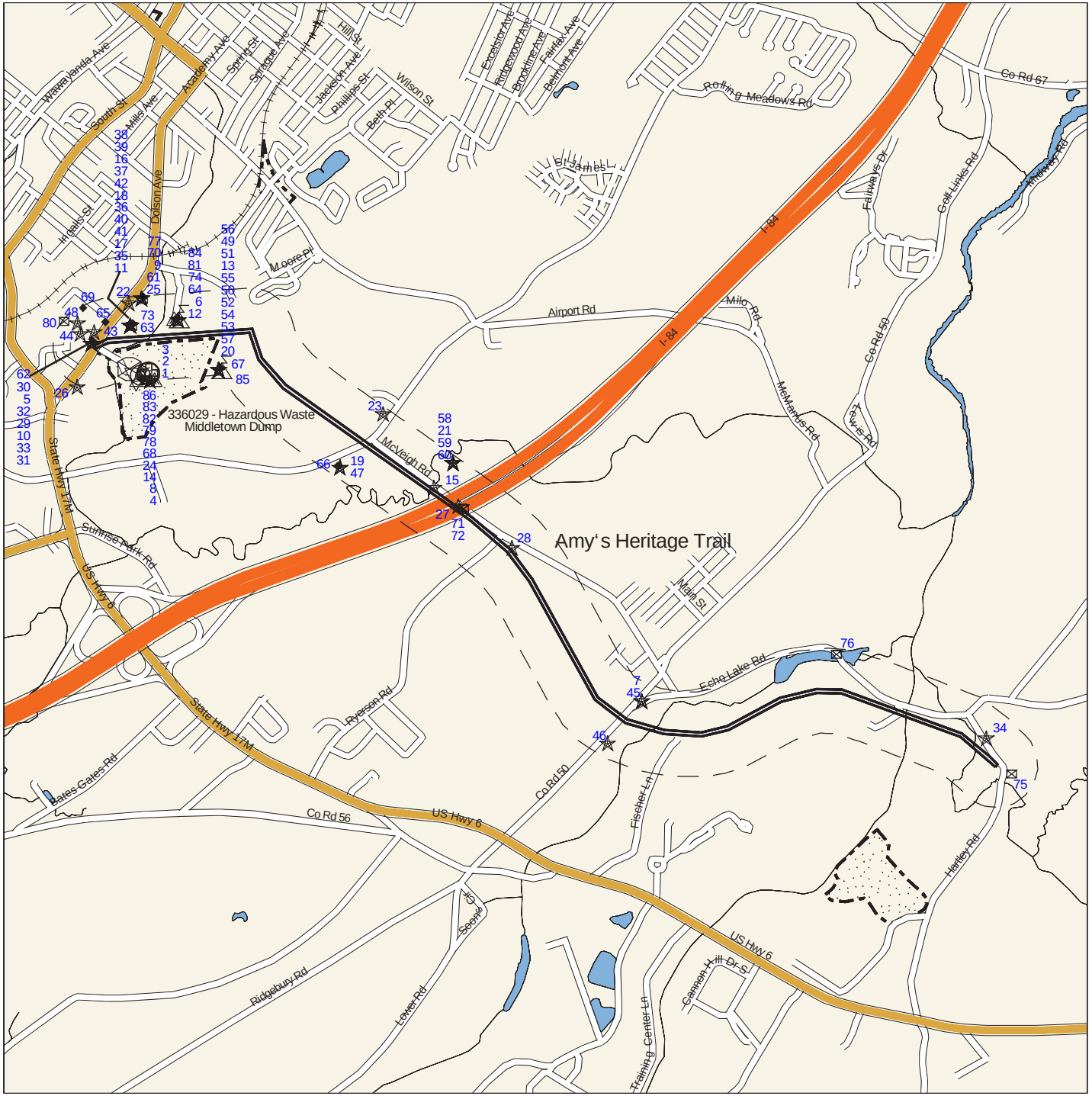
Identified Toxic Sites by Proximity

Amy‘s Heritage Trail, Goshen/Middletown, NY

* Compass directions can vary substantially for sites located very close to the subject property address.

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
27	I−84 OVERPASS	MCVEIGH ROAD	42 feet to the NW*	Closed Status Spill (Misc. Spill Cause)
71	NYSDOT	1−84	43 feet to the NW*	Hazardous Waste Generator/Transporter
72	NYSDOT BIN 1052501	I−84 WB OVER MCVEIGH RD	43 feet to the NW*	Hazardous Waste Generator/Transporter
28	MCVEIGH RD AT	145 MCVEIGH RD	63 feet to the ESE*	Closed Status Spill (Misc. Spill Cause)
62	CHESTNUT MART OF DOLSON AVENUE	154 DOLSON AVENUE	63 feet to the WNW*	Petroleum Bulk Storage Site
15	REMEDIATION SITE	MCVEIGH RD	70 feet to the NW*	Closed Status Spill (Unk/Other Cause)
5	HESS STATION #32302	154 DOLSON AVENUE	76 feet to the WNW*	Closed Status Tank Failure
10	SUNOCO DOLSEN AVE	154 DOLSEN AVE	76 feet to the WNW*	Closed Status Tank Test Failure
29	HESS STATION 32302	154 DOLSON AVE	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
30	HESS STATION	154 DOLSON AVE.	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
31	CHESTNUT SUNOCO GAS STATION	154 DOLSON AVE	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
32	SUNOCO	154 DOLSON AVENUE	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
33	SUNOCO STATION	154 DOLSON AVENUE	76 feet to the WNW*	Closed Status Spill (Misc. Spill Cause)
73	DUTCH GIRL CLEANERS	125 DOLSON AVENUE	187 feet to the WNW*	Hazardous Waste Generator/Transporter
34	POWER LINE RIGHT−OF−WAY	160 HARTLEY RD	206 feet to the ESE	Closed Status Spill (Misc. Spill Cause)
63	KIRK‘S NORTHERN TYRE	125−155 DOLSON AVE	216 feet to the WNW	Petroleum Bulk Storage Site
11	CAMPBELL PLAZA	125 DOLSON AVE	218 feet to the WNW	Closed Status Tank Test Failure
16	FLOOR DRAIN	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Unk/Other Cause)
17	CAMPBELL PLAZA	125 DOLSON AVENUE	218 feet to the WNW	Closed Status Spill (Unk/Other Cause)
18	DOLSON AVE NEAR	SHOP RITE	218 feet to the WNW	Closed Status Spill (Unk/Other Cause)
35	GOODYEAR AUTO SERVICE CTR	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
36	KIRKS GARAGE	CAMPBELL PLAZA 141 DOLSON	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
37	TRANSFORMER POLE 47492/52093	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
38	SHOPPING CENTER CAMBELL PLAZZA	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
39	DOLSON AUTO & TIRE	125 DOLSON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
40	CAMBELL PLAZA 14 STORES	125 DOLSEN AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
41	CONCRETE	125 DOLTON AVE	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
42	CAMPBELL PLAZA	DOLSEN AV	218 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
84	GENPAK CORP	REPUBLIC PLAZA	222 feet to the NW	Air Discharge Site
74	GENPACK CO	REPUBLIC PLAZA	224 feet to the NW	Hazardous Waste Generator/Transporter
43	AUTO ZONE	150 DOLSON AVE	228 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
6	GEN−PACK	REPLUBIC PLAZA	254 feet to the NW	Closed Status Tank Failure
12	GEN PAC	REPUBLIC PLAZA	254 feet to the NW	Closed Status Tank Test Failure
64	GENPAK CORPORATION	REPUBLIC PLAZA	254 feet to the NW	Petroleum Bulk Storage Site
75	TAM ENTERPRISES INC	114 HARTLEY RD	255 feet to the ESE	Hazardous Waste Generator/Transporter
81	GENPAK CORP.	REPUBLIC PLAZA	258 feet to the NW	Chemical Bulk Storage Facility
65	CONTINENTAL BAKING CO.	140 DOLSON AVE.	275 feet to the WNW	Petroleum Bulk Storage Site
44	MIDDLETOWN SAVINGS BANK	156 DOLSON AVE.	315 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
7	MARKEL RESIDENCE	ECHO LAKE ROAD	391 feet to the SE	Closed Status Tank Failure
45	MARKEL RESIDENCE	ECHO LAKE ROAD	391 feet to the SE	Closed Status Spill (Misc. Spill Cause)
46	POLE MOUNTED	569 RT 50‘	396 feet to the SSE	Closed Status Spill (Misc. Spill Cause)
4	MIDDLETOWN (C) T.S.	159 DOLSON AVENUE	441 feet to the WNW	Solid Waste Facility
19	LEE‘S QUALITY TIRE, INC.	1184 DOLSONTOWN ROAD	469 feet to the WNW	Closed Status Spill (Unk/Other Cause)
47	TRANSFORMER BANK @ POLE 47832/51846	1184 DOLSON TOWN RD	469 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
48	PARKING LOT	134 DOLSON AVE	482 feet to the WNW	Closed Status Spill (Misc. Spill Cause)

1	MIDDLETOWN DUMP	DOLSON AVENUE (ROUTE 17M)	492 feet to the WNW	NYSDEC Inactive Haz Waste Disposal Site
2	MIDDLETOWN DUMP	DOLSON AVE	492 feet to the WNW	CERCLIS Superfund NFRAP Site
66	LEE'S QUALITY TIRE, INC.	1184 DOLSONTOWN ROAD	501 feet to the WNW	Petroleum Bulk Storage Site
13	O & R UTILITIES	71 DOLSON AVE.	535 feet to the WNW	Closed Status Tank Test Failure
20	SHOEMAKER FACILTY	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Unk/Other Cause)
49	SHOEMAKER SUB STATION	DOLSNE AV	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
50	O & R SITE(SHOEMAKER STA)	DOLSON AVE.	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
51	SHOEMAKER GAS TURBINE PL.	DOLSON AVE.	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
52	SHOEMAKER SUB STATION	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
53	SHOEMAKER SUB STATION	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
54	O&R SUBSTATION	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
55	O&R FACILITY − SCHUMAKER SUBSTATION	71 DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
56	SHOEMAKER SUBSTATION	DORSON AVE & REPUBLIC PLAZA DR	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
57	SHOEMACHER SUBSTATION	DOLSON AVE	535 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
67	SHOEMAKER GAS TURBINE FACILITY	71 DOLSON AVENUE	536 feet to the WNW	Petroleum Bulk Storage Site
3	MIDDLETOWN LANDFILL	NEAR 159 DOLSON AVENUE	575 feet to the WNW	Brownfields Site
21	NEW ORANGE & ROCKLAND	208 MCVEIGH RD	580 feet to the NNW	Closed Status Spill (Unk/Other Cause)
58	MIDDLETOWN TAP/PAD MOUNT	208 MCVAY AVE	580 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
59	MIDDLETOWN TAP SUBSTATION	208 MCVEIGH RD	580 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
60	MIDDLETOWN TAP STATION	208 MCVIEGH RD	580 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
22	SPILL NUMBER 9608983	DOLSON AVE IFO MCDONALD	584 feet to the WNW	Closed Status Spill (Unk/Other Cause)
76	ORANGE COUNTY DPW CHEECHUNK BRIDGE	ECHO LAKE RD OVER WALLKILL RIV	586 feet to the ESE	Hazardous Waste Generator/Transporter
23	RATUNDO PROPERTY	1235 DOLSON TOWN RD	587 feet to the NW	Closed Status Spill (Unk/Other Cause)
85	O & R UTILTIES−SHOEMAKER GAS TURBINE	71 DOLSON AVENUE	587 feet to the WNW	Air Discharge Site
77	WALLACE OIL	107−111 DOLSON AVE	616 feet to the NW	Hazardous Waste Generator/Transporter
86	PENCOR MASADA OXYNOL LLC	950 22ND STREET N. SUITE 850	625 feet to the WNW	Air Discharge Site
68	MIDDLETOWN WASTEWATER TREATMENT FACILITY	159 DOLSON AVENUE	626 feet to the WNW	Petroleum Bulk Storage Site
83	MIDDLETOWN (C) STP	DOLSON AVENUE EXTENSION	627 feet to the WNW	Wastewater Discharge Facility
69	MAVIS DISCOUNT TIRE #139	156 DOLSON AVENUE	630 feet to the WNW	Petroleum Bulk Storage Site
78	MIDDLETOWN CITY OF	159 DOLSON AVENUE	634 feet to the WNW	Hazardous Waste Generator/Transporter
79	MIDDLETOWN WATER TREATMENT PLANT	136 DOLSON AVENUE	634 feet to the WNW	Hazardous Waste Generator/Transporter
8	CITY MIDDLETOWN STP	159 DOLSON AVE	637 feet to the WNW	Closed Status Tank Failure
14	SEWER PLANT	DOLSON AVE EXT	637 feet to the WNW	Closed Status Tank Test Failure
24	MIDDLETOWN SEWAGE TREATME	DOLSON AV	637 feet to the WNW	Closed Status Spill (Unk/Other Cause)
80	FAMILY DOLLAR STORE 4582	156 DOLSON AVE	637 feet to the WNW	Hazardous Waste Generator/Transporter
70	DOLSON AVENUE VALERO	107−111 DOLSON AVE.	642 feet to the NW	Petroleum Bulk Storage Site
82	CITY OF MIDDLETOWN WASTEWATER TREATMENT FACILITL	159 DOLSON AVENUE	645 feet to the WNW	Chemical Bulk Storage Facility
9	DOLSON AVE.MOBIL	107 DOLSON AVE.	647 feet to the NW	Closed Status Tank Failure
25	DOLSON AVENUE VALERO	107−111 DOLSON AVENUE	647 feet to the NW	Closed Status Spill (Unk/Other Cause)
61	POLE # 47524/52136	107 DOLSON AVE	647 feet to the NW	Closed Status Spill (Misc. Spill Cause)
26	COLUMBIA DEVELOPMENT	181−191 DOLSON AVE	654 feet to the WNW	Closed Status Spill (Unk/Other Cause)



Toxics Targeting
1/8 Mile Buffer Closeup Map

Amy's Heritage Trail

Goshen/Middletown, NY

Scale: 1 inch = 2399 feet

- National Priority List (NPL) *
- Delisted NPL Site *
- CERCLIS Superfund Non-NFRAP Site *
- CERCLIS Superfund NFRAP Site *
- Inactive Hazardous Waste Disposal Registry Site *
- Inact. Haz Waste Disp. Registry Qualifying *
- Hazardous Waste Treater, Storer, Disposer *
- RCRA Corrective Action Facility *
- Hazardous Substance Waste Disposal Site *
- Solid Waste Facility *
- Major Oil Storage Facility *
- Brownfields Site *
- Chemical Storage Facility *
- Hazardous Material Spill *
- Toxic Release *
- Wastewater Discharge *
- Petroleum Bulk Storage Facility *
- Enforcement Docket Facility *
- Hazardous Waste Generator, Transp. *
- Air Release *
- Remediation Site Borders
- Subject Area
- Waterbody
- County Border
- Railroad Tracks
- 1/8 Mile Radius

* 1/8 Mile Search Radius

** 1/8 Mile Search Radius

**** 1/8 Mile Search Radius

Section Two: Toxic Site Profiles

The heading of each *Toxic Site Profile* refers to the site's map location and details:

- The facility name, address, city, state, and zip code.
- Any changes that were made to a site's address in order to map its location.
- The site mapping method that was used (see ***How Sites are Located***, at the end of this section for more information).

Toxic Site Profiles summarize information provided by site owners or operators and government agencies regarding various toxic chemical activities reported at each site, such as:

- Whether chemicals were stored, produced, transported, discharged or disposed of.
- The name of chemicals and their Chemical Abstract Series (CAS) numbers.
- The amount of chemicals and the units (gallons/pounds) the chemical was measured in.
- Whether the site or storage tanks at the site are currently active or inactive.
- Special codes used by government agencies to regulate hazardous waste activities at some sites, or a complete description of the codes follows the profiles section.

For selected individual chemicals reported at various toxic sites, some potential health effect summary information appears below the site profile. Each potential health effect summary identifies chemicals by name and by Chemical Abstract Series (CAS) Number. An "x" under each potential health effect heading indicates positive toxicity testing results reported by the National Institute of Occupational Safety and Health's Registry of Toxic Effects of Chemical Substances (RTECS). Some chemicals (mostly appearing in profiles of Hazardous Waste facilities), are reported as mixtures, and RTECS health effect information is only available for individual chemicals. In addition, RTECS only provides information on approximately 100,000 common chemicals. Consequently, the absence of potential health effect summary information for a particular chemical identified in a Toxic Site Profile does not necessarily mean that the chemical does not pose potential health effects.

The Maximum Contaminant Level (MCL) in drinking water allowed for selected chemicals is also noted. In most cases, the only applicable MCL has been set by the New York State Department of Health (NYSDOH). Where NYSDOH has not set an MCL, the federal standard, if one exists, is listed and is marked by an asterisk.

Presented below are column headings that describe the health effect definitions used in RTECS and applicable New York State and federal drinking water standards. Reference sources for information presented in this section are also provided.

ACUTE TOX: **Acute Toxicity**: Short-term exposure to this chemical can cause lethal and non-lethal toxicity effects not included in the following four categories.

TUMOR TOX: **Tumorigenic Toxicity**: The chemical can cause an increase in the incidence of tumors.

MUTAG TOX: **Mutagenic Toxicity**: The chemical can cause genetic alterations that are passed from one generation to the next.

REPRO TOX: **Reproductive Toxicity**: May signify one of the following effects: maternal effects, paternal effects, effects on fertility, effects on the embryo or fetus, specific developmental abnormalities, tumorigenic effects, or effects on the newborn (only positive reproductive effects data for mammalian species are referenced).

IRRIT TOX: **Primary Irritant**: The chemical can cause eye or skin irritation.

MCL: **Drinking Water Standard - Maximum Contaminant Level** (MCL) listed under Drinking Water Supplies, 10 NYCRR Part 5, Subparts 1.51(f),(g), and (h) for NYDOH MCL's and under the Safe Drinking Water Act, 40 CFR 141, Subparts B and G, (* indicates value for total trihalomethanes) for federal MCL's.

Reference Source for Toxicity Information: Registry of Toxic Effects of Chemical Substances (RTECS), NIOSH (on-line database); For further information, contact: NIOSH, 4676 Columbia Parkway, Cincinnati, OH, 45226, 800/35-NIOSH.

Reference Source for Drinking Water Standards: New York State Department of Health, Bureau of Toxic Substances Assessment, 2 University Place, Room 240, Albany, NY 12203, 518/458-6373.

U.S. Environmental Protection Agency, Office of Drinking Water, 401 M St SW, Mailstop WH-556, Washington, DC, 20460, 202/260-5700.

Inactive Hazardous Waste Disposal Site Classifications:

1 -- Causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or the environment -- immediate action required;
2 -- Significant threat to the public health or environment -- action required;
3 -- Does not Present a significant threat to the environment or public health -- action may be deferred;
4 -- Site properly closed --requires continued management;
5 -- Site properly closed, no evidence of present or potential adverse impact -- no further action required;
2a -- This temporary classification has been assigned to sites where there is inadequate data to assign them to the five classifications specified by law;
A -- Work underway and not yet complete;
P -- Potential Site;
$D_{1, 2, 3}$ -- Delisted Site (1: hazardous waste not found; 2: remediated; 3: consolidated site or site incorrectly listed);
C -- Remediation Complete (formerly D2).

NO NATIONAL PRIORITIES LIST (NPL) SITES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

INACTIVE HAZ WASTE DISPOSAL REGISTRY OR REGISTRY−QUALIFYING SITES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 1 **MIDDLETOWN DUMP** **Facility Id: 336029**
DOLSON AVENUE (ROUTE 17M) MIDDLETOWN, NY 10940 TT−Id: 120A−0004−897

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 492 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: Dolson Avenue (Route 17M)
Revised zip code: NO CHANGE

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 336029
CLASSIFICATION CODE: 03 REGION: 3 DEC ID: 56009
CLASSIFICATION CODE DESCRIPTION:
Does not present a significant threat to the public health or the environment - action may be deferred.

NAME OF SITE: Middletown Dump
STREET ADDRESS: Dolson Avenue (Route 17M) TOWN: Middletown (c)
CITY: Middletown ZIP: 10940 COUNTY: Orange

ESTIMATED SIZE: 22 Acres
SITE TYPE: Dump- Structure- Lagoon- Landfill-X Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
None reported

CROSS REFERENCES:

IDENTIFIER	SOURCE
#	Muni. Waste ID
NYD980507057	EPA Site ID
V00289	VCP Site ID

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:
CURRENT OWNER(S):
NAME: City of Middletown
ADDRESS: City Hall
Middletown, NY 10940

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:
NAME: UNKNOWN3
ADDRESS:

HAZARDOUS WASTE DISPOSAL PERIOD: from 1952 to 1969

SITE DESCRIPTION:
Location Description:
The 20 acre site is located east of Dolson Avenue (NYS Rt. 17M), and adjacent to the City of Middletown’s Wastewater Treatment Plant.

Site Features:
The landfill is not capped and had an ncinerator. The ash from the incinerator was disposed of at the site.

Current Use:
The site may still be receiving construction and demolition debris from town activities such as road cleaning, tree pruning, and catch basin cleaning.

Surrounding Uses:
Commerical, industrial and agricultural properties, and the City wastewater treatment works surround the land.

Past Uses of the Site:
This site was an active incinerator and landfill from 1952 to 1969, receiving municipal and commercial waste from the Town of Middletown. Approximately 450 tons of hazardous materials including benzene, toluene, ethanol, methanol, waste oil, and still bottom residues were transported to the landfill. Four hundred tons of the waste were incinerated, and the resulting ash was buried in the landfill. It is estimated that an additional 40 tons were incinerated and 10 tons were buried directly in to the landfill.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
WASTE SOLVENTS	400 TONS (INCINERATED &
METHANOL (F003)	RESULTING ASH DISPOSED)
TOLUENE (F005)	10-50 TONS NON-INCIN-
STILL BOTTOM RESIDUE (UNSPECIFIED, MAY BE ANY	ERATED
COMBINATION OF F001 THROUGH F005 WASTES)	UNKNOWN

COMBINATION OF F001 THROUGH F005 WASTES)	UNKNOWN
TOLUENE (F005)	10-50 TONS NON-INCIN-
STILL BOTTOM RESIDUE (UNSPECIFIED, MAY BE ANY	ERATED
METHANOL (F003)	RESULTING ASH DISPOSED)

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

A Phase I Investigation was completed in 1988. A Preliminary Site Assessment (PSA) was completed in 1993. Sampling conducted during the PSA included surface water, sediment, domestic well water, soil borings and groundwater. Sediment samples indicated low concentrations of methylene chloride and acetone, and one surface water sample indicated methylene chloride was present. The subsurface samples revealed one analyte, trichloroethane at 5ppb. In groundwater, two organic compounds were found exceeding NYS Class GA Groundwater Standards, 1-2 dichloroethene @ 36 ppb and trichloroethene @ 34 ppb.

The levels of organic contamination found in groundwater are low and infrequent (only 1 of 4 wells showed exceedance of groundwater standard). The levels found do not represent a significant threat to the environment.

ASSESSMENT OF HEALTH PROBLEMS:

Hazardous waste deposition at the site has been confirmed and there is the potential for groundwater, soil, and surface water contamination due to leaching of material from the landfill. Limited surface water/sediment, groundwater, and surface soil sampling do not indicate any significant contamination. The testing of nearby residential drinking water supply wells in May 2000 indicates no impacts from the nearby landfill. Although the site is unfenced and the access road to the site is not secured, there is no evidence of trespassing. A recycling and ethanol production facility is proposed for construction on-site. Prior to construction, additional subsurface investigation is planned.

PROJECT COMPLETIONS:

Operable Unit 01 - * NO REMED PROG *

PROJECT	DESCRIPTION	END DATE	STATUS
Site Characterization		01/01/1994	Actual

The New York State Department of Environmental Conservation has not publicly updated the following fields since 2003:

ANALYTICAL DATA AVAILABLE FOR:	Air-	Surface Water-X	Groundwater-X	Soil-X	Sediment-X
APPLICABLE STANDARDS EXCEEDED IN:	Groundwater-X	Drinking Water-	Surface Water-	Air-	

GEOTECHNICAL INFORMATION:

SOIL/ROCK TYPE:	Gravel and silt-rich loam over bedrock.
GROUNDWATER DEPTH:	Range: 1 to 10 feet.

LEGAL ACTION:	Type:		State-	Federal-
STATUS:	Negotiation in Progress-		Order Signed-	
REMEDIAL ACTION:	Proposed-	Under Design-	In Progress-	Completed-
NATURE OF ACTION:				

NO RCRA CORRECTIVE ACTION SITES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

CERCLIS SUPERFUND SITES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 2 **MIDDLETOWN DUMP** **EPA Facility Id: NYD980507057**
DOLSON AVE MIDDLETOWN, NY 10940 TT−Id: 240A−0008−726

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING − LARGE SITE
Approximate distance from property: 492 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

NOTE: US EPA has not publicly updated most of the site information in the CERCLIS database since 10/25/2013. The following new information is available for this site.

NPL Status: Not on the NPL
Non−NPL Status: NFRAP−Site does not qualify for the NPL based on existing information
NFRAP (No Further Remedial Action Planned) Status: NO FURTHER REMEDIAL ACTION PLANNED

The following information has not been publicly updated by US EPA since 10/25/13.

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USEPA COMPREHENSIVE ENVIRONMENTAL RESPONSE
COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)

SITE INFORMATION

EPA-ID: NYD980507057 Site-ID: 0201726
Site Name: MIDDLETOWN DUMP
Site Street: DOLSON AVE
Site City/State/Zip: MIDDLETOWN, NY 10940

NFRAP (No Further Remedial Activity Planned) Status: NO FURTHER REMEDIAL ACTION PLANNED

USGS Hydrological Unit: 02020007
Incident Category:
Non-NPL Status: NFRAP
Federal Facility Flag: Not a Federal Facility

NPL Status Indicator: Not on the NPL
RCRA Flag:
Non-NPL Stat Date: 02/07/1995

SITE DESCRIPTION
The following information was dropped by the US EPA:

SITE IS INACTIVE MUN LANDFILL, 3 ACRES OPEN FIELD WOODED ON THE EAST, WEST & NORTHERN BOUNDARIES WITH THE TOWN SEWAGE TRT PLT DIRECTLY SOUTH. THE MONHAGEN BROOK FLOWS SOUTH JUST BEYOND THE WESTERN BOUNDARY.

OPERABLE UNIT INFORMATION

Operable Unit ID: 00 Operable Unit Name: SITEWIDE

ACTION INFORMATION

Name:	Discovery	Start Date:	Operable Unit ID: 00
Lead:	EPA Fund-Financed	Completion Date:	01/01/1986
Qualifier:		Fin Budget Src:	
Name:	Preliminary Assessment	Start Date:	Operable Unit ID: 00
Lead:	EPA Fund-Financed	Completion Date:	09/29/1986
Qualifier:	Low	Fin Budget Src:	Remedial
Name:	Site Inspection	Start Date:	09/21/1987 Operable Unit ID: 00
Lead:	EPA Fund-Financed	Completion Date:	09/22/1987
Qualifier:	NFRAP (No Futher Remedial Action Planned)	Fin Budget Src:	Remedial
Name:	Preliminary Assessment	Start Date:	Operable Unit ID: 00
Lead:	State, Fund Financed	Completion Date:	06/16/1988
Qualifier:	Low	Fin Budget Src:	Remedial
Name:	Preliminary Assessment	Start Date:	Operable Unit ID: 00
Lead:	State, Fund Financed	Completion Date:	03/05/1992
Qualifier:	High	Fin Budget Src:	Remedial
Name:	Archive Site	Start Date:	Operable Unit ID: 00
Lead:	EPA In-House	Completion Date:	01/23/1996
Qualifier:		Fin Budget Src:	

FINANCIAL INFORMATION

No financial information was provided

BROWNFIELDS SITES (STATE & LOCAL) IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 3 **MIDDLETOWN LANDFILL** **Facility Id: V00289**
NEAR 159 DOLSON AVENUE, MIDDLETOWN, NY 10940 TT−Id: 280A−0001−538

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 575 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Brownfield Program: Voluntary Cleanup Program

Volunteer: City of Middletown

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
VOLUNTARY CLEANUP PROGRAM

SITE CODE: V00289
CLASSIFICATION CODE: N REGION: 3 DEC ID: 58185
CLASSIFICATION CODE DESCRIPTION:
No further action

NAME OF SITE: Middletown Landfill
STREET ADDRESS: Near 159 Dolson Avenue TOWN: Middletown (c)
CITY: Middletown ZIP: 10940 COUNTY: Orange

ESTIMATED SIZE: 18.45 Acres
SITE TYPE: Dump- Structure- Lagoon- Landfill- Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
None reported

CROSS REFERENCES:

IDENTIFIER	SOURCE

The following cross reference(s) have been deleted from the registry. Data reflects previous information.

336029	HW Site ID
D3-5000-99-02	Agreement/Consent Order Number
D3-5000-99-02(I	Haz. Substance ID

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:

CURRENT OWNER(S):

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:

APPLICANT REQUESTOR(S):

NAME: CITY OF MIDDLETOWN Applicant Type: PRP - Non-Registry HazSubs
Jacob Tawil
ADDRESS: 16 James Street
Middletown, NY 10940

HAZARDOUS WASTE DISPOSAL PERIOD:

SITE DESCRIPTION:

See also Site #336029

Site Location: The Middletown Landfill Site in an suburban portion of Orange County, NY. The site is located on 159 Dolson Avenue and is approximately 200 meters south of the shopping plaza on NY-17M in Middletown.

Predominant Site Features: The landfill is not capped. The ash from an on-site incinerator was disposed of at the site.

Current Site Use: The site still receives construction and demolition debris from town activities such as road cleaning, tree pruning, and catch basin cleaning.

Surrounding Uses: The surrounding parcels are currently used for a combination of commercial and industrial. The nearest residential area is 300 meters from the site.

Past Uses of the Site: The site was an active incinerator and landfill from 1952 to 1969, receiving municipal and commercial waste from the Town of Middletown.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY

The following material(s) have been deleted from the registry. Data reflects previous information.

Hazardous Substances	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

See Site #336029

ASSESSMENT OF HEALTH PROBLEMS:
Hazardous waste deposition at the site has been confirmed and there is the potential for groundwater, soil, and surface water contamination due to leaching of material from the landfill. Limited surface water/sediment, groundwater, and surface soil sampling do not indicate any significant contamination. The testing of nearby residential drinking water supply wells in May 2000 indicates no impacts from the nearby landfill. Although the site is unfenced and the access road to the site is not secured, there is no evidence of trespassing. A recycling and ethanol production facility is proposed for construction on-site. Prior to construction, additional subsurface investigation is planned.

PROJECT COMPLETIONS:
None reported

****

SOLID WASTE FACILITIES IDENTIFIED WITHIN THE 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 4 **MIDDLETOWN (C) T.S.** **Facility Id: NY00000002405**
159 DOLSON AVENUE, MIDDLETOWN, NY 10940 TT−Id: 390A−0008−872

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 441 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
36R09	Transfer station − registration	Yes	Registration	02/17/2002			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
Alfred Fusco United States City of Middletown 16 James Street, Middletown, NY, 10940	Operator	02/08/2002	
	Owner	02/08/2002	

NO HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSERS IDENTIFIED WITHIN THE 1/8 MILE SEARCH RADIUS

NO ACTIVE TANK FAILURES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

NO ACTIVE TANK TEST FAILURES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

NO ACTIVE UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

NO ACTIVE HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS.

CLOSED STATUS TANK FAILURES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 5 **HESS STATION #32302** **Spill Number: 8804001** **Close Date: 11/25/1988**
154 DOLSON AVENUE MIDDLETOWN, NY TT−Id: 520A−0117−897

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 76 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	GASOLINE STATION OR PBS FACILITY	Spiller:	AMERADA HESS	Spiller Phone:	(201) 750−6970
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	JOHN OKESSON	Caller Agency:	NYS DEC	Caller Phone:	(914) 255−5453
DEC Investigator:	jeokesso	Contact for more spill info:		Contact Person Phone:	

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/04/1988	08/05/1988	TANK FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	GALLONS	0	GALLONS	GROUNDWATER

Caller Remarks:

SPOKE WITH PETE ELLIOT. REMOVING TANKS AND NOTICED GASOLINE IN TANK HOLE. VALLEY EQUIPMENT DOING WORK. DEC TO INSPECT. REQUESTED NOT TO DISCHARGE. 4, 10K REMOVED.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was J.OKESSON 11/25/88: TANKS REMOVED.NEW INSTALLED.MONITORING

WELLS INSTALLED WHEN TANKS WERE PUT IN.

Map Identification Number 6 **GEN−PACK** **Spill Number: 9703520** **Close Date: 07/14/1997**
REPLUBIC PLAZA MIDDLETOWN, NY TT−Id: 520A−0118−717

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 254 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: REPUBLIC PLAZA
Revised zip code: 10940

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Notifier Type: Other
Caller Name: DEBBY THOMPSON
DEC Investigator: DVWEHRFR

Spiller: SAME − SAME
Notifier Name: SAME
Caller Agency: IRA D CONKLIN & SONS
Contact for more spill info: JIM PARR

Spiller Phone:
Notifier Phone:
Caller Phone: (914) 561−1512
Contact Person Phone: (914) 343−7971

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/05/1997		TANK FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

they removed a tank back on may 5 and got the labresults today.they found the soil to be contaminated.

DEC Investigator Remarks:

Spiller hired IDC. Report dated 6/23/97 sent. NFA

Map Identification Number 7 **MARKEL RESIDENCE** **Spill Number: 9416349** **Close Date: 03/29/1995**
ECHO LAKE ROAD NEW HAMPTON, NY TT−Id: 520A−0311−816

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 391 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10958

Source of Spill:	PRIVATE DWELLING	Spiller:		Spiller Phone:	
Notifier Type:	DEC	Notifier Name:		Notifier Phone:	
Caller Name:	D. WEITZ	Caller Agency:	DEC	Caller Phone:	
DEC Investigator:	DVWEHRFR	Contact for more spill info:		Contact Person Phone:	

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/17/1995	03/29/1995	TANK FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	240.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SAME AS SPILL # 9416346

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ

Map Identification Number 8 **CITY MIDDLETOWN STP** **Spill Number: 0309001** **Close Date: 05/15/2006**
159 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0117−910

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 637 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	TOM OWEN − CITY OF MIDDLETOWN	Spiller Phone:	(845) 346−4130
Notifier Type:	Responsible Party	Notifier Name:	SAME	Notifier Phone:	
Caller Name:	PAM VANAKEN	Caller Agency:	LUZON OIL CO	Caller Phone:	(845) 434−7805
DEC Investigator:	DVWEHRFR	Contact for more spill info:	VINNIE	Contact Person Phone:	(914) 866−8334

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/24/2003		TANK FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

SPILL FROM TANK NUMEROUS HOLES BEING REMOVED APPROX 8 YARDS AT LEAST SOIL AFFECTED MAY BE IN GROUNDWATER ALSO REQ DEC TO CALL THE SCENE

DEC Investigator Remarks:

Closure report rec. on 4/13/06. 1K diesel removed. no soil samples taken due t high groundwater. MW installed, purged and sampled on 3/30/04 and 7/26/06. Results ND for all parameters on both samples.

Map Identification Number 9 **DOLSON AVE.MOBIL** **Spill Number: 9214016** **Close Date: 09/30/1993**
107 DOLSON AVE. MIDDLETOWN, NY TT−Id: 520A−0117−905

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 647 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	GASOLINE STATION OR PBS FACILITY	Spiller:	WALLACE OIL	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	D W PORTO	Caller Agency:	WALLACE OIL	Caller Phone:	(914) 344−4271
DEC Investigator:	WXWADSWO	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/22/1993	09/30/1993	TANK FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	UNKNOWN	0	UNKNOWN	SOIL

Caller Remarks:

SUSPECT SURFACE RUNOFF LEAKING INTO VENT TO TANK TANK PUMPED WILL REMOVE AND REPLACE TANK 12,000 GAL TANK 1968

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WADSWORTH

CLOSED STATUS TANK TEST FAILURES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 10 **SUNOCO DOLSEN AVE** **Spill Number: 0908379** **Close Date: 10/28/2009**
154 DOLSEN AVE MIDDLETOWN, NY TT−Id: 520A−0235−617

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 76 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: 154 DOLSON AVE
Revised zip code: 10940

Source of Spill: GASOLINE STATION OR PBS FACILITY Spiller: PAUL GALANOPOULOS − SUNOCO DOLSEN AVE Spiller Phone:
Notifier Type: Tank Tester Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: RDBENDEL Contact for more spill info: PAUL GALANOPOULOS Contact Person Phone: (845) 561−1512

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/26/2009		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	GALLONS	0	GALLONS	

Caller Remarks:

LINE TEST FAILURE ON THE REGULAR PRODUCT. PUMP HAS BEEN SHUT DOWN.

DEC Investigator Remarks:

10/26/09: couldnt get an update, caller in field, left a message for call back...mm. 10−28−09: Paul/CSC ^ V.Mc./Dispt.: line failure @ Sunoco, passed retest, NFA.

Map Identification Number 11 **CAMPBELL PLAZA** **Spill Number: 9011407** **Close Date: 07/24/1991**
125 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0117−903

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name: MRS. KATHLENE HOUSE
DEC Investigator: DVWEHRFR

Spiller: SAME
Notifier Name:
Caller Agency: CAMPBELL PL.OWNER
Contact for more spill info:

Spiller Phone:
Notifier Phone:
Caller Phone: (914) 343−5614
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/17/1990	06/18/1953	TANK TEST FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	SOIL

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
		Unknown	0.00	UNKNOWN

Caller Remarks:

TANK WAS TESTED BECAUSE MORTGAGE REQUIRED IT NOTHING DONE WILL BE CONVERTING TO GAS TRACER TITE LEAK TEST

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ 09/27/95: This is additional information about material spilled from the translation of the old spill file: ANK TEST.

Map Identification Number 12 **GEN PAC** **Spill Number: 9101019** **Close Date: 06/12/1991**
REPUBLIC PLAZA MIDDLETOWN, NY TT−Id: 520A−0118−677

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 254 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Tank Tester
Caller Name: JIM SLANTER
DEC Investigator: DVWEHRFR

Spiller: SAME
Notifier Name:
Caller Agency: IRA CONKLIN
Contact for more spill info:

Spiller Phone: (914) 343−7971
Notifier Phone:
Caller Phone: (914) 561−1512
Contact Person Phone:

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/25/1991	06/12/1991	TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	GROUNDWATER

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
		Unknown	0.00	UNKNOWN

Caller Remarks:

ROUTINE TEST EIR PETRO−TITE −.300

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ 09/27/95: This is additional information about material spilled from the translation of the old spill file: TANK TEST.

Map Identification Number 13 **O & R UTILITIES** **Spill Number: 9406021** **Close Date: 07/14/1995**
71 DOLSON AVE. MIDDLETOWN, NY TT−Id: 520A−0118−041

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:		Spiller Phone:	
Notifier Type:	Tank Tester	Notifier Name:		Notifier Phone:	
Caller Name:	STEVE MCGUIRE	Caller Agency:	IRA CONKLIN	Caller Phone:	(914) 561−1512
DEC Investigator:	WXWADSWO	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	PBS # Involved	Meets Cleanup Standards	Penalty Recommended
08/02/1994	07/14/1995	TANK TEST FAILURE	3−412643	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	UNKNOWN	0	UNKNOWN	GROUNDWATER

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
		Unknown	0.00	UNKNOWN

Caller Remarks:

PUMP LINE LEAK WILL EIR −.2 GPH

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WADSWORTH 09/27/95: This is additional information about material spilled from the translation of the old spill file: TANK TEST.

Map Identification Number 14 **SEWER PLANT** **Spill Number: 0304010** **Close Date: 03/11/2008**
DOLSON AVE EXT MIDDLETOWN, NY TT−Id: 520A−0117−928

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 637 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: DOLSON AVE
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	TOM − SEWER PLANT	Spiller Phone:	(914) 343−3169
Notifier Type:	Tank Tester	Notifier Name:	LEWIS MACBRIEN	Notifier Phone:	(845) 561−1512
Caller Name:	LEWIS MACBRIEN	Caller Agency:	IRA CONKLIN	Caller Phone:	(845) 561−1512
DEC Investigator:	pjdecicc	Contact for more spill info:	TOM	Contact Person Phone:	(914) 343−3169

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/16/2003		TANK TEST FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

uncover − isolate and then retest

DEC Investigator Remarks:

Closure report rec. on 4/13/06. 1K diesel removed. no soil samples taken due t high groundwater. MW installed, purged and sampled on 3/30/04 and 7/26/06. Results ND for all parameters on both samples.

03/11/2008 The above comments were imported from Spill # 0309001 for the same Middletown STP site. Explanatory letter rec'd from Middletown DPW 2/14/2008 in response to Conlon NOV letter. This duplicate spill is closed accordingly. PJD

CLOSED STATUS UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 15 **REMEDIATION SITE** **Spill Number: 0909452** **Close Date: 11/24/2009**
MCVEIGH RD NEW HAMPTON, NY TT−Id: 520A−0316−098

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 70 feet to the NW*

ADDRESS CHANGE INFORMATION
Revised street: MC VEIGH RD
Revised zip code: 10958

Source of Spill: UNKNOWN Spiller: MARYBETH MCCORMICK − ORANGE AND ROCKLAND UTILITIES Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: JYMCCART Contact for more spill info: MARYBETH MCCORMICK Contact Person Phone: (845) 783−5534

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/24/2009		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	UNKNOWN	0	UNKNOWN	SURFACE WATER

Caller Remarks:

CALLER REPORTING A SHEEN ON MONHAGEN BROOK, I/A/O A DEWATERING PUMP. CLEAN UP IS IN PROGRESS. REMEDIATION TEAM ON SITE ALREADY.

DEC Investigator Remarks:

11−24−09 Called and left message for Mary Beth to return phone call. jm Spoke with Mary Beth. O & R is working with the DEC at this MGP plant. Dave Herman from DEC CO is on site. They began to dewater an area to be excavated and there was a diesel residue

still in the hose that they began to use. Their contractor was on site and put down pads to contain and clean up. They removed hose and replaced with new one. NFA jm

Map Identification Number 16 **FLOOR DRAIN** **Spill Number: 1005856** **Close Date: 08/26/2010**
125 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0257−682

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	CITY OF MIDDLETOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxweitz	Contact for more spill info:	SUE	Contact Person Phone:	(845) 343−5614

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/26/2010		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
OTHER	OTHER	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

floor drains in subway, untid check cashing, quick cash, downtown bagels, vacant store 1900sq ft. Caller called monday to report back up. City isn’t doing anything about it.

DEC Investigator Remarks:

8/26/10 Ongoing problem with blockage of sewer pipe. City of Middletown DPW has been working on it for the past 3 days. OCHD was initially called in 3 days ago, and closed down several eating establishments. Spoke to Cindy at DPW at 845−346−4124. NFA dw

Map Identification Number 17 **CAMPBELL PLAZA** **Spill Number: 0208156** **Close Date: 09/29/2005**
125 DOLSON AVENUE MIDDLETOWN, NY TT−Id: 520A−0117−902

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: GASOLINE STATION OR PBS FACILITY
Spiller: DOLSON AVENUE MOBIL
Spiller Phone:
Notifier Type: Other
Notifier Name: SCOTT SCHMIDT
Notifier Phone: (845) 567−1133
Caller Name: RICH CALOGERO
Caller Agency: CHAZEN ENGINEERING
Caller Phone: (845) 567−1133
DEC Investigator: KABROWNE
Contact for more spill info:
Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/01/2002		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	GALLONS	0	GALLONS	GROUNDWATER

Caller Remarks:

SITE ASSESSMENT PERFORMED FOR A POTENTIAL BUYER. GROUNDWATER SAMPLES CAME BACK POSITIVE FOR MTBE'S. CALLER BELIEVES THAT IT IS GASOLINE FROM THIS ADJACENT GASOLINE STATION. THERE IS A PAST HISTORY OF SPILLS FROM THIS GASOLINE STATION. ONE OF THE SPILL NUMBERS IS 9214016. GAS STATION IS OWNED BY WALLACE OIL.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was BROWNE 11/06/2002 CHAZEN GEOPROBED 2 BORINGS ON PROPERTY LINE BY STATION. GW SAMPLE 3.7 PPM − TO SEND RESULTS.

11/03− letter to alta east requiring inv. and monitoring.

09/29/2005 − Soil samples and groundwater samples were collected no signinficant detects found at the gasoline station. Last round of sampling was non detect for groundwater. NFA. KAB

Map Identification Number 18 **DOLSON AVE NEAR** **Spill Number: 0002783** **Close Date: 06/06/2000**
SHOP RITE MIDDLETOWN, NY TT−Id: 520A−0316−097

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: DOLSON AVE
Revised zip code: 10940

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Fire Department	Notifier Name:	STATE POLICE	Notifier Phone:	
Caller Name:	FF GIL FOIL	Caller Agency:	MIDDLETOWN FD	Caller Phone:	(914) 343−4169
DEC Investigator:	DVWEHRFR	Contact for more spill info:	CALLER	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/05/2000		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	0	GALLONS	0	GALLONS	SURFACE WATER

Caller Remarks:

caller not on scene and does not have any further info. req call back from dec asap

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ 06/05/2000 CITY DPW NOT REQUESTING DEC RESPONSE.
THEY HAVE CONTAINED WITH BOOMS IN IMPACTED STREAM. D.W. TO INSPECT 6/6 AM.

Map Identification Number 19 **LEE'S QUALITY TIRE, INC.** **Spill Number: 0850060** **Close Date: 09/10/2008**
1184 DOLSONTOWN ROAD MIDDLETOWN, NY 10940 TT−Id: 520A−0316−095

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 469 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 1184 DOLSONTOWN RD
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	LEE HUBBERT − LEE'S QUALITY TIRE, INC.	Spiller Phone:	
Notifier Type:	Fire Department	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxtraver	Contact for more spill info:	LEE HUBBERT	Contact Person Phone:	(845) 344−4760

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/11/2008		OTHER	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	SURFACE WATER

Caller Remarks:

FIRE AT FACILITY. THICK BLACK SMOKE, RUNOFF GOING INTO STORM DRAIN.

DEC Investigator Remarks:

FIRE UNDER CONTROL AT 1430 HRS. RUNOFF WITH SHEEN INTO STORM DRAIN ON PROPERTY DISCHARGING TO CREEK SOME 500 FEET AWAY− SLIGHT SHEEN IN CREEK. OC HAZ MAT DEPLOYING BOOM & SORBANTS. RP HIRED LUZON ENV. FOR RESPONSE. LUZON ARRIVED AND CONTINUED CLEANUP WITH SORBANTS. SEVERAL CONTAINERS OF MOTOR OIL/AUTO FLUIDS LEAKED DURING FIRE.

4/17/08− Site inspection; Lee Hubbert on site. No water contained prior to storm drain in containment area. Sorbants remain in place and in good condition. Owner states bldg. may be demolished next week. Luzon contacted later in day by owner ins. co. and will be conducting more cleanup on site in oil storage area of bldg. where oil remains on floor.

RECEIVED CLEANUP REPORT FROM LUZON DATED 8/20/08. NFA DT

Map Identification Number 20 **SHOEMAKER FACILTY** **Spill Number: 0512772** **Close Date: 02/03/2006**
71 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0118−044

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL | Spiller: NICK PEREZ − SHOEMAKER FACILTY | Spiller Phone: (914) 584−1862
Notifier Type: Responsible Party | Notifier Name: CHRISTINE BUBGNKO | Notifier Phone: (914) 772−0274
Caller Name: CHRISTINE BUBGNKO | Caller Agency: MIRANT | Caller Phone: (914) 772−0274
DEC Investigator: JPCUMMIN | Contact for more spill info: NICK PEREZ | Contact Person Phone: (914) 584−1862

Category: Investigation indicates there was no spill.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/03/2006		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	GROUNDWATER

Caller Remarks:

PRODUCT IS UNKNOWN BUT MAY BE OIL AND WATER, THERE IS A PINHOLE IN THE TANK. HE TANK IS A STORM WATER HOLDING TANK, 500 GALLONS. TANK IS BEING CLEANED OUT TODAY AND GROUNDWATER IS COMING INTO THE TANK

DEC Investigator Remarks:

2/3/06 Cummins A stormwater collection sump/tank was a perferated tank made to be solid Pump is disconnected, so only groundwater flowing into tank. Stormwater pumped out be Miller Env. Had no sheen or product.

Map Identification Number 21 **NEW ORANGE & ROCKLAND** **Spill Number: 0106244** **Close Date: 08/03/2010**
208 MCVEIGH RD MIDDLETOWN, NY TT−Id: 520A−0316−096

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 580 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: UNKNOWN | Spiller: FORMER LAND OWNER | Spiller Phone:
Notifier Type: Affected Persons | Notifier Name: TIM HALLOCK | Notifier Phone: (914) 577−2345
Caller Name: TIM HALLOCK | Caller Agency: ORANGE & ROCKLAND UTILITI | Caller Phone: (914) 799−0618
DEC Investigator: WSOTTAWA | Contact for more spill info: TIM HALLOCK | Contact Person Phone: (914) 799−0618

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/13/2001		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
COAL TAR PITCH VOLATILES	HAZARDOUS MATERIAL	0	UNKNOWN	0	UNKNOWN	SOIL, SURFACE WATER
The following material(s) was dropped or revised by the NYS DEC. Call Toxics Targeting for more information						
UNKNOWN PETROLEUM	UNKNOWN	0	GALLONS	0	GALLONS	

Caller Remarks:

GROUND CONTAMINATION WAS DISCOVERED WHILE PUTTING IN A GROUND WELL

DEC Investigator Remarks:

8/3/10 not a spills Issue NFA JO’M

Map Identification Number 22 **SPILL NUMBER 9608983** **Spill Number: 9608983** **Close Date: 10/21/1996**

DOLSON AVE IFO MCDONALD MIDDLETOWN, NY TT−Id: 520A−0316−094

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 584 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	TIM HALLOCK − ORANGE & ROCKLAND UTL		Spiller Phone: (914) 577−2969
Notifier Type:	Responsible Party	Notifier Name:	TIM HALLOCK		Notifier Phone: (914) 577−2969
Caller Name:	TIM HALLOCK	Caller Agency:	ORANGE & ROCKLAND UTL.		Caller Phone: (914) 577−2969
DEC Investigator:	JYMCCART	Contact for more spill info:	TIM HALLOCK		Contact Person Phone: (914) 577−2969

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/19/1996		OTHER	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

spill on blacktop − non pbc − miller enviornmental on way for clean up −transformer fell off pole

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MCCARTHY

Map Identification Number 23 **RATUNDO PROPERTY** **Spill Number: 0901438** **Close Date: 05/19/2009**
1235 DOLSON TOWN RD WAWAYANDA, NY TT−Id: 520A−0316−099

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 587 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: PRIVATE DWELLING Spiller: 361 ORANGE COUNTY CAR #1 − DOMINC RATUNDO Spiller Phone:
Notifier Type: Fire Department Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: JKOMARA Contact for more spill info: 361 ORANGE COUNTY CAR #1 Contact Person Phone: (845) 742−0021

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/05/2009		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN MATERIAL	OTHER	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

There was a structure fire at the above location. This is a secondary structure fire that has included some vehicles. It is unknown at this time what materials have spilled. Orange County has requested ECO Buckley to the scene.

DEC Investigator Remarks:

5/5/09 Spoke to Daryl Vandermark, he had already spoken to O'Mara. Fire is out. some runoff with a sheen. Sorbant booms were place by Haz Mat. Owner will be contacting contractor to pump out 2 full drums of waste oil on site and cleanup what residual oil there may be from the fire water used. No other chemicals reported leaking or present.dvw

5/18/09− O'Mara reports cleanup is complete. NFA dt

Map Identification Number 24 **MIDDLETOWN SEWAGE TREATME** **Spill Number: 9913912** **Close Date: 03/09/2000**
DOLSON AV MIDDLETOWN, NY TT−Id: 520A−0117−924

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 637 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: BILL JOHNSON − MIDDLETOWN SEWAGE TREATME Spiller Phone: (914) 343−3169
Notifier Type: Responsible Party Notifier Name: CO RON WALRATH Notifier Phone:
Caller Name: BILL JOHNSON Caller Agency: DEPUTY COMM DPW OF MIDDLE Caller Phone: (914) 343−3169
DEC Investigator: mbmastro Contact for more spill info: BILL JOHNSON Contact Person Phone: (914) 343−3169

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/09/2000		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
CHLORINE	HAZARDOUS MATERIAL	0	GALLONS	0	GALLONS	AIR

Caller Remarks:

CHLORINE RELEASED INTO THE AIR FROM AN UNKNOWN SOURCE. CELL # 914−341−8861

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MASTRO 03/09/2000 EMPLOYEES NOTICE HEAVY CHLORINE ODOR AROUND 6:30 AM. LOOKED ABOUT 3 HOURS. TRIED TO TRACK DOWN SOURCE BUT WERE UNSUCCESSFUL. CONCLUDED SOMEONE DUMPED, ONE TIME EVENT. BACK TO NORMAL. NFA

Map Identification Number 25 **DOLSON AVENUE VALERO** **Spill Number: 1300579** **Close Date: 09/20/2013**
107−111 DOLSON AVENUE MIDDLETOWN, NY 10940 TT−Id: 520A−0287−298

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 647 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill:	GASOLINE STATION OR PBS FACILITY	Spiller:	Mark Dombal − Alta East	Spiller Phone:	
Notifier Type:	DEC	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	ELMOORE	Contact for more spill info:	SAM	Contact Person Phone:	(845) 342−1237

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/09/2013		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	SOIL

Caller Remarks:

See DEC Remarks

DEC Investigator Remarks:

4−17−13 During inspection, stained soil found under dispenser 7/8. This dispenser dispenses diesel and gasoline. No containment sumps. NOV to be sent. jc

9/20/2013 −− APECCO submitted spill closure report. All 4 dispensers were removed, contaminated soil/pea stone removed from each. Containment sumps installed and dispensers replaced. Clean up was not initiated until first week of September after the April inspection leading to the spill report. The PBS NOV was issued during July. Known contamination has been adequately remedied. nfa, meets stds. ELM

Map Identification Number 26 **COLUMBIA DEVELOPMENT** **Spill Number: 0005809** **Close Date: 11/15/2000**
181−191 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0117−909

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 654 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: UNKNOWN
Notifier Type: Other
Caller Name: KEN CASAMENTO
DEC Investigator: DVWEHRFR

Spiller: ORANGE CO. DPW
Notifier Name: JIM TUCCI
Caller Agency: BL COMPANIES
Contact for more spill info: KEN CASAMENTO

Spiller Phone:
Notifier Phone: (914) 485−7088
Caller Phone: (914) 485−7088
Contact Person Phone: (914) 485−7055

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/15/2000		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN MATERIAL	OTHER	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

SOIL SAMPLES TAKEN AT ABOVE LOCATION INDICATE CONTAMINATION. CALLER HAS SPOKEN WITH DAVE TRAVOR FROM REGION #3 OFFICE.
Sublimental gw invest. done. Closure given 11/15/2000.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ 08/15/2000 REPORT WILL BE SUBMITTED.

CLOSED STATUS HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − WITHIN 1/8 MILE SEARCH RADIUS.

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 27 **I−84 OVERPASS** **Spill Number: 9207196** **Close Date: 09/24/1992**
MCVEIGH ROAD WAWAYANDA, NY TT−Id: 520A−0316−110

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 42 feet to the NW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10973

Source of Spill:	UNKNOWN	Spiller:		Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:		Notifier Phone:	
Caller Name:	JEFF BRIDGES	Caller Agency:	WAWAYANDA SUPV.	Caller Phone:	(914) 355−4000
DEC Investigator:	DVWEHRFR	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/21/1992	09/24/1992	ABANDONED DRUM	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	UNKNOWN	0	UNKNOWN	SOIL

Caller Remarks:

ABANDONE DRUM FOUND BY ROAD NO ACTION WANTS DEC HELP & ADVICE,CALL BACK SPOKE WITH JEFF BRIGES APPEARS TO BE DOT DRUM FROM RECENT WORK ON BRIDGE SPOKE WITH RAY SPOLETI (343−0166) THEY WILL HANDLE

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ 09/27/95: This is additional information about material spilled from the translation of the old spill file: DRUM.

Map Identification Number 28 **MCVEIGH RD AT** **Spill Number: 0008425** **Close Date: 10/18/2000**
145 MCVEIGH RD MIDDLETOWN, NY TT−Id: 520A−0316−107

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 63 feet to the ESE*

ADDRESS CHANGE INFORMATION
Revised street: 145 MC VEIGH RD
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Other
Caller Name: TIM HALLOCK
DEC Investigator: JYMCCART

Spiller: CALLER − ORANGE AND ROCKLAND
Notifier Name:
Caller Agency: ORANGE & ROCKLAND UTILITI
Contact for more spill info: TIM HALLOCK

Spiller Phone: (914) 589−6164
Notifier Phone:
Caller Phone: (914) 589−6164
Contact Person Phone: (914) 589−6164

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/18/2000		TRAFFIC ACCIDENT	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	5.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

TRANSFORMER ON POLE NEXT TO POLE #48124/51719 AT LOCTION WAS HIT BY A VEHICLE AND KNOCKED DOWN − TRANSFORMER ON POLE THAT CAME DOWN SHOWS NON−PCB OIL − MILLER ENVIROMENTAL GRP ENRT TO CLEAN UP NOW

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MCCARTHY

Map Identification Number 29 **HESS STATION 32302** **Spill Number: 9702863** **Close Date: 04/09/2004**
154 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0117−899

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 76 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: GASOLINE STATION OR PBS FACILITY
Spiller: WARREN − HESS STATION 32302
Spiller Phone: (914) 342−0532
Notifier Type: Responsible Party
Notifier Name: DAVID MAZZETTI
Notifier Phone: (914) 342−0532
Caller Name: DAWN JOHNSON
Caller Agency: AMERADA HESS CORPORATION
Caller Phone: (908) 750−7068
DEC Investigator: DVWEHRFR
Contact for more spill info: WARREN
Contact Person Phone: (914) 342−0532

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/05/1997		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	5.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

DRAIN HOSE ON THE FILL IS LEAKING − LEAK ONTO PEASTONE − SPILL WILL BE CLEANED UP LATER TODAY AND REPAIR WILL BE DONE LATER TODAY

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ NEW OWNER IS ALTA EAST. 5/25/01− ALTA EAST TO MONITOR WELLS ON SITE.

Map Identification Number 30 **HESS STATION** **Spill Number: 9202812** **Close Date: 06/09/1992**
154 DOLSON AVE. MIDDLETOWN, NY TT−Id: 520A−0117−898

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 76 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	GASOLINE STATION OR PBS FACILITY	Spiller:		Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	CALVIN JONES	Caller Agency:	HESS	Caller Phone:	(908) 750−6548
DEC Investigator:	DVWEHRFR	Contact for more spill info:		Contact Person Phone:	

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/06/1992	06/09/1992	EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

LEAK FROM DISPENSER TO STORM DRAIN ATTENDANT AND F.D. APPLIED SORBENTS AND DISPOSED

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ

Map Identification Number 31 **CHESTNUT SUNOCO GAS STATION** **Spill Number: 1301465** **Close Date: 12/11/2015**
154 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0292−710

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 76 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	GASOLINE STATION OR PBS FACILITY	Spiller:	KAREN MALLOY − CHESTNUT SUNOCO GAS STATION	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	KABROWNE	Contact for more spill info:	KAREN MALLOY	Contact Person Phone:	(845) 204−1534

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/13/2013		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Weeping meter spilled to dispenser & ground. Cleanup is underway.

DEC Investigator Remarks:

5/13/13 Spoke to Karen Malloy. American Petroleum doing repairs on leaking dispenser. dw

5/13/13 Karen will keep tipple updated as work progresses. mt

5−24−13 Sent letter to Alta East & Chestnut for spills 07−04736,07−07248,& 13−01465. Closed 0707248 leaving open 0704736 & 13−01465 at this time, transfering project to Keith Browne. RDB

12/11/15 − The site had a monitoring program of three monitoring wells from 2008 until 2015. A remediation was conducted on site to reduce levels in the groundwater. The groundwater contamination is considered to be residue there is no longer a source on site. Two monitoring wells groundwater results showed VOCs above NYS standards. These levels are expected to decrease to below standards or no detect, since there is no contamination source. There are no significant impacts from the spill. NFA. KAB

Map Identification Number 32 **SUNOCO** **Spill Number: 0707248** **Close Date: 12/11/2015**
154 DOLSON AVENUE MIDDLE TOWN, NY TT−Id: 520A−0213−608

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 76 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: GASOLINE STATION OR PBS FACILITY
Notifier Type: Other
Caller Name:
DEC Investigator: KABROWNE

Spiller: RICH FISHER − SUNOCO
Notifier Name:
Caller Agency:
Contact for more spill info: BRAIN WARNER

Spiller Phone: (845) 256−0162 ext. 1
Notifier Phone:
Caller Phone:
Contact Person Phone: (631) 300−6732 ext. C

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/01/2007		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	GALLONS	0	GALLONS	GROUNDWATER

Caller Remarks:

PBS No: 3−180327 LEAKING PUMP; PRODUCT IN SUMP; NO CONTAINMENT; PILIMINARY TEST SHOW MATERIAL TANK PAD WELL; EXPECTING GROUNDWATER CONTAMINATION; ARE RESPONDING WITH VAC TRUCK AT THIS TIME− AND WILL MONITOR THE WELL FOR FURTHUR CONTAMINATION;

DEC Investigator Remarks:

LEFT MESSAGE FOR RICH FISHER AND BRIAN WARNER, NEVER RETURNED CALL.

1/17/08− Chestnut Petroleum, operator, retained Aztech Technologies to gauge and sample wells. Work was done on 1/15/08. Aztech reports that 4 tank field wells had only sheen of product with heavy odors. 3 existing MW’s located, 2 of which were abandoned in place; third MW had unremovable cover. Aztech also reported that Chestnut was to retain a vac truck on its own to perfrom hivac event on tank field wells.

1/29/08− Noted American Petroleum at site removing slab on top of tanks. American petroleum reports that tanks are to be relined.

1/28/10− Received GW Inv. report. Refer to KAB. DT

5−24−13 Sent letter to Alta East & Chestnut for spills 07−04736,07−07248,& 13−01465. Closed 0707248 leaving open 0704736 & 13−01465 at this time, transfering project to Keith Browne. RDB

12/11/15 − The site had a monitoring program of three monitoring wells from 2008 until 2015. A remediation was conducted on site to reduce levels in the groundwater. The groundwater contamination is considered to be residue there is no longer a source on site. Two monitoring wells groundwater results showed VOCs above NYS standards. These levels are expected to decrease to below standards or no detect, since there is no contamination source. There are no significant impacts from the spill. NFA. KAB

Map Identification Number 33 **SUNOCO STATION** **Spill Number: 0704736** **Close Date: 12/11/2015**
154 DOLSON AVENUE MIDDLETOWN, NY TT−Id: 520A−0119−439

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 76 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name:
DEC Investigator: KABROWNE

Spiller: DARYL VANDEMARK − ALTA EAST
Notifier Name:
Caller Agency:
Contact for more spill info: DARYL VANDEMARK

Spiller Phone: (845) 741−6516
Notifier Phone:
Caller Phone:
Contact Person Phone: (845) 741−6516

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/26/2007		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

Caller was called to pump out water that is built up in sumps. Found raw product. Water and gas. Pumps are shut down and operations. Will sump down as far as possible and search for leak. Thinks it’s pipe leak from tank to pumps. NO quanity at this time. Believed to be in secondary containment system

DEC Investigator Remarks:

LEFT # PAGE FOR DARYL − 7:00 LEFT 2 # PAGES & LEFT VOICEMAIL FOR DARYL

6/21/10 needs to be investigated. JO’M

5−24−13 Sent letter to Alta East & Chestnut for spills 07−04736,07−07248,& 13−01465. Closed 0707248 leaving open 0704736 & 13−01465 at this time, transfering project to Keith Browne. RDB

12/11/15 − The site had a monitoring program of three monitoring wells from 2008 until 2015. A remediation was conducted on site to reduce levels in the groundwater. The groundwater contamination is considered to be residue there is no longer a source on site. Two monitoring wells groundwater results showed VOCs above NYS standards. These levels are expected to decrease to below standards or no detect, since there is no contamination source. There are no significant impacts from the spill. NFA. KAB

Map Identification Number 34 **POWER LINE RIGHT−OF−WAY** **Spill Number: 1407791** **Close Date: 10/29/2014**
160 HARTLEY RD GOSHEN, NY TT−Id: 520A−0303−867

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 206 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10924

Source of Spill: COMMERCIAL VEHICLE Spiller: NORTH LINE UTILITIES Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: MBMASTRO Contact for more spill info: MIKE Contact Person Phone: 5853297127

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/28/2014		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	3.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Hydraulic line failed on bucket truck on O&R right of way. Spill was to stone and dirt. Clean up started with spill kit, further clean up pending until bucket, which is stuck extended, can be moved. Estimated 2−3 gallons lost.

DEC Investigator Remarks:

Spill from boom on truck. Oil on the ground is soaked up and pads down to catch drips. Machine will be fixed tonight, mechanic is on his way. Remainder of material will be cleaned up after machine is repaired and moved, nfa..m

Map Identification Number 35 **GOODYEAR AUTO SERVICE CTR** **Spill Number: 9702663** **Close Date: 10/03/1997**
125 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0117−904

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL | Spiller: SUSAN LUNT − GOODYEAR AUTO SERVICE CTR | Spiller Phone: (330) 796−1735
Notifier Type: DEC | Notifier Name: SCOTT ENGLES | Notifier Phone: (716) 773−1801
Caller Name: DENNIS HOYT | Caller Agency: ENCON | Caller Phone: (716) 773−1801
DEC Investigator: DVWEHRFR | Contact for more spill info: SUSAN LUNT | Contact Person Phone: (330) 796−1735

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/02/1997		HOUSEKEEPING	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
WASTE OIL/USED OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

SOIL AROUND FILL PIPE WAS IMPACTED − SOIL EXCAVATED − READINGS OF HNUPID 15−30PPM

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ 10−3−97 CLOSURE LETTER SENT. NFA

Map Identification Number 36 **KIRKS GARAGE** **Spill Number: 9613280** **Close Date: 02/28/1997**
CAMPBELL PLAZA 141 DOLSON MIDDLETOWN, NY TT−Id: 520A−0117−901

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 141 DOLSON AVE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE | Spiller: KIRKS GARAGE | Spiller Phone:
Notifier Type: Fire Department | Notifier Name: DISP 7 | Notifier Phone: (914) 469−4911
Caller Name: DISP 7 | Caller Agency: ORANGE CO FIRE CONTROL | Caller Phone: (914) 469−4911
DEC Investigator: JYMCCART | Contact for more spill info: | Contact Person Phone: ( ) 343−1493

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/10/1997		TRAFFIC ACCIDENT	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	30.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

GARAGE WAS REPAIRING A FUEL TANK WHEN IT RUPTURED AND FUEL FLOWED INTO THE STREAM − CALLER WOULD LIKE A CALL BACK WITH AN ETA RESPONSE

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MCCARTHY 02/10/97 TRACTOR TRAILER CLIPPED SIGN & RUPTURED SADDLETANK;

SPILL BEING CLEANED UP.

Map Identification Number 37 **TRANSFORMER POLE 47492/52093** **Spill Number: 1403714** **Close Date: 07/09/2014**
125 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0302−982

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: UNKNOWN Spiller: BRIAN BRUY − ORANGE & ROCKLAND UTIL Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: MBMASTRO Contact for more spill info: BRIAN BRUY Contact Person Phone: (646) 306−2772

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/07/2014		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	5.00	GALLONS	0.00	GALLONS	SOIL, SEWER

Caller Remarks:

Spilled to blacktop. Cleanup is pending. Clean Harbors enroute.

DEC Investigator Remarks:

Contractor enroute, nfa...mm

Map Identification Number 38 **SHOPPING CENTER CAMBELL PLAZZA** **Spill Number: 1302915** **Close Date: 06/17/2013**
125 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0292−709

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: SUE COHEN − CITY OF MIDDLE TOWN DPW SEWER Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: DECDOW Contact for more spill info: SUE COHEN Contact Person Phone: (845) 343−5614

Category: Investigation indicates there was no spill.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/11/2013		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
RAW SEWAGE	OTHER	0	UNKNOWN	0	UNKNOWN	AIR, SEWER

Caller Remarks:

inside shopping center − affected − clean up complete report never made to DEC Spills

DEC Investigator Remarks:

6/17/13: Sewage Spill. Forwarded to Health Dept and Division of Water. jod

Map Identification Number 39 **DOLSON AUTO & TIRE** **Spill Number: 1200632** **Close Date: 04/20/2012**
125 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0275−201

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: DOLSON AUTO & TIRE − DOLSON AUTO & TIRE Spiller Phone:
Notifier Type: Citizen Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxweitz Contact for more spill info: ANONYMOUS Contact Person Phone: (845) 978−2066

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/20/2012		DELIBERATE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
WASTE OIL/USED OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	SOIL

Caller Remarks:

Employees regularly dump garbage containers full of used oil filters from the day's oil changes into the dumpster. Call refused to leave name/caller ID showed incoming phone #.

DEC Investigator Remarks:

4/20/12 Spoke to caller, Steve Williams, who worked at this location until yesterday. He was laid off with another employee, but claims he refused to throw used (and undrained) oil filters into a dumpster. Called Dolson Auto, and they completely deny that this is true; that there is a contractor who comes periodically to dispose of used auto fluids. Waiting for callback from Ed Perry, the owner, who will be on site later. Got call back from Sven, the service manager, who described disposal method for oil filters. Employee was fired for leaving lug nuts loose on customer's car. NFA dw

Map Identification Number 40 **CAMBELL PLAZA 14 STORES** **Spill Number: 1005727** **Close Date: 08/23/2010**
125 DOLSEN AVE MIDDLETOWN, NY TT−Id: 520A−0257−681

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 125 DOLSON AVE
Revised zip code: 10940

Source of Spill:	UNKNOWN	Spiller:	CITY MIDDLETOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	MBMASTRO	Contact for more spill info:	SUE COHEN MANAGER	Contact Person Phone:	(845) 343−5614

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/23/2010		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
OTHER	OTHER	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

Caller states that the sewer back up and filled 14 stores with 3 inch of sewer.

DEC Investigator Remarks:

8/23/10 This is an ongoing problem, caller wanted to make an official report, caller has notified DOH, nfa...mm

Map Identification Number 41 **CONCRETE** **Spill Number: 0907334** **Close Date: 09/29/2009**
125 DOLTON AVE MIDDLETOWN, NY TT−Id: 520A−0233−508

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 125 DOLSON AVE
Revised zip code: 10940

Source of Spill:	UNKNOWN	Spiller:	PAD MOUNT TRANSFORMER	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxtraver	Contact for more spill info:	SAME AS ABOVE	Contact Person Phone:	

Category: Investigation indicates there was no spill.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/29/2009		EQUIPMENT FAILURE	YES	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

staining on concrete pad from pad mount transformer. Miller Env will be on stand by while they change out the pad mount transformer.

DEC Investigator Remarks:

Stain on concrete under transformer. No recoverable product. Miller on standby while transformer being replaced. NFA dt 9/29/09

Map Identification Number 42 **CAMPBELL PLAZA** **Spill Number: 0111422** **Close Date: 03/04/2002**
DOLSEN AV MIDDLETOWN, NY TT−Id: 520A−0316−106

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 218 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: DOLSON AVE
Revised zip code: 10940

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	SUE COHEN	Notifier Phone:	(845) 343−5614
Caller Name:	EDMUND CASSESE	Caller Agency:	MILLER ENVIRONMENTAL GRP	Caller Phone:	(914) 569−1200
DEC Investigator:	mbmastro	Contact for more spill info:	SUE COHEN	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/04/2002		ABANDONED DRUM	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN MATERIAL	OTHER	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

2 5 gal pales of material left in shopping cart. clean up in progress

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MASTRO 03/04/2002 PROBABLY PAINT THINNER − SAMPLED AND OVERPACKED, LABELED. ALSO 4 CAR BATTERIES − WERE TAKEN TO A RECYCLER. NO FURTHER ACTION.

Map Identification Number 43 **AUTO ZONE** **Spill Number: 0910592** **Close Date: 12/29/2009**
150 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0235−618

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 228 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL VEHICLE	Spiller:		Spiller Phone:	
Notifier Type:	Fire Department	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	kabrowne	Contact for more spill info:	FF HENDERSON	Contact Person Phone:	(845) 343−4169

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/29/2009		EQUIPMENT FAILURE	YES	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	12.00	GALLONS	12.00	GALLONS	IMPERVIOUS SURFACE

Caller Remarks:

LEAKING SADDLE TANK IN THE PARKING LOT OF AUTO ZONE. CLEAN UP PENDING SPILL IS CONTAINED.

DEC Investigator Remarks:

12/29/09 − The spill extended across Dolson Ave. Middletown Public Works and NYSDOT applied speedy dry and are sweeping the used speed dry. Spill cleaned up. NFA. KAB

Map Identification Number 44 **MIDDLETOWN SAVINGS BANK** **Spill Number: 9502427** **Close Date: 06/20/1995**
156 DOLSON AVE. MIDDLETOWN, NY TT−Id: 520A−0117−900

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 315 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL VEHICLE	Spiller:		Spiller Phone:	
Notifier Type:	Fire Department	Notifier Name:		Notifier Phone:	
Caller Name:	STEVE BODWIN	Caller Agency:	MIDDLETOWN F.D.	Caller Phone:	(914) 343−4169
DEC Investigator:	DVWEHRFR	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/26/1995	06/20/1995	EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	25.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SADDLE TANK LEAKING THE SPILL IS NOT NEAR ANY WATERWAYS DPW & F.D. ARE DOING CLEANUP

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ

Map Identification Number 45 **MARKEL RESIDENCE** **Spill Number: 9416346** **Close Date: 05/30/1995**
ECHO LAKE ROAD WAWAYANDA, NY TT−Id: 520A−0316−093
(1ST ON LF)

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 391 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: ECHO LAKE ROAD(1ST ON LF)
Revised zip code: 10973

Source of Spill: PRIVATE DWELLING Spiller: Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: JEFF BRIDGES Caller Agency: TOWN SUPER. Caller Phone: (914) 355−4000
DEC Investigator: DVWEHRFR Contact for more spill info: Contact Person Phone:

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/17/1995	05/30/1995	EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	GROUNDWATER

Caller Remarks:

OLD ROTTED TANK LEAKED REMAINING OIL ONTO GROUND AND INTO DITCH THE DITCH EVENTUALLY GOES TOWARDS ECHO LAKE NOT AFFECTED AT THIS TIME SEE SPILL # 9416349

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ

Map Identification Number 46 **POLE MOUNTED** **Spill Number: 0713701** **Close Date: 03/27/2008**
569 RT 50' NEW HAMPTON, NY TT−Id: 520A−0252−430

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 396 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: 569 HIGHWAY 50
Revised zip code: 10958

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	CHRIS MCCOLLOIN − POLE MOUNTED	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	VPMCCABE	Contact for more spill info:	CHRIS MCCOLLOIN	Contact Person Phone:	(845) 577−3152

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/27/2008		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

1/4 OF GALLON NON PCB AND CLEANING

DEC Investigator Remarks:

3/27/08: MEG RESPONDED & CLEANING UP. TO FINISH BY END OF DAY. −− NFA

Map Identification Number 47 **TRANSFORMER BANK @ POLE 47832/51846** **Spill Number: 1311310** **Close Date: 03/04/2014**
1184 DOLSON TOWN RD MIDDLETOWN, NY TT−Id: 520A−0298−141

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 469 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 1184 DOLSONTOWN RD
Revised zip code: 10958

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	O&R	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JYMCCART	Contact for more spill info:	AURTHUR	Contact Person Phone:	8455978333

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/04/2014		TRAFFIC ACCIDENT	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

Drops from Tx dripped to snow below, resulting from MVA. Clean Harbors will be responding. Tx bank is leaning. Believed to be Non−PCB, will confirm.

DEC Investigator Remarks:

3−4−14 Spoke with Arthur. As stated in report, motor vehicle accident hit pole and caused transformer on pole to leak. Clean harbors enroute to perform cleanup and O & R will repair/replace transformer. Told Arthur to call back if this turns out to be anything more serious. NFA jm

Map Identification Number 48 **PARKING LOT** **Spill Number: 0901602** **Close Date: 05/08/2009**
134 DOLSON AVE WALLKILL, NY TT−Id: 520A−0231−831

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 482 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxtraver	Contact for more spill info:	POKOTELO FD CAR 1	Contact Person Phone:	

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/08/2009		EQUIPMENT FAILURE	YES	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	10.00	GALLONS	0.00	GALLONS	

Caller Remarks:

Haz mat Rep on scene−clean up in progress.

DEC Investigator Remarks:

5/8/09− SPOKE TO FD ON SCENE. CLEANUP COMPLETED. ALL CONTAINED TO ASPHALT AND PADS/SPEEDIDRY USED. NFA DT

Map Identification Number 49 **SHOEMAKER SUB STATION** **Spill Number: 9509073** **Close Date: 10/23/1995**
DOLSNE AV MIDDLETOWN, NY TT−Id: 520A−0118−036

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	SAME	Spiller Phone:
Notifier Type:	Responsible Party	Notifier Name:	DOUG FULTON	Notifier Phone:
Caller Name:	TIM HALLOCK	Caller Agency:	ORANGE & ROCKLAND UTILITY	Caller Phone: (914) 577−2969
DEC Investigator:	JYMCCART	Contact for more spill info:	TIM HALLOCK	Contact Person Phone: (914) 577−2969

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/23/1995	10/23/1995	EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	15.00	GALLONS	15.00	GALLONS	SOIL

Caller Remarks:

OIL LEAK FROM BUSHING

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MCCARTHY 10/23/95 SPILL IN CONTAINMENT CLEANED UP AND EQUIPMENT REPAIRED

Map Identification Number 50 **O & R SITE(SHOEMAKER STA)** **Spill Number: 9400668** **Close Date: 04/21/1994**
DOLSON AVE. MIDDLETOWN, NY TT−Id: 520A−0118−035

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	SAME	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	BILL SAKSEN	Caller Agency:	O & R UTIL.	Caller Phone:	(914) 577−2989
DEC Investigator:	DVWEHRFR	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/14/1994	04/21/1994	HUMAN ERROR	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	15.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

CONTAINED ON CONCRETE PAD SORBENT APPLIED

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ

Map Identification Number 51 **SHOEMAKER GAS TURBINE PL.** **Spill Number: 9010101** **Close Date: 12/17/1990**
DOLSON AVE. MIDDLETOWN, NY TT−Id: 520A−0118−042

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name: MARY MCCORMICK
DEC Investigator: DVWEHRFR
Spiller: O & R
Notifier Name:
Caller Agency: O & R UTIL.
Contact for more spill info:
Spiller Phone:
Notifier Phone:
Caller Phone: (914) 577−2580
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/17/1990	06/18/1953	EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
JET FUEL	PETROLEUM	100.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

DIAPHRAM BLEW ON REGULATOR IN PUMP HOUSE ONTO GROUND TO STORM SEWER TOSWAMP BOOM AND SORBANT IN PLACE DW TO INVESTIGATE

DEC Investigator Remarks:

Administratively closed due to file review and/or information received. If new information arises to contradict this determination DEC reserves the right to reopen this spill without prejudice. Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRITZ

Map Identification Number 52 **SHOEMAKER SUB STATION** **Spill Number: 1311667** **Close Date: 03/14/2014**
71 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0298−140

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JBODEE	Contact for more spill info:	ART BARIKYAN	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/14/2014		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	0.25	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

clean up pending

DEC Investigator Remarks:

3/14/14: Spill of less than one gallon of non−PCB oil at substation. Cleanup is underway. No environmental impacts noted. No DEC response necessary. jod

Map Identification Number 53 **SHOEMAKER SUB STATION** **Spill Number: 1305009** **Close Date: 08/08/2013**
71 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0292−713

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JYMCCART	Contact for more spill info:	ORANGE AND ROCKLAND	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/08/2013		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	0.25	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

clean up underway

DEC Investigator Remarks:

8−8−13 Spoke with Arthur. Cleanup being completed by O & R. NFA jm

Map Identification Number 54 **O&R SUBSTATION** **Spill Number: 1202759** **Close Date: 05/21/2013**
71 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−1000−768

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	CHRIS MCCALLION − O&R UTILITIES	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	Unassigned	Contact for more spill info:	CHRIS MCCALLION	Contact Person Phone:	8455773152

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/20/2012		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

NON PCB OIL from a pressure relief valve due to an internal fault at transformer bank 811. Cleanup will be Clean Harbors Enviromental, who is enroute at this time. O&R On scene.

DEC Investigator Remarks:

6−20−12 Called and left message for Chris to return call to dispatch desk with status. jm

Clean Harbors hired for cleanup. NFA DT 5/21/13

Map Identification Number 55 **O&R FACILITY − SCHUMAKER SUBSTATION** **Spill Number: 1112666** **Close Date: 02/02/2012**
71 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0273−171

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	kabrowne	Contact for more spill info:	BOBTA KIM	Contact Person Phone:	(845) 558−6644

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/02/2012		EQUIPMENT FAILURE	YES	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	0.50	GALLONS	0.00	GALLONS	IMPERVIOUS SURFACE

Caller Remarks:

cleanup pending − clean harbors dispatched

DEC Investigator Remarks:

2/2/12 − Clean Habors conducting the clean up. Spill is within the substation on a concrete pad and gravel. NFA. KAB

Map Identification Number 56 **SHOEMAKER SUBSTATION** **Spill Number: 1012389** **Close Date: 03/13/2011**
DORSON AVE & REPUBLIC PLAZA DR MIDDLETOWN, NY TT−Id: 520A−0262−574

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: DOLSON AVE / REPUBLIC PLAZA
Revised zip code: 10940

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	ORANGE & ROCKLAND UTILITIES − ORANGE & ROCKLAND	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JPCUMMIN	Contact for more spill info:	ORANGE & ROCKLAND UTILITIES	Contact Person Phone:	(914) 231−6348

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/12/2011		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIELECTRIC FLUID	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Spilled onto blue stone and into soil. Cleanup is enroute and assessing. Contained at this time. Cleanup planned for today.

DEC Investigator Remarks:

3−13−11 Bushing on unit was removed while unit was being worked on during week. Unit was secured with plastic, but water got in and caused some oil to leak. Soil and gravel impacted. Clean Harbors responded. While cleaning up, encountered asphalt below soil and gravel. jc

Map Identification Number 57 **SHOEMACHER SUBSTATION** **Spill Number: 0000344** **Close Date: 05/16/2000**
DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0118−043

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 535 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name: ELLEN FRISCOE
DEC Investigator: dvwehrfr

Spiller: ELLEN FRISCOE − ORANGE & ROCKLAND UTILITI
Notifier Name: OLMAN
Caller Agency: ORANGE & ROCKLAND UTIL
Contact for more spill info: ELLEN FRISCOE

Spiller Phone: (914) 577−3535
Notifier Phone: (914) 577−3881
Caller Phone: (914) 577−3535
Contact Person Phone: (914) 577−3535

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/08/2000		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	75.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

300 kva transformer exploded depositing material onto stone surface spill has been contained, because substation is contained.
when transformer is moved cleanup crew will respond − probably not until monday. Oil is non−pcb

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEHRFRTIZ 04/08/2000 PER E. FRISCOE − EVERYTHING IS CONTAINED. WILL CLEAN UP MONDAY.

05/16/2000 D.W. SPOKE W/ELLEN @O&R. EVERYTHING CONTAINED. CLEANED UP. NFA

Map Identification Number 58 **MIDDLETOWN TAP/PAD MOUNT** **Spill Number: 1500463** **Close Date: 04/14/2015**
208 MCVAY AVE MIDDLETOWN, NY TT−Id: 520A−0316−102
SUBSTATION

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 580 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: 208 MCVEIGH AVE
Revised zip code: 10958

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	KABROWNE	Contact for more spill info:	CASEY TOMKINS	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/14/2015		EQUIPMENT FAILURE	YES	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	

Caller Remarks:

spill to blue stone/clean up pending outage

DEC Investigator Remarks:

4/14/15 − Clean up will be schedule later in the week. Electrical outgages will be associated with deengerzing sections of the substation to access spill. NFA. KAB

Map Identification Number 59 **MIDDLETOWN TAP SUBSTATION** **Spill Number: 1311453** **Close Date: 03/07/2014**
208 MCVEIGH RD MIDDLETOWN, NY TT−Id: 520A−0298−147

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 580 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10958

Source of Spill: COMMERCIAL/INDUSTRIAL | Spiller: ORANGE AND ROCKLAND | Spiller Phone:
Notifier Type: Other | Notifier Name: | Notifier Phone:
Caller Name: | Caller Agency: | Caller Phone:
DEC Investigator: JPCUMMIN | Contact for more spill info: AURTHUR BARIKYAN | Contact Person Phone: 8455978333

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/07/2014		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	2.00	GALLONS	0.00	GALLONS	

Caller Remarks:

Non PCB Oil leaked from a Tx to gravel. Contained, Planned outage for Clean Harbors to respond.

DEC Investigator Remarks:

3−7−14 Spoke with Art. Planned outage at 11pm tonight, at which point Clean Harbors will clean up. Art will call if details are different. jc

Map Identification Number 60 **MIDDLETOWN TAP STATION** **Spill Number: 0807535** **Close Date: 10/08/2008**
208 MCVIEGH RD MIDDLETOWN, NY TT−Id: 520A−0316−103

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 580 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: 208 MC VEIGH RD
Revised zip code: 10958

Source of Spill: UNKNOWN | Spiller: BOBCA KIM − ORANGE AND ROCKLAND UTILITIES | Spiller Phone:
Notifier Type: Local Agency | Notifier Name: | Notifier Phone:
Caller Name: | Caller Agency: | Caller Phone:
DEC Investigator: dxtraver | Contact for more spill info: TOM CAVENAUGH | Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/05/2008		EQUIPMENT FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	2.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Caller does not know any further details. Noaha environmental en route

DEC Investigator Remarks:

MEG on route to clean up approx. 6 gals of transformer oil (PCBs ?) MEG will also come back to finish next day...ra

Map Identification Number 61 **POLE # 47524/52136** **Spill Number: 1215054** **Close Date: 01/29/2013**
107 DOLSON AVE MIDDLETOWN, NY TT−Id: 520A−0288−017

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 647 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JYMCCART	Contact for more spill info:	ARTHUR BOREAKIAN	Contact Person Phone:	(845) 577−3440

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
01/29/2013		TRAFFIC ACCIDENT	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	5.00	UNKNOWN	0.00	UNKNOWN	

Caller Remarks:

5 oz − cleanup pending − clean harbors on way

DEC Investigator Remarks:

1−29−13 Spoke with Arthur. Vehicle hit pole and transformer is suspended from pole dripping slowly onto sidewalk. Clean Harbors enroute for cleanup. NFA jm

NO OIL STORAGE FACILITIES LARGER THAN 400,000 GALLONS IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PETROLEUM BULK STORAGE FACILITIES LESS THAN 400,000 GALLONS IDENTIFIED WITHIN THE 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 62 **CHESTNUT MART OF DOLSON AVENUE** **Facility Id: 3−180327** **Source: NYS DEC**
154 DOLSON AVENUE MIDDLETOWN, 10940 TT−Id: 640A−0043−409

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 63 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Retail Gasoline Sales
Site Status: Active
Expiration Date of the facility's registration certificate: 10/14/2017
Operator Name: CHESTNUT PETROLEUM DISTRIBUTION, INC. Operator Phone #: (845) 344−3337
Owner Name: MARK DOMBAL − VICE PRESIDENT
Owner Company: PLAYTOGS OUTPARCELS LLC Owner Type: Corporate or Commercial
Owner Address: 8 INDUSTRIAL WAY EAST 2ND FLOOR, EATONTOWN, NJ 07724

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Closed Prior to Micro Conversion 03/91	Gasoline	8000	Underground	04/01/1967		
2	Closed Prior to Micro Conversion 03/91	Gasoline	8000	Underground	04/01/1967		
3	Closed Prior to Micro Conversion 03/91	Gasoline	8000	Underground	04/01/1967		
4	Closed Prior to Micro Conversion 03/91	Diesel	10000	Underground	08/01/1983		
5	In Service	Gasoline/Ethanol	10000	Underground	09/01/1988	03/06/2008	
6	In Service	Gasoline/Ethanol	10000	Underground	09/01/1988		
7	In Service	Gasoline/Ethanol	10000	Underground	09/01/1988		
8	In Service	Diesel	10000	Underground	09/01/1988		

TANK NUMBER: 1 TANK TYPE: Steel/Carbon Steel/Iron TK INT. PROTECTION: None
TANK EXT. PROTECTION: None TANK LEAK DETECTN: None TK SEC. CONTAINMNT: None
PIPING EXT. PROTECTN: None PIPING LEAK DETECTN: PIPE SEC. CONTAINMNT:
PIPING TYPE: Galvanized Steel PIPING LOCATION: No Piping
OVERFILL PROTECTION: Product Level Gauge (A/G) SPILL PREVENTION: DISPENSER METHOD: Submersible

TANK NUMBER: 2 TANK TYPE: Steel/Carbon Steel/Iron TK INT. PROTECTION: None
TANK EXT. PROTECTION: None TANK LEAK DETECTN: None TK SEC. CONTAINMNT: None
PIPING EXT. PROTECTN: None PIPING LEAK DETECTN: PIPE SEC. CONTAINMNT:
PIPING TYPE: Galvanized Steel PIPING LOCATION: No Piping

**** TANK INFO FOR THIS SITE CONTINUES ON NEXT PAGE ****

OVERFILL PROTECTION:	Product Level Gauge (A/G)	SPILL PREVENTION:		DISPENSER METHOD:	Submersible
TANK NUMBER:	3	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:		PIPE SEC. CONTAINMNT:	
PIPING TYPE:	Galvanized Steel	PIPING LOCATION:	No Piping		
OVERFILL PROTECTION:	Product Level Gauge (A/G)	SPILL PREVENTION:		DISPENSER METHOD:	Submersible
TANK NUMBER:	4	TANK TYPE:	Fiberglass Reinforced Plastic (FRP)	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	None	PIPING LEAK DETECTN:		PIPE SEC. CONTAINMNT:	
PIPING TYPE:	Galvanized Steel	PIPING LOCATION:	No Piping		
OVERFILL PROTECTION:	Product Level Gauge (A/G)	SPILL PREVENTION:		DISPENSER METHOD:	Submersible
TANK NUMBER:	5	TANK TYPE:	Fiberglass Reinforced Plastic (FRP)	TK INT. PROTECTION:	Fiberglass Liner (FRP)
TANK EXT. PROTECTION:	Fiberglass	TANK LEAK DETECTN:	Interstitial − Electronic Monitoring	TK SEC. CONTAINMNT:	Double−Walled (Underground)
PIPING EXT. PROTECTN:	Fiberglass	PIPING LEAK DETECTN:	Exempt Suction Piping	PIPE SEC. CONTAINMNT:	None
PIPING TYPE:	Fiberglss Reinforcd Plastic(FRP)	PIPING LOCATION:	Underground/On−ground		
OVERFILL PROTECTION:	Automatic Shut−Off	SPILL PREVENTION:	Catch Basin	DISPENSER METHOD:	Suction
TANK NUMBER:	6	TANK TYPE:	Fiberglass Reinforced Plastic (FRP)	TK INT. PROTECTION:	Fiberglass Liner (FRP)
TANK EXT. PROTECTION:	Fiberglass	TANK LEAK DETECTN:	Interstitial − Electronic Monitoring	TK SEC. CONTAINMNT:	Double−Walled (Underground)
PIPING EXT. PROTECTN:	Fiberglass	PIPING LEAK DETECTN:	Pressurized Piping Leak Detector	PIPE SEC. CONTAINMNT:	None
PIPING TYPE:	Fiberglss Reinforcd Plastic(FRP)	PIPING LOCATION:	Underground/On−ground		
OVERFILL PROTECTION:	Automatic Shut−Off	SPILL PREVENTION:	Catch Basin	DISPENSER METHOD:	Submersible
TANK NUMBER:	7	TANK TYPE:	Fiberglass Reinforced Plastic (FRP)	TK INT. PROTECTION:	Fiberglass Liner (FRP)
TANK EXT. PROTECTION:	Fiberglass	TANK LEAK DETECTN:	Interstitial − Electronic Monitoring	TK SEC. CONTAINMNT:	Double−Walled (Underground)
PIPING EXT. PROTECTN:	Fiberglass	PIPING LEAK DETECTN:	Pressurized Piping Leak Detector	PIPE SEC. CONTAINMNT:	None
PIPING TYPE:	Fiberglss Reinforcd Plastic(FRP)	PIPING LOCATION:	Underground/On−ground		
OVERFILL PROTECTION:	Automatic Shut−Off	SPILL PREVENTION:	Catch Basin	DISPENSER METHOD:	Submersible
TANK NUMBER:	8	TANK TYPE:	Fiberglass Reinforced Plastic (FRP)	TK INT. PROTECTION:	Fiberglass Liner (FRP)
TANK EXT. PROTECTION:	Fiberglass	TANK LEAK DETECTN:	Interstitial − Electronic Monitoring	TK SEC. CONTAINMNT:	Double−Walled (Underground)
PIPING EXT. PROTECTN:	Fiberglass	PIPING LEAK DETECTN:	Pressurized Piping Leak Detector	PIPE SEC. CONTAINMNT:	None
PIPING TYPE:	Fiberglss Reinforcd Plastic(FRP)	PIPING LOCATION:	Underground/On−ground		
OVERFILL PROTECTION:	Automatic Shut−Off	SPILL PREVENTION:	Catch Basin	DISPENSER METHOD:	Submersible

Map Identification Number 63 **KIRK‘S NORTHERN TYRE** **Facility Id: 3−601189** **Source: NYS DEC**
125−155 DOLSON AVE MIDDLETOWN, 10940 TT−Id: 640A−0043−405

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 216 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Other Wholesale/Retail Sales
Site Status: Unregulated/Closed
Expiration Date of the facility’s registration certificate: 02/05/2003
Operator Name: JIM PRICE
Operator Phone #: (914) 343−1493
Owner Name: −
Owner Company: KIRKS NORTHERN TYRE
Owner Type: Corporate or Commercial
Owner Address: 125−155 DOLSON AVE, MIDDLETOWN, NY 10940

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Closed − Removed	Waste Oil/Used Oil	550	Underground			06/02/1997

TANK NUMBER: 1
TANK TYPE: Steel/Carbon Steel/Iron
TK INT. PROTECTION: None
TANK EXT. PROTECTION: None
TANK LEAK DETECTN: None
TK SEC. CONTAINMNT: None
PIPING EXT. PROTECTN: None
PIPING LEAK DETECTN:
PIPE SEC. CONTAINMNT:
PIPING TYPE: Galvanized Steel
PIPING LOCATION: Underground/On−ground
OVERFILL PROTECTION: None
SPILL PREVENTION:
DISPENSER METHOD:

Map Identification Number 64 **GENPAK CORPORATION** **Facility Id: 3−019542** **Source: NYS DEC**
REPUBLIC PLAZA MIDDLETOWN, 10940 TT−Id: 640A−0043−573

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 254 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Manufacturing (Other than Chemical)/Processing
Site Status: Unregulated/Closed
Expiration Date of the facility’s registration certificate: 09/02/2001
Operator Name: BILL GENTES
Operator Phone #: (914) 343−7971
Owner Name: −
Owner Company: GENPAK CORP
Owner Type: Corporate or Commercial
Owner Address: REPUBLIC PLAZA, MIDDLETOWN, NY 10940

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Closed − Removed	Other	22000	Underground	04/01/1974		
3	Closed − Removed	#2 Fuel Oil	10000	Underground	06/01/1976	04/01/1991	06/01/1997

Map Identification Number 65 **CONTINENTAL BAKING CO.** **Facility Id: 3−451134** **Source: NYS DEC**
140 DOLSON AVE. MIDDLETOWN, 10940 TT−Id: 640A−0043−407

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 275 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Manufacturing (Other than Chemical)/Processing
Site Status: Unregulated/Closed
Expiration Date of the facility's registration certificate: 06/28/1993
Operator Name: CONTINENTAL BAKING CO. Operator Phone #: (718) 526−3184
Owner Name: −
Owner Company: JOREN CO. Owner Type:
Owner Address: 94 DOLSON AVE., MIDDLETOWN, NY 10940

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Tank Converted to Non−Regulated Use	Diesel	10000	Underground	04/01/1982		03/01/2010

Map Identification Number 66 **LEE'S QUALITY TIRE, INC.** **Facility Id: 3−601762** **Source: NYS DEC**
1184 DOLSONTOWN ROAD MIDDLETOWN, 10940 TT−Id: 640A−0091−527

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 501 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 1184 DOLSONTOWN RD
Revised zip code: NO CHANGE

Facility Type: Other Wholesale/Retail Sales
Site Status: Active
Expiration Date of the facility's registration certificate: 11/14/2015
Operator Name: LEE R. HUBBERT Operator Phone #: (845) 344−4760
Owner Name: LEE R. HUBBERT − PRESIDENT
Owner Company: LEE R. HUBBERT Owner Type: Corporate or Commercial
Owner Address: 786 BUCK BROOK ROAD, NORTH BRANCH, NY 12766

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Closed − Removed	Waste Oil/Used Oil	500	Abovegrnd − In Contact w/Imperv. Barrier	11/01/2004		04/01/2008
2	Closed − Removed	Lube Oil	275	Abovegrnd − In Contact w/Imperv. Barrier	08/01/2004		04/01/2008
3	Closed − Removed	Waste Oil/Used Oil	275	Abovegrnd − In Contact w/Imperv. Barrier	08/01/2004		04/01/2008
4	Closed − Removed	Lube Oil	200	Abovegrnd − In Contact w/Imperv. Barrier	05/01/2005		04/01/2008
5	Closed − Removed	Lube Oil	200	Abovegrnd − In Contact w/Imperv. Barrier	05/01/2005		04/01/2008
6	Closed − Removed	Waste Oil/Used Oil	300	Aboveground on Crib Rack or Cradle	06/01/2005		04/01/2008
7	Closed − Removed	Waste Oil/Used Oil	300	Aboveground on Crib Rack or Cradle	06/01/2005		04/01/2008
8	Closed − Removed	Waste Oil/Used Oil	300	Aboveground on Crib Rack or Cradle	06/01/2005		04/01/2008
9	Closed − Removed	Waste Oil/Used Oil	300	Aboveground on Crib Rack or Cradle	06/01/2005		04/01/2008
10	Closed − Removed	Waste Oil/Used Oil	300	Aboveground on Crib Rack or Cradle	06/01/2005		04/01/2008
11	Closed − Removed	Waste Oil/Used Oil	300	Aboveground on Crib Rack or Cradle	06/01/2005		04/01/2008
01	In Service	Waste Oil/Used Oil	275	Abovegrnd − In Contact w/Imperv. Barrier	02/01/2010		
02	In Service	Waste Oil/Used Oil	275	Abovegrnd − In Contact w/Imperv. Barrier	02/01/2010		
03	In Service	Waste Oil/Used Oil	275	Abovegrnd − In Contact w/Imperv. Barrier	02/01/2010		
04	In Service	Waste Oil/Used Oil	275	Abovegrnd − In Contact w/Imperv. Barrier	02/01/2010		
05	In Service	MOTOR OIL	275	Abovegrnd − In Contact w/Imperv. Barrier	02/01/2010		
06	In Service	MOTOR OIL	275	Abovegrnd − In Contact w/Imperv. Barrier	02/01/2010		
07	In Service	Waste Oil/Used Oil	275	Abovegrnd − In Contact w/Imperv. Barrier	02/01/2010		

Map Identification Number 67 **SHOEMAKER GAS TURBINE FACILITY** **Facility Id: 3−412643** **Source: NYS DEC**
71 DOLSON AVENUE MIDDLETOWN, 10940 TT−Id: 640A−0043−451

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 536 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Site Status: Active
Expiration Date of the facility's registration certificate: 05/10/2019

Facility Type: Utility (Other than Municipal)

Additional PBS information for this site has been publicly withheld by the NYSDEC. The following is historic data:

TANK INFORMATION
Aboveground tanks: Yes Underground tanks: No

Operator Name: MIRANT NY
Operator Phone #: (845) 786−8000
Owner Name: ELLIOT NERI − PLANT MANAGER
Owner Company: MIRANT NY−GEN, LLC.
Owner Type: Corporate or Commercial
Owner Address: 140 SAMSONDALE AVENUE, WEST HAVERSTRAW, NY 10993

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
9	In Service	OTHER	216000	Aboveground	12/72		
1	In Service	UNLEADED GASOLINE	10000	Underground	12/01/1982	06/01/1995	
2	In Service	UNLEADED GASOLINE	10000	Underground	12/01/1982	06/01/1995	
3	In Service	DIESEL	10000	Underground	12/01/1982	06/01/1995	
4	Closed−Rmvd from Ground	USED OIL	1000	Underground	12/01/1953	06/01/1993	12/01/1993
4A	In Service	USED OIL	1000	Underground	02/01/1996	02/01/1994	
5	Closed−Rmvd from Ground	OTHER	550	Aboveground on Legs Racks Etc			12/01/1990
5A	In Service	OTHER	550	Aboveground on Legs Racks Etc	12/01/1990		
6	Closed−Rmvd from Ground	OTHER	550	Aboveground on Legs Racks Etc			12/01/1990
6A	In Service	OTHER	550	Aboveground on Legs Racks Etc	12/01/1990		
7	Closed−Rmvd from Ground	OTHER	275	Aboveground on Legs Racks Etc			12/01/1990
8	In Service	OTHER	216000	Aboveground	12/01/1972	06/01/1990	
8	Closed−Rmvd from Ground	OTHER	275	Aboveground on Legs Racks Etc			12/01/1990

Map Identification Number 68 **MIDDLETOWN WASTEWATER TREATMENT FACILITY** **Facility Id: 3−602100** **Source: NYS DEC**
159 DOLSON AVENUE MIDDLETOWN, 10940−4130 TT−Id: 640A−0087−205

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 626 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Municipality (Incl. WWTPs, Utilities, Swimming Pools)
Site Status: Active
Expiration Date of the facility's registration certificate: 02/12/2020
Operator Name: BEN BRUNNING Operator Phone #: (845) 346−4130
Owner Name: JACOB S. TAWIL, P.E. − COMMISSIONER OF PUBLIC WORKS
Owner Company: CITY OF MIDDLETOWN Owner Type:
Owner Address: 16 JAMES STREET, MIDDLETOWN, NY 10940

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
WWTF	In Service	Diesel	2250	Abovegrnd − In Contact w/Imperv. Barrier	02/12/2010		

Map Identification Number 69 **MAVIS DISCOUNT TIRE #139** **Facility Id: 3−602249** **Source: NYS DEC**
156 DOLSON AVENUE MIDDLETOWN, 10940 TT−Id: 640A−0089−070

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 630 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Other Wholesale/Retail Sales
Site Status: Active
Expiration Date of the facility's registration certificate: 07/27/2017
Operator Name: TOM SEXTON
Operator Phone #: (845) 342−3502
Owner Name: IAN LARSON − FACILITY MANAGER
Owner Company: PLAYTOGS CENTER ACQUISITION
Owner Type:
Owner Address: 8 INDUSTRIAL WAY E. 2ND FLOOR, EATONTOWN, NJ 07724

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	In Service	Lube Oil	500	Aboveground on Crib Rack or Cradle	03/13/2012		
2	In Service	Waste Oil/Used Oil	180	Aboveground on Crib Rack or Cradle	03/13/2012		

Map Identification Number 70 **DOLSON AVENUE VALERO** **Facility Id: 3−078832** **Source: NYS DEC**
107−111 DOLSON AVE. MIDDLETOWN, 10940 TT−Id: 640A−0043−404

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 642 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Types: Retail Gasoline Sales
The following additional facility type data has not been updated since 2002.
Other Retail Sales
Site Status: Active
Expiration Date of the facility's registration certificate: 05/07/2017
Operator Name: BEST STEAK SANDWICHES IN TOWN, INC.
Operator Phone #: (845) 342−4222
Owner Name: MARK DOMBAL − VICE PRESIDENT
Owner Company: ALTA EAST, INC.
Owner Type: Corporate or Commercial
Owner Address: 50 INDUSTRIAL PLACE, MIDDLETOWN, NY 10940−0257

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Closed − Removed	Gasoline	12000	Underground	12/01/1968	10/01/1989	04/01/1993
2	Closed − Removed	Gasoline	12000	Underground	12/01/1968	10/01/1989	04/01/1993
3	Closed − Removed	Gasoline	12000	Underground	12/01/1974	10/01/1989	04/01/1993

**** TANK INFO CONTINUES ON NEXT PAGE ****

4	Closed − Removed	#2 Fuel Oil	550	Underground	12/01/1968		04/01/1993
5	In Service	Gasoline/Ethanol	10000	Underground	04/01/1993	05/01/1993	
6	In Service	Diesel	10000	Underground	04/01/1993	05/01/1993	
7	In Service	Gasoline/Ethanol	10000	Underground	04/01/1993	05/01/1993	

HAZARDOUS WASTE GENERATORS/TRANSPORTERS IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 71 **NYSDEC Name:** **NYSDOT** **Facility Id: NYD986994929**

NYSDEC Address: 1−84 MIDDLETOWN, NY 10940 TT−Id: 740A−0036−538
EPA (RCRA) Name: NYSDOT 1−84 & MCVEIGH RD−BIN 1052502
EPA (RCRA) Address: 1−84 & MCVEIGH RD MIDDLETOWN, NY 10940

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 43 feet to the NW*

ADDRESS CHANGE INFORMATION
Revised street: I−84 / MC VEIGH RD
Revised zip code: 12549

US EPA RCRA Type: LARGE QUANTITY GENERATOR
Notification date: 03/16/1992
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:

Contact Name: GRETCHEN FITZGERALD	Source Type: Annual/Biennial Report update with Notification	Contact Phone: 845−431−7932	Contact Info Date: 05/08/2012
Contact Name: RICHARD MANNS	Source Type: Implementer	Contact Phone: 914−431−5743	Contact Info Date: 01/01/2007
Contact Name: RICHARD MANNS	Source Type: Notification	Contact Phone: 914−431−5743	Contact Info Date: 03/16/1992

Historically listed as the following USEPA RCRA Generator Size(s) as well:
SMALL QUANTITY GENERATOR

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	4800	POUNDS	GENERATED	2011		

Map Identification Number 72 **NYSDEC Name:** **NYSDOT BIN 1052501** **Facility Id: NYR000165357**

NYSDEC Address: I−84 WB OVER MCVEIGH RD WAWAYANDA, NY 10958 TT−Id: 740A−0068−896
EPA (RCRA) Name: NYSDOT BIN 1052501
EPA (RCRA) Address: I−84 WB OVER MCVEIGH RD WAWAYANDA, NY 10958

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 43 feet to the NW*

ADDRESS CHANGE INFORMATION
Revised street: I−84 / MC VEIGH RD
Revised zip code: NO CHANGE

US EPA RCRA Type: LARGE QUANTITY GENERATOR
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: 06/02/2009
Incinerator:
Transporter:
Contact Name: CARL KOCHERSBERGER Source Type: Notification Contact Phone: 518−485−9161 Contact Info Date: 06/02/2009

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	900	POUNDS	GENERATED	2011		

Map Identification Number 73 **NYSDEC Name:** **DUTCH GIRL CLEANERS** **Facility Id: NYD089759666**

NYSDEC Address: 125 DOLSON AVENUE MIDDLETOWN, NY TT−Id: 740A−0036−293
EPA (RCRA) Name: DUTCH GIRL CLEANERS
EPA (RCRA) Address: 125 DOLSON AVE MIDDLETOWN, NY 10940

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 187 feet to the WNW*

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

US EPA RCRA Type: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: 01/31/1986
Incinerator:
Transporter:
Contact Name: ANTONIO REDA Source Type: Notification Contact Phone: 914−342−4181 Contact Info Date: 01/31/1986

Historically listed as the following USEPA RCRA Generator Size(s) as well:
LARGE QUANTITY GENERATOR
SMALL QUANTITY GENERATOR

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
F002	Spent halogenated solvents	295	POUNDS	GENERATED	2006	1205	1988
F002	Spent halogenated solvents	30	GALLONS	GENERATED	1986		

Map Identification Number 74 **NYSDEC Name:** **GENPACK CO** **Facility Id: NYD096191192**
NYSDEC Address: REPUBLIC PLAZA MIDDLETOWN, NY 10940 TT−Id: 740A−0036−419
EPA (RCRA) Name: GENPAK CORP
EPA (RCRA) Address: REPUBLIC PLAZA MIDDLETOWN, NY 10940

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 224 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR Notification date: 03/16/1987
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:

Contact Name: SAM BATTIATO	Source Type: Implementer	Contact Phone: 914−343−7971	Contact Info Date: 01/01/2007
Contact Name: SAM BATTIATO	Source Type: Notification	Contact Phone: 914−343−7971	Contact Info Date: 03/16/1987
Contact Name: FELIX W GENTES	Source Type: Annual/Biennial Report	Contact Phone: 914−343−7971	Contact Info Date: 05/01/1992

Historically listed as the following USEPA RCRA Generator Size(s) as well:
SMALL QUANTITY GENERATOR

US EPA RCRA Violations:

Violation Type: Generators − General
Violation Number: 0001 Location: NY
Former Citation:
Responsible Agency: STATE
Violation Determination Date: 01/27/1987
Violation Return to Compliance: 05/20/1987

Violation Type: LDR − General
Violation Number: 0002 Location: NY
Former Citation:
Responsible Agency: STATE
Violation Determination Date: 10/31/1997
Violation Return to Compliance: 01/13/1998

Violation Type: Generators − General
Violation Number: 0003 Location: NY
Former Citation:
Responsible Agency: STATE
Violation Determination Date: 10/31/1997
Violation Return to Compliance: 01/13/1998

Violation Type: Generators − General
Violation Number: 0004 Location: NY
Former Citation:

Responsible Agency: STATE
Violation Determination Date: 07/30/2014
Violation Return to Compliance: 07/30/2014

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D001	Solid waste that exhibits the characteristic of ignitability	165	GALLONS	GENERATED	2013	259	1993
D002	Solid waste that exhibits the characteristic of corrosivity	110	GALLONS	GENERATED	2013		
U228	Ethene, trichloro−	5	GALLONS	GENERATED	2013		
D008	Lead	100	POUNDS	GENERATED	2012	114	1999
D018	BENZENE	450	POUNDS	GENERATED	2006	455	2000
F003	Spent non−halogenated solvents	227	POUNDS	GENERATED	2005	415	2001
D001	Solid waste that exhibits the characteristic of ignitability	150	POUNDS	GENERATED	2004	14161	1991
D039	Tetrachloroethylene	167	GALLONS	GENERATED	2001		
D009	Mercury	175	POUNDS	GENERATED	2000	365	1999
F005	Spent non−halogenated solvents	393	POUNDS	GENERATED	1998	400	1997
B002	Petroleum oil or other liquid containing 50 ppm < PCBs < 500 ppm	31	KILOGRAMS	GENERATED	1996		
B007	Other PCB Wastes including contaminated soil, solids, sludges, clothing, etc.	1190	KILOGRAMS	GENERATED	1996		
D039	Tetrachloroethylene	135	POUNDS	GENERATED	1991	135	1990
F002	Spent halogenated solvents	320	GALLONS	GENERATED	1989		

Map Identification Number 75 **NYSDEC Name:** **TAM ENTERPRISES INC** **Facility Id: NYR000186049**

NYSDEC Address: 114 HARTLEY RD GOSHEN, NY 10924 TT−Id: 740A−0080−478
EPA (RCRA) Name: TAM ENTERPRISES INC
EPA (RCRA) Address: 114 HARTLEY RD GOSHEN, NY 10924

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 255 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: 11/09/2011
Incinerator:
Transporter: YES
Contact Name: ANTHONY LASAPONARA Source Type: Notification Contact Phone: 845−294−8882 Contact Info Date: 10/28/2015

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
NONE	Site reported by US EPA. No hazardous waste activity reported by NYS.						

Map Identification Number 76 **NYSDEC Name:** **ORANGE COUNTY DPW CHEECHUNK BRIDGE** **Facility Id: NYR000195016**

NYSDEC Address: ECHO LAKE RD OVER WALLKILL RIV GOSHEN, NY 10924 TT−Id: 740A−0082−390
EPA (RCRA) Name: ORANGE COUNTY DPW CHEECHUNK BRIDGE
EPA (RCRA) Address: ECHO LAKE RD OVER WALLKILL RIV GOSHEN, NY 10924

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 586 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: ECHO LAKE RD / WALLKILL RIVER
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: WILLIAM OWEN Source Type: Implementer Contact Phone: 845−291−2771 Contact Info Date: 02/25/2013
Contact Name: WILLIAM OWEN Source Type: Temporary Contact Phone: 845−291−2771 Contact Info Date: 07/09/2012

Historically listed as the following USEPA RCRA Generator Size(s) as well:
LARGE QUANTITY GENERATOR

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	400	POUNDS	GENERATED	2012		

Map Identification Number 77 **NYSDEC Name:** **WALLACE OIL** **Facility Id: NYD987034386**

NYSDEC Address: 107−111 DOLSON AVE MIDDLETOWN, NY 10940 TT−Id: 740A−0036−294
EPA (RCRA) Name: DOLSON AVENUE MOBIL
EPA (RCRA) Address: 111 DOLSON AVE MIDDLETOWN, NY 109406538

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 616 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste: Notification date: 05/20/1993
Storer: Treatment facility: Incinerator:
Contact Name: MARK DOMBAL Source Type: Notification Transporter:
Contact Phone: 914−344−4271 Contact Info Date: 05/20/1993

Historically listed as the following USEPA RCRA Generator Size(s) as well:
SMALL QUANTITY GENERATOR

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D001	Solid waste that exhibits the characteristic of ignitability	110	GALLONS	GENERATED	1993		

Map Identification Number 78 **NYSDEC Name:** **MIDDLETOWN CITY OF** **Facility Id: NYD076681451**

NYSDEC Address: 159 DOLSON AVENUE MIDDLETOWN, NY 10940 TT−Id: 740A−0036−295
EPA (RCRA) Name: MIDDLETOWN SEWAGE TREATMENT PLANT
EPA (RCRA) Address: 159 DOLSON AVENUE MIDDLETOWN, NY 10940

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 634 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 159 DOLSON AVE
Revised zip code: NO CHANGE

US EPA RCRA Type: LARGE QUANTITY GENERATOR
Land Disposal: Receives offsite waste: Notification date: 12/17/1991
Storer: Treatment facility: Incinerator:
Contact Name: BEN BRUNNING Source Type: Annual/Biennial Report update with Notification Transporter:
Contact Phone: 845−346−4130 Contact Info Date: 04/14/2010
Contact Name: ALFRED FUSCO Source Type: Notification
Contact Phone: 914−343−3169 Contact Info Date: 12/17/1991

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D002	Solid waste that exhibits the characteristic of corrosivity	16242	GALLONS	GENERATED	2009		
D008	Lead	26160	POUNDS	GENERATED	1992		

Map Identification Number 79 **NYSDEC Name:** **MIDDLETOWN WATER TREATMENT PLANT** **Facility Id: NYD986908986**

NYSDEC Address: 136 DOLSON AVENUE MIDDLETOWN, NY 10940 TT−Id: 740A−0036−296
EPA (RCRA) Name: MIDDLETOWN WWTP UTICA
EPA (RCRA) Address: 136 DOLSON AVE MIDDLETOWN, NY 109406540

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 634 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: 08/06/1990
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: DENNIS ROGERS Source Type: Notification Contact Phone: 914−344−4131 Contact Info Date: 08/06/1990

Historically listed as the following USEPA RCRA Generator Size(s) as well:
LARGE QUANTITY GENERATOR

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
B006	PCB Transformers.	1948	KILOGRAMS	GENERATED	1990		

Map Identification Number 80 **NYSDEC Name:** **FAMILY DOLLAR STORE 4582** **Facility Id: NYR000216671**

NYSDEC Address: 156 DOLSON AVE MIDDLETOWN, NY 10940 TT−Id: 740A−0125−157
EPA (RCRA) Name: FAMILY DOLLAR STORE 4582
EPA (RCRA) Address: 156 DOLSON AVE MIDDLETOWN, NY 10940

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 637 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR Notification date: 11/05/2014
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: KEVIN STRAIGHT Source Type: Notification Contact Phone: 704−708−1909 Contact Info Date: 11/05/2014

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D001	Solid waste that exhibits the characteristic of ignitability	18	POUNDS	GENERATED	2015		
More than one waste code was reported for the following waste amount:		33	POUNDS	GENERATED	2015		

D004 Arsenic
D005 Barium
D007 Chromium
D009 Mercury
D011 Silver
D010 Selenium

NOTE: 2015 waste amounts are for 1/1/2015 to 12/18/2015 only

CHEMICAL STORAGE FACILITIES IDENTIFIED WITHIN THE 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 81 **GENPAK CORP.** **Facility Id: 3−000099**
REPUBLIC PLAZA MIDDLETOWN, NY 10940 TT−Id: 780A−0005−893

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE (1)
Approximate distance from property: 258 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 06/06/1995
Site Type: Manufacturing (Other than Chemical)/Processing

Site Status: Unregulated/Closed

NOTE: The following detailed facility and tank information has not been made publicly available by the NYSDEC since 1/1/2002.

Owner Name: GENPAK CORP.
Owner Address: REPUBLIC PLAZA MIDDLETOWN, NY 10940
Operator Name: BILL GENTES Facility Phone #: (914) 343−7971

TANK NUMBER	TANK STATUS	CHEMICAL NAME	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	DATE CLOSED
001	CLOSED−IN PLACE	CHLORODIFLUOROMETHANE	3300	ABOVEGROUND	06/82	00/00

Toxicity Information Summary

CHEMICAL NAME	CAS−NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
CHLORODIFLUOROMETHANE	75456	X	X	X	X		

Map Identification Number 82 **CITY OF MIDDLETOWN WASTEWATER TREATMENT FACILITL** **Facility Id: 3−000263**
159 DOLSON AVENUE MIDDLETOWN, NY 10940 TT−Id: 780A−0001−947

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE (1)
Approximate distance from property: 645 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Expiration Date of the facility's registration certificate: 03/27/1999
Site Status: Unregulated/Closed
Site Type: Municipality (Incl. Waste Water Treatment Plants, Utilities, Swimming Pools, etc.)

NOTE: The following detailed facility and tank information has not been made publicly available by the NYSDEC since 1/1/2002.

Owner Name: CITY OF MIDDLETOWN
Owner Address: 16 JAMES STREET MIDDLETOWN, NY 10940
Operator Name: RONALD WALRATH Facility Phone #: (914) 346−4130

TANK NUMBER	TANK STATUS	CHEMICAL NAME	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	DATE CLOSED
001	CLOSED−IN PLACE	SODIUM HYDROXIDE	10000	UNDERGROUND VAULTED W/ ACCESS	04/88	00/00

Toxicity Information Summary

CHEMICAL NAME	CAS−NO	ACUTE TOX	TUMOR TOX	MUTAG TOX	REPRO TOX	IRRIT TOX	MCL
SODIUM HYDROXIDE	1310732	X		X		X	

NO HAZARDOUS SUBSTANCE WASTE DISPOSAL SITES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

NO TOXIC AIR, LAND AND WATER RELEASES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

WASTEWATER DISCHARGES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 83 **MIDDLETOWN (C) STP** **Facility Id: NY0026328**
DOLSON AVENUE EXTENSION MIDDLETOWN, NY 10940 EPA(FINDS) Id: NYD076681451
TT−Id: 880A−0002−028

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE (1)
Approximate distance from property: 627 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Contact Name: TOM OWEN CHIEF OPER @ WWTP
Contact Phone: 9143433169

Receiving Waterbody: WALLKILL R
Average Design Flow (in millions of gallons/day): 6

Standard Industrial Code Description	Facility Type	Discharge Indicator	Facility Status	Permit Issued Date	Permit Expiration Date	Date Permit First Issued
SEWERAGE SYSTEMS	MUNICIPAL	MAJOR	ACTIVE	11/01/2001	03/01/2007	08/01/1977

AIR DISCHARGE FACILITIES IDENTIFIED WITHIN THE 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 84 **GENPAK CORP** **Facility Id: 3607100127** **State−county CDS Id: 3607100127**
REPUBLIC PLAZA MIDDLETOWN, NY 109400000 State−county NED id: 360710267
EPA (FINDS) Name: GENPAK CORP TT−ID: 900A−0005−089
EPA (FINDS) Address: DOLSON AVENUE MIDDLETOWN 109400000

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 222 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: DOLSON AVENUE
Revised zip code: 10940

CDS−ID: 00127 NED−ID: 0267 EPA−ID: NYD986878064 FINDS−ID: NYD986878064
Plant Phone #1: (914)343−7971 Plant Phone #2: (914)343−7971
Operating Status: OPERATING
EPA Classification:
State Classification: POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS IF AND ONLY IF SOURCE COMPLIES WITH FEDERALLY ENFORCEABLE REGULATIONS OR LIMITATIONS
EPA Plant Compliance Status:
State Plant Compliance Status: IN COMPLIANCE − CERTIFICATION

AIR PROGRAM INFORMATION
Regulatory Air Program: SIP SOURCE Program Status: OPERATING

POLLUTANT INFORMATION
Pollutant: DEFAULT POLLUTANT FROM CDS
State Pollutant Compliance for this pollutant: IN COMPLIANCE − CERTIFICATION

Map Identification Number 85 **O & R UTILTIES−SHOEMAKER GAS TURBINE** **Facility Id: 3607100082** **State−county CDS Id: 3607100082**
71 DOLSON AVENUE MIDDLETOWN, NY 109400000 State−county NED id:
EPA (FINDS) Name: ORANGE AND ROCKLAND UTIL INC TT−ID: 900A−0005−083
EPA (FINDS) Address: SHOEMAKER STATION MIDDLETON 109400000

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 587 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

CDS−ID: 00082 NED−ID: None Given EPA−ID: NYD986877991 FINDS−ID: NYD986877991
Plant Phone #1: (914)343−4422 Plant Phone #2: None Given
Operating Status: OPERATING
EPA Classification:
State Classification: ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS
EPA Plant Compliance Status:
State Plant Compliance Status: IN COMPLIANCE − INSPECTION

AIR PROGRAM INFORMATION
Regulatory Air Program: SIP SOURCE Program Status: OPERATING
Regulatory Air Program: TITLE V PERMITS Program Status: OPERATING

POLLUTANT INFORMATION
Pollutant: NITROGEN DIOXIDE
State Pollutant Compliance for this pollutant: IN COMPLIANCE − INSPECTION

Map Identification Number 86 **PENCOR MASADA OXYNOL LLC** **Facility Id: 3607100155** **State−county CDS Id: 3607100155**
950 22ND STREET N. SUITE 850 BIRMINGHAM, NY 35203 State−county NED id:
TT−ID: 900A−0007−774

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 625 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 159 DOLSON AVE
Revised zip code: 10940

CDS−ID: 00155 NED−ID: None Given EPA−ID: None Given FINDS−ID: None Given
Plant Phone #1: None Given Plant Phone #2: None Given
Operating Status: PLANNED (HAS APPLIED FOR A CONSTRUCTION PERMIT)
EPA Classification:
State Classification: ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS
EPA Plant Compliance Status:
State Plant Compliance Status: UNKNOWN WITH REGARD TO BOTH EMISSIONS AND PROCEDURAL COMPLIANCE

AIR PROGRAM INFORMATION
Regulatory Air Program: TITLE V PERMITS Program Status: PLANNED (HAS APPLIED FOR A CONSTRUCTION PERMI

POLLUTANT INFORMATION
Pollutant: SULFUR DIOXIDE
State Pollutant Compliance for this pollutant: UNKNOWN WITH REGARD TO BOTH EMISSIONS AND PROCEDURAL COMPLIANCE

NO CIVIL & ADMINISTRATIVE ENFORCEMENT DOCKET FACILITIES IDENTIFIED WITHIN THE 1/8 MILE SEARCH RADIUS

U.S. EPA EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) SPILLS
AT THE LOCATION OR POTENTIALLY AT THE LOCATION OF
Amy's Heritage Trail
Goshen/Middletown, NY

* Any ERNS Spills listed below are NOT mapped in this report *

ONSITE ERNS (A count of these spills can be found in the distance interval table):
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

POTENTIALLY ONSITE ERNS:
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

Copyright 2016 Toxics Targeting, Inc. March 03, 2016 'Amy's Heritage Trail'

Unmappable facilities for 'Orange' County

NPL/CERCLIS/NYSDEC Inactive Haz. Waste or Reg. Qual. Sites

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
336040	MONTGOMERY OVERALL SERVICE	336040 MONTGOMERY OVERALL SERVICE		UNKNOWN
336047	REVERE SMELTING & REFINING CORP. OF NJ			UNKNOWN
336016	OLD AL TURI LANDFILL	73 HARTLEY ROAD	GOSHEN	10924
NYD980506190	AL TURI LF	HARTLEY RD	GOSHEN	10924

Solid Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
36E04	ALTURI GAS RECOVERY			10924
36S12	CEJWIN'S CAMPS			UNKNOWN
36S13	CNTRAL HUDSON GAS & ELEC.			UNKNOWN
36T04	GREENWOOD LAKE T.S.			10924
36W02	TAYLOR RECYCLING FACILITY			UNKNOWN
36W07	MAYBROOK MATERIALS			UNKNOWN
36X01	SYNCOR NUCLEAR PHARMACY S			UNKNOWN
36Y03	NEAL ALDER'S TOPSOIL			UNKNOWN
36F02	MIDDLETOWN LFG, LTD. (AT)	AL TURI LANDFILL	GOSHEN	10924
36S04	AL TURI LF, INC.	73 HARTLEY ROAD	GOSHEN	10924
NY00000002387	AL TURI LF, INC.	73 HARTLEY ROAD	GOSHEN	10924
NY00000002403	AMERESCO - FORMERLY MIDDLETOWN LFG, LTD.	AL TURI LANDFILL	GOSHEN	10924
NY40000010514	GOSHEN RECYCLING CENTER	GOSHEN RECYCLING CENTER	GOSHEN	10924
NY00000002401	LITTLE BRITTAIN SITE	UNKNOWN	UNKNOWN	UNKNOWN
NY00000002433	WALLKILL LF (T)	UNKNOWN	WALLKILL	UNKNOWN

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9709340	FAIROAKS CENCO	RT 17M BOX 420	FAIR OAKS	10940
9811873	ORANGE CO HIGHWAY	RT 17M	GOSHEN	UNKNOWN
1206813	REST AREA	MM17 EASTBOUND I-84	MIDDLETOWN	UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
1100507	ROADWAY	I 84 WEST BOUND MILE 19.1	WALLKILL	UNKNOWN

Hazardous Spills - TANK FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8900360	ABANDONED GAS STATION	ROUTE 17M	CHESTER	UNKNOWN
0210076	CENCO STATION	ROUTE 17 M	FAIR OAKS	10940
9708772	ORANGE CO DPW	RT 17M	GOSHEN	10924
9600289	RESIDENCE	RT 17M	GOSHEN	10924
9202967	TEL CHEF	RT 17M	GOSHEN	UNKNOWN
0506382	MCBRIDE HOME	20 PARKWAY	GOSHEN	10924
9600670	DAIRY MART CONVT. STORE	16-18 COUNTY LINE ROAD	MIDDLETOWN	10940
9504440	FORMER SEARS SHOP	RUNNING FARM ROAD	MIDDLETOWN	10940
9102377	ALERES RESIDENCE	RD 4 BOX 5025	MIDDLETOWN	10940
0601835	PARKING LOT	130 DAWSON AVE	MIDDLETOWN	UNKNOWN
0502499	NORTHEND GARAGE	343 ROUTE 17M	MIDDLETOWN	UNKNOWN
0108384	KEITH YONSKY	21 GERTUDE DR	MIDDLETOWN	10940
9709135	MIDHUDSON INSTITUTION	ROUTE 17M	NEW HAMPTON	UNKNOWN
9212512	MID-HUDSON PSYCH. CENTER	RT. 17M	NEW HAMPTON	10924
8703951	MID HUDSON PSYCH	MID HUD PSYCH CENTRE	NEW HAMPTON	10924
9802705	BLUE CHIP FARMS	807 HOAGENBERG RD	WALLKILL	UNKNOWN
0300927	RESIDENCE	1083 HOAGERBURGH RD	WALLKILL	UNKNOWN
0002413	SPILL NUMBER 0002413	2230 BRUSNWICK RD	WALLKILL	UNKNOWN

Hazardous Spills - TANK TEST FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8702488	CHESTER VALLEY	ROUTE 17M	CHESTER	UNKNOWN
8801312	DAVIS MOTOR INC.	RT17M	FAIR OAKS	10940
9700870	CITCO GAS STATION	RT 17N	GOSHEN	10924
9304784	O & R UTIL.	RT 17M	GOSHEN	10940
9300288	CITGO S/S	RT 17M	GOSHEN	UNKNOWN
9210866	ORANGE CO. DPW	RT 17M	GOSHEN	UNKNOWN
9210739	GOSHEN SCH.DIST.BUS GAR.	OFF STOCKTOWN ROAD	GOSHEN	10924
9210685	RT. 17M DEPT. PUB. WORKS	3 ORANORCO ROAD	GOSHEN	UNKNOWN
8706698	ORANGE CO DPW	RT 17M	GOSHEN	10924
8606031	TOYOTA	RTE 17M	MIDDLETOWN	10940
8602865	REYNOLDS METAL	REYNOLDS METALS CO	MIDDLETOWN	10940
1008079	TANK TEST FAILURE	VIOLA AVE OSTRANDER ELEMENTARY	WALKILL	UNKNOWN

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9612574	SPILL NUMBER 9612574	RD 1 BOX 499		UNKNOWN
9501456	1111	NYS THRUWAY		UNKNOWN
9315557	111111111111	UNKNOWN		UNKNOWN
9314382	111111111	UNKNOWN		UNKNOWN
9312516	111111111	UNKNOWN		UNKNOWN
9307357	11111111111111111111	UNKNOWN		UNKNOWN
9307010	11111111111111	UNKNOWN		UNKNOWN
9306124	11111111111	UNKNOWN		UNKNOWN
9305931	1111111111	UNKNOWN		UNKNOWN
9305322	111111111111	UNKNOWN		UNKNOWN
9303425	11111111111	UNKNOWN		UNKNOWN
9303357	1111111111	UNKNOWN		UNKNOWN
9303329	1111111111	UNKNOWN		UNKNOWN
9301341	11111111111	UNKNOWN		UNKNOWN
9300671	11111111111	UNKNOWN		UNKNOWN
9214241	111111111	UNKNOWN		UNKNOWN
9213074	1111111	UNKNOWN		UNKNOWN
9205774	1111111111111	UNKNOWN		UNKNOWN
9202836	11111111111	UNKNOWN		UNKNOWN
1410487	ORANGE COUNTY EM. RES.	21 SOUTH PUTT CORNERS ROAD		UNKNOWN
1106445	ORANGE IRENE	ALL OF ORANGE COUNTY		UNKNOWN
9700067	CHESTER MALL	ROUTE 17M	CHESTER	10918
9511165	D AND J SALVAGE	BOX 133 RT 17M	FAIR OAKS	UNKNOWN
9935032	HUDSON VALLEY LANDSCAPING	RT 17M	GOSHEN	UNKNOWN
9814382	GOSHEN SECURE CENTER	CROSSROAD	GOSHEN	10924
9600891	MACK BROTHER FOODS	RT 17M	GOSHEN	10924
8904718	PLAY TOGS DEPT. STORE	RT 17M	GOSHEN	10940
8700999	DEC DUMP	ROUTE 17 M	GOSHEN	10924
0135035	NEW HAMPTON WATER DEPT	RT 17M	GOSHEN	10924
0708063	WASTE WATER	95 3RD ROAD	MIDDLE TOWN	10940
9910635	MONHAGEN BROOK	SE OF DOLSON AVE	MIDDLETOWN	10940
9705286	I84 EB NEW HAMPTONBURG RE	ST AREA BY MILE MARKER 17	MIDDLETOWN	10940
9510610	DAIRY MART	16 COUNTYLINE RD	MIDDLETOWN	10940
9310372	MOBIL S/S	RT. 17M CHRISTAL RUN	MIDDLETOWN	10940
9309500	UAYUAYONDA AVE.	UAYUAYONDA AVE	MIDDLETOWN	10940
9200562	EXITS 3 & 4 EASTBOUND	I-84	MIDDLETOWN	10940
9000151	AGWAY GAS STATION	RT. 17 M	MIDDLETOWN	10940
8907245	CPI GAS STATION	DELSON AVE	MIDDLETOWN	10940
8808795	SULLIVANS DEPT. STORE	SULLIVANS DEPT. STORE	MIDDLETOWN	10940
8805598	TOWNSEND BLD.	DRAPER BROOK	MIDDLETOWN	10940
8600078	SPILL NUMBER 8600078	RT.17N-ROEDERS PIANO-ACRS	MIDDLETOWN	10940
8302593			MIDDLETOWN	10940

8301946			MIDDLETOWN	10940
1407391	ORANGE AND ROCKLAND UTIL	71 DOLSON AVE	MIDDLETOWN	10940
1100522	SOIL	EXIT 4E ON ROUTE 84 WB	MIDDLETOWN	UNKNOWN
0906630	MIDDLETOWN OPERATING CENTER	71 DOLSON AVE	MIDDLETOWN	10940
0400488	MIDDLETOWN OPERATING CENT	71 DOLSON AVE	MIDDLETOWN	10940
0314155	MOBIL ON THE RUN	DOLSON AVE/RT 17 M	MIDDLETOWN	10958
0313294	SIENA OFFICE BUILD	800 RT.17M	MIDDLETOWN	10940
0300537	SPILL NUMBER 0300537	71 DOLSON AVE	MIDDLETOWN	10940
9906965	MILE MARKER 16.5	NEW YORK STATE THRUWAY	NEW HAMPTON	10958
9801140	EASTERDAY RESIDENCE	SO DENIS DRIVE	NEW HAMPTON	10958
9513154	MID-HUDSON PSYCH CENTER	RT17M	NEW HAMPTON	10924
0707132	MID HUDSON FORENSIC PSYCH	RT. 17M	NEW HAMPTON	10958
0307506	MID HUDSON PHYC CENTER	RT 17 M	NEW HAMPTON	10958
0504313	MID HUDSON MENTAL HEALTH	RT 17M, BOX 158	NORTH HAMPTON	10958
9910658	CURRY RESIDENCE	682 FOSTERTOWN RD	WALLKILL	12550
9810641	ROADWAY	I-84 EB	WALLKILL	UNKNOWN
9705284	REST AREA MILE MARKER 24	I-84 EAST BOUND	WALLKILL	UNKNOWN
8706345	CLIFF WHITE	RT 17M MIDDLETOWN	WALLKILL	UNKNOWN
8301082			WALLKILL	UNKNOWN
8300030			WALLKILL	UNKNOWN
0710304	18.6 EAST BOUND	I84	WALLKILL	UNKNOWN
0206478	ORANGE POWDER ON LAWN	3 TAYLOR LANE	WALLKILL	UNKNOWN
0103047	LEO'S SERVICE CENTER	RT 17M (NORTH ST)	WALLKILL	UNKNOWN
0000203	WALLKILL SERVICE AREA	I-84	WALLKILL	UNKNOWN
8000715			WASHINGTON HEIGHTS	10940
9703377	I 84 WETBOUND	MILE MARKER 16.7	WAWAYANDA	10973
9411028	NEW HAMPTON REST STOP	I-84 EASTBOUND	WAWAYANDA	10973
9109748	HIGHWAY	I-84 WESTBOUND	WAWAYANDA	10973
8900273	SPILL NUMBER 8900273	MOREEN DRIVE/ROBIN MEADOW	WAWAYANDA	10973
0803325	ROADWAY	I 84, MP 15.9	WAWAYANDA	UNKNOWN
8100682			WAYANDA	10973

Hazardous Spills - MISC. SPILL CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9207841	MIDWAY TEXACO	ROUTE 17M	CHESTER	UNKNOWN
9011387	KEY BANK.	ROUTE 17M	CHESTER	UNKNOWN
9006880	POLE # 6180-60	ROUTE 17M	CHESTER	UNKNOWN
8909349	SPI S/S	RT.17 M	CIRCLEVILLE	10940
0503940	TRACTOR TRAILER ACCIDENT	RT 84 MM 11.3 WB	DEER PARK	UNKNOWN
9912574	POLE 49278-51483	CHEECHUNK RD	GOSHEN	10924
9810071	BY COUNTY CONVENIENCE	RTE 17 M	GOSHEN	UNKNOWN
9614152	ORANGE COUNTY DPW	RT 17M	GOSHEN	10924
9505676	RD 3 PO BOX 452	RD 3 PO BOX 452	GOSHEN	10924
9408114	MAIN GARAGE AT DPW	RT 17M	GOSHEN	UNKNOWN
9312507	LANG CITGO	17M COUNTRY COVENIENT	GOSHEN	10924
9212263	VALLEY FRAGRANCE & FLAVOR	RT 17M	GOSHEN	UNKNOWN
9111224	JACK PERRY FORD	RT 17M	GOSHEN	UNKNOWN
9011451	ALTAN LANDFILL	RT 17M WEST	GOSHEN	UNKNOWN
9010678	LEO MAPLE SERVICE STATION	RT 17M	GOSHEN	10940
9000484	EXXON S/S	P.O. BOX 702	GOSHEN	UNKNOWN
8909638	ALTERI LANDFILL	RT 17M	GOSHEN	UNKNOWN
8709311	MC BRIDE	MCBRIDE TERMINAL	GOSHEN	10924
8706108	MCBRIDE	MCBRIDE TERMINAL	GOSHEN	10924
8604416	WEHRAN ENGINEERING	JACK PERRY FORD	GOSHEN	10924
1500285	AL TURI LANDFILL	17 M HARTLEY RD	GOSHEN	10924
1000001	POLE 49653-49841	MELBOURNE RD	GOSHEN	10924
0709268	KWON HOME	12 FRAN ROAD NORTH	GOSHEN	10924
0607693	AMARESCO LANDFILL/GAS SIG	73 HARTLEY RD	GOSHEN	10924
0404229	MID HUDSON FORESIC AND PH	ROUTE 17 M	GOSHEN	10924
0404076	PRIVATE RESIDENCE	TAMERON LANE OFF AXWIRTHY	GOSHEN	10924

0205065	SPILL NUMBER 0205065	354 FAIRWELLS TRAILS	GOSHEN	UNKNOWN
0202980	POLE #31/61	HALLSTOWN RD	GOSHEN	10924
0202611	GOSHEN COLISION CENTER	RT 17M	GOSHEN	10924
0909239	INT 84 EXIT 4W EAST	INT 84 EXIT 4W EAST	MECHANICSTOWN	10940
1307021	GROUND	71 DELSON AVE	MIDDLE TOWN	10940
9810156	IMPERIAL RIDGE	BUILDING 14	MIDDLETOWN	10940
9801865	RESIDENCE	BOX 4030	MIDDLETOWN	UNKNOWN
9710175	ORANGE AND ROCKLAND UTILI	DOLSON AVE	MIDDLETOWN	10940
9709988	LAND	I84 MEDIAN EX #4 MM #19	MIDDLETOWN	10940
9602375	MIDDLE TOWN OP CENTER	DOLSON AVE	MIDDLETOWN	10940
9510459	OFF RT 17M	VANBURENVILLE RD	MIDDLETOWN	10940
9416551	ROADWAY	17 M EXTENSION	MIDDLETOWN	10940
9412843	SUN GLOBE	RD #7 TAUX RD.	MIDDLETOWN	10940
9412399	PINTER RESIDENCE	RD 1 BOX 258	MIDDLETOWN	10940
9404875	ON ROADWAY	I-84 M.M. 9.8	MIDDLETOWN	10940
9404289	MIDCITY TRANSIT	1518 RT. 17M	MIDDLETOWN	10940
9304391	UTILITY POLE	OLIVER & LAKE ROAD	MIDDLETOWN	10940
9303896	HUDSON PSYPH. CENTER	ROUTE 17M	MIDDLETOWN	10940
9301816	REST STOP	I-84 EAST	MIDDLETOWN	10940
9301159	O & R POLE	DOLSON AVE.	MIDDLETOWN	10940
9211394	O & R UTILITIES	WASHINGTON SUBSTATION	MIDDLETOWN	10940
9210434	HIGHWAY	RT. 84 MM 13 WEST	MIDDLETOWN	10940
9200975	SEARS MIDDLETOWN	SEARS AUTOMOTIVE	MIDDLETOWN	10940
9005736	BEEBE RESIDENCE	MIDMILLS ROAD RD 3 BOX 3	MIDDLETOWN	10940
8909350	SPI S/S	RT. 17 M	MIDDLETOWN	10940
8903762	UNKNOWN TRUCK	RT.84 WEST BOUND	MIDDLETOWN	10940
8803462	AGWAY	NORTH ST	MIDDLETOWN	10940
8709922	WINTERTON RD	RD 5 BOX 320	MIDDLETOWN	10940
8702739	AGWAY	RTE 84	MIDDLETOWN	UNKNOWN
8702509	SUPER VALUE	DOLSON AVE	MIDDLETOWN	10940
1503819	MIDDLETOWN OPERATING FACILITY	71 DAWSON AVE	MIDDLETOWN	10940
1503789	MIDDLETOWN OPERATING CENTER	71 DOLSON AVE	MIDDLETOWN	10940
1502127	ORANGE AND ROCKLAND UTIL OPER CTR	71 DOLSON AVE	MIDDLETOWN	10940
1500060	TRANSFORMER47899	14 MERDILE AVE	MIDDLETOWN	UNKNOWN
1411362	I84 MM 3.3 W	I84 BTWN EXIT 2 AND 1 WESTBOUND	MIDDLETOWN	UNKNOWN
1410280	MIDDLETOWN OPERATING CENTER	71 DOLSON AVE	MIDDLETOWN	10940
1405379	O&R GARAGE - SADDLE TANK	71 DOLSON AVE	MIDDLETOWN	10940
1311948	ROADWAY	INTER STATE 84 WB MM 25.1	MIDDLETOWN	UNKNOWN
1311659	GARBAGE TRUCK ROLLOVER	I-84 MILE 19.5 WEST BOUND	MIDDLETOWN	UNKNOWN
1304112	BUSINESS	71 DOLSON AVE	MIDDLETOWN	10940
1302278	STORM DRAIN	71 DOLSON AVE	MIDDLETOWN	10940
1300720	MIDDLETOWN OPERATING CENTER	71 DOLSON AVE	MIDDLETOWN	10940
1206968	PVT DWELLING	38 WINTERS LANE	MIDDLETOWN	UNKNOWN
1206607	REST STOP MM 17 EAST	I-84 EASTBOUND	MIDDLETOWN	UNKNOWN
1205900	PAVEMENT	71 DOLSON AVE	MIDDLETOWN	10940
1203621	FIELD NEXT TO ROADWAY	NYC ROAD 10	MIDDLETOWN	UNKNOWN
1202009	LITTLE TOWN OPERATING CTR	71 DOLSON AVE	MIDDLETOWN	10940
1201728	MVA	MM 16.3 IN 84 EST	MIDDLETOWN	UNKNOWN
1201162	BLACKTOP	ORANGE AND ROCKLAND GARAGE	MIDDLETOWN	UNKNOWN
1200649	POLE NUMBER 6683-52661	COMFORT FARM ROAD	MIDDLETOWN	UNKNOWN
1200259	TRANSFORMER - MIDDLETOWN FACILITY	71 DOLSON AVE	MIDDLETOWN	10940
1113059	PRIVATE RESD	57 UPPER RD	MIDDLETOWN	UNKNOWN
1112801	ORANGE & ROCKLAND BLOOMING GROVE GARAGE	71 DOLSON AVE	MIDDLETOWN	10940
1111977	RUPTURED SADDLE TANK	I-84 MM 16.9 EASTBOUND	MIDDLETOWN	UNKNOWN
1111819	POLE MOUNT #47708/5401	INGRAFFIA RD/ROUTE 17M	MIDDLETOWN	10940
1111423	MIDDLE TOWN FACILITY	71 DOLSON AVE	MIDDLETOWN	10940
1110852	MIDDLETOWN YARD	71 DOLSON AVE	MIDDLETOWN	10940
1110029	TRAFFIC ACCIDENT	JAMES KELLY WAY AND DOLSON AVE	MIDDLETOWN	UNKNOWN
1107782	POLE # 48015/55261	2 NICAGA COURT	MIDDLETOWN	UNKNOWN
1105271	OPERATING FACILITY	71 DOLSON AVE	MIDDLETOWN	10940

1104459	TRUCK 90860	71 DALTON AVE	MIDDLETOWN	UNKNOWN
1012177	INTO SOIL	71 DOLSON AVE.	MIDDLETOWN	10940
1012143	BACKHOE ON PAVEMENT	71 DOLSEN AVE	MIDDLETOWN	10940
1007918	O&R : MIDDLETOWN FACILITY	71 DILSON AVE	MIDDLETOWN	10940
1003641	MIDDLETOWN FACILITY	71 DOLSON AVE	MIDDLETOWN	10940
1001009	COMMERCIAL SITE	71 DOLSON DR	MIDDLETOWN	10940
0913669	PAD MOUNT TRANSFORMER/MIDDLE TOWN OPERATING CENTER	71 DOLSON AVE	MIDDLETOWN	10940
0912772	MIDDLETOWN OPERATING CTR	71 DOLSON AVE	MIDDLETOWN	10940
0912597	MIDDLETOWN OPERATING CTR	71 DOLSON AVE	MIDDLETOWN	10940
0910204	PARKING LOT OF COMMERCIAL BUILDING	88 DUNNING PLAZA	MIDDLETOWN	10940
0909657	MIDDLETOWN OPERATING FACILITY	71 DOLSON AVE	MIDDLETOWN	10940
0909063	MIDDLETOWN OPERATING CENTER	71 DOLSON AVE	MIDDLETOWN	10940
0902474	O & R UTLITIES: UPS TRUCK	71 DOLSEN AVE	MIDDLETOWN	10940
0813382	TRUCK ROLLOVER	I-84 MP 19.2 WB	MIDDLETOWN	UNKNOWN
0808895	RESIDENCE	130 M&M ROAD	MIDDLETOWN	10940
0708067	ORANGE & ROCKLAND TRUCK	71 DOLSON AVE	MIDDLETOWN	10940
0613072	TRANSFORMER # 48317-53430	WINDFLOWER RD	MIDDLETOWN	UNKNOWN
0607720	IN FRONT OF NISSSAN CAR	RT 17M	MIDDLETOWN	10958
0603453	MIDDLETOWN OPER CENTER	DOLSON AVE	MIDDLETOWN	10940
0508893	MEDIAN	I-84 WEST BOUND MI. MARK	MIDDLETOWN	UNKNOWN
0504972	BUILDING 117	47 M AVE	MIDDLETOWN	UNKNOWN
0500349	I -84 WB	MM 24.1	MIDDLETOWN	UNKNOWN
0410875	I-84 WB	EXIT 53 OFFRAMP	MIDDLETOWN	10940
0407285	ON ROAD	NEW VERON RD.	MIDDLETOWN	10940
0402545	SPILL NUMBER 0402545	71 DOLSON AVE	MIDDLETOWN	10940
0305179	WATKINS GLENN RD	133 WATKINS GLENN RD	MIDDLETOWN	10940
0210279	CONCRETE BASEMENT	985 ROUTE 17M BLDG 16	MIDDLETOWN	10940
0203485	LAWERENCE &	LUTZ DR	MIDDLETOWN	UNKNOWN
0200702	SPILL NUMBER 0200702	REPUBLIC DR	MIDDLETOWN	UNKNOWN
0111574	0	HAGAN RD	MIDDLETOWN	UNKNOWN
0101291	MIDDLETOWN OPERATING CTR	71 DOLSON AVE	MIDDLETOWN	10940
9304501	BUILDING 128	CIRCULATION ROAD	NEW ?	UNKNOWN
9905706	MID HUDSON FORENSIC PSYCH	RT17M	NEW HAMPTON	10958
9713092	MID-HUDSON PSYCH CENTER	RT 17M	NEW HAMPTON	10958
9709171	MID-HUDSON PSYCHIATRIC CE	ROUTE 17M	NEW HAMPTON	UNKNOWN
9709034	MID-HUDSON PSYCHIATRIC CE	ROUTE 17M	NEW HAMPTON	UNKNOWN
9707149	MID HUDSON PSYCHIATRIC	RT 17 M	NEW HAMPTON	UNKNOWN
9700394	MIDHUDSON PSYCHIATRIC CTR	17K ROUTE 6	NEW HAMPTON	10958
9609097	RUDDYS SUNOCO	ROUTE 17M	NEW HAMPTON	10958
9308294	RUDY'S SUNOCO	ROUTE 17M	NEW HAMPTON	UNKNOWN
9303465	MIDHUDSON PSYCH. CENTER	RT. 17M	NEW HAMPTON	10924
9302229	NEW HAMPTON SUNOCO	RT.17M NEXT TO FIRE HOUSE	NEW HAMPTON	UNKNOWN
9205453	TERRY ANNESE	RYERSON ROAD	NEW HAMPTON	10958
9112569	MID HUDSON PSYCH. CENTER	IN RKG AREA	NEW HAMPTON	10924
8809480	VALLEY AUTOMOTIVE	ROUTE 17M	NEW HAMPTON	UNKNOWN
1305069	OUTFLOW	P.O. BOX 158	NEW HAMPTON	10958
1304530	MID HUD. FORENSIC PSYCH CENTER	2834 ROUTE 17M	NEW HAMPTON	10924
1201168	MIDHUDSON CENTER	RT 17N	NEW HAMPTON	10924
1200328	MID HUDSON FORENSIC PSY. CTR.	RT 17 M	NEW HAMPTON	10924
0607146	MIDHUSON FORENSIC PSHYCHI	BOX 158 ROUTE 17M	NEW HAMPTON	10924
0602414	LINE TRUCK	FISHER ROAD	NEW HAMPTON	10958
0601139	I-84 MM16.9	NEW HAMPTOM REST AREA	NEW HAMPTON	10958
0111087	MID HUDSON FORENSIC PSYCH	RT 17M	NEW HAMPTON	10924
0106558	ABANDONED DRUMS	ECHO LAKE RD	NEW HAMPTON	10958
0104782	MID HUDSON PSYCHIATRIC	BOX 158 RT.17M	NEW HAMPTON	10958
1302188	BULLDOZER	11 TRAINING CENTER LANE	NEW HEMPSTEAD	10924
1208165	ORANGE COUNTY HURRICANE SANDY	ALL OF ORANGE COUNTY	NEWBURGH	UNKNOWN
9912412	GERCZAK RESIDENCE	GERCZAK RESIDENCE	UNKNOWN	UNKNOWN
0807889	GARBAGE TRUCK PROPANE ODOR	MILE MARKER 17.5 INTERSTATE 84	WALKILL	UNKNOWN
0709881	TRACTOR TRAILER ACCIDENT	I-84 17.55 EB	WALKILL	UNKNOWN

1409853	ROAD WAY	24.6 I84 WEST BOUND	WALKKILL	UNKNOWN
9602520	RT 101	NEAR CIRCLEVILLE FD	WALLKILL	UNKNOWN
9411029	TRUCK	I-84	WALLKILL	10940
9301144	ROADWAY	I-84	WALLKILL	10940
9300946	I-84 MP 26	MONTGOMERY REST AREA	WALLKILL	10940
9211885	INT. 84	MILEPOST 18 WEST	WALLKILL	10940
9208273	DRUM MC VEIGH RD	MC VEIGH ROAD	WALLKILL	UNKNOWN
9203744	RANDALL AIRPORT	I-84	WALLKILL	10940
9107339	I-84 MP 2402	I-84	WALLKILL	10940
9104585	ORANGE CT.FAIRGROUNDS	RACEWAY ON FAIRGROUNDS	WALLKILL	10940
1400597	INTERSTATE 84 WESTBOUND	BY EXIT 4	WALLKILL	UNKNOWN
1301414	GILMORE RESIDENCE	203 ST ELMO RD	WALLKILL	12589
1206805	EXIT 4 ON RAMP I-84W	INTERSTATE 84 WEST BOUND	WALLKILL	UNKNOWN
1204936	INTERSTATE 84 WB	I-84 WB AT MILE MARKER 23	WALLKILL	UNKNOWN
1114354	EASTBOUND MM 19	I-84	WALLKILL	UNKNOWN
1002903	POLE 48028 /55315	FANS RD	WALLKILL	UNKNOWN
0800482	FEDEX	I-84 EB MP21	WALLKILL	UNKNOWN
0800481	FEDEX	I - 84	WALLKILL	UNKNOWN
0704519	TRACTOR TRAILER ACCIDENT	RTE 84	WALLKILL	10940
0701899	SATHER TRUCKING	17.4 EASTBOUND	WALLKILL	UNKNOWN
0602302	MILE MARKER 23.6	INTERSTATE 84	WALLKILL	UNKNOWN
0513560	I-84 EXIT 4-W	ON RAMP	WALLKILL	10940
0500346	I-84 WB	MM23.7	WALLKILL	UNKNOWN
0304138	INTERSTATE 84	MILE POST 19.5 - EXIT 4	WALLKILL	UNKNOWN
0203833	OTTOS GARAGE	5 EAST RD	WALLKILL	UNKNOWN
0103570	PAGE TRANSPORT	I-84	WALLKILL	10940
9306148	EXIT 3 I-84	MP 17.5 EAST	WAWAYANDA	10973
9202360	VACANT LAND	SOUTH CENTERFEILD ROAD	WAWAYANDA	10973
9105746	CP 78 & RT, 17M	RT 17M	WAWAYANDA	10973
9002383	REST AREA	I-84	WAWAYANDA	10973
8903547	RT 84	RT 84 EAST	WAWAYANDA	10973
8902638	I-84	I-84	WAWAYANDA	10973
1402285	ROADWAY	I-84 WB AT MILEMARKER 12.2	WAWAYANDA	UNKNOWN
1215641	MM 11.6	I-84 EASTBOUND	WAWAYANDA	UNKNOWN
0910707	INTERSTATE 84 EB	NEW HAMPTON REST AREA MM 16.9	WAWAYANDA	UNKNOWN
0413053	I-84 MM 11.6	I-84 WESTBOUND	WAWAYANDA	UNKNOWN
0312187	I-84 16.2 EB	I-84	WAWAYANDA	UNKNOWN
0308709	TRACTOR TRAILER ACCIDENT	I-84 E/B	WAWAYANDA	UNKNOWN

Petroleum Bulk Storage Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
3-457825	AL TURI LANDFILL	73 HARTLEY ROAD	GOSHEN	10924
3-600741	JET CHEF - MACK BROTHERS LTD.	ROUTE 17M	GOSHEN	10924
3-601729	ED MCBRIDE	20 PARKWAY	GOSHEN	10924
3-078891	WALTERS GULF SERVICE CENTER	RD 4 BOX 28 RT 17 M	MIDDLETOWN	10940
3-441759	DAVIS MOTORS INC.	RD 3 RTE. 17-M, BOX 305	MIDDLETOWN	10940
3-450316	PLAYTOGS FACTORY OUTLET INC.	DOLSON AVE. EXT.	MIDDLETOWN	10940
3-601580	O&R MIDDLETOWN OPERATING CENTER	ORANGE & ROCKLAND UTILITIES	MIDDLETOWN	10940
3-601738	REGIONAL TRUCK SERVICE, INC.	779 ROUTE 17M	MIDDLETOWN	10940
3-049662	MID-HUDSON FORENSIC PSYCHIATRIC CENTER	2834 ROUTE 17M	NEW HAMPTON	10958
3-173452	PIERCE WELL DRLL, CO INC	RD BOX 192	NEW HAMPTON	10958
3-176567	JOHNSTONS TOYOTA INC.	ROUTE 17 M	NEW HAMPTON	10958
3-053872	NEW VERNON MARINA	DOLSON TOWN ROAD	WAWAYANDA	10940

Hazardous Waste Generation or Transport Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYN30003A508	032299-DELISTED			UNKNOWN
NYD046342044	GOSHEN LITHO	RTE 17M BOX 510	CHESTER	UNKNOWN
NYD095170775	QUICKWAY CLEANERS	ROUTE 17M	CHESTER	UNKNOWN
NY9120000634	FARMERS HOME ADMIN ROGOWSKI PROPERTY	RFD #2 - 1 MI SW OF RTE 1	GOSHEN	UNKNOWN

NYD012688271	JACK PERRY FORD INCORPORATED	ROUTE 17M	GOSHEN	UNKNOWN
NYD980778328	MID HUDSON PSYCHIATRIC CENTER	ROUTE 17 M	GOSHEN	10924
NYD981564149	ORANGE COUNTY HIGHWAY	RT 17M	GOSHEN	UNKNOWN
NYD982184673	P P G INDUSTRIES INCORPORATED	LOC #1273 WEST GATE IND PK	GOSHEN	10924
NYD982792194	JW OPERATING CO	ALTERI LANDFILL/ROUTE 17	GOSHEN	10924
NYD982794174	LANDFILL GENERATING PARTNERS IC O OCL	RTE 17M	GOSHEN	10924
NYD982794182	LANDFILL GENERATING PARTNERS I CO OCL	RTE 17M	GOSHEN	10924
NYD986895118	AL TURI LANDFILL INC	RTE 17M & HARTLEY RD	GOSHEN	10924
NYD986993871	ORANGE COUNTY FIRE TRAINING CENTER	RTE 17M	GOSHEN	UNKNOWN
NYN000036S04	AL TURI LANDFILL	RR1 BOX 14 HARTLEY RD	GOSHEN	10924
NYN00003A180	ORANGE COUNTY DPW	P.O. BOX 509, RT. 17M	GOSHEN	UNKNOWN
NYN300000009	ORANGE COUNTY DEPT. OF PUBLIC WORKS	P.O. BOX 509	GOSHEN	UNKNOWN
NYN300000079	DYKSHOORN FARM	RD 2 BOX 105	GOSHEN	UNKNOWN
NYN30003A411	ORANGE CO DEPT OF PUBLIC WORKS	ROUTE 17M	GOSHEN	10924
NYN30003A465	ORANGE CO DEPT E F & S	ROUTE 17M	GOSHEN	10924
NYN30003A468	ORANGE COUNTY DPW	ROUTE 17-M	GOSHEN	10924
NYN30003A470	AL TURI LANDFILL INC.	RD #1 BOX 14 HARTLEY ROAD	GOSHEN	10924
NYD000704122	SUNOCO SERVICE STATION	RTE 17M RD 3	MIDDLETOWN	UNKNOWN
NYD000704189	SERVICE STATION	RTE 17M NR I-84	MIDDLETOWN	UNKNOWN
NYD000706150	ORANGE AND ROCKLAND UTILITIES INC	71 DOLSON AVE	MIDDLETOWN	10940
NYD000997684	ADF DESIGN INC	RD 3 BOX 855	MIDDLETOWN	10940
NYD010948156	POWER PLUS AUTO PARTS INC	RD 8 BOX 434	MIDDLETOWN	UNKNOWN
NYD084012889	PATTONS AUTO BODY	ROAD 7 BOX 38	MIDDLETOWN	UNKNOWN
NYD981140999	NYSDOT	ROAD 4	MIDDLETOWN	UNKNOWN
NYD981180755	T & C AUTO BODY	770 ROUTE 17M	MIDDLETOWN	UNKNOWN
NYD981185838	WARWICK WOODWORK REFINISH	ROUTE 17M	MIDDLETOWN	UNKNOWN
NYD986966745	NYSDOT	#2	MIDDLETOWN	12525
NYP000905083	SAINT JOHNSBURY TRUCKING	REST AREA I-84	MIDDLETOWN	10940
NYR000091157	MIDDLETOWN ONE RESOURCES	444 DOWNING RD	MIDDLETOWN	10940
NYR000128280	HOME DEPOT SUPPLY FLOORS 34	712 ASH BLVD	MIDDLETOWN	10940
NYD002015360	GOLZ ENTERPRISES INC	RD 1 BOX 673	NEW HAMPTON	UNKNOWN
NYD084013945	AL SCALA DATSUN	RTE 17M BOX 399	NEW HAMPTON	UNKNOWN
NYD986890754	NEW YORK STATE THRUWAY AUTHORITY	BRIDGE #17	TARRYTOWN	10941

Hazardous Substance Waste Sites

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NY0138	ARKVILLE CHEMICAL CO.		MIDDLETOWN	10940

Wastewater Discharges

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NY0145157	BLUE BEACON OF MONTGOMERY			UNKNOWN
NY0165255	IDC SOILS RECLAMATION			UNKNOWN
NY0208345	WESTWOOD CHEMICAL CORP			UNKNOWN
NY0218693	FEDERAL BLOCK CORP			UNKNOWN
NY0219843	MILL POND STP			UNKNOWN
NY0233617	AGWAY PETROLEUM CORP			UNKNOWN
NY0234117	ROLLING HILLS SD			UNKNOWN
NY0234575	SLATE HILL REMEDIATION PROJECT			UNKNOWN
NY0235423	MOBIL S/S 06-LYZ REM PROJ			UNKNOWN
NY0247529	NEWBURGH REM PROJ S/S 06-369			UNKNOWN
NY0247812	NYS THRUWAY AUTHORITY-MIDDLETO			UNKNOWN
NY0248011	ADVANCED FUEL INC			UNKNOWN
NY0250384	FRANKIE'S SUNOCO REM PROJ			UNKNOWN
NY0251593	WALLKILL GENERATING CO, LP			10940
NYG997901				UNKNOWN
NYP080080				10940
NYP080090				UNKNOWN
NYP080100				UNKNOWN
NYP080140				UNKNOWN
NYP080260				10940

NYU300060	AAR BROOKS			UNKNOWN
NYU300089				UNKNOWN
NYU300101				UNKNOWN
NY0005622	MACK BROTHERS LTD	PO BOX 431	GOSHEN	10924
NY0166511	AL TURI LANDFILL	73 HARTLEY ROAD	GOSHEN	10924

Air Releases

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
3607100114	GOSHEN LITHO	ROUTE 17M	GOSHEN	10924
3607100150	MIDDLETOWN LFG/JW OPERATING CORP	ROUTE 17M & HARTLEY ROAD	GOSHEN	10924
3607100153	AL TURI INC (LANDFILL)	RD1 BOX 14	GOSHEN	10924
NY0711014	RONS AUTO BODY INC	RTE 17 M	GOSHEN	10924
3607100029	AGWAY/FERTILIZER	DOLSON AVE,	MIDDLETOWN	10940
3607160004	GENPAK CORP	DOLSON AVENUE	MIDDLETOWN	10940
3607100038	MID-HUDSON PSYCHIATRIC CENTER	BOX 58-ROUTE 17M	WAWAYANDA	10924

Hazardous waste codes presented in individual Toxic Information Profiles are defined below.

B002 Petroleum oil or other liquid containing 50 ppm or greater of PCBs but less than 500 ppm PCBs. This includes oil from electrical equipment whose PCB concentration is unknown, except for circuit breakers, reclosers and cable.

B006 PCB Transformers. "PCB Transformers" means any transformer that contains 500 ppm PCB or greater.

B007 Other PCB Wastes including contaminated soil, solids, sludges, clothing, rags, and dredge material.

D001 Solid waste that exhibits the characteristic of ignitability, but is not listed under any other hazardous waste code.

D002 Solid waste that exhibits the characteristic of corrosivity, but is not listed under any other hazardous waste code.

D008 Lead

D009 Mercury

D018 BENZENE

D039 Tetrachloroethylene

F002 The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1−trichloroethane, chlorobenzene, 1,1,2−trichloro−1,2,2−trifluoroethane, ortho−dichlorobenzene, trichlorofluoromethane, and 1,1,2−trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (T)

F003 The following spent non−halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n−butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non−halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non−halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (I)*

F005 The following spent non−halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2−ethoxyethanol, and 2−nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non−halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (I,T)

U228 Ethene, trichloro−

Source: U. S. Environmental Protection Agency

How Toxic Site Locations Are Mapped

Toxics Targeting maps toxic site locations on a digital version of the U. S. Census map or those used by local authorities using addresses and map coordinates provided by site owners/operators or government agencies. In order to allow site locations to be verified independently, the information used to map each site is presented in the first section of each Toxic Site Profile, along with a description of the mapping technique used and any address corrections that were made in order to locate toxic sites with incomplete or inadequate site location information. The mapping process is explained below.

Map Identification Number: 12 Site Name: Acme World Manufacturing, Inc.

Site Address: 55 Main Street Anytown, NY 11797

MAP LOCATION INFORMATION

Site location mapped by:

Address Matching

1) Most toxic sites are mapped by matching addresses provided by site owners/operators or government agencies with locations on a digital version of the street or parcel map. These site locations are identified with the method used to map them.

Note: Some sites have an address match location and a map coordinate location. Both locations are mapped because they can be equally correct.

or Map Coordinate

2) Some toxic sites are located using map coordinates provided by site owners/ operators or government agencies. These site locations are identified "map coordinate." Map coordinates for Toxic Wastewater Discharges, Toxic Release Inventory sites and Major Oil Storage Facilities should be considered suspect.

or Manual Mapping

or Site Visit

3) Incomplete addresses or map coordinates require some site locations to be determined by commercial street maps (manual mapping), site visits, map coordinates from other databases and address location services. Application of any of these methods is identified accordingly.

ADDRESS CHANGE INFORMATION

Revised Street: NO CHANGE

Revised zip code: NO CHANGE

4) Site addresses are sometimes corrected to eliminate obvious errors that prevent sites from being mapped. All address corrections are noted here.

Information Source Guide

Toxics Targeting's Environmental Reports contain government and other information compiled on 18 categories of reported known or potential toxic sites. Each toxic site database is described below with information detailing a) the source of the information, b) the date when each database is covered to and c) when *Toxics Targeting* obtained the information..

1) **National Priority List for Federal Superfund Cleanup:** Toxic sites nominated for cleanup under the Federal Superfund program. Annual compilation of special two-page detailed profiles of NPL sites. Also includes delisted NPL sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated from: 9/9/2015. Data obtained by Toxics Targeting: 9/9/2015.
New Facilities updated through: 9/9/2015. Data obtained by Toxics Targeting: 9/9/2015.

2) **Inactive Hazardous Waste Disposal Site Registry:** New York State database that maintains information and aids decision making regarding the investigation and cleanup of toxic sites. The Registry's data includes two-page profiles noting site name, ID number, description, classification, cleanup status, types of cleanup, owner information, types and quantities of contaminants, and assessment of health and environmental problems. Also included are sites that qualify for possible inclusion on the Registry. These Registry Qualifying sites may or may not be on the Site Registry.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 7/26/2015. Data obtained by Toxics Targeting: 7/26/2015.
New Facilities updated to: 7/26/2015. Data obtained by Toxics Targeting: 7/26/2015.

3) **Corrective Action Activity (CORRACTS):** New York State and Federal databases of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]
Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 1/11/2016. Data obtained by Toxics Targeting: 1/13/2016.
New facilities updated through: 1/11/2016. Data obtained by Toxics Targeting: 1/13/2016.

4) **CERCLIS:** Toxic sites listed in the Federal Comprehensive Environmental Response, Compensation and Liability Information System. Includes Active and No Further Remedial Action Planned (NFRAP) sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated through: 10/25/2013. Data obtained by Toxics Targeting: 1/07/2014.
New Facilities updated through: 1/11/2016. Data obtained by Toxics Targeting: 1/23/2016.

5) **Brownfield Programs:** NYS programs for sites that are abandoned, idled or under-used industrial and/or commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.
ASTM required.* Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 7/26/2015. Data obtained by Toxics Targeting: 7/26/2015.
New Facilities updated to: 7/26/2015. Data obtained by Toxics Targeting: 7/26/2015.

(a) **Brownfield Cleanup Program (BCP)**
(b) **Voluntary Cleanup Program (VCP)**
(c) **Environmental Restoration Program (ERP)**

6) **Solid Waste Facilities: NYS Solid Waste Registry**, including, but not limited to, landfills, incinerators, transfer stations, recycling centers.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated to: 4/1/2013. Data obtained by Toxics Targeting: 4/1/2013.

7) **RCRA Hazardous Waste Treatment, Storage or Disposal Facility Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the DEC's Division of Environmental Remediation pursuant to NYS Law and the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 12/18/2015. New facilities obtained by Toxics Targeting: 1/17/2016.
Manifest transactions data updated to: 12/18/2015. Manifest transactions data obtained by Toxics Targeting: 1/17/2016.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 1/11/2016. Data obtained by Toxics Targeting: 1/13/2016.
Data attributes updated through: 1/11/2016. Data obtained by Toxics Targeting: 1/13/2016.

8) **Spills Information Database:** Spills reported to the DEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from Petroleum Bulk Storage Regulations) or 6 NYCRR Section 595.2 (from Chemical Bulk Storage Regulations). This database includes both *active* and *closed* spills.
ASTM required.* Fannie Mae.** Source: NYS Department of Environmental Conservation.[2]

New spills through: 7/30/2015 New spills data obtained by Toxics Targeting: 7/30/2015
Spill attribute data through: 2/13/2016 Spill attribute data obtained by Toxics Targeting: 2/13/2016

Active spills: paperwork not completed. Closed spills: paperwork completed.
Both active and closed spills may or may not have been cleaned up (see Date Cleanup Ceased in spill profiles).

9) **Major Oil Storage Facilities:** NYS database of facilities licensed pursuant to Article 12 of the Navigation Law, 6NYCRR Parts 610 and 17NYCRR Part 30, such as onshore facilities or vessels, with petroleum storage capacities equal to or greater than 400,000 gallons. **Tank and other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

Data updated through: 8/3/2015. Data obtained by Toxics Targeting: 8/3/2015.

10) **Petroleum Bulk Storage Facilities:** County or State databases of aboveground and underground petroleum storage facilities.
ASTM required.* Fannie Mae required.**

All New York Counties except Cortland, Nassau, Rockland, Suffolk:
NYS Petroleum Bulk Storage Database. This includes all New York State counties except Cortland, Nassau, Rockland, Suffolk, and Westchester. ASTM required.* Fannie Mae required.**
Source: NYS Department of Environmental Conservation.[2]
New facilities updated through: 8/3/2015. Data obtained by Toxics Targeting: 8/3/2015.
Tank data updated through: 8/3/2015. Data obtained by Toxics Targeting: 8/3/2015.

Westchester County: Data updated through 10/1/1998

Cortland County: **Cortland County Health Dept. Tank database**.
Source: Cortland County Health Department[7]
Data updated through: 7/15/2004 Data obtained by Toxics Targeting: 7/23/2004

Nassau County: a compilation of the following 2 databases:
Heat producing products and other products:
Source: Nassau County Department of Health.[3]
NOTE: This data is being withheld by the Nassau County DOH
Data updated through: 4/1/2001. Data obtained by Toxics Targeting: 1/2/2002

Generally non-heat producing products:
Source: Nassau County Fire Marshal.[4]
Data updated through: 8/6/2009. Data obtained by Toxics Targeting: 9/22/2009

Rockland County: **Rockland County Dept. of Health Tank database.**
Source: Rockland County Department of Health.[5]
Data updated through: 4/13/2004. Data obtained by Toxics Targeting: 4/16/2004.

Suffolk County: **Suffolk County Dept. of Health Article 12 database**
Source: Suffolk County Department of Health Services.[6]
Data updated through: 1/30/2014. Data obtained by Toxics Targeting: 7/22/2014.

11) **RCRA Hazardous Waste Generators and/or Transporters Databases:**
(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the NYS Department of Environmental Conservation's Division of Environmental Remediation pursuant to New York State Law.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 12/18/2015. New facilities obtained by Toxics Targeting: 1/17/2016.
Manifest transactions data updated to: 12/18/2015. Manifest transactions data obtained by Toxics Targeting: 1/17/2016.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]

New facilities updated through:	1/11/2016.	Data obtained by Toxics Targeting:	1/13/2016.
Data attributes updated through:	1/11/2016.	Data obtained by Toxics Targeting:	1/13/2016.

12) **Chemical Bulk Storage Facilities:** New York State database of facilities compiled pursuant to 6NYCRR Part 596 that store regulated substances listed in 6NYCRR Part 597 in aboveground tanks with capacities greater than 185 gallons and /or in underground tanks of any size. **Tank and other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated through: 8/3/2015. Data obtained by Toxics Targeting: 8/3/2015.

13) **Hazardous Substance Waste Disposal Site Study:** NYS database of waste disposal sites that may pose threats to public health or the environment, but could not be remediated using monies from the Hazardous Waste Remedial Fund.
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 5/16/2000. Data obtained by Toxics Targeting: 5/16/2000.

14) **Toxic Release Inventory (TRI):** Federal database of manufacturing facilities required under Section 313 of the Federal Emergency Planning and Community Right-to-Know Act to report releases to the air, water and land of any specifically listed toxic chemical. See Fannie Mae requirement** below.
Source: U. S. Environmental Protection Agency.[1] / NYS Department of Environmental Conservation[2]
Data updated through: 3/8/2004. Data obtained by Toxics Targeting: 3/25/2004

15) **Toxic Wastewater Discharges (Permit Compliance System):** Federal database of discharges of wastewater to surface waters and groundwaters. See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 6/17/2004. Data obtained by Toxics Targeting: 7/19/2004.

16) **Air Discharge Facilities:** EPA AIRS database containing address information on each air emission facility and the type of air pollutant emission it is. Compliance information is also provided on each pollutant as well as the facility itself.
See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency[1]
Data updated through: 11/24/1999. Data obtained by Toxics Targeting: 1/6/2000

17) **Civil Enforcement & Administrative Docket:** This database is the U. S. EPA's system for tracking administrative and civil judiciary cases filed on behalf of the agency by the Department of Justice. Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
New Sites through: 10/14/1999.
Data updated through: 10/14/1999. Data obtained by Toxics Targeting: 11/18/1999.

18) **Emergency Response Notification System (ERNS):** Federal database of spills compiled by the Emergency Response Notification System. On-site searches only.
ASTM required.* See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 1/31/2000. Data obtained by Toxics Targeting: 2/15/2000

* American Society of Testing Materials: Standard Practice on Environmental Site Assessments: Phase I Environmental Site Assessment Process (E1527-05).
** Fannie Mae's Part X Environmental Hazards Management Procedures specify 1.0 mile searches for "any state or Federal list of hazardous waste sites (e.g. CERCLIS, HWDMS etc.)." Searches for the property and adjacent properties are specified for "chemical manufacturing plants," "obvious high risk neighbors engaging in storing or transporting hazardous waste, chemicals or substances" and "...any documented or visible evidence of dangerous waste handling... (e.g. stressed vegetation, stained soil, open or leaking containers, foul fumes or smells, oily ponds, etc." Searches for property and adjacent properties can include sites up to a quarter mile away (W. Hayward, Director, Multi-Family Business Planning and Control, Fannie Mae, personal communication, 5/94).

[1]U. S. Environmental Protection Agency, 290 Broadway, NY, NY 10007-1866.

[2]NYS Department of Environmental Conservation, 625 Broadway, Albany, NY 12233.

[3]Nassau County Department of Health, Bureau of Land Resources Management, 240 Old Country Road, Mineola, NY 11501.

[4]Nassau County Fire Commission, Office of the Fire Marshal, 899 Jerusalem Avenue, P. O. Box 128, Uniondale, NY 11553.

[5]Rockland County Department of Health, The Dr. Robert Yeager Health Center, Building D, Sanitorium Road, Pomona, NY 10970.

[6]Suffolk County Department of Health, Hazardous Materials Management, 15 Horseblock Place, Farmingville, NY 11738-1220.

[7]Cortland County Department of Health, 60 Central Avenue, Cortland, NY 13045-2746

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

ORANGE & ROCKLAND TRUCK **Spill Number: 0708067** **Close Date: 10/23/2007**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: CHRIS − ORANGE & ROCKLAND TRUCK Spiller Phone: (845) 577−3152
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxtraver Contact for more spill info: CHRIS Contact Person Phone: (845) 577−3152

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/23/2007		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

LEAKING HOSE AND IN PROCESS OF CLEANING UP :

DEC Investigator Remarks:

O & R cleaned up. NFA

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CTR **Spill Number: 0101291** **Close Date: 05/03/2001**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name: TIM HALLOCK
DEC Investigator: DXWEITZ
Spiller: CALLER − ORANGE & ROCKLAND
Notifier Name: TIM HALLOCK
Caller Agency: ORANGE & ROCKLAND UTILITI
Contact for more spill info: TIM HALLOCK
Spiller Phone:
Notifier Phone: (914) 577−2345
Caller Phone: (914) 589−6164
Contact Person Phone: (914) 589−6164

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/03/2001		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
LUBE OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SURFACE WATER

Caller Remarks:

cleanup in progress − <1 gal spilled total.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was WEITZ

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

SPILL NUMBER 0300537 **Spill Number: 0300537** **Close Date: 04/15/2003**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name: TIM HALLOCK
DEC Investigator: UNASSIGNED
Spiller: CALLER − ORANGE & ROCKLAND
Notifier Name: TIM HALLOCK
Caller Agency: ORANGE & ROCKLAND UTILITI
Contact for more spill info: TIM HALLOCK
Spiller Phone:
Notifier Phone: (914) 799−0618
Caller Phone: (914) 557−1357
Contact Person Phone: (914) 557−1357

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/15/2003		UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SMALL AMOUNT WAS FOUND IN A OLD REPAIR PIT − UNKNOWN FROM WHEN − MILLER ENVIR CONTACTED FOR CLEAN UP

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CENT **Spill Number: 0400488** **Close Date: 04/05/2010**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Notifier Type: Responsible Party
Caller Name: TIM HALLOCK
DEC Investigator: JKOMARA
Spiller: TIM HALLOCK − MIDDLETOWN OPERATING CENT
Notifier Name: TIM HALLOCK
Caller Agency: ORANGE ROCKLAND UTILITIES
Contact for more spill info: TIM HALLOCK
Spiller Phone: (845) 557−3422
Notifier Phone: (914) 799−0618
Caller Phone: (914) 799−0618
Contact Person Phone: (845) 557−3422

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/15/2004		OTHER	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
MERCURY	HAZARDOUS MATERIAL	0.00	POUNDS	0.00	POUNDS	GROUNDWATER

Caller Remarks:

WHILE DOING SOME INVESTIGATION TO PUT IN FLOOR DRAIN IN A BUILDING CAME UPON A DISCHARGE POINT: SAMPLE SHOWED .33PPM AMOUNT OF MERCURY:

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

SPILL NUMBER 0402545 **Spill Number: 0402545** **Close Date: 06/09/2004**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Other
Caller Name: TIM HALLOCK
DEC Investigator: mbmastro
Spiller: TIM HALLOCK
Notifier Name: TIM HALLOCK
Caller Agency: ORANGE ROCKLAND UTILITIES
Contact for more spill info: TIM HALLOCK
Spiller Phone: (914) 799−0618
Notifier Phone: (914) 799−0618
Caller Phone: (914) 799−0618
Contact Person Phone: (914) 799−0618

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/08/2004		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

miller environmental is in route to conduct clean up

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MASTRO

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CENTER **Spill Number: 1503789** **Close Date: 07/08/2015**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: ORANGE AND ROCKLAND Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: DXTRAVER Contact for more spill info: BRIAN NEVIN Contact Person Phone: (646) 455−7924

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/08/2015		HUMAN ERROR	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	0.50	GALLONS	0.00	GALLONS	

Caller Remarks:

cleanup crew enr

DEC Investigator Remarks:

7/8/15− Spoke to caller, Brian. Diesel leak from vehicle. Contained to pavement and concrete. Clean Ventures hired for cleanup.
NFA DT

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

ORANGE AND ROCKLAND UTIL OPER CTR **Spill Number: 1502127** **Close Date: 05/28/2015**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: BRIAN NEVIN − ORANGE AND ROCKLAND UTIL Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: DXWEITZ Contact for more spill info: BRIAN NEVIN Contact Person Phone: (646) 455−7924

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/28/2015		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSMISSION FLUID	PETROLEUM	2.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

loss to soil and pavement, c/u pending by Clean Harbors

DEC Investigator Remarks:

5/28/15 Spoke to caller from O&R. Spill was from an O&R dump truck on to the road. Clean Harbors is doing the cleanup. NFA dw

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING FACILITY **Spill Number: 1503819** **Close Date: 07/09/2015**
71 DAWSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: ORANGE AND ROCKLAND Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: CLJOHNSO Contact for more spill info: BRIAN NEVIN Contact Person Phone: (845) 577−3152

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/09/2015		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
ANTIFREEZE	OTHER	0.50	GALLONS	0.00	GALLONS	

Caller Remarks:

cleanup done

DEC Investigator Remarks:

7/10/15: Spoke with Brian. Clean up completed by transportation dept with speedy dry.

cj

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CENTER **Spill Number: 1410280** **Close Date: 01/21/2015**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JPCUMMIN	Contact for more spill info:	ARTHUR BARIKYAN	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
01/21/2015		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	0.06	GALLONS	0.00	GALLONS	

Caller Remarks:

spill to concrete/clean up complete by DOT

DEC Investigator Remarks:

1−21−15 Spoke to Art. Small amount from a fleet vehicle. Cleaned up. jc

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

ORANGE AND ROCKLAND UTIL **Spill Number: 1407391** **Close Date: 10/16/2014**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: JOSE CLASS − ORANGE & ROCKLAND Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: DXWEITZ Contact for more spill info: JOSE CLASS Contact Person Phone: (347) 978−5719

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/16/2014		UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0.00	UNKNOWN	0.00	UNKNOWN	

Caller Remarks:

5x5 stain found on pavement in parking lot, unk source, investigation and c/u pending by Clean Harbors

DEC Investigator Remarks:

10/16/14 Spoke to Jose Class at O&R. Clean Harbors is doing cleanup. NFA dw

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

O&R GARAGE − SADDLE TANK **Spill Number: 1405379** **Close Date: 08/18/2014**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: JOSE CLASS − ORANGE AND ROCKLAND UTIL Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: JBODEE Contact for more spill info: JOSE CLASS Contact Person Phone: (347) 978−5719

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/18/2014		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

LOSS TO PAVEMENT, CONTAINED, AND C/U IN PROGRESS

DEC Investigator Remarks:

8/18/14: I spoke to Jose Class from Orange & Rockland Utilities. This is a leaking fuel tank on an O&R Bucket Truck, spill is to pavement at the Middletown O&R facility. Jose states the spill is contained to pavement, no soil impacted, no drains or waterways impacted. Spill is contained and the cleanup in underway at this time. Jose will call back to the dispatch desk when the cleanup is completed. jod

−C/B from Jose Class with an update. He states the actual amount spilled was closer to 10 gallons; and reports the cleanup has been completed. No DEC action is necessary. jod

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

GROUND **Spill Number: 1307021** **Close Date: 10/08/2013**
71 DELSON AVE MIDDLE TOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: ANTHONY − ORANGE AND ROCKLAND Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: MBMASTRO Contact for more spill info: ANTHONY Contact Person Phone: (845) 629−1410

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/04/2013		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

clean up in progress

DEC Investigator Remarks:

will be cleaned up tonight, nfa...mm

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

BUSINESS **Spill Number: 1304112** **Close Date: 07/17/2013**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	Orange & Rockland	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JPCUMMIN	Contact for more spill info:	ARTHUR BARIKYAN	Contact Person Phone:	8455978333

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/17/2013		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
ANTIFREEZE	OTHER	0.00	UNKNOWN	0.00	UNKNOWN	

Caller Remarks:

Clean up completed from pavement.

DEC Investigator Remarks:

7−17−13 Spoke to Arthur. Small amount to pavement. Cleaned up by O&R. jc

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

STORM DRAIN **Spill Number: 1302278** **Close Date: 06/03/2013**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: ORANGE AND ROCKLAND Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxweitz Contact for more spill info: ARTHUR BARIKYAN Contact Person Phone: 845 597 8333

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/03/2013		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0.00	UNKNOWN	0.00	UNKNOWN	SEWER

Caller Remarks:

Caller advised unknown type oil spilled onto storm drain. Clean up is in process.

DEC Investigator Remarks:

6/3/13 Called Mr. Barykyan, and left a message to call back with update. Spoke to him later. Spill was from equipment. Not a transformer spill, but maybe some hydraulic or transmission fluid. Storm drain grate was pulled, and Clean Harbors cleaned it out. Was completely contained in this one storm drain. NFA dw

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CENTER **Spill Number: 1300720** **Close Date: 04/22/2013**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: ORANGE AND ROCKLAND Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxtraver Contact for more spill info: CHRIS MCCALLION Contact Person Phone: (845) 577−3152

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/22/2013		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
OTHER	OTHER	1.00	GALLONS	0.00	GALLONS	

Caller Remarks:

cleanup done

DEC Investigator Remarks:

4/22/13− Leak of compressor oil from equipment to gravel. Impacted gravel cleaned up and put into drum for disposal. NFA DT

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

PAVEMENT **Spill Number: 1205900** **Close Date: 09/14/2012**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE
Notifier Type: Other
Caller Name:
DEC Investigator: dxtraver
Spiller: ORANGE AND ROCKLAND
Notifier Name:
Caller Agency:
Contact for more spill info: GREGORY EIBAND
Spiller Phone:
Notifier Phone:
Caller Phone:
Contact Person Phone: (347) 931−2890

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/13/2012		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	2.00	GALLONS	0.00	GALLONS	

Caller Remarks:

Caller advised aprx 2 gallons of diesel spilled onto pavement. Clean up is pending.

DEC Investigator Remarks:

Spoke to caller, Greg of O&R. Spill from O&R vehicle to pavement. Contained to pavement. Clean Harbors to perform cleanup. NFA
DT

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

LITTLE TOWN OPERATING CTR **Spill Number: 1202009** **Close Date: 05/30/2012**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: ORANGE AND ROCKLAND Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxtraver Contact for more spill info: BOBTA KIM Contact Person Phone: (845) 558−6644

Category: Investigation indicates there was no spill.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/04/2012		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
ANTIFREEZE	OTHER	2.00	GALLONS	0.00	GALLONS	

Caller Remarks:

cleanup done next day −

DEC Investigator Remarks:

Already reported as Spill No. 1201162. NFA this #. DT

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

TRANSFORMER − MIDDLETOWN FACILITY **Spill Number: 1200259** **Close Date: 04/10/2012**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: BOBKA KIM − ORANGE & ROCKLAND UTIL Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: JYMCCART Contact for more spill info: BOBKA KIM Contact Person Phone: (845) 558−6644

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/10/2012		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	0.50	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Spilled onto gravel. Cleanup is pending.

DEC Investigator Remarks:

4−10−12 Spoke with Bobta. Cleanup will be completed by Allstate. Very minor release. NFA jm

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

ORANGE & ROCKLAND BLOOMING GROVE GARAGE **Spill Number: 1112801** **Close Date: 02/07/2012**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: GREGORY EIBAND − ORANGE & ROCKLAND UTILITIES Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: JPCUMMIN Contact for more spill info: GREGORY EIBAND Contact Person Phone: (845) 577−3309

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/07/2012		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
ANTIFREEZE	OTHER	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Spilled onto pavement. Cleanup is in progress.

DEC Investigator Remarks:

2−7−12 Greg checking that clean−up complete. Amount is probably over RQ of 1 lb, but spill is on pavement and is being addressed.
jc

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLE TOWN FACILITY **Spill Number: 1111423** **Close Date: 12/23/2011**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	GREG EIBAND − ORANG & ROCKLAND	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxtraver	Contact for more spill info:	GREG EIBAND	Contact Person Phone:	

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/22/2011		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	

Caller Remarks:

nothing affected − cement only clean up in progress

DEC Investigator Remarks:

12/22/11− Spoke to caller. Broken hose on forklift. O&R cleaning up spill inside garage on floor and Clean Harbors to cleanup spill outside on asphalt. No waterways impacted. NFA DT

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN YARD **Spill Number: 1110852** **Close Date: 12/06/2011**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ORANGE ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JPCUMMIN	Contact for more spill info:	MARK	Contact Person Phone:	

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/06/2011		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	2.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

1−2 gal spill. contained at this time. cleanup pending

DEC Investigator Remarks:

12−6−11 Old unit in yard stockpile leaked to soil. Clean Harbours to clean up. jc

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

OPERATING FACILITY **Spill Number: 1105271** **Close Date: 08/08/2011**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: CATHERINE HUNT − ORANGE AND ROCLAND UTILITIES Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxtraver Contact for more spill info: CATHERINE HUNT Contact Person Phone: (347) 541−1185

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/08/2011		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	3.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Transformer in storage leaked 3 gallons onto to pavement and gravel. Clean up is in progress. Clean harbors en route to help.

DEC Investigator Remarks:

8/8/11− Spoke to Katherine. Transformer stored in yard started to leak. O&R contained and Cleans Harbors enroute to finish cleanup. Non−PCB oil. Contained to gravel/pavement. NFA DT

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

INTO SOIL **Spill Number: 1012177** **Close Date: 03/08/2011**
71 DOLSON AVE. MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	KIM − ORANGE & ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxweitz	Contact for more spill info:	KIM	Contact Person Phone:	

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/08/2011		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	5.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Blown Hose, Clean up is pending

DEC Investigator Remarks:

3/8/11 Clean Harbors is doing cleanup of 5 gal hydraulic fluid spill. NFA dw

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

BACKHOE ON PAVEMENT **Spill Number: 1012143** **Close Date: 03/08/2011**
71 DOLSEN AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ARTHUR − ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	kabrowne	Contact for more spill info:	ARTHUR	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/07/2011		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
ANTIFREEZE	OTHER	3.00	GALLONS	0.00	GALLONS	

Caller Remarks:

Clean up is underway. Area is contained. Clean Harbors will also be contracted out.

DEC Investigator Remarks:

3/8/11 − Clean Habors completed clean up. NFA. KAB

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

O&R : MIDDLETOWN FACILITY **Spill Number: 1007918** **Close Date: 10/26/2010**
71 DILSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: BOBTA KIM − ORANGE AND ROCKLAND UTILITIES Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: Unassigned Contact for more spill info: BOBTA KIM Contact Person Phone: (845) 558−6644

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/26/2010		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	0.25	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Caller reporting a spill of .25 gallon of hydraulic oil to gravel. Clean up is pending.

DEC Investigator Remarks:

10−26−10: V.Mc. to Kim/O&R: From one of O&R trucks, O&R handling clean up, NFA.

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN FACILITY **Spill Number: 1003641** **Close Date: 07/01/2010**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: ORANGE AND ROCKLAND Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxtraver Contact for more spill info: ART BARIKYAN Contact Person Phone: (845) 597−8333

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/01/2010		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	0.00	UNKNOWN	0.00	UNKNOWN	

Caller Remarks:

1 pint − no impact to resources − cleanup pending

DEC Investigator Remarks:

Spoke to Art at O&R. Tub unit has weep at seam. Pad mat under unit has absorbed weep, no impact to gravel under mat. Unit to be secured. NFA DT 7/1/10

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

COMMERCIAL SITE **Spill Number: 1001009** **Close Date: 04/27/2010**
71 DOLSON DR MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: KEN MCTIGHE − ORANGE AND ROCKLAND UTILITIES Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: kabrowne Contact for more spill info: KEN MCTIGHE Contact Person Phone: (914) 447−3157

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/26/2010		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	0.00	GALLONS	0.00	GALLONS	SOIL, IMPERVIOUS SURFACE

Caller Remarks:

Caller reporting a spill of an unkown amount of fuel to soil. Clean up pending.

DEC Investigator Remarks:

4/27/10 − Miller Environ. conducting clean up. Spill is sheen on asphalt. Using pads for clean up. NFA. KAB

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

PAD MOUNT TRANSFORMER/MIDDLE TOWN OPERATING CENTER **Spill Number: 0913669** **Close Date: 03/25/2010**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	Unassigned	Contact for more spill info:	DEAN SCARI	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/25/2010		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	0.20	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

clean up crew en route

DEC Investigator Remarks:

3−25−10: V.Mc.^ Dean/O&R: new 750K volt pad mounted transformer, part of inventor maitained at O&R's storage facility. MEG on site & completed clean up. NFA.

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CTR **Spill Number: 0912772** **Close Date: 03/10/2010**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: ORANGE AND ROCKLAND Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxtraver Contact for more spill info: CHRIS MCCALLION Contact Person Phone: (845) 577−3152

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/09/2010		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

cleanup pending − Miller Env enroute

DEC Investigator Remarks:

3−9−10 Called left message. jc

3/10/10− Call back from Chris at O & R. Miiler Env. cleaned up impacted soil; less than 1 drum of debris generated. NFA dt
3/10/10

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CTR **Spill Number: 0912597** **Close Date: 03/03/2010**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: ORANGE AND ROCKLAND UTILITIES Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: kabrowne Contact for more spill info: CHRIS MCCALLION Contact Person Phone: (845) 577−3152

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/03/2010		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	2.00	GALLONS	0.00	GALLONS	SOIL, IMPERVIOUS SURFACE

Caller Remarks:

onto blacktop − cleanup in progress

DEC Investigator Remarks:

3/3/10 − Spill cleaned up. NFA. KAB

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING FACILITY **Spill Number: 0909657** **Close Date: 12/01/2009**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL VEHICLE Spiller: BOBTA KIM − ORANGE AND ROCKLAND UTILITIES Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: JYMCCART Contact for more spill info: BOBTA KIM Contact Person Phone: (845) 577−3577

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/01/2009		HUMAN ERROR	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	3.00	GALLONS	0.00	GALLONS	

Caller Remarks:

caller reporting a spill of 3 gallons of diesel to asphalt, clean up complete.

DEC Investigator Remarks:

12−1−09 Called and left message for Bobta to return call. Recv'd callback from Bobta. Cleanup completed. NFA jm

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CENTER **Spill Number: 0909063** **Close Date: 11/12/2009**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: MAJOR OIL FACILITY (>400,000 GAL) Spiller: ORANGE AND ROCKLAND SEWER Spiller Phone:
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: dxweitz Contact for more spill info: ARTHUR BARIKYAN Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/12/2009		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	0.20	GALLONS	0.00	GALLONS	

Caller Remarks:

Miller Enviro. en route for clean/spill to paved surface

DEC Investigator Remarks:

11/12/09 Miller Env. cleaning up 0.2 gal spill. Message in to O&R. NFA dw

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPERATING CENTER **Spill Number: 0906630** **Close Date: 12/08/2009**
71 DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ORANGE AND ROCKLAND	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxtraver	Contact for more spill info:	ARTHUR BARIKYAN	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/10/2009		UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	PETROLEUM	0.50	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

miller enviro en route for clean up

DEC Investigator Remarks:

Miller is doing the clean up/closed...ra

9/14/09: Call to dispatch desk from Arthur Barikyan of O&R Utilities. The clean up of this spill has not yet been completed. Arthur states that MEG responded to the site on the day of the spill, and three drums of contaminated soil were removed. But the spill appears to be associated with a UST which may be leaking; and there is still an ungoing investigation to determine the cause. Arthur requests the spill be left open and a report will follow. jod *Spill re−opened on the database. jod

9/25/09 Clean up was completed yesterday, 5 yds of soil was removed, diesel tank was tested and there was a problem with the vent which was repaired, report will be sent to D Traver...mm

11/30/2009− SPOKE TO ART AT O&R. REQUIRED CLEANUP REPORT TO BE SUBMITTED. DT

12/7/09− Receiv3d cleanup info performed by Miller Env. from O&R. NFA dt

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

O & R UTLITIES: UPS TRUCK **Spill Number: 0902474** **Close Date: 06/28/2009**
71 DOLSEN AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVE
Revised zip code: 10940

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	SCOTT WILSON − UPS	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	dxweitz	Contact for more spill info:	CHRIS MCCALLION	Contact Person Phone:	(845) 577−3152

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/01/2009		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
MOTOR OIL	PETROLEUM	3.00	GALLONS	3.00	GALLONS	

Caller Remarks:

CALLER STATES THAT A UPS TRUCK LEAKED ABOUT 3 GALLONS TO THE PARKING LOT. CLEAN UP WAS DONE.

DEC Investigator Remarks:

6−1−09: V.Mc.^ SCOTT WILSON/UPS : Spoke w/Ron.: O&R handling clean up. 6−1−09: V.Mc.^ CHRIS MCCALLION/O&R : Clean up completed at O&R. Some product went off site,(onto Rd.), that part was not cleanned up. 6−1−09: V.Mc.^ Ron/UPS : Noted: O&R only doing the pk lot @ O&R, some onto rd. Req. follow up by UPS, Ron to update manager & Callbk w/update. 6/28/09 D. Weitz did site visit. No sign of spill is left at site. NFA dw

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLETOWN OPER CENTER **Spill Number: 0603453** **Close Date: 06/28/2006**
DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: MIDDLETOWN OPER CENTER Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: DVWEHRFR Contact for more spill info: Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/28/2006		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	10.00	GALLONS	10.00	GALLONS	SOIL

Caller Remarks:

HOSE LEAK − CLEANED UP

DEC Investigator Remarks:

06/30/06; CLEAN UP CONFIRMED; CLOSE NFA

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

MIDDLE TOWN OP CENTER **Spill Number: 9602375** **Close Date: 05/30/1996**
DOLSON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 10940

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name: TIM HALLOCK
DEC Investigator: JYMCCART
Spiller: TIM HALLOCK − MIDDLE TOWN OP CENTER
Notifier Name: MIDDLE TOWN OP CENTER
Caller Agency: ORANGE + ROCKLAND UTILITI
Contact for more spill info: TIM HALLOCK
Spiller Phone: (914) 577−2969
Notifier Phone:
Caller Phone: (914) 577−2969
Contact Person Phone: (914) 577−2969

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/20/1996		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	100.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

a bushing failed on a transformer causing spill − caller is in process of cleaning up

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MCCARTHY

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

BLACKTOP **Spill Number: 1201162** **Close Date: 05/07/2012**
ORANGE AND ROCKLAND GARAGE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: ORANGE / ROCKLAND GARAGE
Revised zip code: UNKNOWN

Source of Spill: COMMERCIAL VEHICLE Spiller: MARC KALBREEZE − ORANGE AND ROCKLAND UTILITIES Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: MBMASTRO Contact for more spill info: MARC KALBREEZE Contact Person Phone: (845) 222−2161

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/05/2012		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
ANTIFREEZE	OTHER	2.00	GALLONS	0.00	GALLONS	

Caller Remarks:

Spill is contained to blacktop. Clean up will be done by Allstate.

DEC Investigator Remarks:

5/7/12 cleanup to be done asap, nfa...mm

HAZARDOUS MATERIAL SPILLS INFORMATION REQUEST

TRUCK 90860 **Spill Number: 1104459** **Close Date: 07/21/2011**
71 DALTON AVE MIDDLETOWN, NY NO ZIP PROVIDED

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: UNKNOWN

Source of Spill: COMMERCIAL VEHICLE Spiller: ORANGE AND ROCKLAND UTIL Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: MBMASTRO Contact for more spill info: KATHERINE HUNT Contact Person Phone: (845) 558−6644

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/21/2011		EQUIPMENT FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
HYDRAULIC OIL	PETROLEUM	2.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

onto soil and pavement, clean up pending

DEC Investigator Remarks:

7/21/11 Clean up done by CleanHarbors, nfa...mm

PETROLEUM BULK STORAGE INFORMATION REQUEST

O&R MIDDLETOWN OPERATING CENTER **Facility Id: 3−601580** **Source: NYS DEC**
ORANGE & ROCKLAND UTILITIES MIDDLETOWN, 10940

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVENUE
Revised zip code: NO CHANGE

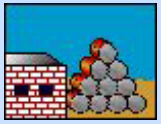
Site Status: Active
Expiration Date of the facility's registration certificate: 04/08/2018

Facility Type: Utility (Other than Municipal)

Additional PBS information for this site has been publicly withheld by the NYSDEC. The following is historic data:

TANK INFORMATION
Aboveground tanks: No Underground tanks: Yes

Operator Name: JOHN FRANK LEAHY Operator Phone #: (845) 342−8956
Owner Name: DANIEL O'KEEFE − SECTION MANAGER, TRANSPORTATION OPERATIONS
Owner Company: ORANGE & ROCKLAND UTILITIES, INC. Owner Type: Corporate or Commercial
Owner Address: ONE BLUE HILL PLAZA, PEARL RIVER, NY 10965



HAZARDOUS WASTE GENERATORS/TRANSPORTERS INFORMATION REQUEST

NYSDEC Name: **ORANGE AND ROCKLAND UTILITIES INC** **Facility Id: NYD000706150**
NYSDEC Address: 71 DOLSON AVE MIDDLETOWN, NY 10940
EPA (RCRA) Name: O&R MIDDLETOWN OP CENTER
EPA (RCRA) Address: 71 DOLSON AVE MIDDLETOWN, NY 10940

ADDRESS CHANGE INFORMATION
Revised street: 71 DOLSON AVENUE
Revised zip code: NO CHANGE

Owner Name: ORANGE AND ROCKLAND UTILITIES,INC.

US EPA RCRA Type: LARGE QUANTITY GENERATOR Notification date: 08/18/1980
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:

Contact Name: BOBTA KIM	Source Type: Annual/Biennial Report updated with Notification	Contact Phone: 845−577−3577	Contact Info Date: 03/03/2014
Contact Name: TIMOTHY HALLOCK	Source Type: Implementer	Contact Phone: 845−344−8853	Contact Info Date: 01/01/2007
Contact Name: WILLIAM SAKSEN	Source Type: Notification	Contact Phone: 845−786−8191	Contact Info Date: 02/15/2001
Contact Name: CHRISTOPHER MCCALLION	Source Type: Annual/Biennial Report	Contact Phone: 845−577−3152	Contact Info Date: 02/21/2008

Historically listed as the following USEPA RCRA Generator Size(s) as well:
SMALL QUANTITY GENERATOR

US EPA RCRA Violations:

Violation Type: Generators − General
Violation Number: 0001 Location: NY
Former Citation:
Responsible Agency: STATE
Violation Determination Date: 05/07/1986
Violation Return to Compliance: 01/09/1987

Violation Type: Generators − General
Violation Number: 0002 Location: NY
Former Citation: SR − 374−3.2(e)(5)
Responsible Agency: STATE
Violation Determination Date: 03/19/2003
Violation Return to Compliance: 03/19/2003

Violation Type: TSD Interim Stat−Preparedness and Prevention
Violation Number: 0003 Location: NY
Former Citation:
Responsible Agency: STATE
Violation Determination Date: 03/18/2010
Violation Return to Compliance: 03/25/2010

NYS DEC Manifested Waste Transactions only summarized for the most recently reported year:

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
B004	PCB Articles containing 50 ppm or greater of PCBs but less than 500 ppm PCBs.	1944	POUNDS	GENERATED	2015	3116	2014
B007	Other PCB Wastes including contaminated soil, solids, sludges, clothing, etc.	703	KILOGRAMS	GENERATED	2015	5183	1994
D001	Solid waste that exhibits the characteristic of ignitability	9	POUNDS	GENERATED	2015	14425	1990
D002	Solid waste that exhibits the characteristic of corrosivity	65	POUNDS	GENERATED	2015	100	2003
D008	Lead	690	POUNDS	GENERATED	2015		
More than one waste code was reported for the following waste amount:		250	POUNDS	GENERATED	2015	714	2014
D001	Solid waste that exhibits the characteristic of ignitability						
D018	BENZENE						
More than one waste code was reported for the following waste amount:		380	POUNDS	GENERATED	2015		
D001	Solid waste that exhibits the characteristic of ignitability						
D039	Tetrachloroethylene						
More than one waste code was reported for the following waste amount:		274	POUNDS	GENERATED	2015		
D002	Solid waste that exhibits the characteristic of corrosivity						
D008	Lead						
B004	PCB Articles containing 50 ppm or greater of PCBs but less than 500 ppm PCBs.	688	KILOGRAMS	GENERATED	2014	6429	2012
B006	PCB Transformers.	618	POUNDS	GENERATED	2014	12754	1988
B007	Other PCB Wastes including contaminated soil, solids, sludges, clothing, etc.	58	POUNDS	GENERATED	2014	23231	1989
More than one waste code was reported for the following waste amount:		350	POUNDS	GENERATED	2014		
D001	Solid waste that exhibits the characteristic of ignitability						
D035	Methyl ethyl ketone						
F005	Spent non−halogenated solvents						
More than one waste code was reported for the following waste amount:		255	POUNDS	GENERATED	2014		
D001	Solid waste that exhibits the characteristic of ignitability						
D039	Tetrachloroethylene						
F002	Spent halogenated solvents						
B006	PCB Transformers.	1358	KILOGRAMS	GENERATED	2013	4080	1993
D008	Lead	6650	KILOGRAMS	GENERATED	2013		
D009	Mercury	10	POUNDS	GENERATED	2013	1010	1999
More than one waste code was reported for the following waste amount:		68	KILOGRAMS	GENERATED	2013		
D007	Chromium						
D008	Lead						

NYS DEC Manifested Waste Transactions for NYD000706150 continued −−−

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
More than one waste code was reported for the following waste amount:		150	POUNDS	GENERATED	2013		
D039	Tetrachloroethylene						
D001	Solid waste that exhibits the characteristic of ignitability						
F002	Spent halogenated solvents						
More than one waste code was reported for the following waste amount:		100	POUNDS	GENERATED	2013		
D018	BENZENE						
D039	Tetrachloroethylene						
D001	Solid waste that exhibits the characteristic of ignitability						
B005	PCB Articles containing 500 ppm or greater of PCBs, excluding small capacitors.	23	KILOGRAMS	GENERATED	2012	3263	1996
D010	Selenium	440	POUNDS	GENERATED	2012		
More than one waste code was reported for the following waste amount:		20	GALLONS	GENERATED	2012	160	2007
D001	Solid waste that exhibits the characteristic of ignitability						
D018	BENZENE						
More than one waste code was reported for the following waste amount:		100	POUNDS	GENERATED	2012	260	2008
D018	BENZENE						
D039	Tetrachloroethylene						
More than one waste code was reported for the following waste amount:		801	GALLONS	GENERATED	2012		
F002	Spent halogenated solvents						
F003	Spent non−halogenated solvents						
F005	Spent non−halogenated solvents						
More than one waste code was reported for the following waste amount:		300	POUNDS	GENERATED	2012		
D018	BENZENE						
D039	Tetrachloroethylene						
F002	Spent halogenated solvents						
D001	Solid waste that exhibits the characteristic of ignitability	55	GALLONS	GENERATED	2011	4787	1990
D018	BENZENE	30	GALLONS	GENERATED	2011	700	2008
D018	BENZENE	10	POUNDS	GENERATED	2011	568	1996
D039	Tetrachloroethylene	1	GALLONS	GENERATED	2010	106	2009
More than one waste code was reported for the following waste amount:		30	GALLONS	GENERATED	2010		
F002	Spent halogenated solvents						
D001	Solid waste that exhibits the characteristic of ignitability						
D039	Tetrachloroethylene						
D039	Tetrachloroethylene	425	POUNDS	GENERATED	2009		

NYS DEC Manifested Waste Transactions for NYD000706150 continued −−−

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
More than one waste code was reported for the following waste amount:		75	POUNDS	GENERATED	2009		
D001	Solid waste that exhibits the characteristic of ignitability						
D016	2,4−D, (2,4−Dichlorophenoxyacetic acid).						
D002	Solid waste that exhibits the characteristic of corrosivity	7	GALLONS	GENERATED	2008	330	1983
B002	Petroleum oil or other liquid containing 50 ppm < PCBs < 500 ppm	1085	KILOGRAMS	GENERATED	2007	12801	1991
B003	Petroleum oil or other liquid containing 500 ppm or greater of PCBs.	191	KILOGRAMS	GENERATED	2007	406	1990
More than one waste code was reported for the following waste amount:		6	GALLONS	GENERATED	2007		
D001	Solid waste that exhibits the characteristic of ignitability						
U239	Xylene (I)						
More than one waste code was reported for the following waste amount:		743	GALLONS	GENERATED	2007		
F002	Spent halogenated solvents						
D039	Tetrachloroethylene						
F002	Spent halogenated solvents	100	POUNDS	GENERATED	2006		
B002	Petroleum oil or other liquid containing 50 ppm < PCBs < 500 ppm	475	GALLONS	GENERATED	2003	1430	1987
F002	Spent halogenated solvents	573	GALLONS	GENERATED	2001	3002	1992
U051	Creosote	7	GALLONS	GENERATED	1999		
D001	Solid waste that exhibits the characteristic of ignitability	100	LITERS	GENERATED	1997	228	1993
F003	Spent non−halogenated solvents	200	POUNDS	GENERATED	1997		
B001	PCB Oil (concentrated) from transformers, capacitors, etc.	110	KILOGRAMS	GENERATED	1996	119	1991
D001	Solid waste that exhibits the characteristic of ignitability	1158	KILOGRAMS	GENERATED	1996	1657	1993
D006	Cadmium	4	GALLONS	GENERATED	1995		
D008	Lead	2	CUBIC YDS	GENERATED	1995		
F001	Spent halogenated solvents used in degreasing	181	KILOGRAMS	GENERATED	1994		
D010	Selenium	55	GALLONS	GENERATED	1991		
B002	Petroleum oil or other liquid containing 50 ppm < PCBs < 500 ppm	1810	POUNDS	GENERATED	1988	1985	1987
X721	Unknown waste type.	500	GALLONS	GENERATED	1986		
X727	Unknown waste type.	1500	GALLONS	GENERATED	1986		

NOTE: 2015 waste amounts are for 1/1/2015 to 12/18/2015 only

Environmental, Planning, and Engineering Consultants

34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

March 8, 2016

Mr. Steven Parisio
Regional Solid Waste Geologist
NYSDEC – Region 3 Solid Waste Program
21 South Putt Corners Road
New Paltz, NY 12561-1696

Re: Old Al Turi Landfill – Well Closure Request
State Superfund Program Site No. 336016
73 Hartley Road, Goshen, NY 10924

Dear Mr. Parisio:

AKRF, Inc. represents Amy's Kitchen, Inc., which is under contract to purchase the "ver Hage" property located at 103-111 Hartley Road in the Town of Goshen (Orange County). As part of our due diligence on the property, we have identified a number of groundwater monitoring wells associated with the long-term groundwater monitoring program established in the NYSDEC Record of Decision (dated March 1996) for the south-adjacent Old Al Turi "Class II" Landfill (referred to as the "Old Al Turi Landfill" or "Landfill"). As shown on the attached concept layout in Figure 1, Amy's Kitchen's proposed manufacturing building and loading dock area would overlap with three (3) of the groundwater monitoring wells, W-20S, W-25 and W-26, which are located in the southern portion of the ver Hage property. As part of the project design, we are requesting that the New York State Department of Environmental Conservation (NYSDEC) approve the decommissioning and permanent closure of these three wells. Provided below is additional background related to monitoring of these wells in the context of the overall monitoring program for the Old Al Turi Landfill as well as our recommendation for closure of these wells.

Post-Closure Monitoring Background

Background information on the post-closure monitoring was obtained through a Freedom of Information Law (FOIL) request submitted to the NYSDEC on July 15, 2015. Information provided by the NYSDEC included semi-annual groundwater monitoring data from January 2006 through January 2013. Records provided by the NYSDEC did not indicate when the monitoring wells were installed. Based on our review of a July 2005 Environmental Monitoring Plan for the Landfill and the 2006 through 2013 semi-annual reports, the on-going post-closure monitoring program for the Old Al Turi Landfill includes the following:

- Semi-annual sampling of eight "Type 1" monitoring wells located adjacent (within 150 feet) to the north-flowing Wallkill River[1] (W-1, W-11S, W-24S, W-38S, W-39S, W-40S, W-1D, and W-37D).

[1] Our literature review of the Wallkill River indicates that this section of the river (north of the Old Al Turi Landfill and bordering the ver Hage property) is a dug canal and not a naturally occurring waterbody. Therefore, the hydrogeologic connection/groundwater flow between the Wallkill River (canal) and the site is atypical compared

- Semi-annual sampling of nine "Type 2" monitoring wells located greater than 150 feet from the Wallkill River (W-3A, W-12SA, W-13S, W-18S, W-19S, W-20S, W-29, W-3D, and W-12DA)
- Laboratory analysis of the samples for certain contaminants of concern, including select volatile organic compounds (VOCs) and metals.
- Semi-annual water level gauging in all Type 1 and Type 2 monitoring wells, plus two additional wells (W-21S and TW-22S)

The Type 1 and Type 2 monitoring well locations are shown on Figure 1. As per the 2005 Environmental Monitoring Plan, semi-annual sampling results are compared to Groundwater Protection Trigger Levels (GWTLs) that were established for each of the contaminants of concern to determine whether implementation of the NYSDEC-approved contingency plan for groundwater remediation is warranted. The contingency plan, which includes installation of a barrier wall along the Wallkill River and a groundwater extraction and treatment system within the identified contaminant plume, would be implemented if contaminant concentrations exceed the GWTLs in any of the Type 1 monitoring wells. If the contaminant concentrations exceed the GWTLs in one or more of the Type 2 monitoring wells, additional sampling may be conducted to confirm that a release has occurred before implementing the contingency plan. This additional sampling would include collection of groundwater samples from wells located downgradient from the original wells exceeding the GWTLs. Monitoring wells W-25 and W-26 are not included in the on-going groundwater monitoring program, and records indicate that these wells have not been sampled since January 2006. We infer that these wells exist to allow for potential contingency monitoring.

Based on our review of semi-annual monitoring reports obtained from NYSDEC, only one (W-20S) of the three monitoring wells proposed for decommissioning and permanent closure has been sampled since January 2006. VOCs were not detected in W-20S during any of the sampling events, and all detected metals concentrations were below their respective GWTLs. In addition, this well was reported to be "dry" and not sampled during nine of the 15 sampling events reviewed. Furthermore, VOCs and metals were not detected above their respective GWTLs in any of the other Type 2 monitoring wells since 2006. A summary of the sampling and water level gauging history for all Type 2 wells is provided in the attached Table 1.

Figure 1 depicts overburden groundwater elevation contours from an April 2012 gauging event conducted by Ground Water Investigations, Inc. The contours indicate a predominantly west-northwesterly inferred flow direction from the western portion (closest to the Wallkill River) of the Old Al Turi Landfill towards the River, with a more northwesterly flow component near the northeastern portion of the Landfill.

The inferred groundwater flow lines intersecting W-20S, W-25, and W-26 indicate that these locations are either outside of the flow path of the Old Al Turi Landfill or marginally downgradient of the extreme eastern tip of the Landfill. In addition, since January 2006, monitoring well W-20S has been only intermittently sampled as part of the Landfill monitoring, contained no VOCs when sampled, and was determined to be dry on several occasions. Monitoring wells W-25 and W-26 have not been sampled since at least 2006 and were gauged for water levels only once (in April 2012) since that time.

Recommendation for Monitoring Well Closure

As noted above, monitoring wells W-25 and W-26 are located within the footprint of the proposed Amy's Kitchen manufacturing building and W-20S within a loading dock area immediately adjacent to the building. Protecting monitoring wells during construction poses a significant challenge. Maintaining such protections during construction will add project costs and may also cause delay. Often, despite best

---

to a natural river. Wherever used in this letter, the Wallkill River refers to this dug canal section bordering the ver Hage property.

efforts to protect monitoring wells, they are inadvertently damaged during construction, requiring closure methods that are less protective than planned well decommissioning and closure.

Based upon their locations in relation to the Old Al Turi Landfill and the associated groundwater flow, monitoring wells W-20S, W-25, and W-26 appear to be unnecessary since they would be either ineffective (or marginally effective at best) in monitoring for a new release from the Landfill. There are several well locations downgradient of the Landfill that are better located for monitoring for potential new releases from the Landfill (i.e., W-12SA, W-19S, W-18S, W-29, W-13S, and W-3A).

Considering the marginal utility of these wells, and the challenges inherent in protecting monitoring wells from a major construction project, and the disruption to business operations caused by monitoring activities within the building and an active loading dock. AKRF recommends that monitoring wells W-20S, W-25, and W-26 be decommissioned and permanently closed.

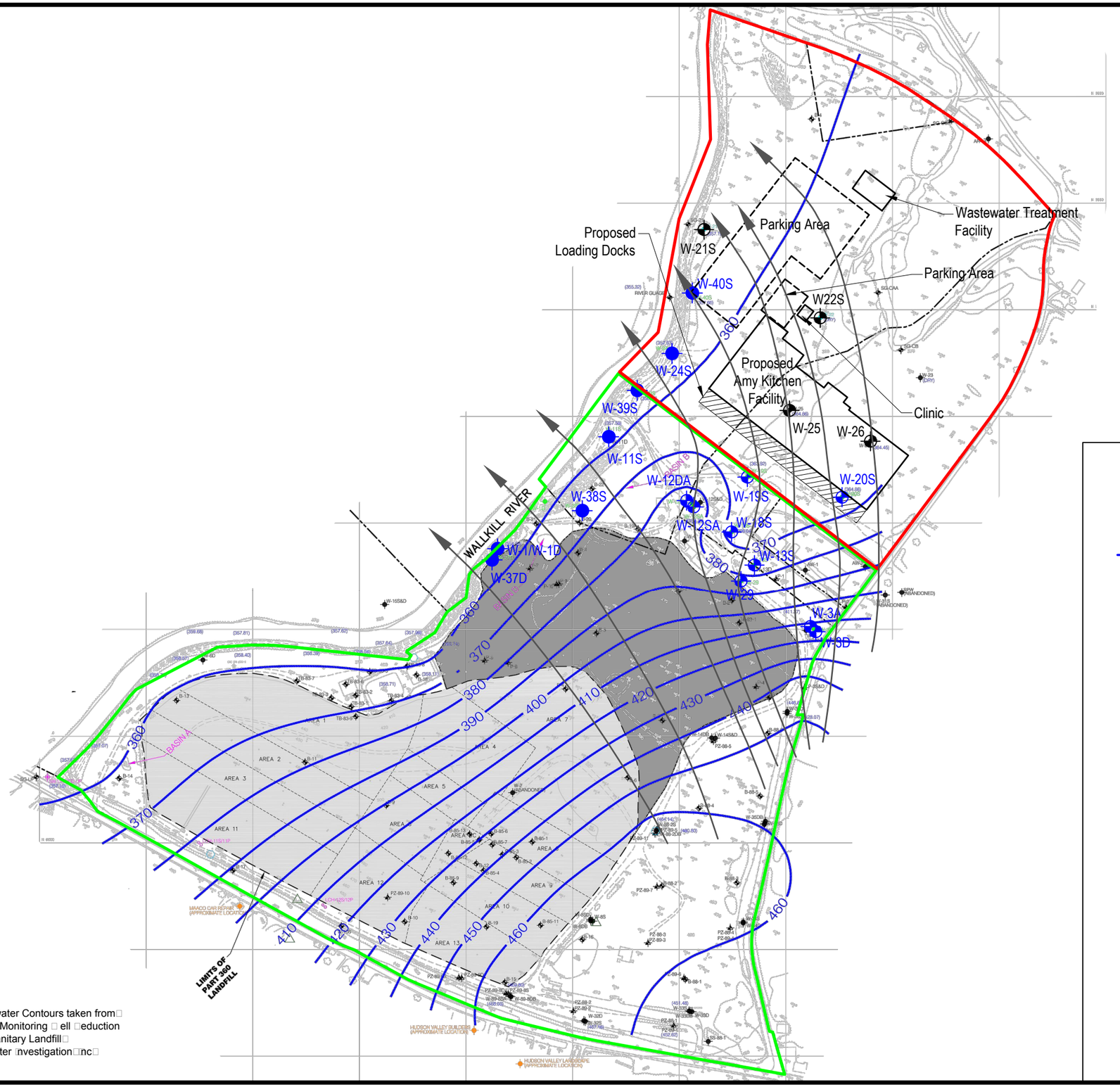
We appreciate the attention of the Department to this matter, and note that development planning is proceeding at a rapid pace. Amy's Kitchen anticipates construction to commence during the 2016 construction season. Confirmation that these wells can be decommissioned and permanently closed would simplify several aspects of the planning effort. As such, we look forward to resolving this question as soon as your schedule permits. Please contact me at (914) 922-2356 if you have any questions or require additional information.

Sincerely,
AKRF, Inc.

Marc S. Godick, LEP
Senior Vice President

Attachments Figure 1 – Site Plan
Table 1 – Type 2 Well Monitoring History

cc: Martin D. Brand
Phil Dropkin, Esq.
Christine Leas, Esq.
Larry Wolinsky, Esq.



Ma□ Source□
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Letter to NYS□□C □□□Monitoring □ ell □eduction
□ssessment□□I □uri Sanitary Landfill□
Pre□ared □y □roundwater □nvestigation□nc□
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LEGEND:

- INFERRED GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR APRIL 6, 2012
- PROPOSED BUILDING OUTLINE
- PROPOSED LOADING DOCKS
- PROPOSED PARKING LOT
- EXTENT OF CLASS II LANDFILL
- W-38S TYPE I CLASS II MONITORING WELL
- W-22S TYPE 2 CLASS II MONITORING WELL
- W-26 CONTINGENCY MONITORING WELL
- VER HAGE SITE
- AL TURI PROPERTY

0' 250' 500' 1000'
SCALE IN FEET

AKRF
Environmental Consultants
34 South Broadway #401, White Plains, N.Y. 10601

Amy's Kitchen
□os□en□New York

SITE PLAN

DATE
3/8/2016

PROJECT NO.
40525

SCALE
as shown

FIGURE
1

©2016 AKRF, Inc. Environmental Consultants Q:\Projects\40525 - AMY'S KITCHEN GOSHEN\Technical\Hazmat\Figures\40525 Site Plan_elev contours.dwg

TABLE 1

Al Turi Landfill Type 2 Monitoring Well Data Summary

Date	Type 2 Monitoring Well ID										
	W-03A	**W-03D**	**W-12SA**	**W-12DA**	**W-13S**	**W-18S**	**W-19S**	**W-20S**	**W-25***	**W-26***	**W-29**
January 2004	VOCs = ND Metals < GWTLs GW Elev. = 413.71	VOCs = ND Metals < GWTLs GW Elev. = 411.76	VOCs = ND Metals < GWTLs GW Elev. = 390.47	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = 370.73	VOCs <GWTLs Metals < GWTLs GW Elev. = 372.59	VOCs < GWTLs Metals < GWTLs GW Elev. = 367.22	VOCs = NA Metals = NA GW Elev. = >361.24	NS	NS	VOCs < GWTLs Metals < GWTLs GW Elev. = 374.54
January 2006	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = NR Metals = NR GW Elev. = NR	VOCs = NR Metals = NR GW Elev. = NR	VOCs = NR Metals = NR GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs < GWTLs Metals < GWTLs GW Elev. = NR	VOCs = NS Metals = NS GW Elev. = Dry	NS	NS	VOCs = ND Metals < GWTLs GW Elev. = NR
July 2006	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = NR Metals = NR GW Elev. = NR	VOCs = NR Metals = NR GW Elev. = NR	VOCs = NR Metals = NR GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs= < GWTLs Metals < GWTLs GW Elev. = NR	VOCs = NS Metals = NS GW Elev. = Dry	NS	NS	VOCs = ND Metals < GWTLs GW Elev. = NR
January 2007	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = 355.01	VOCs = ND Metals < GWTLs GW Elev. = 388.59	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = 370.55	VOCs <GWTLs Metals < GWTLs GW Elev. = 366.05	VOCs = NTSLs Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = 365.57	NS	NS	VOCs <GWTLs Metals < GWTLs GW Elev. = 373.8
July 2007	VOCs = ND Metals < GWTLs GW Elev. = 408.07	VOCs <GWTLs Metals < GWTLs GW Elev. = 412.31	VOCs = ND Metals < GWTLs GW Elev. = 385.57	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = 372.92	VOCs <GWTLs Metals < GWTLs GW Elev. = 370.67	VOCs = ND Metals < GWTLs GW Elev. = 362.59	VOCs = NA Metals = NA GW Elev. = Dry	NS	NS	VOCs <GWTLs Metals < GWTLs GW Elev. = 373.33
January 2008	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = NS Metals = NS GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs = NR Metals = NR GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	NS	NS	VOCs <GWTLs Metals < GWTLs GW Elev. = NR
July 2008	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = 413.53	VOCs <GWTLs Metals < GWTLs GW Elev. = 385.85	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = 373.2	VOCs <GWTLs Metals < GWTLs GW Elev. = 364.86	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = 363.35	NS	NS	VOCs = ND Metals < GWTLs GW Elev. = 373.5
January 2009	VOCs = ND Metals < GWTLs GW Elev. = 413.94	VOCs <GWTLs Metals < GWTLs GW Elev. = 419.46	VOCs <GWTLs Metals < GWTLs GW Elev. = 389.56	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = 373.25	VOCs <GWTLs Metals < GWTLs GW Elev. = 369.95	VOCs = NTSLs Metals < GWTLs GW Elev. = 365.44	VOCs = ND Metals < GWTLs GW Elev. = 366.68	NS	NS	VOCs = ND Metals < GWTLs GW Elev. = 377.48
July 2009	VOCs = ND Metals < GWTLs GW Elev. = 412.04	VOCs <GWTLs Metals < GWTLs GW Elev. = 417.71	VOCs = ND Metals < GWTLs GW Elev. = 390.33	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = 374.19	VOCs <GWTLs Metals < GWTLs GW Elev. = 367.53	VOCs = ND Metals < GWTLs GW Elev. = 365.83	VOCs = ND Metals < GWTLs GW Elev. = 367.23	NS	NS	VOCs = ND Metals < GWTLs GW Elev. = 374.49
January 2010	VOCs = ND Metals < GWTLs GW Elev. = 413.77	VOCs <GWTLs Metals < GWTLs GW Elev. = 418.82	VOCs = ND Metals < GWTLs GW Elev. = 388.59	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = 370.55	VOCs <GWTLs Metals < GWTLs GW Elev. = 366.05	VOCs = ND Metals < GWTLs GW Elev. = 364.49	VOCs = ND Metals < GWTLs GW Elev. = 365.57	NS	NS	VOCs = ND Metals < GWTLs GW Elev. = 373.8
July 2010	VOCs = ND Metals < GWTLs GW Elev. = 409.19	VOCs <GWTLs Metals < GWTLs GW Elev. = 414.85	VOCs = ND Metals < GWTLs GW Elev. = 386.05	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = NS Metals = NS GW Elev. = 354.47	VOCs <GWTLs Metals < GWTLs GW Elev. = 364.13	VOCs = ND Metals < GWTLs GW Elev. = 362.53	VOCs = NS Metals = NS GW Elev. = 362.29	NS	NS	VOCs <GWTLs Metals < GWTLs GW Elev. = 373.35
January 2011	VOCs = ND Metals < GWTLs GW Elev. = 414.73	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = NS Metals = NS GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = 362.67	VOCs = NS Metals = NS GW Elev. = 361.65	NS	NS	VOCs = NS Metals = NS GW Elev. = NR
July 2011	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals = NS GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = NS Metals = NS GW Elev. = NR	NS	NS	VOCs = ND Metals < GWTLs GW Elev. = NR
January 2012	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = NS Metals = NS GW Elev. = NR	VOCs <GWTLs Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = NS Metals = NS GW Elev. = NR	NS	NS	VOCs = ND Metals < GWTLs GW Elev. = NR
April 2012**	GW Elev. = 411.37	GW Elev. = NR	GW Elev. = NR	GW Elev. = NR	GW Elev. = 374.25	GW Elev. = 366.04	GW Elev. = 363.92	GW Elev. = 364.86	GW Elev. = 364.66	GW Elev. = 364.45	GW Elev. = NR
August 2012	VOCs = ND Metals < GWTLs GW Elev. = 409.72	VOCs <GWTLs Metals < GWTLs GW Elev. = 415.24	VOCs = ND Metals < GWTLs GW Elev. = 386.73	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals < GWTLs GW Elev. = 354.47	VOCs <GWTLs Metals < GWTLs GW Elev. = 364.27	VOCs = ND Metals < GWTLs GW Elev. = 363.52	VOCs = NS Metals = NS GW Elev. = 361.65	NS	NS	VOCs = NS Metals = NS GW Elev. = 365.65
January 2013	VOCs = ND Metals < GWTLs GW Elev. = 415.2	VOCs <GWTLs Metals < GWTLs GW Elev. = 421.24	VOCs = ND Metals < GWTLs GW Elev. = 387.25	VOCs = ND Metals < GWTLs GW Elev. = NR	VOCs = ND Metals = NS GW Elev. = 372.71	VOCs <GWTLs Metals < GWTLs GW Elev. = 366.93	VOCs = ND Metals < GWTLs GW Elev. = 371.91	VOCs = NS Metals = NS GW Elev. = 361.65	NS	NS	VOCs = NS Metals = NS GW Elev. = 388.6

Notes:

NA = Not Analyzed

NS = Not Sampled

ND = Not Detected

NR = Not Reported

CVOCs = Chlorinated Volatile Organic Compounds

< GWTLs = Detected concentrations were below the Groundwater Trigger Levels

*Wells W-25 and W-26 are not sampled as part of the semi-annul groundwater monitoring program

**April 2012 groundwater elevation data obtained from a August 3, 2012 Letter from Ground Water Investigations, Inc. to NYSDEC Re: Monitoring Well Reduction

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Materials Management, Region 3
21 South Putt Corners Road, New Paltz, NY 12561-1620
P: (845) 256-3000 | F: (845) 255-3414
www.dec.ny.gov

March 18, 2016

Mark S. Godick, LEP
Senior Vice President
AKRF
34 South Broadway
Suite 401
White Plains, NY 10601

Re: Old Al Turi Landfill, Site ID 336016 – Modification of the Approved (July 2005) Environmental Monitoring Plan

By email to: mgodick@akrf.com

Dear Mr. Godick:

Thank you for your letter of March 8, 2016 in which you request approval for decommissioning and permanent closure of three monitoring wells which were installed in connection with the remedial investigation and monitoring of the Old Al Turi Landfill, Site ID 336016, located at 73 Hartley Rd in Goshen, NY. Specifically the three monitoring wells you would like to decommission are W-20S, W-25 and W-26. In support of your request, you have provided a groundwater contour map showing that the monitoring wells in question are located in positions which are hydraulically cross-gradient or only marginally downgradient of the landfill and a table showing that the wells have not been part of the monitoring program (W-25 and w-26) or have had insufficient water volume for sampling during most sampling events (W-20).

Department staff have reviewed the information provided in your letter along with additional information contained in Department files and have determined that the monitoring wells which you have identified can be decommissioned without adversely impacting the capability of the monitoring program to detect a release of contaminants from the facility. Approval is hereby granted subject to the following terms and conditions:

1. This approval authorizes Amy's Kitchen Inc or its agents to decommission wells on property currently owned by Al Turi Landfill Inc and does not become effective until after the property deed has been transferred to Amy's Kitchen Inc or, if the work is to be done prior to transfer of ownership, after written permission has been obtained from the current property owner.
2. All work shall be carried out as prescribed in 6 NYCRR 360-2.11(a)(8)(vi).
3. Department staff shall be provided with written notification (email preferred) a minimum of three business days in advance of the date when decommissioning work is scheduled to begin.

4. Department staff reserve the right to require installation of a replacement well for one or more of the wells which are being abandoned if future monitoring results indicate that there is a gap in the monitoring network prevents a complete and adequate understanding of groundwater quality impacts which are caused by the landfill.

Please attach this letter to your copy of the Environmental Monitoring Plan. If there are any questions or concerns regarding the terms and conditions of this approval please contact me.

Sincerely,

Steven Parisio

Steven Parisio
Regional Solid Waste Geologist

.

ecc: Joseph Gambino, Al Turi Landfill Inc
George Heitzman
Rosalie Rusino
M. Brand
J. Lansing

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

September 30, 2015

Mr. Lee Bergus
Town of Goshen
41 Webster Avenue
Goshen, NY 10924

Re: USACE
Amy's Kitchen Manufacturing Plant
Route 17M, Echo Lake Road and Hartley Road, Goshen, NY
15PR03538

Dear Mr. Bergus:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the submitted materials in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. SHPO has no concerns regarding the project's potential impacts to historic architectural resources.

I have reviewed the following three archaeological survey reports.

- Phase I Archaeological Investigations of the Proposed Overflow Parking Area on the Strong Farm Property, Town of Goshen, Orange County, New York (Sept 2015).
- Phase I and II Archaeological Investigations of the Proposed Amy's Kitchen Project, Ver Hage and Lipoff Properties, Town of Goshen, Orange County, New York (Sept 2015).
- Phase I and II Archaeological Investigations of the Proposed Science of the Soul Conference Center, Echo Lake Property, Town of Goshen, Orange County, New York (Sept 2015).

Strong Farm Property

No archaeological sites were identified during the survey of area of proposed ground disturbances on the Strong Farm Property and I concur with the report recommendation that no additional archaeological work is necessary for the surveyed area.

Lipoff Property

No archaeological sites were identified during the survey of the area of proposed ground disturbances on the Lipoff Property and I concur with the report recommendation that no additional archaeological work is necessary for the surveyed area.

Ver Hage Property

One pre-contact Native American archaeological site was identified during the survey of the proposed ground disturbances on the Ver Hage Property: The Ver Hage 1 site. I concur with the interpretation that Ver Hage 1 represents the re-identification of previously recorded Native American site ORGO-13-F (recorded in 1979), and they have been linked under the No. 07106.000023. I concur with the report recommendation that Ver Hage 1 is eligible for the State and/or National Register of Historic Places (S/NRHP). It is SHPO's recommendation that the site be avoided by project-related impacts. If the site cannot be avoided, then a Phase III data recovery should be conducted.

Echo Lake Property

The following four archaeological sites were identified during the survey of the area of proposed ground disturbances on the Echo Lake Property.

Site Name	Temporal Assessment	SHPO No.	Report Recommendation
H. Stage	19th & 20th century	07106.000171	No additional Work
Amy's Kitchen 1	Late Archaic Period	07106.000164	S/NRHP Eligible
Amy's Kitchen 2	Late Archaic Period	07106.000165	S/NRHP Eligible
Amy's Kitchen 3	Late Archaic Period	07106.000166	S/NRHP Eligible

I concur with the report recommendation that the H. Stage site is not eligible for the S/NRHP and no additional archaeological work is necessary. I also concur with the report recommendation that the three pre-contact Native American sites (Amy's Kitchen 1, 2, and 3) are eligible for the S/NRHP. It is SHPO's recommendation that the three sites be avoided by project-related impacts. If one or more of the three sites cannot be avoided, then Phase III data recoveries should be conducted for each of the sites that will be impacted.

Finally, due to the potential impacts to Native American archaeological sites, it is my recommendation that the U.S. Army Corps of Engineers initiate consultation with the appropriate Native American Nations.

If further correspondence is required regarding this project, please refer to the OPRHP Project Review (PR) number noted above. If you have any questions I can be reached at 518-268-2186.

Sincerely,

Tim Lloyd, Ph.D., RPA
Scientist - Archaeology
timothy.lloyd@parks.ny.gov

via e-mail only

Phase I and II Archaeological Investigations of the Proposed Science of the Soul Conference Center Echo Lake Property Town of Goshen Orange County, New York

Prepared for:
Amy's Kitchen, Inc.
PO Box 4759
Petaluma, California

Prepared by:
Derrick J. Marcucci, Jessica Schreyer, Susan Gade and Brad Gawron
Landmark Archaeology, Inc.
6242 Hawes Road
Altamont, New York 12009-4606

Susan Gade, RPA and Derrick J. Marcucci, RPA
Principal Investigators

LA# 335.337.350
September 2015

In accordance with Section 6.6 of the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State," published by the New York Archaeological Council (NYAC) in 1994 and adopted by the State Historic Preservation Office, sensitive site location information has been redacted. An unredacted version has been made available to the Planning Board.

MANAGEMENT SUMMARY

SHPO Project Review Number:

Federal Agencies: USACE, FWS, FEMA
State Agencies: DEC, DOT, OGS, OMH, DPS, ESD, SEQRA

Phase of Study: Phase I and II

Location:
Minor Civil Division: Town of Goshen
County: Orange

USGS 7.5′ Quadrangle Map: Middletown, NY (2000)

Survey Area
Length: 1460 m (4790 ft) maximum
Width: 606 m (1987 ft) maximum
Depth: n/a
Size Total Acres Surveyed: 109.5 acres (44.3 ha)
Total Square Meters Excavated: Site 07106.000164- 4.56
Site 07106.000165- 14.06
Site 07106.000166- 10.59
Total Square Feet Excavated: Site 07106.000164- 49.08
Site 07106.000165- 151.34
Site 07106.000166-113.99
Percentage of Site Excavated: Site 07106.000164- 0.47%
Site 07106.000165- 0.34%
Site 07106.000166- 0.47%

Archaeological Survey Overview
Total and Interval of Shovel Tests:
Phase I APE: 444 at 15-meter interval, 12 at 7.5-meter interval
Site 07106.000164:Ph II: 8 at 7.5-meter interval
Site 07106.000165:Ph II: 36 at 7.5-meter interval, 8 selectively placed
Site 07106.000166:Ph II: 32 at 7.5-meter interval

Total and Size of Units:
Site 07106.000164: Ph II: 3 1x1-meter units
Site 07106.000165: Ph II: 6 1x1-meter units
Site 07106.000166: Ph II: 5 1x1-meter unit

Width of Plowed Strips: n/a
Surface Survey Transect Interval: n/a

Results of Archaeological Survey
Number and name of prehistoric sites identified: Site 07106.000164, Site 07106.000165, Site 07106.000166
Number and name of historic sites identified: H. Stage Historic Site
Sites Recommended for Phase II/Avoidance: Site 07106.000164, Site 07106.000165, Site 07106.000166

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Landmark Archaeology, Inc.

Date of Report: September 2015

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1. INTRODUCTION

This report presents the results of Phase I and II archaeological investigations conducted for the proposed Science of the Soul (SoS) Conference Center Project located in the Town of Goshen, Orange County, New York (Figure 1). The proposed project will entail the construction of a conference center consisting of several buildings, cottages, a guest house and an open air pavilion. Part of the proposed center will be constructed on lands previously mined. The archaeological investigations were conducted by Landmark Archaeology, Inc. of Altamont, New York who was retained as a consultant by Amy's Kitchen Inc. of Petaluma, California. The Phase I investigation considered an Area of Potential Effect (APE) of approximately 109.5 acres (44.3 ha) within a 177-acre parcel (Figure 2).

According to the Draft Environmental Impact Statement (DEIS) (AKRF n.d.), Amy's' Kitchen is collaborating with SoS on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents. Amy's Kitchen is proposing to construct a production facility on adjacent land (Ver Hage property) and the Amy's Kitchen facility and the SoS conference center will share certain access, water supply and wastewater treatment infrastructure. The SoS development also includes an area for overflow parking (Strong Farm property). Archaeological investigations of the SoS Strong Farm property and of the Amy's Kitchen's production facility are detailed in separate reports (Gawron and Gade 2015; Marcucci et al. 2015).

The Phase I study was conducted to: (a) inspect the project area and define the spatial boundaries of any archaeological resources in relation to the limits of the project area, (b) assess the potential of the project area for deeply buried cultural deposits, (c) conduct surface and limited subsurface investigations of the resources which are either partially or completely in the area of the proposed construction, and (d) provide recommendations for those archaeological resources which may be impacted by proposed development activities. These tasks were conducted to provide federal and state reviewing agencies with appropriate documentation to evaluate the effect of the proposed project on historic and/or prehistoric cultural resources.

The Phase I study was conducted in two stages: a Phase IA literature review and a Phase IB intensive level identification survey. The purpose of the Phase IA investigation was to assess the potential for National Register of Historic Places (NRHP) properties to exist within the project area. Research tasks associated with the Phase IA study consisted of a literature review and records search at the New York Office of Parks, Recreation, and Historic Preservation (OPRHP). The Phase IA study also reviewed the results of previous Phase IB and II archaeological investigations conducted in portions of the current APE prior to mining activities (Oberon 1994). The Phase IB consisted of a pedestrian survey and shovel test excavations within the APE.

Phase II investigations were designed to gather data with which to evaluate the NRHP eligibility status of Sites 07106.000164, 07106.000165, and 07106.000166, which were identified by the Phase I study. Site eligibility is based on NRHP criteria of significance (36CFR60.6, Federal Register 1976). Phase II field efforts consisted of shovel test and unit excavations. All Phase I and II field and analytical methods were conducted in accordance with guidelines established in *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York* by the New York Archaeological Council (NYAC 1994) and adopted by the Office of Parks, Recreation and Historic Preservation (OPRHP).

The following technical report presents the results of the Phase I and II investigations conducted during September and October, 2014, and Phase I investigations in August, 2015. Derrick J. Marcucci, RPA, and Susan Gade, RPA, served as Principal Investigators for the project and supervised all aspects of the investigation. Background literature was reviewed by Ms. Gade and Mr. Marcucci. Fieldwork was conducted by Mr. Marcucci, Ms. Gade, Evan Butterfield (Field Director), Brad Gawron (Crew Chief), Devon Guy, Zach Hinkley, Dawn Lawrence (Crew Chief), Nicole Marcucci, Georgiana Patterson, Sarah

Salem, and Kevin VanDerWende. Artifact analysis was completed by Mr. Butterfield and Susan Gade. This report is written by Mr. Marcucci, Jessica Schreyer, Ms. Gade, and Mr. Gawron. Mr. Butterfield and Mr. Gawron collected all spatial data and produced report graphics. All field notes, photographs, and records associated with the project are on file at Landmark Archaeology, Inc., 6242 Hawes Road, Altamont, New York.

2. PROJECT DESCRIPTION

The Draft Environmental Impact Statement (DEIS) notes "The Amy's Kitchen manufacturing facility and the SoS Conference Center, together with certain related facilities and improvements, comprise the "Proposed Project" (AKRF n.d.:II-1). Four properties are part of the proposed project. Table 1 lists the properties, and the size and proposed development for each.

Table 1
Amy's Kitchen and SoS Properties and Proposed Development

Entity	Property Name	Size (ac)	APE Size (ac)	Proposed Development
Amy's Kitchen	Ver Hage	71.7	71.7	Manufacturing facility
Amy's Kitchen	Lipoff	11.8	11.8	Wells/water supply
SoS	Echo Lake	194.6	109.5	Conference Center
SoS	Strong Farm	96	23.3	Volunteer parking for SoS

Source: DEIS

The proposed SoS conference center will be constructed on lands located along the west side of the Wallkill River, north of State Route 17M and south of Echo Lake Road (see Figure 2). The project is located approximately three miles west of the village of Goshen in central Orange County, New York. The Wallkill River forms the eastern boundary of the project area and an abandoned railroad grade borders the northwestern limits of the parcel. The Mid-Hudson Psychiatric Center complex lands form part of the southern and western boundaries of the project area. No standing structures older than 50 years are located within or adjacent to the APE.

Current plans for the SoS conference center are shown in Figure 3. The center will include construction of a 200,000-square foot open-air pavilion, two caretaker residences, a guest house and administrative buildings. Plans also include parking places for 2,043 cars and 130 buses. In addition to construction, ground disturbing activities will include utility trenching, landscaping and grading of a driveway to the guest house and access roads off of State Route 17M and Echo Lake Road. Primary access to the facility will be from Route 17M in the southern part of the parcel. The entrance road will be about 500 feet east of the Mid-Hudson Psychiatric Complex. This access also will be used eventually for the Amy's Kitchen facility located on the adjacent Ver Hage parcel (see Figure 2) via a bridge over the Wallkill River. An emergency access road is proposed along an existing two-track lane that leads to Echo Lake Road. All construction and earthmoving activities will be confined to an estimated 109.5-acre APE (see Figure 3).

Part of the proposed conference center and related infrastructure will be constructed on lands previously used as a sand and gravel mine (see Figure 3). According to mining plans provided to Landmark, the mining permit area for the Echo Lake Mine Site encompassed approximately 48.4 acres. Within the APE approximately 21.6 acres (8.7 ha) have been actively mined, and thus, they are considered excessively disturbed. The original permit was issued in December 1994, and aerial photography shows mining at this location between 2001 and 2009. Based on aerial photography and current Phase I fieldwork results, the principal mining area was confined to a prominent hillslope and high terrace located along the southern one half of the mining permit area (Appendix A: Photograph 1).

3. DESCRIPTION OF PROJECT AREA

The project area is located in southeastern New York, in the Town of Goshen. It is situated in the lower Hudson River Valley within the Hudson Mohawk Lowlands physiographic area (Isachsen et al. 2000). The Hudson Mohawk Lowlands span almost the entire north-south length of eastern New York. In southern New York, these lowlands are bounded by the Catskill Mountains to the west and the Taconic Mountains to the east. The combined watersheds of the Wallkill River and Rondout Creek provide drainage for the region. Surficial geology of the project is dominated by glacial landforms and the unconsolidated sediments (glacial till) that were deposited during the late Wisconsinan glaciation which occurred 21,000 to 13,600 years ago. Bedrock geology is complex, comprised of the Trenton Group of shales that underlie the entire central part of Orange County.

The project area is located adjacent to the Wallkill River, the major drainage system in the central part of Orange County. In the project vicinity, the Wallkill River is a slow moving stream approximately ten meters wide. The channel is entrenched more than five meters below the floodplain and is bounded by steep river banks (Appendix A: Photographs 2 and 3). The headwaters of the Wallkill River form in the Pochuck Mountains on the New York/New Jersey border. The Wallkill River flows for approximately 88 miles in a northeasterly direction before being impounded into a small body of water near Rosendale called Sturgeon Pond. Sturgeon Pond flows into the Rondout Creek, which empties into the Hudson River at Kingston, New York.

Topography within the project area is variable, including moderate to steep side slopes as well as nearly level land. A large glacial hillslope and terrace characterize the central portion of the APE. The highest point on the hillslope is a northeast/southwest aligned ridge top (526 feet amsl), located in the western portion of the APE. A broad terrace lies at the base of the hillslope. The terrace edges correspond with the 400-foot contour line. The eastern limits of the terrace form the APE's eastern limits, and are marked by a well-defined escarpment situated about ten meters (30 feet) above the floodplain. Elevation within the project area ranges from 360 feet to about 526 feet amsl. At the time of fieldwork, vegetation in the APE included tall grasses/brush across the mined terrain and hardwood forest surrounding the mined area.

Ten soils are mapped in the project area (Figure 4; Olsson 1981). Soils within the project area were formed in glacial till, glacial lake, and outwash deposits. The soils in the APE range from very poorly to somewhat excessively drained, but most are moderately well drained and well drained. The soils consist primarily of silt loam, gravelly silt loam, and sandy loam. The soil types in the APE are found on landforms associated with ridges, hills, terraces, valleys and plains. Table 2 lists the soils mapped in the APE.

Table 2
Summary Soil Information

Soil Name	**Symbol**	**Slope**	**Drainage Class**	**Parent Material**	**Landform**
Alden silt loam	Ab	0-3%	Very poorly drained	Glacial till	Upland depressions
Allard silt loam	AdB	3-8%	Well drained	Glacial outwash	Terraces and benches along valley floors and plains
Erie gravelly silt loam	ErA	0-3%	Somewhat poorly drained	Glacial till	Broad hilltops and footslopes in uplands
Erie gravelly silt loam	ErB	3-8%	Somewhat poorly drained	Glacial till	Footslopes, lower hillsides, and along upland drainageways
Hoosic gravelly	HoD	15-	Somewhat	Glacial outwash	Sides of terraces and

Soil Name	Symbol	Slope	Drainage Class	Parent Material	Landform
sandy loam		25%	excessively drained		low rounded hills and ridges in valleys
Mardin gravelly silt loam	MdB	3-8%	Moderately well drained	Glacial till	Broad divides, hilltops, and ridges in uplands
Mardin gravelly silt loam	MdC	8-15%	Moderately well drained	Glacial till	Valley sides, hillsides, and ridges in uplands
Mardin gravelly silt loam	MdD	15-20%	Moderately well drained	Glacial till	Valley sides and hillsides in uplands
Middlebury silt loam	My	0-3%	Somewhat poorly drained	Recent silty alluvial deposits	Floodplains
Raynham silt loam	Ra	n/a	Somewhat poorly drained	Glacial lake-laid deposits	Upland depressions and low benches in valleys
Riverhead sandy loam	RhC	8-15%	Well drained	Glacial outwash	Terrace fronts, low rolling hills, and ridges in valleys and on plains
Riverhead sandy loam	RhD	15-20%	Well drained	Glacial outwash	Terrace fronts, low rolling hills, and ridge sides in valleys and on plains
Rock outcrop-Arnot complex, sloping	RKC	3-15%	Somewhat excessively drained	Glacial till	Hillcrests and ridges of mountainous uplands
Unadilla silt loam	UnB	0-8%	Well drained	Glacial lacustrine deposits	Terraces and undulating benches

4. PHASE IA INVESTIGATIONS

A. RESEARCH OBJECTIVES AND PHASE IA METHODS

The goal of the Phase IA study is to assess the potential for the presence of significant archaeological resources within the project area. The study is designed to gather data regarding archaeological potential through archival research. All pertinent archaeological and historical literature and state records applicable to the project area are reviewed during the Phase IA investigation.

Background research was conducted for the purpose of compiling baseline information related to the prehistoric, history, geomorphology, environment, and land use history of the project area. These sources provided information regarding NRHP eligibility in the area and data with which to evaluate the project's archaeological potential.

Background research consisted of consulting official site records at the OPRHP, the New York State Museum (NYSM), site files at the OPRHP, historic maps at the New York State Library, and documents provided by the client's engineer and attorney. Historic maps were used to identify land use history and potential for historic resources to exist within the project area. A GIS database search also was conducted at OPRHP to determine the presence of NRHP properties within or near the project area.

B. RESULTS OF PHASE IA INVESTIGATIONS

A number of archaeological surveys and Phase II investigations have been conducted within, near and adjacent to the project area. Background research conducted at the OPRHP determined that there are incomplete records for these surveys and for the sites identified during the surveys. Some of the reports, map data, and other corresponding documentation for surveys near, but outside of the project area, were available as part of the official OPRHP files. However, documentation for the surveys conducted within portions of the project area is missing in the files because they were misplaced, lost, or perhaps never submitted for agency review. Despite the missing archaeological survey information at the OPRHP, it was possible to reconstruct some information using site forms and technical report bibliographies primarily from Oberon's 1994 report entitled "*Stage I-B and Stage II Cultural Resources Surveys, Site Identification and Site Evaluation Phases, Proposed Echo Lake Mine Site, Town of Goshen, Orange County, New York and Stage I Site Identification Survey, Proposed Water Line Construction Route, Towns of Wawayanda and Wallkill, Orange County, New York.*" This report, which is not in the OPRHP files, was obtained and provided to Landmark by a client representative. Based on information in Oberon's 1994 report, at least three archaeological surveys have been completed within portions of the current project area between 1988 and 1994. All three surveys appear to have focused on areas corresponding to the mine permit area depicted on Figure 3. Previous Phase I archaeological investigations conducted within, adjacent to, or within one mile of the Amy's Kitchen Project Area are summarized in Table 3.

According to Oberon (1994), portions of the current survey area were investigated in the late 1980s by Louis Berger & Associates, Inc. (LBA) as part of an Environmental Impact Statement for the Orange County Jail Facility (Alterman and Weubber 1988). The Phase IA survey identified two prehistoric sites (LBA Sites 1 and 2), but the sites were not investigated beyond noting their presence. The same area was investigated in 1991 during Phase I investigations for the jail facility (Butler 1991). Butler recommended the two LBA sites as not eligible for the NRHP. Finally, in 1994 Oberon conducted a Phase I investigation of portions of the current project area for a proposed mine (Oberon 1994). Based on Butler's recommendation that the two sites identified by LBA were not eligible, Oberon did not reexamine these sites. No information or maps for the two sites identified by LBA are documented in the official OPRHP files. Additionally, no report or other records documenting Butler's 1991 work was found in the OPRHP files.

Table 3
Summary of Previous Archaeological Investigations Within,
Adjacent to or Within One Mile of Amy's Kitchen Project Area

Archaeological Survey Title	Year	Researchers	Location in Relation to Project Area	Sites Present/#	OPRHP Records
A Phase I Archaeological Survey of a 21.9-Acre Sand and Gravel Mine Site, Al Turi Landfill, Town of Goshen, Orange County, New York. Hunter Research Associates	1987	L. Rakos- Hunter Research Associates	Adjacent to eastern and northern portion of project area	Yes	Not available
Final Environmental Impact Statement, Orange County Jail Facility, Orange County, New York _Appendix B: Phase I-A Cultural Resources Survey, Louis Berger and Associates, East Orange, New Jersey	1988	M. Alterman and I. Weubber-Louis Berger & Associates .	Within northern portion	Yes/3	Not available
Report on Investigation of the Echo Lake Project Area, Town of Goshen, Orange County, New York, EnviroPlan Associates, Poughkeepsie, New York	1989	Eugene J. Boesh	Within mining permit area	No	Not available
Stage I-B Cultural Resources Survey, Proposed Water Supply Area, Echo Lake Development Site, Town of Goshen, Orange County, New York. Atlantic Testing Laboratories, Limited, Utica, New York	1990	S.J. Oberon	Well field site north of project area	?	Not available
Phase I-B Archaeological Survey and Testing of the Proposed Orange County Jail Project, Echo Lake, Orange County, New York, Brockington and Associates, Atlanta, Georgia	1991	S. Scott Butler	Within northern portion	Yes/3	Not available
Stage I-B and Stage II Cultural Resources Surveys Site Identification and Site Evaluation Phases Proposed Echo Lake Mine Site, Town of Goshen, Orange County, New York and Stage I Site Identification Survey Proposed Water Line Construction Route, Towns of Wawayanda and Wallkill, Orange County, New York	1994	S. J. Oberon	Within northern portion	Yes/3	Not available
The Communication Complex at the mid-Hudson Psychiatric Center, Goshen, Orange County, New York. Historical Perspectives	2000	D. Brown et al.- Historical Perspectives	Adjacent and west of project area	No	Available
Phase IB and Limited Phase II Cultural Resources Survey Site Identification and Site Evaluation Phases (sic), Proposed Echo Lake Development, Town of Wawayanda, Orange County, New York.	2000	S.J. Oberon	West of project area	Yes	Available
Phase IA/IB Archaeological Survey, Orange and Rockland Utilities, Inc., Proposed 13,500 Foot, 12-Inch Gas Main Project, PAL	2010	G. R.Dubell and M.J. Hubbard-Public Archaeology Lab	West of project area	Yes	Available

Oberon's (1994) Phase I and Phase II investigations identified and conducted site evaluations on three prehistoric archaeological sites. Oberon found a wide assortment of lithic artifacts associated with the Early Archaic through Late Woodland groups (ca. 8000 BC- AD 1600). Most of the diagnostic artifacts date to the Late Archaic (ca. 4000-1000 BC), but the recovery of an Early Archaic bifurcate biface indicates the area was attracting groups as early as 8000 BC. This approximately 10,000-year span of time encompasses the majority of New York's documented prehistory, which includes roughly 13,000 years. Based on previous work conducted at the project area, the project vicinity was a desirable setting for prehistoric populations who depended on seasonally available plants and animals for their subsistence requirements.

As noted above, Oberon's (1994) Phase I survey identified three prehistoric sites. Artifacts recovered from his Site 1 included one Lamoka point, one broken biface, and five chert flakes. Fifteen flakes, one

quartzite flake, one chert core, one scraper, one unidentifiable biface preform and ten bivalve shell fragments constitute the material assemblage of his Site 2. Site 3 yielded 30 flakes, five biface fragments, one scraper and one biface preform.

Phase II site evaluations also were conducted at each of the three sites by Oberon in 1994. Artifacts recovered during the Phase II at Site 1 included two Lamoka points, one broken projectile point, one chert core, 83 chert flakes, two preforms and seven bone fragments. Eight scrapers, two hammer/anvil stones, two cores, four projectile points, and 314 chert flakes were found at Site 2. One Lamoka point and one Normanskill point were among the four projectile points recovered from Site 2. Site 3 yielded the largest assemblage which included: 292 chert flakes, three cores, three hammer/anvil stones, one potsherd, and 17 projectile points including three Lamoka points, one Normanskill point, one Brewerton point, and one Madison point.

Despite the large numbers of artifacts including a high number of diagnostic bifaces, Oberon (1994:12) recommended the three sites as not eligible for inclusion in the NRHP. The basis for Oberon's recommendation was the lack of subplowzone features and structural remains at the sites. Since no records of these investigations can be found at OPRHP, it is unclear if OPRHP reviewed the report or concurred with his recommendations. The three sites have been subsequently destroyed by mining.

Using GIS and information found in Oberon's 1994 report, it was possible to reconstruct the approximate locations of the two LBA sites and three Oberon prehistoric sites. Figure 5 shows the five site locations in relation to the present project boundaries. The figure indicates that Oberon's Sites 2 and 3 were located within the current project area on a high terrace. Oberon's Site 1 was located near the northern limits of the APE. Site 2 was located between and adjacent to LBA's Sites 1 and 2. Mining activities have obliterated Oberon's Sites 1, 2 and 3, and the eastern portions of LBA's Sites 1 and 2.

Records at the OPRHP show that 19 archaeological sites have been recorded within one mile of the project area (Table 4). As noted the records do not include LBA's or Oberon's sites. One (NYSM 6171) of the 19 sites on file is within the project area. NYSM 6171 is mapped as a nearly mile-long polygon that covers most of the northern part of the project area. The "site" was recorded in 1989 and the only information listed on the records is: "numerous sites above 400' elevation." Important information such as the precise site locations, cultural material found, the cultural/temporal association(s), and who recorded the sites is absent from the site form.

Table 4
Previously Recorded Archaeological Sites Within One Mile of the Amy's Kitchen Project Area

OPRHP #	NYSM #	Reporter	Site Identifier/ Description	Time Period
07106.000006		Orange County NYSAA	OR-GO-06-F	Multicomponent: Early Archaic-19th century
07106.000010		Orange County NYSAA	OR-GO-14-F	Multicomponent Prehistoric: Archaic-Transitional Historic: 18th century
07106.000022		Orange County NYSAA	OR-GO-12-F	Unknown Prehistoric
07106.000023		Orange County NYSAA	OR-GO-13-F	n/a
07106.000076		Richard Hunter	Al Turi Site A	Unknown Prehistoric
07106.000077		Lynn Rakos	Temporary hunting camp	Prehistoric: Early to Late Archaic
07119.000012		Orange County NYSAA	Echo Lake	Prehistoric: Archaic to Transitional
07119.000013		Orange County NYSAA	OR-WW-06-F	Unknown Prehistoric
07119.000014		Orange County NYSAA	OR-WW-07-F	Prehistoric: Archaic to Woodland

OPRHP #	NYSM #	Reporter	Site Identifier/ Description	Time Period
07119.000030		Orange County NYSAA	OR-WW-23-F	Unknown Prehistoric
07119.000032		Orange County NYSAA	OR-WW-25-F	Unknown Prehistoric
07119.000193		S.J. Oberon	Huberth Site	Prehistoric: Archaic
	774	W.A. Ritchie	New Hampton School	n/a
	6171	**Orange County NYSAA**	**Numerous sites above 400 ft amsl**	**n/a**
	6172	Orange County NYSAA	Cannon Hill	Prehistoric: Archaic
	6173	Orange County NYSAA	n/a	Prehistoric: Archaic
	6198	Orange County NYSAA	Hutt	Prehistoric: Paleo-Indian to Archaic
	6199	Orange County NYSAA	Strong	n/a
	6200	Orange County NYSAA	Halcott	n/a

BOLD: Within or adjacent to project area

Historic maps reviewed for the Phase IA study included the years 1875 (Beers 1875; Figure 6) and 1908 (USGS 1908; Figure 7). Both maps show a structure on the west side of the proposed emergency access road within the northern limits of the APE. The name H. Stage is associated with the structure on the 1875 map. Both maps also illustrate a rail line crossing the northern portion of the APE near Echo Lake Road.

C. ARCHAEOLOGICAL POTENTIAL

Based on the physiographic setting of the project area and the results of background research, the archaeological potential was considered high for prehistoric and historic archaeological resources to be within the project area. Topographic features such as terraces and hilltops that are in close proximity to the Wallkill River would have been attractive settings for prehistoric groups. Background research indicates that prehistoric sites have been recorded within the project area and numerous prehistoric sites are located within a one-mile radius. Historic maps show a structure within the northern portion of the APE. The likelihood for deeply buried archaeological deposits to exist within the project area was considered low. Soils mapped in the APE are primarily glacial-derived except for a small area near Echo Lake Road. This area within the APE was disturbed and marked by an earthen berm that skirted an existing farm lane. There is no potential for archaeological sites to exist in areas that lack intact terrain due to mining activities.

5. PHASE I AND II METHODS

A. RESEARCH OBJECTIVES

The goal of the current study was twofold. First, the purpose of the Phase I fieldwork was to document the presence/absence archaeological resources within the project area. Second, the Phase II investigation was designed to determine if sites in the APE are eligible for listing in the NRHP. Site evaluation is based on NRHP criteria of significance (36CFR60.6, Federal Register 1976). The criteria are:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and

a. that are associated with events that have made a significant contribution to the broad patterns of our history; or

b. that are associated with the lives of persons significant in our past; or

c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction, or

d. that has yielded, or may be likely to yield, information important in prehistory or history.

Typically, Criterion d is the most applicable criterion for evaluation of archaeological resources.

B. PHASE I FIELD METHODS

The Phase I field investigations were first conducted in September, 2014. Phase I investigations were conducted again in August, 2015 to accommodate proposed new development in areas outside of the 2014 APE (see Figure 3). Phase I fieldwork in both years included a pedestrian survey and the excavation of shovel tests. The pedestrian survey was conducted across the APE to examine the area for archaeological evidence and assess disturbances. Pedestrian survey was performed by a crew of five walking in parallel transects five meters apart. Generally, shovel tests were spaced at a 15-meter interval along transects spaced 15 meters apart. Selectively placed shovel tests also were excavated based on landform considerations. Shovel tests were not excavated in areas of excessive slope (>12-15%) and standing water or in areas that have been previously mined or otherwise highly disturbed (e.g., two track roads).

Several areas within the APE were mowed with a John Deere tractor and "brush hog" rotary brush cutter attachment to facilitate shovel testing (Appendix A: Photograph 4). The diameter of shovel tests ranged from 40 to 50 centimeters. The A horizon was removed and screened in one analytic unit. Soils below the A horizon were removed in 20-centimeter levels with tests extending a minimum of 40 centimeters in subsurface strata.

C. PHASE II FIELD METHODS

Phase II fieldwork was conducted in October, 2014. It consisted of the excavation of shovel tests and 1x1-meter test units at each of the three prehistoric sites. Shovel tests were spaced 7.5 meters apart across the sites and units were positioned according to shovel test results and landform considerations. Units were placed in areas with the greatest potential to yield significant information about the site. Units were hand

excavated by shovel skimming and trowel excavation. Soils were removed in ten-centimeter arbitrary levels within natural soil horizons. Unit excavations extended at least ten centimeters into culturally sterile subsoil. A soil profile was compiled for at least one wall of each unit and color photographs were taken of unit profiles. Cultural features identified in the units were mapped in planview, photographed, and excavated by cross sectioning.

All Phase I and II excavated soils were screened through ¼-inch hardware cloth. Soil characteristics including texture and color (Munsell) and any disturbances or other noteworthy aspects of the tests were recorded on standardized Landmark Archaeology, Inc. field forms. Soil descriptions for each shovel test are provided in Appendix B. All Phase I and II excavations were recorded using a submeter, high precision GPS receiver. The georeferenced data were differentially corrected for an estimated horizontal error of less than one meter. All excavations were backfilled after completion.

D. ANALYSIS METHODS

Artifacts were transported to laboratory facilities at Landmark Archaeology, Inc. Artifacts were washed and sorted into appropriate categories and subcategories for analysis. The prehistoric chipped stone debitage was sorted into five categories reflecting stages in the lithic reduction sequence (Callahan 1979). The five categories of chert debitage include: primary, secondary, tertiary, retouch, and shatter. A sixth category, broken, was used for broken flakes which could not be assigned to a lithic reduction category. Fire-cracked rock (fcr) were tabulated and weighed. Sources used for projectile point identification and cultural affiliation and age included Justice (1987) and Ritchie (1971).

Historic artifacts were tabulated by class, with temporally diagnostic attributes noted whenever possible. Sources commonly used in the aid of historic artifact classification include Miller (1987) and South (1977). The analysis data for both prehistoric and historic artifacts, including provenience and category frequencies are presented in Appendix C.

Artifacts are temporarily curated at Landmark Archaeology, Inc. For the four archaeological sites identified in the parcel, New York State Archaeological Site Inventory Forms were completed and submitted to the OPRHP. These forms are included in Appendix D.

6. RESULTS OF THE 2014 PHASE I AND II INVESTIGATIONS

A. PHASE I TESTING ACROSS THE APE IN 2014

As noted, 391 shovel tests were excavated in the APE during the Phase I field investigation (Appendix A: Photographs 4 and 5). Three prehistoric archaeological sites were identified by the Phase I effort: 07106.000164-07106.000166 (Figure 9). These sites are detailed below in the following sections.

Phase I shovel testing in the APE documented soils comprised mostly of gravelly sandy silt loam. A-horizon soils were brown (10YR 4/3) in color and B subsoils tended to be brown to pale brown (10YR 5/3-6/3) in color. A-horizon soils typically were between 20 and 30 centimeters deep and a plowzone was observed in tests along transects (Tr. 24-28, 33-51, 54-58) in the more open areas in central portion of the APE. Tests along the access road in the southern APE exhibited an A-B soil sequence with gravelly silty loam soils. No evidence of a plowzone was found in this part of the project area. Clay loam soil was encountered in the several shovel tests along Transects 60 through 69. These tests were located next to a small drainage associated with a small pond in the northeastern APE. In these tests, the A horizon consisted of black (10YR 3/1) clay loam over gray (10YR 5/1) clay B soils. Disturbance related to mining activities were documented in several shovel tests. Specifically, shovel tests in the east central area of the APE along Transects 12 and 13, and 15 through 18 where fill or mixed soils were encountered.

B. SITE 07106.000164

Site Type: Prehistoric
Component: Terminal Archaic/Transitional
[redacted]
Approximate Size: 993.3 sq meters (0.25 acres)
Landform: Terrace
Soil Type: Mardin gravelly silt loam (MdB)
Elevation: 390 ft amsl
Vegetation: Weeds, woods, and brush
Subsurface Tests: Phase I: 4 shovel tests
Phase II: 8 shovel tests; 3 1x1-meter units
Percentage of Site Excavated: 0.47%
Artifacts: 1 Orient Fishtail projectile point base, 2 flake tools, 35 debitage, 15 fcr (1217.4 gm)
NRHP Eligibility: Eligible
Recommendation: Preservation and avoidance or Phase III data recovery

[redacted]

1. Soils

Excavations on Site 07106.000164 encountered an A-B soil sequence (Figure 11). A-horizon soils were typically brown (10YR 4/3) gravelly silt loam, and between 25 and 35 centimeters thick. The B subsoils were brown to yellowish brown (10YR 5/3-5/4) and light yellowish brown (10YR 6/4) gravelly silt loam.

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2. Shovel Test Excavations

In total, 12 shovel tests were excavated at the site; four were excavated during Phase I fieldwork and eight during the Phase II effort. The distribution of positive tests is shown in Figure 10. Seven of the 12 shovel tests contained prehistoric cultural material; three Phase I shovel tests and four Phase II shovel tests yielded artifacts. Shovel tests produced a total of 11 artifacts: one Orient Fishtail point base, seven flakes, and three (142.9 gm) fcr (Table 5). The Orient Fishtail point base was found in STP 2.5 on Transect 30. All artifacts found in shovel tests on this site were found within A-horizon soils.

Table 5
Site 07106.000164 Artifact Assemblage

Artifact Class	Phase I STPs	Phase II STPs	Unit			Total
			1	2	3	
Biface		1				1
Flake Tool					2	2
Debitage (n=35)						
Primary						
Secondary						
Tertiary	3	4	14	6	6	33
Retouch						
Broken			2			2
Shatter						
Fcr (gm)	3 (142.9)		4 (196.6)	4 (675.8)	4 (202.1)	15 (1217.4)
Total	6	5	20	10	12	53

3. Unit Excavations

Three 1x1-meter units were excavated at the site (see Figure 10). The units were positioned according to shovel testing results and placed to examine different areas of the terrace within the site. All three units contained artifacts. The unit assemblage includes 42 artifacts: two flake tools, 28 debitage, and 16 (1074.5 gm) fcr (see Table 5). Artifacts were found in the A horizon and the upper B-horizon soils.

Unit 1 was located in the portion of the site where the Orient Fishtail point base was found and this unit contained the greatest quantity of artifacts. Twenty artifacts were found in Unit 1, all from the A horizon. Unit 2 was located in the northwestern part of the site. Unit 2 contained four artifacts in the A soils and six in the upper B subsoils. Unit 3, excavated in the southwestern part of the site, also contained artifacts in both the A and B soil horizons. The A soils produced one artifact and the B soils contained 11 artifacts. No features were identified in the units.

4. Artifact Analysis

The artifact assemblage at Site 07106.000164 includes 53 artifacts: one Orient Fishtail projectile point base, two flake tools, 35 flakes and 15 (1217.4 gm) fcr. Orient Fishtail points are associated with the Terminal Archaic/Transitional cultural period (1700-700 BC). This point is represented by a base/stem fragment; the shoulders and blade are missing (Appendix A: Photograph 7). This fishtail-shaped stem measures 13.7 millimeters in width and 5.8 millimeters in thickness. It was made from Normanskill chert. The two flake tools exhibit chipping/crushing wear indicative of scraping activities. The 35 flakes on the site

consist of 33 tertiary flakes and two broken flakes.

5. Site Interpretation

Based on the recovery of the fragmented Orient Fishtail point, Site 07106.000164 is interpreted to be a Terminal Archaic/Transitional period (1700-700 BC) occupation. While the artifact assemblage is relatively small with 53 items it contains several artifact classes including a projectile point, flake tools, flaking debris, and fcr. At minimum the site marks a camp site along terrain overlooking the Wallkill River. The low density of materials suggests it was occupied by a few individuals, and artifact types indicate the occurrence of tool production and maintenance and hunting activities. The recovery of fcr points to the likelihood of features (i.e., hearths, processing pits/ovens) being at the site. All tests yielded cultural material except for five shovel tests. Excavations indicate that soils are intact across the site and cultural deposits are contained within unplowed A- and upper B-horizon soils.

C. SITE 07106.000165

Site Type: Prehistoric
Component: Late Archaic
[redacted]
Approximate Size: 4024.0 sq meters (0.99 acres)
Landform: Hill summit
Soil Type: Hoosic gravelly sandy loam (HoD)
Elevation: 480 ft amsl
Vegetation: Woods
Subsurface Tests: Phase I: 18 shovel tests
Phase II: 44 shovel tests; 6 1x1-meter units
Percentage of Site Excavated: 0.34%
Artifacts: 1 Bare Island projectile point, 1 flake tool, 69 debitage, 1 core (42.7), 96 fcr (11622.9 gm)
NRHP Eligibility: Eligible
Recommendation: Preservation and avoidance or Phase III data recovery

[redacted]

1. Soils

Soils encountered in excavations exhibited an A-B soil sequence (Figure 13). A-horizon soils were dark yellowish brown (10YR3/4-4/4) gravelly sandy silt loam, and were typically 20 to 25 centimeters thick. B-horizon soils were brown to yellowish brown (10YR 5/3-5/4) gravelly sandy silt loam. The soil profile of Unit 4 is depicted in Photograph 9 (Appendix A).

2. Shovel Test Excavations

In total, 62 shovel tests were excavated at the site; 18 shovel tests were excavated during Phase I fieldwork and 44 tests were excavated during the Phase II effort (see Figure 12). Thirty-four of the 62 shovel tests contained prehistoric cultural material; nine Phase I shovel tests and 25 Phase II shovel tests yielded artifacts. Fifty-eight artifacts were found in shovel tests (Table 6). These items include one Bare Island point, one flake tool, 39 debitage, and 17 (1781.0 gm) fcr. The Bare island point was found in the

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upper B horizon in STP 2 on Transect 101. The shovel test assemblage includes 39 artifacts found in the A horizon and 19 from the B horizon.

Table 6
Site 07106.000165 Artifact Assemblage

Artifact Class	Phase I STPs	Phase II STPs	Unit						Total
			1	2	3	4	5	6	
Biface		1							1
Flake Tool		1							1
Debitage (n=69)									
Primary									
Secondary						1			1
Tertiary	8	23		3	6	3	6	2	51
Retouch		2							2
Broken		3			1		4		8
Shatter	2	1			2		2		7
Core				1					1
Fcr (gm)	2 (101.5)	15 (1679.5)	4 (269.6)	18 (3264.0)	10 (403.1)	3 (321.9)	31 (4243.8)	13 (1339.5)	96 (11622.9)
Total	12	46	4	22	19	7	43	15	168

3. Unit Excavations

Six 1x1-meter units were excavated at Site 07106.000165 (see Figure 12). Unit placement was guided by shovel testing results and with consideration of the topographic characteristics of the site location. All excavation units contained artifacts. In total, 110 artifacts were found in units including 30 debitage, one core, and 79 (9841.9 gm) fcr (see Table 6).

Artifacts totals from units varied widely with two units yielding less than ten artifacts. Unit 1 was placed at the shovel test location which contained the Bare Island projectile point, and this unit yielded four artifacts. Unit 4 also contained a low number of artifacts with a total of seven. Unit 5 had the highest number of artifacts (n=43). Units 2, 3, and 6 contained 22, 19, and 15 artifacts, respectively. Eighty artifacts were found within A soils in the units and 30 artifacts were recovered from the B soils. No features were identified in the units.

4. Artifact Analysis

The prehistoric assemblage at Site 07106.000165 includes 168 artifacts: one Bare Island projectile point, one flake tool, 69 debitage, one core, and 96 (11622.9 gm) fcr. The Bare Island projectile point dates to the Late Archaic period. The Bare Island point is complete (see Appendix A: Photograph 7). It measures 55.0 millimeters in length, 23.5 millimeters in shoulder width, and 8.2 millimeters in thickness. It was manufactured from Normanskill chert. The flake tool found on the site exhibits chipping damage from use as a scraping implement. The flakes found on the site consist of one secondary, 51 tertiary, two retouch, eight broken, and seven shatter. The core is of Normanskill chert and weighs 42.7 grams.

5. Site Interpretation

The recovery of a Bare Island point from excavations at Site 07106.000165 associates this site's occupation with the Late Archaic cultural period (4000-1000 BC). The assemblage from this site is similar to that of 07106.000164 and includes lithic tools (a biface and flake tool), debitage and fcr. Also as with Site 07106.000164, cultural deposits at this site appear intact within unplowed A- and upper B-horizon soils. Activities related to tool manufacturing/maintenance and hunting are postulated for Site 07106.000165 and the site may represent a camp or short term occupation focused on resource procurement.

D. SITE 07106.000166

Site Type: Prehistoric
Component: Late Archaic
[redacted]
Approximate Size: 2245.8 sq meters (0.55 acres)
Landform: High glacial terrace
Soil Type: Riverhead sandy loam (RhC and RhD)
Elevation: 420 ft amsl
Vegetation: Woods and brush
Subsurface Tests: Phase I: 11 shovel tests
Phase II: 32 shovel tests; 5 1x1-meter units
Percentage of Site Excavated: 0.47%
Artifacts: 1 Normanskill projectile point, 1 untyped projectile point, 1 biface fragment, 2 flake tools, 137 debitage, 1 groundstone netsinker (103.4 gm), 1 abrader (1436.0 gm), 1 nuttingstone (182.2 gm), 80 fcr (25309.2 gm)
NRHP Eligibility: Eligible
Recommendation: Preservation and avoidance or Phase III data recovery

[redacted]

1. Soils

Soils encountered in most excavations across the site exhibited an A-B soil sequence (Appendix A: Photograph 11; see Figure 13). A-horizon soils were dark yellowish brown (10YR 4/4) gravelly sandy silt loam, and were typically 20 centimeters thick. B subsoils were brown to yellowish brown (10YR 5/3-5/4) and dark yellowish brown (10YR 4/6) gravelly sandy silt loam. Unit 5, which contained Feature 1 (discussed below), exhibited a different soil profile. Soils in this unit consisted of a 15-centimeter thick dark brown (10YR 3/3) gravelly sandy silt loam A horizon over a thin lens (7-cm) of brown (10YR 4/3) sandy silt loam. Beneath this lens C1 soils were encountered. They consisted of dark yellowish brown (10YR 3/4) sand with pea gravel. Under the pea gravel lens, a C2 very dark gray (10YR 3/1) sand was found.

2. Shovel Test Excavations

In total, 43 shovel tests were excavated at the site; 11 were excavated during Phase I fieldwork and 32 during the Phase II effort (see Figure 14). Prehistoric artifacts were recovered from seven of the Phase I shovel tests and from 19 Phase II shovel tests. The shovel test assemblage includes 68 artifacts; 21 were

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found in the Phase I tests and 47 in the Phase II tests. Artifacts found in shovel tests include one biface blade fragment, 53 flakes, one cobble tool, and 14 (1260.4 gm) fcr (Table 7). Shovel testing yielded 55 artifacts from the A horizon and 13 from the upper B subsoils.

Table 7
Site 07106.000166 Artifact Assemblage

Artifact Class	Surface	Phase I STPs	Phase II STPs	Unit					Total
				1	2	3	4	5*	
Biface			1		1		1		3
Flake Tool					1		1		2
Debitage (n=137)									
Primary									
Secondary									
Tertiary		17	26	13	30	9	29		124
Retouch									
Broken			6		1				7
Shatter		4		2					6
Cobble/ GS Tool	1 (1435.6)				2 (285.6)				3 (1721.2)
Fcr (gm)			14 (1260.4)	13 (1013.1)	19 (1693.2)	6 (407.6)	9 (1043.5)	19 (19891.4)	80 (25309.2)
Total	1	21	47	28	54	15	40	19	225

*All artifacts within Unit 5 are from Feature 1

3. Unit Excavations

Five 1x1-meter units were completed at the site (see Figure 14). Units were placed based on shovel testing results and in order to examine different areas on the terrace landform. Units 1 and 4 were positioned in the southern portion of the site near the bluff edge, and Units 2, 3, and 5 were placed in the central part of the site. In total, 156 artifacts were found in units including two bifaces, two flake tools, 84 debitage, one cobble tool, one groundstone tool, and 66 (24048.8 gm) fcr (see Table 7). Units 3 and 5 contained the lowest frequencies of artifacts (<20), and Unit 2 contained the highest number (n=54). A nuttingstone was found in the A horizon of Unit 2 and an untyped point and grooved netsinker were recovered from the B soils in this unit. A Normanskill point fragment was recovered from the A horizon in Unit 4.

A thermal feature designated Feature 1 was identified in Unit 5 approximately 20 centimeters below ground surface. This feature consisted of a concentration of fcr, rocks, and thermally oxidized (reddened) soil. It measured 70x70 centimeters in size and extended into the north and west walls of the unit (Figure 15). Feature matrix primarily consisted of dark yellowish brown (10YR 4/4) gravelly sand silt and the thermally oxidized sediment (5YR 4/6) was concentrated in a 35x15-centimeter area. The soil surrounding the feature consists of dark yellowish brown (10YR 3/4) pea gravel. In profile, Feature 1 appeared pit-shaped, and the thermally oxidized sediment was contained within a smaller pit (Figure 16). Feature 1 contained 19 fcr (19891.4 gm). The fcr from Feature 1 were the only artifacts found in Unit 5.

The fcr and thermally oxidized sediment are unequivocal evidence of burning. However, no artifacts other than the fcr were found in Unit 5 or Feature 1. Thus, this feature cannot confidently be assigned to a prehistoric origin with Phase II data.

4. Artifact Analysis

Site 07106.000166 contained a total of 225 artifacts: three bifaces, two flake tools, 137 debitage, two cobble tools, one groundstone netsinker, and 80 (25309.2 gm) fcr. The biface assemblage consists of one Normanskill point fragment, one untyped point, and one biface blade fragment (see Appendix A: Photograph 7). The two points were manufactured from Normanskill point and the biface blade fragment was made from Onondaga chert. Normanskill points are associated with the River Phase (2100-1800 BC) of the Late Archaic cultural period. The Normanskill point fragment consists of the base and shoulders, as well as a small portion of the blade. Part of the blade and the tip is missing. The stem is boldly side notched. The shoulder width measures 17.5 millimeters and the point is 5.2 millimeters thick. The untyped projectile point consists of the blade and partial stem. The blade is triangular and thick (8.6 mm). The shoulder width measures 22.5 millimeters. The two flake tools found on the site exhibit chipping/crushing damage consistent with scraping use. The debitage assemblage includes 124 tertiary flakes, seven broken flakes and six pieces of shatter. The two cobble tools found on the site are a nuttingstone and an abrading stone. The nuttingstone weighs 182.2 grams and exhibits pitting damage along two sides (Appendix A: Photograph 12). The abrading stone weighs 1435.6 grams and has a burned surface. The groundstone grooved netsinker weighs 103.4 grams. This netsinker is a spherical implement that has a circumferential groove.

5. Site Interpretation

Site 07106.000166 overlaps spatially with previously recorded Oberon's (1994) Sites 2 and 3, and with LBA's (Alterman and Weubber 1988) Sites 1 and 2 (see Figure 5). During the current study 26 of the 43 shovel tests and all five units excavated at the site contained artifacts. Excavations indicate that soils are intact across the site and cultural deposits are contained within unplowed A- and upper B-horizon soils.

The artifact assemblage from the present study contains 225 items including a Normanskill projectile point, an untyped point, a biface fragment, flake tools, flaking debris, two cobble tools, a groundstone netsinker and fcr. Oberon (1994) reports that the Phase I and II assemblages from his Site 2 include one Lamoka point, one Normanskill point, two other points, one *unfinished* projectile point (preform), nine scrapers, two anvil/hammerstones, three cores, and 330 flakes. The assemblage from Oberon's Site 3 contains three Lamoka points, one Normanskill point, one Brewerton point, one Madison point, 11 other points, five bifaces, one preform, one scraper, and 327 debitage, three cores, three hammer/anvil stones, and one pottery sherd. The Lamoka, Brewerton, and Normanskill points date to the Late Archaic period (4000-1000 BC), the pottery sherd dates to the Woodland period (1000 BC – 1500 AD), and the Madison point dates to Late Woodland period (1000-1500 AD).

The combined assemblages from the present investigation and Oberon's (1994) study provide evidence of activities including tool production and maintenance, resource processing, fishing, and hunting. The Normanskill projectile point found on Site 07106.000166 indicates that this area of the site contains a River Phase (2100-1800 BC), Late Archaic period occupation. Although Oberon (1994) reports Woodland period artifacts (a pottery sherd and a Madison point) in his Site 3 assemblage, no evidence of Woodland occupation was found during the current investigation of Site 07106.000166. The assemblage from the current Phase I and II excavations includes several artifact types and a wide range of tools types such as bifaces, flakes tools, and cobble and groundstone tools. Based on the variety of cultural materials in the assemblage and the presence of fcr, this site is tentatively interpreted to be a seasonal base camp where Late Archaic inhabitants stayed to procure and process nearby resources.

7. RESULTS OF THE 2015 PHASE I INVESTIGATIONS

As previously discussed, additional Phase I investigations were completed in 2015 to accommodate changes to project design which expanded the APE (see Figure 3). A total of 65 shovel tests were excavated during the 2015 effort, and one historic archaeological site, the H. Stage Historic Site, was identified by this work (see Figures 8 and 9).

A. PHASE I TESTING ACROSS THE 2015 NEW APE

Phase I shovel testing in the APE documented soils comprised mostly of gravelly sandy silt loam. A-horizon soils were brown (10YR 4/3) and typically were between 15 and 30 centimeters deep. B subsoils tended to be yellowish brown (10YR 5/4) in color. A plowzone was not observed in any shovel tests excavated in 2015.

The new APE included the area of Oberon's (1994) Site 1 (see Figure 5). Since Oberon's work, much of this area has been deeply graded and excavated during mining activity and was found to be severely disturbed. The extent of the disturbance is shown on Figure 5. Only a narrow ridge of intact terrain remains in this area. Three shovel tests (Transect 207) were excavated on this landform and encountered B-horizon soils within three centimeters of the surface, which documents the eroded condition of the terrain. No artifacts were recovered from the tests.

One area of the eastern APE, which included Transects 212 and 213, and STPs S212and S213, appeared to be a forested seasonal swamp at the foot of several downslopes. Excavations in this area encountered a very dark brown (10 YR 3/2) silt loam A-horizon and a grey (10YR 5/1) clay B-horizon. The A-horizon soils were typically 15 to 20 centimeters thick.

B. H. STAGE HISTORIC SITE

Site Type: Historic
Component: 19th and 20th Centuries
Location: Northern APE
Approximate Size: 6186.0 sq meters (1.53 acres)
Landform: Low glacial terrace
Soil Type: Riverhead sandy loam (RhD) and Middlebury Silt Loam (My)
Elevation: 380 ft amsl
Vegetation: Woods and grasses
Subsurface Tests: 28 shovel tests
Artifacts: 2 fencing staples, 1 yellowware sherd, 1 clear glass jar threaded-rim, 7 aqua and 11 clear flat glass, 5 clear curved glass, 1 .22 caliber casing, 1 screw, 1 wire nail, 1 metal brace, 1 unidentified metal object, 6 unidentified plastic fragments
NRHP Eligibility: Not eligible
Recommendation: No further work

1. Site Description and Shovel Test Results

The H. Stage Historic Site is a small (<2 ac) historic farmstead complex that is positioned on a ridge located along the edge of a low terrace (see Figure 9). Its location corresponds to the map-documented structure illustrated on the 1875 and 1908 maps (see Figures 6 and 7). The site is comprised of a small house foundation and barn ruins that are visible on the modern ground surface (Figure 17). Also associated with the site are household and demolition debris and abandoned farm implements dating circa 1950s. A vernal pool is located immediately east of the site and open farm fields to the west. Mature trees and mixed grass/weed were found within the site boundary.

The house foundation is located approximately ten meters (32.8 ft) northwest of the parcel's main access road at a location about 200 meters (656.2 ft) south of Echo Lake Road. The barn ruins are located about 60 meters (200 ft) northwest of the house. An abandoned farm lane skirts along the ridge line just north of the ruins. This farm lane begins just north of the house ruins and extends along the length of the ridge line for a length about 137 meters (450 ft).

The house foundation is constructed from dry laid fieldstone and measures 12x7 meters (40x23 ft). A concrete pad (porch?) adjoins the structure's northwestern corner. The foundation is filled with demolition debris from the house and includes modern materials such as a rubber hose and an aluminum clad electrical conduit. All visible debris and refuse within the foundation date to the late mid to late twentieth century (Appendix A: Photograph 13).

The barn foundation is made of concrete and measures roughly 22x16 meters in size. This English "basement barn" was accessed from the upper level along the ridge grade and lower level at the terrace's lower elevation to the southwest. A concrete partition bisects the basement, likely a structural feature associated with milking dairy cows. Similar to the house foundation, the barn basement is full of demolition debris including galvanized roofing materials and discarded metal items (Appendix A: Photograph 14). Remnants of a cinder block silo are visible, adjoined to the northwest corner of the barn foundation. The silo measures 4.5 meters (15 ft) in diameter.

Several abandoned cars and farm implements are located north of the barn foundation along the ridge's escarpment. They date to circa 1950-1960 and appear to be an example of provisional discard—a location where items no longer in use are orderly stored for parts.

A selective shovel test was placed one meter from each wall of the house foundation (STPs S201-203) except along its southwest side. The southwest side of the house was blanketed by concrete rubble which prohibited excavation. In the yard of the house, shovel tests were spaced 7.5 meters apart along Transects 200 and 201. Shovel tests excavated near and around the house foundation encountered an A-B horizon. The A soil was unplowed and consisted of dark brown (10YR 3/2) silt loam. It ranged in depth from 16 to 35 centimeters. The underlying B soils were pale brown (10YR 5/4) gravelly silt loam. Artifacts recovered from the A-horizon soils include a yellowware fragment, a threaded glass jar rim, two pieces of clear curved glass, six window glass fragments, a .22 caliber ammunition casing, and one metal brace of unknown function. No artifacts were found in the B horizon.

Transect 202 follows the path of what was interpreted to be the farm lane that traversed the barn yard (see Figure 17). Shovel tests along this transect north of the barn encountered fill deposits of concentrated, dense gravels associated with the lane. The gravels extended to a maximum depth of 60 centimeters below the surface in one test (STP 1). In STPs 4 through 6, the road gravels were significantly more shallow and between 15 and 17 centimeters deep. B-horizon soils of pale brown (10YR 5/4) gravelly silt loam were encountered below the fill these tests. A round-shafted bolt and a piece of flat glass were recovered from tests on this transect, both in the road gravel.

The remaining eight shovel tests excavated in the H. Stage Historic Site (STPs S205 and S206; Tr. 203, STPs 1-3; and Tr. 204, STPs 1- 3) were in the vicinity of a refuse pile of modern debris. Twenty-four of the 38 total artifacts recovered from the H. Stage Historic Site are from these eight excavations. The artifacts include two fencing staples, a wire nail, a modern screw, curved (n=3) and flat (n=7) clear glass, and unidentified metal (n=1) and plastic (n=5) objects. The A-horizon soils encountered were brown (10YR 4/3) gravelly silt loam and B-horizon soils were pale brown (10YR 5/4) gravelly silt loam. One fencing staple and a piece of clear, curved glass were recovered from the top of the B-horizon soil in this area.

2. Artifact Analysis

Artifacts recovered from this site total 38. The assemblage is dominated by glass fragments which total 22. The glass assemblage consists primarily of nondiagnostic flat (n=14) or curved (n=5) fragments. Other glass specimens found include two mending fragments of a threaded jar rim and one piece of milk glass. Metal artifacts (n=8) are the next most numerous class in the assemblage. The metal items include two fencing staples, one wire nail, one modern screw, one bolt, one brace fragment, one .22-caliber casing, and an unidentified cast iron fragment. The single ceramic artifact in the assemblage is an undecorated yellowware fragment. Other items recovered include six pieces of plastic of unknown use and one clam shell fragment.

Based on the 1875 maps and the debris littered across the site's surface, the H. Stage Historic Site was occupied from the late nineteenth century into modern times. For the most part, the assemblage includes twentieth century materials. The earliest dating artifact is the yellowware fragment. Yellowware manufacturing dates start in the early nineteenth century (ca. 1820s) and continued well into the twentieth century. The assemblage is a mix of relatively recent architectural items (e.g., nail, screw, bolt, window glass) and refuse. There are no artifacts in the assemblage that can be confidently associated with the nineteenth century occupation of the site.

8. NRHP ELIGIBILITY AND RECOMMENDATIONS

Sites 07106.000164 through 07106.000166 are recommended eligible to the NRHP under Criterion d. Phase II investigations of each site have documented the presence of intact cultural deposits in unplowed A- and upper B-horizon soils. The sites have yielded culturally diagnostic artifacts with evidence of the Late Archaic cultural period at Sites 07106.000165 and 07106.000166 and Terminal Archaic/Transitional cultural period at Site 07106.000164. The cultural deposits have yielded, and have potential to yield more, information on these cultural periods. Specifically, each site provides an opportunity to examine and expand our knowledge regarding settlement, subsistence and community patterning of the Late Archaic and Terminal Archaic/Transitional period occupations along the Wallkill River. Therefore, all three sites meet Criterion d of the NRHP. A sample of research topics which can be addressed by cultural deposits at the sites includes:

- Settlement System/Site Function
- Subsistence Patterns
- Community Pattern
- Cultural History
- Prehistoric Lithic Technology

Avoidance of each site is recommended. Site avoidance should include an avoidance and preservation plan that outlines short term protective strategies to protect the site during construction, as well as long term plans to ensure future preservation of the site. The avoidance and preservation plan must be submitted to OPRHP for review. Avoidance should be planned with an understanding that site boundaries are defined by the APE boundaries and whether the sites identified during this study extend outside of the APE is not known. Site 07106.000164 is a relatively small site measuring one-quarter acre, and is located within the southern terminus of the proposed assess road. The western site limits of Site 07106.000164 are defined by the APE boundary and the western extent of the site beyond the APE is not known. Site 07106.000165 and 07106.000166 are located in the southeastern portion of the APE. The southern boundary of 07106.000165 is defined by the APE limits and this site may extend further south along the hill summit. Site 07106.000166 is the remnant of a Late Archaic occupation along the eastern edge of the APE. Previous archaeological investigations report this site as extending further east (Alterman and Weubber 1988; Oberon 1994) and portions of the site have been destroyed by mining activities.

For any site of which avoidance is not feasible, a Phase III archaeological data recovery is recommended to mitigate adverse effects of the proposed development activities. Phase III investigations should follow a Data Recovery Plan (DRP) which is developed in consultation with the OPRHP. The DRP must outline field and analytical methods to address research issues relevant to the site's data potential.

The H. Stage Historic Site does not appear to meet eligibility criteria for listing in the NRHP. Relatively few artifacts (n=38) were found at the site and the assemblage is primarily nondiagnostic items of glass and metal. Additionally, there are no artifacts in the assemblage that can be confidently associated with the nineteenth century occupation of the site. While the site includes intact architectural features (e.g., house and barn foundation walls), no deep subterranean features such as cisterns, privies, and wells were identified at the site. The lack of temporally discrete cultural deposits and the low density of diagnostic artifacts limit research potential of the site. No further archaeological investigations of the site are recommended.

9. SUMMARY

This report presents the results of Phase I and II archaeological investigations conducted for the proposed SoS Conference Center Project located in the Town of Goshen, Orange County, New York. The proposed project will entail the construction of a conference center consisting of several buildings, cottages, a guest house and an open air pavilion. Part of the proposed center will be constructed on lands previously mined. The archaeological investigations were conducted by Landmark Archaeology, Inc. of Altamont, New York who was retained as a consultant by Amy's Kitchen Inc. of Petaluma, California. The Phase I investigation considered an Area of Potential Effect (APE) of approximately 109.5 acres (44.3 ha) within a 177-acre parcel (Figure 2).

Based on the physiographic setting of the project area and the results of background research, the archaeological potential was considered high for prehistoric and historic archaeological resources to be within the project area. Topographic features such as terraces and hilltops that are in close proximity to the Wallkill River would have been attractive setting for prehistoric groups. Background research indicates that prehistoric sites have been recorded within the project area and numerous prehistoric sites are located within a one-mile radius. Historic maps show a structure within the northern portion of the APE.

In total 456 Phase I shovel tests were excavated in the APE. Phase I excavations in 2014 included 391 shovel tests and study identified three prehistoric sites within the boundaries of the APE: 07106.000164-07106.000166. The 2015 Phase I shovel test excavations totaled 65 tests and identified the H. Stage Historic Site. Phase II field efforts were undertaken at the prehistoric sites and the investigation included a total of 84 shovel tests and 14 1x1-meter units. Phase II excavations at these sites have yielded culturally diagnostic artifacts with evidence of the Terminal Archaic/Transitional cultural period found at Site 07106.000164, and evidence of the Late Archaic cultural period found at Sites 07106.000165 and 07106.000166. Phase II investigations indicate cultural deposits are intact in unplowed A- and upper B-horizon soils. The prehistoric cultural deposits at these sites have yielded, and have potential to yield more information on these cultural periods and the use and occupation of the area. Therefore, these sites meet Criterion d of the NRHP.

Proposed development activities in these areas of the APE have the potential to adversely impact Sites 07106.000164, 07106.000165 and 07106.000166. Avoidance of each prehistoric site is recommended. Site avoidance should include an avoidance and preservation plan that outlines short term protective strategies to protect the site during construction, as well as long term plans to ensure future preservation of the site. The avoidance and preservation plan must be submitted to OPRHP for review.

If avoidance is not feasible, a Phase III archaeological data recovery is recommended to mitigate adverse effects of proposed development activities at the sites. Phase III investigations should follow a DRP which is developed in consultation with the OPRHP. The DRP must outline field and analytical methods to address research issues relevant to the site's data potential.

The H. Stage Historic Site does not appear to be NRHP eligible. Shovel testing yielded a small assemblage with mostly nondiagnostic artifacts and there are no artifacts in the assemblage that can be confidently associated with the nineteenth century occupation of the site. The lack of temporally discrete cultural deposits and the low density of diagnostic artifacts limit research potential of the site. No further archaeological investigations of this historic site are recommended.

It should be noted that no field technique is completely adequate to define all cultural resources in a particular location. Therefore, should additional historic or prehistoric resources be detected during the course of the project development, the OPRHP must be notified immediately so that the significance of the discovery can be determined.

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2000 *Middletown, NY*. 7.5′ Series Quadrangle

Figures

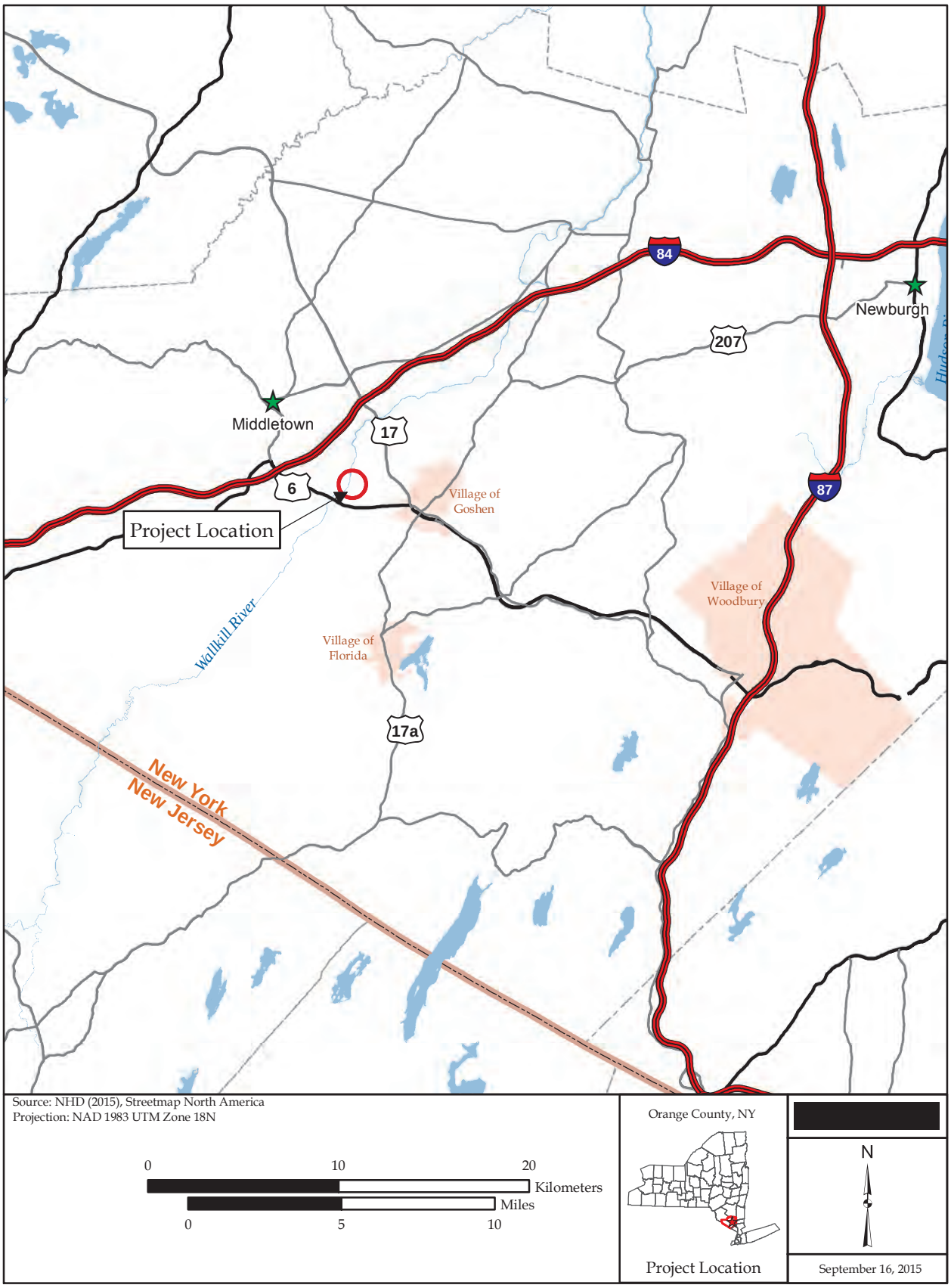


Figure 1: Project Location

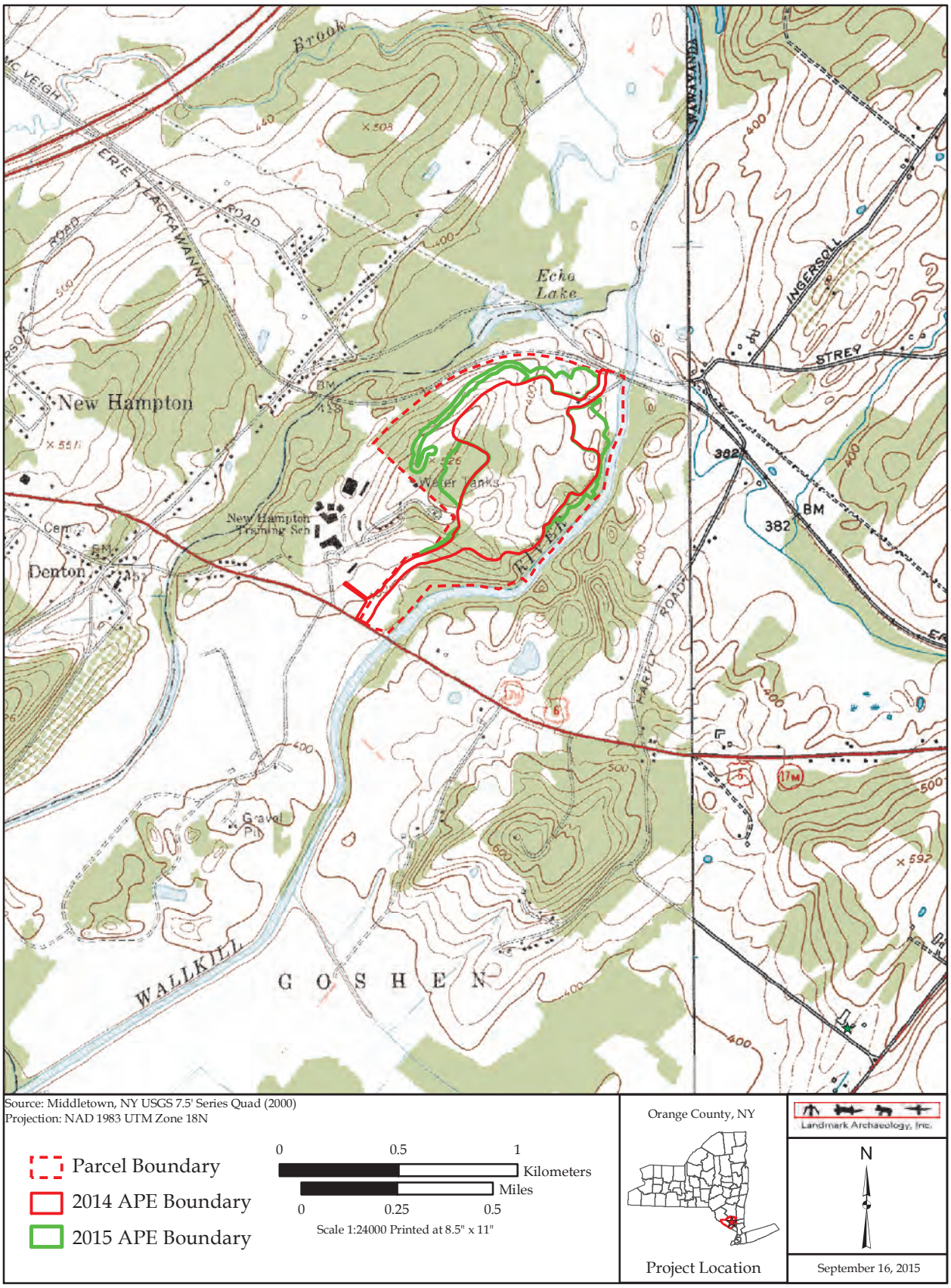


Figure 2: Project Location and Topographic Features

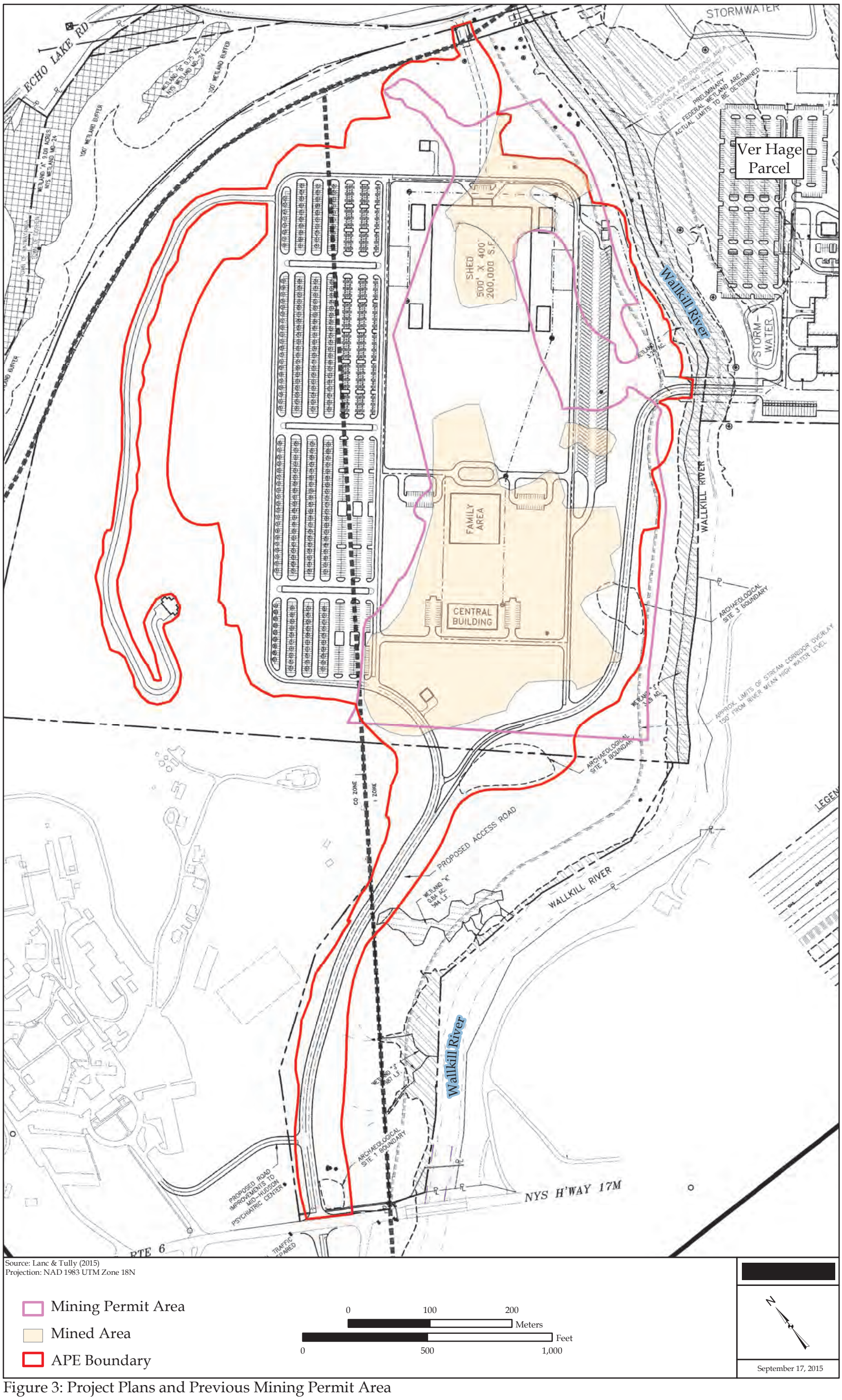


Figure 3: Project Plans and Previous Mining Permit Area

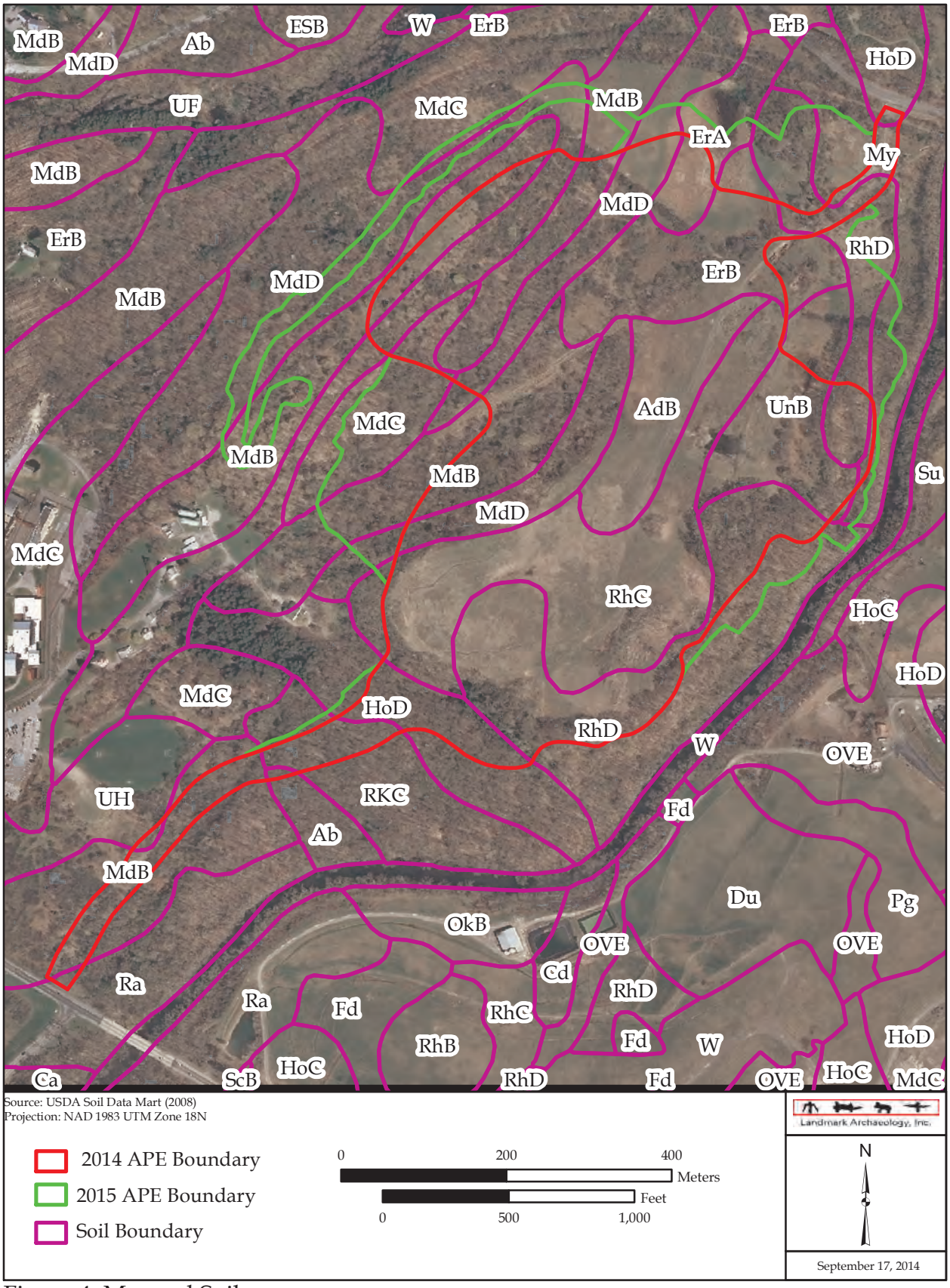
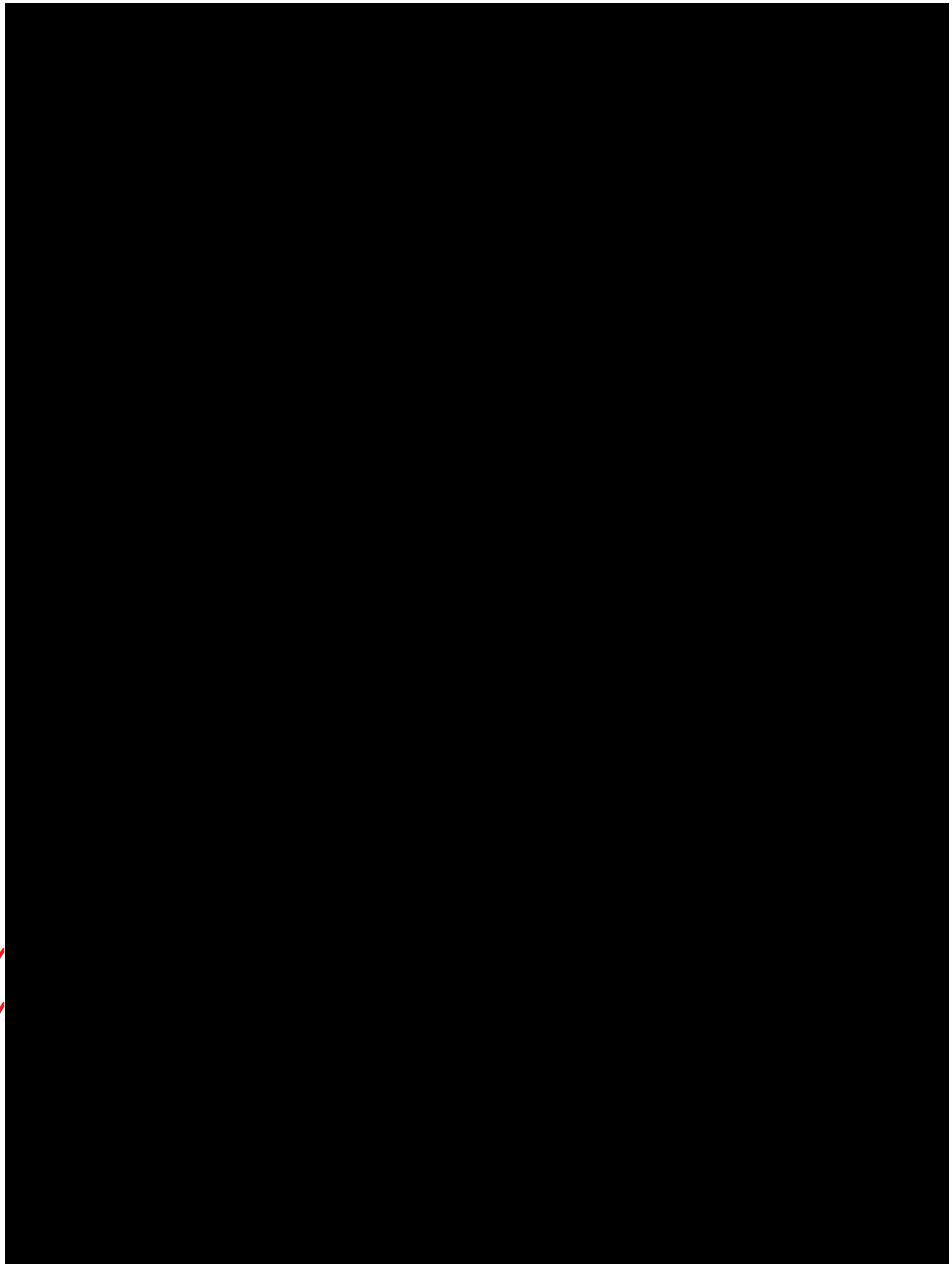


Figure 4: Mapped Soils



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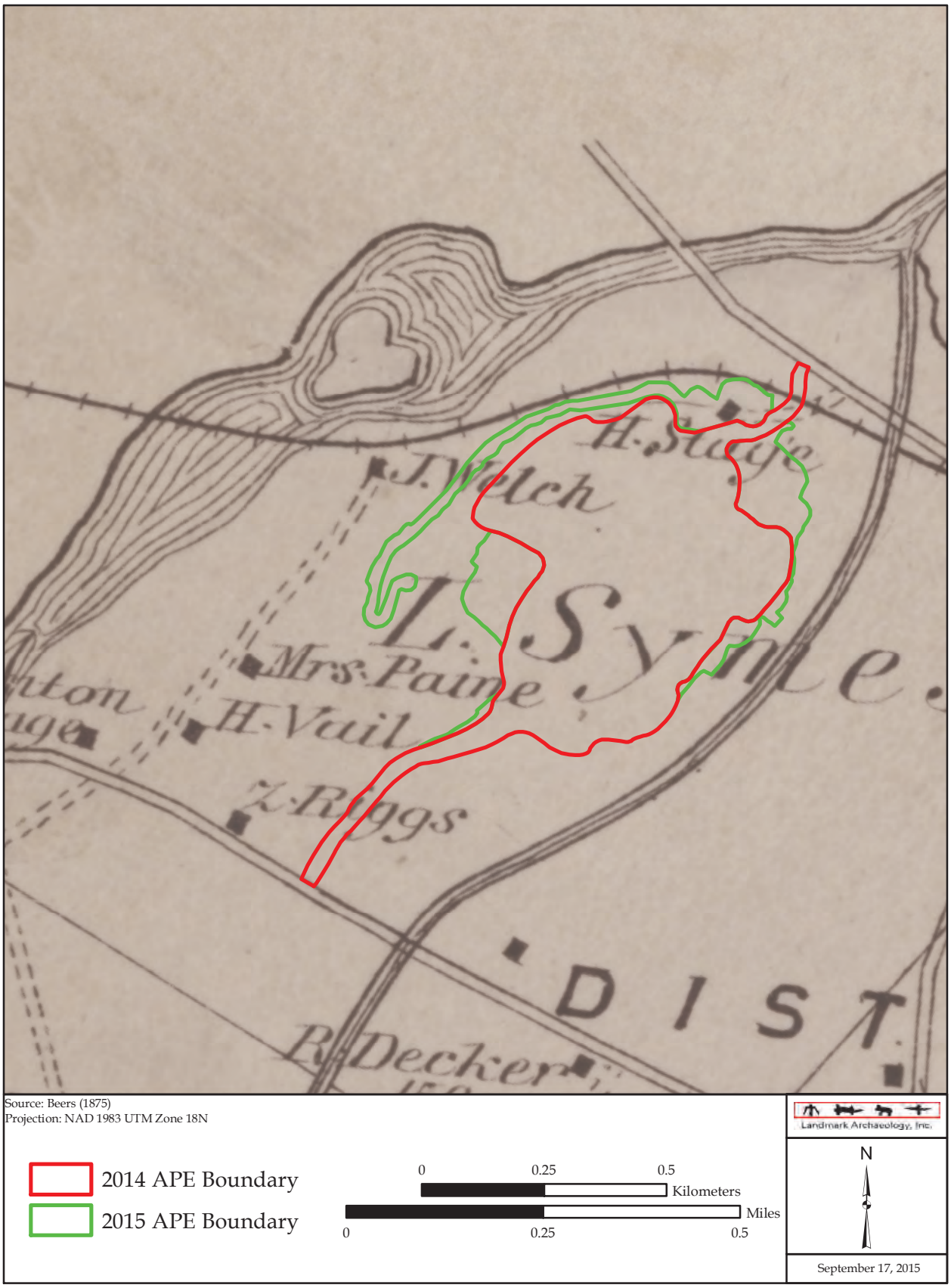


Figure 6: Project Area, 1875

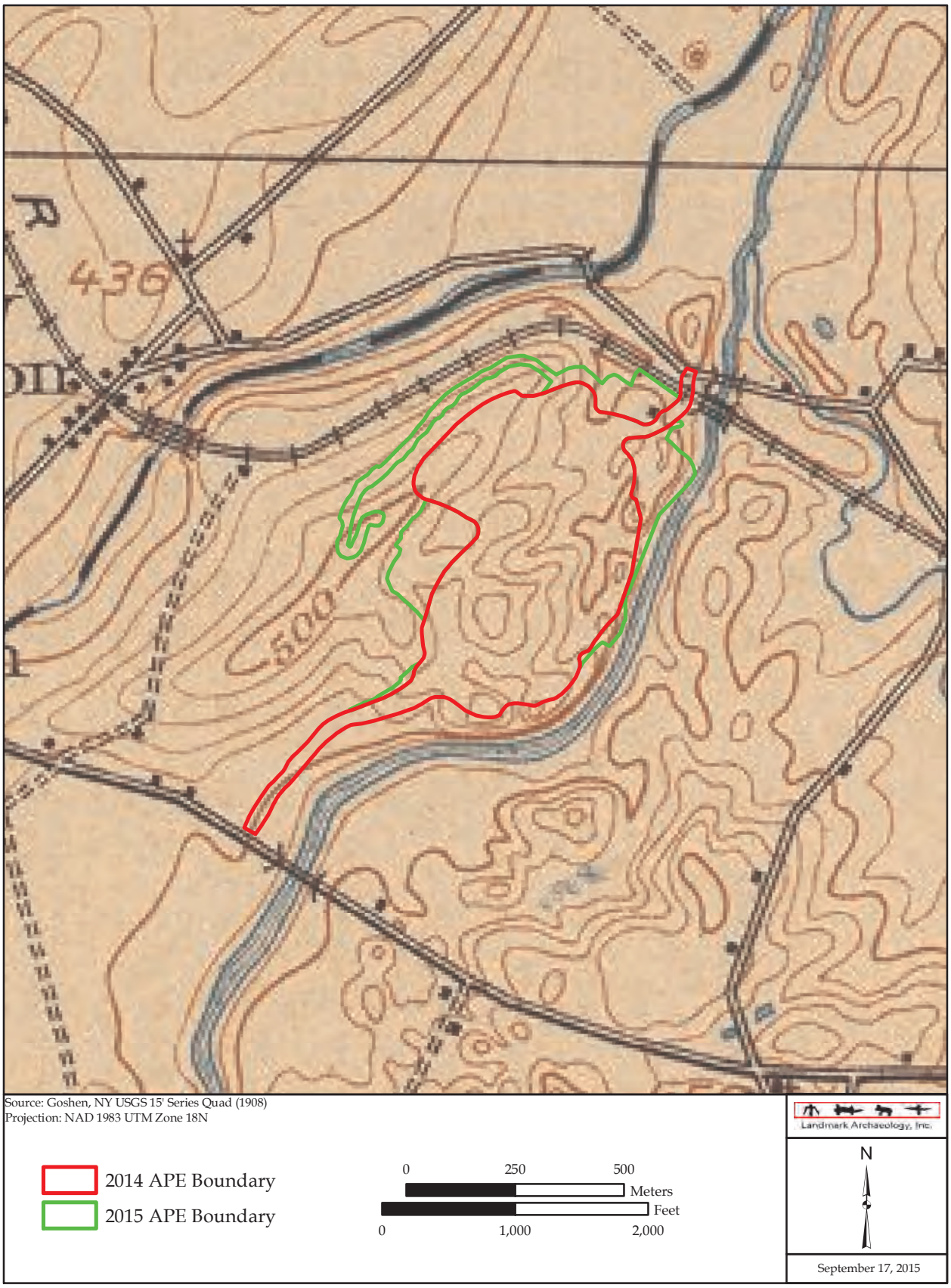
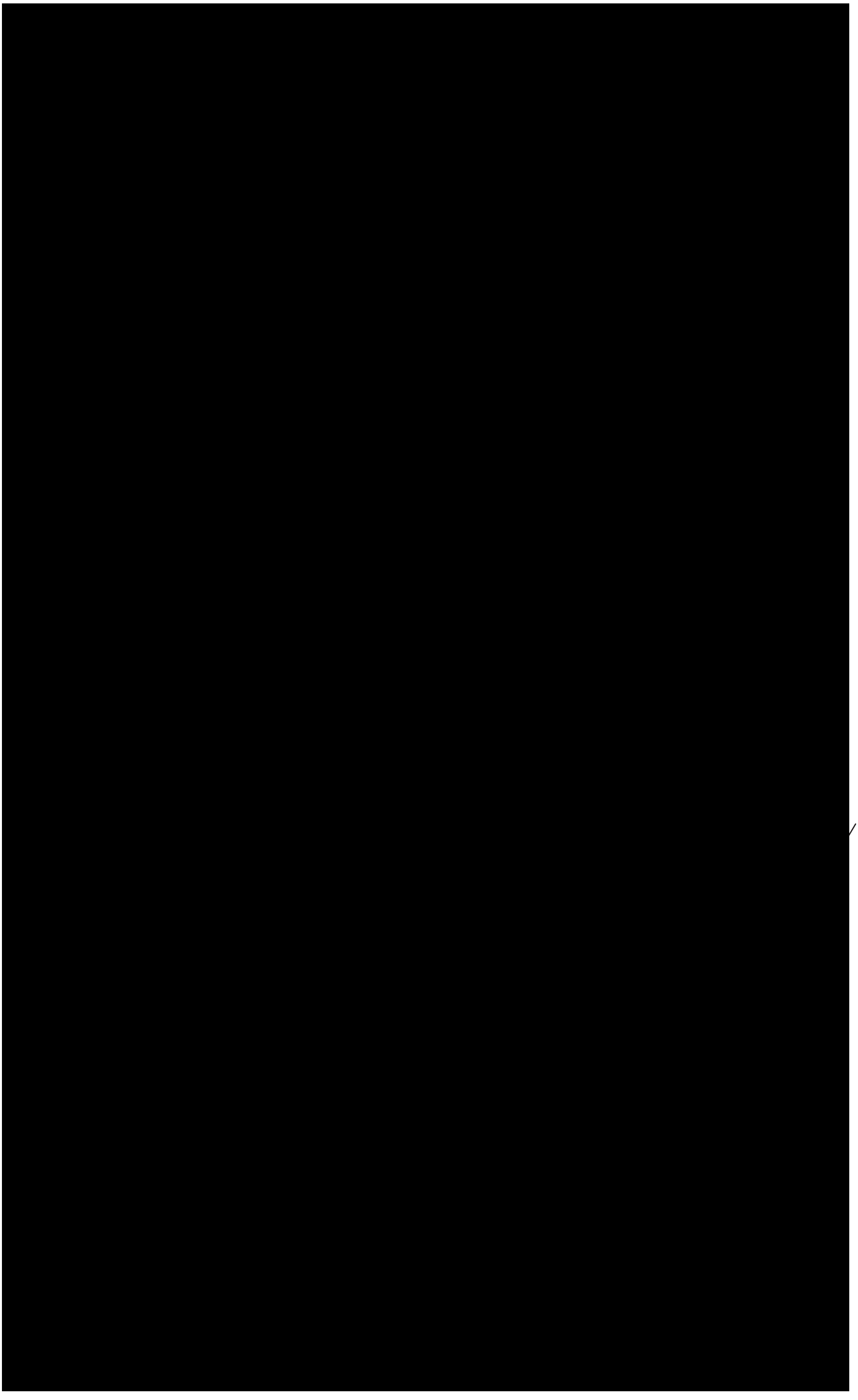


Figure 7: Project Area, 1908



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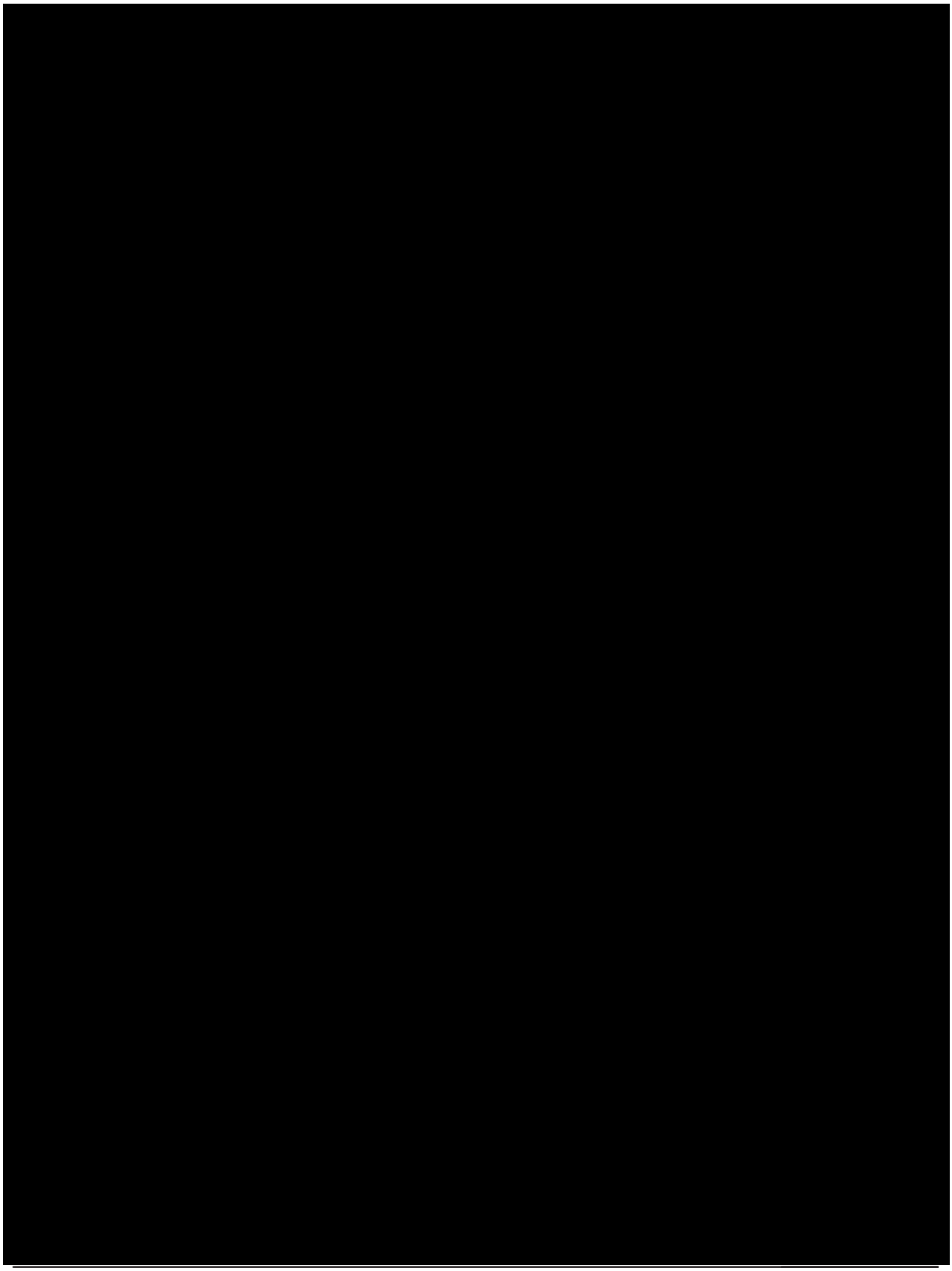

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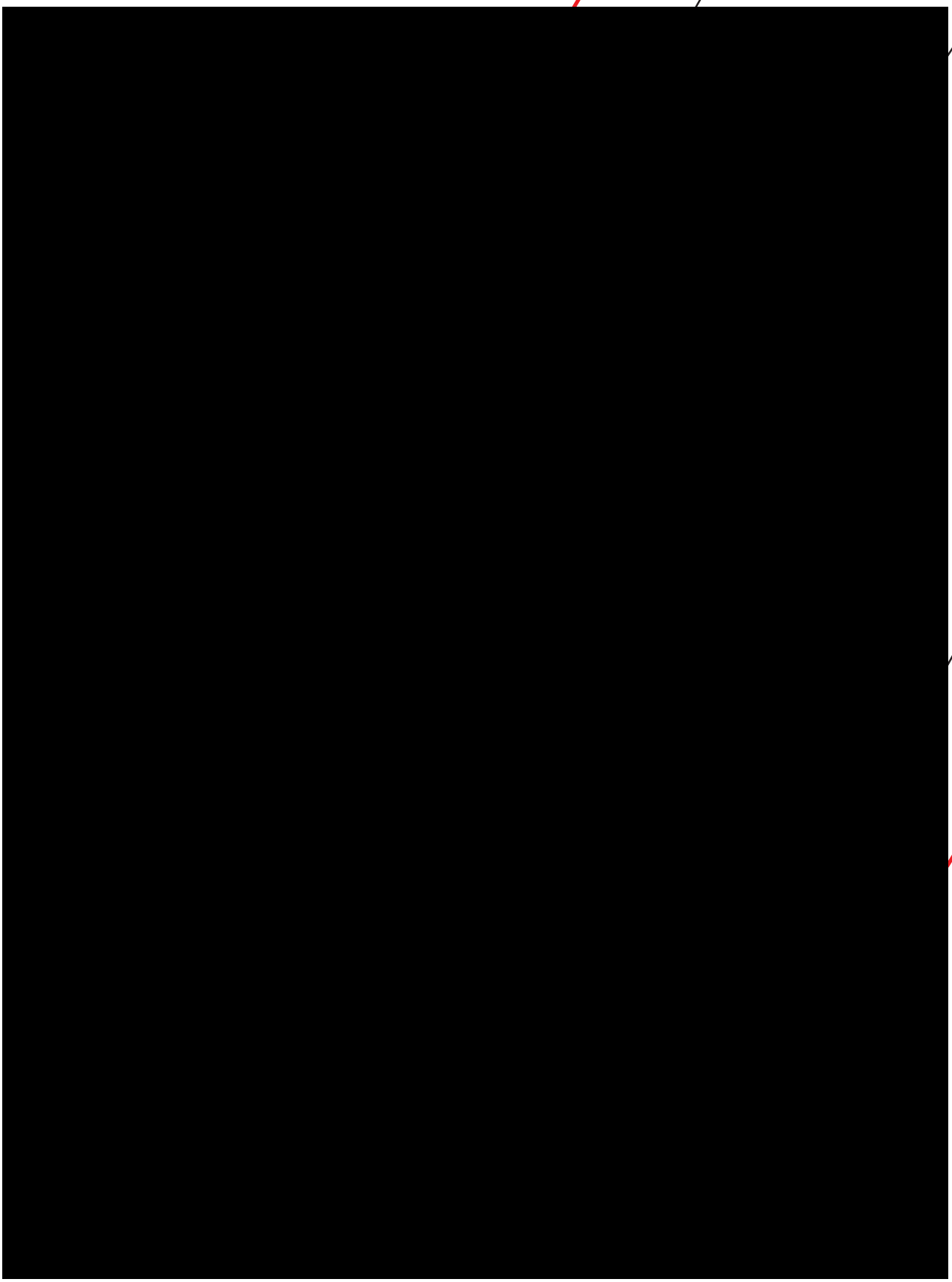

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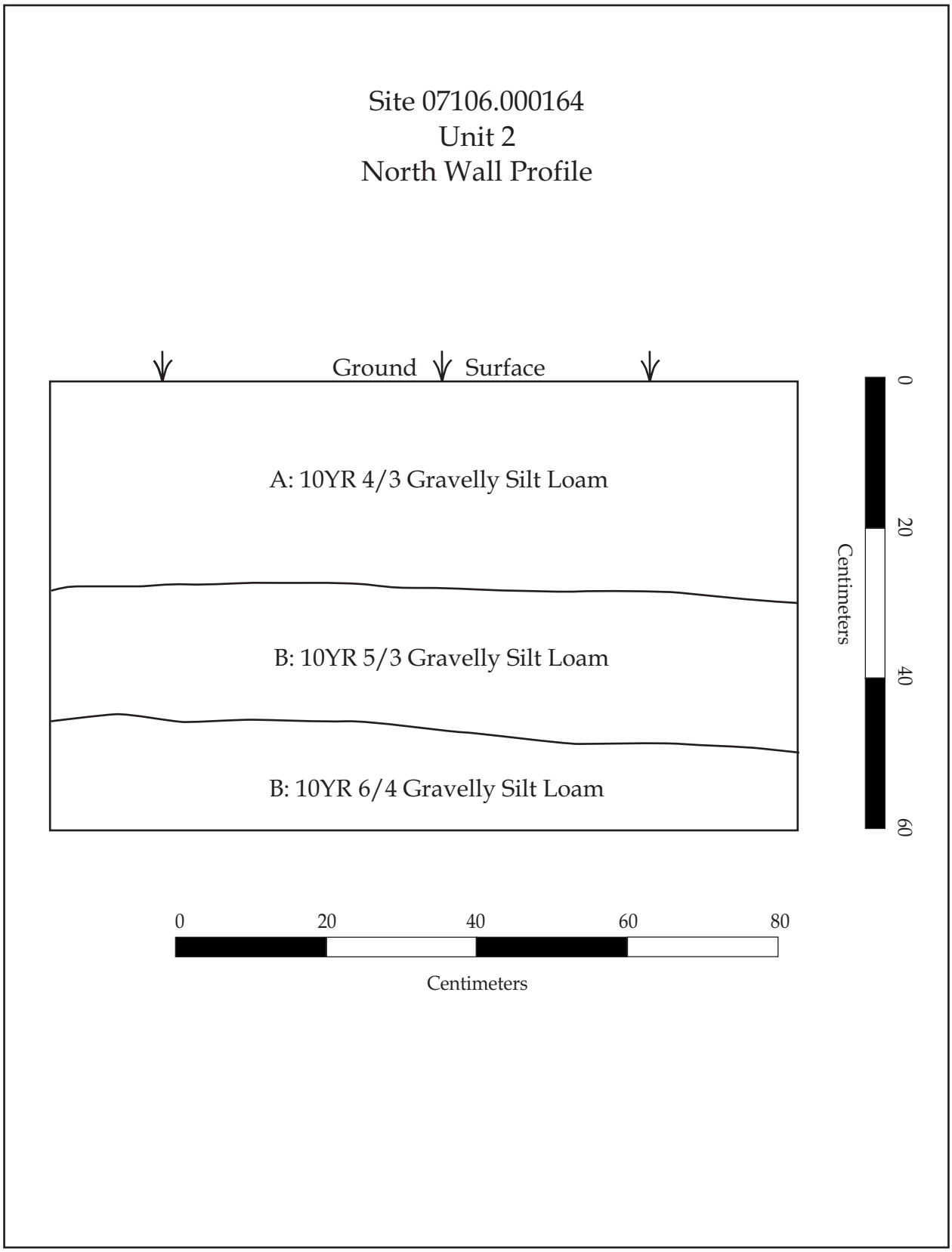
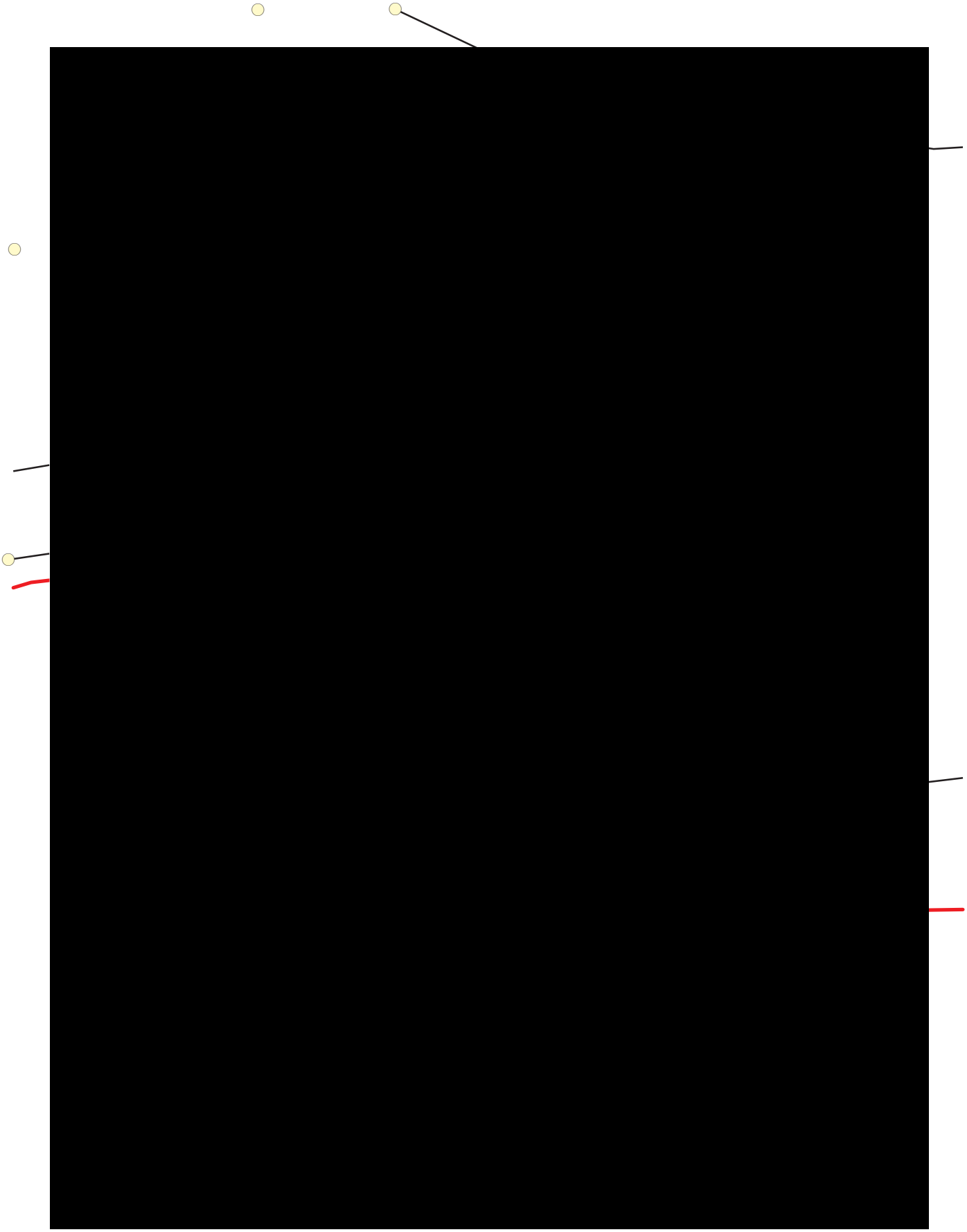


Figure 11: Site 07106.000164 Unit 2 Profile



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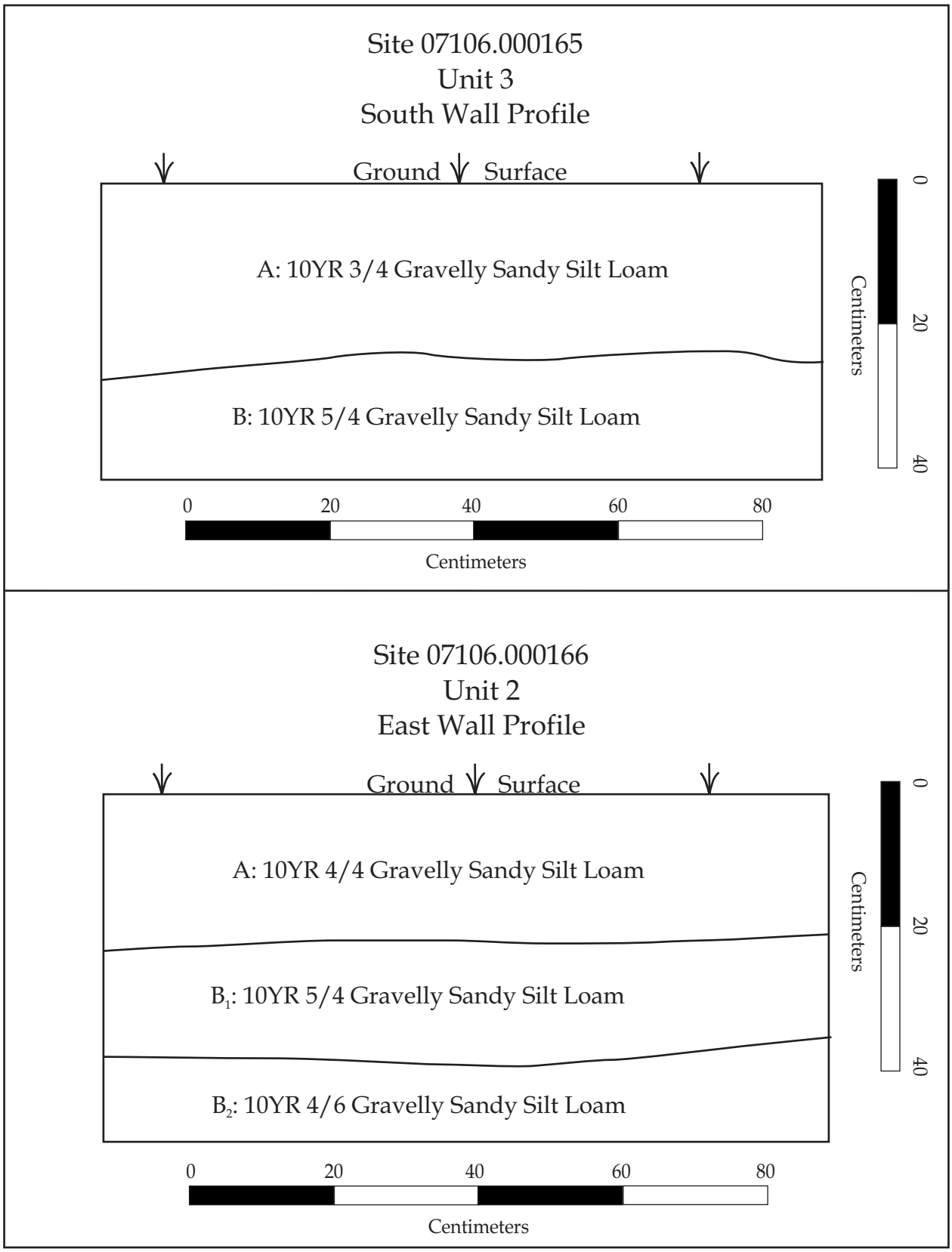
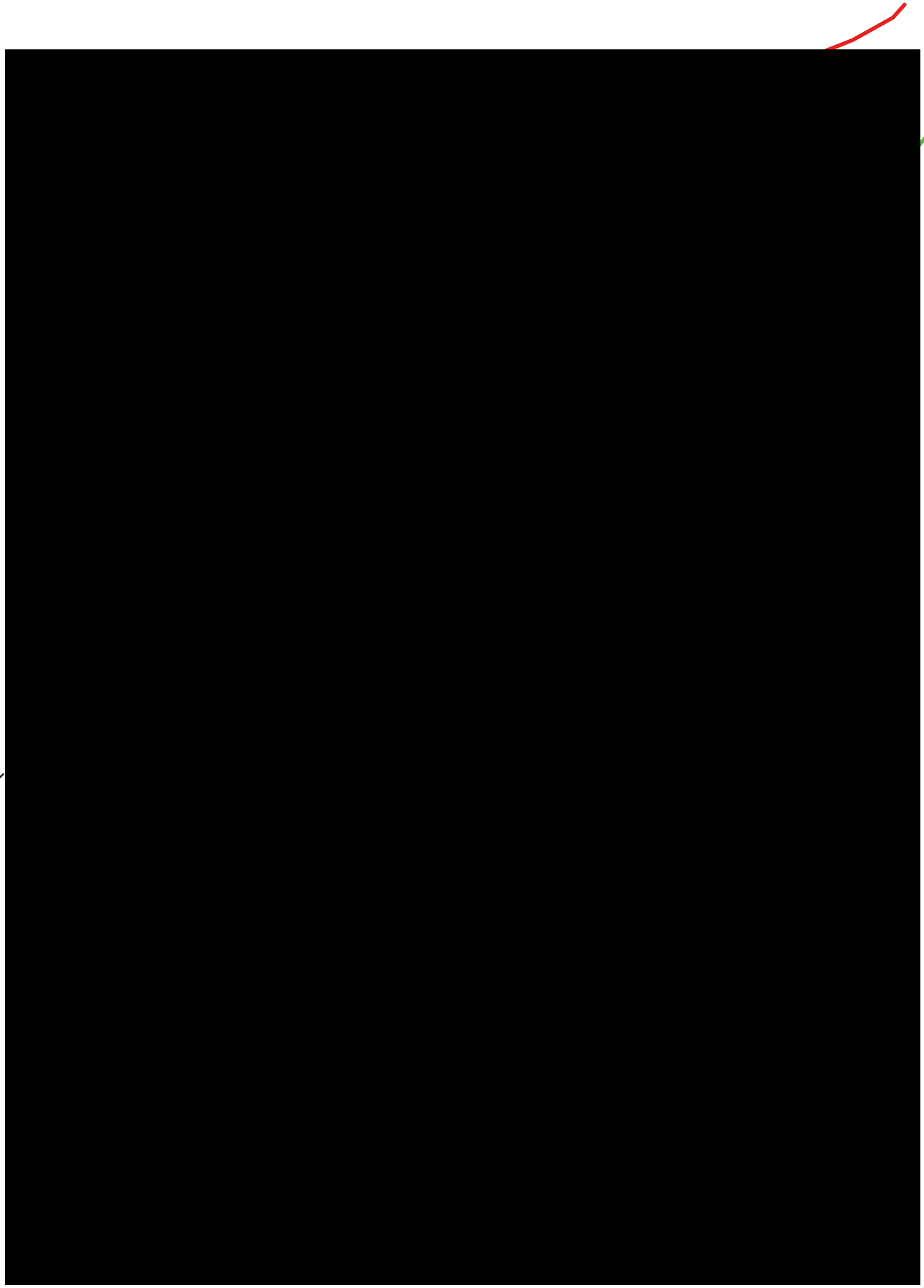


Figure 13: Site 07106.000165 and Site 07106.000166 Unit Profiles



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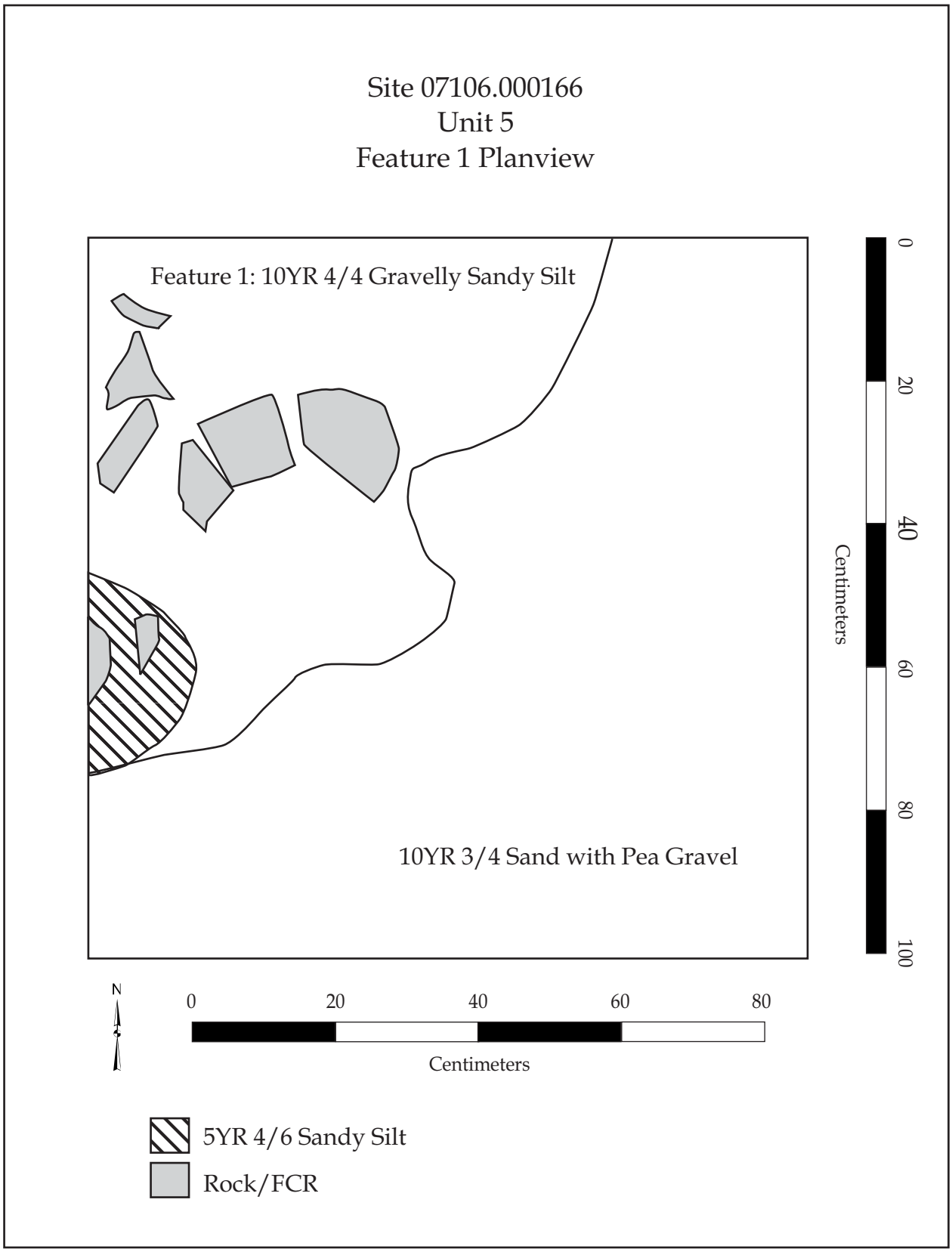


Figure 15: Site 07106.000166 Feature 1 Planview

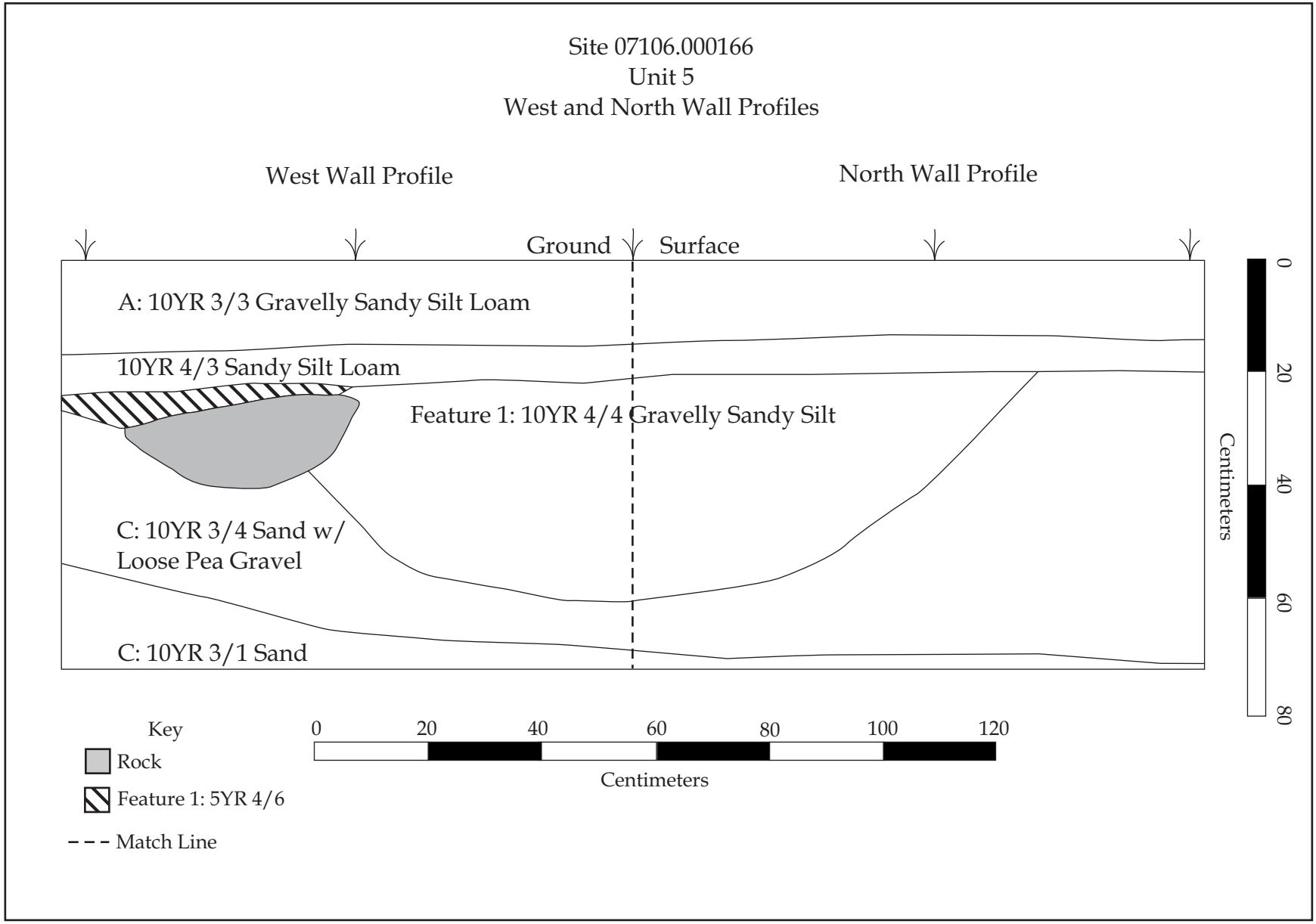
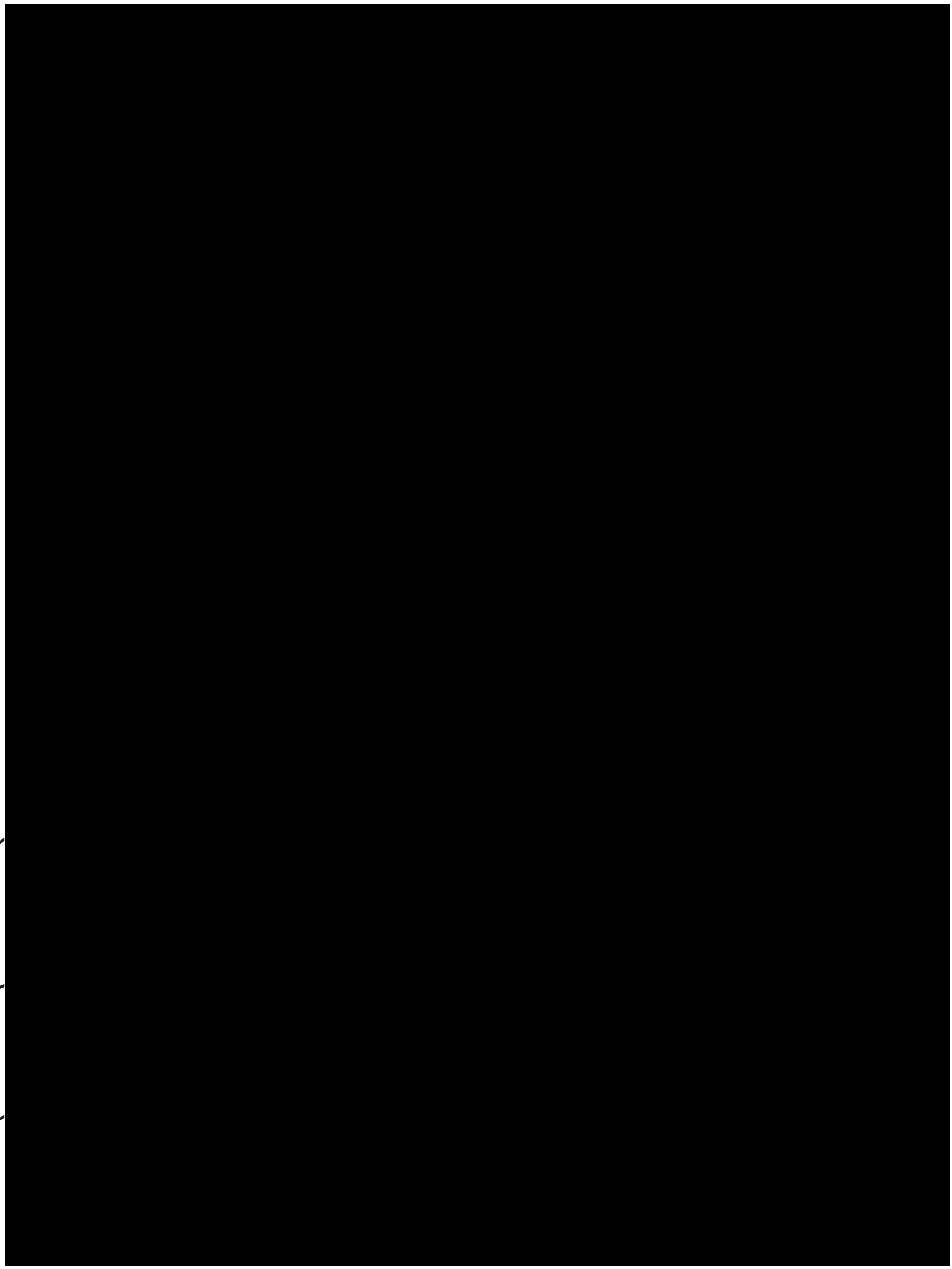


Figure 16: Site 07106.000166 Unit 5 Profile



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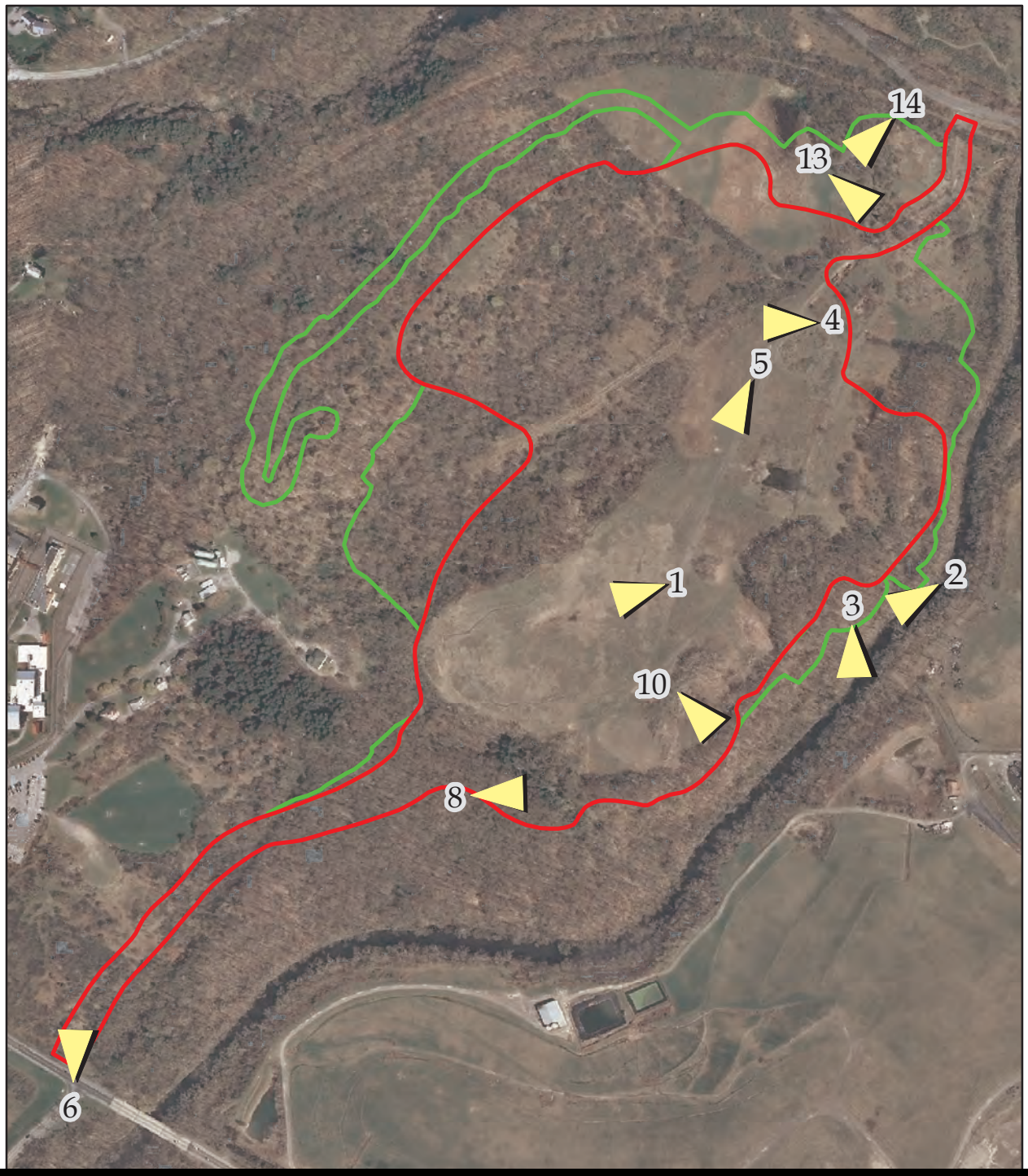
APPENDIX A

Photographs



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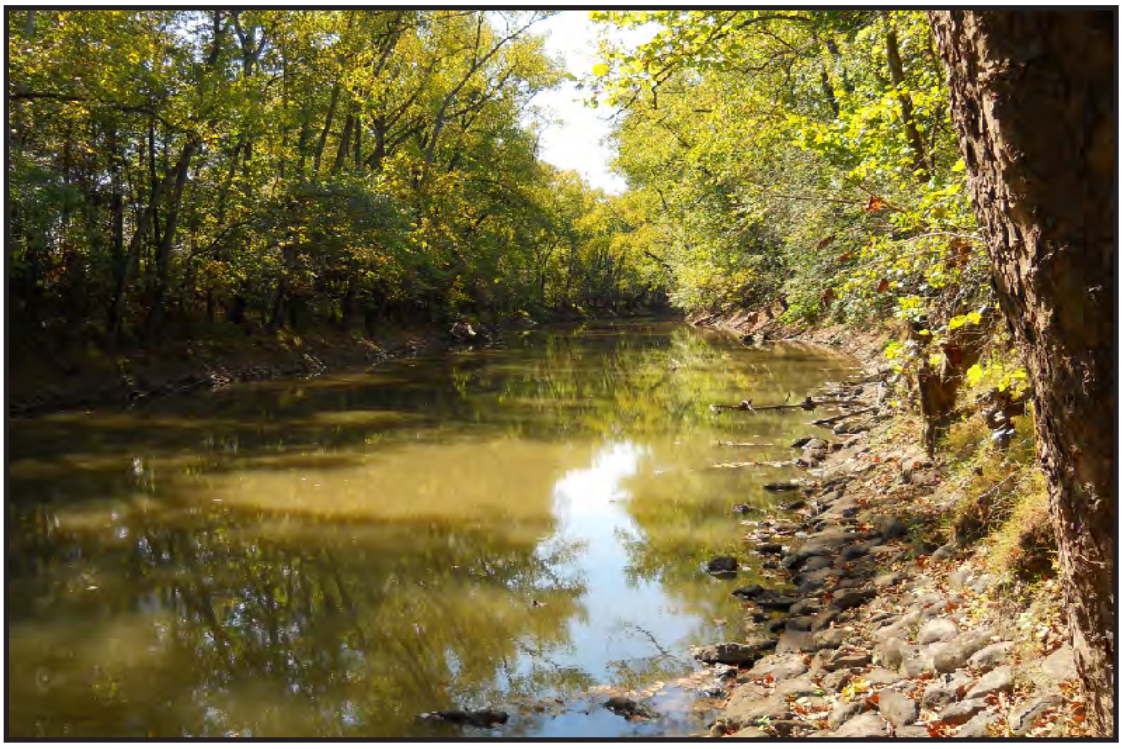
Photograph 1: Mined Area, View to Southwest



Photograph 2: Wallkill River near APE, View to Southwest

Photograph 3: Wallkill River near APE, View to South

Photograph 4: Phase I Shovel Testing along "Brush Hog" Transect, View to West

Photograph 5: Phase I Shovel Testing, View to Southwest

Photograph 6: Site 07106.000164, View to North

Photograph 7: Project Points-(a) Orient Fishtail from 07106.000164, (b) Bare Island from 07106.000165, and (c) Normanskill, (d) Untyped Point, (e) Biface Fragment from 07106.000166

Photograph 8: Site 07106.000165, View to East

Photograph 9: Site 07106.000165, Unit 4 North Wall Profile

Photograph 10: Site 07106.000166, View to Southeast

Photograph 11: Site 07106.000166, Unit 3 North Wall Profile

Photograph 12: Nuttingstone and Netsinker from 07106.000166

Photograph 13: H. Stage Historic Site, House Ruins, View to Southeast

Photograph 14: H. Stage Historic Site, Barn Ruins, View to Southwest

APPENDIX B

Shovel Test Descriptions

SoS Conference Center-Echo Lake Property
Orange County, New York
Landmark Archaeology, Inc. #335.337

Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	STP												
Phase I													
Transect 1													
Site 07106.000165	1		0-27	27-66									
Site 07106.000165	2		0-22	22-43								X	
Site 07106.000165	3		0-18	18-45									
	4		0-14	14-42									
Transect 2													
Site 07106.000165	1		0-16	16-44									
Site 07106.000165	2		0-16	16-60								X	
Site 07106.000165	3		0-17	17-65									
Site 07106.000165	4		0-18	18-52									
Site 07106.000165	5		0-18	18-64								X	
Transect 3													
	1		0-12	12-62									
	2		0-10	10-43									
	3		0-11	11-39									
	4		0-10	10-58									
Site 07106.000165	5		0-19	19-55									
Site 07106.000165	6		0-15	15-25								X	Root impasse
Site 07106.000165	7		0-13	13-54								X	
Site 07106.000165	8		0-12	12-47									
Site 07106.000165	9		0-9	9-54								X	
Transect 4													
Site 07106.000165	1		0-11	11-54								X	
	2		0-12	12-49									
	3		0-18	18-43									
Transect 5													
	1		0-18	18-48									
	2		0-17	17-55									
	3		0-16	16-53									
	4		0-16	16-50									
	5		0-17	17-55									
	6		0-17	17-62									
	7		0-19	19-60									
	8		0-18	18-54									
	9		0-16	16-44									
	10		0-12	12-57									
Transect 6													
	1		0-14	14-64									
	2		0-14	14-46									
	3		0-13	13-45									
Transect 7													
	1		0-13	13-65									
	2		0-12	12-61									
Transect 8													
	1		0-18	18-42									
	2		0-19	19-58									
Site 07106.000166	3		0-18	18-59								X	
Site 07106.000166	4		0-19	19-67								X	
Site 07106.000166	5		0-19	19-61									
Transect 9													
Site 07106.000166	1		0-20	20-49									
Site 07106.000166	2		0-13	13-32								X	
Site 07106.000166	3		0-17	17-37								X	
Site 07106.000166	4		0-15	15-40									
	5		0-16	16-42									

SoS Conference Center-Echo Lake Property
Orange County, New York
Landmark Archaeology, Inc. #335.337

Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
Transect 10													
	1		0-34	34-73									
	2		0-64										Gravel impasse
Transect 11													
Site 07106.000166	1		0-17	17-54								X	
Site 07106.000166	2		0-17	17-45									
Site 07106.000166	3		0-16	16-43								X	
Transect 12													
	1		0-12	12-37									
	2	0-67											Rock impasse
	3	0-59											Rock impasse
	4	0-63											Rock impasse
	5		0-17	17-39									
	6		0-16	16-45									
Transect 13													
	1	0-44											Gravel impasse
	2	0-20		20-38									
	3	0-15		15-30									
	4	0-4		4-23									
Transect 14													
	1		0-12	12-43									
	2		0-16	16-48									
	3		0-15	15-32									
Transect 15													
	1	0-25											
	2	0-41		41-50									
	3	0-30											
	4	0-25		25-35									
	5	0-99											
Transect 16													
	1		0-17	17-43									
	2	0-31		31-38									Gravel impasse
	3	0-28		28-53									
	4	0-19		19-36									
	5		0-26	26-43									
Transect 17													
	1		0-16	16-30									
	2		0-16	16-27									
	3	0-17		17-30									
Transect 18													
	1	0-20		20-36									
	2	0-25											Gravel impasse
Transect 19													
	1		0-19	19-40									
	2		0-14	14-26									Gravel impasse
	3		0-11	11-30									
Transect 20	1				0-11	11-50							
	2				0-10	10-36							
	3				0-10	10-30							
	4				0-10	10-38							
Transect 21													
	1				0-7	7-44							
	2				0-6	6-41							
	3					0-41							

SoS Conference Center-Echo Lake Property
Orange County, New York
Landmark Archaeology, Inc. #335.337

Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	4					0-35							
	5					0-37							
Transect 22													
	1				0-8	8-37							
	2				0-9	9-45							
Transect 23													
	1				0-19	19-35							
	2				0-12	12-49							
Transect 24													
	1		0-20	20-40									
	2		0-22	22-37									
	3		0-20										Gravel impasse
	4		0-19	19-32									
Transect 25													
	1		0-31	31-46									
	2		0-29	29-46									
	3		0-25	25-40									
	4		0-27	27-49									
Transect 26													
	1		0-29	29-44									
	2		0-23	23-40									
	3		0-25	25-45									
	4		0-29	29-41									
	5		0-23	23-42									
Transect 27													
	1		0-19	19-38									
	2		0-18	18-40									
	3		0-23	23-44									
Transect 28													
	1		0-15	15-40									
	2		0-19	19-39									
	3		0-16	16-43									
Transect 29													
H. Stage Site	1		0-19	19-36									
H. Stage Site	2		0-20	20-30									Rock impasse
Transect 30													
Site 07106.000164	1						0-19	19-47				X	
Site 07106.000164	2						0-16	16-46				X	
Site 07106.000164	3						0-21	21-36					Gravel impasse
	4						0-18	18-40					
	5						0-17	17-40					
	6						0-21	21-49					
	7						0-26	26-41					
	8						0-16	16-40					
	9						0-18	18-42					
	10						0-24	24-45					
	11						0-19	19-36					
	12						0-20						Rock impasse
	13						0-21						Rock impasse
	14	0-40											
	15	0-80											Furnace pit
	16						0-26	26-52					
	17						0-17	17-36					
	18						0-12	12-38					
	19						0-17	17-41					
	20						0-19	19-40					
	21						0-16	16-40					

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Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell	Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key	Fill	1	1	1	1	2	2	3	3	4		
STRAT	Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
Transect 31												
1						0-32	32-42					
2						0-19	19-42					
3						0-22	22-44					
4						0-16	16-38					
5						0-35						Rock impasse
6						0-20	20-45					
7						0-24	24-40					
8						0-27	27-46					
9						0-28	28-40					
10						0-18	18-37					
11						0-10	10-25					Rock impasse
12						0-10	10-25					Bedrock impasse
13						0-12	12-25					Bedrock impasse
14						0-18	18-44					
15						0-30	30-50					
16						0-22	22-44					
17						0-24	24-39					
18						0-29	29-45					
Transect 32												
1		0-27	27-42									
2		0-10	10-20									
3		0-12	12-47									
4		0-10	10-60									
Transect 33												
1		0-17	17-45									
2		0-21	21-48									
3		0-19	19-54									
Transect 34												
1		0-19	19-30									Rock impasse
2		0-20	20-55									
3		0-25	25-50									
Transect 35												
1		0-28	28-42									
2		0-30	30-46									
3		0-30	30-47									
4		0-29	29-44									
Transect 36												
1		0-16	16-40									
2		0-30	30-50									
3		0-30	30-50									
4		0-29	29-47									
Transect 37												
1		0-33	33-51									
2		0-21	21-52									
3		0-24	24-49									
4		0-18	18-42									
5		0-14	14-39									
Transect 38												
1		0-29	29-46									
2		0-30	30-45									
3		0-30	30-44									
4		0-29	29-47									
5		0-31	31-47									
Transect 39												
1		0-29	29-47									
2		0-25	25-40									

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Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	3		0-25	25-44									
	4		0-24	24-40									
	5		0-24	24-42									
Transect 40													
	1		0-23	23-48									
	2		0-19	19-46									
	3		0-21	21-45									
	4		0-30	30-52									
	4A		0-41	41-55									
	4B		0-26	26-52									
	4C		0-34	34-52									
	4D		0-31	31-49									
	4AA		0-30	30-48									
	4BB		0-28	28-49									
	4CC		0-25	25-40									
	4DD		0-30	30-45									
	5		0-25	25-45									
Transect 41													
	1		0-30	30-50									
	2		0-17	17-49									
	3		0-23	23-52									
	4		0-18	18-45									
	5		0-25	25-49									
Transect 42													
	1		0-10	10-35									
	2		0-25	25-45									
	3		0-15	15-35									
	4		0-15	15-35									
Transect 43													
	1		0-20	20-45									
	2		0-20	20-40									
	3		0-20	20-40									
	4		0-15	15-35									
	5		0-10	10-30									
Transect 44													
	1		0-33	33-47									
	2		0-27	27-45									
Transect 45	1		0-25	25-40									
	2		0-20	20-40									
Transect 46													
	1		0-29	29-41									
	2		0-30	30-44									
Transect 47													
	1		0-20	20-35									
	2		0-27	27-42									
	3		0-20	20-40									
Transect 48													
	1		0-13	13-44									
	2		0-17	17-43									
	3		0-23	23-52									
	4		0-18	18-45									
	5		0-18	18-39									
Transect 49													
	1		0-30	30-43									
	2		0-29	29-41									
	3		0-28	28-45									

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Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	4		0-24	24-44									
Transect 50													
	1		0-23	23-40									
	2		0-24	24-41									
	3		0-23	23-42									
	4		0-22	22-40									
Transect 51													
	1		0-23	23-45									
	2		0-25	25-45									
	3		0-20	20-35									
	4		0-21	21-35									
Transect 52													
	1		0-18	18-40									
	2		0-29	29-45									
	3		0-26	26-40									
Transect 53													
	1		0-17	17-40									
	2		0-19	19-40									
Transect 54													
	1		0-26	26-43									
	2		0-34	34-61									
	3		0-24	24-47									
	4		0-23	23-45									
Transect 55													
	1		0-30	30-52									
	2		0-39	39-55									
	3		0-44	44-60									
	4		0-29	29-49									
	5		0-30	30-55									
Transect 56													
	1		0-35	35-61									
	2		0-30	30-64									
	3		0-38	38-47									
	4		0-32	32-47									
	5		0-30	30-46									
Transect 57													
	1		0-25	25-50									
	2		0-30	30-45									
	3		0-35	35-50									
	4		0-35	35-50									
	5		0-30	30-45									
Transect 58													
	1		0-16	16-43									
	2		0-21	21-45									
	3		0-35	35-55									
	4		0-35	35-50									
	5		0-32	32-50									
	6		0-39	39-55									
Transect 59													
	1		0-14	14-30									
	2		0-16	16-32									
	3		0-15	15-30									
Transect 60													
	1		0-25	25-40									
	2		0-15	15-30									

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Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	3								0-20	20-35			
Transect 61													
	1		0-21	21-38									
	2		0-17	17-40									
	3								0-33	33-55			
Transect 62													
	1		0-12	12-30									
	2		0-16	16-40									
	3								0-22	22-35			
Transect 63													
	1		0-19	19-41									
	2		0-23	23-47									
	3								0-23	23-45			
Transect 64													
	1		0-25	25-40									
	2		0-12	12-35									
	3								0-25	25-40			
Transect 65													
	1		0-26	26-51									
	2								0-14	14-34			
	3								0-18	18-43			
Transect 66													
	1		0-20	20-42									
	2								0-28	28-45			
	3								0-25	25-40			
	4								0-20	20-35			
	5								0-30	30-47			
Transect 67													
	1		0-29	29-44									
	2		0-28	28-47									
	3		0-30	30-47									
	4								0-50				
	5		0-30	30-40									Gravel impasse
Transect 68													
	1		0-9	9-25									
	2		0-13	13-30									
	3		0-17	17-40									
Transect 69													
	1		0-26										Rock impasse
	2								0-33				Rock impasse
	3								0-17	17-37			
	4		0-37	37-55									
Transect 70													
	1				0-16	16-39							
	2				0-15	15-35							
	3				0-19	19-43							
	4				0-30	30-60							
	5				0-20	20-40							
	6				0-30	30-45							
Transect 71													
	1				0-23	23-47							
	2				0-10	10-25							
	3	0-150											
	4	0-40											
	5	0-30											

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Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	6	0-45											
	7				0-33	33-52							
	8				0-29	29-75							
Transect 72													
	1	0-235											
	2	0-170											
	3	0-19				19-34							
Transect 73													
	1				0-19	19-43							
	2				0-16	16-37							
	3				0-18	18-35							
Transect 74													
	1				0-31	31-47							
	2				0-28	28-45							
	3	0-115				115-125							
	4				0-20	20-40							
Transect 75													
	1		0-32	32-42									
	2		0-20	20-35									
Transect 76													
Site 07106.000164	1						0-33	33-50					
Site 07106.000164	2						0-27	27-39				X	
	3						0-27	27-52					
	4						0-26	26-49					
	5						0-29	29-50					
	5A						0-33	33-56					
	5B						0-31	31-57					
	5C						0-30	30-46					
	5D						0-27	27-45					
	5AA						0-37	37-60					
	5BB						0-35	35-45					
	5CC						0-27	27-49					
	5DD						0-33	33-50					
	6						0-29	29-43					
	7						0-26	26-47					
	8						0-25	25-50					
	9						0-26	26-48					
	10						0-25	25-50					
Transect 77													
	1						0-26	26-46					
	2						0-23	23-45					
	3						0-22	22-42					
	4						0-30	30-45					
	5						0-38	38-54					
	6						0-30	30-40					
	7						0-25	25-40					
	8						0-26	26-40					
Selective													
	1				0-9	9-45							
	2				0-10	10-68							
	3				0-9	9-58							
	4				0-26	26-40							
	5		0-9	9-48									
	6		0-17	17-39									
	7		0-17	17-37									
	8		0-33	33-60									
	9		0-18	18-39									
	10		0-19	19-41									
	11		0-22	22-39									

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Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	12	0-104											
	13				0-18	18-30							
	14				0-24	24-41							
	15				0-19	19-32							
07106.000166	16				0-18	18-38						X	
	16A				0-23	23-40							
	16B				0-28	28-40							
	16C				0-27	27-45							
	16D				0-30	30-40							
	16AA				0-24	24-35							
	16BB				0-25	25-35							
	16CC				0-24	24-40							
	16DD				0-23	23-40							
	17				0-23	23-39							
	18				0-18	18-42							
	19				0-17	17-43							
Site 07106.000165	20				0-23	23-40						X	
Site 07106.000165	21				0-24	24-40							
Site 07106.000165	22				0-17	17-40							
Phase II													
Site 07106.000164													
Transect 30													
	1.5						0-32	32-45				X	
	2.5						0-37	37-45				X	
Transect 76													
	1.5						0-29	29-46					
	2.5						0-33	33-45					
Transect 100													
	1						0-26	26-50					
	2						0-34	34-60					
	3						0-36	36-60					
	4						0-32	32-57					
Transect 101													
	1						0-29	29-42				X	
	2						0-32	32-45					
	3						0-28	28-54					
	4						0-29	29-51					
Selective													
	100						0-34	34-50					
Site 07106.000165													
Transect 1													
	1.5		0-12	12-47								X	
	2.5		0-19	19-58								X	
	3.5		0-17	17-46									
Transect 2													
	1.5		0-15	15-43									
	2.5		0-16	16-52								X	
	3.5		0-14	14-49									
	4.5		0-15	15-53									
Transect 3													
	5.5		0-12	12-44									
	6.5		0-12	12-41									
	7.5		0-11	11-43									
	8.5		0-14	14-53								X	
Transect 4													

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Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	1.5		0-18	18-40								X	
	2.5		0-16	16-44									
Transect 100													
	1		0-18	18-42								X	
	2		0-18	18-43								X	
	3		0-17	17-39								X	
	4		0-18	18-37								X	
	5		0-17	17-38									
Transect 101													
	1		0-19	19-42									
	2		0-23	23-44								X	
	3		0-20	20-46								X	
	4		0-18	18-40								X	
	5		0-20	20-42								X	
	6		0-20	20-39								X	
	7		0-18	18-38									
	8		0-25	25-45									
	9		0-25	25-42									
Transect 102													
	1		0-22	22-46								X	
	2		0-24	24-48								X	
	3		0-22	22-50								X	
	4		0-23	23-44								X	
	5		0-24	24-50									
	6		0-25	25-43									
	7		0-22	22-40								X	
	8		0-25	25-50									
Transect 103													
	1		0-15										Root impasse
	2		0-20	20-35								X	
	3		0-17	17-39									
	4		0-16	16-40									
	5		0-15	15-42									
Selective													
	100		0-20	20-30								X	
	101		0-26	26-40								X	
	102		0-28	28-40								X	
	103		0-20	20-45								X	
	104		0-16	16-40									
Site 07106.000166													
Transect 8	2.5		0-12	12-30									
	3.5		0-30	30-40								X	
	4.5		0-45	45-55									
	5.5		0-25	25-50									
Transect 9													
	1.5		0-16	16-42									
	2.5		0-18	18-41									
	3.5		0-17	17-40									
	4.5		0-30	30-45									
Transect 11	1.5		0-14	14-43									
	2.5		0-15	15-46									
Transect 100													
	1		0-18	18-40									
	2		0-22	22-50									
	3		0-30	30-50								X	
	4		0-35	35-50								X	
	5		0-40	40-50								X	

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Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	6		0-40	40-60								X	
Transect 101													
	1		0-18	18-45									
	2		0-9	9-46								X	
	3		0-25	25-40								X	
	4		0-20	20-35									
	5		0-26	26-40								X	
	6		0-24	24-45								X	
	7		0-20	20-35									
	8		0-22	22-37									
Transect 102												X	
	1		0-20	20-37								X	
	2		0-26	26-40								X	
	3		0-20	20-44								X	
	4		0-19	19-39								X	
	5		0-20	20-42								X	
	6		0-20	20-40									
Transect 103													
	1		0-18	18-41									
	2		0-19	19-39								X	
	3		0-20	20-44									
2015 Fieldwork													
Transect 200													
H. Stage Site	1							35-45			0-35	X	
H. Stage Site	2							20-35			0-20		
H. Stage Site	3							20-45			0-20		
Transect 201													
H. Stage Site	1							16-30			0-16		
H. Stage Site	2							18-34			0-18		
H. Stage Site	3							18-37			0-18	X	
H. Stage Site	4							19-35			0-19	X	
H. Stage Site	5						0-18	18-21					Gravel Impasse
Transect 202													
H. Stage Site	1	0-60										X	Gravel Impasse
H. Stage Site	2	0-40											Gravel Impasse
H. Stage Site	3	0-40										X	Gravel Impasse
H. Stage Site	4	0-17											Gravel Impasse
H. Stage Site	5	0-15						15-35					
H. Stage Site	6	0-15						15-25					
Transect 203													
H. Stage Site	1						0-17	17-37				X	
H. Stage Site	2						0-13	13-29					
H. Stage Site	3						0-15	15-41				X	
Transect 204													
H. Stage Site	1						0-27	27-39				X	
H. Stage Site	2						0-19	19-42				X	
H. Stage Site	3						0-18	18-40				X	
	4						0-17	17-42					
Transect 205													
	1						0-17	17-32					
	2						0-18	18-34					
Transect 206													
	1					3-30	0-3						
	2					3-35	0-3						
	3					2-25	0-2						
Transect 207													
	1				0-10	10-28							
	2				0-10	10-36							
	3				0-10	10-32							
Transect 208													
	1						0-31	31-60					

SoS Conference Center-Echo Lake Property
Orange County, New York
Landmark Archaeology, Inc. #335.337

Soil Description	
1 Gravelly Sandy Silt Loam	3 Clay Loam
2 Gravelly Silt Loam	4 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/3	10YR 5/3	10YR 6/3	10YR 4/3	10YR 5/4	10YR 3/1	10YR 5/1	10YR 3/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	1	1	2	2	3	3	4		
STRAT		Fill	A/Ap	B	A	B	A/Ap	B	A	B	A/AP		
	2						0-30	30-40					
Transect 209													
	1						0-28	28-37					
	2						0-23	23-42					
	3						0-33	33-38					
	4						0-33	33-37					
Transect 210													
	1						0-15	15-30					
	2						0-24	24-32					
Transect 211													
	1						0-27						Rock Impasse
	2						0-12	12-28					Rock Impasse
	3						0-28	28-35					
	4						0-29	29-36					
	5						0-15	15-30					
	6						0-16	16-35					
	7						0-15	15-28					Rock Impasse
Transect 212													
	1									0-30			Root Impasse
	2									0-12			Root Impasse
	3									15-28	0-15		Rock Impasse
	4									16-34	0-16		
	5									22-32	0-22		Root Impasse
Transect 213													
	1									12-30	0-12		
	2									17-35	0-17		
Selective													
H. Stage Site	S201							20-40			0-20		
H. Stage Site	S202							18-31			0-18	X	Rock Impasse
H. Stage Site	S203							20-40			0-20		
H. Stage Site	S204							20-37			0-20	X	
H. Stage Site	S205						0-16	16-34				X	Rock Impasse
H. Stage Site	S206						0-24						Rock Impasse
	S207						0-18	18-44					
	S208						0-10	10-33					
	S209						0-10	10-28					
	S210						0-12	12-25					
	S211						0-15	15-33					
	S212									17-32	0-17		
	S213									17-33	0-17		

APPENDIX C

Artifact Inventory

Site 07106.000164
Artifact Inventory

Site	Phase	Cat. #	Tr.	STP	Unit	Lvl	Depth (cm)	Strat	Feat.	Feat. Lvl	Biface	Flake Tool	Debitage Pri.	Sec.	Tert.	RT	Sh.	Br.	Core amt.	wt (g)	Chert Type	GS/CT amt.	wt (g)	FCR amt.	wt (g)	Other/Comments
7106.000164	IB	21	30	1		1	0-19	A							1						ON					
7106.000164	IB	22	30	2		1	0-16	A							1						ON					
7106.000164	IB	104	76	2		1	0-20	A							1						NSK					
7106.000164	IB	104	76	2		1	10-20	A																3	142.9	
7106.000164	II	100	30	1.5		1	0-20	A							2						NSK					
7106.000164	II	103	30	2.5		2	20-37	A			1										NSK					Orient Fishtail base fragment. 12.5 mm long, 13.7 mm wide, 5.8 mm thick; wt-1.0 gm
7106.000164	II	106	101	1		1	0-20	A							1						ES					
7106.000164	II	106	101	1		1	0-20	A							1						NSK					
7106.000164	II	118			1	2	13-23	A							3						NSK					
7106.000164	II	118			1	2	13-23	A							3						ON					
7106.000164	II	118			1	2	13-23	A																3	119.4	
7106.000164	II	119			1	3	23-33	A							5						ON					
7106.000164	II	119			1	3	23-33	A							3						NSK					
7106.000164	II	119			1	3	23-33	A										2			NSK					
7106.000164	II	119			1	3	23-33	A																1	77.2	
7106.000164	II	111			2	2	0-20	A							2						NSK					
7106.000164	II	111			2	2	10-20	A																1	69.5	
7106.000164	II	112			2	3	20-30	A							1						NSK					
7106.000164	II	113			2	4	30-40	B							2						NSK					
7106.000164	II	113			2	4	30-40	B																3	606.3	
7106.000164	II	114			2	5	40-50	B							1						NSK					
7106.000164	II	115			3	1	0-10	A							1						ON					
7106.000164	II	116			3	3	20-30	B							4						NSK					
7106.000164	II	116			3	3	20-30	B				1	X								NSK					1 edge: crushing, straight edge 25.6 mm in length; wt-20.1 gm
7106.000164	II	116			3	3	20-30	B				1			X						NSK					1 edge: chipping, straight edge 7.9 mm in length; wt-1.6 gm
7106.000164	II	116			3	3	20-30	B																4	202.1	
7106.000164	II	117			3	4	30-40	B							1						NSK					
							TOTALS				1	2			33			2						15	1217.4	

ES-Esopus chert
NSK-Normanskill chert
ON-Onondoga chert

Pri.-Primary flake
Sec.-Secondary flake
Tert.-Tertiary flake
RT-Retouch flake
Sh.-Shatter
Br-Broken flake

Site 07106.000165
Artifact Inventory

Site	Phase	Cat. #	Tr.	STP	Unit	Lvl	Depth (cm)	Strat	Feat.	Feat. Lvl	Biface	Flake Tool	Debitage Pri.	Debitage Sec.	Debitage Tert.	Debitage RT	Debitage Shat.	Debitage Br.	Core amt.	Core wt (g)	Chert Type	GS/CT amt.	GS/CT wt (g)	FCR amt.	FCR wt (g)	Other/Comments
7106.000165	IB	4	1	2		1	0-22	A													ON			1	69.3	
7106.000165	IB	1	1	2		2	22-42	B													ON			1	32.2	
7106.000165	IB	7	2	2		1	0-10	A							1						ON					
7106.000165	IB	7	2	2		1	0-10	A									2				ON					
7106.000165	IB	12	2	5		2	20-30	B							1						ON					
7106.000165	IB	14	3	6		1	0-15	A							1						ON					
7106.000165	IB	9	3	7		1	0-13	A							1						ES					
7106.000165	IB	2	3	9		2	9-54	B							1											
7106.000165	IB	5	4	1		2	11-54	B							1						QT					
7106.000165	IB	23		S20		1	0-20	A							1						UN					
7106.000165	IB	23		S20		1	0-20	A							1						ON					
7106.000165	II	100	1	1.5		2	12-32	B					1		X						ON					1 edge: chipping, straight edge 9.1 mm in length
7106.000165	II	101	1	2.5		2	19-39	B																1	80.3	
7106.000165	II	106	2	2.5		2	16-36	B							1						ON					
7106.000165	II	106	2	2.5		2	16-36	B							1						NSK					
7106.000165	II	106	2	2.5		2	16-36	B																3	103.7	
7106.000165	II	126	3	8.5		2	14-34	B							1						NSK					
7106.000165	II	126	3	8.5		2	14-34	B							1						ON					
7106.000165	II	107	4	1.5		1	0-18	A										1			NSK					
7106.000165	II	108	100	1		1	0-18	A							2						ON					
7106.000165	II	108	100	1		1	0-18	A																2	302.1	
7106.000165	II	109	100	2		1	0-18	A							1						NSK					
7106.000165	II	110	100	3		1	0-17	A							1						NSK					
7106.000165	II	110	100	3		1	0-17	A																1	271.8	
7106.000165	II	111	100	4		1	0-18	A							1						NSK					
7106.000165	II	111	100	4		1	0-18	A																1	58.8	
7106.000165	II	112	101	2		2	20-23	B				1									NSK					Bare Island Point. 55.0 mm long, 23.5 mm wide, 11.1 mm wide (base), 8.2 mm thick; wt-6.7 gm
7106.000165	II	113	101	2		3	23-43	B							1						NSK					
7106.000165	II	114	101	3		1	0-20	A							1						NSK					
7106.000165	II	114	101	3		1	0-20	A																1	51.5	
7106.000165	II	115	101	4		1	0-18	A							1						NSK					
7106.000165	II	116	101	5		1	0-20	A							1						NSK					
7106.000165	II	116	101	5		1	0-20	A								2					NSK					
7106.000165	II	116	101	5		1	0-20	A																1	65	
7106.000165	II	117	101	5		2	20-40	B										1			ES					
7106.000165	II	124	101	6		1	0-20	A							1						NSK					
7106.000165	II	124	101	6		1	0-20	A							1						ON					2 pieces that mend, looks like shovel break
7106.000165	II	118	102	1		1	0-20	A																3	558.9	
7106.000165	II	119	102	2		1	10-20	A																1	154.7	
7106.000165	II	120	102	3		1	0-20	A							1						ON					
7106.000165	II	121	102	4		1	0-20	A																1	32.7	
7106.000165	II	123	102	7		1	0-20	A							1						NSK					2 pieces that mend, looks like shovel break
7106.000165	II	127	103	2		2	20-40	B										1			NSK					
7106.000165	II	105	S	20		2	20-28	B							1						NSK					
7106.000165	II	102	S	100		1	0-20	A							1						NSK					
7106.000165	II	103	S	101		1	0-20	A							2						NSK					
7106.000165	II	104	S	102		1	0-20	A							1						NSK					
7106.000165	II	104	S	102		1	0-20	A									1				NSK					
7106.000165	II	125	S	103		2	20-40	B							1						NSK					
7106.000165	II	137			1	2	10-20	A																4	269.6	
7106.000165	II	128			2	1	0-10	A																5	1709.2	
7106.000165	II	133			2	2	10-20	A							1						NSK					

Site 07106.000165
Artifact Inventory

Site	Phase	Cat. #	Tr. STP	Unit	Lvl	Depth (cm)	Strat	Feat.	Feat. Lvl	Biface	Flake Tool	Debitage Pri.	Sec.	Tert.	RT	Shat.	Br.	Core amt.	Core wt (g)	Chert Type	GS/CT amt.	GS/CT wt (g)	FCR amt.	FCR wt (g)	Other/Comments
7106.000165	II	133		2	2	10-20	A							1						ON					
7106.000165	II	129		2	2	10-20	A																8	1002.3	
7106.000165	II	130		2	3	20-25	A							1						NSK					
7106.000165	II	130		2	3	20-25	A											1	42.7	NSK					
7106.000165	II	130		2	3	20-25	A																4	518.3	
7106.000165	II	131		2	4	25-35	B																1	34.2	
7106.000165	II	132		3	1	0-10	A							2						NSK					
7106.000165	II	132		3	1	0-10	A							1						ON					
7106.000165	II	133		3	2	10-20	A										1			NSK					
7106.000165	II	133		3	2	10-20	A																4	272	
7106.000165	II	134		3	3	20-29	B							2						ON					
7106.000165	II	134		3	3	20-29	B							1						NSK					
7106.000165	II	134		3	3	20-29	B									2				NSK					
7106.000165	II	134		3	3	20-29	B																6	131.1	
7106.000165	II	135		4	2	10-20	A							1						NSK					
7106.000165	II	135		4	2	10-20	A						1							NSK					
7106.000165	II	135		4	2	10-20	A																3	321.9	
7106.000165	II	136		4	3	20-30	B							2						NSK					
7106.000165	II	138		5	1	0-10	A							1						NSK					
7106.000165	II	138		5	1	0-10	A										1			NSK					
7106.000165	II	138		5	1	0-10	A																8	1585.9	
7106.000165	II	139		5	2	10-20	A							3						NSK					
7106.000165	II	139		5	2	10-20	A										2			NSK					
7106.000165	II	139		5	2	10-20	A																13	779.3	
7106.000165	II	140		5	3	20-32	B							1						NSK					
7106.000165	II	140		5	3	20-32	B										1			NSK					
7106.000165	II	140		5	3	20-32	B									2				NSK					
7106.000165	II	140		5	3	20-32	B																10	1878.6	
7106.000165	II	141		5	4	32-42	B							1						NSK					
7106.000165	II	142		6	1	0-20	A																5	404.3	
7106.000165	II	143		6	2	10-20	A							1						NSK					
7106.000165	II	143		6	2	10-20	A																8	935.2	
7106.000165	II	144		6	4	30-40	B							1						NSK					
						TOTALS						1	1	1	51	2	7	8	1	42.7			96	11622.9	

ES-Esopus chert
NSK-Normanskill chert
ON-Onondaga chert
QT-Quartzite
UN-Unidentified

Pri.-Primary flake
Sec.-Secondary flake
Tert.-Tertiary flake
RT-Retouch flake
Shat.-Shatter
Br-Broken flake

Site 07106.000166
Artifact Inventory

Site	Phase	Cat. #	Tr.	STP	Unit	Lvl	Depth (cm)	Strat	Feat.	Feat. Lvl	Biface	Flake Tool	Pri.	Sec.	Debitage Tert.	RT	Shat.	Br.	Core amt.	Core wt (g)	Chert Type	GS/CT amt.	GS/CT wt (g)	FCR amt.	FCR wt (g)	Other/Comments
7106.000166	IB	6	8	3		1	0-18	A							1						ON					
7106.000166	IB	6	8	3		1	0-18	A							1						NSK					
7106.000166	IB	10	8	4		1	0-19	A							3						ON					
7106.000166	IB	17	9	2		1	0-13	A							1						ON					
7106.000166	IB	3	9	3		1	0-17	A							7						ON					
7106.000166	IB	3	9	3		1	0-17	A									4				ON					
7106.000166	IB	20	11	1		1	0-11	A							1						ON					
7106.000166	IB	16	11	3		2	6-43	B							1						ON					
7106.000166	IB	24		S16		1	0-18	A							1						ON					
7106.000166	IB	24		S16		1	0-18	A							1						ON					
7106.000166	II	101	8	3.5		2	20-30	A							1						NSK					
7106.000166	II	111	9	3.5		1	0-17	A							1						NSK					
7106.000166	II	111	9	3.5		1	0-17	A										1			NSK					
7106.000166	II	102	100	3		1	0-20	A							3						NSK					
7106.000166	II	103	100	4		1	0-20	A							3						NSK					
7106.000166	II	104	100	5		1	0-20	A							1						ON					
7106.000166	II	104	100	5		1	0-20	A							1						NSK					
7106.000166	II	104	100	5		1	0-20	A										1			NSK					
7106.000166	II	105	100	6		1	0-20	A							1						NSK					
7106.000166	II	109	101	2		2	9-29	B																6	887.1	
7106.000166	II	110	101	2		3	29-46	B							1						NSK					
7106.000166	II	106	101	3		1	0-20	A							1						ON					
7106.000166	II	106	101	3		1	0-20	A			1										ON					blade fragment
7106.000166	II	107	101	5		1	0-20	A							1						NSK					
7106.000166	II	108	101	6		1	0-20	A							1						ON					
7106.000166	II	112	102	1		1	0-20	A							1						NSK					
7106.000166	II	113	102	2		1	0-20	A							1						NSK					
7106.000166	II	114	102	2		2	20-26	B							1						ON					
7106.000166	II	114	102	2		2	20-26	B																1	75.4	
7106.000166	II	115	102	3		1	0-20	A										2			NSK					
7106.000166	II	116	102	3		2	20-40	B							1						NSK					
7106.000166	II	119	102	4		1	0-19	A							1						NSK					
7106.000166	II	119	102	4		1	0-19	A							2						ON					
7106.000166	II	119	102	4		1	0-19	A																4	98.8	
7106.000166	II	117	102	5		1	0-20	A										2			NSK					
7106.000166	II	117	102	5		1	0-20	A																3	199.1	
7106.000166	II	118	102	5		2	20-40	B							2						NSK					
7106.000166	II	120	102	6		1	0-20	A							1						NSK					
7106.000166	II	121	103	2		1	0-19	A							1						NSK					
7106.000166	II	137	Surface																			1	1435.6			abrading stone with burned/heated surface
7106.000166	II	100			1	1	0-20	A							2						NSK					
7106.000166	II	123			1	1	0-10	A							2						NSK					
7106.000166	II	123			1	1	0-10	A																6	668.1	
7106.000166	II	124			1	2	10-20	A							2						ON					
7106.000166	II	124			1	2	10-20	A							4						NSK					
7106.000166	II	124			1	2	10-20	A																7	345	
7106.000166	II	125			1	3	20-30	B							3						NSK					
7106.000166	II	125			1	3	20-30	B									2				NSK					
7106.000166	II	131			2	1	0-10	A							2						NSK					

Site 07106.000166
Artifact Inventory

Site	Phase	Cat. #	Tr. STP	Unit	Lvl	Depth (cm)	Strat	Feat.	Feat. Lvl	Biface	Flake Tool	Debitage Pri.	Sec.	Tert.	RT	Shat.	Br.	Core amt.	wt (g)	Chert Type	GS/CT amt.	wt (g)	FCR amt.	wt (g)	Other/Comments
7106.000166	II	132		2	2	10-20	A							5						ON					
7106.000166	II	132		2	2	10-20	A							8						NSK					
7106.000166	II	132		2	2	10-20	A					1		X						NSK					1 edge: 9.8, chipping, straight edge
7106.000166	II	132		2	2	10-20	A																4	482.7	
7106.000166	II	132		2	2	10-20	A														1	182.2			nuttingstone with battered edge, 15.9 mm pitting
7106.000166	II	130		2	3	20-26	B							3						ON					
7106.000166	II	130		2	3	20-26	B							11						NSK					
7106.000166	II	130		2	3	20-26	B																15	1210.5	
7106.000166	II	130		2	3	20-26	B														1	103.4			netsinker
7106.000166	II	130		2	3	20-30	B			1										NSK					Untyped Point missing base. 32.7 mm long, 22.5 mm wide, 8.6 mm thick; wt-6.1 g
7106.000166	II	133		2	5	36-46	B							1						NSK					
7106.000166	II	133		2	5	36-46	B										1			ON					
7106.000166	II	134		3	1	0-10	A																3	210.2	
7106.000166	II	135		3	2	10-20	A							3						ON					
7106.000166	II	135		3	2	10-20	A							2						NSK					
7106.000166	II	135		3	2	10-20	A																3	197.4	
7106.000166	II	136		3	3	20-30	B							4						NSK					
7106.000166	II	126		4	1	0-10	A							2						ON					
7106.000166	II	126		4	1	0-10	A							6						NSK			3	525	
7106.000166	II	127		4	2	10-20	A							6						ON					
7106.000166	II	127		4	2	10-20	A							12						NSK					
7106.000166	II	127		4	2	10-20	A					1		X						NSK					1 edge: crushing, concave edge 9.5 mm long
7106.000166	II	127		4	2	10-20	A																4	261.3	
7106.000166	II	128		4	2	10-20	A			1										NSK					Normanskill Point Base. 16.7 mm long, 17.5 mm wide, 11.1 mm wide (base), 5.2 mm thick; wt-1.6 g
7106.000166	II	129		4	3	20-30	B							3						NSK					
7106.000166	II	129		4	3	20-30	B																2	257.2	
7106.000166	II	137		5	3	20-30		1	1														10	3251.7	2 large pieces mend
7106.000166	II	138		5	4	30-14		1	2														2	360.1	
7106.000166	II	139		5	5	40-50		1	3														4	379.6	
7106.000166	II	137		5	3	20-30		1	1														2	9700	1 piece mends with cat #139
7106.000166	II	139		5	5	40-50		1	3														1	6200	mends with cat #137
						TOTALS				3	2			124		6	7				3	1721.2	80	25309.2	

NSK-Normanskill chert
ON-Onondaga chert

Pri.-Primary flake
Sec.-Secondary flake
Tert.-Tertiary flake
RT-Retouch flake
Shat.-Shatter
Br-Broken flake

H. Stage Historic Site Artifact Inventory

Phase	Cat	Tr.	STP	Level	Depth (cm)	Strat	Material	Type	Description	Quantity
I	6	200	1	1	0-20	A	Ceramic	Refined earthenware	Yellowware, plain	1
I	6	200	1	1	0-20	A	Metal		Brace	1
I	3	201	3	1	0-20	A	Glass	Curved	Clear	1
I	3	201	3	1	0-20	A	Metal	.22 casing		1
I	5	201	4	1	0-20	A	Glass	Curved	Clear	1
I	7	202	1	1	0-20	A	Metal	Bolt	Round shaft	1
I	8	202	3	1	0-20	A	Glass	Flat	Aqua	1
I	9	203	1	1	0-20	A	Glass	Milk glass		1
I	9	203	1	1	0-20	A	Shell		Fragment	1
I	10	203	3	1	0-15	A	Glass	Flat	Clear	4
I	10	203	3	1	0-15	A	Metal	Screw	Modern	1
I	10	203	3	1	0-15	A	Plastic	Unidentified tubes		3
I	16	204	1	1	0-17	A	Glass	Curved	Clear	2
I	13	204	2	1	0-18	A	Metal	Fencing staple		1
I	14	204	2	2	18-32	A	Metal	Fencing staple		1
I	12	204	3	1	0-19	A	Metal	Nail	Wire	1
I	12	204	3	1	0-19	A	Glass	Flat	Clear	2
I	15	204	3	2	19-37	A	Glass	Curved	Clear	1
I	11	Selective	S202	1	0-18	A	Glass	Window glass	Aqua	6
I	11	Selective	S202	1	0-18	A	Plastic	Curved, unidentified	Blue	1
I	1	Selective	S204	1	0-20	A	Glass	Jar	Threaded rim	2
I	2	Selective	S205	1	0-20	A	Glass	Flat	Clear	1
I	2	Selective	S205	1	0-20	A	Metal	Unidentified	Curved, possibly cast iron	1
I	2	Selective	S205	1	0-20	A	Plastic	Flat	Clear and aqua	2
									TOTAL	38

APPENDIX D

New York State Archaeological Site Inventory Forms

In accordance with Section 6.6 of the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State," published by the New York Archaeological Council (NYAC) in 1994 and adopted by the State Historic Preservation Office, sensitive site location information has been redacted. An unredacted version has been made available to the Planning Board.

Phase I and II Archaeological Investigations of the Proposed Amy's Kitchen Project Ver Hage and Lipoff Properties Town of Goshen Orange County, New York

Prepared for:
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Principal Investigators

LA# 347.348
September 2015

In accordance with Section 6.6 of the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State," published by the New York Archaeological Council (NYAC) in 1994 and adopted by the State Historic Preservation Office, sensitive site location information has been redacted. An unredacted version has been made available to the Planning Board.

MANAGEMENT SUMMARY

SHPO Project Review Number:

Federal Agencies: USACE, FWS, FEMA
State Agencies: DEC, DOT, OGS, OMH, DPS, ESD, SEQRA

Phase of Study: Phase I and II

Location:
Minor Civil Division: Town of Goshen
County: Orange

USGS 7.5′ Quadrangle Map: Middletown, NY (2000)

Survey Area
Ver Hage Parcel:
Length: 1882 ft (574 m)
Width: 1810 ft (552 m)
Lipoff Parcel:
Length: 856 ft (261 m)
Width: 920 ft (280 m)
Depth: n/a
Size Total Acres Surveyed: 83.5 (33.8 ha)
Total Square Meters Excavated: Site 07106.000023-45.04
Total Square Feet Excavated: Site 07106.000023-484.8
Percentage of Site Excavated: Site 07106.000023-0.19

Archaeological Survey Overview
Total and Interval of Shovel Tests:
Ver Hage Parcel: Phase I- 205-(192 at 15-meter interval, 13 selectively placed)
Phase II-127 at intervals of 1 to 10 meters
Lipoff Parcel: 42 (30 at 15-meter interval, 12 selectively placed)

Total and Size of Units: 18 1x1-meter units
Width of Plowed Strips: n/a
Surface Survey Transect Interval: n/a

Results of Archaeological Survey
Number and name of prehistoric sites identified: 1, Site 07106.000023
Number and name of historic sites identified: 0
Sites Recommended for Phase II/Avoidance: Site 07106.000023

Report Author(s): Susan Gade, RPA and Jessica Schreyer
Landmark Archaeology, Inc.

Date of Report: September 2015

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1. INTRODUCTION

This report presents the results of Phase I and II archaeological investigations conducted for the proposed *Amy's Kitchen* Project, on the Ver Hage and Lipoff properties, located in the Town of Goshen, Orange County, New York (Figure 1). The proposed project will entail the construction of a production facility and related infrastructure to accommodate the manufacture and distribution of *Amy's Kitchen* natural and organic frozen food products. The proposed facility will include development within two properties: Ver Hage and Lipoff. Combined, the Phase I investigation considered an Area of Potential Effect (APE) of 83.5 acres (33.8 ha) which includes the Ver Hage property measuring 71.7 acres (29.0 ha), and the Lipoff property, measuring 11.8 acres (4.8 ha) (Figure 2). The archaeological investigations were conducted by Landmark Archaeology, Inc. of Altamont, New York who was retained as a consultant by Amy's Kitchen Inc. of Petaluma, California.

According to the Draft Environmental Impact Statement (DEIS) (AKRF n.d.), Amy's' Kitchen is collaborating with Science of the Soul (SoS) on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents. SoS is proposing to construct a conference center and parking area on two adjacent parcels. The SoS development includes the Echo Lake parcel which will contain the conference center (Marcucci et al. 2015) and the Strong Farm property which will be utilized for overflow parking (Gawron and Gade 2015). The Amy's Kitchen facility and the SoS conference center will share certain access, water supply and wastewater treatment infrastructure.

The Phase I study of the Ver Hage and Lipoff properties was conducted to: (a) inspect the project area and define the spatial boundaries of any archaeological resources in relation to the limits of the project area, (b) assess the potential of the project area for deeply buried cultural deposits, (c) conduct surface and limited subsurface investigations of the resources which are either partially or completely in the area of the proposed construction, and (d) provide recommendations for those archaeological resources which may be impacted by proposed development activities. These tasks were conducted to provide federal and state reviewing agencies with appropriate documentation to evaluate the effect of the proposed project on historic and/or prehistoric cultural resources.

The Phase I study was conducted in two stages: a Phase IA literature review and a Phase IB intensive level identification survey. The purpose of the Phase IA investigation was to assess the potential for National Register of Historic Places (NRHP) properties to exist within the project area. Research tasks associated with the Phase IA study consisted of a literature review and records search of documents housed at the New York Office of Parks, Recreation, and Historic Preservation (OPRHP). The Phase IB consisted of a pedestrian survey and shovel test excavations within the APE.

Phase II investigations were designed to gather data with which to evaluate the NRHP eligibility status of Site 07106.000023, a prehistoric site located on the Ver Hage property. Site eligibility is based on NRHP criteria of significance (36CFR60.6, Federal Register 1976). Phase II field efforts consisted of shovel test and unit excavations. All Phase I and II field and analytical methods were conducted in accordance with guidelines established in Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York by the New York Archaeological Council (NYAC 1994) and adopted by the OPRHP.

The following technical report presents the results of the Phase I and II investigations conducted from June to August, 2015. Derrick J. Marcucci, RPA and Susan Gade, RPA served as Principal Investigators for the project and supervised all aspects of the investigation. Background literature was reviewed by Jessica Schreyer. Fieldwork was conducted by Mr. Marcucci, Ms. Gade, Kristen Fedigan, Brad Gawron (GIS Specialist), Zach Hinkley, Jack Marcucci, Sam Marcucci, Georgiana Patterson and Sydney Snyder. Artifact analysis was completed by Ms. Schreyer and Mr. Gawron. This report is written by Ms. Gade and Ms. Schreyer. Spatial data were collected by Mr. Gawron who also produced report graphics.

2. PROJECT DESCRIPTION

The Draft Environmental Impact Statement (DEIS) notes "The Amy's Kitchen manufacturing facility and the SoS Conference Center, together with certain related facilities and improvements, comprise the "Proposed Project" (AKRF n.d.:II-1). The proposed project includes developments within four separate properties. Table 1 lists the properties, and the size and proposed development for each.

Table 1
Amy's Kitchen and SoS Properties and Proposed Development

Entity	Property Name	Property Size (ac)	APE Size (ac)	Proposed Development
Amy's Kitchen	Ver Hage	71.7	71.7	Manufacturing facility
Amy's Kitchen	Lipoff	11.8	11.8	Wells/water supply
SoS	Echo Lake	194.6	109.5	Conference Center
SoS	Strong Farm	96	23.3	Volunteer parking for SoS

Source: DEIS

The proposed Amy's Kitchen facility on the Ver Hage property and associated wells on the Lipoff property are located along the east side of the Wallkill River (Figure 2). The project area is located approximately two miles west of the village of Goshen in central Orange County, New York. The Amy's Kitchen manufacturing facility planned within the Ver Hage property is bounded by the Wallkill River to the west, Hartley Road to the east, and the Orange Heritage Trail (former Erie Lackawanna Railroad) to the north. A property containing a waste management facility forms the southern boundary. Proposed plans for the Lipoff parcel consist of well drilling and installation. The Lipoff property is bounded to the west by the Wallkill River, to the south by Echo Lake Road, to the east by residential lots along Cheechunk Road, and to the north by agricultural fields. No standing structures older than 50 years are located within or adjacent to the APE.

Current plans for the Amy's Kitchen facility are shown in Figure 3. Figure 3 also illustrates plans for the SoS conference center and shows how these two parcels will be connected. The principal construction feature for Amy's Kitchen is a 369,000-square foot production facility to manufacture and distribute natural and organic frozen food products. Project plans within the Ver Hage property also include 642 parking places for employees, 49 spaces for visitors, 18 tractor trailer parking spaces, a bridge over the Wallkill River connecting the parcel to the SoS conference center (Echo Lake property), and a stormwater retention area. In addition to construction, ground disturbing activities will include utility trenching, landscaping and grading of access roads. Access to the facility will be from Hartley Road and from the proposed bridge across the Wallkill River. As noted, wells will be drilled and installed within the Lipoff property; however, no plans were available for the Lipoff parcel at the time of the current study. All construction and earthmoving activities on the Ver Hage and Lipoff properties will be within an APE encompassing 83.5 acres (33.8 ha).

Part of the proposed facility and related infrastructure will be constructed on lands within the Ver Hage area that have been mined for sand and gravel. Aerial photography in 1994 shows that the mining area encompassed approximately 30 acres (12 ha) extending along the entire western portion of the Ver Hage property. The mining area measures approximately 330 meters (1080 ft) wide in the northern part of the project area and 110 meters (370 ft) wide in the southern portion. The portion of the APE that has been actively mined is considered excessively disturbed.

3. DESCRIPTION OF PROJECT AREA

The project area is located in southeastern New York, in the town of Goshen. It is situated in the lower Hudson River Valley within the Hudson Mohawk Lowlands physiographic area (Isachsen et al. 2000). The Hudson Mohawk Lowlands span almost the entire north-south length of eastern New York. In southern New York, these lowlands are bounded by the Catskill Mountains to the west and the Taconic Mountains to the east. The combined watersheds of the Wallkill River and Rondout Creek provide drainage for the region. Surficial geology of the project is dominated by glacial landforms and the unconsolidated sediments (glacial till) that were deposited during the late Wisconsinan glaciation which occurred 21,000 to 13,600 years ago. Bedrock geology is complex, comprised of the Trenton Group of shales that underlie the entire central part of Orange County.

The Amy's Kitchen project area is located on a glaciated Pleistocene hillslope adjacent to the right bank of the Wallkill River, the major drainage system in the central part of Orange County. In the project vicinity, the Wallkill River is a slow moving stream approximately ten meters wide. The headwaters of the Wallkill River form in the Pochuck Mountains on the New York/New Jersey border. The Wallkill River flows for approximately 88 miles in a northeasterly direction before being impounded into a small body of water near Rosendale called Sturgeon Pond. Sturgeon Pond flows into the Rondout Creek, which empties into the Hudson River at Kingston, New York. The Cheechunk Creek flows though the northern part of the Ver Hage project area, through the Lipoff project area, and empties into the Wallkill River about 200 meters north of Echo Lake Road along the western limits of the Lipoff Parcel.

The Lipoff project area is primarily a low lying, wooded area marked with two knoll remnants, the Cheechunk Creek and a small pond (Appendix A: Photographs 1 and 2). Much of the Lipoff parcel's knoll formations, which are comprised of glacial outwash gravels, have been mined. Pits, steep cuts into hillslopes and access roads can be found in the northern portion of the property. A high voltage electric corridor traverses the parcel's southern limits, just north of Echo Lake Road. Cheechunk Creek merges with the Wallkill River along the parcel's southwest corner and terrain along theses streams are low-lying. Vegetation in the parcel included woods and brush. Elevation within the Lipoff project area ranges from 360 feet to about 405 feet amsl.

Topography within the Ver Hage parcel is variable; most areas are gently sloping and nearly level (Appendix A: Photograph 3), with a few undulating and hilly areas. The western one-half of the parcel has been mined for topsoil and this area is presently marked by a large depression (Appendix A: Photograph 4). The southern and western edges of the parcel contain a gravel lane built on top of a 1- to 1.5-meter high earthen berm that provided access to the mine. The eastern portion of the Ver Hage parcel has been farmed. Elevation within the Ver Hage project area ranges from 360 feet to about 427 feet amsl. Prior to mining, the Ver Hage area contained a Pleistocene glacial ridge interfluve that separated the terrace adjacent to the Wallkill River from the floodplain and terraces surrounding Cheechunk Creek. The Cheechunk Creek is located in the northeastern corner of the parcel and is surrounded by low-lying wetland terrain. At the time of fieldwork, vegetation in the Ver Hage property consisted of an open field with tall grasses, woods along the creek channel, and grasses in the mined area.

Thirteen soils are mapped in the Ver Hage and Lipoff project areas (Figure 4; Olsson 1981). Soils within the project area were formed in glacial till, glacial lake deposits, glacial outwash deposits and recent alluvium. The soils in the APE range from somewhat poorly to excessively drained, but most are well to somewhat excessively drained. The soils consist primarily of silt loam, gravelly silt loam, sandy loam, and gravelly sandy loam. The soil types in the APE are found on landforms associated with ridges, hills, terraces, valleys and floodplains. Table 2 lists the soils mapped in the APE.

Table 2
Summary Soil Information

Soil Name	Symbol	Slope	Drainage Class	Parent Material	Landform	Property
Allard silt loam	AdA	0-3%	Well drained	Glacial outwash	Terraces and benches along valley floors	Ver Hage
Chenango gravelly silt loam	CnB	3-8%	Well drained to somewhat excessively drained	Glacial outwash	Undulating terraces along valley floors and plains	Ver Hage
Erie gravelly silt loam	ErA	0-3%	Somewhat poorly drained	Glacial till	Broad hilltops and footslopes in uplands	Lipoff
Erie gravelly silt loam	ErB	3-8%	Somewhat poorly drained	Glacial till	Footslopes, lower hillsides, and along upland drainageways	Lipoff Ver Hage
Hoosic gravelly sandy loam	HoC	8-15%	Somewhat excessively drained	Glacial outwash	Low rounded hills, ridges, and along the fronts of terraces in valleys and on lowland plains	Ver Hage
Hoosic gravelly sandy loam	HoD	15-25%	Somewhat excessively drained	Glacial outwash	Sides of terraces and low rounded hills and ridges in valleys	Ver Hage
Mardin gravelly silt loam	MdC	8-15%	Moderately well drained	Glacial till	Valley sides, hillsides, and ridges in uplands	Ver Hage
Middlebury silt loam	My	0-3%	Somewhat poorly drained	Recent silty alluvium	Floodplains	Ver Hage
Pits, gravel	Pg	Varies	N/A	Gravelly and sandy glacial outwash	Varies	Lipoff
Riverhead sandy loam	RhB	3-8%	Well drained	Glacial outwash	Valley terraces and undulating plains	Lipoff
Riverhead sandy loam	RhC	8-15%	Well drained	Glacial outwash	Terrace fronts, low rolling hills, and ridges in valleys and on plains	Ver Hage
Suncook sandy loam	Su	0-3%	Excessively drained	Sandy alluvium	Floodplains adjacent to streams that periodically overflow	Lipoff Ver Hage
Unadilla silt loam	UnB	0-8%	Well drained	Glacial lacustrine	Terraces and undulating benches	Ver Hage

Source: Olsson 1981

4. PHASE IA INVESTIGATIONS

A. RESEARCH OBJECTIVES AND PHASE IA METHODS

The goal of the Phase IA study is to assess the potential for the presence of significant archaeological resources within the project area. The study is designed to gather data regarding archaeological potential through archival research. All pertinent archaeological and historical literature and state records applicable to the project area are reviewed during the Phase IA investigation.

Background research was conducted for the purpose of compiling baseline information related to the prehistory, history, geomorphology, environment, and land use history of the project area. These sources provided information regarding NRHP eligible sites in the area and data with which to evaluate the project's archaeological potential.

In 2014, Phase IA background research consisted of consulting official site records at the OPRHP, the New York State Museum (NYSM) site files at the OPRHP, and documents provided by the client's engineer and attorney. In 2015, research also included a site file search using the Cultural Resources Information System (CRIS) maintained at the OPRHP. This search determined if archaeological sites or NRHP properties were recorded within or near the project area. It also identified areas of previous archaeological investigations within one mile of the project areas. Historic maps were examined to identify land use history and potential for historic resources within the project area.

B. RESULTS OF PHASE IA INVESTIGATIONS

A number of Phase IA/IB archaeological surveys and Phase II investigations have been conducted within, near and adjacent to the project area (Table 3). Background research conducted at the OPRHP determined that there are incomplete records for many of these surveys and for a number of the sites identified during the surveys. Some of the reports, map data, and other corresponding documentation for surveys near, but outside of the project area, were available as part of the official OPRHP files. However, documentation for other surveys conducted within one mile of the project area is missing in the files. Despite the missing archaeological survey information at the OPRHP, it was possible to reconstruct some information using archaeological site forms and technical report bibliographies from reports obtained and provided to Landmark by a client representative.

Table 3
Summary of Previous Archaeological Investigations Within, Adjacent to or Within One Mile of the APE

Archaeological Survey Title	**Year**	**Researchers**	**Location in Relation to Project Area**	**Sites Present**
A Phase I Archaeological Survey of a 21.9-Acre Sand and Gravel Mine Site, Al Turi Landfill, Town of Goshen, Orange County, New York. Hunter Research Associates	1987	L. Rakos-Hunter Research Associates	Within mined area	Yes, OPRHP records not available
Report on Investigation of the Echo Lake Project Area, Town of Goshen, Orange County, New York, EnviroPlan Associates, Poughkeepsie, New York	1989	Eugene J. Boesh	Adjacent, west side of Wallkill River (Echo Lake Parcel)	No
Stage I-B Cultural Resources Survey, Proposed Water Supply Area, Echo Lake Development Site, Town of Goshen, Orange County, New York. Atlantic Testing Laboratories, Limited, Utica, New York	1990	S.J. Oberon	Well field site north of project area	?
Phase I-B Archaeological Survey and Testing of the Proposed Orange County Jail Project, Echo Lake, Orange County, New York, Brockington and Associates, Atlanta, Georgia	1991	S. Scott Butler	Adjacent, west side of Wallkill River (Echo Lake Parcel)	Yes/3, OPRHP records not available
Stage I-B and Stage II Cultural Resources Surveys Site Identification and Site Evaluation Phases Proposed Echo Lake	1994	S. J. Oberon	Adjacent, west side of Wallkill River (Echo	Yes/3, OPRHP

Archaeological Survey Title	Year	Researchers	Location in Relation to Project Area	Sites Present
Mine Site, Town of Goshen, Orange County, New York and Stage I Site Identification Survey Proposed Water Line Construction Route, Towns of Wawayanda and Wallkill, Orange County, New York			Lake Parcel)	records not available
Phase IB and Limited Phase II Cultural Resources Survey Site Identification and Site Evaluation Phases (sic), Proposed Echo Lake Development, Town of Wawayanda, Orange County, New York.	2000	S.J. Oberon	West of project area	Yes, OPRHP records not available
Phase 1 Archaeological Survey, The Mid-Hudson Psychiatric Center, Goshen, Orange County, New York	2000	Dawn Brown et al. -Historical Perspectives	0.5 miles west #260	One prehistoric site
Phase I Cultural Resources Survey, Site Assessment and Site Identification Phases, Proposed Goshen Meadows Development, Town of Goshen, Orange County, New York. Prepared for Owens Road Associates, LLC, Pine Ridge, NJ.	2007	S.J. Oberon-Columbia Heritage, Inc.	0.5 miles north	One prehistoric site
Phase 1A And 1B Archaeological Survey, Hartley Substation, Section 12, Block 1, Lot 1.7, Town Of Goshen, Orange County, New York	2010	Amy Reas-Richard Grubb & Associates, Inc.	Adjacent, east side (across Hartley Road)	One historic site
Phase IA/IB Archaeological Survey, Orange and Rockland Utilities, Inc. Proposed 13,500 Foot, 12 Inch Gas Main Project, Wawayanda And Middletown, New York	2010	G.R. Dubell and M.J. Hubbard-Public Archaeology Lab	0.8 miles west	One isolated prehistoric chert flake
Supplementary Phase IB Cultural Resources Survey, Archaeological Inspection Component, Proposed Goshen Meadows Development, Town of Goshen, Orange County, New York. Prepared for Owens Road Associates, LLC, Pine Ridge, NJ.	2012	S.J. Oberon - Columbia Heritage, Inc.	0.5 miles north	One prehistoric site
Phase IA Literature Review and Archaeological Sensitivity Assessment & Phase IB Archaeological Field Investigation, SBA New Hampton 2 Cell Tower Project NYS Highway 17M/6, Town of Goshen, Orange County, New York	2014	Hudson Mohawk Archaeological Consultants	0.5 miles southwest	None
Phase I and II Archaeological Investigations of the Proposed Amy's Kitchen Project, Town of Goshen, Orange County, New York	2014	D.J. Marcucci et al. -Landmark Archaeology Inc.	Adjacent, west side of Wallkill River (Echo Lake Parcel)	Three prehistoric sites
Phase I Cultural Resource Survey Orange County Airport Wetland Mitigation Site, Town of Goshen, Orange County, New York	2015	T. Fortugno and L Hayden-Louis Berger	0.5 miles east	None

In 1987, a 21.9-acre parcel was investigated by Hunter Research Associates for a sand and gravel mine (Rakos 1987) which identified a site within the Ver Hage project area. Since the survey report for that project is not available at the OPRHP, we do not know the project area boundaries for that study. Several other archaeological studies have been conducted adjacent to the project area. A 2010 archaeological survey located on the opposite side of Hartley Road identified a single historic archaeological site consisting of stone farm rows (Raes 2010). Several archaeological surveys have been conducted on the Echo Lake property located just west of the Ver Hage parcel on the opposite side of the Wallkill River (Butler 1991, Marcucci et al. 2015, Oberon 1994). Archaeological investigations in 1991 and 1994 identified several prehistoric sites on the Echo Lake parcel some of which were subsequently destroyed by mining activities. In 2014, Landmark Archaeology, Inc. completed Phase I and II investigations for the original proposed Amy's Kitchen facility (now the SoS conference center on the Echo Lake property) directly across the Wallkill River from the current APE and identified three prehistoric sites recommended as NRHP eligible under Criterion d (Marcucci et al. 2015).

Official CRIS site records show that two previously recorded archaeological sites are contained within the Ver Hage property and two other sites extend into the property boundaries. Of the former, records show one site (07106.000076) located in the mined area and one site (07106.000023) located in the southeastern

corner of the property. The other two sites include large areas, one (NYSM Site 6171) of which covers most of the property except for the northeast corner. However, a portion of a smaller site (NYSM Site 6200) extends into this corner. It is important to note that these latter two sites are represented on maps by large multi-acre areas in contrast to Sites 07106.000023 and 07106.000076, which are drawn as small dots. While the presence of NYSM Sites 6171 and 6200 indicates high potential for archaeological sites in the area, their boundaries are not definitive. All four sites are presumed to be prehistoric archaeological sites, but a prehistoric association is identified only for Site 07106.000076 on OPRHP archaeological site forms. Site forms for the remaining three sites provide no information regarding what artifacts were found or the sites' temporal/cultural association. Only NYSM Site 6171 is shown as extending into the southern section of the Lipoff property.

Records at the OPRHP show that 16 other archaeological sites have been recorded within one mile of the project area (Table 4). Prehistoric occupations identified within one mile of the project areas have been dated to the Paleoindian, Archaic and Transitional periods. Historic sites have been identified dating to the eighteenth and nineteenth centuries.

Table 4
Previously Recorded Archaeological Sites Within One Mile of the APE

OPRHP #	NYSM#	Reported by	Site identifier/Description	Time period
07106.000010		Orange Co. NYSAA	ORGO 14F	Archaic, Transitional, and 18th century
07106.000022		Orange Co. NYSAA	ORGO 12F	Prehistoric
07106.000023		**Orange County NYSAA**	**ORGO 13F**	**No info**
07106.000076		**Hunter Research Associates**	**Al Turi Site A**	**Prehistoric**
07106.000077		Hunter Research Associates	Al Turi Site B	Late Archaic
07106.000112		Hartgen Archaeological Associates	Orange County Jail Prehistoric Site	Prehistoric
07106.000138		Richard Grubb and Associates	Hendler Site	Prehistoric
07106.000161	6198	S.J. Oberon	Hutt Farm Site	Late Archaic and Paleoindian
07119.000012		Orange Co. NYSAA	ORWW-05F (Echo Lake)	Archaic to Transitional
07119.000013		Orange Co. NYSAA	ORWW-06F	No info
07119.000032		Orange Co. NYSAA	ORWW-25F	Prehistoric
07119.000155		BTK Associates Inc.	Golf Links Road Historic Cemetery	Historic 1850-1870
07119.000164		Landmark Archaeology Inc.	Amy's Kitchen 1 Precontact Site	Transitional
07119.000165		Landmark Archaeology Inc.	Amy's Kitchen 2 Precontact Site	Late Archaic
07119.000166		Landmark Archaeology Inc.	Amy's Kitchen 3 Precontact Site	Late Archaic
07119.000193		S.J. Oberon	Huberth Site	Archaic
No info		S.J. Oberon	Owens Road Site (next to Hutt Farm Site)	Prehistoric
	6171	**No info**	**Numerous sites above 400' elevation**	**No info**
	6199	Orange Co. NYSAA	Strong	No info
	6200	**Orange Co. NYSAA**	**Halcott**	**No info**

BOLD: Within and/or adjacent to project area

Historic maps reviewed for the Phase IA study included the years 1875 (Beers 1875; Figure 5) and 1908 (USGS 1908; Figure 6). Echo Lake Road, Hartley Road, Cheechunk Road and the Erie Lackawanna Railroad (presently the Orange Heritage Trail) are shown on the maps in routes reflecting their modern day alignments. The 1875 map shows a structure within the Lipoff property labeled "J.L. Stage," and a structure appears in the same location in 1908. No structures are depicted within the Ver Hage property on the 1875 or 1908 map. The 1875 and 1908 maps show three structures across roads from the Ver Hage project areas. Two structures are on the east side of Hartley Road and one structure is north of the intersection of Echo Lake Road and Cheechunk Road. On the 1875 map, one of the structures along Hartley Road is unlabeled and the other is labeled "E.D. Redfield." The structure at the corner of Echo Lake and Cheechunk roads is also unlabeled on the 1875 map. Both maps show the railroad (presently the Orange Heritage Trail) forming the northern boundary of the Ver Hage area and running along the south side of Echo Lake Road in the project vicinity. The 1875 map also shows a pond within the northeast corner of the Ver Hage project area.

C. ARCHAEOLOGICAL POTENTIAL

Based on the physiographic setting of the project area and the results of background research, archaeological potential was considered high for prehistoric and historic archaeological resources to be present within the project area. Topographic features such as terraces and hilltops that are in close proximity to the Wallkill River would have been attractive settings for prehistoric groups. Background research indicates that prehistoric sites have been recorded within the project area and numerous prehistoric sites are located within a one-mile radius. Historic maps show one structure within the Lipoff parcel and three other structures across the road from the Ver Hage property. The likelihood for the presence of deeply buried archaeological deposits was considered low in the Ver Hage project area and higher in the Lipoff area. Soils mapped in the Ver Hage parcel are a combination of glacially derived and alluvial soils; however, most alluvial soils within the Ver Hage project area have been mined or are within the low-lying, wet area associated with Cheechunk Creek, a small drainage that lacks the stream velocity and volume necessary to create deep alluvial deposits.

Archaeological potential in both areas has been greatly compromised by ground disturbing activities related to mining. As noted in the Ver Hage parcel, the western part of the property was mined. This entire previously mined area is represented by a large depression and was found to contain no intact landforms. There is no potential for archaeological sites to exist in this area and the previously recorded Site 07106.000076 that is located in this area would have been destroyed by mining activities.

5. PHASE IB and II METHODS

A. RESEARCH OBJECTIVES

The goal of the current study was twofold. First, the purpose of the Phase I fieldwork was to document the presence/absence archaeological resources within the project area. Second, the Phase II investigation was designed to determine if sites in the APE are eligible for listing in the NRHP. Site evaluation is based on NRHP criteria of significance (36CFR60.6, Federal Register 1976). The criteria are:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and

a. that are associated with events that have made a significant contribution to the broad patterns of our history; or

b. that are associated with the lives of persons significant in our past; or

c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction, or

d. that has yielded, or may be likely to yield, information important in prehistory or history.

Typically, Criterion d is the most applicable criterion for evaluation of archaeological resources.

B. PHASE I FIELD METHODS

The Phase I field investigation was conducted in June and July of 2015. Phase I fieldwork included a pedestrian survey and the excavation of shovel tests. The pedestrian survey was conducted across the APE to examine the area for archaeological evidence and assess disturbances. When field conditions allowed, pedestrian survey was performed by crew walking in parallel transects five meters apart. Generally, shovel tests were spaced at a 15-meter interval along transects spaced 15 meters apart. Selectively placed shovel tests also were excavated based on landform considerations. Shovel tests were not excavated in areas of excessive slope (>12-15%) and standing water or in areas that have been previously mined or otherwise highly disturbed (e.g., two track roads). In total, 247 shovel tests were excavated in the APE during the Phase I study: 42 in the Lipoff parcel and 205 in the Ver Hage property (Figures 7 and 8). The diameter of shovel tests ranged from 40 to 50 centimeters. The Ap horizon, where present, was removed and screened in one analytic unit. Otherwise, soils were removed in 20-centimeter levels within natural soil horizons and tests extended a minimum of 20 centimeters in subsurface strata. When needed, a 5-inch stainless steel bucket auger was used to examine the lower B and C soils.

C. PHASE II FIELD METHODS

Phase II fieldwork at Site 07106.000023 in the Ver Hage property was conducted in July and August, 2015. Fieldwork consisted of the excavation of 127 shovel tests and 18 1x1-meter test units. Shovel tests were spaced ten meters apart and positioned along transects located parallel to and in between the Phase I transects to create a 7.5-meter spacing of transects within the site. Unit placement was based on shovel test results and landform considerations. Units were placed in areas with the greatest potential to yield significant information about the site. Units were hand excavated by shovel skimming and trowel excavation. Subplowzone soils were removed in ten-centimeter arbitrary levels within natural soil

horizons. Unit excavations extended at least ten centimeters into culturally sterile subsoil in glacial till soils and 20 centimeters into culturally sterile soil in silt or sandy loam soils. A bucket auger was utilized to examine the sediments below the base of selected units. A soil profile was compiled for at least one wall of each unit and color photographs were taken of unit profiles. Cultural features identified in the units were mapped in planview, photographed, and excavated by cross sectioning.

All Phase I and II excavated soils were screened through ¼-inch hardware cloth. Soil characteristics including texture and color (Munsell) and any disturbances or other noteworthy aspects of the tests were recorded on standardized Landmark Archaeology, Inc. field forms. Soil descriptions for each shovel test are provided in Appendix B. All Phase I and II excavations were recorded using a submeter, high precision GPS receiver. The georeferenced data were differentially corrected for an estimated horizontal error of less than one meter. All excavations were backfilled after completion.

D. ANALYSIS METHODS

Artifacts were transported to laboratory facilities at Landmark Archaeology, Inc. Artifacts were washed and sorted into appropriate categories and subcategories for analysis. The prehistoric chipped stone debitage was sorted into five categories reflecting stages in the lithic reduction sequence (Callahan 1979). The five categories of chert debitage include: primary, secondary, tertiary, retouch, and shatter. A sixth category, broken, was used for broken flakes which could not be assigned to a lithic reduction category. Fire-cracked rock (fcr) were tabulated and weighed. Sources used for projectile point identification and cultural affiliation and age included Justice (1987) and Ritchie (1971). The artifact analysis data including provenience and category frequencies are presented in Appendix C.

All field notes, photographs, and records associated with the project are on file at Landmark Archaeology, Inc., 6242 Hawes Road, Altamont, New York. Artifacts are temporarily curated at Landmark Archaeology, Inc. facilities. For the archaeological site identified in the Ver Hage parcel, a New York State Archaeological Site Inventory Form was completed and submitted to the OPRHP (Appendix D).

6. RESULTS OF THE PHASE IB INVESTIGATIONS AT THE LIPOFF PROPERTY

As previously noted, 42 shovel tests were excavated in the Lipoff parcel during the Phase I field investigation. No artifacts were recovered from the tests and no archaeological sites were identified during the Phase IB fieldwork. Much of the project area north of the Cheechunk Creek lacked intact terrain as it was previously disturbed by mining activities (Figure 7). Shovel testing in this area was selective and included nine tests. A powerline utility corridor traversed the southern parcel, encompassing approximately 1.2 acres and no testing was conducted in the corridor. The map documented structure on the 1875 and 1908 map is depicted in the area of the powerline corridor (see Figures 5 and 6).

The mined area in the northern portion of the parcel encompasses approximately 4.8 acres. Five shovel tests (STPs S20-S24) in this area encountered fill. Shovel tests (Tr. 50, STP 1-2, S18, S19) excavated along the intact terrain on the edges of the disturbances demonstrated an A-B sequence. A-horizon soils consisted of dark brown (10YR 3/3) gravelly silt loam and B soils were yellowish brown (10YR 5/4) gravelly sandy silt loam. From the mined area, the terrain slopes steeply to the floodplain of the Cheechunk Creek.

Modern alluvium with an A-C soil sequence was encountered in several shovel tests southwest of the creek channel. These tests were extended by use of a bucket auger to maximum depths ranging from 117 to 130 centimeters below the surface. Shovel Tests S25 through S29 all exhibited deep sands with a thin (<10 cm) topsoil lens of dark brown (10YR 3/3) over loose, yellowish brown (10YR 5/4) sands. Other tests positioned along Transects 53 through 56 southwest of the creek documented soils with an A-B-C profile. These shovel tests were extended with a bucket auger to depths ranging from 117 to 141 cm. The soils were silty loam with channery soils comprising the B and C horizons. The A-horizon soils were very dark grayish brown (10YR 3/2), the B-horizon soils were yellowish brown (10YR 5/4), and the C-horizon soils were weak red (2.5YR 4/2) in color.

Shovel tests excavated on the bottomland northeast of the creek include those along Transects 51 and 52. An A-B-C soil sequence was observed in these tests. The A-horizon soils were very dark grayish brown (10YR 3/2) silt loam that extended to depths between 34 and 53 centimeters below the surface. B-horizon soils were dark yellowish brown (10YR 4/6) silt loam, and C-horizon soils when encountered were gray (10YR 5/1) silt loam.

The 2000 USGS topographic map shows a structure in the northern portion of the Lipoff project area (see Figure 2), but this structure is not present on either the 1875 or 1908 map. No evidence of this structure was found during the current study. This structure likely was a temporary outbuilding related to the mining activity in the project area.

7. RESULTS OF THE PHASE IB/II INVESTIGATIONS AT THE VER HAGE PROPERTY

A. PHASE I TESTING ACROSS THE APE

A total of 205 shovel tests were excavated in the APE during the Phase I field investigation (see Figure 8). This effort resulted in identifying the location of Site 07106.000023, a previously recorded site, in the southeastern portion of the APE. This site is detailed in the following section.

No shovel testing was conducted in the previously mined area or access roads constructed on fill. Shovel tests excavated on the intact terrain on the western rim of the mine and overlooking the Wallkill River documented silt loam soils with an A-B soil sequence. The A horizon consisted of very dark grayish brown (10YR 3/2) silt loam which extended 26 centimeters in depth. B-horizon soils were dark yellowish brown (10YR 4/6) in color.

In the eastern area of the APE, Phase I shovel testing in the APE documented undisturbed soils exhibiting an Ap-B or Ap-A-B soil sequence. Along the higher terrain on the eastern and western sides of this area, soils tended to be shallow, gravelly silt loam with an Ap-B sequence. Plowed soils were dark brown (10YR 3/3) in color and extended up to 36 centimeters in depth. The Ap horizon was underlain by a yellowish brown (10YR 5/4) B horizon. Shovel tests on the lower terrain encountered silt loam and sandy loam with far less gravel. In these tests, the A horizon consisted of dark brown to dark yellowish brown (10YR 3/3-4/4) silt loam over dark yellowish brown to yellowish brown (10YR 4/6-5/6) gravelly silt or sandy loam B-horizon soils. In numerous tests in this area of the APE, unplowed A-horizon soils several centimeters thick were present below the plowzone.

B. SITE 07106.000023

Site Type: Prehistoric
Component: Late Archaic
[redacted]
Approximate Size: 23,116.6 square meters (5.7 acres)
Landform: Terrace
Soil Type: Allard silt loam (AdA) and Hoosic gravelly sandy loam (HoC)
Elevation: 380 ft amsl
Vegetation: Grasses
Subsurface Tests: Phase I: 81 shovel tests
Phase II: 127 shovel tests, 18 1x1-meter units
Percentage of Site Excavated: 0.19%
Artifacts: 3 Lamoka points, 1 Normanskill point, 2 bifaces, 2 flake tools, 11 cores, 279 debitage, 7 cobble tools, 1 groundstone tool, 143 (17226.4 g) fcr
NRHP Eligibility: Eligible
Recommendation: Preservation and avoidance or Phase III data recovery

[redacted]

Redacted per NYAC. An unredacted version has been made available to the Planning Board.

1. Soils

Excavations at Site 07106.000023 encountered soils with Ap-B and Ap-A-B soil sequences. The site soil profiles reflected those observed in the general area and are identical to those described above. The unplowed A soils below the plowzone tended to be mottled dark yellowish brown (10YR 3/4 and 4/6) silt loam between three and eight centimeters thick. The plowzone typically extended 28 to 30 centimeters in depth.

In several excavations a fill lens up to 48 centimeters thick was encountered overlying a plowed Ap soil. Some of these excavations were located along Transect 110 in the southwestern site area and it is suspected that the fill is related to the road berm that borders the southwestern APE edge. However, STPs 1 and 4 on Transect 102 encountered a plowed, surface fill and 30 centimeters of fill was documented in Unit 3. The fill lens was not distinct in all shovel tests in this vicinity, and thus, was interpreted in the field to be a plowzone. The area of the surface fill appears to be limited to the southwestern area of the site and is not widespread across the site.

2. Shovel Test Excavations

In total, 208 shovel tests were excavated at the site during Phase I and II fieldwork. Of the 205 Phase I shovel tests, 81 fall within the site boundaries and 46 out of these 81 tests yielded artifacts. During the Phase II field effort, 127 shovel tests were excavated at the site. Thirty-six Phase II shovel tests contained artifacts. As mentioned in Chapter 5, most Phase II tests were spaced ten meters apart along transects positioned in between the Phase I transects. Eight radial shovel tests, spaced at one and three meters from the positive test, were excavated around isolated positive tests located along the site's perimeter. The distribution of positive tests is shown in Figure 10.

A total of 123 artifacts were recovered from Phase I shovel tests (Table 5). Eleven shovel tests yielded a total of 19 artifacts from subplowzone soils including 16 debitage and three (321.5 g) fcr. Phase II shovel tests yielded 95 artifacts, 68 were recovered from the plowzone and 14 flakes and 13 fcr (352.3 gm) were found in the B soils. Fourteen Phase II shovel tests yielded artifacts from subplowzone soils. In sum, shovel testing across the site yielded a total of 172 artifacts from plowed soils and 46 artifacts from subplowzone contexts. Maximum depth of recovery was between 60 and 70 centimeters below the surface where one flake was found; the remaining subplowzone assemblage is from the upper 20 centimeters of the B horizon.

Table 5
Site 07106.000023 Shovel Test Artifact Assemblage

Artifact Class	Phase I	Phase II	Total
Flake Tool	1	1	2
Core	1	3	4
Secondary Flake	9	3	12
Tertiary Flake	48	44	92
Retouch Flake	4	1	5
Broken Flake	21	5	26
Shatter	18	1	19
Cobble Tool	1	1	2
FCR	20	36	56
Total	123	95	218

3. Unit Excavations

Eighteen 1x1-meter units were excavated at the site (see Figure 10). The units were positioned according to shovel testing results and placed to examine different areas of the site. Prehistoric artifacts from the units total 229. For the most part, artifact frequency was low with only Unit 1 yielding more than 50 artifacts with a total of 52. Unit 5 had the second highest frequency of artifacts with a total of 41. The remaining units contained 29 or less artifacts with no artifacts found in two units (13 and 16). Six units (3, 8, 10, 12, 15, 18) had artifacts only in the plowzone. Five features were identified during unit excavation and they are detailed further in the following section.

As previously discussed, an intact A horizon remains below the plowzone. Artifacts were recovered from this lens as well as the upper B-horizon soils. Nine units (1, 2, 4, 5, 6, 7, 9, 11, 14) yielded artifacts from subplowzone soils.

a. Units 3, 8, 10, 12, 15, and 18

These six units contained artifacts only in plowed soils. Table 6 lists the artifact assemblage for these units. Unit 8 had the most artifacts with a total of 13 flakes. Unit 12 had the most diverse assemblage including a broken biface preform, a core of Onondaga chert, five pieces of debitage and one fcr. A Lamoka projectile point was found in the buried plowzone of Unit 3. This unit contained 31 centimeters of fill capping an Ap-B soil sequence (Figure 11). In total, six artifacts were found in the Ap of this unit; no artifacts were recovered from the fill lens. Also of note is the groundstone artifact from Unit 10. This artifact is a grooved axe and represents the only artifact found in the unit.

Table 6
Site 07106.000023 Artifact Assemblage from Units 3, 8, 10, 12, 15, and 18

Artifact Class	Unit						Total
	3	8	10	12	15	18	
Biface	1			1			2
Core				1			1
Secondary Flake		3					3
Tertiary Flake	2	10		4	1	1	18
Shatter	2			1			3
Groundstone			1 (265.1 g)				1 (265.1 g)
FCR	1 (154.6 g)			1 (136.2 g)		2 (352.5 g)	4 (643.3 g)
Total	6	13	1	8	1	3	32

b. Units with Features

Excavation of Units 1, 2, 5, 9 and 14 exposed a total of five features. Units 1, 2, and 5 are all located in the east-central portion of the site. This area of the site yielded the most artifacts and of the six units (1, 2, 4, 5, 11 and 18) in this area, five (1, 2, 4, 5, and 11) contained artifacts below the plowzone. Units 9 and 14 formed a 1x2-meter excavation in the northwestern corner of the site.

Unit 1

Fifty-two artifacts were found in Unit 1 (Table 7). This unit included a six-centimeter thick intact A horizon directly below the plowzone (Figure 12). Exactly one-half of the assemblage was recovered from subplowzone soils including nine debitage and nine (1477.2 gm) fcr from the unplowed A, two (440.0 gm)

fcr from Feature 1, and five debitage and one fcr (339.4 gm) from the upper B-horizon soils. Included in the unit's assemblage are two Lamoka project points, both from the plowzone.

Table 7
Site 07106.000023 Unit 1 Artifact Assemblage

Artifact Class	Context of Recovery				Total
	Ap	A	B	Feature 1	
Biface	2				2
Secondary Flake	1				1
Tertiary Flake	12	9	5		26
Shatter	1				1
FCR	10 (646.5 g)	9 (1477.2 g)	1 (339.4 g)	2 (440.0 g)	22 (2903.1 g)
Total	26	18	6	2	52

Feature 1 was first encountered at the base of the unplowed A soils and fully exposed in the upper B horizon. It includes three rocks lying edgewise concentrated in the northeastern area of the unit (Appendix A: Photograph 6). Two (440.0 gm) of the rocks are fire cracked and no modifications were apparent on the third rock. No soil discoloration was associated with the feature.

Unit 2

Twenty-nine artifacts (Table 8) were recovered from Unit 2 including 20 from the plowzone, two from Feature 2, and seven from the upper B-horizon soils. Artifacts found in the upper B include four flakes and three (4529.5 g) fcr. Unlike Unit 1, no unplowed A soils were encountered in Unit 2 and the B horizon was directly below the Ap (Figure 13). Unit 2 had the third highest density of artifacts among the unit excavations.

Table 8
Site 07106.000023 Artifact Assemblage from Units 2, 5, 9 and 14

Artifact Class	Unit				Feature 2	Feature 3	Total
	2	5	9	14			
Core		1					1
Secondary Flake	2	1					3
Tertiary Flake	9	7	1	1			18
Shatter	1	1		1			3
Cobble Tool		1 (810.9 g)			2 (4529.5 g)		3 (5340.4 g)
FCR	15 (1142.0 g)	9 (692.6 g)				21 (6650.4 g)	45 (8485.0 g)
Total	27	20	1	2	2	21	73

Similar to Feature 1, Feature 2 consists of a small concentration of rock exposed in the upper B horizon (Appendix A: Photograph 7). It includes four rocks, two are cobble tools and two are unmodified. The cobble tools include a hammerstone (525.5 g) and a grindingstone (4004.0 g). No soil staining or discoloration was evident in association with the feature.

Unit 5
Unit 5 yielded 41 artifacts and 21 of these are fcr from Feature 3. Of the 20 artifacts not from the feature, nine flakes and one (22.4 g) fcr were found within the upper 20 centimeters of the B horizon. The soil profile of Unit 5 was similar to that of Unit 2 (see Figure 13); the plowzone was directly atop the B horizon.

Feature 3 is an fcr/rock concentration that was exposed in the upper B soils in Unit 5 (Appendix A: Photograph 8). The concentration covered an area measuring 83x56 centimeters and was ten centimeters deep. No soil discoloration or staining was evident among the rocks. The feature includes 21 fcr (6650.4 gm) and 13 rocks exhibiting no evidence of modification.

Units 9 and 14
As noted, Units 9 and 14 formed a 1x2-meter excavation. Each unit yielded few artifacts with only one flake found in Unit 9 and one flake and one shatter recovered from Unit 14. Both flakes were recovered from the upper B soils and the shatter was found in the plowzone.

Feature 4 (Appendix A: Photograph 9) is a shallow pit marked by soil discoloration. It has a roughly circular shape with irregular edges in planview and measures 32 centimeters across. The feature matrix consisted of dark brown (10YR 3/3) silt loam with sparse charcoal flecking. In profile, the feature had sloping sides and a rounded bottom. It was encountered in the B horizon at 40 centimeters below the surface and extended seven centimeters in depth. No artifacts were found in association with the feature.

Feature 5 also is a shallow pit. It was first identified in the southern wall of Unit 9, and Unit 14 was positioned contiguous to Unit 9 in order to expose and examine the feature. In planview, the feature had an amorphous shape, but in profile it appears as a rounded bottom pit (Appendix A: Photograph 10). It was visible directly below the plowzone at a depth of 30 centimeters below the surface, which places it stratigraphically higher than Feature 4. It measures 50 centimeters across and extends 16 centimeters in depth. The feature matrix consisted of a mottled (10YR 3/4 and 10YR 4/6) silt loam with some charcoal flecking. No artifacts were recovered from the feature's matrix.

c. Units 4, 7, and 11
Of the remaining five units not yet discussed, Units 4, 7, and 11 exhibited an unplowed A soil below the Ap and above the B horizon. A representative profile is illustrated in Figure 14 which shows the profile of Unit 11. In Unit 4, 20 artifacts were found (Table 9). Nine artifacts in this unit were recovered from the unplowed A soils directly below the plowzone. The nine artifacts include four flakes, two cores, and three (236.2 g) fcr. Unit 4 is one of the four units at the site that yielded 20 or more artifacts. A total of eight artifacts were found in Unit 7 and seven of those were found in the unplowed A.

Table 9
Site 07106.000023 Artifact Assemblage from Units 4, 6, 7, 11, and 17

Artifact Class	Unit					Total
	4	6	7	11	17	
Biface		1		1		2
Core	3				1	4
Secondary Flake					1	1
Tertiary Flake	9	15		12	5	41
Broken Flake	1					1
Shatter			4	1		5
Cobble Tool				2 (1323.0 g)		2 (1323.0 g)

Artifact Class	Unit					Total
	4	6	7	11	17	
FCR	7 (504.4 g)	3 (722.1 g)	4 (170.4 g)		2 (115.8 g)	16 (1512.7 g)
Total	20	19	8	16	9	72

Sixteen artifacts were recovered from Unit 11 including a Normanskill projectile point from the plowzone. Five artifacts were found in each the unplowed A and upper B soils. The unplowed A soils produced five flakes. Artifacts from the B soils consist of three flakes, a hammerstone and a nuttingstone.

d. Units 6 and 17

Unit 6 exhibited 30 centimeters of fill over an Ap-B soil sequence, very similar to Unit 3 (see Figure 11). In total 19 artifacts were found in Unit 6, two artifacts in the fill, six flakes in the Ap, and 11 artifacts in the upper B horizon. The artifacts found in the B horizon include eight flakes and three (722.1 g) fcr. A broken biface blade and a flake were recovered from the fill lens.

Unit 17 is the only unit that encountered severe rodent disturbance which is rather surprising as large woodchuck holes were noted in several areas of the site. The rodent den was encountered at 39 centimeters below the surface along the unit's eastern wall. Nine artifacts were found in this unit, five flakes and a core from the plowzone and one flake and two (115.8 g) fcr fragments from soils below the Ap. Given the disturbance in this unit, the integrity of the subplowzone contexts cannot be ascertained.

4. Artifact Analysis

Phase I and II excavations yielded 449 artifacts (Table 10). Artifacts recovered from subplowzone contexts total 152 and account for approximately one-third (33.9%) of the assemblage. The assemblage includes four projectile points and two other biface fragments. The projectile points consist of three Lamoka points and one Normanskill point (Appendix A: Photograph 11). One Lamoka point is complete. It is manufactured from Normanskill chert and measures 31.3 millimeters long, 16.5 millimeters wide and 6.8 millimeters thick. A second Lamoka point also is manufactured from Normanskill chert. This specimen is broken at the tip. It is 26.1 millimeters in length, 16.5 millimeters in width, and 6.2 millimeters in thickness. Both of these points were found in the Ap of Unit 1. The last Lamoka point is a broken specimen made of Onondaga chert. It measures 23.6 millimeters long, 18.4 millimeters wide and 6.4 millimeters thick. It was found in the buried plowzone of Unit 3. The Normanskill point was recovered from the plowzone of Unit 11. This point is manufactured from Normanskill chert. It is broken and the tip is missing. It measures 23.4 millimeters in length, 16.1 millimeters in width, and is 4.9 millimeters in thickness. Lamoka and Normanskill point styles are diagnostic of the Late Archaic cultural period. The other biface fragments consist of a midsection of a point blade and a distal end of a preform.

Table 10
Site 07106.000023 Phase I and II Artifact Assemblage

Artifact Class	Context of Recovery								Total
	Fill	Surface	Ap	A	B	Feature 1	Feature 2	Feature 3	
Biface	1		5						6
Flake Tool			2						2
Core		1	8	2					11
Secondary Flake			17		3				20

Artifact Class	Context of Recovery								Total
	Fill	Surface	Ap	A	B	Feature 1	Feature 2	Feature 3	
Tertiary Flake	1	1	130	19	45				196
Retouch Flake			4		1				5
Broken Flake			20		7				27
Shatter			22	4	5				31
Cobble Tool			3 (2160.1 g)		2 (1323.0 g)		2 (4529.5 g)		7 (8012.6 g)
Groundstone			1 (265.1 g)						1 (265.1 g)
FCR			81 (6370.4 g)	15 (1841.7 g)	24 (1923.9 g)	2 (440.0 g)		21 (6650.4 g)	143 (17226.4 g)
Total	2	2	293	40	87	2	2	21	449

Flaking debris, the most frequent artifact class, accounts for 62.1 percent of the assemblage. Flakes total 279 and over 70 percent are tertiary flakes (n=196). The procurement of chert and manufacture of lithic tools do not seem to be primary activities at the site since no primary flakes were found at the site and secondary lakes (n=20) and retouch flakes (n=5) are poorly represented in the debitage assemblage.

Cobble tools are the most frequent tool type in the assemblage. They total seven and included three grindingstones (metates), two hammerstones, a nuttingstone, and a hammerstone/anvil. A single groundstone tool was found at the site. This tool is a grooved axe. It is an irregularly-shaped rock with a circumferential groove and has pecking damage on one end (Appendix A: Photograph 12).

5. Site Interpretation

Site 07106.000023 is interpreted to be a Late Archaic period occupation. There were three Lamoka points found at the site and this point style is associated with the Late Archaic Lamoka Phase (3500-2500 BC). The Normanskill point found at the site also is a Late Archaic point type and it is associated with the River Phase (2100-1800 BC) of the Late Archaic cultural period. The site may represent a series of camps or seasonal occupations that was used to procure and process resources. The assemblage includes several artifact classes and contains several tools types (projectile points, flake tools, and cobble and groundstone tools).

While site size is 23,116.6 square meters (5.7 ac), Phase I and II excavations indicate deposits preserved below the plowzone exist within a 5564.1-square meter (1.4-ac) area primarily in the central portion of the site. A second, smaller area (524.2 sq m/0.13 ac), located in the northwestern site limits, also contained subplowzone artifacts. Subplowzone artifacts in this smaller area of the site are sparse; eight of the 152 subplowzone artifacts were found here. In the northern and eastern areas of the site, artifacts are confined to the plowzone. Figure 15 shows the distribution of excavations with subplowzone deposits.

8. RECOMMENDATIONS

A. LIPOFF PROPERTY

No archaeological sites, artifacts or other evidence of cultural deposits were recovered during Phase I investigations of the Lipoff property. Based on these results, proposed project activities will have no impact on cultural resources and project clearance is recommended for this parcel.

B. VER HAGE PROPERTY

Site 07106.000023 is recommended as eligible to the NRHP under Criterion d. The site has yielded culturally diagnostic artifacts of the Late Archaic cultural period and an artifact assemblage including several tools types. Phase II investigations of the site documented the presence of intact cultural deposits in unplowed A- and upper B-horizon soils, and unit excavations exposed several features below the plowzone. The presence of these features and the recovery of fcr in Phase I and II excavations indicate additional features (i.e., hearths, processing pits/ovens) may be present at the site. Cultural deposits at the site have yielded and have potential to yield additional information on the Late Archaic cultural period. Specifically, the site provides an opportunity to examine and expand our knowledge regarding settlement, subsistence and community patterning of Late Archaic period occupations along the Wallkill River. Therefore, Site 07106.00023 meets Criterion d of the NRHP. Research topics which can be addressed by cultural deposits at the site include:

- Settlement System/Site Function
- Subsistence Patterns
- Community Pattern
- Cultural History
- Prehistoric Lithic Technology

Avoidance of the site is recommended. Site avoidance should include an avoidance and preservation plan that outlines short term protective strategies to protect the site during construction, as well as long term plans to ensure future preservation of the site. The avoidance and preservation plan must be submitted to OPRHP for review.

For areas of the site that avoidance is not feasible, a Phase III archaeological data recovery is recommended to mitigate adverse effects of the proposed development activities. Phase III investigations should follow a Data Recovery Plan (DRP) which is developed in consultation with the OPRHP. The DRP must outline field and analytical methods to address research issues relevant to the site's data potential.

Project clearance for areas outside of Site 07106.000023 boundaries is recommended. The western area of the Ver Hage parcel contains a previous mined area within no intact landforms. This section has no potential for archaeological resources due to the severity of disturbance. Shovel testing along the eastern edge of the property yielded no artifacts or evidence of cultural resources.

9. SUMMARY

This report presents the results of Phase I and II archaeological investigations conducted for the proposed *Amy's Kitchen* Project, on the Ver Hage and Lipoff properties, located in the Town of Goshen, Orange County, New York (Figure 1). The proposed project will entail the construction of a production facility and related infrastructure to accommodate the manufacture and distribution of *Amy's Kitchen* natural and organic frozen food products. The Phase I investigation considered an APE of 83.5 acres (33.8 ha) which includes the Ver Hage property measuring 71.7 acres (29.0 ha), and the Lipoff property, measuring 11.8 acres (4.8 ha). The archaeological investigations were conducted by Landmark Archaeology, Inc. of Altamont, New York who was retained as a consultant by Amy's Kitchen Inc. of Petaluma, California.

Based on the physiographic setting of the project area and the results of background research, archaeological potential was considered high for prehistoric and historic archaeological resources to be present within the project area. Topographic features such as terraces and hilltops that are in close proximity to the Wallkill River would have been attractive settings for prehistoric groups. Background research indicates that prehistoric sites have been recorded within the project area and numerous prehistoric sites are located within a one-mile radius. Historic maps show one structure within the Lipoff parcel and three structures across roads from the Ver Hage property.

Phase I excavations included 241 shovel tests and identified the location of Site 07106.000023, a prehistoric site on the Ver Hage property. No archaeological sites were identified in the Lipoff parcel. Phase II field efforts at Site 07106.000023 included 127 shovel tests and 18 1x1-meter units. Excavations at the site yielded culturally diagnostic artifacts of the Late Archaic cultural period. Phase II investigations indicate cultural deposits are intact in unplowed A- and upper B-horizon soils below the plowzone. The prehistoric cultural deposits at the site have yielded, and have potential to yield more, information on the Late Archaic cultural period and the prehistoric use and occupation of the area. Therefore, the site meets Criterion d of the NRHP.

It should be noted that no field technique is completely adequate to define all cultural resources in a particular location. Therefore, should additional historic or prehistoric resources be detected during the course of the project development, the OPRHP must be notified immediately so that the significance of the discovery can be determined.

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Figures

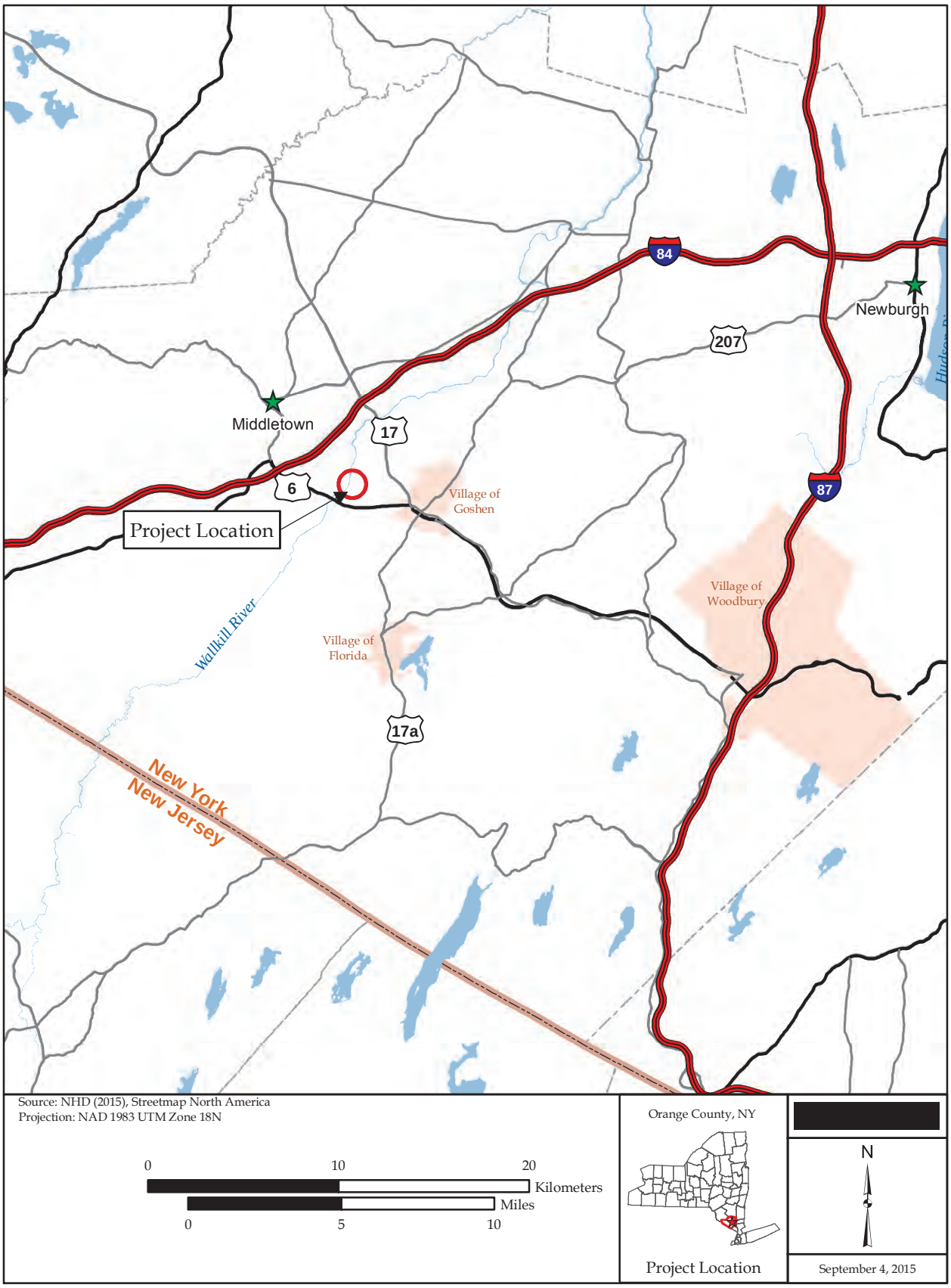


Figure 1: Project Location

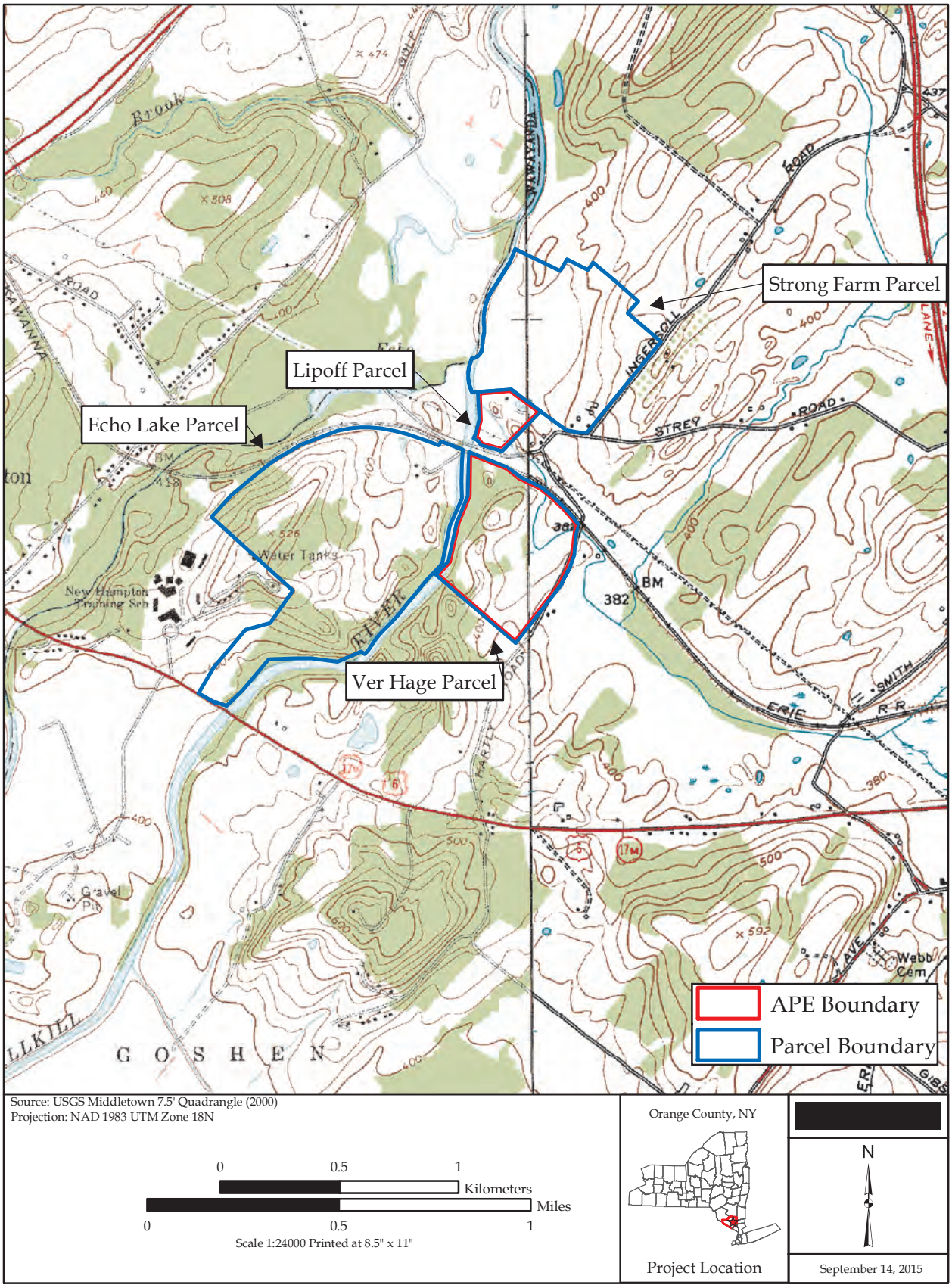


Figure 2: Project Location and Topographic Features

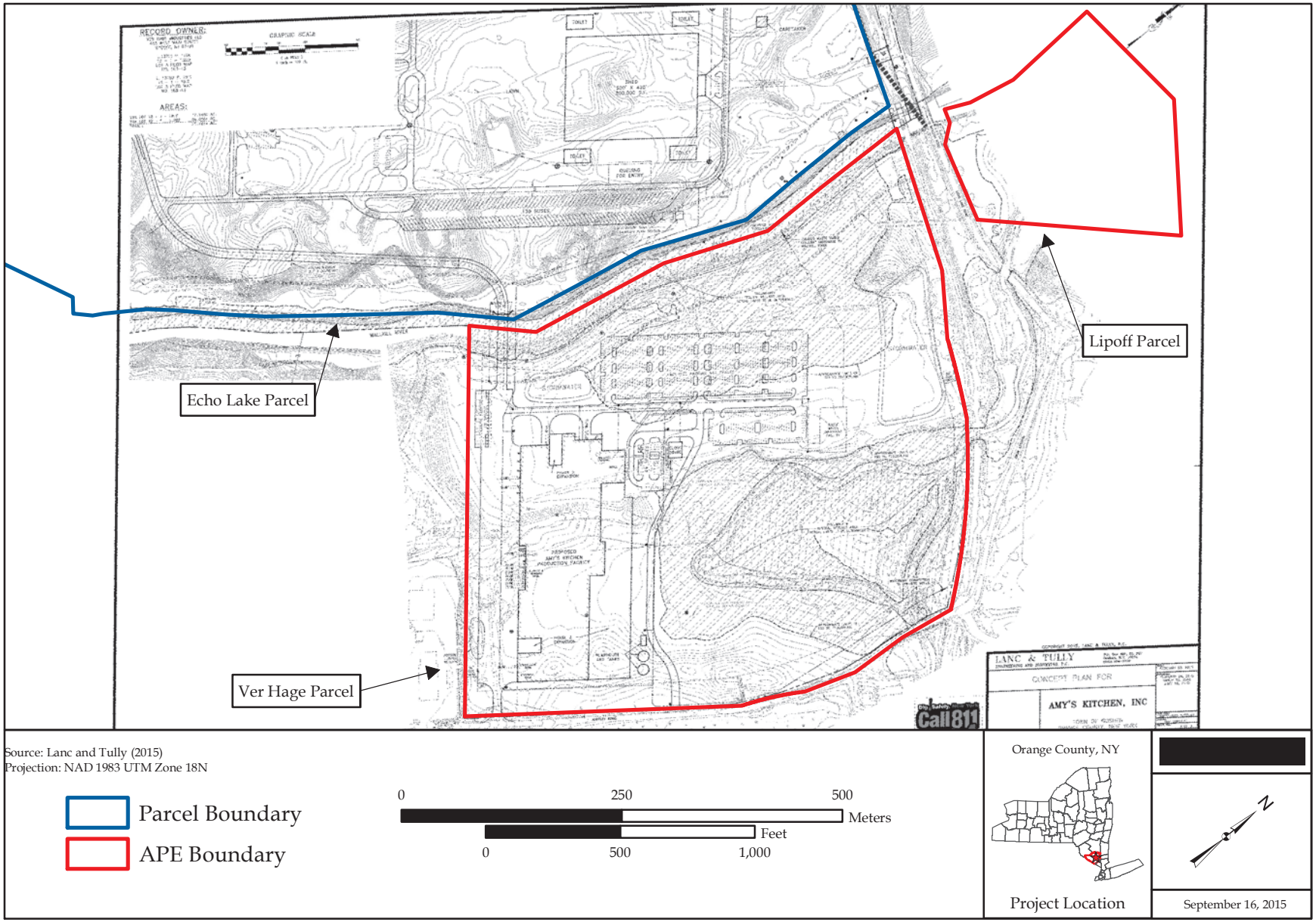


Figure 3: Project Plans

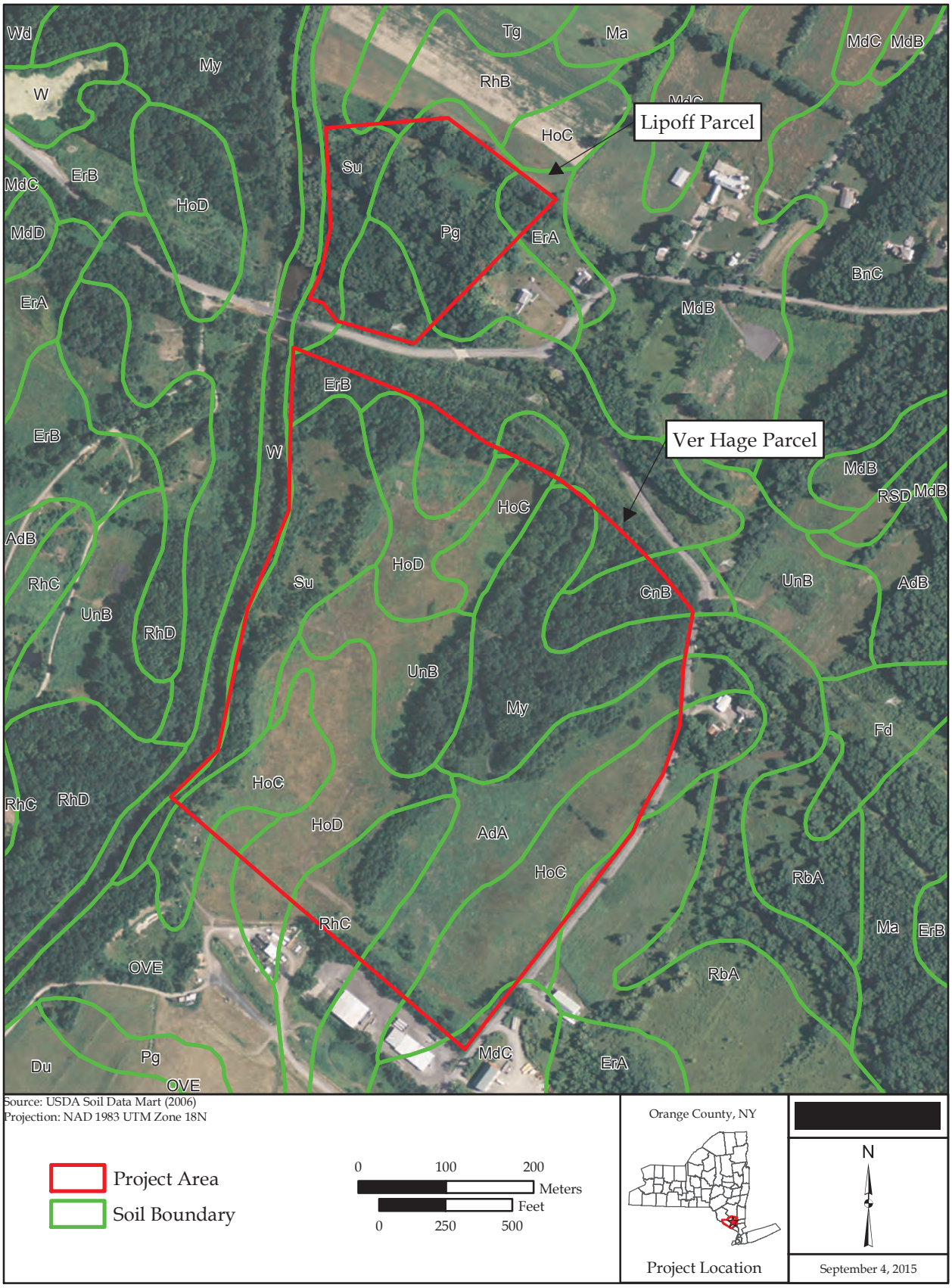


Figure 4: Mapped Soils

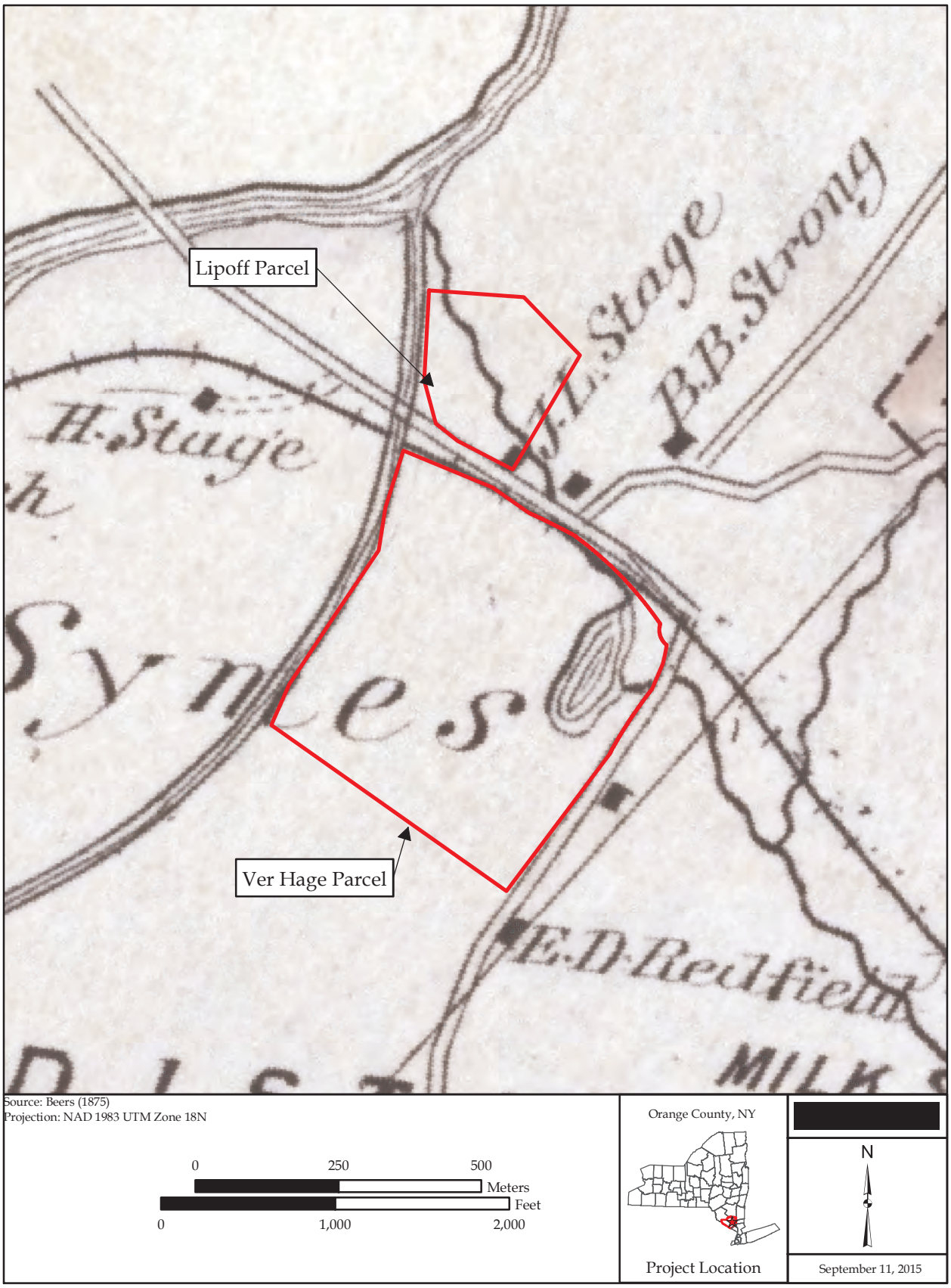


Figure 5: Project Area, 1875

Figure 6: Project Area, 1908

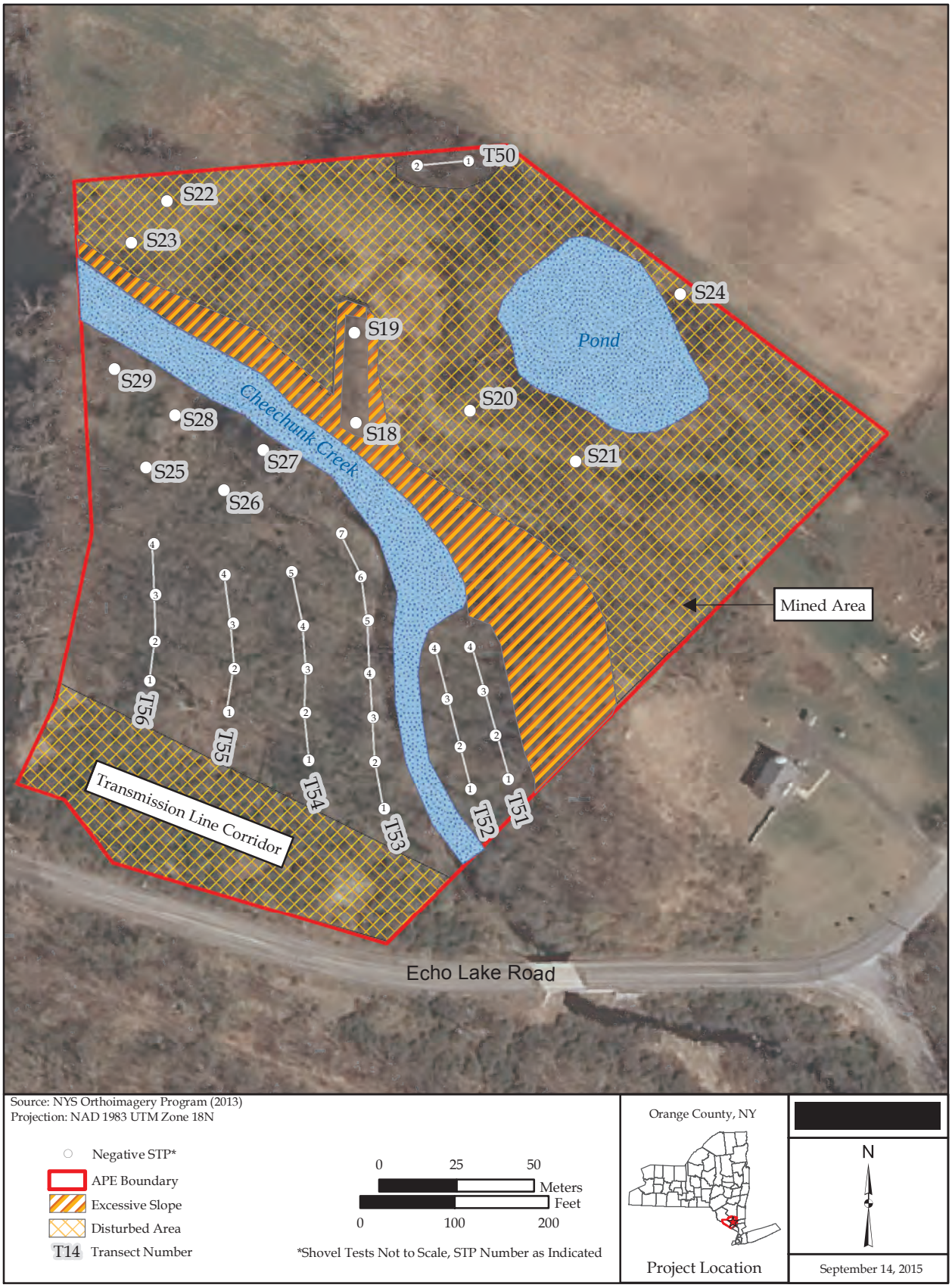
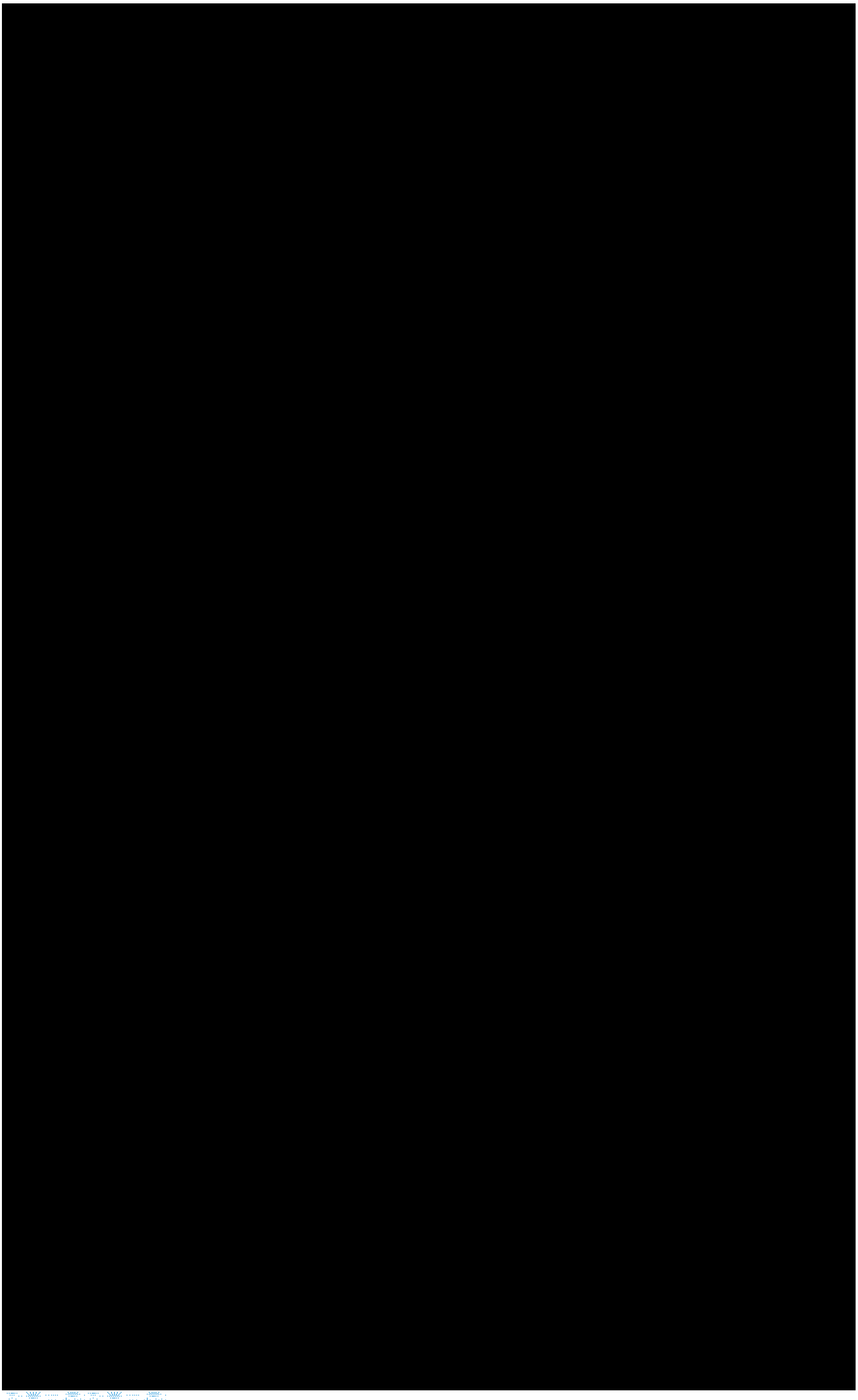


Figure 7: Phase I Shovel Tests Lipoff Property



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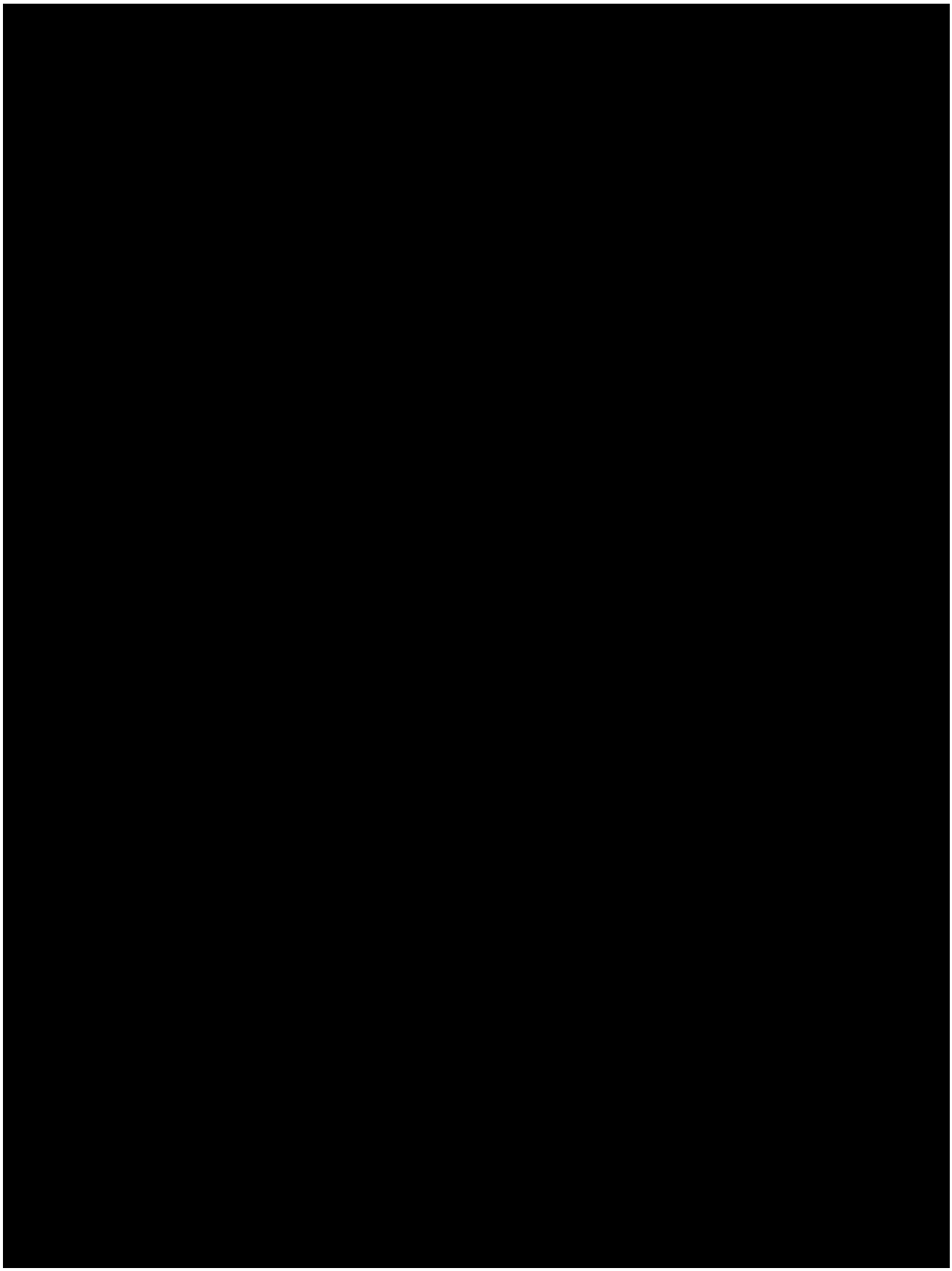

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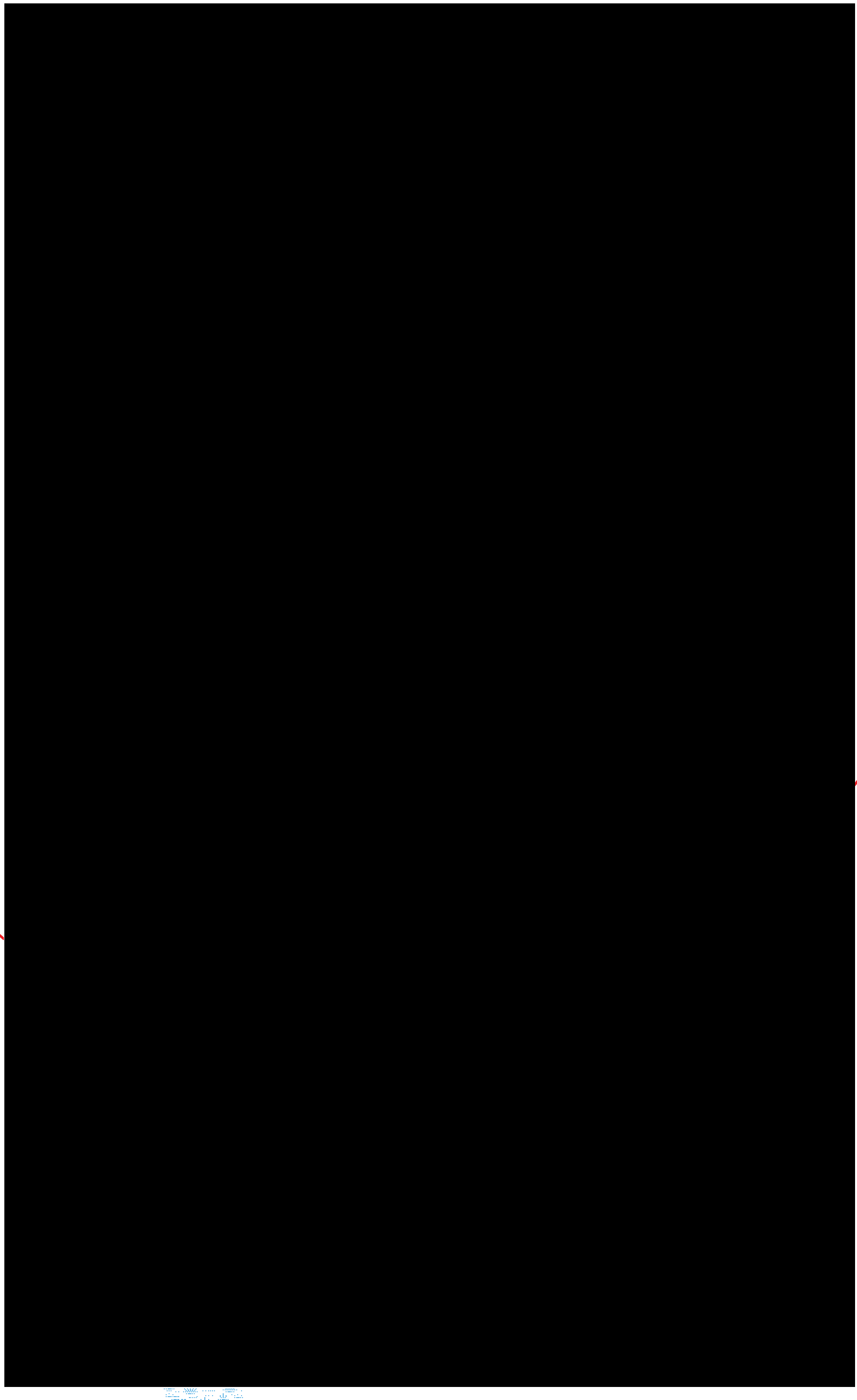

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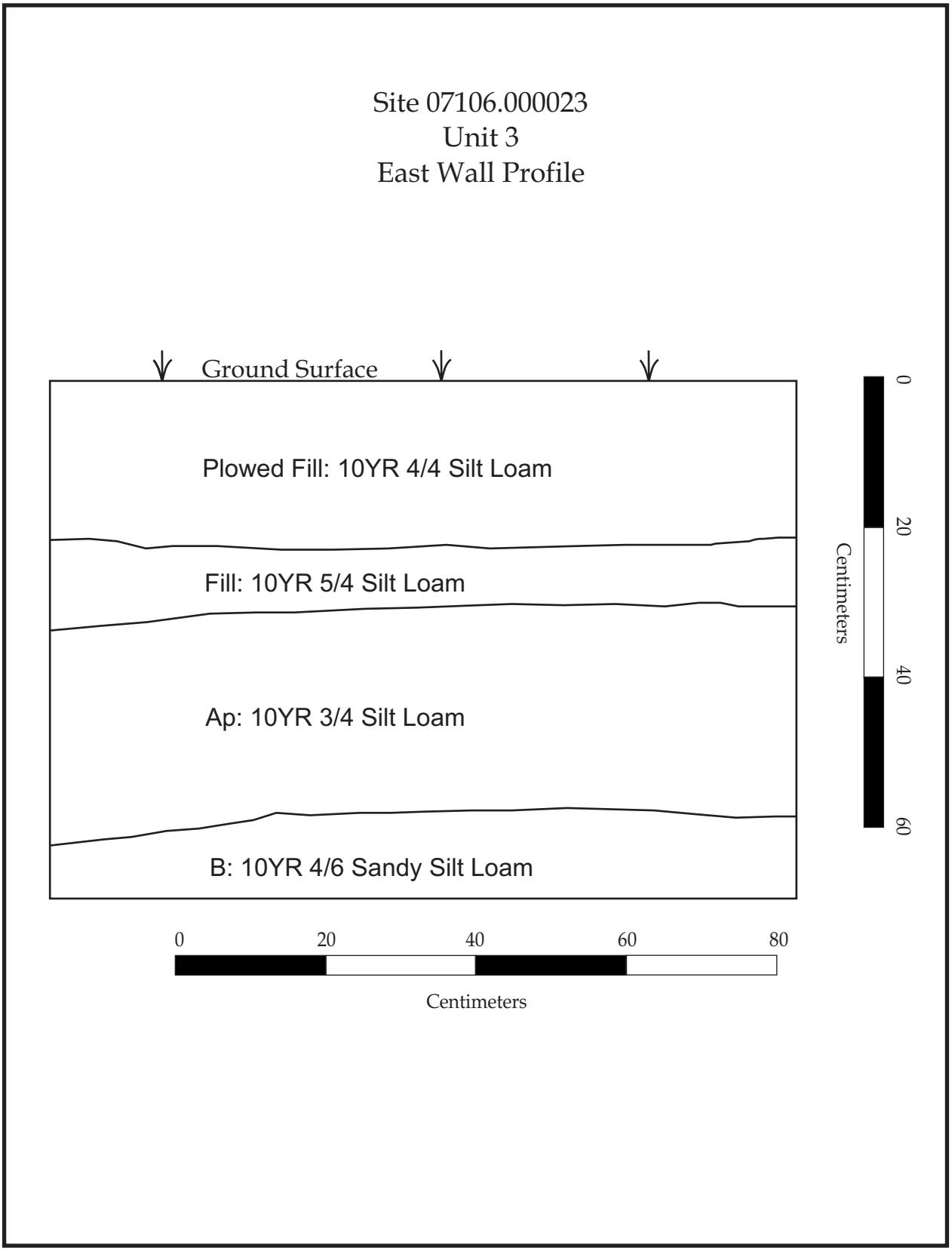


Figure 11: Site 07106.000023 Unit 3 Profile

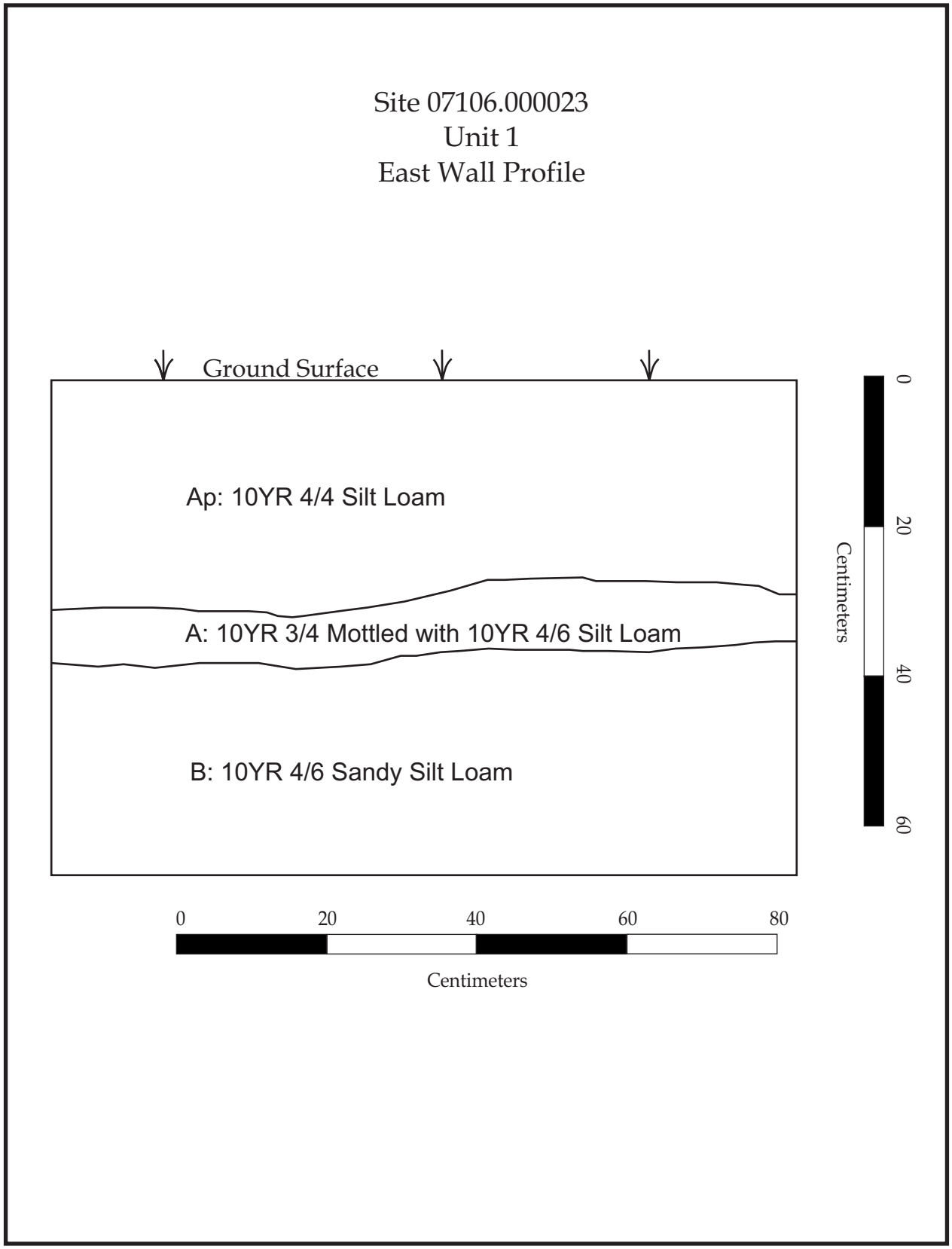


Figure 12: Site 07106.000023 Unit 1 Profile

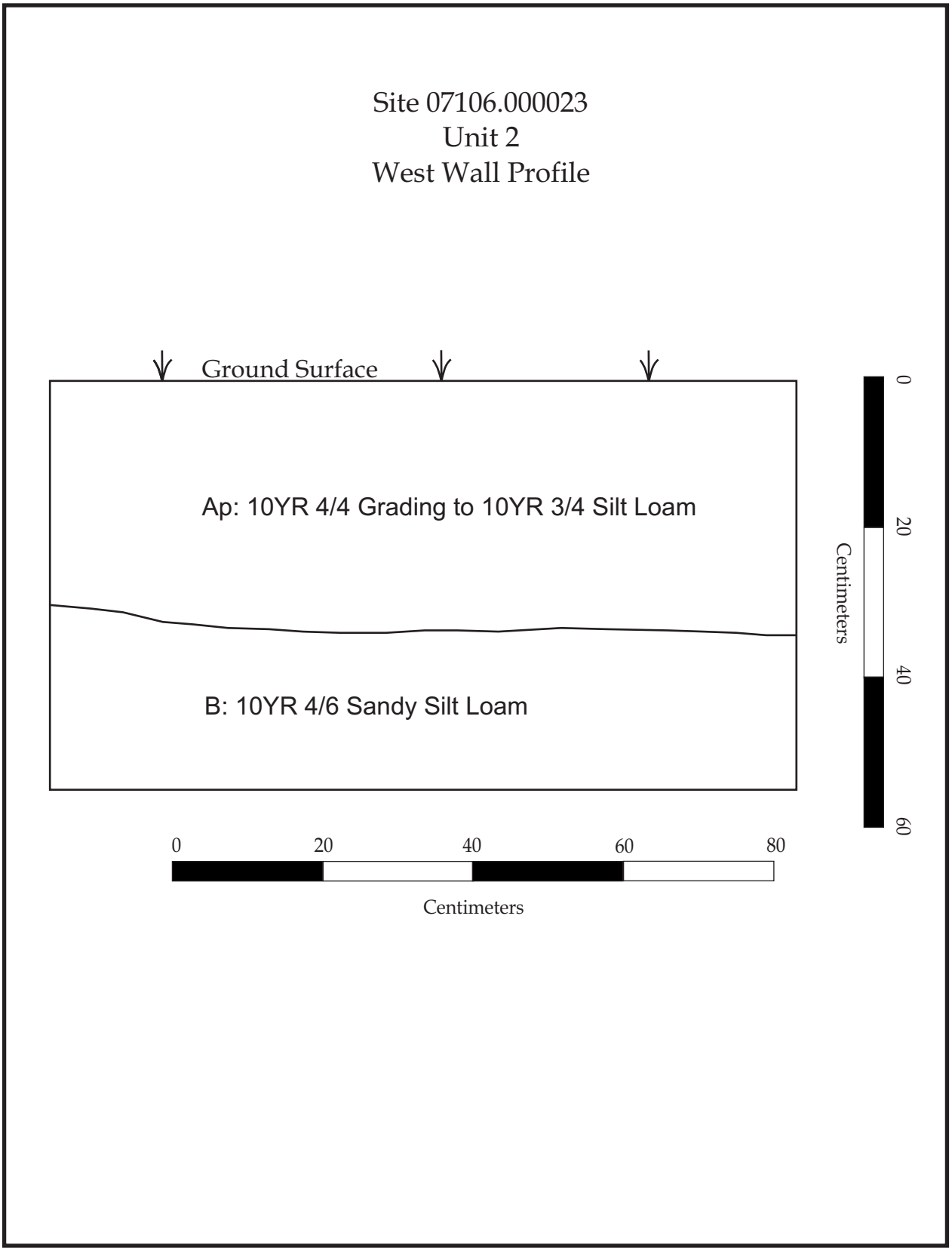


Figure 13: Site 07106.000023 Unit 2 Profile

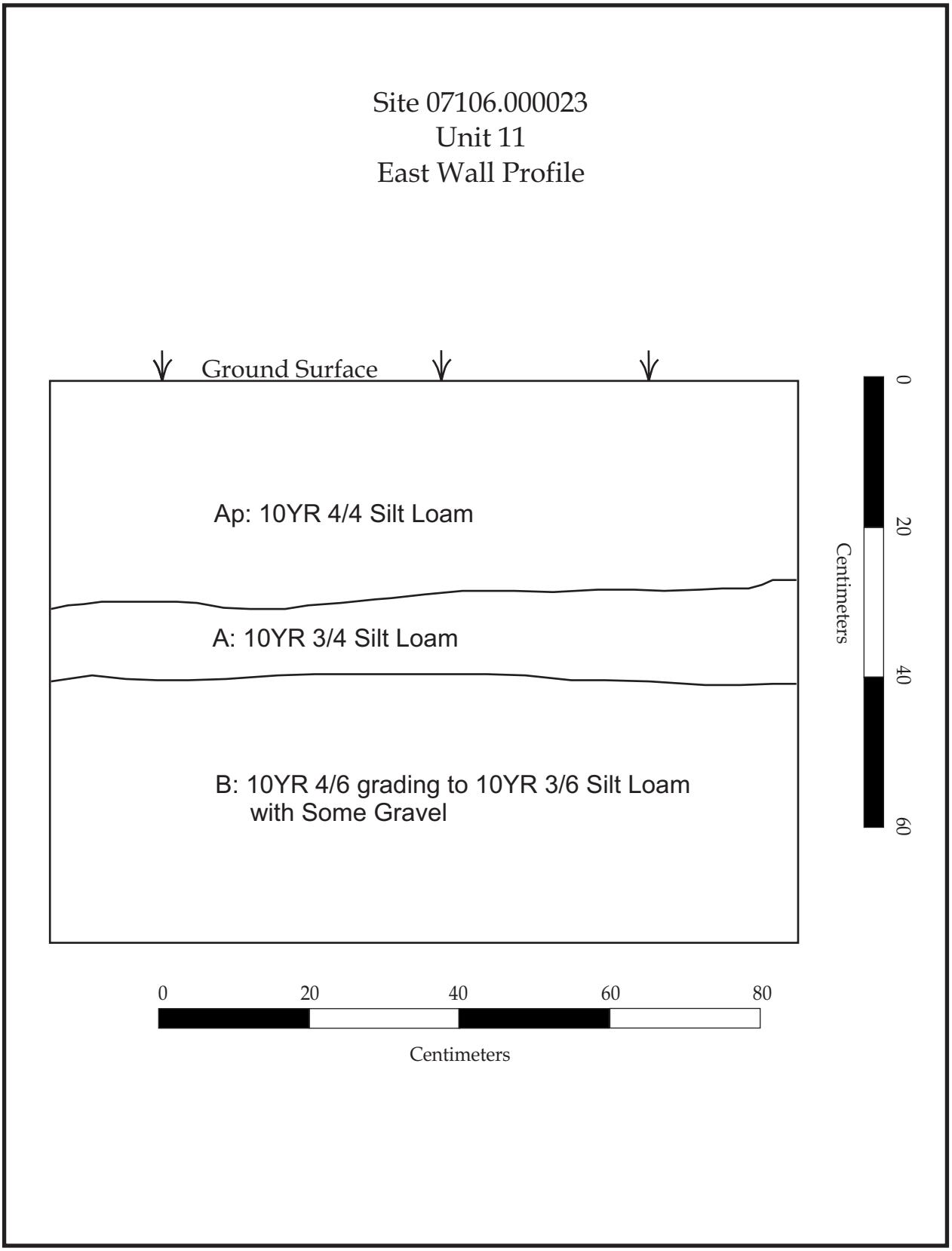
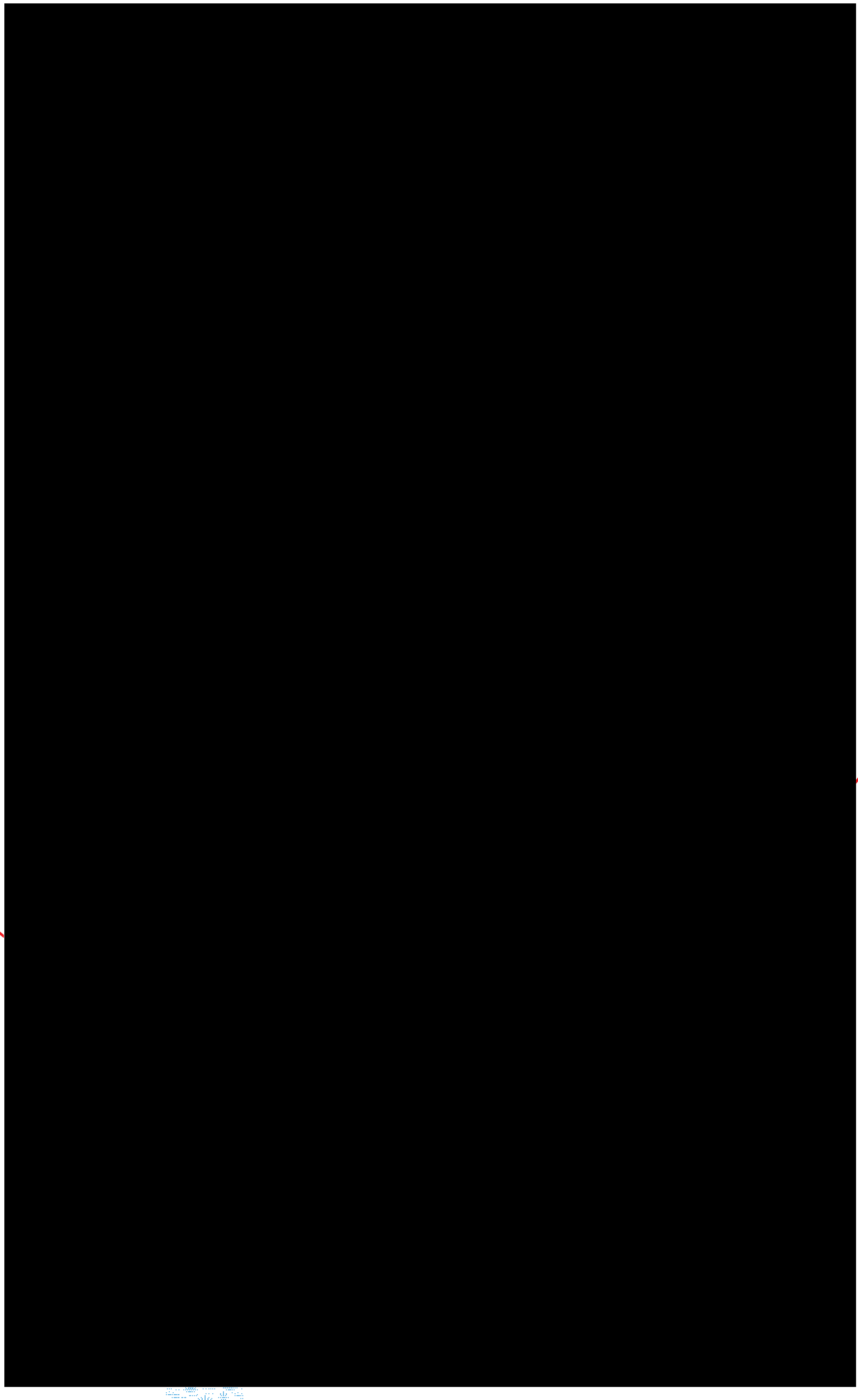


Figure 14: Site 07106.000023 Unit 11 Profile



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APPENDIX A

Photographs

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Redacted per NYAC. An unredacted version has been made available to the Planning Board.

Photograph 1: Lipoff Property and Cheechunk Creek, View to South

Photograph 2: Mined Area in Lipoff Property, View to South

Photograph 3: Eastern Portion of the Ver Hage Parcel, View to North

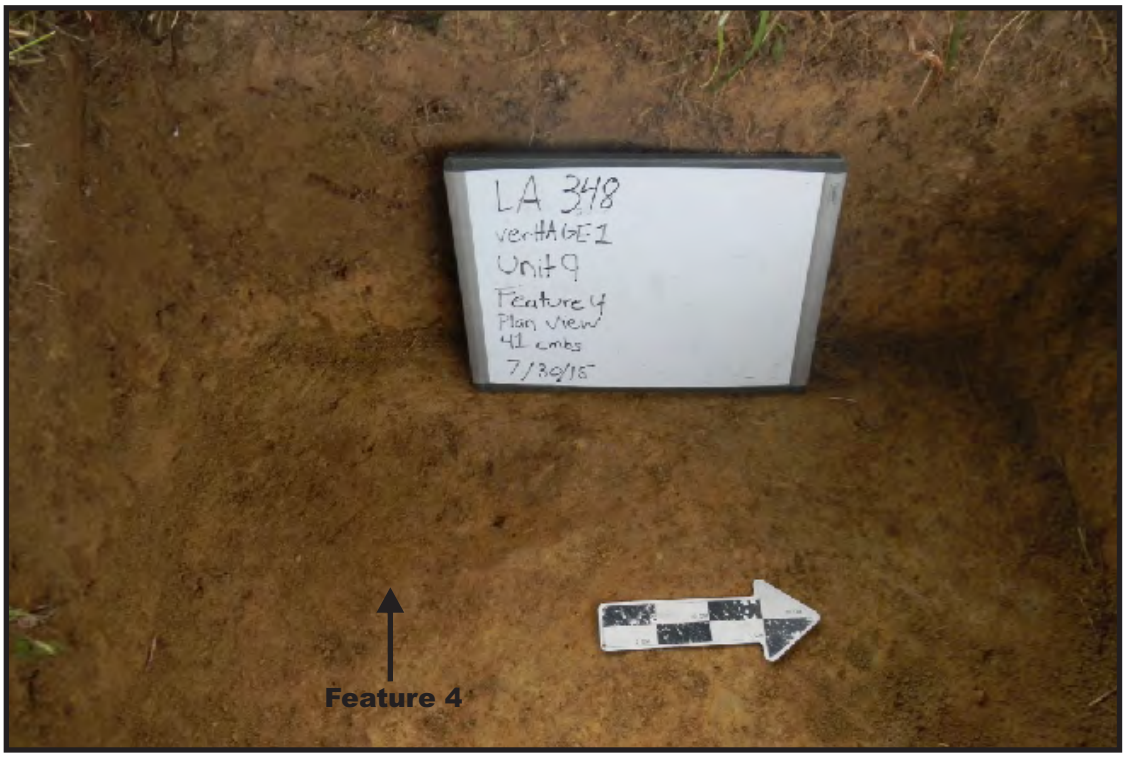
Photograph 4: Mined Area in Western Portion of the Ver Hage Parcel, View to Southwest

Photograph 5: Site 07106.000023, View to Northwest

Photograph 6: Site 07106.000023, Feature 1, Planview

Photograph 7: Site 07106.000023, Feature 2, Planview

Photograph 8: Site 07106.000023, Feature 3, Planview



Photograph 9: Site 07106.000023, Feature 4, Planview

Photograph 10: Site 07106.000023, Units 9 and 14, East Wall Profile Showing Feature 5

Photograph 11: Lamoka (a, b, c) and Normanskill (d) Projectile Points

Photograph 12: Grooved Axe

APPENDIX B

Shovel Test Descriptions

Amy's Kitchen-Lipoff Property
Orange County, New York
Landmark Archaeology, Inc. #347

Soil Description		
1 Gravelly Silt Loam	3 Silt Loam	5 Channery Silt Loam
2 Gravelly Sandy Silt Loam	4 Loose Sand	

Munsell		Varies	10YR 3/3	10YR 4/4-5./4	10YR 3/2-3/3	10YR 4/6	10YR 5/1	10YR 5/4	2.5Y 4/2	Artifacts Present	Comments
Soil Description Key		Fill	1	2	3	3	3	4	5		
STRAT		Fill	A	B	A	B	C	C	C		
	STP										
TRANSECT 50											
	1		0-37	37-47							
	2		0-23	23-50							
TRANSECT 51											
	1				0-40	40-80	80-90				Rock Impasse
	2				0-43	43-58					
	3				0-34	34-60					Rock impasse
	4				0-45	45-60					
TRANSECT 52											
	1				0-52	52-62					
	2				0-45	45-59					
	3				0-53	53-67					
	4				0-53	53-65					
TRANSECT 53											
	1			33-90	0-33				90-117		Channery B and C
	2			34-92	0-34				92-123		""
	3			32-96	0-32				96-132		""
	4			30-99	0-30				99-141		""
	5			31-87	0-31				87-118		""
	6			33--88	0-33				88-125		""
	7			32-94	0-32				94-131		""
TRANSECT 54											
	1			29-87	0-29				87-120		Channery B and C
	2			30-90	0-30				90-117		""
	3			30-94	0-30				94-118		""
	4			33-88	0-33				88-121		""
	5			32-89	0-32				89-120		""
TRANSECT 55											
	1			31-88	0-31				88-121		Channery B and C
	2			32-89	0-32				89-119		""
	3			33-90	0-33				90-120		""
	4			32-94	0-32				94-125		""
TRANSECT 56											
	1			34-89	0-34				89-126		Channery B and C
	2			34-92	0-34				92-129		""
	3			33-95	0-33				95-125		""
	4			32-90	0-32				90-126		""
SELECTIVE											
	S18		0-26	26-47							
	S19		0-22	22-36							
	S20	0-37									Mined/Landscaped
	S21	0-32									""
	S22	0-40									""
	S23	0-33									""
	S24	0-39									""
	S25				0-5		5-120				Modern Alluvium
	S26				0-6		6-117				""
	S27				0-6		6-120				""
	S28				0-4		4-118				""
	S29				0-8		8-130				""

Amy's Kitchen-Ver Hage Property
Orange County, New York
Landmark Archaeology, Inc. #347.348

Soil Description	
1 Gravelly Silt Loam	3 Silt Loam
2 Gravelly Sandy Silt Loam	4 Sand Loam

Munsell		Varies	10YR 3/3	10YR 4/4-5./4	10YR 3/2-3/3	10YR 4/6	10YR 5/1	10YR 3/4	Artifacts Present	Comments
Soil Description Key		Fill	1	2	3	3	3	4		
STRAT		Fill	A/Ap	B	A/Ap	B	C	C		
	STP									
Phase I										
Ver Hage Parcel										
TRANSECT 1										
	1				0-20	20-30				
	2				0-10	10-38				
TRANSECT 2										
	1				0-28	28-88				
	2				0-10	10-150				
	3				0-26	26-30				Rock Impasse
	4				0-26	26-30				Root Impasse
	5				0-14	14-40				
	6				0-13	13-50				
TRANSECT 3										
	1		0-16	16-33						
	2		0-27	27-33						
	3		0-10	10-35						
	4		0-23	23-61						
TRANSECT 4										
	1	0-33								
	2	0-30								
TRANSECT 10										
Site 07106.000023	1			36-58	0-36			58-95	X	
Site 07106.000023	2			38-55	0-38				X	
Site 07106.000023	3			30-48	0-30			48-70	X	
Site 07106.000023	4			38-55	0-38				X	
Site 07106.000023	5			26-50	0-26				X	
Site 07106.000023	6			32-50	0-32					
Site 07106.000023	7			26-40	0-26				X	
Site 07106.000023	8			38-70	0-38			70-90	X	
Site 07106.000023	9				0-31	31-45				
Site 07106.000023	10				0-40	40-47			X	
	11				0-20	20-49				
	12				0-40	40-50				
	13				0-32	32-45				
TRANSECT 11										
Site 07106.000023	1			45-60	0-45			60-120	X	
Site 07106.000023	2			43-56	0-43				X	
Site 07106.000023	3			43-50	0-43				X	
Site 07106.000023	4			54-65	0-54				X	
Site 07106.000023	5			50-56	0-50				X	
Site 07106.000023	6			45-52	0-45				X	
	7			33-47	0-33					
	8			50-60	0-50					
	9			40-60	0-40					
	10			34-54	0-34					
	11			23-40	0-23					
	12			43-55	0-43					
	13				0-37	37-56				
	14				0-28	28-46				
TRANSECT 12										
Site 07106.000023	1			30-70	0-30				X	
Site 07106.000023	2			50-70	0-50				X	
Site 07106.000023	3			29-60	0-29			60-95	X	
Site 07106.000023	4			23-68	0-23			68-74	X	
Site 07106.000023	5			49-63	0-49				X	
Site 07106.000023	6			31-54	0-31			54-64		
	7			40-75	0-40					
	8			30-50	0-30					
	9			26-45	0-26					
	10				0-25	25-43				Rock Impasse
	11				0-32	32-58				
	12				0-28	28-58				
	13				0-36	36-57				
	14				0-30	30-75	75-85			
TRANSECT 13										

Amy's Kitchen-Ver Hage Property
Orange County, New York
Landmark Archaeology, Inc. #347.348

Soil Description	
1 Gravelly Silt Loam	3 Silt Loam
2 Gravelly Sandy Silt Loam	4 Sand Loam

Munsell		Varies	10YR 3/3	10YR 4/4-5./4	10YR 3/2-3/3	10YR 4/6	10YR 5/1	10YR 3/4	Artifacts Present	Comments
Soil Description Key		Fill	1	2	3	3	3	4		
STRAT		Fill	A/Ap	B	A/Ap	B	C	C		
Site 07106.000023	1			30-40	0-30					
Site 07106.000023	2			20-40	0-20				X	
Site 07106.000023	3			30-70	0-30				X	
Site 07106.000023	4			45-75	0-45				X	
Site 07106.000023	5			50-80	0-50					
Site 07106.000023	6			40-60	0-40				X	
Site 07106.000023	7			23-58	0-23					
Site 07106.000023	8			25-55	0-25					
Site 07106.000023	9			35-49	0-35					
Site 07106.000023	10			24-46	0-24					
Site 07106.000023	11			25-46	0-25					
Site 07106.000023	12			26-45	0-26				X	
TRANSECT 14										
Site 07106.000023	1			32-55	0-32					
Site 07106.000023	2			38-70	0-38					
Site 07106.000023	3			46-67	0-46				X	
Site 07106.000023	4			40-62	0-40					
Site 07106.000023	5			39-59	0-39					
Site 07106.000023	6			46-75	0-46					
Site 07106.000023	7			37-63	0-37				X	
Site 07106.000023	8			25-43	0-25				X	
Site 07106.000023	9			25-38	0-25				X	
Site 07106.000023	10			26-50	0-26				X	
Site 07106.000023	11				0-30	30-50				
	12				0-24	24-40				
TRANSECT 15										
	1			45-105	0-45			105-115		
Site 07106.000023	2			40-80	0-40			80-90	X	
Site 07106.000023	3			35-70	0-35					
Site 07106.000023	4			30-50	0-30					
Site 07106.000023	5			40-60	0-40					
Site 07106.000023	6			40-63	0-40					
	7			42-63	0-42					
	8			26-76	0-26					
	9			43-65	0-43					
	10				0-40	40-56				
	11				0-40	40-55				
	12				0-26	26-44				
TRANSECT 16										
	1		0-18	18-40						Root Impasse
	2	0-102								
	3		0-37	37-55						
	4		0-8	8-54						
	5		0-16	16-37						Root Impasse
	6		0-35	35-45						
	7		0-30	30-50						
	8		0-27	27-47						
	9		0-36	36-47						
	10		0-22	22-40						
TRANSECT 17										
	1		0-26	26-47						
	2		0-38	38-54						
	3		0-36	36-42						Rock Impasse
	4		0-30	30-49						
	5		0-31	31-49						
	6		0-38	38-59						
	7		0-31	31-53						
	8		0-26	26-52						
	9		0-40	40-55						
	10		0-28	28-59						
	11		0-33	33-47						
	12		0-33	33-45						
Site 07106.000023	13		0-35	35-48						
TRANSECT 18										
	1		0-23	23-34						Gravel Impasse
	2		0-26	26-31						Rock Impasse

Amy's Kitchen-Ver Hage Property
Orange County, New York
Landmark Archaeology, Inc. #347.348

Soil Description	
1 Gravelly Silt Loam	3 Silt Loam
2 Gravelly Sandy Silt Loam	4 Sand Loam

Munsell	Varies	10YR 3/3	10YR 4/4-5./4	10YR 3/2-3/3	10YR 4/6	10YR 5/1	10YR 3/4	Artifacts Present	Comments
Soil Description Key	Fill	1	2	3	3	3	4		
STRAT	Fill	A/Ap	B	A/Ap	B	C	C		
3		0-26	26-40						Rock Impasse
TRANSECT 19									
1		0-24	24-34						Rock Impasse
2		0-31	31-54						
3		0-29	29-49						
4		0-26	26-45						
5		0-36	36-57						
TRANSECT 20									
Site 07106.000023 1		0-32	32-50						
Site 07106.000023 2		0-28	28-45						
TRANSECT 21									
Site 07106.000023 1			32-47	0-32					
Site 07106.000023 2			27-40	0-27					
Site 07106.000023 3			30-47	0-30					
Site 07106.000023 4			38-56	0-38				X	
Site 07106.000023 5			36-55	0-36				X	
Site 07106.000023 6			30-62	0-30				X	
Site 07106.000023 7			26-58	0-26				X	
Site 07106.000023 8			27-53	0-27				X	
Site 07106.000023 9			26-45	0-26				X	
Site 07106.000023 10				0-35	35-53				
11				0-38	38-50				
12				0-35	35-51				
13				0-44	44-61				
TRANSECT 22									
Site 07106.000023 1		0-32	32-54						
Site 07106.000023 2		0-27	27-41						Rock Impasse
Site 07106.000023 3		0-36	36-57					X	
Site 07106.000023 4		0-32	32-60					X	
TRANSECT 23									
1				0-39	39-46				
2				0-43	43-56				
3				0-38	38-46				
4				0-36	36-55				
5				0-32	32-55				
6				0-32	32-50				
7				0-30	30-50				
8				0-36	36-52				
9				0-36	36-54				
10			29-52	0-29					
Site 07106.000023 11			30-42	0-30				X	
Site 07106.000023 12			32-47	0-32				X	
TRANSECT 24									
Site 07106.000023 1				0-48	48-57			X	
Site 07106.000023 2				0-42	42-52				
Site 07106.000023 3				0-40	40-56				
Site 07106.000023 4				0-33	33-42			X	
Site 07106.000023 5				0-30	30-42				
TRANSECT 25									
Site 07106.000023 1		0-39	39-44					X	
Site 07106.000023 2		0-42	42-53					X	
Site 07106.000023 3		0-30	30-48					X	
Site 07106.000023 4		0-27	27-43						
TRANSECT 26									
1		0-19	19-42						
2		0-34	34-54						
3		0-29	29-59						
4		0-31	31-53						
5		0-33	33-44						
6		0-36	36-52						
TRANSECT 27									
1		0-46	46-66						
2		0-32	32-52						
3		0-35	35-55						
4		0-36	36-56						
5				0-30	30-50				

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Soil Description	
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Munsell		Varies	10YR 3/3	10YR 4/4-5./4	10YR 3/2-3/3	10YR 4/6	10YR 5/1	10YR 3/4	Artifacts Present	Comments
Soil Description Key		Fill	1	2	3	3	3	4		
STRAT		Fill	A/Ap	B	A/Ap	B	C	C		
TRANSECT 28										
Site 07106.000023	1				0-29	29-50			X	
	2				0-37	37-47				
	3				0-27	27-39				
	4				0-31	31-46				
	5				0-33	33-45				
TRANSECT 29										
	1				0-30	30-59				
	2				0-30	30-60				
	3				0-32	32-52				
TRANSECT 30										
	1		0-25	25-38						
	2		0-22	22-26						Rock Impasse
	3		0-23	23-39						
TRANSECT 31										
	1		0-27	27-45						
	2		0-23							Rock Impasse
TRANSECT 32										
	1				0-39	39-59				
	2				0-43	43-63				
	3				0-38	38-62				
	4				0-37	37-57				
TRANSECT 33										
	1				0-33	33-60				
	2				0-35	35-50				
SELECTIVE										
	S1		0-28	28-35						
	S2		0-25	25-35						
	S3	0-40								Mine lip
Site 07106.000023	S4		0-33	33-52						
Site 07106.000023	S5		0-23	23-61						
	S10		0-23	23-35						
	S11		0-28	28-47						
	S12				0-35	35-62				
Site 07106.000023	S13			40-55	0-40					
	S14				0-24	24-46				
	S15		0-22							Rock Impasse
	S16				0-33	33-47				
	S17				0-20	20-32				
PHASE II Site 07106.000023										
RADIALS										
TRANSECT 13	12A		0-32							Gravel Impasse
	12AA		0-34	34-41						Rock Impasse
	12B		0-31							Gravel Impasse
	12BB		0-30	30-42						
	12C		0-26							Gravel Impasse
	12CC		0-27	27-35						Gravel Impasse
	12D		0-29							Gravel Impasse
	12DD		0-27	27-30						Gravel Impasse
TRANSECT 17	13A		0-13	13-31						Gravel Impasse
	13AA		0-14	14-29						Gravel Impasse
	13B		0-15	15-40						Gravel Impasse
	13BB		0-10	10-35						
	13C		0-10	10-31						
	13CC		0-8	8-33						
	13D		0-15	15-30						
	13DD		0-14	14-32						
TRANSECT 100										
	1			34-43	0-34				X	
	2			29-44	0-29				X	
	3			33-42	0-33				X	
	4			28-42	0-28				X	
	5			27-45	0-27					
	6			26-47	0-26					

Amy's Kitchen-Ver Hage Property
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Munsell		Varies	10YR 3/3	10YR 4/4-5./4	10YR 3/2-3/3	10YR 4/6	10YR 5/1	10YR 3/4	Artifacts Present	Comments
Soil Description Key		Fill	1	2	3	3	3	4		
STRAT		Fill	A/Ap	B	A/Ap	B	C	C		
	7			39-54	0-39					
	8				0-35					Rock Impasse
TRANSECT 101										
	1				0-32					Rock Impasse
	2			44-67	0-44				X	
	3			22-41	0-22					
	4			39-64	0-39				X	
	5			19-44	0-19					
	6			37-55	0-37				X	
	7			20-45	0-20					
TRANSECT 102										
	1	0-33			33-45					
	2	0-48			48-53					
	3	0-32			32-48					
	4	0-38		48-62	38-48					
	5	0-29			29-43					
	6			30-42	0-30					
	7			28-43	0-28					
	8			28-39	0-28					
TRANSECT 103										
	1			30-62	0-30				X	
	2			28-58	0-28				X	
	3			22-54	0-22				X	
	4			17-56	0-17					
	5			21-59	0-21				X	
	6			20-55	0-20				X	
	7			21-51	0-21				X	
	8			20-44	0-20				X	Rock Impasse
	9			18-44	0-18					
	10			18-47	0-18					
	11		0-27			27-45				
	12		0-27			27-47				
	13		0-24			24-46				
TRANSECT 104										
	1		0-30			30-52			X	
	2		0-29			29-44			X	
	3		0-27			27-52			X	
	4		0-30			30-52			X	
	5		0-32			32-54			X	
	6		0-33			33-54			X	
	7		0-32			32-60				
	8		0-35			35-48				
	9		0-33			33-49				
	10		0-23			23-50			X	
	11		0-25			25-42				
	12		0-26			26-42				
	13		0-25			25-40				
TRANSECT 105										
	1			29-51	0-29					
	2			33-54	0-33					
	3	0-48								
	4			27-42	0-27					
	5			26-44	0-26					
	6			18-37	0-18					
	7			20-48	0-20			48-62	X	
	8			32-50	0-32				X	
	9			24-41	0-24					
	10			26-42	0-26					
	11				0-25	25-38			X	
	12				0-28	28-40				
	13		0-24			24-40				
TRANSECT 106										
	1		0-33			33-59			X	
	2		0-30			30-51			X	
	3		0-33			33-56				
	4		0-24			24-46			X	

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Munsell		Varies	10YR 3/3	10YR 4/4-5./4	10YR 3/2-3/3	10YR 4/6	10YR 5/1	10YR 3/4	Artifacts Present	Comments
Soil Description Key		Fill	1	2	3	3	3	4		
STRAT		Fill	A/Ap	B	A/Ap	B	C	C		
	5		0-24			24-46				
	6		0-24			24-47				
TRANSECT 107										
	1		0-38			38-52			X	
	2		0-24			24-35			X	
	3		0-23			23-39				
	4		0-24			24-39			X	
TRANSECT 108										
	1		0-21			21-41			X	
	2		0-17			17-40				
	3		0-18			18-38				
	4		0-18			18-40				
	5		0-17			17-42				
TRANSECT 109										
	1		0-26			26-47				
	2		0-24			24-36				
	3		0-20			20-41				
TRANSECT 110										
	1	0-30		60-70	30-60				X	Rock Impasse
	2	0-31			31-72					Rock Impasse
	3	0-27		45-98	27-45					
	4			38-54	0-38					
	5			42-58	0-42					
TRANSECT 111										
	1		0-29			29-41				
	2		0-31			31-43				
	3		0-31			31-41				
	4		0-22			22-41				
	5		0-25							Rock Impasse
TRANSECT 112										
	1				0-42	42-48				Rock Impasse
	2				0-38	38-42				
	3		0-23			23-50			X	
	4		0-21			21-42				
	5		0-23			23-41				
	6		0-26			26-50				
	7		0-39			39-63			X	
	8		0-28			28-55			X	
	9		0-32			32-55				
	10		0-21			21-42				
	11		0-32			32-51				
	12		0-32			32-57				
	13		0-31			31-52				
	14		0-29			29-49				
TRANSECT 113										
	1		0-40			40-44				
	2		0-35			35-51			X	
	3		0-29			29-44				
	4		0-32			32-54				
SELECTIVE										
	S100			33-58	0-33			58-62		
	S101		0-32			32-38				
	S102		0-35							Rock Impasse

APPENDIX C

Artifact Inventory

Site 07106.000023

Prehistoric Artifact Inventory

Phase	Cat	Tr.	STP	Unit	Feature	Level	Depth (cm)	Strat	Biface	Flake Tool	Debitage						Core		Chert Type	GS/Cobble Tool		FCR		Other/Comments
											Pri.	Sec.	Tert.	RT	Sh.	Br.	amt.	wt (g)		amt.	wt (g)	amt.	wt (g)	
I	3	10	1			1	0-20	Ap				1	1			1			ON					
I	1	10	2			1	0-20	Ap					1		1				NSK					
I	2	10	3			1	0-20	Ap					2						NSK, ON			1	19.9	
I	4	10	3			2	20-30	Ap														1	56.1	
I	5	10	3			3	30-48	B					1						NSK					
I	6	10	4			1	0-20	Ap					2			1			NSK			1	7.4	
I	7	10	5			1	0-20	Ap														1	19.9	
I	8	10	5			2	20-26	Ap				1	1						NSK	1	427.4			Hammerstone/anvil stone
I	10	10	7			1	0-20	Ap						1					NSK			1	38.3	
I	11	10	8			1	0-20	Ap					1						ON					
I	12	10	10			1	0-20	Ap					1				1	26.8	NSK, ON					Bifacial core, edge prep
I	13	11	1			2	20-40	Ap/A					2						NSK, ON					
I	14	11	2			1	0-20	Ap					3			1			NSK, ON					
I	15	11	3			1	0-20	Ap								1			NSK					
I	16	11	4			2	20-40	Ap/A								1			NSK					
I	17	11	5			2	20-40	Ap/A					1						NSK					
I	18	11	6			2	40-60	B					1			1			ON, ?					
I	21	12	1			1	0-20	Ap				1							ON			1	816.8	
I	22	12	2			1	0-20	Ap					2						CDY					
I	23	12	2			2	20-40	Ap/A						1					NSK					
I	24	12	3			2	29-60	B					1						NSK			1	104.7	
I	25	12	4			1	0-23	Ap								1			CDY					
I	27	12	5			2	25-49	B					1						NSK					
I	30	13	2			2	20-40	B							1				NSK					
I	31	13	3			3	40-60	B				1							ON					
I	32	13	4			2	20-40	Ap/A								1			ON					
I	33	13	6			1	0-20	Ap				1							NSK					Heated
I	34	13	12			1	0-26	Ap						1					ON					
I	35	14	3			2	30-46	B								1			NSK					
I	37	14	7			2	26-37	Ap/A				2							NSK, ON					
I	38	14	8			2	25-43	B								1			NSK					
I	39	14	9			2	25-38	B														1	63.4	
I	40	14	10			1	0-26	Ap							1				NSK					
I	41	15	2			1	0-20	Ap					1						ON					
I	69	17	13			1	0-35	Ap							1				NSK					Heated
I	42	21	4			1	0-38	Ap					9		9	4			NSK, ON, CDY			2	24.8	Some flakes heated
I	43	21	4			2	38-50	B					4						NSK, ON			1	153.4	
I	44	21	5			1	0-20	Ap					4		2	2			NSK, ON					
I	45	21	5			2	20-36	Ap														2	132.4	
I	59	21	6			1	0-30	Ap					2			1			NSK, ON			4	52	
I	60	21	6			2	30-50	B					1		1	1			NSK					
I	68	21	7			1	0-26	Ap						1					CDY					
I	66	21	8			1	0-27	Ap											NSK					

Site 07106.000023

Prehistoric Artifact Inventory

Phase	Cat	Tr.	STP	Unit	Feature	Level	Depth (cm)	Strat	Biface	Flake Tool	Debitage						Core		Chert Type	GS/Cobble Tool		FCR		Other/Comments
											Pri.	Sec.	Tert.	RT	Sh.	Br.	amt.	wt (g)		amt.	wt (g)	amt.	wt (g)	
I	63	21	9			1	0-26	Ap														1	105.1	
I	56	22	3			1	0-20	Ap								1			ON					
I	57	22	3			2	20-36	Ap/A					1						NSK					
I	58	22	4			2	17-32	Ap								2			NSK					
I	54	23	11			1	0-30	Ap		1			1						NSK					1 edge chipped
I	47	23	12			1	0-32	Ap				1							ON					
I	70	24	1			1	0-20	Ap					1		1				ON					
I	64	24	1			2	20-40	Ap/A					1						NSK					
I	65	24	4			2	20-40	Ap/A				1							NSK					
I	55	25	1			2	18-39	Ap/A					1						ON					
I	61	25	2			1	0-27	Ap					1						ON					
I	67	25	2			1	0-30	Ap							1				NSK					
I	53	28	1			1	0-29	Ap														2	97.9	
I	19						Surface										1	21.1	ON					Core fragment
I	71						Surface						1						NSK					
II	119	100	1			1	0-14	Ap					1						ON					
II	120	100	1			2	14-34	Ap/A					2						NSK					
II	121	100	1			3	34-43	B					1						CDY					
II	122	100	2			1	0-14	Ap					1						ON					
II	123	100	2			2	14-29	Ap								1			ON					
II	124	100	2			3	29-44	B				1							NSK					
II	126	100	3			2	13-33	Ap/A					1						NSK					
II	127	100	4			2	14-28	Ap/A					2						NSK					
II	112	101	2			1	0-20	Ap					1						CDY					
II	113	101	2			1	0-20	Ap														3	103.8	
II	113	101	2			1	0-20	Ap					1						CDY					
II	114	101	2			3	44-65	B								1			ON					
II	115	101	4			2	20-39	Ap/A									1	8.9	ON					Multifacial
II	116	101	6			1	0-18	Ap					1						ON					
II	117	101	6			2	18-37	Ap/A														1	73.4	
II	129	103	1			1	0-30	Ap					1						ON					
II	131	103	2			1	0-28	Ap								1			NSK					
II	132	103	3			1	0-22	Ap														1	40.8	
II	132	103	3			1	0-22	Ap					2						ON					
II	135	103	5			1	0-21	Ap					3						NSK,CDY					
II	136	103	5			2	21-51	B														8	155.5	
II	137	103	6			1	0-20	Ap														5	107.1	
II	137	103	6			1	0-20	Ap					2						ON					
II	138	103	6			2	20-51	B														2	41.8	
II	138	103	6			2	20-51	B					2			2			ON					
II	139	103	7			1	0-21	Ap		1			3						ON					1 edge chipped, 1.9 mm
II	141	103	8			1	0-20	Ap									1	14.4	ON					Bifacial
II	157	104	1			3	30-52	B						1					ON					

Site 07106.000023
Prehistoric Artifact Inventory

Phase	Cat	Tr.	STP	Unit	Feature	Level	Depth (cm)	Strat	Biface	Flake Tool	Debitage						Core		Chert Type	GS/Cobble Tool		FCR		Other/Comments
											Pri.	Sec.	Tert.	RT	Sh.	Br.	amt.	wt (g)		amt.	wt (g)	amt.	wt (g)	
II	143	104	2			1	0-14	Ap				1							ON					
II	144	104	2			2	14-28	Ap					1						ON					
II	147	104	3			2	12-27	Ap									1	27.8	NSK					Multifacial
II	149	104	4			1	0-12	Ap					2						ON,CDY					
II	151	104	4			3	30-52	B														1	12.5	
II	160	104	5			1	0-12	Ap							1				ON					
II	161	104	5			2	12-32	Ap/A												1	921.8			Grindingstone
II	161	104	5			2	12-32	Ap/A					3						NSK, ON					
II	162	104	5			3	32-54	B					1						NSK					
II	163	104	6			2	13-33	Ap/A					2						ON, CDY					
II	164	104	6			3	38-54	B					1						ON					
II	169	104	10			1	0-23	Ap				1							NSK					
II	154	105	7			2	20-48	B														2	142.5	
II	154	105	7			2	20-48	B					1						ON					
II	152	105	8			1	0-32	Ap					1						ON					
II	153	105	11			2	25-38	B					1						ON					Heated
II	172	106	1			1	0-25	Ap														3	104.9	
II	172	106	1			1	0-23	Ap					1						ON					
II	175	106	2				0-30	Ap					1						ON					
II	173	106	4			1	0-24	Ap														1	134.6	
II	171	107	1			2	10-24	Ap														2	197.8	
II	179	107	2			2	10-24	Ap														2	432.2	
II	176	107	2			3	24-35	B					1						ON					
II	134	107	4			1	0-17	Ap					1						ON					
II	177	107	4			2	12-24	Ap														1	41	
II	174	108	1			1	0-21	Ap														1	94.9	
II	158	110	1			3	60-70	B					1						CDY					
II	215	112	3			1	0-13	Ap														1	201.7	
II	213	112	7			2	27-39	Ap/A														2	114.7	
II	214	112	8			1	0-28	Ap					1						NSK					
II	217	113	2			1	0-13	Ap					1						ON					
II	100			1		1	0-12	Ap														2	162.9	
II	100			1		1	0-12	Ap					2						ON					
II	100			1		1	0-12	Ap	1										NSK					Broken Lamoka point, 26.1 mm long, 16.5 mm shoulders, 6.2mm thick
II	100			1		1	0-12	Ap	1										NSK					Lamoka point, 31.3 mm long, 19.6 mm shoulders, 6.8 mm thick, expanding stem
II	101			1		2	12-22	Ap														3	392.5	
II	101			1		2	12-22	Ap				1	5						ON					
II	102			1		3	22-28	Ap														5	91.1	
II	102			1		3	22-28	Ap					5		1				ON, NSK					
II	103			1		4	28-36	A														4	655.6	

Site 07106.000023
Prehistoric Artifact Inventory

Phase	Cat	Tr.	STP	Unit	Feature	Level	Depth (cm)	Strat	Biface	Flake Tool	Debitage						Core		Chert Type	GS/Cobble Tool		FCR		Other/Comments
											Pri.	Sec.	Tert.	RT	Sh.	Br.	amt.	wt (g)		amt.	wt (g)	amt.	wt (g)	
II	104			1	1	4	34	A														2	440	
II	103			1		4	28-36	A														5	821.6	
II	103			1		4	28-36	A					9						ON,CDY					
II	105			1		5	36-46	B														1	339.4	
II	105			1		5	36-46	B					5						ON					
II	106			2		1	0-17	Ap														7	433	
II	106			2		1	0-18	Ap				2	2						NSK, ON					
II	107			2		2	17-27	Ap														5	542.8	
II	107			2		2	17-27	Ap					4						ON					
II	108			2		3	27-37	B														3	166.2	
II	108			2		3	27-37	B					3		1				NSK, ON					
II	110			2	2	3	26	B												2	4529.5			Hammerstone, Grindingstone
II	170			3		4	40-50	Ap					2						NSK,ON					
II	184			3		5	50-60	Ap														1	145.6	
II	184			3		5	50-60	Ap							2				ON					
II	184			3		5	55	Ap	1										ON					Broken Lamoka point, 23.6 mm long, 18.4 shoulders, 6.4 mm thick, missing tip
II	185			4		1	0-12	Ap								1			ON					
II	109			4		2	37-47	Ap					1						ON					
II	182			4		2	12-22	Ap														4	268.2	
II	182			4		2	12-22	Ap									1	79.9	NSK					
II	182			4		2	12-22	Ap					4						NSK					
II	193			4		4	27-37	A														3	236.2	
II	193			4		4	27-37	A									2	157.6	ON					
II	193			4		4	27-37	A					4						ON					
II	178			5		1	0-20	Ap														8	670.2	
II	178			5		1	0-20	Ap												1	810.9			Grindingstone
II	178			5		1	0-20	Ap									1	14.6	NSK					Multifacial
II	181			5		3	27-37	B				1	6		1				ON					
II	228			5	3	3	37	B														21	6650.4	
II	228			5	3	3	37	B																13 Unmodified Rocks
II	180			5		4	37-47	B														1	22.4	
II	180			5		4	37-47	B					1						ON					
II	199			6		1	0-20	Fill					1						ON					
II	198			6		2	20-30	Fill	1										ON					Middle segment of biface, 25.2 mm long, 19.7 mm wide, 6.8 mm thick
II	198			6		3	30-40	Ap					3						ON, CDY					
II	197			6		4	40-50	Ap					3						ON, CDY					
II	196			6		6	60-70	B					2						ON					
II	200			6		7	70-80	B														3	722.1	
II	200			6		7	70-80	B					6						NSK, ON					
II	186			7		2	20-30	Ap														1	42.1	

Site 07106.000023
Prehistoric Artifact Inventory

Phase	Cat	Tr.	STP	Unit	Feature	Level	Depth (cm)	Strat	Biface	Flake Tool	Debitage						Core		Chert Type	GS/Cobble Tool		FCR		Other/Comments
											Pri.	Sec.	Tert.	RT	Sh.	Br.	amt.	wt (g)		amt.	wt (g)	amt.	wt (g)	
II	187			7		3	28-40	A														3	128.3	
II	187			7		3	28-40	A							4				NSK					
II	191			8		1	0-20	Ap				1	4						NSK					
II	188			8		2	20-30	Ap				2	6						NSK					
II	192			9		3	30-40	B					1						ON					
II	189			10		1	0-20	Ap												1	265.1			Grooved axe
II	204			11		1	0-20	Ap					1						NSK					
II	203			11		2	20-30	Ap					4						ON, JSP					
II	203			11		2	20-30	Ap	1										NSK					Normanskill point, 23.4 mm long, 16.1 mm shoulders, 4.9 mm thick, missing tip
II	211			11		3	30-40	A					5						ON					
II	212			11		4	40-45	B					2		1				ON					
II	206			11		5	54	B																Unmodified Rock
II	207			11		5	46	B												1	444.8			Hammerstone
II	208			11		5	52	B																Unmodified Rock
II	209			11		5	46	B												1	878.2			Nuttingstone
II	202			12		2	20-30	Ap														1	136.2	
II	202			12		2	19-26	Ap					3		1				ON, JSP, QTZ					
II	202			12		2	20-30	Ap					1						NSK					
II	202			12		2	21	Ap	1										NSK					Preform distal portion, 39.6 mm long, 32.1 wide, 9.2 mm thick
II	202			12		2	21	Ap									1	53.7	ON					Bifacial core
II	216			14		1	0-20	Ap							1				ON					
II	218			14		3	35-45	B					1						NSK					Heated
II	223			15		1	0-20	Ap					1						ON					
II	224			17		1	0-20	Ap														2	115.8	
II	224			17		1	0-20	Ap					2						ON					
II	224			17		1	0-20	Ap									1	12.3	NSK					
II	220			17		2	20-30	Ap				1	2						ON					
II	225			17		3	30-40	A					1						NSK					
II	226			18		1	0-20	Ap					1						ON					
II	227			18		2	20-30	Ap														2	352.5	
						SITE TOTAL			6	2	0	20	196	5	31	27	11	417.1		8	8277.7	143	17226.4	

CDY-Chalcedony
JSP-Jasper
NSK-Normanskill chert
ON-Onondoga chert
QTZ-Quartzite

Pri.-Primary flake
Sec.-Secondary flake
Tert.-Tertiary flake
RT-Retouch flake
Sh.-Shatter
Br-Broken flake

APPENDIX D

New York State Archaeological Site Inventory Forms

In accordance with Section 6.6 of the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State," published by the New York Archaeological Council (NYAC) in 1994 and adopted by the State Historic Preservation Office, sensitive site location information has been redacted. An unredacted version has been made available to the Planning Board.

Phase I Archaeological Investigations of the Proposed Overflow Parking Area on the Strong Farm Property Town of Goshen Orange County, New York

Prepared for:
Radha Soami Society Beas
4115 Gillespie Street
Fayetteville, North Carolina 28306

Prepared by:
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Altamont, New York 12009-4606

Derrick J. Marcucci, RPA
Principal Investigator

LA# 349
September 2015

MANAGEMENT SUMMARY

SHPO Project Review Number:

Federal Agencies: USACE, FWS, FEMA
State Agencies: DEC, DOT, OGS, OMH, DPS, ESD, SEQRA

Phase of Study: Phase I

Location:
Minor Civil Division: Town of Goshen
County: Orange County

USGS 7.5′ Quadrangle Map: Middletown, NY (2000)

Survey Area
Length: 473.5 meters (1533.6 ft) maximum
Width: 285.0 meters (935.2 ft) maximum
Depth: n/a
Size Total Acres Surveyed: 23.30 acres (9.4 ha) APE
Total Square Meters Excavated: n/a
Total Square Feet Excavated: n/a

Archaeological Survey Overview
Total and Interval of Shovel Tests: 148 STPs at 15-meter interval, 4 STPs selectively positioned
Width of Plowed Strips: n/a
Surface Survey Transect Interval: n/a

Results of Archaeological Survey
Number and name of prehistoric sites identified: none
Number and name of historic sites identified: none
Sites Recommended for Phase II/Avoidance: none

Report Author(s): Brad Gawron and Susan Gade, RPA
Landmark Archaeology, Inc.

Date of Report: September 2015

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1. INTRODUCTION

This report presents the results of a Phase I archaeological study conducted for a proposed overflow parking area associated with the planned Science of the Soul (SoS) conference center. The proposed parking area is located on property known as the Strong Farm, located in the town of Goshen, Orange County, New York (Figure 1). The Strong Farm includes approximately 95.11 (38.48 ha) acres of which 23.3 (9.43 ha) are proposed for the parking area and are considered the Area of Potential Effect (APE). The investigation was conducted by Landmark Archaeology, Inc. of Altamont NY who was retained as a consultant by Radha Soami Society Beas (RSSBA) of Fayetteville, North Carolina.

According to the Draft Environmental Impact Statement (DEIS) (AKRF n.d.), SoS is collaborating with Amy's Kitchen on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents that include four separate, but related parcels: Strong Farm, Echo Lake, Ver Hage, and Lipoff (Figure 2). SoS is proposing to construct a conference center on the Echo Lake parcel which will be connected to and share infrastructure with a proposed Amy's Kitchen food production facility on the Ver Hage parcel. These parcels are approximately one-quarter mile south of the current study area, across Echo Lake Road. Both of these projects would draw water from a proposed wells site located on the Lipoff parcel, adjacent to the Strong Farm. Archaeological investigations of the Echo Lake, Ver Hage, and Lipoff properties are detailed in separate reports (Marcucci et al. 2015; Gade and Schreyer 2015).

The Phase I study was conducted to: (a) inspect the project area and precisely define the spatial boundaries of any archaeological resources in relation to the limits of the project area, (b) assess the potential of the project area for deeply buried cultural deposits, (c) conduct surface and limited subsurface investigations of the resources which are either partially or completely in the area of the proposed construction, and (d) provide recommendations for those archaeological resources which may be impacted by proposed development activities. These tasks were conducted to provide federal and state reviewing agencies with the appropriate documentation to evaluate the effect of the proposed project on historic and/or prehistoric cultural resources.

The Phase I study was conducted in two stages: a Phase IA literature review and a Phase IB intensive level identification survey. The purpose of the Phase IA investigation was to assess potential for National Register of Historic Places (NRHP) properties to exist within the project area. Research tasks associated with the Phase IA study consisted of a literature review and records search at the New York Office of Parks, Recreation and Historic Preservation (OPRHP). The Phase IB study included an intensive level identification survey consisting of shovel test excavations within the project APE. All Phase I field and analytical methods were conducted in accordance with guidelines established in *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York* by the New York Archaeological Council (NYAC 1994) and adopted by the OPRHP.

The following technical report presents the results of the Phase I study conducted in August, 2015. Derrick Marcucci, RPA, served as the Principal Investigator for the project and he supervised all aspects of the investigation. Background literature was reviewed by Jessica Schreyer and Brad Gawron. Fieldwork was conducted by Mr. Marcucci, Mr. Gawron (GIS Specialist), Zach Hinkley, Sam Marcucci, and Georgiana Patterson. This report is written by Mr. Gawron and Susan Gade, RPA. Spatial data were collected by Mr. Gawron who also produced report graphics. All field notes, photographs, and records associated with the project are on file at Landmark Archaeology, Inc., 6242 Hawes Road, Altamont, New York.

2. PROJECT DESCRIPTION

The proposed SoS parking area will serve as overflow parking for the SoS Conference Center which will be located approximately one-quarter mile south of the Strong Farm parcel. The Draft Environmental Impact Statement (DEIS) notes "The Amy's Kitchen manufacturing facility and the SoS Conference Center, together with certain related facilities and improvements, comprise the "Proposed Project" (AKRF n.d.:II-1). Four properties are part of the proposed project. Table 1 lists the properties, and the size and proposed development for each.

Table 1
Amy's Kitchen and SoS Properties and Proposed Development

Entity	Property Name	Property Size (ac)	APE Size (ac)	Proposed Development
Amy's Kitchen	Ver Hage	71.7	71.7	Manufacturing facility
Amy's Kitchen	Lipoff	11.8	11.8	Wells/water supply
SoS	Echo Lake	194.6	109.5	Conference Center
SoS	Strong Farm	96	23.3	Volunteer parking for SoS

Source: DEIS

The project area is located on the Strong Farm property along the east side of the Wallkill River (see Figure 2). The parcel is located approximately two miles west of the village of Goshen in central Orange County, New York. The project area is bounded by the Wallkill River to the west and by Owens Road to the east. The southern boundary is formed by Cheechunk Road and the northern boundary of the Lipoff Parcel, which is being considered concurrently as a wells site for the proposed *Amy's Kitchen* development project (Gade and Schreyer 2015).

Figure 3 illustrates the parking APE and the Strong Farm property limits. Portions of five agricultural fields, which are currently used as hay fields, will be used for temporary unimproved parking areas. This parking is needed to accommodate a volunteer labor force for three days during a large national conference slotted for once a year. Use of the remaining portions of the property will remain agricultural and not for any purpose related to SoS or Amy's Kitchen developments. According to plans, the standing structures associated with the Strong Farm will continue to be used with their current residential or agricultural purposes.

There are nine standing structures older than 50 years of age on the Strong Farm. All are located outside and to the south of the APE. They include two houses. The original Strong Farm house located at 212 Cheechunck Road and is listed as eligible for the NRHP. The second house is located at 1 Owens Road (Appendix A: Photographs 1 and 2). The other structures include a dairy barn (Appendix A: Photograph 3) and five outbuildings (Appendix A: Photographs 4–9). There is one house adjacent to the parcel 50 years of age or older at 34 Owens Road (Appendix A: Photograph 10).

3. DESCRIPTION OF PROJECT AREA

The project area is located in southeastern New York, in the Town of Goshen. It is situated in the lower Hudson River Valley within the Hudson Mohawk Lowlands physiographic area (Isachsen et al. 2000). The Hudson Mohawk Lowlands span almost the entire north-south length of eastern New York. In southern New York, these lowlands are bounded by the Catskill Mountains to the west and the Taconic Mountains to the east. The combined watersheds of the Wallkill River and Rondout Creek provide drainage for the region. Surficial geology of the project is dominated by glacial landforms and the unconsolidated sediments (glacial till) that were deposited during the late Wisconsinan glaciation which occurred 21,000 to 13,600 years ago. Bedrock geology is complex, comprised of the Trenton Group of shales that underlie the entire central part of Orange County.

The project parcel is located adjacent to the Wallkill River, the major drainage system in the central part of Orange County. In the project vicinity, the Wallkill River is a slow moving stream approximately ten meters wide. The headwaters of the Wallkill River form in the Pochuck Mountains on the New York/New Jersey border. The Wallkill River flows for approximately 88 miles in a northeasterly direction before being impounded into a small body of water near Rosendale called Sturgeon Pond. Sturgeon Pond flows into the Rondout Creek, which empties into the Hudson River at Kingston, New York. The project parcel's southwest corner is adjacent to the confluence of the Wallkill River and the Cheechunk Creek. The Cheechunk Creek flows from the southeast toward the project area and drains several wet areas in the Town of Goshen.

The APE is comprised entirely of a west-facing glaciated upland sideslope (see Figure 2). The sideslope is located on the right flank of Wallkill River which flows approximately one half mile west of the western APE boundary. Areas within the parcel range from nearly flat along areas adjacent to Owens Road to extremely sloped areas within the western half of the parcel (Appendix A: Photographs 11-16). Most of the area has slope exceeding 15 percent. Elevation ranges from 360 to 440 feet above mean sea level with the lowest elevations occurring in the project area's western limits along the Wallkill River's floodplain. At the time of fieldwork, vegetation within the APE consisted of tall grasses with tree rows along the fields.

Mardin gravelly silt loam of varying slopes is mapped in the APE (Figure 4). Mardin gravelly silt loams are deep, moderately well drained soils which were formed by glacial till. They occupy summits and sideslopes of uplands (Olsson 1981). Summary information about these soils is presented in Table 2.

Table 2
Summary Soil Information

Soil Name	**Symbol**	**Slope**	**Drainage Class**	**Parent Material**	**Landform**
Mardin gravelly silt loam	MdB	3-8%	Moderately well drained	Glacial till	Broad divides, hilltops, and ridges in uplands
Mardin gravelly silt loam	MdC	8-15%	Moderately well drained	Glacial till	Valley sides, hillsides, and ridges in uplands
Mardin gravelly silt loam	MdD	15-20%	Moderately well drained	Glacial till	Valley sides and hillsides in uplands

Source: Olsson 1981

4. PHASE IA INVESTIGATION

A. RESEARCH OBJECTIVES

The goal of the Phase IA study is to assess the potential for the presence of significant archaeological resources within the project area. The study is designed to gather data regarding archaeological potential through archival research and a preliminary field inspection. All pertinent archaeological and historical literature and state records applicable to the project area are reviewed during the Phase IA investigation.

Site assessments are based on NRHP criteria of significance (36CFR60.6, *Federal Register* 1976). The criteria are:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and
>
> a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b. that are associated with the lives of persons significant in our past; or
>
> c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
>
> d. that has yielded, or may be likely to yield, information important in prehistory or history.

Typically, Criterion d is the most applicable criterion for evaluation of archaeological resources.

B. BACKGROUND RESEARCH

Background research was conducted for the purpose of compiling baseline information related to the prehistory, history, geomorphology, environment, and land use history of the project area. These sources provided information regarding NRHP eligible sites in the area and data with which to evaluate the project's archaeological potential.

Background research included a site file search using the Cultural Resources Information System (CRIS) maintained at the OPRHP. This search determined if archaeological sites or NRHP properties were recorded within or near the project area. It also identified areas of previous archaeological investigations within one mile of the project areas. Historic maps were examined to identify land use history and potential for historic resources within the project area.

C. RESULTS OF THE PHASE IA INVESTIGATION

A number of Phase IA/IB archaeological surveys and Phase II investigations have been conducted near the project area. Background research conducted at the OPRHP determined that there are incomplete records for many of these surveys and for a number of the sites identified during the surveys. Some of the reports, map data, and other corresponding documentation for surveys near, but outside of the project area, were available as part of the official OPRHP files.

However, documentation for other surveys conducted within one mile of the project area is missing in the files. Despite the missing archaeological survey information at OPRHP, it was possible to reconstruct some information using site forms and technical report bibliographies from reports obtained and provided to Landmark by a client representative.

In 2007 and again in 2012, a Phase I survey was conducted by Columbia Heritage, Inc. to investigate a proposed housing development directly adjacent to the northern boundary of the project area. These surveys identified two prehistoric archaeological sites. In 2010, Richard Grubb and Associates (Raes 2010) conducted an archaeological survey on the opposite side of Cheechunk Road and identified a single historic archaeological site consisting of stone farm rows. Eleven other surveys have been conducted within one mile of the project boundaries (Table 3).

Table 3
Summary of Previous Archaeological Investigations Within One Mile of the APE

Archaeological Survey Title	**Year**	**Researchers**	**Location in Relation to APE**	**Sites Present**
A Phase I Archaeological Survey of a 21.9-Acre Sand and Gravel Mine Site, Al Turi Landfill, Town of Goshen, Orange County, New York. Hunter Research Associates	1987	L. Rakos- Hunter Research Associates	.25 miles south	Yes, OPRHP records not available
Report on Investigation of the Echo Lake Project Area, Town of Goshen, Orange County, New York, EnviroPlan Associates, Poughkeepsie, New York	1989	Eugene J. Boesh	.25 miles south	No
Stage I-B Cultural Resources Survey, Proposed Water Supply Area, Echo Lake Development Site, Town of Goshen, Orange County, New York. Atlantic Testing Laboratories, Limited, Utica, New York	1990	S.J. Oberon	Well field site south of project area	?
Phase I-B Archaeological Survey and Testing of the Proposed Orange County Jail Project, Echo Lake, Orange County, New York, Brockington and Associates, Atlanta, Georgia	1991	S. Scott Butler	.4 miles southwest	Yes/3, OPRHP records not available
Stage I-B and Stage II Cultural Resources Surveys Site Identification and Site Evaluation Phases Proposed Echo Lake Mine Site, Town of Goshen, Orange County, New York and Stage I Site Identification Survey Proposed Water Line Construction Route, Towns of Wawayanda and Wallkill, Orange County, New York	1994	S. J. Oberon	.25 miles southwest	Yes/3, OPRHP records not available
Phase IB and Limited Phase II Cultural Resources Survey Site Identification and Site Evaluation Phases (sic), Proposed Echo Lake Development, Town of Wawayanda, Orange County, New York.	2000	S.J. Oberon	.5 miles southwest	Yes, OPRHP records not available
Phase 1 Archaeological Survey, The Mid-Hudson Psychiatric Center, Goshen, Orange County, New York	2000	D.Brown et al.- Historical Perspectives	0.75 miles southwest	One prehistoric site
Phase IA and IB Archaeological Survey, Hendler Property, Cheechunk Road, and 6 ½ Station Road, Lots 10-1-56.2, 10-1-56.3, and 10-1-56.4, Town of Goshen, Orange County, New York. Report submitted to Meadow Creek Development, LLC. Walden, New York.	2005	Richard Grubb and Associates, Inc.	.5 miles east	One prehistoric site
Phase I Cultural Resources Survey, Site Assessment and Site Identification Phases, Proposed Goshen Meadows Development, Town of Goshen, Orange County, New York. Prepared for Owens Road Associates, LLC, Pine Ridge, NJ.	2007	S.J. Oberon- Columbia Heritage, Inc.	Adjacent, north	One prehistoric site
Phase 1A And 1B Archaeological Survey, Hartley Substation, Section 12, Block 1, Lot 1.7, Town Of Goshen, Orange County, New York	2010	A. Raes -Richard Grubb & Associates, Inc.	Adjacent, south (across Cheechunk Road)	One historic site
Phase IA/IB Archaeological Survey, Orange and Rockland Utilities, Inc. Proposed 13,500 Foot, 12 Inch Gas Main Project, Wawayanda And Middletown, New	2010	G. R.Dubell and M.J. Hubbard-Public Archaeology Lab	0.8 miles west	One prehistoric isolated find

Archaeological Survey Title	Year	Researchers	Location in Relation to APE	Sites Present
York				(chert flake)
Supplementary Phase IB Cultural Resources Survey, Archaeological Inspection Component, Proposed Goshen Meadows Development, Town of Goshen, Orange County, New York. Prepared for Owens Road Associates, LLC, Pine Ridge, NJ.	2012	S.J. Oberon-Columbia Heritage, Inc.	Adjacent, north	One prehistoric site
Phase I and II Archaeological Investigations of the Proposed Amy's Kitchen Project, Town of Goshen, Orange County, New York	2014	D.J. Marcucci et al. Landmark Archaeology Inc.	.25 miles southwest	Three prehistoric sites
Phase I Cultural Resource Survey Orange County Airport Wetland Mitigation Site, Town of Goshen, Orange County, New York	2015	T. Fortugno and L. Hayden- Louis Berger	0.5 miles east	None

Records at the OPRHP show that there are no previously recorded archaeological sites within the APE, but there are three sites recorded within the immediate vicinity of the APE. One archaeological site, ORGO 14F, is located west of the APE on the Strong Farm property. It was identified in cultivated fields by surface finds and is recorded as having prehistoric (Archaic and Transitional) and historic (18th century) components. The other two sites are adjacent to the northern end of the APE. These sites include the Hutt Farm Site and the Owens Road Site which were identified by Columbia Heritage, Inc. Both sites are identified as prehistoric, and, while no temporal information was available for the Owens Road Site, the Hutt Farm Site contained both Late Archaic and Paleoindian artifacts.

Records at the OPRHP show that 14 other archaeological sites have been recorded within one mile of the project area (Table 4). Prehistoric occupations identified within one mile of the project areas have been dated to the Late Archaic and Transitional periods. Historic sites have been identified dating to the eighteenth and nineteenth centuries.

Table 4
Previously Recorded Archaeological Sites Within One Mile of the Project Area

OPRHP #	NYSM#	Reported by	Site identifier/Description	Time period
07106.000010		**Orange County NYSAA**	**ORGO 14F**	**Archaic, Transitional, and 18th century**
07106.000023		Orange County NYSAA	ORGO 13F	No info
07106.000076		Hunter Research Associates	Al Turi Site A	Prehistoric
07106.000077		Hunter Research Associates	Al Turi Site B	Late Archaic
07106.000112		Hartgen Archaeological	Orange County Jail Prehistoric Site	Prehistoric
07106.000138		Richard Grubb and Associates	Hendler Site	Prehistoric
07106.000161	**6198**	**S.J. Oberon**	**Hutt Farm Site**	**Late Archaic and Paleoindian**
07119.000012		Orange County NYSAA	ORWW-05F (Echo Lake)	Archaic to Transitional
07119.000013		Orange County NYSAA	ORWW-06F	No info
07119.000032		Orange County NYSAA	ORWW-25F	Prehistoric
07119.000155		BTK Associates Inc.	Golf Links Road Historic Cemetery	Historic 1850-1870

OPRHP #	NYSM#	Reported by	Site identifier/Description	Time period
07119.000165		Landmark Archaeology Inc.	Amy's Kitchen 2 Precontact Site	Late Archaic
07119.000166		Landmark Archaeology Inc.	Amy's Kitchen 3 Precontact Site	Late Archaic
07119.000193		S.J. Oberon	Huberth Site	Archaic
No info		**S.J. Oberon**	**Owens Road Site (next to Hutt Farm Site)**	**Prehistoric**
	6199	Orange County NYSAA	Strong	No info
	6200	Orange County NYSAA	Halcott	No info

BOLD: Within or adjacent to project area

Historic maps reviewed during the Phase IA study included the years 1875 (Beers 1875, Figure 5) and 1908 (USGS 1908; Figure 6). Echo Lake Road, Owens Road, and Cheechunk Road are all depicted on routes which are consistent with their modern day alignments. A structure is documented within the Strong Farm parcel on both maps which likely corresponds to the NRHP-eligible Strong Farm farmhouse at 212 Cheechunk Road (see Appendix A: Photograph 1). On the 1875 map, it is labeled "B. B. Strong". A second structure is shown south of the APE on the 1908 map. This structure likely corresponds to the house at 1 Owens Road (see Appendix A: Photograph 2). Both the 1875 and 1908 maps depict two structures adjacent to the southern boundary of the Strong Farm property. These structures are on Echo Lake Road and adjacent to the Cheechunk Creek. The 1875 map associates the westernmost structure of the two with "J. L. Stage" while the other structure is unlabeled. Neither structure is currently standing.

D. ARCHAEOLOGICAL POTENTIAL

Based on the physiographic setting of the project area and the results of background research, the archaeological potential was considered high for prehistoric and historic archaeological resources to be within the APE. Topographic features such as terraces and hilltops that are in close proximity to the Wallkill River would have been attractive settings for prehistoric groups. Background research indicates that prehistoric sites have been recorded adjacent to the APE and numerous prehistoric sites are located within a one-mile radius. Historic maps show two structures within the Strong Farm property adjacent to the APE, and two other structures adjacent to the parcel's southern boundary. There is no potential for archaeological deposits to be buried deeply by alluvium as the APE is an upland landform and soils are glacially derived.

5. PHASE IB INVESTIGATION

A. PHASE IB FIELD METHODS

The Phase I field investigation was conducted the week of August 10, 2015. Fieldwork included a pedestrian walkover and shovel test excavations. The walkover assessed the archaeological potential of the project area and examined exposed surfaces for archaeological evidence. Shovel tests were positioned along transects and spaced at 15 meter intervals or they were selectively positioned to examine areas of disturbance. No tests were excavated in areas of slope exceeding 12 percent. In total, 152 shovel tests were excavated during the Phase I field investigation (see Figure 7).

All subsurface test locations were recorded using a submeter, high precision GPS receiver. The geospatial data were differentially corrected for an estimated horizontal error of less than one meter. The diameter of shovel tests ranged from 30 to 50 centimeters. Soils were removed in 20-centimeter levels within soil horizons. Across the APE, soils were excavated 15 centimeters into the B horizon soils unless an impasse was reached. All excavated soil was screened through ¼-inch mesh hardware cloth. Soil characteristics including texture and color (Munsell) and any disturbances or other noteworthy features of the tests were recorded on standardized Landmark Archaeology, Inc. forms. All shovel tests were backfilled after completion. Soil descriptions for each shovel test are given in Appendix B.

B. RESULTS OF THE PHASE IB INVESTIGATION

As noted, the Phase IB fieldwork at the Strong Farm property involved the excavation of 152 shovel tests across the APE. No artifacts were recovered and no archaeological sites were identified during the Phase IB fieldwork. Four shovel tests were selectively placed due to landform considerations and the remaining 148 were spaced 15 meters apart along transects.

Shovel test excavation focused on three areas in the APE with slope less than 12 percent. These areas included an area next to Owens Road, a second area which traversed the central portion of the APE, and a third area in the northern APE. In all areas, the same Ap-B-Fragipan soil sequence was observed in the tests. Plowzone soils were brown (10YR 4/4) gravelly silt loam; B-horizon soils were dark yellowish brown (10YR 4/6) gravelly silt loam; and the fragipan was a very dense, compact, gray (10YR 5/1) channery silt loam. This bottom horizon typically was impassable by hand excavation, though loose enough to be partially excavated in places. Notably, along higher terrain in the location of STPs 5 through 7 on Transect 10 and STPs 4 through 6 on Transect 11, fragipan was found to be at or near the ground surface. In areas where fragipan was encountered at depths of less than 20 centimeters below the surface, no B-horizon soils were typically present.

6. SUMMARY AND RECOMMENDATIONS

Phase I archaeological investigations conducted for a proposed overflow parking area associated with the planned SoS conference center. The overflow parking area is located on property known as the Strong Farm, located in the town of Goshen, Orange County, New York. The APE for the overflow parking area measures 23.3 acres (9.43 ha). The investigation was conducted by Landmark Archaeology, Inc. of Altamont NY who was retained as a consultant by RSSBA of Fayetteville, North Carolina.

Background research revealed that no archaeological sites or map-documented historic structures are located within the APE. However, archaeological sites and historic structures have been identified adjacent to the APE and nearby. Two archaeological sites are recorded near the APE on the Strong Farm parcel and numerous prehistoric sites have been recorded within a one-mile radius of the APE. The Strong Farm house, which is located south of the APE, is considered NRHP eligible, and historic maps show a second house on the farm property and two structures adjacent to the parcel. Based on the results of background research and the physiographic setting of the project area, the archaeological potential was considered high for prehistoric and historic archaeological resources to be within the project area. Topographic features such as hilltops that are in close proximity to the Wallkill River would have been attractive settings for prehistoric groups.

Phase IB investigations included a pedestrian survey and the excavation of 152 shovel tests. No artifacts or evidence of cultural features were found in any of these tests. Testing across the APE documented an A-B-Fragipan soil sequence.

Based on the results of the current archaeological study and upon concurrence by the OPRHP, the proposed project will have no effect on significant archaeological resources. Project clearance is recommended. Should project plans change to include new activity in other areas of the parcel, the OPRHP should be notified to determine if further archaeological investigations are required. It should be noted that no field technique is completely adequate to define all cultural resources in a particular location. Therefore, should historic or prehistoric resources be detected during the course of the project, the OPRHP must be notified immediately so that the significance of the discovery can be determined.

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Figures

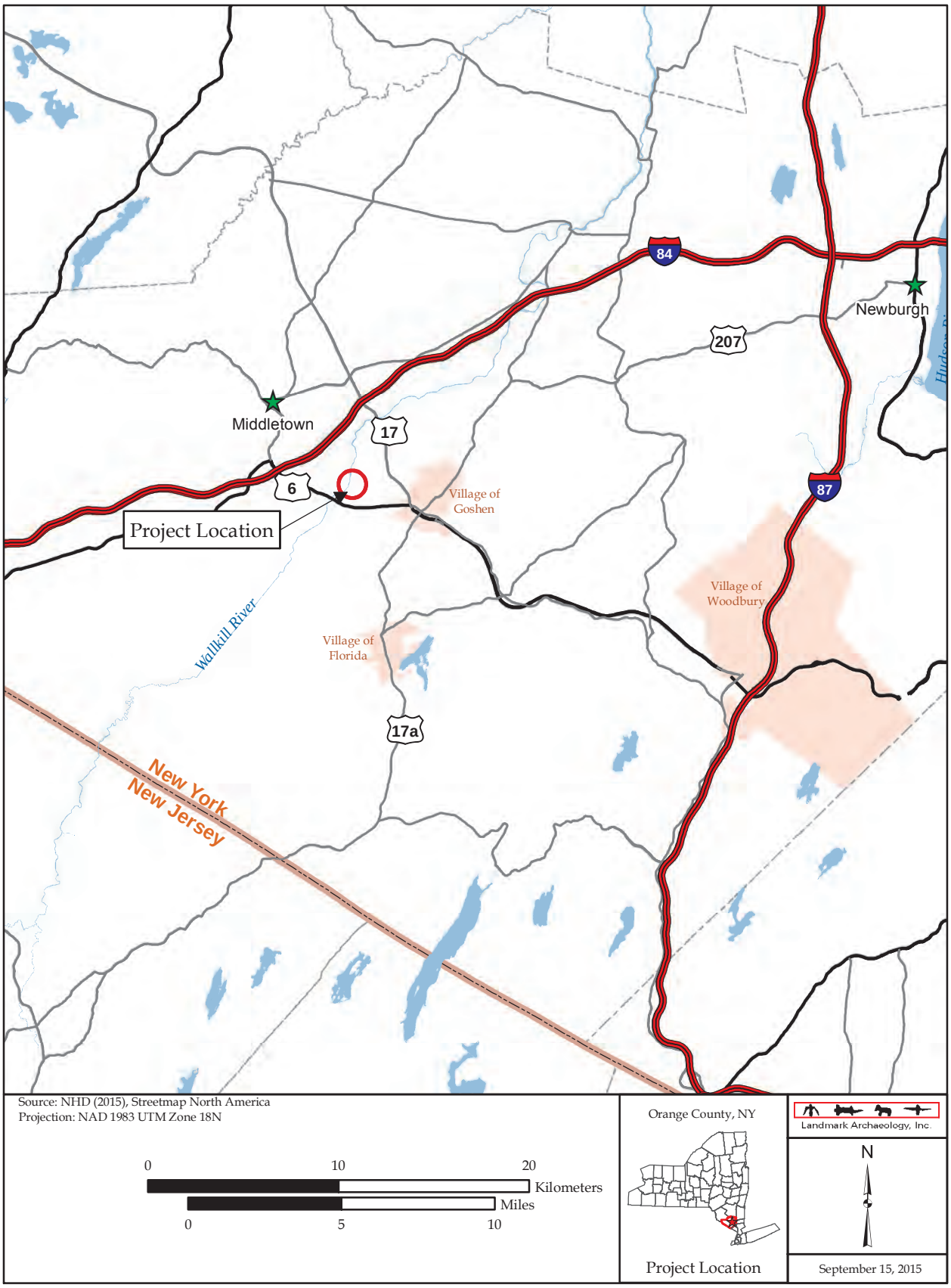

Figure 1: Project Location

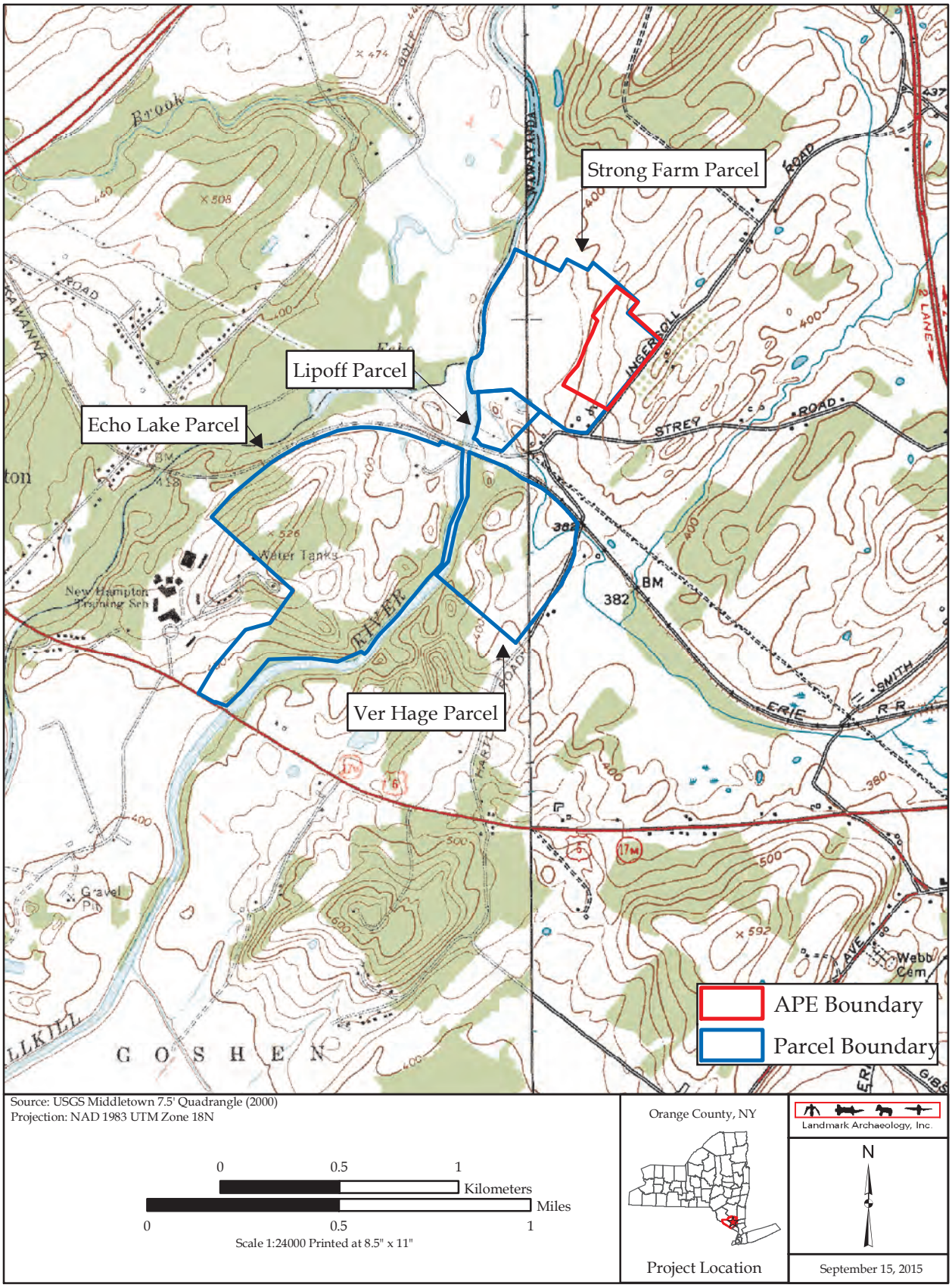

Figure 2: Project Location and Topographic Features

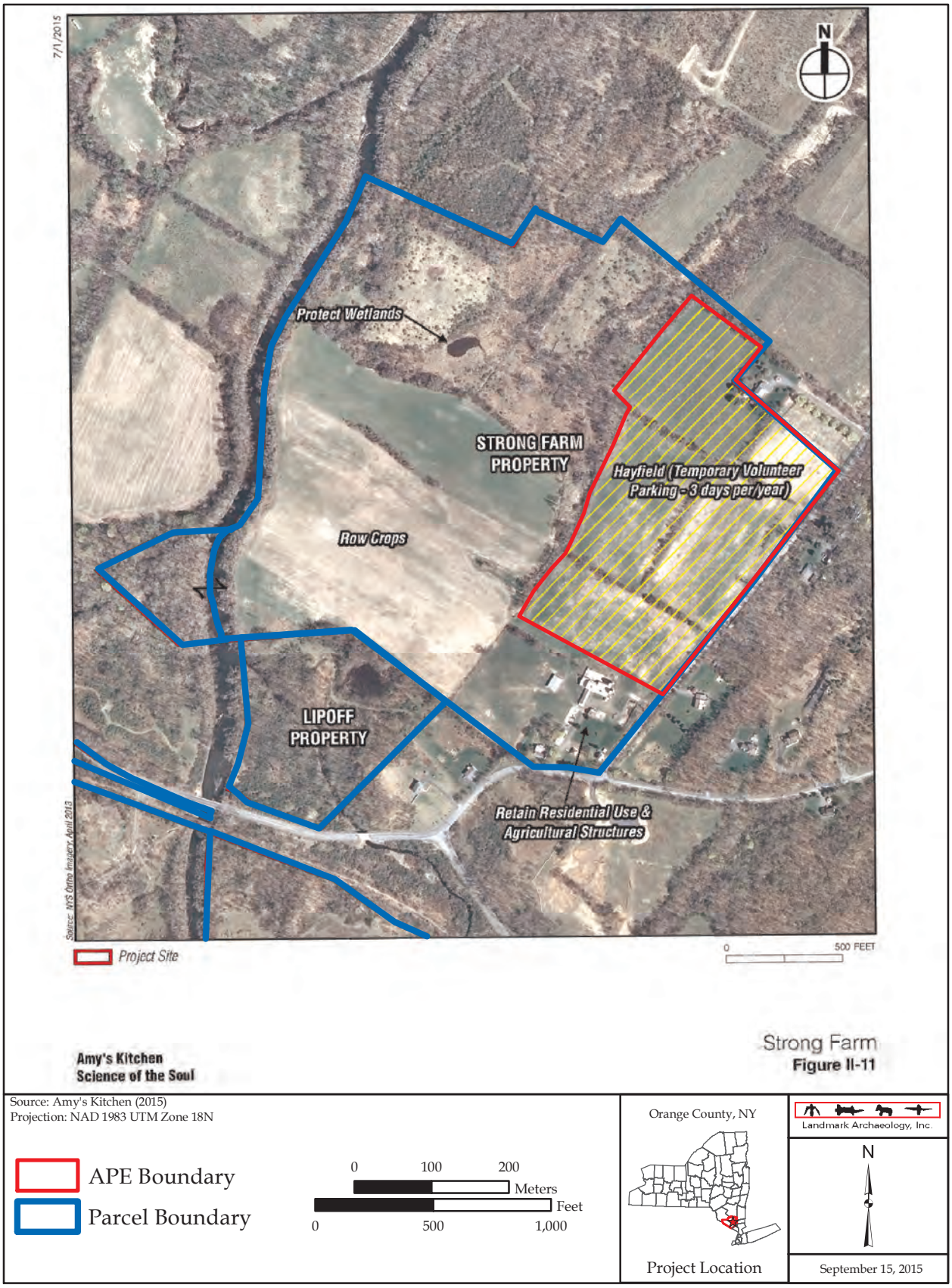

Figure 3: Project Plans

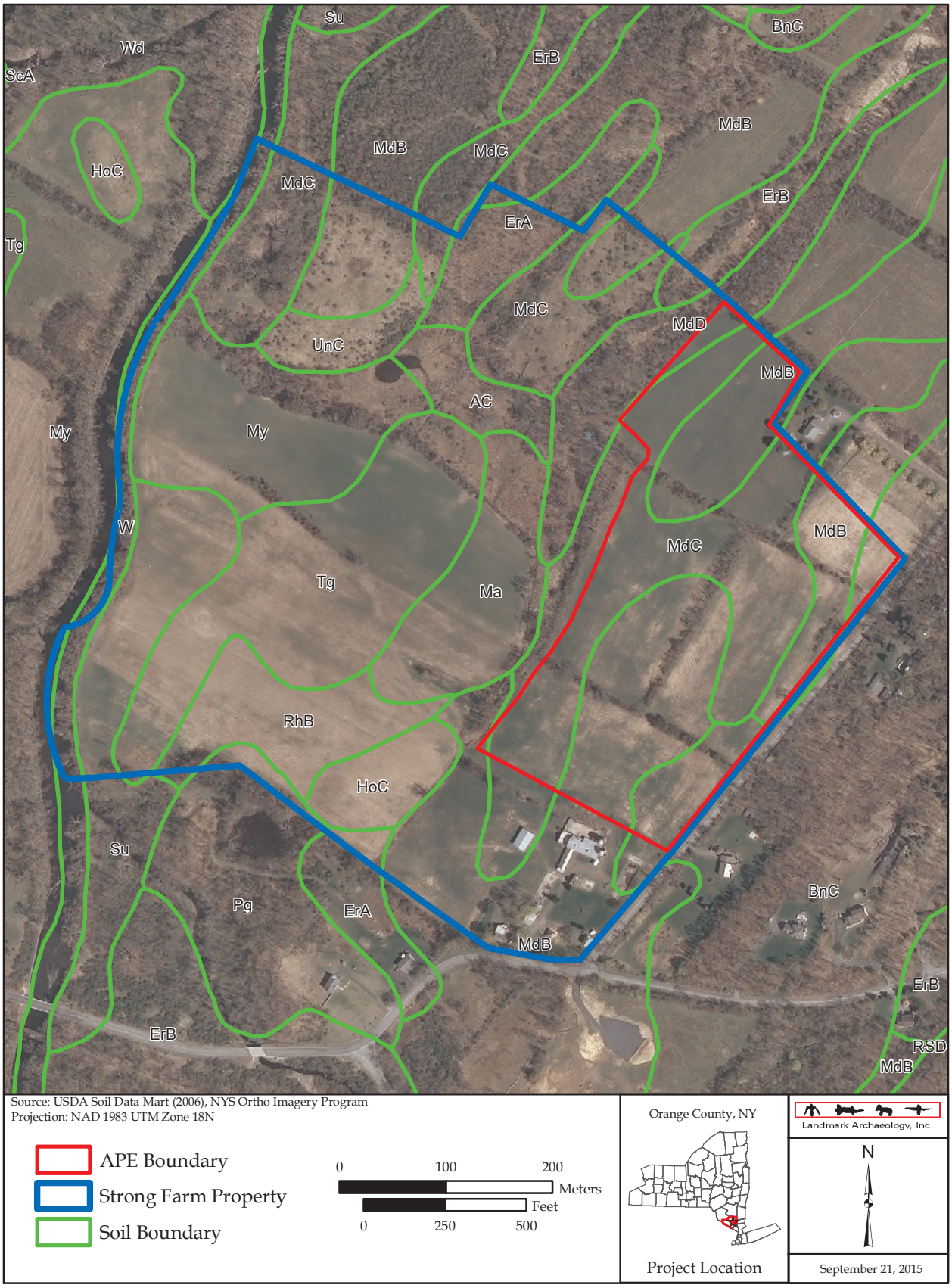

Figure 4: Mapped Soils

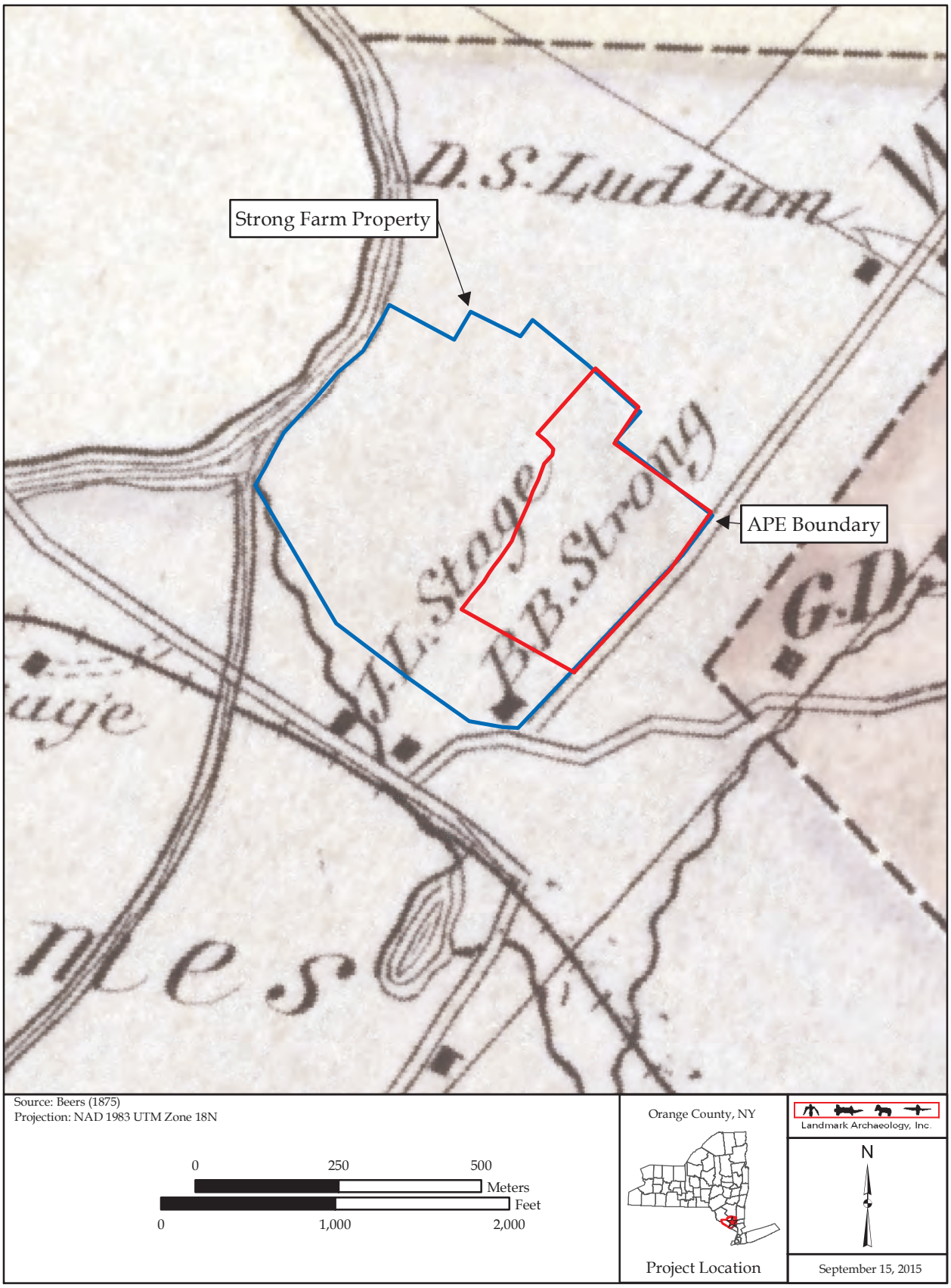

Figure 5: Project Area, 1875

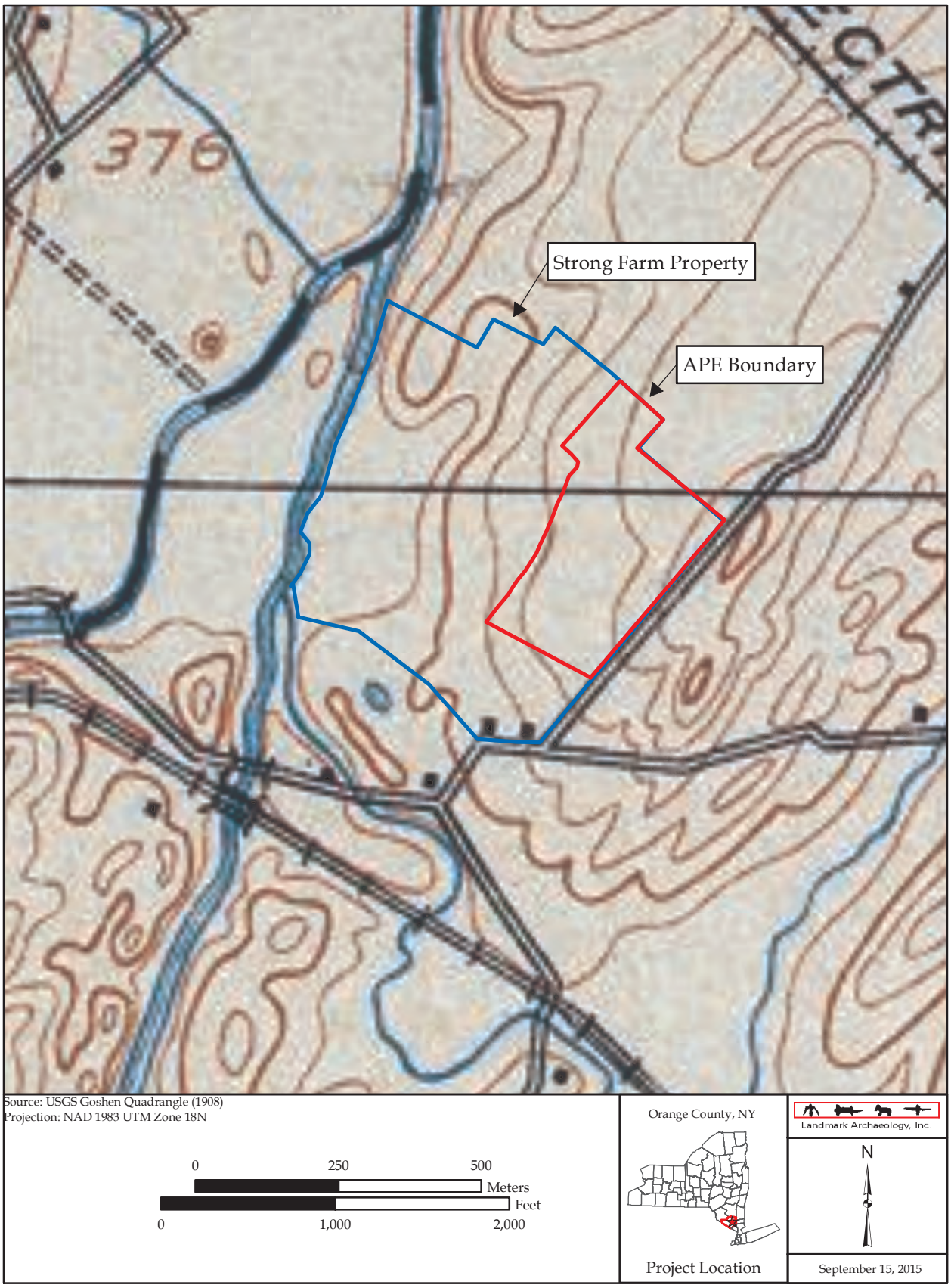

Figure 6: Project Area, 1908

Figure 7: Shovel Test Locations

APPENDIX A

Photographs

Modern Pole Barn
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Source: Esri, NYS Ortho Imagery Program 2013
Projection: NAD 1983 UTM Zone 18N
APE Boundary
Strong Farm Parcel
Photo Angle
15 Photo Number
0 100 200
Meters
0 250 500
Feet
Orange County, NY
Project Location
Landmark Archaeology, Inc.
N
September 14, 2015

Photo Key

Photograph 1: NRHP-Eligible Strong Farm House at 212 Cheechunk Road, View to Northeast

Photograph 2: Strong Farm House at 1 Owens Road, View to West

Photograph 3: Strong Farm Dairy Barn, View to Northwest

Photograph 4: Strong Farm Outbuilding, View to West

Photograph 5: Strong Farm Outbuilding, View to South

Photograph 6: Strong Farm Outbuilding, View to Northwest

Photograph 7: Strong Farm Outbuilding, View to Southeast

Photograph 8: Strong Farm Outbuilding, View to Southeast

Photograph 9: Strong Farm Structure over Well, View to Southeast

Photograph 10: Structure at 34 Owens Road, View to East

Photograph 11: Southern APE, Strong Farm in the Background, View to South

Photograph 12: Northern APE, View to Northeast

Photograph 13: Central APE, View to Southwest

Photograph 14: APE near Owens Road, View to Northeast

Photograph 15: Central APE, View to North

Photograph 14: Eastern APE, View to South

APPENDIX B

Shovel Test Descriptions

SoS Overflow Parking Area-Strong Farm Property
Orange County, New York
Landmark Archaeology, Inc. #349

Soil Description
1 Gravelly Silt Loam
2 Gravelly Sandy Silt Loam
3 Channery Silt Loam Fragipan

Munsell		10YR 4/4-5/4	10YR 4/6	10YR 5/1	
Soil Description Key		1	2	3	
STRAT		A	B	Fragipan	Comments
	STP				
Transect 1					
	1	0-25	25-42		
	2	0-27	27-32		Gravel impasse
	3	0-28	28-32		Gravel impasse
	4	0-30	30-42		
	5	0-37			Rock impasse
	6	0-34	34-49		
	7	0-33	33-48		
	8	0-37	37-47		
	9	0-30	30-33		Rock impasse
	10	0-27	27-42		
	11	0-28			Rock impasse
	12	0-23	23-40		
	13	0-27			Rock impasse
	14	0-24	24-50		
	15	0-23	23-40		
	16	0-20	20-35		
	17	0-24	24-35		
	18	0-20	20-30		Gravel impasse
Transect 2					
	1	0-20	20-35		
	2	0-20	20-35		
	3	0-20	20-28		Rock impasse
	4	0-15	15-33		
	5	0-20	20-29		Rock impasse
Transect 3					
	1	0-17	17-30		
	2	0-18	18-32		Rock impasse
	3	0-20	20-38		
	4	0-18	18-37		
	5	0-21	21-41		
	6	0-17	17-42		
	7	0-25	25-38		
	8	0-31	31-42		
	9	0-22	22-32		
Transect 4					
	1	0-35	35-40		Rock impasse
	2	0-32	32-47		
	3	0-37	37-49		
	4	0-30	30-40		
Transect 5					
	1	0-28			Gravel impasse
	2	0-28			Gravel impasse
	3	0-21	21-36		
	4	0-21	21-38		
Transect 6					
	1	0-25	25-30	30-32	Fragipan Impasse
	2	0-15		15-30	Fragipan Impasse
	3	0-20	20-35		
	4	0-23	23-36		
	5	0-20	20-36		
	6	0-20	20-40		
	7	0-30	30-45		
	8	0-29	29-45		
	9	0-31	31-44		
	10	0-32	32-35		Rock impasse
	11	0-30	30-42		
	12	0-34	34-46		
Transect 7					
	1	0-20	20-34		
	2	0-18	18-33		
	3	0-21	21-33		
	4	0-19	19-32		
	5	0-21	21-36		
	6	0-20	20-34		

SoS Overflow Parking Area-Strong Farm Property
Orange County, New York
Landmark Archaeology, Inc. #349

Soil Description
1 Gravelly Silt Loam
2 Gravelly Sandy Silt Loam
3 Channery Silt Loam Fragipan

Munsell		10YR 4/4-5/4	10YR 4/6	10YR 5/1	
Soil Description Key		1	2	3	
STRAT		A	B	Fragipan	Comments
	7	0-18	18-29		
	8	0-20	20-35		
	9	0-21	21-32		
	10	0-24		24-23	Fragipan Impasse
	11	0-22	22-34		
	12	0-19	19-32		
Transect 8					
	1	0-28	28-38		
	2	0-25	25-38		
	3	0-25	25-39		
	4	0-26	26-40		
	5	0-25	25-41		
Transect 9					
	1	0-15	15-32		
	2	0-17	17-28		
	3	0-18	18-42		
	4	0-16	16-33		
	5	0-21	21-41		
	6	0-20	20-37		
	7				
Transect 10					
	1	0-16	16-35		
	2	0-13	13-32		
	3	0-17	17-34		
	4	0-18	18-32		
	5	0-3		3-4	Fragipan Impasse
	6	0-8		8-7	Fragipan Impasse
	7				Fragipan at surface
	8	0-12	12-20	20-21	Fragipan Impasse
Transect 11					
	1	0-20	20-29		
	2	0-22	22-32		
	3	0-25	25-38		
	4	0-10		10-11	Fragipan Impasse
	5	0-7		7-8	Fragipan Impasse
	6	0-15		15-16	Fragipan Impasse
	7	0-22		22-30	
	8	0-22	22-35		
Transect 12					
	1	0-20	20-31		
	2	0-20	20-32		
	3	0-19	19-30		
	4	0-19	19-26		Gravel impasse
	5	0-19	19-30		
	6	0-20	20-32		
Transect 13					
	1	0-15	15-20	20-21	Fragipan Impasse
	2	0-10		10-30	
	3	0-18		18-33	
Transect 14					
	1	0-20	20-38		
	2	0-20	20-35		
	3	0-18	18-37		
Transect 15					
	1	0-19	19-26	26-27	Fragipan Impasse
	2	0-13	13-30	30-35	
Transect 16					
	1	0-15	15-29	29-30	Fragipan Impasse
	2	0-15	15-25	25-26	Fragipan Impasse
	3	0-18	18-30		
	4	0-15	15-30		
	5	0-19	19-30		
Transect 17					
	1			0-10	Fragipan Impasse
	2	0-7		7-20	Fragipan Impasse
	3	0-10		10-11	Fragipan Impasse

SoS Overflow Parking Area-Strong Farm Property
Orange County, New York
Landmark Archaeology, Inc. #349

Soil Description
1 Gravelly Silt Loam
2 Gravelly Sandy Silt Loam
3 Channery Silt Loam Fragipan

Munsell		10YR 4/4-5/4	10YR 4/6	10YR 5/1	
Soil Description Key		1	2	3	
STRAT		A	B	Fragipan	Comments
	4	0-17		17-19	Fragipan Impasse
	5	0-18	18-30		
	6	0-17	17-29		
	7	0-17		17-18	Fragipan Impasse
	8	0-19	19-24	24-25	Fragipan Impasse
	9	0-20	20-31		
	10	0-20	20-26	26-27	Fragipan Impasse
Transect 18					
	1	0-10	10-20	20-21	Fragipan Impasse
	2	0-20	20-30		
	3	0-16	16-31		
	4	0-20	20-31		
	5	0-20	20-32		
Transect 19					
	1	0-15			Rock impasse
	2	0-17	17-30		
Transect 20					
	1	0-20	20-30		
	2	0-15	15-30		
Transect 21					
	1	0-12	12-30		
	2	0-11	11-30		
	3	0-10	10-31		
	4	0-15	15-29		Rock Impasse
	5	0-10	10-22		Rock Impasse
Transect 22					
	1	0-20	20-30		
	2	0-19	19-28		
	3	0-19	19-26		Rock Impasse
	4	0-20	20-31		
Transect 23					
	1	0-16	16-30		Rock Impasse
	2	0-15	15-28		Rock Impasse
	3	0-16	16-31		
	4	0-18			Rock Impasse
Transect 24					
	1	0-16	16-34		
	2	0-20	20-35		
Transect 25					
	0-23		23-35		Fragipan Impasse
	0-26			26-27	Fragipan Impasse
	0-25			25-26	Fragipan Impasse
Selective					
	S1	0-20	20-38		
	S2	0-14	14-26	26-27	Fragipan Impasse
	S3	0-17	17-27		
	S4	0-20	20-32		

Phase I Archaeological Investigations of the Proposed NYS 17M Entrance to Science of the Soul Conference Center/ Amy's Kitchen Production Facility Town of Goshen Orange County, New York

OPRHP No. 15PR03538

Prepared for:
Hudson Valley Area LLC
PO Box 4759
Petaluma, California

Prepared by:
Susan Gade and Brad Gawron
Landmark Archaeology, Inc.
6242 Hawes Road
Altamont, New York 12009-4606

Susan Gade, RPA and Derrick J. Marcucci, RPA
Principal Investigators

LA# 351
December 2015

In accordance with Section 6.6 of the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State," published by the New York Archaeological Council (NYAC) in 1994 and adopted by the State Historic Preservation Office, sensitive site location information has been redacted. An unredacted version has been made available to the Planning Board.

MANAGEMENT SUMMARY

SHPO Project Review Number: 15PR03538

Federal Agencies: USACE, FWS, FEMA
State Agencies: DEC, DOT, OGS, OMH, DPS, ESD, SEQRA

Phase of Study: Phase I

Location:
Minor Civil Division: Town of Goshen
County: Orange County

USGS 7.5′ Quadrangle Map: Middletown, NY (2000)

Survey Area
Length: 369.0 meters (1210.6 ft) maximum
Width: 254.3 meters (834.3 ft) maximum
Depth: n/a
Size Total Acres Surveyed: 3.1 acres (1.3 ha)
Total Square Meters Excavated: n/a
Total Square Feet Excavated: n/a

Archaeological Survey Overview
Total and Interval of Shovel Tests: 71 total: 33 at 15-meter interval, 25 at 7.5-meter interval, 6 at 5-meter interval, 5 radials (1- and 3-m), and 2 selectively placed.
Width of Plowed Strips: n/a
Surface Survey Transect Interval: n/a

Results of Archaeological Survey
Number and name of prehistoric sites identified: 1-07106.000164
Number and name of historic sites identified: none
Sites Recommended for Phase II/Avoidance: Avoidance of 07106.000164

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Landmark Archaeology, Inc.

Date of Report: December, 2015

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1. INTRODUCTION

This report presents the results of a Phase I archaeological investigation of the proposed NYS 17M Entrance to the proposed Amy's Kitchen/Science of the Soul projects (OPRHP No. 15PR03538) located in the Town of Goshen, Orange County, New York (Figure 1). The proposed NYS 17M Entrance project will entail widening this roadway and the realignment of the existing entrances to Mid-Hudson Forensic Psychiatric Center and to the Orange County Tactical Training Center. The Phase I considered an Area of Potential Effect (APE) of approximately 3.1 acres (1.3 ha). The investigation was conducted by Landmark Archaeology, Inc. of Altamont, New York who was retained as a consultant by Hudson Valley Area LLC of Petaluma, California.

The proposed project is part of a larger project that includes an Amy's Kitchen production facility and a Science of the Soul (SoS) conference center. There are four separate, but related parcels of the project: Echo Lake, Ver Hage, Lipoff, and Strong Farm. The NYS 17M Entrance APE is located at the southern end of the Echo Lake parcel (Figure 2). According to the Draft Environmental Impact Statement (DEIS) (AKRF n.d.), Amy's Kitchen and SoS are working together on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents. The proposed SoS conference center on the Echo Lake parcel will be connected to and share infrastructure with the proposed Amy's Kitchen food production facility on the Ver Hage parcel. Both of these projects will draw water from proposed wells located on the Lipoff parcel. The Strong Farm parcel is proposed for overflow parking associated with the SoS conference center. The previous archaeological investigations of the Echo Lake, Ver Hage, Lipoff, and Strong Farm properties are detailed in separate reports (Gade and Schreyer 2015; Gawron and Gade 2015; Marcucci et al. 2015).

The current Phase I study was conducted to: (a) inspect the project area and precisely define the spatial boundaries of any archaeological resources in relation to the limits of the project area, (b) assess the potential of the project area for deeply buried cultural deposits, (c) conduct surface and limited subsurface investigations of the resources which are either partially or completely in the area of the proposed construction, and (d) provide recommendations for those archaeological resources which may be impacted by proposed development activities. These tasks were conducted to provide federal and state reviewing agencies with the appropriate documentation to evaluate the effect of the proposed project on historic and/or prehistoric cultural resources.

The Phase I study was conducted in two stages: a Phase IA literature review and a Phase IB intensive level identification survey. The purpose of the Phase IA investigation was to assess potential for National Register of Historic Places (NRHP) properties to exist within the project area. Research tasks associated with the Phase IA study consisted of a literature review and records search at the New York Office of Parks, Recreation and Historic Preservation (OPRHP). The Phase IB study included an intensive level identification survey consisting of shovel test excavations within the project APE. All Phase I field and analytical methods were conducted in accordance with guidelines established in *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York* by the New York Archaeological Council (NYAC 1994) and adopted by the OPRHP.

The following technical report presents the results of the Phase I study conducted in November, 2015. Derrick Marcucci, RPA, served as the Principal Investigator for the project and he supervised all aspects of the investigation. Background literature was reviewed by Brad Gawron. Fieldwork was conducted by Mr. Marcucci, Mr. Gawron (GIS Specialist), Devin Guy, Nicole Marcucci, and Kevin VanDerWende. This report is written by Susan Gade, RPA and Mr. Gawron. Spatial data were collected by Mr. Gawron who also produced report graphics. All

field notes, photographs, and records associated with the project are on file at Landmark Archaeology, Inc., 6242 Hawes Road, Altamont, New York.

2. PROJECT DESCRIPTION

The proposed NYS 17M Entrance will serve as the main access to the SoS conference center and Amy's Kitchen production facility. The DEIS notes "The Amy's Kitchen manufacturing facility and the SoS Conference Center, together with certain related facilities and improvements, comprise the "Proposed Project" (AKRF n.d.:II-1). As noted in Chapter 1, four properties are part of the total project. Table 1 lists the properties, and the size and proposed development for each.

Table 1
Amy's Kitchen and SoS Properties and Proposed Development

Entity	Property Name	Property Size (ac)	APE Size (ac)	Proposed Development
Amy's Kitchen	Ver Hage	71.7	71.7	Manufacturing facility
Amy's Kitchen	Lipoff	11.8	11.8	Wells/water supply
SoS	Echo Lake	194.6	109.5	Conference Center
SoS	Strong Farm	96	23.3	Volunteer parking for SoS

Source: DEIS

The NYS 17M Entrance project area abuts the southern end of the Echo Lake parcel and it is located on both sides of State Route 17M on the western side of the Wallkill River (see Figure 2). It is bounded by the Wallkill River to the east and travels west along the NYS 17M for approximately 370 meters (1213.9 ft). The project proposes widening NYS 17M and the APE includes up to 6.0 meters (19.7 ft) north of the existing northern road edge and 3.5 meters (11.5 ft) south of the existing southern road edge (Figure 3).

Plans also propose to realign the existing Mid-Hudson Forensic Psychiatric Center entrance located north of NYS 17M and the existing Orange County Tactical Training Center entrance south of NYS 17. The existing Mid-Hudson Forensic Psychiatric Center entrance is slotted for closure and the new access will be via the proposed Amy's Kitchen/SoS access road. The project plans to move the Orange County Tactical Training Center entrance to the west directly opposite of the proposed Amy Kitchen/SoS access road and approximately 140 meters (459.3 ft) of the entrance will be realigned (see Figure 3).

There are no structures 50 years or older within or adjacent to the APE. No standing structures will be demolished by this undertaking.

3. DESCRIPTION OF PROJECT AREA

The project area is located in southeastern New York, in the Town of Goshen. It is situated in the lower Hudson River Valley within the Hudson Mohawk Lowlands physiographic area (Isachsen et al. 2000). The Hudson Mohawk Lowlands span almost the entire north-south length of eastern New York. In southern New York, these lowlands are bounded by the Catskill Mountains to the west and the Taconic Mountains to the east. The combined watersheds of the Wallkill River and Rondout Creek provide drainage for the region. Surficial geology of the project is dominated by glacial landforms and the unconsolidated sediments (glacial till) that were deposited during the late Wisconsinan glaciation which occurred 21,000 to 13,600 years ago. Bedrock geology is complex, comprised of the Trenton Group of shales that underlie the entire central part of Orange County.

The project area is located adjacent to the Wallkill River, the major drainage system in the central part of Orange County. In the project vicinity, the Wallkill River is a slow moving stream approximately ten meters wide. The headwaters of the Wallkill River form in the Pochuck Mountains on the New York/New Jersey border. The Wallkill River flows for approximately 88 miles in a northeasterly direction before being impounded into a small body of water near Rosendale called Sturgeon Pool. Sturgeon Pool flows into the Rondout Creek, which empties into the Hudson River at Kingston, New York.

The APE is comprised of a glaciated upland footslope and terrace near the Wallkill River (see Figure 2). Terrain within the project area is relatively flat (Appendix A: Photographs 1-4). Elevation ranges from 360 to 425 feet above mean sea level with the lowest elevations occurring in the project area's eastern limits nearest the Wallkill River. Disturbance in the APE is confined to areas along NYS 17M. Buried utilities run along most of area south of the road. A road/drainage ditch approximately 0.5 meters deep is present in various areas along the northern road edge. At the time of fieldwork, vegetation within the APE consisted of areas of manicured lawn, trees, and tall grasses.

Five soils are mapped in the project area (Figure 4; Olsson 1981). Smoothed Udorthents is mapped along the proposed entrance to the Mid-Hudson Forensic Psychiatric Center and it is product of manmade cut and fill activities. The four natural soils within the project area were formed in glacial till and glacial lake deposits. The soils in the APE range from very poorly to moderately well-drained, with most being poorly drained. The soils consist of silt loam and gravelly silt loam. The soil types in the APE are found on landforms associated with upland depressions, footslopes and hilltops, as well as lowland plains and benches. Table 2 provides summary information on these soils.

Table 2
Summary Soil Information

Soil Name	**Symbol**	**Slope**	**Drainage Class**	**Parent Material**	**Landform**
Canandaigua silt loam	Ca	0-3%	Poorly to very poorly drained	Glacial lake deposits	Upland depressions and lowland plains
Erie gravelly silt loam	ErB	3-8%	Somewhat poorly drained	Glacial till	Upland footslopes and along shallow drainages
Mardin gravelly silt loam	MdB	3-8%	Moderately well drained	Glacial till	Upland hilltops and ridges
Raynham silt loam	Ra	0-3%	Somewhat poorly to poorly	Glacial lake deposits	Upland depressions and valley benches

Soil Name	Symbol	Slope	Drainage Class	Parent Material	Landform
			drained		
Smoothed Udorthents	UH	Varies	Varies	Manmade cut and fill	Urban developments and industrial sites

4. PHASE IA INVESTIGATION

A. RESEARCH OBJECTIVES

The goal of the Phase IA study is to assess the potential for the presence of significant archaeological resources within the project area. The study is designed to gather data regarding archaeological potential through archival research and a preliminary field inspection. All pertinent archaeological and historical literature and state records applicable to the project area are reviewed during the Phase IA investigation.

Site assessments are based on NRHP criteria of significance (36CFR60.6, *Federal Register* 1976). The criteria are:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and

a. that are associated with events that have made a significant contribution to the broad patterns of our history; or

b. that are associated with the lives of persons significant in our past; or

c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction, or

d. that has yielded, or may be likely to yield, information important in prehistory or history.

Typically, Criterion d is the most applicable criterion for evaluation of archaeological resources.

B. BACKGROUND RESEARCH

Background research was conducted for the purpose of compiling baseline information related to the prehistory, history, geomorphology, environment, and land use history of the project area. These sources provided information regarding NRHP eligible sites in the area and data with which to evaluate the project's archaeological potential.

Background research included a site file search using the Cultural Resources Information System (CRIS) maintained at the OPRHP. This search determined if archaeological sites or NRHP properties were recorded within or near the project area. It also identified areas of previous archaeological investigations within one mile of the project areas. Historic maps were examined to identify land use history and potential for historic resources such as map documented structures (MDS) to be within the project area.

C. RESULTS OF THE PHASE IA INVESTIGATION

There are no previously recorded archaeological sites or NRHP properties within the APE. However, the NRHP-eligible Site 07106.000164 is located adjacent to the APE on the north side of NYS 17M. This site was identified and examined by Phase I/II investigations of the Echo Lake parcel in 2014 (Marcucci et al. 2015). It is a prehistoric site associated with the Terminal

Archaic/Transitional cultural period. Phase I/II investigations of the site recovered 53 artifacts including an Orient Fishtail point base. The work documented archaeological deposits are contained within intact, unplowed A- and upper B-horizon soils. The site is recommended as eligible to the NRHP under Criterion d for its research value in examining settlement, subsistence and community pattering of the Terminal Archaic/Transitional period (Marcucci et al. 2015:22). The study further notes that the site may extend beyond the Echo Lake parcel boundaries.

In addition to Site 07106.000164, 18 other archaeological sites have been previously recorded within one mile of the NYS 17M Entrance APE (Table 3). The sites consist of 13 prehistoric sites, two historic sites, one prehistoric/historic site, and two sites of which no information is recorded. The prehistoric sites include occupations associated with the Paleoindian through the Woodland cultural periods. Historic sites date to the nineteenth and twentieth centuries.

Table 3
Previously Recorded Archaeological Sites Within One Mile of the Project Area

OPRHP #	NYSM #	Reported by	Site identifier/Description	Time period
07106.000006		Orange County NYSAA	New Hampton 2	Early Archaic and 19th Century
07106.000009		Orange County NYSAA	ORGO -9F	Paleoindian and Early Archaic
07106.000010		Orange County NYSAA	ORGO 14F	Prehistoric
07106.000022		Orange County NYSAA	ORGO 12F	Prehistoric
07106.000023		Orange County NYSAA/Landmark Archaeology, Inc.	ORGO 13F	Late Archaic
07106.000076		Hunter Research Associates	Al Turi Site A	Prehistoric
07106.000077		Hunter Research Associates	Al Turi Site B	Late Archaic
07106.000112		Hartgen Archaeological	Orange County Jail Prehistoric Site	Prehistoric
07106.000138		R. Grubb and Associates	Hendler Site	Prehistoric
07106.000164		**Landmark Archaeology, Inc.**	**Amy's Kitchen Site 1**	**Terminal Archaic/ Transitional**
07106.000165		Landmark Archaeology Inc.	Amy's Kitchen Site 2	Late Archaic
07106.000166		Landmark Archaeology Inc.	Amy's Kitchen Site 3	Late Archaic
07106.000171		Landmark Archaeology, Inc.	H. Stage Historic Site	19th to 20th Century
07119.000013		Orange County NYSAA	ORWW 06F	No info
07119.000014		Orange County NYSAA	ORWW-07F	Archaic to Woodland
07119.000030		Orange County NYSAA	ORWW-23F	Prehistoric
07119.000155		BTK Associates Inc.	Golf Links Road Historic Cemetery	Historic 1850-1870
07119.000193		S.J. Oberon	Huberth Site	Archaic
	6171	Orange County NYSAA	Numerous sites above 400 ft amsl	No info

BOLD: Adjacent to project area

No archaeological surveys have been previously conducted within the limits of the NYS 17M Entrance APE. However, a number of Phase IA/IB archaeological surveys and Phase II investigations have been conducted near the project area. Table 4 lists the earlier investigations conducted within one mile of the APE. As mentioned above, archaeological investigations of the Echo Lake parcel (Marcucci et al. 2015) included land abutting the current project area (see Figure 2).

Table 4
Summary of Previous Archaeological Investigations Within One Mile of the APE

Archaeological Survey Title	Year	Researchers	Location in Relation to APE
A Phase I Archaeological Survey of a 21.9-Acre Sand and Gravel Mine Site, Al Turi Landfill, Town of Goshen, Orange County, New York. Hunter Research Associates	1987	L. Rakos-Hunter Research Associates	.5 miles northeast
Report on Investigation of the Echo Lake Project Area, Town of Goshen, Orange County, New York, EnviroPlan Associates, Poughkeepsie, New York	1989	Eugene J. Boesh	.9 miles northeast
Stage I-B Cultural Resources Survey, Proposed Water Supply Area, Echo Lake Development Site, Town of Goshen, Orange County, New York. Atlantic Testing Laboratories, Limited, Utica, New York	1990	S.J. Oberon	Well field site north of project area
Phase I-B Archaeological Survey and Testing of the Proposed Orange County Jail Project, Echo Lake, Orange County, New York, Brockington and Associates, Atlanta, Georgia	1991	S. Scott Butler	.4 miles northeast
Stage I-B and Stage II Cultural Resources Surveys Site Identification and Site Evaluation Phases Proposed Echo Lake Mine Site, Town of Goshen, Orange County, New York and Stage I Site Identification Survey Proposed Water Line Construction Route, Towns of Wawayanda and Wallkill, Orange County, New York	1994	S. J. Oberon	.4 miles northeast
Phase IB and Limited Phase II Cultural Resources Survey Site Identification and Site Evaluation Phases (sic), Proposed Echo Lake Development, Town of Wawayanda, Orange County, New York.	2000	S.J. Oberon	.8 miles north
Phase 1 Archaeological Survey, The Mid-Hudson Psychiatric Center, Goshen, Orange County, New York	2000	D.Brown et al.-Historical Perspectives	.4 miles north
Phase IA Literature Review & Sensitivity Analysis and Phase IB Archaeological Field Reconnaissance survey, Raja Convenience Store and Gas Station, 4932 State Route 17M, town of Wawayanda, Orange County, New York	2005	CITY/SCAPE	.9 miles west
Phase I Cultural Resource Survey site Assessment and Site Identification Phases, Proposed Orange County Transfer Station #1 Improvements, Town of Goshen, Orange County, New York	2007	S.J. Oberon	.7 miles south
Phase 1A And 1B Archaeological Survey, Hartley Substation, Section 12, Block 1, Lot 1.7, Town Of Goshen, Orange County, New York	2010	Richard Grubb & Associates, Inc.	1 mile northeast
Phase IA/IB Archaeological Survey, Orange and Rockland Utilities, Inc. Proposed 13,500 Foot, 12 Inch Gas Main Project, Wawayanda And Middletown, New York	2010	G. R.Dubell and M.J. Hubbard-PAL	0.7 miles north
Phase I Cultural Resources Survey, Site Assessment and Site Identification Phases, Proposed Orange County Tactical Training Range, Town of Goshen, Orange County, New York	2013	S.J. Oberon	.5 miles southeast
Phase I and II Archaeological Investigations of the Amy's Kitchen and Science of the Soul Developments, Town of Goshen, Orange County, New York	2015	Landmark Archaeology Inc.	Adjacent, northeast

Historic maps reviewed during the Phase IA study included the years 1875 (Beers 1875; Figure 5) and 1908 (USGS 1908; Figure 6). On both maps NYS 17M is depicted in the project vicinity following a route similar with its modern day alignment. The maps show no major changes in the Wallkill River channel in the project area. On the 1875 map, a structure associated with the name "Z. Riggs" is illustrated immediately adjacent to the western limit of the APE on the north side of NYS 17M. The 1908 map shows this structure as well as a second structure located to the north of NYS 17M.

D. ARCHAEOLOGICAL POTENTIAL

Based on the physiographic setting of the project area and the results of background research, the archaeological potential is considered high for prehistoric and historic archaeological resources to

be within the APE. Site 07106.000164, the prehistoric site that borders the APE to the north and east may extend into the APE. Historic maps show two structures within the immediately area of the APE, and thus, potential for historic archaeological resources is consider high. Potential for archaeological deposits to be deeply buried in alluvium is considered low since the soils mapped for the area are glacially derived.

5. PHASE IB INVESTIGATION

A. PHASE IB FIELD METHODS

The Phase I field investigation was conducted the week of November 2, 2015. Fieldwork included a pedestrian walkover and shovel test excavations. The walkover assessed the archaeological potential of the project area and examined exposed surfaces for archaeological evidence. Shovel tests were positioned along transects and generally spaced 15 meters apart. Along NYS 17M near the MDS areas (Transect 5) and near Site 07106.000164 (Transects 2 and 3), the testing interval was reduced to 7.5 meters. A reduced testing interval was also used along the western edge of Site 07106.000164. Transects 8 through 10 were five meters apart and Transect 9 was located approximately three meters from the western edge of Site 07106.000164. Shovel tests on Transects 9 and 10 were spaced five meters apart and they were 7.5 meters apart on Transect 8. Phase I fieldwork also included some selectively positioned shovel tests to examine areas of suspected disturbance. Radial shovel tests were placed at one and three meters around STP 1 on Transect 3, which had yielded a single flake. No tests were excavated in areas of slope exceeding 12 to 15 percent or in areas identified by *Dig Safely New York* as buried utility corridors. In total, 71 shovel tests were excavated during the current Phase I field investigation (Figures 7 and 8).

All subsurface test locations were recorded using a submeter, high precision GPS receiver. The geospatial data were differentially corrected for an estimated horizontal error of less than one meter. The diameter of shovel tests ranged from 30 to 50 centimeters. Soils were removed in 20-centimeter levels within soil horizons. Across the APE, soils were excavated 15 centimeters into the B-horizon soils unless an impasse was reached. All excavated soil was screened through ¼-inch mesh hardware cloth. Soil characteristics including texture and color (Munsell) and any disturbances or other noteworthy features of the tests were recorded on standardized Landmark Archaeology, Inc. forms. All shovel tests were backfilled after completion. Soil descriptions for each shovel test are given in Appendix B.

B. LABORATORY AND ANALYSIS METHODS

Artifacts were transported to laboratory facilities at Landmark Archaeology, Inc. for processing. Artifacts were washed and sorted into appropriate categories (e.g. historic and prehistoric) and subcategories for analysis. The flake assemblage was sorted by chert types and by five categories reflecting the stages in the lithic reduction sequence (Callahan 1979). The five categories of chert debitage include: primary, secondary, tertiary, retouch, and shatter. A sixth category, broken, was used for broken flakes which could not be assigned to a lithic reduction category. The artifact analysis data, including provenience and category frequencies are presented in Appendix C.

Artifacts are temporarily curated at Landmark Archaeology, Inc., 6242 Hawes Road, Altamont, New York. For the archaeological site which extended into the project area, a New York State Archaeological Site Inventory Form was completed and submitted to the OPRHP (Appendix D).

C. RESULTS OF THE PHASE IB INVESTIGATION

As noted, the Phase IB fieldwork included the excavation of 71 shovel tests. In general, shovel tests encountered gravelly silt loam or silt loam soils with an A-B soil sequence. Soils primarily included an A horizon of brown (10YR 4/3) gravelly silt loam over a B horizon of yellowish brown (10YR 5/4) gravelly silt loam. Along lower lying areas, silt loams lacking gravels were found. These soils typically consisted of a very dark grayish brown (10YR 3/1-3/2) silt loam A horizon and a grayish brown (10YR 5/2) silt loam B horizon. Across the project area the A horizon ranged from 26 to 44 centimeters in thickness. Fill comprised of dense, impenetrable

gravel also was recorded in several shovel tests. These tests were located along NYS 17M and near the existing entrance to the Mid-Hudson Forensic Psychiatric Center.

The Phase IB field investigation yielded two artifacts. The first artifact is a tertiary flake. This artifact was found in a shovel test (Tr. 1, STP 3) located along the NYS 17M road edge. It was recovered from the upper 20 centimeters of the A horizon. Five radial shovel tests were excavated around the shovel test (see Figure 7). The narrow APE along NYS 17M at this location prohibited radial testing in all directions from the positive test and no shovel tests were excavated to the south of the positive test. No artifacts were recovered from the radial tests. The positive shovel test is approximately 31 meters (101.7 ft) from the nearest positive excavation associated with Site 07106.000164. The flake is interpreted to be an isolated artifact due to the distance separating it from Site 07106.000164.

The second artifact is a utilized, tertiary flake. It was recovered from the upper 20 centimeters of the A horizon in STP 5 on Transect 8. This shovel test is approximately eight meters (26.2 ft) from the western edge of Site 07106.000164, and thus, the artifact is interpreted to be associated with Site 07106.000164. Based on the recovery of this artifact, the size of Site 07106.000164 has increased from 993.3 square meters (0.25 ac) as defined by earlier Phase I/II investigations of the Echo Lake parcel (Marcucci et al. 2015) to 1578.3 square meters (0.39 ac) (see Figure 8). Shovel tests on Transect 10 did not yielded any artifacts.

6. SUMMARY AND RECOMMENDATIONS

Phase I archaeological investigations were conducted for the proposed NYS 17M Entrance to the proposed Amy's Kitchen/Science of the Soul projects (OPRHP No. 15PR03538) located in the Town of Goshen, Orange County, New York. The proposed NYS 17M entrance project will entail widening this roadway and the realignment of the existing entrance to Mid-Hudson Forensic Psychiatric Center and the existing entrance to the Orange County Tactical Training Center. The Phase I investigation considered an APE of approximately 3.1 acres (1.3 ha). The investigation was conducted by Landmark Archaeology, Inc. of Altamont New York who was retained as a consultant by Hudson Valley Area LLC of Petaluma, California.

Background research revealed that there are no previously recorded archaeological sites or NRHP properties located within the APE. However, NRHP-eligible Site 07106.000164 is located adjacent to the APE on the north side of NYS 17M. Additionally, numerous archaeological sites have been recorded in the area, and potential was considered high for prehistoric archaeological resources on the APE. Potential for historic archaeological resources also was considered high since historic maps show two structures within close proximity to the APE.

Phase IB investigations included a pedestrian survey and the excavation of 71 shovel tests. Prehistoric artifacts were found in two excavations. One artifact is a tertiary flake and this artifact is considered to be isolated find as radial shovel test excavations did not yield additional artifacts. As an isolated artifact, it has limited research potential and does not meet NRHP eligibility criteria. No further archaeological investigation is recommended for the isolated find.

The second artifact, a flake tool, is interpreted to be associated with Site 07106.000164. The recovery of this artifact increases the site size from 993.3 square meters (0.25 ac) as defined by earlier Phase I/II investigations of the Echo Lake parcel (Marcucci et al. 2015) to 1578.3 square meters (0.39 ac). Site 07106.000164 is considered eligible to the NRHP under Criterion d, and avoidance by project activities has been recommended for this site. Therefore, avoidance of the new site area in the NYS 17M entrance APE also is recommended. If avoidance is not feasible, a Phase III archaeological data recovery is recommended to mitigate adverse effects of the proposed development activities. Phase III investigations should follow a Data Recovery Plan (DRP) which is developed in consultation with the OPRHP. The DRP must outline field and analytical methods to address research issues relevant to the site's data potential.

It should be noted that no field technique is completely adequate to define all cultural resources in a particular location. Therefore, should historic or prehistoric resources be detected during the course of the project, the OPRHP must be notified immediately so that the significance of the discovery can be determined.

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United States Geological Survey (USGS)
1908 *Goshen, NY*. 15' Series Quadrangle
2000 *Middletown, NY*. 7.5' Series Quadrangle

Figures

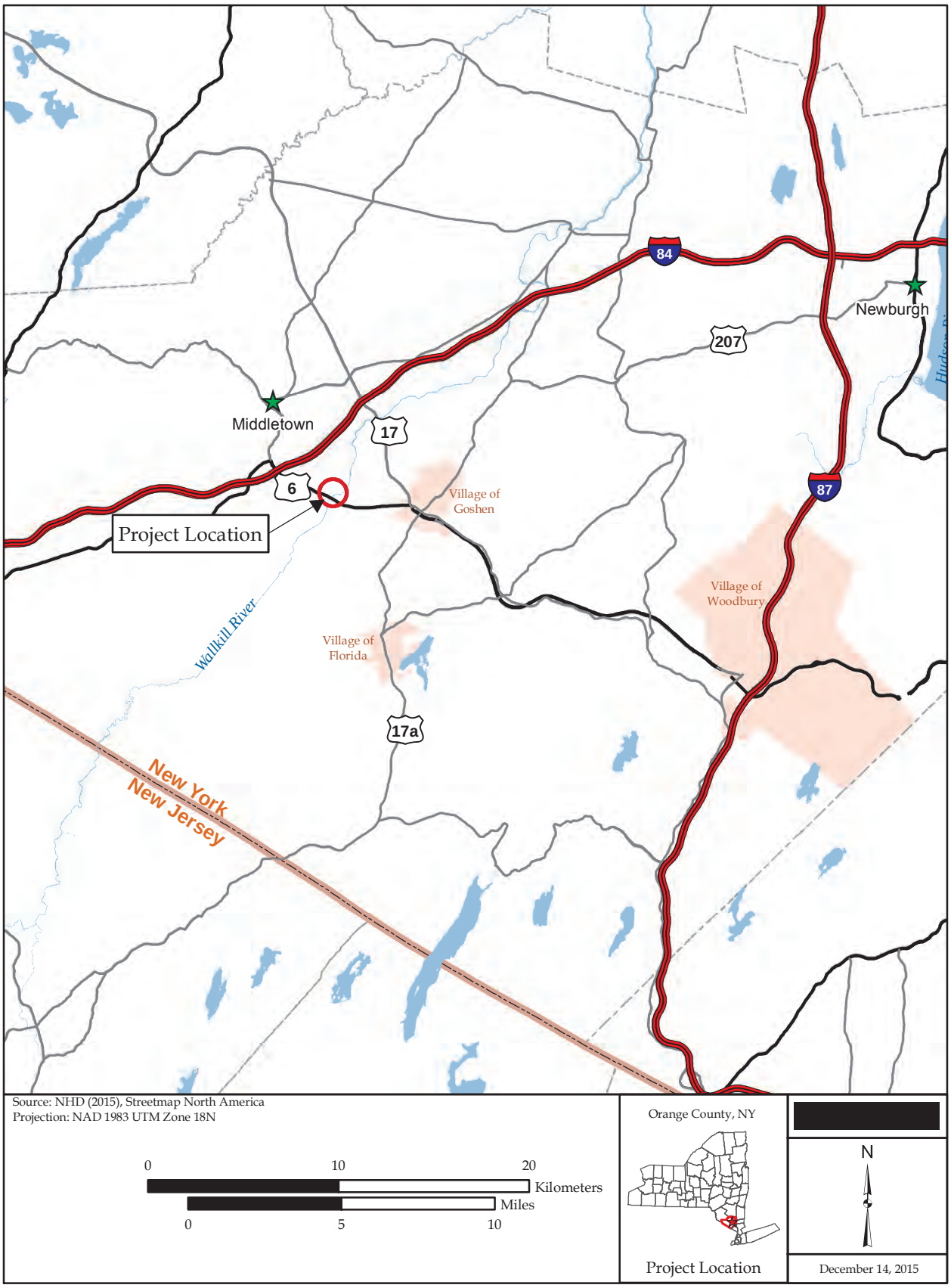


Figure 1: Project Location

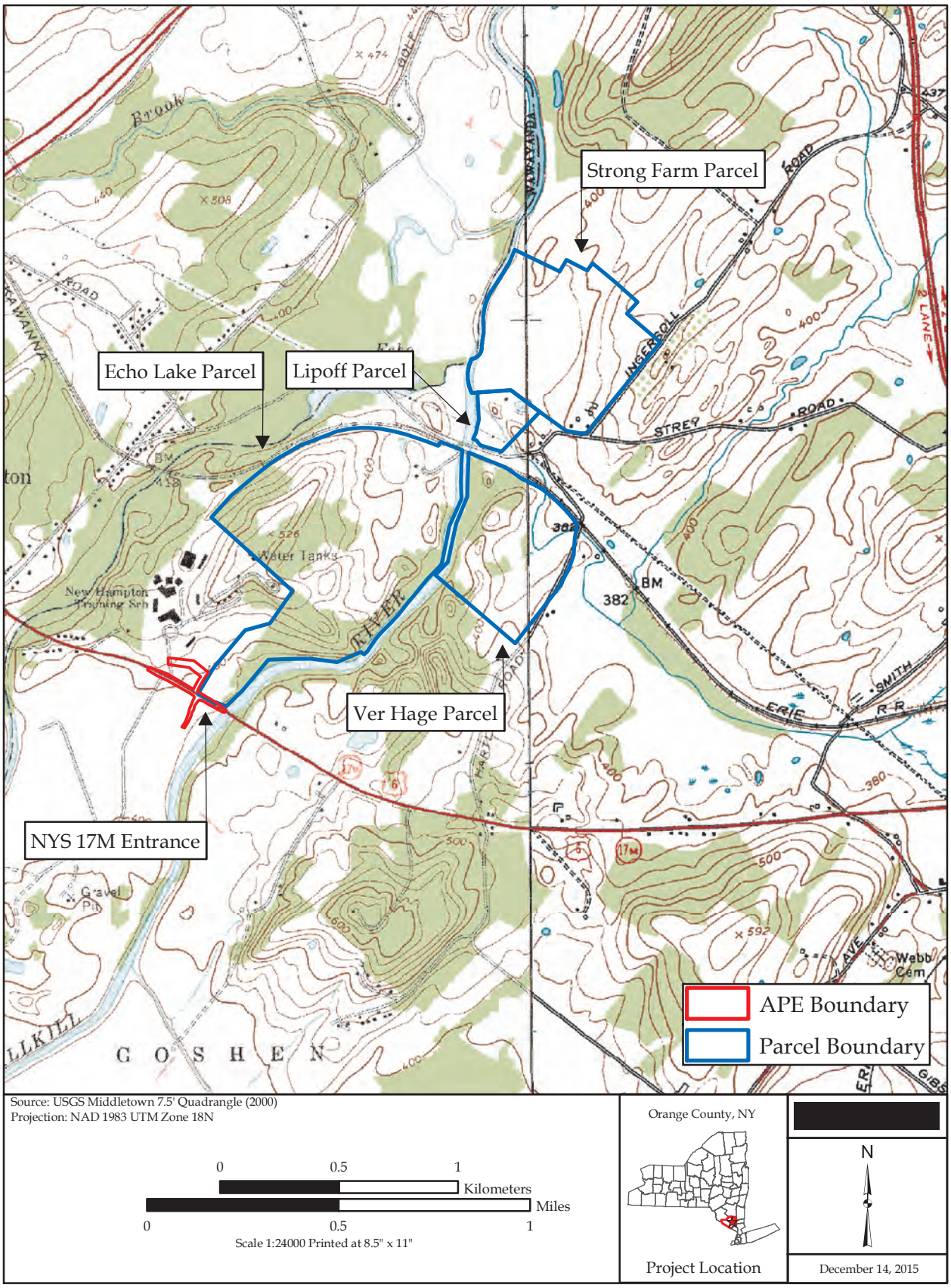


Figure 2: Project Location and Topographic Features

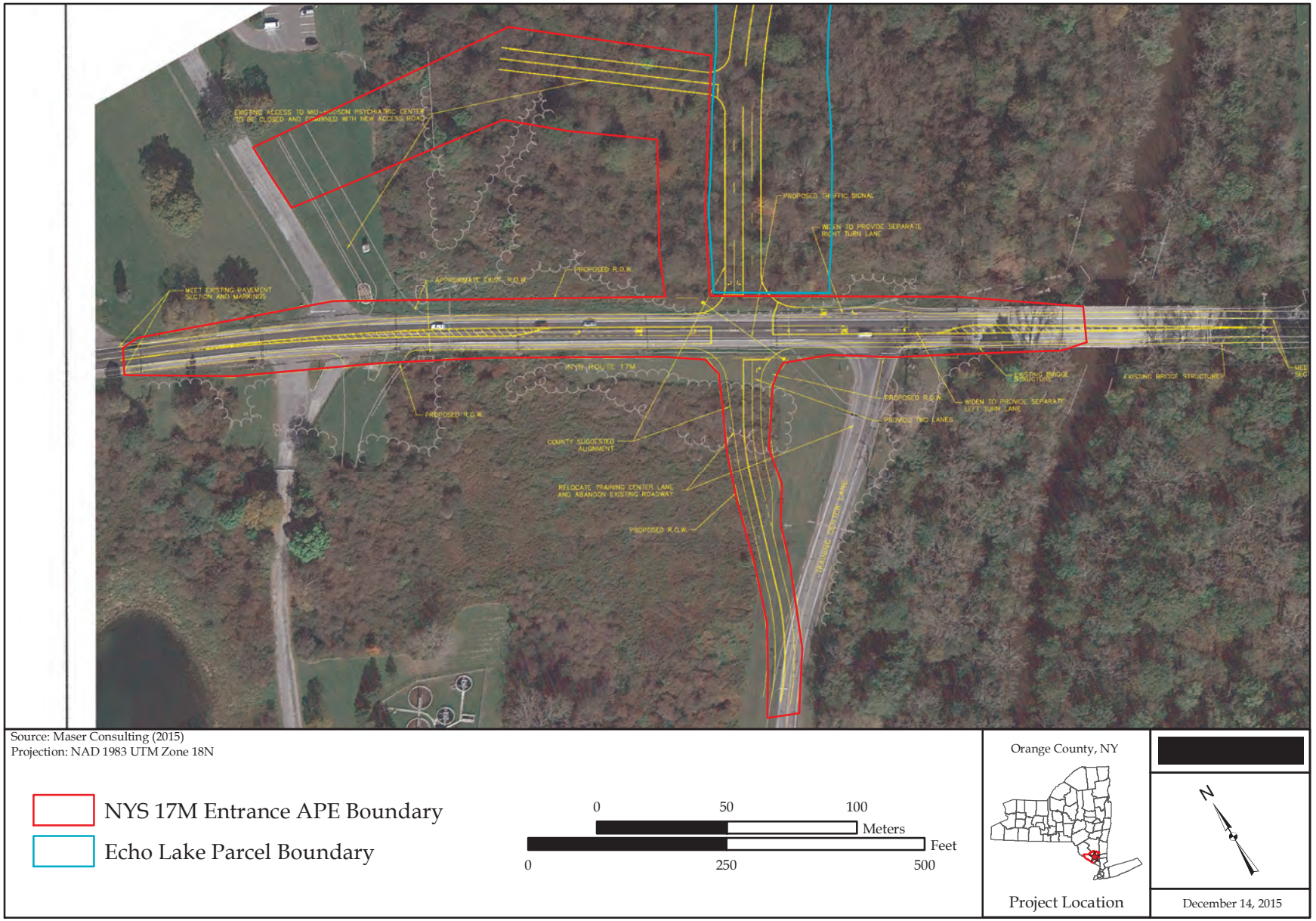


Figure 3: Project Plans

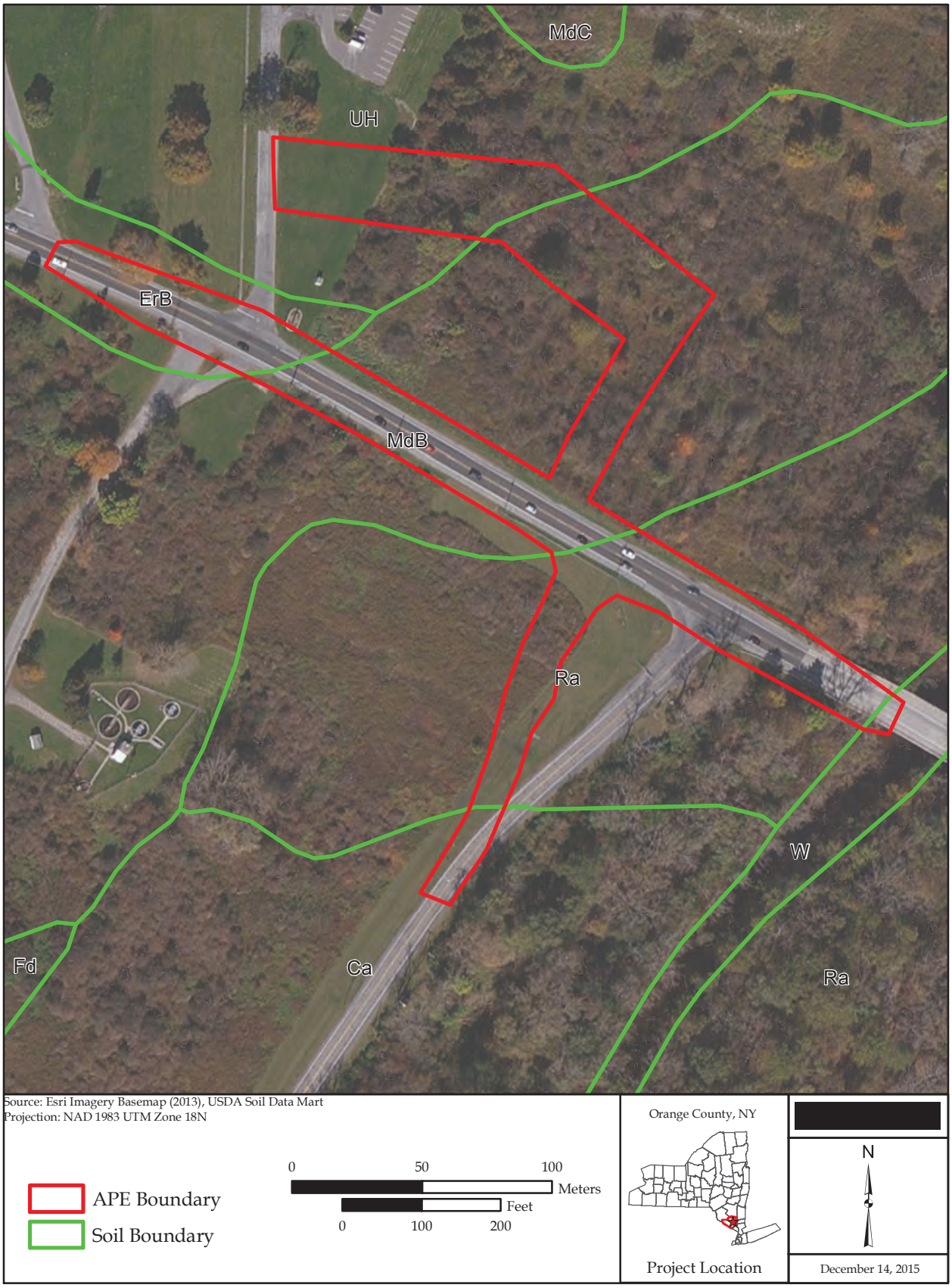
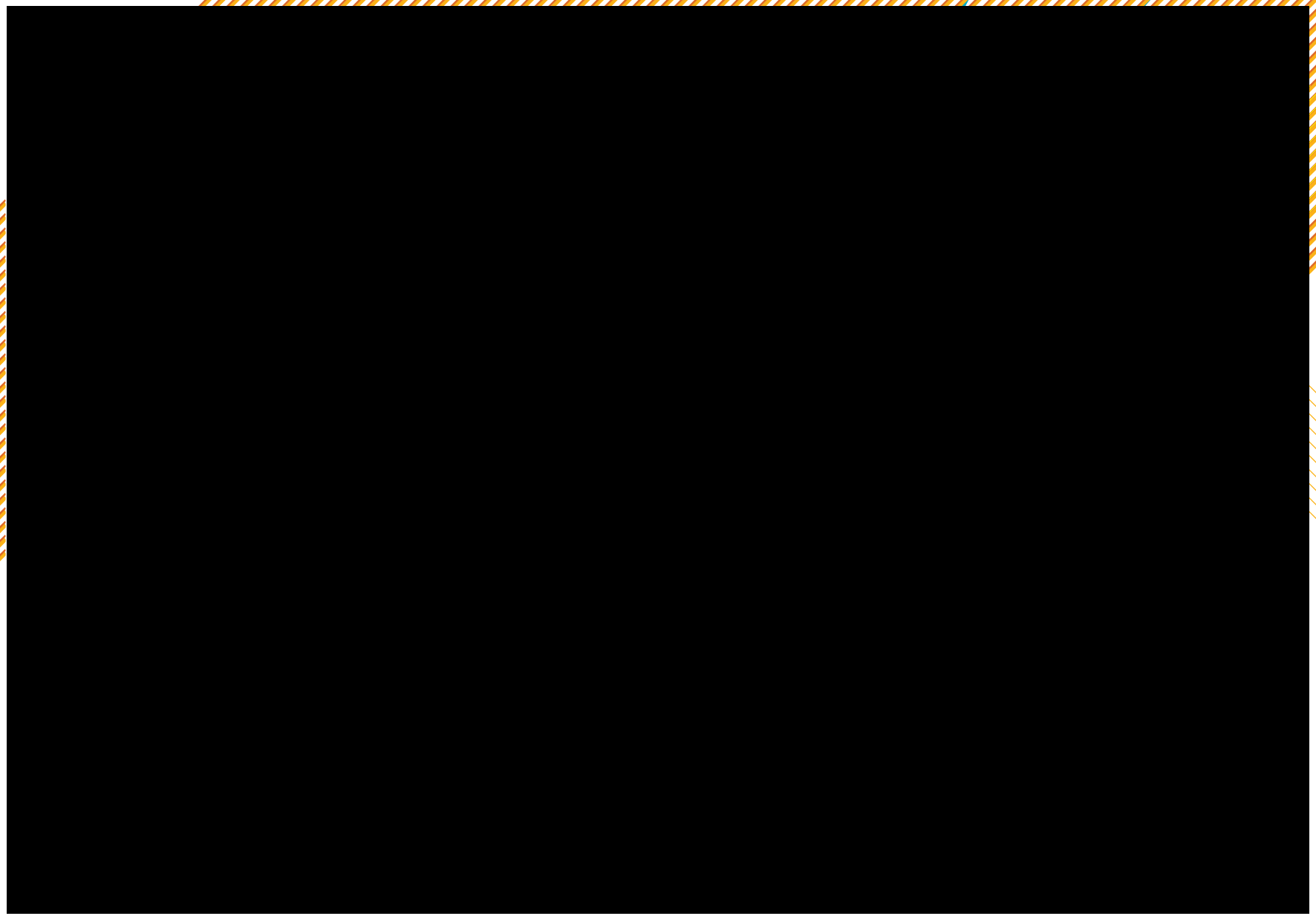


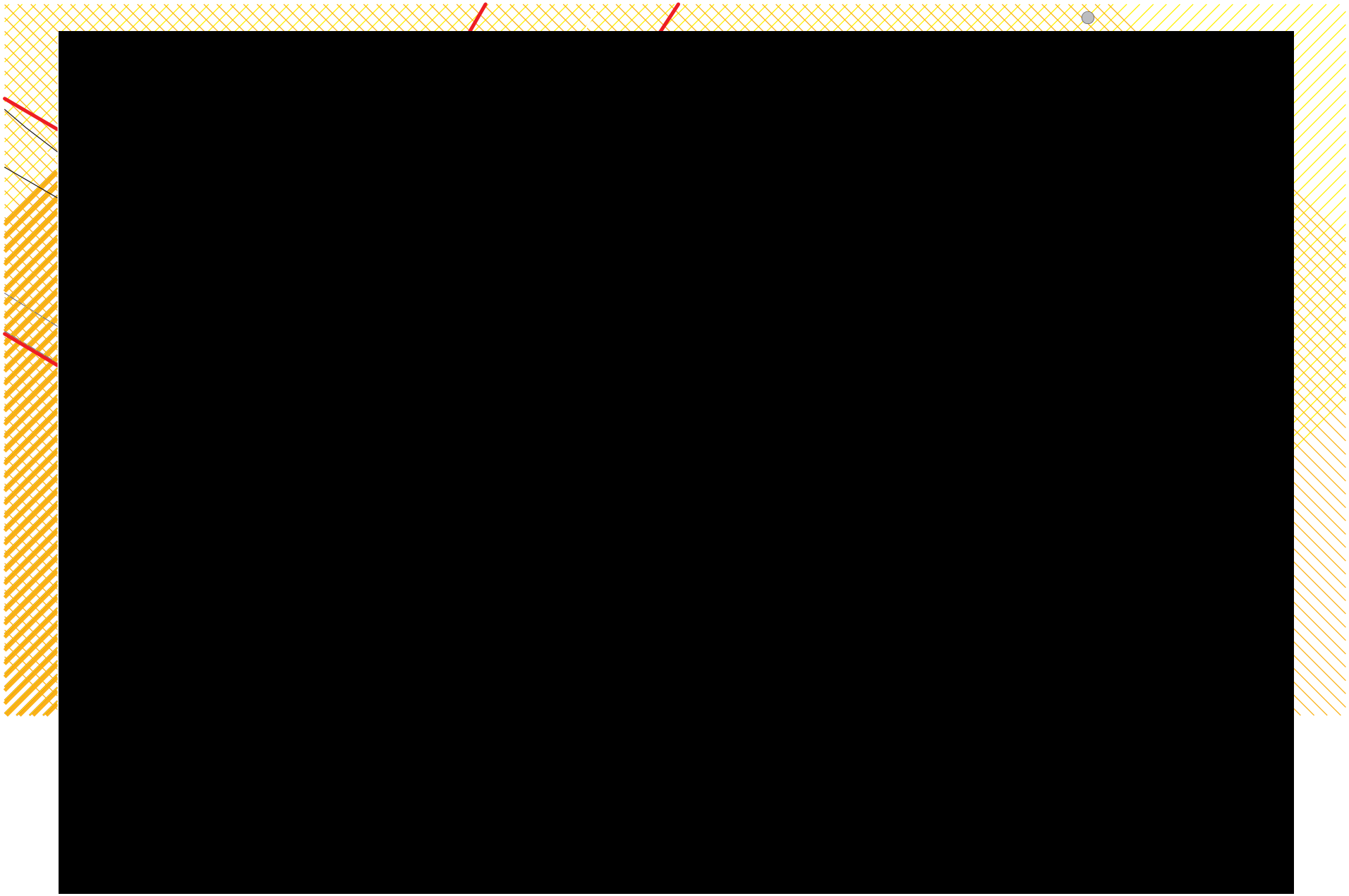
Figure 4: Mapped Soils

Figure 5: Project Area, 1875

Figure 6: Project Area, 1908



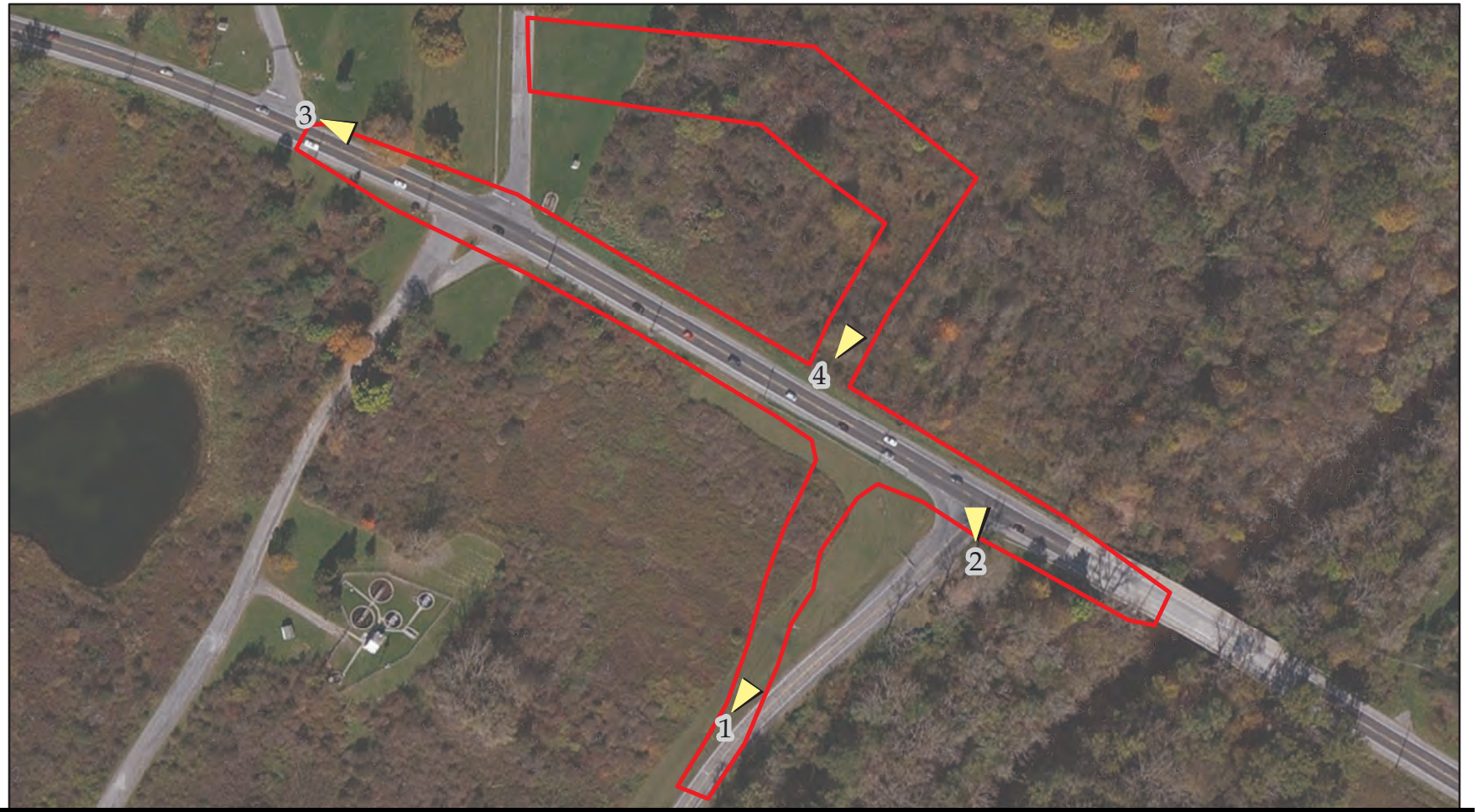
Redacted per NYAC. An unredacted version has been made available to the Planning Board.



Redacted per NYAC. An unredacted version has been made available to the Planning Board.

APPENDIX A

Photographs



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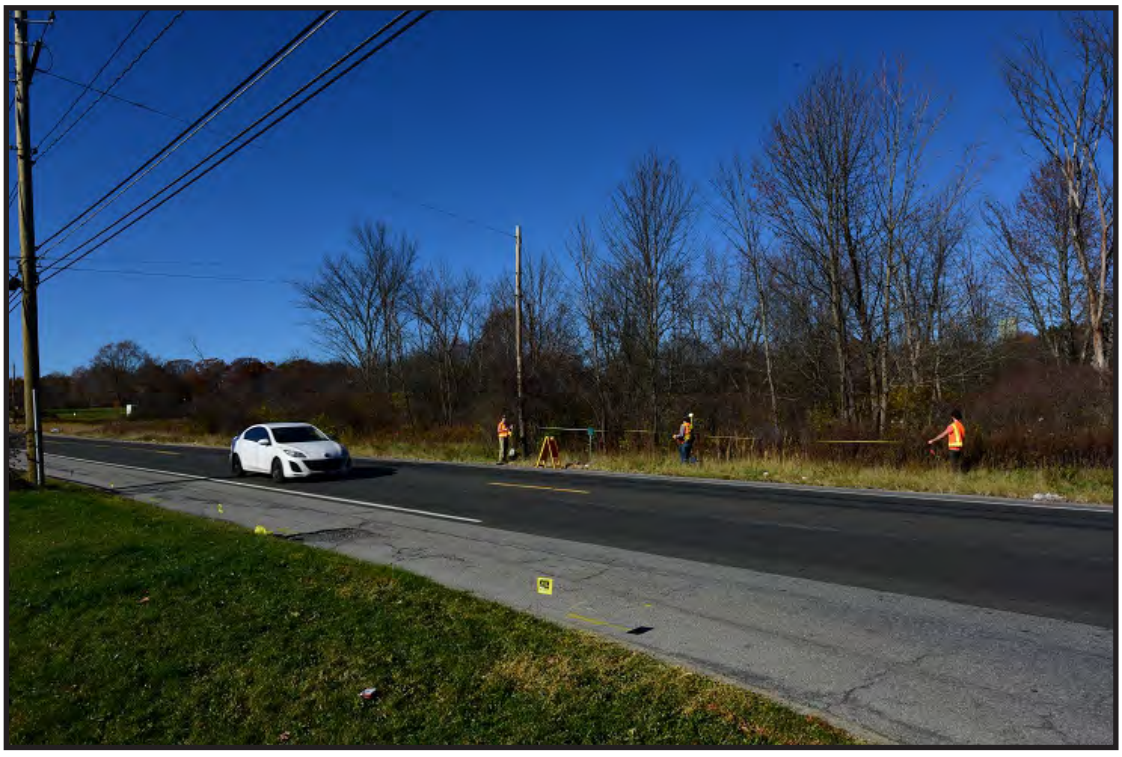
Redacted per NYAC. An unredacted version has been made available to the Planning Board.

Photograph 1: Transect 1 in Southern Project Area, View to Northeast



Photograph 2: Transect 3 along North Side of NYS 17M, View to North

Photograph 3: Transect 5 in Western Project Area, View to Southeast

Photograph 4: Site 07106.000164, View to Northeast

APPENDIX B

Shovel Test Descriptions

NYS 17M Entrance
Orange County, New York
Landmark Archaeology, Inc. #351

Soil Description	
1 Gravelly	Silt Loam
2 Silt Loam	

Munsell		Varies	10YR 4/3	10YR 5/4	10YR 3/1 - 3/2	10YR 5/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	2	2		
STRAT		Fill	A	B	A	B		
	STP							
Transect 1								
	1				0-44	44-63		
	2				0-34	34-49		
	3				0-39	39-51		
	4				0-32	32-47		
	5				0-38	38-53		
	6		0-38	38-60				
	7		0-35	35-50				
Transect 2								
	1		0-31	31-48				
	2		0-32	32-49				
	3		0-31	31-52				
	4		0-31	31-47				
Transect 3								
	1		0-32	32-50			X	
	2		0-30	30-45				
	3		0-29	29-45				
	4		0-34	34-48				
	5		0-37	37-53				
	6		0-38	38-54				
	7		0-39	39-54				
	8		0-39	39-51				
	9		0-28					Root Impasse
Transect 4								
	1		0-40	40-56				
	2	0-38						Road Fill/Gravel Impasse
	3	0-33						Road Fill/Gravel Impasse
Transect 5								
	1	0-49						Road Fill/Gravel Impasse
	2	0-54						Road Fill/Gravel Impasse
	3	0-45						Road Fill/Gravel Impasse
	4		0-38	38-79				
	5		0-34	34-49				
	6		0-32	32-46				Root Impasse
Transect 6								
	1	0-50						Road Fill/Gravel Impasse
	2		0-30	30-45				
	3		0-29	29-50				
	4		0-27	27-30				Rock Impasse
	5		0-32	32-45				
	6		0-26	26-42				
	7		0-41	41-55				
	8		0-38	38-55				
	9		0-32	32-44				Rock Impasse
	10				0-23	23-44		
	11				0-25	25-45		
Transect 7								
	1	0-41						Concrete Impasse
	2		0-27	27-46				
	3		0-24	24-43				
	4		0-32	32-47				
	5		0-34	34-52				
	6		0-29	29-46				
	7		0-28	28-51				
	8		0-34	34-49				
	9		0-26	26-41				Rock Impasse
	10				0-25	25-38		
	11		0-27	27-42				
	12		0-26	26-49				
Transect 8								
	1		0-32	32-48				
	2		0-31	31-45				
	3		0-34	34-50				

NYS 17M Entrance
Orange County, New York
Landmark Archaeology, Inc. #351

Soil Description
1 Gravelly Silt Loam
2 Silt Loam

Munsell		Varies	10YR 4/3	10YR 5/4	10YR 3/1 - 3/2	10YR 5/2	Artifacts Present	Comments
Soil Description Key		Fill	1	1	2	2		
STRAT		Fill	A	B	A	B		
	4		0-34	34-54				
	5		0-36	36-54			X	
	6		0-32	32-50				
Selective								
	S1	0-23						Road Fill/Gravel Impasse
	S2	0-42						Road Fill/Gravel Impasse

APPENDIX C

Artifact Inventory

Artifact Inventory

Site	Phase	Cat. #	Tr.	STP	Lvl	Depth (cm)	Strat	Biface	Flake Tool	Pri.	Sec.	Debitage Tert.	RT	Sh.	Br.	Core amt.	wt (g)	Chert Type	Other/Comments
	I	1	3	1	1	0-20	A					1						NSK	
07106.000164	I	2	8	5	1	0-20	A		1									ON	1 edge chipped, distal portion missing, tertiary flake

NSK-Normanskill chert
ON-Onondaga chert
Tert.-Tertiary flake

APPENDIX D

New York State Archaeological Site Inventory Forms

In accordance with Section 6.6 of the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State," published by the New York Archaeological Council (NYAC) in 1994 and adopted by the State Historic Preservation Office, sensitive site location information has been redacted. An unredacted version has been made available to the Planning Board.

Phase IA Literature Review and Archaeological Sensitivity Assessment for the Proposed Heritage Trail Utility Corridor Towns of Goshen and Wawayanda and the City of Middletown Orange County, New York

OPRHP No. 15PR03538

Prepared for:
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Susan Gade, RPA and Derrick J. Marcucci, RPA
Principal Investigators

LA# 361
April 2016

MANAGEMENT SUMMARY

SHPO Project Review Number: 15PR03538

Federal Agencies: USACE, FWS, FEMA
State Agencies: DEC, DOT, OGS, OMH, DPS, ESD, SEQRA

Phase of Study: Phase IA

Location:
Minor Civil Division: Towns of Goshen and Wawayanda, City of Middletown
County: Orange County

USGS 7.5′ Quadrangle Map 2000 *Middletown, NY*. 7.5′ Series Quadrangle

Survey Area
Length: Middletown Route: 2.9 miles (4.7 km)
Goshen Route: 2.1 miles (3.4 km)

Depth: N/A
Size: N/A

Archaeological Survey Overview
Total and Interval of Shovel Tests: n/a
Width of Plowed Strips: n/a
Surface Survey Transect Interval: n/a

Results of Archaeological Survey
Number and name of prehistoric sites identified: n/a
Number and name of historic sites identified: n/a
Sites Recommended for Phase II/Avoidance: n/a

Report Author(s): Jessica Schreyer and Susan Gade

Date of Report: April 2016

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1. INTRODUCTION

This report presents the results of a Phase IA Literature Review and Archaeological Sensitivity Assessment for the proposed Heritage Trail Utility Corridor. This project is associated with the proposed Amy's Kitchen production facility and the Science of the Soul conference center (OPRHP# 15PR03538). The project corridor is within the towns of Goshen and Wawayanda, and the city of Middletown, New York (Figure 1). The project includes construction of water and sewer lines that will follow the alignment of the former Erie Lackawanna Railroad (which is being converted to the Heritage Trail). The Area of Potential Effect (APE) considered during the Phase IA study includes two route options: the Middletown route, which extends from the planned Amy's Kitchen production facility (Ver Hage parcel) and Science of the Soul conference center (Echo Lake Parcel) to the Middletown wastewater treatment facility, as well as the Goshen route, which extends from planned Amy's Kitchen production facility (Ver Hage parcel) and Science of the Soul conference center (Echo Lake Parcel) to the village of Goshen's wastewater treatment facility (Figure 2). The Middletown route is approximately 2.9 miles (4.7 km) long and the Goshen route is approximately 2.1 miles (3.4 km) long. Preliminary plans indicate that the utilities will be installed within a trench measuring approximately 4 feet (1.2 m) in width and 6.5 feet (2.0 m) in depth. The investigation was conducted by Landmark Archaeology, Inc. who was retained as a consultant by Amy's Kitchen, Inc. of Petaluma, California.

The purpose of the Phase IA investigation is to assess potential for National Register of Historic Places (NRHP) properties to exist within the project area. The study is designed to gather information concerning the cultural, historical, and environmental/physical setting of the project area. Research tasks associated with the Phase IA study consist of a literature review and records search at the Office of Parks, Recreation and Historic Preservation (OPRHP), a review of historic maps of the project area, and a field visit to assess the general character (i.e., land use, geography, obvious disturbances) of the project area.

The following technical report presents the results of the Phase IA study conducted in March, 2016. Susan Gade, RPA and Derrick J. Marcucci, RPA served as Principal Investigators for the project and supervised all aspects of the investigation. Background research data were collected and analyzed by Jessica Schreyer. A field visit was performed by Derrick J. Marcucci (RPA). Ms. Schreyer and Ms. Gade are the authors of this report. Graphics were created by Brad Gawron and Ms. Schreyer. All records associated with the project are on file at Landmark Archaeology, Inc., 6242 Hawes Road, Altamont, New York.

2. PROJECT DESCRIPTION

The two route alternatives of the proposed Heritage Trail Utility Corridor are located in the towns of Goshen and Wawayanda, and the City of Middletown, Orange County, New York (see Figure 2). The planned water and sewer line routes will follow the alignment of the former Erie Lackawanna Railroad (which is being converted to the Heritage Trail). These sections of the former railroad route cross predominantly rural areas, with residences and commercial/municipal buildings tending to occur near road intersections.

The planned development entails the installation of water and sewer lines from the planned Amy's Kitchen production facility and Science of the Soul conference center to either the city of Middletown or the village of Goshen. Since both routes are still being considered, this investigation examines both alignments. The Middletown route is approximately 2.9 miles (4.7 km) long and the Goshen route is approximately 2.1 miles (3.4 km) long. Plans indicate that the utilities will be installed within a trench measuring approximately 4 feet (1.2 m) in width and 6.5 feet (2.0 m) in depth.

There is an existing outfall sewer line along most of the proposed Middletown route. The existing sewer line was installed in 1984 and travels from the wastewater treatment facility in the city of Middletown to the Wallkill River. Most of the existing sewer line follows the route of the former Erie Lackawanna Railroad, with the exception of the outfall sewer line east of Route 50, which instead follows the route of Echo Lake Road to the Wallkill River. The as-built plans for the 1984 outfall sewer show that much of the terrain within the railroad corridor was subject to cut and fill for construction of the railroad.

There are three railroad bridges along the Middletown route corridor, and four bridges and one culvert within the Goshen route corridor that are older than 50 years (Figure 3; Appendix A: Photographs 1-13). There are four buildings 50 years of age or older adjacent to the Middletown route. These include a house on the northwest corner of the intersection of Dolsontown Road and the railroad (Appendix A: Photograph 14), two houses on either side of the railroad at the intersection of the Railroad and Ryerson Road (Appendix A: Photographs 15 and 16), and a hotel/inn on the northeast corner of the intersection of Route 50 and the railroad (Appendix A: Photograph 17). There are no extant buildings 50 years of age or older adjacent to the Goshen Route.

3. DESCRIPTION OF PROJECT AREA

The project area is located in southeastern New York, in the towns of Goshen and Wawayanda, and the city of Middletown. It is situated in the lower Hudson River Valley within the Hudson Mohawk Lowlands physiographic area (Isachsen et al. 2000). The Hudson Mohawk Lowlands span almost the entire north-south length of eastern New York. In southern New York, these lowlands are bounded by the Catskill Mountains to the west and the Taconic Mountains to the east. The combined watersheds of the Wallkill River and Rondout Creek provide drainage for the region. Surficial geology of the project is dominated by glacial landforms and the unconsolidated sediments (glacial till) that were deposited during the late Wisconsinan glaciation which occurred 21,000 to 13,600 years ago. Bedrock geology is complex, comprised of the Trenton Group of shales that underlie the entire central part of Orange County.

Both route options are located on upland and valley terrain within the watershed of the Wallkill River, the major drainage system in the central part of Orange County. In the project vicinity, the Wallkill River is a slow moving stream approximately ten meters wide. The headwaters of the Wallkill River form in the Pochuck Mountains on the New York/New Jersey border. The Wallkill River flows for approximately 88 miles in a northeasterly direction before being impounded into a small body of water near Rosendale called Sturgeon Pond. Sturgeon Pond flows into the Rondout Creek, which empties into the Hudson River at Kingston, New York.

The Middletown route crosses both the Monhagen Brook and the old channel of the Wallkill River which now includes Echo Lake. The path of the old channel of the Wallkill River corresponds with the town line. The Monhagen Brook empties into the Wallkill River north of Echo Lake. Terrain along the Middletown corridor is highly variable, ranging from nearly level to steep. Elevation along the Middletown route ranges from 360 to 480 feet amsl. Vegetation along the railroad consists of trees and brush.

The Goshen route crosses the meandering Cheechunk Creek several times. Cheechunk Creek empties into the Wallkill River just north of the railroad line. The Goshen route traverses terrain that is predominantly characterized as nearly level or gently sloping, with small areas of rolling terrain closer to the Wallkill River. Almost the entire railroad east of Hartley Road has been built upon low lying, poorly drained terrain. Elevation along the Goshen route ranges from 360 to 400 feet amsl. Vegetation along the railroad consists of trees and brush.

A total of 21 soil types are mapped in the two route options (Figures 4 and 5; Table 1) (Olsson 1981). Soils range from very poorly drained to excessively drained, with slopes that range from 0 to 35 percent. Parent materials of soils within the corridor include glacially derived sediments, recent alluvial deposits, and anthropogenic deposits in dumps and mechanically altered areas. The topography includes mountainsides, hills, terraces, flats, and depressions along the two route options.

The Middletown route soils are highly variable along the entire route. Soils at and surrounding the wastewater treatment facility at the western terminus of the Middletown route are characterized as dumps (Du) and smoothed udorthents (UH), which are the result of human refuse disposal, as well as cut and fill activities.

The Goshen route soils are variable in the western portion, near the Wallkill River and surrounding the Hartley Road intersection. However, the central and eastern part of the Goshen route traverses an area of Mardin silt loam (Ma) for roughly one mile (1.7 km). Mardin silt loam

soils are poorly to very poorly drained soils formed in upland basins, lowland flats, and depressions.

Table 1
Summary Soil Information

Soil Name	Symbol	Slope	Drainage Class	Parent Material	Landform	Route
Allard silt loam	AdA	0-3%	Well drained	Glacial outwash	Terraces and benches along valley floors and plains	Goshen
Chenango gravelly silt loam	CnB	3-8%	Well to somewhat excessively drained	Glacial outwash	Terraces along valley floors and plains	Goshen
Dumps	Du	Varies	Varies	Refuse mixed with earthy materials	Excavated and filled trenches	Middletown
Erie gravelly silt loam	ErA	0-3%	Somewhat poorly drained	Glacial till	Broad hilltops and footslopes in uplands	Middletown Goshen
Erie gravelly silt loam	ErB	3-8%	Somewhat poorly drained	Glacial till	Footslopes, lower hillsides, and along upland drainageways	Middletown Goshen
Erie extremely stony soils	ESB	3-8%	Somewhat poorly drained	Glacial till	Footslopes, lower hillsides, and along upland drainageways	Middletown
Fredon loam	Fd	0-3%	Poorly to somewhat poorly drained	Glacial outwash	Low terraces and plains along valley floors and lowlands	Goshen
Hoosic gravelly sandy loam	HoB	3-8%	Somewhat excessively drained	Glacial outwash	Terraces and undulating areas on valley floors and lowlands	Middletown
Hoosic gravelly sandy loam	HoC	8-15%	Somewhat excessively drained	Glacial outwash	Low hills, ridges, and terrace fronts on valley floors and lowlands	Goshen
Hoosic gravelly sandy loam	HoD	15-25%	Somewhat excessively drained	Glacial outwash	Sides of terraces and low rounded hills and ridges in valleys	Middletown Goshen
Mardin silt loam	Ma	0-3%	Poorly to very poorly drained	Glacial lake deposits	Upland basins and lowland depressions and flats	Middletown Goshen
Mardin gravelly silt loam	MdB	3-8%	Moderately well drained	Glacial till	Broad divides, hilltops, and ridges in uplands	Middletown Goshen
Mardin gravelly silt loam	MdC	8-15%	Moderately well drained	Glacial till	Valley sides, hillsides, and ridges in uplands	Middletown
Mardin gravelly silt loam	MdD	15-20%	Moderately well drained	Glacial till	Valley sides and hillsides in uplands	Middletown
Mardin soils	MNE	25-35%	Moderately well drained	Glacial till	Hillsides, valley sides and mountainsides	Middletown
Middlebury silt loam	My	0-3%	Somewhat poorly drained	Recent silty alluvial deposits	Floodplains	Middletown Goshen
Rhinebeck silt loam	RbA	0-3%	Somewhat poorly drained	Glacial lake deposits	Lowland flats and basins	Middletown Goshen
Suncook sandy loam	Su	0-3%	Excessively drained	Sandy alluvial deposits	Floodplains	Goshen
Udifluvents-fluvaquents complex	UF	0-5%	Well to very poorly drained	Recent alluvial deposits	Floodplains	Middletown
Smoothed udorthents	UH	Varies	Varies	Manmade cut and fill activities	Industrial, urban and construction sites	Middletown
Wayland silt loam	Wd	0-3%	Poorly to very poorly drained	Silty alluvial deposits	Floodplains	Middletown

SOURCE: Olsson (1981)

4. PHASE IA INVESTIGATIONS

A. RESEARCH OBJECTIVES

The goal of the Phase IA study is to assess potential for the presence of significant archaeological resources within the project area. The study is designed to gather data regarding archaeological potential through archival research and a preliminary field inspection. All pertinent archaeological and historical literature and state records applicable to the project area are reviewed during the Phase IA investigation.

Site assessments are based on NRHP criteria of significance (36CFR60.6, *Federal Register* 1976). The criteria are:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and

a. that are associated with events that have made a significant contribution to the broad patterns of our history; or

b. that are associated with the lives of persons significant in our past; or

c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction, or

d. that has yielded, or may be likely to yield, information important in prehistory or history.

Typically, Criterion d is the most applicable criterion for evaluation of archaeological resources.

B. BACKGROUND RESEARCH

Background research was conducted for the purpose of compiling baseline information related to the prehistory, history, geomorphology, environment, and land use history of the project area. These sources provided information regarding NRHP eligible sites in the area and data with which to evaluate the project's archaeological potential.

Phase IA research included a site file search using the Cultural Resources Information System (CRIS) maintained at the OPRHP. This search determined if archaeological sites or NRHP properties were recorded within or near the project area. It also identified areas of previous archaeological investigations within one mile of the project areas. Historic maps were examined to identify land use history and potential for historic resources within the project area.

C. RESULTS OF PHASE IA INVESTIGATION

1. NRHP Properties

There is one NRHP eligible property adjacent to the Middletown route, and no NRHP listed properties within or adjacent to either project route. The NRHP eligible property is a building at the intersection of Dolsontown Road and the railroad. No other information on this property is

available on the CRIS database. This location corresponds with a structure labeled "E. Walling" on the 1875 Beers map of Wawayanda (Beers 1875; Figure 6).

2. Previously Recorded Archaeological Sites

Based on the records stored in the OPRHP CRIS database, there are two NYSM archaeological sites that fall within the project routes. NYSM 6171 overlaps with both the Middletown and Goshen routes, and NYSM 6200 overlaps with the Goshen route. Site files indicate that NYSM 6171 consists of numerous sites above 400 feet amsl and NYSM 6200 is the Halcott Site. Both were reported by the Orange County Chapter of the New York State Archaeological Association (NYSAA). No other information is available for either site.

Forty-two previously recorded archaeological sites are located within one mile of the project routes (Table 2). These include 29 prehistoric sites, four historic sites, and three with both a prehistoric and historic component. No information regarding site type or temporal association is available for the remaining six sites. Several sites were recorded near the project routes during Landmark Archaeology Inc.'s investigations for the Amy's Kitchen and Science of the Soul projects (Gade and Schreyer 2015; Gawron and Gade 2015; Marcucci et al. 2015). These surveys identified four prehistoric and one historic archaeological site. The closest, the H. Stage Historic Site (07106.000171), is a nineteenth and twentieth century farm complex that was recommended as not eligible for listing in the NRHP. This site is approximately 50 meters (164 ft) south of the railroad. The Ver Hage 1 Prehistoric Site (07106.000023) is located approximately 300 meters (985 ft) south of the railroad. The Ver Hage 1 Prehistoric Site is a Late Archaic site recommended as eligible to the NRHP under Criterion d (Gade and Schreyer 2015). Several other sites dating to the Archaic, including ORGO-14F and Amy's Kitchen 1, 2, and 3 (07106.000164, 07106.000165, 07106.000166) also are located in this general area.

Table 2
Previously Recorded Archaeological Sites within One Mile of the Project Area

OPRHP #	NYSM #	Reporter	Site Identifier/ Description	Time Period
07106.000006		Orange County NYSAA	New Hampton 2 (ORGO-6F)	Early Archaic through 19th Century Historic
07106.000010		Orange County NYSAA	ORGO-14F	Archaic and Transitional Prehistoric, 18th Century Historic
07106.000022		Orange County NYSAA	ORGO-12F	Unknown Prehistoric
07106.000023		Landmark Archaeology	Ver Hage 1	Late Archaic
07106.000076		Hunter Research Associates	Al Turi Site A	Unknown Prehistoric
07106.000077		Hunter Research Associates	Al Turi Site B	Early through Late Archaic
07106.000112		Hartgen Archeological Associates	Orange County Jail Prehistoric Site	Unknown Prehistoric
07106.000138		Richard Grubb & Associates	Hendler Site	Early Woodland
07106.000161	6198	Columbia Heritage	Hutt Farm Site	Paleoindian and Late Archaic
07106.000164		Landmark Archaeology	Amy's Kitchen 1	Late Archaic to Transitional
07106.000165		Landmark Archaeology	Amy's Kitchen 2	Late Archaic
07106.000166		Landmark Archaeology	Amy's Kitchen 3	Late Archaic
07106.000171		Landmark Archaeology	H. Stage Site	19th and 20th Century Historic

OPRHP #	NYSM #	Reporter	Site Identifier/ Description	Time Period
07117.000147		BTK Associates	Brody Site	Archaic
07119.000008		Orange County NYSAA	ORWW-01F	Unknown Prehistoric
07119.000012		Orange County NYSAA	Echo Lake	Archaic to Transitional
07119.000013		Orange County NYSAA	ORWW-06F	Unknown Prehistoric
07119.000014		Orange County NYSAA	ORWW-07F	Archaic to Woodland
07119.000015		Orange County NYSAA	ORWW-08F	Unknown Prehistoric
07119.000016		Orange County NYSAA	ORWW-09F	Unknown Prehistoric
07119.000017		Orange County NYSAA	ORWW-10F	Unknown Prehistoric
07119.000018		Orange County NYSAA	ORWW-11F	Unknown Prehistoric
07119.000021		Orange County NYSAA	ORWW-14F	Unknown Prehistoric
07119.000030		Orange County NYSAA	ORWW-23F	Unknown Prehistoric
07119.000032		Orange County NYSAA	ORWW-25F	Unknown Prehistoric
07119.000083		Hartgen Archeological Associates	Simon Site	Late Archaic and Unknown Historic
07119.000186		Landmark Archaeology	Horizons Site 1	Late Archaic
07119.000187		Landmark Archaeology	Horizons Site 2	Late Archaic
07119.000193		Columbia Heritage	Huberth Site	Archaic
07119.000205		TRC, Inc.	Isolated Find IF-CPV-4	Unknown Prehistoric
07119.000206		TRC, Inc.	Isolated Find IF-CPV-5	Unknown Prehistoric
07146.000206		NYS OPRHP	1850s House Site and Associated Features	19th Century
07146.000218		Hartgen Archaeological Associates	Hatfield Lane Prehistoric Site 2	Unknown Prehistoric
07146.000219		Hartgen Archaeological Associates	Hatfield Lane Prehistoric Site 3	Unknown Prehistoric
	774	William A. Ritchie	New Hampton School	Historic
	6169	No info	Cemetery	Historic
	6170	No info	Bates	No info
	6171	**Orange County NYSAA**	**Numerous Sites Above 400 ft amsl**	**No info**
	6172	Orange County NYSAA	Cannon Hill	No info
	6173	Orange County NYSAA	No info	No info
	6199	Orange County NYSAA	Strong	No info
	6200	**Orange County NYSAA**	**Halcott**	**No info**

Bold = within or adjacent to project corridor

3. Previous Archaeological Surveys

Background research indicated that 29 surveys have been conducted within one mile of the project corridor, and of those, 18 are within one-half mile (Table 3). The closest previous work includes investigations for the proposed Amy's Kitchen production facility and Science of the Soul conference center project which were located adjacent to the current project routes (Gade and Schreyer 2015; Gawron and Gade 2015; Marcucci et al. 2015).

Of the other previous investigations, two are in relatively close proximity to the current project area. A Phase IA/IB study for a proposed gas line conducted by the Public Archaeology Laboratory (PAL) (Dubell and Hubbard 2010) ran along McVeigh Road between Dolsontown Road and Ryerson Road. The gas line corridor parallels the current project corridor for approximately 800 meters (2600 ft). The study included shovel test excavations along the northern side of McVeigh Road which is on the opposite side of the road from the current project corridor. Shovel tests encountered multiple layers of fill which were often very compact (Dubell and Hubbard 2010: 38). No archaeological sites were identified in shovel tests along the north side of McVeigh Road between Dolsontown Road and Ryerson Road.

In 1984, a survey performed for the Marcy-South transmission line identified the Simon Site, a prehistoric and historic site. The site is within the transmission line corridor approximately 300 meters (1000 ft) west of the railroad. Since no information about the associated survey is available on CRIS, it is not known if the transmission line survey extended across the railroad and McVeigh Road in this area.

Table 3
Summary of Previous Archaeological Investigations within One-half Mile of the APE

Archaeological Survey Title	**Year**	**Researchers**
A Phase I Archaeological Survey of a 21.9-Acre Sand and Gravel Mine Site, Al Turi Landfill, Town of Goshen, Orange County, New York.	1987	Hunter Research Associates
Cultural Resource Survey of the Marcy-South 345 kV Transmission Line	1985	Hartgen Archeological Associates
Report on Investigation of the Echo Lake Project Area, Town of Goshen, Orange County, New York, EnviroPlan Associates, Poughkeepsie, New York	1989	Eugene J. Boesh
Stage I-B Cultural Resources Survey, Proposed Water Supply Area, Echo Lake Development Site, Town of Goshen, Orange County, New York. Atlantic Testing Laboratories, Limited, Utica, New York	1990	S.J. Oberon
Phase I-B Archaeological Survey and Testing of the Proposed Orange County Jail Project, Echo Lake, Orange County, New York, Brockington and Associates, Atlanta, Georgia	1991	S. Scott Butler
Stage I-B and Stage II Cultural Resources Surveys Site Identification and Site Evaluation Phases Proposed Echo Lake Mine Site, Town of Goshen, Orange County, New York and Stage I Site Identification Survey Proposed Water Line Construction Route, Towns of Wawayanda and Wallkill, Orange County, New York	1994	S. J. Oberon
Phase IB and Limited Phase II Cultural Resources Survey Site Identification and Site Evaluation Phases (sic), Proposed Echo Lake Development, Town of Wawayanda, Orange County, New York.	2000	S.J. Oberon
Phase 1 Archaeological Survey, The Mid-Hudson Psychiatric Center, Goshen, Orange County, New York	2000	Dawn Brown et al.
Phase IA Cultural Resource Investigation, Wawayanda Lateral Project, Wantage Township, Sussex County, New Jersey; Towns of Minisink and Wawayanda, Orange County, New York	2002	Hunter Research.
Phase I Archaeological Investigation for the Simon Business Park, New Hampton, Town of Wawayanda, Orange County, New York	2007	Alfred Camissa et al.
Phase IA/IB Archaeological Survey, Orange and Rockland Utilities, Inc. Proposed 13,500 Foot, 12 Inch Gas Main Project, Wawayanda and Middletown, New York	2010	Dubell and Hubbard (PAL)

Archaeological Survey Title	Year	Researchers
Phase 1A and 1B Archaeological Survey, Hartley Substation, Section 12, Block 1, Lot 1.7, Town of Goshen, Orange County, New York	2010	Amy Raes
Phase I Archaeological Investigation: Maple Fields at Wallkill, Schutt Road, Town of Wallkill, Orange County, New York	2011	Abell Horn and Sandy
Addendum 2 Additional Phase I Archaeological Survey of the Proposed CPV Valley Energy Center Proposed Utilities Corridor	2015	Sara and Walters
Phase I Cultural Resource Survey Orange County Airport Wetland Mitigation Site, Town of Goshen, Orange County, New York	2015	Fortugno and Hayden
Phase I and II Archaeological Investigations of the Amy's Kitchen and Science of the Soul Developments, Town of Goshen, Orange County, New York	2015	Derrick J. Marcucci et al.
Abbreviated Phase 1A Literature Search and Sensitivity Assessment Solar City Orange County Emergency Services Building Solar Array Project Description Town of Goshen, Orange County, NY	2015	Selig and Roberg-Lopez
Phase I Archaeological Investigations of the Proposed NYS 17M Entrance to Science of the Soul Conference Center/Amy's Kitchen Production Facility, Town of Goshen, Orange County, New York	2015	Gade and Gawron

4. Historic Maps

Historic maps reviewed during the Phase IA study included the years 1875 (Beers 1875; Figures 6 and 7) and 1908 (USGS 1908; Figure 8). A 1903 map (Meuller 1903; Figure 9) was consulted for a more detailed layout of the buildings in the hamlet of New Hampton. Each map shows the Erie Lackawanna Railroad.

On the 1875 map, two "milk stations" are depicted in close proximity to the railroad line, one along the Middletown route west of Monhagen Brook and the other along the Goshen route west of Smith Road. The milk stations of Orange County were pivotal in the development of rail transportation of milk in the mid nineteenth century. The program was started in 1842 and was very successful: "by the summer of 1843, people were lining up for a block at Erie's Reade Street terminal for fresh, sweet Goshen milk" (Kindraka 1990:18). The milk stations allowed for a central repository where milk could be packaged into 40 to 70 quart containers cooled with ice-filled cylinders and loaded onto trains bound for New York City. This and other northeastern cities, such as Boston and Baltimore, helped shape the development of "milksheds" which would dominate the supply of milk to metropolitan areas for the next century (Kindraka 1990).

Both the 1875 and 1908 maps depict structures in close proximity to the APE. Along both route options, structures tend to occur at intersections with roads and drainages.

a. Middletown Route Structures

As noted above, a structure labeled "E. Walling" appears at the intersection of the railroad and Dolsontown Road in 1875 (see Figure 6). A structure is depicted in the same location on the 1908 map (see Figure 8). A structure labeled "Milk Station" is shown on the 1875 map at the intersection of the railroad and the Monhagen Brook. Another structure appears directly across the brook from the milk station. No structures are depicted in the location of these two structures on the 1908 map. Structures labeled "J. White," "L. Brown" and "J.B. Case" appear on the 1875 map near the intersection of the railroad and Ryerson Road. While no structure is shown at the location of "J. White" on the 1908 map, structures are illustrated on the 1908 map at the location of the "L. Brown" and "J.B. Case" structures. In 1875, two structures are shown at the intersection of the railroad and Golf Links Road (Route 50): the "Talmadge House" and a "P.O. and Store." A New York State historic marker has been installed next to the Talmadge House and it reads:

HAMPTON
A 1700 INDUSTRIAL AND MILL
SETTLEMENT. WAWAYANDA INN
BUILT IN 1866. A STORE AND
STAGE COACH STOP. MASON'S
STORE ESTABLISHED 1917.

In 1908, several more structures are clustered around that intersection, forming the hamlet of New Hampton. A 1903 map of New Hampton provides more detail, showing a "Station and P.O." at the location of the P.O. and Store, and the "Wawaynda (sic) Inn" at the location of the Talmadge House (see Figure 9). The Talmadge House/Wawaynda (sic) Inn corresponds with an extant structure that is now "Mason's Store" at 550 Gold Links Road (see Appendix A: Photograph 17). New structures adjacent to the tracks at Route 50 in 1903 include a Cider Mill, Freight Yard, and Creamery. The 1903 map also portrays the old channel of the Wallkill River.

The 1875 and 1908 maps show two structures in the area between the old and new channels of the Wallkill River (see Figures 7 and 8). The 1875 map of Goshen associates the structures with the names "H. Stage" and "J. Welch." The location of the "H. Stage" structure has been recorded as an historic site (07106.000171) (Marcucci et al. 2015). A modern raised ranch style home now stands at the location of the "J. Welch" structure.

b. Goshen Route Structures

On the 1875 map of Goshen, a structure labeled "J.L. Stage" is shown on the north side of Echo Lake Road and the railroad, and adjacent to the east side of Cheechunk Creek (see Figure 7). Another (possibly related) structure appears directly across Cheechunk Creek from the J.L. Stage structure. In 1908, a structure is still shown in the location of the J.L. Stage structure, but the structure across Cheechunk Creek is no longer depicted (see Figure 8).

A structure labeled "Milk Station" appears on the southeast corner of the intersection of the railroad and Smith Road (see Figure 7). A structure is not shown in this location on the 1908 map (see Figure 8).

5. Field Reconnaissance

A field reconnaissance was conducted March 16 and 17, 2016. The field reconnaissance included a walk over of the corridor to assess the general character (i.e., land use, geography, obvious disturbances) of both project routes. Most of the railroad was built upon a berm of fill over two meters (6 ft) high (Appendix A: Photographs 18-24). However, there are sections of the rail corridor that have been incised into the terrain in order to achieve the requisite grade for the railroad bed and in these locations the berm fill is less than one meter (3 ft) high. No intact surface terrain remains in these incised areas (Appendix A: Photographs 25-28). As noted, there are historic map documented structures at several intersections along the project routes (see Appendix A: Photographs 14-17). Six railroad bridges and one culvert older than 50 years are in the proposed project routes (see Appendix A: Photographs 1-13). Table 4 provides descriptions and dimensions of the bridges and culvert.

Table 4
Railroad Bridges and Culvert in the Project Corridor

Bridge/Culvert	Date Built	Dimensions	Description	Waterway	Project Route
1	Unknown	4 m long	Concrete culvert	Cheechunk Creek	Goshen
2	1927	8 m long 13 m wide	Concrete slab railroad bridge	Cheechunk Creek	Goshen

Bridge/Culvert	Date Built	Dimensions	Description	Waterway	Project Route
3	Unknown	15 m long 7 m wide	Steel plate girder railroad bridge, riveted	Cheechunk Creek	Goshen
4	1942	5 m long 12 m wide	Concrete slab railroad bridge	Cheechunk Creek	Goshen
5	Unknown	45 m long 7 m wide	Steel plate girder railroad bridge, riveted	Wallkill River	Goshen, Middletown
6	Unknown	70 m long 7 m wide	Steel plate girder railroad bridge, riveted	Old Channel Wallkill River	Middletown
7	Unknown	13 m long 7 m wide	Steel plate girder railroad bridge, riveted	Monhagen Brook	Middletown

a. Middletown Route

The entire railroad berm along the Middletown route measures between two to six meters (6 to 18 ft) high and ten to 25 meters (30 to 80 ft) in width with the exception of three extensive cut and fill areas (see Figure 2), where the railroad bed fill is less than one meter (3 ft) high. One cut and fill area extends from Dolsontown Road approximately 100 meters west. The second area extends from Ryerson Road approximately 950 meters (3120 ft) east (see Appendix A: Photograph 25) and the third area extends from a point 120 meters (380 ft) east of the bridge crossing the old channel of the Wallkill River to a point approximately 515 meters (1690 ft) east (see Appendix A: Photograph 26).

There are four extant buildings that are older than 50 years adjacent to the Middletown route. A building at the location of the 1875 "E.Walling" house on the northwest corner of Dolsontown Road and the railroad has been determined eligible for inclusion in the NRHP (see Appendix A: Photograph 14). It is located approximately 30 meters (100 ft) west of the railroad berm, and is separated from the berm by a stand of mature trees. Two houses older than 50 years of age are extant at the intersection of Ryerson Road and the railroad (see Appendix A: Photographs 15 and 16). The house of the north side of the railroad is approximately 38 meters (125 ft) from the railroad berm and the house on the south side of the railroad is approximately 25 meters (85 ft) from the berm. These houses at Ryerson Road appear to have been greatly modified and retain little of their original pre-1875 character. Both houses are separated from the berm by a stand of mature trees. The hotel/store building (see Appendix A: Photograph 17) at the intersection of Route 50 and the railroad is about 10 meters (35 ft) from the railroad berm. Trees line the margin between the hotel/store and the railroad.

Three railroad bridges older than 50 years are within the Middletown route. These bridges are over the Monhagen Brook (Bridge 7) (see Appendix A: Photographs 12 and 13), the old channel of the Wallkill River (Bridge 6) (see Appendix A: Photographs 10 and 11), and the Wallkill River (Bridge 5) (see Appendix A: Photographs 8 and 9). All three are steel plate girder bridges, and the plates were riveted together.

b. Goshen Route

The entire section of railroad that extends from a point approximately 100 meters (300 ft) west of the sewage treatment facility to a point 380 meters (1250 ft) east of Hartley Road is situated upon a berm that measures approximately four to six meters (12 to 18 ft) high and often over 25 meters (75 ft) in width. This 3.2-kilometer (2.0-mile) segment is built upon poorly drained soils and areas of standing water. The area adjacent to the Goshen sewage treatment facility and the area extending from Hartley Road to a point 380 meters (1250 ft) east have been subject to cut and fill

activities, and the railroad bed is less than one meter (3 ft) high in these areas (see Figure 2). Between Hartley Road and the Wallkill River the railroad berm is approximately two to four meters (6.6-13.1 ft) high.

No historic map documented buildings are located adjacent to the Goshen route. Four railroad bridges and one culvert older than 50 years are within the Goshen route. Three of the bridges and the culvert (Bridges/Culvert 1-4) (see Appendix A: Photographs 1-7) cross the Cheechunk Creek, which meanders over the low, marshy terrain. The fifth (Bridge 5) crosses the Wallkill River (see Appendix A: Photographs 8 and 9). The bridge crossing the Wallkill River and one of the bridges crossing Cheechunk Creek are steel plate girder railroad bridges that have been riveted. Two of the four bridges crossing Cheechunk Creek are concrete slab railroad bridges and they are marked with dates; Bridge 2 is marked 1927 and Bridge 4 is marked 1942. The final bridge/culvert crossing Cheechunk Creek is a concrete culvert.

D. ARCHAEOLOGICAL POTENTIAL

Phase IA research revealed that there is one previously recorded NRHP eligible property located approximately 30 meters (100 ft) west of the Middletown route and no previously recorded archaeological sites or NRHP listed properties within or adjacent to either project route. Historic maps show that structures along the route tend to occur in locations where the railroad intersects with roads. These intersections are considered to have high potential for historic sites. The project routes are considered to have high potential for prehistoric sites based on the numerous previously reported sites in the general area, as well as both routes' intersections and proximity to the Wallkill River, Monhagen Brook, and Cheechunk Creek.

In spite of the high potential for both historic and prehistoric archaeological sites along the route, most of the railroad has been built upon a fill berm measuring two to six meters in height, and often 25 meters (75 ft) in width. However, all other sections have been incised into the terrain in order to achieve the requisite grade for the railroad bed and in these locations the berm fill is less than one meter (3 ft) high. Grading has removed, at minimum, surface soils and upper subsoils (A- and B-horizon soils), thus eliminating potential for archaeological deposits in these incised areas. In addition, a sewer outfall line (Appendix A: Photograph 29) has been installed within the berm in the Middletown route from the sewage treatment facility in Middletown to Route 50. If the proposed water and sewer lines stay within the railroad berm, no undisturbed terrain or potential archaeological sites will be impacted by the proposed construction. Areas beneath or beside the railroad berm with intact terrain are considered to have archaeological potential. Areas where the sewer and water lines traverse undisturbed terrain (Appendix A: Photograph 30) also are considered to have potential to contain archaeological sites. These areas include the path from the railroad berm to the water line connections and the sewage treatment facilities.

5. SUMMARY AND RECOMMENDATIONS

The Phase IA Literature Review and Archaeological Sensitivity Assessment for the Heritage Trail Utility Corridor the in the towns of Goshen and Wawayanda, and the city of Middletown, New York consisted of a literature review, records check, and a preliminary field assessment. The project includes installation of water and sewer lines that will follow the alignment of the former Erie Lackawanna Railroad (which is being converted to the Heritage Trail). The Phase IA study examined two route options: the Middletown route, which extends from the planned Amy's Kitchen production facility and Science of the Soul conference center to Middletown, as well as the Goshen route, which extends from the same facilities to the village of Goshen. The Middletown route is approximately 2.9 miles (4.7 km) long and the Goshen route is approximately 2.1 miles (3.4 km) long. Preliminary plans indicate that the utilities will be installed within a trench measuring approximately 4 feet (1.2 m) in width and 6.5 feet (2.0 m) in depth. The investigation was conducted by Landmark Archaeology, Inc. who was retained as a consultant by Amy's Kitchen, Inc. of Petaluma, California.

Most of the railroad has been built upon a fill berm measuring between two to six meters (6.6-19.7 ft) in height, and often 25 meters (75 ft) in width. However, there are sections of the rail corridor that have been incised into the terrain in order to achieve the requisite grade for the railroad bed and in these locations the berm fill is less than one meter (3 ft) high. Grading has removed, at minimum, surface soils and upper subsoils (A- and B-horizon soils) below and next to the berm, thus eliminating potential for archaeological deposits in these incised areas. In addition, a sewer outfall line has been installed within the berm in the Middletown route from the sewage treatment facility in Middletown to Route 50. If the proposed water and sewer lines stay within the railroad berm, no additional archaeological work is recommended. In areas of intact terrain or undisturbed ground, Phase IB shovel testing or archaeological monitoring is recommended. Specifically:

- shovel testing is recommended if installation activities will impact undisturbed/intact terrain beside the railroad berm
- shovel testing is recommended where water and sewer line installation will traverse undisturbed terrain. These areas include the path from the railroad berm to the water line connections and the sewage treatment facilities
- Archaeological monitoring of construction activities is recommended if water or sewer line installation will impact ungraded and intact terrain (sediment) below the railroad berm.

Areas previously disturbed by grading activities or other activities that have caused severe ground disturbance are illustrated in Figure 2 and Phase IB archaeological investigations do not appear warranted for these areas. As per NYAC standards, areas of standing water or within designated state or federal wetland, and areas where slope exceeds 12 to 15 percent can be eliminated from Phase IB investigations. All Phase IB investigations should comply with the guidelines established in *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* by the New York Archaeological Council (NYAC 1994) and adopted by the OPRHP, and the 2005 revised guidelines issued by the OPRHP.

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Figures

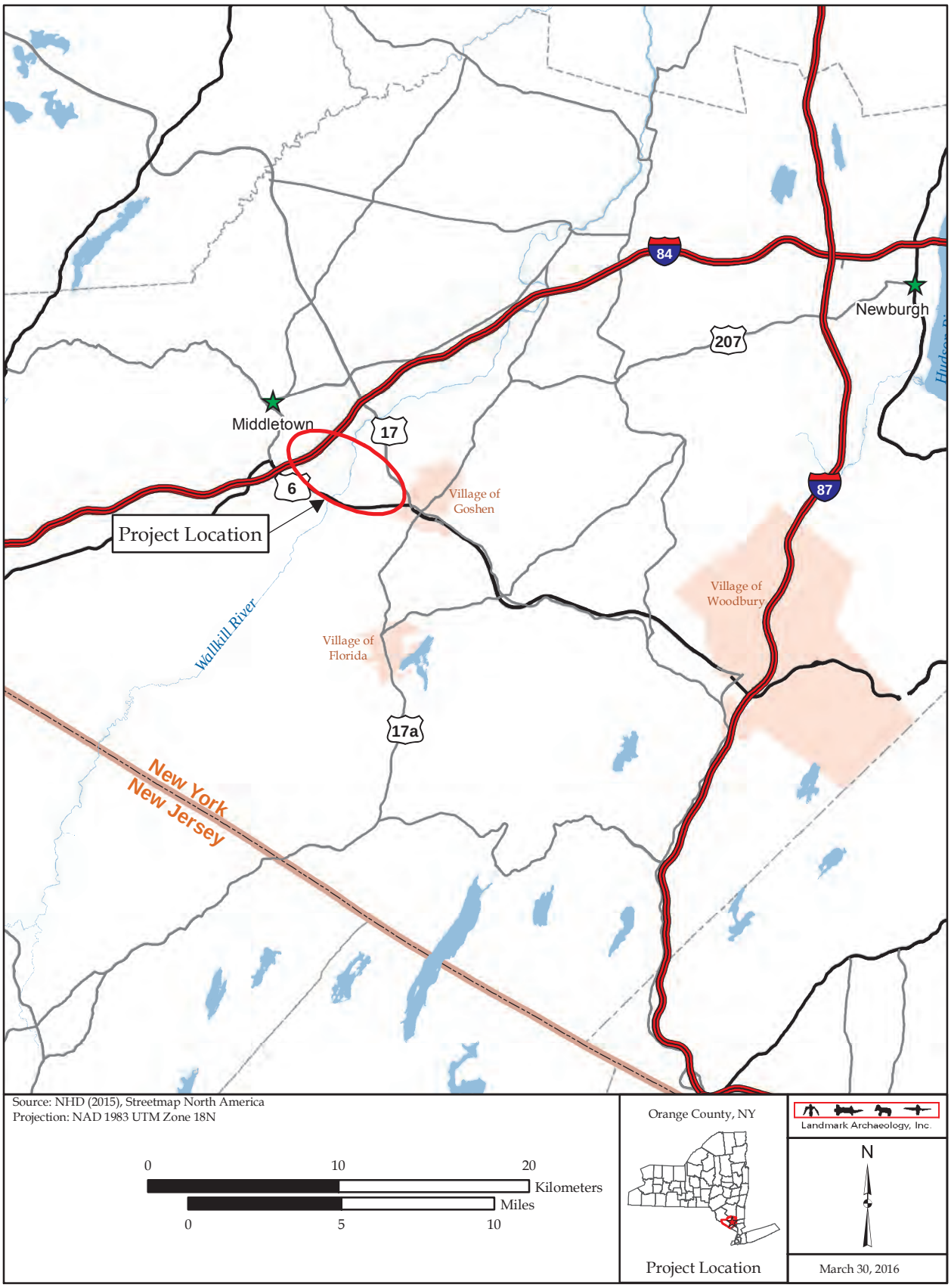


Figure 1: Project Location

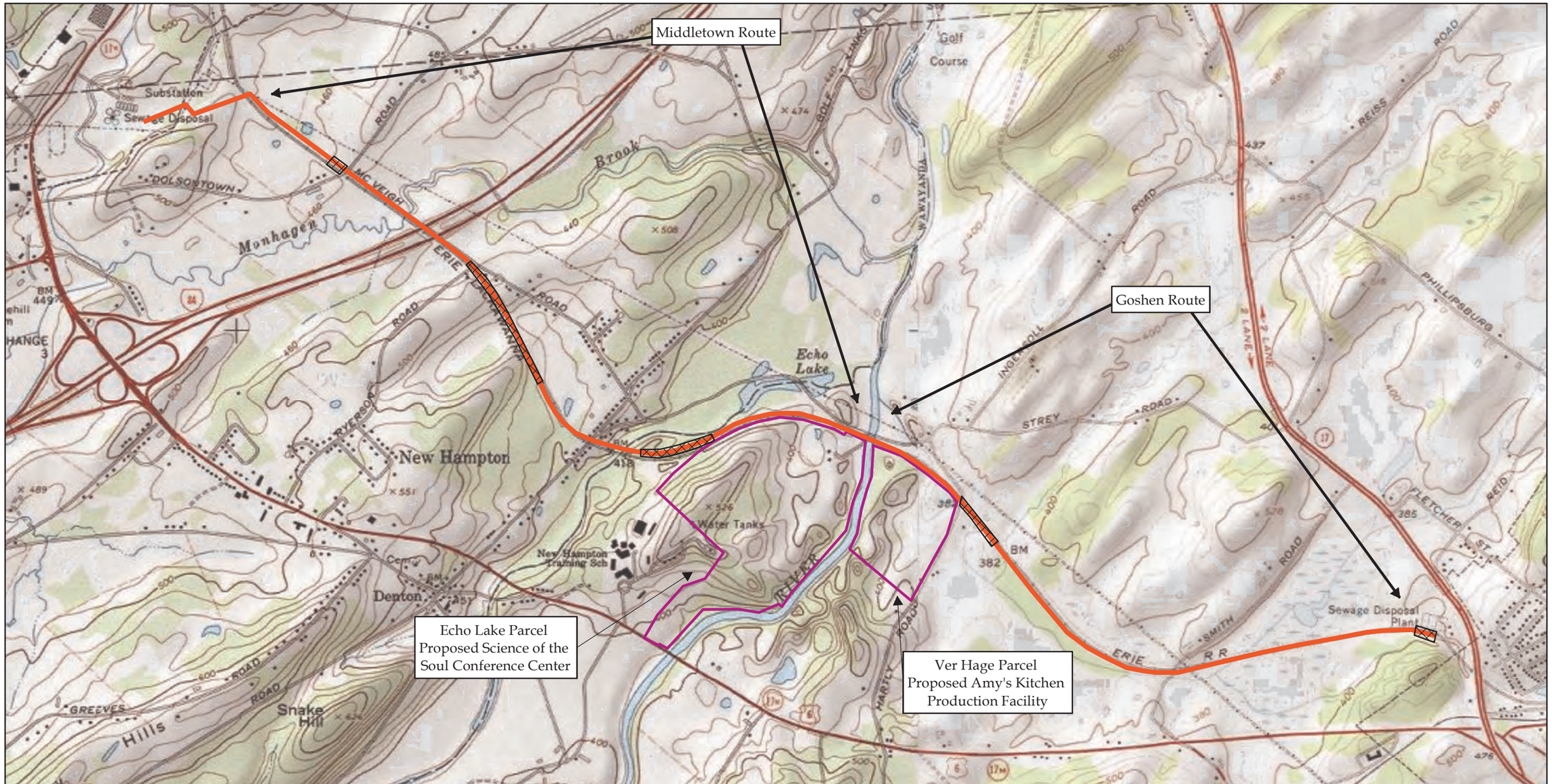


Figure 2: Project Location, Topographic Features, and Severe Disturbance

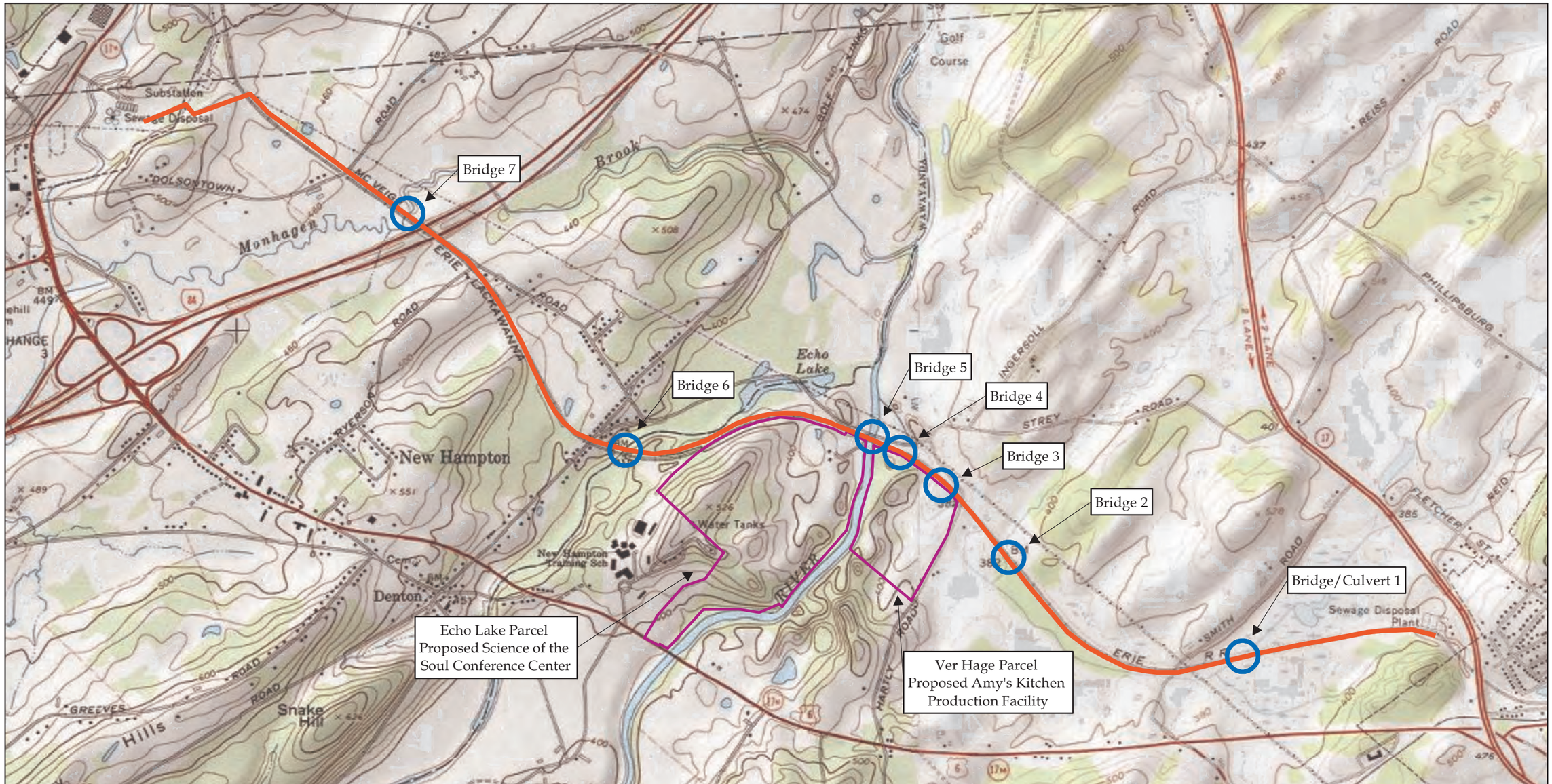


Figure 3: Railroad Bridge Locations

Figure 4: Mapped Soils, Middletown Route

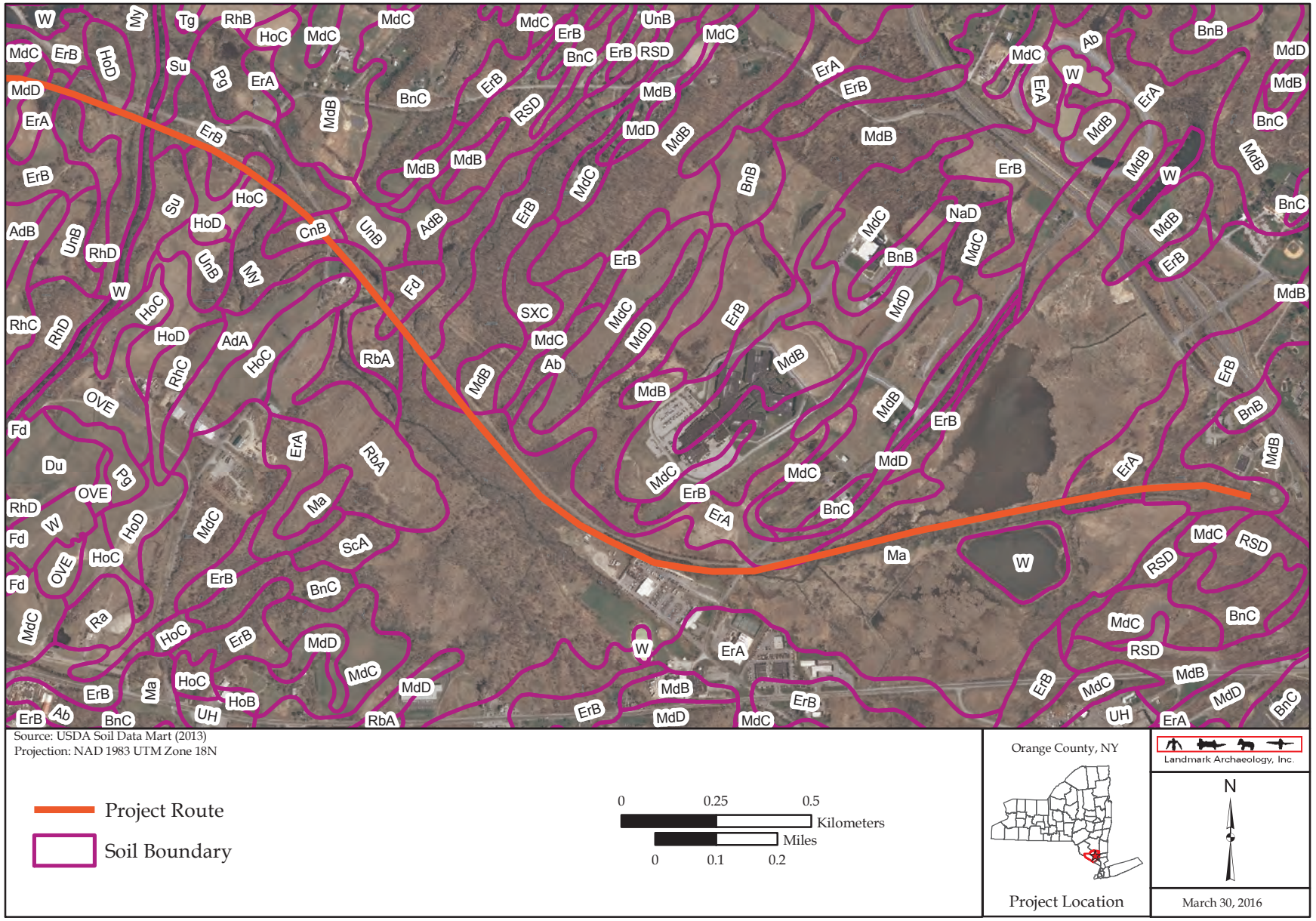


Figure 5: Mapped Soils, Goshen Route

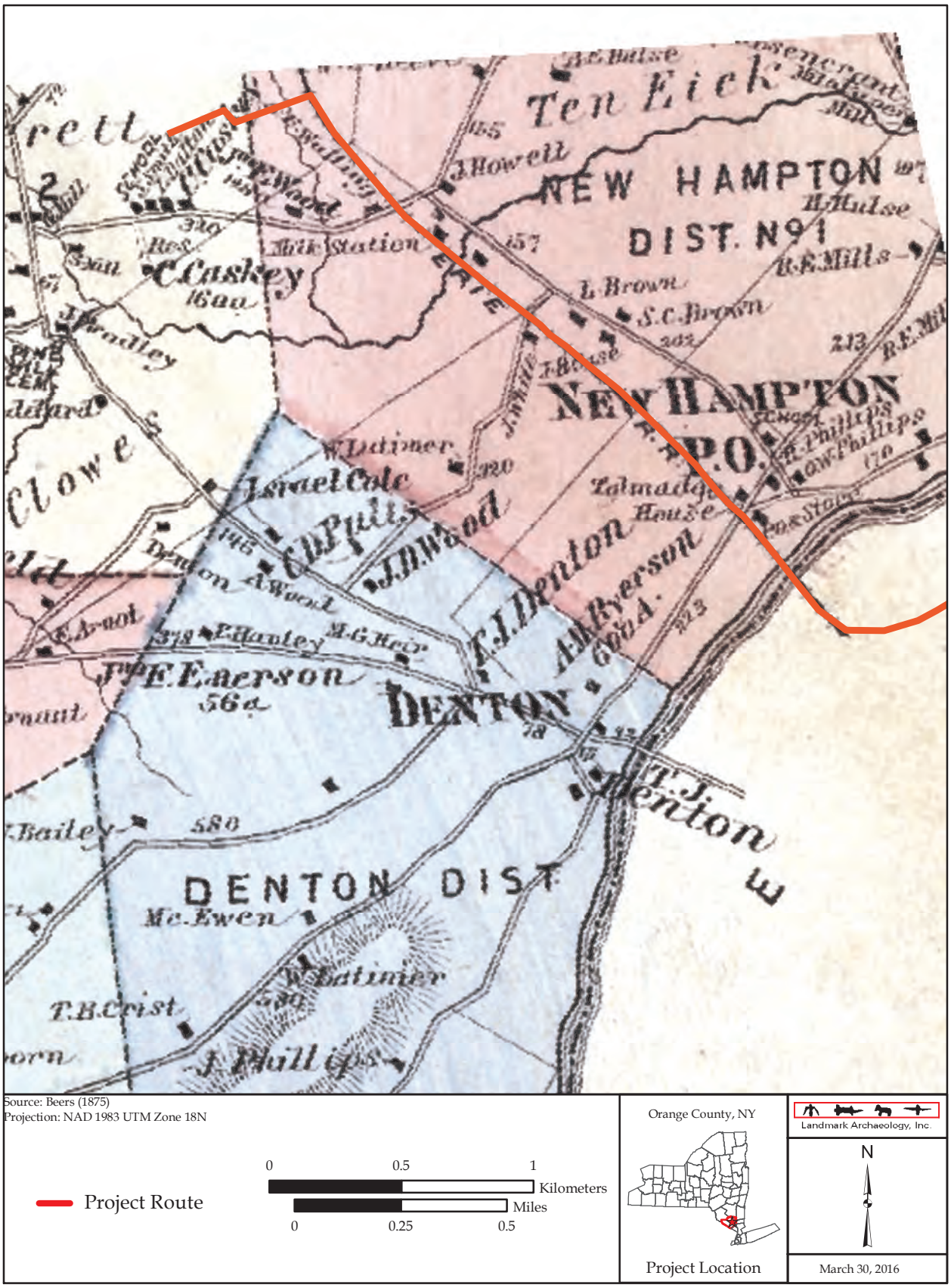


Figure 6: Middletown Route within the Town of Wawayanda, 1875

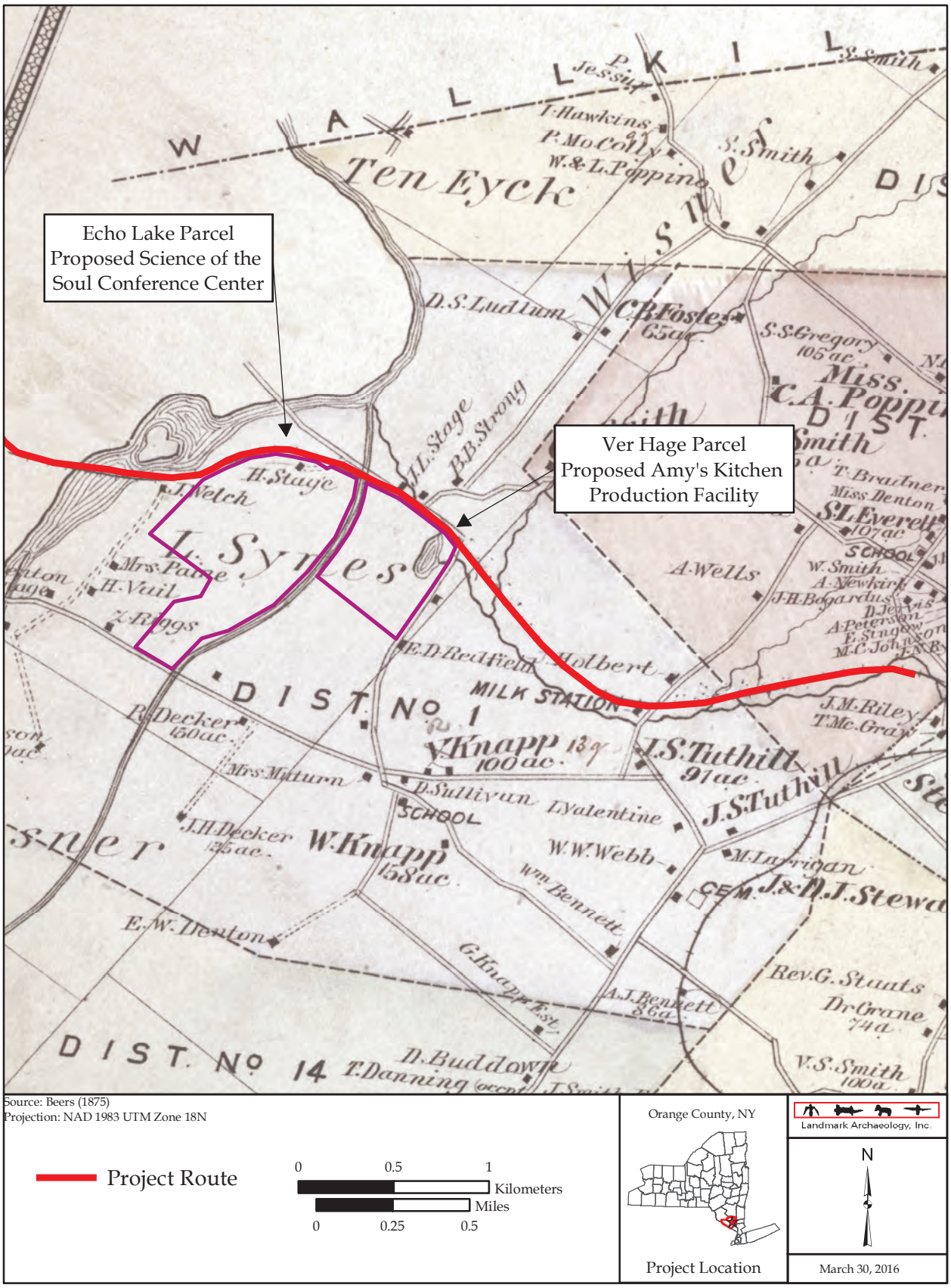


Figure 7: Middletown and Goshen Routes within Town of Goshen, 1875

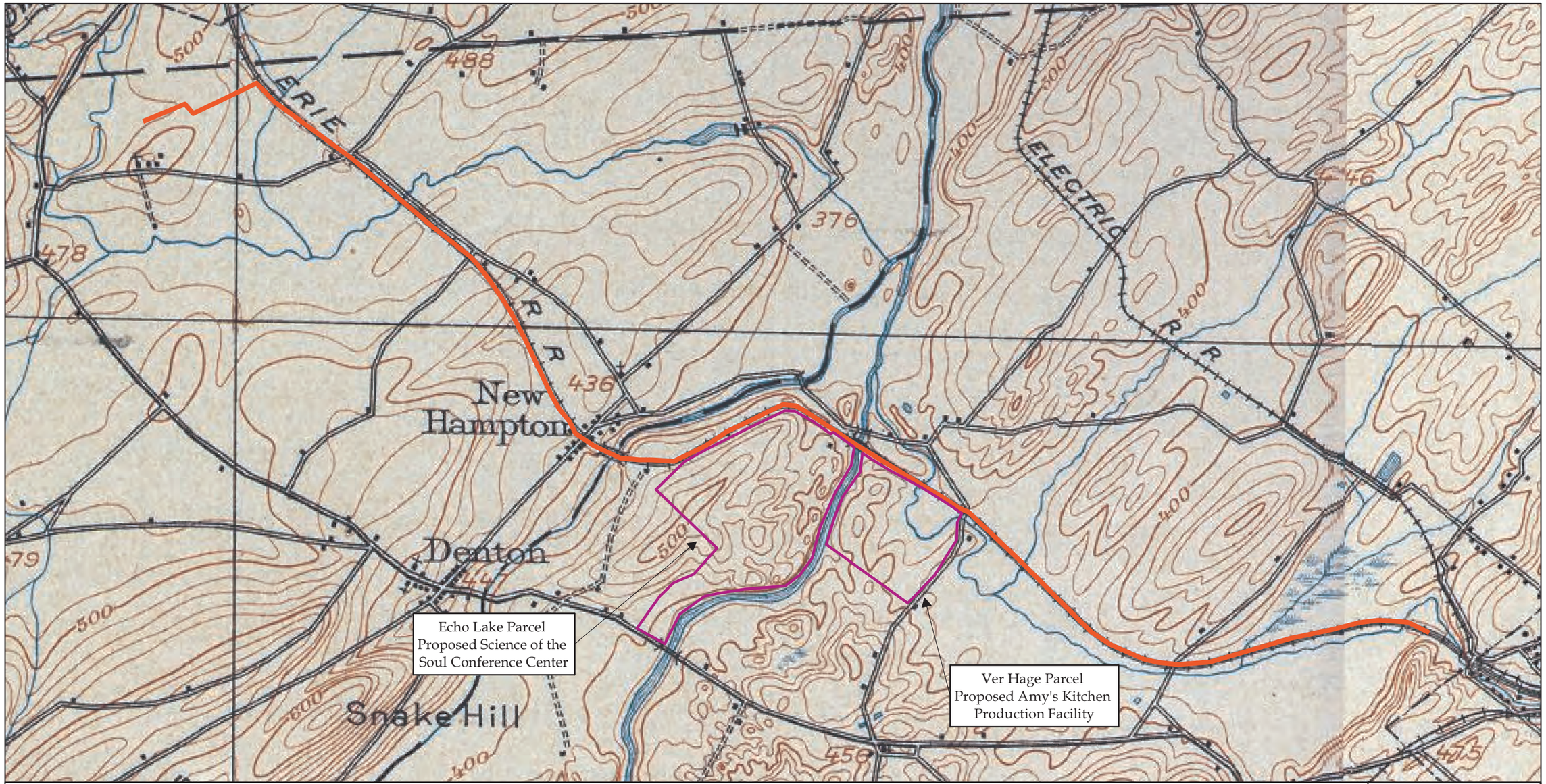


Figure 8: Project Route, 1908

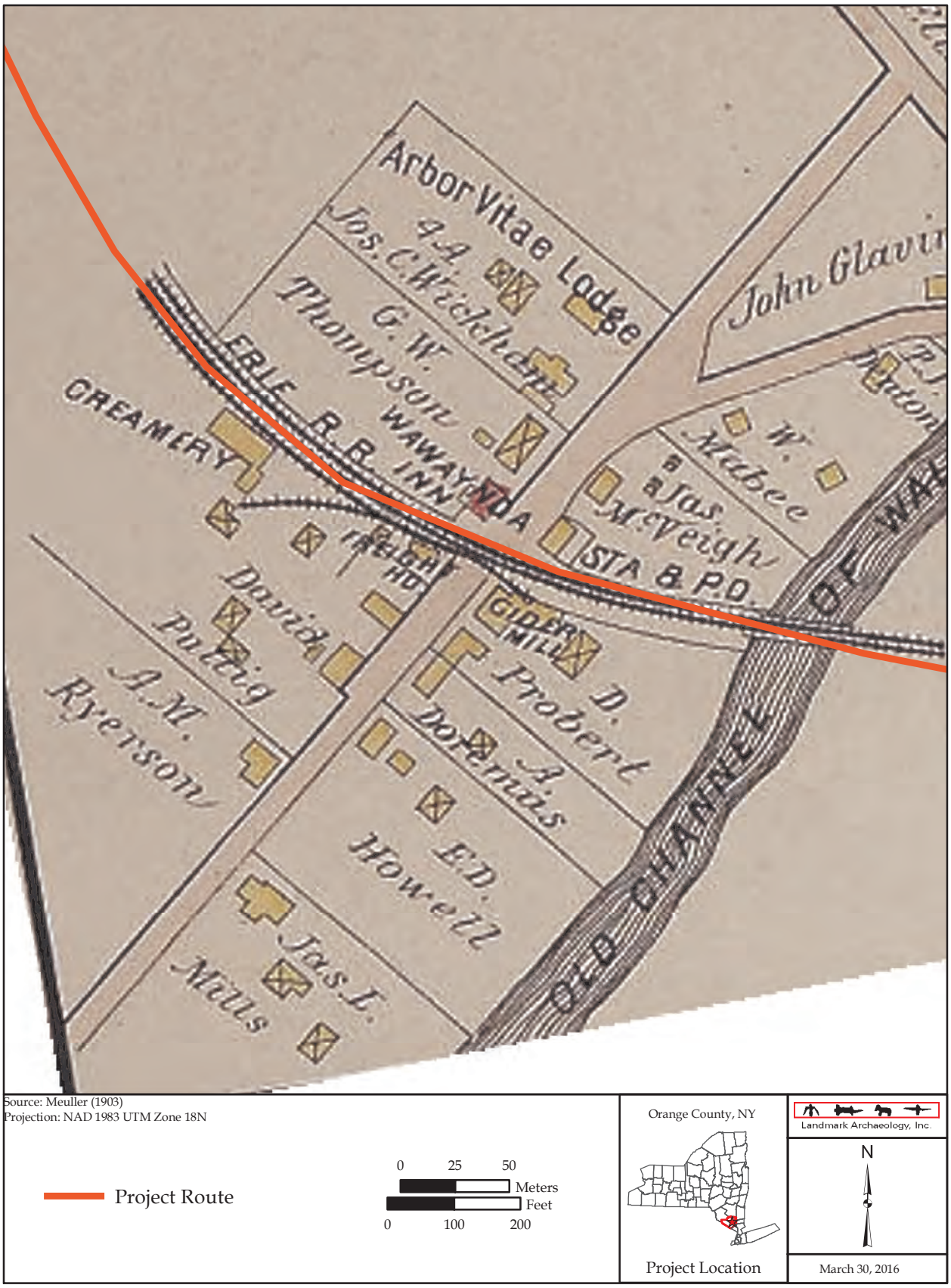
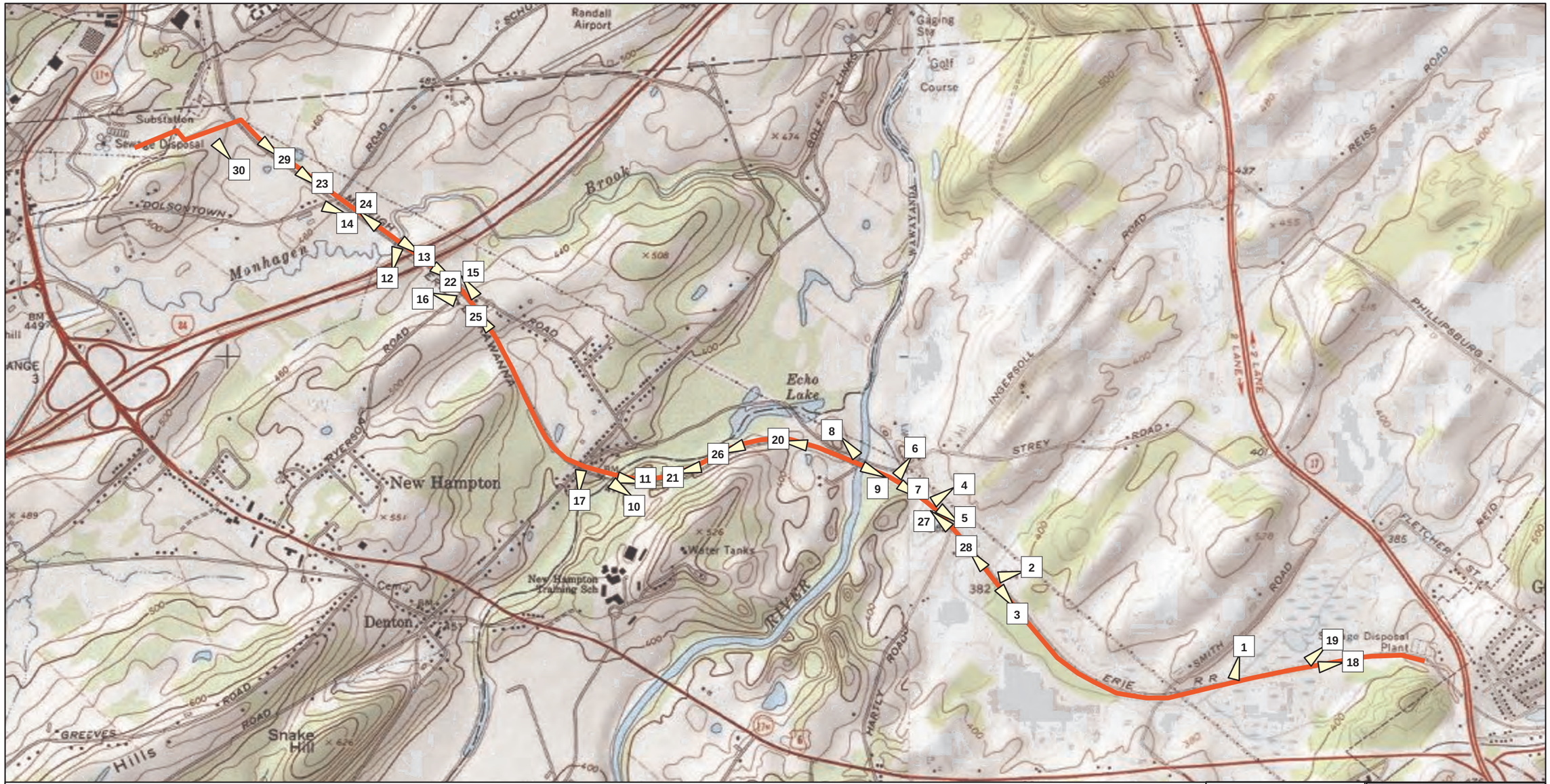


Figure 9: Middletown Route, New Hampton, 1903

APPENDIX A

Photographs



2000 Middletown NY 7.5' Series Quadrangle

Project Route

Photo Angle

0 0.5 1 2 Miles

0 0.5 1 2 Kilometers

Orange County, NY

Project Location

Landmark Archaeology, Inc.

N

3/29/2016

Photo Key

Photograph 1: Bridge/Culvert 1 Elevation, View to Southwest

Photograph 2: Bridge 2 Elevation, View to West

Photograph 3: Bridge 2 Deck, View to Northwest

Photograph 4: Bridge 3 Elevation, View to Southwest

Photograph 5: Bridge 3 Deck, View to Northwest

Photograph 6: Bridge 4 Elevation, View to Southwest

Photograph 7: Bridge 4 Deck, View to Northwest

Photograph 8: Bridge 5 Elevation, View to Southeast

Photograph 9: Bridge 5 Deck, View to Northwest

Photograph 10: Bridge 6 Elevation, View to Northwest

Photograph 11: Bridge 6 Deck, View to West

Photograph 12: Bridge 7 Elevation, View to North

Photograph 13: Bridge 7 Deck, View to Northwest

Photograph 14: NRHP Eligible “E. Walling” House, View to Northwest

Photograph 15: “L. Brown” House, View to Southeast

Photograph 16: “J. White” House, View to Southeast

Photograph 17: Talmadge House/Wawayanda Inn/Mason's Store, View to North

Photograph 18: Railroad Berm, Goshen Route, View to West

Photograph 19: Railroad Berm, Goshen Route, View to Southwest

Photograph 20: Railroad Berm, Goshen Route, View to East

Photograph 21:Railroad Berm, Middletown Route, View to East

Photograph 22, Railroad Berm, Middletown Route, View to Northwest

Photograph 23: Railroad Berm, Middletown Route, View to Northwest

Photograph 24: Railroad Berm, Middletown Route, View to Southeast

Photograph 25: Graded Area, Middletown Route, View to Southeast

Photograph 26: Graded Area, Middletown Route, View to East

Photograph 27: Graded Area, Goshen Route, View to Southeast

Photograph 28: Graded Area, Goshen Route, View to Southeast

Photograph 29: Outfall Sewer in Railroad Berm, Middletown Route, View to Northwest

Photograph 30: Section of the Route between the Railroad and Middletown Sewage Treatment Facility, View to Northwest